Documents of the Administrative Radio Conference (CAR-59)

(Geneva, 1959)

To reduce download time, the ITU Library and Archives Service has divided the conference documents into sections.

- This PDF includes Document No. 1 - 100.
- The complete set of conference documents includes Document No. 1 - 915, DT No. 1 – 875 (incomplete).

This electronic version (PDF) was scanned by the International Telecommunication Union (ITU) Library & Archives Service from an original paper document in the ITU Library & Archives collections.

La présente version électronique (PDF) a été numérisée par le Service de la bibliothèque et des archives de l'Union internationale des télécommunications (UIT) à partir d'un document papier original des collections de ce service.

Esta versión electrónica (PDF) ha sido escaneada por el Servicio de Biblioteca y Archivos de la Unión Internacional de Telecomunicaciones (UIT) a partir de un documento impreso original de las colecciones del Servicio de Biblioteca y Archivos de la UIT.

هذه النسخة الإلكترونية (PDF) نتاج تصوير بالمسح الضوئي أجراه قسم المكتبة والمحفوظات في الاتحاد الدولي للاتصالات (ITU) نقلاً من وثيقة ورقية أصلية ضمن الوثائق المتوفرة في قسم المكتبة والمحفوظات.

此电子版（PDF版本）由国际电信联盟（ITU）图书馆和档案室利用存于该处的纸质文件扫描提供。

Настоящий электронный вариант (PDF) был подготовлен в библиотечно-архивной службе Международного союза электросвязи путем сканирования исходного документа в бумажной форме из библиотечно-архивной службы МСЭ.

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No. 1-E
11 August 1959

PLENARY MEETING

REPORT BY THE ADMINISTRATIVE COUNCIL TO THE ADMINISTRATIVE RADIO CONFERENCE

I have the honour to submit to the Conference the attached report by the Administrative Council relating to the Implementation of the Atlantic City Table of Frequency Allocations.

Gerald C. GROSS
Acting Secretary-General

Annex : 1

ARCHIVES U.I.T. GENÈVE

REPORT

BY THE

ADMINISTRATIVE COUNCIL

TO THE

ADMINISTRATIVE RADIO CONFERENCE

RELATING TO THE IMPLEMENTATION

OF THE ATLANTIC CITY

TABLE OF FREQUENCY ALLOCATIONS

Published by
The General Secretariat
of the
International Telecommunication Union
GENEVA

PAGE INTENTIONALLY LEFT BLANK

PAGE LAISSEE EN BLANC INTENTIONNELLEMENT

Introduction

1. The International Telecommunication Convention of Buenos Aires (1952) specifies in Article 5, paragraph 11(1), that :

"The Administrative Council shall be responsible for taking all steps to facilitate the implementation by the Members and Associate Members of the provisions of the Convention, of the Regulations, of the decisions of the Plenipotentiary Conference, and, where appropriate, of the decisions of other conferences and meetings of the Union."

1.1 A similar provision appeared in the former Convention of Atlantic City (1947).

2. In accordance with these directives the Council has, at each of its annual sessions, reviewed the situation relating to the eventual implementation of the new Table of Frequency Allocations, below 27 500 kc/s, which was adopted by the Administrative Radio Conference of Atlantic City (1947). In addition to the duties of the Council specified in the Convention the Extraordinary Administrative Radio Conference (E.A.R.C.), Geneva, 1951, invited the Council to take certain actions with a view to bringing the Table into force and concerning the preparation by the I.F.R.B. of draft plans for the High Frequency Broadcasting Service.

3. The Council has made every endeavour to carry out its duties relating to this matter and, at its annual sessions, made a number of recommendations to Administrations and to the I.F.R.B. with the objective of obtaining the maximum possible implementation of the Atlantic City Table of Frequency Allocations, below 27 500 kc/s, prior to the 1959 Ordinary Administrative Radio Conference.

Action taken in respect of the situation prior to the decisions of the Extraordinary Administrative Radio Conference (Geneva 1951)

4. The Atlantic City Administrative Radio Conference not only established a new Table of Frequency Allocations but it also decided that,

in order to facilitate the bringing into force of this new Table, a new International Frequency List should be prepared for the radio spectrum between 10 kc/s and 27 500 kc/s. Since time did not permit the Conference to complete this latter work, it passed a special Resolution (Resolution relating to the Preparation of the New International Frequency List) which established the Provisional Frequency Board, (P.F.B.) specified the bases on which a draft List should be drawn up, and defined the frequency bands for which the responsibility for the preparation of the List should be entrusted to the P.F.B. or, to Service or Regional Conferences. It was envisaged in the Resolution that a Special Conference would be convened to study the draft list so prepared.

5. Pursuant to this decision and Resolution, the following Conferences and meetings were held under the aegis of the I.T.U.:

Provisional Frequency Board,
Geneva, 15 January 1948 - 28 February 1950

International High Frequency Broadcasting Conference,
Mexico City, 22 October 1948 - 10 April 1949
(preceded by the Planning Committees of Geneva and Mexico City)

International High Frequency Broadcasting Conference,
Florence/Rapallo, 1 April 1950 - 19 August 1950
(preceded by the Technical Plan Committees of Paris and Florence)

International Administrative Aeronautical Radio Conferences,
Geneva, 1st session : 15 April 1948 - 25 September 1948
2nd session : 1 August 1949 - 17 October 1949

Administrative Radio Conference for Region 1,
Geneva, 18 May 1949 - 17 September 1949

Administrative Radio Conference for Region 2,
Washington, 25 April 1949 - 9 July 1949

Administrative Radio Conference for Region 3,
Geneva, 18 May 1949 - 4 November 1949

5.1 In addition, regional conferences of more limited scope, such as the European Broadcasting Conference and the Maritime Regional Radio Conference (Copenhagen, 1948) and the North American Regional Broadcasting Conference (Montreal/Washington 1949/50), were held to establish plans for certain types of service in their exclusive Regional bands.

5.2 A brief résumé of the results achieved by these Conferences is given in Annex 1.

6. The Administrative Council, at each of its annual sessions, reviewed the progress which was being made in the preparation of the new draft International Frequency List and, where necessary, took steps destined to facilitate and hasten the completion of this work.

7. At its 5th Annual Session (Geneva, September-October 1950), the Administrative Council carefully examined the progress which had been made. It concluded that the results of the work of the Service and Regional Conferences and of the P.F.B. showed that in the parts of the Atlantic City Table of Frequency Allocations below about 4000 kc/s it seemed possible to draw up a new frequency List and, hence, to implement successfully this portion of the Frequency Allocation Table. It further concluded that between about 4000 kc/s and 27 500 kc/s there was as yet no prospect of a complete frequency list prepared in accordance with the provisions of the Atlantic City Resolution relating to the Preparation of the New International Frequency List, except in respect of the Maritime Mobile and Aeronautical Mobile Services. It also considered that, to provide for the orderly development and operation of radio services and in particular of the safety and radio-navigation services, it was urgent to implement the entire Atlantic City Table, since otherwise international radiocommunications will be adversely affected to an increasingly serious degree..

7.1 The Council, therefore, proposed to Administrations that an Extraordinary Administrative Radio Conference should meet in Geneva on 16 August 1951, and drew up the Agenda for this Conference. (The full text of the relevant Administrative Council Resolution (No. 199) is given in Annex 2).

7.2 The Administrative Council also invited the Administrations and the I.F.R.B. to take a number of steps prior to the convening of this Conference in order to facilitate its work. (The full text of the relevant Administrative Council Resolution (No. 200) is given in Annex 2).

8. The Extraordinary Administrative Radio Conference duly met on 16 August 1951, and, basing its work on the Agenda drawn up by the Administrative Council :

(i) adopted a new International Frequency List for the frequency bands between 14 and 150 kc/s allocated on a world-wide basis;

(ii) adopted new International Frequency Lists for Regions 1, 2 and 3 for the Regionally allocated frequency bands below 3950 kc/s (4000 kc/s Region 2);

(iii) adopted a Frequency Allotment Plan and a new International frequency List for the Maritime Mobile Service for the frequency bands exclusively allocated to that Service between 4000 kc/s and 27 500 kc/s;

(iv) adopted Frequency Allotment Plans for the Aeronautical Mobile (R) and (OR) Services for the frequency bands exclusively allocated to that Service between 2 850 kc/s and 27 500 kc/s.

8.1 The Extraordinary Administrative Radio Conference also adopted a series of measures to be applied by the Administrations and by the I.F.R.B. in bringing their radio frequency operations into conformity with the Atlantic City Table of Frequency Allocations and for the preparation of plans for the High Frequency Broadcasting Service, and it invited the Administrative Council to review the progress made in the application of these provisions.

Action taken in respect of the situation arising from the decisions of the Extraordinary Administrative Radio Conference (Geneva 1951)

9. The Plenipotentiary Conference of Buenos Aires (1952) considered that it was necessary to remove all doubts as to whether there was a conflict between certain provisions of the Agreement of the Extraordinary Administrative Radio Conference and provisions of the Atlantic City Radio Regulations and resolved :

> "that any provisions of the Extraordinary Administrative Radio Conference Agreement which might be considered as conflicting with provisions of the Atlantic City Radio Regulations or with the Resolution 'Relating to Participation in the Provisional Frequency Board of Members of the International Frequency Registration Board', shall be considered as superseding those provisions of the Regulations and of that Resolution."

(The full text of the relevant Resolution (No. 30) is given in Annex 3).

10. The specific paragraphs of the E.A.R.C. Agreement relating to action by the Administrative Council are Nos. 123, 130, 157, 158 and 198, the full texts of which are given in Annex 4. The action taken by the Council in response to the provisions of these paragraphs, for ease of reference, is presented under the two main subjects of "Implementation of the Atlantic City Table of Frequency Allocations" and "Preparation by the I.F.R.B. of Draft Plans for the High Frequency Broadcasting Service".

Implementation of the Atlantic City Table of Frequency Allocations

11. The I.F.R.B. was charged by Article 13 of the E.A.R.C. Agreement to make reports to Members of the Union on the progress made in carrying out the provisions of the Agreement. The first of these reports was to be made in advance of the 1953 session of the Council so that in accordance with No. 130 of the Agreement, the Council might review the position in regard to the clearance of the Ship Radiotelegraph Calling bands; and, if progress was satisfactory, recommend a date on which ship stations would commence to move into the Radiotelegraph Calling Bands, provided that they were so equipped as to operate satisfactorily in these bands.

11.1 As a result of a consultation with the Administrations undertaken by the I.F.R.B. in June 1952 and in the light of the Board's recommendations in its progress report, the Council, at its 8th Session, in 1953, decided to recommend to the Administrations to clear the calling bands allocated to ship radiotelegraph stations by 3 June 1953 and to commence to move the assignments of radiotelegraph ship stations into these bands by 1 September 1953. The full text of the relevant Administrative Council Resolution, (No.285) is given in Annex 5.

11.2 This decision marked an important step in the implementation programme since the establishment of specific dates set in motion the whole programme for the clearance of all the high frequency bands allocated exclusively to the Maritime Mobile Service and the introduction of the planned use of these bands by that Service.

12. Pursuant to the provisions of No. 157 of the E.A.R.C. Agreement, the Administrative Council, at its 10th Session, in 1955, carefully studied the report by the I.F.R.B. concerning the progress made in the bringing into use of the Table of Frequency Allocations. The Council decided (a) that it would be premature to recommend a date for the commencement of the Final Adjustment Period provided for in Article 16 of the E.A.R.C. Agreement, or other measures, and (b) to review the situation again during its 1956 session. The full text of the relevant Administrative Council Resolution No. 336 is given in Annex 5. The Council also decided to examine, at its 1956 session, the question of the date of the convening of the next Administrative Radio Conference.

13. In the light of the considerable progress achieved by Administrations which was revealed in the 1956 Progress Report of the I.F.R.B., the Council at its Eleventh Session, in 1956, considered that, although no plans for high frequency broadcasting had been adopted (see No. 157 of the E.A.R.C. Agreement), the time had come to make recommendations to Administrations on the possibility of commencing the Final Adjustment Period and in regard to the convening of the next Administrative Radio Conference. Since the majority of Administrations declared in favour of the Council's recommendations, the Council decided, subject to review during its 1957 annual session, that the Administrative Radio Conference should begin on 1 June 1957, the period of seven months envisaged for the duration of the final adjustment period being extended to ten months in order to provide two months for each of the frequency blocks Nos. 4, 5 and 6, where the Council felt that the greatest difficulties for Administrations would arise. The full text of the relevant Administrative Council Resolution, (No. 347), is given in Annex 5.

14. After close scrutiny of the situation described by the I.F.R.B. in its 1957 progress report and the recommendations contained therein, the Administrative Council, at its 12th Session, in 1957, confirmed that the Final Adjustment Period should begin on 1 June 1957 and should extend over a period of ten months. The full text of the relevant Resolution, (No. 364), is given in Annex 5. It also decided that the Administrative Radio Conference should be convened on 1 July 1959 for a duration of five months.

15. At its 13th Session (1958), the Administrative Council reviewed the situation, as revealed in the I.F.R.B.'s progress report, after the conclusion of the Final Adjustment Period, and noted that a number of out-of-band operations continued to exist. It also noted that the number of such operations had very greatly decreased during the preceding two years, and that a still further reduction might be expected. It therefore requested the I.F.R.B, to send a further progress report on this matter to Administrations toward the end of 1958 and to submit a report on the situation at its 1959 annual session. The Council also decided that, considering the work done by the Union from 1948 to 1958 to prepare for the Administrative Radio Conference, and the fact that the Union was facing a difficult financial situation, the budget for the Conference should be based on a duration of four months, and that, with the concurrence of the Members of the Union, the Conference should therefore convene on 17th August, 1959.

16. At its 14th Session (1959), the Administrative Council considered the two reports mentioned in the preceding paragraph; and, after reviewing the situation as on 1 May 1959, it decided to appeal to all Administrations which were still operating out-of-band assignments not in accordance with the Atlantic City Table of Frequency Allocations, to do their utmost to adjust these operations so as to be in conformity with the Table prior to the opening of the Administrative Radio Conference. The full text of the relevant Resolution (No. 406) is given in Annex 5.

Preparation by the I.F.R.B. of Draft Plans for the High Frequency Broadcasting Service

17. No. 123 of the E.A.R.C. Agreement invited the Administrative Council, at its session in 1953, to pay very special attention to the state of progress as regards the draft high frequency broadcasting plans and to recommend to Administrations the necessary action the Council considered appropriate.

18. The Council noted at its 8th Session, in 1953, that, according to No. 98 of the E.A.R.C. Agreement, Administrations were to submit their up-to-date requirements to the I.F.R.B. by 1 July 1952; that such information furnished by Administrations involved an average increase in channel-hours, for all frequency bands, of 78% over the corresponding channel-hours consigned in the Mexico City Basic Plan; and that the I.F.R.B. was of the opinion that the preparation of a basic plan to embrace all these requirements would be impossible without lowering the technical standards adopted by the Mexico City High Frequency Broadcasting Conference, as authorized in No. 101 of the E.A.R.C. Agreement, to such an extent that the draft plan would be likely to be unacceptable to the majority of Administrations. Consequently, the Council decided that the first step was to invite Administrations to reduce their requirements to the greatest extent possible, after which the Board should review the situation. The full text of the relevant Resolution, (No. 286), is given in Annex 6.

19. At its 9th Session, in 1954, the Council took note that, as a result of the response by Administrations to the Council's appeal, the I.F.R.B. had received many revised requirements but that the overall result

was only a small reduction in the total number of channel-hours. It also took note, however, that the Board had been able to make a more detailed study of individual requirements in the light of the comments and suggestions received from Administrations; and that it considered that it would be advantageous to discuss them with the Administrations concerned and to obtain further information concerning programmes; in particular, the Board felt that a review of the method of assessment of the requirements could yield a reduction in the number of channel-hours actually required to satisfy the various needs. The Council requested the I.F.R.B. to continue its studies and invited the Administrations to cooperate with the Board in consultations designed to achieve a reduction of the channel-hours necessary to satisfy the stated requirements of Administrations. The full text of the relevant Administrative Council Resolution (No. 294), is given in Annex 6.

20. At its 10th Session, in 1955, the Council took note that the consultations held by the I.F.R.B. with a number of Administrations had considerably clarified the situation in respect of their requirements and that the Board considered that if progress in consultations could be maintained during the year it might well be possible to prepare a tentative draft plan for phase June 70 on a basis of interlaced channels with a separation of 5 kc/s. The Council therefore urged Administrations, in its Resolution No. 336 (Annex 6), to facilitate direct consultation with the I.F.R.B. and requested the Board to endeavour to complete a draft plan for phase June 70 for circulation to Administrations in sufficient time for their comments to be received before the 1956 session of the Council.

21. At its 11th Session, in 1956, the Council was able to consider the comments of Administrations on the Draft Plan (June 70) (which ranged from full acceptance to complete rejection), as summarized by the I.F.R.B. and the Board's conclusion that it could now go ahead with a revision of the draft plan taking into account as many of the detailed comments as possible (although it would not be possible to meet most objections which had been raised, many of which were mutually incompatible) and take this revised draft plan as a basis for the preparation of draft plans for other phases of solar activity. This action was endorsed by the Council, and, in its Resolution No. 348, the full text of which is given in Annex 6, it requested the Board to revise its draft plan for phase June 70, and to prepare a draft plan for phase December 70 by 1 April 1957 and to report to the Council in 1957 on the possibility of the preparation of additional plans.

22. At its 12th Session, in 1957, the Council took note that the I.F.R.B. had been able to complete the Draft Reference Plan (phase June 70) only by March of that year since it had extended the period of final consultations with Administrations in the interests of resolving as many problems as possible prior to the establishment of this plan which would serve as a basis for the plans for the other phases. The Council, after studying the question in detail on the basis of the Board's report and in collaboration with the Board's representatives, promulgated Resolution No. 365, (the full text of which is given in Annex 6) in which it requested the Board to endeavour to complete the draft plans for the remaining phases

of number 70 by the end of 1957 and to invite the comments of Administrations on these plans; and thereafter to proceed to prepare draft plans for phases of Low and High Sunspot activity with a view to completing as many of these plans as possible before the end of 1958.

23. At its 13th Session, in 1958, the Council considered the report by the I.F.R.B. on the progress made in High Frequency Broadcasting Planning and took note that the Board considered that the programme set up in 1957 could be maintained. It accordingly requested the Board to continue its work and report to the Council at its 1959 Session.

24. At its 14th Session, in 1959, the Council took note that the I.F.R.B. had completed the draft plans for the phases June, Equinox and December of Sunspot Numbers 12, 70 and 125, the last draft plan (Phase June 12) having been despatched in April 1959. It also took note that the Board had been able to submit a summary of the general comments of Administrations on the draft plans for Sunspot Numbers 70 and 125. As these comments relate, in many cases, to individual allocations which are being further studied by the Board, and as the Board will report fully on these matters to the Administrative Radio Conference which will have to consider the whole problem, the Council does not feel it would be appropriate to offer any comments. In its Resolution No. 407 (Annex 6), the Council invited Administrations, in cases where they had not already done so, to furnish to the I.F.R.B. their comments on the draft plans, as soon as possible for consideration by the Administrative Radio Conference.

25. Finally, with reference to the invitation to the Council, in No. 198 of the E.A.R.C. Agreement "to consider whether a High Frequency Broadcasting Conference is necessary for the consideration of these draft plans", the Administrative Council considers that as only a few months remain before the convening of the Administrative Radio Conference, there is now no point in considering this question.

26. A statement of the costs incurred by the I.T.U. in respect of high frequency broadcasting planning by Conferences and by the I.F.R.B. appears in Annex 7.

Conclusion

The Administrative Council has endeavoured to carry out its mandate under Article 5, paragraph 11 (1), of the Convention and to discharge the duties given to it by the Extraordinary Administrative Radio Conference and submits this report to the Administrative Radio Conference for its consideration.

Annexes : 7

ANNEX 1

BRIEF SUMMARY OF THE WORK ACCOMPLISHED BY THE PROVISIONAL FREQUENCY BOARD AND BY SERVICE AND REGIONAL CONFERENCES

1.1 The Provisional Frequency Board prepared a draft frequency assignment plan for the internationally allocated section of the spectrum below 150 kc/s and for about 80 - 90% of the spectrum with which it was concerned in the frequency range 4000 kc/s - 27 500 kc/s. The plans for the Fixed Service in the latter frequency range were subject to considerable criticism from Administrations and many found them unacceptable. The plans for the Maritime Mobile Service were, however, favourably received by a large number of Administrations.

1.2 The High Frequency Broadcasting Conference of Mexico City adopted a basic plan for the High Frequency Broadcasting Service for Phase June 70. Time did not permit the preparation of plans for other sunspot phases to complete the "Mexico City Plan" and the Conference established the Technical Plan Committee to prepare plans for these phases for consideration by a future High Frequency Broadcasting Conference.

1.3 The High Frequency Broadcasting Conference of Florence/Rapallo considered the draft plans prepared by the Technical Plan Committee for the further sunspot phases and prepared modified draft plans but the work of the Conference was suspended before these could be considered for adoption.

1.4 The International Administrative Aeronautical Radio Conference at its first session in Geneva adopted an Allotment Plan for the Aeronautical Mobile OR Service; however, it could not reach agreement on a similar plan for the Aeronautical Mobile R Service and consideration of this question was suspended.

1.5 The International Administrative Aeronautical Radio Conference at its second session in Geneva adopted an Allotment Plan for the Aeronautical Mobile R Service.

1.6 The Administrative Radio Conference of Geneva for Region 1 prepared a draft plan for Region 1 for the frequency bands below 3900 kc/s under its consideration.

1.7 The Administrative Radio Conference of Washington for Region 2 set up a procedure for the preparation of a draft plan for Region 2 for the bands below 4000 kc/s under its consideration.

1.8 The Administrative Radio Conference of Geneva for Region 3 prepared a draft assignment plan for Region 3 for the frequency bands below 3950 kc/s under its consideration.

1.9 Regional Conferences of more restricted scope, such as the European Broadcasting Conference, the Maritime Regional Radio Conference, and the North American Regional Broadcasting Conference, adopted plans for the frequency bands with which they were concerned.

ANNEX 2

RESOLUTIONS ADOPTED BY THE ADMINISTRATIVE COUNCIL CONCERNING THE CONVENING OF, AND PREPARATIONS FOR, THE EXTRAORDINARY ADMINISTRATIVE RADIO CONFERENCE (GENEVA, 1951)

No. 199.- CONVENING OF THE EXTRAORDINARY ADMINISTRATIVE RADIO CONFERENCE AT GENEVA ON 16 AUGUST 1951

(cf. PV CA5/15, 16 - October 1950)

The Administrative Council,

referring

to Resolution No. 154 concerning the Provisional Frequency Board and to the following Documents of the 5th Session of the Administrative Council:

No. 592 Report by the Secretary-General of the Union : Extraordinary Administrative Radio Conference, The Hague 1950

No. 626 Report by the Secretary-General of the Union on the situation resulting from the postponement of the Extraordinary Administrative Radio Conference of The Hague; and the Resolution adopted by the Economic and Social Council of the United Nations at its 11th Session (shown in Annex 2 to this document)

No. 644 Report by the Secretary-General : Situation arising as a result of the postponement of the Extraordinary Administrative Radio Conference (Further to Document No. 626/CA5)

No. 650 Memorandum by the I.F.R.B. on the postponement of the Extraordinary Administrative Radio Conference at The Hague

No. 653 Recommendation by the High Frequency Broadcasting Conference, Florence/Rapallo

No. 660 Letter from the Chairman of the Council of I.C.A.O. commenting on the situation resulting from the postponement of the Extraordinary Administrative Radio Conference at The Hague

No. 671 Summary by the I.F.R.B. of comments received from Administrations on the frequency assignment plans prepared by service and regional radio conferences and the P.F.B.

No. 672 French proposal for the Draft Agenda for the Extraordinary Radio Conference

No. 677 Note on the situation arising from the postponement of the Extraordinary Administrative Radio Conference

No. 691 Report by the Secretary-General : Situation resulting from the postponement of the Extraordinary Administrative Radio Conference (Addendum to Documents Nos. 626/CA5 and 644/CA5)

No. 696 Report by the Secretary-General : Situation resulting from the postponement of the Extraordinary Administrative Radio Conference (further to Documents Nos. 626/CA5, 644/CA5 and 691/CA5)

No. 699 Note from the Secretary-General : Situation resulting from the postponement of the Extraordinary Administrative Radio Conference - Communication from the Indian Administration

and considering

1. that the results of the work of the service and regional conferences and of the P.F.B. show that in the parts of the Atlantic City Table of Frequency Allocations below about 4000 kc/s it seems possible to draw up a new frequency list and hence to implement successfully this portion of the table;

2. that between about 4000 kc/s and 27 500 kc/s there is as yet no prospect of a complete frequency list prepared in accordance with the provisions of the Atlantic City Resolution relating to the Preparation of the New International Frequency List except in respect of the maritime mobile and aeronautical mobile services;

3. that, whereas the Atlantic City Table of Frequency Allocations above 27 500 kc/s is already in force, Article 47 of the Atlantic City Radio Regulations defers, until the date when the new International Frequency List is put into effect, the application of the lower part of this Table and of important articles in the Atlantic City Radio Regulations, including those which define the new procedures for the notification and registration of all frequencies;

4. that, to provide for the orderly development and operation of radio services and in particular of the safety and radionavigation services, it is urgent to implement the entire Atlantic City Table, since otherwise international radiocommunications will be adversely affected to an increasingly serious degree;

5. that, in many bands changes of frequency assignments to bring these into conformity with the Atlantic City Table of Frequency Allocations will be interdependent and need to be closely studied and coordinated to minimize interference;

proposes

I. that the Extraordinary Administrative Radio Conference meet at Geneva on 16 August 1951 for a period of three months, on the understanding, however, that the Administrative Council during its Sixth Session beginning on 16 April 1951 will have to confirm the date;

II. that the new agenda for the Conference shall be as follows :

Agenda

1. To consider the draft frequency lists prepared by the P.F.B. as well as by regional and service conferences in all frequency bands between 14 and 27 500 kc/s where such drafts (taking into account the remarks and general comments of the Members of the Union received, assembled and synthetized by the I.F.R.B. and circulated to Administrations before the Conference) appear sufficiently advanced to afford promise of early enough agreement;

2. a) To establish, to the extent compatible with paragraph 1. above, a new frequency list in the part of the Atlantic City Table of Frequency Allocations below 4000 kc/s;

b) To establish, to the extent compatible with paragraph 1. above in the bands between 4000 and 27 500 kc/s a new frequency list for the Maritime Mobile and Aeronautical Mobile services;

c) To consider proposals from the I.F.R.B. and from Members of the Union relating to new methods of bringing into effect those parts of the Atlantic City Table for which the Conference is unable to establish a frequency list in advance of implementation of the Table and to adopt those methods which appear suitable;

3. To take all necessary decisions concerning the procedures and effective dates of implementation;

a) of those parts of the Atlantic City Table of Frequency Allocations below 4000 kc/s for which, under paragraph 2.a) above, a new frequency list has been established;

b) of those parts of the Atlantic City Table between 4000 kc/s and 27 500 kc/s for which, under paragraph 2.b) above, a new frequency list has been established, paying full regard to the fact that it will be impracticable to implement the lists for the Maritime Mobile and Aeronautical Mobile services unless satisfactory procedures agreed to by the conference are applied for bringing the frequency assignments of the other services into conformity with the Atlantic City Allocation Table;

c) of those parts of the Atlantic City Allocation Table in which it is not possible to establish a new frequency list and in which the methods adopted in accordance with paragraph 2.c) above will have to be applied;

d) of those articles, paragraphs or appendices referred to in Article 47 (paragraph 1076) of the Atlantic City Radio Regulations which the Conference considers it possible to implement either in whole or in part; having due regard to the decisions which it has taken with respect to the implementation of the Atlantic City Allocation Table;

4. To take all necessary measures for the dissolution of the P.F.B., amending as necessary in the light of the decisions taken under paragraph 3.a), b), c) and d) above, paragraph 21 of the Atlantic City Resolution relating to the Preparation of the New International Frequency List;

5. To determine, in the light of the decisions taken in conformity with paragraphs 1 to 3 above, to what extent the I.F.R.B. shall, after the end of the Conference, assume the functions assigned to it in Articles 10 and 11 of the Radio Regulations; to define any additional tasks which the Conference may consider necessary, in the light of its decisions, to entrust to the I.F.R.B. and to forward to the Administrative Council of the Union all information and recommendations needed to guide it when taking any administrative and financial action which may subsequently be necessary;

requests

pending the meeting of the Conference and in order to facilitate and shorten its work;

a) the active assistance of the I.F.R.B. (in accordance with paragraph c) of the Atlantic City Resolution relating to the participation in the P.F.B. of Members of the I.F.R.B.) and of all Members of the Union in studying and making proposals for suitable methods of bringing the entire Atlantic City Table of Frequency Allocations into operation as soon as possible;

b) the I.F.R.B. to assemble and collate all comments and proposals and to circulate them to Members of the Union at least two months before the Conference.

No. 200.- PREPARATION FOR THE EXTRAORDINARY ADMINISTRATIVE RADIO CONFERENCE
(cf. PV CA5/23 - October 1950)

The Administrative Council,

considering

1. that the Extraordinary Conference is to meet in Geneva on 16 August 1951;

2. that the Conference should complete its work within a period of three months, and that, in order to achieve this end, it is essential that the advance preparations for the Conference should be as complete as possible;

3. that it has requested the active assistance of all Members of the Union and of the I.F.R.B., in studying and making proposals to that Conference for suitable methods of bringing the entire Atlantic City Table of Frequency Allocations into force as soon as possible;

4. that the comments and proposals of all Administrations should be sent to the I.F.R.B., in adequate time to enable them to be assembled, synthesized and distributed to all Members of the Union at least two months in advance of the opening of the Conference;

5. that it is important to ascertain, if possible, in those parts of the spectrum for which a new frequency list is unlikely to be established by the Conference, the frequencies which may be available for stations which have to be displaced from their existing frequencies, and for the stations of projected services;

6. that the Economic and Social Council of the United Nations, at its 11th Session, adopted a Resolution of which a copy is annexed;

invites

the active participation of Administrations in the preparation for the Extraordinary Administrative Radio Conference by supplying to the I.F.R.B. :

a) comments (including observations on specific assignments), where these have not as yet been submitted, or amplification of comments already submitted, in respect of the frequency assignment plans already prepared for the frequency bands below 4000 kc/s and the frequency assignment plans prepared for the maritime mobile and aeronautical mobile services;

b) comments, where these have not as yet been submitted, or amplification of comments already submitted, in respect of draft frequency assignment plans in the frequency range between 4000 and 27 500 kc/s other

than those covered in a) above, indicating for each plan whether or not it is acceptable without major modifications and including such observations on specific assignments as Administrations may wish to offer;

c) proposals relating to new methods of bringing into effect those parts of the Atlantic City Table for which the Conference is unlikely to establish a frequency List;

d) the following details of present usage of each frequency which is outside the bands provided for the service concerned under the Atlantic City Table of Frequency Allocations :

1) Frequency in use (kc/s)
2) Type of service and class of emission
3) Location of station
4) Power employed and directivity of antenna
5) Daily hours of use

e) such summaries of international monitoring information relating to the present world-wide usage of frequencies as Administrations, having regard to Article 18 and Appendix C of the Radio Regulations, may be able to furnish;

requests

Administrations, in order that all comments and proposals may be assembled and synthesized by the I.F.R.B. and circulated to reach all Administrations not later than 15th June 1951, to supply to the I.F.R.B.:

1. the information requested in paragraphs a) and b) above as soon as possible and not later than 15th December 1950;

2. the information requested in paragraphs c) and d) as soon as possible and not later than 31st January 1951;

3. the information requested under paragraph e) at monthly intervals until 1st August 1951,

and recommends

that Administrations should send to the Extraordinary Conference delegations which comprise a sufficient number of experts familiar with the problems of the various radio services, to enable the several aspects of the work of the Conference to proceed simultaneously and thus permit the Conference to complete its task within the period of three months specified in the proposal to Administrations.

A N N E X

Resolution adopted by the Economic and Social Council of the United Nations at its 11th Session (July/August, 1950)

IMPLEMENTATION OF THE DECISIONS OF THE ATLANTIC CITY TELECOMMUNICATION CONFERENCES OF 1947

"The Economic and Social Council,

"mindful of its role as a coordinating organ of the United Nations in the field of transport and communications,

"recalling its active participation in the calling of the Atlantic City Telecommunication Conferences of 1947, which resulted in the modernization of the organizational structure of the then existing Telecommunication Union to meet the exigencies of telecommunications in the modern world, including the establishment of an engineered international List of Frequencies and the creation of the International Frequency Registration Board (I.F.R.B.),

"recalling the resolution adopted by the International Radiocommunication Conference of Atlantic City (1947), that the 'date upon which the new International Frequency List shall become effective shall be the subject of a recommendation of the P.F.B. to the Special Conference taking into consideration the urgent need for implementation which should be commenced, if possible, by 1 September 1949',

"noting that this Special Conference was not able to meet on the date specified, due to various difficulties and delays in the work of different conferences dealing with the matter,

"aware that communications by radio may become disrupted through interference if the Extraordinary Radio Conference to approve the international List of Frequencies called by the International Telecommunication Union (I.T.U.) for 1 September 1950 is not successful in the task of effecting an orderly arrangement of radio frequencies, which was entrusted to it by the Atlantic City Telecommunication Conference as well as by the Administrative Council of the I.T.U.,

"conscious that such disruption will be detrimental to existing services especially in the fields of aviation, shipping, point-to-point radiotelegraphy and radiotelephony, safety aids to navigation, broadcasting, and police and security services which, in turn, will have the most adverse

effect in the fields of economics, culture, education and health, which are specifically entrusted to the Council under Article 62 of the Charter,

resolves

to direct the Secretary-General to bring the foregoing considerations to the attention of all Members of the United Nations, requesting those of them attending the Extraordinary Radio Conference to give this matter the most careful consideration at the highest policy level, and to direct their representatives at the Conference to take steps to ensure that, without unnecessary delay, the Conference shall reach a successful conclusion, which can only be brought about by a broad cooperative and realistic approach to the problems."

ANNEX 3

RESOLUTION No. 30 OF THE PLENIPOTENTIARY CONFERENCE

(BUENOS AIRES, 1952)

On the Agreement of the

Extraordinary Administrative Radio Conference

(Geneva, 1951)

The Plenipotentiary Conference of the International Telecommunication Union, Buenos Aires,

recognizing

1. that certain provisions of the Agreement of the Extraordinary Administrative Radio Conference, Geneva, 1951, might be considered as conflicting with Article 47 of the Atlantic City Radio Regulations and with the resolution adopted at Atlantic City "Relating to Participation in the Provisional Frequency Board of Members of the International Frequency Registration Board";

2. that it is necessary to remove all doubts in this matter;

considering

1. that the agenda proposed for the E.A.R.C. by the Administrative Council was accepted by the majority of the Members of the Union;

2. that it was implicit in items 2, 3 and 5 of that agenda that the Radio Regulations and the resolution relating to participation in the Provisional Frequency Board of Members of the International Frequency Registration Board could be revised, if such a revision was found necessary;

3. that administrations were invited to send proposals to the International Frequency Registration Board regarding these agenda items and that these proposals were communicated to all Members of the Union;

4. that the E.A.R.C. Agreement was signed by sixty-three Members of the Union;

resolves

that any provisions of the Extraordinary Administrative Radio Conference Agreement which might be considered as conflicting with provisions of the Atlantic City Radio Regulations or with the Resolution "Relating to Participation in the Provisional Frequency Board of Members of the International Frequency Registration Board", shall be considered as superseding those provisions of the Regulations and of that Resolution.

A N N E X 4

PARAGRAPHS OF THE E.A.R.C. AGREEMENT RELATING TO ACTION BY THE ADMINISTRATIVE COUNCIL

No. 123 (Relating to the preparation of Draft Plans for the High Frequency Broadcasting Service).

"The Administrative Council is invited, at its session in 1953, to pay very special attention to the state of progress as regards the Draft Plans for High Frequency Broadcasting and to recommend to Administrations the necessary action the Council considers appropriate."

No. 130 (Relating to the bringing into use of the Ship Radiotelegraph Calling Bands).

"A report on this question will be made by the I.F.R.B. to Members of the Union in advance of the Administrative Council Session in 1953 so that the Council may review the position and, if progress is satisfactory, recommend a date on which ship stations will commence to move into the Ship Radiotelegraph Calling Bands, provided that they are so equipped as to operate satisfactorily in these bands (see 127)."

Nos. 157 and 158 (Relating to recommending a specific date for the commencement of the Final Adjustment Period).

"(1) The Administrative Council is invited, at its session in 1955, to review the progress made during the interim period, with a view to recommending a specific date for the beginning of the final adjustment period, taking into account that the Plans for High Frequency Broadcasting may have been accepted and their implementation agreed. If no plans have been accepted for High Frequency Broadcasting or if the progress made by other services during the interim period has not developed to a satisfactory degree, the Administrative Council is invited to consider the situation and make recommendations to Administrations for measures to be taken, amongst which will be considered the convening of the Administrative Radio Conference referred to in 170."

"(2) Should the Members of the Union consider that the date recommended by the Administrative Council for the commencement of the final adjustment period is not acceptable, the Council is invited to reconsider the matter at each of its subsequent sessions until such time as a majority of the Members of the Union agree on a suitable date."

No. 198 (Relating to the consideration of Draft Plans for the High Frequency Broadcasting Service).

"The I.F.R.B. will, if necessary, communicate to Administrations the degree of voluntary reduction to be made by them in their requirements in accordance with 102; it shall also submit to Administrations the Draft Plans it will have completed. The Administrations can send to the I.F.R.B. their comments on such a submission, to be received by a date it will specify and the I.F.R.B. shall submit the results to the Administrative Council. In the light of the comments received from Administrations, the Administrative Council is invited to consider whether a high Frequency Broadcasting Conference is necessary for the consideration of these Draft Plans".

ANNEX 5

RESOLUTIONS ADOPTED BY THE ADMINISTRATIVE COUNCIL CONCERNING IMPLEMENTATION OF THE ATLANTIC CITY TABLE OF FREQUENCY ALLOCATIONS

No. 285.- BRINGING INTO USE OF THE FREQUENCY BANDS ALLOCATED BY THE ATLANTIC CITY RADIO REGULATIONS TO SHIP RADIO-TELEGRAPH STATIONS
(cf. PV CA8/19, Doc. 1424/CA8 - June 1953
PV CA8/22, Doc. 1435/CA8 - June 1953)

The Administrative Council,

bearing in mind

No. 130 of the Agreement of the Extraordinary Administrative Radio Conference (E.A.R.C.), Geneva, 1951, which invites the Council to review the position with regard to the commencement of the first stage, providing for the bringing into use of the Ship Radiotelegraph Calling Bands and, if progress is satisfactory, to recommend a date on which ship stations will commence to move into these bands;

having examined

the report of the I.F.R.B. to Members of the Union (Document No. 1287/CA8) on this matter and the recommendations contained therein;

noting

the recommendation of the I.F.R.B. in paragraph 5 of its report, dealing with the ship radiotelegraph calling and working bands between 22 070 and 22 400 kc/s;

considering

that it is desirable that the same date be recommended to Administrations for bringing into use all ship radiotelegraph calling bands, as listed in No. 268 of the Atlantic City Radio Regulations;

further considering

that it is also desirable that the ship radiotelegraph working bands 22 070 - 22 220 kc/s and 22 270 - 22 400 kc/s be brought into use at the same time as the ship radiotelegraph calling bands;

recommends to Administrations of all Members of the Union

1. to make every endeavour by 3rd June 1953, to move from the 4177 - 4187, 6265.5 - 6280.5, 8354 - 8374, 12 531 - 12 561, 16 708 - 16 748, and 22 070 - 22 400 kc/s ship radiotelegraph frequency bands all

assignments to stations, other than ship radiotelegraph stations, which are capable of causing harmful interference with ships' radiotelegraph operations, and to complete the movement of all such assignments not later than 1st September 1953;

2. to commence to move the assignments of radiotelegraph ship stations into the new bands quoted in paragraph 1 above on the 1st of September 1953 and to endeavour to discontinue the use of the old 4140, 5520, 6210, 8280, 11 040, 12 420, 16 560 and 22 080 kc/s ship radiotelegraph calling frequencies (No. 184 of the Cairo Radio Regulations) within two weeks after the 1st September 1953, and to withdraw these frequencies from use for ship radiotelegraph calling purposes not later than the 1st October 1953;

3. that, in cases where the Administrations concerned deem it appropriate, their high frequency radiotelegraph coast stations maintain a double watch on the old calling frequencies quoted in paragraph 2 above and on the new calling bands (No. 268 of the Atlantic City Radio Regulations) during the two weeks after the 1st September 1953;

4. to discontinue as soon as possible after the date fixed in paragraph 2 above for the commencement of the movement of radiotelegraph ship stations assignments, and not later than one month after that date, the use of frequencies in the band 21 750 - 22 070 kc/s by the mobile service;

5. that Members of the Union which may wish their ship radiotelegraph stations to use as of 1st of August 1953, the new calling bands listed in No. 268 of the Radio Regulations, for contacting the coast stations of these Members, and the working bands 22 070 - 22 220 kc/s and 22 270 - 22 400 kc/s, may do so to the extent that such use is rendered permissible by the degree of clearance of these frequency bands, provided that, during the period between the date of introduction of these bands and 1st September 1953, their coast stations maintain a double watch on both the old and the new calling frequencies;

6. that Administrations notify promptly to the I.F.R.B. the cancellation of all assignments which they will cease to use when the bands referred to in paragraph 1 above are brought into use, and that Administrations, the coast stations of which will maintain a double watch either pursuant to paras. 3 and 5 above, or voluntarily, notify also to the I.F.R.B. the particulars of this double watch; such particulars will be brought to the knowledge of all Members of the Union through the bi-monthly Notifications of the I.T.U.

No. 336.- IMPLEMENTATION OF THE ATLANTIC CITY TABLE OF FREQUENCY ALLOCATIONS BETWEEN 3950 kc/s (4000 kc/s REGION 2) AND 27 500 kc/s
(cf. PV CA10/18, Doc. 1759/CA10 - May 1955)

The Administrative Council,

in the light of

a) the provisions of No. 157 of the E.A.R.C. Agreement;

b) the Memorandum of the I.F.R.B. (Document No. 1658/CA10) which has been transmitted to all Members and Associate Members of the Union by Circular-letter No. 1729/55/R of 18 April, 1955;

c) the Report on High-Frequency Broadcasting (January, 1955) by the I.F.R.B. (Document No. 1639/CA10) which has been transmitted to Members and Associate Members by Circular-letter No. 1649/55/R of 24 January, 1955, and the Memorandum of the I.F.R.B. (Document No. 1682/CA10);

considering

a) that substantial progress has been achieved in the bringing into use of the Atlantic City Table of Frequency Allocations below 27 500 kc/s;

b) that, however, the progress in the bands between 3950 kc/s (4000 kc/s Region 2) and 27 500 kc/s is not sufficient to justify consideration of an early date for the commencement of the final adjustment period provided for in No. 156 of the E.A.R.C. Agreement;

c) that the I.F.R.B. has so far not been in a position to prepare draft plans for High-Frequency Broadcasting, but nevertheless the consultations already held by the I.F.R.B. with a number of Administrations have, in the view of the I.F.R.B., considerably clarified the situation with respect to requirements;

resolves

1. that it would be premature for the Council at this Session to recommend a date for the commencement of the final adjustment period, or other measures;

2. to review the situation again during its 1956 annual session;

requests the I.F.R.B.

1. to submit to the Council a further report on the progress in the bringing into use of the Atlantic City Table of Frequency Allocations between 3950 kc/s (4000 kc/s Region 2) and 27 500 kc/s for consideration at the 1956 annual Session of the Council and also to send this report to all Members and Associate Members of the Union;

2. to continue its studies and consultations with Administrations with respect to High-Frequency Broadcasting, taking advantage of all the possibilities indicated in Article 11 of the E.A.R.C. Agreement, and to endeavour to complete a draft plan for phase June 70 for circulation to Administrations in sufficient time for their comments to be received before the 1956 annual Session of the Council;

urges Administrations

1. to continue to make every effort to transfer into the appropriate frequency bands their assignments which are still out-of-band;

2. to notify to the I.F.R.B. the assignments which they cease to use, either as a result of transfers into appropriate bands, or for any other reason;

3. in particular, to facilitate direct consultation with the I.F.R.B. on High-Frequency Broadcasting requirements;

4. to continue to cooperate with other Administrations and with the I.F.R.B. in order to enable a date for the commencement of the final adjustment period to be selected in a not too distant future.

No. 347.- IMPLEMENTATION OF THE ATLANTIC CITY TABLE OF FREQUENCY ALLOCATIONS BETWEEN 3950 kc/s (4000 kc/s REGION 2) AND 27 500 kc/s
(cf. PV CA11/13, Doc. 1878/CA11 - May 1956)

The Administrative Council,

in view of

a) the provisions of Article 16 of the E.A.R.C. Agreement and, in particular, No. 157 thereof;

b) its Resolution No. 336 on this question;

c) Document No. 1782/CA11 (Circular-letter No. 1958/56/R of 16 March, 1956) - Report by the I.F.R.B. on the progress made in the bringing into use of the Atlantic City Table of Frequency Allocations,

Document No. 1827/CA11 - an Addendum to this Report,

Document No. 1829/CA11 - a summary of Annex 2 to this Report,

Document No. 1839/CA11 - First Report of the Frequency Working Group;

d) Circular-telegram No. 22/4 of 4 May, 1956, annexed to this Resolution;

considering

the replies of Members and Associate Members to the recommendations contained in the second part of the Circular-telegram;

resolves

that, subject to review during its 1957 annual session,

1. the final adjustment period provided for in Article 16 of the E.A.R.C. Agreement should begin on 1 June, 1957;

2. the period of seven months envisaged for the duration of the final adjustment period in No. 162 of that Article should be extended to ten months, in order to provide two months for each of the frequency blocks Nos. 4, 5 and 6;

invites the I.F.R.B.

1. to recall to Administrations the procedure with respect to the final adjustment of out-of-band assignments and to advise them of the schedule of work relating to the final adjustment period based on Annex 1 to Document No. 1839/CA11;

2. to prepare a report on the situation at 31 December, 1956, for consideration by the Council at its annual session in 1957 and also to send this report to all Members and Associate Members of the Union;

urges Administrations

1. to continue to exercise the utmost goodwill and mutual assistance in the application of the provisions of Article 45 of the Convention and of Article 14 of the Radio Regulations to the settlement of problems of interference;

2. to collaborate with each other and the I.F.R.B. to facilitate the solution of the remaining problems associated with the transfer of out-of-band assignments into their appropriate bands, and, to assist to this end, to review as soon as possible the lists of their frequency assignments which will shortly be forwarded to them by the I.F.R.B. so that the Board may receive the results of the review not later than 1 December 1956;

3. to advise the I.F.R.B. as soon as possible of all assignments which they cease to use, either as a result of transfers into the appropriate bands, or for any other reason.

Annex : 1

ANNEX

COPY OF CIRCULAR-TELEGRAM No. 22/4 DATED 4 MAY 1956

22/4

Primo Administrative Council has considered question of programme for convening Administrative Telegraph and Telephone Conference comma Administrative Radio Conference comma and Plenipotentiary Conference and recommends to Members of Union following tentative Programme these Conferences based on current situation and taking into account related factors colon

a) that Plenipotentiary and Administrative Radio Conferences might be convened during the latter part 1959 in same place comma precise dates to be fixed by Council at later session

b) that Administrative Telegraph and Telephone Conference be convened Geneva towards end 1958 stop

Above tentative conference programme to be reviewed by Council at 1957 session stop

Secundo Council have also considered question of progress made in implementation Atlantic City Table of Frequency Allocation comma reference Article 16 Number 157 E.A.R.C. Agreement comma and although on one hand no complete high frequency broadcasting plan has yet been accepted and on other hand bands allocated to fixed service and shared bands have been burdened by transfers made to them comma majority of Council has estimated that in interim period other services for which frequency plans have previously been adopted have made sufficient progress stop Council therefore recommends comma also subject to review 1957 session colon

a) that final adjustment period provided for Article 16 E.A.R.C. Agreement should commence 1 June 1957

b) that period of seven months envisaged for final adjustment period in Number 162 of that Article should be extended to 10 months comma on basis of estimated need of two months for each of frequency blocks four comma five and six stop

Tertio All Members of Union are requested to inform Secretary-General of their acceptance or rejection these recommendations not later than fourteen May to enable Council take appropriate action during present Session stop +

No. 364.- IMPLEMENTATION OF THE ATLANTIC CITY TABLE OF FREQUENCY ALLOCATIONS BETWEEN 3950 kc/s (4000 kc/s REGION 2) AND 27 500 kc/s
(cf. PV CA12/14, Doc. 2006/CA12 - May 1957)

The Administrative Council,

in view of

a) the provisions of Article 16 of the E.A.R.C. Agreement and, in particular, No. 157 thereof;

b) its Resolution No. 347 on this question;

having examined

a) Document No. 1908/CA12 (Circular-letter No. 2242/57/R of 22 March 1957) - Report by the I.F.R.B. on the progress made in the bringing into use of the Atlantic City Table of Frequency Allocations;

b) Document No. 1942/CA12 - 1st Report of the Frequency Group;

confirms

as indicated in Circular telegram No. 27/3 of 3 May 1957:

1. that the final adjustment period provided for in Article 16 of the E.A.R.C. Agreement will begin on 1 June 1957;

2. the programme for the final adjustment period set out in Annex 4 to the Report by the I.F.R.B. enclosed with Circular-letter No. 2242/57/R;

invites the I.F.R.B.

1. to prepare a report on the situation at the close of the final adjustment period (31 March 1958), as it is known to the Board at that time, for consideration by the Council at its annual session in 1958 and also to send this report to Members and Associate Members of the Union;

2. to continue to render assistance to Administrations in especially difficult cases in accordance with No. 110 of the E.A.R.C. Agreement;

urges Administrations

1. to continue to exercise the utmost goodwill and mutual assistance in the application of the provisions of Article 45 of the Convention and of Article 14 of the Radio Regulations to the settlement of problems of interference;

2. to collaborate with each other and with the I.F.R.B. in the solution of problems associated with the final adjustment of out-of-band operations, and, in particular, to give preference, as far as possible, to the solution of such problems rather than to securing additional frequencies for new services;

3. to advise the I.F.R.B. immediately each final adjustment of an out-of-band assignment has been completed and immediately assignments or the basic characteristics thereof are modified or cease to be used.

No. 406.- IMPLEMENTATION OF THE ATLANTIC CITY TABLE OF FREQUENCY ALLOCATIONS BETWEEN 3950 kc/s (4000 kc/s IN REGION 2) AND 27 500 kc/s (cf. PV CA14/11, Doc. 2277/CA14 - June 1959)

The Administrative Council,

in view of

Resolution No. 386 - Implementation of the Atlantic City Table of Frequency Allocations between 3950 kc/s (4000 kc/s Region 2) and 27 500 kc/s;

having examined

the reports by the I.F.R.B. on progress made in the implementation of the Atlantic City Table of Frequency Allocations - Documents Nos. 2147/CA14 (Circular-letter No. 2669/59/R of 16 February 1959) and 2225/CA14 (Circular-letter No. 2739/59/R of 27 May 1959);

having noted

according to these reports :

a) that, very substantial progress has been made by Administrations in bringing their frequency assignments into conformity with the Atlantic City Table of Frequency Allocations;

b) that, however, there continue to exist out-of-band operations;

c) that, the I.F.R.B. is again taking up, with all the Administrations concerned, the question of the cancellation, or transfer, of the remaining out-of-band assignments in the bands between 3950 kc/s (4000 kc/s in Region 2) and 27 500 kc/s;

urges Administrations which continue to use assignments which are not in conformity with the Atlantic City Table of Frequency Allocations:

1. to make every endeavour, prior to the opening of the Administrative Radio Conference, to cancel or to transfer such assignments into the appropriate frequency bands;

2. to advise the I.F.R.B. immediately

2.1 each adjustment of an out-of-band assignment has been completed; or

2.2 assignments, or the basic characteristics thereof, are modified or cease to be used;

requests the I.F.R.B.

to submit a comprehensive report on this question to the Administrative Radio Conference.

ANNEX 6

RESOLUTIONS ADOPTED BY THE ADMINISTRATIVE COUNCIL CONCERNING PREPARATION BY THE I.F.R.B. OF DRAFT PLANS FOR THE HIGH FREQUENCY BROADCASTING SERVICE

No. 286.- PREPARATION OF DRAFT PLANS FOR THE HIGH FREQUENCY BROADCASTING SERVICE BY THE I.F.R.B.
(cf. PV CA8/19, Doc. 1424/CA8 - June 1953)
PV CA8/22, Doc. 1435/CA8 - June 1953)

The Administrative Council,

bearing in mind

that No. 123 of the Agreement of the Extraordinary Administrative Radio Conference (E.A.R.C.), Geneva, 1951, invited the Administrative Council, at its session in 1953, to pay very special attention to the state of progress as regards the draft plans for High Frequency Broadcasting and to recommend to Administrations the necessary action the Council considers appropriate;

having examined

the report of the I.F.R.B. to Members of the Union (Document No. 1294/CA8) on the preparation of draft plans for the High Frequency Broadcasting Service, pursuant to the provisions of Chapter III, Article 11 of the E.A.R.C. Agreement;

having noted

that the I.F.R.B. is of the opinion that the preparation of a new draft plan for the High Frequency Broadcasting Service, for the period of medium sunspot activity, to embrace all requirements which have been notified by Administrations, is impossible without degrading the technical standards adopted by the Mexico City High Frequency Broadcasting Conference to such a degree that the plan would be likely to be unacceptable to the majority of the Members of the Union;

also noting

that the analysis of requirements, contained in Section III of the I.F.R.B.'s report, discloses a very large increase in the total requirements, compared to the channel-hours contained in the Mexico City Basic Plan;

that this large increase is primarily due to very large increases in the requirements of a relatively small number of countries;

urgently invites

1. all Administrations,

a) to make every endeavour to reduce their requirements for High Frequency Broadcasting;

b) to inform the I.F.R.B. of their revised requirements as early as possible and in any case not later than 1st September, 1953, and

c) to forward these revised requirements in the form (Form 4) used for the presentation of requirements to the Mexico City High Frequency Broadcasting Conference,

2. those Administrations which have greatly increased their requirements for channel-hours, over those assigned to them in the Mexico City Basic Plan, to make a special endeavour to reduce their requirements to a value comparable to those provided for in that Plan;

requests the I.F.R.B.

to examine the revised requirements received from Administrations and to send a brief report to Members of the Union, as soon as possible and not later than 15th January 1954, on the practicability of fitting these into the available spectrum space, together with any appropriate comments;

to submit a report to the Administrative Council, at its 9th Session, on this question. This report should be in the form of a summary of the situation at that time, taking into account such comments as may have been received from Administrations,

to continue its studies of technical principles and standards in connection with the preparation of draft plans for the High Frequency Broadcasting Service.

No. 294.- PREPARATION BY THE I.F.R.B. OF DRAFT HIGH-FREQUENCY BROADCASTING PLANS
(cf. PV CA9/20, Doc. 1601/CA9 - May 1954)

The Administrative Council,

in view of

- Resolution No. 286 adopted at its 8th Session,
- the reports by the I.F.R.B. (Documents Nos. 1473 and 1502/CA9,
- No. 157 of the E.A.R.C. Agreement;

considering

a) that the I.F.R.B. has undertaken the preparatory studies for the preparation of draft high frequency broadcasting plans;

b) that, following the publication of a résumé of these studies, Administrations have submitted a number of comments and suggestions;

c) that in most of the bands allocated to high frequency broadcasting it is not possible to accommodate all the requirements as at present submitted;

requests the I.F.R.B.

1. to continue its studies and to try to find some method which would make it possible to arrive at an acceptable result, bearing in mind the comments and suggestions made by Administrations and the views expressed by the Councillors at the 9th Session of the Council;

2. to consult directly each Administration concerned, with a view to achieving a reduction in the channel-hours necessary to satisfy the stated requirements of Administrations;

3. to send the Administrations, in the first fortnight of January 1955, a short report of the situation at that date;

invites Administrations

to cooperate to the full with the I.F.R.B.

Resolution No. 336

see Annex 5

No. 348.- PREPARATION OF DRAFT PLANS FOR THE HIGH-FREQUENCY BROADCASTING SERVICE
(cf. PV CA11/8, Doc. 1876/CA11 - May 1956)

The Administrative Council,

in view of

a) Resolution No. 336 - Implementation of the Atlantic City Table of Frequency Allocations between 3950 kc/s (4000 kc/s Region 2) and 27 500 kc/s;

b) Articles 11, 16 and 28 of the E.A.R.C. Agreement;

c) Document No. 1773/CA11 and Circular-letter No. 1908/55/R to Administrations - Preparation by the I.F.R.B. of Draft High-Frequency Broadcasting Plans;

d) Document No. 1823/CA11 - Summary Report by the Chairman of the I.F.R.B. presented to the Administrative Council at its 11th Session, April - May 1956 on Comments of Administrations on the Draft Plan for the High-Frequency Broadcasting Service - Phase June 70;

taking into account

that it would be advisable for the I.F.R.B. to accelarate its programme for the preparation of draft high-frequency broadcasting plans;

noting

that it would be desirable for the next Administrative Radio Conference to have before it draft plans for high-frequency broadcasting for the maximum number of different seasons and phases of sunspot activity;

requests the I.F.R.B.

a) to revise its draft plan for Phase June 70 taking into account the comments received from Administrations as far as possible;

b) subsequently to prepare a draft plan for Phase December 70;

c) to complete the preparation of these draft plans by 1 April 1957, and to submit to the Council at its 1957 Annual Session a report relative to the possibility of the preparation of additional plans;

d) to forward the draft plans to Administrations for their examination and comments, in accordance with number 198 of the E.A.R.C. Agreement;

invites Administrations

to be so good as to continue to cooperate with the I.F.R.B. in the preparation of high-frequency broadcasting plans.

No. 365.- PREPARATION OF DRAFT PLANS FOR THE HIGH-FREQUENCY BROADCASTING SERVICE
(cf. PV CA12/14, Doc. 2006/CA12 - May 1957)

The Administrative Council,

in view of

a) Resolution No. 348 - Preparation of Draft Plans for the High-Frequency Broadcasting Service;

b) Articles 11, 16 and 28 of the E.A.R.C. Agreement;

c) Document No. 1909/CA12 and Circular-letter No. 2245/57/R (28 March 1957) to Administrations - Draft Plans for the High-Frequency Broadcasting Service;

taking into account

that the draft Reference Plan Phase June 70 has been completed by the I.F.R.B. and has been dispatched to Administrations;

noting

a) that it has not, however, been possible for the I.F.R.B. to complete a draft plan for Phase December 70;

b) that it would be desirable for the next Administrative Radio Conference to have before it draft plans for high-frequency broadcasting for the maximum number of different seasons and phases of sunspot activity;

requests the I.F.R.B.

1. to endeavour to complete the projection of the draft Reference Plan for the remaining seasons of Phase 70 by the end of 1957, and to send its plans so produced to Administrations for comment in conformity with No. 198 of the E.A.R.C. Agreement;

2. to commence, as soon as possible thereafter, with the projection of the draft Reference Plan

(i) to Phase June Low and to follow this with the projection to Phase December and Equinox Low;

(ii) in parallel, as far as possible, but if necessary on a secondary basis, to Phase June 110 followed by Equinox and/or December 110;

3. to complete as many of these plans as possible by the end of 1958, and to despatch them to Administrations in order to permit

(i) their study and consideration prior to the Administrative Radio Conference;

(ii) the submission of comments by Administrations to the Board in accordance with No. 198 of the E.A.R.C. Agreement so that the results, together with the comments on Phase 70, may be submitted to the Council during its annual session in 1959 and to the Administrative Radio Conference;

4. during 1959 up to the opening of the Administrative Radio Conference

(i) to complete such draft plans as remain from the programme under 2 above or, in cases where the Board is unable to complete draft plans, to prepare detailed studies;

(ii) to prepare, as far as possible, draft plans or detailed studies for remaining seasons or phases;

5. to submit a progress report to the Council during its 1958 annual session;

<u>invites Administrations</u>

to be so good as to continue to cooperate with the I.F.R.B. in the preparation of high-frequency broadcasting plans.

No. 407.- PREPARATION OF DRAFT PLANS FOR THE HIGH-FREQUENCY BROADCASTING SERVICE
(cf. PV CA14/11, Doc. 2277/CA14 - June 1959)

The Administrative Council,

in view of

Resolution No. 387 - Preparation of Draft Plans for the High-Frequency Broadcasting Service;

noting

a) that, from the report by the I.F.R.B. on progress made in high-frequency broadcasting planning (Document No. 2199/CA14), nine draft plans for the complete cycle of solar activity have now been prepared and circulated to Administrations for their comments;

b) that, from the report by the I.F.R.B. (Document No. 2243/CA14), comments had been received from many Administrations on the draft plans for Sunspot numbers 70 and 125, but that the comments on the draft plans for number 12 were still awaited;

c) that the I.F.R.B. would be submitting a report on the preparation of the draft plans and on the comments of Administrations thereon, to the Administrative Radio Conference;

invites Administrations

to furnish to the I.F.R.B., as soon as possible, in cases where they have not already done so, their comments on the draft plans in accordance with No. 198 of the E.A.R.C. Agreement, for consideration by the Administrative Radio Conference.

ANNEX 7

STATEMENT OF THE COSTS INCURRED BY THE I.T.U. IN RESPECT OF HIGH FREQUENCY BROADCASTING PLANNING BY CONFERENCES AND BY THE I.F.R.B.

Costs incurred by I.T.U. Conferences	Swiss francs
International High Frequency Broadcasting Conference, Atlantic City, 1947 [1]	-
Planning Committee, Geneva, 1948 Planning Committee, Mexico City, 1948 International High Frequency Broadcasting Conference, Mexico City, 1948/1949	2,634,277.68
Technical Plan Committee, Paris, 1949	502,321.27
Technical Plan Committee, Florence, 1950	80,921.70
International High Frequency Broadcasting Conference, Florence/Rapallo, 1950	1,253,763.26
	4,471,283.91

Costs incurred by the I.F.R.B. [2]	
Establishment of Requirements (1952 to July, 1955)	507,740.00
Preparation, printing and distribution of Draft Plans (August 1955 to 1959)	785,845.00 [3]
	1,293,585.00

Summary	
Costs incurred by I.T.U. Conferences	4,471,283.91
Costs incurred by the I.F.R.B.	1,293,585.00
	5,764,868.91

1) The cost of this Conference was included in the overall cost of the Administrative Radio Conference, Atlantic City, 1947; no individual assessment was made.

2) These figures represent the costs which may be directly attributed to high frequency broadcasting planning as an additional task given to the I.F.R.B. by the E.A.R.C. They do not include any expenditure which would have been incurred in any case in the carrying out of the normal tasks of the I.F.R.B. according to its existing constitution. The figures should be regarded as approximate since the expenditure has not been costed separately as a special programme.

3) Of this sum approximately 190,000 Swiss francs were charged, between 1956 and 1959 in accordance with decisions of the Administrative Council, to the Extraordinary Budget of the Administrative Radio Conference.

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No. 2-E
11 August, 1959
Original: English

PLENARY MEETING

AGENDA OF THE CONFERENCE

In accordance with Article 10, para. 2.(1) of the International Telecommunication Convention, Buenos Aires, 1952, the duties of the Conference will be to :

i) revise the Radio Regulations and Additional Radio Regulations (Atlantic City 1947)

ii) deal with all other matters deemed necessary within the terms of the Convention and the General Regulations and any directives given by the Plenipotentiary Conference

iii) elect the members of the International Frequency Registration Board

iv) review the activities of the Board

On 24 June 1959 I addressed a Circular-letter to all Administrations, Members and Associate Members of the Union, containing suggestions as to the organization of, and work programme for, the Conference. For the convenience of participants the text of this Circular-letter is reproduced as Annex I to this document, and the text of three comments received as Annex II.

Gerald C. GROSS
Acting Secretary-General

Annexes : 2

ARCHIVES U.I.T. GENÈVE

PAGE INTENTIONALLY LEFT BLANK

PAGE LAISSEE EN BLANC INTENTIONNELLEMENT

A N N E X I

INTERNATIONAL TELECOMMUNICATION
UNION

Circular-letter
No. 2758/59/R

Geneva, 24 June, 1959

Subject: Suggested organization of, and work programme for, the Ordinary Administrative Radio Conference, Geneva, 17 August, 1959.

To the Director-General:

Sir,

In co-operation with the International Frequency Registration Board, I take pleasure in submitting to Administrations the following suggestions for consideration in the preparations for the Administrative Radio Conference:

The tasks of this Conference, which is scheduled to meet in Geneva on 17 August next, derive from Article 10, paragraph 2 of the International Telecommunication Convention (Buenos Aires, 1952). They include:

a) a revision of the Radio Regulations and Additional Radio Regulations (Atlantic City, 1947);

b) the tasks devolving on the Conference under the Agreement of the Extraordinary Administrative Radio Conference (E.A.R.C., Geneva, 1951), taking into account Resolution No. 30 of the Buenos Aires Plenipotentiary Conference (1952);

c) a review of the activities of the International Frequency Registration Board (I.F.R.B.);

d) the election of the members of that Board.

As the Conference will have a great deal of complicated work to do in a relatively short time, we consider that it would be well if the Conference's discussions on the organization of its activities were reduced to a minimum. Accordingly, we believe that it would be useful to

make some suggestions for the organization of the work of the Conference, which are intended to provide a basis for discussion as soon as the Conference opens. These suggestions are appended hereinafter, so that Administrations may take them into account in pursuing their preparatory studies and in considering the composition of their delegations. They are made only in order to be helpful as the Conference must be the final authority in the organization of its work.

Annex 1 hereinafter gives a list of committees and working groups which the Conference may wish to set up. Most I.T.U. conferences normally include four committees (Steering Committee, Credentials Committee, Finance Committee, and Drafting Committee), on which no comment is therefore necessary. Besides these, the suggestion is made that five other committees be set up. No provision has been made for sub-committees, following the practice adopted at an earlier radio conference, so as not to overload the conference secretariat, it being suggested that all main questions of principle should be dealt with in the main committees, and that all questions of detail should be remitted directly to working groups. The number of working groups provided for within several committees has been suggested on the basis of the matters to be dealt with by each Committee, with a view to the most expeditious treatment of the work.

Annex 2 hereinafter sets forth a draft summary programme of work, followed by an index of the matters which will fall within the scope of each committee or working group (provisions of the Radio Regulations, of the E.A.R.C. Agreement, and of the various Regional or Service agreements in force). Committees and working groups should also take into account during their deliberations, the most recent relevant Recommendations of the C.C.I.R., especially those which will be quoted in I.T.U. Circular No. 775 which will be published early in July 1959, in accordance with Chapter 18 of the General Regulations annexed to the Convention, as proposals for modification of the Radio Regulations.

The General Secretariat and the I.F.R.B. believe that the organization suggested is that which is best suited to the task of the Conference. It would, in view of the experience acquired at previous Radio Conferences (Atlantic City, 1947, and Geneva, 1951), and in the light of the proposals already submitted by Administrations, enable the Conference to achieve its work in the minimum time and hence with the minimum of expenditure for Administrations and for the Union itself. However, only when the Conference meets will it be possible to ascertain whether the suggested organization should be adopted. It may well be that the membership of the delegations (about which little information is at present available at the Headquarters of the Union) will lead to certain regroupings, which could easily be made. The Conference, too, may decide not to set up particular working groups, for example, within Committee 5, if it feels that in the light of the proposals made, the study of certain matters does not warrant the setting up of the corresponding working group.

The I.F.R.B. has informed me that it will submit to the Conference a report on its activities, describing how it has been discharging its duties since the Atlantic City Ordinary Administrative Radio Conference

(1947), and stating in terms as concise as possible the questions which the various committees will have to study, taking into account the activities of the Union during the past years, the results achieved and the proposals submitted by Administrations to the Conference. This report will be composed of parts, each of which will deal with one of the overall problems with which Administrations and the I.F.R.B. have had to deal. On the basis of the provisions of the E.A.R.C. Agreement, these problems will be classified under headings such as: "Frequency Bands below 4,000 kc/s", "Aeronautical Mobile Exclusive Bands", "Maritime Mobile Exclusive Bands", "High-Frequency Broadcasting Exclusive Bands", "Other bands below 27,500 kc/s", "Frequency Bands above 27.5 Mc/s", "International Monitoring", etc.

Administrations will no doubt want to give careful consideration to the suggestions made herein, which are offered with the single purpose of facilitating the smooth and efficient working of the Conference. Any comments or suggestions on this subject will be most welcome and will be submitted to the Conference.

Yours faithfully,

Sign.: Gerald C. GROSS
Acting Secretary-General

Annexes : 2

ANNEX 1

Suggestions for organization of the
Ordinary Administrative Radio Conference
(Geneva 1959)

Plenary Assembly

Committee 1 : Steering Committee

Committee 2 : Credentials Committee

Committee 3 : Finance Committee

Committee 4 : Table of Frequency Allocations

Committee 5 : International Frequency List:

- Working Group 5A - Frequency bands between 150 kc/s and 3,900 kc/s in Region 1
- Working Group 5B - Frequency bands between 150 kc/s and 4,000 kc/s in Region 2
- Working Group 5C - Frequency bands between 150 kc/s and 3,950 kc/s in Region 3
- Working Group 5D - Frequency bands between 14 kc/s and 150 kc/s
- Working Group 5E - High Frequency Broadcasting Exclusive bands between 5,950 kc/s and 27,500 kc/s
- Working Group 5F - Aeronautical Mobile Exclusive Bands between 2,850 kc/s and 18,030 kc/s
- Working Group 5G - Maritime Mobile Exclusive Bands between 4,000 kc/s and 27,500 kc/s
- Working Group 5H - Other frequency bands below 27,500 kc/s
- Working Group 5I - Frequency bands above 27,500 kc/s

Committee 6 : Notification and Registration of Frequency Assignments

Committee 7 : Technical Committee (definitions, technical characteristics of transmissions, procedure in case of interference, international monitoring, etc.).

Committee 8 : Operations

- Working Group 8A - General questions (licences, station identification, Service documents, etc.)
- Working Group 8B - Radiotelegraph and Radiotelephone Procedures in the Mobile Services
- Working Group 8C - Distress and Safety
- Working Group 8D - Radiotelegrams.

Committee 9 : Drafting Committee

ANNEX 2

Draft summary programme of work for the Ordinary Administrative Radio Conference (Geneva 1959)

Preliminary remarks

It appears that Article 46 of the Radio Regulations, which deals with the C.C.I.R., is at present abrogated and superseded by the provisions of Article 7 of the Convention and of Part II of the General Regulations annexed thereto. Therefore, this Article is not quoted in the present Annex.

The Plenary Assembly of the Conference will no doubt deal with Article 47, taking into account Resolution No. 30 of the Plenipotentiary Conference (Buenos Aires 1952). The review of the activities of the I.F.R.B., as well as the election of its members, are also to be considered by the Plenary Assembly.

COMMITTEE 1

Steering Committee

No comments

COMMITTEE 2

Credentials Committee

No comments

COMMITTEE 3

Finance Committee

No comments

COMMITTEE 4

Table of Frequency Allocations

Broadly speaking, Committee 4 will have to deal with Chapter III of the Radio Regulations.

Draft summary programme of work

It seems that Committee 4 should examine in the first instance the part of Chapter III of the Radio Regulations which relates to the frequency range 3,950 kc/s (4,000 kc/s in Region 2) - 27,500 kc/s, in order to permit Committee 5 (Groups 5E, 5F, 5G and 5H) to work on a firm basis. From the proposals now available, it seems that the part of this frequency range which is exclusively allocated to the High Frequency Broadcasting Service should be dealt with first.

Then the Committee, if no working group was created for this purpose, should review the part of Chapter III of the Radio Regulations which relates to the frequency range below 3,950 kc/s (4,000 kc/s in Region 2). Groups 5A, 5B, 5C and 5D could, in this way, continue their work.

The review of the part of Chapter III of the Radio Regulations which relates to frequencies above 27,5 Mc/s is not so urgent from the point of view of its impact on other Committees or working groups. Nevertheless, it would appear that, in view of the number of proposals submitted, a working group to consider these proposals should be established early in the Conference.

Committee 4 will no doubt take into account, during its work, that the part of the Table above 27,5 Mc/s is in force, as well as the part of the Table below 2,850 kc/s (2,000 kc/s in Region 2), and that the remaining part of the Table, while not in force, is generally respected.

Committee 4 and its working group should take into account during their deliberations, the most recent relevant Recommendations of the C.C.I.R., especially those which will be quoted in I.T.U. Circular No. 775 which will be published early in July 1959, in accordance with Chapter 18 of the General Regulations annexed to the Convention, as proposals for modification of the Radio Regulations.

Matters to be dealt with

Radio Regulations

Articles 3, 4 and 5
No. 233 (in cooperation with Group 5D)
Nos. 234 and 235
Nos. 242 to 244
Nos. 245 to 249 (in cooperation with Group 5A)
Nos. 250 to 254

Section II of Article 9 (in cooperation with Group 5F)
Section III of Article 9
Nos. 263 to 268 (in cooperation with Group 5G)
No. 269 (in cooperation with Group 5B)
Nos. 270 and 272 to 276 (in cooperation with Group 5G)
Nos. 278 to 283 (in cooperation with Group 5H)
Appendix 16

Resolution No. 31 of the Buenos Aires Plenipotentiary Conference, 1952
(in cooperation with Group 5A)

E.A.R.C. Agreement

Nos. 40, 42 and 44 (in cooperation with Group 5A)
No. 64 (in cooperation with Group 5C)
Resolution No. 2 (in cooperation with Group 5B)
Resolution No. 6 (in cooperation with Group 5B)
Resolution No. 7 (in cooperation with Group 5B)

COMMITTEE 5

International Frequency List

Draft summary programme of work

This Committee will have to review the International Frequency List and connected provisions adopted for certain parts of the spectrum by the E.A.R.C. (or in certain cases by Regional Conferences), and possibly to amend them in accordance with the proposals which may be adopted in this respect, or to prepare any appropriate procedure for their revision. This Committee will also have to consider the draft plans prepared by the I.F.R.B. for the High Frequency Broadcasting Service, and to study how they should be dealt with, taking into account any proposals submitted in this connection. The Committee will also have to study the situation in other frequency bands.

This Committee will also have to forward recommendations to Committee 6 on the parts of the Table of Frequency Allocations which are not in force and which the Committee finds should enter into force.

It seems appropriate for this Committee to split from the beginning into a number of groups, each having to deal with a part of the frequency spectrum or with one of the three Regions.

Committee 5 and its working groups should take into account during their deliberations, the most recent relevant Recommendations of the C.C.I.R., especially those which will be quoted in I.T.U. Circular No. 775 which will be published early in July 1959, in accordance with Chapter 18 of the General Regulations annexed to the Convention, as proposals for modification of the Radio Regulations.

Matters to be dealt with

GROUP 5A (International Frequency List for the frequency bands between 150 kc/s and 3,900 kc/s in Region 1)

Radio Regulations

Nos. 245 to 249 (in cooperation with Committee 4)
Additional Protocol to the Acts of the International Radio Conference of Atlantic City (Broadcasting in the European Area) (for information)

European Broadcasting Convention (Copenhagen, 1948)

European Regional Convention for the Maritime Mobile Radio Service (Copenhagen, 1948)

Resolution No. 31 of the Buenos Aires Plenipotentiary Conference, 1952 (in cooperation with Committee 4)

E.A.R.C. Agreement

Article 5 (Nos. 40, 42 and 44 in cooperation with Committee 4)
Article 21
Annex 2
Resolution No. 5 (in cooperation with Groups 5B and 5C)
Recommendation No. 3
Recommendation No. 4
Recommendation No. 7
Recommendation No. 8 (in cooperation with Groups 5B and 5C)

Final Acts of the Baltic and North Sea Radiotelephone Conference (Göteborg, 1955)

Resolution No. 8
Recommendation No. 2 (in cooperation with Groups 5B and 5C)
Recommendation No. 3 (in cooperation with Groups 5B and 5C)
Recommendation No. 4 (in cooperation with Groups 5B and 5C)

GROUP 5B (International Frequency List for the frequency bands between 150 kc/s and 4000 kc/s in Region 2)

Radio Regulations

No. 269 (in cooperation with Committee 4)

E.A.R.C. Agreement

Article 6
Article 22
Annex 3
Resolution No. 2 (in cooperation with Committee 4)
Resolution No. 5 (in cooperation with Groups 5A and 5C)
Resolution No. 6 (in cooperation with Committee 4)
Resolution No. 7 (in cooperation with Committee 4)
Recommendation No. 8 (in cooperation with Groups 5A and 5C)
Recommendation No. 9

GROUP 5C (International Frequency List for the frequency bands between 150 kc/s and 3950 kc/s in Region 3)

E.A.R.C. Agreement

Article 7 (No. 64 in cooperation with Committee 4)
Article 23
Annex 4
Resolution No. 5 (in cooperation with Groups 5A and 5B)
Recommendation No. 8 (in cooperation with Groups 5A and 5B)

GROUP 5D (International Frequency List for the frequency bands between 14 kc/s and 150 kc/s)

Radio Regulations

No. 233 (in cooperation with Committee 4)

E.A.R.C. Agreement

Article 4
Article 19
Article 20
Annex 1

GROUP 5E (International Frequency List for the High Frequency Broadcasting Exclusive bands between 5950 kc/s and 27,500 kc/s)

E.A.R.C. Agreement

Article 11
Article 28

Draft Plans prepared by the I.F.R.B.

Draft Plan for:		Circular-letter No:	Date:
Phase June 70 (Draft Reference Plan)	(J 70 - 31 March 1957)	2256/57/R	18 April 1957
Phase Equinox 70	(E 70 - 31 December 1957)	2501/58/R	21 April 1958
Phase December 70	(D 70 - 31 March 1958)		
Phase June 125	(J 125 - 30 June 1958)	2556/58/R	22 July 1958
Phase Equinox 125	(E 125 - 30 August 1958)	2594/58/R	2 October 1958
Phase December 125	(D 125 - 30 September 1958)		
Phase December 12	(D 12 - 22 December 1958)	2642/59/R	9 January 1959
Phase Equinox 12	(E 12 - 31 January 1959)	2689/59/R	17 March 1959
Phase June 12	(J 12 - 28 February 1959)	2720/59/R	24 April 1959

GROUP 5F (International Frequency List for the Aeronautical Mobile Service Exclusive Bands between 2850 kc/s and 18,030 kc/s)

Radio Regulations

Section II of Article 9 (in cooperation with Committee 4)

E.A.R.C. Agreement

Article 9
Article 25
Article 30
Annexes 8 and 9
Resolution No. 4 (for information)
Recommendation No. 1 (for information)
Recommendation No. 2

GROUP 5G (International Frequency List for the Maritime Mobile Service Exclusive Bands between 4000 kc/s and 27,500 kc/s)

Radio Regulations

Nos. 263 to 268 (in cooperation with Committee 4)
No. 270 (in cooperation with Committee 4)
Nos. 272 to 276 (in cooperation with Committee 4)
Appendices 10 and 12

E.A.R.C. Agreement

Article 8
Article 29
Nos. 300 to 303
Annexes 5, 6 and 7

GROUP 5H (International Frequency List for other frequency bands below 27,500 kc/s)

Radio Regulations

Nos. 278 to 283 (in cooperation with Committee 4)

E.A.R.C. Agreement

Article 10
Article 27

GROUP 5I (International Frequency List for the frequency bands above 27,500 kc/s)

E.A.R.C. Agreement

Recommendation No. 13 (in cooperation with Committee 6)

Final Acts of the European Broadcasting Conference, (Stockholm, 1952)

Final Acts of the International Maritime VHF Radiotelephone Conference, (The Hague, 1957)

Annex 1 (in cooperation with Group 8B)

COMMITTEE 6

Notification and Registration of frequency assignments

Broadly speaking, Committee 6 will have to deal with Chapter IV of the Radio Regulations and Chapter VII of the E.A.R.C. Agreement.

Draft summary programme of work

Following the decisions of the E.A.R.C., the frequency bands above 14 kc/s may be classified in the following way:

a) bands between 14 kc/s and 2,850 kc/s (2,000 kc/s in Region 2); for these bands a New International Frequency List was adopted by the E.A.R.C. (except for the broadcasting and maritime bands in certain areas of the world), and subsequently entered into force, as well as the corresponding part of the Table and the procedure for notification and registration laid down in Article 11 of the Radio Regulations;

b) bands between 2,850 kc/s (2,000 kc/s in Region 2) and 3,900 kc/s in Region 1, 4,000 kc/s in Region 2 and 3,950 kc/s in Region 3, with the exception of the bands allocated exclusively to the Aeronautical Mobile Service between 2,850 kc/s and 3,500 kc/s; for these bands a New International Frequency List was adopted by the E.A.R.C., but was not brought into force. The corresponding part of the Table is not in force, and the procedure for notification and recording laid down in Nos. 211 to 213 and in Section II of Article 33 of the E.A.R.C. Agreement is applicable in these bands;

c) bands allocated exclusively to the Maritime or Aeronautical Mobile Services between 4,000 kc/s and 27,500 kc/s, and bands exclusively allocated to the Aeronautical Mobile Service between 2,850 kc/s and 3,500 kc/s; for these bands a New International Frequency List was adopted by the E.A.R.C. and was brought into use without, however, entering into force. The corresponding part of the Table is not in force, and the procedure for notification and recording laid down in Nos. 214 to 223 and in Section III of Article 33 of the E.A.R.C. is applicable in these bands;

d) bands between 3,900 kc/s in Region 1, 4,000 kc/s in Region 2, 3,950 kc/s in Region 3, and 27,500 kc/s, with the exception of the bands exclusively allocated to the Maritime or Aeronautical Mobile Services; for these bands, which are allocated mainly to the Fixed Service and to the High Frequency Broadcasting Service, no new international frequency list was adopted by the E.A.R.C.. The corresponding part of the Table is not in force, and the procedure for notification and recording laid down in Nos. 214 to 223 and in Section III of Article 33 of the E.A.R.C. Agreement is applicable in these bands;

e) bands above 27,500 kc/s ; for these bands no new international frequency list was adopted by the E.A.R.C., but the Table of Frequency Allocations has been in force since 1st January 1949. The procedure for notification and recording laid down in No. 224 and in Section IV of Article 33 of the E.A.R.C. Agreement is applicable in these bands.

In view of this situation and of the successful results of the efforts made by Administrations since the E.A.R.C. in bringing their frequency assignments in conformity with the Table of Frequency Allocations, it appears that Committee 6 should consider, inter alia, the following questions, taking into account the proposals of Administrations and the work of Committee 5:

1. Should the Master Radio Frequency Record, as it exists at present between 14 kc/s and 27,500 kc/s, be retained, or should it be modified in some way, in particular with respect to Column 2 (dates), in view of the procedure or procedures which will be adopted in connection with notification and registration of frequency assignments?

2. Is it possible to lay down a single procedure for notification and registration of frequency assignments in the whole of the frequency spectrum between 14 kc/s and 27,500 kc/s, or is it appropriate to devise more than one procedure, according to the bands concerned?

3. Detailed preparation of one or more procedures applicable between 14 kc/s and 27,500 kc/s.

4. Is it appropriate to extend beyond 27,500 kc/s the procedure for notification and registration to be applied below this frequency and, in the affirmative, up to what frequency?

5. Detailed preparation of a procedure applicable beyond this frequency or 27,500 kc/s, as appropriate.

6. Could the entry into force of the Table of Frequency Allocations be envisaged for the bands below 27,500 kc/s for which it is not yet in force, although generally respected? (in cooperation with Committee 5).

7. In cases where Committee 4 would amend the Table of Frequency Allocations which procedure could be devised for the orderly transfer of assignments into appropriate bands?

8. According to the results of the consideration of the questions above, how should Article 11 of the Radio Regulations be redrafted in respect of the duties of the organ charged with the application of the procedure or procedures for the registration of frequency assignments? Will these duties go beyond registration? What will be the structure and the internal regulations of this organ?

Committee 6 should take into account during its deliberations, the most recent relevant Recommendations of the C.C.I.R., especially those which will be quoted in I.T.U. Circular No. 775 which will be published early in July 1959, in accordance with Chapter 18 of the General Regulations annexed to the Convention, as proposals for modification of the Radio Regulations.

Matters to be dealt with

Radio Regulations

Articles 10, 11 and 12
Nos. 447, 448 and 470
Appendix 1
List 1 of Appendix 6

E.A.R.C. Agreement

Articles 2 and 3
Articles 12 to 17 (for information)
Article 18
Article 26
Articles 31 to 33
Article 34 (for information)
Article 35
Article 36 (for information)
Article 37
Article 39 (for information)
Appendix
Resolution No. 1
Recommendation No. 10
Recommendation No. 13 (in cooperation with Group 5I)

Circular-letters No. 2296/57/R dated 17 June 1957 and No. 2486/58/R dated 1 April 1958

Circular-letter No. 2424/57/R dated 20 December 1957

I.T.U. Circular No. 766 dated 30 December 1958, List I

COMMITTEE 7

Technical Committee

Broadly speaking, Committee 7 will have to deal with Chapters I, II, V and VI of the Radio Regulations, as well as with a number of provisions of the E.A.R.C. Agreement.

Draft summary programme of work

The Technical Committee may wish to set up working groups, taking into account that the main subjects pertaining to this Committee may be considered in four categories:

Definitions
Technical characteristics of transmissions
Procedure in case of interference
International monitoring.

This Committee should deal first with the definition of services, in order to permit Committee 4 to work on a firm basis.

Committee 7 should take into account during its deliberations, the most recent relevant Recommendations of the C.C.I.R., especially those which will be quoted in I.T.U. Circular No. 775 which will be published early in July 1959, in accordance with Chapter 18 of the General Regulations annexed to the Convention, as proposals for modification of the Radio Regulations.

Matters to be dealt with

Radio Regulations

Articles 1 and 2
No. 232 (in cooperation with Group 8C)
No. 271
Articles 13 and 14
Articles 16 to 18
Appendix 2 (in cooperation with Group 8A)
Appendices 3 to 5
Appendix A
Appendix C
Recommendations Nos. 1 to 8

E.A.R.C. Agreement

Article 1
No. 294 (for information)
Nos. 295 to 300
Resolution No. 3
Recommendation No. 5
Recommendations Nos. 11 and 12
Recommendation No. 14

COMMITTEE 8

Operations

Broadly speaking, Committee 8 will have to deal with Chapters VII to XVI of the Radio Regulations and with various provisions of the E.A.R.C. Agreement.

Draft summary programme of work

It would seem to be appropriate for this Committee to set up from the beginning four separate working groups dealing respectively with the following matters:

General questions (including identification of stations and Service Documents)

Radiotelegraph and radiotelephone procedures in the Mobile Services (including the use of frequencies)

Distress and Safety

Radiotelegrams

Committee 8 and its working group should take into account during their deliberations Regional agreements adopted after the E.A.R.C. and the most recent relevant Recommendations of the C.C.I.R., especially those which will be quoted in I.T.U. Circular No. 775 which will be published early in July 1959, in accordance with Chapter 18 of the General Regulations annexed to the Convention, as proposals for modification of the Radio Regulations.

Matters to be dealt with

GROUP 8A (General questions)

Radio Regulations

Article 15
Articles 19 and 20 (with the exception of Nos. 447, 448 and 470)
Articles 21 to 26
Articles 42 and 43
Article 45
Appendix 2 (in cooperation with Committee 7)
Appendix 6 (with the exception of List I)
Appendices 7 and 8
Appendix B

E.A.R.C. Agreement

No. 294 (for information)
Resolution No. 8

Final Acts of the Baltic and North Sea Radiotelephone Conference, Göteborg, 1955

Resolution No. 7

I.T.U. Circular No. 766 dated 30 December 1958, with the exception of List I

GROUP 8B (Radiotelegraph and Radiotelephone Procedures in the Mobile Services)

Radio Regulations

Nos. 236 to 239
No. 262
Articles 27 to 35
Article 44
Appendices 9, 11, 13 and 15

E.A.R.C. Agreement

No. 294 (for information)

Final Acts of the Baltic and North Sea Radiotelephone Conference, (Göteborg, 1955)
(Göteborg, 1955)

Resolutions Nos. 3, 4 and 5
Recommendation No. 1
Recommendations Nos. 5 to 10
Supplementary Radio Regulations, Nos. 1 to 25

Final Acts of the International Maritime VHF Radiotelephone Conference, (The Hague, 1957)

Annex 1 (in cooperation with Group 5I)
Annex 2
Recommendations Nos. 1 to 6
Supplementary Radio Regulations, Nos. 1 to 26

GROUP 8C (Distress and Safety)

Radio Regulations

No. 232 (in cooperation with Committee 7)
Article 8
No. 277
Articles 36 and 37

E.A.R.C. Agreement

Article 24 (for information)
No. 294 (for information)
Recommendation No. 6

Final Acts of the Baltic and North Sea Radiotelephone Conference, (Göteborg, 1955)

Resolution No. 2
Resolution No. 6
Resolution No. 9
Recommendation No. 10
Supplementary Radio Regulations, Nos. 25 to 43

Final Acts of the International Maritime VHF Radiotelephone Conference, (The Hague, 1957)

Supplementary Radio Regulations, No. 27

GROUP 8D (Radiotelegrams)

Radio Regulations

Articles 38 to 41
Appendix 14

Additional Radio Regulations

COMMITTEE 9

Drafting Committee

No comments

A N N E X II

COMMENTS RECEIVED FROM ADMINISTRATIONS

1. Letter dated 14 July 1959 from the Director-General of Telecommunications, Federation of Malaya and Singapore :

"I refer to your Circular-letter 2758/59/R dated 24th June 1959, on the suggested organization and work programme for the Ordinary Administrative Radio Conference to be held in Geneva on 17th August 1959. The Federation of Malaya will be sending only one delegate - Che Mohd Hassan bin Abdul Wahab, Assistant Controller of Telecommunications - to this conference. He will not however be able to attend the whole period of the conference but will stay for approximately the first two months. After that, documents will be sent by air to Malaya as was done last year at the Administrative Telephone & Telegraph Conference. Nevertheless, as the Federation of Malaya is anxious to participate as far as possible in the work of the I.T.U., I would like Che Mohd Hassan to take part in the work of the suggested Committees 4, 5 and 6.

"It is appreciated that the suggested organization in Circular-letter 2758/59/R is well suited to the task of the conference but since Committees 4, 5 and 6 all deal with frequency matters, we wonder whether there is any possibility of these three Committees being combined into one single Committee with appropriate working groups. This, of course, would have obvious advantages in the case of countries which can only manage to send one or two delegates."

2. Letter dated 16 July 1959 from the Chief, Telecommunications Division, Department of State, Washington D.C. :

"In reply to the invitation in Circular-letter No. 2758/59/R, dated June 24th, 1959, for comments on the proposed organization of the Administrative Radio Conference (A.R.C.), I wish to inform you that the United States cannot support the proposed Committee 5.

"In this Administration's opinion, the proposed Committee 5 would have the effect of slowing down the work of proposed Committee 6. Further, it appears to be unnecessary in the light of the decisions of the Extraordinary Administrative Conference (E.A.R.C.). Moreover, the proposed terms of reference for Committee 5 seem to infringe on those for both Committees 4 and 6. Insofar as our studies are concerned, we envisage a dynamic frequency list derived by criteria to be agreed by the A.R.C. from the Radio Frequency Record and not a static list such as the Lists and Plans adopted by the E.A.R.C. in 1951.

"Regarding the aeronautical mobile service allotment plans, the proposals of the United States envisage the continuation of status of these as an integral part of the Radio Regulations.

"In our opinion a much more acceptable plan would be to combine in one main committee all the work envisaged by proposed Committees 5 and 6, with the deletion therefrom of any questions relating to Chapter III. With this one amendment the United States could accept the proposed organization as a basis for discussion at the Conference."

3. Letter dated 24 July 1959 from the Director, Telecommunications Branch, Department of Transport, Canada :

"1. I wish to refer to your Circular-letter No. 2758/59/R of 24 June in which you outline suggestions, prepared in co-operation with the I.F.R.B., for the Organization of the Administrative Radio Conference.

"2. The suggested organization, with the draft summary programme of work of the Conference, has been carefully studied and would appear to be most useful as a working paper for consideration by the Conference. However, in the opinion of the Canadian Administration, it is essential for the Conference to keep the number of major committees to the minimum necessary to bring its work to a successful conclusion and that every effort should be made to avoid divided responsibilities between committees on important items, which might result in confusion and delay of the Conference.

"3. It would appear that the suggested Committee 5 "International Frequency List" has been based to a great extent on the experience of the E.A.R.C. and we consider that should not be used as a criteria for the A.R.C. Therefore, it is our view that the suggested Committee 5 "International Frequency List" and Committee 6 "Notification and Registration of Frequency Assignments" should be amalgamated into one committee.

"4. Summarizing the position of the Canadian Administration, the organization which we favour for the conference is as follows :

Plenary Assembly

Committees :
1. Steering Committee
2. Credentials Committee
3. Finance Committee
4. Table of Frequency Allocations Committee
5. International Frequency List - Notification and Registration of Frequency Assignments Committee
6. Technical Committee
7. Operations Committee
8. Drafting Committee"

4. Letter dated 4 August 1959 from W.C. Buchanan, Secretary of Communications and Transport, Mexico :

"In connection with your Circular-letter No. 2758/59/R (24 June, 1959), we think it would be well if, before the meeting of heads of delegation which will begin the work of the International Administrative Radio Conference, your General Secretariat were advised of our views with regard to the way in which this conference should be organized.

"Although we are, in general, in agreement with the suggestions made for its organization, Committee 5, we feel, should not be so sub-divided. The problems confronting the conference do not justify this. In addition, such sub-division would make it difficult for the very small delegations to be represented at some of the sub-groups.

"Here, then, are our definite proposals for this Committee :

"Working Party 5A - Frequencies between 150 kc/s and 27,500 kc/s

Working Party 5B - Frequencies below 150 kc/s and above 27,500 kc/s

Working Party 5C - Regional Bands between 150 kc/s and 4,000 kc/s (sub-divided by regions).

"We propose this sub-division because there do not appear to be any special problems in the services which possess exclusive bands and for which plans have been adopted (the aeronautical and maritime mobile services). Should there be any, they should first be dealt with in the plenary meeting, which would decide what should be done about them. As regards high-frequency broadcasting, it is our view that the draft plans drawn up by the I.F.R.B., and any others, should be considered in plenary meeting, too, which would decide on the action to be taken.

"As regards Committee 4, we cannot plan any working parties beforehand, because the rate at which this Committee will work will depend on the progress made in Committees 5 and 6, especially in Committee 5.

"In this respect, we beg to differ from the views expressed in the suggestions for organization of the Conference. The natural course, in our view, would be first to consider the requirements of the various services (Committee 5), and then to see what changes can be made in the Frequency Allocation Table with an eye to these requirements. It might well be that certain demands for increases in bands would not be insisted on as a result of inquiries undertaken in Committees 5 and 6. And the other way round - changes in existing bands decided on beforehand, on theoretical grounds, by Committee 4, might lead Committee 5 into difficulties when it considers requirements for the various services."

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No. 3-E
11 August, 1959
Original: English

PLENARY MEETING

INVITATIONS TO THE CONFERENCE

Under the provisions of Chapter 4 of the General Regulations annexed to the Convention I undertook, in the absence of an inviting government and after agreement with the Government of the Swiss Confederation, the following tasks of organization normally incumbent upon the inviting government :

1. Invitations to Members and Associate Members

On 15 August 1958 invitations were sent to the Administrations of countries listed in Annexes 1 and 2 to the Convention, and to other countries which had acceded to the Convention on that date.

On 12 March 1959, following the deposit, on 7 March, by the Republic of Guinea of an instrument of accession to the Convention, an invitation was addressed to the Administration of that country.

In the letters of invitation, Administrations were asked to intimate the approximate number of private operating agencies, liable to contribute individually to the expenses of the Conference in conformity with the provisions of Article 13, para. 3(2) of the Convention, which were likely to attend.

A complete list of countries to which invitations were sent is contained in Annex 1.

It should be noted that in March 1959 an application for admission to the Union was received from the Government of Kuwait and that the General Secretariat opened the required consultation among Members of the Union. By 24 July 1959 the closing date of that consultation, the necessary number of favourable replies had been received but so far the instrument of accession has not been deposited with the General Secretariat.

2. Invitations to the United Nations and Specialized Agencies

An invitation was sent on 18 August 1958 to the United Nations to attend the Conference in a consultative capacity.

In agreement with the Council, invitations were also sent on 18 August 1958 to all the Specialized Agencies to attend the Conference in an advisory capacity, and a similar invitation was extended to the International Atomic Energy Agency.

ARCHIVES U.I.T. GENÈVE

An invitation was addressed to the Inter-Governmental Maritime Consultative Organization (I.M.C.O.) on 13 January 1959, the date on which that organization officially became a Specialized Agency.

3. Notifications to International Organizations

In agreement with the Administrative Council the following international organizations were notified on 18 August 1958 of the convening of the Conference:

Inter-American Broadcasting Association
International Air Transport Association
Bureau international de l'Heure
International Chamber of Shipping
International Committee of the Red Cross
International Radio Maritime Commission
Special International Committee on Radio Disturbance
International Electro-Technical Committee
International Conference of the Main High-Tension Electrical Networks
International Lifeboat Conference
International Astronautical Federation
International Federation of Radio Officers
International Standardization Organization
Organisation internationale de la Police Criminelle
International Broadcasting Organization
International Astronomical Union
European Broadcasting Union
International Railway Union
International Union of Producers and Distributors of Electrical Power
International Amateur Radio Union
International Public Transport Union
International Gas Union
Union Radio-Scientifique Internationale
International Association of Radio-Maritime Interests

During its 14th Session, the Council agreed that requests for admission received from:

International Shipping Federation
International Radio Air Safety Association

should be filed for submission to the Conference.

Subsequent to the 14th Session of the Council an application for admission has been received from the Committee on Space Research (COSPAR).

The texts of applications for admission received from International organizations from the subject of a separate document (Document No. 5).

It should be noted that, with the exception of COSPAR, all the international organizations mentioned above have been exempted by the Administrative Council from participation in the expenses of the Conference, under the provisions of Article 13, para. 3(5) of the Convention.

Gerald C. GROSS
Acting Secretary-General

Annex : 1

PAGE INTENTIONALLY LEFT BLANK

PAGE LAISSEE EN BLANC INTENTIONNELLEMENT

A N N E X

LIST OF COUNTRIES TO WHICH INVITATIONS WERE SENT

Afghanistan

Albania (People's Republic of)

Saudi Arabia (Kingdom of)

Argentine Republic

Australia (Commonwealth of)

Austria

Belgium

Bielorussian Soviet Socialist Republic

Burma

Bolivia

Brazil

Bulgaria (People's Republic of)

Cambodia (Kingdom of)

Canada

Ceylon

Chile

China

Vatican City State

Colombia (Republic of)

Colonies, Protectorates, Overseas Territories and Territories under Mandate or Trusteeship of the United Kingdom of Great Britain and Northern Ireland

Belgian Congo and Territory of Ruanda-Urundi

Korea (Republic of)

Costa Rica

Cuba

Denmark

Dominican Republic

El Salvador (Republic of)

Group of the different territories represented by the French Overseas Postal and Telecommunication Agency

Ecuador

Spain

United States of America

Ethiopia

Finland

France

Ghana

Greece

Guatemala

Guinea (Republic of)

Haiti (Republic of)

Honduras (Republic of)

Hungarian People's Republic

India (Republic of)

Indonesia (Republic of)

Iran

Iraq

Ireland

Iceland

Israel (State of)

Italy

Japan

Jordan (Hashemite Kingdom of)

Laos (Kingdom of)

Lebanon

Liberia

Libya (United Kingdom of)

Luxembourg

Malaya (Federation of)

Morocco

Mexico

Monaco

Nepal

Nicaragua

Norway

New Zealand

Pakistan

Panama

Paraguay

Netherlands, Surinam, Netherlands Antilles, New Guinea

Peru

Philippines (Republic of the)

Poland (People's Republic of)

Portugal

Spanish Provinces in Africa

Portuguese Oversea Provinces

United Arab Republic

Federal German Republic

Federal People's Republic of Yugoslavia

Ukrainian Soviet Socialist Republic

Rhodesia and Nyasaland (Federation of)

Roumanian People's Republic

United Kingdom of Great Britain and Northern Ireland

Sudan (Republic of the)

Sweden

Switzerland (Confederation)

Czechoslovakia

Territories of the United States of America

Thailand

Tunisia

Turkey

Union of South Africa and Territory of South-West Africa

Union of Soviet Socialist Republics

Uruguay (Oriental Republic of)

Venezuela (Republic of)

Viet-Nam (Republic of)

Yemen

Associate Members

British West Africa

British East Africa

Bermuda-British Caribbean Group

Singapore-British Borneo Group

Trust Territory of Somaliland under Italian Administration

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No. 4-E
11 August, 1959
Original: English

PLENARY MEETING

SITUATION OF CERTAIN COUNTRIES WITH RESPECT TO THE CONVENTION

A reminder that they had not deposited an instrument of ratification of the Buenos Aires Convention, or of accession thereto, was included in the letter of invitation to those countries which had not, at the time, deposited the appropriate instrument.

At the date of publication of this document

Bolivia
Columbia (Republic of)
Costa Rica

have not yet ratified the Buenos Aires Convention, and

Ecuador
Honduras (Republic of)
Liberia
Yemen

have not acceded thereto.

Gerald C. GROSS
Acting Secretary-General

ARCHIVES U.I.T. GENÈVE

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No. 5-E
12 August 1959
Original: English/French

PLENARY MEETING

INTERNATIONAL ORGANIZATIONS

I have the honour to submit herewith requests for admission to the Conference which I have received from the following International Organizations:

European Broadcasting Union (E.B.U.)
International Air Transport Association (I.A.T.A.)
International Radio Maritime Commission (C.I.R.M.)
International Association of Radio-Maritime Interests (A.I.I.R.N.)
International Broadcasting Organization (O.I.R.)
International Federation of Radio Officers
International Amateur Radio Union (I.A.R.U.)
International Chamber of Shipping
International Shipping Federation (I.S.F.)
International Scientific Radio Union (U.R.S.I.)
International Committee of the Red Cross
International Radio Air Safety Association (I.R.A.S.A.)
International Astronomical Union
Committee on Space Research (COSPAR)
International Criminal Police Organization (INTERPOL)

Gerald C. GROSS
Acting Secretary-General

Annex: 1

ARCHIVES U.I.T. GENEVE

PAGE INTENTIONALLY LEFT BLANK

PAGE LAISSEE EN BLANC INTENTIONNELLEMENT

A N N E X

(Translation)

EUROPEAN BROADCASTING UNION (E.B.U.)
TECHNICAL CENTRE

Brussels, 28 August, 1958

Ref.: GR/JdlH
B.12/B.12a
No. 18,857

To the Secretary-General,
International Telecommunication Union,
GENEVA.

The Ordinary Administrative Radio Conference, 1959:

Dear Sir,

In answer to your letter 1867/55/R (18 August), for which we thank you, we hereby inform you that this Union wishes to take part in the Ordinary Administrative Radio Conference to begin in Geneva on 17 August next.

Yours faithfully,

(Sign.) G. Hansen, Director.

INTERNATIONAL AIR TRANSPORT ASSOCIATION,
Terminal Centre Building,
Montreal 3, P.Q. Canada.

Montreal, 25 August, 1958

Ref. : 4281

Mr. G.C. Gross,
Acting Secretary-General,
International Telecommunication Union,
GENEVA.

Dear Sir,

I have to acknowledge, with thanks, the receipt of your letter No. 1867/55/R of 18th August 1958 and of the advice that the I.T.U. Ordinary Administrative Radio Conference, lasting some four months, will open in Geneva on 17th August, 1959.

2. The International Air Transport Association is very interested in the proceedings of this Conference, which will be of importance from the viewpoint of civil aviation. Appreciating the action by the I.T.U. Administrative Council as well as your invitation, I take this opportunity of applying for I.A.T.A.'s admission to the Conference, in the understanding that it will be for the Conference itself to approve our admission in accordance with the provisions of Chapter 2, paragraph 2(1) of the I.T.U. General Regulations.

3. Thanking you for the courtesy extended to this association,

Yours faithfully,

(Sign.) William P. Hildred
Director General

COMITE INTERNATIONAL RADIO-MARITIME LONDON
Shipping Federation House, The Minories,
London, E.C.3.

Ref. CIRM/FI

London, 3 September 1958.

The Assistant Secretary-General
International Telecommunications Union,
Palais Wilson,
GENEVA.

Dear Mr. Gross,

Ordinary Administrative Radio Conference

Thank you for your letter, reference 1867/55/R, dated 18th August, concerning participation in the AORC. Our organisation would like to be represented under the terms of Resolution 222 (1951). We will notify you of the names of our representatives as soon as possible.

Yours sincerely,

(sign.) J.D. PARKER,

Col. J.D. Parker, MBE., RARO.

Secretary-General.

ASSOCIATION INTERNATIONALE DES INTERETS RADIO-MARITIMES
Intelco House,
Croydon.

Croydon, 16 September 1959.

The Secretary-General,
International Telecommunications
Union,
Palais Wilson,
GENEVA.

Dear Sir,

With reference to your letter of the 18th August and your reply to our cable of the 10th September we wish to apply for admission to the Radio Conference. In this connection it is understood that subject to the decision of the Administrative Council this Association will be excused any contribution to the expenses of the Conference.

The names of the representative/s attending will be advised as soon as possible.

Yours truly,

(sign.) H. THORPE-WOODS

President

(Translation)

INTERNATIONAL BROADCASTING ORGANIZATION (I.B.O.)
Liebknectova 15,
Prague,
Czechoslovakia

PRAGUE, 2 October, 1958

Ref.: Pf/Sti - 855

Gerald C. GROSS, Esq.,
Acting Secretary-General,
International Telecommunication Union,
GENEVA

Dear Sir,

Further to your letter dated 18 August, in which you announce that the I.T.U. Administrative Conference will begin on 17 August next, in Geneva, and invite us to attend, I have pleasure in announcing that the International Broadcasting Organization intends to send a delegation.

I.B.O. participation in the work of the Administrative Conference will, we feel, redound to the benefit of both parties, the conference agenda being closely bound up with the I.B.O. programme of activities.

Yours faithfully,
(sign.) J. WEISER
Secretary-General

INTERNATIONAL FEDERATION OF RADIO OFFICERS
Cort Adelersgade 8,
Copenhagen,
Denmark

COPENHAGEN, 14th October, 1958

The Secretary General,
International Telecommunication Union,
Palais Wilson,
GENEVA

Ordinary Administrative Radio Conference 1959

Dear Sir,

With reference to your letter of the 18th August, ref. nr. 1867/55/R, the International Federation of Radio Officers hereby make formal application for admission to the International Telecommunication Conference 1959.

Yours faithfully,
(sign.) Illegible
Secretary

THE INTERNATIONAL AMATEUR
RADIO UNION

West Hartford, 30 October 1958

Headquarters Society :
The American Radio Relay League, Inc.
West Hartford 7, Conn., U.S.A.

Mr. Gerald C. Gross
Acting Secretary-General
I.T.U., Palais Wilson
GENEVA

Dear Sir,

I regret that circumstances have combined to delay a reply to your invitation to the International Amateur Radio Union asking if we wish to apply for admission to the Ordinary Administrative Radio Conference which will open in Geneva on 17 August, 1959.

I would like to take this occasion to inform you that it is the desire of the I.A.R.U. to apply for admission to the Conference. We shall have names of observers at a later date.

Faithfully yours,

(Sign.) : A.L. Budlong
Secretary

RADIO ADVISORY SERVICE
12-20 Camomile Street,
London, E.C. 3

London, 31 October 1958

Ref. : Our ICS.100/SC.

A. Lethbridge, Esq.,
Senior Counsellor,
For the Acting Secretary-General,
I.T.U., Palais Wilson,
GENEVA

Dear Mr. Lethbridge,

International Chamber of Shipping

The I.T.U. Circular No. 758 requests Administrations to state how many copies of the collected proposals for the Administrative Radio Conference will be required. Could you please tell me whether the International Chamber of Shipping, which, as you know, has expressed its desire to be admitted to the above Conference, is entitled to ask for the requisite number of copies of these proposals?

Yours sincerely,

(Sign.) : F. J. Wylie

THE INTERNATIONAL SHIPPING FEDERATION,
Shipping Federation House,
146-150 Minories, London, E.C.3.

London, 3 November, 1958.

Our reference : 5541c

The Acting Secretary-General
International Telecommunication Union
Palais Wilson
G e n e v a

Dear Sir,

I am very much obliged for your letter about the notification to this Federation of the convening of the Ordinary Administrative Radio Conference. I am, however, disturbed to learn that this Federation did not appear on the list drawn up by the Administrative Council of the I.T.U. earlier this year. I hope that this was not brought about by any omission on my part. As I said in my letter of the 23rd October, the Federation was represented at the Conferences held at Washington, Madrid, Cairo and Atlantic City.

The International Shipping Federation is an Association of International Organisations of Shipowners dealing with seagoing personnel. Their special interest in the Radio Regulations is therefore as regards those which deal with the qualifications and duties of wireless operators in seagoing vessels.

I am enclosing in addition to the Articles of Association of the International Shipping Federation, a copy of an article written by the General Manager, Sir Richard Snedden, which appeared in "International Associations" last year which gives a short summary of the Federation's activities.

I should be grateful if this letter can be taken as a formal application for admission to the Conference in Geneva next year, and I assume that the representative or representatives of the Federation can make their preparations to be present at that Conference.

Yours faithfully,

(signed): Illegible
Secretary

Enclosures

(Translation)

INTERNATIONAL SCIENTIFIC RADIO UNION,
(U.R.S.I.),
7, Place Emile Danco,
Uccle, Brussels, Belgium.

Brussels, 24 December, 1958

Ref. : 1309 R/b

Gerald C. Gross,
Acting Secretary-General,
International Telecommunication Union,
GENEVA.

Dear Sir,

My reply to your letter dated 18 August last (letter 1867/55/R) has been delayed by travel abroad and by consultations I have had with members of our Union resident there. The International Scientific Radio Union would be exceedingly glad to appoint an observer to attend the conference. You are familiar, of course, with the fact that we cooperate with the International Radio Consultative Committee, the activities of which are similar to our own in several fields.

I hope to be able to tell you very soon who our observers would be.

(Sign.) E. Herbays
Secretary-General

(Translation)

INTERNATIONAL RED CROSS COMMITTEE

Geneva, 4 February, 1959

Gerald C. Gross, Esq.,
Acting Secretary-General,
International Telecommunication Union,
GENEVA.

Dear Sir,

We beg to refer to your letter 1867/55/R (18 August, 1958). You were so good as to inform us that the ordinary Administrative Radio Conference would begin in Geneva on 17 August, 1959, and asked whether we wished to take part in the activities thereof.

We thank you heartily for this communication. While regretting our inability to do so earlier, we can assure you that this Committee would very much like to follow the conference's deliberations. As you know, it was thanks to the understanding displayed by the Mexico City High-Frequency Broadcasting Conference (1948) that we were allotted our own special wavelength for our humanitarian work. Hence we shall not fail to follow the work of the conference with the closest attention, and ask that we may be allowed to send observers.

Yours faithfully,

(Sign.) Claude Villanel
Assistant Director, General Affairs

(Translation)

I.R.A.S.A.
INTERNATIONAL RADIO AIR SAFETY ASSOCIATION,
La Brosse,
BRIIS-sous-FORGES,
Seine-et-Oise, France.

PARIS, 9 May, 1959

The Secretary General,
International Telecommunication Union,
GENEVA

Dear Sir,

With reference to Article 27 of the International Telecommunication Convention, Atlantic City, 1947, and also to Article 2, Chapter 8 (Second Part) of the General Regulations annexed to this Convention, I would like to ask for the International Radio Air Safety Association (I.R.S.A.) to be allowed to take part in the work of the C.C.I.R.

Although I am late in asking, I should also like to see our Association represented on an advisory basis at the next Administrative Radio Conference to be held on 1 July, 1959, according to the provision in Article 4, Chapter 2 (First Part) of the General Regulations annexed to the Convention.

The I.R.A.S.A. is a professional international association which was founded in 1952. It is open to and includes persons of all nationalities who hold either First or S cond Class Radiotelegraphists' Certificates as defined in Article 24 of the Eleventh Part of the Radio Regulations and work as aircraft wireless officers.

The aims of the Association as defined in Article I of the Statutes, amended by the Council of Delegates (the supreme organ of the I.R.A.S.A.), are as follows:

1. To have its members represented on international organizations which deal with air security, radionavigation and air telecommunications.

2. To bring together at an international level trade unions which take an interest in air security and wish to defend their professional interests.

3. To give its members a normal professional training, taking into account technical progress in the control of air traffic, radionavigation and telecommunications.

4. To establish contact with other international organizations dealing with air security.

Since 1953 the I.R.A.S.A. has been recognized by the International Civil Aviation Organization (I.C.A.O.) and has been allowed to take part in the latter's Air Navigation Conferences as an observer. Thus our representatives have had the opportunity of attending several meetings with I.T.U. observers like Mr. J.A. GRACIE from the I.F.R.B.

I should like to see our Association represented in the field of telecommunications as well as in air navigation. Our members do work which was begun and is still regulated by the I.T.U. and I believe we are in a position to provide information and suggest useful and constructive solutions to the problems that are put before the I.T.U. and in particular the C.C.I.R.

These are the reasons for my request at the beginning of this letter.

I should be glad to give you any information concerning the I.R.A.S.A. and its activities.

Yours faithfully,

(sign.) Gilbert GUILLAUME

Secretary General,
I.R.A.S.A.

INTERNATIONAL ASTRONOMICAL UNION,
Royal Greenwich Observatory,
Hertmonceux Castle,
Hailsham, Sussex.

Hailsham, 20 May, 1959

Mr. G.C. Gross,
Acting Secretary-General,
International Telecommunication Union
Palais Wilson, Geneva.

Ref. : H 1054

Dear Sir,

I refer to your letter No. 1867/55/R of 18 August 1958 regarding the admission of a representative of the International Astronomical Union to the Ordinary Administrative Radio Conference to be held in Geneva from 17 August 1959 onwards.

On behalf of the Executive Committee of the I.A.U., I formally apply for permission to send a representative to the Administrative Radio Conference to attend those sessions concerned with the allocation of radio frequencies.

I much regret that it was not possible formally to make this application within two months from the date of your letter.

Yours faithfully,

(Sign.) D.H. SADLER (General Secretary)

COSPAR,
Committee on Space Research, Established by the
International Council of Scientific Unions
Leiden, Netherlands.

Leiden, 22 June, 1959

Dr. G.C. Gross,
Acting Secretary-General of the I.T.U.,
Palais Wilson, Geneva.

Ref. : HCH/am/155

Dear Dr. Gross,

This letter is an application for admission of an observer on behalf of COSPAR to attend the General Radio Conference, which starts in August. The Committee on Space Research (COSPAR) has studied the scientific requirements for the transmission of telemetering signals between artificial earth satellites or space vehicles and surface stations. It is vital to the scientific applications - and at a later stage the economically useful applications - of these vehicles that proper regulations on the frequencies to be used be passed by the I.T.U.

By being present at the Conference, the observer may keep COSPAR informed and will also be able to give advice where needed. I suppose that the COSPAR observer will also be entitled to submit documents on the matters within COSPAR'S concern. The I.T.U. will, of course, be welcome to send an observer to general COSPAR meetings on the basis of reciprocity.

The COSPAR observer, if admitted, will most probably be Prof. W.J.G. Beynon, Prof. A.C.B. Lovell, or myself, but it would be helpful to leave the possibility open, that we might have to send someone else.

For your information may I briefly summarize COSPAR'S task and terms of reference. COSPAR is a committee established in October 1958 by the International Council of Scientific Unions (I.C.S.U.). The International Council of Scientific Unions federates 14 International Scientific Unions and 45 National Scientific Academies. It is considered the main coordinating international scientific body at a non-governmental level. The International Geophysical Year was organized as an I.C.S.U. undertaking. Other, more permanent, scientific tasks, which do not fall specifically under one of the established International Scientific Unions, have been delegated to I.C.S.U. Committees.

The COSPAR is one of these Committees. It has representatives of nine Scientific Unions, among which are the International Astronomical Union (I.A.U.) and the International Union for Scientific Radio (U.R.S.I.). It has also representatives from the National Scientific Academies of all countries engaged in the launching of rockets and satellites. The composition of COSPAR will be subject to revision next September but this may be irrelevant in the present context.

The purpose of COSPAR, as described in its Charter, is "to further on an international scale the progress of all kinds of scientific investigation which are carried out with the use of rockets or rocket-propelled vehicles. COSPAR shall be concerned with fundamental research. It will not normally concern itself with such technological problems as propulsion, construction of rockets, guidance and control."

"These objectives shall be achieved through the maximum development of space research programs by the international community of scientists working through the I.C.S.U. and its adhering national academies and unions. Recognizing the need for international regulation and discussion of certain aspects of satellite and space probe programs, the Committee shall keep itself fully informed on United Nations or other international activities in this field, in order to assure that maximum advantage is accorded international space science research through such regulations, and to make recommendations relative to matters of planning and regulation that may effect the optimum program of scientific research."

As you see, the present application falls directly within the task assigned to COSPAR in the second paragraph. I shall be grateful if you will submit this application to the Radio Conference.

Yours sincerely,

(Sign.) H.C. van de Hulst

Professor H.C. van de Hulst

The President of COSPAR

(Translation)

INTERNATIONAL CRIMINAL POLICE ORGANIZATION
37bis, rue P. Valéry,
Paris XVI

Ref.: Y/ 1867/55/R of 18.8.58
O/ O.I.P.C. No.2556/Telecom 400

PARIS, 7 July, 1959

Subject: Radio Conference, 1959

Mr. Gerald C. GROSS,
Acting Secretary-General,
I.T.U.,
Palais Wilson,
GENEVA

Dear Sir,

In your letter quoted in reference you were so kind as to suggest that the General Secretariat of the I.C.P.O. be represented at the forthcoming Ordinary Administrative Radio Conference.

In spite of my delay in replying, which I hope you will excuse, I do feel that it is very important that Interpol should participate.

I should therefore be much obliged if you would submit our application to the Conference, in the hope that it will be accepted.

Yours faithfully,

(sign.) M. SICOT

Secretary-General

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No. 6-E
12 August 1959
Original: English

PLENARY MEETING

PROPOSALS FOR THE WORK OF THE CONFERENCE

In accordance with Chapter 3 of the General Regulations, a letter was sent to Members and Associate Members of the Union on 18 August 1958, requesting them to submit their proposals for the work of the Conference within a period of four months.

By 15 December 1958 however series of proposals had been received from only 8 Administrations, certain of which consisted of only one or two proposals. Faced with this situation it was decided not to "close the books" for the main volume until 27 January, which enabled us to include therein the proposals of 28 Administrations. In spite of the delay the main volume was sent to Administrations three months before the opening of the Conference as called for by the Regulations.

In the meantime further proposals were received many of which modified those already published. These were included in the 2nd series of Proposals dispatched to Administrations on 24 July 1959. A third series will be distributed during the early days of the Conference.

It should also be mentioned that under the provisions of Chapter 18 of the General Regulations a report was prepared jointly by the General Secretariat and the Specialized Secretariat of the C.C.I.R., which was distributed to Administrations by Radio Division Circular No. 772 of 21 March 1959. A further report on this matter was prepared as a result of the discussions during the IXth Plenary Assembly of the C.C.I.R., Los Angeles 1959, which was distributed to Administrations by Radio Division Circular No. 775 dated 1 July 1959.

Gerald C. GROSS
Acting Secretary-General.

ARCHIVES U.I.T. GENÈVE

Documents of the Administrative Radio Conference (Geneva, 1959)

Proposals for the International Radio Conference (Geneva, 1959): Series one to three

An electronic version (PDF) of the three series of proposals referred to in Document No. 6 is available separately.

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No. 7-E
11 August, 1959
Original: English

HEADS OF DELEGATIONS

DRAFT AGENDA FOR THE FIRST MEETING OF THE HEADS OF DELEGATIONS MONDAY, 17 AUGUST 1959, SALLE E, AT 10.00 hrs.

1. Organization and Committee structure of the Conference (Document No.2)
2. Proposals for the Chairman and Vice-Chairmen of the Conference
3. Constitution of the Secretariat
4. Agenda of the First Meeting of the Plenary Assembly
5. Miscellaneous

Note : The formal opening of the Conference will take place at 15.00 hrs. on Monday, 17 August 1959, in the main Plenary Hall (Salle A), Bâtiment Electoral.

U.I.T. GENEVE

INTERNATIONAL TELECOMMUNICATION UNION

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

E

Document No. 8-E
13 August, 1959
Original: English

PAKISTAN

Proposals

ARTICLE 1

No. of proposal

4726 1. After this number add the following new text:

" For the other terms used in these Regulations but not defined in the Convention, the Administrations or recognized private operating agencies shall consult the "List of definitions of essential telecommunication terms" (Part I: Telegraphy; Part II: Special radio terms)."

Reasons

To bring the list of definitions within the scope of the Radio Regulations.

4727 5. Replace the present text by the following:

" Hertzian Waves: Electro magnetic waves of frequencies between 8 kc/s and 3,000,000 Mc/s propagated without guide in free space."

Reasons

Long distance propagation of electro magnetic waves is possible between 8 and 10 kc/s.

ARCHIVES U.I.T. GENEVE

INTERNATIONAL TELECOMMUNICATION UNION

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No. 9-E
13 August, 1959
Original: English

E

PAKISTAN

Proposals

ARTICLE 3

No. of proposal		
4728	86.	Replace the present text by the following:

"§ 1. Members and Associate Members of the Union agree that in assigning frequencies to stations which can cause harmful interference, in practice, to services rendered by stations of other countries, they will make such assignments in accordance with the Table of frequency allocations and other provisions of these Regulations.

Reasons

1. To conform with the wording of the Convention.

2. To be consistent with No. 88.

4729	88.	"§ 3. A Member of an Associate Member of the Union shall not assign to a station any frequency in derogation of either the Table of frequency allocations given in this Chapter or the other provisions of these Regulations, except on the express condition that harmful interference shall not be caused to services carried on by stations operating in accordance with the provisions of the Convention and of these Regulations."

Reasons

To conform with the wording of the Convention in "Singular Number".

ARCHIVES U.I.T. GENÈVE

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No. 10-E
27 August, 1959

REPUBLIC OF COLOMBIA

Proposals

ARTICLE 1

Number of proposal

4730 1. Read:

The following definitions apply to terms used in the Regulations annexed to the Convention for the operation of the respective services and take into account the present stage reached in the science of radio; they are not necessarily applicable to other purposes.

Reasons:

To clarify and bring the wording of the article up to date.

4731 2. Add at the end:

... or by ultra-sound

Reasons:

To complete the definition.

4732 4. Read:

Radiocommunication. Any telecommunication carried out by means of electromagnetic waves.

ARCHIVES U.I.T. GENÈVE

Number of proposal

Reasons:

The present definition does not distinguish clearly between wireless systems and the transmission of electromagnetic waves by physical lines, coaxial cables, conductor cells, etc.

4733 5. Read:

Radio or Hertzian Waves: Electromagnetic waves radiated in space and between frequencies of 6 kc/s and 300,000,000 Mc/s.

Reasons:

To clarify and bring up to date the limits of the definition.

4733 b 5. Add the following new definition at the end of this number:

Radio frequency or "frequency": The number of cycles per second of a radio wave at the place of transmission or reception.

Reasons:

To include this definition in the R.R., since it does not exist there as such, although the term is constantly used in the text of the Regulations.

4734 6. Read:

Radio: A general term applied to the use of radio or Hertzian Waves.

Reasons:

To bring the definition into line with 5.

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No. 11-E (Rev.)
28 August, 1959

PLENARY MEETING
COMMITTEE 6

REPUBLIC OF COLOMBIA

Proposals

ARTICLE 1

Number of proposal

4843 21. Read:

Broadcasting Service: A radio service, using telephony, for reception by the general public for cultural, recreational and news purposes.

NOTE.- Special cases in this service are Tropical Broadcasting and High-Frequency Broadcasting.

Reasons:

To bring the definitions in the Regulations up to date, and make them conform to current practice.

4844 22. Read:

Radiotelevision: A radio service, using television, for reception by the general public for cultural, recreational and news purposes.

Reasons:

To bring the definition in the R.R. up to date and in conformity with current practice.

4845 31. Read:

Amateur Service: A radio service for self-training and experiment, operated by duly authorized persons for scientific purposes and not for gain.

Reasons:

Improved drafting.

ARCHIVES U.I.T. GENEVE

Number of proposal

4846 32. Read:

Meteorological Aids Service: A radio service intended for meteorological and hydrological observations and exploration, using telemetry.

Reasons:

Improved drafting.

4847 33. Read:

Standard Frequency Service: A radio service for the transmission of specified frequencies of very high accuracy for scientific, technical and other purposes.

Reasons:

Improved drafting.

4848 39. After this number, insert the following new definition:

Radiotelevision station: Station intended for the radiotelevision service.

Reasons:

Derives from Proposal No. 4844.

4849 - 4868 Deleted.

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No. 11-E
28 August, 1959

REPUBLIC OF COLOMBIA

Proposals

ARTICLE 1

Number of proposal

4843 21. Read:

Broadcasting Service: A radio service, using telephony, for reception by the general public for cultural, recreational and news purposes.

NOTE.- Special cases in this service are Tropical Broadcasting and High-Frequency Broadcasting.

Reasons:

To bring the definitions in the Regulations up to date, and make them conform to current practice.

4844 22. Read:

Radiotelevision: A radio service, using television, for reception by the general public for cultural, recreational and news purposes.

Reasons:

To bring the definition in the R.R. up to date and in conformity with current practice.

4845 31. Read:

Amateur Service: A radio service for self-training and experiment, operated by duly authorized persons for scientific purposes and not for gain.

Reasons:

Improved drafting.

Number of proposal

4845 32. Read:

Meteorological Aids Service: A radio service intended for meteorological and hydrological observations and exploration, using telemetry.

Reasons:

Improved drafting.

4846 33. Read:

Standard Frequency Service: A radio service for the transmission of specified frequencies of very high accuracy for scientific, technical and other purposes.

Reasons:

Improved drafting.

4847 39. After this number, insert the following new definition:

Radiotelevision station: Station intended for the radiotelevision service.

Reasons:

Derives from Proposal No. 4844.

4848 - 4853 Deleted.

Documents of the Administrative Radio Conference (Geneva, 1959)

Documents No. 12 - 17

Not available

****

Pas disponible

****

No disponible

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No. 18-E
14 August, 1959
Original: English

PLENARY MEETING

SITUATION OF CERTAIN COUNTRIES WITH RESPECT TO THE CONVENTION

I take pleasure in informing the Conference that -

a) since publishing Document No. 3, the instrument of accession of Kuwait has been deposited with the General Secretariat, and Kuwait has thus become a Member of the Union;

b) since publishing Document No. 4, the instrument of ratification by Bolivia has been deposited with the General Secretariat.

Gerald C. GROSS
Acting Secretary-General

ARCHIVES U.I.T. GENÈVE

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE
RADIO CONFERENCE

GENEVA, 1959

Document No. 19-E
13 August 1959.
Original: English

PLENARY MEETING

ORGANIZATION AND COMMITTEE STRUCTURE OF THE CONFERENCE

Since publishing Document No. 2, the following letter dated 6 August 1959 has been received from the Director-General of Telecommunications, China:

"Dear Sir

Reference is made to your circular letter No. 2758/59/R dated 24 June 1959 concerning the suggested organization of, and work programme for, the Ordinary Administrative Radio Conference, 17 August 1959. We would like to make the following comments:

The suggestion made in above letter is well prepared and is indeed a great help for the facilitation of the work of the Conference. But we doubt that whether it is advisable to establish a Committee, namely proposed Committee 5, to examine the International Frequency Lists, as it would have the effect of slowing down the work of Committees 4 and 6.

It may be recalled that certain Frequency Lists and Plans have been adopted by the EARC, Geneva, 1951 and the procedure of their notification and registration as well as for the unplanned bands have been laid down in Chapter VII of the EARC Agreement. In our opinion, the re-examination of adopted Frequency Lists and Plans in detail at the Conference, is not necessary. Neither is it necessary for the re-examination of the unplanned bands; as for the unplanned bands, judging from the past years experience, it is likely that a satisfactory solution can only be obtained by a slow, evolutionary process over a number of years.

For the above reasons, we would like to propose to eliminate the proposed Committee 5 and to concentrate our work on drafting a unique procedure for the notification and registration of frequency assignments, bearing in mind the provisions of Chapter IV of current Radio Regulations and Chapter VII of the EARC Agreement."

ARCHIVES U.I.T. GENÈVE

Gerald C. GROSS
Acting Secretary-General

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No. 20-E
14 August, 1959
Original: English

PLENARY MEETING

REPORT BY THE INTERNATIONAL FREQUENCY REGISTRATION BOARD (I.F.R.B.) TO THE CONFERENCE

I have the honour to submit herewith a report by the I.F.R.B. to the Administrative Radio Conference (Geneva 1959).

Gerald C. GROSS
Acting Secretary-General.

Annex: 1

ARCHIVES U.I.T. GENÈVE

REPORT

by the

INTERNATIONAL FREQUENCY REGISTRATION BOARD (I. F. R. B.)

to the

ADMINISTRATIVE RADIO CONFERENCE

(Geneva, 1959)

SECTION I

Introduction

ARCHIVES U.I.T. GENÈVE

REPORT

by the

International Frequency Registration Board (I.F.R.B.)

to the

Administrative Radio Conference

(Geneva, 1959)

The present booklet contains Section I

SECTION I

TABLE OF CONTENTS

REPORT

by the

International Frequency Registration Board (I.F.R.B.)

to the

Administrative Radio Conference

(Geneva, 1959)

SECTION I

INTRODUCTION

According to Article 10 of the International Telecommunication Convention (Buenos Aires, 1952), one of the tasks facing the Ordinary Administrative Radio Conference is to review the activities of the International Frequency Registration Board. To help the Conference in so doing, the Board has prepared this report, which should also be of assistance to the Conference in the other work it has to do, especially in the tasks devolving on it under the Extraordinary Administrative Radio Conference Agreement (E.A.R.C., Geneva, 1951).

1.1 Origin of the International Frequency Registration Board

1.1.1 It will be recalled that the last Ordinary Administrative Radio Conference of the Union, which was held in Atlantic City in 1947, surveyed the situation then prevailing in the international radio field as a result of the second world war and its aftermath, and reached the following broad conclusions:

a) that the Table of Frequency Allocations established by the Cairo Conference (1938) no longer represented the relative needs of the various types of radio service, and had, indeed, been largely disregarded;

b) that the list of frequencies, compiled and published by the Bureau of the Union, did not reflect actual radio operations;

c) that the uncontrolled taking-into-use of radio frequencies had given rise to widespread interference between services.

1.1.2 The Conference, therefore:

i) adopted a new Table of Frequency Allocations;

ii) decided that a new International Frequency List should be established, in accordance with this Table, for all radio stations using frequencies below 27,500 kc/s;

iii) decided that notices of intention to use specific frequencies for specific purposes should be sent to a central body, to be called the International Frequency Registration Board; this Board would be charged, solely on the basis of technical principles of worldwide application, with the examination of the proposed use of the frequencies with respect to conformity with all relevant Regulations and from the aspect of causing harmful interference to radio services already in use; according to the result of this examination, the Board would reach a Finding, favourable or unfavourable; the Board would maintain a Master International Frequency Register of all radio assignments throughout the world; in addition the Board would be charged to render advice to Members of the Union in connection with the rational use of the radio frequency spectrum.

1.2 Membership of the International Frequency Registration Board

1.2.1 The International Frequency Registration Board, as at present constituted, was elected by the Ordinary Administrative Radio Conference of Atlantic City (1947). The election procedures are described in Documents Nos. 810 R(20 August, 1947), 959 R (17 September, 1947), and 975 R (22 September, 1947) of that Conference. The eleven members of the I.F.R.B. nominated as a result of this election were as follows:

	Nominated by:
Mr. S. Banerji	Republic of India
Mr. A.H. Catá	Cuba
Mr. I. Danilenko	Union of Soviet Socialist Republics
Mr. F. Dellamula	Argentine Republic
Mr. J.A. Gracie	United Kingdom of Great Britain and Northern Ireland
Mr. P.D. Miles	United States of America
Mr. R. Petit	France
Mr. N.H. Roberts	Union of South Africa and Territory of South West Africa
Mr. J.J. Svoboda	Czechoslovakia
Mr. T.K. Wang	China
Mr. S.H. Witt	Commonwealth of Australia

1.2.2 These members took up their duties during January 1948, with the exception of Mr. I. Danilenko, who joined the Board on 1 May, 1948. Since that time the following changes have occurred:

In 1950/1951	Mr. I Danilenko resigned and was replaced by Mr. N.I. Krasnosselski.
In 1952	Mr. S. Banerji died and was replaced by Mr. S.S. Moorthy Rao.
In 1953	Mr. Paul D. Miles resigned and was replaced by Mr. John H. Gayer.

In 1955 ..... Mr. S.S. Moorthy Rao resigned and was replaced by Mr. P.S.M. Sundaram.

In 1956 ..... Mr. N.I. Krasnosselski resigned and was replaced by Mr. B. Iastrebov.

In 1957 ..... Mr. S.H. Witt resigned and was replaced by Mr. R.E. Page.

1.2.3 The composition of the Board at present is therefore as follows:

Mr. A.H. Catá
Mr. F. Dellamula
Mr. J.H. Gayer
Mr. J.A. Gracie
Mr. B. Iastrebov
Mr. R.E. Page
Mr. R. Petit
Mr. N.H. Roberts
Mr. P.S.M. Sundaram
Mr. J.J. Svoboda
Mr. T.K. Wang

1.3 Activities of the I.F.R.B. up to 16th August, 1951

1.3.1 In a Resolution adopted by the Atlantic City Radio Conference (page 89 of the booklet of Recommendations and Resolutions), the Conference decided that the Board should be established on 1 January 1948, and specified the tasks of the members of the Board pending the adoption of a new International Frequency List for the range 14-27,500 kc/s. Preparation of this List was the subject of another resolution of the Conference (page 14 of the aforementioned booklet). The whole of the Atlantic City Radio Regulations were to come into force on the date of entry into force of this List.

1.3.2 Thus it was that, after a first meeting held in Atlantic City on 28 September, 1947, and a second meeting in Geneva on 8 January, 1948, the Board made the necessary preparatory arrangements for the effective discharge of their later duties. In 1948, 1949, 1950 and 1951, members of the Board attended the following meetings, held under I.T.U. auspices:

- Provisional Frequency Board (Geneva, 15 January 1948 to 28 February 1950).

- International High Frequency Broadcasting Conference (Mexico City, 22 October 1948 to 10 April 1949), preceded by meetings of the Plan Committee in Geneva and then in Mexico City.

- International High Frequency Broadcasting Conference (Florence/Rapallo, from 1 April 1950 to 19 August 1950), preceded by meetings of the Technical Plan Committee in Paris and Florence.

- European Broadcasting Conference (Copenhagen, 25 June 1948 to 15 September 1948).

- European Maritime Mobile Service Conference (Copenhagen, 25 June 1948 to 17 September 1948).

- International Administrative Aeronautical Radio Conference (Geneva, First Session, 15 April 1948 to 25 September 1948; Second Session, 1 August 1949 to 17 October 1949).

- Administrative Radio Conference for Region 1 (Geneva, 18 May 1949 to 17 September 1949).

- Administrative Radio Conference for Region 2 (Washington, 25 April 1949 to 9 July 1949).

- Administrative Radio Conference for Region 3 (Geneva, 18 May 1949 to 4 November 1949).

- International Radio Consultative Committee, Vth Plenary Assembly (Stockholm, 13 July 1948 to 31 July 1948).

- International Radio Consultative Committee, VIth Plenary Assembly (Geneva, 5 June 1951 to 6 July 1951).

- Sessions of the Administrative Council.

1.3.3 The Administrative Council, at its first sessions, reviewed the progress made in preparation of the draft New International Frequency List in the range 14 kc/s to 27,500 kc/s, and took such action as might facilitate and accelerate this work. At its Fifth Session (Geneva, 1950), it considered the situation afresh. In the light of data supplied by the I.F.R.B., it concluded that, in view of the results achieved by regional and service conferences and by the Provisional Frequency Board, there was a possibility of drawing up a New International Frequency List in that part of the frequency spectrum below 3,950 kc/s (4,000 kc/s in Region 2). It also concluded that it was not yet possible, between 3,950 kc/s (4,000 kc/s in Region 2) and 27,500 kc/s, to envisage drawing up a complete frequency list in accordance with the Atlantic City Resolution, with the exception, however, of the frequency bands allocated exclusively to the aeronautical or maritime mobile services. The Council also considered it an urgent matter to bring into force the whole of the Table of Frequency Allocations so as to ensure the ordered operation and development of radio services (particularly radionavigation and safety services), otherwise international radiocommunications would become more and more seriously hampered. This could have become an exceptionally serious matter when safety of life was at stake.

1.3.4 Hence, the Administrative Council proposed to Administrations that an Extraordinary Administrative Radio Conference should meet in Geneva on 16 August 1951. The proposal was accepted and the Council specified the agenda of this Conference in its Resolution No. 199. In Resolution No. 200, the Council invited Administrations and the I.F.R.B.

to take action to facilitate the work of this Conference; the Board thereupon drew up and submitted to the Conference an analysis and synthesis of the comments by Administrations on the various parts of the draft New International Frequency List prepared by the above-mentioned conferences; the Board also submitted lengthy documentation to the Conference and a booklet containing its own proposals.

1.4 The Extraordinary Administrative Radio Conference and its decisions

The Extraordinary Administrative Radio Conference (E.A.R.C.) met in Geneva on 16 August 1951. Seventy-six Administrations were represented at this Conference, in which members of the I.F.R.B. took part. Basing itself on the agenda prepared by the Administrative Council and the work of conferences held since 1948, this Conference drew up an agreement, which was signed on 3 December 1951, by the representatives of 63 Administrations, defining the measures to be taken with a view to bringing the whole of the Atlantic City Table of Frequency Allocations into force. This Agreement, which came into force on 1 March 1952, entailed:

1) the adoption of a new International Frequency List for the frequency bands allocated on a worldwide basis between 14 kc/s and 150 kc/s;

2) the adoption of a New International Frequency List for Regions 1, 2 and 3, for the bands allocated on a regional basis below 3,950 kc/s (4,000 kc/s in Region 2);

3) the adoption of a Frequency Allotment Plan and a New International Frequency List for the Maritime Mobile Service in its exclusive bands between 4,000 kc/s and 27,500 kc/s;

4) the adoption of Frequency Allotment Plans for the Aeronautical Mobile R Service and the Aeronautical Mobile OR Service in their exclusive bands between 2,850 kc/s and 27,500 kc/s;

5) specification of the measures to be applied by Administrations and the I.F.R.B. to ensure that frequency assignments were brought into accordance with the Table of Frequency Allocations, particularly by means of bringing the aforementioned lists and plans into use;

6) a programme for the bringing into force, on specified dates, of certain parts of the Table of Frequency Allocations and the related provisions of the Radio Regulations;

7) specification of the interim measures to be taken in those portions of the spectrum where no date had been specified for the bringing into force of the Table of Frequency Allocations and the related provisions of the Radio Regulations;

8) the creation of a new I.T.U. service document, the Radio Frequency Record, to replace the I.T.U. Frequency List, publication of which was to end on 29 February 1952;

9) a programme for the preparation of draft plans for the high frequency broadcasting service.

1.5 Activities of the I.F.R.B. since the closing date of the E.A.R.C., 3 December, 1951.

1.5.1 The E.A.R.C. entrusted the International Frequency Registration Board with a coordinating role and with the task of supplying Administrations with advice and helping them, within the limits of its mandate, specifying in detail the work it would have to do. These tasks comprised the establishment and keeping up-to-date of a Master Radio Frequency Record published in the form of the Radio Frequency Record, and application of the procedure for registration in the Master Record after technical examination, as specified in Article 11 of the Radio Regulations, to frequency notices relating to frequencies in bands in respect of which the Table of Frequency Allocations and this procedure had been brought into force. Moreover, the E.A.R.C. entrusted the I.F.R.B. with other tasks, in particular the application of programmes for the bringing into use of the Lists and Plans adopted by the E.A.R.C. , and application to frequency notices concerning frequencies in bands for which the Table of Frequency Allocations had not been brought into force, of an interim procedure for recording in the Master Radio Frequency Record after technical examination, as defined in the E.A.R.C. Agreement. It also laid down the general basis on which the Board was required to prepare draft plans for the High Frequency Broadcasting Service.

1.5.2 Since the E.A.R.C. decided, in its Resolution No. 9, to abrogate the two abovementioned Resolutions of the Atlantic City Administrative Radio Conference, the Board has been carrying out its duties, since 3 December 1951, according to the directives it received from the E.A.R.C..

1.5.3 The Plenipotentiary Conference which met in Buenos Aires in 1952 revised Article 6 of the Convention, adapting it to the additional tasks entrusted to the Board by the E.A.R.C., and decided that the election of the members of the I.F.R.B. should continue to be the responsibility of the Ordinary Administrative Radio Conference. It also decided, in Resolution No. 30, that any provisions of the E.A.R.C. which might be considered as conflicting with earlier decisions of the Atlantic City Radio Conference should be considered as superseding those decisions. Moreover, it decided in its Resolution No. 1, that the I.F.R.B. should continue to have eleven members.

1.5.4 Since the end of 1948 the I.F.R.B. took the initiative of submitting a detailed annual report on its work to the Members of the Union; it included the management and work of its Specialized Secretariat, regarding which details are given in Section XI of this report. In accordance with directives given by the E.A.R.C., the Board also submitted to

the Members of the Union and the Council, from 1955 onwards, a number of reports on the progress made towards bringing into force the Atlantic City Table of Frequency Allocations. Furthermore, it made available to Administrations the Opinions and Rules of Procedure which it prepared, whenever necessary, with a view to facilitating the uniform application of the provisions of the Radio Regulations and the E.A.R.C. Agreement, and its Technical Standards.

1.5.5 Nevertheless, the Board felt that in this report it should describe the manner in which it has carried out its duties towards the Members of the Union since 3 December 1951. For the convenience of the Conference, the Board has divided the report into sections, each of which forms a separate booklet and deals with one of the overall problems arising out of the E.A.R.C. Agreement; they have been classified under the following headings:

Section		Title
I	-	Introduction
II	-	Compilation and maintenance of the Master Radio Frequency Record..
III	-	Frequency bands between 14 kc/s and 3,950 kc/s (4000 kc/s Region 2)(with the exception of the exclusive aeronautical mobile bands between 2850 kc/s - 3155 kc/s, 3400 kc/s - 3500 kc/s and, in Region 1, 3900 kc/s - 3950 kc/s).
IV	-	Frequency bands allocated exclusively to the Aeronautical Mobile Service between 2850 kc/s and 27,500 kc/s.
V	-	Frequency bands allocated exclusively to the Maritime Mobile Service between 4000 kc/s and 27,500 kc/s.
VI	-	Frequency bands allocated exclusively to the High Frequency Broadcasting Service between 3950 kc/s (4000 kc/s Region 2) and 27,500 kc/s.
VII	-	Frequency bands allocated to the Fixed, Land Mobile, Tropical Broadcasting and Standard Frequency Services between 3950 kc/s (4000 kc/s Region 2) and 27,500 kc/s.
III	-	Frequency bands above 27,5 Mc/s.
IX	-	Technical Standards
X	-	International Monitoring
XI	-	The organization of the International Frequency Registration Board and of its Specialized Secretariat.

1.5.6 The Board has added to each section of this report, as concisely as possible, a statement of the situation confronting the Administrative Radio Conference and the questions which the Conference will be called upon to settle, particularly in view of the proposals submitted by Administrations. In this connection, attention is drawn to Circular-letter No. 2758/59/R of 24 June 1959, in which the General Secretariat, in co-operation with the I.F.R.B., submitted to Administrations proposals for the organization of, and a programme of work for, the Conference.

1.6 Conclusion:

1.6.1 In concluding this introduction to its report, the Board feels that it should draw attention to the fact that its tasks have been greatly facilitated by the additional experience acquired, in the period since 1948, of the problems of radiocommunications in the world, through the participation of members of the Board in the work of the various I.T.U. meetings, and their contacts with the delegates of Administrations. Furthermore, it considers that its structure and Rules of Procedure, as established by the Atlantic City Administrative Radio Conference, have proved to be appropriate not only to the Board's tasks as specified in the Radio Regulations but also to the additional tasks entrusted to it by the Extraordinary Administrative Radio Conference.

1.6.2 Finally, the Board wishes to emphasise that the progress made since 1952 towards the entry into force of the Atlantic City Table of Frequency Allocations in its entirety would not have been so satisfactory if the Administrations of the Members and Associate Members of the Union had not shown the spirit of cooperation and goodwill which they have manifested in the implementation of the provisions of the E.A.R.C. Agreement.

REPORT

by the

INTERNATIONAL FREQUENCY REGISTRATION BOARD (I. F. R. B.)

to the

ADMINISTRATIVE RADIO CONFERENCE

(Geneva, 1959)

SECTION II

Compilation and maintenance of the Master Radio Frequency Record

REPORT
by the
International Frequency Registration Board (I.F.R.B.)
to the
Administrative Radio Conference
(Geneva, 1959)

The present booklet contains Section II

SECTION II

TABLE OF CONTENTS

REPORT

by the

International Frequency Registration Board (I.F.R.B.)

to the

Administrative Radio Conference

(Geneva, 1959)

SECTION II

COMPILATION AND MAINTENANCE OF THE MASTER RADIO FREQUENCY RECORD

2.1 The relevant regulatory provisions

A list of the relevant provisions of the Radio Regulations (hereinafter called "the Regulations") and of the Extraordinary Administrative Radio Conference (E.A.R.C.) Agreement (hereinafter called "the Agreement") is appended.

2.2 Compilation of the Master Radio Frequency Record

2.2.1 In Article 37 of the Agreement, the International Frequency Registration Board was charged to compile the "Master Radio Frequency Record", in accordance with the provisions of Article 34. Under No. 205 of the Agreement, the term "Master Radio Frequency Record" has the same significance as the term "Master International Frequency Register" used in the Regulations. Article 35 of the Agreement lays down that the contents of the Master Record shall periodically be published in the form of a new I.T.U. Service document, to be known as the "Radio Frequency Record". This Radio Frequency Record was designed to replace the I.T.U. Frequency List, publication of which, under Article 36, was to cease after the issue of a final recapitulatory supplement to the sixteenth edition of this List, containing particulars of notifications and modifications received from Administrations up to 29 February, 1952.

2.2.2 The Master Radio Frequency Record (hereinafter called "the Master Record"), which the I.F.R.B. began to compile as soon as the E.A.R.C. was over, was to include as basic entries, in the frequency bands below 27,500 kc/s, all the assignments shown in the New International Frequency List adopted by the E.A.R.C., together with particulars of the "usage of frequencies" furnished by Administrations in pursuance of No. 272 of the Agreement, and, in the frequency bands above 27.5 Mc/s, the assignments contained in the "Provisional List of Frequencies above 27,500 kc/s."

2.2.3.1 Assignments appearing in the New International Frequency List adopted by the E.A.R.C. were extracted from the various Annexes to the Final Acts of the E.A.R.C. and were incorporated in the Master Record. However, many of them did not contain all the basic technical data required to permit the Master Record to be used for the technical examination of frequency assignment notices: for instance, many assignments in the New International Frequency List adopted by the E.A.R.C. for the frequency bands where Article 11 of the Radio Regulations was scheduled to enter fully into force, did not contain the minimum technical data specified in No. 318 of the Radio Regulations. The E.A.R.C. had decided, in No. 269 of the Agreement, that the data necessary for the completion of these entries should be submitted by Administrations to the I.F.R.B. at an early date. This information, however, reached the I.F.R.B. at a very slow rate, and the treatment of new notices, in particular their technical examination with respect to the probability of harmful interference to these incomplete assignments, was in consequence frequently hampered and delayed. At first the I.F.R.B. attempted to overcome this difficulty by requesting in each case by letter or telegram the Administration concerned urgently to supply the missing data for the specific assignment involved. A considerable amount of additional work was thus involved, and delays were incurred making it impossible for the Board to respect in such cases the specific periods of time laid down in Article 11 of the Regulations.

2.2.3.2 The Board drew the attention of Administrations to these difficulties in Circular-letter No.D 615/R of 17th March 1953, but the results of its appeal were not as satisfactory as expected, and many basic entries in the Master Record remained incomplete. Consequently, the Board advised Administrations by Circular-letter No. D 435/R of 4th March 1954, that it was obliged to cease, by 1st September, 1954, to request in each case missing data from the Administration concerned and that in the future it would conduct technical examinations for the bands concerned, based only on the information available in the Master Record (see Section III, paragraph 3.7.1).

2.2.4.1 With respect to "frequency usage information" to be supplied under No. 272 of the Agreement, the minimum particulars to be supplied were those specified in the Appendix to the Agreement, and Administrations were required to notify them to the I.F.R.B. by 1 April, 1952, at the latest. But many Administrations were unable to do so by that date. Furthermore, in many cases where information was furnished, a good deal of the data called for in the Appendix to the Agreement was lacking.

2.2.4.2 Faced with a situation which had not been foreseen by the E.A.R.C., the I.F.R.B. took the action described in its Circular-letter No. 1977/R (10 June, 1952), being desirous of providing Administrations, in the first publication of the Radio Frequency Record, with all the frequency usage information then available, even if incomplete. The overall result was that compilation of the Master Record proved considerably longer and more complicated than was anticipated; but the initial Master Record was

established in November, 1952. It contained the particulars of some 200,000 frequency assignments, on behalf of fifty-eight Administrations, which appeared in the first publication of the Radio Frequency Record. By the end of 1952, a further seventeen Administrations had supplied the Board with frequency usage information.

2.2.4.3 To make it easier for Administrations to supply data which were still lacking in respect of frequency usage information furnished under No. 272 of the Agreement, and realizing that Administrations might have some difficulty in identifying the assignments concerned, the I.F.R.B. in 1953 took the initiative of extracting from the Master Record and sending to the sixty-five Administrations concerned, particulars of all assignments (totalling about 5,400) for which essential data had not yet been supplied, and indicating in detail, in each case, what particulars - usually relating to points or areas of reception required in Column 4b of the Master Record in order to permit the Board to assess the probability of harmful interference - were still missing. These Administrations replied, during the course of 1953, so that by the end of the first quarter of 1954 the I.F.R.B. was able to include about 20,000 lines of the information thus received in the Master Record.

2.2.4.4 On 1 April, 1953, the date on which the Board began to apply the interim procedure defined in Article 33 of the Agreement for the recording of "changes in frequency usage" in the Master Record (i.e., according to No. 8 of the Agreement, the bringing into use of new frequency assignments or changes in existing assignments) the Master Record contained the assignments of 73 Administrations. By 1 November, 1958, this number had grown to ninety-one. Details on the application of this procedure are given in Section VII (paragraph 7.3) of this Report.

2.2.5 As required by No. 260 of the Agreement, the I.F.R.B. keeps the Master Record up-to-date by means of a mechanical punched-card system. Detailed information regarding this system will be found in Section XI (paragraph 11.4.4) of this Report.

2.2.6 The numerous changes in frequency usage, arising from transfers of assignments into appropriate bands, implementation of E.A.R.C. Plans, development of new services and modifications to existing operations, have made it necessary to issue a new edition of the Radio Frequency Record almost every year. The Radio Frequency Record, in accordance with Article 35 of the Agreement, is kept up-to-date by regular quarterly supplements. The sixth edition of the Radio Frequency Record will be dated 31 March, 1959, and will be a reference document for the Administrative Radio Conference.

2.3 The Supplementary Information to the Radio Frequency Record

2.3.1 In accordance with No. 283 of the Agreement, the I.F.R.B. extracted from the last edition of the I.T.U. Frequency List the available information relating to the frequency assignments of those Administrations which, at the time the first publication of the Radio Frequency Record was issued, had not provided any information in accordance with No. 272 of the Agreement, either because they had not accepted the Agreement, or for other reasons. There were twenty-four such countries, including four non-Members of the Union, and the information concerned was published as "Supplementary Information to the Radio Frequency Record", and this is kept up-to-date by means of half-yearly supplements.

2.3.2 Subsequently, a number of these countries (some of them had not been represented at the E.A.R.C. but had accepted the Agreement either formally, or tacitly, by observing the provisions thereof) supplied the I.F.R.B. with the data called for in No. 272 of the Agreement. Other countries, most of whose frequency usage information was already in the Master Record, notified either isolated assignments or all the assignments of some particular service (such as high-frequency broadcasting), on the grounds that such data had previously been omitted. Now the Agreement laid down that "frequency usage information" had to be supplied to the I.F.R.B. before 1 April, 1952, a date which was long past by the time the data alluded to above were received. Moreover, it is laid down in the Agreement that I.T.U. Members and Associate Members which have not signed the Agreement may at any time accept it. But nothing is said about how assignments, notified as frequency usage information by a Member or Associate Member which accepted the Agreement after 1 April, 1952, are to be treated.

2.3.3 Ever since 1954, the Board has studied this question in the light of the following main considerations:

a) the Radio Frequency Record, embodying the contents of the Master Record, would be of greater value to Administrations if it reflected, as closely as possible, the actual use of the radio frequency spectrum;

b) if the assignments of all countries were taken into consideration when the Board, under Article 33 of the Agreement, made technical examinations relating to the probability of harmful interference, these examinations, and the consequent Findings reached by the Board, would be on a much better foundation and the possibility of setting-up interference-free communications would be considerably enhanced;

c) no procedure devised by the I.F.R.B. should adversely affect assignments already in the Master Record especially those which, as a result of technical examination, had been entered after 1 April 1953, the date on which the interim procedure defined in Article 33 of the Agreement began to be applied.

2.3.4 By the end of 1954, the Board had come to the conclusion that it would be undesirable to leave the assignments then recently notified as frequency usage information in abeyance until the next Administrative Radio Conference. On the other hand, to consider them as new assignments, and to enter them in the Master Record only if technical examinations led to favourable Findings, would be to ignore the fact that many of the assignments ha been in use for a long time; and such a procedure, the Board felt, would hardly encourage Administrations, which had not accepted the Agreement, to submit frequency usage information. Lastly, the Board considered that it might be unable, with its available resources, to make a full technical examination of all frequency usage information that might be supplied by certain non-signatory countries.

2.3.5 Hence, at the end of 1954, the Board devised a procedure by which assignments notified as frequency usage information might be included in the Master Record, while avoiding the difficulties described above. This procedure was brought to the notice of Administrations in Circular-letter No. 1599/54/1/R (26 November, 1954), and was subsequently revised, as described to Administrations in Circular-letter No. 1912/55/R (23 December, 1955).

2.3.6 The number of countries whose assignments were contained in the "Supplementary Information to the Radio Frequency Record" declined as more and more countries submitted the data called for in No. 272 of the Agreement. By 1 November, 1958, the number of such countries had been reduced to thirteen, nine of them Members of the Union which had not accepted the Agreement, and four non-Members. On that date, the total number of assignments in the Supplementary Information to the Radio Frequency Record was about 23,500.

2.3.7 The Board had long been seeking, with the Administrations of the above-mentioned nine Member-countries, a procedure acceptable to them which would enable them to submit the frequency usage information specified in No. 272 of the Agreement. In June, 1958, the joint efforts made by the Administrations concerned and the I.F.R.B. resulted in acceptance by both parties of a new procedure, further to which, since November, 1958, the Board has received frequency usage information from the Administrations of the following eleven countries: the People's Republic of Albania, the Bielorussian Soviet Socialist Republic, the People's Republic of Bulgaria, the Hungarian People's Republic, the People's Republic of Poland, the Ukrainian Soviet Socialist Republic, the Roumanian People's Republic, Czechoslovakia, the Union of Soviet Socialist Republics, the German Democratic Republic and the Mongolian People's Republic (these two last countries are not Members of the Union).

2.3.8 One of the essential characteristics of this procedure is that the date on which the Board received the assignment notices is entered in Table No. 10 of the Preface to the Radio Frequency Record with the following text :

> "The frequency usage information of the Administration of ..... was received by the I.F.R.B. on ....., and all assignments for which there were corresponding assignments each with a date in Column 12 in the 16th Edition of the I.T.U. List of Frequencies have been entered in the Master Radio Frequency Record with this date in Column 2c."

It was, of course, understood that the foregoing procedure would be applied only in respect of assignments for which the full technical particulars specified in the Appendix to the Agreement (as amplified in I.F.R.B. Opinion No. 27) were furnished. It was also the understanding that the notified frequency usage information would be in conformity with the Atlantic City Table of Frequency Allocations and that the notifying Administration would exercise the utmost goodwill in mutual collaboration with other Administrations in the solution of any problems of actual harmful interference which might arise.

2.3.9 The new procedure thus agreed upon is, the Board considers, in the interests of all Administrations, because it will afford more complete data on the global use of frequencies. This should contribute to the success of the Administrative Radio Conference, as it will enable this Conference to begin work without delay and will make it considerably easier for the Conference to study procedures for the registration of frequencies with a view to the establishment of a complete International Frequency List.

2.3.10 The Board has applied this new procedure in dealing with the frequency usage information supplied by the Administrations of the following ten countries: the People's Republic of Albania, the Bielorussian Soviet Socialist Republic, the People's Republic of Bulgaria, the Hungarian People's Republic, the People's Republic of Poland, the Roumanian People's Republic, Czechoslovakia, the Ukrainian Soviet Socialist Republic, the Union of Soviet Socialist Republics, and the Mongolian People's Republic (which is not a Member of the Union). Most of this information appears in the Sixth edition of the Radio Frequency Record. But, although a large number of the out-of-band assignments which were previously entered on behalf of the above-mentioned countries in the "Supplementary Information" have been cancelled, some 1,000 assignments not in conformity with the Table of Frequency Allocations

were included among the 23,000 or so assignments notified by these countries as frequency usage information. Since after the conclusion of the Final Adjustment Period (specified in Article 16 of the Agreement), the Board had felt unable to accept from any Administration, for inclusion in the Master Record, any assignments on out-of-band frequencies unless notified under the provisions of No. 88 of the Radio Regulations or similar provisions, assignments on frequencies in bands not allocated to the service concerned were referred back to the notifying Administration together with such comments and suggestions as the I.F.R.B. was able to formulate in respect of these assignments. However, in accordance with the treatment accorded to assignments of other Administrations, assignments which had been notified on frequencies in bands allocated to the service concerned, but having emissions which spread into non-appropriate bands, were entered in the Master Record with a special remark in Column 13 pending consideration by the notifying Administration of suggestions made by the Board, in the light of a technical examination of other assignments which might be affected, as to how the assignments might be brought into conformity with the Atlantic City Table of Frequency Allocations. As a result of these measures about 500 of the notified out-of-band assignments have been cancelled or have been modified in such a manner as to conform with the Table of Frequency Allocations. The remaining assignments, numbering about 500, a number of which were stated to be temporary, are still under study by the Board, in consultation with the Administrations concerned. A report on the out-of-band assignments of all Administrations will be presented to the Administrative Radio Conference.

2.3.11 The Board has been unable to deal with the frequency usage information submitted by the German Democratic Republic (which is not a Member of the Union) since this Administration has not yet provided the full technical data specified in the Appendix to the Agreement.

2.3.12 The new procedure has, of course, been retroactively applied to frequency usage information inserted in the Master Record, under the original procedure, on behalf of all the Administrations which supplied this information after the Interim Procedure was brought into use.

2.4 <u>Technical examinations of frequency assignment notices in frequency bands below 27,500 kc/s with a view to their inclusion in the Master Radio Frequency Record</u>

2.4.1 Under the directives given to it by the E.A.R.C., the I.F.R.B. in applying the provisions of No. 329 of Article 11 of the Regulations and of Nos. 235 and 236 of Article 33 of the Agreement, was charged to examine notices of new assignments, or amendments to existing assignments, with regard to the probability of harmful interference being caused to assignments which were already recorded in the Master Record in frequency bands below 27,500 kc/s.

2.4.2 The first step in such a technical examination is to select, from a survey of the assignments recorded in the Master Record, those assignments on the same frequency or on adjacent frequencies to that of the new (or amended) assignment which are liable to be affected by its operations, and to extract the particulars of the assignments so selected. After this has been done, it is necessary to calculate, at the notified receiving point of each of these existing assignments, the field strength of the signal received from the transmitting station of the existing service and also to calculate, at the same receiving points, the field strength of the "interfering" signal received from the transmitting station of the new (or amended) assignment. As the relative strength of these signals normally varies according to the time of day or night and according to seasons and phases of solar activity, it is necessary to take into account a) the probable variation of the strength of the signal of the existing service which might be affected after making any necessary adjustments for the radiated power and the gain of any directional transmitting aerial which may be employed, and b) the likely variation of the strength of the interfering signal from the new (or amended) assignment, after making any necessary adjustments for the radiated power and the effect of any directional transmitting aerial which may be used, and for the discrimination against interference which may result from the selectivity of the receiver and the directional characteristics of the receiving aerial used by the existing service. The Board also takes account of the probability that signals would be propagated on account of reflection on the ionosphere over the various paths involved, and of the signal/noise ratios attained at all relevant times.

2.4.3 The application of these processes allows the Board to estimate the periods during which it is probable that the new (or amended) assignment could work without causing harmful interference and the periods, which may be limited to only a few hours per day or during certain seasons, when harmful interference would seem likely to occur. Where harmful interference seems probable during prolonged periods, the Board makes an unfavourable Finding and the notice is returned to the notifying Administration. Where the probability of harmful interference does not appear to exist, or if it exists, does not appear to be great or is likely to occur only during short periods, the Board makes a favourable or qualified favourable Finding as appropriate and enters the new assignment (or the amendment of the existing assignment) in the Master Record.

2.4.4 In making the calculations referred to in the preceding paragraph the Board applies a series of Technical Standards which it has established and which are dealt with in Section IX of this Report. It will suffice to say, at this juncture, that these Standards embrace :

a) the signal/interference protection ratios required for the various types of transmission;

b) the minimum field strengths to be protected for the various types of transmission, according to the geographical location of the receiving station;

c) the discrimination afforded by the receivers used in the various types of service;

d) the average gain of antennae at various angles from the direction of the main lobe;

e) an extensive series of propagation curves and tables for various distances for various frequencies in the range from 10 kc/s - 27.5 Mc/s, including MUF/LUF curves.

2.4.5 It has to be observed that the consideration of a single frequency assignment notice may call for the detailed technical examination of an average of five or six assignments recorded on the particular frequency concerned or on neighbouring frequencies. Hence, for a Finding reached with respect to a specific frequency assignment notice, about five technical examinations have usually to be made.

2.4.6 A full description of the manner in which the technical examinations are carried out is given in the "Rules of Procedure of the I.F.R.B." which were circulated to Administrations under cover of Circular-letter No. 2662/59/R of 10 February, 1959. Section I of these Rules embraces technical examinations carried out under the provisions of Article 11 of the Radio Regulations, while Section II covers technical examinations made under the provisions of Article 33 of the E.A.R.C. Agreement. These Rules were developed in order to ensure uniform treatment of the notices of all Administrations and have been expanded, and in some cases, modified, as the Board gained experience in its technical examination work. Reference to particular aspects of these Rules is made in subsequent Sections of this report.

A P P E N D I X

Relevant provisions of the Radio Regulations

Article 10, Nos. 285 and 288

Article 11

Article 20, Nos. 447, 448 and 470

Appendix 6, List I

Relevant provisions of the E.A.R.C. Agreement

Article 1, No. 8

Article 31, No. 205

Article 32

Article 33

Article 34

Article 35

Article 36

Article 37, No. 288

REPORT

by the

INTERNATIONAL FREQUENCY REGISTRATION BOARD (I. F. R. B.)

to the

ADMINISTRATIVE RADIO CONFERENCE

(Geneva, 1959)

SECTION III

Frequency bands between 14 kc/s and 3950 kc/s (4000 kc/s Region 2)
(with the exception of the exclusive aeronautical mobile bands between
2850 kc/s - 3155 kc/s, 3400 kc/s - 3500 kc/s and,
in Region 1, 3900 kc/s - 3950 kc/s)

REPORT

by the

International Frequency Registration Board (I.F.R.B.)

to the

Administrative Radio Conference

(Geneva, 1959)

Section		Title
I	-	Introduction
II	-	Compilation and maintenance of the Master Radio Frequency Record
III	-	Frequency bands between 14 kc/s and 3950 kc/s (4000 kc/s Region 2) (with the exception of the exclusive aeronautical mobile bands between 2850 kc/s - 3155 kc/s, 3400 kc/s - 3500 kc/s and, in Region 1, 3900 kc/s - 3950 kc/s)
IV	-	Frequency bands allocated exclusively to the Aeronautical Mobile Service between 2850 kc/s and 27,500 kc/s
V	-	Frequency bands allocated exclusively to the Maritime Mobile Service between 4000 kc/s and 27,500 kc/s
VI	-	Frequency bands allocated exclusively to the High Frequency Broadcasting Service between 3950 kc/s (4000 kc/s Region 2) and 27,500 kc/s
VII	-	Frequency bands allocated to the Fixed, Land Mobile, Tropical Broadcasting and Standard Frequency Services between 3950 kc/s (4000 kc/s Region 2) and 27,500 kc/s
VIII	-	Frequency bands above 27.5 Mc/s
IX	-	Technical Standards
X	-	International Monitoring
XI	-	The organization of the International Frequency Registration Board and of its Specialized Secretariat

The present booklet contains Section III

SECTION III

TABLE OF CONTENTS

(continued)

SECTION III

TABLE OF CONTENTS (continued)

R E P O R T

by the

International Frequency Registration Board (I.F.R.B.)

to the

Administrative Radio Conference

(Geneva, 1959)

SECTION III

FREQUENCY BANDS BETWEEN 14 kc/s AND 3,950 kc/s (4,000 kc/s REGION 2)

(WITH THE EXCEPTION OF THE EXCLUSIVE AERONAUTICAL MOBILE BANDS BETWEEN 2,850 kc/s - 3,155 kc/s, 3,400 kc/s - 3,500 kc/s AND, IN REGION 1, 3,900 kc/s - 3,950 kc/s)

3.1 The relevant regulatory provisions

A list of the relevant provisions of the Radio Regulations (hereinafter called "the Regulations") of the Extraordinary Administrative Radio Conference (E.A.R.C.) Agreement (hereinafter called "the Agreement") and of relevant Regional Agreements is appended.

3.2 Frequency bands

Of the frequency bands below 3,950 kc/s (4,000 kc/s Region 2) the bands 10-70 kc/s, 90-110 kc/s, 325-405 kc/s, 415-510 kc/s, 535-1,605 kc/s and 2,850-3,500 kc/s are allocated, under the Atlantic City Table of Frequency Allocations, on a world-wide basis. The remaining bands are allocated on a Regional basis.

3.3 International Frequency List

3.3.1 The Extraordinary Administrative Radio Conference (E.A.R.C.), Geneva, 1951, adopted the New International Frequency List for the bands concerned between 14 kc/s and 3,950 kc/s (4,000 kc/s Region 2). The specific assignments to the stations were contained in the Annexes 1, 2, 3 and 4 of the E.A.R.C. Agreement. The List was put into force according to the Regions and frequency bands, in conformity with a programme established by this Agreement in Chapter VI.

3.3.2 In accordance with Nos. 262, 277 and 278 of the Agreement, the assignments in the New International Frequency List for the bands concerned between 14 kc/s and 3,950 kc/s (4,000 kc/s Region 2) were entered as initial entries in the Master Radio Frequency Record with the date of 3 December 1951 inserted in Column 2a with the following exceptions:

a) assignments indicated as "notifications" in the List in which case the date of 4 December 1951 was inserted in Column 2b;

b) assignments in the bands 3,155-3,400 kc/s and 3,500-3,900 kc/s in Region 1 in which case the date of 3 December 1951 was inserted in Column 2b;

c) assignments in the band 535-1,605 kc/s in Region 2, for which no date was inserted in either Column 2a or 2b.

In each case, the date entered in Column 2c was the date notified by Administrations for putting the assignments into service.

3.3.3 The following Table shows, in summary, the dates of the bringing into force of the different parts of the New International Frequency List, as well as the corresponding parts of the Atlantic City Table of Frequenc Allocations. It also shows the dates on which the provisions of Article __ of the Regulations concerning the Notification and Registration procedure were brought into force for those bands.

T A B L E

Region	Frequency Bands kc/s	Date of bringing into force		
		Article 11 of Radio Regulations	Table of Frequency Allocations Atlantic City	New International Frequency List
World-wide	14- 55	15 Aug.1952	15 Aug.1952	15 Aug. 1952
1	55- 150	15 Aug.1953	15 Aug.1953	15 Aug. 1953
2 and 3	55- 150	15 Aug.1953	15 Aug.1953	15 Aug. 1952
1 (African Area)	150- 285	1 Jul.1952	1 Jul.1952	1 Jul. 1952
	285- 315	1 Jan.1953	1 Jan.1953	1 Jan. 1953
	315- 405	1 Jul.1952	1 Jul.1952	1 Jul. 1952
	405- 525	1 May 1952	1 May 1952	1 May 1952
	525-1605	1 Aug.1952	1 Aug.1952	1 Aug. 1952

./.

Region	Frequency Bands kc/s	Date of bringing into force		
		Article 11 of Radio Regulations	Table of Frequency Allocations Atlantic City	New International Frequency List
/.				
1 (excepting African Area)	150- 255	1 Aug.1952	15 Mar.1950	15 Mar. 1950
	255- 285	1 Jul.1952	1 Jul.1952	1 Jul. 1952*
	285- 320	1 Aug.1953	1 Aug.1953	1 Aug. 1953*
	320- 415	1 Jul.1952	1 Jul.1952	1 Jul. 1952*
	415-1605	1 Aug.1952	15 Mar.1950	15 Mar. 1950
1	1605-2850 (excepting ships)	1 Nov.1953	1 May 1953	1 May 1953
	1605-2850 (ships)	1 Nov.1953	1 Nov.1953	1 Nov. 1953
	2850-3900	(Article 33, Sect. II,EARC)	To be determined by an Adm. Radio Conference	To be determined by an Adm. Radio Conference
2	150- 200	1 Dec.1952	1 Dec.1952	1 Dec. 1952
	200- 535	1 Nov.1952	1 Nov.1952	1 Nov. 1952
	535-1605	(Article 33, Sect. II,EARC)	1 Dec.1952	1 Dec. 1952**
	1605-2000	1 Jan.1952	1 Jan.1952	1 Jan. 1952
	2000-2850	(Article 33, Sect. II,EARC)	Special Agreement	Special Agreement
	2850-4000	(Article 33, Sect. II,EARC)	To be determined by an Adm. Radio Conference	To be determined by an Adm. Radio Conference
3	150- 200	1 Feb.1953	1 Feb.1953	1 Feb. 1953
	200- 415	4 Jan.1953	4 Jan.1953	4 Jan. 1953
	415-1605	1 Feb.1953	1 Feb.1953	1 Feb. 1953
	1605-2850 (excepting ships)	30 Apr.1953	1 Feb.1953	1 Feb. 1953
	1605-2850 (ships)	30 Apr.1953	30 Apr.1953	30 Apr. 1953
	2850-3950	(Article 33, Sect. II,EARC)	To be determined by an Adm. Radio Conference	To be determined by an Adm. Radio Conference

* Some assignments were put into force on 15 March 1950. See E.A.R.C. No. 178.1

** Only for information. See E.A.R.C. No. 58.

3.4 Procedures for the notification, registration and recording of frequency assignments

A. Frequency bands where the provisions of Article 11 of the Regulations are in full force

3.4.1 Section II of this Report gives details on the compilation of the original Master Radio Frequency Record. It suffices to recall here that the assignments contained in the New International Frequency List adopted by the E.A.R.C. for the bands 14-2,850 kc/s in Regions 1 and 3, and for the bands 14-535 kc/s and 1,605-2000kc/s in Region 2 were entered by the I.F.R.B. as initial data in the Master Record in conformity with Section II of Article 34 of the Agreement. The assignments contained in the Plans annexed to the European Broadcasting Convention (Copenhagen, 1948) and to the European Regional Convention for Maritime Mobile Service (Copenhagen, 1948) were also incorporated in the Master Record.

3.4.2 The operations in these bands, from the dates on which they came into force (see the preceding Table) were to be in accordance with the specific assignments to the stations contained in the New International Frequency List. From these dates, the I.F.R.B. applied, in respect to the bands concerned, in conformity with No. 206 of the Agreement, the relevant provisions of Article 11 of the Regulations, for the examination and recording of frequency assignments, notified by Administrations, which are additional to or amendments of those contained in the New International Frequency List.

3.4.3 When a notice of a new assignment or an amendment to an assignment existing in the Master Record is notified by an Administration, the Board examines each notice from the point of view of its completeness (RR 318), its conformity with the Table of Frequency Allocations (RR 327), its conformity with the other provisions of the Convention and of the Regulations (RR 328) and with the purpose of determining the probability of harmful interference to other assignments already recorded in the Master Record (RR 329). The Finding of the Board (RR 334-339) establishes wheth the new assignment, or the amendment, should be recorded in the Master Record in order to obtain official international recognition.

3.4.3.1 The number of assignments in the bands concerned appearing in the Lists adopted by the E.A.R.C. and entered into the Master Record as initial basic entries was 19,298.

3.4.3.2 Up to 1 July, 1959:

a) 14,600 notices of new assignments or amendments to existing assignments have been examined in accordance with the procedure specified in Article 11 of the Regulations;

b) 990 notices, resubmitted under RR 337 or RR 338, have been examined;

c) 2,162 objections or comments in accordance with Nos. 323 to 325 of the Regulations have been received from Administrations;

d) 156 cases of Studies and Recommendations have been treated by the Board in accordance with Nos. 352-359 of the Radio Regulations;

e) 4,761 entries remain in these bands from initial entries which have not been notified as having been put into service (see No. 270 of the Agreement) and approximately the same number, which includes the majority of these entries, have not been completed as required by No. 269.

B. Frequency bands where the provisions of Article 11 of the Regulations are not yet in full force

3.4.4 The assignments contained in the New International Frequency List adopted by the E.A.R.C. for the bands 3,155 kc/s-3,400 kc/s and 3,500 kc/s-3,900 kc/s in Region 1, 535 kc/s-1,605 kc/s, 2,000 kc/s-2,850 kc/s, 3,155 kc/s-3,400 kc/s and 3,500 kc/s-4,000 kc/s in Region 2, and 3,155 kc/s-3,400 kc/s and 3,500 kc/s-3,950 kc/s in Region 3 were entered by the I.F.R.B. as initial data in the Master Record in conformity with Section II of Article 34 of the Agreement.

3.4.5 The transfer of operations to these bands in accordance with the specific assignments to the stations contained in the New International Frequency List adopted by the E.A.R.C. for these bands commenced in Region 1 on 1 May 1952, and in Region 3 on 1 February 1953, in accordance with Nos. 181 and 191 of the Agreement. For Region 2, the assignments for the band 535 kc/s-1,605 kc/s were included in the List for information only, while for the bands concerned between 2,000 kc/s and 4,000 kc/s the transfer of the operations in accordance with the specific assignments were to form part of the generally coordinated programme laid down for other bands in the Agreement.

3.4.6 From the date of the coming into force of the Agreement, the I.F.R.B. applied in the bands concerned the relevant provisions of Section II of Article 33 of the Agreement with respect to the examination and

recording of notices of frequency assignments notified by Administrations, which were additional to, or amendments of, those contained in the New International Frequency List.

3.4.7 When the notice of a new assignment or an amendment to an existing assignment is notified by an Administration, the Board examines each notice from the point of view of its completeness; no examination to determine its conformity with the Table of Frequency Allocations and the other provisions of the Convention and of the Regulations is required.

3.4.7.1 In the case of a new assignment, no technical examination to determine the probability of harmful interference to other assignments is required, and the notice is recorded in the Master Record with the date of receipt of the notice by the I.F.R.B. in the Notification Column (Column 2b). For the band 535 kc/s-1,605 kc/s in Region 2 the notice is recorded with no date in Columns 2a or 2b.

3.4.7.2 In the case of an amendment to an existing assignment, when the amendment does not increase the probability of interference to other assignments, the amendment is incorporated in the original entry with no change in the dates of Columns 2a, 2b or 2c. When the amendment increases the probability of interference to other assignments, the assignment so amended is entered in the Master Record as a separate entry with the date of receipt of the amendment by the Board in the Notification Column (Column 2b), and the date appearing in Column 2c of the original entry is transferred to the Column 2c of the second entry; this action is also taken in cases where the original characteristics are amended in a manner likely to cause a reduction in the probability of harmful interference to other assignments, since the New International Frequency List is not yet in force for these bands and, in each case, the Administration concerned has the right to operate the assignment according to the particulars appearing in the List at the time of its entry into force.

3.4.8 The number of assignments appearing in the International Frequency List and which constituted the initial entries in the Master Record for these bands was 20,350.

3.4.8.1 Up to 1 July, 1959:

a) 20,950 notices of new assignments or amendments to existing assignments have been examined in accordance with the procedure specified in Section II of Article 33 of the Agreement;

b) 3,692 entries remain in these bands from initial entries which have not been notified as put into service in accordance with No. 270 of the Agreement and approximately the same number, which includes the majority of these entries, have not been completed as required by No. 269.

3.5 Application of the notification and registration procedure defined in Article 11 of the Regulations

3.5.1 At the beginning of 1952, the Board established the necessary organization for the treatment of notices of frequency assignments notified by Administrations. The particulars of the assignments in the New International Frequency List for the bands concerned were entered on punched cards, as have been the notices of new, and amended, assignments which have since been recorded pursuant to the Article 11 procedure; and the use of this system enables the Board to have at any time an up-to-date tabulated list of the assignments already recorded in this part of the spectrum (see Section II of this Report).

3.5.2 In accordance with No. 322 of the Regulations, which provides that "the Board shall circulate by air mail in the form of a circular addressed to all countries, Members of the Union, certified copies of all notices received by it", the Board began in 1952 to send weekly Circulars to all Administrations. From this time on, the weekly I.F.R.B. Circulars have been published and sent to Administrations every Tuesday without interruption. At the beginning, these Circulars were composed only of two parts: the first was a copy of the notices received by the Board for the bands where Article 11 of the Regulations was in full force, and the second part contained the Findings of the Board with respect to the notices which appeared in the first part of the preceding circulars. Later, other parts were introduced which covered the Findings of the Board with respect to frequency assignment notices for other bands. In this way, the Administrations began to receive weekly up-to-date information of the changes that were to be introduced in the operation of these bands as compared with those contained in the New International Frequency List.

3.5.3 The Board has followed fully the steps in the procedure provided in Article 11 of the Regulations (see paragraph 3.4.3) and has not found any major difficulties such as would warrant a profound change in the procedure itself. In paragraph 3.7, however, some questions are discussed which may be considered during the review of this procedure.

3.5.4 Due to the complexity of the details of its application, and in order to respect the dates which must be observed between the receipt of notices and the final action to be taken, the Board has considered it necessary to prepare rules, as a guide to ensure uniformity of treatment of the notices received from all Administrations and as an instruction to the staff of its Specialised Secretariat (see Section II of this Report). Section I of the current Rules of Procedure of the I.F.R.B. deals with the application of the procedure of Article 11. Copies of these Rules of Procedure were sent to Administrations for information under cover of Circular-letter No. 2662/59/R dated 10 February 1959.

3.5.5 Section I of these Rules of Procedure contains a detailed explanation of the various steps in the examination of the notices, in particular with respect to technical examinations required, under No. 329 of the Regulations, concerning the assessment of the probability of harmful interference to other assignments previously entered in the Master Record.

3.5.6 The technical examinations have required determination of and preparation by the I.F.R.B. of Technical Standards, concerning which a number of details are given in Section IX of the present Report.

3.5.7 It will be of interest to note that the number of Findings formulated by the Board for the bands in which Article 11 of the Regulations is in full force, up to 1 July, 1959, reached 15,590, which can be classified as follows:

11,983 favourable Findings

2,617 unfavourable Findings

990 Findings in respect of notices re-submitted in accordance with Nos. 337 and 338 of the Regulations.

3.6 Problems of harmful interference brought to the attention of the I.F.R.B.

Since 1953, some 47 cases of harmful interference in the bands concerned have been brought to the Board's attention; either for its information, or in accordance with No. 391 of the Regulations. In the latter cases, the Board has frequently been able to make suggestions to the Administration concerned, usually for frequency readjustments, sufficient to improve the situation.

It is to be noted that in each case of actual harmful interference brought to the attention of the Board, facts have supported the conclusion derived by the Board from the application of its Technical Standards in studying the case, i.e. that probabilities of harmful interference existed.

3.7 Questions related to the application of the notification, registration and recording procedures for the bands concerned below 3950 kc/s (4000 kc/s in Region 2)

3.7.1 Putting into service of the assignments appearing in the New International Frequency List and completion data for the assignments concerned

3.7.1.1 At the end of 1955, the I.F.R.B. undertook an analysis of the assignments contained in the New International Frequency List and which had been notified to the I.F.R.B. by the Administrations concerned, as having been taken into use. This analysis showed that in the bands for which Article 11 of the Regulations is in full force, only 50% of the assignments in the adopted List had been put into service. For the other bands concerned, only about 30% of the assignments in the adopted List had been put into operation.

3.7.1.2 In the majority of cases, the assignments for which the dates of putting into service had not yet been notified were also those which were incomplete in their basic data as referred to in Section II. The difficulty caused by this situation when attempting to conduct technical examinations in respect of new notices will be clearly evident.

3.7.1.3 In June 1956, the I.F.R.B. extracted from the Master Record and sent to each Administration complete lists (called Lists A and B) of all assignments recorded on its behalf in the bands in question, with the request that they be carefully scrutinized and

a) that any assignments which the Administrations concerned did not propose taking into use, should be cancelled;

b) that the necessary amendments should be notified in respect of any assignments which were no longer operating in accordance with the recorded particulars;

c) that the technical data, required under No. 269 of the Agreement in order to complete the particulars of the frequency assignments and which had not yet been furnished, should be supplied.

3.7.1.4 By the end of 1956, about 80% of the Administrations had returned the Lists A and B amended and completed, and, in the majority of cases, in the manner required. There was a sharp increase in the

number of assignments which were notified as having been taken into use for these bands during 1956. This increase, no doubt, largely resulted from the despatch of the Lists A and B to each Administration, which reminded them not only of the frequencies available to them for their services, but also of their omission to notify to the I.F.R.B., at the appropriate time, of the taking into use of their assignments. Even so, the full technical particulars of some of the assignments have not yet been supplied by the Administrations concerned; this is also true in some cases, even where the assignment has been notified as having been put into service.

3.7.1.5 Since 1956, the total number of assignments notified as taken into use, in conformity with the New International Frequency List, has continued to increase. A complete analysis of the assignments recorded in the Master Record on various dates, the last being on 1 July, 1959, gave the following results:

BANDS kc/s	Region	Number of assignments appearing in the New International Frequency List adopted by the E.A.R.C.	Assignments appearing in the List and notified as having been put into service									
			31 December 1954		31 December 1955		31 December 1956		31 December 1957		1 July 1959	
			No.	%	No.	%	No.	%	No.	%	No.	%
14-150	1,2,3	975	520	53	545	56	680	70	685	70	696	71
150-2850	1	6115	3116	51	3174	52	4445	71	4455	73	5595	91
150-2000*	2	6131	2590	42	2592	42	3955	64	3982	65	3986	65
150-2850	3	6077	2339	39	2506	41	4085	67	4254	70	4260	70
Total		19298	8565	44	8817	46	13165	68	13376	69.5	14537	75
3155-3900**	1	4269	1316	31	1380	32	2535	59	2553	59	3697	86
2000-4000**	2	11914	4695	39	4822	40	7965	67	9090	76	9600	80
3155-3950**	3	4167	341	8	402	10	3275	78	3351	80	3361	80
Total		20350	6352	31	6604	32	13775	68	14994	72	16658	82
Grand Total		39648	14917	37.5	15421	39	26940	68	28370	71.5	31195	78.5

*) Excepting the exclusive broadcasting bands

**) Excepting the exclusive aeronautical mobile bands

Note : For the band 535-1605 kc/s in Region 2, the 3360 assignments in the List were shown "For Information".

3.7.2 Dates in Columns 2a and 2b of the Master Record (Nos.310 and 311 of the Regulations)

3.7.2.1 The significance of the dates entered in Column 2a for the assignments recorded in the Master Record is defined in Nos. 310 and 311 of the Regulations. The procedure of Article 11 of the Regulations with respect to a notice and the action taken as a result of the I.F.R.B. Finding, relates to the Board's examination to determine the probability of harmful interference that a new assignment, or an amendment to an existing assignment, may cause to an assignment already recorded in the Master Record. There is no question of examination by the I.F.R.B. of the probability of harmful interference that a new or amended assignment may receive from an already recorded assignment in the Master Record; this aspect concerns the Administrations themselves, and they will, naturally, choose the frequencies in such a way that the operations of their stations are not interfered by other stations already recorded in the Master Record. As a consequence, it would seem that No. 311 of the Regulations was intended to imply that "such a frequency assignment shall have the right to international protection from harmful interference caused by an assignment recorded in the Master Record at a later date". It is in this way that the Board has interpreted this provision.

3.7.2.2 In conformity with No. 346 of the Regulations, if the Board should arrive at the conclusion that a change of the basic data of an assignment which by virtue of the change does not cause harmful interference with the service of a station for which a frequency assignment has been recorded, the amended assignment retains the original date of registration. Thus it would appear that the Atlantic City Conference had sought to relate the date of recording such an assignment in the Master Record with the probability of interference caused by the assignment.

3.7.2.3 The question of the probability of interference caused to such an assignment, as amended, by assignments already recorded in the Master Record is, as has been explained above, of exclusive concern to the interested Administration. It is to be noted, however, that while an amendment to a frequency assignment may not increase the probability of interference to other assignments, it may thereby become more vulnerable to interference caused by other assignments. Such may arise from a reduction of power, the use of an emission with a wider bandwidth, the change of the class of emission by another requiring a higher protection ratio, the change of the class of station, the change of the frequency, etc.. In these circumstances, it would not seem to be in conformity with the spirit of Article 11 of the Regulations if an Administration in such a case, and because of the fact that the date entered in Column 2a or 2b has been maintained, could claim international protection in favour of its amended assignment against assignments already recorded in the

Master Record at the date when the assignment was amended. From these considerations it seems necessary to provide for an extra date in the Master Record, which would be related to the probability of interference caused to the assignments concerned. The Board has provisionally adopted a procedure which provides for the insertion of Remarks (161 or 224) in Column 13 of the Master Record for the assignments so amended, followed by the date of receipt by the Board, of the amendment concerned.

3.7.2.4 Reference to this extra date also becomes necessary when a notice, after being returned to the interested Administration, as a consequence of an unfavourable Finding of the Board with respect to No. 329 of the Regulations, is resubmitted to the Board to be recorded under the provisions of No. 338 of the Regulations, that is to say, with the date of receipt by the Board of the first notice, recorded in Column 2b. In the meantime, other assignments may have been recorded in the Master Record without being examined with respect to the assignment in question, since during that time this assignment had not been included in the Master Record. A difficult situation could arise in such cases with assignments of this kind and further when the provisions of No. 344 of the Regulations are taken into account. The Board has provisionally adopted a procedure which provides for insertion of a symbol (X) in Column 13 of the Master Record for the assignments recorded under No. 338 of the Regulations, followed by the date of receipt by the Board, of the re-submitted notice.

3.7.2.5 The points mentioned in the preceding paragraph for the bands where Article 11 of the Regulations is in full force, have presented similar problems in the other bands where the Interim Procedure, as detailed in Section III of Article 33 of the Agreement, is in force, and for which the Board has adopted several Remarks (209,210,211, 232 etc.)to be recorded, in appropriate cases, in Column 13 of the Master Record.

3.7.2.6 It seems, therefore, that the Conference may wish to consider whether a solution may be found in providing in the Master Record for an extra date to be inserted, which should be related to the effective date by which the assignment in question begins to enjoy official international recognition based on the technical examination made by the I.F.R.B., i.e. the date of receipt by the Board of the notice in a form qualifying for its recording in the Master Record.

3.7.3 Notification of frequency assignments by Administrations (Nos. 314 to 320 of the Regulations)

3.7.3.1 The I.F.R.B. receives many notices which do not convey clearly the wishes of the notifying Administration as to whether it should be considered as falling in any one of the following categories:

a) a completely new assignment (whether or not there exists in the Master Record another assignment of the same Administration on the frequency concerned);

b) an amendment to an assignment existing in the Master Record:

(i) adding any particulars to the existing assignment, including points of reception;

(ii) changing or replacing any of the particulars of the existing assignment.

No. 314 of the Regulations might usefully be expanded to require that where the notice refers to an amendment (change or addition of particulars) to an assignment already recorded in the Master Record, it should indicate the whole assignment as it should appear after the amendment has been entered in the Master Record, and show between parenthesis all data which is obsolete and may consequently be deleted from the Master Record.

3.7.3.2 Each frequency assignment notice sent to the Board should contain the information specified in No. 318 of the Regulations, in order to permit the application of the procedure specified in Article 11. The preliminary telegraphic notice, as mentioned in No. 319 of the Regulations, has not been extensively used by Administrations and in the few cases, in which this practice was followed in the early stages, has shown no practical value. The fact is that the Board cannot proceed with the treatment of the notice until all basic technical data required have been supplied. Further, and in view of No. 320 of the Regulations, a telegraphic notice containing only the data as called for in No. 319, obliges the Board to hold up for a period up to thirty days all complete notices of other Administrations, received after this telegraphic notice, which have a technical bearing on this telegraphic notice.

3.7.3.3 It would seem therefore that No. 318 of the Regulations could with advantage be redrafted to require in every case a complete notice, and that No. 319 could be cancelled. In addition, No. 320 of the Regulations should be redrafted so that the date which shall establish the order for consideration of the notice shall be the date of the first receipt by the Board of the complete notice. No. 320.1 would then be superfluous.

3.7.3.4 It would seem to be advantageous also to transfer to an Appendix to the Regulations the list of essential technical data which appears at present in No. 318.

3.7.4 Receipt and acknowledgement of a notice (Nos. 321 and 322 of the Regulations)

The immediate and individual acknowledgement of each notice, as provided for in No. 321 of the Regulations, soon proved to be impracticable and a duplication of the weekly publication in the I.F.R.B. Circular of a certified copy of each notice received (RR 322). The Board solicited and received the agreement of Administrations to accept as the official acknowledgement of receipt, mention, in Column 13 of the Circular against each entry, of the symbol "R" followed by the date of receipt of the notice concerned.

No. 321 might, therefore, be amended to read as follows:

"Upon receipt of a complete notice, the Board shall record its receipt; the date of receipt of each notice shall be acknowledged to the notifying country by publication in the weekly I.F.R.B. Circular".

3.7.5 Objections and comments by Administrations with regard to notices (Nos. 323 to 325 of the Regulations)

The technical examination of a notice and the consequent Finding by the Board are essentially based on the I.F.R.B. Technical Standards, which are uniformly applied to the notices of all Administrations, ensuring the protection of the interests of all countries concerned. The present procedure for objections and comments (RR 323-325) which is complemented by provisions for review of Findings according to RR 340-345 increases by four weeks, the time before Findings may formally be adopted.

3.7.6 Conformity of frequency assignment notices with the Table and rules for allocation of frequencies (No. 327 of the Regulations) and conformity with other provisions of the Convention and the Regulations (No. 328)

3.7.6.1 The I.F.R.B. is required by No. 326 to examine each notice with respect to Nos. 327, 328 and 329 and, in accordance with Section IV (Nos. 333 - 339) of the Regulations, to take recording action or to return the notices to the notifying country.

3.7.6.2 Where the Finding is favourable with respect to Nos. 328 and 329 but unfavourable with respect to No. 327, the Regulations prescribe the recording of the frequency assignment with the date of receipt of the notice by the Board shown in the Notification Column (2b) but upon the express condition that the station, upon receipt of advice that harmful interference is caused, must immediately suspend operations (No. 339). If

the Finding is unfavourable with respect to No. 328, however, the notice shall be returned immediately by airmail to the notifying country (No. 335); and no provision is made in the Regulations for re-submission to the I.F.R.B. and recording of such a notice in its original form. In view of the comments by some Administrations in this respect, No. 335 of the Regulations might usefully be expanded to clarify the intention.

3.7.6.3 In applying these provisions, the I.F.R.B. first differentiated between rules pertaining to frequency allocation and those to be considered as pertaining to "other provisions of the Convention and the Radio Regulations"; in other words, those rules which may lead to the recording of the frequency assignment with the condition prescribed in No. 339 and those which could lead only to the return of the notice to the notifying country with no possibility of recording in the Master Record. The Board found that among the footnotes to the Table of Frequency Allocations were some which could clearly be considered as pertaining to frequency allocation while others referred to other matters; for instance, they expressly forbid or exclude from specific parts of the spectrum certain types of operation or provide for exclusivity of a specific type of operation. For example, No. 113, by which the bands 112-115 kc/s and 126-129 kc/s in Region 1, Australia and New Zealand, are reserved for the exclusive use of continuous wave systems of radionavigation. In these latter cases, notwithstanding that the provisions were footnotes to the Table of Frequency Allocations, if a notice for the service concerned did not conform to the particular provisions, the I.F.R.B. considered it as unfavourable with respect to No. 328. Likewise, among the provisions other than those of the Table of Frequency Allocations, the same two categories of rules were found. For example in No. 40 of the Agreement certain provisions apply to specific limitations in the type of emission which may be used and others are a sub-division of the allocation in the bands concerned within the Maritime Mobile Service; while the former would correctly be considered under No. 328 the latter must be considered under No. 327.

3.7.6.4 All notices returned to Administrations under No. 335 as unfavourable with respect to No. 328 have been accompanied by a suggestion by the I.F.R.B. as to how the operation might be modified so as to be in conformity with the particular "other provision". It is significant to note that the Board's interpretation of the various provisions and their

application under No. 328 have been accepted by Administrations and in almost every case the country has re-notified according to the Board's suggestion and a favourable Finding and recording have resulted.

3.7.6.5 In this connection, however, the Conference will no doubt wish to give special consideration to the case of the general calling frequency 333 kc/s for aircraft stations in Regions 1 and 3. Nos. 130, 241 and 803 of the Regulations are considered by the I.F.R.B. to constitute grounds for treatment of a notice under No. 328. However, some countries informed the Board that, in Regions 1 and 3, the frequency 333 kc/s was no longer being used for the purpose specified in the Regulations. Furthermore, the I.F.R.B. received confirmation from the International Civil Aviation Organization (I.C.A.O.) that among its Member States, in general, aircraft were no longer carrying the equipment required. The Aeronautical Radionavigation Service has "priority" in the band 325-405 kc/s except in New Zealand and except, in Region 1, the frequencies and bands referred to in No. 37 of the Agreement (which concern the general calling frequency 333 kc/s, the supplementary frequencies 348 kc/s and 399 kc/s, and the bands used by aeronautical stations keeping watch on these frequencies). No doubt because of this fact and the fact that the general calling frequency 333 kc/s was no longer being used, some Administrations wished to use the band 325-345 kc/s, which is the subject of No. 241 of the Regulations, and within this band the guard band 331-335 kc/s, for aeronautical radionavigation services.

3.7.6.6 The Findings of the I.F.R.B. in respect of notices for these services within the guard band were unfavourable with respect to No. 328. The application of the provision could thus result in little effective use being made of the frequency spectrum between 331-335 kc/s until a Conference could reconsider the restrictive provision. Therefore, although the Board could not waive the provision, it considered that, in the circumstances, the provision should not be applied if its examination of a notice for a station in the Aeronautical Radionavigation Service showed that harmful interference could not occur outside the boundaries of the territory under the jurisdiction of the notifying Administration. In all such cases, however, the symbol RR 241 was included in Column 13 of the Master Record. Cases which had received unfavourable Findings with respect to No. 328, were reviewed by the I.F.R.B. and new Findings adopted to cancel and replace the Findings previously given.

3.7.7 Waiving of technical examination of notices from parties to agreements, in accordance with No. 332 of the Regulations.

While the Board has been informed or made aware of major Regional and Service agreements, it has not always been informed of bilateral or multilateral agreements or of action taken by Administrations for coordinating the use of specific frequencies or bands of frequencies. It would be useful to expand No. 332 of the Regulations to provide for all such arrangements being formally notified to the I.F.R.B. and that, at the time of notification of individual assignments concerned, each notice should include a reference to the particular agreement. Thus, in all such cases, the Board would not consider the question of probabilities of harmful interference among the parties to such agreements.

3.7.8 Re-submitted notices (Nos. 336 to 338 of the Regulations).

Notices re-submitted to the I.F.R.B., following return in conformity with No. 336 of the Regulations, fall into four categories, as follows:

a) Notices re-submitted without modification;

b) Notices re-submitted with modification, which results after re-examination in a favourable Finding;

c) Notices re-submitted with modification, which decreases the probability of harmful interference, but not sufficiently to result after re-examination, in a favourable Finding;

d) Notices re-submitted with modification, which increases the probability of harmful interference.

3.7.8.1 With respect to a), No. 338 applies and no comment is offered. (See also paragraphs 3.7.2.4 and 3.7.2.6 of the present Report concerning the date to be shown in the Master Record).

3.7.8.2 With respect to b), it appears desirable to specify in No. 337 that the modification should be such as to decrease the probability of harmful interference.

3.7.8.3 With respect to c), it is considered that a new paragraph is required along the following lines:

"337 bis. If the notifying country re-submits the notice with a modification which decreases the probability of harmful interference, but not sufficiently to result, after re-examination, in a favourable Finding by the Board, the assignment shall be recorded in the Master Record with the date of receipt of the first notice by the Board being shown in the NOTIFICATION COLUMN. The data recorded shall be that notified by the later notice incorporating the modification."

(See also paragraphs 3.7.2.4 and 3.7.2.6 of the present Report concerning the date to be shown in the Master Record.)

3.7.8.4 With respect to d), a new paragraph is required to provide that any notice re-submitted with a modification which is such as to increase the probability of harmful interference, shall be considered as a new notice.

3.7.9 Review of Findings (Nos. 340 to 345 of the Regulations)

3.7.9.1 The I.F.R.B. has, in the light of additional information, proceeded to review Findings upon its own motion. To cover these circumstances it seems appropriate to add a new sentence to No. 340 of the Regulations, as follows:

"The Board may also review a Finding upon its own motion."

3.7.9.2 In respect of the provisions of Nos. 341 and 342, the circulation by airmail of such requests to all countries in fact increases the time necessary for consideration of the case by the Board. It also retards consideration of notices of other Administrations on which the outcome of the review may have a technical bearing. Consequently, and recalling the remarks made in paragraph 3.7.5 above concerning the Objections and Comments Procedure, Nos. 341 and 342 of the Regulations might be amended to provide for the Board to proceed immediately with the review and, after consultation, where necessary, with the Administrations concerned, to issue such further Findings as the circumstances warrant.

3.7.10 Changes in basic data of a frequency assignment recorded in the Master Record (No. 346 of the Regulations)

3.7.10.1 In the application of No. 346 of the Regulations, the I.F.R.B. has retained the original date of registration (Column 2a) if the operation of the assignment according to the new data has no greater probability of causing harmful interference to existing assignments of other Administrations than the operation of the assignment according to the original data. It was found appropriate to apply the provisions of No. 346 in this manner since some assignments appearing in the New International Frequency List adopted by the E.A.R.C. had evidently been included in this List on the basis of sharing (but without mention of this fact) and the Findings of the I.F.R.B. would otherwise have been unfavourable, which would have been inconsistent. In addition, to treat an assignment,

amended in such a manner, as a new assignment would also have been inconsistent in cases where there was a probability that assignments recorded later (particularly those with a date in the Notification Column) would receive harmful interference from the earlier assignment and, consequently, the operations of the later assignments would already have been adjusted to avoid such interference.

3.7.10.2 When examining changes of basic data in respect of an assignment recorded with a date in the Notification Column (Column 2b), the I.F.R.B. has applied the provisions of No.346 of the Regulations by analogy and, in the circumstances described in paragraph 3.7.10.1 above, has retained the original date of notification.

3.7.10.3 In view of the foregoing, the last sentence of No. 346 might, perhaps, be amended to read as follows:

"However, should the Board arrive at the conclusion that the use of the frequency assignment based on the new data will not cause any increase in the probability of harmful interference to the service of a station for which a frequency assignment has been recorded, the amended assignment shall retain the original date of registration or of notification."

(See also paragraphs 3.7.2.2 to 3.7.2.6 of the present Report, concerning the date to be shown in the Master Record.)

3.7.11 Studies and Recommendations (Nos. 352 to 359 of the Regulations)

The Board has found that the interests of Administrations appear to be best served in connection with the Studies and Recommendations Procedure (RR 352-359) by taking the following practical steps:

a) to publish the case in Part I of the weekly Circular with a special Remark in Column 13 referring to Nos. 352-359 inclusive of the Regulations;

b) where the technical examination establishes a conflict of interest between Administrations arising out of the study, to confine its consultations and recommendations to the interested countries;

c) to promulgate the resultant Finding in Part II of the weekly Circular.

Consequently this section of Article 11 of the Regulations might usefully be redrafted in the light of the above considerations.

3.7.12 "Priority" given to a particular service according to the Table of Frequency Allocations

3.7.12.1 In certain of the frequency bands in those parts of the Atlantic City Table of Frequency Allocations which are in force, and for which the provisions of Article 11 of the Regulations are applicable, "priority" is given to particular services; for example, the frequency band 325 - 405 kc/s is allocated to the Aeronautical Mobile and Aeronautical Radionavigation Services but the latter Service has priority except in New Zealand (see No. 129 of the Regulations).

3.7.12.2 In the absence of any definition or explanation in the Regulations which clarified the conditions which governed these priority provisions, and in view of the provisions governing the broadcasting service operating inside the Tropical Zone (see Nos. 253 and 254 of the Regulations), the I.F.R.B. was bound to consider that each of the services concerned has priority in every respect within the frequency band and the area defined. Therefore, when considering a notice concerning a class of service having priority, and provided the provisions of No. 89 of the Regulations were respected, the Board has not taken into account, in its examination with respect to the probability of harmful interference being caused to the existing assignments of other Administrations, those assignments concerning the other class or classes of service with which the priority service shares the frequency band concerned within the area in which the priority provision is applicable. In other words, in a frequency band which includes a priority service, the right to international protection from harmful interference (No.311 of the Regulations) cannot be claimed within the specific area in respect of an assignment concerning a class of service which shares the band with the priority service and having an earlier date of registration in Column 2a (and even if it were an entry in the New International Frequency List).

3.7.12.3 The foregoing considerations should be borne in mind by the Conference if changes in the existing priorities are contemplated (see paragraph 3.8.5).

3.8 Subjects for consideration by the Administrative Radio Conference in relation to the bands below 3,950 kc/s(4,000 kc/s in Region 2) and with respect to the application of the notification and registration procedure defined in Article 11 of the Regulations.

3.8.1 The Conference, in reviewing the International Frequency List adopted by the E.A.R.C. for these bands, may wish to consider the question raised in paragraph 3.7.1 above, and decide on the measures to be taken in relation to those frequency assignments contained in the List and entered in the Master Record as initial data, for which the completion data in accordance with No. 269 of the Agreement and the date of putting into service according to No. 270, have not been notified.

3.8.2 The Conference may also wish to consider the possibility of adjustments of the frequency assignments in the New International Frequency List or to establish a procedure for this purpose.

3.8.3 The Conference may wish to consider, under E.A.R.C. Resolution No. 5 and Recommendations Nos. 2, 3 and 4 of the Baltic and North Sea Radiotelephone Conference (Göteborg 1955), the question of providing common working frequencies on a world-wide basis for the Maritime Mobile Radiotelephone Service in the frequency bands between 2,000 kc/s and 2,850 kc/s.

3.8.4 The Conference, in reviewing Article 5 of the Regulations, will take into consideration the various proposals for amendments submitted by Administrations. It will doubtless bear in mind, in this examination, that the New International Frequency List has been adopted and that a substantial part of this List has, thanks to the efforts of Administrations and at considerable expense by all concerned, been progressively applied since 1952; and that any changes in the bands concerned would necessitate a review of the assignments at present recorded in the Master Record with dates in the Registration Column (2a) and Notification Column (2b).

3.8.5 The Conference should consider the situation which may arise, if the Table of Frequency Allocations or the notes related thereto concerning the "priority" for certain services are modified by the Conference, in respect to those assignments in the bands where Article 11 of the Regulations is in full force, and which were, under the provisions of the present Allocation Table, recorded with a date in the Registration column (2a) or recorded with a date in the Notification column (2b) in accordance with RR 339 (unfavourable with respect to No.327).

3.8.6 The Conference may wish to consider the bringing into force of the Table of Frequency Allocations and the List adopted by the E.A.R.C. for the bands between 3,155 kc/s and 3,400 kc/s and between 3,500 kc/s and 3,900 kc/s in Region 1, 4,000 kc/s in Region 2 and 3,950 kc/s in Region 3.

3.8.6.1 The countries in Region 2 may also wish to consider the bringing into force of the Table of Frequency Allocations and the List adopted by the E.A.R.C. for the band 2,000 - 2,850 kc/s.

3.8.6.2 The countries in Region 2 may also wish to consider the situation of the assignments in the band 535 - 1,605 kc/s.

3.8.7 The Conference, in examining the procedure defined in Article 11 of the Regulations for the notification and registration of frequency assignments, may wish to consider the measures to be taken in relation to the questions related to this procedure mentioned in paragraphs 3.7.2 - 3.7.12 inclusive above.

3.8.8 The Conference may wish to consider the situation of the frequency assignments entered in the Master Record with a date in the Notification Column (2b) in accordance with 338 of the Regulations, in the bands below 2,850 kc/s (2,000 kc/s in Region 2) where Article 11 of the Regulations is in full force, when the assignments concerned have been notified since several years to the I.F.R.B. as being in service, without any actual harmful interference having been reported (see RR 345).

3.8.9 In the event of a decision to apply the procedure as at present detailed in Article 11 of the Regulations to the bands below 3,950 kc/s (4,000 kc/s in Region 2) (with the exception of the Aeronautical Mobile Exclusive bands above 2,850 kc/s) where this procedure is not yet in full force, the Conference should consider the situation of those frequency assignments entered in the Master Record with a date in Column 2b, which were recorded, in accordance with Article 33, Section II, of the Agreement, as additional to those contained in the New International Frequency List, without a technical examination with respect to the probability of harmful interference to other assignments.

3.8.10 The Conference, in examining the situation of the assignments in the Master Record for the bands concerned, may wish to consider the measures to be taken in order that the information in the Master Record would reflect more accurately the actual utilization of the frequencies. In this connection, it may envisage establishing a procedure by which the Board should send to each Administration from time to time, an extract from the Master Record for these bands representing the frequency assignments of each Administration, and requesting it to bring this information up-to-date.

APPENDIX

Relevant provisions of the Radio Regulations

Article 3	General rules for the assignment and use of frequencies
Article 4	Special arrangements
Article 5	Table of Frequency Allocations
Article 6	Special rules relating to use of classes of emission
Article 7	(Nos. 236, 237 and 238) Special rules for the assignment and use of frequencies
Article 8	Protection of distress frequencies
Article 9	(Section I) Special rules relating to the Broadcasting Service
Article 11	Notification and registration of frequencies
Article 28	Conditions to be observed by mobile stations
Article 33	(Sections I, II, III, IV and VI) Use of frequencies for radiotelegraphy in the Maritime Mobile and Aeronautical Mobile Services
Article 34	(Section II) Maritime Mobile Radiotelephone Service
Appendix 3	Table of frequency tolerances

Additional Protocol to the Acts of the International Radio Conference of Atlantic City (Broadcasting in the European Region) (For information)

European Broadcasting Convention (Copenhagen, 1948)

European Regional Convention for the Maritime Mobile Service (Copenhagen, 1948)

Relevant provisions of the E.A.R.C. Agreement

Article 2	Provisions for frequencies between 14 kc/s and 3950 kc/s (4000 kc/s Region 2)
Article 4	New International Frequency List for the band 14 - 150 kc/s

Article 5 New International Frequency List for Region 1

Article 6 New International Frequency List for Region 2

Article 7 New International Frequency List for Region 3

Article 18 (No. 169) Entry into force of the New International Frequency List and Articles 19, 20, 21, 22 and 23 of the Table of Frequency Allocations.

Article 24 Special provisions for the frequency 2,182 kc/s

Article 26 Special provisions regarding bilateral or multilateral arrangements for frequencies below 3,950 kc/s (4,000 kc/s Region 2)

Article 31 (Sections I, II and III) Entry into force of Articles 10, 11 and 12 of the Radio Regulations

Article 32 (Nos. 210, 211, 212 and 213) Notification of frequency assignments by Administrations

Article 33 (Sections I and II) Recording of frequency assignments by the I.F.R.B.

Article 34 (Nos. 260, 261, 262, 269, 270, 271, 277 and 278) Master Radio Frequency Record

Article 38 Entry into force of certain provisions of the Radio Regulations

Resolutions Nos. 1, 2, 5, 6 and 7

Recommendations Nos. 1, 3, 4, 8 and 9

Final Acts of the Baltic and North Sea Radiotelephone Conference (Göteborg 1955)
(Resolution No. 8 and Recommendations Nos. 2, 3 and 4)

REPORT

by the

INTERNATIONAL FREQUENCY REGISTRATION BOARD (I. F. R. B.)

to the

ADMINISTRATIVE RADIO CONFERENCE

(Geneva, 1959)

SECTION IV

Frequency bands allocated exclusively to the Aeronautical Mobile Service between 2850 kc/s and 27,500 kc/s

REPORT

by the

International Frequency Registration Board (I.F.R.B.)

to the

Administrative Radio Conference

(Geneva, 1959)

The present booklet contains Section IV

SECTION IV

TABLE OF CONTENTS

REPORT

by the

International Frequency Registration Board (I.F.R.B.)

to the

Administrative Radio Conference

(Geneva, 1959)

SECTION IV

FREQUENCY BANDS ALLOCATED EXCLUSIVELY TO THE AERONAUTICAL MOBILE SERVICE BETWEEN 2850 KC/S AND 27500 KC/S

4.1 The relevant regulatory provisions

A list of the relevant provisions of the Radio Regulations (hereinafter called "the Regulations") and of the Extraordinary Administrative Radio Conference (E.A.R.C.) Agreement (hereinafter called "the Agreement") is appended to this Section.

4.2 The frequency bands concerned, their use, and the allotment of specific frequencies

4.2.1 According to the Atlantic City Table of Frequency Allocations, the frequency bands between 2850 kc/s and 27500 kc/s which are allocated exclusively to the Aeronautical Mobile Service are as follows :

R Bands Frequency Band and (Bandwidth) kc/s	OR Bands Frequency Band and (Bandwidth) kc/s
2850 - 3025 kc/s (175)	3025 - 3155 kc/s (130)
3400 - 3500 kc/s (100)	3900 - 3950 kc/s (Region 1) (50)
4650 - 4700 kc/s (50)	4700 - 4750 kc/s (50)
5450 - 5480 kc/s (Region 2) (30)	5680 - 5730 kc/s (50)
5480 - 5680 kc/s (200)	6685 - 6765 kc/s (80)
6525 - 6685 kc/s (160)	8965 - 9040 kc/s (75)
8815 - 8965 kc/s (150)	11175 - 11275 kc/s (100)
10005 - 10100 kc/s (95)	13200 - 13260 kc/s (60)
11275 - 11400 kc/s (125)	15010 - 15100 kc/s (90)
13260 - 13360 kc/s (100)	17970 - 18030 kc/s (60)
17900 - 17970 kc/s (70)	

4.2.1.1 Under No. 256 of the Regulations, frequencies allocated to the Aeronautical Mobile R Service are reserved for communications between any aircraft and those aeronautical stations primarily concerned with the safety and regularity of flight along national or international civil air routes.

4.2.1.2 Under No. 257 of the Regulations, frequencies allocated to the Aeronautical Mobile OR Service are reserved for communications between any aircraft and aeronautical stations other than those primarily concerned with flight along national or international civil air routes.

4.2.2 Allotment of Frequencies

4.2.2.1 Aeronautical Mobile R bands.. Apart from two frequencies which are designated for world-wide use, frequencies are allotted to Major World Air Route Areas (MWARA) and to Regional and Domestic Air Route Areas (RDARA), on a basis of geographical sharing, in accordance with the Allotment Plan for the Aeronautical Mobile R Service adopted by the E.A.R.C. (Annex 8 to the E.A.R.C. Final Acts). The boundaries of each of the Areas are defined in Section I of the Annex. There is no limit to the number of stations, within these boundaries, which may use the frequencies allotted to the area concerned.

4.2.2.2 Aeronautical Mobile OR bands. Frequencies are allotted to countries, areas and places, on a basis of geographical sharing, in accordance with the Allotment Plan for the Aeronautical Mobile OR Service adopted by the E.A.R.C. (Annex 9 to the E.A.R.C. Final Acts). There is no limit to the number of stations which may use the frequencies within the geographical limitations of the allotments of the Plan.

4.2.3 Classes of Emission and permissible power of Stations

4.2.3.1 The classes of emission and the maximum power which may be used by aeronautical and aircraft stations are specified in the preamble to the Allotment Plan for the R Service. Limits of power for a number of individual allotments are specified in the Allotment Plan for the OR Service.

4.3 Clearance and bringing into use of the Frequency bands

4.3.1 Aeronautical Mobile R Service

In accordance with the provisions of Section I of Article 15 of the Agreement and in collaboration with the International Civil Aviation Organization (I.C.A.O.), the Allotment Plan for the Aeronautical Mobile R

Service was implemented by stages and by individual families of frequencies in the various areas of the world. This procedure involved the preparation of sectional plans for specific I.C.A.O. areas, and the setting of target dates for bringing these plans into force having due regard to time required for the prior clearance of the frequencies concerned. In order to assist Administrations, the I.F.R.B., immediately each plan had been formulated, technically examined all assignments recorded in the Master Record or entered in the Supplementary Information to the Radio Frequency Record, on or adjacent to the frequencies concerned; and it advised Administrations of the assignments which would interfere with the planned use of the frequencies and would, in consequence, have to be moved. The wholehearted collaboration of the Administrations made it possible for the sectional plans to be brought into force as follows :

North Atlantic Area	1st November 1953
European Mediterranean Areas	1st August 1953 1st July 1955
Middle East Areas	1st June 1954 1st January 1956
South East Asia Area	1st December 1954 1st September 1955
Caribbean Area	1st May 1954
South America, South Atlantic Area	1st September 1954
Africa, Indian Ocean Area	1st November 1954
Pacific Area	1st December 1954 1st October 1955

4.3.1.1 These sectional plans did not embrace all the allotments to the areas in question and, at later dates, additional groups of frequencies were added to the plans for each area, to meet the requirements of the International Civil Aviation Organization and with the collaboration of the Administrations.

4.3.1.2 As regards the frequencies which were not cleared and taken into use under paras. 4.3.1 and 4.3.1.1 above, the I.F.R.B. took the initiative, in the spirit of Section I of Article 15 of the Agreement, of consulting the Administrations and of suggesting a date for the residual clearance of the bands and the bringing into use of the whole of the E.A.R.C. Allotment Plan for the Aeronautical Mobile R Service. With the concurrence of the great majority of the Administrations, this date was established as 1 October, 1956.

4.3.2 Aeronautical Mobile OR Service

As regards the Aeronautical Mobile OR bands, the I.F.R.B. took the initiative, in the spirit of Section II of Article 15 of the Agreement, of consulting the Administrations and of suggesting dates for the clearance of the bands and the bringing into use of the E.A.R.C. Allotment Plan for the Aeronautical Mobile OR Service (Annex 9 to the E.A.R.C. Final Acts). The following dates were thus decided on in consultation with the Administrations:

Frequency bands under 8 Mc/s . . . . 1 October 1955

Frequency bands above 8 Mc/s . . . . 1 January 1956

4.3.3 Details are given in the 6th, 7th, 8th and 9th Annual Reports of the I.F.R.B. to Members of the Union, on the preparation by the Board of 15 Circular-letters by which Administrations were consulted on the implementation of the various steps of the programmes, and were acquainted with the results of the analysis of replies received from the Administrations and with relevant recommendations.

4.3.4 Present use of the bands as reflected by the assignments recorded in the Master Radio Frequency Record

Thanks to the wholehearted cooperation from the Administrations, the results of applying the provisions of Article 15 of the Agreement can be measured by the following data, valid on 1 July, 1959 :

4.3.4.1 61 assignments to aeronautical stations still appear in the Master Record between 3950 kc/s (4000 kc/s in Region 2) and 27500 kc/s on frequencies outside the appropriate bands.

4.3.4.2 14803 assignments have been notified to the I.F.R.B. as having been taken into use in the frequency bands exclusively allocated to the Aeronautical Mobile R Service of which 12194 were in strict conformity with the Allotment Plan adopted by the E.A.R.C. This Plan specifies 156 channel frequencies which, by frequency sharing, form the basis for the allotment in various parts of the world of 73 channels to MWARA and 139 channels to RDARA. Assignments to aeronautical stations have been notified on all (i.e. 100%) of the 156 channel frequencies; and 70 (i.e. 96%) of the 73 channels allocated to the Major World Air Route Areas and 133 (i.e. 96%) of the 139 channels allocated to Regional and Domestic Air Route Areas have been recorded as having been taken into use in areas of their allotment by stations of the Aeronautical Mobile R Service.

4.3.4.3 10762 assignments have been notified to the I.F.R.B. as having been taken into use in the frequency bands exclusively allocated to the Aeronautical Mobile OR Service of which 8399 were in strict conformity with the Allotment Plan adopted by the E.A.R.C. This Plan specifies 92 channel frequencies which, by frequency sharing, form the basis of 2346 allotments to countries in various parts of the world. Assignments to Aeronautical Mobile OR stations have been notified on all (i.e. 100%) of the 92 channel frequencies and 1632 (i.e. 70%) of the 2346 allotments have been recorded as having been taken into use by stations of the Aeronautical Mobile OR Service.

4.3.4.4 15965 assignments have been cancelled in the bands concerned since 1 January 1953; the stations in question were stations other than stations of the Aeronautical Mobile Service or were stations of this Service using frequencies not in accordance with the E.A.R.C. decisions.

4.3.4.5 575 frequency assignments not in accordance with the Table of Frequency Allocations still remain in these bands, of which 395 are in the frequency bands above 3950 kc/s; the stations concerned are stations other than those of the Aeronautical Mobile Service, which were not notified under special provisions such as those of No. 88 of the Regulations. About 80% of these out-of-band assignments are recorded on behalf of only 3 Administrations.

4.3.4.6 The above figures show that while the frequency bands between 2850 kc/s and 27,500 kc/s allocated to the Aeronautical Mobile Service are now being used in very great measure by the stations of that Service and although there has been a tremendous reduction in the number of out-of-band assignments, these bands are not yet entirely cleared. For example, there are still a few broadcasting stations in the OR bands and a number of fixed stations in the R and OR bands.

4.3.5 Monitoring observations

After the dates set for the clearance of the exclusive aeronautical mobile bands between 2850 kc/s and 27,500 kc/s (see paras. 4.3.1.2 and 4.3.2), a number of out-of-band transmissions continued to be heard by monitoring centres and were quoted in the monitoring reports which the Board receives from various sources. The identification of these transmissions was frequently a difficult matter as, in a great many cases, the stations concerned did not appear to be recorded in the Master Radio Frequency Record; but whenever the Board was reasonably sure of the source of a particular transmission, it wrote to the Administration concerned and invited it to discontinue that transmission, if it originated from a station under its jurisdiction. By 1 July 1959, 169 letters of this kind had been sent to 54 Administrations, about half of which resulted in remedial action being taken.

4.3.6 General situation

It may be said that as a result of the application of the E.A.R.C. decisions and by the more rational and efficient use of the available frequency bands through the implementation of the Allotment Plans, the situation as regards communications in the Aeronautical Mobile Service - communications which are often essential to the safety of life - has improved enormously since the time of the E.A.R.C., at which time the lack of an adequate number of channels of communication, together with the serious interference experienced on the channels in use, was seriously handicapping the development of aviation services and was endangering the safety of flying.

4.4 Application of the procedures laid down in the Agreement for the examination and recording of frequency assignments in the Master Radio Frequency Record

4.4.1 Section II of this Report gives details on the compilation of the original Master Radio Frequency Record according to the prescriptions of Article 34 of the Agreement. It suffices to recall here that, in the frequency bands referred to in this Section, the Master Record contained, as basic entries, the allotments provided for in Annexes 8 and 9 to the Final Acts of the E.A.R.C. (Nos. 263 and 276 of the Agreement) - as well as the "frequency usage information" furnished by Administrations to the I.F.R.B. pursuant to the provisions of No. 272 of the Agreement.

4.4.2 In applying the provisions of Section III of Article 33 of the Agreement to the examination and recording of assignments to specific aeronautical stations, the I.F.R.B. treated notices of such assignments in accordance with paras. D 8.1 - D 8.5 of Section II of its Rules of Procedure which were forwarded to Administrations under cover of Circular letter No. 2262/59/R dated 10 February 1959. These procedures were adopted with a view to facilitating the transfer of aeronautical stations into their appropriate frequency bands while not prejudicing the right to international protection which the E.A.R.C. accorded to assignments in strict conformity with the adopted Plans from the operations of stations which are not in strict conformity with these Plans. As a result of the application of these procedures:

4.4.2.1 12194 assignments to aeronautical stations in the R bands and 8399 such assignments in the OR bands, which were in full conformity with the relevant E.A.R.C. Plan for the Aeronautical Mobile Service, were given Finding 10 Note U, without technical examination, and in accordance with No. 251 of the Agreement, were recorded in the Master Record with the date of 3.12.51 in Column 2a and Remark No. 186 in Column 13 (in the case of aeronautical stations on a primary allotment basis), or with the date of 3.12.51 in Column 2b and Remark No. 186 in Column 13 (in the case of aeronautical stations on a secondary allotment basis).

It should be mentioned that Note U and Remark No. 186 were based on No. 209 of the Agreement, the significance of which declined with the progressive clearance of the bands from stations of other types of Service.

4.4.2.2 430 assignments to aeronautical stations in the R bands and 716 such assignments in the OR bands on frequencies allotted to the area or country concerned in the relevant E.A.R.C. Plan, but with notified particulars which were not in accordance with No. 84 of the Agreement, were given Finding 11 Note S accompanied by Finding 12 (84, 236) without technical examination, and, in accordance with No. 253 of the Agreement, were entered in the Master Record with the date of receipt of the notice in Column 2b and with Remark No. 208 in Column 13. In all such cases, the attention of the notifying Administration was drawn to the governing technical prescriptions and the Administration was advised that, if the notified technical particulars could be amended to conform with these prescriptions, the assignments would be recorded, in accordance with No. 251 of the Agreement, with the date of 3.12.51 in column 2a.

4.4.2.3 282 assignments to aeronautical stations in the R bands and 451 such assignments in the OR bands, which were not in conformity with the Allotment Plans but which were notified under the provisions of Nos. 85, 86 and 87 of the Agreement, were given Finding 11 accompanied by Finding 12 (236) and Note S, without technical examination, and in accordance with No. 253 of the Agreement, were entered in the Master Record with the date of receipt of the notices in Column 2b and Remarks Nos. 208 and 227 in Column 13.

4.4.2.4 Apart from the assignments covered in 4.4.2.2 and 4.4.2.3 above, notices of assignments to aeronautical stations which were not in conformity with the relevant Allotment Plan were technically examined with respect to the probability of harmful interference being caused to assignments which might be brought into use in conformity with the Plan, using the technical standards for the Aeronautical Mobile Service developed by the International Aeronautical Administrative Radio Conference, Geneva, 1948/49 (I.A.A.R.C.) and adopted by the E.A.R.C.

4.4.2.4.1 In the case of 1025 assignments in the R bands and 24 assignments in the OR bands, where it was found that there was no probability of such harmful interference, the notices were given Finding 11, together with Note S, and the assignments were recorded in the Master Record in accordance with No. 252 of the Agreement, with the date of 3.12.51 in Column 2b and Remark No. 208 and Symbol AC 252 in Column 13.

4.4.2.4.2 In the case of 594 assignments in the R bands and 631 assignments in the OR bands where it was found that there was a probability of such harmful interference, the notices were given Finding 11, with Note S, accompanied by Finding 12(236) or 12W(236) as appropriate, and the assignments were entered in the Master Record, in accordance with No. 253 of the Agreement, with the date of receipt of the notice in Column 2b and Remarks Nos. 208 and 197, or Nos. 208 and 201, depending on the Finding, in Column 13.

4.4.2.4.3 134 assignments to aeronautical stations in the R bands which were not in conformity with the Allotment Plan for that Service but were in conformity with a Regional plan adopted by I.C.A.O., were entered in the Master Record with the date of receipt of the notice in Column 2b but with a special Remark (Nos. 205, 213, 217, 231, 236, 247 or 248, as appropriate) in Column 13.

4.5 Problems of harmful interference brought to the attention of the I.F.R.B. - Studies

Since 1953, a number of cases of harmful interference have been brought to the attention of the Board for its information or in accordance with No. 391 of the Regulations, with No. 77 of the Agreement or with E.A.R.C. Resolution No. 1. These cases were usually due to operations of stations which did not appear to be in conformity with the Atlantic City Table of Frequency Allocations.

Where the source of the interference could be identified, representations were made to the Administrations concerned requesting modification of their operations; these representations, unfortunately, did not always result in a complete clearance of the interference.

4.6 Questions to be considered by the Administrative Radio Conference in connection with the Aeronautical Mobile Service between 2,850 kc/s and 27,500 kc/s

4.6.1 The Conference in reviewing Article 5 of the Regulations, will no doubt examine whether the bands allocated exclusively to the Aeronautical Mobile Service in the Table of Frequency Allocations (see paragraph 4.2.1) should be retained unchanged. It will doubtless bear in mind, in this examination, that Allotment Plans have been adopted for the Service which have been progressively brought into use since 1953 as a result of great effort and very considerable expense by the Administrations and Air Transport agencies; and that any change in the bands allocated to the Aeronautical Mobile Service would necessitate further effort and expenditure.

4.6.2 Once the question of the overall bands to be allocated exclusively to the Aeronautical Mobile Service between 2850 kc/s and

27,500 kc/s has been settled, it will be appropriate for the Conference to examine whether any changes in the allotments in the Plans are necessary in the light of developments - for example, growth of air traffic in certain areas or the use of new systems of communication - since the plans were formulated. In this connection, in view of the sharing patterns used in the construction of the Plans (which have proved generally satisfactory in practice), it may be difficult to introduce major modifications without substantial re-construction of the Plans.

4.6.3 The Conference may also wish to consider whether any changes should be made in the technical principles on which the Plans were based, for example in respect of the maximum permissible power of aeronautical and aircraft stations.

4.6.4 It would then be appropriate for the Conference to decide on the following main questions :

4.6.4.1 Entry into force of the Table of Frequency Allocations for the bands concerned;

4.6.4.2 Whether the Allotment Plans, with or without modifications, should be incorporated as Appendices to the new Radio Regulations;

4.6.4.3 What treatment should be accorded to assignments which are not in strict conformity with the Allotment Plans, including those already recorded in the Master Record as a result of Findings by the Board, and particularly of Findings 11S, 12/236 (see paragraphs 4.4.2.2, 4.4.2.3 and 4.4.2.4.2 above).

4.6.5 After any decision on the significance to be given in future to dates recorded in Columns 2a, 2b and 2c of the Master Record, and on how to show the present relative significance of the dates recorded in Columns 2a and 2b (No. 208 of the Agreement), the Conference may consider it advisable to examine the Remarks entered in Column 13 of the Master Record and to consider :

1) that Remark No. 186 (Finding 10U) should now be deleted;

2) whether Remarks Nos. 197, 201, 208, AC 252, 227 and 257 should be modified in the light of the decisions of the Conference in regard to assignments which are not in strict conformity with the Allotment Plans.

A P P E N D I X

Relevant provisions of the Radio Regulations

Article 5 (Table of Frequency Allocations)

Nos. 255 to 257 (Use of frequencies)

Article 33, Nos. 779, 780, 792 and 801 (Calling and distress frequencies)

Article 34, No. 805 (Communication with stations of the Maritime Mobile Service)

Article 35, Sections III and V (Aeronautical and aircraft stations)

Appendix 3, (Frequency tolerances)

Relevant provisions of the E.A.R.C. Agreement

Annexes 8 and 9 (Allotment Plans for the Aeronautical Mobile Service)

Article 3, Section III, Nos. 18 and 19 (Entry into force of the Allotment Plans)

Article 3, Section IV, No. 20 (Procedure for shared bands)

Article 9, Nos. 81 to 87 (General provisions) and Article 25 (Special provisions)

Article 15, Nos. 148 to 154 (Special procedure applicable to the Aeronautical Mobile Service in its exclusive bands)

Article 17, Nos. 166 to 168 (Final adjustment of frequency usage by the Aeronautical Mobile Service)

No. 170 and Article 30, Nos. 202 and 203 (Entry into force of the Plans for the Aeronautical Mobile Service)

No. 208, (Relative significance of 2a and 2b dates)

Article 32, Section II, Nos. 214 to 223 (Procedure for the notification of frequency assignments)

Article 33, Section III, Nos. 231 to 253 (Recording of frequency assignments in the Master Record by the I.F.R.B.)

No. 294, (Entry into force of the provisions of the Regulations)

No. 296 and 297 (Frequency tolerances)

Resolution No. 1 (Bringing into use of the Plans and Lists adopted by the E.A.R.C.)

Resolution No. 4 (Assistance to the Aeronautical Mobile Service in moving into its allocated bands)

Recommendation No. 1 (Protection of Aeronautical Mobile Communications at Band-edges)

Recommendation No. 2 (Secondary Sharing of Aeronautical Mobile OR Frequencies)

Note: Useful information about the technical bases for preparing the Plans adopted by the E.A.R.C. for aeronautical services may be found in Document No. 193 of the I.A.A.R. Conference, dated 22nd July 1948, and in Document No. 211 of the I.A.A.R. Conference, dated 30th July, 1948.

REPORT

by the

INTERNATIONAL FREQUENCY REGISTRATION BOARD (I. F. R. B.)

to the

ADMINISTRATIVE RADIO CONFERENCE

(Geneva, 1959)

SECTION V

Frequency bands allocated exclusively to the Maritime Mobile Service between 4000 kc/s and 27,500 kc/s

REPORT

by the

International Frequency Registration Board (I.F.R.B.)

to the

Administrative Radio Conference

(Geneva, 1959)

The present booklet contains Section V

SECTION V

TABLE OF CONTENTS

REPORT

by the

International Frequency Registration Board (I.F.R.B.)

to the

Administrative Radio Conference

(Geneva, 1959)

SECTION V

FREQUENCY BANDS ALLOCATED EXCLUSIVELY TO THE MARITIME MOBILE SERVICE BETWEEN 4000 kc/s and 27500 kc/s

5.1 The relevant regulatory provisions

A list of the relevant provisions of the Radio Regulations (hereinafter called "the Regulations") and of the Extraordinary Administrative Radio Conference (E.A.R.C.) Agreement (hereinafter called "the Agreement") is appended to this Section.

5.2 The frequency bands concerned, their allocation, and assignment of frequencies

5.2.1 According to the Atlantic City Table of Frequency Allocations, the maritime mobile exclusive bands between 4,000 kc/s and 27,500 kc/s are as follows:

Frequency Band and (Bandwidth) kc/s
4063 - 4438 (375)
6200 - 6525 (325)
8195 - 8815 (620)
12330 - 13200 (870)
16460 - 17360 (900)
22000 - 22720 (720)

5.2.2 Their sub-allocation to ship radiotelephone stations, coast radiotelephone stations, ship radiotelegraph stations and coast radiotelegraph stations is defined in Nos. 264, 265, 266 and 267 of the Regulations, which are part of Chapter III thereof (see No. 87 of the Regulations). Frequencies of the bands thus allocated are assigned to individual stations in the following manner.

5.2.2.1 Ship radiotelephone stations : Two Frequencies to be assigned are specified in Appendix 12 to the Radio Regulations, amended in accordance with Annex 7 to the E.A.R.C. Final Acts. The Allotment Plan to countries is based on Part A of Annex 5 to the E.A.R.C. Final Acts (see 5.2.2.2 hereinunder), for, under No. 829 of the Regulations, the transmission frequencies used by coast and ship stations are - as far as possible - associated in pairs.

5.2.2.2 Coast radiotelephone stations : Frequencies are allotted to countries in accordance with a plan which appears in Part A of Annex 5 to the E.A.R.C. Final Acts (No. 65 of the Agreement). Within the limits of this plan, each country can arrange for as many stations as it sees fit to use the frequencies allotted to it. It is to be noted that Part B of this Annex, which contains a Station Assignment Plan, is published for information purposes only (No. 66 of the Agreement).

5.2.2.3 Ship radiotelegraph stations: The bands are divided into calling bands (No. 268 of the Regulations), passenger-ship working bands and cargo-ship working bands. The frequencies to be assigned are specified in Appendix 10 to the Regulations. To obtain a uniform distribution, Administrations must assign these frequencies to their ship stations in accordance with an orderly system of rotation, as defined in Section IV of Article 33 of the Regulations (see, inter alia, Nos. 778, 790 and 797 thereof). It is to be noted that in the bands from 4 to 16 Mc/s, the frequencies concerned are harmonically related.

5.2.2.4 Coast radiotelegraph stations : Frequencies are assigned to stations in accordance with a Frequency Assignment List appearing in Annex 6 to the E.A.R.C. Final Acts. Fourteen of the frequencies assigned in this manner in the 4, 8, 12 and 16 Mc/s bands are harmonically related, as well as eight additional frequencies in the 4, 8 and 12 Mc/s bands.

5.3 Implementation of the E.A.R.C. programme for clearing the bands and bringing them into use (Article 14 of the Agreement)

5.3.1 With a view to the progressive application of the Table of Frequency Allocations, the E.A.R.C. drew up a programme for the clearance and bringing into use of the maritime mobile exclusive bands between 4,000 kc/s and 27,500 kc/s. The implementation of this programme began in 1953. A start was made with the ship radiotelegraph stations; the harmonic relationship in these bands from 4 to 16 Mc/s made it imperative that they be dealt with simultaneously.

5.3.2 As regards the ship station bands, the following dates were decided on, in consultation with the Administrations, in accordance with Article 14 of the Agreement, for clearance of the bands and entry into force of the regulations relating to assignment of frequencies to ship stations :

Ship radiotelegraph calling bands	1 September, 1953
Cargo-ship radiotelegraph working bands	1 July, 1954
Passenger-ship radiotelegraph working bands	1 January, 1955
Ship radiotelephone bands	1 July, 1955

Thus the programme envisaged by the E.A.R.C. was in all essentials respected, except in the case of the cargo-ship working bands, in which, to overcome difficulties largely attributable to the extent of these bands, Administrations needed somewhat longer to clear the bands than had been expected by the E.A.R.C.

5.3.3 As regards the coast station bands, the I.F.R.B. took the initiative, in the spirit of Article 14 of the Agreement, of consulting the Administrations and of suggesting dates for the clearance of these bands and the bringing into use of the E.A.R.C. Coast Station Plan and List (Annexes 5 and 6 to the E.A.R.C. Final Acts). The following dates were thus decided on in consultation with the Administrations:

Bringing into use of the E.A.R.C. Coast Radiotelephone Station Allotment Plan ..... 1 January 1956
Bringing into use of the E.A.R.C. Coast Radiotelegraph Station Assignment Plan .....1 January 1957

5.3.4. Details are given in the 6th, 7th, 8th and 9th Annual Reports of the I.F.R.B. to Members of the Union, on the preparation by the Board of 14 Circular-letters by which Administrations were consulted on the implementation of the various steps of the programme, and were acquainted with the results of the analysis of replies received in general from about sixty Administrations and with relevant recommendations.

5.3.5. Thanks to wholehearted co-operation from the Administrations, the results of applying Article 14 of the E.A.R.C. Agreement can be measured by the following data, valid on 1 July 1959;

a) 22 assignments to coast stations still appear in the Master Radio Frequency Record between 4,000 kc/s and 27,500 kc/s outside the appropriate bands. These assignments are recorded on behalf of one single Administration, which has hitherto cancelled at most only a very small number of its out-of-band assignments.

b) 816 assignments to coast radiotelephone stations have been notified to the Board as having been brought into use in accordance with the E.A.R.C. Allotment Plan, corresponding to 338 allotments or 85% of a total of 395 allotments in the Plan.

c) 3187 assignments to coast radiotelegraph stations have been notified to the Board as having been brought into use in a accordance with the E.A.R.C. Assignment Plan. This represents 86% of the 3681 assignments in this List.

d) 11562 assignments have been cancelled in the bands concerned since 1 January 1953; the stations in question were stations other than stations in the Maritime Mobile Service or were stations in this service using frequencies not in accordance with the Regulations or with the E.A.R.C. decisions.

e) 390 frequency assignments not in accordance with the Table of Frequency Allocations still remain in these bands; the stations concerned are stations other than stations in the Maritime Mobile Service, which were not notified under special provisions, such as those of Nos. 88, 154, 155, 157, etc., of the Radio Regulations, or stations in the Maritime Mobile Service using frequencies which are not in accordance with Nos. 264, 265, 266, or 267 of the Regulations. About 75% of these out-of-band assignments are recorded on behalf of only one Administration.

5.3.6 The above figures show that between 4,000 kc/s and 27,500 kc/s stations in the Maritime Mobile Service use almost exclusively the bands allocated to this service in the Table of Frequency Allocations. But although there has been a marked drop in the number of out-of-band assignments (especially in the ship radiotelegraph call bands, where monitoring information confirms the rarity of out-of-band transmissions), these bands are not yet fully cleared. For example, there are still a few broadcasting stations in the 6 Mc/s ship station band and a number of fixed stations, not all of which have been identified, in the coast station bands. Nevertheless, it may be said that, thanks to application of the E.A.R.C. decisions, the maritime mobile exclusive bands are almost entirely available for maritime mobile purposes, and that a more rational and efficient use of the bands available has thus led to a considerable improvement in maritime mobile communications.

5.3.7 A number of out-of-band transmissions are being heard by monitoring centres in the exclusive maritime mobile bands between 4,000 kc/s and 27,500 kc/s, and are quoted in the monitoring reports which the Board receives from various sources. While drawing the attention of the Members of the Union to this question in the reports it sends to them, the Board analyses these monitoring reports and, in so doing, it is faced with some difficult problems. Besides making a technical check of propagation conditions, it has to make a meticulous examination of the reported identification of the source of the transmissions, which identification is sometimes subject to error and is often incomplete. Be that as it may, whenever the Board is reasonably sure of the source of a particular transmission, it writes to the Administration concerned and invites it to discontinue that transmission, if it happens to originate from a station under this Administration's jurisdiction. In most cases the stations concerned are not recorded in the Master Radio Frequency Record. The Board renews this process every two months or so. By

1 July 1959, 240 letters of this kind had been sent to 66 Administrations. Thanks to these efforts, there has been some improvement, especially in the ship radiotelegraph calling bands. But of the letters so despatched, 102 have unhappily elicited no reply from the Administrations apparently concerned.

5.4 Application of the procedure laid down in the E.A.R.C. Agreement for notification and recording of frequency assignments in the Master Radio Frequency Record

5.4.1 Section II of this Report gives details on the compilation of the original Master Radio Frequency Record according to the prescriptions of Article 34 of the Agreement. It suffices to recall here that, in the frequency bands referred to in this Section, the Master Record contained, as basic entries, the assignments or allotments provided for in Appendix 10 to the Regulations and in Annexes 5, 6 and 7 to the Final Acts of the E.A.R.C. (Nos. 264,265, 276 and 277 of the Agreement), as well as the "frequency usage information" furnished by Administrations to the I.F.R.B. pursuant to the provisions of No. 272 of the Agreement.

5.4.2 Under Nos. 294, 300, 301, 302 and 303 of the Agreement, Appendix 10 to the Regulations and Section V of Article 33 thereof are now in force, as well as that part of Appendix 12 to the Regulations (amended by Annex 7 to the Final Acts of the E.A.R.C.) which refers to ship radiotelephone stations. Under Nos. 16, 200, 201 and 170 of the Agreement, on the other hand, that part of Appendix 12 to the Regulations (amended by Annex 7 to the Final Acts of the E.A.R.C.) which refers to coast radiotelephone stations, as well as Annexes 5 and 6 to the Final Acts of the E.A.R.C. which, as explained above, are now generally applied, will come into force, in principle, at the same time as the Table of Frequency Allocations on a date to be determined by the Radio Conference.

5.4.2.1 In the bands allocated to coast stations, the fact that Annexes 5 and 6 to the Final Acts of the E.A.R.C. are not entered into force is shown, from the point of view of the procedure for recording assignments in the Master Radio Frequency Record, by the fact that only assignments in conformity with the List or Plan adopted by the E.A.R.C. bear a date (3 December 1951), in Column 2a (Nos. 264 and 277 of the Agreement). Under No. 254 of the Agreement, all assignments which are not in conformity with the List or Plan adopted by the E.A.R.C. bear a date in Column 2b, the date on which the I.F.R.B. received the assignment notice. In accordance with No. 208 of the Agreement, moreover, any frequency assignment bearing a date in Column 2a is entitled to international protection against harmful interference caused by any assignments bearing a date in Column 2b: this provision has substantially contributed, at least in some cases, to the application of the List and Plan adopted by the E.A.R.C. The date to be entered in Column 2c of each assignment was determined in accordance with No. 255 of the Agreement.

5.4.2.2 On the other hand, according to Nos. 68 and 79 of the E.A.R.C. Agreement, it was recommended that additional assignments to coast stations should be the subject of agreement between Administrations, in collaboration with the I.F.R.B., in order to avoid harmful interference to stations operating in conformity with the E.A.R.C. List or Plan No. 80 of the Agreement provides that "in the absence of agreement with the Administrations whose transmissions may be affected, such additional assignments (to coast radiotelegraph stations) should be notified to the I.F.R.B., for treatment under Article 11 of the Radio Regulations after the Frequency Assignment Plan has come into force" The Board was bound, on receipt of the frequency assignment notices, to apply the Interim Procedure outlined in Section III of Article 33 of the Agreement.

5.4.2.3 It was on the basis of these provisions that the Board prepared paragraph D.9 of Section II of its Rules of Procedure, which were forwarded to Administrations with Circular-letter No. 2662/59/R dated 10 February, 1959.

5.4.3 In reaching its Findings in accordance with Section III of Article 33 of the Agreement, the Board applied the following principles:

5.4.3.1 Assignments in conformity with the E.A.R.C. List or Plan, which were notified by Administrations as having been brought into use, were given Finding "10U" by the Board (Remark No. 186 in Column 13 of the Master Radio Frequency Record). Remark No. 186 was based on No. 209 of the E.A.R.C. Agreement, but its significance has so dwindled with the progressive disappearance of out-of-band assignments that it could soon be cancelled.

5.4.3.2 Additional assignments notified on the central channel frequencies specified in the E.A.R.C. List or Plan were given Findings "11S,12/236" or "10T", as appropriate (Remarks Nos. 208 or 196 in Column 13 of the Master Radio Frequency Record). The Board considered that such Findings conformed to the spirit of Nos 68, 79 and 80 of the Agreement and that, in view of the relative significance of the dates entered in Columns 2a and 2b, they afforded the required protection to assignments in conformity with the E.A.R.C. decisions, pending the application of a more elaborate procedure which would enable the I.F.R.B.. once the E.A.R.C. List and Plan had entered into force, to formulate final Findings. Thus 2640 assignments received the Finding "11S,12/236" and 44 the Finding "10T". The Board would point out, however, that cases were brought to its notice where the coordination measures recommended in Nos. 68 and 79 of the Agreement and in Remark No. 208 were not taken by the Administrations concerned, and that it received reports of consequent interference, some instances of which occurred several years after the dates notified for the bringing into use of the new assignment not in conformity with the E.A.R.C. List or Plan or of the assignment bearing a date in Column 2a.

5.4.3.3 Additional assignments on frequencies other than the central channel frequencies specified in the E.A.R.C. List or Plan underwent a technical examination, as a result of which the Board formulated:

- 130 favourable Findings (10, 11 or 17)
- 24 qualified favourable Findings (10X, 10Y, 11X or 11Y)
- 79 unfavourable Findings (16 or 16W), following which 14 assignments were resubmitted to the I.F.R.B. for insertion in the Master Radio Frequency Record under No. 245 of the Agreement.

5.4.3.4 The 451 assignments to fixed stations notified under Nos. 154, 155 or 157 or similar provisions of the Regulations were not examined in relation to assignments of the Maritime Mobile Service, but solely with reference to other assignments of the same kind already entered in the Master Radio Frequency Record. In these cases 366 favourable Findings (10), 18 qualified favourable Findings (10X or 10Y) and 59 unfavourable Findings (15 or 15W) were formulated by the Board. 8 such assignments were resubmitted for insertion in the Master Radio Frequency Record under No. 245 of the Agreement.

5.4.4 In entering assignments in the Master Record, the Board applied the following principles :

5.4.4.1 As the E.A.R.C. List and Plan were not in force and as no assignment or allotment could be included as an integral part thereof in view of No. 254 of the Agreement, which provided that no new date could be entered in Column 2a of the Master Radio Frequency Record, the Board therefore felt it inappropriate to cancel any assignment or allotment in conformity with the E.A.R.C. List or Plan. When the Administration concerned stated that it did not intend to use a particular frequency which had been assigned or allotted to it, Remark No. 229 was inserted in Column 13 of the Master Radio Frequency Record.

5.4.4.2 In principle, any assignment in conformity with the List or Plan which was later amended by the Administration concerned and inserted in the Master Radio Frequency Record as a result of the Board's Finding, was subject to a further entry in the Record, in which a date was entered in Column 2b. However, where the amendment concerned the use of a frequency provided in the E.A.R.C. Plan for radiotelegraph coast stations, not by the station mentioned in the Plan, but by a radiotelegraph coast station of the same Administration situated at less than 150 km from the position indicated in the Plan, the Board retained the date in Column 2a of the Master Radio Frequency Record and entered the names of both stations in Column 4a. Furthermore, in cases where lower power or shorter service hours than those provided by the E.A.R.C. were notified, the Board retained the date in Column 2a and inserted Remarks Nos. 169 or 170, as appropriate in Column 13 of the Master Radio Frequency Record.

5.4.4.3 For every additional assignment to coast stations in the appropriate bands which was notified and inserted in the Master Radio Frequency Record following the Board's Finding, a date was inserted in Column 2b.

5.4.4.4 With regard to the collective entries for ship stations, notifying Administrations were individually informed that, in the case of radiotelegraph stations, such entries were incompatible with Nos. 778, 790 and 797 of the Regulations and that, in the case of ship radiotelephone stations, it seemed preferable, from the point of view of international protection, to notify reception frequencies of coast stations, in the spirit of No. 315 of the Regulations. Such assignments of reception frequencies to radiotelephone coast stations were entered in the Master Radio Frequency Record with a date in Column 2b, even when they were paired with those allotted to the country concerned in accordance with Annex 5 to the Final Acts of the E.A.R.C.: in view of Nos. 265 and 276 of the Agreement, it was impossible to enter dates in Column 2a.

5.5 Problems of harmful interference brought to the attention of the I.F.R.B. - Studies

5.5.1 Since 1953, about fifteen cases of harmful interference have been brought to the attention of the Board for its information or in accordance with No. 391 of the Regulations, with No. 77 of the E.A.R.C. Agreement or with E.A.R.C. Resolution No. 1. These cases occurred either when assignments provided in the E.A.R.C. List or Plan were brought into use, or between coast and out-of-band stations, or between coast stations in conformity with the E.A.R.C. List or Plan and coast stations not mentioned therein, or between coast stations in conformity with the E.A.R.C. List or Plan. The Board was able to formulate and submit suggestions to Administrations, in particular in this last case. Where interference occurred between coast radiotelegraph stations, for example, it suggested frequency adjustments which appear to have improved the situation. It noted, moreover, from monitoring data that many coast radiotelegraph stations had slightly adjusted their frequencies as compared with their E.A.R.C. assignments.

5.5.2 The Board also carried out about twelve studies under Section VII of Article 11 of the Radio Regulations, usually to assist countries in selecting frequencies to be assigned to their coast stations in cases where the assignments or allotments provided in the E.A.R.C. List or Plan were considered inadequate.

5.6 Questions to be considered by the Administrative Radio Conference in connection with the Maritime Mobile Service between 4,000 kc/s and 27,500 kc/s

5.6.1 The Conference in reviewing Article 5 of the Regulations may wish to consider whether the bands allocated exclusively to the Maritime Mobile Service in the Table of Frequency Allocations (see paragraph 5.2.1) should be retained unchanged. It will doubtless consider that assignment lists and allotment plans exist which, thanks to the efforts of Administrations and considerable expense by all concerned, have been progressively applied since 1953. It probably will bear in mind that any change in the bands allocated to the Maritime Mobile Service would be likely to necessitate further effort and expenditure. It would be well for the Conference to study this question at the outset.

5.6.2 Once the question of the overall bands to be allocated exclusively to the Maritime Mobile Service between 4,000 kc/s and 27,500 kc/s has been settled, the Conference may wish to consider their sub-allocation as laid down in Nos. 264, 265, 266 and 267 of the Regulations (see paragraph 5.2.2), in the light of the relative development in maritime radio telegraphy and radio telephony during the last twelve years since the Atlantic City Radio Conference. It should be observed that any change in sub-allocation to the maritime telegraphy and telephone services will entail amendments in Appendices 10 and 12 of the Regulations and Annexes 5, 6 and 7 of the Final Acts of the E.A.R.C.

5.6.3 The Conference may then wish to consider reviewing the method of assigning frequencies to ship stations (Appendix 10 to the Regulations and Appendix 12 amended according to Annex 7 of the Final Acts of the E.A.R.C.). It will no doubt bear in mind in this respect that any substantial modifications to Appendix 10 of the Regulations or Annex 7 of the Final Acts of the E.A.R.C. Agreement would be likely to oblige many ship stations to change their crystals, particularly in the case of radiotelegraph cargo-ship working frequency bands. However, it seems that adjustments involving a re-arrangement of the passenger-ship radiotelegraph working bands could be adopted and introduced without major difficulty.

5.6.4 The Conference may then wish to consider reviewing the List and the Plan adopted by the E.A.R.C. for coast stations (Annexes 5 and 6 to the Final Acts of the E.A.R.C.) and the related provisions in Article 8 of the Agreement.

5.6.4.1 It will no doubt bear in mind that any far-reaching modifications in the List or the Plan adopted by the E.A.R.C. for coast stations would probably call for work which would require a period of time out of all proportion to the envisaged duration of the Conference. As regards the

Assignment List for coast radiotelegraph stations, it should be remembered that it contains harmonically related channels (see paragraph 5.2.2.4) and that any modifications in one band could thus have repercussions on the other bands.

5.6.4.2 It would then be appropriate for the Conference to decide on the following main questions:

5.6.4.2.1 Entry into force of the Table for the bands concerned, and of that part of Appendix 12 to the Regulations (modified by Annex 7 to the Final Acts of the E.A.R.C.) which concerns coast radiotelephone stations and of Annexes 5 and 6 to the Final Acts of the E.A.R.C., which may have been modified (see paragraph 5.6.4).

5.6.4.2.2 Treatment of allotments according to the Plan and assignments according to the List which have not been notified as having been brought into use.

5.6.4.2.3 Treatment of modifications to assignments appearing in the List or the Plan adopted by the E.A.R.C., particularly as regards coast radiotelegraph stations which have been shifted more than 150 km. The Conference may lay down that the future procedure it will decide upon for the recording of frequency assignments in the Master Record shall apply retroactively in this respect, in the spirit of No. 80 of the Agreement.

5.6.4.2.4 Treatment of additional assignments already recorded in the Master Record as a result of Findings by the Board, and particularly of "11S,12/236" or "10T" Findings (see paragraph 5.4.3.2). Here again the Conference may perhaps decide that the future procedure shall be applicable retroactively in the spirit of No. 80 of the Agreement.

5.6.5 After having decided perhaps on the significance to be given in future to dates recorded in Columns 2a, 2b and 2c of the Master Record, and on how to show the present relative significance of the dates recorded in Columns 2a and 2b (No.208 of the Agreement), the Conference may consider it advisable to prescribe that the following should be deleted from Column 13 of the Master Record:

- Remark No. 186 (Finding 10U)

- Remarks Nos. 196 (Finding 10T) and 208 (Finding 11S), but only once the additional assignments and modifications to assignments in the List or Plan adopted by the E.A.R.C. have been treated according to the decisions of the Conference (see paragraphs 5.6.4.2.3 and 5.6.4.2.4).

APPENDIX

Relevant provisions of the Radio Regulations

Article 5 (Table of Frequency Allocations)

Nos. 263 to 268 (Sub-allocation of frequency bands)

Nos. 270 to 272 (Radiotelephony)

Nos. 273 to 276 (Use for radiotelegraphy of frequency bands allocated for radiotelephony)

No. 277 (Frequency 8364 kc/s)

Section V of Article 33 (Nos. 752 to 800)

Section III of Article 34 (Nos. 828 and 829)

Appendix 3 (Frequency tolerances)

Appendix 10

Appendix 12 (modified according to Annex 7 to the Final Acts of the E.A.R.C.)

Relevant provisions of the E.A.R.C.Agreement

Nos. 16 and 17 (General provisions)

Article 8, Nos. 65 to 80 (Plan and List adopted by the E.A.R.C. for coast stations)

Article 14, Nos. 124 to 147 (Special procedure applicable to the Maritime Mobile Service in its exclusive bands)

No. 165 (Final adjustment in bands allocated to coast stations)

No. 170 and Article 29, Nos. 200 and 201 (Entry into force of the adopted List and Plan and of the Table of Frequency Allocations)

No. 208 (Relative significance of 2a and 2b dates)

Section II of Article 32, Nos. 214 to 223 (Procedure for the notification of frequency assignments)

Section III of Article 33, Nos. 231 to 250 and 254 and 255 (Recording of frequency assignments in the Master Record by the I.F.R.B.)

No. 294 (Entry into force of the provisions of Section V of Article 33 of the Regulations and of Section III of Article 34 of the Regulations)

Nos. 296 to 298 (Frequency tolerances)

No. 301 (Entry into force of Appendix 10 to the Regulations)

Nos. 302 and 303 (Modification of Appendix 12 according to Annex 7 to the Final Acts of the E.A.R.C.)

Resolution No. 1 (Bringing into use of the List and Plan adopted by the E.A.R.C.)

Annexes 5, 6 and 7 to the Final Acts of the E.A.R.C.

Note:

Useful information about the technical bases used for preparing the List and Plan adopted by the E.A.R.C. for coast stations may be found in Document No. 591 of the Provisional Frequency Board, dated 19 May, 1949, and in Document No. 602 of the Provisional Frequency Board, dated 13 June, 1949.

REPORT

by the

INTERNATIONAL FREQUENCY REGISTRATION BOARD (I. F. R. B.)

to the

ADMINISTRATIVE RADIO CONFERENCE

(Geneva, 1959)

SECTION VI

Frequency bands allocated exclusively to the High Frequency Broadcasting Service between 3950 kc/s (4000 kc/s Region 2) and 27,500 kc/s

REPORT

by the

International Frequency Registration Board (I.F.R.B.)

to the

Administrative Radio Conference

(Geneva, 1959)

The present booklet contains Section VI

SECTION VI

TABLE OF CONTENTS

REPORT

by the

International Frequency Registration Board (I.F.R.B.)

to the

Administrative Radio Conference

(Geneva, 1959)

SECTION VI

FREQUENCY BANDS ALLOCATED EXCLUSIVELY TO THE HIGH FREQUENCY BROADCASTING SERVICE BETWEEN 3,950 kc/s (4,000 kc/s REGION 2) AND 27,500 kc/s

Note: Part 1 of this Section deals with the application of the provisions of the E.A.R.C. Agreement in respect of the use of the bands allocated exclusively to the High Frequency Broadcasting Service. Part 2 deals with the preparation of draft Plans for that Service.

PART 1

6.1.1 The relevant regulatory provisions

A list of the relevant provisions of the Radio Regulations (hereinafter called "the Regulations") and the Extraordinary Administrative Radio Conference (E.A.R.C.) Agreement (hereinafter called "the Agreement") is appended to this Section. These provisions relate both to the use of the frequency bands allocated to the High Frequency Broadcasting Service and to the preparation of draft plans for that Service.

6.1.2 The Frequency bands concerned

According to the Atlantic City Table of Frequency Allocations, the frequency bands concerned kc/s (4,000 kc/s Region 2) and 27,500 kc/s which are allocated exclusively to the High Frequency Broadcasting Service are as follows:

Frequency Bands and (Bandwidth)	Frequency Band and (Bandwidth)
kc/s	kc/s
5,950 - 6,200 (250)	15,100 - 15,450 (350)
7,100 - 7300 (Regions 1 and 3) (200)	17,700 - 17,900 (200)
9,500 - 9,775 (275)	21,450 - 21,750 (300)
11,700 - 11,975 (275)	25,600 - 26,100 (500)

6.1.3 Position after the E.A.R.C.

6.1.3.1 The E.A.R.C. found that although considerable effort had been expended to prepare a plan for the allocation of frequency-hours for the High Frequency Broadcasting Service, a complete Plan which could be considered by a Conference for implementation had still to be prepared. The Conference decided that the I.F.R.B. should undertake this work and laid down, in Article 11 of the Agreement, the basis on which it should be undertaken (see Part 2 of this Section).

6.1.3.2 In addition, the Conference established an Interim Procedure applicable to all Services whereby assignments should be gradually moved into the appropriate bands of the Atlantic City Table of Frequency Allocations prior to a period of final adjustment which was to be decided upon later in the light of the progress achieved. This Interim Procedure, which is described in Article 12 of the Agreement, was therefore applicable to the High Frequency Broadcasting Service.

6.1.4 Implementation of Atlantic City Table of Frequency Allocations

6.1.4.1 The E.A.R.C., with a view to the implementation of the Atlantic City Table of Frequency Allocations, had laid down, in Article 16 of the Agreement, a procedure for the final adjustment of out-of-band assignments into the appropriate bands.

6.1.4.2 In 1955, the I.F.R.B., in order to facilitate the introduction of the final adjustment period, and in the light of the progress achieved in the application of the special procedures applicable to the Aeronautical and Maritime Mobile Services (see Sections IV and V of this Report), suggested to Administrations a programme for the clearance of the high frequency broadcasting bands on an international basis by an agreed date, thus paving the way for out-of-band high frequency broadcasting assignments to move into band after this date.

6.1.4.3 A detailed study of the assignments recorded in the Master Record at that time revealed that there was a total of 1,291 assignments to other services recorded in the high frequency broadcasting bands and that there were 147 broadcasting stations recorded in bands other than those allocated to the High Frequency Broadcasting Service. In addition, monitoring sources revealed that some 350 broadcasting stations were operating outside the exclusive bands but were not recorded in the Master Record.

6.1.4.4 The clearance programme which was suggested to Administrations by the Board (see paragraph 6.1.4.2) was accompanied by a list of all the out-of-band assignments recorded in the Master Record in the high frequency broadcasting bands and a similar list of the broadcasting assignments recorded in bands other than those allocated to high frequency broadcasting. The Board suggested that the high frequency broadcasting bands should be cleared of all out-of-band assignments by 1 March, 1956, and that thereafter the out-of-band broadcasting assignments should be moved into band (see Circular-letter No. 1740/55/R of 9 May, 1955). This programme was generally accepted by Administrations as reported in Circular-letter No. 1919/55/R of 31 December, 1955, and the results of the efforts of Administrations to clear the high frequency broadcasting bands, which were described in the 8th and 9th Annual Reports of the I.F.R.B. to Members of the Union, were very successful and facilitated the later adjustment of out-of-band broadcasting assignments. The results may be measured by the following data, valid on 1 July, 1959:

6.1.4.4.1 4570 assignments to broadcasting stations appear in the Master Record in the high frequency broadcasting exclusive bands between 5,950 kc/s and 27,500 kc/s.

6.1.4.4.2 47 assignments to stations other than broadcasting still appear in the Master Record in the high frequency broadcasting bands between 5,950 kc/s and 27,500 kc/s. These assignments are recorded on behalf of 8 Administrations and 23 of them have a power greater than 1 kW.

6.1.4.4.3 194 assignments to other Services have been notified and recorded in the frequency bands concerned as in use in accordance with No. 88 of the Regulations, i.e. without causing harmful interference to broadcasting services.

6.1.4.4.4 76 out-of-band assignments to high frequency broadcasting stations still appear in the Master Record between 5,950 kc/s and 27,500 kc/s on frequencies outside the appropriate bands, of which 70 have a power greater than 1 kW.

6.1.4.4.5 There still remain a number of out-of-band broadcasting stations which are not recorded in the Master Record.

6.1.4.4.6 There still appears to be a number of out-of-band assignments operating in the high frequency broadcasting bands which are not identifiable by monitoring observation, some of which may be among those mentioned in paragraph 6.1.4.4.3.

6.1.4.5 It will be seen that thanks to the wholehearted cooperation of Administrations, the high frequency broadcasting bands have been generally cleared from stations of other Services. Furthermore, the results show that, in spite of the high power generally used by broadcasting stations, the wide band of emission and the extensive reception areas of the services, Administrations have made great efforts, generally successful, to transfer their broadcasting services into the appropriate bands.

6.1.5 Notification of Frequency Assignments for the High Frequency Broadcasting Service

6.1.5.1 Section II of this Report gives details on the compilation of the original Master Radio Frequency Record according to the prescriptions of Article 34 of the Agreement. It suffices to recall here that, in the high frequency broadcasting bands referred to in this Section, the Master Record contained, as basic entries, the assignments notified as the "frequency usage information" furnished by Administrations to the I.F.R.B. pursuant to the provisions of No. 272 of the Agreement.

6.1.5.2 Changes in frequency usage (new and amended assignments) were recorded by the Board according to the provisions of Article 33 of the Agreement.

6.1.5.3 In the first publication of the Radio Frequency Record, there were some 2540 frequency assignments recorded in the frequency bands concerned on behalf of 56 Administrations, which had been received and processed according to the provisions of No. 272 of the Agreement and, at the time of the introduction of the Interim Procedure on 1 April 1953, these figures had increased to 2840 and 73, respectively.

6.1.5.4 The volume of notices of changes in frequency usage received by the I.F.R.B. since the recording of frequency usage information commenced in 1953 has been significant. In the 6th Edition of the Radio Frequency Record, there are approximately 4500 frequency assignments in the exclusive bands for the High Frequency Broadcasting Service on behalf of 92 Administrations.

6.1.5.5 For the application of detailed technical examinations (see Section II of this Report), the particulars notified with each assignment, although complete according to the minimum particulars specified in the Appendix to the Agreement, have been found not to be sufficient detail as to permit the Board to assess accurately the particular time of normal use of a specific frequency for each reception area during the different seasons and phases of solar activity. Without such detailed information an exact technical examination is impossible. The information supplied by Administrations, as a general rule, gives the maximum hours of operation of the service to the totality of the notified reception areas (in many cases H24 and in some cases to all areas of the world) and does not give the hours of use of the frequency to each reception area. The hours of probable

use of the frequency to each reception area assessed by the Board according to its Technical Standards usually greatly exceed the actual programme times to that area (according to other information available to the Board) and it is evident, therefore, that the final assessment of the probability that a new, or amended, assignment will cause harmful interference to an existing assignment is much greater than will occur in practice. As a result, in nearly 95% of the cases examined by the Board, unfavourable Findings resulted. The Board regrets this development, because it feels that if, within the spirit of the Agreement, more specific information had been notified, it would have been possible to reach favourable Findings for at least some parts of the time of day and phases of solar activity when the new transmissions were required.

6.1.5.6 When an unfavourable Finding was given, the frequency notice was returned to the Administration. In nearly all cases, after receiving the notice, the Administration returned it to the Board according to the provisions of No. 245 of the Agreement and the assignment was so recorded in the Master Record. This would seem to confirm the view that the general information provided in respect of the existing and the new assignment does not permit a reasonably factual assessment of the possibilities of sharing.

6.1.5.7 The assignments recorded under the provisions of No. 245 of the Agreement in the Master Record (ZZ and ZZZ entries) are being reviewed by the I.F.R.B. as explained in Section VII (paragraph 7.6.4) of this Report. The Board began the review of broadcasting assignments by considering those in the 21 and 26 Mc/s bands, being of the opinion that it could obtain the most accurate information on the use of frequencies in the present period of high solar activity in this particular part of the spectrum. Of the 84 assignments in these bands which were reviewed, only one assignment received a favourable Finding. On continuing the review in consultation with the Administrations concerned, it was determined, however, that 97.5% of the assignments were either not being used at all or were only in partial use. The reviews have not yet been completed since the Administrations on whose behalf the affected assignments are recorded are now being consulted. The Board hopes that all the information sought in its questionnaires will be provided by the Administrations concerned, so that it will be possible to establish a Record reflecting to a greater degree the actual use being made of all the assignments involved.

6.1.6 Problems in reference to the use of the exclusive High Frequency Broadcasting bands

6.1.6.1 In spite of the general clearance of the high frequency broadcasting bands, many Administrations have found difficulty in finding satisfactory

frequencies for their out-of-band broadcasting assignments, even after exhausting such possibilities as the interchange of out-of-band assignments provided for in No. 107 of the Agreement. The Board was asked, in a number of cases, to undertake studies in accordance with Section VII of Article 11 of the Regulations, with a view, in particular, to help countries to decide what frequencies to assign, in the appropriate bands, to their broadcasting stations, in cases where the transfer of an out-of-band station was likely to allow a number of other Administrations to benefit from the spectrum space thus set free; such was the case during implementation of the clearance programmes for the Maritime Mobile, Aeronautical Mobile and Standard Frequency exclusive bands.

6.1.6.2 However, it was difficult for the I.F.R.B. to render any great assistance to Administrations in finding in-band frequencies for broadcasting services and the general problems relating to the application of No. 110 of the Agreement are explained in Section VII (paragraphs 7.4.2.1 and 7.4.2.2) of this Report. It suffices to say here that a number of factors combine to accentuate the problem in the case of high frequency broadcasting. These are the relatively high power used by broadcasting stations, the wide band of emission and the extensive reception areas of the services as well as the fact that the Master Record does not reflect, in most cases, the actual use being made of the frequencies to each reception area and that the monitoring information received by the Board is insufficient for the purpose of determining actual world wide usage. Nevertheless, in spite of the difficulties, studies were undertaken and, in many of these cases, the Board was able to make specific suggestions.

6.1.6.3 A number of cases of harmful interference have been brought to the Board's attention, either for its information, or in accordance with No. 391 of the Regulations. In the latter cases, the Board has frequently been able to make suggestions to the Administrations concerned in order to improve the situation, but, for the reasons already explained, it was not always possible to put forward specific solutions.

6.1.6.4 Some monitoring centres have continued to provide the Board with detailed observations on the spectrum occupancy by high frequency broadcasting stations. Such information was particularly useful in connection with the programme for the clearance of the exclusive high frequency broadcasting bands referred to in paragraph 6.1.4 in identifying out-of-band stations which had to be transferred and in making suggestions on the use of certain frequencies. The monitoring information was particularly enlightening in reference to out-of-band high frequency broadcasting stations. In fact, through this information the Board was continually aware of the extent of this problem and the efforts that were necessary to transfer

high frequency broadcasting stations into band. Information in this respect was also received from specialist organizations, such as the European Broadcasting Union and the International Broadcasting Organization.

6.1.6.5 Although continuous efforts were made to make the exclusive bands entirely available to the Broadcasting Service, these efforts were hampered by the fact that not all out-of-band transmissions could be identified by monitoring observations. Only in those cases where the assignments could be identified could any action be taken by the Board to promote clearance.

6.1.7 Questions to be considered by the Administrative Radio Conference in connection with the High Frequency Broadcasting Service

6.1.7.1 The Conference, in reviewing Article 5 of the Regulations, will no doubt wish to consider whether the bands allocated exclusively to the High Frequency Broadcasting Service should be retained unchanged. In considering the proposals of Administrations in this respect, it will doubtless bear in mind the extensive efforts which have been made at various Conferences by Administrations themselves, and by the I.F.R.B., to prepare assignment plans for the orderly use of the exclusive high frequency broadcasting bands.

6.1.7.2 The Conference may then wish to decide on the entry into force of the Table of Frequency Allocations for the bands in question, bearing in mind the fact that the existing Table is generally respected in the frequency bands between 3,950 kc/s (4,000 kc/s Region 2) and 27,500 kc/s.

6.1.7.3 Once the question of the overall bands to be allocated exclusively to the High Frequency Broadcasting Service has been settled, it will no doubt be appropriate to examine the way in which the exclusive bands are to be utilized in the future. In this respect, the Conference will wish to consider the draft plans prepared by the I.F.R.B. which have been submitted to the Conference for its consideration, the preparation of which is explained in Part 2 of this Section.

6.1.7.4 As any plans which might be adopted would take time to implement, the Conference will no doubt wish to review the existing recording procedure provided in Article 33 of the Agreement. In this connection, the Conference may wish to consider whether assignments to high frequency broadcasting stations should contain more specific information in regard to the actual periods of use of the frequency to each area of reception.

PART 2

Preparation of Draft Plans for the High Frequency Broadcasting Service

6.2.1 Historical

6.2.1.1 At the time of the Atlantic City Conferences, it was recognized that the effectiveness of the High Frequency Broadcasting Service could only be achieved through the orderly use of the frequencies in the spectrum allocated to this service. Accordingly it was decided that a plan for the allocation of frequency-hours to all the high frequency broadcasting stations of the world should be established. Since that time, efforts to this end have been made by a series of conferences and meetings which are listed below:

a) International High Frequency Broadcasting Conference, Atlantic City, 16 August 1947 - 27 September 1947.

b) Planning Committee, Geneva 22 March 1948 - 10 June 1948 and Mexico City, 14 September 1948 - 20 October 1948.

c) International High Frequency Broadcasting Conference, Mexico City, 22 October 1948 - 10 April 1949.

d) Technical Plan Committee, Paris, 16 June 1949 - 5 December, 1949.

e) Technical Plan Committee, Florence, 1 March 1950 - 31 March 1950.

f) International High Frequency Broadcasting Conference, Florence/ Rapallo, 1 April 1950 - 19 August 1950.

6.2.1.2 Results of the various meetings and conferences

The above-mentioned meetings and conferences achieved several plans and agreements, the following being the more important:

1) Report of the International High Frequency Broadcasting Conference - Atlantic City 1947.

2) Report of the Planning Committee of the High Frequency Broadcasting Conference - Geneva Session 1948 (with a Draft Frequency Assignment Plan - June Sunspot Medium in its Annex).

3) International High Frequency Broadcasting Agreement - Mexico City, 1949.

4) Mexico City Basic Plan for June Sunspot 70 - Mexico City, 1949.

5) Draft plans for seasons June, Equinox and December of Sunspot Numbers 40 and 12 - Technical Plan Committee, Paris, 1949.

6.2.1.3 In spite of the progress made, the last conference of the series, that is, the Florence/Rapallo Conference, which was to consider and supplement the plans so far drafted in the hope of reaching final agreement, was unfortunately faced with circumstances that led it finally to decide to suspend its deliberations and close without completing its task.

6.2.2 E.A.R.C. Agreement

6.2.2.1 In 1951, the E.A.R.C., with the ultimate objective of bringing into force the Atlantic City Table of Frequency Allocations, decided to entrust the I.F.R.B. with continuing the preparation of draft plans for the High Frequency Broadcasting Service. The details of the procedure were specified in Articles 11 and 28 of its Agreement.

6.2.3 Preparation of the Draft Plans by the I.F.R.B.

6.2.3.1 Establishment of up-to-date Broadcasting requirements

6.2.3.1.1 On 23 April 1952, by Circular-letter No. D 1511/R, the Board requested all Administrations to send in their up-to-date requirements for the High Frequency Broadcasting Services, before 1 July 1952 in accordance with No. 99 of the Agreement. A detailed guide to Administrations for the filling in of the necessary requirement forms was attached to that letter.

6.2.3.1.2 There was some delay in receiving information from a number of countries, and finally, it was still necessary, in accordance with No. 99 of the Agreement, to extract information from the Mexico City Basic Plan for nineteen Administrations which had not submitted up-to-date information. The List of Requirements thus compiled with the help of the Mechanical System of the I.F.R.B. (see Section XI of this Report) was published and despatched to Administrations on 6 February 1953.

6.2.3.2 Analysis of the requirements

After assembling the High Frequency Broadcasting requirements, the I.F.R.B. made a detailed analysis of them in order to assess the feasibility of preparing an acceptable draft plan. It was found that the up-to-date requirements had very greatly increased in comparison with those accommodated in the Mexico City Basic Plan, and the Board concluded

that the preparation of a new plan, to embrace all requirements of Administrations, was impossible without degrading the Technical Standards adopted by the Mexico City Conference to such a degree that the plan would be unacceptable, technically, to the majority of the Administrations of the Members of the Union. The Board reported this analysis in a very detailed manner to Administrations in Circular-letter D 1190/R of 11 May, 1953 together with several recommendations, the most important among them being that a special endeavour should be made to reduce their requirements. The same report was presented to the Administrative Council of the Union at its Session in May, 1953 with the following points given for its consideration :

a) whether the work of preparing plans for the High Frequency Broadcasting service entrusted to the I.F.R.B., should be discontinued;

b) whether a special committee should be created to negotiate with all Administrations for a reduction of their requirements, and, if necessary, to impose reductions; or

c) whether a special High Frequency Broadcasting Conference should be called to consider the situation.

The Council, in its Resolution No. 286, decided to invite all Administrations to reduce requirements and to request the I.F.R.B. to examine the revised requirements with a view to the practicability of fitting them into the available spectrum space.

6.2.3.3 Revised Requirements

6.2.3.3.1 Pursuant to the Administrative Council's Resolution mentioned above, the Board sent Circular-letter D 1550/R on 24 June 1953 to all Administrations inviting them to revise their requirements with every effort to reduce them to a value comparable to those provided for in the Mexico City Basic Plan.

6.2.3.3.2 Towards the end of 1953, the Board was able to assess the situation of the revised requirements. It found that while twenty Administrations had reduced their requirements by a total of 1,198 channel-hours, nine other Administrations had asked for a total increase of 468 channel-hours. The overall number of channel-hours in the revised requirements was now 12,377, which was still 4,533 (58%) more than those provided in the Mexico City Basic Plan. The Board concluded that the reduction of requirements was still not sufficient to permit a plan to be made on the basis of the technical principles and standards established at Mexico City. In a report sent to Administrations under cover of Circular-letter No. D 157/R on 27 January 1954, the Board gave all pertinent details of the situation and invited Administrations to comment. In addition, the Board addressed a special appeal to each of those

Administrations, whose revised requirements (1953) exceeded by 15% or more the requirements accommodated in the Mexico City Plan, to review their requirements in the light of the part of the Report in which the Board stated that a plan might be drafted if every Administration limited its requirements to one frequency for each programme and identified its separate programmes.

6.2.3.3.3 Fifty-three Administrations responded to the above-mentioned report and individual appeals. Forty of them maintained or even increased further their requirements. The details of the situation and of the response from Administrations were reported to the Administrative Council at its Session in May 1954.

6.2.3.3.4 The Council, in its Resolution No. 294, requested the I.F.R.B. to continue its studies and endeavour to find some method which would make it possible to arrive at an acceptable result, and also to consult directly each Administration concerned for a reduction in channel-hours. Administrations were informed of this Resolution by Circular-letter No. 1222/54/R (1) on 21 June 1954.

6.2.3.4 Final analysis after consultations with Administrations

In Circular-letter No. 1649/55/R of 24 January 1955, the Board informed all Administrations that, in spite of intensive consultations with individual Administrations, the total requirements remained 27% higher than those accommodated in the Mexico City Basic Plan, and the preparation of a draft plan for phase June 70 might be possible only if Administrations:

a) were prepared to accept the revised echnical tandards of reduced channel separations, and a co-channel protection comparable to that provided in the Mexico City Basic Plan, and

b) were prepared to accept adjustments in the times of their transmissions.

6.2.3.5 Decision of the Administrative Council for completing a draft plan for phase June 70

The Council, in view of the final analysis by the I.F.R.B., mentioned in the previous paragraph, decided at its session in April-May 1955, in its Resolution No. 336, to request the Board to continue its studies and consultations with Administrations, taking advantage of all the possibilities indicated in Article 11 of the Agreement, and to endeavour to complete a draft plan for phase June 70, for circulation to Administrations in sufficient time for their comments to be received before the 1956 annual session of the Council.

6.2.3.6 First draft plan for the High Frequency Broadcasting Service - Phase June 70

6.2.3.6.1 The first draft plan for phase June 70 was prepared along the lines mentioned at the end of paragraph 6.2.3.4. It was completed and despatched to Administrations by Circular-letter No.1908/55/R on 31st December, 1955, which also explained, inter alia, the amount of requirements accommodated and the technical standards used. Owing to last minute requests for increases in requirements by some Administrations, particularly from those which previously had not submitted "up-to-date" requirements, the total number of channel-hours required rose to 159% of those in the Mexico City Plan. The final accommodation in the draft plan was 132%. The percentage increase was much higher in the peak listening hours. The important feature in the change of technical standards was the adoption of a basic 10 kc/s channel separation with a pattern of interlacing assignments at 5 kc/s intervals. The Board believed that this change enabled better plans to be provided than a reduction of the channel separation to 7 or 8 kc/s.

6.2.3.6.2 Administrations were also asked to send to the I.F.R.B. their comments on the draft plan before the 1st April 1956 in order to present them to the Administrative Council for consideration at its Session in 1956. A summary report of these comments was presented to the Council and the same report was transmitted to Administrations through Circular-letter No.1996/56/R on 27th April, 1956. It was evident from the report that while a large number of Administrations supported the draft plan as a basis for discussion, the Administrations' objections were also quite numerous and most of them were mutually incompatible. Thus, they sought more allocations and, at the same time, better protection and continuity. The Board clearly pointed out in the report that it would not be possible to revise the plan to meet fully the wishes presented in the comments.

6.2.3.6.3 The Council, in its Resolution No.348 adopted at its session in April/May 1956, requested the I.F.R.B. to revise its draft plan for phase June 70 taking into account the comments received from Administrations as far as possible, and subsequently to prepare a draft plan for Phase December 70.

6.2.3.7 Draft Reference Plan - Phase June 70

With further consultations and joint studies with Administrations, the I.F.R.B. revised its first draft plan for phase June 70. At the same time, it informed Administrations that this revised plan would form the basis for projection to draft plans for the other phases, and for this

reason, it was named the Draft Reference Plan. The plan was despatched to Administrations on 18th April, 1957 under cover of Circular-letter No. 2256/57/R. It was possible in the revised plan to increase the overall allocations by about 7%, to improve the continuity of the use of particular frequencies, and to improve the protection to some assignments.

6.2.3.8 Preparation of Draft Plans for other phases

In view of the progress made in the planning work, the Administrative Council, at its session in April/May 1957, requested the I.F.R.B. to complete the projection of the Draft Reference Plan to the remaining seasons of phase 70 and, as soon as possible thereafter, to commence the projection to the seasons June, Equinox and December for the periods of low and high sunspot activity (Resolution No. 365). This Resolution was transmitted by the I.F.R.B. to Administrations in Circular-letter No. 2298/57/R of 19th June, 1957. During the ensuing two years, the Board was able to prepare the remaining eight draft plans which were despatched to Administrations as indicated below:

Draft Plan for:	Covering Circular-letter:	Date:
Equinox-70	2501/58/R	21st April, 1958
December-70	2501/58/R	21st April, 1958
June-125	2556/58/R	22nd July, 1958
Equinox-125	2594/58/R	2nd October, 1958
December-125	2594/58/R	2nd October, 1958
December-12	2642/59/R	9th January, 1959
Equinox-12	2689/59/R	17th March, 1959
June-12	2720/59/R	24th April, 1959

The bases for the projection of the allocations in the Draft Reference Plan to the other phases were explained in the different covering letters. Administrations were also asked to send their comments on each plan.

6.2.3.9 Graphical Index and Preface

6.2.3.9.1 The allocations to each Administration in the draft plans for the three seasons of each sunspot number were also prepared in graphical form to serve as an index to these allocations. They were transmitted by individual letters to each Administration.

6.2.3.9.2 When all the draft plans had been completed, the Board prepared a preface to give a recapitulated account of the general principles and technical standards used in the planning. This was despatched to Administrations on 15th May, 1959 through Circular-letter No.2734/59/R.

6.2.4 Comments from Administrations

By the end of April 1959, the I.F.R.B. had received comments from Administrations on the draft plans for Sunspot Numbers 70 and 125 in sufficient number for analysis. It also hopes that by the time of the Administrative Radio Conferences, sufficient comments in respect of the draft plans for Sunspot Number 12 will have been received that they may be similarly treated. These comments are being presented to the Administrative Radio Conference as a separate document in the form of booklets devoted to general comments and to a detailed analysis in respect of the draft plans for each Sunspot Number.

6.2.5 Observations on Administrations' comments

6.2.5.1 It hardly needs to be stated that after all the efforts and time spent in the preparation of a draft High Frequency Broadcasting Plan, the important question now is whether the Plan can be made generally acceptable. Unfortunately, this question cannot be easily answered from the comments which have been received so far from Administrations. However, from the essential points contained in the comments, the following deductions can be made:-

6.2.5.1.1 Firstly, it must be recognized that many Administrations were commenting in a detailed manner upon their assignments in the draft plan. They pointed out their objections to certain assignments because of one reason or another. They also pointed out certain requirements which they considered essential and which were not accommodated. Since in most cases, such detailed objections refer to only small fractions of their total assignments, it may be assumed that those Administrations are prepared to accept the major part of their assignments, i.e. those upon which they have not commented. Whether they will be able to accept the Plan then depends on:

1) the extent to which their detailed comments can be satisfied, and

2) to what extent these Administrations are willing to make concessions.

With regard to point 1), the I.F.R.B. has made a brief annalysis of all the detailed comments, and has examined the degree to which they might be satisfied. This has been indicated in the booklets of comments, as mentioned in paragraph 6.2.4. Few Administrations could be wholly satisfied in this respect. As to point 2), only the Administrations themselves can give the answer and it will not be known until the Administrative Radio Conference has been convened and the draft plans thoroughly discussed.

6.2.5.1.2 It is noted that very few Administrations have expressed complete satisfaction with the plan, and in fact several Administrations have rejected it, on the ground that their requirements were not satisfied to 100% both quantitatively and qualitatively. In this respect, the I.F.R.B. must point out that it has repeatedly advised Administrations as well as the Administrative Council of the Union that it is impossible to make a draft plan to embrace all the requirements as submitted by the Administrations without degrading the Technical Standards far below an acceptable degree (see paragraph 6.2.3.2). The I.F.R.B. also made it quite clear when it commenced to prepare the Draft Reference Plan that it did so on the assumption that Administrations:

a) would be prepared to accept interlaced assignments at 5 kc/s intervals and protection ratios comparable to those provided in the Mexico City Basic Plan; and

b) would be prepared to accept some adjustments in the times of their transmissions.

The Board has reported to Administrations, in Circular-letter No. 1996/56/R of 27th April, 1956, that many of their objections concerning the first draft Plan for Phase June 70 were mutually incompatible. This was so because Administrations wanted additional assignments as well as better protection, strict adherence to a required time schedule and better continuity in the use of a given channel. These observations are equally applicable to the comments on subsequent draft plans.

6.2.5.1.3 Several Administrations have pointed out that they object to the draft Plan because its contents are already largely, obsolete, since, for the majority of countries, they are based on requirements submitted between 1952 and 1955. In this connection, however, the Board wishes to point out that Administrations were constantly revising their requirements until late in 1955. On the other hand, it will be appreciated that the plan covers several phases spread through a complete solar cycle. If such a plan, covering requirements which were regarded as up-to-date were adopted for implementation forthwith, the complete set of draft plans, composed of several phases, would not be fully implemented for a period of years. For

that reason, the question of revising a draft plan to take care of developments or changes will, no doubt need to be carefully considered in conjunction with the implementation of the Plan by the Radio Conference.

6.2.6 Conclusions

In concluding, the I.F.R.B. recommends that the draft plans prepared in accordance with Articles 11 and 28 of the E.A.R.C. Agreement and completed pursuant to Administrative Council Resolutions Nos. 286, 294, 336, 348, 365 and 387, should form a basis of discussion for the Conference. In this respect, the Board believes that:

6.2.6.1 The draft plans represent a resonable balance between satisfaction in numbers of frequency hours assigned and quality;

6.2.6.2 Adjustments can always be made in the details of the draft plans, but the principles followed do not permit the accommodation of many more requirements during the notified hours without lowering the technical quality; neither can the technical quality be improved without reducing the number of requirements to be accommodated.

6.2.6.3 Even though there are some requirements which have not been assigned frequencies, every effort was made to ensure that at least one frequency has been provided for every programme of each Administration.

6.2.6.4 Although some Administrations have expressed concern about probable mutual interference between co-channel assignments and between assignments interlaced at 5 kc/s intervals, the actual sharing patterns in the draft plans, even with the considerably increased number of requirements accommodated, are very little worse than those in the Mexico City Basic Plan. In the Mexico Plan, the requirements were relatively lower for the higher bands (15 Mc/s band and upwards) and the needs of co-channel sharing in these bands were so small that they did not pose any serious problem. But in the lower bands, where co-channel sharing was comparatively greater, the protection ratios were, in many cases, appreciably lower than the Technical Standards specified in the Mexico City High Frequency Broadcasting Agreement. In the case of 5 kc/s interlaced assignments in the draft plans prepared by the Board, it would not be difficult to find similar sharing patterns for co-channel assignments shown in the Mexico City Basic Plan. It is, therefore, believed that, had the same total of requirements as were received by the Board in 1952-55, been submitted to the Mexico City Conference, Administrations would have then agreed to accept that kind of sharing pattern in the draft plans. Also many actual broadcasting services are operated at 5 kc/s separation. These were the main reasons why the Board considered that there was a prospect that the draft plans might be generally acceptable to the Administrations, if prepared on such a basis. It should perhaps also

be borne in mind that, during its annual review of the situation over the past seven years in fulfilment of the obligations it was invited to undertake by the E.A.R.C., the Administrative Council, in the light of the reports and considerations furnished by the I.F.R.B., did not find it necessary to recommend to Administrations any action other than that the Board should continue with the work and, eventually, should prepare draft plans on the bases the Board had described, and which are explained in the Preface to the Draft Plans (see Circular-letter No. 2734/59/R of 15th May, 1959).

6.2.6.5 While it is not claimed that the draft plans are fully satisfactory in respect of meeting all the desires of Administrations, they represent a substantial effort towards achieving that objective and their implementation would result in more effective high frequency broadcasting services and would promote a more orderly use of the high frequency spectrum.

A P P E N D I X

Relevant Provisions of the Radio Regulations

Article 1 (Nos. 57-69) Technical Characteristics

Article 2 (Nos. 74-84) Designations of emissions

Article 3 General Rules for the Assignment and Use of Frequencies

Article 4 Special arrangements

Article 5 Table of Frequency Allocations

Article 7 Special Rules for the Assignment and Use of Frequencies

Article 9 (Nos. 243 and 254) Special Rules relating to the Broadcasting Service

Article 14 Procedure in case of interference

Article 18 International Monitoring

Appendices 1, 3, 5, 6, 7

Appendix C International Monitoring

Recommendations Nos. 3, 4 and 8

Relevant Provisions of the E.A.R.C. Agreement

Article 3 (Nos. 14, 15) General Provisions for Frequencies between 3,950 kc/s (4,000 kc/s in Region 2) and 27,500 kc/s

Article 11 Preparation of Draft Plans for the High Frequency Broadcasting Service

Article 12 Procedure for the Transfer of Assignments into their appropriate bands; Establishment of New Assignments in the appropriate bands; Procedure in cases of Harmful Interference.

Article 13 Progress Reviews and Reports

Article 16 Final Adjustment of out-of-band assignments into their appropriate bands. Procedure applicable to all Services.

Article 17 Special Procedure applicable to the different Services

No. 170 Adoption of the New International Frequency List and Entry into force of the Table of Frequency Allocations.

Article 28 Adoption of Plans for the High Frequency Broadcasting Service for the bands between 3,950 kc/s (4,000 kc/s Region 2) and 27,500 kc/s

Nos. 205, 207, 214-217 Notification and Registration of Frequency Assignments

Article 33 (Nos. 231-240) Examination of Notices
(Nos. 241-255) Findings by the I.F.R.B. and Recording in the Master Record.

Article 34 (Nos. 260-268) Basic Entries in the Master Record
(Nos. 272-274) Particulars to be furnished by Administrations for basic entries in the Master Record.

Nos. 287, 288, 290, 291, 292, and 293 Special Provisions relating to the I.F.R.B.

Appendix.

Resolution No. 3 related to the Fixed, Land Mobile and Broadcasting Services between 3,950 kc/s (4,000 kc/s Region 2) and 27,500 kc/s.

Recommendation 11 International Monitoring

Recommendation 12 Identification of Emission

Recommendation 14 concerning C.C.I.R. Studies.

REPORT

by the

INTERNATIONAL FREQUENCY REGISTRATION BOARD (I. F. R. B.)

to the

ADMINISTRATIVE RADIO CONFERENCE

(Geneva, 1959)

SECTION VII

Frequency bands allocated to the Fixed, Land Mobile, Tropical Broadcasting and Standard Frequency Services between 3950 kc/s (4000 kc/s Region 2) and 27,500 kc/s

ARCHIVES U.I.T. GENÈVE

REPORT

by the

International Frequency Registration Board (I.F.R.B.)

to the

Administrative Radio Conference

(Geneva, 1959)

Section		Title
I	-	Introduction
II		Compilation and maintenance of the Master Radio Frequency Record
III	-	Frequency bands between 14 kc/s and 3950 kc/s (4000 kc/s Region 2) (with the exception of the exclusive aeronautical mobile bands between 2850 kc/s - 3155 kc/s, 3400 kc/s - 3500 kc/s and, in Region 1, 3900 kc/s - 3950 kc/s)
IV	-	Frequency bands allocated exclusively to the Aeronautical Mobile Service between 2850 kc/s and 27,500 kc/s
V	-	Frequency bands allocated exclusively to the Maritime Mobile Service between 4000 kc/s and 27,500 kc/s
VI	-	Frequency bands allocated exclusively to the High Frequency Broadcasting Service between 3950 kc/s (4000 kc/s Region 2) and 27,500 kc/s
VII	-	Frequency bands allocated to the Fixed, Land Mobile, Tropical Broadcasting and Standard Frequency Services between 3950 kc/s (4000 kc/s Region 2) and 27,500 kc/s
VIII	-	Frequency bands above 27.5 Mc/s
IX	-	Technical Standards
X	-	International Monitoring
XI	-	The organization of the International Frequency Registration Board and of its Specialized Secretariat

The present booklet contains Section VII

SECTION VII

TABLE OF CONTENTS

(continued)

SECTION VII

TABLE OF CONTENTS (continued)

REPORT

by the

International Frequency Registration Board (I.F.R.B.)

of the

Administrative Radio Conference

(Geneva, 1959)

SECTION VII

FREQUENCY BANDS ALLOCATED TO THE FIXED, LAND MOBILE, TROPICAL BROADCASTING AND STANDARD FREQUENCY SERVICES BETWEEN 3,950 kc/s (4,000 kc/s REGION 2) AND 27,500 kc/s

7.1 The relevant regulatory provisions

A list of the relevant provisions of the Radio Regulations (hereinafter called "the Regulations") and of the Extraordinary Administrative Radio Conference (E.A.R.C.) Agreement (hereinafter called "the Agreement") is appended to this Section.

7.2 Implementation of the Atlantic City Table of Frequency Allocations for the frequency bands between 3,950 kc/s (4,000 kc/s Region 2) and 27,500 kc/s

7.2.1 The ultimate objective of the Extraordinary Administrative Radio Conference was the bringing of the assignments of all Administrations into conformity with the Atlantic City Table of Frequency Allocations.

7.2.2 To this end it laid down, in Article 12 of the Agreement, a procedure to be followed by Administrations and the I.F.R.B. in the transfer of assignments between 3,950 kc/s (4,000 kc/s Region 2) and 27,500 kc/s into their appropriate bands. It also laid down, in Article 14, special procedures to be applied in respect of assignments of the Maritime Mobile Service in its exclusive bands, and, in Article 15, corresponding procedures in respect of assignments of the Aeronautical Mobile Service in its exclusive bands; and it adopted Resolutions Nos. 3 and 4 relating to the question. Finally, it laid down, in Articles 16 and 17, procedures to be followed by all Services during the "Final Adjustment Period" by the end of which it was envisaged that all out-of-band operations should cease.

7.2.3 The I.F.R.B. was charged, in Article 13, to make periodic progress reports to Administrations on the transfer of out-of-band assignments into their appropriate bands; and the Administrative Council, in No. 157 of the Agreement, was invited to review the progress made with a view to recommending a specific date for the beginning of the Final Adjustment Period.

7.2.4 The application of the special procedures provided for in Articles 14 and 15 of the Agreement for the Maritime and Aeronautical Mobile Services respectively in their exclusive bands is described in Sections V and IV of this Report. The clearance of the exclusive High Frequency Broadcasting bands through a programme initiated by the Board is dealt with in Section VI.

7.2.4.1 With respect to the bands exclusively allocated to the Standard Frequency Service, the Board took the initiative, in Circular-letter No. 2003/56/R dated 14 May, 1956, of consulting Administrations on setting a date for achieving the clearance of these bands. In consultation with Administrations, the Board recommended to this effect, in Circular-letter No. 2093/56/R, dated 7 September, 1956, the date of 1 November, 1956. There seemed to remain at that time some possibilities of harmful interference in the 5 Mc/s band. It appears nevertheless that the bands exclusively allocated to the Standard Frequency Service are almost entirely at the disposal of this Service. The Board, when noting in monitoring reports received from various sources, out-of-band transmissions in the frequency bands exclusively allocated to the Standard Frequency Service, writes to the Administration concerned and invites it to discontinue that transmission, if it happens to originate from a station under this Administration's jurisdiction.

7.2.5 The I.F.R.B. kept the situation in respect of the operation of out-of-band assignments under close review in all the frequency bands between 3,950 kc/s (4,000 kc/s, Region 2) and 27,500 kc/s. It found in early 1955 that, while certain portions of the spectrum had been substantially cleared of out-of-band assignments to enable step by step implementation of adopted plans for the Maritime Mobile and Aeronautical Mobile Services, and although Administrations were devoting an immense amount of effort towards achieving the objectives of the E.A.R.C., a great number of out-of-band assignments were still in operation; and it advised the Administrative Council at its 10th Session (April - May, 1955) that it would be premature to recommend a date for the commencement of the Final Adjustment Period.

7.2.6 During the ensuing year, although a very large number of out-of-band assignments continued to be recorded in the Master Record, favourable responses were given by the majority of Administrations to proposals which were initiated by the I.F.R.B. for the setting of specific dates for the clearance of the frequency bands allocated exclusively to the Maritime Mobile, Aeronautical Mobile, and High Frequency Broadcasting Services. This enabled the Board to suggest to Administrations, and to Administrative Council at its 11th Session (April-May 1956), that the Final Adjustment Period might commence on a date not earlier than 1 May, 1957. The Board also suggested that the final adjustment of assignments should be spread over a period of 10 months, the period of

one month provided for each "block" in No. 162 of the Agreement being extended to two months in the case of blocks 3,4 and 5 in view of the large number of assignments which, it was envisaged, would still have to be treated in each of these blocks. The Council, after consulting Members of the Union, decided that the Final Adjustment Period should commence on 1 June 1957, and to last for a period of 10 months, but that this date would be subject to review at its next session in 1957.

7.2.7 With a view, inter alia, to assisting Administrations in making the necessary adjustments to their frequency usage, the I.F.R.B. extracted from the Master Record, and sent to every Administration during June and July 1956, a complete list (called List C) of all the assignments which were recorded on its behalf in the bands between 3,950 kc/s (4,000 kc/s Region 2) and 27,500 kc/s; and it also sent similar lists to the Administrations whose assignments were at that time entered in the Supplementary Information to the Radio Frequency Record (See Section II of this Report). It requested each Administration carefully to review its assignments, to cancel or to modify, as appropriate, those which were no longer used in accordance with the recorded particulars; and it addressed a special appeal to Administrations with respect to out-of-band assignments, which were specially marked on each list, to make every endeavour to cancel these or to transfer them into the frequency bands appropriate to the Service concerned.

7.2.8 Thanks to the foregoing measures and the great endeavours made by Administrations, it was possible for the I.F.R.B. to report to the Administrative Council, at its Twelfth Session (April-May, 1957) that the number of out-of-band assignments recorded in the Master Record in the frequency bands specified in No. 272 of the Agreement had been reduced to less than 5,000 by the 31 January 1957 and was continuing to fall. In the light of this report, the Council confirmed that the Final Adjustment Period should commence on 1 June 1957 and that its duration should extend over a period of 10 months. The complete programme was sent to Administrations under cover of Circular-letter No. 2242/57/R of 28 March, 1957.

7.2.9 Prior to the date set for the commencement of the final adjustments in each block, the Board brought the Master Record up-to-date for the portion of the spectrum involved in each block by completing the technical examination of all outstanding notices which had been received in the frequency range concerned. The Board was thus able, just before the dates set for the final adjustments in each block, to advise Administrations, through a series of Circular-letters, of the specific assignments which should be transferred from each block.

7.2.10 The I.F.R.B. continued to study the situation after the conclusion of the Final Adjustment Period and sent reports to the Members of the Union describing, respectively, the position on 31 March 1958, 1 December 1958 and 1 May 1959. This last report showed that on

1 May 1959 the number of assignments recorded in the Master Record, in the frequency bands specified in No. 272 of the Agreement, which were not in conformity with the Atlantic City Table of Allocations - excluding those operated under No. 88 of the Radio Regulations or similar provisions - was 1,214, representing less than 1% of the total assignments recorded in the Master Record in the frequency bands concerned. Of these 1,214 assignments, 1,025 were in the bands allocated to all Services between 3,950 kc/s (4,000 kc/s in Region 2) and 27,500 kc/s, among which 181 were in the bands allocated to the Fixed, Land Mobile and Tropical Broadcasting Services. It is to be noted that 689 assignments to fixed stations were still recorded on frequencies outside the appropriate bands in this part of the spectrum.

7.2.11 The situation was examined by the Administrative Council at its 14th Session (May - June 1959) and it adopted Resolution No. 406 in which, inter alia, the Council "urged Administrations which continued to use assignments which are not in conformity with the Atlantic City Table of Frequency Allocations to make every endeavour, prior to the opening of the Administrative Radio Conference, to cancel or to transfer such assignments into the appropriate frequency bands".

7.2.12 A letter embodying the above-mentioned appeal of the Administrative Council was sent almost immediately thereafter to every Administration which still had recorded in the Master Record, on its behalf, assignments which were not in conformity with the Atlantic City Table of Frequency Allocations, together with a complete list in duplicate of all such assignments. In its letter, the I.F.R.B. urged Administrations to scrutinize very carefully the list of assignments annexed to the letter and it made a number of suggestions which might lead to the cancellation or modification of these assignments. It requested that one of the copies of the list should be returned not later than 31 July 1959 so that any changes could be carried into a comprehensive list which would be submitted to the Administrative Radio Conference.

7.2.13 Pursuant to a request contained in Administrative Council Resolution No. 406 the I.F.R.B. will submit a supplementary report on the question after the return of the above-mentioned lists by the Administrations concerned and a further analysis has been made of the assignments recorded in the Master Record after such modifications as are made by the Administrations have been incorporated therein.

7.2.14 Since more than 15,000 out-of-band assignments were still recorded in the Master Record on 30 September 1955 in the frequency bands covered by No. 272 of the Agreement, and since 1 January 1953, over 27,000 assignments had been cancelled in, or transferred from, the Aeronautical Mobile and Maritime Mobile exclusive bands alone, the fact that only a relatively small number of out-of-band assignments remain (see paragraph 7.2.10 above) shows the tremendous efforts which have been made by the Administrations to implement the Atlantic City Table of Frequency Allocations.

7.3 Application of the Procedure specified in Article 33 of the Agreement for recording frequency assignments in the Master Radio Frequency Record:

7.3.1 Section II of this Report gives details on the compilation of the initial Master Record according to the prescriptions of Article 34 of the Agreement. It suffices to recall here that, in the frequency bands referred to in this Section, the Master Record contained as basic entries the "frequency usage information" furnished by Administrations to the I.F.R.B. pursuant to the provisions of No. 272 of the Agreement.

7.3.2 For the reasons explained in detail in Section II of this Report, it was only on 1 April, 1953, that the Board introduced the procedure specified in Article 33 of the Agreement for the recording of frequency assignments in the bands listed in No. 272 of the Agreement, which includes the bands referred to in this Section. By this date, the Master Record, containing the assignments of seventy-three Administrations, was deemed to be sufficiently comprehensive for this procedure to be applied. This procedure comprises an examination of every frequency assignment notice, with a view to ascertaining whether it is in conformity with the provisions of the Regulations other than those relating to the probability of harmful interference, and whether it includes the minimum technical information required under the Appendix to the Agreement, and also a technical examination with a view to determining whether the use of a newly-notified assignment, or a modification of an existing assignment, is likely to cause harmful interference to assignments already recorded in the Master Record.

7.3.3 The examination of frequency assignment notices requires uniform application by the I.F.R.B. of Rules of Procedure and Technical Standards.

7.3.3.1 Because of the volume of frequency assignment notices which it has received since 1952, the Board felt obliged to draw up comprehensive "Rules of Procedure" (see Section II of this Report). Section II of these Rules of Procedure applies to the frequency bands under consideration.

7.3.3.2 The Technical Standards of the I.F.R.B. are dealt with in Section IX of this Report.

7.3.3.3 Details regarding the technical examination of frequency assignment notices by the Board are given in Section II of this Report. It suffices to explain here that, in the frequency bands under consideration, this examination is made for normal propagation conditions,

taking account of diurnal variations, during four representative phases of solar activity; and the Finding made by the Board, if unfavourable, indicates the periods of the day during each of these phases (sometimes only one phase is involved) when harmful interference to other assignments already recorded in the Master Record may be expected.

7.3.3.4 A general definition of favourable, qualified favourable, and unfavourable Findings made by the Board is given in paragraph 2 of the Preface to Technical Standard A-1. The means whereby these Findings are reached are defined in Chapter D, Section II, of the Rules of Procedure.

7.3.4 The following figures show the number of assignment notices in the frequency bands under consideration and the frequency bands allocated exclusively to the High Frequency Broadcasting Service received by the I.F.R.B. since 1 April, 1953, which have required a technical examination:

1953	10,100	(1 April to 31 December)
1954	12,622	
1955	12,636	
1956	21,357	
1957	14,475	
1958	13,696	(adjusted according to Note 3 to Table II of the 11th Annual Report of the I.F.R.B.
1959	6,895	(1 January to 30 June)

The very large number of assignment notices received in 1956 was due, as explained in detail in paragraphs 7.2.7 and 7.6.2, to the fact that the Board during that year sent to each Administration an extract from the Master Record showing all the assignments of that Administration in the frequency bands referred to in No. 272 of the Agreement and asked for this information to be brought up-to-date.

7.3.5 Arrears in the treatment of assignment notices accumulated from 1953, because Administrations have been sending in far more notices than had ever been expected, not only by the Atlantic City Conference, but also by the E.A.R.C. At the end of 1956, as at the end of 1955, there was a "backlog" representing more than five months' work in most bands. During 1957, the Board concentrated its efforts on the liquidation of these arrears;

and thanks to improved methods of applying its Technical Standards, further standardization of its Rules of Procedure, special efforts by the members and staff, the "backlog" had been eliminated by the end of 1957. As a result and with the engagement of extra staff authorized by the Administrative Council, the time elapsing between receipt of a notice by the Board and the issue of a Finding has been reduced to about two months which must be regarded as the normal time-delay having regard to the numerous steps which have to be taken in the treatment of a notice. It should be noted, however, that this time-delay is bound to fluctuate according to the rate of receipt of notices.

7.3.6 It may be of interest to note that, in the frequency bands mentioned in No. 272 of the Agreement about 8,500 notices have been re-submitted so far to the I.F.R.B. and recorded in the Master Record under the terms of No. 245 of the Agreement; this figure represents approximately 63% of the total notices which have received an unfavourable Finding with respect to the provisions of No. 235 of the Agreement and which were returned to the Administrations concerned in accordance with No. 242 thereof. The application of this procedure has thus resulted, since 1 April, 1953, in avoiding insertion of some 4,500 assignments which, it must be assumed, were found to give rise to harmful interference in practice.

7.4 Problems of harmful interference brought to the attention of the I.F.R.B. and Studies in accordance with Section VII of Article 11 of the Regulations

7.4.1 Since 1953, forty-five cases of harmful interference in the bands under consideration have been brought to the Board's attention, either for its information, or in accordance with No. 391 of the Regulations. In the latter cases, the Board has frequently been able to make suggestions to the Administrations concerned, usually for slight frequency readjustments, sufficient to improve the situation. Generally speaking, before the Board makes such suggestions, it asks the Administrations concerned to consider and examine whether the changes envisaged would solve the problems involved. But in general, the Board has had to recognize that the data from the Master Record and monitoring reports do not sufficiently reflect actual usage for it to put forward specific solutions.

7.4.1.1 It is to be noted that in each case of actual harmful interference brought to the attention of the Board, facts have supported the conclusion derived by the Board from the application of its Technical Standards in studying the case, i.e. that probabilities of harmful interference existed.

7.4.2 Furthermore, the Board has undertaken twenty-five studies in accordance with Section VII of Article 11 of the Regulations, with a view, in particular, to help countries to decide what frequencies to assign, in the appropriate bands, to their Fixed Stations, in cases where transfer of an out-of-band station was likely to allow a number of other Administrations to benefit from the spectrum space thus set free, for example, during implementation of the clearance programmes for the Maritime Mobile, Aeronautical Mobile, Broadcasting or Standard Frequency exclusive bands.

7.4.2.1 It has to be observed, in this connection, that certain Administrations, invoking No. 110 of the Agreement, have submitted lists of out-of-band assignments outside the category mentioned in the previous paragraph, stating their inability to transfer these assignments unless the Board could designate replacement frequencies in the appropriate bands. Other Administrations, too, have asked the Board to suggest frequencies for assignment to new services, which they wished to bring into use. The Board, while appreciating how difficult and complicated are the problems with which all Administrations have had to cope during the last few years, has not been in a position to comply with these requests in cases where the Administration concerned had not informed the Board of the full details of the results obtained in applying the procedures specified in Nos. 107, 108, 109 and 114 of the Agreement.

7.4.2.2 The question of finding frequencies which Administrations could use without causing or receiving harmful interference, was raised in the Administrative Council during its Twelfth Session (1957), and the Board submitted a memorandum (Document 1975/CA12) which is reproduced in Annex 1 hereinafter. Should the Conference consider extending the scope of No. 110 of the Agreement, as interpreted by the Board in relation to the terms of reference given it by the International Telecommunication Convention, Buenos Aires, (1952), it will no doubt wish to take this memorandum into account. It will be gathered from this memorandum that the Board feels that steps of this kind should be taken only if a strict procedure is evolved, under which all Administrations can be given uniform treatment.

7.5 Present state of frequency assignments in the Master Radio Frequency Record in the frequency bands concerned

7.5.1 Under the terms of Article 10 of the Agreement, the Board was charged to prepare a draft New International Frequency List for the bands in question, taking into account:

a) the Radio Frequency Record for the appropriate parts of the spectrum, the assignments included in that Record being adjusted where necessary to improve the use of the spectrum and thus permit the accommodation of new assignments;

b) the unsatisfied actual new requirements at the end of the Final Adjustment Period.

7.5.2 As regards the use of the Radio Frequency Record as a basis for the draft List, it should first of all be noted that, under the terms of No. 272 of the Agreement, the basic entries in the Master Record were to represent, at the time when the application of the Interim Procedure defined in Article 33 of the Agreement started, "particulars in respect of the usage of frequencies needed to maintain their existing services over a complete solar cycle". Under the terms of Nos. 214, 215 and 216 of the Agreement, any subsequent "change in frequency usage", in the meaning of this expression as defined in No. 8 of the Agreement, should be notified not earlier than three months before the change became effective, and not later than 10 days thereafter. According to No. 247 of the Agreement, such a "change in frequency usage" is not entered in the Master Record until it has taken place.

7.5.3 It was obviously the aim of the above provisions to place at the disposal of a future Radio Conference, referred to in No. 170 of the Agreement, a Master Radio Frequency Record which, being originally based on "frequency usage" as envisaged in No. 272 of the Agreement (see paragraph 7.5.2 above) and on later entries made after a technical examination according to the Interim Procedure, would form a technical framework comparable to that of the complete new list which was envisaged at Atlantic City.

7.5.4 Soon after the Interim Procedure began to be applied, the I.F.R.B. commenced to have doubts as to whether the Master Record would meet the requirements which the E.A.R.C. had in mind - that of a list which would reflect accurately actual operations, and the Board had grounds to believe that Administrations might also have such doubts. In fact, it appeared to the Board (which has since found no reason to change its opinion) that the Master Record indicates a considerably greater degree of spectrum occupancy than that which normally exists in practice.

7.5.5 In fact, it would seem that the intention of the E.A.R.C. referred to in paragraph 7.5.3 has been rather lost sight of and that Administrations, possibly anticipating the implementation of Article 10 of the Agreement, have from the beginning regarded the Master Record created by the E.A.R.C. not as a faithful picture of the actual situation in the frequency spectrum, but rather as a draft frequency assignment "plan" into which they have introduced their "requirements", or at least what they consider to be their "requirements", including proposed expansions, probably for a period considerably greater than a solar cycle.

7.5.6 The reasons why the I.F R.B. holds the belief that the Master Record gives an exaggerated picture of the occupancy of the spectrum have already been indicated to Administrations in general terms; for instance, in the individual letters which accompanied Lists C (see paragraph 7.6.2), in Circular-letter No. 2296/57/R of 17 June 1957 (see paragraph 7.6.3) and in the Board's Annual Reports for 1956 and 1957.

7.5.7 Am Among these reasons are the following which have become apparent in the course of the Board's examination of frequency assignment notices:

7.5.7.1 Among the assignments in the Master Record, there are several thousands which have received unfavourable Findings with respect to No. 235 of the Agreement, but which have been recorded in accordance with the provisions of No. 245 of the Agreement after return of the notice to the notifying Administration under No. 242. Very many of these could not receive favourable Findings on the basis of the information entered in the Master Record and of the existing I.F.R.B. Technical Standards or of any technical standards likely to be evolved, and in these cases it is obvious that, if these assignments were operating as notified, interference with existing assignments would be inevitable, assuming that these existing assignments were operating according to their recorded particulars. Yet many of the notices re-submitting the assignments were accompanied by a statement from the Administration concerned to the effect that the assignment notified had been used for a certain time (the total usage period sometimes being quoted in hours) without giving rise to complaints of actual interference.

7.5.7.2 There are also many thousands of assignments which have received qualified favourable Findings, which means that a distinct possibility of harmful interference to assignments already recorded appeared to exist. Yet complaints of actual harmful interference from such assignments reach the Board only very occasionally, which would indicate that interference is much less serious than conclusions based on the information recorded in the MRFR would lead one to expect.

7.5.7.3 The Board has frequently found that an Administration has notified an assignment the use of which was likely to cause harmful interference to transmissions from another country and intended for reception by a receiving station situated on territory under the jurisdiction of that Administration. Sometimes the new transmitting station notified was at the same place of reception and using the same frequency as that of the incoming circuit.

During 1956 and 1957 the Board questioned the Administrations concerned in such cases. The reply was frequently that "the frequency x kc/s is not received in our country" or even that "the circuit indicated as being affected does not exist". Further comments and suggestions relating to this question are given in Annex 2.

7.5.8 In paragraph 7.5.4 above, it was stated that the Board had grounds to believe that Administrations shared its doubts. As a further example, the following comments are taken from a document submitted by an Administration to the Administrative Council relating to the difficulties of finding in-band frequencies:

"These difficulties are encountered in two principal cases:

a) when study of national or international frequency records reveals the possibility of accommodating a fresh assignment, monitoring reports show that the space is occupied by some unregistered station;

b) when monitoring records indicate the existence of available space the frequency record shows that the channel is assigned to a country which (perhaps momentarily) is not using it."

7.5.9 Although some further reasons for the Board's views are mentioned later (in paragraphs 7.6.2, 7.6.3 and 7.6.4) in connection with the steps which the I.F.R.B. has taken with a view to rectifying the situation, it is believed that sufficient evidence has been cited to justify these views. It would be helpful if it would be possible to estimate the extent to which the Master Record fails to reflect actual frequency usage; that is, the ratio of "notified spectrum occupancy" to "actual occupancy".

7.5.10 This ratio could be estimated reasonably well, no doubt, if statistics based on an extensive analysis of the recorded assignments and on detailed information on a wide range of actual operations were available. However, it has not been possible to establish such statistics. This is primarily because the very existence of the problem means that adequately comprehensive information on actual operations is not available to the I.F.R.B. Nevertheless, the Board, on the basis of information in I.T.U. publications, has made some studies which have helped it to form its opinion, and some results of these sample studies, which it should be noted are by no means unique examples, are given below.

7.5.11 One of these studies concerns the three Fixed Service bands between 13,360 and 16,460 kc/s, totalling 2,290 kc/s. In these bands one Administration, called Administration A, has notified 25 similar assignments for operation to over a dozen localities, including several at a great distance. These assignments include no less than 97 telephone channels for reception at all receiving points. The assignments to a single transmitting centre of a second Administration B include nearly 100 telephone channels for reception at a large number of localities distributed through a large part of the world. Two other Administrations, C and D, have notified a number of assignments for long-distance operation to an average of 4 points each. These assignments include 62 telephone channels, 38 for C and 24 for D.

7.5.12 For the paths notified by Administration D, the frequencies are useful for about 8 hours per day, at least in years of low solar activity. It follows that the potential capacity of the 24 notified channels appears to be at least 20 times that which was required for the number of radiotelephone calls shown for the Administration concerned in the I.T.U. "General Telecommunications Statistics" for a typical year of low solar activity. If similar considerations apply to the assignments of Administrations A, B and C, and also to Administrations not included in this study, the actual use of the frequencies of such assignments must be much less extensive than appears from the Master Record.

7.5.13 It is also interesting to note that, for many of the receiving points involved, the I.F.R.B. has been able to trace only a very few, if any, return telephone channels among the assignments of the Administrations of the countries in which the notified receiving stations are located.

7.5.14 Another study has been made on 135 automatic telegraph operations recorded in the Master Record in frequency bands between 18 and 21 Mc/s on behalf of 13 countries close to one another and working to a common distant receiving point, i.e. in similar propagation conditions. From the summaries of monitoring information covering a nine-month period, a count was made of the total number of times that each assignment was reported by monitoring stations near the receiving point. From this study it emerges that, while one station was reported 159 times, 44 assignments (almost one third) were not reported at all. No less than 80% of the monitoring observations were accounted for by only 23% of the assignments, these stations being reported on the average about 12 times as often as

the remaining 77%, although the deductions drawn from the information recorded in the Master Record would indicate that the spectrum occupancy by each of these assignments should be the same. This study of course cannot indicate the absolute level of activity of the assignments concerned, but it seems clear that the majority of the assignments studied must fall far short of full activity in the spectrum space which, according to the information in the Master Record, they appear to occupy.

7.5.15 The above examples relate to long distance services, but of course it is common for some Administrations to notify large numbers of local low power services employing both telegraphy and telephony. For instance, in one band 50 kc/s wide, below 7 Mc/s, one country has assignments of this type on 11 frequencies. When, as often happens, the assigned frequencies are only 5 kc/s apart, there are virtually no gaps left for the use of other Administrations, and moreover the spacing is so close that simultaneous use of telephony by assignments of the same Administration on adjacent frequencies cannot be satisfactory when, as is often the case, the stations concerned are geographically close to one another. When this is so, two such assignments each with a bandwidth of 6 kc/s and notified on frequencies 5 kc/s apart, appear to occupy 11 kc/s, but as telephony can be used by only one of these assignments at a time, only 6 kc/s, that is, hardly more than half of the apparently occupied space will be in use at any one moment. Here again the real occupancy must be less than the apparent occupancy, even if each frequency is used continuously. But in many cases, even the telegraphy service will be intermittent, so that the real occupancy will be still further reduced and there should be great possibilities of concentrating several assignments of this type on a single frequency, as is done by many Administrations.

7.5.16 Without really comprehensive statistics, the I.F.R.B. cannot accurately assess the ratio which notified occupancy bears to actual occupancy, but believes that, even after making due allowance for varying propagation conditions and operational flexibility, it is often high and sometimes very considerable.

7.6 Steps taken by the I.F.R.B. with a view to ensuring that the Master Record reflects actual operations as accurately as possible

7.6.1 The I.F.R.B. has always been anxious to see that the Master Record would reflect as accurately as possible the situation in the radio spectrum, and, as Administrations have been informed through its various reports, the Board has taken a number of steps with a view to attaining this objective, taking into account the views expressed in paragraph 7.5. But, until such time as this objective could be reached, the Board, as it is desirous of making the best use of the information in the Master Record as it stands, has also found it necessary to take other measures.

7.6.2 The first step was the despatch, in 1956, of Lists C - tabulations of all the assignments recorded on behalf of each Administration in the bands specified in No. 272 of the Agreement (see paragraph 7.2.7). The I.F.R.B. accompanied these tabulations with an appeal to Administrations to review their assignments with respect to completeness and accuracy, and, with reference to Fixed Service assignments, the Board made a special appeal to each Administration to cancel all points of reception to which services were no longer operated or which might be served on other frequencies, to reduce the notified bandwidths of emission in all cases where the emissions using the wider bandwidths were not normally employed, to state the complement of frequencies used for each circuit and to review the number of frequencies in this complement. Many Administrations amended or deleted a number of their assignments, but very little information was received with respect to frequency complements, which would have facilitated the task of the Board in estimating the probable period of normal use of each frequency and hence of assessing, more accurately, the probability that the assignment would cause or receive harmful interference. In paragraph 58 of Circular-letter No. 2242/57/R of 28 March 1957, the I.F.R.B. expressed the opinion that "there still exist in the Master Radio Frequency Record circuits which have too many frequencies, and assignments for which an unduly large number of points of reception have been notified, or which are recorded as using wide bandwidths of emission which are only infrequently employed".

7.6.3 As a further step, the Board prepared a proposal which was distributed to Administrations as Circular-letter No. 2296/57/R dated 17 June 1957. This proposal suggested a means by which frequency assignments, or certain characteristics of frequency assignments, when used on an "occasional" basis could be so recorded. The responses (from fifty-seven Administrations) which were summarised in Circular-letter No. 2486/58/R of 1 April 1958, showed appreciation of the Board's attempt to secure greater possibilities of frequency sharing and can be taken to imply a recognition of the importance of the factor under discussion - that actual activity in the frequency spectrum is less than the information in the Master Record indicates. However, the Board has drawn from the analysis of the replies the conclusion that the suggestion concerned should be discussed at the Administrative Radio Conference (see Annex 4 to this Section).

7.6.4 Next, the Board, in Circular-letter No. 2424/57/R of the 20 December, 1957, announced that it was commencing a review of assignments recorded in the Master Record upon the insistence of notifying Administrations in accordance with No. 245 of the E.A.R.C. Agreement (ZZ assignments), and that, in the course of these reviews, the I.F.R.B. would study, in the spirit of No. 114 of the Agreement, the actual use

made of each of the frequencies involved. As the review procedure involves much correspondence with Administrations, it is naturally a slow process and as other duties of the Board make heavy claims on its limited resources, the I.F.R.B. does not expect to complete reviews of many cases before the commencement of the Administrative Radio Conference. Nevertheless, the Eleventh Annual Report of the Board (Circular-letter No. 2721/59/R of 1 May 1959) was able to state, in paragraph 7.5.5.3, "that the majority of Administrations have shown willingness to collaborate with the Board in supplying more detailed information regarding the use of their assignments; that, however, this information is supplied slowly, and is sometimes incomplete; and when supplied it reveals that, in many cases, current operations are much less extensive than those indicated by the entries in the Master Record". A detailed statistical report on the results of the application of this procedure is contained in Annex 3 to this Section.

7.6.5 As a measure devised in order to allow more practical conclusions to be drawn from the information in the Master Record as it stands, the Board drew up its Rules of Procedure, referred to in Section II of this Report, so as to be able to take account of certain sharing possibilities which undoubtedly exist but which are not always apparent, from entries in the Master Record. They, therefore, permit the Board to avoid making the unfavourable Findings which the mere application of rigid technical considerations would indicate, but which in all probability would be unrealistic in such cases. For instance, the qualified favourable Findings which the I.F.R.B. formulates in accordance with the application of principles explained in paragraph D.2.4.3 of Section II of the Rules of Procedure (symbols "OOCA", "PMCA", "SPR", "N103") enable it to a certain extent to take into account sharing possibilities, in particular, with respect to wide-band multi-channel emissions and multiplicity of notified reception points. Similarly the application of the principles represented by the symbols "AASA" or "AVLP" seemed to the Board to be likely to encourage Administrations to use the frequencies already assigned to some of their stations rather than to seek entirely new frequencies for their new stations, which they seem, in general, only too inclined to do, possibly not fully appreciating that the co-ordination of the use of a frequency is normally easier within the country itself, than when more than one country is involved.

7.6.6 As indicated in Section X, the Board has found that monitoring data, if available in sufficient quantity, is a useful addition to the information recorded in the Master Record and with this in mind has made many requests for such data and, with a view to enhancing the effectiveness of monitoring stations, has endeavoured to encourage measures which would facilitate the identification of stations.

7.7 Results of the steps taken by the I.F.R.B.

7.7.1 In view of the above, it may be said that the survey by Administrations of Lists C, and the review by the I.F.R.B. of "ZZ assignments", have had the effect that the entries in the Master Record now correspond somewhat more closely with actual operations than they did before and the Board therefore suggests that the application of these procedures should continue. However, the procedures cause Administrations and the I.F.R.B. considerable work and involve considerable time. In fact it would be feasible neither to apply the "List C" procedure very frequently nor to expect that the "ZZ review" procedure could be carried out in respect of all the cases concerned within a short period, especially if the procedure were also to be applied, as would be desirable, to assignments which have received qualified favourable Findings.

7.7.2 The step referred to in paragraph 7.6.3 (suggestion regarding "occasional" and "regular" use) aroused considerable interest, but consideration of it, by Administrations and the I.F.R.B., indicates that two main comments could be made on it. Briefly, these are:

a) Without clear definitions of the terms "occasional" and "regular", various Administrations would tend to apply the suggestion in different ways. The results would probably be non-uniform and therefore not satisfactory.

b) The suggestion invited each Administration to differentiate between its assignments in the general interests of the I.T.U., but with the apparent prospect of only indirect advantage to itself.

Further comments by the Board on this suggestion are contained in Annex 4 to this Section, together with considerations concerning a possible extension of the principles underlying the suggestion.

7.7.3 With reference to paragraph 7.6.5 and to the Rules of Procedure therein mentioned, these procedures are regarded as having been effective during the phase now concluding (the movement into band) as they have avoided the return of many notices to the Administrations concerned and have therefore facilitated the movement of assignments into band. In fact

this movement might well have been seriously impeded if these procedures had not been evolved by the Board. Nevertheless the very numerous qualified favourable Findings which result cannot be fully satisfactory to Administrations which wish to operate their assignments with a minimum of qualifications. But if Administrations are prepared to take action in order to improve the comprehensiveness and accuracy of information in the Master Record and in their frequency assignment notices, the way would be open to the simplification of the I.F.R.B. Rules of Procedure, including the abandonment of some types of qualified favourable Findings.

7.8 Preparation of a draft New International Frequency List in accordance with Article 10 of the Agreement

As explained in paragraph 7.5.1. the E.A.R.C. decided that a new International Frequency List should be prepared for the Fixed, Land Mobile and Tropical Broadcasting Services between 3,950 kc/s (4,000 kc/s Region 2) and 27,500 kc/s which would incorporate the assignments contained in the appropriate parts of the Master Radio Frequency Record. In view of the considerations outlined in the foregoing paragraphs, the I.F.R.B. considers that it would be premature to establish such a List on the basis of this Master Record as it exists at present. The Board is of the opinion that some of the defects of the present Master Record should be eliminated and has made suggestions to this end (see paragraphs 7.6.2 to 7.6.4 and 7.7.3 and Annexes 2 and 4); other suggestions have already been made to the Conference by some Administrations and still further suggestions will no doubt be forthcoming from other Administrations which consider that the Master Record, in its present form, gives inadequate, and possibly misleading, information. The Board feels that it would be in the best interests of the Union if the Conference were to concentrate its attention, at least in the first instance, on methods and measures for improving the accuracy of the Record as this would lead, ultimately, to the formulation of a much more satisfactory and useful International Frequency List than could be evolved, from the data contained in the existing Record, at the present time.

7.9. Questions to be considered by the Administrative Radio Conference in connection with the frequency bands allocated to the Fixed, Land Mobile, Tropical Broadcasting and Standard Frequency Services between 3,950 kc/s (4,000 kc/s in Region 2) and 27,500 kc/s.

7.9.1 The Conference, when reviewing Article 5 of the Regulations, will no doubt consider whether it should maintain these bands as they are in the Table of Frequency Allocations. In this connection, it will certainly take into account that, as a result of the application of the provisions of the Agreement, the Atlantic City Table of Frequency Allocations is generally respected in this part of the spectrum.

7.9.2 The Conference may wish to review the Master Record in the bands concerned and consider what steps should be taken to bring the Record more closely into line with the actual usage of each frequency, especially in relation to the entries in Columns 4b, 6, 7 and 10. In this connection the Conference may, in addition to other measures, contemplate:

a) the establishment of a procedure whereby the Board would send to every Administration, at regular intervals to be set up in connection with the periodicity of publication of the Radio Frequency Record, an extract from the Master Record representing that Administration's frequency assignments, with a request that it be brought up-to-date and returned to the Board with a confirmation that it represents actual utilisation of frequencies (see paragraph 7.6.2);

b) laying down a procedure whereby a distinction is made between recorded assignments according to the degree of regularity of their use (see paragraph 7.6.3 and Annex 4 to this Section).

7.9.3 The Conference may then wish to decide on the entry into force of the Table of Frequency Allocations for the bands in question, and, in this connection, the consequential treatment to be accorded to assignments which have been notified on out-of-band frequencies.

7.9.4 The Conference may wish to consider the treatment to be accorded to assignments entered in the Master Record as a result of qualified favourable Findings (Remarks 185 or 189 in Column 13) or under the provisions of No. 245 of the Agreement, after an unfavourable Finding (Symbols ZZ or ZZZ in Column 13). It will perhaps decide that the future procedure which it will agree for the registration of frequency assignments in the Master Record should be applicable retroactively to these types of assignments.

7.9.5 In reviewing the present procedure for the notification and recording of frequency assignments in the bands concerned, the Conference may wish to consider measures for improving the notification procedure for assignments in the Fixed Service. Annex 2 includes suggestions to this effect.

7.9.6 In considering the proposals of Administrations concerning the dates to be entered in Column 2 of the Master Record, the Conference may wish to take into account the comments and suggestions made by the Board in Section III (paragraph 3.7.2) of this Report.

7.9.7 The Conference - should it consider extending the scope of provisions such as those in No. 110 of the E.A.R.C. Agreement - will no doubt take into account the advisability of establishing a strict and detailed procedure to this end (see paragraphs 7.4.2.1 and 7.4.2.2).

A P P E N D I X

Relevant Provisions of the Radio Regulations

Article 1 (Nos. 57-69) Technical Characteristics

Article 2 (Nos. 74-84) Designations of Emissions

Article 3 General Rules for the Assignment and Use of Frequencies

Article 4 Special arrangements

Article 5 Table of Frequency Allocations

Article 7 Special Rules for the Assignment and Use of Frequencies

Article 9 (Nos. 250-254) Broadcasting in the Tropical Zones

(Nos. 278-283) Fixed Service

Article 14 Procedure in case of interference

Article 18 International Monitoring

Appendices 1, 3, 5, 6 and 7

Appendix B Standard Frequency and Time Broadcasts

Appendix C International Monitoring

Recommendation Nos. 2, 3, 4 and 8

Relevant Provisions of the E.A.R.C. Agreement

Article 3 (Nos. 14 & 15) General Provisions for Frequencies between 3,950 kc/s (4,000 kc/s in Region 2) and 27,500 kc/s

Article 10 Preparation of the Draft International Frequency List for Fixed, Land Mobile and Tropical Broadcasting Services in the bands between 3,950 kc/s (4,000 kc/s in Region 2) and 27,500 kc/s

Article 12 Procedure for the transfer of assignments into their appropriate bands, establishment of new assignments in the appropriate bands, cases of harmful interference

Article 13 Progress Reviews and Reports

Article 16 Final adjustment of out-of-band assignments into their appropriate bands. Procedure applicable to all Services

Article 17 Special procedure applicable to the different Services

No. 170 Adoption of the New International Frequency List and Entry into force of the Table of Frequency Allocations

Article 27 Adoption of the New International Frequency List for the Fixed, Land Mobile and Tropical Zone Broadcasting Services

Nos. 205, 207, 214-217 Notification of frequency assignments

Article 33 (No. 231-240) Examination of notices
(No. 241-255) Findings by the I.F.R.B. and recording in the Master Record

Article 34 (No. 260-268) Basic entries in the Master Record
(No. 272-274) Particulars to be furnished by Administrations for basic entries in the Master Record
(No. 278-279) Entries in Column 2c, subsequent entries and amendments

Nos. 287, 288, 289, 291, 292, 293 Special provisions relating to the I.F.R.B..

Appendix

Resolution No. 3 related to the Fixed, Land Mobile, and Broadcasting Services between 3,950 kc/s (4,000 kc/s Region 2) and 27,500 kc/s.

Recommendation 11 International Monitoring

Recommendation 12 Identification of emission

Recommendation 14 concerning C.C.I.R. Studies

ANNEX 1

(see paragraph 7.4.2.2)

Document No. 1975/CA12 of 20 May 1957

******

MEMORANDUM BY THE I.F.R.B. TO THE ADMINISTRATIVE COUNCIL

APPLICATION OF No. 110 OF THE E.A.R.C. AGREEMENT

1. During recent sessions of the Administrative Council, the representatives of certain of its Members have directed some criticism towards the I.F.R.B. that the Board has not helped these Administrations by advising them of the frequencies which should be used for their services. Indeed, during the current session of the Council, a question to the Board is recorded as follows: "Did the Board intend to help those Administrations which had run out of frequencies and could find no replacement frequencies?"

2. The I.F.R.B. is not a frequency distributing body according to the decisions of the Atlantic City Radio Conference, which created the Board, and proposals by some Administrations to make it such were not accepted by the Buenos Aires Plenipotentiary Conference (see, in particular, Document No. 344, paragraph 2 of this Conference). Neither the Radio Regulations nor the E.A.R.C. Agreement lay down any procedure whereby the Board could effect an orderly distribution of frequencies to the different countries. The Board therefore considers it desirable to endeavour to explain the extent to which it can furnish advice to individual Administrations on the use of particular frequencies, in present circumstances, or more specifically, to comply with No. 110 of the E.A.R.C. Agreement, which reads as follows:

> "An Administration may request the I.F.R.B. to study and to make proposals for the transfer of out-of-band assignments, particularly in those cases in which the Administration concerned has not been able to carry out transfers without causing harmful interference to transmissions on existing assignments. Such proposals should take into account the practical and technical possibilities in each individual case."

3. No. 110 of the E.A.R.C. Agreement cannot be separated from paragraph 1 b) of Article 6 of the Convention, under which the I.F.R.B. is empowered to furnish advice to Administrations with a view to the operation of the maximum practical number of radio channels. The Board considers that its function in this respect is to formulate advice on the possibility of an Administration using any given channel specifically nominated by that Administration. For example, in the I.T.U. Circular-letters published in 1953 and 1954 about the clearing and bringing into use of new aeronautical mobile R frequencies in various parts of the world, the Board indicated the limitations of various kinds which prevent extensive application of No. 110 of the E.A.R.C. Agreement and stated that it could do no more than offer to advise Administrations on the possible use of the old aeronautical mobile

service frequencies, which, although released by this service in the areas concerned could nevertheless still be used by this service in other parts of the world in which protection should still be afforded them; this advice was also intended to apply only to the case where the use of a specific frequency was suggested by an Administration for a specific station and service. In this connection, the Board, when examining a notice of an assignment submitted by an Administration, endeavours to give the maximum assistance to that Administration by indicating the hours and/or seasons during which the proposed assignment would be liable to interfere with those of other Administrations. Sometimes these hours comprise a comparatively short part of the day, or cover only a single season; and it is thus open to the notifying Administration to re-submit the notice, in the light of this information, and use the frequency for the hours during which harmful interference is unlikely to be caused.

4. It is a fact that in the past the Board has also been able to offer suggestions concerning the choice of frequencies; such suggestions have been offered, however, either

a) in order to assist an Administration in the clearance of a particular out-of-band assignment which was likely to prevent the bringing into use by a substantial number of Administrations, on a prescribed date, of frequencies in the aeronautical mobile (R) or maritime mobile exclusive bands in accordance with agreed plans or programmes for these services;

or b) when such a suggestion emerged from the technical studies undertaken by the Board with a view to formulating Findings concerning the use of a frequency notified by the Administration concerned, and it was suggested to this latter Administration at the same time as the notices were returned with the unfavourable Findings made by the I.F.R.B.; usually, in such cases, it was observed that a slight change in the frequency or other technical data might result in a favourable Finding being given and such modifications were therefore suggested to the notifying Administration;

or c) as a result of a study carried out by the Board after it had been supplied with the complete file of the case by the Administration concerned upon completion by it of the procedures Administrations have agreed to follow, as specified in the E.A.R.C. Agreement or in Article 14 of the Radio Regulations.

5. It is clear from Article 12 of the E.A.R.C. Agreement that the transfer of frequency assignments into the appropriate bands and the choice of frequencies to this end or for the introduction of new operations are matters for which Administrations are primarily responsible. Moreover, it appears that the provisions of Nos. 107, 108, 109 and even 111, of this Agreement, in which detailed descriptions are given of the procedures Administrations themselves should follow in such cases, including the

interchange of assignments, the selection of alternative frequencies through monitoring observations and requests for the assistance of other Administrations, must be applied before those of N. 110.

6. Hence, before applying, within the framework of Article 6 of the Convention, the provisions of No. 110 of the E.A.R.C. Agreement, the Board considers that the Administration making the request should let it have the results of the procedures carried out in accordance with Nos. 107, 108, 109, 111 and 114 of the E.A.R.C. Agreement and indicate the specific frequencies selected for notification.

7. Such has not been the case with those Administrations which have regularly requested large scale assistance from the Board by invoking No. 110 of the E.A.R.C. Agreement. Such requests have usually been made in response to an enquiry by the Board concerning the clearance of out-of-band operations and have been framed in a general manner, for example, the Administration will clear a particular frequency or band when the Board nominates the frequencies to which the out-of-band operations should be moved. Other requests for the nomination of frequencies by the Board have been in the case of new services, in particular where the Board has made unfavourable Findings with respect to frequencies notified by an Administration. In all such cases the Board has received none of the details mentioned in paragraph 6 above when these have been solicited.

8. The Board believes that the E.A.R.C. linked No. 110 of the Agreement with the following:

a) that Administrations would "do their utmost to improve the efficiency of the international monitoring system and to extend its coverage on a world-wide basis". (E.A.R.C. Recommendation No. 11);

b) that "an adequate knowledge of the use which is being made of the spectrum is necessary to enable Administrations to select frequencies for their new assignments and for replacement of out-of-band assignments, and to enable the I.F.R.B. to render advice to Administrations in their selection of these frequencies, and that such knowledge may be provided, to a great extent, by the data derived from international monitoring"; (E.A.R.C. Recommendation No. 12);

c) that "in the near future, the usage of the spectrum will be subject to extensive changes as a result of the decisions of the present Conference, and that in consequence an effective international monitoring system will become more and more necessary to the Administrations as well as to the I.F.R.B."; (E.A.R.C. Recommendation No. 12);

d) that it would be applied only when the procedures normally applied by Administrations, such as those desribed in Article 12, had failed to provide a solution and that all of the details would be forwarded to the Board with the request.

Thus it was believed that the Master Radio Frequency Record (M.R.F.R.) would reflect the use being made of the spectrum and that the Board would receive extensive monitoring information on a world-wide basis. With this information and the complete details provided by the Administration in each case at its disposal, the Board would be able to make proposals which would "take into account the practical and technical possibilities in each individual case".

9. Such has not proved to be the case. In spite of the efforts made by the I.F.R.B. and the very great number of frequency assignments which have been treated, the M.R.F.R. is not yet complete and still does not accurately reflect the actual use of the spectrum. Moreover, although the Board has made several appeals to Administrations to supply or to increase their supply of monitoring information, it is unfortunately a fact that at present the information received is very far from representing world-wide coverage. In addition, none of these Administrations which have regularly requested the Board to apply No. 110 of the E.A.R.C. Agreement supply the Board with any monitoring information, although the Board understands that monitoring systems have been established at least by some of them.

10. The search for a suitable frequency involves not only a study of the probability of harmful interference being caused to existing assignments of other Administrations, but also the probability of harmful interference being received from such assignments. The Board has found that studies of this nature, with the great mass of assignments recorded in the M.R.F.R., are very time-consuming and can be highly complicated (particularly if the Board has to seek the collaboration of other Administrations whose assignments may have to be adjusted). In this respect, the Board would stress that it has not facilities or powers such as those envisaged in Document No. 1847/CA11 (Mexican Proposal) and that Administrations, according to the existing Regulations, are not bound to accept any decisions or recommendations of the Board. Furthermore, when such a study has to be made in face of an ever changing Record, results may well be out-of-date before trials can be completed by the Administration concerned, since the Board is bound to examine all frequency assignment notices in order of their receipt in the frequency range concerned. Moreover, if a frequency becomes available, due, say, to the cancellation of an assignment, is it right that this should be offered to the Administration which first requested assistance, bearing in mind that other Administrations may, in the meantime, have made much greater efforts over a longer period, but without success, to solve their problem before invoking assistance from the Board? A procedure based on "first come, first served" might well result in Administrations hastening to pass their problems of frequency assignment to the I.F.R.B.

11. A further complication in the application of No. 110 of the E.A.R.C. Agreement has been the reluctance of certain Administrations to accept, as a replacement frequency for an out-of-band assignment, a frequency assignment which would be recorded in accordance with the provisions of No. 245, even though the assignment has been notified as being in use for several years and in actual practice harmful interference has not been caused to the operations of other Administrations. In other words, these Administrations consider that the provisions of No. 110 to be satisfied only if the Board reaches a favourable Finding in respect of their notice of the replacement frequency.

12. While wishing to be of maximum assistance to Administrations, the I.F.R.B. considers that before it will be able to advise and assist Administrations on frequency matters in the manner envisaged in No. 110 of the E.A.R.C. Agreement but to the extent desired by some:

a) the international monitoring system must be extended to coverage on a world-wide basis (as will be seen from the attached chart,[1] the largest gaps are in the southern part of the western hemisphere and in those parts of the eastern hemisphere lying northward of the Indian Ocean) and all Administrations having monitoring systems should participate by sending the maximum possible amount of monitoring data to the Board *);

b) each request for advice should be accompanied by the complete details resulting from the application of Nos. 107, 108, 109 and 111 of the E.A.R.C. Agreement, including monitoring, operational and other technical information relative to the trials conducted on specified frequencies;

c) Administrations must recognize the fact that a suggestion by the Board to conduct trials does not necessarily mean that if the frequency assignment is notified to the Board it will receive a favourable Finding according to Article 33 of the E.A.R.C. Agreement;

d) additional staff and facilities must be made available to the Board.

13. With respect to paragraph 12 a), b) and c) above, the Administrative Council may consider it desirable to make a special recommendation to Administrations and to stress, in respect of a), the advantages which would accrue for all Administrations through the publication of more complete monitoring summaries.

---

*) The publication by the Board of such comprehensive monitoring summaries would be of great value to Administrations in following the usual procedures for selecting suitable frequencies and should lessen the need to have recourse to No. 110 of the E.A.R.C. Agreement.

1) For the sake of brevity, this chart has not been reproduced here, but may be made available if desired by the Conference.

14. With regard to paragraph 12 d), any requirement for additional staff would depend on the extent to which the International Monitoring System is expanded and the extent to which Administrations invoke No. 110 of the E.A.R.C. Agreement and, in so doing, provide the details which would enable the Board to untake studies and make proposals. This question must therefore necessarily be left in abeyance for the time being. In the meanwhile, however, should the Administrative Council consider that the possibility of affording a limited amount of additional assistance to countries underdeveloped in the radio field should be further explored, consideration could perhaps be given to the provision of some suitably qualified technical staff under the Technical Assistance Programme.

On behalf of the I.F.R.B.

John H. Gayer
Chairman

A N N E X 2

(see paragraphs 7.5.7.3 and 7.9.5)

THE RECEIVING POINTS (COLUMN 4b OF THE MASTER RECORD) AND THE PROCEDURE FOR NOTIFICATION OF FIXED-SERVICE FREQUENCY ASSIGNMENTS

Under the notification procedure existing prior to the Atlantic City Conference, the actual points of reception of fixed-service circuits were not regarded as of major importance. The notification of receiving countries was specified in No. 349 of the Cairo Regulations, but many assignments appeared in the I.T.U. Frequency List without any particulars in the relevant column (Column 11), or with such vague particulars that it was almost impossible to deduce any reliable technical information therefrom.

In the new Radio Regulations (Nos 311 and 313), the Atlantic City Radio Conference introduced the idea of "international protection", based on "Findings" reached by the I.F.R.B. regarding the probability of harmful interference caused to existing assignments. Information about the reception points of fixed-service circuits henceforth took on an entirely new significance : it is, in fact, at these points, which the Administrations responsible for the transmitting stations are now required to notify, that the I.F.R.B. evaluates the protection against harmful interference on which its Findings are based; it is also at these points that any interference is observed in practice and so brought to the knowledge of the Administration operating the circuit which suffers interference to enable it to invoke the procedure against interference laid down in Article 14 of the Regulations. It should be noted, further, that according to Nos. 388 and 389 of the Regulations, the Administration having jurisdiction over the receiving station has the same right to take action as the Administration having jurisdiction over the transmitting station experiencing interference.

In selecting a frequency for a point-to-point circuit, the importance of the part to be played by the receiving station cannot be underestimated. The E.A.R.C., in No. 109 of its Agreement, considered it "customary" in such circumstances, where international circuits are concerned, to request "the assistance of other Administrations in monitoring a suitable frequency band in the area of reception". In the absence of a frequency list which would be agreed by Administrations and put into operation and which would reflect the actual situation in the radio frequency spectrum, this is the only procedure whereby, in practice, it may be

ascertained that the reception of a particular frequency is free from interference at a given point. As certain misunderstandings have risen in this connection, it may be pointed out that the I.F.R.B.'s Finding with respect to a newly-notified circuit does not concern the probability that the latter may experience interference from existing circuits but is exclusively based on the probability of harmful interference which may be caused by the new circuit to those already in operation. In other words, a favourable Finding by the Board by no means signifies that the operation of the circuit is technically feasible and that it will not be subject to harmful interference from existing circuits. It may be assumed that, in the absence of prior co-ordination between the authorities having jurisdiction over the transmitting and receiving stations many assignments notified to the Board have proved technically unusable, although they still appear in the Master Radio Frequency Record.

The authorities having jurisdiction over the transmitting and receiving stations respectively (the two Administrations concerned in the case of an international circuit), therefore, should normally co-operate in choosing a frequency. This does not seem always to have been the case with respect to assignments now appearing in the Master Radio Frequency Record. Thus the Board has often noticed that an Administration has notified an assignment which is capable of causing harmful interference to transmissions originating in another country and intended to be received by a station situated in the territory for which this Administration is responsible. Sometimes the new transmitting station notified has actually been situated at the receiving point of an incoming circuit using the same frequency. On several occasions the Board raised the matter with the Administration concerned : frequently the reply has been that "frequency x kc/s is not received in our country" or even that "the circuit mentioned as being affected does not exist". The review of "ZZ entries", under Circular-letter No. 2424/57/R dated 20 December 1957, also brought to light very interesting information in this connection.

As regards Column 4b, the difficulty could presumably be partly overcome if, in the case of international circuits, both Administrations were associated in drawing up the notification to be sent to the I.F.R.B. A variety of procedures to this end are conceivable. For example, Administration X, which wished to establish a circuit with Administration Y, might send its notification regarding the transmitting station to the I.F.R.B.; Administration Y, a receiving station of which would be entered in Column 4b of Administration X's notification, would likewise have to submit to the I.F.R.B. within a certain time (one month, for example), a notification regarding the receiving station. Any notification from Administration X, which was not supplemented within the required period by a notification from Administration Y, would be regarded as null and void. It seems unlikely

that such a procedure would in any way inconvenience Administrations, as the establishment of new international circuits is always preceded by consultations both on technical questions (frequencies, classes of emission, etc.) and on operational matters (schedules, rates, etc.).

While the foregoing procedure clearly could not be applicable to national circuits, some of the difficulties associated with such circuits could be avoided if Administrations could agree to notify specific points, rather than areas, of reception, particularly in the case of long distance circuits.

As for assignments already entered in the Master Radio Frequency Record, the Administrative Radio Conference may wish to establish a procedure whereby entries in Column 4b are reviewed with the co-operation of the Administrations of all countries concerned, so that information which does not reflect the actual position is deleted. In addition, the Conference might consider including the following provision in the Radio Regulations:

> "Each Administration shall take the necessary steps to protect from its own transmissions, the reception, at notified receiving point(s) located in the territory under its jurisdiction, of transmissions by station(s) operating according to particulars of frequency assignment(s) already recorded in the Master Radio Frequency Record on behalf of other Administration(s)".

PAGE INTENTIONALLY LEFT BLANK

PAGE LAISSEE EN BLANC INTENTIONNELLEMENT

ANNEX 3

(see paragraph 7.6.4)

REVIEW BY THE I.F.R.B. OF ASSIGNMENTS RECORDED IN THE MASTER RADIO FREQUENCY RECORD, IN THE FREQUENCY BANDS SPECIFIED IN No. 272 OF THE E.A.R.C. AGREEMENT ON THE INSISTENCE OF THE NOTIFYING ADMINISTRATION (No. 245 OF THE E.A.R.C. AGREEMENT)

By the end of 1957, about 6000 notices had been re-submitted to the Board and recorded in the Master Record under the terms of No. 245 of the Agreement; and the Board doubted whether all the unfavourable Findings it had made over nearly five years were still justified, particularly in view of the following considerations:

a) the frequency assignments giving rise to the unfavourable Findings might well have been cancelled or modified in the course of the large transfers of assignments resulting from the bringing into use of the Table of Frequency Allocations;

b) the I.F.R.B. had revised its Technical Standards as a result of the recommendations of the VIIIth Plenary Assembly of the C.C.I.R. (Warsaw, 1956);

c) finally, a great number of notices which had been re-submitted to the Board were accompanied by a statement by the Administration concerned to the effect that the assignment notified had been used for some time (the duration of operation being sometimes given in hours) without giving rise to complaints of harmful interference.

In these circumstances, the Board felt that it was desirable, in the spirit of No. 114 of the Agreement, to open a full enquiry on the actual utilisation, not only of each assignment inserted in the Master Record under the terms of No. 245 of the E.A.R.C. Agreement (those bearing the symbol ZZ or ZZZ in Column 13), but also of the assignments which had given rise to the unfavourable Finding. The Board therefore announced to the Administrations, by Circular-letter No. 2424/57/R, dated 20 December 1957, that it would review "ZZ or ZZZ entries". This review comprises three stages:

1) The Board first carries out a new technical examination of the entry, taking into account any modifications or cancellations of other assignments notified since the entry was recorded in the Master Record, as well as the more refined technical standards which it now applies.

2) If this examination confirms the original unfavourable Finding, the Board asks the Administration concerned to fill in a questionnaire giving detailed information about the utilisation of the notified frequency and other related information. It then carries out a new examination of the Finding.

3) If the Finding still remains unfavourable, the Board asks each of the Administrations concerned to fill in a questionnaire giving full information about the utilisation of the frequency assignments which the Board considered would be subject to harmful interference and which therefore had given rise to the unfavourable Finding.

Details of the application of the review procedure are given in Addendum No. 1 to Section II of the I.F.R.B.'s Rules of Procedure, which were circulated to Administrations with Circular-letter No. 2662/59/R dated 10 February, 1959.

The Board began its review by considering that portion of the spectrum allocated to Fixed Service and Broadcasting Service between 17,360 kc/s - 27,500 kc/s, with the exception of the frequency band 17,700 kc/s - 17,900 kc/s, being of opinion that it could obtain the most accurate information on the use of frequencies in the present period of high solar activity in this particular portion of the spectrum. It also reviewed a number of Findings in that portion of the spectrum allocated to the Fixed Service around 4 Mc/s (4,000-4,063 kc/s) and 7 Mc/s (6950-7,000 kc/s).

The review thus embraced:

- 725 ZZ or ZZZ entries between 17,360 kc/s and 27,500 kc/s (with the exception of the 17,700 - 17,900 kc/s band)

- 126 ZZ or ZZZ entries between 4,000 kc/s and 4,063 kc/s

- 64 ZZ or ZZZ entries between 6,950 kc/s and 7,000 kc/s.

Due to other urgent work, as was explained in paragraph 7.5.5.2 of its Eleventh Annual Report to the Members of the I.T.U. (Circular-letter No. 2721/59/R dated 1 May, 1959), the Board, with the resources at its disposal, had to confine its review to the entries referred to above.

The purpose of the present Annex is to give some details about the results of this review and the conclusions which the Board feels able to draw herefrom, in the hope of assisting the Conference by providing some information which may be of use to it when it establishes the procedure or procedures to be followed in future for the registration of frequency assignments.

Numerical results

a) 915 ZZ or ZZZ entries were subjected to the first stage of the review and 378 originally unfavourable Findings became entirely, or partially, favourable or qualified favourable Findings, either owing to the cancellation or modification of the previously-affected assignments, or as the result of modification of the I.F.R.B.'s Technical Standards.

b) 657 ZZ or ZZZ entries were subjected to the second stage of the review. In 21 cases, the Administration concerned did not reply to the questionnaire which had been sent to it concerning a ZZ or ZZZ entry. 41 ZZ or ZZZ entries were totally or partly cancelled by the Administration concerned, and 51 were stated to be fully or partially unused. As a result of supplementary information supplied by the Administration concerned, 73 originally unfavourable Findings became entirely, or partially, favourable or qualified favourable Findings.

c) 149 ZZ or ZZZ entries were subjected to the third stage of the review covering a total of 274 affected assignments. In 27 cases, the Administration concerned did not reply to the questionnaire which had been sent to it concerning an affected assignment. 12 affected assignments were stated to be wholly or partially cancelled by the Administration concerned and 10 were declared to be wholly or partially unused.

In all cases where a ZZ or ZZZ entry or an affected assignment had been declared to be totally or partially unused, but when the unused characteristics had not been cancelled by the Administration concerned, the Board asked the latter to do so. In the meanwhile, it inserted a Remark in Column 13 of the Master Record, opposite the entry in question, indicating that in its technical examinations of new notices from other Administrations, it no longer took these characteristics into account.

One Administration made a reservation with regard to the period of three months within which the Board had invited Administrations to reply to the questionnaire sent to them in the course of these enquiries; it should be noted that circumstances themselves led the Board to a broad interpretation of this time limit, which moreover was exceeded in only very few of the cases in which the Administrations actually replied.

Another Administration asked the Board whether its enquiries about affected assignments also covered frequency assignments originally notified by Administrations under No. 272 of the E.A.R.C. Agreement. The Board replied in the affirmative, but the Administration concerned has not so far replied to a number of the questionnaires which were sent to it, during the third stage of the review, concerning assignments which were considered to be subject to the probability of harmful interference.

Observations made during the review of entries

1. It was only rarely that the frequency measured did not coincide with the frequency notified. But on many occasions, in the case of multi-channel independent sideband emissions, the frequency which had been originally notified as being assigned to the station was not the central frequency of the emission and did not therefore meet the provisions of No. 57 of the Radio Regulations.

2. Cases of totally or partially unused assignments, whether ZZ or ZZZ entries or assignments which had given rise to unfavourable Findings, were relatively numerous in relation to the total number of frequency assignments submitted to enquiry in the relevant portion of the frequency spectrum and for which an answer was received from each Administration concerned. In 28 cases, the assignment was completely unused. In 89 cases, the hours of use of the frequency were reduced as compared with those derived from the entry in Column 10 of the Master Record, and in 18 cases, some classes of emission were unused. In 37 cases, recorded reception points did not correspond to existing circuits, and in asking the Administrations concerned to cancel the unused reception points, the Board referred to the following sentence in Note 4 to the Appendix of the Agreement: "Only the locality (localities) or area(s) for which the frequency is normally used should be indicated".

3. In many cases, the Board noted that the hours of daily use of a frequency indicated by the Administration in reply to a questionnaire, and the phases and seasons of solar activity, during which the frequency was used, were much shorter than those which the Board had deduced from available propagation data and from the information entered in Column 10

of the Master Record (hours of use of the circuit). The additional information thus supplied was inserted, as is always done in such cases, in Column 13 of the Master Record, when it was within the hours already notified in Column 10.

4. In 18 cases, information supplied by the interested Administration was interpreted as meaning that the assignment concerned, or some of its characteristics, were used only occasionally, and the Board applied the relevant provisions of its Rules of Procedure.

5. In some cases, the non-utilisation of a ZZ or ZZZ assignment was reported by countries in which the points of reception which had been notified were located and on which the Findings with respect to the affected assignments had been based. In such cases, the enquiries were pursued in order to clarify the apparent discrepancy between the statements of the two Administrations concerned.

6. Finally, the Administrations having jurisdiction over the affected assignments spontaneously supplied information, in cases where the original Finding was modified, as a result of the first stage of the review, regarding actual harmful interference in the past.

Conclusions

a) Enquiries by the Board regarding the use of frequency assignments take considerable time. It proved necessary to give Administrations a three-month time limit to send the Board the additional information requested, and the total period of time normally required for a complete review is thus at least nine months. Moreover, this procedure not only requires meticulous technical work, since it involves a determination and a close examination of all the affected assignments, but it also calls for a lengthy exchange of correspondence between the Board and the Administrations concerned.

b) The Board regrets that it had to suspend the review of some 8,500 frequency assignments bearing the ZZ or ZZZ symbol, but at present it is engaged on the second and third stages of re-examinations which are not yet concluded. However, the Board is prepared to continue this review as soon and as far as circumstances and resources permit. In fact, the information which it was able to extract from this review has been very useful, for it not only enabled inaccuracies in the Master Record to be rectified but also a number of artificial incompatibilities between assignments entered in the Master Record to be removed.

c) The Board would finally like to stress that the large majority of Administrations have shown their willingness to co-operate with it in every way, by supplying fuller information about the use of frequency assignments. They have thus demonstrated their interest in having a Radio Frequency Record which would reflect the actual situation in the frequency spectrum.

PAGE INTENTIONALLY LEFT BLANK

PAGE LAISSEE EN BLANC INTENTIONNELLEMENT

A N N E X 4

"OCCASIONAL", "REGULAR" AND "CONTINUOUS" USE OF FREQUENCIES

Introduction

1. It was recalled in paragraphs 7.6.3 and 7.7.2 of Section VII that one of the steps taken by the Board in an endeavour to make the Master Record a more accurate reflection of actual operations was the issue of Circular-letter No. 2296/57/R of 17 June 1957, in which Administrations were invited to consider the application of different treatment to various assignments or parts of assignments, depending on whether they were classified, by the Administration concerned, as in "occasional" or in "regular" use.

2. The principal features of the treatment to be accorded to assignments, or parts thereof, classified as in "occasional" use were described in paragraphs 7c) and 7e) of the Circular-letter, as follows:

"7c) In its technical examination of a new notice, if the only particulars of existing assignments likely to be affected are those which are classified as being in occasional use, the Board would reach a limited favourable Finding in respect of the new notice and would insert the following Remark in Column 13:

"When the I.F.R.B. examined the notice of this frequency assignment or this entry it found that the only probability of harmful interference being caused to frequency assignments already recorded in the M.R.F.R. on behalf of other Administrations was in respect of certain operations which are conducted only occasionally. A satisfactory Finding with respect to No. 235 of the E.A.R.C. Agreement is therefore given for the times when such operations are not being conducted."

"7e) If assignments or particulars in occasional use were later to be notified as now being in regular use, they would be so recorded without further examination. If in the meantime an Administration

had had an assignment recorded in accordance with paragraph 7c) above, it would be anticipated that the two Administrations would collaborate in adjusting their operations in order to avoid causing harmful interference while at the same time achieving the maximum possibilities of sharing."

3. In Circular-letter No. 2486/58/R of 1 April, 1958, the Board reported on the comments made by the 56 Administrations which replied to the earlier Circular-letter. It may be said that the suggestion aroused considerable interest and the greater majority of the Administrations which replied supported the principle underlying the suggestion; but so many qualifications and comments were made, including suggestions that the matter should be discussed by the Administrative Radio Conference, that the Board confined the Circular-letter to an analysis of the replies and to a clarification of certain points of the suggestion.

4. One comment which was either specifically made in, or could be deduced from, a large number of the replies, was that, without a clear definition of the terms "occasional" and "regular", various Administrations would tend to apply the suggestion in different ways and the results would be non-uniform and therefore unsatisfactory.

Basis for definition of "occasional" and "regular" use of frequencies

5. The Board appreciates the difficulty in arriving at satisfactory definitions for "occasional" and "regular" use and in securing the uniform application of any principles involved in these definitions. Nevertheless, the Board believes that a definition of "regular use" based on the following principles could have wide application even though modification might be necessary in some instances in the light of the knowledge which Administrations possess regarding their own services.

These principles are:

a) As an individual frequency assignment is usually one of a number which together enable the operation of a circuit over a complete solar cycle, the definition could best be made with reference to the circuit and can then be extended to individual frequency assignments of the complement.

b) A circuit may be scheduled for 24 hours a day or for one or more shorter periods during the 24 hours. The period during which it is provided can be called the "circuit schedule".

c) A circuit could be considered to be in "regular" use if the daily average of the number of hours during which the transmitting station is in actual communication with its receiving point(s) is, say, more than 10% of the circuit schedule. This daily average might be reckoned over a period of three consecutive months. It should be emphasized that, under this principle, the consideration of "regular" use would not be confined to circuits which are scheduled during the whole of the day. The term would be applicable to any circuit which satisfied the criteria that, during the hours for which it is designated as being in "regular" use the transmitting station would be in communication with the receiving point(s) during at least 10% of the notified hours. This would apply irrespective of other characteristics of the circuit such as the power, the length of the circuit, or whether the circuit is of a domestic or international type.

d) Each of the frequency assignments required for the operation of the circuit which is in "regular" use would itself be considered as in "regular" use, but only for the hours (within the limits of the circuit schedule) during which the frequency assignment is necessary for the operation of the circuit. In determining these hours which might be called the "frequency assignment schedule", account would have to be taken of the availability and technical utility (from the propagational view-point) of other assignments in the frequency complement. These hours will usually vary with season and sunspot number.

e) The application of the foregoing principles would depend on the number of transmitting and receiving stations concerned. The application should be straightforward in the case of a single transmitter working to a single receiving point. If, however, the circuit is one leg of a network, the principle would be that the hours during which communication actually takes place would be found by combining the hours of all the circuits in the network, provided that the propagation conditions for the various circuits were essentially similar. If the circuit is forked, with more than one point of reception, analogous principles would be applied, provided that the propagation conditions for the various branches of the circuit were essentially similar. Hence these principles would apply to the reception, at several points close to one another, of an emission from a transmitter in a distant country, or to a network confined to a relatively small area. But if the various legs of the network or branches of the forked circuit corresponded to appreciably different propagation conditions, the component parts would be treated separately.

f) If multi-channel emissions are employed, some of the channels might be designated as in "regular" use for the whole of the circuit schedule. Others might be designated during shorter periods. Services employing a combination of two or more single-channel types of transmission, such as manual telegraphy and double side-band telephony could be treated in an analogous way; if the telephone service were secondary, it might not be considered as in "regular" use even if the telegraphy service were so regarded.

6. Any frequency assignment which does not attain the degree of use appropriate to an assignment qualifying for designation as being in "regular" use would thus be considered as being in "occasional" use.

Possible extension of the foregoing principles to include a concept of "continuous" use of frequencies

7. In pondering on the considerations which led to the formulation of the foregoing principles, the Board has given thought to the possibility of a further development of the concept of a division between frequency assignments according to the degree of regularity in their use, for it appreciates that, among circuits in "regular" use, there are many which approach continuity in use during the periods for which they are notified. For such circuits the daily average of hours of use would attain say, at least, 50% of the circuit schedule and these circuits and the required complements of frequency assignments, might be referred to as being in "continuous" use. In this connection, the Board has taken note of certain points which appear to have a bearing on the possibilities of development of the concept. These points include the following which are related to assignments in "continuous" use:

a) such frequency assignments, as they approach continuity in use during the time when propagation conditions permit their operation, are less able than others to use time-sharing as a means of avoiding interference;

b) to ensure continuity of the service, Administrations tend to maintain a number of reserve frequency assignments which also provide the flexibility which assists exploitation, and facilitate expansion of services;

c) the reserves may be in the form of assignments on different frequencies, or of spare channels;

d) it is probable that a good proportion of the reserves in the case of many services is in fact seldom used, and as such would qualify for designation as in "occasional" use;

e) if means could be found, tending both to provide the necessary protection to assignments which cannot effectively avoid interference by making use of time-sharing, as well as to maintain some provision for flexibility and expansion of services, the reserves could no doubt be cancelled;

f) such cancellation (of assignments, channels, points of reception) should facilitate the task of finding frequencies for new assignments on the basis of the Master Record;

g) in maintaining an assignment in "continuous" use, the agency responsible will be likely to employ efficient and advanced methods and facilities which might not be economic for assignments in less regular use;

h) on account of their regular appearance, assignments in "continuous" use should be comparatively readily recognized by monitoring stations;

i) a monitoring service able to provide useful information on assignments in general is likely to be included in the facilities associated with assignments in "continuous" use.

8. In addition, the Board has kept in view the following points, which have either been specifically mentioned in, or can be deduced from, certain paragraphs in Section VII.

a) Many recorded assignments are technically incompatible with one another; their operation must therefore depend on time-sharing made possible by factors (including complete inactivity or only occasional use of some assignments) which are not clearly reflected in the Master Record;

b) the entries in the Master Record do not give a precise enough picture either of the real occupancy of the spectrum or, more specifically, of the actual degree of use of assignments (this degree appears to vary from zero to nearly 100%), to allow full account to be taken of the time-sharing referred to above;

c) there are many recorded assignments which appear not to be making as rational and efficient use of the radio spectrum as is desirable; this may be due to the method of deploying the frequencies, or to the use of transmitting and receiving equipment and techniques which are not up-to-date;

d) monitoring can provide much useful information to supplement the information in the Master Record, but the quantity of monitoring information so far supplied to the Board falls far short of providing adequate information on all operations, especially as virtually no information is furnished from some very large areas. A contributing factor which the C.C.I.R. recognises and seeks to overcome, through Recommendation No. 323 of Los Angeles (No. 220 of Warsaw), is that the effectiveness of a monitoring system is reduced by the difficulty in identifying stations, especially if the stations transmit their identifications infrequently or use identifications which are not included in I.T.U. records.

9. As a development of the proposals contained in Circular-letter No. 2296/57/R, consideration could be given to another possibility, namely that of a procedure which would be complementary to that originally proposed, and according to which Administrations, if they designated some of their assignments as being in "continuous" use, apart from any assignments which they designate as being in "occasional" use, would be asked to assume certain obligations in respect of the assignments in "continuous" use. These obligations might include not only the supply of fuller technical and operational data in respect of the circuits and assignments involved, and the making of every effort to employ such techniques and operating conditions as would tend to improve the use of the spectrum, but also an obligation to cancel any reserve assignments which were not strictly necessary to the operation of the circuit. This would lead to a release of notified spectrum which would facilitate the task of Administrations in finding frequencies for new services on the basis of the Master Record.

10. Naturally, adoption of measures such as those envisaged as a possibility in the foregoing paragraph would call for the collaboration of the Administrations in the application of the procedures, especially in the giving up of notified reserve assignments, and therefore adequate steps would have to be taken to ensure freedom from interference of the assignments designated as in "continuous" use, which would be operating with reduced reserves and reduced flexibility.

11. If the original proposal and the additional possibility now suggested were both to be applied, the result would be three categories, corresponding to "occasional" use, "regular" use, and "continuous" use, respectively. The Board recognises that the division of assignments into separate categories is to some extent undesirable; but it believes that if satisfactory definitions could be evolved and uniformly applied, and if

such a division would conduce to a more informative Master Record and lead to increased possibilities of exploiting frequency sharing, the overall results would be justified and would ultimately benefit all Administrations.

12. Although it has given much thought to the matters discussed above, the Board has presented the foregoing considerations in general terms only, for it has found that the information which is available to it at the present stage is not sufficiently comprehensive for it to make more specific proposals. It will of course be prepared to make further contributions as appropriate, in connection with any consideration which the Conference may wish to give to the matters dealt with in this Annex.

REPORT

by the

INTERNATIONAL FREQUENCY REGISTRATION BOARD (I. F. R. B.)

to the

ADMINISTRATIVE RADIO CONFERENCE

(Geneva, 1959)

SECTION VIII

Frequency bands above 27.5 Mc/s

REPORT

by the

International Frequency Registration Board (I.F.R.B.)

to the

Administrative Radio Conference

(Geneva, 1959)

The present booklet contains Section VIII

SECTION VIII

TABLE OF CONTENTS

R E P O R T

by the

International Frequency Registration Board (I.F.R.B.)

to the

Administrative Radio Conference

(Geneva, 1959)

SECTION VIII

FREQUENCY BANDS ABOVE 27.5 Mc/s

8.1 The relevant regulatory provisions

The provisions of the Radio Regulations (hereinafter called "the Regulations") and of the Extraordinary Administrative Radio Conference (E.A.R.C.) Agreement (hereinafter called "the Agreement") are listed in an Appendix to this Section, as well as a number of Agreements applicable in the frequency bands concerned.

8.2 Frequency Allocations above 27.5 Mc/s

The Cairo Table of Frequency Allocations contained allocations for Services up to 200 Mc/s. The Atlantic City Conference revised and extended the Table up to 10,500 Mc/s, and included allocations to the different services.

8.3 Application of the procedure specified in Article 33 of the Agreement for the recording of frequency assignments in the Master Radio Frequency Record

8.3.1 Section II of this Report gives details regarding the compilation of the original Master Radio Frequency Record according to the provisions of Article 34 of the Agreement. The basic entries in the Master Record are the assignments that were in the "Provisional List of Frequencies above 27,500 kc/s". This List had been prepared by the I.F.R.B. and published by the General Secretariat in 1951 according to a decision taken by the Administrative Council, at its 5th Session (1950), on the basis of a recommendation by the I.F.R.B. (Resolution No. 202 - see I.T.U. Circular No. 633, dated 6 November, 1950). According to No. 275 of the Agreement, Administrations were required to submit to the I.F.R.B. at an early date, for inclusion in the Master Record, data for the completion of the assignments extracted from this List.

8.3.2.1 The minimum essential data to be furnished by Administrations to the Board when notifying their frequency assignments in the spirit of No. 309 of the Regulations, specified in No. 257 of the Agreement, are as follows:

Column 1	Assigned frequency in kc/s
" 2c	Date of putting into service
" 4	Area of operation
" 5	Class of station and nature of service
" 6	Class and bandwidth of emission
" 8	Mean power in kW.

8.3.2.2 This minimum essential information is much less than that of the particulars called for under the Appendix to the Agreement for the frequency assignment notices below 27.5 Mc/s. However, it was recommended in No. 258 of the Agreement that Administrations, where practicable, should supply at least the information in accordance with the Appendix to the Agreement, particularly where inter-regional or long distance communication is involved. Administrations have, in general, complied with this recommendation and there are not many assignments which do not have the full particulars according to No. 258 entered in the Master Record.

8.3.3 According to the procedure specified in Article 33 of the Agreement for the bands concerned, the I.F.R.B. is required to examine every frequency assignment notice to ascertain whether it is in conformity with the provisions of the Regulations other than those relating to the probability of harmful interference, and whether it includes the minimum essential data specified in No. 257 of the Agreement. It is seen that this procedure does not include any technical examination with a view to determining whether the use of a newly notified assignment, or a modification to an existing assignment, is likely to cause harmful interference to assignments already recorded in the Master Record. At the time of the Atlantic City Administrative Radio Conference, circuits using frequencies in these higher ranges were normally established with the receiving antenna in the line of sight from the transmitting antenna, and it was assumed that, in general, propagation was not appreciable beyond the line of sight. Consequently, it was supposed that problems of harmful interference would be confined to neighbouring countries or within a limited geographical area.

8.3.4 Between 1 January, 1953, and 1 July, 1959, the Board has received about 292,000 notices of frequency assignments or changes thereto in the frequency bands under discussion. The number of notices received annually has been as follows:

Frequency assignment notices in the range above 27.5 Mc/s

Year	Notices received	Cancellations
1953	60,400	-
1954	33,440	3,230
1955	50,620	5,280
1956	28,900	6,900
1957	37,210	4,900
1958	47,750	8,600
1959 (up to 1 July)	32,780	2,070

This high number of notices received by the Board reflects the increased usage of the frequency bands above 27.5 Mc/s since the Atlantic City Radio Conference, and the extensive development of various types of radio services, such as Sound and Television Broadcasting, Land Mobile, Aeronautical Mobile, Radionavigation, Maritime Mobile, etc., making use of frequencies in this range. It indicates also the tendency to extend the usage of the higher frequency spectrum to higher and still higher frequencies as progress develops in new circuit techniques, materials and equipment, incorporating greater sensitivities in the receivers, greater powers in the transmitters, and consequently making these frequencies usable at greater ranges.

8.3.5 The particulars of assignments recorded in the Master Record are periodically published in Volume III of the Radio Frequency Record and in the Supplements thereto. This volume contains assignments of all notifying Administrations all over the world. The number of entries in the Master Record has increased since 1951 in the following manner:

	Approximate No. of entries
Provisional List of Frequencies above 27,500 kc/s	31,500
1st publication of the Radio Frequency Record (1st Edition and Supplement No. 1)	35,000
2nd Edition	41,500
3rd Edition	82,800
4th Edition	96,700
5th Edition	120,000
6th Edition	138,000

It may be of interest to note that in the 6th Edition of the Radio Frequency Record, the number of entries in various frequency ranges in the Master Record are as follows:

Frequency range (Mc/s)	No. of entries in the 6th Edition of the Radio Frequency Record
27.5 - 40	26,600
40 - 50	18,800
50 - 60	1,210
60 - 70	1,560
70 - 100	9,530
100 - 1000	62,800
1000 - 10500	17,400
above 10,500	100
TOTAL:	138,000

8.4 Regional Agreements adopted since the E.A.R.C. with respect to the use of the frequency bands concerned

8.4.1 A Regional Agreement under Article 42 of the I.T.U. Convention was adopted by the European Broadcasting Conference (Stockholm, 1952), including a specific plan for the assignment of frequencies to sound and television broadcasting stations in the countries of the European Broadcasting Area within the bands 41-68 Mc/s, 87.5-100 Mc/s and 174-216 Mc/s (162-216 Mc/s for France). The International Civil Aviation Organization (I.C.A.O.) has drawn up a Frequency Allotment Table for the International Aeronautical Mobile Service in the frequency band 118-132 Mc/s and a number of Regional frequency assignment plans have been derived therefrom. In addition, the I.C.A.O. has drawn up international and regional frequency assignment plans for the Aeronautical Radionavigation Service in the frequency band 108-118 Mc/s. All Agreements referred to in this paragraph relate to frequency bands exclusively allocated to a single service.

8.4.2 An Agreement, including a Frequency Allotment Table, was adopted under Article 42 of the I.T.U. Convention by a number of countries of the European Maritime Area at The Hague Regional Conference (1956) for the International Maritime VHF Radiotelephone Service within the frequency range 156-162 Mc/s. A Regional Agreement, including a Frequency Allotment Table, was also adopted under Article 42 of the I.T.U. Convention by European countries at the International Meeting concerning Radiotelephony for the

Rhine Navigation (Brussels, 1957), in the same frequency range. As both these Agreements relate to a single service in a part of the spectrum also allocated to other services (Fixed, Mobile except Aeronautical Mobile), the Administration concerned adopted a special provision, in Article 6 of each of these Agreements, in order to recognize the rights of these various services, while avoiding mutual interference between them.

8.4.3 All the I.T.U. Agreements referred to above include a provision whereby frequency assignments brought into use in conformity with the Agreement concerned should be notified to the I.F.R.B., in accordance with the I.T.U. procedure in force.

8.4.4 Other Agreements of this nature may exist, but have not been brought to the knowledge of the I.F.R.B.

8.5 Implementation of the Table of Frequency Allocations for the Frequency bands concerned

8.5.1 The part of the Table between 27.5 Mc/s and 10,500 Mc/s has been in force since 1 January, 1949.

8.5.2 Administrations, in notifying frequency assignments since 1951, have notified assignments generally in accordance with the Table. Nevertheless, there are 2755 assignments in the Master Record which are not in accordance with the Table, most of which, especially in the frequency range 50 - 100 Mc/s, have been brought into the Master Record from the Provisional Frequency List (see paragraph 8.3.1). The number of out-of-band assignments by frequency range is approximately as follows:

Frequency range Mc/s	Number of out-of-band assignments		%
27.51 - 42		80	0.3
42 - 50		50	0.4
50 - 60		130	10.5
60 - 70		330	20
70 - 100		450	5
100 - 150	650		
150 - 174	85		
174 - 235	320		
235 - 420	90	1575	2.5
420 - 460	180		
460 - 1000	250		
1000 - 10500		140	0.8
Total:		2755	Average for all bands 2%

8.5.3 The I.F.R.B. includes in Column 13 of the Master Record a special Remark in any case in which an assignment notified is not in accordance with the Table.

8.6 Recommendation No. 13 of the E.A.R.C.

8.6.1 In 1951, the development of the radio services in the frequency bands referred to in this Section and the improvement of technical knowledge related thereto were such that the E.A.R.C. felt it appropriate to recommend that, with a view to making any necessary proposals to the next Administrative Radio Conference, Administrations and the I.F.R.B. should consider both the procedures for notification and registration of frequency assignments and the method of publication of the Radio Frequency Record for the frequency bands above 27.5 Mc/s.

8.6.2 With respect to the question of a suitable procedure for notification and registration of frequencies such as that laid down in Article 11 of the Regulations, the views of the Board are as follows:

8.6.2.1 There is no doubt that recent data on propagation have led to the revision of the opinion which prevailed in 1947, i.e. that there would be no appreciable long distance propagation above 27.5 Mc/s. During high sun-spot conditions, long distance communications can be effected through normal F.2 propagation on frequencies as high as about 40 Mc/s and, during short periods of exceptionally high ionisation, interfering signals can be propagated on frequencies up to about 60 Mc/s. New techniques have been developed for using frequencies up to the order of 100 Mc/s for long distance circuits through ionospheric scatter propagation, although the practical upper limit for this type of propagation appears to be of the order of 70-80 Mc/s. Under certain conditions, long distance propagation by sporadic "E" layer can also take place in these frequency bands. In such circumstances, the Conference, in view of the possibilities of long distance interference in this part of the spectrum, might consider raising the upper limit below which a procedure including technical examination of frequency assignment notices by the I.F.R.B. would be applicable.

8.6.2.2 In this respect, it is well to note, in addition, that frequencies in the range 400 to 1000 Mc/s are usable for medium distance circuits through a new technique, known as tropospheric scatter propagation.

8.6.2.3 The application of the technical examination procedure above 27.5 Mc/s would, depending on the upper limit decided upon, require:

8.6.2.3.1 That the minimum technical data to be supplied in notifying a frequency assignment should be the minimum technical information provided for in the Appendix to the Agreement and all additional pertinent technical information, including the antenna characteristics of the transmitter and receiver, such as elevation above mean sea-level.

8.6.2.3.2 The establishment by the Board of technical standards derived from the following basic information, some of which is already available:

(i) propagation data; curves of field strengths;

(ii) in accordance with the class of station and nature of the service performed as well as the class of emission, the determination of:

a) minimum signal-to-noise ratio required for steady conditions;

b) information on radio noise (atmospheric, galactic);

c) fading allowances;

d) minimum signal-to-interference ratio required for steady conditions with respect to the different interfering types of transmissions on the same and adjacent frenquencies;

e) characteristics of receivers normally used for all these types of services and types of transmissions, in relation to the discriminatory properties against interfering signals on frenquencies different from that of the wanted signal.

8.6.2.4 Above the limit which the Conference may decide upon, there would be no technical examination. However, it is the view of the Board that, in the interests of Administrations themselves, the minimum technical information to be supplied in frequency assignment notices for these higher frequencies should be that specified in the Appendix to the Agreement.

8.6.3 With respect to the method of publication of the Radio Frequency Record for the part of the spectrum at present covered by Volume III, it should be possible to obtain a mode of publication less cumbersome and more convenient for Administrations. The following points should be considered in this connection

8.6.3.1 Up to the upper limit frequency, below which technical examination should be applied to frequency assignment notices, the part concerned of the Radio Frequency Record should contain assignments for the whole of the world, as at present. In view of the possibilities of long distance interference, no geographical divisions would appear to be appropriate in this part of the spectrum.

8.6.3.2 Beyond this upper limit frequency, the publication would appear to be more convenient to the users and in general less expensive for Administrations if it were prepared for each of the three I.T.U. Regions separately. The Conference may find that, in certain parts of the world, for instance in Region 2, further sub-division of the publication is appropriate. However, in such a case, frequency assignments of countries bordering the limit of two sub-divisions should be included in both publications relating to the two sub-divisions.

8.7 Questions to be considered by the Administrative Radio Conference in connection with the frequency bands above 27.5 Mc/s

8.7.1 The Conference, in reviewing Article 5 of the Regulations in the light of the relative developments of various services, will take into consideration the numerous proposals for amendments submitted by Administrations. The Conference will no doubt wish to consider whether the Table should be extended above 10,500 Mc/s. Requirements for bands to be allocated to new services, such as radioastronomy, space communications (including control of vehicles, radionavigation, telemetering), etc., will no doubt also be taken into consideration.

8.7.2 If the Table of Frequency Allocations is amended, the Conference should consider the two following matters:

a) The date or dates of entry into force of the revised Table, or parts thereof;

b) The preparation of a procedure for the transfer to their appropriate bands of assignments which do not conform to the revised Table.

8.7.3 The Conference may wish to consider the future procedure for notification and registration of frequency assignments in the Master Record, a procedure which may involve entering dates in Column 2 of the Master Record in addition to the dates of use at present recorded.

8.7.3.1 The extension beyond 27.5 Mc/s of a procedure including technical examination of frequency assignment notices should be considered in the light of paragraph 8.6.2 above and in this connection the following points would need to be decided upon:

a) The new upper limit below which frequency assignment notices should be subject to a technical examination (see paragraph 8.6.2.1).

b) The minimum technical basic data required in the frequency assignment notices (see paragraph 8.6.2.3).

c) The adoption of a procedure for completing, as appropriate, assignments at present recorded in the Master Record.

d) The adoption of a revised form of notice incorporating all necessary technical data, and the consequential recording of the information in the Master Record.

8.7.3.2 Beyond this upper limit, the procedure for recording would not include technical examination of frequency assignment notices; however the Conference may consider whether, in the interests of Administrations, it would be appropriate to extend the minimum technical information prescribed under No. 257 of the Agreement to embrace all data specified in the Appendix to the Agreement.

8.7.4 The Conference may wish to consider taking action for the geographical division of Volume III of the Radio Frequency Record (see paragraph 8.6.3).

8.7.5 The Conference may also wish to consider whether it is appropriate to extend to the whole of the world and to include in the Radio Regulations the provisions of The Hague Agreement (1957) concerning the International Maritime VHF Radiotelephone Service.

8.7.6 In view of recent developments in space communication, the Conference may wish to consider what provisions are required to ensure full international cooperation in this new field, for instance through frequency allotments to various branches of this Service (control of space vehicles, radio navigation, telemetering, etc.) and through subsequent plans for the assignment of frequencies to stations.

Annex : 1

APPENDIX

Relevant provisions of the Radio Regulations

Article 5, (Nos. 172-231) (Table of Frequency Allocations)

Article 9, Section III, (Nos. 258-261) (Aeronautical Radionavigation Service)

Article 20, (No. 447) (The International Frequency List)

Article 34, Section IV (Nos. 830-834) (Maritime Mobile Radiotelephone Service, Frequency band 152-162 Mc/s)

Relevant provisions of the E.A.R.C. Agreement

Article 32 (No. 224) Form of Notification above 27.5 Mc/s

Article 33, Section IV (Nos. 256-259) Recording of Assignments above 27,5 Mc/s

Article 34, Section II (No. 266) Basic Entries in the Master Record

Article 34, Section III (Nos. 275 and 278) Particulars required for completing basic entries in the Master Record

Recommendation No. 13 concerning frequencies above 27.5 Mc/s.

Relevant Regional Agreements

Final Acts of the European Broadcasting Conference (Stockholm 1952)

Final Acts of the International Maritime VHF Radiotelephone Conference, (The Hague 1957)

Agreement concerning the establishment of an international VHF radiotelephone mobile service for the Rhine navigation, (Brussels, 1957)

I.C.A.O. Documents

Reports of I.C.A.O. Communications Division Meetings.

Reports of Regional Air Navigation Meetings.

Reports of Special Services Meetings.

Annex 10 to I.C.A.O. Convention, paragraph 4.1.

REPORT

by the

INTERNATIONAL FREQUENCY REGISTRATION BOARD (I.F.R.B.)

to the

ADMINISTRATIVE RADIO CONFERENCE

(Geneva, 1959)

SECTION IX

Technical Standards

REPORT

by the

International Frequency Registration Board (I.F.R.B.)

to the

Administrative Radio Conference

(Geneva, 1959)

Section		Title
I	-	Introduction
II	-	Compilation and maintenance of the Master Radio Frequency Record
III	-	Frequency bands between 14 kc/s and 3950 kc/s (4000 kc/s Region 2) (with the exception of the exclusive aeronautical mobile bands between 2850 kc/s - 3155 kc/s, 3400 kc/s - 3500 kc/s and, in Region 1, 3900 kc/s - 3950 kc/s)
IV	-	Frequency bands allocated exclusively to the Aeronautical Mobile Service between 2850 kc/s and 27,500 kc/s
V	-	Frequency bands allocated exclusively to the Maritime Mobile Service between 4000 kc/s and 27,500 kc/s
VI	-	Frequency bands allocated exclusively to the High Frequency Broadcasting Service between 3950 kc/s (4000 kc/s Region 2) and 27,500 kc/s
VII	-	Frequency bands allocated to the Fixed, Land Mobile, Tropical Broadcasting and Standard Frequency Services between 3950 kc/s (4000 kc/s Region 2) and 27,500 kc/s
VIII	-	Frequency bands above 27.5 Mc/s
IX	-	Technical Standards
X	-	International Monitoring
XI	-	The organization of the International Frequency Registration Board and of its Specialized Secretariat

The present booklet contains Section IX

SECTION IX

T A B L E O F C O N T E N T S

REPORT

by the

International Frequency Registration Board (I.F.R.B.)

to the

Administrative Radio Conference

(Geneva, 1959)

SECTION IX

TECHNICAL STANDARDS

9.1 Introduction

9.1.1 No. 298 of the Radio Regulations states that "the members of the Board shall perform all their functions on a world-wide basis and in the interest of the most effective use of the radio spectrum. In particular they shall reach their decisions on frequency assignments solely on an engineering basis".

9.1.2 In the conduct of the technical examinations which are dealt with in Section II of this Report, a comprehensive set of technical standards is necessarily required.

9.1.3 Shortly after the end of the Extraordinary Administrative Radio Conference (E.A.R.C.) Geneva 1951, the I.F.R.B. set about compiling such a set of standards, first for application in the frequency bands below 3950 kc/s (4,000 kc/s, Region 2), as Article 11 of the Radio Regulations started to come into force in 1952, for certain of these bands, and then for application in the frequency bands within which the Interim Procedure is prescribed under Article 33 of the E.A.R.C. Agreement.

9.2 The Technical Standards compiled

9.2.1 The technical standards prepared by the Board and published in accordance with financial arrangements made by the Administrative Council in 1954 (see paragraph 9.5.2) comprise 3 series as follows:-

Series A

A-1 Signal/interference protection ratios
A-2 Minimum field strength to be protected
A-3 Tables of "receiver discrimination"

A-4 Gain of antennae
A-5 Relation between the power supplied to the antenna and the input power to the final stage of a transmitter
A-6 Ground wave and sky wave propagation in the frequency range between 10 kc/s and 3,500 kc/s.

Series B

B-1 Field strength curves for circuits of more than 4,000 km in length for the frequency range 6-21 Mc/s (this standard also includes MUF indications)
B-2 Propagation curves for distances up to 4,000 km for the frequency range 2 - 20 Mc/s (this standard contains both field strength data and MUF data).

Series C

C-1 MUF - LUF curves for long circuits, generally more than 4,000 km in length.

9.2.2 The standards required in the examination of assignments in the frequency bands below 3,950 kc/s (4,000 kc/s Region 2) are all included in Series A. The standards required in connection with the Interim Procedure include most of those in Series A as well as the propagation data contained in Series B and C. In recent supplements to the standards, the I.F.R.B. has combined Series B and C, in the interests of economy and convenience in use. The bases on which the standards were established are described in the prefaces to the respective standards.

9.2.3 In addition the Board uses the following standards which were not included in those for which the financial arrangements referred to in paragraph 9.2.1 were made. These are:-

Table of field strengths for distances up to 4,000 km (these tables are derived from the curves in B-2)

Propagation periods for distances up to 4,000 km (4 to 15 Mc/s)

Series D

D-1 Protection curves for Aeronautical Mobile R stations

D-2 Protection curves for Aeronautical Mobile OR stations

Series E

E-1 Charts of equal field strength for the Maritime Mobile Service

9.3 The Establishing of the Standards

9.3.1 In establishing its standards, the I.F.R.B. made use of data compiled by it from that which is available from the work of the C.C.I.R. or from the standards which were adopted in Conferences where frequency assignment plans were prepared. In this connection it should be pointed out as a factor of considerable importance, that some of the existing data such as those of the C.C.I.R. are intended for general application and are, therefore, frequently presented in a general form. The Board has had to extract from them the data required for the establishment of the individual standards needed for rapid application to the particular problems of the Board in the examination of a large number of diverse cases arising from the application of the procedures laid down in the Radio Regulations or by the E.A.R.C. An example is afforded by Technical Standard A-6 which presents the data in the form of tables, for the I.F.R.B. has found that, in general, for rapid application, tables are preferable to curves. The ground wave field strength values contained in this standard are extracted from C.C.I.R. Recommendation No. 52 (No. 307 of Los Angeles) which contains in an annex the sentence "the engineer should regard as an auxiliary problem the determination of the appropriate value of the unattenuated field in a given practical case and the value of the necessary multipliers." The Board has included in the standard a table of corrections which correspond to the multipliers needed to take account of the characteristics of various types of antennae likely to be used in practice.

9.3.2 In contrast to much of the data derived from the work of the C.C.I.R., the standards established by conferences normally take into account the particular problems involved in the preparation of frequency assignment plans, where there is a degree of flexibility possible in the way in which the assignments may be arranged and there is also a certain measure of uniformity in the nature of the assignments and in the spacing between the frequencies of the assignments. The I.F.R.B. on the other hand has to face a different problem, namely, the problem of assessing the harmful interference which the introduction of a new assignment may cause to the very diverse assignments already in operation on frequencies which seldom form a pattern such as may be achieved in a plan. Consequently it soon became apparent that, on account of the diversity of the assignments

to be considered, there was a need for a set of standards considerably more comprehensive than those available from the work of previous conferences. An example is provided by Technical Standard A-3 which now contains about three times as much material as could have been extracted from the work of the Provisional Frequency Board (P.F.B.). This standard was established through the use of methods based on Appendix 1 to the Resolution relating to the preparation of the new International Frequency List, on the work of the Stockholm Plenary Assembly of the C.C.I.R. (1948), and of the P.F.B.

9.3.3 Furthermore, as the scope of the technical examinations includes the whole of the low frequency, medium frequency and high frequency radio spectrum and all services and regions of the world, the establishment of the required standards of the Board involved, inter alia, a comparison of the technical rules and data adopted by the various planning conferences held since 1947. The rules of different conferences are often different in nature, if not inconsistent with each other, and in addition the standards originally adopted by a conference were sometimes considerably modified at a later stage when it became clear that many more assignments had to be accommodated than the accepted standards would permit. In consequence, the I.F.R.B. frequently had to make a choice between alternative standards, or to make adjustments to the rules and data available, in order to obtain uniform standards suitable for universal application. For instance, the Board had available two sets of standards for high frequency field strength; one set from the P.F.B. (the Blue Books and the Brown Books) and the other from the High Frequency Broadcasting Conferences (the Mexico City curves), both calculated on the same method but differing greatly in form. Each form has advantages and disadvantages, but the Mexico City form was selected as it was the more suitable for rapid application.

9.3.4 Naturally, while the compilation was in progress, the Board was already carrying out technical examinations (which began to be applied in 1952 in connection with the Article 11 procedure) and could not wait until the compilation had been completed. Accordingly copies of the requisite standards, in certain cases, in a provisional form, were produced as and when required. These standards were produced in a limited number of copies. For instance, the first curves of the series known as B-2, calculated and drawn by members of the Board, were produced in six copies only.

9.3.5 As the work progressed, the Board soon became aware that some of the factors needed for the compilation of certain standards were not completely determined or not yet fully known. During the course of 1953 these shortages of information became more apparent and, in accordance with No. 294 of the Radio Regulations, some of the problems of the Board were

submitted to the VIIth Plenary Assembly of the C.C.I.R. which met in London later in the year. The problems fell into two groups; those which were not covered by existing Questions or Study Programmes, and those which were so covered.

9.3.6 The first group related to ionospheric propagation and gave rise to the three questions contained in the Annex to Report No. 56 (No. 150, Los Angeles) of the C.C.I.R., which aim at the improvement or refinement of the F2 MUF data, and of methods for the estimation of field strength at frequencies above 1500 kc/s, and below 1500 kc/s, which were available to the I.F.R.B. The questions relate to Series B and C of the I.F.R.B. Technical Standards and to Technical Standard A-6. These questions were posed because none of the available data was of recent origin, so that it was felt that improvement was possible in view of the increasing knowledge of the ionosphere.

9.3.7 The second group consisted of a number of matters, mainly concerning signal/noise ratios, signal/interference protection ratios, characteristics of receivers, and characteristics of antennae, which fell within the scope of existing Questions or Study Programmes. These matters concern Technical Standards A-1, A-2, A-3 and A-4. Although a considerable amount of information on these subjects was already available, from the work of conferences and of the C.C.I.R., this information was not sufficiently comprehensive to answer all the many questions which arose in connection with the great variety of conditions with which the Board had to deal.

9.3.8 At the VIIth Plenary Assembly held in 1953 in London the details of what was required were explained as specifically as possible and the Board sought to ensure that as much information as possible would be made available during the Assembly and that measures would be taken to provide additional data as soon as practicable. When the results of these actions were known, the Board proceeded with its task of compiling the necessary standards. It applied the additional information which had been obtained, continued to use existing data and methods where there was no immediate prospect of change or improvement, and sought by its own efforts to fill gaps in the information at its disposal, pending further assistance from the C.C.I.R. As the compilation proceeded, it became evident that the task would be likely to last longer than had been expected. This was on account of the factors which are indicated below.

9.3.9 As already stated, the I.F.R.B. in 1952 began to carry out the technical examinations required in the application of the Article 11 (Radio Regulations) procedure. In 1953, the Interim Procedure specified in Article 33 of the E.A.R.C. Agreement, which is applicable in the high

frequency part of the spectrum, was applied and the Board commenced to carry out the necessary technical examinations. On account of the number and diversity of the factors involved, including propagation conditions, the technical examinations in the high frequency bands involve considerable complications. Consequently, the work load soon proved to be such that it became even more necessary than before to produce technical standards in such a form as would expedite their application.

9.3.10 It will be appreciated that the data incorporated in any standard can be presented in a variety of forms, from a concise general form from which the data applicable to any individual case may be derived, to an elaborate detailed form in which the data have been adapted, in advance, for direct application to all individual cases which may arise. The first is frequently unsuited to the daily work of the Board on account of the time required for the extraction of the information in each case, while the second may require excessive time for its preparation and may result in a form which is too cumbersome for convenience in use. In respect to each standard the Board seeks to evolve a form between the two extremes mentioned, which will provide its members and staff with the most effective working tools. It will be realised that, if an improved form of presentation of a standard results in a saving of even a few minutes in each technical examination, then in the course of a year the saving of time will amount to a very considerable number of man hours which can then be applied to other activities, with consequent benefit to the Union. Therefore, the Board continuously devotes attention to this question.

9.3.11 In parallel with work on the improvements in form, work is undertaken, as and when required, on the rectification of the data in cases where errors or omissions have come to light in the course of the application of the standards, or where developments in knowledge prompt the review of a standard. In fact, technical standards can never be static.

9.3.12 It may be said that in 1953, when the Interim Procedure was first applied the Board had at its disposal the bare minimum of tools required for the conduct of technical examinations. The later work which consisted mainly in expanding the scope of the standards and of refining them as the need became apparent or as new information became available, led to the production of the standards included in the 1st Edition published in 1955 and 1956.

9.3.13 Although these standards were reasonably complete, there was still great need for further information. Accordingly, the Board in various communications to the VIIIth Plenary Assembly of the C.C.I.R. held in Warsaw in 1956, referred to a number of matters including those which it had raised in 1953. The Warsaw meeting afforded the Board the opportunity of obtaining additional information on a number of these matters especially those concerning Technical Standards A-1, A-2, A-3 and A-4 and of explaining the outstanding technical needs of the I.F.R.B. In the light of this information, the Board proceeded to modify or elaborate the standards concerned.

9.3.14 As regards the questions on ionospheric propagation, the Board learned, some weeks before the commencement of this Plenary Assembly, that two proposals, concerning MUF data and a new method for the estimation of high frequency field strength, had been made as interim answers to two of the questions which the Board had submitted to the London Plenary Assembly, as mentioned in paragraph 9.3.6. As soon as the details of the proposed new method and MUF data became available for the Board for study, it was realized that the adoption of the proposals might well call for an extensive revision of its Standards relating to propagation, which included many thousands of curves based on the data already available.

9.3.15 The Board brought this aspect of the matter to the attention of the Warsaw Plenary Assembly and of the Study Group concerned, which set up a subgroup, presided over by one of the Board's representatives to study this matter and related topics. This action led inter alia to the adoption of Recommendation No. 177 of Warsaw which set up an international Working Party to carry out certain studies which will be of assistance to the I.F.R.B. in deciding whether its existing methods should be modified, and to what extent, if any, the high frequency propagation curves should be revised. As this problem is important in view of the magnitude of the work which would be involved in a revision of the corresponding standards, the Board has made many contributions to the work of the Working Party and maintains great interest in the progress which is being made.

9.3.16 As the study of ionospheric propagation on a world wide scale inevitably must cover a period of years if it is to take account of variations with season and solar activity, early answers to the Board's questions on this subject could not be given by the Warsaw Plenary Assembly. Consequently, no information necessitating a revision of the relevant standards was obtained at that stage, although steps were taken to ensure that additional information would eventually become available.

9.3.17 The Board has continued its participation in the work of the C.C.I.R., through attendance at the 1958 interim meetings of the Study Groups most directly concerned with matters affecting the I.F.R.B.'s technical standards, and at the IXth Plenary Assembly (Los Angeles, 1959). As before, progress has been made and information has been obtained through participation in these meetings although no revision of existing standards is contemplated at the present stage, especially as the Administrative Radio Conference is due to assemble very shortly. Participation in the meetings of the C.C.I.R. is in accordance with the Board's policy of keeping its Technical Standards up-to-date and also affords the opportunity of keeping in touch with developments in all aspects of radiocommunication.

9.4 Remarks on the methods used in the preparation of the Technical Standards

9.4.1 For the sake of brevity, this report does not deal with the methods which have been used in the preparation of the Technical Standards, although there are many points of interest which have arisen in this connection. An exception may be made, however, by referring to a situation which arose in November 1958, and which required the immediate production of 200 sheets of curves which had to be made available to the Board very early in 1959. To achieve this object it proved necessary to seek all means of expediting the work. In view of recent technical developments and the availability of equipment, the means found was the calculation of field strengths by a commercial electronic computor service bureau, using a programme established at short notice by the I.F.R.B. in collaboration with the bureau, and this means enabled the Board to achieve its objective.

9.4.2 The additional task described in the preceding paragraph had the effect of holding up the preparation of other propagation curves which were to be completed before the Administrative Radio Conference convenes, and in consequence the I.F.R.B. has continued to employ an electronic computor for the basic field strength calculations which form a part of the preparation of these curves. In this connection, it must be appreciated that, in addition to these calculations, the work includes the preparation of MUF and LUF curves, as well as very considerable draughting work.

9.5. Publication of I.F.R.B. Technical Standards

9.5.1 As the Radio Regulations do not refer specifically to standards for the use of the I.F.R.B., there was no provision for the publication of the standards produced by the Board. In 1953, when the compilation was well advanced though by no means complete (especially with respect to Series B and C), the Administrative Council, at its 8th Session, expressed a wish that the standards should be published and invited the Board, in consultation with the Secretary-General, to go into the question of publication.

9.5.2 When this matter was examined, the indications were that the costs of preparation and publication might cause the price to be so high as to inhibit sales. The question was therefore submitted to the Administrative Council at its 1954 Session. As was announced in Circular No.697 of 30 June 1954, the Council was able to accept a suggestion made jointly by the Board and the Director of the C.C.I.R. who had a similar problem, whereby the publications concerned could be made available to the Administrations at a reasonable price. The orders which resulted considerably exceeded the numbers originally estimated.

9.5.3 Until it was known that a sufficient quantity of orders would be placed, the I.F.R.B. could not embark on the task of preparing the material for publication; a task which would occupy a considerable time. This was so especially because the Board felt it desirable not to publish the standards until, as far as possible, all the refinements and modifications which the Board could foresee would be necessary and feasible, in the light of the knowledge then available, had been incorporated. It obviously would not be useful to an Administration to receive copies of standards which were still subject to revision in material particulars.

9.6 The First Edition of the Standards

The 1st Edition comprised the Standards listed in paragraph 9.2.1. It contained 3800 sheets, and was issued in instalments at times between October 1955 and November 1956 as the various series were completed.

9.7 Extensions to the First Edition

9.7.1 While the 1st Edition of Series A was regarded at the time of issue as satisfactorily complete, it was realised even in 1955 that the remaining standards, especially B-1 and C-1, needed extension, for the number of specific circuits included in them (275 and 500 respectively) had already been found to be insufficient. Moreover these standards, which are used for the preparation of draft plans for the High Frequency Broadcasting Service as well as for technical examinations, applied only to 4 of the 9 phases of solar activity for which the Board had to prepare draft plans. Although the need for the extensions was apparent, it was not possible to start work on them before the preparation of the 1st Edition had been completed.

9.7.2 In Circular No. 727 of the 11th July 1956, Administrations were informed of the Board's intention of preparing the extensions and were invited to place standing orders. Sufficient orders were received to enable the I.F.R.B. to proceed with the preparation of the extension in the form of supplements to the 1st Edition of Series B. The issue of these supplements (4 to B-1 and 3 to B-2) commenced in August 1957 and will be

completed, it is expected, by the middle of August 1959. These supplements will comprise 3413 pages. In this connection it is to be noted that, starting with the 3rd Supplement to B-1, the Board introduced a new form of presentation which in effect combined Technical Standards B-1 and C-1 (see paragraph 9.2.2.). This new form (which would have been adopted from the beginning if it had not been for certain practical objections which have since been overcome), considerably reduces the bulk and cost of the publication and saves time in use. If this change had not been made, the extensions would have comprised 5729 pages.

9.8 Second Edition of Series A

As mentioned in paragraph 9.3.13, the Board revised some of the standards contained in Series A in the light of the additional information obtained from the work of the VIIIth Plenary Assembly of the C.C.I.R., and prepared the 2nd Edition of this Series, which contained 111 pages and was issued in May 1958.

9.9 General Comments on the existing Technical Standards

9.9.1 The Board considers that, generally speaking, the Technical Standards which it has evolved from the work of conferences of the I.T.U. and of the C.C.I.R. are adequate as a basis for the technical examinations as performed in present circumstances. Naturally as some of the factors on which the standards depend are still imperfectly known or understood, it cannot be said that the standards are free from all uncertainty. However, as most of the conclusions which the Board bases on its interpretation of the results of the application of the standards depend on comparisons (such as the comparison of one field strength with another or the comparison of the situation after a modification has been made to an assignment with the previous situation) very frequently uncertainties tend to cancel out. Of course, there would be cases in which errors combine, but it is believed that such cases are comparatively few and their effect is slight. Moreover, the effect of any shortcomings of the standards is often masked by doubts regarding operational, and not technical, aspects.

9.9.2 The standards are not completely uniform in certain respects. For instance the specific circuits included in the latest supplements to Technical Standard B-1 are not quite the same as those included in earlier publications. This is because, although a standard list of 600 circuits was decided on in 1958 on the basis of several years of experience, it has not yet been possible to modify earlier issues of B-1 to correspond exactly with this list. Also the LUF curves included in the first edition of C-1 made use of atmospheric noise data which was superseded, after the curves

had been drawn, by the data on which the 2nd Edition of Technical Standard A-2 is based. Again it has not yet been possible to make the necessary modifications to these LUF curves. The lack of complete uniformity does not give rise to appreciable errors, if the standards are applied with discretion, but do cause some inconvenience and loss of time in the application of the standards. Greater uniformity would therefore save time and labour.

9.9.3 The Board considers that further work on the Technical Standards should aim at making such refinements as will tend to reduce the proportion of cases where appreciable uncertainties may exist, and at removing any lack of uniformity between and within the various standards. This is of course in addition to any modification which may become necessary through the revision of the basic data on which the standards are based.

9.10 Aspects which the Conference may wish to consider

9.10.1 In view of the foregoing, the I.F.R.B. suggest, that, if the Conference should wish to give consideration to the Board's Technical Standards, the more profitable course would be to take steps, similar to those provided for by Recommendation No. 14 of the E.A.R.C., with a view to expediting the provision of data necessary for the refinement of the standards, and steps which will make it possible, at an early date, to eliminate such lack of uniformity as may exist in the present standards.

9.10.2 In conclusion, the Board wishes to refer to the statement made in paragraph 9.3.11, that technical standards can never be static, and to express the view that, as the frequency assignment notices which it has to treat, reflect the constantly increasing use of up-to-date techniques, its standards need also to be kept constantly up-to-date, in the light of new technical information as it becomes available.

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No. 20-E
ADDENDUM No. 1
(Section X.)
9 September, 1959.

COVERAGE OF THE INTERNATIONAL MONITORING SYSTEM

1. In paragraph 10.18 of Section X of Document 20, it was suggested "that the Conference might wish to consider measures by which:

a) the coverage of the International Monitoring System can be improved, more particularly through extension of the present facilities to parts of the world in which there are few, if any, participating Administrations or from which little monitoring information is supplied".

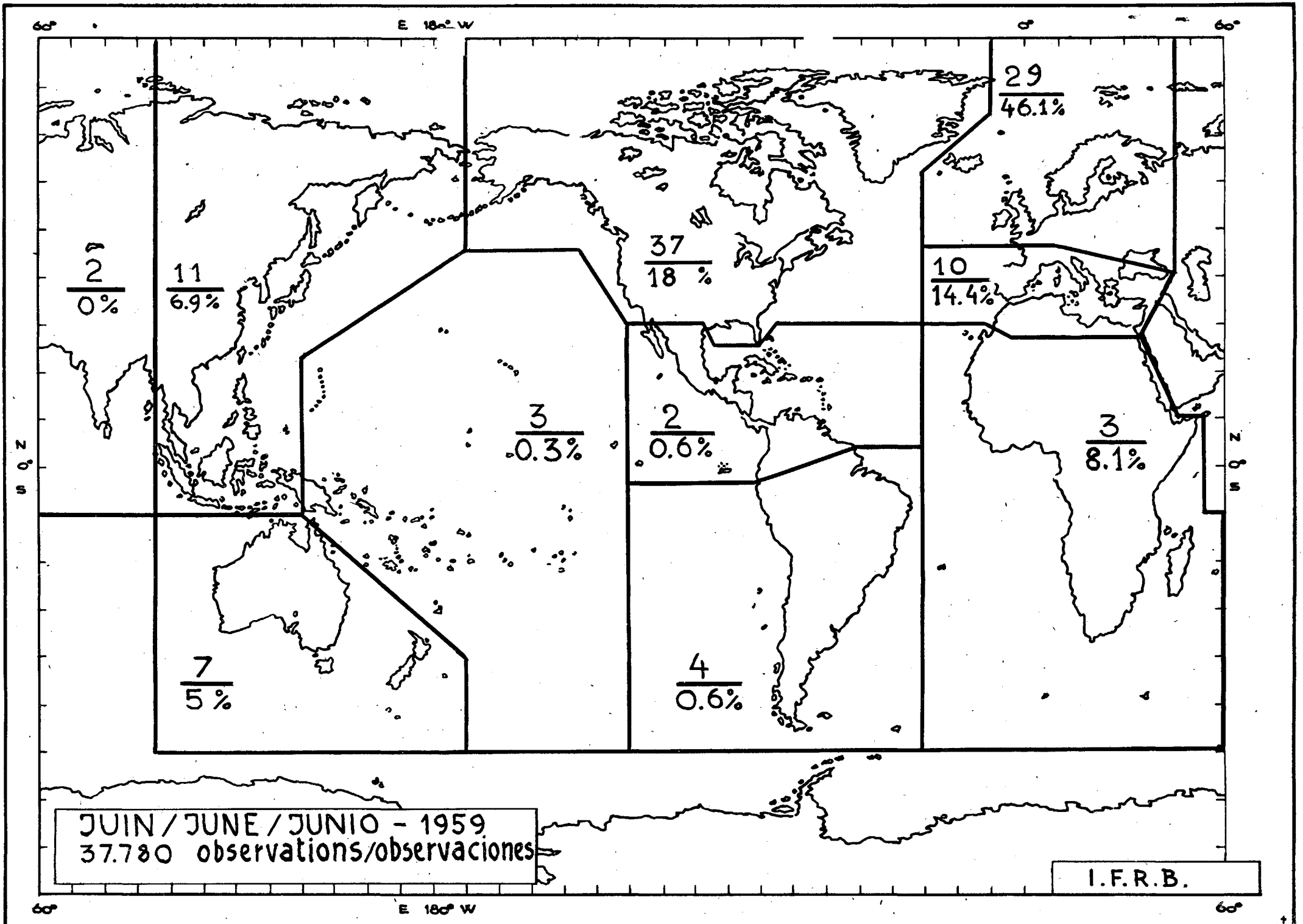
2. An earlier paragraph in the same Section (10.16.5a)), points out that the distribution of participating stations is far from uniform.

3. To illustrate this point, the I.F.R.B. has prepared the attached chart which is a map of the world divided into the ten main areas used in the I.F.R.B. Monitoring Summaries. In each area two figures have been inserted, one above the other. The upper figure indicates the number of monitoring stations operating in the area concerned and reflected in the Second Edition of the I.T.U. List of Monitoring Stations. The lower figure, which relates to the information supplied in respect of the month of June 1959, indicated the contribution actually made by monitoring stations in the area, expressed as a percentage of the total amount of information (37,780 observations) received by the Board.

4. It will be seen that three of the ten areas account for over 75% of the monitoring information reflected in the chart and for nearly 70% of the monitoring stations entered in the List of Monitoring Stations.

5. The distribution shown in the chart is typical, except that one of the areas which supplied a considerable amount of data for June 1959 normally makes an even larger contribution.

Annex: Map of the World.


60° E 180° W 60°
2
0%
11
6.9%
37
18 %
29
46.1%
10
14.4%
3
0.3%
2
0.6%
3
8.1%
7
5 %
4
0.6%
60° S
60° N
JUIN / JUNE / JUNIO - 1959
37.780 observations/observaciones
I.F.R.B.
60° E 180° W 60°

REPORT

by the

INTERNATIONAL FREQUENCY REGISTRATION BOARD (I. F. R. B.)

to the

ADMINISTRATIVE RADIO CONFERENCE

(Geneva, 1959)

SECTION X

International Monitoring

REPORT
by the
International Frequency Registration Board (I.F.R.B.)
to the
Administrative Radio Conference
(Geneva, 1959)

The present booklet contains Section X

SECTION X

TABLE OF CONTENTS

R E P O R T

by the

International Frequency Registration Board (I.F.R.B.)

to the

Administrative Radio Conference

(Geneva, 1959)

SECTION X

INTERNATIONAL MONITORING

10.1 Bases of activities relating to international monitoring

The work of the I.F.R.B. concerning international monitoring depends on certain provisions which are briefly summarised below in chronological order:

10.1.1 No. 290 of the Radio Regulations which includes among the functions of the Board "the collection of such results of monitoring observations as Administrations and Organisations may be able to supply and the making of arrangements, through the Secretary General of the Union, for their publication in suitable form";

10.1.2 Article 18 and Appendix C of the Radio Regulations which provide, inter alia,

a) for the establishment of an international system of frequency monitoring and, to the extent practicable, of other forms of monitoring, with reference particularly to No. 399 of the Radio Regulations which charged Administrations to make frequent checks of the emissions of the stations under their jurisdiction;

b) for the supply to the I.F.R.B. of monitoring information and for the preparation of a list of international monitoring stations, including a statement of the current standards recognized by the I.F.R.B. for monitoring stations, and of summaries of the monitoring information received by the Board;

c) that the techniques of measurement, the establishment of monitoring stations and the standards recognized by the Board should be based on Recommendations of the C.C.I.R.

10.1.3 The following Recommendations of the C.C.I.R., adopted at various times, starting with the Vth Plenary Assembly at Stockholm (1948):

Recommendation No. 19 which recommended that a co-ordinated world-wide monitoring service should be established forthwith.

Recommendations Nos. 20 and 21 (now Nos. 322 and 181, Los Angeles, 1959) which dealt with the accuracy of frequency measurements and of field strength measurements.

Recommendation No. 22 which recommended the minimum data which should be recorded in respect of frequency and field strength measurements and requested the I.F.R.B. to study forms for the reporting of such information.

10.1.4 Resolution No. 200 of the Administrative Council (1950) which requested monitoring information relating "to the present world-wide usage of frequencies"; an aspect of monitoring which had not been stressed previously.

10.1.5 Resolution No. 3 and Recommendation No. 11 of the E.A.R.C. (1951) which endorsed previous provisions, especially as regards the use of monitoring to provide information on the actual usage of frequencies.

10.2 In order to assist the Administrative Radio Conference to form an appreciation of how the present situation has evolved, the next sections of this report deal, as far as possible in chronological order, with developments.

10.3 Early Actions by the I.F.R.B.

10.3.1 In Circular No. 593 of the 18th January 1949, the I.F.R.B. requested Administrations which were willing to participate in the international monitoring system to designate their National Centralising Offices envisaged in Article 18 of the Radio Regulations, through which monitoring information would be requested and exchanged, and to notify to the Secretary-General particulars of their monitoring stations with a view to the publication of a List of International Monitoring Stations. In the same Circular, the Board, with reference to Recommendation No. 22 of the C.C.I.R., submitted to Administrations two forms which it had devised for the reporting of frequency measurements and field strength measurements.

10.3.2 The response from Administrations to this Circular was poor but after a second Circular (No. 621 of 27th March 1950) sufficient information regarding monitoring stations had been received to allow the compilation of a provisional List of International Monitoring Stations. As practically no comment was received from the Administrations regarding the forms suggested in the previous Circular, it appears that they met with tacit approval.

10.4 Resolution No. 200 of the Administrative Council

10.4.1 In October 1950, in connection with the preparations for the E.A.R.C., the Administrative Council adopted Resolution No. 200 which included an invitation to Administrations to supply to the I.F.R.B., at monthly intervals until 1st August 1951, "such summaries of international monitoring information relating to the present world-wide usage of frequencies as Administrations, having regard to Article 18 and Appendix C of the Radio Regulations, may be able to supply". This provision was prompted by the need for information which in the absence of an approved frequency list should facilitate a search for frequencies for stations which had to be displaced from their existing frequencies. This was the first time that attention was especially directed to the use of the information on spectrum occupancy which monitoring could yield.

10.5 Consequent action by the I.F.R.B.

10.5.1 The I.F.R.B., in Circular No. 631 of 2nd November 1950, in drawing attention to the above-mentioned provision, expressed the view that information in respect of the number of stations heard and identified, with some appreciation of the extent of their activity, would be more valuable than accurate measurements of frequency. The Board also stressed the importance of observing No. 384 of the Radio Regulations, which concerns the transmission of identification signals.

10.5.2 As was reported to the E.A.R.C., a great deal of information, amounting in some months to over 30,000 observations per month, was received from the 10 Administrations and 2 International Organisations which responded to the requests of the Administrative Council and the I.F.R.B. However, as practically all the monitoring stations supplying information were in the European area, the coverage attained was far from world-wide.

10.6 Resolution No. 3 and Recommendation No. 11 of the E.A.R.C.

The E.A.R.C. took account of the experience gained by the I.F.R.B. in dealing with the monitoring information referred to in paragraphs 10.4 and 10.5 and took two measures to encourage the development of international monitoring: by including certain provisions in Resolution No. 3 and in adopting Recommendation No. 11. From the relevant texts it may be said, briefly, that the E.A.R.C. desired that:

a) the supply of monitoring information relating to the usage of frequencies should continue; and

b) the coverage of the international monitoring system should be extended; and

c) the work of monitoring stations should be coordinated with a view to improving the efficiency of the system; and

d) the publication of monitoring summaries, which No. 411 of the Radio Regulations required the I.F.R.B. to prepare, should continue.

10.7 Consequent action by the I.F.R.B. - Arrangements for handling the information to be received

10.7.1 In view of the above actions, and on the strength of discussions during the E.A.R.C., the I.F.R.B. expected that the amount of information supplied to it would increase, perhaps to 40,000 or 50,000 observations per month or even more; a quantity which according to the Board's experience in treating such information by hand, would require the services of a very considerable number of persons. Accordingly, the Board, before the end of the E.A.R.C., began to look into the possibility of mechanising the treatment of the information, and, early in 1952, had evolved a system using punched cards (see Section XI, paragraph 11.4, of this Report).

10.7.2 As the observations relating to each station are scattered through more than one of the various reports received during a given period, the treatment of the information involves a great deal of mechanical sorting through which, for instance, all the observations relating to each station monitored are collected together as a preliminary to summarising. Other processes are included, in order, for example, to total the number of observations made during various periods of hours, and to indicate the way in which the measured frequencies of each station are distributed. The system now enables three officials, with the help of the Board's mechanical section, to handle an amount of information which would have required at least twenty-five persons if manual methods had remained in use.

10.8 Arrangements relating to collection of information and to organisation of the system

10.8.1 As just stated, the system using punched cards was made in the expectation of receiving information in considerable quantity. However, it transpired that "the response in 1952 to the request made by the E.A.R.C. for the supply of monitoring information to the I.F.R.B. was extremely disappointing", to quote from the Annual Report of the I.F.R.B. for 1952 (Circular-letter No. D 1173/R of 6 May 1953). In fact the amount of information supplied during 1952 was far below the level attained in 1951. Nevertheless the Board proceeded with its plans, which took into account the provisions of Resolution No. 3 and Recommendation No. 11 of the E.A.R.C., and, in Circular-letter No. D 1744/R of 14 May 1952:

a) reminded the Administrations of the requests made by the E.A.R.C.,

b) advised them of the arrangements which the Board proposed regarding the reporting of observations,

c) requested information regarding the nature and extent of the resources which could be put at the disposal of the international monitoring system, and

d) in asking for reports of monitoring information to be furnished from the 30th June 1952, stated that "observations from countries, especially outside Europe, from which the I.F.R.B. has received little or no monitoring information to date, would be particularly welcome".

10.8.2 With reference to point (b) of paragraph 10.8.1, the earlier approaches to Administrations referred to in paragraphs 10.1.4, 10.1.5., and 10.5.1 had requested the supply of information in summarised form. This was with the object of limiting the charge on the I.F.R.B. budget which would be incurred in handling a great volume of unsummarised information. The experience of the Board showed, however, that few Administrations found it possible to undertake the work involved in summarising their observations, and moreover that such summaries as had been supplied differed so much from each other that the Board experienced difficulty in using them. Further, the mechanised system adopted by the Board so greatly facilitated the processing of the information that the main disadvantages of receiving information in unsummarised form fell away. Accordingly, in Circular-letter No. D 1744/R of 14th May 1952, the I.F.R.B. requested the supply of information on an observation by observation basis. At the same time the Board proposed a new form for the reporting of information. This was because the earlier form referred to in paragraph 10.3.1 and which had been devised for the reporting of frequency measurements but not with monitoring of spectrum occupancy in mind, included some columns which required a comparison of the measured frequency with the frequency recorded in the I.T.U. List of Frequencies. Now, as reported to the E.A.R.C. in Document No. 222, the Board had found from an analysis of the summary which it had published for the information of the E.A.R.C. that only 22% of the entries in that summary corresponded closely to entries in the I.T.U. List of Frequencies so that such a comparison was seldom possible and was not made. On the other hand, certain useful information had been included regularly in the Remarks Column of many of the reports received, but no specific provision for this information had been made in the form. Accordingly, in

order to make better use of the information which was in fact available, a new form, that annexed to Circular-letter No. D 1744/R,was evolved. It has come into wide use and, apart from one point of detail, appears to be suitable for the purpose for which it was devised. The point of detail relates to the reporting of bandwidth and will be taken up at an appropriate time during the Administrative Radio Conference.

10.8.3 Coordination of programmes of work

10.8.3.1 The request for information regarding the nature and extent of the resources which might be made available (point (c) of paragraph 10.8.1) was made with a view to establishing an international programme of work on the basis of this information. It may be explained that early in 1951 the I.F.R.B., on the suggestion of two Administrations, had proposed a scheme according to which the various participating countries would observe different bands in rotation, so that the bands would be covered regularly at different locations but without duplication of effort. Unfortunately only three of the countries approached found themselves able to adopt the scheme. Nevertheless the I.F.R.B., feeling that the principle of coordinated action was sound, advocated the adoption of the principle during the deliberations of the E.A.R.C. which took account of it in Recommendation No. 11. However, the Board's request for information on the resources which could be made available met with very little response.

10.8.3.2 In spite of this, the Board feeling that the comparative failure of the first attempt at a coordinated programme of work might have been due to the absence of a clearly defined objective, made a further attempt in 1953, in connection with the clearance of channels in the aeronautical mobile bands for the Europe - Mediterranean and the North Atlantic routes. In 1952 the Board's representatives at a Regional meeting of I.C.A.O. in Paris, advocated intensive monitoring as an aid to band clearance, and at a later meeting established a collaboration which led to a monitoring campaign, the results of which were collected and processed by the I.F.R.B. In this connection the Board approached 30 Administrations which were directly concerned with the use of the aeronautical frequencies, requesting monitoring observations on the channels concerned and offering to devise a coordinated scheme with the object of avoiding duplication of effort. About one third of these Administrations supplied the monitoring information requested but only three of them asked the I.F.R.B. for, and applied, a coordinated programme. The resulting information proved a valuable help in selecting those non-aeronautical stations which would cause most interference with the aeronautical services if they were not transferred to other frequencies, and also in deciding when the clearance had progressed sufficiently to make it safe for the aeronautical services to take up their frequencies in the bands.

10.8.3.3 These two experiences gave the Board the impression that Administrations on the whole preferred not to commit themselves to coordinated schemes, even if there was a clearly defined objective. Nevertheless the monitoring information obtained proved a valuable aid in band clearance, and the I.F.R.B. has requested and made use of monitoring information in connection with 22 programmes for the clearance of bands for the Aeronautical Mobile, Maritime Mobile and Standard Frequency Services. In addition, use has been made by the I.F.R.B. of monitoring information in connection with problems in the High Frequency Broadcasting Service (see Section VI of this Report).

10.9 Coverage and Scope of System

10.9.1 The last point made in the I.F.R.B. Circular-letter No. D 1744/R (point (d) of paragraph 10.8.1) was of course an attempt to increase the coverage and scope of the international monitoring system. The response was disappointing, for the amount of information received during 1952 did not exceed 9000 observations in any month, although, as stated before the quantity received had exceeded 30,000 per month in some months of the previous year. The Board endeavoured to secure greater support, through such steps as the organisation of the campaign mentioned in paragraph 10.8.3.2 and the making of references in its Annual Reports to the unsatisfactory situation. The I.F.R.B. has continued its endeavours, for instance through requests, included in the 21 Prefaces to the Summaries of Monitoring Information issued so far and in 22 Circular-letters relating to band clearance programmes, for more information. The result has been a steady, but unfortunately somewhat slow, increase in the quantity of information received, as illustrated by the following table.

Monitoring observations received from 1951 to 1959

Year	Average number of observations per month
1951	20,000 *
1952	8,000 *
1953	13,200
1954	14,400
1955	26,000
1956	29,100
1957	28,200
1958	30,400
1959 **	30,600

* estimated

** average of first 3 months of 1959

10.9.2 In spite of this measure of achievement which has meant that the Board has processed over 2 million observations since 1952, it cannot be said that the position is satisfactory, because even this quantity of information casts relatively little light on spectrum occupancy in general, particularly as, to repeat a statement made many times in the Board's Annual Reports and elsewhere, there are still large areas of the world from which monitoring information is not forthcoming, or is but sparsely supplied. The largest gaps in monitoring coverage are in the central and southern parts of the Western Hemisphere, and in those parts of the Eastern Hemisphere lying northward of the Indian Ocean.

10.10 Publication of Summaries of Monitoring Information

10.10.1 No. 411 of the Radio Regulations and Resolution No. 3 of the E.A.R.C. call for the publication of summaries of monitoring information received by the I.F.R.B.

10.10.2 When the I.F.R.B. in 1952 advised Administrations, as indicated in paragraph 10.8.1 of the measures it proposed regarding the implementation of the decisions of the E.A.R.C. in connection with monitoring, the Board had it in mind to commence the publication of summaries later that year. However so little information was received in that year that the Board decided to defer publication, but by about April 1953, the quantity received had increased sufficiently to justify publication. In Circular No. 683 of 10th October 1953, Administrations were invited to place orders for the summaries. Sufficient orders(for over 400 copies) were placed to encourage the I.F.R.B. to proceed with its preparations and the first summary of the present series, covering April to June (inclusive) of 1953, was issued in January 1954. In all, 34 of these summaries have been published by 1st July 1959.

10.11 Establishment of Form and Content of Summaries

10.11.1 It should be remarked that, unlike other lists published by the I.T.U. there are no provisions in the Radio Regulations or E.A.R.C. Agreement specifying the information which is to be entered in monitoring summaries or giving any indication as to the arrangement of the particulars included. In fact, decisions on these points and on the intervals between successive issues were left to the discretion of the I.F.R.B. As regards the Fixed Service, at least, which accounts for the greater part of the information received, the Board was not aware of any previously existing summary such as it had to produce, and accordingly had to base itself on deductions from its own experience.

10.11.2 For the sake of brevity, this report will not enter into the details of the reasons for which it decided on the form and content of the summaries which it has prepared. Suffice it to say that, in considering the various possibilities, the Board developed and applied the following main principles:

a) as the more immediate aim of the summaries envisaged by the E.A.R.C. was to supplement the information on spectrum occupancy contained in the Radio Frequency Record, the general arrangement of the summaries should be similar to that of the Record. Consequently, the Board chose an arrangement in frequency order, rather than one in order of service, or country or call sign and decided to prepare a general summary covering the frequency bands in which, in general, no lists or plans had been adopted and including stations of all services except ship and aircraft stations;

b) to provide the Administrations with the maximum of information, as much as possible of the detailed information received and of any statistical information which could be derived from the information should be incorporated in the summaries, subject to the possibilities of handling these particulars and of finding space for them in the punched cards used and in the publication;

c) in particular, as the extent to which an assignment occupies spectrum space depends not only on the bandwidth occupied but also on the area over which its influence on other assignments extends, and on the length of the periods during which its influence can be felt in different parts of the world, these factors should be reflected in the summaries. This meant the inclusion of information on the class of emission used, on the times at which an assignment is monitored in various areas and on the signal strength noted in these areas;

d) as a compromise between the desire to make the summaries available as soon as possible after the information was received, and the desire to limit the expense and labour involved in frequent publications, the Board decided on a publication every quarter; a period which corresponded approximately with seasonal changes in frequency usage. Subsequent experience, however, led the Board to issue monthly instead of quarterly summaries.

10.11.3 Examination of the published summaries shows that the above principles are in general reflected in the publication. As just mentioned, however, the Board, in Circular-letter No. 2267/57/R of 9th May 1957, made proposals for changes in its arrangements intended to place the summaries in the hands of Administrations more expeditiously; the principal change being the issue of the publications at monthly, instead of quarterly, intervals. This change was introduced in 1958, starting with the summary for January 1958.

10.12 Data from Receiving Stations

With regard to deficiencies in the world coverage provided by this existing international monitoring system, it has already been stated that the Board has made, and is continuing to make, appeals for more monitoring information. In addition the I.F.R.B., after consideration of a suggestion made to it by an Administration, announced in Circular-letter No. 1827/55/R of 24th August 1955, that it could accept for inclusion in its summaries, information from receiving stations which report on the operations of transmitters in other countries with which they are in correspondence, provided that such information was supplied in accordance with prescriptions which were detailed in the Circular-letter and which were intended to ensure that the corresponding reports would be of value. By the end of 1955, five Administrations had responded to this Circular-letter by contributing information and the number of Administrations participating in this arrangement is now thirteen. The result has been an appreciable increase in the amount of information supplied to the Board.

10.13 Identification of Radio Stations

As mentioned in paragraph 10.5.1, the Board at an early stage had referred to the importance of observing No. 384 of the Radio Regulations. In Circular-letter No. 1439/54(1)R of 3rd August 1954, the Board took up the matter again with Administrations, expressing the hope that energetic steps would be taken by all Administrations and operating agencies to ensure that identification signals would be transmitting frequently enough to permit rapid identification of transmitting stations, thereby increasing the effectiveness of monitoring stations.

10.14 Optimum Standards for Monitoring Stations

As Recommendations as to the Technical Standards for performance to be observed by various classes of monitoring stations have been adopted by the C.C.I.R., the Board, in accordance with No. 406 of the Radio Regulations has considered and recognised these as optimum practicable Standards. In addition, the I.F.R.B. also includes in the recognized Standards, Note 1 of Recommendation No. 11 of the E.A.R.C., which refers to frequency measuring equipment having a somewhat lower accuracy, for use in investigating the occupancy of the spectrum. The Standards recognized by the Board are included in the List of International Monitoring Stations, in accordance with No. 408 of the Radio Regulations.

10.15 Recapitulation

10.15.1 Thus far, outlines have been given:-

a) of the measures adopted by the Atlantic City Administrative Radio Conference, the E.A.R.C., the C.C.I.R., and the Administrative Council with a view to the establishment of the international monitoring system; and

b) of the steps taken by the I.F.R.B. with a view to ensuring the effective application of these measures; and

c) of the principal results of the above actions.

10.15.2 The results may be summarised briefly as follows:-

a) 28 Administrations and international organisations have supplied monitoring information to the Board and have notified 101 monitoring stations as available for participation in the international monitoring system. Particulars of these stations appear in the second edition of the List of International Monitoring Stations (May, 1959).

b) In addition, 13 Administrations have supplied reports from 17 receiving stations on the operation of certain correspondents of these stations.

c) 34 Summaries of Monitoring Information have been prepared for publication by the General Secretariat.

d) Over 2 million individual observations have been supplied to the I.F.R.B. since 1952; about 370,000 during the year ended 1st July 1959.

10.16 Comments by the I.F.R.B.

10.16.1 The following comments relating to the effectiveness of the present system are made with a view to assisting the Conference in its consideration of this matter.

10.16.2 If the 370,000 observations received during the last year applied uniformly to the 130,000 fixed service assignments recorded in the Master Record in the frequency range (2,850 kc/s to 27,500 kc/s) covered by the observations, each recorded assignment would have been monitored about once in 4 months.

10.16.3 However only a small proportion (estimated as between 10% and 20%) of the recorded assignments has been reported by monitoring stations; moreover many (approximately one half) of the transmitting stations reported are located in Europe and North America. The coverage is thus far from comprehensive.

10.16.4 Even for those areas which are reasonably well covered, it appears that few stations are monitored more often than once in one or two weeks. Accordingly, although in these areas monitoring yields useful evidence of activity, the results are not sufficiently comprehensive even here to give a detailed picture of frequency usage.

10.16.5 The present insufficiencies of the system appear to exist mainly:-

a) because the distribution of participating stations is far from uniform, there being large areas of the world from which no monitoring information is received; and

b) to a lesser extent, because the number of participating stations is still somewhat limited; and

c) the difficulties in identifying stations, especially in the Fixed Service, are great largely because call signs are often emitted only at long intervals.

10.16.6 The above considerations apply particularly to the Fixed Service. As regards the High Frequency Broadcasting Service and the Mobile Services, coverage is rather more effective, because of such factors as the existence of specialized monitoring organisations and lesser difficulties in identification.

10.16.7 The participation of Administrations and the amount of information supplied are greater when a specific programme in connection with band-clearance is concerned, than when scope is more general.

10.16.8 As regards the Summaries, the Board itself has made rather less use of them than of the detailed lists containing all information received, which are prepared during the summarising processes. For certain purposes, however, the summaries themselves have proved useful to the Board. Nevertheless, the preparation of summaries is of course primarily intended to place the information which the I.F.R.B. receives, at the disposal of Administrations. Although each Preface to the Summaries has invited comment, practically no comment has been received. The Board can only state that over 400 copies of each Summary are sold at present, and that, in co-operation with Administrations, it has done its utmost with the limited resources at its disposal to expedite the publication.

10.17 Acknowledgment

Although the Board has found it necessary to draw attention to insufficiencies of the existing monitoring system, it wishes to express, to the Administrations and International Organizations which have contributed information, its sincere appreciation for their co-operation.

10.18 Subjects for consideration by the Administrative Radio Conference in relation to international monitoring

Ad.1

The I.F.R.B., considering that monitoring provides the Administrations and the Board with useful information to supplement that contained in the Master Record, suggests that the Conference, in re-examining existing provisions concerning monitoring, might wish to consider measures by which:

a) the coverage of the international monitoring system can be improved, more particularly through extension of the present facilities to parts of the world in which there are few, if any, participating Administrations or from which little monitoring information is supplied; and

b) the identification of stations can be facilitated.

REPORT

by the

INTERNATIONAL FREQUENCY REGISTRATION BOARD (I. F. R. B.)

to the

ADMINISTRATIVE RADIO CONFERENCE

(Geneva, 1959)

SECTION XI

The organization of the International Frequency Registration Board and of its Specialized Secretariat

REPORT
by the
International Frequency Registration Board (I.F.R.B.)
to the
Administrative Radio Conference
(Geneva, 1959)

The present booklet contains Section XI

SECTION XI

TABLE OF CONTENTS

REPORT

by the

International Frequency Registration Board (I.F.R.B.)

to the

Administrative Radio Conference

(Geneva, 1959)

SECTION XI

THE ORGANIZATION OF THE INTERNATIONAL FREQUENCY REGISTRATION BOARD AND OF ITS SPECIALIZED SECRETARIAT

This Section gives information about the way in which the International Frequency Registration Board, assisted by its specialized Secretariat, has performed the tasks assigned to it by the International Telecommunication Convention (Buenos Aires, 1952), the Radio Regulations (Atlantic City, 1947), and the Agreement of the Extraordinary Administrative Radio Conference (E.A.R.C., Geneva, 1951).

The origins and composition of the Board are outlined in Section I of this Report.

11.1 Officers of the Board

11.1.1 In accordance with the provisions of the Internal Regulations of the I.F.R.B. (Article 12 of the Radio Regulations), the Board elects a Vice-Chairman to hold office for a term of one year, whereupon he succeeds to the office of Chairman and a new Vice-Chairman is elected. The first Chairman of the Board was elected at a first meeting held in Atlantic City on 28 September, 1947. Since 1948, the offices of Chairman and Vice-Chairman have been held as follows:

	Chairman	Vice-Chairman
1948	Mr. Paul D. Miles	Mr. S. H. Witt
1949	Mr. S. H. Witt	Mr. J. A. Gracie
1950	Mr. J. A. Gracie	Mr. R. Petit
1951	Mr. R. Petit	Mr. F. Dellamula
1952	Mr. F. Dellamula	Mr. J. J. Svoboda
1953	Mr. J. J. Svoboda	Mr. N. H. Roberts
1954	Mr. N. H. Roberts	Mr. A. H. Catá
1955	Mr. A. H. Catá	Mr. T. K. Wang
1956	Mr. T. K. Wang	Mr. J. H. Gayer
1957	Mr. J. H. Gayer	Mr. B. Iastrebov
1958	Mr. B. Iastrebov	Mr. P. S. M. Sundaram
1959	Mr. P. S. M. Sundaram	Mr. J. A. Gracie

11.1.2 Mr. G. C. Gross, Assistant Secretary-General of the I.T.U., temporarily acted as Secretary of the Board until 27 May, 1948, when Mr. D. H. Reynolds was appointed to this post, which he still holds.

11.2 Tasks of the International Frequency Registration Board

11.2.1 According to Article 6 of the International Telecommunication Convention (Buenos Aires, 1952), the essential duties of the Board are:

a) to effect an orderly recording of frequency assignments made by the different countries, so as to establish, in accordance with the procedure provided for in the Radio Regulations, and in accordance with any decisions which may be taken by the competent conferences of the Union, the date, purpose and technical characteristics of each of these assignments, with a view to ensuring formal international recognition thereof;

b) to furnish advice to Members and Associate Members with a view to the operation of the maximum practicable number of radio channels in those portions of the spectrum where harmful interference may occur;

c) to perform any additional duties concerned with the assignment and utilization of frequencies, prescribed by a competent conference of the Union, or by the Administrative Council with the consent of the majority of the Members of the Union in preparation for or in pursuance of the decisions of such a conference;

d) to maintain such essential records as may be related to the performance of its duties.

11.2.2 The functions of the Board are described in detail in the Radio Regulations (Atlantic City, 1947) annexed to the Convention, particularly in Articles 10, 11 and 12 thereof, and in the Extraordinary Administrative Radio Conference Agreement (Geneva, 1951), particularly in Article 37 thereof. Since 3 December, 1951, the date on which this Agreement was signed, they have included in particular:

i) the application of the procedure defined in Article 11 of the Radio Regulations for the examination and registration in the Master Record of frequency assignments in certain frequency bands;

ii) the application of the interim procedure defined in Article 33 of the E.A.R.C. Agreement for the examination and recording in the Master Record of frequency assignments in frequency bands where the procedure laid down in Article 11 of the Regulations is not applicable;

iii) assistance to Administrations in frequency assignment matters and in the implementation of plans adopted by the E.A.R.C. for the Aeronautical and Maritime Mobile Services;

iv) the preparation of draft plans for the High Frequency Broadcasting Service;

v) the analysis and study of monitoring information, and the preparation of periodical summaries;

vi) studies directed towards perfecting and constantly reviewing the technical standards needed by the Board for its various tasks.

11.3 Organization and working methods of the International Frequency Registration Board

11.3.1 The Board established its organization and working methods after a careful study of the requirements needed to discharge its duties.

11.3.2 The I.F.R.B. is a collegiate body composed of independent persons, each one of a different nationality, who must be fully qualified and must carry out their duties as impartial custodians of an international public trust. Each member must perform his duties on the basis of principles of world-wide application, and taking only technical considerations into account. The Board, in reaching its decisions, is entrusted to apply continuously, to notices by which Administrations notify their intention to use specific frequencies, what may be considered as the "law", or in other words the overall provisions adopted, in the form of the Radio Regulations and the E.A.R.C. Agreement, by the Administrations of the Members of the Union meeting in conference. To this end it takes its decisions as a corporate body, in accordance with its Internal Regulations, as contained in Article 12 of the Radio Regulations. It must endeavour to reach its decisions by unanimous agreement, but if this cannot be done, the Board applies the voting procedure specified in detail in its Internal Regulations. The latter ensure that the vote of each member is of equal weight when decisions are taken, no matter whether he is serving as the Chairman or Vice-Chairman. It is to be noted, in this connection, that the Atlantic City Administrative Radio Conference took great care to make provisions to ensure the independence of the members of the Board and the impartiality of the decisions it has to take in a field which is unique in nature, since, in view of the radio propagation characteristics in the transmission medium common to all countries, the operation of a radio transmitting station may involve immediate serious implications throughout a large part of the world.

11.3.3 The Board had to organize itself in such a way that its members might not only act as a corporate body to formulate decisions, particularly to reach findings with regard to frequency notices submitted by Administrations, but also do the daily technical work required to enable the Board itself to take the decisions necessary for the discharge of its duties. Each member is responsible vis-à-vis the Board for a part of the technical work, and does the necessary preparatory detailed work or has it done by the Specialized Secretariat according to directions given by him. It might be noted that the distribution of duties among the members of the Board has changed slightly from time to time according to the incidence of various aspects of the work. It should also be pointed out that experience has shown that the complexity of the work of the Board - complexity which reflects the multiplicity of factors to be taken into account in frequency usage matters - makes it indispensible, in order to achieve efficiency and satisfactory results, that a direct and constant contact exist between members of the I.F.R.B. and the Specialized Secretariat; such has been achieved only because this latter works under the direct authority of the Chairman of the I.F.R.B..

11.3.4 Each member prepares recommendations to the Board, particularly with regard to findings to be reached concerning frequency assignment notices; these recommendations, of a clearly specialized technical character, are reproduced and distributed to all the other members for study, and the Board takes its decisions at its next meeting.

11.3.5 According to its Internal Regulations, the Board normally meets at least once a week. Each of its formal meetings is preceded by one or more preparatory technical meetings at which all the recommendations submitted by the members are discussed in detail, the members of the Board exchange views on the various aspects of the matter, and the Board lays the bases for its formal decisions. It is also at these preparatory meetings that the Board discusses the various technical aspects of the methods which it currently applies in the course of its work, assisted by its Specialized Secretariat, as well as the amendments proposed thereto. The minutes of the formal meetings are drawn up on the three working languages of the Union and indicate, with all relevant details, the agreements and decisions reached and, in particular, the findings adopted by the Board with regard to frequency assignment notices.

11.3.6 In addition to these meetings, the members of the I.F.R.B. hold a number of special technical meetings to discuss questions affecting its work. In some cases, only the members designated to study the particular questions under discussion attend them and later on submit reports on these questions to the Board.

11.3.7 The Board has appraised the value of these working methods and it considers that they are in fact the most suitable in view of its mandate and structure, and the limited resources at its disposal.

11.4. The Specialized Secretariat of the I.F.R.B.

11.4.1 According to Article 10 of the Radio Regulations, the Board is assisted by a Specialized Secretariat which works under the direct authority of the Chairman of the I.F.R.B..

11.4.2 The Board organized its Secretariat at the beginning of 1952 with an eye to the tasks it had to perform. Anybody familiar with the procedures laid down in the Radio Regulations or the E.A.R.C. Agreement for the notification of frequency assignments and their registration or recording in the Master Radio Frequency Record will appreciate the problems involved in the application of these procedures and the meticulous organization they call for in the Specialized Secretariat assisting the Board. For instance, frequency notices reach the Board at the rate of several hundred every week - a rate much higher than was ever envisaged, not only by the Atlantic City Radio Conference, but also by the E.A.R.C. - and the Finding which the Board issues for each of them in accordance with the above-mentioned procedures requires a detailed study of each individual notice to see whether its particulars are in accordance with the Radio Regulations (including the Table of Frequency Allocations) and to assess the probability of harmful interference to stations already recorded in the Master Record. This is one example of the complex and scrupulously careful work in which the Specialized Secretariat assists the Board, following the detailed standardized instructions which the latter has prepared only after very deep study, and which it is constantly reviewing.

11.4.3 Staff

11.4.3.1 The staff of the I.F.R.B. Secretariat was organized into departments and sections appropriate to the different tasks undertaken by the Board. Each of them works according to instruction prepared by the Board, and the direction of departments and of the staff is exercised in the following manner:

- administrative: by the Chairman of the I.F.R.B. through the Secretary
- technical: by the members of the Board according to the decisions of the Board.

Supervision of the application of all decisions of the Board is vested in the member or members of the Board concerned and/or the Secretary, according to the decisions of the Board.

11.4.3.2 This organization and the working methods applied have been regularly reviewed by the Board in endeavours to achieve maximum efficiency consistent with economy. The organization has, however, never been rigid and the actual numbers of staff working in a particular department or

section at any given time has varied according to the work-load at that time. This flexibility is facilitated since the Specialized Secretariat works under the direct authority of the Chairman of the I.F.R.B.. However, in spite of this flexibility, it has been necessary from time to time to seek the authority of the Administrative Council for the establishment of additional posts in view of the ever-increasing volume of work. Such proposals as have been made have been consistent with the Board's policy that the utmost economy should be exercised and that additional staff expenditure should be incurred only when, in its opinion, it is absolutely necessary in the overall interest of the Union. Almost annually since 1953, the organization and staffing of the I.F.R.B. Secretariat has been the subject of detailed investigation by the Administrative Council, particularly when requests for additional staff have been considered, and the Board is pleased to report that the Council has never expressed any dissatisfaction or criticism.

11.4.3.3 A table showing the present organization of the Specialized Secretariat and its connections with the Board, is given in Annex 1 to this Section; Annex 2 shows the staff establishment. While the tables in these Annexes include certain posts which were provided to enable the Board to undertake various tasks in preparation for the Administrative Radio Conference, the Board nevertheless feels that the whole organization should be maintained until it has been possible to assess the repercussions of the decisions of the Conference. The Administrative Council has accordingly included provision for the whole organization, as it stands at present, in the provisional Ordinary Budget of the Union for 1960 which it has submitted to the Plenipotentiary Conference.

11.4.4 Mechanical System

11.4.4.1 In conformity with a recommendation in No. 260 of the E.A.R.C. Agreement, the I.F.R.B., as explained in the March (1952) issue of the Telecommunication Journal, studied and adopted the use of punched cards for the recording and classification of frequency assignments and to facilitate the publication of the Radio Frequency Record. In addition, the Board decided to use punched cards for the recording and summarizing of monitoring data, and for the recording and publication of requirements submitted for the preparation of draft plans for the High Frequency Broadcasting Service.

11.4.4.2 There was no doubt that a punched card system would be the most suitable and the most economical insofar as the recording, summarizing and publication of monitoring data was concerned, since the number of elements (letters or figures) normally available on the punch card of any system were sufficient for the purpose. The same applied with regard to high frequency broadcasting requirements. In the case of the recording of frequency assignments, it was again clear that a mechanical or electronic system would be the most rapid and economical, not only for the establishment

of the Master Radio Frequency Record and the publication of the Radio Frequency Record, but also for producing with facility and speed at any time the tabulated lists containing up-to-date information on frequency utilization in any frequency band, which the Board requires to have available for reference daily when applying the technical examination specified for new assignments or changes in basic data.

11.4.4.3 The problem however, in 1952, was whether such a system could be adapted for this work in view of the large number of figures and letters involved in a single entry concerning a frequency assignment (i.e. in the manner envisaged in List I of Appendix 6 of the Radio Regulations). Detailed study and trial of the amount of space to be allotted to each column of List I, which in turn involved the preparation of suitable codes for Columns 11, 12 and 13 (the need for which had already been foreseen in the Radio Regulations) revealed that it would be possible to contain this information, in a readily understandable form, on two cards each containing 90 elements. Although a two-card system had many drawbacks, the advantages of using punched cards were so numerous that the Board decided to adopt the system and the Master Radio Frequency Record was accordingly established on punched cards and the first publication of the Radio Frequency Record was printed by the photographic offset process (with substantial savings in time and costs of publication) from the tabulations of the cards.

11.4.4.4 Obviously, a single card system would be greatly preferable and the Board continued to explore the possibilities and improvements of all mechanical systems available on the market with a view to changing over to a single card system, should a satisfactory one appear. The Board's continued explorations met with success and towards the end of 1954 it changed over to a single card system. This system is based on the use of a card with 130 elements, as compared with 90 elements under the former system, and additional capacity is obtainable by a facility known as "overpunching", in certain columns. By taking advantage of this overpunching, the I.F.R.B. has been able to accommodate on a single card the information which formerly appeared on two cards in the Master Radio Frequency Record.

11.4.4.5 The single card system has many advantages, the main one being the simplification in the various steps in the procedure for the handling of notices. It was no longer necessary to maintain two sets of cards in parallel and the need of the constant checking of matching cards disappeared. Additional flexibility resulted from the possibility of extracting any desired information relating to a particular frequency assignment from the single card on which all the information is recorded. Furthermore, it was possible to publish the Radio Frequency Record in the column order envisaged in List I of Appendix 6 of the Radio Regulations.

11.4.4.6 Apart from these benefits, economies to the Union resulted from a lower machine rental and a halving of the number of cards used for every new or amended frequency assignment. The system was described in an article published in the December (1955) issue of the Telecommunication Journal under the title "The Master Radio Frequency Record".

11.4.4.7 The Board endeavours to keep abreast of developments in the processing of information by means of electronic or mechanical systems, in order to be able to inform the Administrative Radio Conference on possible implications of any proposals for modification of the structure of List I of Appendix 6 to the Radio Regulations.

11.5 Correspondence with Administrations

11.5.1 Through the weekly I.F.R.B. Circulars which the Board has been preparing regularly since 1953 for publication by the Secretary-General, the Administrations are informed, in accordance with No. 322 of the Radio Regulations, of the notifications of frequency assignments received by the Board and requiring treatment under the Article 11 procedure, and also, in accordance with No. 360 of the Radio Regulations, of the Findings reached by the I.F.R.B. under the Article 11 and the Interim Procedures, with a view to inclusion of frequency assignments in the Master Record.

11.5.2 Since 1948 the Board has prepared, for publication by the Secretary-General, 209 Circulars, Circular-letters and Circular-telegrams relating to special studies made by the Board in the fulfilment of its duties. The list of these publications and their respective subjects appears in Annex 3 to this Section.

11.5.3 In addition to the weekly Circulars, Circulars, Circular-letters and Circular-telegrams mentioned above, the volume of correspondence between Administrations and the Board has reflected the high activity of the Union in the sphere with which the I.F.R.B. is concerned. As an indication of this activity it may be noted that, since 1953, the number of letters and telegrams exchanged annually between Administrations and the Board averaged about 9000, of which approximately 6000 were incoming and 3000 outgoing. It is to be noted that the Board, conscious of the expense caused to Administrations through an extensive use of telegrams and taking advantage of alternative fast modern means of communication, introduced in 1954 the "I.F.R.B. Mail Message", a kind of concise communication sent by airmail.

11.5.4 Annex 4 to the present Section gives a list of the various documents prepared by the Board since 1952 for publication by the General Secretariat.

11.6 Other activities of the I.F.R.B.

11.6.1 In accordance with the provisions of the Convention and the Radio Regulations, or in response to invitations received, members of the I.F.R.B. have participated in international meetings which, for the years 1948 to 1958 inclusive, have been mentioned regularly in the eleven annual Reports by the Board to the Members of the Union. Since 1 January 1959, members of the Board have taken part in a number of meetings

including the 15th Session of the Economic Commission for Asia and the Far East (E.C.A.F.E.), (Broadbeach, Australia, March 1959), the IXth Plenary Assembly of the C.C.I.R.,(Los Angeles, U.S.A., April 1959), the Meeting of the Working Party of Telecommunications Experts for the E.C.A.F.E. Region, (Tokyo, Japan, May 1959), and the Sub-Study Group for Far East and South Asia Plan of the C.C.I.T.T.,(Tokyo, Japan, May 1959).

11.6.2 It should be noted that on several occasions the I.F.R.B. had to decline invitations to be represented at international and regional service meetings, either because it was not possible to spare a member of the I.F.R.B. or an official of the Specialized Secretariat because of the heavy workload, or for lack of credits, despite the fact that representation would have been in the interests of the inviting body and of the discharge of the duties of the I.F.R.B. vis-à-vis Members of the Union.

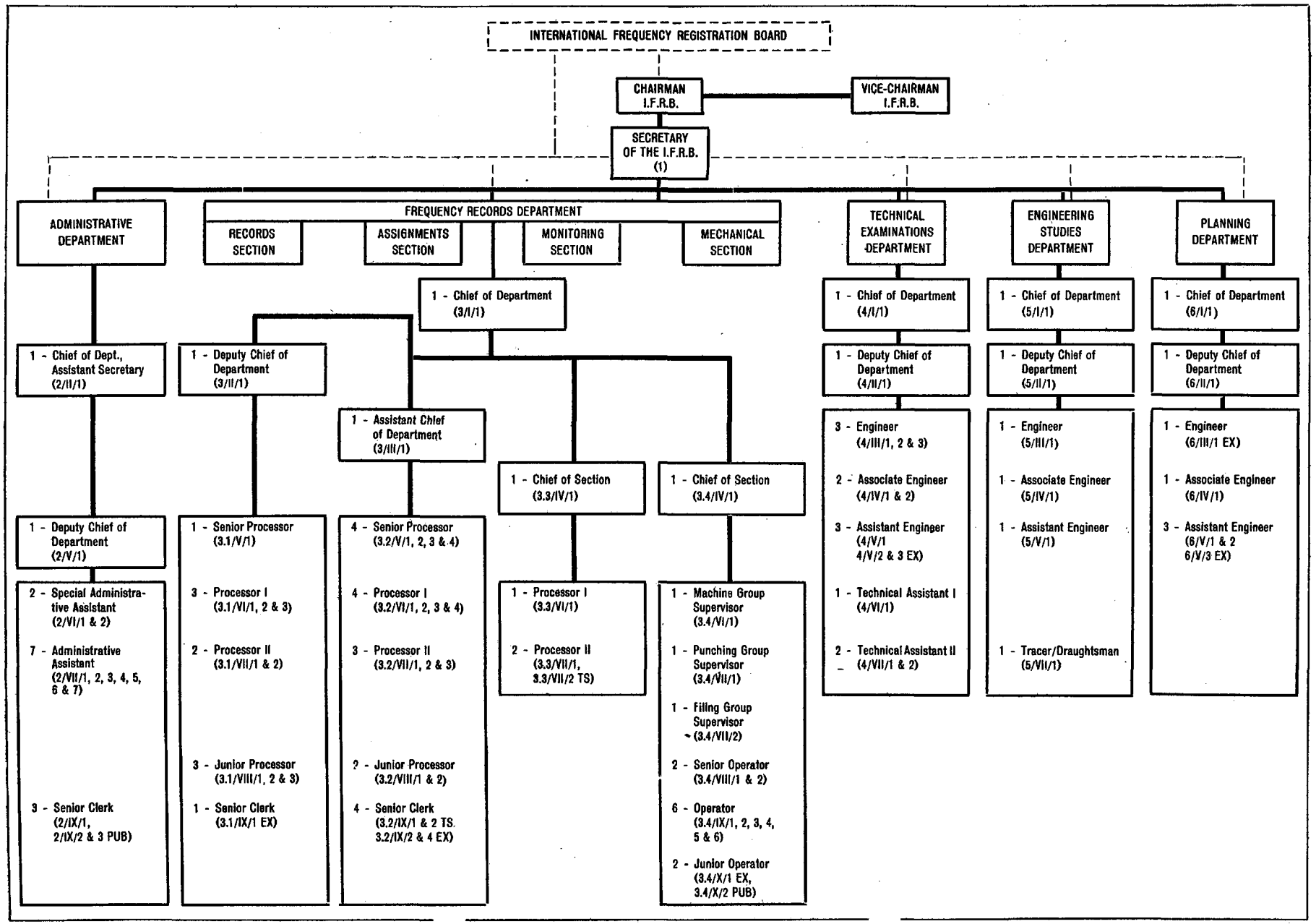
11.6.3 Moreover, the Chairman of the I.F.R.B. and, since 1958, the Vice-Chairman, have served as members of the Coordination-Committee of the I.T.U., where various questions affecting the Union and its headquarters were discussed. In this connection many reports and questions concerning technical assistance to Administrations have been studied and recommendations put forward to the Coordination-Committee, by the Chairman and Vice-Chairman of the Board, especially on frequency assignment matters.

11.6.4 In addition, members of the I.F.R.B. have served on internal Committees and Boards of I.T.U. Headquarters, such as the Promotion Board (for the higher appointments), the Editorial Board, the Appeal Board and the Finance Control Committee.

11.6.5 Finally, the Board feels that it should express its satisfaction at having been able to cooperate with the General Secretariat in the preparation of the report attached to Circular No. 766 of 30 December, 1958, relating to I.T.U. Service Documents, in the preparation of Circular-letter No. 2758/59/R of 24 June, 1959, relating to the organization and programme of work for the Administrative Radio Conference, and in the preparation of the Second Edition of the List of International Monitoring Stations. This cooperation is only one instance of the harmonious understanding which exists between the permanent organs at the headquarters of the Union, thanks to which Members of the Union can in all circumstances secure advantage from the experience of all the high officials of the headquarters of the I.T.U..

ANNEX 1

ORGANIZATION OF THE I.F.R.B. SPECIALIZED SECRETARIAT



ANNEX 2

STAFF ESTABLISHMENT OF THE I.F.R.B. SPECIALIZED SECRETARIAT

Class	D	a/b	b	c	d	e	f	g	h	i	j	Totals
Secretary of the I.F.R.B.	1											1
Administrative Department				1			3	5	2	3		14
Frequency Records Department		1		1	3	5	8	10	7	11	2	48
Technical Examinations Department		1		4	2	3		1	2			13
Engineering Studies Department		1	1	1	1	1		1				6
Planning Department		1	1	1	1	3						7
TOTALS	1	4	2	8	7	12	11	17	11	14	2	89

PAGE INTENTIONALLY LEFT BLANK

PAGE LAISSEE EN BLANC INTENTIONNELLEMENT

ANNEX 3

List of Circulars, Circular-letters and Circular-telegrams prepared by the I.F.R.B. for publication by the General Secretariat.

Year 1949		
	No. 593 of 18 January, 1949	International Monitoring.
	No. 19/52 of 2 June, 1949	First Annual Report of the I.F.R.B. for 1948.
Year 1950		
	No. 621 of 27 March, 1950	International Monitoring.
	No. 19/51 of 19 June, 1950	Second Annual Report of the I.F.R.B. for 1949.
	No. 631 of 2 November, 1950	International Monitoring.
	No. 633 of 6 November, 1950	Notification of frequencies above 27,500 kc/s.
Year 1951		
	No. 134 of 9 January, 1951	Preparation of the Extraordinary Administrative Radio Conference.
	No. 640 of 29 January, 1951	Preparation of the provisional List of Frequency Notifications above 27,500 kc/s (Resolution No. 202 of the Administrative Council).
	No. 136 of 26 February, 1951	Third Annual Report of the I.F.R.B. for 1950.
	No. D 961/R of 20 March, 1951	E.A.R.C. - Geneva, 1951 - 1st Volume of Proposals (Administrative Council Resolutions Nos. 199 and 200).
	No. D 1127/R of 26 April, 1951	E.A.R.C. - Geneva, 1951 - Comments by Administrations on draft New International Frequency List (Administrative Council Resolutions Nos. 154 and 200).
	No. D 1779/R of 7 June, 1951	E.A.R.C. - Geneva, 1951 - Proposals by the I.F.R.B. (Resolution No. 199 of the Administrative Council).
	No. D 1782/R of 18 June, 1951	E.A.R.C. - Geneva, 1951 - Second Volume of Proposals (Administrative Council Resolutions Nos. 199 and 200).
	No. D 1853/R of 29 June, 1951	Preparation of the E.A.R.C. (Geneva, 1951). Detailed observations by Administrations on the Draft New International Frequency List (Resolutions Nos. 154 and 200 of the Administrative Council).

No. D 2090/R of 3 July, 1951	E.A.R.C. - Geneva, 1951 - Proposal from India (Administrative Council Resolution No. 200).
No. D 2256/R of 16 July, 1951	E.A.R.C. - Geneva, 1951 - Comments by Administrations on draft New International Frequency List (Administrative Council Resolutions Nos. 154 and 200).
No. D 2342/R of 23 July, 1951	Preparations for the E.A.R.C., Geneva, 1951 - Explanation of the method which has been adopted by the I.F.R.B. in dealing with certain detailed comments.

Year 1952

No. D 573/R of 15 February, 1952	Fourth Annual Report of the I.F.R.B. for 1951.
No. D 938/R of 12 March, 1952	Information to be supplied for the I.F.R.B..
No. 998/R of 17 March, 1952	An analytical and chronological index of the provisions, classed by frequency band and service, adopted by the E.A.R.C., Geneva, 1951.
No. D 1511/R of 23 April, 1952	High Frequency Broadcasting up-to-date requirements to be furnished to the I.F.R.B..
No. D 1744/R of 14 May, 1952	International Monitoring.
No. D 1950/R of 3 June, 1952	Implementation of the E.A.R.C. Agreement.
No. D 1977/R of 10 June, 1952	Information on frequency usage supplied in accordance with the Agreement of the Extraordinary Administrative Radio Conference (Geneva, 1951).
No. D 2491/R of 28 July, 1952	Procedure for notification of frequency assignments.
No. D 3394/R of 24 October, 1952	Implementation of the E.A.R.C. Agreement.
No. D 3533/R of 10 November, 1952	Implementation of the E.A.R.C. Agreement.
No. D 3697/R of 25 November, 1952	Minimum essential information for notice of frequency assignments above 27,500 kc/s.
No. D 4053/R of 23 December, 1952	Implementation of the E.A.R.C. Agreement - Clearance of Aeronautical Mobile (R) frequencies.
No. D 4054/R of 23 December, 1952	Implementation of the E.A.R.C. Agreement.

Year 1953

No. D 228/R of 4 February, 1953	International Monitoring Service - Implementation of certain Aeronautical Mobile (R) Frequencies.
No. D 615/R of 17 March, 1953	E.A.R.C. Agreement (Geneva, 1951) - Completion of Basic Entries in the Master Radio Frequency Record; - Application of the Interim Procedure for the recording of frequency assignments.
No. D 682/R of 20 March, 1953	Corrections to the List of High Frequency Broadcasting Requirements.
No. D 761/R of 2 April, 1953	Implementation of the E.A.R.C. Agreement - Clearance of the Aeronautical Mobile (R) frequencies.
Nos. D 1095/R, D 1096/R and D 1097/R of 4 May, 1953	Report by the I.F.R.B. to Members of the Union on the bringing into use of the calling frequency bands allocated, under No. 268 of the Atlantic City Radio Regulations, to ship radiotelegraph stations.
No. D 1103/R of 4 May, 1953	Omission from the First Edition of, and Supplement No.1 to, the Radio Frequency Record.
No. D 1173/R of 6 May, 1953	Fifth Annual Report of the I.F.R.B. for 1952.
No. D 1190/R of 11 May, 1953	Report by the I.F.R.B. to Members of the Union on the preparation of draft plans for the High Frequency Broadcasting Service.
No. 1444/R of 12 June, 1953	Bringing into use of the Atlantic City Ship Radiotelegraph Frequency Bands.
No. 1501/R of 18 June, 1953	The question of harmful interference among the parties to service or regional agreements in the application of No. 332 of the Radio Regulations.
No. D 1550/R of 24 June, 1953	Preparation of draft plans for the High Frequency Broadcasting Service.
No. D 1780/R of 27 July, 1953	Bringing into use of the Atlantic City Ship Radiotelegraph Frequency Bands.
No. D 2133/R of 3 September, 1953	Information to be supplied for Column 4b for assignments in the Fixed and Aeronautical Fixed Services between 14 and 27,500 kc/s.
No. D 2130/R of 7 September, 1953	Implementation of the E.A.R.C. Agreement - Clearance of the Aeronautical Mobile (R) Frequencies.
No. D 2321/R of 1 October, 1953	Fixed and Aeronautical Fixed Services - Co-ordination of Transmitting and Receiving operations on the same or adjacent frequencies.

No. D 2347/R of 5 October, 1953	Implementation of the E.A.R.C. Agreement - Clearance of the aeronautical mobile (R) frequencies.
No. D 2388/R of 8 October, 1953	International Monitoring Service - Implementation of certain aeronautical mobile (R) frequencies.
No. 683 of 10 October, 1953	Summary of Monitoring Information.
No. D 2581/R of 29 October, 1953	Notices of frequency assignments for aeronautical radiobeacon services within the frequency band 200/415 kc/s in Region 1.
No. D 2661/R of 6 November, 1953	Clearance and bringing into use of the 4, 6, 8, 12 and 16 Mc/s cargo ship radiotelegraph working bands (No. 793 of the Radio Regulations).
No. D 2697/R of 7 November, 1953	Implementation of the E.A.R.C. Agreement - Clearance of Aeronautical Mobile (R) frequencies.
Nos. D 3000/R, D 3001/R, D 3027/R and D 3028/R of 18 December, 1953	Application of the E.A.R.C. Agreement - Clearance of aeronautical mobile (R) frequencies in the Caribbean (CAR) and South American/South Atlantic (SAM/SAT) areas.

In addition, during 1953, the I.F.R.B. prepared, for dispatch to Administrations, 17 Circular-telegrams relating in general to the subjects of the above Circular-letters.

Year 1954

No. D 157/R of 27 January, 1954	Report on High Frequency Broadcasting.
No. D 190/R of 1 February, 1954	Clearing and bringing into use of the 4, 6, 8, 12 and 16 Mc/s working bands allocated under No. 793 of the Radio Regulations to cargo ship radiotelegraph stations.
No. D 447/R of 27 February, 1954	Implementation of the E.A.R.C. Agreement - Clearance of Aeronautical Mobile (R) Frequencies. Plan for African/Indian Ocean Area.
No. D 435/R of 4 March, 1954	E.A.R.C. Agreement (Geneva, 1951). Completion of Basic Entries in the Master Radio Frequency Record in the bands for which the procedure laid down in Article 11 of the Radio Regulations is in full force.
No. D 612/R of 23 March, 1954	Sixth Annual Report of the I.F.R.B. for 1953.
No. 1195/54/R of 6 April, 1954	I.F.R.B. Opinions and other technical directives.

No. 1222/54/R(1) of 21 June, 1954	High Frequency Broadcasting.
No. 1345/54(1)/R of 26th June, 1954	Clearing and bringing into use of the working bands allocated to ship radiotelegraph stations under the Atlantic City Radio Regulations.
No. 697 of 30 June, 1954	Orders for I.F.R.B. Technical Standards.
No. 1403/54(1)/R of 6 July, 1954	Implementation of E.A.R.C. Agreement - Clearance of Aeronautical Mobile (R) frequencies. Plan for Pacific Area.
No. 1439/54(1)/R of 3 August, 1954	International Monitoring.
No. 1452/54(1)/R of 18 August, 1954	Cancellation of abandoned frequency assignments.
No. 1557/54/1/R of 14 October, 1954	Clearing and bringing into use of the 4, 6, 8, 12 and 16 Mc/s working bands allocated to ship radiotelegraph stations under No. 788 of the Radio Regulations.
No. 1599/54/1/R of 26 November, 1954	Treatment of frequency usage information recently received by the I.F.R.B. (No. 272 of the E.A.R.C. Agreement, Geneva, 1951).
No. 1624/54 of 23 December, 1954	Clearing and bringing into use of the frequency bands allocated to ship stations under the Atlantic City Radio Regulations.

In addition, during 1954, the I.F.R.B. prepared, for dispatch to Administrations, 8 Circular-telegrams relating in general to the subjects of the above Circular-letters.

Year 1955

No. 1632 of 11 January, 1955	Implementation of E.A.R.C. Agreement. Clearance of Aeronautical Mobile (R) frequencies in European-Mediterranean and North Atlantic areas.
No. 1649/55/R of 24 January, 1955	Report on High Frequency Broadcasting (January, 1955) by the I.F.R.B..
No. 1665/55/R of 10 February, 1955	Implementation of E.A.R.C. Agreement - Clearance of Aeronautical Mobile (R) frequencies in Middle East and South Eastern Asia Areas.
No. 1709/55 of 25 March, 1955	Clearance and bringing into use of the Atlantic City Aeronautical Mobile (OR) bands.
No. 1712/55/R of 25 March, 1955	Seventh Annual Report of the I.F.R.B. for 1954. Supplement No. 1 to the Opinions of the I.F.R.B..

No. 1729/55/R of 18 April, 1955	Next Administrative Radio Conference.
No. 1739/55/R of 9 May, 1955	Clearing and bringing into use of the frequency bands allocated to ship radiotelephone stations under No. 264 of the Radio Regulations.
No. 1740/55/R of 9 May, 1955	Clearance of, and transfers of assignments into, the Atlantic City High Frequency Broadcasting bands.
No. 1771/55/R of 14 June, 1955	Clearance and bringing into use of the Atlantic City Aeronautical Mobile (OR) bands.
No. 1775/55/R of 21 June, 1955	Implementation of the Atlantic City Table of Frequency Allocations between 3950 kc/s (4000 kc/s Region 2) and 27,500 kc/s.
No. 1797/55/R of 19 July, 1955	Clearing and bringing into use of the frequency bands allocated to the radiotelephone stations of the Maritime Mobile Service under the Atlantic City Radio Regulations.
No. 1827/55/R of 24 August, 1955	International Monitoring - Reports from stations other than those operating in the International Monitoring System.
No. 1888/55/R of 29 November, 1955	Clearance and bringing into use of the frequency bands allocated to coast radiotelephone stations under No.265 of the Radio Regulations.
No. 1889/55/R of 7 December, 1955	Treatment by the I.F.R.B. of re-submitted notices (No. 245 of the E.A.R.C. Agreement, Geneva, 1951).
No. 1912/55/R of 23 December, 1955	Amendment of the explanations of certain Remarks and Symbols entered in Column 13 of the Master Radio Frequency Record.
No. 1919/55/R of 31 December, 1955	Clearance of, and transfer of assignments into, the Atlantic City High Frequency Broadcasting bands.
No. 1908/55/R of 31 December, 1955	Draft Plan for the High Frequency Broadcasting Service - Phase June 70.

In addition, during 1955, the I.F.R.B. prepared, for dispatch to Administrations, 11 Circular-telegrams relating in general to the subjects of the above Circular-letters.

Year 1956

No. 1940/56/R of 31 January, 1956	Clearance of the frequency bands allocated to the Maritime Mobile Service under the Atlantic City Radio Regulations, and bringing into use of the frequencies provided for in the Plans adopted by the E.A.R.C. for coast stations (Annexes 5 and 6 of the E.A.R.C. Final Acts).

No. 1945/56/R of 6 February, 1956	Implementation of E.A.R.C. Agreement - Clearance of the Atlantic City Aeronautical Mobile (R) bands.
No. 1963/56/R of 12 March, 1956	Eighth Annual Report of the I.F.R.B. for 1955. Supplement No. 2 to the Opinions of the I.F.R.B..
No. 1958/56/R of 16 March, 1956	Report by the I.F.R.B. - Progress made in the bringing into use of the Atlantic City Table of Frequency Allocations.
No. 1990/56/R of 16 April, 1956	Interim Procedure (frequency bands defined in No. 272 of the E.A.R.C. Agreement) - Treatment of assignments notified in advance of the date of putting into service.
No. 1996/56/R of 27 April, 1956	Summary Report by the Chairman of the I.F.R.B. presented to the Administrative Council at its 11th Session, April/May, 1956, on comments of Administrations on the draft plan for the High Frequency Broadcasting Service - Phase June 70.
No. 2002/56/R of 7 May, 1956	Clearance and bringing into use of the Atlantic City Aeronautical Mobile (R) bands.
No. 2003/56/R of 14 May, 1956	Clearance of the frequency bands exclusively allocated to the Standard Frequency Service.
No. 2011/56/R of 23 May, 1956	Fixed and Aeronautical Fixed Services - Co-ordination of Transmitting and Receiving operations on the same or adjacent frequencies.
No. 2034/56/R of 22 June, 1956	Implementation of the Atlantic City Table of Frequency Allocations between 3950 kc/s (4000 kc/s Region 2) and 27,500 kc/s.
No. 2035/56/R of 26 June, 1956	Preparation of Draft Plans for the High Frequency Broadcasting Service.
No. 2036/56/R of 27 June, 1956	Clearance of the frequency bands allocated exclusively to coast radiotelegraph stations under No. 267 of the Radio Regulations.
No. 727 of 11 July, 1956	Orders for I.F.R.B. Technical Standards.
No. 2067/56/R of 30 July, 1956	Technical bases of the draft High Frequency Broadcasting Plan (Circular-letter No. 1908/55/R of 31 December, 1955).
No. 2093/56/R of 7 September, 1956	Clearance of the frequency bands exclusively allocated to the Standard Frequency Service.
No. 2116/56/R of 18 October, 1956	Clearance of the frequency bands allocated to coast radiotelegraph stations under No. 267 of the Radio Regulations.

In addition, during 1956, the I.F.R.B. prepared, for dispatch to Administrations, 19 Circular-telegrams relating in general to the subjects of the above Circular-letters.

Year 1957

No. 2233/57/R of 25 March, 1957	Ninth Annual Report of the I.F.R.B. for 1956. Supplement No. 3 to the Opinions of the I.F.R.B..
No. 2242/57/R of 28 March, 1957	Report by the I.F.R.B. - Progress made in the bringing into use of the Atlantic City Table of Frequency Allocations.
No. 2245/57/R of 28 March, 1957	Draft Plans for the High Frequency Broadcasting Service.
No. 2256/57/R of 18 April, 1957	Draft Reference Plan for the High Frequency Broadcasting Service - Phase June 70.
No. 2267/57/R of 9 May, 1957	International Monitoring.
No. 2268/1/57/R of 15 May, 1957	Implementation of the Atlantic City Table of Frequency Allocations. Final adjustment of out-of-band assignments into their appropriate bands between 3950 kc/s (4000 kc/s Region 2) and 27,500 kc/s and the exclusive Aeronautical Mobile bands between 2850 kc/s and 3950kc/s. FINAL ADJUSTMENT PERIOD : BLOCK No. 1: 27,500 kc/s to 21,450 kc/s (Commencing : 1st June, 1957)
No. 2268/2/57/R of 1 June, 1957	BLOCK No. 2: 21,450 kc/s to 15,450 kc/s (Commencing : 1st July, 1957)
No. 2296/57/R of 17 June, 1957	Information recorded in the Master Radio Frequency Record in the frequency bands between 3950 kc/s (4000 kc/s Region 2) and 27,500 kc/s - Use of frequencies - High Frequency Broadcasting, Fixed and Land Mobile Services.
No. 2297/57/R of 19 June, 1957	Implementation of the Atlantic City Table of Frequency Allocations between 3950 kc/s (4000 kc/s Region 2) and 27,500 kc/s.
No. 2298/57/R of 19 June, 1957	Preparation of Draft Plans for the High Frequency Broadcasting Service.
No. 2268/3/57/R of 1 July, 1957	Implementation of the Atlantic City Table of Frequency Allocations. Final adjustment of out-of-band assignments into their appropriate bands between 3950 kc/s (4000 kc/s Region 2) and 27,500 kc/s and the exclusive Aeronautical Mobile bands between 2850 kc/s and 3950kc/s. FINAL ADJUSTMENT PERIOD : BLOCK No. 3: 15,450 kc/s to 11,400 kc/s (Commencing : 1st August, 1957)

No. 2268/4/57/R of 1 August, 1957	Implementation of the Atlantic City Table of Frequency Allocations. Final adjustment of out-of-band assignments into their appropriate bands between 3950 kc/s (4000 kc/s Region22) and 27,500 kc/s and the exclusive Aeronautical Mobile bands between 2850 kc/s & 3950 kc/s FINAL ADJUSTMENT PERIOD : BLOCK No. 4: 11,400 kc/s to 6,765 kc/s (Commencing : 1st September, 1957)
No. 2368/57/R of 30 August, 1957	BLOCKS Nos. 1 & 2: 27,500 kc/s to 15,450 kc/s (Commencing : 1st June/1st July, 1957)
No. 2268/5/57/R of 1 October, 1957	BLOCK No. 5: 6765 kc/s to 5250 kc/s (Commencing : 1st November, 1957)
No. 747 of 1 November, 1957	I.F.R.B. Technical Standards - Orders for Second Edition of Series A : General Standards.
No. 2268/6/57/R of 2 December, 1957	Implementation of the Atlantic City Table of Frequency Allocations. Final adjustment of out-of-band assignments into their appropriate bands between 3950 kc/s (4000 kc/s Region 2) and 27,500 kc/s and the exclusive Aeronautical Mobile bands between 2850 kc/s & 3950 kc/s. FINAL ADJUSTMENT PERIOD : BLOCK No. 6: 5250 kc/s to 3950 kc/s (Commencing : 1st January, 1958)
No. 2424/57/R of 20 December, 1957	Review of assignments recorded in the MRFR on the insistence of the notifying Administrations in accordance with No. 245 of the E.A.R.C. Agreement.

In addition, during 1957, the I.F.R.B. prepared, for dispatch to Administrations, 6 Circular-telegrams relating in general to the subjects of the above Circular-letters.

Year 1958

No. 2268/57/R of 3 February, 1958	Implementation of the Atlantic City Table of Frequency Allocations. Final adjustment of out-of-band assignments into their appropriate bands between 3950 kc/s (4000 kc/s Region 2) and 27,500 kc/s and the exclusive Aeronautical Mobile bands between 2850 kc/s & 3950 kc/s. FINAL ADJUSTMENT PERIOD : BLOCK No. 7: 3950 kc/s to 2850 kc/s (Commencing : 1st March, 1958)
No. 2471/58/R of 18 March, 1958	International Monitoring.

No. 2476/58/R of 26 March, 1958	Tenth Annual Report of the I.F.R.B. for 1957. Supplement No. 4 to the Opinions of the I.F.R.B..
No. 2486/58/R of 1 April, 1958	Information recorded in the Master Radio Frequency Record in the frequency bands between 3950 kc/s (4000 kc/s Region 2) and 27,500 kc/s - Use of frequencies - High Frequency Broadcasting, Fixed and Land Mobile Services.
No. 2495/58/R of 11 April, 1958	Report by the I.F.R.B. - Progress made in the bringing into use of the Atlantic City Table of Frequency Allocations.
No. 2499/58/R of 18 April, 1958	Report by the I.F.R.B. - Progress made in High Frequency Broadcasting Planning.
No. 2500/58/R of 18 April, 1958	Draft Reference Plan for the High Frequency Broadcasting Service - Phase June 70, 31 March, 1957.
No. 2501/58/R of 21 April, 1958	Draft Plans for the High Frequency Broadcasting Service - Phase Equinox 70 and December 70.
No. 2556/58/R of 22 July, 1958	Draft Plan for the High Frequency Broadcasting Service - Phase June 125.
No. 2594/58/R of 2 October, 1958	Comments of Administrations on draft plans for the High Frequency Broadcasting Service, Medium Solar Activity (SS 70) and High Solar Activity (SS 125) and transmittal of draft plans Equinox 125 and December 125.
No. 2618/58/R of 21 November, 1958	High Frequency Broadcasting Service - Schedule of Transmissions, January, 1959.

In addition, during 1958, the I.F.R.B. prepared, for dispatch to Administrations, 2 Circular-telegrams relating in general to the subjects of the above Circular-letters.

Year 1959

No. 2642/59/R of 9 January, 1959	Draft Plan for the High Frequency Broadcasting Service - Phase December 12.
No. 2662/59/R of 10 February, 1959	Rules of Procedure of the I.F.R.B..
No. 2669/59/R of 16 February, 1959	Report by the I.F.R.B. - Progress made in the bringing into use of the Atlantic City Table of Frequency Allocations.
No. 2689/59/R of 17 March, 1959	Draft Plan for the High Frequency Broadcasting Service - Phase Equinox 12.
No. 773 of 17 April, 1959	I.F.R.B. Technical Standards.

No. 2720/59/R of 24 April, 1959	Draft Plan for the High Frequency Broadcasting Service - Phase June 12.
No. 2721/59/R of 1 May, 1959	Eleventh Annual Report of the I.F.R.B. for 1958.
No. 2733/59/R of 11 May, 1959	Report by the I.F.R.B. - Progress made in High Frequency Broadcasting Planning.
No. 2734/59/R of 15 May, 1959	Preface to the Draft Plans for the High Frequency Broadcasting Service.
No. 2739/59/R of 27 May, 1959	Report by the I.F.R.B. - Progress made in the bringing into use of the Atlantic City Table of Frequency Allocations.
No. 2740/59/R of 1 June, 1959	Summary Report by the I.F.R.B. : Comments of Administrations on the Draft Plans for the High Frequency Broadcasting Service - Sunspot Numbers 70 and 125.

In addition, 345 I.F.R.B. Weekly Circulars have been published up to 1st July, 1959.

PAGE INTENTIONALLY LEFT BLANK

PAGE LAISSEE EN BLANC INTENTIONNELLEMENT

ANNEX 4

List of the Various documents prepared by the I.F.R.B. since 1952 for publication by the General Secretariat

Radio Frequency Record 1st Edition combined with Supplement No. 1 (Years 1952/53)		
Preface	163 pages	30 June 1952
Volumes I, II and III	2248 "	30 June 1952
Supplement No. 2	1002 "	31 March 1953
Supplement No. 3	187 "	30 June 1953
Supplement No. 4	181 "	30 Sept. 1953
Supplement No. 5	158 "	31 Dec. 1953
Supplementary Information to the Radio Frequency Record, 1st Edition		
	456 pages	30 June 1952
Supplement No. 1	4 "	31 March 1953
Supplement No. 2	2 "	30 Sept. 1953
Radio Frequency Record, 2nd Edition (Years 1954/55)		
Preface	189 pages	31 March 1954
Volumes I, II and III	2916 "	31 March 1954
Supplement No. 1	223 "	30 June 1954
Supplement No. 2	221 "	30 Sept. 1954
Supplement No. 3	250 "	31 Dec. 1954
Supplement No. 4	239 "	30 March 1955
Supplement No. 5	187 "	30 June 1955
Supplementary Information to the Radio Frequency Record, 1st Edition		
Supplement No. 3	2 pages	31 March 1954
Supplement No. 4	1 "	30 Sept. 1954
Radio Frequency Record, 3rd Edition (Years 1955/56)		
Preface	211 pages	30 Sept. 1955
Volumes I, II and III	3431 "	30 Sept 1955
Supplement No. 1	220 "	31 Dec. 1955
Supplement No. 2	327 "	31 March 1956
Supplement No. 3	300 "	30 June 1956
Supplement No. 4	401 "	30 Sept. 1956
Supplement No. 5	314 "	31 Dec. 1956
Supplementary Information to the Radio Frequency Record, 1st Edition		
Supplement No. 5	2 pages	30 Sept. 1955
Supplement No. 6	2 "	31 March 1956

Radio Frequency Record, 4th Edition (Year 1957)		
Preface	(187 pages)	31 March 1957
Volumes I, II and III	(3790 ")	31 March 1957
Supplement No. 1	(314 ")	30 June 1957
Supplement No. 2	(388 ")	30 Sept. 1957
Supplement No. 3	(272 ")	31 Dec. 1957
Supplementary Information to the Radio Frequency Record, 1st Edition		
Supplement No. 7	(4 pages)	31 March 1957
Radio Frequency Record, 5th Edition (Year 1958)		
Preface	(193 pages)	31 March 1958
Volumes I, II and III	(4207 ")	31 March 1958
Supplement No. 1	(191 ")	30 June 1958
Supplement No. 2	(188 ")	30 Sept. 1958
Supplement No. 3	(221 ")	31 Dec. 1958
Supplementary Information to the Radio Frequency Record, 1st Edition		
Supplement No. 8	(2 pages)	31 March 1958
Radio Frequency Record, 6th Edition (Year 1959)		
Preface	(210 pages)	31 March 1959
Volumes I, II and III	(5034 " approx.)	31 March 1959
Supplementary Information to the Radio Frequency Record, 1st Edition		
Supplement No. 9	(1 page)	31 March 1959

International Monitoring Information

Summaries of Monitoring Information received by the I.F.R.B.

Up to 31 March 1959, the I.F.R.B. had prepared 34 Summaries, numbered 1 to 34.

Technical Standards of the I.F.R.B.

1955	Technical Standard B-1,	1st Edition	(5 volumes)
1955	Technical Standard B-2,	1st Edition	(3 volumes)
1956	Technical Standards A,	1st Edition	(1 booklet)
1956	Technical Standard C-1,	1st Edition	(10 volumes)
1957	Supplement No. 1 to the Technical Standard B-1,	1st Edition	(1 volume)
1957	Supplement No. 1 to the Technical Standard B-2,	1st Edition	(1 volume)
1957	Supplement No. 2 to the Technical Standard B-1,	1st Edition	(2 volumes)
1957	Supplement No. 2 to the Technical Standard B-2,	1st Edition	(1 volume)
1958	Technical Standards A,	2nd Edition	(1 booklet)
1958	Supplement No. 3 to the Technical Standard B-1,	1st Edition	(9 volumes)
1958	Supplement No. 3 to the Technical Standard B-2,	1st Edition	(1 volume)
1959	Supplement No. 4 to the Technical Standard B-1,	1st Edition	(1 volume)

Draft Plans for the High Frequency Broadcasting Service and Associated Documents

List of requirements submitted to the I.F.R.B. by the Administrations for their High Frequency Broadcasting Services.	July, 1952
Addendum to the list of requirements submitted to the I.F.R.B. by the Administrations for their High Frequency Broadcasting Services (Phase June 70 only)	August, 1956

Draft Plans :

Phase June 70	1 Sept. 1955
June 70 Rev. (Draft reference plan)	31 March 1957
Equinox 70	31 Dec. 1957
December 70	31 March 1958
Phase June 125	30 June 1958
Equinox 125	30 Aug. 1958
December 125	30 Sept. 1958
Phase December 12	22 Dec. 1958
Equinox 12	31 Jan. 1959
June 12	28 Feb. 1959
Preface to the Draft Plans for the High Frequency Broadcasting Service	15 May 1959

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No. 21-E
CORRIGENDUM No. 1
29 September, 1959

PLENARY MEETING

CORRIGENDUM

FEDERAL REPUBLIC OF GERMANY

In Document No. 21, Booklet D, page 10, under "b", D 12, 3rd line :

instead of : "15,171 kc/s"

read : "15,175 kc/s"

ARCHIVES U.I.T. GENÈVE

INTERNATIONAL TELECOMMUNICATION UNION

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

E

Document No. 21-E
14 August 1959
Original: English

PLENARY MEETING

COMMENTS BY ADMINISTRATIONS ON THE DRAFT PLANS FOR THE HIGH FREQUENCY BROADCASTING SERVICE

I have the honour to submit to the Conference three booklets which have been prepared by the I.F.R.B. containing comments by Administrations on the Draft Plans for Sunspot Numbers 70 and 125.

Gerald C. GROSS
Acting Secretary-General

Annexes : 3

ARCHIVES U.I.T. GENÈVE

COMMENTS BY ADMINISTRATIONS

on the

DRAFT PLANS

for the

HIGH FREQUENCY BROADCASTING SERVICE

(Articles 11 and 28 of the E.A.R.C. Agreement)

BOOKLET A

U.I.T. GENÈVE

CONTENTS

...

...

COMMENTS BY ADMINISTRATIONS ON THE DRAFT PLANS FOR THE HIGH FREQUENCY BROADCASTING SERVICE

INTRODUCTION

A brief report on the comments on the draft plans for the High Frequency Broadcasting Service, furnished by Administrations in accordance with Article 28 of the Agreement of the Extraordinary Administrative Radio Conference (E.A.R.C. Agreement) has already been made to Administrations in Circular-letter No. 2740/59/R of 1st June 1959. As announced in the above-mentioned report, the I.F.R.B. now presents to the Administrative Radio Conference a summary of general comments and an analysis of detailed comments for consideration with the draft plans for the High Frequency Broadcasting Service prepared by the Board.

1. General comments

The general comments of Administrations on the draft plans are reproduced in two booklets. The comments in respect of the draft plans for Sunspot Numbers 70 and 125 appear in Booklet A. The draft plans for Sunspot Number 12 were despatched this year and Administrations have had little time to comment; however, such general comments as are received up to the opening date of the Conference will be published in Booklet D.

The comments are classified by Administrations and are in the order of the abbreviations designating the countries which are used in the draft plans and which correspond to those used in the Radio Frequency Record. Comments received from sources outside the Union appear at the end.

2. Detailed comments

This category comprises the observations of Administrations on specific allocations. They have been briefly analysed by the I.F.R.B. and the result of the Board's examination of each comment is indicated. The detailed

...

comments are arranged in the numerical order of frequencies, and are published in three separate Booklets:

Booklet B : Detailed comments in respect of draft plans SS 70

Booklet C : Detailed comments in respect of draft plans SS 125

Booklet E : Detailed comments in respect of draft plans SS 12 (This booklet will be published with Booklet D)

The actual nature of the comments is given in coded form, in order to reduce the volume of material and to facilitate reproduction by the use of punched cards.

The explanation of the code appears at the end of each of the Booklets concerned.

SS 70 and SS 125

AFG - Afghanistan

No comments received

SS 70 and SS 125

AFS - Union of South Africa
and Territory of South-West Africa

Ref: Letter No. 33A/11445/52,
dated 29 November 1958

... "some changes have been made to the original requirements and comments forwarded to you on 19th March, 1956. This is regretted but is unavoidable as certain errors in planning had been made and it is essential that national coverage be obtained for three programmes."

SS 70 and SS 125

ALB - Albania (People's Republic of)

Ref: Letter 10512/VII,
dated 20 December 1958

"1. Our minimum requirements for June 70 have been reduced by six frequency-hours. For no one of the three phases can we accept any reduction. Hence we still demand forty-three frequency-hours.

"2. We have considered your proposals for shifting certain frequency-hours. To try to meet our minimum requirements, we have made certain additions and changes which are shewn in the attached diagram."

SS 70 and SS 125

ARG - Argentine Republic

No comments received

SS 70 and SS 125

ARS - Saudi Arabia (Kingdom of)

Ref: Letter 04,
dated 21 November 1958

"It is emphasised that Saudi Arabia has submitted a general plan for frequencies required for a service which is under development. The Jedda station is now operating with three 3 kW and one 10 kW transmitters which, during the early part of 1959, will be changed over to 50 kW. In addition, it is pointed out that the REYADH station is being developed and will be in operation during the last part of 1959, with three 100 kW transmitters. The directive antennae are also being constructed so as to provide the best coverage of the designated reception areas. The Administration of Saudi Arabia appreciates the difficulty the Board has in incorporating all requirements into a plan, as that being prepared, when not only the requirements change with the development of the service, but also other changes occur affecting the service.

This Administration wishes to emphasize the need for continuity in the use of frequencies, for instance, a channel in the 11 Mc/s band is required from 04-21 hours for broadcasting a regional programme with a directional antenna in the azimuth of approximately 300°. From an operational point of view shifting frequencies for the same reception area or with the same transmitter must be eliminated. Therefore a criteria is to have only one channel in a specific band if only one such frequency is required at any one time."

AUS - Australia (Commonwealth of)

Letter No. G.315/8/95, dated 30 September 1957
" " " " 24 November 1958
" " " " 10 February 1959

"Although the draft plan does not meet Australian requirements in many respects, this Administration appreciates the difficulties of the I.F.R.B. in attempting to meet the objections of all Administrations, and feels that in order to make early progress, the Board's June 70 Draft Plan should be adopted as it stands as a basis for projection to other phases." ...

"Internal Services - All allocations made in respect of the internal service for the 3 seasons in Phase 70, i.e. Requirements 1 to 13 (I.F.R.B. Index) are satisfactory both in regard to the number of channel-hours allocated and the continuity of programme periods.

External Services (Basic Plan only) " ...

"this Administration's attitude to allocations in the 26 Mc/s band" ... "is" ... "that for the time being and in the forseeable future very little value can be attached to these allocations. However, it is desired that they be retained at least in part for the purposes of planning." ...

"Basic Requirements" ... "it should please be noted that several amendments to the basic requirements have been found necessary." ... "The most recent amendments involve no new requirements (and, in fact, two requirements have been withdrawn), but call for several changes in programme times and frequency bands, which, although kept to a careful minimum, were formulated with two main objectives:-

(i) Some programme times have been altered slightly to improve continuity or fit of the basic plan allocations in relation to current requirements.

(ii) Band changes are proposed in a limited number of requirements (and associated allocations) for which the calculated service is appreciably below the standard field strength eligible for international protection, and where, because of developments in facilities or service requirements, or the advent of more accurate prediction data, no reason exists for continuing acceptance of a sub-standard service. Another consideration was

the undoubted need for a rational basic pattern of allocations suitable for projection to other seasons and phases, particularly in connection with those services where there is no need to change frequency from season to season or phase to phase. Band changes have also been made in two requirements for which no allocations have yet been made," ...

"Projected Requirements. Due to the compounded nature of the notified requirements it has been possible to extend the basic requirements to other seasons and phases virtually unchanged so far as programme times are concerned (as indeed was apparently the assumption of the Board), but frequency bands were changed where necessary to achieve suitable service field strengths." ... "the projected allocations are not always in the required frequency band and where such discord leads unnecessarily to a sub-standard service some review of the allocations will be appreciated. A further point to be considered in projections to other seasons or phases concerns a reasonable upper limit on service field strength - while Australian external services are generally unable to reach very high strengths because of the distance limitation, there appear to be several cases in the plans where a serious unbalance exists between an Australian service of near standard field-strength and an excessively strong foreign service to the same reception area at 10 kc/s frequency separation. In such cases, modifications of transmitter power and/or possibly aerial gain seem to be clearly desirable if reasonable protection and compatibility of the services is to be achieved with the existing channel arrangements." ...

"Protection. All six plans of Phases 70 and 125 have now been examined to assess the protection afforded Australian allocations for both internal and external services, and details of these allocations which appear to be insufficiently protected are given in Table II. The criteria forming the basis of the protection appraisal" ... "are re-stated here for completeness, viz.,

Required Protection Ratio

Internal Services - 32 to 38 db

External Services - 23 to 38 db, with the lower limit subject to increase depending on the extent of uncertainty in aerial discrimination assessments.

The I.F.R.B. Technical Standards A (1958) were used for data on aerial and receiver discriminations, so far as they were applicable, and field strengths were calculated by the method of Circular 462 (U.S.A.-Bureau of Standards)." ...

...

"Summary. It can be stated that this Administration is completely satisfied with the allocations in all 3 seasons of Phase 70 for its internal services." ...

"While this Administration is satisfied with the channel-hour provision made for internal services in the Phase 70 and 125 plans, the same cannot be said for external services to our most important receiving region (CIRAF 41, 49, 54), and to CIRAF 60, 62, 63 and CIRAF 27, 28. The channel-hour provision to CIRAF 60, 62, 63 is particularly poor when viewed as a proportion of the stated requirements, while the situation in the peak period, (1200-1730 G.M.T.) for CIRAF 41, 49, 54, is amenable to considerable improvement by minor amendments aimed at restoring continuity and by additional allocations of a limited number of channel-hours. This Administration therefore requests that the Australian allocations be reviewed with the object of eliminating the present objections" ...

AUT - Austria

Ref: Letter 56379-8/1958,
dated 22 December, 1958

"We observe with gratitude that in all its plans the I.F.R.B. has unrestrictedly provided for our minimum requirements (we demanded never more than one frequency per circuit) and has tried to keep the same frequencies as far as possible.

According to the criteria available, some of the frequencies would be too high during part of the phases. Hence, since we can surrender not a single frequency-hour, we have to ask for other frequencies in some cases.

There is a general tendency to increase power. Hence we must reserve the right to make such increases, should there be an increase in the power of other stations in the same or adjacent channels, leading to a drop in the quality of Austrian transmissions. Besides which, for practical reasons, too great a change in power is to be avoided. Hence we propose to use stations of from 20 kW to 50 kW only. These latter could if necessary be connected to 100 kW stations.

To keep down the number of transmitting stations, we are calling for some slight change in transmission hours for a few individual requirements. In this fashion, we hope to avoid overlapping of transmission times and to use to the full all transmission times."

SS 70 and SS 125

B - Brazil

No comments received

BCG - Bermuda-British Caribbean Group

Ref: Letter W1/058,
dated 30 April 1959

"Regarding the International Telecommunications Union's Draft Plan for High Frequency Broadcasting Service, I am to invite your attention to the fact that no allocation is listed in the 31 metre band in respect of the Windward Islands Broadcasting Service, for Phases 125, June 70 and Equinox 70.

It is significant to note in the above connection that experience in this region has proved the impossibility of using a frequency in the 49 metre band for broadcasting, during the midday period and yet maintain the desired signal-to-noise ratio throughout the coverage area, due to high absorbtion in this band during all phases of Sunspot 125.

I am accordingly to submit the following requirements on behalf of the Windward Islands Broadcasting service, situated in Grenada for inclusion in the Draft Plan:-"

SS 70 and SS 125

BEA -- British East Africa

Ref: Letter DF.4685/IFRB,
dated 24 December 1958

"With reference to your letter dated 7th May, 1958 I submit the following revised requirements for the broadcasting services of Kenya, Uganda and Tanganyika territories. The points outlined will be followed up by our delegate to the Ordinary Administrative Conference to be held in Geneva in 1959."

"KENYA

The Kenya Broadcasting Service will shortly transmit programmes in six languages with a possibility of an additional one being introduced in 1960. The services will be carried mainly on transmitters operating in the medium wave and 60 metre bands. There will however be day-time programmes and other transmissions outside the hours suitable for medium wave and 60 metre band coverage when it is essential to use the higher frequencies in the 41 and 49 metre bands." ...

"The aerials to be used for day-time transmissions in the international bands will be restricted to those of a vertical incidence pattern using multidipoles in phase. It has been shown in practice that interference is unlikely to be caused to other broadcasting organisations outside a distance of approximately 400 miles. The requirements apply to the operation of the frequencies throughout the sun spot cycle and supersede all previous requests." ...

"TANGANYIKA

The Tanganyika Broadcasting Corporation has been allocated one 41 metre channel. Alternative programmes are scheduled for January 1960 and will be broadcast simultaneously with the existing schedule. It will be necessary therefore for Tanganyika to have an additional 41 metre channel to provide adequate coverage during the hours of day-light. Again vertical incidence aerials will be used at a power not exceeding 10 kW and the channel will be required for the complete sun spot cycle. In addition, an additional 60 metre channel will be required in 1960 and in a few years' time a total of not less than four 60 metre channel will be required. If 60 metre channels cannot be allocated it will be necessary to assign 49 metre channels in lieu." ...

...

"UGANDA

The Uganda Broadcasting Service has been allocated two frequencies, one in the 41 metre band and one in the 31 metre band. Alternative programmes have been scheduled for operation in 1959 and simultaneous transmissions are required on two channels covering eight vernaculars in the high frequency band in addition to the high power medium wave coverage. The requirements for Uganda will be therefore two frequencies in the 31 metre band, two frequencies in the 41 metre band, two frequencies in the 49 metre band and one in the 25 metre band. The 31 metre band frequency is required for day-time coverage during sun spot maximum to median conditions. This amounts to one additional new frequency in each of the 25, 31 and 41 metre bands and two additional frequencies in the 49 metre band."

BEL - Belgium

Ref: Letters R1/1.131, dated 6 November 1957 and R1/1.852/279, dated December 1958

"... we notice with satisfaction that the plan as a whole meets our requirements. Congratulations and thanks to the Board for what it has accomplished."

"1. We have but three O.C. transmitters, which we want to use as intensively as we can.

2. We have two complex Chireix antennas directed to the Belgian Congo on 9,745 and 17,860 kc/s. Hence we want to keep these frequencies to within plus or minus 15 kc/s.

3. Many programmes are simultaneously broadcast in several directions. Hence there can be no staggering of times.

4. We have asked that certain bands specified in our requirements be kept. Although our experience with high-frequency broadcasting is still somewhat limited, we still think the frequencies we proposed are better than your suggestion, especially in view of the appreciable differences in reception fields.

Be it remembered that, desirous of obtaining positive results, this Administration did not hesitate to make a considerable sacrifice by reducing its requirements from sixty and a half to fifty-six frequency hours. Hence we hope that the various reservations made by us will be very seriously considered.

SS 70 and SS 125

BLR - The Bielorussian Soviet Socialist Republic

Ref: Letter from U.S.S.R., No. OVS-4/210, dated 24 January 1959

Since the requirements of this Administration were received from the Administration of the U.S.S.R., it is assumed that the comments of the latter also apply to this Administration.

SS 70 and SS 125

BOL - Bolivia

No comments received

BRM - Burma (Union of)

Ref: Letter F/F-12(76),
dated 26 December 1958

... "the proposed frequency allocations for Burma, as shown in the draft plans, are generally acceptable."

BUL - Bulgaria (People's Republic of)

Ref: Telegram 5/3/178,
dated 22 April 1959

"The high-frequency broadcasting plans for 70 and 125 are, we consider, unacceptable without far- reaching modifications."

SS 70 and SS 125

BWA - British West Africa

NIG - Nigeria

Ref: Letter EW.0559/387,
dated 17 November 1958

"If minor details such as wrong aerial directivity are neglected, the allocation for Sunspot 70 is satisfactory. Allocations at Enugu, Ibadan and Kaduna for Sunspot 125 are satisfactory, although with the Enugu frequency on the present transmitter it is below the LUF during part of the day: this will be corrected when power there is increased by 3 db as is intended in 1959.

The frequencies allocated to Lagos, however, will not allow this Corporation to provide an adequate service with the National Programme during Sunspot 125. It is imperative that we be allocated a frequency in the 31 metre band and would suggest 9535 kc/s will serve our purpose. During Sunspot 70 its power should be increased from 2.5 to 20 kW; during Sunspot 125 the frequency should be transferred to Lagos, power increased to 20 kW and hours extended to 1800."

CAN - Canada

SS 70

Ref: Letter 6653-13/6206-70,
dated 9 January 1959

... "while the Plans are generally acceptable to Canada our comment does include numerous requests for minor changes particularly in phase December 70."

SS 125

Ref: Letter 6653-13/6206-70,
dated 15 January 1959

"While the Plans are generally acceptable to Canada, our comment includes numerous requests for changes involving hours of use, areas of reception and directivity of transmissions."

SS 70 and SS 125

CBG - Cambodia (Kingdom of)

No comments received

CGO - Belgian Congo and Territory of Ruanda-Urundi

Ref: Letter 661/8162,
dated 30 December 1958

... "broadcasting in the Belgian Congo is advancing with leaps and bounds. Hence we have recast our basic programme, not only as regards frequency-hours, but also as regards transmitted power.

Thus 'Programme C' is being broadcast with a power of 50 kW instead of 20, in the nine and eleven megacycle bands.

In 1959, Programmes E, F, H, I and K (instead of J) will be broadcast with a power of 10 kW instead of 3. The radius of action is to be some 300 miles around the transmitter.

On the other hand, the "Flemish Programme" will be broadcast with a power of 50 kW only with effect from 1962 in the nine and eleven megacycle bands. But it should be possible to start using the 20 kW transmitter originally designed for "Programme C", if our requirements 12b, 13b and 16b are met.

Lastly, as regards the table of frequency-hours to be provided, this table is to be amended only in so far as "Programmes A to L" are concerned. The following is the time-table which ought to be attained with all possible speed:

Programmes A, A', B, B', C, D: from 0400 to 2400 hours GMT, without interruption.

Programmes E, F, G, H, I, J, K, L: from 0400 to 2300 hours GMT, without interruption.

I would lay especial emphasis on the speed with which broadcasting is advancing in the Belgian Congo. When we first submitted our requirements practically no provincial services existed, so that our estimates were not sufficiently factual."

SS 70 and SS 125

CHL - Chile

Ref: Letter No. 5775,
dated 29 December 1958

Individual comments only.

CHN - China

Ref: Telegram GT 1724,
dated 29 April 1959

"The HF Bc draft plans for SS 70 and 125 in principle acceptable to us"

SS 70 and SS 125

CLM - Colombia (Republic of)

No comments received

SS 70 and SS 125

CLN - Ceylon

Ref: Letter EH.83/23, dated 18 December 1958
and Telegram dated 15 April 1959

Individual comments only.

SS 70 and SS 125

CTO - Ghana

No comments received

SS 70 and SS 125

CTR - Costa Rica

No comments received

SS 70 and SS 125

CUB - Cuba

No comments received

SS 70 and SS 125

CVA - Vatican City State

Ref: Letter 4351/E22,
dated 13 February 1959

... "before all else, we have to recognize that the allocations planned (in relation to the plan for June 70), for the seasons Equinox, December 70, and June, Equinox, and December 125, are judicious.

Be it observed, however, that the shifts envisaged are inadequate, because:

a) some parts of the world cannot be properly served by keeping the same frequency in the various seasons for both 70 and 125,

b) and for some phases your plan implies a further reduction in the exceedingly moderate requests submitted by the Vatican.

In conclusion, in view of:

1) the very limited number of allocations provided for in your plan;

2) the reduction in frequency-hours introduced for certain seasons;

3) the vast number of programmes broadcast by Vatican Radio, in some thirty different languages already,

we suggest that you introduce the frequency-hours shewn in the attached table for the benefit of the Vatican. These frequency-hours, in our view, could suitably be included in a new draft plan, having been chosen so as not to interfere with neighbouring allocations to other Administrations in the draft plan for phase 70 (June, Equinox, and December), phase 125 (June, Equinox, and December), and for December 12."

SS 70 and SS 125

D - Federal German Republic

Ref: Letter IIb C-FuB 3 5023-0/1 Nr1 3260, dated 29 December 1958

... "despite the precautions taken in the draft plans to avoid interference between the same channels by staggering of broadcasting times, there are nevertheless cases, in every phase, when the signal-to-noise ratio determined in accordance with the "Technical Standards" is less than thirty-eight decibels, even though the interfering transmitter power has been reduced by twenty-five decibels (modified characteristic in the antenna of the interfering transmitter) in the direction towards the area to be covered.

Besides which, it seems that no attention has been paid to interference arising between adjacent channels if there be a high-frequency interfering signal" (in German: HF-Störabstand)" of thirty-two decibels (4.5 kc/s spacing of the assigned frequency) in accordance with the "Technical Standards", when the operating diagram of transmitter antennas on adjacent channels (25 decibels) is considered, as shewn by the numerous cases about which complaints might be lodged."

SS 70 and SS 125

DNK - Denmark

Ref: Letter I.T. No. 4098, dated 20 September 1957
" " " 4684/58, dated 2 April 1959
" " " 3569, dated 2 April 1959

"As far as Danish assignments are concerned the revised Draft Plan shows a considerable improvement" ...

"For some Danish requirements the protection is very low. However our calculations may be uncertain, because of no exact information about radiated power in unwanted directions from the directional antennas which may be used." ...

"Our technical equipment does not permit transmission on 2 frequencies at the same time; for that reason we would appreciate not to have simultaneous transmissions. Furthermore we find it inconvenient to have consecutive transmissions in the same frequency band assigned to different frequencies."

SS 70 and SS 125

DOM - Dominican Republic

No comments received

SS 70 and SS 125

E - Spain

Ref: Letter dated 25 April 1959

"While acknowledging the merit of all that has been done by the I.F.R.B. and the difficulties encountered, the scale of our present plant and the quantity of services rendered necessary by Spain's position in the world oblige us to insist that our assignments be reviewed and our requirements met; many of these latter could be embodied in the draft plans without causing interference to the assignments of other countries. We also ask that consideration be given to those other requirements we have submitted that are liable to suffer interference from other assignments."

EGY - United Arab Republic (Egpytian Region)

SS 70

Ref: Letter 5/18/5 (3883),
dated 18 December 1958

"The revised draft plan June 70 is rejected by our Administration as it ignores certain important requirements and also due to cutting down other requirements to unsuitable transmission time. A chart is attached hereto, for our complete requirements which is the least we can accept for the above-mentioned three phases."

SS 125

Ref: Letter dated 5 March 1959

... "we wish to repeat our comments on the original revised draft plan June 70 which is rejected by our administration and hence also reject the plan for the above three phases as it ignores certain important requirements and also due to cutting down other requirements to unsuitable transmission time. A chart is attached hereto for our complete requirements which is the least we can accept for the phases E 125, D 125, and J 125."

SS 70 and SS 125

EQA - Ecuador

No comments received

SS 70 and SS 125

ETH - Ethiopia

Ref: Letter 75/GNM/MS,
dated 4 May 1959

"Our requirements at the beginning of the working out of the H.F. plan were based on the conditions and the project prevailing at that time. Actually, the conditions are quite different: A thorough broadcasting project that covers national as well as international requirements is in the course of implementation."

"In view of the new broadcasting project worked out for this country and the wish of the Imperial Ethiopian Government to cover certain zones, a team of experts has carried out a detailed study on the H.F. broadcasting arrangements for satisfying the requirements of the country, always taking as basis the draft plans we had in hand."

"We highly appreciate the excellent work done by the IFRB staff in preparing the draft plans and we feel confident that it will be realized that the modifications and additional assignments requested are imposed by the sheer necessity to ensure an adequate, restricted though, broadcasting service to Ethiopia."

SS 70 and SS 125

F - France

Ref: Letter DT/61/69/59,
dated 27 January 1959

"Your Board has undoubtedly done an interesting and important job. Unhappily, we have not had time to make a close analysis of the assignments shewn for this country." ...

"In general, however, it does seem to us that our comments offered in March, 1956, on the preliminary plan for June 70, still hold good, especially those about time schedules (staggering sometimes incompatible with the service expected) and the choice of frequencies in the same band (somethimes wide dispersion even in the same programme). Protection ratios we have not considered, because of lack of time." ...

"But one very important comment could legitimately be made about these draft plans: they are not up to date. Two circumstances have fatally contributed to this state of affairs. Firstly, the plans are produced long years after requirements have been submitted, and there has inevitably been an evolution since; secondly, over these last few years this evolution has been exceptionally fast, because of political changes in many parts of the world.

In this connection, it will doubtless not have escaped you that France has introduced no change (except for the straightforward deletion of thirty frequency-hours) in the requirements it submitted to your Board for 1 July, 1952, in accordance with the E.A.R.C. Agreement. We hoped that plans would be speedily produced, but they would have taken vastly longer to prepare had there been continuous modification of data. Be it observed that the French requirements of 1952 arose naturally from those submitted to the High-Frequency Broadcasting Conference (Mexico City), since all that was at stake was just a 'revision', and the plans to-day proposed cannot, at the earliest, take effect before 1960. Hence no less than twelve years between submission of minimum requirements and the very imperfect degree of satisfaction given to them. So lengthy a period at such a time shews just how difficult the task is. It also shews how great is the risk that the product will no longer be adapted to changing circumstances.

Be that as it may, there can be no two opinions about the usefulness of the work accomplished, since, even if they are incapable of suitable modification, the results achieved will prove a valuable source of data for further inquiries."

SS 70 and SS 125

F/ - Group of the different territories represented by the French Overseas Postal and Telecommunication agency

Ref: Letter 0062 T/3.LA,
date 7 January 1959

"The draft plan, based as it is on ancient data, cannot be unrestrictedly accepted." ...

"INLAND SERVICES: The 1954 requirements will have to be modified to make allowance for changes that have taken place in the political status of the territories concerned.

The corresponding requirements as a whole should be progressively met:

a) by adaptation to the present plan during a transitory period, to enable a plan to be derived from the draft under consideration, always provided that provision be made for development in the draft plan from the time it takes effect;

b) by implementation, over the next ten years, of the plan corresponding to the whole of the attached list for the territories of the French Community. To this end, a general rule should be adopted, namely, that priority should be given to inland broadcasts over external ones in the bands in question.

Implementation of a) and b) at the same time is the only way, we consider, whereby a constructive agreement could be reached.

EXTERNAL SERVICES: Our initial requirements were extremely moderate and we demand that they be met in full."

SS 70 and 125

FNL - Finland

Ref: Letter V 8072,
dated 22 December 1958

"As regards the draft plans in general, we approve the I.F.R.B. procedure whereby frequencies are allotted for definite times and the times are kept mostly unchanged for the various phases of solar activity.

The frequencies and times reserved for Finland are suitable, subject to one or two comments. In the tables relating to the various phases, two or three frequencies from the same band have been allotted to Finland, in a fashion such that in a broadcast to a particular country one frequency has to be used in the morning and another in the evening. Such changes makes use of transmitters difficult. We do not see how we can accept this procedure."

SS 70 and SS 125

G - United Kingdom of Great Britain and Northern Ireland

Ref: Letter RB52/014, dated 28 October 1957

... "the United Kingdom considers that an adjacent-channel protection ratio of 30 dB in field strength is the minimum tolerable for 5 kc/s spacing" ...

SS 70 and SS 125

G/ - Colonies, Protectorates, Overseas Territories and Territories under Mandate or Trusteeship of the United Kingdom of Great Britain and Northern Ireland

Ref: Letter RB/335/07, dated 3 April 1959 and Telegram dated 28 April 1959

"It is desired to bring to notice that broadcast transmitting stations in the territories of the Colonial Ensemble cover a wide area of reception which is only possible with the use of high frequencies. We consider that in the circumstances it is essential that the requirements of these territories for high frequencies for broadcasting purposes should be adequately covered in the Plans."

"Draft plans partly meet colonial requirements and we would be willing they should form basis for discussion during conference although substantial modifications will be necessary to draft plans before they will be acceptable to colonial ensemble."

SS 70 and SS 125

GRC - Greece

Ref: Letter 100601,
dated 21 February 1959

"If we compare the number of frequency-hours assigned to Greece with the draft plan for June 70, there seem to be no major differences and what differences there are could be justified by the change in solar activity. But our requirements for frequency-hours submitted six years ago no longer meet our needs. So much the less, then, could they meet our needs at the time when the plans are approved and applied."

SS 70 and SS 125

GTM - Guatemala

No comments received

SS 70 and SS 125

HND - Honduras (République of)

No comments received

SS 70 and SS 125

HNG - Hungarian People's Republic

Ref: Letter 30.629-3/1957,
dated 24 July 1957

... "we have considered the draft high-frequency reference plan (June 70) and have no comments to offer on the allocations appearing therein for Hungary."

SS 70 and SS 125

HOL - Netherlands, Surinam, Netherlands Antilles, New Guinea

Ref: Letter 590211
3188 7453
H AZR/RB III, dated 12 February 1959

"Sub 1. Protection ratios

According to the I.F.R.B. Technical Standards, Series A, second edition 1958, the Board will make a favourable finding when the protection ratio amounts to 38 dB or more, and a qualified favourable finding when the protection ratio is between 23 and 38 dB.

The Netherlands Administration is of the opinion that all allocations having in the reception area a protection ratio of 33 dB or more, are fully acceptable.

As for those allocations having protection ratios between 23 and 33 dB, they are also accepted; however, if, on the implementation of the plans, it should appear that the reception is nevertheless unsatisfactory, the Netherlands Administration wants to reserve its right to request another allocation or to take all other measures possible, to ensure a better reception.

Sub 2. Changes in program-time

In general, changes in program-time cannot be accepted for the following reasons:

a) The hours allocated fall within periods of the day, during which the listeners are unable to follow the broadcast-program (day-working-hours or at night).

b) Program-hours should be the same during all seasons of one phase at least. The experience has shown, that the listeners adapt themselves very slowly to even small changes.

The result is, that, although the total number of hours allocated in the plans generally amounts to that required, the number of hours which will be effectual is far less.

Sub 3. Spacing of frequencies allocated

A number of programs, which will be partly or wholly broadcast at the same time, has been allocated frequencies so closely spaced to each other (5, 10 and 15 kc/s separation), that simultaneous transmission will cause intermodulation in the transmitters, as they are all situated in the same building.

...

For this reason one out of the two frequencies, allocated for simultaneous transmission and being so closely spaced to each other, cannot be accepted.

It will be appreciated to have the allocations in question on frequencies separated more widely.

Sub 4. Number of frequencies allocated

The total number of frequencies allocated to the Netherlands in each of the phases and seasons is very large, viz.:

	June	December	Equinox
Phase 70	22	25	25
" 125	22	28	23

This constitutes a serious handicap for the effectuation of the programs for the following reasons:

a) It implies a rather large number of frequency changes. Each change requires about 10 minutes switching-time, which means a comparatively great loss for a 60 minute program.

b) The greater part of the antennas consists of curtain arrays with slewing facilities, making them very selective, so that they can only be used for a small part of the same band.

c) A serious objection to the many frequency changes is, that our transmitting equipment is not designed for such a large number of frequencies.

d) In some cases, when programs, broadcast in the same or nearly the same direction, follow each other in chronological order, a change of frequency, even in the same frequency band, takes away the possibility of introducing small corrections in program-scheduling.

In fact, the items a), c), and d) refer only to the number of frequencies per phase, while item b) plays a part between the phases as well.

The Netherlands Administration is fully aware of the serious difficulties the Board has to cope with in solving the High Frequency Broadcasting problem and in drafting the plans for this Service.

It is therefore much regretted, that a considerable number of allocations as they now appear in the plans are not acceptable to us.

...

It is hoped, that the Board will be able to assimilate at least part of the comments before submitting the plans to the Administrative Radio Conference.

As for the plans as a whole, it is our impression that there is still sufficient room to meet a number of objections, so that they offer a good basis for further discussion at the coming conference."

SS 70 and SS 125

HTI - Haiti (Republic of)

No comments received

SS 70 and SS 125

I - Italy

Ref: Letter XI 32737/231,
dated 7 January 1959

... "be it observed that three basic reasons exist why the plans in their present form are not acceptable.

Namely:

1) There is no uniformity in the number of simultaneous transmissions for Italy. At certain times of day there are to be up to fourteen simultaneous broadcasts, which means at least the same number of transmitters. At other times of day there are far fewer (only three in certain cases, and precisely at times when the most important broadcasts, such as those to the Americas, have to be made.

Hence some of the transmitters will be only intermittently used. This is quite inadmissible, even from the economic point of view.

2) In the various plans, and in different fashion from plan to plan, there are several shifts or reductions in time schedule for some transmissions which ought to take place simultaneously on several different frequencies.

Fading, interference, etc. may very often occur. So that it is absolutaly essential to broadcast each programme simultaneously on a least two channels.

3) In several cases the protection afforded against broadcasts by other countries in the same channels or in adjacent ones is utterly inadequate.

There are various other interference possibilities (difficult to predict with any accuracy with the data to hand), since there is bound to be a certain imprecision in the construction of plant and the observance of time-tables. These time schedules should, too, make provision for preparation and announcement, outside the actual broadcasting times.

Hence the more reason to accept our request, i.e., that every broadcast should be made simultaneously on at least two channels."

SS 70 and SS 125

IND - India (Republic of)

Ref: Letter W-5(2)/58,
dated December 1958

... "the total channel hours allotted fall far short of the requirements, several of the assignments have basic technical characteristics different from those indicated for the requirements, and the signal protection on many of the draft provisions are unsatisfactory." ...

"INTERNAL SERVICES:

3. A number of essential regional and national services requirements have not been provided for." ...

4. The requirements left unassigned" ...
"would seriously affect the services contemplated at the respective stations. These include a number of services that are already in operation and some of the services which are to be commissioned in the near future.

5. Requirement Nos. 230-252 refer to News Services. No allocations (except for requirement No. 248) have been made in any of the plans under consideration. These News Services are meant not only for relay by various stations of the broadcasting system but are primarily required for direct reception by the general public all over the country. These bulletins are meant for listeners speaking various languages and living in various parts of the country. Relay by one or two stations of the broadcasting system of individual bulletin will not afford a solution as persons speaking a particular language are distributed over the entire country and consequently radiation of News Services from a central location is essential to ensure reception by all people interested in a particular language. In view of these considerations, it is essential to assign frequencies also for these important requirements of Indian broadcasting.

6. Concerning the unprovided services, it is essential that the m/c order and the powers indicated in the requirements are preserved. Otherwise, the services contemplated from the respective transmitters would be seriously affected.

7. Of the provisions made in the draft plans under consideration, the m/c order on a number of assignments are not optimum for the intended services. Powers in respect of certain requirements have also been reduced."

...

"Even though some of these can be worked as a compromise provided also that adequate protection is afforded to this, it is essential that the frequency bands in respect of certain requirements are restored to optimum bands and powers increased to the figures given in the requirements." ...

"EXTERNAL SERVICES:

8. A number of requirements some of which concern very important services already in operation, have not been met." ...

"9. An examination of the draft plan under consideration also shows that a number of changes have been made in respect of periods of transmissions, intended areas of reception, power of transmitter, frequency bands, antenna gains and directivities. Even though slight alterations in the transmission periods can be accommodated as a compromise, major shifts in time blocks and changes in power of transmitter and other transmission characteristics will affect seriously the listening potentialities in the target areas. Only a single frequency has been assigned for some of the services. Except under strictly optimum conditions, these single assignments will seriously affect the services concerned." ...

"PROTECTION RATIOS AND TECHNICAL STANDARDS:" ...

"11. In evaluating the protection, receiver discrimination has not been taken into account. The lists detail the provisions to India which suffer unsatisfactory protection from co-channel assignments and from those 5 kc and 10 kc away. The receiver discrimination figures are under study and it is difficult without further study to agree to the values assumed by the I.F.R.B. for purposes of arriving at the over all protection. It is essential that all assignments made to India should carry enough protection from co-channel and adjacent channel assignments for providing satisfactory service."

SS 70 and SS 125

INS - Indonesia (Republic of)

Ref: Telegrams 2511/rad/f dated 15 January 1959
and 10040/rad/f dated 25 February 1959

Individual comments only

SS 70 and SS 125

IRL - Ireland

No comments received

SS 70 and SS 125

IRN - Iran

No comments received

SS 70 and SS 125

IRQ - Iraq

Ref: Telegram dated 20 April 1959

... "h.f. broadcasting plans for ss70 and 125 prepared by ifrb unacceptable without drastic modifications as specified in our letter to you."

SS 70 and SS 125

ISL - Iceland

Ref: Telegram dated 28 April 1959

"We consider the HF Broadcasting plans for SS 70 and 125 prepared by the IFRB acceptable as they stand."

SS 70 and SS 125

ISR - Israel (State of)

Ref: Telegram DH24/54 dated 7 April 1959

"Draft plans IFRB totally unacceptable for us without drastic modifications".

SS 70 and SS 125

J - Japan

Ref: Letter MP/R 275,
dated 22 December 1958

"The Japanese Administration should like to pay its respects to the efforts endeavoured by the IFRB in the preparation of the draft plans for the High Frequency Broadcasting Service." ...

"As for the circuits, the channel hours of which have been reduced and the broadcasting hours of which have been changed, we should like to request their restorations" ...

"Taking the existing state of our national and international broadcasting into consideration, we should like to request herewith new circuits and additional region of intended reception" ...

SS 70 and SS 125

JOR - Jordan (Hashemite Kingdom of)

Ref: Letter 16/4/1/8538,
20 August 1958

"The information concerns the planned broadcast emissions from the new AMMAN broadcast station which is under construction at present." ...

"One HF (short wave) 100-kW broadcast transmitter has been ordered and is anticipated to be on the air by July 1959.

The intention is to operate simultaneously the 100-kW MF transmitter previously mentioned and the 100-kW HF transmitter for broadcast of the same programme." ...

"One 7½-kW HF transmitter, which is already available, is also to be installed in the new broadcast station. The transmitter has been planned for broadcast to Europe. No decision has been taken yet as to the frequency to be used, and the transmitting time.

One 5-kW HF transmitter and one 3½-kW HF transmitter for broadcast to other Arab countries are to be installed in the new station as well." ...

"The above transmitters have been planned to constitute the initial equipment of the new Amman broadcast station.

In conclusion it may be mentioned that the Jordan broadcast service may be in need of some more frequencies in future. This matter will be taken up with the international organization after careful consideration."

SS 70 and SS 125

KOR - Korea (Republic of)

Ref: Letter dated 31 December 1958

"The hours of transmission allocated to us on the draft plan are inadequate for the High Frequency Broadcasting Service in the Republic of Korea.

It is, therefore, desired to amend the hours of transmission and the frequency band required for the service," ...

SS 70 and SS 125

LAO - Laos (Kingdom of)

Ref: Letter 742/LD,
dated 8 March 1959

... "no comments. We find the plans acceptable."

SS 70 and SS 125

LBN - Lebanon

No comments received

SS 70 and SS 125

LBR - Liberia

No comments received

SS 70 and SS 125

LBY - Libya (United Kingdom of)

No comments received

SS 70 and SS 125

LUX - Luxembourg

No comments received

MCO - Monaco

SS 70

Ref: Letter Fin. No. 3100,
dated 27 February 1959

"The frequency- hours allocated to the Principality do not meet its needs." ...

"Radio Monte-Carlo is planning to acquire two new short-wave 100 kW transmitters, one in 1960 and the other in 1962. For these, it is essential to provide:

- for 1960, besides the frequency-hours already called for: eighteen hours in the nine and eleven megacycle bands, according to the period of solar activity;

- for 1962: eighteen hours in the fifteen and seventeen megacycle bands."

SS 125

Ref: Letter Fin. No. 3246,
dated 10 April 1959

"In general, and for the frequencies 6105 and 7205 kc/s we should like frequency-hours for high-frequency broadcasting such that we can broadcast uninterruptedly from 0600 to 2300 hours GMT."

SS 70 and SS 125

MEX - Mexico

Ref: Letter 31291 - 047 (494)/1:35,
dated 10 June 1959

"The Mexican Administration wishes to point out to the IFRB that even though proposals have been made concerning the draft plans for which the Reference Plan, i.e. the plan for June 70 prepared by the Board, with modified standards, has been taken as a basis, this does not imply that the attitude of the Mexican Administration to the plan in question has changed. It continues to consider it as unacceptable as it contains certain assignments which would, in practice, make those corresponding to Mexico useless. It should also be pointed out to the IFRB that the results of the analysis of the plans for Equinox 70 and December 70 show that these too are unacceptable for Mexico if the modifications suggested in the present letter are not adopted."

SS 70 and SS 125

MLA - Malaya (Federation of)

Ref: Letter MBITU.230/B1/46,
dated 22 December 1958

"Consequent on the Federation of Malaya becoming an independent territory, the original 'Radio Malaya' has now been split into two separate Administrations. One Administration under the Director of Broadcasting, Singapore to be known as 'Radio Singapore' and the second under the Administration of the Director of Broadcasting, Federation to be known as 'Radio Malaya'.

The split into two separate Administrations has modified considerably the original requirements put forward for this H.F. Broadcasting Plan." ...

"Regarding Malaya, considerable expansion of services are visualised both for internal and external services."

SS 70 and SS 125

MRF - Morocco (Kingdom of)

Ref: Telegram 342t/erc,
dated 23 April 1959

"The broadcasting plans are acceptable, with the following changes:

firstly, the allocation of two new channels in the four megacycle band; and

secondly, the allocation of an extra channel in the seven megacycle one; and

thirdly, the allocation of an extra channel in the fifteen megacycle band."

SS 70 and SS 125

NCG - Nicaragua

No comments received

NOR - Norway

SS 70

Ref: Letter IV.Rt/JD/Viv,
dated 18 July 1958

"A very important assumption, from our point of view, is that the time schedule for the different transmissions should be maintained through all phases and seasons.

Our oversea programmes are, to a great extent, designed for the Norwegian Merchant Marine, and the time-table set up for this service has remained unchanged since the beginning some 12 years ago, and is thus well established and familiar to all listeners.

According to our experience irregular seasonal alterings of the schedule will always lead to difficulties and confusion."

SS 125

Ref: Letter IV.Rt/JD/Viv,
dated 26 November 1958

"We find it desirable that the transmissions from Oslo and Tromsö should follow a schedule which would not vary with seasons and sun spot periods," ...

"Concerning the station at Fredrikstad we would stress the importance of all transmissions taking place in accordance with a time schedule without variations, frequencies being chosen in accordance with the prevailing transmissions conditions."

SS 70 and SS 125

NPL - Nepal

No comments received

NZL - New Zealand

SS 70

Ref: Letter P. & T. 1958/1216,
dated 26 September 1958

... "the New Zealand Administration provisionally approves the allocations to New Zealand in the Draft Plans, the provision being that before the full Plan is developed and approved by an Administrative Radio Conference, New Zealand will need to put forward several matters. The latter are detailed below but should not be allowed to obscure the general position which is one of agreement."

SS 125

Ref: Letter P. & T. 1958/1216,
dated 23 January 1959

... "the New Zealand Administration provisionally approves the allocations to New Zealand in the Draft Plans for Phases June, Equinox,,and December 125, the provision being that before the full Plan is developed and approved by an Administrative Radio Conference New Zealand will need to put forward several matters which are detailed below. The general position is, however, one of agreement."

SS 70 and SS 125

PAK - Pakistan

Ref: Letter PWB. 8-2/58,
dated 30 December 1958

"There are certain deficiencies in the plans. Our comments in detail are attached herewith for each of the plans separately. These may be taken into consideration when the plans are given a final shape.

The number of channel hours that has been allotted to Pakistan in the various plans is just about 144. However, now our broadcasting requirements have increased considerably and we find that it will not be possible to accommodate all of our commitments within these channel hours. We, therefore, submit herewith our additional requirements for 106 channel hours. These channel hours are in addition to the 144 channel hours allotted in plans referred to above."

SS 70 and SS 125

PHL - Philippines (Republic of the)

Ref: Telegram n/lb.,
dated 14 April 1959

... "as the plans considerably reduce frequency allocation to this administration in the six comma nine comma eleven comma fifteen and seventeen megacycle bands which are useful and suitable for this area due to geographical and propagation conditions we" ... "consider the plans unacceptable without drastic modifications."

SS 70 and SS 125

PNR - Panama

No comments received

SS 70 and SS 125

POL - Poland (People's Republic of)

Ref: Letter TM 51/498/59,
dated 23 March 1959

We have closely scrutinized the I.F.R.B.'s proposals for high-frequency broadcasting frequency apportionment, and observe that this plan overlooks the needs of the German Democratic Republic, the People's Republic of China, the People's Democratic Republic of Korea, and the Democratic Republic of Viet-Nam. The fact that stations exist in these countries and continue to develop outside the purview of the I.F.R.B. will inevitably necessitate a review of the plan proposed.

The plan does not guarantee the requisite quality of transmissions and sets the protection ratio inordinately low, to our way of thinking. This was pointed out, also, by the Post Office of the United Kingdom of Great Britain and Northern Ireland, after the VIIIth Plenary Assembly of the International Radio Consultative Committee in the course of Study Group X activities. Hence, after the plan has been accepted and implemented, interference may well appear.

The plan calls above all for the closest scrutiny. Analysis thereof shews that the People's Republic of Poland cannot possibly accept certain I.F.R.B. proposals, because of changes in the allocation of time schedules and frequency bands.

Accordingly, we consider that the plan in question is not acceptable without amendment."

SS 70 and SS 125

POR - Portugal

Ref: Telegram 02919,
dated 29 April 1959

"As they stand, these plans are unacceptable. We could, however, consider them as a possible starting point for discussion."

SS 70 and SS 125

POR/ - Portuguese Oversea Provinces

No comments received

SS 70 and SS 125

PRG - Paraguay

Ref: Telegram pasuncion pga8,
dated 29 April 1959

"The plans are acceptable provided always we are assigned frequencies to cover areas 7 and 8 from 00 to 04 hours GMT and areas 27 and 28 from 1800 to 2200 hours GMT."

SS 70 and SS 125

PRU - Peru

No comments received

SS 70 and SS 125

RHO/NYA - Rhodesia & Nyasaland (Federation of)

Ref: Letter 8031/59,
dated 12 January 1959

"This Administration has, from time to time, indicated that the circumstances arising out of the rapid development of the Federation of Rhodesia and Nyasaland might necessitate a revision of our frequency requirements for high frequency broadcasting.

A Federal Broadcasting Corporation has been formed and has taken over all broadcasting activities in Northern and Southern Rhodesia and Nyasaland with effect from 1st February 1958. It is the intention of the Board of the Corporation that during 1959 coverage within the Federation shall be improved and extended and a commercial service will be introduced.

The programmes at present broadcast and the rearrangements and extensions planned for 1959 are given in the appendices attached. The detailed means whereby the programmes, as set out in the second appendix, will be broadcast, has not yet been finally determined. The matter is being closely studied. However, inevitably, because of the nature of the three territories of the Federation, increased use of high frequency broadcast channels will be necessary. Submissions will be made to the Board as and when detailed plans are worked out. In general appendix No. 2 has been included with this letter to give some idea of the scale of the operations which is envisaged.

On the longer term it is expected that high frequency broadcasting beyond the boundaries of the Federation will be undertaken within a year or two, and therefore a requirement for higher frequencies appropriate for such a service will arise in due course."

SS 70 and SS 125

ROU - Roumanian People's Republic

Ref: Telegram 298983,
dated 25 April 1959

"We cannot accept the proposals made in the I.F.R.B. plan except with far-reaching amendment. Changes of the kind required can, we feel, only be made at an international conference if other States are not to be affected."

SS 70 and SS 125

S - Sweden

Ref: Letter Rb/Art/ Uh/Tin,
dated 15 January 1959

Individual comments only.

SS 70 and SS 125

SDN - Sudan (Republic of)

Ref: Letter P&T/13-7-2F,
dated 17 December 1958

"The Sudan Administration supports the effort of the I.F.R.B. to prepare Plans for the High Frequency Broadcasting Service so confusion in the use of frequencies will be eliminated and the general conditions of the service will be improved.

The final comments by the Sudan Administration in reference to the planning work will be made when the requirements by Sudan have been included in the Draft Plans. It is to be regretted that the requirements have not yet been submitted for this purpose and as the service is now developed or will be put into complete operation during the coming year, I submit the requirements of this Administration as a first comment in reference to the Draft Plans for the Service."

SS 70 and SS 125

SLV - El Salvador (Republic of)

No comments received

SS 70 et 125

SNG/BRN - Singapore-British Borneo Group

Ref: Letter MBITU.230/B1/46,
dated 22 December 1958

BRN - North Borneo

... "the Broadcasting Service in North Borneo commenced operations in November 1955 in a very conservative manner with respect to programme hours." ...

"Efforts were made at this period to extend existing broadcast time in the morning and evening sessions but agreement on these points could not be reached as also to the granting of further frequencies to permit simultaneous H.F. broadcasts to cover the multilingual listening public in this Colony, and I do feel that further frequencies and extended programme hours are essential if H.F. Broadcasting in this Colony is to achieve its object." ...

SNG - Singapore

"Regarding Singapore, as a small island local coverage will be given either immediately by MF and eventually VHF F/M and only one HF frequency (6000 kc/s) is required."

SRW - Sarawak

"The Sarawak Administration agrees with no comment."

SS 70 and SS 125

SOM – Trust Territory of Somaliland under Italian Administration

No comments received

SS 70 and SS 125

SUI - Switzerland (Confederation)

Ref: Letter 86,6.16.1,
dated 18 February 1959

Individual comments only.

SS 70 and SS 125

SYR - United Arab Republic (Syrian region)

No comments received

SS 70 and SS 125

TCH - Czechoslovakia

Ref: Letter M-3165/59,
dated 16 March 1959

"1/ The draft plans are not accompanied by a list of assignments to countries shewing how frequency-hours are apportioned among countries in the various bands and at peak listening hours. This is a factor of the greatest importance in assessing just what a plan is worth.

2/ The draft plans make no provision for the high-frequency broadcasting services of the German Democratic Republic, the People's Republic of China, the People's Democratic Republic of Korea, or the Democratic Republic of Viet-Nam. No realistic plan which might conceivably be accepted by the world at large can be produced unless provision is made therein for the requirements of these countries.

3/ In these plans, the standards ordinarily considered essential for a satisfactory high-frequency broadcasting service are seriously diminished. This holds good both of bandwidth and of protection ratios. The procedures used during preparation of the draft plans, for calculation of optimum working frequencies and field strengths, are highly questionable. Opinion within the International Radio Consultative Committee is that no definite assessment can be made of the methods for calculation of maximum usable frequency and of short-wave field strengths is possible. Experience shews that in many cases the maximum usable frequency considerably exceeds the figures derived from the curves used for preparation of the draft plans in question. This gravely reduces sharing possibilities and means that interference will be much greater than had been initially suspected.

4/ The draft plans are based on requirements submitted by Administrations several years ago. The high-frequency broadcasting service is such that these plans no longer meet existing requirements or plans in the realm of high-frequency broadcasting.

Hence we cannot consider these draft plans as suitable for implementation, and we cannot approve them.

...

We are firmly of the conviction that the complex questions of an equitable apportionment of frequency-hours for high-frequency broadcasting and preparation of plans to that end cannot be solved by an isolated organ such as the I.F.R.B. They can be solved, we consider, only by close cooperation between Administrations at a specially convened conference. Plans once drawn up would have to be put into effect with all possible speed after the conference.

Since we consider these draft plans unacceptable in principle, it follows that we are extremely sceptical as to the effect of any efforts that might be made for readjustment thereof. This concerns the method proposed in Circular-Letter 2618/58/R, based on data about existing transmission schedules, the more so as the structure of short-wave programme transmissions, under present-day conditions, is inevitably different from the structure of transmission schedules based on a world-wide plan for apportionment of high-frequency broadcasting frequencies."

SS 70 and SS 125

THA - Thailand

No comments received

SS 70 and SS 125

TUN - Tunisia

Ref: Letter T.S.F. 7-59,
dated 27 April 1959

... "sound broadcasting has now been taken over by the Government of the Tunisian Republic, and the high-frequency requirements made in 1952 and 1954 are no longer in accordance with present requirements.

Hence the plans prepared by the International Frequency Registration Board for 70 and 125 are no longer acceptable to us without far-reaching amendment.

We are now considerating plans for short-wave transmissions. We will send it as soon as it is ready."

SS 70 and SS 125

TUR - Turkey

Ref: Telegram dated 28 April 1959

"We are asked by the Director-General of the Press, Broadcasting and Tourism to say that his department could accept them with some slight amendment as shewn in (b) of the message (namely, as regards the time schedules and bands of certain assignments)."

SS 70 and SS 125

UKR - Ukrainian Soviet Socialist Republic

Ref: Letter from U.S.S.R., OVS-4/210, dated 24 January 1959

Since the requirements of this Administration were received from the Administration of the U.S.S.R., it is assumed that the comments of the latter also apply to this Administration.

SS 70 and SS 125

URG - Uruguay (Oriental Republic of)

Ref: Telegram rf/50,
dated 30 April 1959

"Our requirements still stand".

SS 70 and SS 125

URS - Union of Soviet Socialist Republics

Ref: Letter OVS-4/210
dated 24 January 1959

"The opinion of the Telecommunications Administration of the USSR in respect to the HF Bc plans has been stated on many occasions by the USSR representatives to the Administration Council of the ITU.

The analysis of the plans has proved that they are not satisfactory, considering the arbitrary allocation of frequency-hours to the USSR and the quality of the assignments, which is the consequence of the departure by the IFRB from well-founded technical standards for HF Broadcasting.

The needs of the USSR for internal and external broadcasting have not been satisfied in the IFRB plans.

In these plans, the needs of the Popular Democratic Republics of CHINA, GERMANY, VIET-NAM and KOREA, have not been considered, and yet it is generally impossible to make acceptable plans without taking such needs into account.

Moreover, the IFRB plans are for the most part superannuated, as for the majority of countries, they are based on requirements submitted between 1952 and 1955."

SS 70 and SS 125

USA - United States of America

Ref: Letter TD,
dated 22 August 1958

"The Administrations of the United States of America and the Territories of the United States of America have given these documents their careful consideration, and wish to commend the Board for its conscientious effort to devise a workable plan within the Terms of Reference established by the Extraordinary Administrative Radio Conference, Geneva, 1951. While appreciative of the considerable technical effort expended by the Board, these Administrations observe a number of still unresolved problems which would hinder the effective implementation of the plan, and submit the following comments in the hope that they will promote a more rational use of the high frequency broadcasting bands:

(1) It is noted that, while the IFRB requested that requirements be submitted in terms of program hours, a number of Administrations submitted their requirements in terms of frequency hours. Having, therefore, no clearly defined common denominator for impartially applying technical standards in the translation of requirements into equitable allocations, the resultant plans may be said to lack an equitable foundation.

(2) In order to accommodate as many requirements as possible, it is apparent that the IFRB reduced technical standards to what was considered to be a minimum for defining satisfactory reception (5 Kc channel separation, a protection ratio of 40 db, and a power limit of 200 kilowatts). Many Administrations have commented that the technical standards developed by the Board are actually <u>below</u> the minimum required for satisfactory reception. In the U.S. view, the 5 Kc separation scheme developed by the Board appears workable and is, in fact, being accepted by most Administrations in their present operations. A protection ratio of 40 db, if maintained throughout an entire target area, also appears to be a reasonable figure from the practical point of view. On the other hand, it is clear that the IFRB cannot further reduce technical standards to accommodate additional requirements without seriously affecting the quality of reception.

...

In this respect, the IFRB plan is saturated. Furthermore, there appears to be no technical justification for the Board's limitation of maximum power to 200 kW.

(3) Being based upon technical standards reduced to the lowest acceptable level and rigid in its adherence to unalterable frequency assignments, the IFRB plan is dangerously lacking in flexibility. Based on 1952 requirements, the plan does not reflect shifts in requirements resulting from political events of the past six years and cannot reflect such shifts in the future. Furthermore, new or expanded requirements may be accommodated only at the expense of prior assignees. A large number of channels have been assigned to countries which may have no plans for their immediate use, while on the other hand the actual requirements of other users have been arbitrarily reduced. Although the U.S. recognizes that all countries should be assured of reasonable access to the high frequency broadcasting bands, the implementation of a plan based upon projected rather than actual requirements could only result in the lowered efficiency of spectrum usage, or worse, a widespread derogation from the plan.

(4) Furthermore, being tied directly to the sunspot cycle, the plan, as a whole, lacks technical flexibility. A great many assignment hours of the Phase 70 plan will have to be modified if they are to fit into a total plan for the entire sunspot cycle. Because of extreme solar cycle propagation variations, the remaining phases projected on the basis of the Phase 70 plan will almost certainly prove to be less workable than these plans already developed.

Rigidly based on the solar cycle, the plan discourages the engineering of circuits to actual propagation conditions, and there will undoubtedly be times, as during the present solar cycle, when the predicted solar activity will differ considerably from actual conditions.

(5) The Administrations of the United States of America, and the Territories of the United States of America, recognize the importance of shortwave broadcasting and will continue to support the concept of planned frequency usage in the high frequency broadcast bands. It seems evident, however, that a plan based on rigid assignments will prove to be unworkable.

...

The United States, therefore, will submit proposals for the 1959 Radio Conference based upon the principle that broadcast requirements can be satisfied within the present broadcasting bands by the application of frequency management techniques to actual usage rather than adherence to rigid allocations based on projected assignments. It is hoped that the adoption of these proposals may result in the immediate implementation of procedures which will bring about international coordination of frequencies in the high frequency broadcasting bands pending the development and acceptance of more formal plans."

SS 70 and SS 125

VEN - Venezuela (Republic of)

Ref: Telegram di-19,
dated 14 April 1959

"Reference circular-letters about high-frequency broadcasting plans. We consider these plans unacceptable without far-reaching amendment."

SS 70 and SS 125

VTN - Viet-Nam (Republic of)

Ref: Telegram vtd/28/zt-qtvt,
dated 29 April 1959

... "the plans are unacceptable without far-reaching amendment."

YUG - Federal People's Republic of Yugoslavia

SS 70

Ref: Letter 50/1-59,
dated 6 January, 1959

"1. Having perused the plans for June 70 and Equinox 70, we observe that the schedule of frequencies allotted is in many cases incomplete and frequently unsatisfactory, if the areas for which the broadcasts are intended be borne in mind.

2. The separate frequencies allotted in most bands are pointlessly numerous since in certain bands only two, or even a single hour of transmission, are allocated. We are of the opinion that is not necessary and cannot but complicate the plans and their applications.

3. Yugoslav requirements in the six, seven, nine and eleven megacycle bands are not met; hence we call for an increase of 11.5 frequency-hours in all."

SS 125

Ref: Letter 1541/1,
dated 29 January, 1959

"1. We note, after perusal of the plans for June 125, Equinox 125, and December 125, that the time schedules of the frequencies allotted (in many cases and bearing in mind the areas of reception) are incomplete and frequently unsatisfactory.

2. The separate frequencies allotted in most bands are pointlessly numerous. In some bands, no more than two, or even one hour of transmission, are allotted. That, we feel, is unnecessary and cannot but complicate the plans and their application.

...

3. The Yugoslav requirements for frequency-hours in the 6, 7, 9 and 11 Mc/s bands are not met. Hence we ask for an increase therein" ...

"Our proposal will, we trust, be taken into account. It is based on our actual minimum high-frequency broadcasting requirements. This would enable Yugoslavia to adopt the allocation plans. Our views as to the need for common agreement in this field remain unshaken."

SS 70 and SS 125

ONU - United Nations Organization

Ref: Letter G.II A 7/34 15530,
dated 17 March 1959

"The United Nations has no comments to make on the position as set forth in the Annexes attached to circular letter 2594/58/R."

SS 70 and SS 125

IND (Sik) - INDIA (Sikkim)

Ref: Letter W-5(2)/59-Pt.I,
dated 23 April 1959

"I am directed to forward herewith requirements in the High Frequency Broadcast Bands for a broadcast transmitter that is proposed to be installed at Gangtok, Sikkim. Appropriate provisions may please be made for this service in the High Frequency Broadcasting Plan now being evolved by the Board."

COMMENTAIRES FORMULÉS PAR LES ADMINISTRATIONS

à l'égard des

PROJETS DE PLANS

pour le

SERVICE DE RADIODIFFUSION A HAUTES FRÉQUENCES

(Articles 11 et 28 de l'Accord de la C.A.E.R.)

FASCICULE B

Commentaires détaillés relatifs aux projets de plans
pour l'indice d'activité solaire 70

COMMENTS BY ADMINISTRATIONS

on the

DRAFT PLANS

for the

HIGH FREQUENCY BROADCASTING SERVICE

(Articles 11 and 28 of the E.A.R.C. Agreement)

BOOKLET B

Detailed comments on the draft plans
for Sunspot Number 70

COMENTARIOS FORMULADOS POR LAS ADMINISTRACIONES

sobre los

PROYECTOS DE PLANES

para el

SERVICIO DE RADIODIFUSIÓN POR ALTAS FRECUENCIAS

(Artículos 11 y 28 del Acuerdo de la C.A.E.R.)

FASCÍCULO B

Comentarios detallados relativos a los proyectos de planes
para el índice de actividad solar 70

J 70

Phase / Phase / Fase	Bande/Band/Banda	Voie/Channel/Canal	Pays / Country / País	Index / Index / Indice nº	Zones de réception / Reception Zones / Zonas de recepción	Heures d'émission / Hours of transmis. / Horario de operac.	Commentaires de l'Administration / Comments from the Administration / Comentarios de la Administración	Analyse par l'IFRB / Analysis by IFRB / Análisis de la IFRB		Observations / Remarks / Observaciones
J 70	6	1	AUS	1	5 9	0830 1400	INT COCH URS	A	Y	
J 70	6	1					INT CH1A BRN	A	Y	
J 70	6	1	CAN	2	2	1500 0100	INT COCH S	G	N	
J 70	6	1	SUR	1	2	1100 0400	INT	A	Y	
J 70	6	1A	BRN	1	5 4	0300 1400	0300/1600 2200/0100	F	X	
J 70	6	2	CLN	4	4 1	0100 0230	SEP CH1 CLN	C	X	
J 70	6	2	PAK	8	4 0 4 1	1200 1800	INT COCH NGN,D	D	Y	
J 70	6	2					INT CH2A ADN	A	Y	
J 70	6	2A	ADN	1	3 9	0900 1200	INT COCH CBG	G	N	
J 70	6	2A	ADN	1	3 9	1400 1900	INT COCH CBG	A	Y	
J 70	6	2A					INT CH2 PAK	D	X	
J 70	6	2A					INT CH3 I	A	Y	
J 70	6	2A	NIG	2	4 6	0900 1600	FREQ/6MC	C	N	
J 70	6	2A					AZM55 6DB	F	X	
J 70	6	3	AUS	2	5 9	0830 1400	INT CH3A INS	A	Y	
J 70	6	3	I	1	2 8	0300 0600	AZM40 CIRAF 28,29	C	Y	
J 70	6	3	I	2	8 2 7 2 8	1730 2200	ND CIRAF 27,28,29	C	Y	
J 70	6	3	IND	1	5 4 1	1100 1700	INT COCH HNG	A	Y	
J 70	6	5A	MLA	1	5 4	2230 1630	SINGAPORE	F	X	
J 70	6	6	FJI	1	6 2	0500 1200	INT COCH PNR	G	N	
J 70	6	8	IND	3	2 4 1	1300 1745	INT	D	Y	
J 70	6	8	KEN	1	4 8	0700 1100	6KW 0300/1600	F	X	
J 70	6	8	KEN	1	4 8	1300 2000	6KW 0300/1600	F	X	
J 70	6	8	KEN	1	4 8	1300 2000	DEL 1600/2000	F	X	
J 70	6	9	G	2	5 2 8	1800 1900	INT CH8A F	A	Y	
J 70	6	9					1700/1815	B	Y	
J 70	6	9	G	9	0 2 8 3 8	0400 0600	INT CH8A IRQ	A	Y	
J 70	6	9					INT CH9A PRU	G	N	
J 70	6	9	YUG	3	2 8	1000 1800	DEL	F	X	
J 70	6	9A	CGO	2	5 2	1600 2000	50KW ND	F	X	
J 70	6	9A					LEOPOLOVILLE	F	X	
J 70	6	10	I	7	2 8	0530 2330	ND CIRAF 27,28,37,38,39	C	Y	
J 70	6	10A	INS	1	0 5 4	2200 1600	MENADO	F	X	
J 70	6	11	G	3	8 2 7 2 8	1600 2315	INT CH11A URS	A	Y	
J 70	6	11	IND	6	4 1	0030 1600	INT CH11A IND	D	Y	
J 70	6	11A	IND	3	6 4 1	0045 1600	INT CH11 IND	A	Y	
J 70	6	11A					INT CH11 IWD	D	Y	
J 70	6	13	CTO	5	4 6	0600 2300	ACCRA	F	X	
J 70	6	13A	CLN	5	4 1	0100 0230	SEP CH12A CLN	C	X	
J 70	6	13A	EGY	1	3 8 3 9	0300 0900	0300/1500	F	X	
J 70	6	13A	EGY	1	3 8 3 9	1500 2330	1500/2400	F	X	
J 70	6	14	ATN	1	1 1	1200 0500	INT	D	Y	
J 70	6	14	NOR	2	1 8 2 7	0730 0930	0700/0900	B	Y	
J 70	6	14	NOR	6	1 8 2 7	2000 2300	1900/2300	F	Y	
J 70	6	15	IOB	1	1 1	1600 1800	1000/1800	F	X	
J 70	6	15					INT COCH CLM	C	Y	
J 70	6	15					INT CH14A DOM	C	Y	
J 70	6	15	IOB	1	1 1	2100 0200	1800/0300	F	X	
J 70	6	15					INT COCH CLM	C	Y	
J 70	6	15					INT CH14A DOM	C	Y	
J 70	6	15	MLA/G	7	4 9 5 0	1300 1700	INT CH15A URS	A	Y	
J 70	6	15	MLA/G	7	4 9	2200 0200	INT COCH SUI	A	Y	
J 70	6	15A	AFS	1	5 7	1400 1800	DEL	F	X	
J 70	6	15A	IND	5	4 1	0045 1400	INT CH15 MLA/G	D	Y	
J 70	6	16	MCO	1	2 7 2 8 3 7	0630 1800	0600/2300	B	Y	
J 70	6	16	SEY	1	5 3	1200 1700	INT COCH MLA	A	X	
J 70	6	16					INT CH16A ARS	D	X	
J 70	6	16	YUG	4	2 8	2100 2330	1000/2330	F	Y	
J 70	6	17	G	1	4 2 7 2 8	0500 0830	INT CH17A TUR	A	Y	
J 70	6	17	HOL	1	1 8 2 7 2 8 3 7	1530 0100	INT	A	Y	

1	2	3	4	5	6	7	8	9	10	11
J	70	6	19	MLA/G	5434449 50	22000200	INT COCH G	C	Y	
							INT CH18A,CH19A IND	A	Y	
J	70	6	20A	ARS	339	04002100	0330/2100 , 50KW , 9MC	F	Y	
							JEDDAH	F	X	
J	70	6	21	AUT	1182728293 7	09001500	50KW	F	X	
J	70	6	21	FJI	3565052 63	05001200	INT COCH PHL,IND	A	Y	
							INT CH20A PRU	A	Y	
J	70	6	21	IND	394.1	11001600	INT	D	Y	
J	70	6	21	MAU	14853	03000700	INT COCH AUT	G	N	
							INT OH21A CUB	A	Y	
J	70	6	21	MAU	153	14001900	INT COCH SMB	D	X	
J	70	6	21	SMB	148	12001800	INT COCH IND,AUT	D	X	
							INT CH20A ARS	A	Y	
J	70	6	24	IND	1741	01001800	INT CH25 RAK	A	Y	
J	70	6	24A	ETH	548	04000600	50KW	F	X	
J	70	6	25	BRN	254	03001200	0300/1600	F	Y	
							ADD 2200/0100	F	X	
J	70	6	25	G	112728	04300830	INT CH24A MRF	G	N	
J	70	6	25	PAK	114041	12001800	INT COCH HNG	D	Y	
J	70	7	1	G	192728	08001600	INT COCH URS	A	Y	
J	70	7	1	NIG	846	07001600	20KW AZM55 6DB	F	X	
J	70	7	2	AUS	351	20001400	INT COCH CHN,TUR	A	Y	
							INT CH1A MLA	A	Y	
							INT CH2A BRM	A	Y	
J	70	7	2A	AFS	257	14001800	0400/1800	F	Y	
							7MC CHX	F	Y	
J	70	7	2A	PAK	134041	02000430	INT CH2 POR	A	Y	
J	70	7	4	G	4316 28	17001830	1730/1915	B	Y	
J	70	7	4	G	45 2737	18302000	1915/2100	B	Y	
J	70	7	4	G	50 2728	22002400	2200/2315	E	X	
							INT CH4A UKR	A	Y	
J	70	7	4A	CGO	1152	18002000	BUKAVU	F	X	
J	70	7	4A	PAK	234041	01000330	INT CH5 POR	D	Y	
J	70	7	4A	PAK	2940	12001800	INT CH5 CHN	D	Y	
J	70	7	5	I	19182728293738	16301730	ND CIRAF 27,28,37,38	E	X	
J	70	7	5	I	2328 29	13001500	INT COCH CHN	D	Y	
J	70	7	5	I	2818272829 37	15001630	INT COCH CHN	D	Y	
J	70	7	5	I	49272837	07000900	NOREQ	B	X	
J	70	7	5	I	4938	09001000	CIRAF 37,38	E	X	
J	70	7	5	I	503738 3948	10001300	INT	C	Y	
J	70	7	5	I	543736	20002100	AZM175/220	E	X	
J	70	7	5A	CLN	641	11301700	1130/1730	B	Y	
J	70	7	6	AUT	2182728293 7	09001300	50KW	F	X	
J	70	7	6A	IND	2941	00450400	INT CH6 POR	D	Y	
J	70	7	6A	NIG	746	06002100	ND	F	X	
J	70	7	7	AFS	457	14001800	0400/1800	F	Y	
J	70	7	7A	RAK	940 41	06300930	RAWALPINDI	E	X	
J	70	7	8	NOR	11718 27	06000800	0700/0900	E	X	
J	70	7	8	NOR	51827	13001800	1500/1900	B	Y	
J	70	7	8	NOR	7171827	18002400	1800/2300	F	X	
J	70	7	8A	EGY	23839	04002300	0400/2400	B	Y	
							ND	C	Y	
							INT COCH URS KHABAROVSK	D	Y	
J	70	7	9	G	72728	04000800	0345/0415 0445/0515	B	Y	
J	70	7	9	G	202728	08001700	INT CH8A EGY	A	Y	
J	70	7	9	G	202728	08001700	INT CH8A URS	A	Y	
J	70	7	9	G	442728	17002300	INT CH8A EGY,URS	A	Y	
J	70	7	9A	PAK	364149	00300430	INT CH9 ROR	A	Y	
J	70	7	9A	PAK	364149	10301530	0930/1530	F	X	
J	70	7	10	J	24445 54	20001400	2000/1500	F	Y	
J	70	7	10A	IND	2041	00451530	INT	A	Y	
J	70	7	11A	AFS	657	14001800	0400/1800	F	Y	
J	70	7	11A	NIG	646	07301400	20KW , 0730/1700	F	X	
J	70	7	11A	PAK	2541	15001700	CIRAF 40,41	E	X	
							INT CH11 INS	A	Y	
J	70	7	12A	ARS	239	09001300	100KW	F	X	
							0330/2100	F	Y	
							REYADH	F	X	
J	70	7	12A	TGK	153	07000900	5KW, 0900/1115	F	Y	

1	2	3	4	5	6	7	8	9	10	11
J	70	712A	TGK	153		13001700	DEL	F	X	
J	70	713	PAK	443140 42		15001800	CIRAF 30,31,40,41,42	E	X	
							INT COCH D	D	Y	
							1400/1700	B	X	
							10KW	B	Y	
J	70	713A	PAK	284041		01000330	INT CH14 POR	A	Y	
J	70	713A	UGA	148		06001000	10KW, 0300/2100	F	Y	
J	70	713A	UGA	148		14002000	10KW, 0300/2100	F	Y	
J	70	714A	CLN	741		04001600	0400/1730	B	Y	
J	70	714A	KEN	248		07001100	10KW	F	X	
J	70	714A	KEN	248		07001100	ADD 10KW 0300/0700	F	Y	
J	70	714A	KEN	248		13002000	10KW 1100/1400	F	X	
J	70	714A	KEN	248		13002000	DEL 1400/2000	F	X	
J	70	715	I	103738		06000630	INT CH14A SYR	C	Y	
J	70	715A	CGO	952		09001900	0600/1900	E	X	
J	70	715A	CGO	952		19002200	1830/2200	B	Y	
J	70	715A	PAK	541		14001500	INT CH15 VTN	A	Y	
J	70	715A	PAK	194041		02000500	INT CH18 URS	A	Y	
J	70	715A	PAK	244041		15001830	AZM22	E	X	
J	70	715A	PAK	3040		18301730	CIRAF 30,31,40,42	E	X	
							AZM22	B	X	
J	70	715A	PAK	433031 40 42		17301800	INT CH15 CVA	G	Z	
							AZM22	E	X	
J	70	716	YUG	128		06302230	0400/2330	F	Y	
							ND	F	X	
J	70	717	ALB	2273839		12001800	1200/2300	F	Y	
							CIRAF 27,28,38,39	F	X	
J	70	717A	ETH	148		03000800	10/20KW	F	X	
J	70	717A	IND	2741		00450700	INT COCH POR	D	Y	
J	70	717A	IND	2741		11001745	INT CH18A PAK	A	Y	
J	70	717A	IND	2741		00300700	INT	G	Z	
J	70	718A	PAK	144041		12001800	INT CH18 INS	D	Y	
J	70	719A	NIG	546		06001600	20KW	F	X	
J	70	720	G	412728		16002200	INT CH19A IND	A	Y	
J	70	9 1	ETH	648		09001100	50KW	F	X	
J	70	9 1	ETH	648		11001130	100KW AZM349 16DB	F	X	
							CIRAF 38	F	X	
J	70	9 1	ETH	648		11301200	100KW AZM19 16DB	F	X	
							CIRAF 39	F	X	
J	70	9 1	HOL	3510		02000400	INT	A	Y	
J	70	9 1	IND	9354		23002400	INT CH2 INS	A	Y	
J	70	9 1A	CTO	146		06001700	0600/2300	F	X	
J	70	9 1A	NZL	656662		07001200	INT CH2 INS	A	Y	
J	70	9 2	MAU	253		07001400	INT CH1A URS	G	Z	
J	70	9 4	NIG	1046		06001800	20KW AZM55 6DB	F	Y	
J	70	9 4A	CHL	814		19002200	1900/0200	B	Y	
J	70	9 4A	G	5837		07000800	INT CH5 CTO	A	Y	
J	70	9 5	CTO	246		06001700	0600/2300	F	X	
J	70	9 5	IND	3441		04001300	INT COCH NCL	A	Y	
J	70	9 5	IND	8749 5054		01000200	INT CH6 PHL	A	Y	
J	70	9 5	MLA/G	19272829394041		23002400	INT COCH SUR	D	Y	
							INT CH5A PRU	A	Y	
J	70	9 5	SUR	211		23000330	INT	A	Y	
J	70	9 6A	G	472728		16302200	INT CH6/CH7 URS	A	Y	
J	70	9 7A	G	628837		04000700	AZM138/294	B	Y	
J	70	9 7A	G	3718828		18001900	INT CH7 URS	A	Y	
J	70	9 7A	G	1128838		19002000	INT CH8A URS	A	Y	
J	70	9 7A	G	164 1 10		05000615	0400/0615	B	Y	
J	70	9 8	D	23 6 9		00000400	2200/0500	B	Y	
J	70	910A	I	463940 41		06000900	INT CH11 URS	A	Y	
J	70	911	ETH	748		16001800	50KW	F	X	
J	70	911A	G	2718 2728		10001630	INT CH11 URS	A	Y	
J	70	911A	G	4218 2829		16301900	INT CH11 URS	A	Y	
							1500/1915	B	Y	
J	70	911A	I	605559		19002000	INT	A	Y	
J	70	913	NOR	31718		10001400	1000/1300	F	X	

1	2	3	4	5	6	7	8	9	10	11
J	70	913A	EGY	4	2728	20302300	1800/2300	B	Y	
J	70	913A	EGY	5	37	23002400	AZM320 9DB CIRAF 27,28	F	X	
J	70	914	NZL	7	5682	16002000	INT CH13A IRN	A	Y	
							INT CH14A ONU	A	Y	
J	70	914A	BEL	3	52	23000200	CH25	C	Y	
J	70	914A	IND	5	4272837	22002300	INT CH13A EGY	A	Y	
J	70	914A	IND	5	4272837	22002300	1945/2100	B	Y	
J	70	915A	I	1	818272	16301730	CIRAF 18,27,26,29	E	X	
J	70	916	ATN	2	11	23002400	INT	A	Y	
J	70	916	IND	1	641	07001100	INT COCH URS	A	Y	
J	70	918	AFS	3	57	06301400	0600/1400	F	X	
J	70	918A	I	4	2629	04000600	INT COCH URS	A	Y	
J	70	918A	I	2	42629	13001500	INT COCH URS	D	Y	
J	70	918A	I	3	937	06000630	INT COCH URS	A	Y	
J	70	919	IND	2	841	06001000	INT CH20 PAK	A	Y	
J	70	919A	I	8	27283738	07002400	0530/2330	B	Y	
J	70	919A	IND	4	641	10001200	1200/1330	B	Y	
J	70	920	CTO	4	46	06002100	0600/2300	F	X	
							ACCRA	F	X	
J	70	920A	ALB	6	27	20002100	ADD 1800/1900	F	Y	
J	70	920A	G	5	5375257	03450600	INT COCH PNR	A	Y	
J	70	921	AFS	5	57	06301400	0600/1400	F	X	
J	70	922	UGA	2	46	06001000	10KW, 0600/1500	F	Y	
J	70	922	UGA	2	46	14001600	10KW, 0600/1500	F	Y	
J	70	922A	HOL	3	410	00000400	INT	A	Y	
J	70	922A	IND	5	326	18301500	INT CH21A G	A	Y	
J	70	922A	PAK	4	5303140414 2	04000600	10KW	C	Y	
J	70	922A	YUG	1	227	21002200	AZM250 CIRAF 37	F	X	
J	70	922A	YUG	1	227	22002400	AZM115 CIRAF 39	F	X	
J	70	924A	ARS	4	39	05300900	11MC , GRP 5,6,7	F	Y	
J	70	924A	ARS	4	39	15001900	11MC , GRP 5,6,7	F	Y	
J	70	924A	G	7	9363746475 2	19002100	INT CH24 PRV	A	Y	
J	70	924A	NOR	4	1827 28	10001500	1000/1300	F	X	
J	70	925	CTO	3	46	06001700	0600/2300	F	Y	
							ACCRA	F	X	
J	70	925A	EGY	3	38394047 48	04002300	0400/2400	B	Y	
J	70	925A	G	1	9310111 2	23000400	2200/0400	B	Y	
							INT CH25 CHL	A	Y	
							INT CH26 BOL	A	Y	
J	70	926	AFS	7	57	06301400	0600/1400	F	X	
J	70	926A	G	1	2258 60	06000900	INT CH26,CH27 IND	A	Y	
J	70	926A	NZL	9	54	11001500	INT COCH POL	A	Y	
J	70	927A	G	1	2056 60	05000900	INT CH27 IND	A	Y	
J	70	927A	I	9	2728 3738	09002030	0730/2230	B	Y	
J	70	927A	NOR	1	8 7 8 9 10 11	23000030	0100/0230	D	X	
							6MC	F	Y	
J	7011	2	ARS	6	39	08001000	0400/2100 , GRP4,5,7	F	Y	
							ADD AZM300 , JEDDAH	F	X	
J	7011	2	I	2	237	21002200	AZM270	E	X	
J	7011	2	I	2	52629	13001500	INT COCH CHN	D	Y	
							INT CH1A,CH2A URS	D	Y	
J	7011	2	YUG	6	29	07000730	AZM45	F	X	
							CH6	C	X	
J	7011	2	YUG	1	738	06000700	CH6	C	X	
J	7011	3	AUS	2	249	08301200	0800/1200	F	X	
J	7011	3	AUS	4	42728	05000830	0600/0900	F	Y	
J	7011	3	CGO	1	7 8	00000200	0000/0500	B	Y	
J	7011	3	IND	8	84950	23300100	INT CH4 G	A	Y	
J	7011	3A	G	1	5012131415 16	22000300	INT CH3 BUL;CGO,IND	A	Y	
							INT CH4 G	A	Y	
J	7011	4	G	4	2629 30	03000400	INT CH4A AUT	A	Y	
J	7011	4	G	5	4464752 53	04000600	INT CH3A HOL	A	Y	
							INT CH4A AUT,I	A	Y	
J	7011	4	G	9	42629	06000730	INT CH4A I	A	Y	
J	7011	4	G	9	538	07301100	INT CH4A I	D	Y	
J	7011	4	G	1	474154	22000100	INT COCH PHL	D	Y	
J	7011	4	G	1	49 1 10	22000300	SEP CH3A G	C	Y	
							INT CH3A G	A	Y	
							INT CH4 G,GRC	A	Y	
J	7011	4	G	1	5110411 2	01000300	SEP CH3A G	C	Y	

1	2	3	4	5	6	7	8	9	10	11
							11MC CHX	B	Y	
							INT CH4A AUT	A	Y	
J	70	11	4A	AUS	1055	08301400	INT CH4A USA	G	Z	
							INT CH5 VTN/F	G	Z	
J	70	11	4A	I	5755585960	05000830	INT COCH EQA	A	Y	
							INT CH4 USA	A	Y	
J	70	11	5	EGY	6373839404748	04001800	0400/2400	C	Y	
							ND	F	X	
J	70	11	5	IND	914954	00000200	INT CH6 BRM	A	Y	
J	70	11	5A	I	86141516	23000400	2200/0300	B	Y	
							CIRAF 12,14,15,16	E	X	
J	70	11	6	ETH	348	08001900	10/20KW	F	X	
J	70	11	6	ETH	10 6 7 8	00000200	100KW AZM312 18DB	F	Y	
							CIRAF 6,7,6,10	F	Y	
J	70	11	6A	AUS	2541495 4	13001900	INT CH6 ETH	G	Z	
							1200/1900	B	Y	
J	70	11	7	CAN	6 2 3	14001900	AZM300	E	X	
J	70	11	8A	AFS	952 53	14001500	1200/1400	F	Y	
J	70	11	8A	AFS	952535859	15001800	DEL	F	X	
J	70	11	8A	G	16011 12	22000200	INT CH8 F	A	Y	
							INT CH9 HNG	A	Y	
J	70	11	9	ARS	9383946	11001400	100KW AZM280 15DB	F	X	
							CIRAF 37 ; REYAOH	F	X	
							0800/0900	F	Y	
							GRP 8,12,19,20,22	F	Y	
J	70	11	9A	AUS	1461 62	20002200	15MC 17MC	F	X	
J	70	11	9A	AUS	146063	22002230	2200/2300	F	X	
							15MC 17MC 2200/2300	F	Y	
J	70	11	10	G	13734445	10001030	0900/0930	B	Y	
J	70	11	10A	D	271011	02000500	AZM285	F	X	
J	70	11	11	I	1327	13001400	CIRAF 28,29	E	X	
J	70	11	11	I	2718 2829	15001600	INT CH10A RYU/USA	D	Y	
J	70	11	11A	AUS	156063	09001000	0930/1130	F	X	
J	70	11	11A	IND	413940	02000330	INT CH12A ARS	A	Y	
J	70	11	12	D	25 6 7 8 9	23000600	AZM295/320	F	X	
J	70	11	12A	ARS	539	04000800	GRP 4,6,7	F	Y	
J	70	11	12A	ARS	539	14001700	GRP 4,6,7	F	Y	
J	70	11	12A	ARS	125054	02000400	AZM75/100	F	X	
							GRP 6,9,19,20,22	F	Y	
J	70	11	13	HOL	28 8	01000300	0100/0230	B	X	
J	70	11	13	HOL	331112	03000400	0230/0400	E	X	
							INT	A	Y	
J	70	11	14	ARS	739	18002000	GRP 4,5,6	F	Y	
J	70	11	14	MLA/G	22 1 / 9	23000100	INT CH13A SUI	C	Y	
							INT CH14A URS	D	Y	
							INT CH14A TCH	C	Y	
J	70	11	15	G	2827 37	10001700	INT COCH VTN	A	Y	
							INT CH14A URS	A	Y	
J	70	11	15	G	4828	17001900	1600/1900	B	Y	
							INT COCH VTN	A	Y	
J	70	11	15A	IND	6452 3357	04000600	INT CH16A POR	A	Y	
J	70	11	16	AUS	2145	09001800	INT CH16A URS	D	Y	
J	70	11	17	G	5928 3738	08000900	0700/0800	B	Y	
J	70	11	18	G	1195660	06001100	INT CH18A URS	C	Y	
J	70	11	18	YUG	829	13001400	1200/1300	F	X	
							CH6	C	Y	
J	70	11	18	YUG	1029	20302100	2000/2100	F	X	
J	70	11	18	YUG	1118	22302300	2200/2300	F	X	
							AZM250 CIRAF 37	F	X	
J	70	11	18	YUG	2038	17301900	1800/1900	F	X	
J	70	11	18	YUG	2237	21002230	2100/2200	F	X	
							AZM60 CIRAF 29	F	X	
J	70	11	19	ARS	22 8	23002400	0000/0200	F	Y	
							GRP8,9,12,19,20	F	Y	
J	70	11	19	G	22182829	14151600	INT CH19A CHN	A	Y	
J	70	11	19	G	10728583940	16002100	INT CH18A F	A	Y	
							1500/2100	B	Y	
J	70	11	19	G	14132354345	12451415	INT CH19A B	A	Y	
J	70	11	19	YUG	2813 14	02000400	CH18	C	Y	
J	70	11	20	G	2318 2829	09001400	0900/1500	B	Y	
J	70	11	20	G	8037 3846	20002300	INT CH20A HOL	A	Y	
J	70	11	20	IND	8949 50	23000100	INT CH21 PHL	A	Y	

1	2	3	4	5	6	7	8	9	10	11
J	70	11	20A	HOL	27 4	2200 2400	INT	A	Y	
J	70	11	21	AUS	38 41 49 54	1000 1530	CIRAF 49,54	F	X	
							INT COCH G	D	Y	
J	70	11	21	G	15 9 14 15 16	2200 0300	INT COCH PHL	A	Y	
							INT CH20A HOL, LBY	A	Y	
							INT CH21A D	A	Y	
J	70	11	21	IND	5 3 2 7 28	2000 2200	INT CH22 TCH	A	Y	
J	70	11	21A	D	24 6 7 8 9	2300 0600	AZM295/320	F	X	
J	70	11	22	G	15 7 10 11 12	0030 0330	INT CH21A D	A	Y	
J	70	11	22	G	16 21 0 11 12	2200 2300	INT COCH PHL	A	Y	
J	70	11	23	S	3 18 27 28 29 36 37 38	0900 1600	INT CH23A URS	G	Z	
J	70	11	24	AUS	39 49	1100 1200	1100/1400	F	Y	
							11MC 9MC	F	Y	
							INT CH24A J	A	Y	
J	70	11	24	G	7 32 7 37 38 46	1700 1900	INT CH23A URS	A	Y	
J	70	11	24	G	7 8 37 38 46	1900 2000	1930/2030	B	Y	
							INT CH23A URS	A	Y	
J	70	11	25	AUS	2 3 4 1	1500 2000	INT CH25A URS	A	Y	
							1400/2000	B	Y	
							CIRAF 41,49	F	X	
J	70	11	25	ETH	9 18 27 28	2000 2300	100KW AZM336/349 170B	F	X	
J	70	11	26	MLA/G	16 39 40 41	0000 0200	INT CH25A USA	A	Y	
							INT CH26A URS	D	Y	
J	70	11	26A	CHL	2 11 4 16	1500 1700	1700/2000	B	Y	
J	70	11	26A	D	6 4 6 47	1700 2100	AZM160/200	F	Y	
J	70	11	27	BEL	4 52	2300 0330	2300/0200	B	X	
J	70	11	27	PAK	56 28	1900 1930	1730/1800	B	Y	
							CIRAF 39,40	B	X	
J	70	11	27A	IND	4 7 4 14 2	1000 1200	1200/1330	B	Y	
J	70	11	27A	NZL	1 59	0500 0700	INT COCH USA	D	X	
J	70	11	27A	PAK	7 4 0 41	1330 1700	INT CH27 PHL	A	Y	
							AZM278	E	X	
J	70	11	27A	PAK	48 39 40	1730 1900	1800/1930	B	Y	
							50KW	E	X	
J	70	11	27A	PAK	48 27 28 39	1930 2100	1930/2130	B	Y	
J	70	15	3A	AFS	6 5 2 5 3	1200 1400	AZM312 180B CIRAF 2/9	F	Y	
J	70	15	3A	AFS	18 55 58 59	0400 0500	0430/0530	B	Y	
							AZM132/360	F	X	
							CIRAF 52,53,55,58,59	F	X	
J	70	15	4	I	37 38 39 41 48	1630 1900	150KW	E	X	
							CIRAF 38,39,47,48	E	X	
J	70	15	4	I	40 39 48	0600 0630	150KW	E	X	
							INT CH3A, CH4A URS	A	Y	
J	70	15	4	I	6 4 4 3 4 4 5	0630 1000	INT CH3A, CH4A URS	C	Y	
							INT CH4A AUS	A	Y	
J	70	15	4	I	7 7 1 1 2	1900 2000	INT CH3A B	C	Y	
J	70	15	4	I	8 7 12 14 15 16	0000 0500	INT	C	Y	
							2200/0300	B	Y	
J	70	15	4A	AUS	13 58	0230 1000	INT CH5 J	G	Z	
J	70	15	5	AFS	17 2 / 9	1730 1930	1700/1900	F	Y	
J	70	15	5A	NOR	19 44 45 51 55 59 60	1030 1200	1000/1130	B	Y	
J	70	15	5A	YUG	15 30 39	1730 1930	1730/1800	F	X	
J	70	15	6	CLN	15 29 39 40 41	0200 0500	0130/0500	B	Y	
J	70	15	6A	AUS	17 6 0 63	0630 1000	INT CH7 RYU/USA	A	Y	
J	70	15	6A	AUS	47 6	0300 0430	17MC	F	Y	
J	70	15	7A	AUS	27 45	2200 2330	17MC	F	X	
J	70	15	7A	D	7 46 47	1800 2200	AZM200	F	X	
J	70	15	7A	I	29 5 2 5 3 5 7	1030 1300	INT	A	Y	
J	70	15	7A	I	8 8 12 13 15	2300 0300	2200/0300	B	Y	
J	70	15	8A	ALB	13 13 14 15	0000 0200	DEL	F	X	
J	70	15	8A	D	18 55 58 59	0600 1000	11MC	C	Y	
J	70	15	9A	INS	29 37 38	2000 2200	1900/2100	B	Y	
J	70	15	10	E	9 49 50	2300 0100	GRP10 9MC/11MC 1200/1400	C	Y	
J	70	15	11A	CGO	18 8	0000 0200	0000/0500	B	Y	
J	70	15	12A	AUS	19 60 62 63	0830 0930	INT CH13 URS	G	Z	
							11MC	F	Y	

1	2	3	4	5	6	7	8	9	10	11
J	125	15	19A	HOL	7 3 8 3 9	1700 1800	SEP CH21 HOL	C	Y	
J	125	15	19A	YUG	21 37	1900 2100	2000/2100	F	X	
J	125	15	20	ATN	4 27	2100 2200	INT	D	Y	
J	125	15	20	NGN	4 27	1800 1900	INT	D	Y	
J	125	15	21	AUS	45 27 28	0600 0800	0600/0900	F	Y	
J	125	15	21	HOL	6 29	1700 1800	AZM90	C	Y	
J	125	15	21	HOL	6 29	1700 1800	INT	A	Y	
J	125	15	21	HOL	6 29	1700 1800	SEP CH19A HOL	C	Y	
J	125	15	21	HOL	12 45	1030 1200	INT	A	Y	
J	125	15	21	HOL	13 49	1230 1700	INT	D	Y	
J	125	15	21	HOL	18 63	0400 0600	INT	A	Y	
J	125	15	21	HOL	18 63	0400 0600	SEP CH22 HOL	C	Y	
J	125	15	21	HOL	37 1315	2330 0100	SEP CH22 HOL	C	Y	
J	125	15	22	HOL	19 63	0400 0530	INT	A	Y	
J	125	15	22	HOL	19 63	0400 0530	SEP CH21 HOL	C	Y	
J	125	15	22	HOL	26 9	2200 2400	SEP CH21 HOL	C	Y	
J	125	15	22A	AUS	40 41 49 54	2300 0700	CIRAF 49,54	F	X	
							21MC 17MC	F	Y	
							INT COCH LUX	A	Y	
J	125	15	23	FNL	4 27 28 37	1400 1700	GRP 4 0700/1000	C	Y	
J	125	15	24	MLA/G	14 34 43 44 45 49	1300 1700	INT COCH TGR/USA	C	Y	
J	125	15	25	I	42 39 40 41 48	1030 1300	INT CH24A KOR	C	Y	
							INT CH25A BRM	C	Y	
J	125	15	27	BEL	5 52	0700 1200	21MC	C	X	
J	125	15	27A	PAK	50 37 39	1830 2000	1800/1930	B	Y	
							50KW	E	X	
							CIRAF 37/39	BD	Y	
J	125	15	27A	S	21 6 7	0300 0400	11MC CH2	G	X	
J	125	15	28A	ARS	8 38	0600 0800	REYADH , 100KW , 11MC	F	X	
							GRP 9,12,19,20,22	F	Y	
J	125	15	28A	ARS	6 38	1800 2100	DEL	F	X	
J	125	15	28A	ARS	10 39	0300 0600	DEL	F	X	
J	125	15	28A	ARS	10 39 40	1400 1800	DEL	F	X	
J	125	15	28A	ARS	11 46	1200 1400	DEL	F	X	
J	125	15	28A	ARS	15 49	1000 1200	100KW AZM75/90 , REYADH	F	X	
							0900/1200,CIRAF 49,50,54	F	X	
							GRP 23	F	Y	
J	125	15	28A	G	15 8 12 13 14 15 16	2200 0100	INT CH28 ARG	D	Y	
							INT CH29 MEX	A	Y	
J	125	15	29	G	12 35 55 56 58 59	0800 0900	INT CH29A MEX	C	Y	
J	125	15	29A	AUS	28 54	2200 2300	CIRAF 49,54	F	X	
J	125	15	29A	AUS	28 41 49 54	2300 0300	CIRAF 49,54	F	X	
							21MC 17MC	C	X	
							INT COCH D	D	X	
J	125	15	29A	AUS	29 49 54	1030 1100	1000/1100	F	X	
J	125	15	30	ALB	11 7 8	0900 1000	1300/1400	F	Y	
J	125	15	30	ALB	11 7 8	2300 0300	AZM310/250 CIRAF 7,8,13	F	Y	
J	125	15	31A	HOL	31 8	2200 2300	2200/2330	B	Y	
J	125	15	31A	I	5 13 38 39 48	1000 1300	INT COCH IND	C	Y	
J	125	15	31A	I	7 31 1 12	1800 1630	150KW	C	X	
J	125	15	32	G	5 28 29 30	0300 0400	INT CH32A ROU	A	Y	
J	125	15	32A	I	47 59	0600 0700	AZM90 CIRAF 40,41	C	X	
J	125	15	33	PAK	5 12 8 37 38 39 40	1800 1830	1730/1800	B	Y	
J	125	15	34	G	16 1 1 1 12 13 14 15 18	2200 0100	INT CH33A BUL,POR	A	Y	
J	125	15	34	IND	44 38 39	0430 0600	INT CH33 URS	A	Y	
J	125	15	35	G	8 9 38 39 40	0330 0600	INT CH34A URS	D	Y	
J	125	17	1	G	7 24 7 48 52 53 57	1600 1715	INT CH1A G	A	Y	
J	125	17	1	G	7 44 7 48 52 53 57	1715 2015	INT CH1A G	A	Y	
J	125	17	1	G	8 6 47 48 52 53 57	2015 2100	INT CH1A G	A	Y	
J	125	17	1	G	9 9 28 36 39	1200 1400	INT CH1A G	A	Y	
J	125	17	1	G	13 6 33 44 45	1000 1100	INT CH1A G	A	Y	
J	125	17	1	G	14 04 34 44 45	1100 1200	INT CH1A G	A	Y	
J	125	17	1	G	14 34 04 14 95 054	1400 1600	INT CH1A G	A	Y	
J	125	17	1A	G	16 6 1 / 10 11 12	1030 1600	INT CH1 G	A	Y	
							INT CH2 POL,S	A	Y	
J	125	17	1A	G	17 0 10 11 12	1600 2100	INT CH1 G	A	Y	
							INT CH2 ONU	A	Y	
J	125	17	2	S	9 41 49 54 58	1400 1530	INT CH2A ISR	G	Z	
J	125	17	2A	I	67 4 6 7 8 9 10	1600 1700	1630/1730	C	Y	
							AZM310	C	X	

1	2	3	4	5	6	7	8	9	10	11
J	70	15	34	IND	44 38 39	04300600	INT CH35 G	A	Y	
J	70	15	35	G	89 38 39 40	03300600	INT CH34A URS	A	Y	
J	70	15	35	G	158 10 11 12	21002400	INT CH34A CHL	G	Z	
J	70	17	1	BEL	9 54	11001200	1200/1300	B	Y	
J	70	17	1	G	72 47 48 52 53 57	16001715	INT CH1A G	A	Y	
J	70	17	1	G	74 47 48 52 53 57	17152015	INT CH1A G	A	Y	
J	70	17	1	G	86 47 48 52 53 57	20152100	INT CH1A G	A	Y	
J	70	17	1	G	99 26 36 39	18001400	INT CH1A G	A	Y	
J	70	17	1	G	138 33 44 45	10001100	INT CH1A G	A	Y	
							SEP CH1A G	C	Y	
J	70	17	1	G	143 40 41 49 50 54	14001600	INT CH1A G	A	Y	
J	70	17	1	NZL	3 59	21000500	INT COCH USA	A	Y	
J	70	17	1A	G	166 1 10 11 12	10301600	INT CH1 G	A	Y	
							INT CH2 POL,S	A	Y	
J	70	17	1A	G	170 10 11 12	16002100	INT CH1 G	A	Y	
							INT CH2 ONU,S	A	Y	
J	70	17	2A	I	67 4 6 7 8 9 10	16001700	1630/1730	B	Y	
							AZM310	E	X	
J	70	17	2A	I	74 11 12	15301600	1600/1630	B	Y	
J	70	17	2A	I	78 11 12	19002000	INT CH3 CAN	A	Y	
J	70	17	2A	I	85 14 15 16	22000100	AZM270 CIRAF 10,11,12	C	Y	
J	70	17	3A	EGY	7 52 53	16001800	1300/2000	B	Y	
J	70	17	4	G	138 41 49 54	10301430	INT CH3A TCH	A	Y	
J	70	17	4A	AUS	20 56 61	02300400	INT COCH EGA	A	Y	
							0230/0430	F	XX	
J	70	17	4A	ETH	8 47 52	06000730	10KW AZM270 16DB	F	XX	
							CIRAF 46,47	F	XX	
J	70	17	4A	ETH	8 47 52	07300900	100KW AZM242 16DB	F	XX	
							CIRAF 52	F	XX	
J	70	17	4A	ETH	8 47 52	12001300	100KW AZM270 16DB	F	XX	
							CIRAF 46,47	F	XX	
J	70	17	4A	ETH	8 47 52	13001400	100KW AZM242 16DB	F	XX	
							CIRAF 52	F	XX	
J	70	17	4A	ETH	8 53 57	18002000	100KW AZM199 16DB	F	X	
J	70	17	5	G	124 51 55 56 58 59	06000900	INT CH4A ETH	A	Y	
J	70	17	5	G	168 12 13 14 15 16	18002300	INT CH4A ETH	A	Y	
							INT CH5A IRL	A	Y	
J	70	17	6	J	18 39 40	18002000	1700/2000	B	Y	
J	70	17	6	J	20 27 28 29	07000900	0800/1000	B	Y	
J	70	17	6A	HOL	2 57	18002000	INT	A	Y	
J	70	17	6A	I	35 46 47 48 52	09001000	AZM130/220	E	X	
							CIRAF 46,47,48	E	X	
J	70	17	6A	I	52 37 38 48	10001200	1000/1300	B	Y	
							CIRAF 37,38,39,48	C	Y	
							INT CH7 TUR	A	Y	
J	70	17	7	AUT	10 41	16001800	1300/1500 1330/1530	C	Y	
J	70	17	7A	ALB	12 8 13 15	01000400	0000/0400	F	X	
							AZM310/250 15DB	F	X	
J	70	17	8	CLN	19 18 28 29 39 40 41 49	11001600	1100/1730	B	Y	
J	70	17	9	ETH	13 54	14001500	100KW AZM90 17DB	F	X	
J	70	17	9	I	56 51 54 55 58 59 60	06301100	INT CH8A F	A	Y	
J	70	17	9	MLA/G	12 34 43 44 45	11001400	INT CH9A URS	A	Y	
J	70	17	9	MLA/G	18 40 41	15001800	1400/1700	B	Y	
							INT CH9A D	A	Y	
J	70	17	10	G	125 44 51 55 58 59	08001100	INT CH10A I	A	Y	
J	70	17	10	IND	109 49 50	11001400	INT CH11 HOL	A	Y	
J	70	17	10A	I	30 52 53 57	08001100	1030/1200	B	Y	
J	70	17	10A	I	30 52 53 57	12001300	NOREQ	B	X	
J	70	17	10A	I	32 48 52 53 57	14001600	1500/1630	B	Y	
J	70	17	10A	I	68 11 12	17001800	1630/1730	B	Y	
J	70	17	11	HOL	9 40	17001800	AZM110	F	X	
							INT	A	Y	
J	70	17	11	HOL	14 49 51	14001700	INT	A	Y	
J	70	17	11	HOL	17 51 55	11001400	CIRAF 54	F	X	
							INT	A	Y	
J	70	17	11	HOL	23 52 53 57	18002100	INT	A	Y	
J	70	17	13	PAK	37 49 50	05000530	CIRAF 43/45,50	E	X	
J	70	17	13	PAK	37 49 50	13301400	1230/1330	B	Y	
							CIRAF 50,54	E	X	
J	70	17	13	PAK	53 48 52	03500500	0400/0600	B	Y	
J	70	17	14	EGY	8 42 43 44 45	10001200	1000/1100	F	X	
J	70	17	14	EGY	9 41 44 49 51 54	12001600	1100/1800	F	Y	
							CIRAF 41,49,51,54	F	X	
J	70	17	15	AFS	13 18 27 28	17001800	AM380 12DB CIRAF 46/48	F	X	
							1400/1800	F	Y	
J	70	17	15	ALB	10 41 58 59	09001100	AZM100/85 CIRAF 58.59	F	X	

1	2	3	4	5	6	7	8	9	10	11
	70	17	15	EGY	1 1 2 1 3 1 4 1 5 1 6	2300 0200	2300/0300	F	X	
							15MC	F	Y	
	70	17	15A	IND	8 3 4 2 4 3 4 4	1200 1400	INT CH16A J	A	Y	
	70	17	15A	J	1 7 4 1	1700 1900	1530/1730	B	Y	
	70	17	15A	J	1 9 4 1	1900 2100	1730/1930	B	Y	
	70	17	17	AUS	1 6 6 0 6 3	2300 0500	INT COCH AEF	G	N	
							2300/0600	F	Y	
	70	17	17	AUS	3 0 4 1 4 9 5 4	0600 1000	CIRAF 49,54	F	X	
	70	17	17	AUS	3 0 4 5	2200 2300	2130/2300	F	Y	
	70	17	18	YUG	1 6 3 1 4 1	1700 1800	CIRAF 49	F	X	
	70	17	18	YUG	2 6 5 7	2000 2100	15MC CH5A	F	Y	
	70	17	18A	NZL	8 5 6	0200 0400	0200/0500	B	X	
							AZM 25 , CIRAF 56,62	B	Y	
	70	17	19	G	1 7 2 1 1 0	1700 2200	1500/2200	C	N	
							INT CH18A BEL	A	Y	
							INT CH19A URS	A	Y	
	70	17	19	HOL	3 0 7	2200 2400	2200/2330	B	X	
	70	21	1	AUS	3 2 4 1	0200 0800	CIRAF 41,49	F	X	
	70	21	1	G	1 0 8 3 6 3 9 4 0 4 7 4 8	1600 1800	INT CH1A I	A	Y	
	70	21	1	MLA/G	1 7 4 0 4 1	1200 1600	INT CH1A SUI	A	Y	
	70	21	5	IND	1 0 4 4 9 5 0 5 4	1100 1500	INT CH6 IND	A	Y	
	70	21	6	HOL	1 0 4 1	1500 1700	17MC	B	Y	
	70	21	6	HOL	1 5 5 4	1230 1500	17MC	C	Y	
	70	21	6	IND	1 0 7 4 9	1100 1230	INT CH5 IND	A	Y	
	70	21	7	G	7 7 5 3 5 7	1600 1730	INT CH6A,CH7A I	A	Y	
	70	21	7	G	9 6 3 9 4 0	1000 1030	INT CH6A F	A	Y	
							INT CH7A I	A	Y	
	70	21	7	G	1 0 4 2 9 3 9 4 0	1430 1600	INT CH6A F	A	Y	
	70	21	7	G	1 3 9 4 1 4 9 5 4	1030 1430	INT CH6A F	A	Y	
							INT CH7A I,MRE	A	Y	
	70	21	7A	I	4 3 4 8	1000 1300	INT	A	Y	
	70	21	7A	I	7 2 4 6 7 8 9 10	1600 1730	NOREQ	B	X	
	70	21	9	J	1 1 5 0	1000 1200	1030/1230	B	Y	
	70	21	9	J	1 2 5 4	1200 1400	1230/1430	B	Y	
	70	21	11	ARS	1 3 5 4	1000 1100	DEL	F	X	
	70	21	11	PAK	5 2 4 8 5 2	0400 0600	21MC/FREQ	D	Y	
	70	21	11A	I	3 3 5 2 5 3 5 7	1500 1600	1500/1630	B	Y	
							INT CH12 CHN	A	Y	
	70	21	12	AFS	1 4 1 8 2 7 2 8	1600 1700	1200/1700	F	Y	
							AZM250/280/310/347	F	Y	
							CIRAF 9/14	F	Y	
	70	21	13A	G	1 7 3 1 1 0	1500 2200	INT CH13 D	A	Y	
							INT CH14 CHN	A	Y	
	70	21	14A	G	1 7 1 1 6	1500 1700	INT CH14 CHN	A	Y	
							INT CH15 D	G	Z	
	70	21	16	G	1 2 9 4 1 4 9 5 4	0900 0930	INT CH16A I	A	Y	
	70	21	16	G	1 3 5 4 1 4 9 5 0 5 4	0930 1700	INT CH16A AFS,I	A	Y	
	70	21	16A	AFS	1 1 4 6 4 7 4 8	1300 1800	1200/1800	F	Y	
							AZM347 18DB	F	Y	
							CIRAF 18,27,28	F	Y	
	70	21	16A	I	5 3 3 7 3 8 3 9 4 8	1000 1300	INT CH16 G	A	Y	
	70	21	17	AUS	3 3 4 4 4 5 5 0	2100 2200	15MC 11MC	F	X	
	70	21	17	HOL	2 2 5 2 5 3	1600 2100	INT	A	Y	
	70	21	18	ARS	1 4 5 0 5 4	0200 0400	DEL	F	X	
	70	21	18	ARS	1 8 4 1 4 3	1200 1400	DEL	F	X	
	70	21	18	AUS	3 6 4 1 4 9 5 4	2300 2400	17MC 15MC	F	X	
							CIRAF 49,54	F	X	
	70	21	18A	ARS	2 0 2 8 3 7	2000 2200	11MC	D	Y	
							GRP8,9,12,19,22	F	Y	
	70	21	18A	ARS	2 3 8 1 3 1 4 1 5	2200 0100	2200/2400 , CIRAF 13/15	F	X	
							15MC	D	Y	
							GRP 15,23	F	Y	
	70	21	19	G	1 0 2 2 8 2 9 3 0 3 9 4 0	1600 1730	1430/1515	B	Y	
							INT CH18A E	A	Y	
	70	21	20	G	9 8 3 9 4 7 4 8	1030 1800	INT CH19A BUL	A	Y	
	70	21	20	G	1 6 7 1 0 1 1 1 2	1800 2100	INT CH19A LBY	A	Y	
	70	21	23	G	8 5 3 6 3 7 4 6	1000 2100	INT CH23A TMA	A	Y	
	70	21	23	G	8 6 4 7 4 8 5 2 9 3 5 7	1530 1800	INT CH22A ARG	A	Y	

1	2	3	4	5	6	7	8	9	10	11
J	70	21	26	CGO	1354	0800 1000	0900/1100	B	Y	
J	70	21	26	ETH	12 4 0 4 1 4 9	1500 1600	100KW AZM62 16DB	F	X	
J	70	21	28	I	38 5 2 5 3 5 7	1700 1900	1630/1900	E	X	
							CIRAF 47,52,53,57	E	X	
J	70	21	29	IND	45 38 39	0430 0530	INT CH28 I	A	Y	
J	70	21	29	NOR	10 3 6 4 6 6 6	1600 1800	1600/1730	B	X	
J	70	21	29	NOR	2 1 4 1 4 9 3 0 5 4 5 8	1300 1400	1300/1430	B	Y	
J	70	26	34	AFS	16 9 /1 4 2 7 2 8	1600 2400	DEL	F	X	
J	70	26	42	ARS	1650	0200 0300	DEL	F	X	
J	70	26	42	ARS	1750 3 4	0900 1200	DEL	F	X	
J	70	26	42	ARS	1943	1200 1300	CIRAF 43,44	F	X	
							11MC , GRP 8,9,12,20,22	F	Y	
J	70	26	42	ARS	1941	1300 1500	CIRAF 40 41	F	X	
							11MC , GRP 8,9,12,20,22	F	Y	
J	70	26	42	ARS	2128	2100 2200	DEL	F	X	
J	70	26	42	ARS	24 8 13 14 15	2200 0100	DEL	F	X	
J	70	17	15	ALB	NA41	1300 1400	RST 60KW AZM85 18DB	F	Y	TIRANE
J	70	11		BEL	NA52	0500 0600	RST 100KW AZM167 12DB	B	X	BRUXELLES
J	70	9		BOL	NA12	2230 0300	POTOSI 1KW AZM165 6DB	B	Y	
J	70	9		BOL	NA12	1200 1700	POTOSI 1KW AZM345 6DB	B	Y	
J	70	6		CGO	NA52	1600 2000	3KW ND	B	Y	STANLEYVILLE
J	70	11		CGO	NA27	1900 2100	50KW AZM350 12DB	B	Y	LEOPOLDVILLE
J	70	11		CGO	NA 8	2300 2400	50KW AZM300 12DB	B	Y	LEOPOLDVILLE
J	70	11		CHL	NA14 16	0000 0400	RST 5KW AZM360 8DB	C	Y	SANTIAGO
J	70	17		CLN	NA1 6 2 8 2 9 3 9 4 0 4 1 4 9	1130 1730	RST 3,5KW AZM350 8DB	B	Y	EKALA
J	70	15		D	NA10 11	0200 0600	RST 100KW AZM285 20DB	B	Y	JULICH
J	70	6		FLK	NA16	2100 0200	RST 0,5KW ND	E	X	PT STANLEY
J	70	7		G	NA1 8 19 2 9 2 8 3 0	2100 2200	RST 100KW AZM58 20DB	B	Y	DAVENTRY,ETC
J	70	7		G	NA5 6 6 0	0600 0800	RST 100KW AZM210 20DB	C	Y	DAVENTRY,ETC
J	70	7		G	NA5 6 6 0	0600 0800	RST 100KW AZM210 20DB	C	Y	DAVENTRY,ETC
J	70	11		G	NA 1 10	2200 0100	RST 100KW AZM294 20DB	B	Y	DAVENTRY,ETC
J	70	17		G	NA4 8 5 3	1815 1830	RST 100KW AZM126 20DB	B	Y	DAVENTRY,ETC
J	70	7		I	NA37	2100 2200	RST 60KW AZM270 12DB	C	Y	ROMA
J	70	9		I	NA37	2100 2200	RST 100KW AZM270 15DB	C	Y	ROMA
J	70	9		I	NA2 7 2 8 2 9 3 9	1730 2200	RST 100KW ND 6DB	C	Y	ROMA
J	70	11		I	NA2 7 2 8 2 9 3 9	1730 2200	RST 150KW ND 6DB	C	Y	ROMA
J	70	9		IND	NA37 38 39	1845 2000	RST 100KW AZM282 12DB	B	Y	DELHI
J	70	9		IND	NA38 39	1745 2000	RST 100KW AZM282 16DB	B	Y	DELHI
J	70	9		IND	NA41	1300 1430	RST 20KW ND	B	X	DELHI
J	70	11		IND	NA46	1815 1930	RST 100KW AZM102 16DB	B	Y	DELHI
J	70	11		IND	NA2 7 2 8 3 7	1945 2100	RST 100KW AZM312 16DB	B	Y	DELHI
J	70	11		IND	NA37 38 39	1845 2000	RST 100KW AZM282 16DB	B	Y	DELHI
J	70	11		IND	NA38 39	1745 2000	RST 100KW AZM282 16DB	B	Y	DELHI
J	70	11		IND	NA41	1300 1430	RST 100KW ND	B	Y	DELHI
J	70	17		IND	NA4 2 4 3 4 4	1215 1330	RST 100KW AZM85 16DB	B	Y	DELHI
J	70	9		PAK	NA41	1000 1200	10KW AZM170 6DB	B	Y	KARACHI
J	70	9		PAK	NA4 0 4 1	0700 0900	10KW AZM227 6DB	B	Y	LAHORE
J	70	11		S	NA38 47 52 57	1700 1800	RST 100KW AZM183 20DB	B	Y	HOERBY
J	70	6		CAN	NEW 2	0000 2400	1KW AZM298	F	X	VANCOUVER
J	70	9		CGO	NEW52	0430 0700	50KW ND	F	X	LEOPOLDVILLE
J	70	9		CGO	NEW52	1430 2230	50KW ND	F	X	LEOPOLDVILLE
J	70	11		CGO	NEW52	0700 1300	50KW ND	F	X	LEOPOLDVILLE
J	70	7		CLN	NEW41	0100 0400	7,5KW AZM350 8DB	F	X	EKALA
J	70	7		CLN	NEW41	1130 1730	7,5KW AZM350 8DB	F	Y	EKALA
J	70	9		CLN	NEW41	0430 1130	7,5KW AZM350 8DB	F	Y	EKALA
J	70	6		CTO	NEW46	0600 2300	2,5KW ND	F	X	ACCRA
J	70	6		CTO	NEW46	0600 2300	5KW ND	F	X	ACCRA
J	70	8		CTO	NEW46	0600 2300	5KW ND	F	X	ACCRA
J	70	8		CTO	NEW46	0600 2300	5KW ND	F	Y	ACCRA
J	70	8		CTO	NEW46	0600 2300	5KW ND	F	Y	ACCRA
J	70	9		CTO	NEW46	0600 2300	5KW ND	F	X	ACCRA
J	70	9		CTO	NEW46	0600 2300	5KW ND	F	X	ACCRA

1	2	3	4	5	6	7	8	9	10	11
J	70	7	15	CVA	NEW 2 7 3 7	1300 1430	100KW AZM340 15DB	F	Y	S MARIA DI G
J	70	9	4A	CVA	NEW 4 0 4 9	0000 0200	100KW AZM85 15DB	F	Y	S MARIA DI G
J	70	9	4A	CVA	NEW 2 7 2 8 2 9 3 7	1600 1700	100KW ND	F	X	S MARIA DI G
J	70	9	4A	CVA	NEW 4 9 5 4	2200 2300	100KW AZM85 15DB	F	Y	S MARIA DI G
J	70	9	9	CVA	NEW 6 7 8 9	2300 0200	100KW AZM325 15DB	F	Y	S MARIA DI G
J	70	11	3	CVA	NEW 4 6 4 7	0500 0700	100KW AZM193 15DB	F	Y	S MARIA DI G
J	70	11	3	CVA	NEW 2 7 2 8 2 9 3 7	0830 1000	100KW ND	F	X	S MARIA DI G
J	70	11	3	CVA	NEW 2 7 2 8 2 9 3 7	2000 2200	100KW ND	F	Y	S MARIA DI G
J	70	11	6	CVA	NEW 5 5 5 8	1900 2100	100KW AZM70 18DB	F	Y	S MARIA DI G
J	70	11	6	CVA	NEW 4 4 4 5	2100 2300	100KW AZM58 18DB	F	Y	S MARIA DI G
J	70	15	25	CVA	NEW 5 1 5 4	0400 0600	100KW AZM75 18DB	F	X	S MARIA DI G
J	70	15	25	CVA	NEW 2 7 2 8 2 9 3 7	1030 1300	100KW ND	F	Y	S MARIA DI G
J	70	15	25	CVA	NEW 2 7 2 8 2 9 3 7	1700 1800	100KW ND	F	Y	S MARIA DI G
J	70	15	25	CVA	NEW 4 7 5 7	1900 2100	100KW AZM175 18DB	F	Y	S MARIA DI G
J	70	15	25	CVA	NEW 5 0 5 1	2100 2200	100KW AZM75 18DB	F	Y	S MARIA DI G
J	70	17	12	CVA	NEW 4 8 5 3	1400 1600	50KW AZM140 18DB	F	Y	S MARIA DI G
J	70	17	12	CVA	NEW 5 5 6 0	1900 2100	50KW AZM90 18DB	F	Y	S MARIA DI G
J	70	17	13A	CVA	NEW 4 8 5 7	0600 0730	50KW AZM175 18DB	F	X	S MARIA DI G
J	70	17	13A	CVA	NEW 1 2 13 14 15 16	2200 2400	50KW AZM270 18DB	F	Y	S MARIA DI G
J	70	21	20A	CVA	NEW 7 11 14	1600 1800	50KW AZM250/320 15DB	F	X	S MARIA DI G
J	70	21	20A	CVA	NEW 13 14 15 16	2300 0100	50KW AZM240 18DB	F	X	S MARIA DI G
J	70	21	27	CVA	NEW 4 4 4 5	1030 1200	50KW AZM58 18DB	F	Y	S MARIA DI G
J	70	6		E	NEW 18 27 28 29	1700 2400	100KW AZM45 6DB	F	Y	ARGANDA/MALAGA
J	70	6		E	NEW 6 7 8 9 10 11	0400 0700	100KW AZM300 18DB	F	Y	ARGANDA
J	70	6		E	NEW 6 7 8 9 10 11	0000 0745	100KW AZM300 18DB	F	Y	ARGANDA
J	70	6		E	NEW 2 7 2 8 3 6 3 7	1600 2200	100KW ND	F	Y	ARGANDA
J	70	9		E	NEW 18 27 28 29	1700 2400	100KW AZM45 6DB	F	Y	ARGANDA
J	70	9		E	NEW 2 7 2 8 3 6 3 7	1600 2200	50KW ND	F	Y	ARGANDA
J	70	9		E	NEW 12 13 14 15 16	0030 0400	100KW AZM240 18DB	F	X	ARGANDA
J	70	11		EGY	NEW 39	1600 1900	50KW AZM360 9DB	F	Y	ABU ZAABAL
J	70	11		EGY	NEW 40	1400 1600	50KW AZM68 9DB	F	Y	ABU ZAABAL
J	70	17		EGY	NEW 46	1500 2200	100KW AZM245 15DB	F	Y	ABU ZAABAL
J	70	17		EGY	NEW 45	1000 1130	100KW AZM50 15DB	F	X	ABU ZAABAL
J	70	17		EGY	NEW 50	1130 1300	100KW AZM82 15DB	F	Y	ABU ZAABAL
J	70	15		ETH	NEW 38	1800 1900	50KW AZM349			ADDIS ABEBA
J	70	15		ETH	NEW 39	1700 1800	50KW AZM19			ADDIS ABEBA
J	70	17		ETH	NEW 37	1900 2000	50KW AZM312			ADDIS ABEBA
J	70	15		FNL	NEW 6 7 8	1300 1500	100KW AZM305 20DB	F	Y	
J	70	15		FNL	NEW 12 13 14 15	1000 1200	100KW AZM234 20DB	F	X	
J	70	6		I	NEW 16 19 27 28 29 30 *	2200 0600	25KW ND, * 37/40,46/48	F	Y	CALTANISSETTA
J	70	9		I	NEW 16 19 27 28 29 30 *	2200 0600	25KW ND, * 37/40,46/48	F	Y	CALTANISSETTA
J	70	9		IOB	NEW 11	1300 2000	5KW ND	F	X	GRENADA
J	70	9		IOB	NEW 11	1000 0300	5/50KW AZM294 10DB	F	Y	GRENADA
J	70	9		IOB	NEW 11	1000 0300	0,25/1KW AZM294 8DB	F	Y	GRENADA
J	70	6		J	NEW 4 4 4 5 6 4	1000 1500	50KW AZM11/254 5DB	F	Y	
J	70	6		J	NEW 4 4 4 5 6 4	2000 2300	50KW AZM11/254 5DB	F	Y	
J	70	9	26A	J	NEW 5 2 5 3 5 7	1800 2000	100KW AZM265 6DB	F	Y	TOKYO
J	70	9	20	J	NEW 4 4 6 4	2000 2200	50KW AZM170/270 10DB	F	X	
J	70	9	26	J	NEW 3 4 5 5	2100 0600	50KW 4ZM7 6DB	F	X	TOKYO
J	70	17	11A	J	NEW 6 10	2100 2300	100KW AZM54 17DB	F	X	
J	70	17	3A	J	NEW 5 9 6 0	2200 2400	100JW AZM170 11DB	F	X	
J	70	21	22	J	NEW 10 11	0200 0500	100KW AZM52 10DB	F	X	TOKYO
J	70	6		KEN	NEW 48	0300 1600	10KW ND	F	Y	NAIROBI
J	70	7		KEN	NEW 48	0300 1400	7MC, 5KW ND	F	Y	MOMBASA
J	70	7		KEN	NEW 48	0300 1400	7MC, 5KW ND	F	Y	KISUMU
J	70	7		KEN	NEW 48	0300 1400	7MC, 6KW ND	F	Y	NAIROBI
J	70	7		KEN	NEW 48	0300 1400	7MC, 6KW ND	F	Y	NAIROBI
J	70	7		KEN	NEW 48	0300 1400	7MC, 10KW ND	F	Y	NAIROBI
J	70	6		KOR	NEW 4 3 4 4 4 5	0830 1530	SUWON 10KW AZM270 10DB	F	X	
J	70	9		KOR	NEW 4 3 4 4	2300 0100	SUWON 50KW AZM270 10DB	F	X	
J	70	11		KOR	NEW 4 3 4 4	1400 1600	SUWON 50KW AZM270 10DB	F	Y	
J	70	11		KOR	NEW 4 5	1200 1400	SUWON 50KW AZM100 10DB	F	X	
J	70	11		KOR	NEW 6 10	1300 1500	SUWON 100KW AZM30 10DB	F	Y	
J	70	11		KOR	NEW 4 5	2100 2300	SUWON 50KW AZM100 10DB	F	X	
J	70	15		KOR	NEW 4 3 4 4	1400 1600	SUWON 50KW AZM270 14DB	F	Y	
J	70	15		KOR	NEW 4 5	1200 1400	SUWON 50KW AZM100 14DB	F	Y	
J	70	15		KOR	NEW 3 9 4 0	1800 2000	SUWON 100KW AZM260 14DB	F	Y	
J	70	15		KOR	NEW 6 1	1600 1800	SUWON 100KW AZM100 14DB	F	X	
J	70	15		KOR	NEW 6 10	0500 0700	SUWON 100KW AZM50 14DB	F	X	
J	70	15		KOR	NEW 2 7 2 8	2100 2300	SUWON 100KW AZM315 14DB	F	Y	
J	70	15		KOR	NEW 14 15	0930 1130	SUWON 100KW AZM130 14DB	F	X	
J	70	17		KOR	NEW 49 50 54	2300 0100	SUWON 100KW AZM200 14DB	F	X	
J	70	17		KOR	NEW 4 1	1600 1800	SUWON 100KW AZM240 14DB	F	Y	
J	70	17		KOR	NEW 3 9 4 0	0400 0500	SUWON 100KW AZM260 14DB	F	Y	
J	70	17		KOR	NEW 51 55 59	2000 2100	SUWON 100KW AZM180 14DB	F	X	
J	70	17		KOR	NEW 6 1	0700 0900	SUWON 100KW AZM100 14DB	F	X	
J	70	17		KOR	NEW 6 10	0500 0700	SUWON 100KW AZM50 14DB	F	X	
J	70	17		KOR	NEW 14 15	0100 0300	SUWON 100KW AZM130 14DB	F	Y	
J	70	21		KOR	NEW 49 50 54	1500 1700	SUWON 100KW AZM200 14DB	F	X	
J	70	21		KOR	NEW 4 1	0100 0200	SUWON 100KW AZM240 14DB	F	X	
J	70	21		KOR	NEW 51 55 59	1100 1300	SUWON 100KW AZM180 14DB	F	Y	
J	70	21		KOR	NEW 6 1	0700 0900	SUWON 100KW AZM100 14DB	F	X	
J	70	21		KOR	NEW 2 7 2 8	0600 0800	SUWON 100KW AZM315 14DB	F	X	
J	70	9		MCO	NEW 37	0500 0800	100KW AZM225 6DB	F	Y	FONTBONNE
J	70	9		MCO	NEW 18	1700 2300	100KW AZM13 6DB	F	Y	FONTBONNE
J	70	11		MCO	NEW 38 39	0500 0800	100KW AZM114 6DB	F	Y	FONTBONNE
J	70	11		MCO	NEW 37	0800 1700	100KW AZM225 6DB	F	Y	FONTBONNE
J	70	11		MCO	NEW 46	1700 2300	100KW AZM212 6DB	F	Y	FONTBONNE
J	70	15		MCO	NEW 46	0800 1700	100KW AZM212 8DB	F	Y	FONTBONNE
J	70	7		MLA	NEW 54	1300 1500	50KW	F	X	KUALA LUMPUR
J	70	9		MLA	NEW 54	1200 1300	50KW	F	X	KUALA LUMPUR
J	70	11		MLA	NEW 49	1300 1400	50KW	F	Y	KUALA LUMPUR
J	70	15		MLA	NEW 49	1100 1200	50KW	F	X	KUALA LUMPUR
J	70	15		MLA	NEW 49	1200 1300	50KW	F	X	KUALA LUMPUR
J	70	15		MLA	NEW 38 39	1630 1830	50KW AZM300	F	Y	KUALA LUMPUR
J	70	17		MLA	NEW 39	0730 0830	50KW AZM130	F	X	KUALA LUMPUR
J	70	17		MLA	NEW 38	0830 0900	50KW AZM155	F	X	KUALA LUMPUR
J	70	17		MLA	NEW 30	1000 1100	50KW AZM60	F	Y	KUALA LUMPUR

1	2	3	4	5	6	7	8	9	10	11
J	70	17		MLA	NEW44	1100 1200	50KW AZM35	F	Y	KUALA LUMPUR
J	70	17		MLA	NEW41	1400 1630	50KW AZM300	F	Y	KUALA LUMPUR
J	70	21		MLA	NEW45	0900 1000	50KW AZM35	F	X	KUALA LUMPUR
J	70	6		PAK	NEW4041	0000 0400	100KW AZM22 6DB	F	Y	KARACHI
J	70	7		PAK	NEW40	1600 1700	100KW AZM300 6DB	F	Y	KARACHI
J	70	7		PAK	NEW4041	1600 1900	100KW AZM22 6DB	F	Y	KARACHI
J	70	7		PAK	NEW41	0000 0200	100KW AZM105 6DB	F	Y	LAHORE
J	70	7		PAK	NEW41	0200 1000	100KW ND	F	Y	LAHORE
J	70	7		PAK	NEW41	1200 1900	100KW ND	F	Y	LAHORE
J	70	9		PAK	NEW3040	1400 1600	100KW AZM22 6DB	F	Y	KARACHI
J	70	9		PAK	NEW3040	0200 0400	100KW AZM22 6DB	F	Y	KARACHI
J	70	9		PAK	NEW40	0400 0500	100KW AZM300 6DB	F	Y	KARACHI
J	70	9		PAK	NEW4041	0400 1600	100KW AZM22 6DB	F	Y	KARACHI
J	7011			PAK	NEW3839	1700 2200	100KW AZM300 10DB	F	Y	KARACHI
J	7011			PAK	NEW37	2000 2100	100KW AZM300 10DB	F	Y	KARACHI
J	7011			PAK	NEW39	1800 2000	100KW AZM317 10DB	F	Y	KARACHI
J	7011			PAK	NEW27	2000 2100	100KW AZM317 10DB	F	Y	KARACHI
J	7011			PAK	NEW49	0000 0500	100KW AZM96 10DB	F	Y	KARACHI
J	7011			PAK	NEW41	1000 1200	100KW AZM105 6DB	F	Y	LAHORE
J	7011			PAK	NEW4041	1400 1900	100KW AZM278 10DB	F	Y	DACCA
J	7015			PAK	NEW5558596O	0800 0900	100KW AZM120 10DB	F	Y	KARACHI
J	7015			PAK	NEW3839	1700 2200	100KW AZM300 10DB	F	Y	KARACHI
J	7015			PAK	NEW3839	0500 0700	100KW AZM300 10DB	F	Y	KARACHI
J	7015			PAK	NEW37	2000 2100	100KW AZM300 10DB	F	Y	KARACHI
J	7015			PAK	NEW39	1800 2000	100KW AZM317 10DB	F	Y	KARACHI
J	7015			PAK	NEW27	2000 2100	100KW AZM317 10DB	F	Y	KARACHI
J	7015			PAK	NEW49	1500 1900	100KW AZM96 10DB	F	Y	KARACHI
J	7015			PAK	NEW4041	0000 0500	100KW AZM278 10DB	F	Y	DACCA
J	7015			PAK	NEW4041	1200 1400	100KW AZM278 10DB	F	Y	DACCA
J	7017			PAK	NEW5558596O	0800 0900	100KW AZM120 10DB	F	Y	KARACHI
J	7017			PAK	NEW434445	1100 1200	100KW AZM80 10DB	F	Y	KARACHI
J	7017			PAK	NEW4951 54	1200 1300	100KW AZM120 10DB	F	Y	KARACHI
J	7017			PAK	NEW49	1300 1400	100KW AZM96 10DB	F	Y	KARACHI
J	7017			PAK	NEW39	0500 0700	100KW AZM317 10DB	F	Y	KARACHI
J	7017			PAK	NEW49	0500 1000	100KW AZM96 10DB	F	Y	KARACHI
J	7017			PAK	NEW49	1200 1500	100KW AZM96 10DB	F	Y	KARACHI
J	7017			PAK	NEW4041	0500 1000	100KW AZM278 10DB	F	Y	DACCA
J	7021			PAK	NEW434445	1100 1200	100KW AZM80 10DB	F	Y	KARACHI
J	7021			PAK	NEW4951 54	1200 1300	100KW AZM120 10DB	F	Y	KARACHI
J	7021			PAK	NEW49	1300 1400	100KW AZM98 10DB	F	Y	KARACHI
J	7021			PAK	NEW49	1000 1200	100KW AZM96 10DB	F	Y	KARACHI
J	7021			PAK	NEW4041	1000 1200	100KW AZM278 10DB	F	Y	DACCA
J	7017			PRG	NEW 7 8	0000 0400		F	Y	ASUNCION
J	7017			PRG	NEW2728	1800 2200		F	Y	ASUNCION
J	70	6		SDN	NEW38474 8	0300 0200	20KW ND 0/600KM	F	X	OMDURMAN
J	70	9		SDN	NEW3839474 8	0300 2000	20KW ND 400/2000KM	F	X	OMDURMAN
J	7011			SDN	NEW3839474 8	0800 1500	100KW ND 600/2400KM	F	Y	OMDURMAN
J	7015			SDN	NEW2728	0600 0800	100KW AZM335 15DB	F	X	OMDURMAN
J	7015			SDN	NEW2728	1500 1800	100KW AZM335 15DB	F	Y	OMDURMAN
J	7015			SDN	NEW2728	1800 2000	100KW AZM335 15DB	F	Y	OMDURMAN
J	70	6		SIK	NEW41	0045 0400	GANGTOK, 7,5KW ND	F	X	
J	70	7		SIK	NEW41	0400 1200	GANGTOK, 7,5KW ND	F	Y	
J	70	6		TGK	NEW53	0315 0500	10KW ND	F	X	DAR ES SALAAM
J	70	8		TGK	NEW53	1430 1930	10KW ND	F	Y	DAR ES SALAAM
J	70	6		TGK	NEW53	0315 0500	10KW ND	F	X	DAR ES SALAAM
J	70	6		TGK	NEW53	1430 1930	10KW ND	F	Y	DAR ES SALAAM
J	70	6		TGK	NEW53	0315 0500	10KW ND	F	X	MWANZA
J	70	6		TGK	NEW53	1430 1930	10KW ND	F	Y	MWANZA
J	70	6		TGK	NEW53	0315 0500	10KW ND	F	X	MBEYA
J	70	6		TGK	NEW53	1430 1930	10KW ND	F	Y	MBEYA
J	70	7		TGK	NEW53	0800 1115	10KW ND	F	Y	DAR ES SALAAM
J	70	9		TGK	NEW53	0800 1115	5KW ND	F	Y	DAR ES SALAAM
J	70	6		UGA	NEW48	0300 2100	10KW ND	F	Y	KAMPALA
J	70	6		UGA	NEW48	0300 2100	10KW ND	F	Y	KAMPALA
J	70	7		UGA	NEW48	0300 2100	10KW ND	F	Y	KAMPALA
J	70	9		UGA	NEW48	0600 1500	10KW ND	F	Y	KAMPALA
J	70	11		UGA	NEW48	0600 1500	10KW ND	F	Y	KAMPALA
J	70	9	27A	YUG	NEW40	1600 1700	100KW AZM75	F	Y	BEOGRAD
J	70	9	27A	YUG	NEW38	1700 1800	100KW AZM120	F	Y	BEOGRAD
J	70	9	27A	YUG	NEW29	1830 2000	100KW AZM45	F	Y	BEOGRAD
J	70	9	27A	YUG	NEW30	2000 2100	100KW AZM60	F	Y	BEOGRAD

E 70

Phase / Phase / Fase	Bande/Band/Banda	Voie/Channel/Canal	Pays / Country / País	Index / Index / Indice nº	Zones de réception / Reception Zones / Zonas de recepción	Heures d'émission / Hours of transmis. / Horario de operac.	Commentaires de l'Administration / Comments from the Administration / Comentarios de la Administración	Analyse par l'IFRB / Analysis by IFRB / Análisis de la IFRB		Observations / Remarks / Observaciones
E 70	6	1	AUS	159		0830 1400	INT COCH URS	A	Y	
							INT CH1A BRN	A	Y	
E 70	6	1	CAN	2 2		1500 0100	INT COCH 8	G	N	
E 70	6	1	SUR	112		1100 0400	INT	A	Y	
E 70	6	1A	BRN	154		0300 1400	0300/1600 2200/0100	F	X	
E 70	6	2	CLN	441		0100 0230	SEP CH1 CLN	C	X	
E 70	6	2	PAK	84041		1200 1600	INT COCH NGN,CGO,D	D	Y	
E 70	6	2A	NIG	246		0900 1600	FREQ/6MC	C	N	
							AZM55 6DB	F	Y	
E 70	6	3	AUS	259		0830 1400	INT CH3A INS	A	Y	
E 70	6	3	I	126		0300 0600	AZM40 CIRAF 28,29	C	Y	
E 70	6	3	I	28272 8		1730 2200	ND CIRAF 27,28,29	D	Y	
E 70	6	3	MEX	110		1400 0600	INT	C	Y	
E 70	6	3A	INS	1054		2200 1600	MENADO	F	X	
E 70	6	5	MEX	311		0000 0530	INT	C	Y	
E 70	6	5A	MLA	154		2230 1630	SINGAPORE	F	X	
E 70	6	6	CAN	3 2		1500 0100	1500/0200	F	X	
							INT COCH ROU	G	N	
E 70	6	7	MEX	210		1300 2400	INT COCH DOM	D	Y	
E 70	6	8	IND	3241		0045 0400	INT CH8A IRQ	A	Y	
E 70	6	8	KEN	148		0700 1100	0300/1600	F	Y	
E 70	6	8	KEN	148		0700 1100	6KW	F	X	
E 70	6	8	KEN	148		1300 2000	0300/1600	F	Y	
E 70	6	8	KEN	148		1300 2000	6KW	F	X	
E 70	6	8	KEN	148		1300 2000	DEL 1600/2000	F	X	
E 70	6	9	G	2528		1800 1900	INT CH8A F	A	Y	
E 70	6	9	IND	2141		0030 0400	INT CH9A IRN	A	Y	
E 70	6	9	MEX	510		1400 2400	INT CH8A CLM	D	Y	
							INT CH9A CGO	A	Y	
E 70	6	9	YUG	328		1000 1600	DEL	F	X	
E 70	6	9A	CGO	252		1600 2000	50KW ND	F	X	
							LEOPOLDVILLE	F	X	
E 70	6	9A	NZL	259		0700 1400	FREQ/6MC	C	X	
E 70	6	10	I	728		0530 2330	ND CIRAF 27,28,37,38,39	C	Y	
E 70	6	10	IND	2341		0030 0400	INT	A	Y	
E 70	6	11	G	382728		1600 2315	INT CH11A URS	A	Y	
E 70	6	11	IND	641		0030 1600	INT	G	N	
E 70	6	11A	IND	3641		0045 1600	INT	A	Y	
E 70	6	12	I	12282 9		1300 1400	9MC	C	Y	
E 70	6	13	CTO	546		0600 2300	ACCRA	F	X	
E 70	6	13A	CLN	541		0100 0230	SEP CH12A CLN	C	X	
E 70	6	13A	EGY	13839		0300 0900	0300/1500	F	X	
E 70	6	13A	EGY	13839		1500 2330	1500/2400	F	X	
E 70	6	14	ATN	111		1200 0500	INT	D	Y	
E 70	6	14	NOR	21827		0730 0930	0700/0900	C	Y	
E 70	6	14	NOR	61827		2000 2300	1900/2300	F	Y	
E 70	6	15	IOB	111		1600 1800	1000/1800	F	X	
							INT COCH CLM	C	Y	
							INT CH14A DOM	C	Y	
E 70	6	15	IOB	111		2100 0200	1800/0300	F	X	
							INT COCH CLM	C	Y	
							INT CH14A DOM	C	Y	
E 70	6	15	MLA/G	749504		0800 1300	INT CH15A URS	A	Y	
E 70	6	15	MLA/G	74950		1300 1700	INT COCH SUI	A	Y	
							INT CH15A URS	A	Y	
E 70	6	15A	AFS	157		1400 1800	DEL	F	X	
E 70	6	15A	IND	541		0045 1400	INT CH15 MLA/G	A	Y	
E 70	6	16	MCO	1272837		0630 1800	0600/2300	C	Y	

1	2	3	4	5	6	7	8	9	10	11
E	70	6	16	YUG	4 28	2100 2230	1000/2330	F	Y	
E	70	6	17	HOL	1 1 8 27 28 37	1530 0100	INT	A	Y	
E	70	6	19	MLA/G	5 4 3 4 4 4 9 5 0	2200 0200	INT CH19A IND	A	Y	
E	70	6	19A	IND	1 4 1	0100 1600	INT COCH B	D	Y	
							INT	G	Z	
E	70	6	20A	ARS	3 3 9	0400 2100	JEDDAH	F	X	
							50KW , 9MC	F	Y	
E	70	6	21	AUT	1 1 8 27 28 29 37	0900 1500	50KW	F	X	
E	70	6	24A	ETH	5 4 8	0400 0600	50KW	F	X	
E	70	6	25	BRN	2 5 4	0300 1200	0300/1600	F	Y	
							ADD 2200/0100	F	X	
E	70	6	25	PAK	1 1 4 0 4 1	1200 1800	INT COCH HNG	D	Y	
							INT COCH CGO	A	Y	
E	70	7	1	NIG	8 4 6	0700 1600	20KW AZM55 6DB	F	X	
E	70	7	2	AUS	3 5 1	2000 1400	INT COCH CHN,TUR	A	Y	
							INT CH1A MLA	A	Y	
							INT CH2A BRM	A	Y	
E	70	7	2A	AFS	2 5 7	1400 1800	0400/1800	F	Y	
							7MC CHX	F	Y	
E	70	7	2A	PAK	1 3 4 0 4 1	0200 0430	INT CH2 POR	A	Y	
E	70	7	3A	IND	1 4 4 1	0300 1530	INT CH3 URS	A	Y	
							INT	A	Y	
E	70	7	4	G	5 0 2 7 2 8	2200 2400	7MC/FREQ	B	Y	
E	70	7	4A	CGO	1 1 5 2	1600 2000	BUKAVU	F	X	
E	70	7	4A	PAK	2 9 4 0	1200 1600	INT COCH CGO	D	Y	
							INT CH5 I,CHN	D	Y	
E	70	7	5	G	9 2 7 2 8	0400 0700	7MC/FREQ	B	Y	
E	70	7	5	I	1 9 1 6 2 7 2 8 2 9 3 7 3 6	1630 1730	ND CIRAF 27,28,37,38	C	X	
E	70	7	5	I	2 3 2 8 2 9	1300 1500	INT COCH CHN	D	Y	
E	70	7	5	I	2 6 1 8 2 7 2 8 2 9 3 7	1500 1630	INT COCH CHN	D	Y	
E	70	7	5	I	4 9 2 7 2 8 3 7	0700 0900	NOREQ	C	X	
E	70	7	5	I	4 9 3 8	0900 1000	CIRAF 37,38	C	X	
E	70	7	5	I	5 0 3 7 3 8 3 9 4 8	1000 1300	INT	C	Y	
E	70	7	5	I	5 4 3 7 3 8	2000 2100	AZM175/220	C	X	
E	70	7	5A	CLN	6 4 1	1130 1700	1130/1730	B	Y	
E	70	7	6	AUT	2 1 8 27 28 29 37	0900 1300	50KW	F	X	
E	70	7	6A	NIG	7 4 6	0600 2100	ND	F	X	
E	70	7	7	AFS	4 5 7	1400 1600	0400/1800	F	Y	
E	70	7	7	ARS	4 3 9	1200 1600	11MC , GRP 5,6,7	F	Y	
E	70	7	7A	IND	4 0 4 0	0230 0400	INT COCH URS	D	Y	
E	70	7	7A	PAK	9 4 0 4 1	0630 0930	RAWALPINDI	E	X	
E	70	7	8	NOR	1 1 7 1 8 2 7	0600 0800	0700/0900	C	X	
E	70	7	8	NOR	5 1 8 2 7	1300 1800	1500/1900	C	Y	
E	70	7	8	NOR	7 1 7 1 8 2 7	1800 2400	1800/2300	F	X	
E	70	7	8A	EGY	2 3 8 3 9	0400 2300	0400/2400	C	Y	
							ND	C	Y	
							INT COCH URS KHABAROVSK	D	Y	
E	70	7	9	G	2 0 2 7 2 8	0800 1700	INT CH8A URS	A	Y	
E	70	7	9	G	4 4 2 7 2 8	1700 2300	INT CH8A EGY,URS	A	Y	
E	70	7	9A	PAK	3 6 4 1 4 9	0030 0430	INT CH9 POR	A	Y	
E	70	7	9A	PAK	3 6 4 1 4 9	1030 1530	0930/1530	F	X	
E	70	7	10	G	8 2 7 2 8	0400 0900	7MC/FREQ	B	Y	
E	70	7	10	J	2 4 4 4 5 5 4	2000 1400	2000/1500	F	Y	
E	70	7	10A	IND	2 0 4 1	0045 0400	INT CH10 POR	D	Y	
E	70	7	10A	IND	2 0 4 1	0400 1530	INT CH10 J	A	Y	
E	70	7	11A	AFS	6 5 7	1400 1800	0400/1800	F	Y	
E	70	7	11A	NIG	6 4 6	0730 1400	20KW	F	X	
							0730/1700	F	Y	
E	70	7	11A	PAK	2 5 4 1	1500 1700	INT COCH AFS	D	Y	
							INT CH11 INS	A	Y	
							CIRAF 40,41	E	X	
E	70	7	12A	ARS	2 3 9	0900 1300	REYADH , 100KW	F	X	

1	2	3	4	5	6	7	8	9	10	11
							0330/2100	F	Y	
E	70	712A	TGK	153		0700 0900	5KW, 0800/1115	F	Y	
E	70	712A	TGK	153		1300 1700	DEL	F	X	
E	70	713	PAK	44	31 40 42	1500 1800	CIRAF 30,31,40/42	E	X	
							1400/1700	B	X	
							10KW	B	Y	
							INT COCH D	D	Y	
E	70	713A	UGA	146		0600 1000	10KW, 0300/2100	F	Y	
E	70	713A	UGA	148		1400 2000	10KW, 0300/2100	F	Y	
E	70	714A	CLN	741		0400 1600	0400/1730	B	Y	
E	70	714A	KEN	248		0700 1100	10KW	F	X	
E	70	714A	KEN	248		0700 1100	ADD 10KW 0300/0700	F	Y	
E	70	714A	KEN	248		1300 2000	10KW 1100/1400	F	Y	
E	70	714A	KEN	248		1300 2000	DEL 1400/2000	F	X	
E	70	715	I	10	37 38	0600 0830	INT CH14A SYR	C	Y	
E	70	715A	CGO	952		0900 1900	0800/1900	C	X	
E	70	715A	CGO	952		1900 2200	1830/2200	B	Y	
E	70	715A	PAK	541		1400 1500	INT CH15 VTN	A	Y	
E	70	715A	PAK	19	40 41	0200 0500	INT CH15 URS	O	Y	
E	70	715A	PAK	24	40 41	1500 1630	AZM22	E	X	
E	70	715A	PAK	30	40	1630 1730	CIRAF 30,31,40,42	B	Y	
							AZM22	E	X	
							INT CH15 CVA CH16 YUG	O	Y	
							INT COCH CGO	AD	Y	
E	70	715A	PAK	43	30 31 40 42	1730 1800	AZM22	E	X	
							INT CH15 CVA	O	Y	
E	70	716	YUG	128		0630 2230	0400/2330	F	Y	
							ND	F	X	
E	70	716	YUG	1227		2200 2400	AZM115 CIRAF 39	F	X	
							9MC CH22A	C	Y	
E	70	717	ALB	5	27 36 39	1200 1800	1200/2300	F	Y	
							CIRAF 27,28,38,39	F	X	
E	70	717A	ETH	148		0300 0800	10/20KW	F	X	
E	70	717A	IND	941		0800 1100	INT CH17 CHN	A	Y	
E	70	718A	PAK	14	40 41	1200 1600	INT COCH TUN,MOZ	D	Y	
							INT CH18 INS	D	Y	
							INT CH18 POL, CH19 BUL	A	Y	
E	70	719A	NIG	546		0800 1600	20KW	F	X	
E	70	720	G	41	27 28	1600 2200	INT CH19A IND	A	Y	
E	70	9 1	AUT	6	7 8	2300 0200	100KW 6MC CH20A	G	N	
E	70	9 1	ETH	648		0900 1100	50KW	F	X	
E	70	9 1	ETH	648		1100 1130	100KW AZM349 15DB	F	X	
							CIRAF 36	F	X	
E	70	9 1	ETH	648		1130 1200	100KW AZM19 18DB	F	X	
							CIRAF 39	F	X	
E	70	9 1	HOL	3510		0200 0400	INT	A	Y	
E	70	9 1	PAK	341		0200 0400	INT COCH HOL	O	Y	
E	70	9 1A	CTO	146		0600 1700	0600/2300	F	X	
E	70	9 2A	ALB	12	8	0100 0400	0000/0400 AZM310 15DB	F	X	
							AZM310/250 15DB	F	Y	
							CIRAF 8,13,15	F	Y	
E	70	9 3	IND	441		0400 0700	INT	G	N	
E	70	9 4	MEX	1112		1300 2200	INT CH3 VEN	C	Y	
							INT CH4A CHL	C	Y	
E	70	9 4	MEX	21	6	0400 0600	6MC CH9	G	Y	
							0200/0500	F	Y	
E	70	9 4	NIG	1046		0600 1800	20KW AZM55 6DB	F	Y	
E	70	9 4A	AUT	439		1600 1700	0500/0800 CH6	C	Y	
							20KW	C	X	
E	70	9 4A	CHL	814		1900 2200	1900/0200	C	Y	
E	70	9 5	CTO	246		0600 1700	0600/2300	F	X	
E	70	9 5	IND	3341		0400 1300	INT	G	N	
E	70	9 5	MLA/G	19	27 28 29 39 40 41	2300 2400	INT COCH SUR	C	Y	
E	70	9 5	SUR	211		2300 0330	INT	A	Y	
E	70	9 6A	G	47	27 28	1630 2200	INT CH6 URS	A	Y	
E	70	9 7A	G	37	18 28	1600 1900	INT CH7 URS	A	Y	
E	70	9 7A	G	88	36 37 46	2200 2300	INT CH7 ARG	A	Y	
E	70	9 7A	I	22	37	2000 2100	2100/2200	B	Y	
							AZM270	C	X	
E	70	9 8A	ARS	20	28	2100 2300	2100/2200	B	X	
							11MC, GRP 8,9,12,19,22	F	Y	
E	70	9 9	IND	11	41	0400 1400	INT CH9A URS	A	Y	

1	2	3	4	5	6	7	8	9	10	11
E	70	9	9A	DNK	1 18 27 28 37	19002200	INT	A	Y	
E	70	9	10	MEX	8 10 11	22000600	INT	A	Y	
E	70	9	10A	I	46 39 40 41	06000900	INT CH11 URS	A	Y	
E	70	9	11	ETH	7 46	16001800	50KW	F	X	
E	70	9	11	IND	22 41	04000600	INT	G	N	
E	70	9	11	IND	34 41	09001300	INT COCH URS	D	Y	
E	70	9	11A	G	27 18 27 28	10001630	INT CH11 URS	A	Y	
E	70	9	11A	G	42 18 28 29	16301900	INT CH11 URS	A	Y	
E	70	9	11A	I	60 55 59	19002000	INT	A	Y	
E	70	9	12	MLA/G	13 43 44 49 50	11301245	INT CH12A URS	A	Y	
E	70	9	12	MLA/G	13 43 49	14451645	INT CH12A URS	A	Y	
E	70	9	12	MLA/G	24 1 9	23002400	INT COCH NCG	C	Y	
E	70	9	13	HOL	5 28	07300830	2100/2200	C	Y	
E	70	9	13	NOR	3 17 18	10001400	1000/1300	F	X	
E	70	9	13A	EGY	4 27 28	20302300	1800/2300	C	Y	
E	70	9	13A	EGY	5 37	23002400	AZM320 9DB CIRAF 27,28	F	X	
E	70	9	14A	BEL	3 52	23000200	CH25	C	Y	
E	70	9	14A	I	22 29	03000600	INT CH14 S	A	Y	
E	70	9	14A	IND	54 27 28 37	22002300	INT	A	Y	
E	70	9	14A	IND	54 27 28 37	22002300	1945/2100	C	Y	
E	70	9	15A	I	18 18 27 29	16301730	CIRAF 18,27,28,29	C	X	
E	70	9	16	ATN	2 11	23002400	INT	A	Y	
E	70	9	17	MEX	6 10	13002300	INT	C	Y	
E	70	9	17	MEX	17 6 7	23000200	INT COCH HNG	A	Y	
E	70	9	17	MEX	18 6 7 10	02000500	INT COCH HNG	A	Y	
E	70	9	17	MEX	19 6	05000800	6MC CH9	D	X	
E	70	9	18	AFS	3 57	06301400	0600/1500	F	X	
E	70	9	18A	I	4 28 29	04000800	INT COCH URS	A	Y	
E	70	9	18A	I	24 28 29	13001500	INT COCH URS	D	Y	
E	70	9	18A	I	39 37	06000630	INT COCH URS	A	Y	
E	70	9	19A	I	8 27 28 37 38 39	07002400	0530/2330	C	Y	
E	70	9	19A	IND	46 41 42	10001200	11MC 1200/1330	C	Y	
E	70	9	20	CTO	4 46	06002100	0600/2300 ACCRA	F F	X X	
E	70	9	20A	ALB	6 27	20002100	ADD 1800/1900	F	Y	
E	70	9	21	AFS	5 57	06301400	0600/1500	F	X	
E	70	9	21	S	17 10	04000500	11MC	G	Y	
E	70	9	22	UGA	2 48	06001000	10KW, 0600/1500	F	Y	
E	70	9	22	UGA	2 48	14001600	10KW, 0800/1500	F	Y	
E	70	9	22A	HOL	30 7	22002400	2200/2330 INT	B A	X Y	
E	70	9	22A	IND	52 28	18001830	INT	A	Y	
E	70	9	22A	J	18 39 40	18302030	1700/2000	B	Y	
E	70	9	22A	MEX	9 11	14002200	INT CH21A GTM INT CH23A GTM	C C	N N	
E	70	9	22A	PAK	45 30 31 40 41 42	04000600	10KW INT COCH IRL	C A	Y Y	
E	70	9	22A	YUG	5 27	08300930	0800/0900	B	Y	
E	70	9	22A	YUG	9 29	11001130	1800/1630	C	Y	
E	70	9	22A	YUG	10 29	10301100	2000/2100 11MC CH18	C C	Y Y	
E	70	9	22A	YUG	10 27 29	09301030	1900/2000 11MC CH18	C C	Y Y	
E	70	9	22A	YUG	11 18	11301200	2230/2300 AZM250 CIRAF 37 11MC CH18	C F C	Y X Y	
E	70	9	22A	YUG	12 27	13301430	2100/2200 AZM250 CIRAF 37	C F	Y X	
E	70	9	22A	YUG	22 37	12001330	2100/2200 AZM60 CIRAF 29 11MC CH18	C F C	Y X Y	
E	70	9	24	J	21 27 28 29	19002100	2000/2200	B	Y	
E	70	9	24	MEX	26 49 50	12001300	INT	G	Y	
E	70	9	24A	ARS	4 39	05300900	11MC , GRP 5,6/7	F	Y	
E	70	9	24A	ARS	5 39	15001800	11MC , GRR 4,6,7	F	Y	
E	70	9	24A	ARS	7 39	18001900	11MC , GRP 4,5,6	F	Y	
E	70	9	24A	ARS	20 37	22002300	2000/2100 , 11MC GRR 8,9,12,19,22	B F	Y Y	
E	70	9	24A	G	7 9 36 37 46 47 52	19002100	INT CH25 URS	A	Y	
E	70	9	24A	NOR	4 18 27 28	10001500	1000/1300	F	X	
E	70	9	25	CTO	3 46	06001700	0600/2300 ACCRA	F F	Y X	

1	2	3	4	5	6	7	8	9	10	11
E	70	9	25A	EGY	3 38 39 40 47 48	04002300	0400/2400	C	Y	
E	70	9	25A	G	15 3 10 11 12	23000400	INT CH25 CHL	D	Y	
							INT CH26 BOL,E	A	Y	
E	70	9	26	AFS	7 57	06301400	0600/1500	F	X	
E	70	9	26	E	9 49 50	23000100	11MC 1200/1400	C	Y	
E	70	9	26A	INS	29 37 38	22002300	1900/2100	B	Y	
E	70	9	27A	I	9 27 28 37 38	09002030	0730/2230	C	Y	
E	70	9	27A	NOR	18 7 8 9 10 11	23000030	0100/0230	C	Y	
							6MC	F	Y	
E	70	11	2	ARS	6 39	06001000	0330/2100	F	Y	
							ADD AZM300	F	X	
							JEDDAH	F	X	
							GRP 4,5,7	F	Y	
E	70	11	2	AUS	46 8	12001400	INT COCH CHN	D	Z	
E	70	11	2	I	25 28 29	13001500	INT COCH CHN	D	Y	
							INT CH1A,CH2A URS	D	Y	
E	70	11	2	I	80 3 4 6 7 8 9	03000500	11MC/FREQ	C	Y	
E	70	11	2	PAK	141	02300530	INT COCH I , CH2A URS	D	Y	
E	70	11	2	YUG	6 29	07000730	AZM45	F	X	
							CH6	C	X	
E	70	11	2	YUG	17 38	06000700	CH6	C	X	
E	70	11	3	CGO	17 8	00000200	0000/0500	B	Y	
E	70	11	3	HOL	6 29	21002200	INT	A	Y	
E	70	11	3A	G	15 0 12 13 14 15 16	22000300	INT CH4 G	A	Y	
E	70	11	3A	G	16 8 12 13 14 15 16	21002200	2200/2300	B	Y	
							INT CH3A HOL	A	Y	
							INT CH5A IRL	A	Y	
E	70	11	3A	HOL	20 63	04000530	0900/1030	C	Y	
							AZM80 CIRAF 59	C	Y	
							17MC,21MC	C	Y	
E	70	11	4	G	4 28 29 30	03000400	11MC/FREQ	B	Y	
E	70	11	4	G	5 4 46 47 52 53	04000600	INT CH4A AUT,I	A	Y	
E	70	11	4	G	9 4 28 29	06000730	INT CH4A I	A	Y	
							11MC/FREQ	B	Y	
E	70	11	4	G	14 9 1 10	22000300	INT CH3A G	A	Y	
E	70	11	4	G	15 1 10 11 12	01000300	11MC/FREQ	G	Z	
E	70	11	4A	AUS	10 55	08301400	INT CH4 USA	G	Z	
E	70	11	4A	I	5 7 55 58 59 60	05000630	INT COCH EQA	A	Y	
							INT CH4 USA	A	Y	
E	70	11	5	EGY	6 37 38 39 40 47 46	04001800	0400/2400	C	Y	
							ND	F	X	
E	70	11	5A	I	8 6 14 15 16	23000400	2200/0300	C	Y	
							CIRAF 12,14,15,16	C	X	
E	70	11	5A	I	8 7 12 14 15 16	04000500	11MC/FREQ	C	Y	
							0200/0300	B	Y	
E	70	11	6	ETH	3 48	08001900	10/20KW	F	X	
E	70	11	6	ETH	10 6 7 8	00000200	100KW AZM312 18DB	F	Y	
							CIRAF 6,7,8,10	F	Y	
E	70	11	6A	AUS	25 41 49 54	13001900	1200/1900	B	Y	
E	70	11	7A	G	15 5 1/ 10	22002330	INT CH7 F	A	Y	
							0000/0330	B	Y	
E	70	11	7A	PAK	35 41 49	14001730	1330/1700	B	Y	
E	70	11	8	FNL	11 55 58 59	20002200	17MC,0900/1100	C	Y	
E	70	11	8A	AFS	9 52 53	14001500	1200/1400	F	Y	
E	70	11	8A	AFS	9 52 33 58 59	15001600	DEL	F	X	
E	70	11	8A	AFS	9 52 53	16001600	DEL	F	X	
E	70	11	8A	G	16 0 1 12	22000200	INT CH8 F	A	Y	
E	70	11	9	ARS	9 36 39 46	11001400	100KW AZM280 15DB	F	X	
							CIRAF 37 , REYADH	F	X	
							0800/0900	F	Y	
							GRP 8,12,19,20,22	F	Y	
E	70	11	10A	D	27 10 11	02000500	AZM285	F	X	
E	70	11	10A	J	14 49	12001400	1230/1500	F	Y	
E	70	11	10A	MEX	13 10 11	11002000	INT COCH J	D	Y	
							INT CH10 CLM	D	Y	
E	70	11	11	AUS	45 27 28	06000800	15MC	G	Z	
E	70	11	11	I	13 27	13001400	CIRAF 28,29	C	X	
E	70	11	11A	IND	4 13 39 40	02000330	INT CH12A ARS	A	Y	
E	70	11	11A	MEX	30 44 45	06000800	1230/1430 , 9MC CH27	F	Y	
E	70	11	12	D	25 6 7 8 9	23000600	AZM295/320	F	X	
E	70	11	12A	ARS	5 39	04000800	GRP 4,6,7	F	Y	
E	70	11	12A	ARS	12 50 54	02000400	AZM75/100 , CIRAF 50,54	F	X	
							GRP 8,9,19,20,22	F	Y	
E	70	11	12A	CAN	1 1 2	16000200	INT COCH FNL,HOL	A	Y	

1	2	3	4	5	6	7	8	9	10	11
							INT CH12 D	A	Y	
							INT CH13 HOL	A	Y	
E	70	11	12A	HOL	36 14	23300100	SEP CH13 HOL	C	Y	
							INT	A	Y	
E	70	11	13	HOL	22 8	17001800	INT	A	Y	
E	70	11	13	HOL	21 5 9 6 0	04000600	0900/1100	C	Y	
							AZM80 CIRAF 59	C	Y	
							17MC,21MC	C	Y	
E	70	11	13	HOL	28 8	01000300	0100/0230	B	X	
							INT	A	Y	
E	70	11	13	HOL	29 8	00000100	0100/0230	B	Y	
							SEP CH12A HOL	C	Y	
							11MC/FREQ	C	Y	
E	70	11	13	HOL	33 1 1 12	03000400	0230/0400	B	Y	
E	70	11	13A	IND	12 4 13 14 15	01000230	INT	A	Y	
E	70	11	14	J	22 6 1	06000600	0630/0830	E	X	
E	70	11	14	YUG	30 10	23000100	0200/0300	C	Y	
							15MC CH5A	C	Y	
							15MC CH5A	C	Y	
E	70	11	15	G	28 27 37	10001700	INT CH14A URS	A	Y	
E	70	11	15A	I	8 5 1 1 1 2	04300500	0100/0300	B	Y	
E	70	11	15A	I	8 8 1 2 13 15	03000400	0200/0300	B	Y	
E	70	11	15A	I	8 9 1 1 1 2	04000430	0300/0330	B	Y	
E	70	11	16	AUS	21 45	09001800	INT CH16A URS	D	Y	
E	70	11	16A	I	8 5 14 15 16	22002400	2200/0100	B	Y	
							AZM270 CIRAF 14,15,18	C	X	
E	70	11	17A	G	9 3 39 40	04000600	INT CH18 POL	A	Y	
E	70	11	18	G	11 9 5 6 6 0	06001100	INT CH18A F	A	Y	
							11MC/FREQ	C	N	
E	70	11	18	YUG	8 29	13001400	1200/1300	F	X	
							CH6	C	Y	
E	70	11	18	YUG	20 38	17301900	1800/1900	F	X	
E	70	11	19	ARS	22 8	23002400	0000/0200	F	Y	
							GRP 8,9,12,19,20	F	Y	
E	70	11	19	G	22 18 28 29	14151600	INT CH19A CHN	A	Y	
E	70	11	19	G	10 7 28 38 39 40	16002100	INT CH18A F	A	Y	
							11MC/FREQ	B	Y	
E	70	11	19	G	11 6 5 15 5 5 8 5 9	05000900	INT CH18A F	A	Y	
							11MC/FREQ	C	Y	
E	70	11	19	G	16 3 1 / 10	04000600	11MC/FREQ	G	N	
E	70	11	19	YUG	28 13 14	02000400	CH18	C	Y	
E	70	11	20	G	7 4 4 7 4 8 5 2 5 3 5 7	19002000	1900/2015	B	Y	
E	70	11	20	G	8 0 3 7 38 46	20002300	INT CH20A HOL	A	Y	
E	70	11	20	IND	42 39 40	02000330	INT	A	Y	
E	70	11	20	IND	8 9 4 9 5 0	23000100	INT CH19 PHL	A	Y	
E	70	11	20	MEX	14 10 11	13002100	INT	A	Y	
E	70	11	20A	HOL	27 4	22002400	INT	A	Y	
E	70	11	21	AUS	38 41 49 54	10001530	CIRAF 49,54	F	X	
							INT COCH G	D	Y	
E	70	11	21	G	12 7 5 6 5 8 5 9 6 0	08001000	INT CH20A USA	C	Y	
E	70	11	21	G	15 9 14 15 16	22000300	INT CH21A D,ROU	A	Y	
E	70	11	21	IND	5 3 27 28	20002200	INT	A	Y	
E	70	11	21A	D	24 6 7 8 9	23000600	AZM295/320	F	X	
E	70	11	22	G	15 7 10 11 12	00300330	INT CH21A D	A	Y	
E	70	11	22	NZL	9 5 4	09001300	0900/1500	B	Y	
							INT CH22A URS	A	Y	
E	70	11	22A	J	17 41	16001800	1530/1730	B	Y	
E	70	11	22A	J	19 41	18002000	1730/1930	B	Y	
E	70	11	23	S	3 1 8 27 28 29 36 37 38	09001600	INT CH23A URS	G	N	
E	70	11	24	G	7 3 27 37 38 46	17001900	INT CH24A BLR	A	Y	
E	70	11	24	G	7 8 37 38 46	19002000	INT CH24A BLR	A	Y	
E	70	11	24A	CAN	20 10 11 12	04000600	0300/0600	F	Y	
E	70	11	25	AUS	23 41	15002000	1400/2000	B	Y	
							CIRAF 41,49	F	X	
							INT CH25A URS	A	Y	
E	70	11	25	ETH	9 18 27 28	20002300	100KW AZM336/349 17DB	F	X	
E	70	11	26	I	6 3 5 8	21002200	6MC /	C	Y	
E	70	11	26A	CHL	21 14 16	15001700	1700/2000	C	Y	
E	70	11	26A	D	6 4 6 4 7	17002100	AZM180/200	F	Y	
E	70	11	26A	D	7 4 6 4 7	21002200	AZM200	F	X	
E	70	11	27	BEL	4 5 2	23000330	2300/0200	C	X	
E	70	11	27A	IND	47 41 52	10001200	9MC 1200/1330	C	Y	

1	2	3	4	5	6	7	8	9	10	11
E	7011	27A	NZL	6	5 6 6 2	0500 1000	0500/1200	B	Y	
							INT COCH USA	D	Y	
E	7011	27A	PAK	7	4 0 4 1	1330 1700	AZM278	E	X	
E	7011	27A	PAK	4	6 3 9 4 0	1930 2100	INT CH27 VTN	A	Y	
							1930/2130	B	Y	
E	7011	27A	PAK	4	8 2 7 2 8 3 9	1730 1900	50KW	E	X	
							1800/1930	B	Y	
E	7011	27A	PAK	5	8 2 8	1900 1930	1730/1800	B	Y	
							CIRAF 39,40	B	X	
E	7015	1	CAN	1	3 2 7	1800 2300	CIRAF 27,28	F	X	
E	7015	3	SUI	6	5 2 5 7	0500 0630	21MC CH2A	C	Y	
E	7015	3	SUI	1	1 4 6 4 7 4 8 5 7	1600 2200	21MC CH8	C	Y	
E	7015	3A	AFS	8	5 2 5 3	1200 1400	AZM360/132 13/15DB	F	Y	
							CIRAF 52,53,55,56,59	F	Y	
E	7015	3A	AFS	1	6 5 5 5 8 5 9	0400 0500	0430/0530	B	Y	
							AZM360/132	F	X	
							CIRAF 52,53,55,58,59	F	X	
E	7015	4	I	3	7 3 8 3 9 4 1 4 8	1630 1900	150KW	C	X	
							CIRAF 38,39,47,48	C	X	
E	7015	4	I	4	0 3 9 4 6	0600 0630	150KW	C	X	
							INT CH3A,CH4A URS	A	Y	
E	7015	4	I	8	4 4 3 4 4 4 5	0530 1000	INT CH3A,CH4A URS	C	Y	
							INT CH4A AUS	A	Y	
E	7015	4	I	7	7 1 1 1 2	1900 2000	INT CH3A B	C	Y	
E	7015	4	I	8	7 1 2 1 4 1 5 1 6	0000 0400	2200/0200	C	Y	
							15MC/FREQ	C	Y	
E	7015	4A	AUS	1	3 5 8	0230 1000	IN2 CH5 J	G	Z	
E	7015	4A	MEX	2	2 7 8	2100 2200	0400/0500 , 9MC CH4	F	Y	
E	7015	4A	MEX	2	6 2 8 3 7 3 9	2200 2400	INT	A	Y	
E	7015	5	AFS	1	7 2 / 9	1730 1900	1700/1900	B	Y	
E	7015	5A	NOR	1	9 4 4 5 5 1 5 5 5 9 6 0	1030 1200	1000/1130	C	Y	
E	7015	5A	YUG	1	3 3 0	0530 0600	0500/0530	E	X	
E	7015	5A	YUG	1	5 3 0 3 9	1730 1930	1730/1800	F	X	
E	7015	5A	YUG	1	8 3 7	0800 1000	0600/0900	C	X	
E	7015	5A	YUG	1	9 3 7	1400 1530	1500/1530	C	X	
E	7015	5A	YUG	2	1 3 7	0900 1000	1600/1900	C	Y	
E	7015	5A	YUG	2	1 3 7	1400 1500	1900/2000	C	Y	
E	7015	5A	YUG	3	0 8	2230 0100	2230/0200	C	X	
E	7015	5	CLN	1	5 2 9 3 9 4 0 4 1	0200 0500	0130/0500	B	Y	
E	7015	6A	IND	1	1 5 5 4	1130 1400	INT CH7A MLA/G	A	Y	
E	7015	6A	MEX	1	5 1 1 1 2 1 3	1700 2200	INT	A	Y	
E	7015	7A	AUS	2	7 4 5	2200 2330	17MC	F	X	
E	7015	7A	D	7	4 6 4 7	1800 2100	AZM200	F	X	
E	7015	7A	I	2	9 5 2 5 3 5 7	1030 1300	INT	A	Y	
E	7015	7A	I	8	8 1 2 1 3 1 5	2300 0200	2200/0200	B	Y	
E	7015	7A	MLA/G	3	5 5 5 6 5 8 5 9 6 0	1300 1500	1245/1445	B	Y	
E	7015	8	G	1	0 9 2 9 3 0 3 9	1800 2000	1700/1800	B	Y	
							INT CH7A D	A	Y	
E	7015	8A	ALB	1	3 1 3 1 4 1 5	0000 0200	DEL	F	X	
E	7015	8A	D	1	8 5 5 8 5 9	0600 1000	11MC	C	Y	
E	7015	8A	I	3	8 5 2 5 3 5 7	1500 1700	1630/1900	C	Y	
							CIRAF 47,52,53,57	C	X	
E	7015	10A	IND	8	7 4 9 5 0 5 4	0030 0130	INT	G	Z	
E	7015	11A	CGO	1	5 8	1300 1400	17MC	C	X	
E	7015	11A	CGO	1	6 8	2300 0200	9MC	B	Y	
E	7015	11A	HOL	1	9 6 3	0900 1030	INT	A	Y	
E	7015	12	PAK	4	1 5 5 5 8 5 9 6 0	1030 1130	0900/1000	C	Y	
E	7015	12	SUI	7	3 7 4 8	0700 0900	2100/2230 ,9MC CH21	C	Y	
E	7015	12A	AUS	1	5 6 0 8 3	0930 1030	0930/1130	F	Y	
							11MC	G	Z	
E	7015	13	CLN	1	4 1 8 2 8 2 9 3 9 4 0 4 1 4 9	0130 0400	0130/0430	B	Y	
E	7015	13	MEX	2	1 6	0000 0200	DEL	F	X	
E	7015	14	AUS	1	4 8 0 8 3	2200 2245	2200/2300	F	X	
E	7015	14	I	8	4 1 1 1 2	0000 0500	INT CH13A CLM	D	Y	
							15MC/FREQ	C	Y	
E	7015	14A	ETH	1	1 1 4 1 5	0000 0100	0200/0300	F	X	
							100KW AZM270 17DB	F	Y	
							CIRAF 12,13	F	Y	
E	7015	15	G	3	6 1 8 2 8 2 9	1430 1530	INT CH14A O	A	Y	
E	7015	15A	IND	5	8 5 2 5 3 5 7	0400 0530	INT CH15 USA	A	Y	
E	7015	16	CAN	1	4 2 7	1100 1400	1100/1500	F	X	
							AZM50/60	F	X	

1	2	3	4	5	6	7	8	9	10	11
							CIRAF 18,27,28,29	F	X	
							INT CH16A D	A	Y	
E	70	15	16A	D	19 55 58 59	0600 1000	FREQ/15	C	Y	
E	70	15	16A	I	82 4 6 /13	1600 1830	CIRAF 4,6/15	C	X	
E	70	15	16A	PAK	31 41 49	0100 0400	INT CH16 KOR, CH17 VTN	D	Y	
E	70	15	17A	MLA/G	11 43 44 49	1130 1300	15MC/FREQ	C	Y	
E	70	15	17A	MLA/G	15 49	1400 1500	15MC/FREQ	B	Y	
E	70	15	18	CAN	15 18 28	1500 2300	1400/2300	F	X	
							AZM50/60	F	X	
							CIRAF 18,27,28,29	F	X	
							INT COCH ISR	A	Y	
							11MC 2100/2300	C	Y	
E	70	15	18	I	80 3 4 6 7 8 9	2300 0100	15MC/FREQ	C	Y	
							2200/0300	B	Y	
E	70	15	18A	IND	10 14 95 0	1330 1500	INT CH17A MLA/G	A	Y	
E	70	15	18A	IND	10 14 95 0	1100 1330	INT CH17A MLA/G	A	Y	
							INT CH19 URS	A	Y	
E	70	15	16A	IND	12 25 6	0800 1000	INT CH17A MLA/G	A	Y	
E	70	15	18A	IND	12 25 5 8 8 5 9 6 0	1000 1100	INT CH17A MLA/G	A	Y	
							INT CH19 URS	A	Y	
E	70	15	18A	PAK	6 41	0600 0800	INT CH19 URS	A	Y	
E	70	15	16A	PAK	22 40 41	0300 0400	INT CH19 URS	D	Y	
E	70	15	19A	HOL	7 38 39	1700 1600	INT	A	Y	
							SEP CH21 HOL	C	Y	
E	70	15	20	ATN	4 27	2100 2200	INT	B	Y	
E	70	15	20	NGN	4 27	0700 0900	17MC,21MC	B	Y	
E	70	15	20	NGN	4 27	1800 1900	INT	D	Y	
E	70	15	21	HOL	8 29	1700 1800	AZM90	C	Y	
							INT	A	Y	
E	70	15	21	HOL	6 37	0800 0900	2000/2100	C	Y	
E	70	15	21	HOL	11 44	1100 1230	1030/1200	E	X	
							INT	A	Y	
E	70	15	21	HOL	13 49	1230 1700	INT	D	Y	
E	70	15	21	HOL	18 55 60	0900 1100	AZM55	E	X	
							SEP CH22 HOL	C	Y	
							INT	A	Y	
E	70	15	21	HOL	37 13 15	2330 0100	SEP CH22 HOL	C	Y	
E	70	15	21A	BEL	23 6 37	1800 2000	2100/2300	B	Y	
E	70	15	22	HOL	22 52 53	0700 1000	1800/2100	C	Y	
							SEP CH21 HOL	C	Y	
E	70	15	22	HOL	28 9	2200 2400	SEP CH22 HOL	C	Y	
E	70	15	22A	AUS	40 41 49 54	2300 0700	CIRAF 49,54	F	X	
							17MC 21MC	F	Y	
E	70	15	22A	SUI	17 51	0700 1000	21MC CH2A	C	Y	
E	70	15	23	MEX	25 27	2100 2200	INT CH22 USA	G	N	
							INT CH24 CLM	G	N	
E	70	15	24	MLA/G	14 34 43 44 45 49	1300 1700	15MC/FREQ	C	Y	
E	70	15	25	I	42 39 40 41 48	1030 1300	INT CH24A KOR	C	Y	
							INT CH25A BRM	C	Y	
E	70	15	26A	I	72 4	1600 1700	NOREQ	C	X	
E	70	15	27	BEL	5 52	0800 1200	21MC	C	X	
E	70	15	27	BEL	5 52	1800 2100	9MC,11MC	C	Y	
E	70	15	27	G	9 8 39 47 48	1600 1700	INT CH26A I	A	Y	
							1530/1800	B	Y	
E	70	15	27	G	10 12 8 39	1500 1600	15MC/FREQ	C	Y	
E	70	15	27A	MLA/G	22 1 / 9	2300 0100	INT CH28 ARG	C	Y	
E	70	15	27A	PAK	48 43 44 45	0930 1100	INT CH27 URS	D	Y	
E	70	15	27A	S	11 44 45 59 60	1200 1300	INT CH28 TGR/USA	A	Y	
E	70	15	28A	ARS	8 38	0800 0800	REYADH, 100KW, 11MC	F	X	
							GRP 9,12,19,20,22	F	Y	
E	70	15	28A	ARS	8 38	1800 2100	DEL	F	X	
E	70	15	28A	ARS	10 39	0300 0600	DEL	F	X	
E	70	15	28A	ARS	10 39	1400 1800	DEL	F	X	
E	70	15	28A	ARS	15 49	1000 1200	100KW AZM75/90	F	X	
							CIRAF 49,50,54	F	X	
							0900/1200 , REYADH	F	X	
							GRP 15,23	F	Y	
E	70	15	28A	G	15 8 12 13 14 15 16	2200 0100	INT CH28 ARG	D	Y	
							15MC/FREQ	B	Y	
E	70	15	29	MEX	23 6 7 10	2230 0300	11MC CH11	C	Y	
E	70	15	29A	AUS	28 54	2200 2300	CIRAF 49,54	F	X	
E	70	15	29A	AUS	28 41 49 54	2300 0300	CIRAF 49,54	F	X	
							17MC	F	Y	
E	70	15	29A	AUS	29 41	0900 0930	0900/1000 , CIRAF 49,54	F	X	
E	70	15	29A	AUS	29 49 54	1030 1100	1000/1100	F	X	
E	70	15	29A	AUS	29 44 50	0930 1000	0600/0900	F	X	
E	70	15	29A	AUS	41 57	1500 1730	9MC	D	X	
E	70	15	30	ALB	9 41 59	0700 0900	1000/1200	F	Y	
E	70	15	30	ALB	11 7 8	0900 1100	1200/1400	F	Y	
E	70	15	30	ALB	11 7 8	0000 0300	AZM310/250 CIRAF 7,8,13	F	Y	

1	2	3	4	5	6	7	8	9	10	11
E	7015	30	PAK	5	03739	05300700	1600/1930	C	Y	
							11MC	G	N	
							CIRAF 37/39	E	X	
							50KW	E	X	
E	7015	31A	HOL	31	8	22002300	2200/2330	B	Y	
							11MC	C	Y	
E	7015	31A	I	7	3 1 1 1 2	16001630	150KW	C	X	
							INT	A	Y	
E	7015	32A	I		4739	06000700	AZM90 CIRAF 40,41	C	X	
E	7015	32A	I	7	1 4 6 7 8 9 10	23000100	15MC/FREQ	C	Y	
E	7015	33	PAK	5	1 2 8 3 7 3 8 3 9 4 0	18001830	INT COCH F	D	Y	
							1730/1800	B	Y	
							CIRAF 28,37,38	F	X	
							11MC	A	Y	
E	7015	33	PAK	5	7 2 7 2 8 2 9	19302130	INT COCH F	D	Y	
							11MC	A	Y	
E	7015	33A	G	1	5 5 1 / 1 0	14001600	0000/0330	B	Y	
							INT CH34 G	A	Y	
E	7015	34	G		7 1 3 6 5 7	12001330	INT CH33A BUL	A	Y	
E	7015	34	G		9 2 3 8 3 9 4 0	05000730	INT CH33A URS	A	Y	
E	7015	34	G	1	0 0 2 8 2 9 3 0 3 9 4 0	13301430	INT CH33A BUL,G	A	Y	
E	7015	34	G	1	0 8 2 8 2 9 3 8 3 9 4 0	15301900	1530/2000	B	Y	
							INT CH33A S	A	Y	
E	7015	34	G	1	4 0 4 3 4 4 4 5	11001200	INT CH33A F	A	Y	
E	7015	34	G	1	6 1 1 1 1 2 1 3 1 4 1 5 1 6	22000100	15MC/FREQ	B	Y	
E	7015	34	IND		4 4 3 8 3 9	04300600	INT CH34A URS	A	Y	
							INT	A	Y	
E	7015	35	G		6 7 3 7 4 6	10302300	15MC/FREQ	B	Y	
E	7015	35	G		8 9 3 8 3 9 4 0	03000500	INT CH35A D	A	Y	
E	7015	35	G	1	5 4 1 2 1 3 1 4 1 5 1 6	23000100	15MC/FREQ	B	Y	
E	7017	1	BEL		9 5 4	11001200	1200/1300	C	Y	
E	7017	1	G	7	2 4 7 4 8 5 2 5 3 5 7	16001715	INT CH1A G	A	Y	
E	7017	1	G	7	4 4 7 4 8 5 2 5 3 5 7	17152015	INT CH1A G	A	Y	
E	7017	1	G		9 9 2 8 3 8 3 9	12001400	INT CH1A G	A	Y	
							17MC/FREQ	C	Y	
E	7017	1	G	1	4 3 4 0 4 1 4 9 9 0 5 4	14001600	INT CH1A G	A	Y	
E	7017	1	NZL		3 5 9	21000500	INT COCH USA	A	Y	
E	7017	1A	G	1	6 6 1 / 1 2	10301600	INT CH1 G	A	Y	
							17MC/FREQ	G	Z	
E	7017	1A	G	1	7 0 1 0 1 1 1 2	16002100	INT CH1 G,TCH	A	Y	
E	7017	2A	BEL		6 5 2	08001200	21MC	C	Y	
E	7017	2A	I	6	7 4 6 7 8 9 10	16001700	1630/1730	C	Y	
							AZM310	C	X	
E	7017	2A	I	7	4 1 1 1 2	15301600	1600/1630	C	Y	
E	7017	2A	I	7	8 1 1 1 2	19002000	INT CH3 CAN	A	Y	
E	7017	3	CAN		2 4 5 7	18002000	CIRAF 46,57	F	Y	
							INT CH2A I	F	Y	
E	7017	4A	AUS	2	0 5 6 6 1	02300400	0230/0430	F	X	
							INT COCH EQA	A	Y	
E	7017	4A	ETH		8 4 7 5 2	06000730	100KW AZM270 16DB	F	X	
							CIRAF 46,47	F	X	
E	7017	4A	ETH		8 4 7 5 2	07300900	100KW AZM242 16DB	F	X	
							CIRAF 52	F	X	
E	7017	4A	ETH		8 4 7 5 2	12001300	100KW AZM270 16DB	F	X	
							CIRAF 46,47	F	X	
E	7017	4A	ETH		8 4 7 5 2	13001400	100KW AZM242 16DB	F	X	
							CIRAF 52	F	X	
E	7017	4A	ETH		8 5 3 5 7	18002000	100KW AZM199 16DB	F	X	
E	7017	5	G	1	2 4 5 1 5 5 5 6 5 8 5 9	06000900	INT CH4A ETH	A	Y	
E	7017	6	J	2	0 2 7 2 8 2 9	07000900	0800/1000	C	Y	
E	7017	6A	HOL		2 5 5 7	18002000	INT	A	Y	
E	7017	6A	I	5	2 3 7 3 8 4 8	10001200	1000/1300	C	Y	
							CIRAF 37,38,39,48	C	Y	
							INT CH7 TUR	A	Y	
E	7017	7	AUT		1 0 4 1	16001800	1300/1500 1330/1530	C	Y	
E	7017	7A	G	1	0 8 3 8 4 7 4 8	16001800	AZM126	C	Y	
							CIRAF 38,39,40,47,48	C	Y	
							INT CH8 TCH	A	Y	
E	7017	8	CLN		1 8 3 0 4 0 4 1	03001100	0430/1100	F	X	
E	7017	8	CLN		1 9 3 0 4 0 4 1	11001600	1100/1730	B	Y	
E	7017	8	YUG		2 6 5 7	20002100	15MC CH5A	C	Y	
E	7017	9	ETH		1 3 5 4	14001500	100KW AZM90 17DB	F	X	
E	7017	9	I	5	8 5 1 5 4 5 5 5 8 5 9 6 0	06301100	INT CH8A F	A	Y	
E	7017	9	MEX		2 4 6 1 0 1 1	15002100	INT COCH MLA/G	A	Y	
E	7017	9	MLA/G		1 8 4 0 4 1	15001800	INT CH9A D	A	Y	
E	7017	10	G	1	2 5 4 4 6 1 5 5 5 8 5 9	08001100	INT CH9A ONU	A	Y	
E	7017	10	IND	1	0 9 4 9 5 0	11001400	INT CH9 MLA/G	A	Y	
E	7017	10A	I		3 2 4 8 5 2 5 3 5 7	14001600	1500/1630	C	Y	

1	2	3	4	5	6	7	8	9	10	11
E	7017	10A	I	68	1112	1700 1800	1630/1730	C	Y	
E	7017	11	HOL	9	40	1700 1800	AZM110	F	X	
							INT	A	Y	
E	7017	11	HOL	14	4951	1400 1700	INT	A	Y	
E	7017	11	HOL	23	525357	1800 1900	INT	A	Y	
E	7017	11A	G	9	538	0730 1100	INT CH11 TCH	A	Y	
E	7017	12	AUS	39	49	1030 1130	1100/1400	F	Y	
							11MC 15MC	G	N	
E	7017	12A	IND	68	57	1600 1800	INT CH13 USA	A	Y	
E	7017	13	PAK	37	4950	0500 0630	CIRAF 43/45,50	E	X	
E	7017	13	PAK	37	4950	1330 1400	CIRAF 50,54	E	X	
							1230/1330	B	Y	
E	7017	14	EGY	8	42434445	1000 1200	1000/1100	F	X	
E	7017	14	EGY	9	4144495154	1200 1600	1100/1800	F	Y	
							CIRAF 41,49,51,54	F	X	
E	7017	14	IND	98	495054	0400 0630	INT	G	N	
E	7017	15	AFS	13	182728	1700 1800	1400/1800	F	Y	
							AZM360 12DB	F	X	
							CIRAF 46,47,48	F	X	
E	7017	15	ALB	10	4158659	0900 1100	AZM110/85 CIRAF 58,59	F	X	
E	7017	15	EGY	11	12131415 16	2300 0200	2300/0300	F	X	
							15MC	C	Y	
E	7017	15A	IND	83	424344	1200 1400	INT CH16A J	A	Y	
E	7017	17	AUS	16	6063	2300 0500	2300/0600	F	Y	
							INT COCH AEF	G	N	
E	7017	17	AUS	30	414954	0600 1000	CIRAF 49,54	F	X	
E	7017	18	AUS	22	49	0830 1200	0800/1200	F	X	
E	7017	18	YUG	16	3141	1700 1800	CIRAF 49	F	X	
E	7017	18A	BEL	7	52	1800 2100	9MC,11MC	C	Y	
E	7017	18A	NZL	8	56	0200 0400	0200/0500	B	X	
							AZM 25 , CIRAF 56,62	B	Y	
E	7017	19	G	10	2282930394 0	1600 1700	1600/1730	B	Y	
							17MC/FREQ	C	Y	
E	7017	19	G	172	1/ 10	1700 2200	INT CH18A BEL	A	Y	
E	7017	19	HOL	16	54	1300 1600	1400/1700	B	Y	
E	7021	1	AUS	32	41	0200 0800	CIRAF 41,49	F	X	
E	7021	6	HOL	10	41	1500 1700	17MC	B	Y	
							INT	A	Y	
E	7021	6	HOL	15	54	1230 1500	17MC	B	Y	
E	7021	7	G	7	75357	1600 1730	INT CH6A I	A	Y	
E	7021	7	G	9	63940	1000 1030	INT CH6A F	A	Y	
E	7021	7	G	10	4293940	1430 1600	INT CH6A F	A	Y	
E	7021	7	G	13	9414954	1030 1430	INT CH6A F	A	Y	
E	7021	7A	I	35	4647485 2	0900 1000	AZM130/220	C	X	
							CIRAF 46,47,48	C	X	
E	7021	7A	I	43	48	1000 1300	INT	A	Y	
E	7021	7A	I	72	6 7 8 9 10	1700 1800	NOREQ	C	X	
E	7021	8	NGN	3	54	1200 1500	9MC,11MC,15MC	F	X	
E	7021	9	J	11	50	1000 1200	1030/1230	C	Y	
E	7021	9	J	12	54	1200 1400	1230/1430	C	Y	
E	7021	10A	I	30	525357	1200 1300	NOREQ	C	X	
E	7021	11	ARS	13	54	1000 1100	DEL	F	X	
E	7021	11	PAK	52	4852	0400 0600	21/FREQ	D	Y	
E	7021	11A	I	30	525357	0800 1100	1030/1200	C	Y	
							INT	A	Y	
E	7021	11A	I	33	525357	1500 1600	1500/1630	C	Y	
							INT CH12 CHN	A	Y	
E	7021	13	IND	70	485253	1630 1830	INT CH14 CHN	A	Y	
E	7021	13	J	10	5960	0800 1000	0900/1100	B	Y	
E	7021	14A	G	17	116	1500 1700	INT CH15 D	A	Y	
E	7021	14A	MEX	16	13141 5	1700 0500	15MC CH22A	C	Y	
E	7021	16	G	12	9414954	0900 0930	INT CH16A I	A	Y	
E	7021	16	G	13	54149505 4	0930 1700	INT CH16A I	A	Y	
E	7021	16A	AFS	11	464748	1300 1800	1200/1800	B	Y	
							AZM347 18DB	F	Y	
							CIRAF 18,27,28	F	Y	

1	2	3	4	5	6	7	8	9	10	11
E	70	21	16A	I	36525357	09001000	INT CH17 CVA	A	Y	
E	70	21	16A	I	5337383948	10001300	INT CH18 G	A	Y	
E	70	21	17	AUS	33444550	21002200	15MC	F	X	
E	70	21	18	ARS	145054	02000400	DEL	F	X	
E	70	21	18	ARS	1841443	12001400	DEL	F	X	
E	70	21	18	ARS	236	17001800	DEL	F	X	
E	70	21	18	AUS	364149 54	23002400	CIRAF 49,54	F	X	
							17MC	F	X	
E	70	21	18A	ARS	23131415	23000100	2200/2400	F	X	
							15MC	D	Y	
							GRP 15,23	F	Y	
E	70	21	20	EGY	75253	16001600	1300/2000	C	Y	
							17MC CH3A	C	Y	
E	70	21	23	G	6536 3746	10002100	INT CH22A F	A	Y	
							21MC/FREQ	B	Y	
E	70	21	26	CGO	1354	08001000	0900/1100	F	X	
E	70	21	26	ETH	12404149	15001600	100KW AZM82 16DB	F	X	
E	70	21	28	I	45394041 48	14301600	INT CH28A URS	A	Y	
E	70	21	28	I	791112	19002000	11MC	C	Y	
E	70	21	29	IND	1114954	11001300	INT CH29A I	A	Y	
E	70	21	29	NOR	10364868	16001800	1600/1730	C	X	
E	70	21	29	NOR	21414950 54 58	13001400	1300/1430	C	Y	
E	70	21	29A	D	9525357	13001500	1600/1800	C	Y	
E	70	21	29A	I	413940	09001200	1000/1300	E	X	
							INT	A	Y	
E	70	26	34	AFS	16 9 /14 27 28	16002400	1300/2100	C	Y	
E	70	26	42	ARS	1650	05000600	DEL	F	X	
E	70	26	42	ARS	175054	09001200	DEL	F	X	
E	70	26	42	ARS	1943	12001300	CIRAF 43,44	F	X	
							11MC, GRP 8,9,12,20,22	F	Y	
E	70	26	42	ARS	1941	13001500	CIRAF 40,41	F	X	
							11MC; GRP 8,9,12,20,22	F	Y	
E	70	26	42	ARS	2128	15001600	DEL	F	X	
E	70	28	42	ARS	24 8131415	16001900	DEL	F	X	
E	70	17	15	ALB	NA41	13001400	RST 60KW AZM85 18DB	F	Y	TIRANE
E	70	11		BEL	NA52	05000600	RST 100KW AZM167 12DB	C	X	BRUXELLES
E	70	6		CGO	NA52	16002000	3KW ND	B	Y	STANLEYVILLE
E	70	11		CGO	NA 8	23002400	50KW AZM300 12DB	B	Y	LEOPOLDVILLE
E	70	11		CGO	NA27	19002100	50KW AZM350 12DB	B	Y	LEOPOLDVILLE
E	70	11		CHL	NA1416	00000400	RST 5KW AZM360 8DB	C	Y	SANTIAGO
E	70	17		CLN	NA16262939404149	11301730	RST 35KW AZM350 8DB	B	Y	EKALA
E	70	11		D	NA1011	02000800	RST 100KW AZM255 20DB	B	Y	JULICH
E	70	6		FLK	NA16	21000200	RST 0,5KW ND	E	X	PT STANLEY
E	70	15		FNL	NA 6 7 8	13001500	100KW AZM305 20DB	C	Y	
E	70	15		FNL	NA12131415	16002000	100KW AZM234 20DB	C	Y	
E	70	11		G	NA47465253 57	20152100	RST 100KW AZM16 20DB	B	Y	DAVENTRY,ETC
E	70	7		I	NA37	21002200	RST 60KW AZM270 12DB	C	Y	ROMA
E	70	9		I	NA37	21002200	RST 100KW AZM270 15DB	C	Y	ROMA
E	70	9		I	NA27282939	17302200	RST 100KW ND 6DB	C	Y	ROMA
E	70	11		I	NA27282939	17302200	RST 150KW ND 6DB	C	Y	ROMA
E	70	7		IND	NA41	13001430	RST 100KW ND	C	Y	DELHI
E	70	9		IND	NA37383 9	18452000	RST 100KW AZM282 12DB	C	Y	DELHI
E	70	9		IND	NA3839	17452000	RST 100KW AZM282 16DB	C	Y	DELHI
E	70	9		IND	NA41	13001430	RST 20KW ND	C	X	DELHI
E	70	11		IND	NA27283 7	19452100	RST 100KW AZM312 16DB	C	Y	DELHI
E	70	11		IND	NA37383 9	18452000	RST 100KW AZM282 16DB	C	Y	DELHI
E	70	11		IND	NA3839	17452000	RST 100KW AZM282 16DB	C	Y	DELHI
E	70	15		IND	NA42434 4	12151330	RST 100KW AZM65 16DB	C	Y	DELHI
E	70	17		IND	NA46	18151930	RST 100KW AZM102 16DB	C	Y	DELHI
E	70	26		NOR	NA41495054 58	13001430	RST 10KW AZM110 20DB	E	X	FREDRIKSTAD
E	70	9		PAK	NA41	10001200	10KW AZM170 6DB	B	Y	KARACHI
E	70	9		PAK	NA4041	07000900	10KW AZM227 6DB	B	Y	LAHORE

1	2	3	4	5	6	7	8	9	10	11
E	7011		AFS	NEW	57	0800 1400	20KW ND	F	XX	BLOEMFONTEIN
E	7011		AFS	NEW	57	0800 1400	20KW ND	F	XX	BLOEMFONTEIN
E	7011		AFS	NEW	57	0800 1400	20KW ND	F	XX	BLOEMFONTEIN
E	70	6	CAN	NEW	2	0000 2400	1KW AZM298	F	X	VANCOUVER
E	70	9	CGO	NEW	52	0430 0700	50KW ND	F	XX	LEOPOLDVILLE
E	70	9	CGO	NEW	52	1430 2230	50KW ND	F	XX	LEOPOLDVILLE
E	7011		CGO	NEW	52	0700 1300	50KW ND	F	XX	LEOPOLDVILLE
E	70	7	CLN	NEW	41	0100 0400	7,5KW AZM350 8DB	F	X	EKALA
E	70	7	CLN	NEW	41	1130 1730	7,5KW AZM350 8DB	F	Y	EKALA
E	70	9	CLN	NEW	41	0430 1130	7,5KW AZM350 8DB	F	Y	EKALA
E	70	6	CTO	NEW	46	0600 2300	2,5KW ND	F	XX	ACCRA
E	70	6	CTO	NEW	46	0600 2300	5KW ND	F	XX	ACCRA
E	70	6	CTO	NEW	46	0600 2300	5KW ND	F	XX	ACCRA
E	70	6	CTO	NEW	46	0600 2300	5KW ND	F	YY	ACCRA
E	70	6	CTO	NEW	46	0600 2300	5KW ND	F	Y	ACCRA
E	70	9	CTO	NEW	46	0600 2300	5KW ND			ACCRA
E	70	9	CTO	NEW	46	0600 2300	5KW ND			ACCRA
E	70	715	CVA	NEW	2737	1300 1430	100KW AZM340 15DB	F	Y	S MARIA DI G
E	70	9 4A	CVA	NEW	4049	0000 0200	100KW AZM85 15DB	F	YY	S MARIA DI G
E	70	9 4A	CVA	NEW	2728 2937	1600 1700	100KW ND	F	YY	S MARIA DI G
E	70	9 4A	CVA	NEW	4954	2200 2300	100KW AZM85 15DB	F	YY	S MARIA DI G
E	70	9 9	CVA	NEW	6 7 8 9	2300 0200	100KW AZM325 15DB	F	YY	S MARIA DI G
E	7011	3	CVA	NEW	4647	0500 0700	100KW AZM193 15DB	F	YY	S MARIA DI G
E	7011	3	CVA	NEW	2728 2937	0630 1000	100KW ND	F	XX	S MARIA DI G
E	7011	3	CVA	NEW	2728 2937	2000 2200	100KV ND	F	YY	S MARIA DI G
E	7011	6	CVA	NEW	5538	1900 2100	100KW AZM70 18DB	F	YY	S MARIA DI G
E	7011	6	CVA	NEW	4445	2100 2300	100KW AZM58 18DB	F	YY	S MARIA DI G
E	7015	25	CVA	NEW	5154	0400 0600	100KW AZM75 18DB	F	XX	S MARIA DI G
E	7015	25	CVA	NEW	2728 2937	1030 1300	100KW ND	F	YY	S MARIA DI G
E	7015	25	CVA	NEW	2728 2937	1700 1800	100KW ND	F	YY	S MARIA DI G
E	7015	25	CVA	NEW	4757	1900 2100	100KW AZM175 18DB	F	YY	S MARIA DI G
E	7015	25	CVA	NEW	5051	2100 2200	100KW AZM75 18DB	F	YY	S MARIA DI G
E	7017	12	CVA	NEW	4853	1400 1600	50KW AZM140 18DB	F	YY	S MARIA DI G
E	7017	12	CVA	NEW	5560	1900 2100	50KW AZM90 18DB	F	YY	S MARIA DI G
E	7017	13A	CVA	NEW	4853	0600 0730	50KW AZM175 18DB	F	XX	S MARIA DI G
E	7017	13A	CVA	NEW	1213 1415 16	2200 2400	50KW AZM270 18DB	F	YY	S MARIA DI G
E	7021	20A	CVA	NEW	7114	1600 1800	50KW AZM250/320 18DB	F	XX	S MARIA DI G
E	7021	20A	CVA	NEW	1314 1516	2300 0100	50KW AZM240 18DB	F	YY	S MARIA DI G
E	7021	27	CVA	NEW	4445	1030 1200	50KW AZM58 18DB	F	Y	S MARIA DI G
E	70	6	E	NEW	16 27 28 29	1700 2400	100KW AZM45 6DB	F	Y	ARGANDA/MALAGA
E	70	6	E	NEW	6 7 8 9 10 11	0400 0700	100KW AZM300 18DB	F	YY	ARGANDA
E	70	6	E	NEW	6 7 8 9 10 11	0000 0745	100KW AZM300 18DB	F	YY	ARGANDA
E	70	6	E	NEW	2728 3637	1600 2200	100KW ND	F	YY	ARGANDA
E	70	9	E	NEW	16 27 28 29	1700 2400	100KW AZM45 6DB	F	YY	ARGANDA
E	70	9	E	NEW	2728 3637	1600 2200	50KW ND	F	YY	ARGANDA
E	70	9	E	NEW	12 13 14 15 16	0030 0400	100KW AZM240 18DB	F	YY	ARGANDA
E	7011		EGY	NEW	40	1400 1600	50KW AZM68 9DB	F	YY	ABU ZAABAL
E	7011		EGY	NEW	39	1600 1900	50KW AZM360 9DB	F	YY	ABU ZAABAL
E	7015		EGY	NEW	46	1500 2200	100KW AZM245 15DB	F	YY	ABU ZAABAL
E	7015		EGY	NEW	45	1000 1130	100KW AZM50 15DB	F	YY	ABU ZAABAL
E	7015		EGY	NEW	50	1130 1300	100KW AZM82 15DB	F	Y	ABU ZAABAL
E	7015		ETH	NEW	37	1900 2000	50KW AZM312			ADDIS ABEBA
E	7015		ETH	NEW	38	1800 1900	50KW AZM349			ADDIS ABEBA
E	7015		ETH	NEW	39	1700 1800	50KW AZM19			ADDIS ABEBA
E	70	6	I	NEW	18 19 27 28 29 30 *	2200 0600	25KW ND, * 37/40,46/48	F	Y	CALTANISSETTA
E	70	9	I	NEW	18 19 27 28 29 30 *	2200 0600	25KW ND, * 37/40,46/48	F	Y	CALTANISSETTA
E	70	9	IOB	NEW	11	1300 2000	5KW ND	F	X	GRENADA
E	70	9	IOB	NEW	11	1000 0300	5/50KW AZM294 10DB	F	Y	GRENADA
E	70	9	IOB	NEW	11	1000 0300	0,25/1KW AZM294 8DB	F	Y	GRENADA
E	70	6	J	NEW	44 45 64	1000 1500	50KW AZM11/254 5DB	F	Y	
E	70	6	J	NEW	44 45 64	2000 2300	50KW AZM11/254 5DB	F	Y	
E	70	914	J	NEW	52 53 57	1800 2000	100KW AZM265 6DB	F	X	TOKYO
E	70	919	J	NEW	44 64	2000 2200	50KW AZM170/270 10DB	F	Y	
E	70	927	J	NEW	34 35	2100 0600	50KW AZM7 8DB	F	Y	TOKYO
E	7015	24A	J	NEW	6 10	2100 2300	100KW AZM54 17DB	F	X	
E	7017	3A	J	NEW	59 60	2200 2400	100KW AZM170 11DB	F	X	
E	7021	22	J	NEW	10 11	0200 0500	100KW AZM52 10DB	F	X	TOKYO
E	70	6	KEN	NEW	48	0300 1600	10KW ND	F	Y	NAIROBI
E	70	7	KEN	NEW	48	0300 1400	7MC, 5KW ND	F	Y	MOMBASA
E	70	7	KEN	NEW	46	0300 1400	7MC, 5KW ND	F	Y	KISUMU
E	70	7	KEN	NEW	48	0300 1400	7MC, 6KW ND	F	Y	NAIROBI
E	70	7	KEN	NEW	48	0300 1400	7MC, 6KW ND	F	Y	NAIROBI
E	70	7	KEN	NEW	48	0300 1400	7MC, 10KW ND	F	Y	NAIROBI
E	70	6	KOR	NEW	43 44 45	0830 1530	SUWON 10KW AZM270 10DB	F	X	
E	70	9	KOR	NEW	43 44	2300 0100	SUWON 50KW AZM270 10DB	F	XX	
E	70	9	KOR	NEW	45	2100 2300	SUWON 50KW AZM100 10DB	F	YY	
E	7011		KOR	NEW	43 44	1400 1600	SUWON 50KW AZM270 10DB	F	YY	
E	7011		KOR	NEW	45	1200 1400	SUWON 50KW AZM100 10DB	F	X	
E	7011		KOR	NEW	39 40	1600 2000	SUWON 100KW AZM260 10DB	F	YY	
E	7011		KOR	NEW	6 10	1300 1500	SUWON 100KW AZM50 10DB	F	Y	
E	7011		KOR	NEW	27 28	2100 2300	SUWON 100KW AZM315 10DB	F	YY	
E	7015		KOR	NEW	43 44	1400 1600	SUWON 50KW AZM270 14DB	F	YY	
E	7015		KOR	NEW	45	1200 1400	SUWON 50KW AZM100 14DB	F	YY	
E	7015		KOR	NEW	49 50 54	2300 0100	SUWON 100KW AZM200 14DB	F	XX	
E	7015		KOR	NEW	41	1600 1800	SUWON 100KW AZM240 14DB	F	YY	
E	7015		KOR	NEW	39 40	0400 0500	SUWON 100KW AZM260 14DB	F	XX	
E	7015		KOR	NEW	51 55 59	2000 2100	SUWON 100KW AZM180 14DB	F	X	
E	7015		KOR	NEW	61	0700 0900	SUWON 100KW AZM100 14DB	F	X	
E	7015		KOR	NEW	6 10	0900 0700	SUWON 100KW AZM50 14DB	F	X	
E	7015		KOR	NEW	27 28	0600 0800	SUWON 100KW AZM315 14DB	F	YY	
E	7015		KOR	NEW	14 19	0930 1130	SUWON 100KW AZM130 14DB	F	YY	
E	7015		KOR	NEW	61	1600 1800	SUWON 100KW AZM100 14DB	F	X	

1	2	3	4	5	6	7	8	9	10	11
E	70	17		KOR	NEW41	01000200	SUWON 100KW AZM240 14DB	F	X	
E	70	17		KOR	NEW61	07000900	SUWON 100KW AZM100 14DB	F	X	
E	70	17		KOR	NEW 610	05000700	SUWON 100KW AZM50 1408	F	X	
E	70	17		KOR	NEW1415	01000300	SUWON 100KW AZM130 14DB	F	Y	
E	70	21		KOR	NEW495054	15001700	SUWON 100KW AZM200 14DB	F	X	
E	70	21		KOR	NEW515559	11001300	SUWON 100KW AZM180 14DB	F	Y	
E	70	9		MCO	NEW37	05000800	100KW AZM225 6DB	F	Y	FONTBONNE
E	70	9		MCO	NEW18	17002300	100KW AZM13 6DB	F	Y	FONTBONNE
E	70	11		MCO	NEW3839	05000800	100KW AZM114 6DB	F	Y	FONTBONNE
E	70	11		MCO	NEW37	08001700	100KW AZM225 6DB	F	Y	FONTBONNE
E	70	11		MCO	NEW46	17002300	100KW AZM212 6DB	F	Y	FONTBONNE
E	70	15		MCO	NEW46	08001700	100KW AZM212 8DB	F	Y	FONTBONNE
E	70	7		MLA	NEW54	13001500	50KW	F	Y	KUALA LUMPUR
E	70	9		MLA	NEW54	12001300	50KW	F	X	KUALA LUMPUR
E	70	11		MLA	NEW49	13001400	50KW	F	Y	KUALA LUMPUR
E	70	15		MLA	NEW49	11001200	50KW	F	Y	KUALA LUMPUR
E	70	15		MLA	NEW49	12001300	50KW	F	X	KUALA LUMPUR
E	70	15		MLA	NEW3839	16301830	50KW AZM300	F	Y	KUALA LUMPUR
E	70	17		MLA	NEW59	07300830	50KW AZM130	F	X	KUALA LUMPUR
E	70	17		MLA	NEW58	08300900	50KW AZM155	F	X	KUALA LUMPUR
E	70	17		MLA	NEW50	10001100	50KW AZM80	F	Y	KUALA LUMPUR
E	70	17		MLA	NEW44	11001200	50KW AZM35	F	Y	KUALA LUMPUR
E	70	17		MLA	NEW41	14001630	50KW AZM300	F	Y	KUALA LUMPUR
E	70	21		MLA	NEW45	09001000	50KW AZM35	P	Y	KUALA LUMPUR
E	70	6		RAK	NEW4041	00000400	100KW AZM22 6DB	F	Y	KARACHI
E	70	7		PAK	NEW40	16001700	100KW AZM300 8DB	F	Y	KARACHI
E	70	7		PAK	NEW4041	16001900	100KW AZM22 6DB	F	Y	KARACHI
E	70	7		PAK	NEW41	00000200	100KW AZM105 6DB	F	Y	LAHORE
E	70	7		PAK	NEW41	02001000	100KW ND	F	Y	LAHORE
E	70	7		PAK	NEW41	12001900	100KW ND	F	Y	LAHORE
E	70	9		PAK	NEW3040	14001600	100KW AZM22 6DB	F	Y	KARACHI
E	70	9		PAK	NEW3040	02000400	100KW AZM22 6DB	F	Y	KARACHI
E	70	9		PAK	NEW40	04000500	100KW AZM300 6DB	F	Y	KARACHI
E	70	9		PAK	NEW37	20002100	100KW AZM300 10DB	F	Y	KARACHI
E	70	9		PAK	NEW39	18002000	100KW AZM317 10DB	F	Y	KARACHI
E	70	9		PAK	NEW4041	04001600	100KW AZM22 6DB	F	Y	KARACHI
E	70	11		PAK	NEW3839	17002200	100KW AZM300 10DB	F	Y	KARACHI
E	70	11		PAK	NEW3839	17002200	100KW AZM300 10DB	F	Y	KARACHI
E	70	11		PAK	NEW37	20002100	100KW AZM300 10DB	F	Y	KARACHI
E	70	11		PAK	NEW39	18002000	100KW AZM317 10DB	F	Y	KARACHI
E	70	11		PAK	NEW27	20002100	100K5 AZM317 10DB	F	Y	KARACHI
E	70	11		PAK	NEW49	00000500	100KW AZM96 10DB	F	Y	KARACHI
E	70	11		PAK	NEW41	10001200	100KW AZM105 6DB	F	Y	LAHORE
E	70	11		PAK	NEW4041	00000500	100KW AZM278 10DB	F	Y	DACCA
E	70	15		PAK	NEW3839	05000700	100KW AZM300 10DB	F	Y	KARACHI
E	70	15		PAK	NEW39	05000700	100KW AZM317 10DB	F	Y	KARACHI
E	70	15		PAK	NEW27	20002100	100KW AZM317 10DB	F	Y	KARACHI
E	70	15		PAK	NEW49	15001900	100KW AZM96 10DB	F	Y	KARACHI
E	70	15		PAK	NEW4041	14001900	100KW AZM278 10DB	F	Y	DACCA
E	70	17		PAK	NEW5558596O	08000900	100KW AZM120 10DB	F	Y	KARACHI
E	70	17		PAK	NEW434445	11001200	100KW AZM80 10DB	F	Y	KARACHI
E	70	17		PAK	NEW495154	12001300	100KW AZM120 10DB	F	Y	KARACHI
E	70	17		PAK	NEW49	13001400	100KW AZM96 10DB	F	Y	KARACHI
E	70	17		PAK	NEW49	05001000	100KW AZM96 10DB	F	Y	KARACHI
E	70	17		PAK	NEW49	12001500	100KW AZM96 10DB	F	Y	KARACHI
E	70	17		PAK	NEW4041	05001000	100KW AZM278 10DB	F	Y	DACCA
E	70	17		PAK	NEW4041	12001400	100KW AZM278 10DB	F	Y	DACCA
E	70	21		PAK	NEW5558596O	08000900	100KW AZM120 10DB	F	Y	KARACHI
E	70	21		PAK	NEW434445	11001200	100KW AZM80 10DB	F	Y	KARACHI
E	70	21		PAK	NEW495154	12001300	100KW AZM120 10DB	F	Y	KARACHI
E	70	21		PAK	NEW49	13001400	100KW AZM96 10DB	F	Y	KARACHI
E	70	21		RAK	NEW49	10001200	100KW AZM96 10DB	F	Y	KARACHI
E	70	21		PAK	NEW4041	10001200	100KW AZM278 10DB	F	Y	DACCA
E	70	21		PRG	NEW 7 8	00000400		F	Y	ASUNCION
E	70	21		PRG	NEW2728	18002200		F	Y	ASUNCION
E	70	6		SDN	NEW364748	03002000	20KW ND 0/600KM	F	X	OMDURMAN
E	70	9		SDN	NEW3839474B	03002000	20KW ND 400/2000KM	F	X	OMDURMAN
E	70	11		SDN	NEW3839474B	08001500	100KW ND 600/2400KM	F	Y	OMDURMAN
E	70	11		SDN	NEW2728	18002000	100KW AZM335 150B	F	Y	OMDURMAN
E	70	15		SDN	NEW2728	15001800	100KW AZM335 150B	F	Y	OMDURMAN
E	70	17		SDN	NEW2728	06000800	100KW AZM335 150B	F	X	OMDURMAN
E	70	6		SIK	NEW41	00450400	GANGTOK, 7,5KW ND	F	X	
E	70	7		SIK	NEW41	04001200	GANGTOK, 7,5KW ND	F	Y	
E	70	6		TGK	NEW53	03150500	10KW ND	F	X	DAR ES SALAAM
E	70	6		TGK	NEW53	14301930	10KW ND	F	Y	DAR ES SALAAM
E	70	6		TGK	NEW53	03150500	10KW ND	F	X	DAR ES SALAAM
E	70	6		TGK	NEW53	14301930	10KW ND	F	Y	DAR ES SALAAM
E	70	6		TGK	NEW53	03150500	10KW ND	F	X	MWANZA
E	70	6		TGK	NEW53	14301930	10KW ND	F	Y	MWANZA
E	70	6		TGK	NEW53	03150500	10KW ND	F	X	MBEYA
E	70	6		TGK	NEW53	14301930	10KW ND	F	Y	MBEYA
E	70	7		TGK	NEW53	08001115	10KW ND	F	Y	DAR ES SALAAM
E	70	9		TGK	NEW53	08001115	5KW ND	F	Y	DAR ES SALAAM
E	70	6		UGA	NEW48	03002100	10KW ND	F	Y	KAMPALA
E	70	6		UGA	NEW48	03002100	10KW ND	F	Y	KAMPALA
E	70	7		UGA	NEW48	03002100	10KW ND	F	Y	KAMPALA
E	70	9		UGA	NEW48	06001500	10KW ND	F	Y	KAMPALA
E	70	11		UGA	NEW48	06001500	10KW ND	F	Y	KAMPALA
E	70	9	27A	YUG	NEW40	15001700	100KW AZM75	F	Y	BEOGRAD
E	70	9	27A	YUG	NEW38	17001800	100KW AZM120	F	Y	BEOGRAD
E	70	9	27A	YUG	NEW29	18302000	100KW AZM45	F	Y	BEOGRAD
E	70	9	27A	YUG	NEW30	20002100	100KW AZM60	F	Y	BEOGRAD

PAGE INTENTIONALLY LEFT BLANK

PAGE LAISSEE EN BLANC INTENTIONNELLEMENT

D 70

Phase / Phase / Fase	Bande/Band/Banda	Voie/Channel/Canal	Pays / Country / País	Index / Index / Indice nº	Zones de réception / Reception Zones / Zonas de recepción	Heures d'émission / Hours of transmis. / Horario de operac.	Commentaires de l'Administration / Comments from the Administration / Comentarios de la Administración	Analyse par l'IFRB / Analysis by IFRB / Análisis de la IFRB		Observations / Remarks / Observaciones
1	2	3	4	5	6	7	8	9	10	11
D 70	6	1	AUS	15 9		0830 1400	INT COCH URS	A	Y	
							INT CH1A BRN	A	Y	
D 70	6	1	CAN	2 2		1500 0100	INT COCH S	G	N	
D 70	6	1	SUR	1 1 2		1100 0400	INT	A	Y	
D 70	6	1A	BRN	1 5 4		0300 1400	0300/1600	F	Y	
							ADD 2200/0100	F	X	
D 70	6	2	CAN	5 3		1230 0400	INT CH1A CHN	A	Y	
D 70	6	2	CLN	4 4 1		0100 0230	SEP CH1 CLN	C	X	
D 70	6	2	PAK	8 4 0 4 1		1200 1800	INT COCH D	D	Y	
							INT COCH NGN	D	Y	
							INT CH2A ADN	D	Y	
D 70	6	2A	NIG	2 4 6		0900 1600	FREQ/6MC	C	Z	
							AZM55 6DB	F	X	
D 70	6	3	AUS	2 5 9		0830 1400	INT CH3A INS	A	Y	
D 70	6	3	I	2 8 2 7 2 8		1730 2200	ND CIRAF 27,28,29	C	Y	
D 70	6	3	IND	1 5 4 1		0045 0700	INT COCH ALB	D	Y	
D 70	6	3	MEX	1 1 0		1400 0600	INT	C	Y	
D 70	6	3A	INS	1 0 5 4		2200 1600	MENADO	F	X	
D 70	6	5	MEX	3 1 1		0000 0530	INT	C	Y	
D 70	6	5	MEX	4 1 0		1200 2100	INT	C	Y	
D 70	6	5A	MLA	1 5 4		2230 1630	SINGAPORE	F	X	
D 70	6	6	CAN	1 1 2		0200 0800	INT COCH ROU	G	Z	
D 70	6	6	CAN	3 2		1500 0100	1500/0200	F	Y	
							INT COCH DNK,ROU	G	Z	
D 70	6	7	MEX	2 1 0		1300 2400	INT COCH DOM	D	Y	
D 70	6	8	KEN	1 4 8		0700 1100	6KW 0300/1600	F	X	
D 70	6	8	KEN	1 4 8		1300 2000	6KW 0300/1600	F	X	
D 70	6	8	KEN	1 4 8		1300 2000	DEL 1600/2000	F	X	
D 70	6	9	G	5 2 8 2 9 3 0		0300 0400	6MC/FREQ	C	Y	
D 70	6	9	G	2 5 1 6 2 7 2 8		1600 1900	INT CH9A F	A	Y	
D 70	6	9	IND	2 1 4 1		0030 0400	INT COCH G	D	Y	
D 70	6	9	IND	2 1 4 1		0030 0400	INT COCH URG	A	Y	
D 70	6	9	MEX	5 1 0		1400 2400	INT CH8A CLM	D	Y	
							INT CH9A CGO	D	Y	
D 70	6	9	YUG	3 2 8		1000 1800	DEL	F	Y	
D 70	6	9A	CGO	2 5 2		1600 2000	50KW ND	F	X	
							LEOPOLDVILLE	F	X	
D 70	6	9A	NZL	2 5 9		0700 1400	FREQ/6MC	C	X	
D 70	6	10	I	7 2 8		0530 1800	0530/2330	B	Y	
							ND CIRAF 27,28,37,38,39	C	Y	
D 70	6	10A	MEX	1 8 6 7 1 0		0200 0500	9MC CH17	F	Y	
D 70	6	11	G	1 2 8		0300 0515	6MC/FREQ	C	Y	
D 70	6	11	G	1 3 2 7 2 8 2 9		0515 1600	INT CH11A URS	A	Y	
							6MC/FREQ	C	Y	
D 70	6	11	G	3 8 2 7 2 8		1600 2315	6MC/FREQ	C	Y	
D 70	6	12	I	1 2 2 8 2 9		1300 1400	7MC	C	Y	
D 70	6	12	S	2 1 6 7		0300 0400	9MC	G	Y	
D 70	6	13	CTO	5 4 6		0600 2300	ACCRA	F	X	
D 70	6	13	MEX	2 1 6		0430 0730	0200/0500	F	Y	
D 70	6	13A	CLN	5 4 1		0100 0230	SEP CH12A CLN	C	X	
D 70	6	13A	EGY	1 3 8 3 9		0300 0900	0300/1500	F	X	
D 70	6	13A	EGY	1 3 8 3 9		1500 2330	1500/2400	F	X	
D 70	6	14	ATN	1 1 1		1200 0500	INT	D	Y	
D 70	6	14	I	3 2 8		0530 0730	0400/0730	B	Y	
D 70	6	14	NOR	2 1 8 2 7		0730 0930	0700/0900	C	Y	
D 70	6	15	IOB	1 1 1		1600 1800	1000/1800	F	X	
							INT COCH CLM	C	Y	
							INT CH14A DOM	C	Y	
D 70	6	15	IOB	1 1 1		2100 0200	1800/0300	F	X	
							INT COCH CLM	C	Y	
							INT CH14A DOM	C	Y	
D 70	6	15	MLA/G	7 4 9 5 0 5 4		0800 1300	INT CH14A USA	A	Y	

1	2	3	4	5	6	7	8	9	10	11
D 70	6	15	MLA/G	7	49 50	1300 1700	INT COCH SUI	A	Y	
							INT CH14A USA	A	Y	
D 70	6	15	MLA/G	7	49	2200 0200	INT COCH POR,SUI	A	Y	
D 70	6	15A	AFS	1	57	1400 1800	DEL	F	X	
D 70	6	15A	IND	5	41	0045 1400	INT	G	Z	
D 70	6	16	MCO	1	2 7 28 37	0630 1800	0600/2300	C	Y	
D 70	6	16	YUG	4	28	2100 2230	1000/2330	F	Y	
D 70	6	17	G	1	4 2 7 28	0530 0830	0500/0830	B	Y	
							6MC/FREQ	C	Y	
D 70	6	17	HOL	1	1 8 27 28 37	1530 2100	INT	D	Y	
D 70	6	17	HOL	1	1 8 27 28 37	2300 0100	INT	A	Y	
D 70	6	17	HOL	8	38	2200 2300	2000/2100	B	Y	
D 70	6	19	G	4	6 27 28	1815 2100	1630/2200	B	Y	
							6MC/FREQ	C	Y	
D 70	6	19	G	4	7 18 27 28 29	1815 2100	1630/2200	B	Y	
							6MC/CHX	C	Y	
D 70	6	19	MLA/G	5	4 3 4 4 49 50	2200 0200	INT COCH G	D	Y	
							INT COCH HNB	A	Y	
D 70	6	20A	ARS	3	39	0400 2100	JEDDAH , 0330/2100	F	X	
							50KW , 9MC	F	Y	
D 70	6	21	AUT	1	1 8 27 28 29 37	0900 1500	50KW	F	X	
D 70	6	22	YUG	2	28	0400 0600	0400/0530	B	Y	
D 70	6	23A	GRL	1	5	1700 2100	INT	G	Z	
D 70	6	24	IND	17	41	0100 1800	INT COCH PRV	D	Y	
D 70	6	24	IND	17	41	0100 1800	INT	G	Z	
D 70	6	24A	ETH	5	48	0400 0600	50KW	F	X	
D 70	6	25	BRN	2	54	0300 1200	0300/1600	F	Y	
							ADD 2200/0100	F	X	
D 70	6	25	G	1	1 2 7 28	0600 0830	0430/0830	B	Y	
							INT CH24A MRF	A	Y	
D 70	6	25	PAK	1	1 4 0 41	1200 1800	INT COCH HNG	D	Y	
							INT COCH CGO	A	Y	
D 70	7	1	G	6	28 37	0700 0800	0400/0500 0615/0700	B	Y	
D 70	7	1	G	19	2 7 28	0800 1600	INT COCH URS	AC	Y	
D 70	7	1	NIG	8	46	0700 1600	20KW AZM55 6DB	F	X	
D 70	7	2	AUS	3	51	2000 1400	INT COCH CHN,TUR	A	Y	
							INT CH1A MLA	A	Y	
							INT CH2A BRM	A	Y	
D 70	7	2A	AFS	2	57	1400 1800	0400/1800	F	Y	
							7MC/CHX	F	Y	
D 70	7	2A	PAK	1	3 4 0 41	0200 0430	6MC	C	Y	
							INT CH3 URS	D	Y	
							INT CH2 POR	D	Y	
D 70	7	3A	IND	14	41	0300 1530	INT	A	Y	
D 70	7	4	G	3	1 2 7 28	1000 1400	INT CH3A F	A	Y	
D 70	7	4	G	4	3 1 8 28	1700 1830	7MC/FREQ	B	Y	
D 70	7	4	G	4	5 2 7 37	1830 2000	INT CH4A ROU	A	Y	
							7MC/FREQ	C	Y	
D 70	7	4	G	5	4 6 4 7 52 53	0300 0500	0400/0600	B	Y	
D 70	7	4A	CGO	1	1 52	1600 2000	BUKAVU	F	X	
D 70	7	4A	PAK	2	3 4 0 41	0100 0330	6MC	C	Y	
							INT CH5 POR	D	Y	
D 70	7	4A	PAK	2	9 40	1200 1800	INT COCH CGO	A	Y	
							INT CH5 CHN	A	Y	
							INT CH5 I	D	Y	
D 70	7	5	G	9	2 7 28	0600 0700	0400/0700	B	Y	
D 70	7	5	G	8	9 38 39 40	0400 0500	0330/0500	B	Y	
D 70	7	5	G	9	3 39 40	0400 0600	7MC CHX	B	Y	
D 70	7	5	I	19	1 6 27 28 29 37 38	1630 1730	ND CIRAF 27,28,37,38	B	X	
D 70	7	5	I	2	2 37	2100 2200	AZM270	C	X	
D 70	7	5	I	2	3 2 8 29	1300 1500	INT COCH CHN	D	Y	
D 70	7	5	I	2	6 1 8 27 28 29 37	1500 1630	INT COCH CHN	D	Y	
D 70	7	5	I	4	9 2 7 28 37	0700 0900	NOREQ	C	X	
D 70	7	5	I	5	0 37 38 39 48	1000 1300	INT	C	Y	
D 70	7	5	I	5	4 37 38	2000 2100	AZM175/220	C	X	
D 70	7	5A	CLN	6	41	1130 1700	1130/1730	B	Y	
D 70	7	6	AUT	2	1 8 27 28 29 37	0900 1300	50KW	F	X	
D 70	7	6A	NIG	7	46	0600 2100	ND	F	X	
D 70	7	7	AFS	4	57	1400 1800	0400/1800	F	Y	
D 70	7	7	ARS	4	39	1100 1500	11MC, GRP 5,6,7	F	Y	
D 70	7	7	ARS	7	39	1500 1700	11MC , GRP 4,5,6	F	Y	
D 70	7	7	HOL	6	29	1700 1800	AZM90	C	X	

1	2	3	4	5	6	7	8	9	10	11
							INT	A	Y	
D	70	7	7A	PAK	9 4 0 4 1	0630 0930	RAWALPINDI	E	X	
D	70	7	8	FNL	1 1 5 5 5 8 5 9	2000 2200	17MC,0900/1100	C	Y	
D	70	7	8	NOR	1 1 7 1 8 2 7	0800 1000	0700/0900	B	Y	
D	70	7	8	NOR	5 1 8 2 7	1300 1800	1500/1900	C	Y	
D	70	7	8	NOR	7 1 7 1 8 2 7	1000 1300	1800/2300	C	Y	
D	70	7	8A	EGY	2 3 8 3 9	0400 2300	0400/2400	C	Y	
							ND	C	Y	
							INT COCH URS KHABAROVSK	D	Y	
D	70	7	9	G	7 2 7 2 8	0400 0800	INT CH8A EGY	A	Y	
							7MC/FREQ	B	Y	
D	70	7	9	G	4 4 2 7 2 8	1700 1900	1700/2300	B	Y	
							7MC/FREQ	B	Y	
D	70	7	9A	PAK	3 6 4 1 4 9	0030 0430	INT CH9 POR	A	Y	
D	70	7	9A	PAK	3 6 4 1 4 9	1030 1530	0930/1530	F	X	
D	70	7	10	G	8 2 7 2 8	0400 0900	7MC/FREQ	B	Y	
D	70	7	10	G	2 4 1 8 2 8	0900 1100	INT COCH J	A	Y	
D	70	7	10	J	2 4 4 4 5 5 4	2000 1400	2000/1500	F	Y	
D	70	7	10A	IND	2 0 4 1	0400 1530	INT	G	Z	
D	70	7	11A	AFS	6 5 7	1400 1800	0400/1800	F	Y	
D	70	7	11A	NIG	6 4 6	0730 1400	20KW , 0730/1700	F	X	
D	70	7	11A	PAK	2 5 4 1	1500 1700	CIRAF 40,41	E	X	
							INT COCH AFS	A	Y	
							INT CH11 INS	G	Z	
D	70	7	12A	ARS	2 3 9	0900 1300	REYADH , 100KW	F	X	
							0330/2100	F	Y	
D	70	7	12A	TGK	1 5 3	0700 0900	5KW, 0800/1115	F	Y	
D	70	7	12A	TGK	1 5 3	1300 1700	DEL	F	X	
D	70	7	13	J	1 4 5	2200 1400	2000/1400	B	Y	
D	70	7	13	J	1 9 4 1	1800 2000	1730/1930	C	Y	
D	70	7	13	J	2 1 2 7 2 8 2 9	2000 2200	7MC/CHX	C	Y	
D	70	7	13	PAK	4 4 3 1 4 0 4 2	1500 1600	CIRAF 30,31,40/42	E	Y	
							10KW	B	Y	
							1400/1700	B	X	
							INT COCH D	D	Y	
D	70	7	13A	PAK	2 8 4 0 4 1	0100 0330	INT CH14 POR	D	Y	
D	70	7	13A	UGA	1 4 8	0600 1000	10KW, 0300/2100	F	Y	
D	70	7	13A	UGA	1 4 8	1400 2000	10KW, 0300/2100	F	Y	
D	70	7	14	G	1 0 2 7 2 8	0730 0930	0415/0700	B	Y	
D	70	7	14A	CLN	7 4 1	0400 1600	0400/1730	B	Y	
D	70	7	14A	KEN	2 4 8	0700 1100	10KW	F	X	
D	70	7	14A	KEN	2 4 8	0700 1100	ADD 10KW 0300/0700	F	Y	
D	70	7	14A	KEN	2 4 8	1300 2000	10KW 1100/1400	F	X	
D	70	7	14A	KEN	2 4 8	1300 2000	DEL 1400/2000	F	X	
D	70	7	15	I	1 0 3 7 3 8	0600 0630	INT CH14A SYR	C	Y	
D	70	7	15A	CGO	9 5 2	0900 1900	0800/1900	C	X	
D	70	7	15A	CGO	9 5 2	1900 2200	1830/2200	B	Y	
D	70	7	15A	PAK	5 4 1	1400 1500	INT CH15 VTN	A	Y	
D	70	7	15A	PAK	1 9 4 0 4 1	0200 0500	INT CH15 URS	D	Y	
D	70	7	15A	PAK	2 4 4 0 4 1	1500 1630	AZM22	E	X	
D	70	7	15A	PAK	3 0 4 0	1630 1730	INT COCH CGO	A D	Y	
							INT CH15 CVA	D	Y	
							INT CH16 YUG	D	Y	
							CIRAF 30,31,40,42	B	Y	
D	70	7	15A	PAK	4 3 5 0 3 1 4 0 4 2	1730 1800	AZM22	E	X	
							INT COCH CGO	D	Y	
D	70	7	16	YUG	1 2 8	0630 1800	0400/2330	F	Y	
							ND	F	X	
D	70	7	16	YUG	1 5 3 0 3 9	1800 2000	1730/1800	F	X	
							15MC CH5A	G	Z	
D	70	7	16A	G	1 1 5 4 1 5 4	0030 0230	INT CH17 URS	D	Y	
D	70	7	17	ALB	5 2 7 3 8 3 9	1200 1800	1200/2300	F	Y	
							CIRAF 27,28,38,39	F	X	
D	70	7	17	ALB	7 3 8	2000 2100	9MC CH20A	F	Y	
D	70	7	17A	ETH	1 4 8	0300 0600	10/20KW	F	X	
D	70	7	17A	IND	9 4 1	0800 1100	INT CH17 CHN	A	Y	
D	70	7	17A	IND	2 7 4 1	0100 0700	INT	A	Y	
D	70	7	18	E	9 4 9 5 0	2300 0100	11MC 1200/1400	C	Y	
D	70	7	18	IND	5 3 2 7 2 8	2000 2200	INT	A	Y	
D	70	7	18A	PAK	1 4 4 0 4 1	1200 1800	INT COCH TUN,MOZ	D	Y	
							INT CH18 INS,POL	D D	Y	
							INT CH19 BUL	A	Y	
D	70	7	18A	PAK	1 6 4 0 4 1	0200 0430	INT CH18 POR	D	Y	
D	70	7	19A	IND	3 5 4 1	0100 1300	INT CH19 TCH	A	Y	
D	70	7	19A	NIG	5 4 6	0600 1600	20KW	F	X	

1	2	3	4	5	6	7	8	9	10	11
D	70	7	20	G	4 1 2 7 2 8	1600 1900	INT CH19A IND	A	Y	
							1600/2200	B	Y	
D	70	9	1	AUT	6 7 8	2300 0200	100KW 6MC CH20A	C	Y	
D	70	9	1	ETH	6 4 8	0900 1100	50KW	F	X	
D	70	9	1	ETH	6 4 8	1100 1130	100KW AZM349 16DB	F	X	
							CIRAF 38	F	X	
D	70	9	1	ETH	6 4 8	1130 1200	100KW AZM19 16DB	F	X	
							CIRAF 39	F	X	
D	70	9	1	HOL	3 5 1 0	0200 0400	INT	A	Y	
D	70	9	1	IND	9 3 5 4	2300 0000	INT CH2 INS	A	Y	
D	70	9	1A	CTO	1 4 5	0600 1700	0600/2300	F	X	
D	70	9	2	BEL	1 0 7 8 9	0100 0300	0000/0200	B	Y	
D	70	9	2	CAN	6 2 3	2200 0100	INT CH1A SUI	G	Z	
D	70	9	3A	D	7 4 6 4 7	1800 2200	AZM200	F	X	
D	70	9	3A	D	1 3 4 1	1700 2000	1500/1800	B	Y	
D	70	9	4	DNK	5 6 7 8	0000 0100	0100/0200	B	Y	
							GRP 6,7	C	Y	
D	70	9	4	DNK	6 6 7 8 13 14 15 16	0400 0500	GRP 5,7	C	Y	
D	70	9	4	MEX	1 1 1 2	1300 2200	INT CH4A CHL	C	Y	
							INT CH3 VEN	C	Y	
D	70	9	4	MEX	20 7 8	0100 0400	0000/0300	F	Y	
D	70	9	4	NIG	1 0 4 6	0500 1800	20KW AZM55 6DB	P	Y	
D	70	9	4A	AUT	4 3 9	1600 1700	0500/0600 CH6	C	Y	
							20KW	F	X	
D	70	9	4A	CHL	8 1 4	1900 2200	1900/0200	C	Y	
D	70	9	4A	DNK	6 6 7 6 13 14 15 16	0500 0600	GRP 5,7	C	Y	
D	70	9	4A	DNK	7 13 14 15 16	0100 0300	0200/0400	B	X	
							GRP 5,6	C	Y	
D	70	9	4A	G	16 11 12 13 14 15 16	0000 0100	INT CH4 URS,DNK	A	Y	
D	70	9	5	CTO	2 4 6	0600 1700	0600/2300	F	X	
D	70	9	5	D	2 5 6 7 8 9	0100 0500	6MC	B	Y	
							AZM295/320	F	X	
D	70	9	5	MLA/G	19 27 28 29 39 40 41	2300 2400	9MC/FREQ	B	Y	
D	70	9	5A	I	37 38 39 41 48	1700 1900	1630/1900	B	Y	
							150KW	C	X	
							CIRAF 38,39,47,48	C	X	
D	70	9	7A	CGO	2 0 2 7	2000 2100	1800/2100	B	Y	
D	70	9	7A	CGO	2 0 2 7	0830 0930	DEL	C	X	
D	70	9	7A	G	6 2 8 3 7	0500 0615	9MC/FREQ	B	Y	
D	70	9	7A	G	37 18 28	1600 1900	INT CH7 URS	A	Y	
							9MC/FREQ	B	Y	
D	70	9	7A	G	8 4 3 7	2100 2200	9MC/FREQ	B	Y	
D	70	9	7A	G	8 8 3 6 3 7 4 6	2200 0300	9MC/FREQ	B	Y	
D	70	9	7A	G	1 1 2 2 6 3 8	1900 2000	9MC/FREQ	B	Y	
D	70	9	10	MEX	8 1 0 1 1	2200 0600	INT	A	Y	
D	70	9	10A	CAN	16 18 29	1800 2100	1800/2300	F	Y	
							AZM50/60	F	X	
							CIRAF 18,27,28,29	F	X	
D	70	9	10A	I	4 6 39 40 41	0600 0900	INT CH11 URS	A	Y	
D	70	9	10A	I	8 0 3 4 6 7 8 9	0000 0200	2200/0300	B	Y	
							9MC/FREQ	C	Y	
D	70	9	11	BEL	5 5 2	1900 2100	1800/2100	B	Y	
D	70	9	11	ETH	7 4 8	1600 1800	50KW	F	X	
D	70	9	11	ETH	9 18 27 28	2100 2400	100KW AZM336/349 17DB	F	X	
D	70	9	11A	ALB	1 1 7 8	0300 0500	1200/1400	F	Y	
D	70	9	11A	ALB	12 8	0000 0300	0000/0400	F	Y	
							AZM310 15DB	F	X	
							ADD AZM250 CIRAF 13,15	F	Y	
D	70	9	11A	G	27 18 27 28	1000 1630	INT CH12 MLA/G	A	Y	
D	70	9	11A	G	42 18 28 29	1830 1900	9MC/FREQ	B	Y	
D	70	9	11A	I	6 0 5 5 5 9	1900 2000	INT	A	Y	
D	70	9	12	D	17 5 5 5 8 5 9	0500 0700	11MC	G	Z	
D	70	9	12	MLA/G	24 1 9	2300 2400	INT CH11A NOR	A	Y	
D	70	9	12A	I	7 1 4 6 7 8 9 10	0000 0200	2300/0100	B	Y	
							INT	C	Y	
D	70	9	12A	NOR	16 7 8 9 10	2200 2400	0100/0230	C	Y	
							6MC	C	Y	
D	70	9	13	HOL	5 2 8	0800 0900	2100/2200	C	Y	
D	70	9	13	NOR	3 1 7 18	1000 1400	1000/1300	F	X	
D	70	9	13A	D	1 4 4 1	0100 0300	1300/1600	B	Y	
D	70	9	13A	EGY	4 2 7 2 8	2030 2300	1800/2300	C	Y	
D	70	9	13A	EGY	5 5 7	2300 2400	AZM320 9DB CIRAF 27,28	F	X	
D	70	9	14	AUS	6 5 5 5 9	2000 1400	INT CH13A USA	G	Z	
D	70	9	14A	BEL	3 5 2	2300 0200	CH25	C	Y	
D	70	9	14A	I	2 2 8 2 9	0400 0700	0300/0600	B	X	
D	70	9	14A	I	1 1 3 7 3 8	0700 0800	0600/0630	B	X	
D	70	9	14A	IND	5 4 2 7 2 8 3 7	2200 2300	INT	A	Y	

1	2	3	4	5	6	7	8	9	10	11
D	70	9	14A	IND	54272837	22002300	6MC 1945/2100	C	Y	
D	70	9	15	IND	8134 45	14001500	INT CH16 URS	A	Y	
D	70	9	15A	ARS	23 8	17001800	DEL	F	X	
D	70	9	15A	I	18182729	16301730	CIRAF 18,27,28,29	C	X	
							9MC/FREQ	C	Y	
D	70	9	15A	I	5640	19002000	2000/2100	B	Y	
							INT CH16 URS	D	Y	
D	70	9	16	IND	1841	07001100	INT COCH URS	D	Y	
D	70	9	18A	SUI	143839	17001830	1700/1900, 11MC CH17A	B	Y	
D	70	9	17	MEX	810	13002300	INT	C	Y	
D	70	9	17A	EGY	1112131415 16	00000300	2300/0300	F	Y	
D	70	9	18	AFS	357	08301400	0900/1500	F	X	
D	70	9	18A	I	42829	04000600	INT COCH URS	A	Y	
D	70	9	18A	I	242829	13001500	INT COCH URS	D	Y	
D	70	9	18A	I	3957	06000630	INT COCH URS	A	Y	
D	70	9	19A	I	82728373839	07002400	0530/2330	C	Y	
D	70	9	19A	IND	464142	10001200	7MC 1200/1330	C	Y	
D	70	9	20	CTO	446	06002100	0600/2300	F	X	
							ACCRA	F	X	
D	70	9	20A	G	3282930	03000345	9MC/FREQ	B	Y	
D	70	9	20A	G	5537525 7	03450600	INT CH21 FNL,S	A	Y	
D	70	9	20A	NGN	427	20002100	1600/1900	B	Y	
							6MC	B	Y	
D	70	9	21	AFS	557	06301400	0600/1500	F	X	
D	70	9	21	BEL	1215	21002400	11MC	B	Y	
D	70	9	21A	G	122829	05150600	9MC/FREQ	B	Y	
D	70	9	21A	G	1628	06000700	9MC/FREQ	B	Y	
D	70	9	21A	G	4028	16001815	9MC/FREQ	B	Y	
D	70	9	21A	G	513738 3946 47 48	03450515	INT CH21 S	A	Y	
							9MC/FREQ	B	Y	
D	70	9	21A	G	85525357	21002300	INT CH21 BEL	A	Y	
D	70	9	21A	G	1132838 3948	16152200	9MC/FREQ	B	Y	
D	70	9	21A	G	148 3 4 5 7 8 910	23000345	9MC/FREQ	B	Y	
D	70	9	22	UGA	248	06001000	10KW, 0600/1500	F	Y	
D	70	9	22	UGA	248	14001600	10KW, 0600/1500	F	Y	
D	70	9	22A	HOL	30 7	22002400	INT	A	Y	
D	70	9	22A	HOL	3410	00000400	INT	A	Y	
D	70	9	22A	IND	5039 40	16001800	INT	A	Y	
D	70	9	22A	IND	5228	18001830	INT	A	Y	
D	70	9	22A	J	183940	18302000	1700/2000	B	Y	
D	70	9	22A	MEX	911	14002200	INT CH21A,CH23A GTM	C	Z	
D	70	9	22A	PAK	45303140 4142	04000600	INT COCH IRL	D	Y	
							10KW	C	Y	
D	70	9	22A	PAK	5728 29	20002100	1930/2030	B	Y	
D	70	9	22A	PAK	572728	21002200	2030/2130	B	Y	
							7MC	D	Y	
D	70	9	22A	YUG	527	08300930	0800/0900	C	Y	
D	70	9	22A	YUG	929	11001130	1800/1830	C	Y	
D	70	9	22A	YUG	1029	10301100	2000/2100	C	Y	
							11MC CH18	C	Y	
D	70	9	22A	YUG	102729	09301030	1900/2000	C	Y	
							11MC CH18	C	Y	
D	70	9	22A	YUG	1118	11301200	2230/2300	C	Y	
							AZM250 CIRAF 37	F	X	
							11MC CH18	C	Y	
D	70	9	22A	YUG	1227	13301430	2100/2200	C	Y	
							AZM250 CIRAF 37	F	X	
D	70	9	22A	YUG	2237	12001330	2100/2200	C	Y	
							AZM60 CIRAF 29	F	X	
							11MC CH18	C	Y	
D	70	9	23	SUI	1146474857	22002400	21MC CH7 , 1900/2200	B	Y	
D	70	9	23A	HOL	73839	18001900	1700/1800	B	Y	
D	70	9	23A	HOL	940	17001800	AZM110	F	X	
D	70	9	24	ARS	2315	22002300	CIRAF 13/15	F	X	
							GRP 20,23	F	Y	
D	70	9	24	ARS	231314	23002400	CIRAF 13/15	F	X	
							GRP 20,23	F	Y	
D	70	9	24	CAN	2356606263	06000800	INT CH24A USA	A	Y	
D	70	9	24	MEX	284950	12001300	INT	G	Y	
D	70	9	24A	ARS	439	05300900	11MC, GRP 5,6,7	F	Y	
D	70	9	24A	ARS	539	15001800	11MC , GRP 4,6,7	F	Y	
D	70	9	24A	ARS	1039	18001900	DEL	F	X	
D	70	9	24A	NOR	4182728	10001500	1000/1300	F	X	
D	70	9	25	CTO	346	06001700	0600/2300	F	X	
							ACCRA	F	X	
D	70	9	25A	EGY	3585940 4748	04002300	0400/2400	C	Y	
D	70	9	25A	G	153101112	23000400	INT CH25 CHL,F	A	Y	

1	2	3	4	5	6	7	8	9	10	11
							INT CH26 UKR	G	Z	
D	70	926	AFS	757		06301400	0600/1500	F	X	
D	70	926	MEX	1010		14002300	INT	C	Y	
D	70	926A	G	11855585 9		05000600	INT CH27 ROU	A	Y	
D	70	926A	G	12256 50		06000900	INT CH27 ROU	A	Y	
D	70	926A	INS	29 3738		22002300	1900/2100	B	Y	
D	70	926A	NOR	2045		10001100	1000/1130	B	Y	
D	70	927A	G	1205660		05000900	INT CH27 ROU	A	Y	
							INT CH28 FNL	A	Y	
D	70	927A	G	146 155585 5		20302300	9MC/FREQ	B	Y	
D	70	927A	I	92728 3738		09001800	0730/2230	B	Y	
D	70	927A	NOR	18 7 8	9 10 11	23000030	01100/0230	C	Y	
D	70	927A	YUG	27 6		00300230	0200/0400	C	Y	
							11MC CH6	C	Y	
D	7011	1	CGO	2027		18001900	9MC/7A 1700/1800	B	Y	
D	7011	1	G	1324149505154585 9		13001400	INT CH1A URS	D	Y	
D	7011	1	G	1434041495054		11001300	1400/1600	B	Y	
							INT CH1A URS	D	Y	
D	7011	1	IND	12355 5596 0		10001100	INT COCH URS	A	Y	
D	7011	2	ARS	639		08001000	JEDDAH , ADD AZM300	F	X	
							0400/2100 ; GRP 4,5,7	F	Y	
D	7011	2	AUS	46 8		12001400	INT COCH CHN	D	X	
D	7011	2	I	25 2829		13001500	INT COCH CHN	D	Y	
							INT CH1A,CH2A URS	D	Y	
D	7011	2	I	70 4 6 7 8 9 10		22000300	6MC 9MC	G	Y	
D	7011	2	I	79 1112		18001900	1900/2000	B	Y	
							INT CH1A,CH2A B	D	Y	
D	7011	2	I	80 3 4 6 7 8 9		03000500	11MC/FREQ	C	Y	
D	7011	2	PAK	141		02300530	INT COCH I	D	Y	
							INT CH2A ROU	A	Y	
D	7011	2	YUG	629		07000730	AZM45	C	X	
							CH6	C	X	
D	7011	2	YUG	1738		06000700	CH6	C	X	
D	7011	3	CGO	17 6		00000200	0000/0500	B	Y	
D	7011	3A	G	6746		20002100	2100/2300	B	Y	
D	7011	3A	G	150 12131415 16		22000300	11MC/FREQ	B	Y	
D	7011	3A	G	168 12131415 16		21002200	2000/2300	B	Y	
							11MC/FREQ	B	Y	
D	7011	3A	HOL	2063		04000530	0900/1030	C	Y	
							AZM80 CIRAF 59	C	Y	
							17MC,21MC	C	Y	
D	7011	4	G	4 2829 30		05000600	0300/0400	B	Y	
							11MC/FREQ	B	Y	
D	7011	4	G	94 2829		06000730	INT CH4A I	A	Y	
D	7011	4	G	151 10 11 12		01000300	11MC/FREQ	B	Y	
D	7011	4	G	155 1/ 10		00000100	0000/0330	B	Y	
D	7011	4A	AUT	7 11 12 13 14 15		02300500	9MC CH1	C	Y	
D	7011	4A	HOL	144951		17001800	1400/1700	B	Y	
D	7011	4A	I	57555859 60		05000830	INT COCH EQA	A	Y	
D	7011	5	EGY	63738 39 40 47 48		04001800	0400/2400	C	Y	
							ND	F	X	
D	7011	5	EGY	10 6 7 8		00000300	9MC	C	Y	
D	7011	5A	I	86 14 15 16		23000400	2200/0300	C	Y	
							CIRAF 12,14,15,16	C	X	
							11MC/FREQ	C	Y	
D	7011	5A	I	67 12 14 15 16		04000500	11MC/FREQ	C	Y	
D	7011	6	ETH	348		08001900	10/20KW	F	X	
D	7011	6	ETH	10 6 7 8		00000200	100KW AZM312 18DB	F	Y	
							CIRAF 6,7,8,10	F	Y	
D	7011	6	YUG	2657		21002200	2000/2100	C	Y	
							15MC CH5A	C	Y	
D	7011	7	AFS	1318 27 28		17001800	1400/1800	F	Y	
							AZM360 12DB	F	X	
							CIRAF 46,47,48	F	X	
							15MC,17MC	F	Y	
D	7011	7	CAN	225630		05001130	9MC	D	X	
D	7011	7A	G	155 1/ 10		22002330	11MC/FREQ	B	Y	
D	7011	7A	PAK	35 4149		14001730	1330/1730	B	Y	
D	7011	8A	AF8	95253		14001500	1200/1400	F	Y	
D	7011	8A	AFS	9525358 59		15001600	DEL	F	X	
D	7011	8A	AFS	95253		16001800	DEL	F	X	
D	7011	8A	AL8	11 7 8		03000500	0000/0300	F	Y	
							AZM310/250 CIRAF 7,8,13	F	Y	
D	7011	8A	G	160 1112		22000200	INT CH9 F	A	Y	
							11MC/FREQ	B	Y	
D	7011	9	ARS	936		11001400	100KW AZM280 15DB	F	X	
							CIRAF 37, REYADH	F	X	
							0800/0900 ,GRP 8,12,19	F	Y	
D	7011	10A	D	27 10 11		02000500	AZM285	F	X	
D	7011	10A	J	1449		12001400	1230/1500	F	Y	
D	7011	10A	MEX	13 10 11		11002000	INT CH10 CLM	D	Y	
							INT COCH J	A	Y	

1	2	3	4	5	6	7	8	9	10	11
	70	11	11	BEL	7 5 2	1800 2000	1800/2100	B	Y	
							9MC	B	Y	
D	70	11	11	I	13 2 7	1300 1400	CIRAF 28,29	C	X	
D	70	11	11	SUI	12 4 0	1400 1500	15MC CH8 , 1500/1630	B	X	
D	70	11	11A	MEX	30 44 45	0600 0800	0900/1100 , 9MC CH22A	F	Y	
D	70	11	12A	ARS	5 3 9	0400 0800	GRP 4,6,7	F	Y	
D	70	11	12A	ARS	12 5 0 5 4	0200 0400	AZM75/100 , CIRAF 50,54	F	X	
							GRP 8,9,19	F	Y	
D	70	11	12A	G	16 6 10 11 12	1030 1130	11MC/FREQ	G	N	
							INT COCH J	D	X	
D	70	11	12A	HOL	36 14	2330 0100	INT	A	Y	
D	70	11	12A	J	6 4 4	1000 1200	GRP 7 9MC CH27A	C	Y	
D	70	11	13	HOL	2 2 8	1700 1800	INT	A	Y	
D	70	11	13	HOL	21 5 9 5 0	0400 0600	0900/1100	C	Y	
							AZM80 CIRAF 59	C	Y	
							17MC,21MC	C	Y	
D	70	11	13	HOL	28 8	0100 0230	INT	A	Y	
D	70	11	13	HOL	29 8	0000 0100	0100/0230	B	Y	
							6MC	B	Y	
D	70	11	13	HOL	31 8	2100 2200	2200/2330	B	Y	
							6MC	B	Y	
D	70	11	14	J	22 5 1	0600 0800	0630/0830	E	X	
D	70	11	14	NZL	7 5 6 5 2	1800 2000	INT COCH D CH13A UKR	A	X	
D	70	11	14	YUG	30 10	2300 0100	0200/0300	C	Y	
D	70	11	15	G	4 8 2 8	1700 1900	11MC/FREQ	B	Y	
D	70	11	15	G	1 14 28 29 36 39 40	1900 2000	11MC/FREQ	B	Y	
D	70	11	15	G	14 5 5 1 5 5 5 6 5 9	2000 2215	INT CH15A POL	A	Y	
D	70	11	15A	I	8 4 1 1 12	0500 0600	11MC/FREQ	C	Y	
D	70	11	15A	I	8 5 1 1 12	0430 0530	11MC/FREQ	C	Y	
D	70	11	15A	I	8 8 12 13 15	0300 0400	11MC/FREQ	C	Y	
D	70	11	15A	I	8 9 1 1 12	0400 0430	0300/0330	C	Y	
							11MC/FREQ	C	Y	
D	70	11	16	AUS	21 4 5	0900 1800	INT CH18A URS	D	Y	
D	70	11	16A	I	8 5 14 15 16	2200 2400	2200/0300	C	Y	
							AZM270 CIRAF 10,11,12	C	X	
							11MC/FREQ	C	Y	
D	70	11	18	G	11 9 5 6 6 0	0600 1100	INT CH11A F	A	Y	
D	70	11	18	YUG	8 2 9	1300 1400	1200/1300	F	X	
							CH6	C	Y	
D	70	11	18	YUG	20 3 8	1730 1900	1800/1900	F	X	
D	70	11	18A	BEL	11 7 8 9	1900 2100	2100/2300	B	Y	
D	70	11	19	ARS	22 8	2300 2400	6MC	D	Y	
							0000/0200 , GRP 1,22	F	Y	
D	70	11	19	G	10 7 28 38 39 40	1600 2100	INT CH18A F	A	Y	
							11MC/FREQ	B	Y	
D	70	11	19	G	11 6 5 1 5 5 5 8 5 9	0500 0900	11MC/FREQ	B	Y	
D	70	11	19	G	14 1 32 35 43 45	1245 1415	11MC/FREQ	B	Y	
D	70	11	19	G	16 3 1 / 10	0400 0800	11MC/FREQ	B	Y	
D	70	11	19A	G	15 8 12 13 14 15 16	0400 0500	2200/0100	B	Y	
							11MC/FREQ	B	Y	
D	70	11	20	G	6 5 3 6 3 7 4 6	1700 1900	INT CH20A F	A	Y	
D	70	11	20	G	7 4 7 4 8 5 2 5 3 5 7	1900 2000	1900/2015	B	Y	
							11MC/FREQ	B	Y	
D	70	11	20	G	8 0 3 7 5 8 4 6	2000 2300	11MC/FREQ	B	Y	
D	70	11	20	IND	4 2 3 9 4 0	0200 0330	INT	A	Y	
D	70	11	20	MEX	14 10 11	1300 2100	INT	A	Y	
D	70	11	20A	HOL	27 4	2200 2400	INT	A	Y	
D	70	11	21	AUS	38 4 1 4 9 5 4	1000 1530	CIRAF 49,54	F	X	
							INT COCH G	D	Y	
							INT CH21A HWA	D	Y	
D	70	11	21	CAN	13 2 7	1900 2000	1600/2000	B	Y	
							CIRAF 18,27,28	F	X	
D	70	11	21	CAN	15 18 28	2000 2100	2000/2300	B	Y	
							CIRAF 18,27,28	F	X	
D	70	11	21	G	12 7 5 6 5 8 5 9 6 0	0600 1000	11MC/FREQ	G	N	
D	70	11	21	G	15 9 14 15 16	2200 0300	11MC/FREQ	B	Y	
D	70	11	21	G	16 8 12 13 14 15 16	0300 0500	11MC/FREQ	B	Y	
D	70	11	21A	D	24 6 7 8 9	2300 0600	6MC	B	Y	
							AZM295/320	F	X	
D	70	11	22	G	15 7 11 12	0030 0230	11MC/FREQ	B	Y	
D	70	11	22	G	15 7 10 11	0230 0330	11MC/FREQ	B	Y	
D	70	11	22	NZL	9 5 4	0900 1300	INT COCH TCH	A	Y	
							INT CH21A HWA	A	Y	
							INT CH22A CHN	A	Y	
							0900/1500	B	Y	
D	70	11	22A	CAN	19 10 11 12	0400 0700	NOREQ	B	X	
D	70	11	22A	HOL	37 13 15	0230 0400	2330/0100	B	Y	
							9MC	B	Y	
D	70	11	22A	J	17 4 1	1600 1800	1530/1730	C	Y	
D	70	11	22A	SUR	2 1 1	2300 0030	2300/0330	B	Y	
							9MC CH5	B	Y	

1	2	3	4	5	6	7	8	9	10	11
D	7011	23	S	3	18 27 28 29 38 37 38	0900 1600	INT CH23A URS	G	Z	
D	7011	24	G	7	32 7 37 38 46	1700 1900	INT CH23A URS	A	Y	
D	7011	24A	CAN	20	1 0 11 12	0400 0600	0000/0600	S	Y	
D	7011	24A	G	13	6 33 44 45	0900 1000	1000/1100	B	Y	
							INT CH24 SUI	A	Y	
							INT CH25 URS	A	Y	
D	7011	25	AUS	23	41	1500 2000	1400/2000	B	Y	
							CIRAF 41,49	F	X	
							INT CH25A URS	A	Y	
D	7011	25	HOL	26	9	2200 2300	2200/2400	B	Y	
							9MC,6MC	B	Y	
D	7011	25A	SUI	11	46 47 48 57	1800 1900	21MC CH7	B	Y	
D	7011	25A	SUI	16	44 45	1430 1600	1300/1430	B	Y	
D	7011	26	I	6	3 5 8	2000 2100	2100/2200	B	Y	
							6MC	C	Y	
D	7011	26A	CHL	21	14 16	1500 1700	1700/2000	C	Y	
D	7011	26A	D	6	46 47	1700 2100	AZM160/200	F	X	
D	7011	27	BEL	4	52	2300 0330	2300/0200	C	X	
D	7011	27A	IND	3	41	0100 0230	INT	A	Y	
D	7011	27A	IND	47	41 42	1000 1200	6MC 1200/1330	C	Y	
D	7011	27A	PAK	7	40 41	1330 1700	AZM278	E	X	
D	7011	27A	PAK	48	39 40	1730 1900	50KW	E	X	
							1800/1900	B	Y	
							7MC	D	Y	
D	7011	27A	PAK	48	27 28 39	1930 2000	7MC	D	Y	
D	7011	27A	PAK	48	27 28 39	2000 2100	2000/2130	B	Y	
							6MC	D	Y	
D	7011	27A	PAK	56	28	1900 1930	CIRAF 28,37,40	E	X	
							7MC	D	Y	
D	7015	1	CAN	13	27	1800 2100	1800/2300	B	Y	
							CIRAF 27,28	F	X	
D	7015	1	G	13	5 41 49 50 54	1200 1430	1400/1700	B	Y	
D	7015	3	SUI	11	46 47 48 57	1600 1800	21MC CH7	B	Y	
D	7015	3A	AFS	6	52 53	1200 1400	AZM312 18DB	F	Y	
							CIRAF 2,3,4,5,6,7,8,9	F	Y	
D	7015	3A	AFS	18	55 58 59	0400 0500	0430/0530	B	Y	
							AZM360/132	F	X	
							CIRAF 52,53,55,58,59	F	X	
D	7015	4	I	4	0 3 9 48	0600 0630	150KW	C	X	
							INT CH3A,CH4A URS	A	Y	
D	7015	4	I	6	4 43 44 45	0630 1000	INT CH3A,CH4A URS	C	Y	
							INT CH4A AUS	A	Y	
D	7015	4	I	7	7 11 12	1900 2000	INT CH3A B	D	Y	
D	7015	4	I	8	7 12 14 15 16	0000 0200	2200/0300	B	Y	
							15MC/FREQ	C	Y	
D	7015	4A	AUS	13	58	0230 1000	INT CH5 J	G	Z	
D	7015	4A	MEX	22	7 8	2100 2200	2300/2400 , 9MC CH4	F	X	
D	7015	4A	MEX	26	28 37 39	2200 2400	INT	D	Y	
							1700/1900,	F	Y	
							11MC CH17	D	Y	
D	7015	5	AFS	17	2 / 9	1730 1930	1700/1900	B	Y	
D	7015	5A	NOR	19	44 45 51 55 59 60	1030 1200	1000/1130	C	Y	
D	7015	5A	YUG	13	30	0530 0630	0500/0530	E	X	
D	7015	5A	YUG	21	37	0900 1000	1800/1900	C	Y	
D	7015	5A	YUG	21	37	1400 1500	1900/2000	C	Y	
D	7015	5A	YUG	30	8	2230 0100	2230/0200	C	X	
D	7015	6	CLN	15	29 39 40 41	0200 0500	0130/0500	B	X	
D	7015	6A	AUS	17	6 16 2	0830 1000	INT CH6 F	G	Z	
D	7015	6A	IND	11	5 4	1300 1400	INT CH7A MLA/G	A	Y	
D	7015	6A	MEX	15	11 12 13	1700 2200	INT	A	Y	
D	7015	7A	AUS	27	45	2200 2330	17MC	F	X	
D	7015	7A	I	29	5 25 35 7	1030 1300	INT	A	Y	
D	7015	7A	I	8	8 12 13 15	2300 0200	2200/0300	C	Y	
							15MC/FREQ	C	Y	
D	7015	7A	MLA/G	3	5 5 5 6 5 8 5 9 6 0	1300 1500	1245/1445	B	Y	
D	7015	8A	ALB	13	13 14 15	0000 0200	DEL	F	X	
D	7015	8A	D	18	5 5 8 5 9	0700 1100	11MC VIA AZM250	C	Y	
							17MC VIA AZM70	C	Y	
D	7015	8A	I	38	5 2 5 3 5 7	1500 1700	1630/1900	C	Y	
							150KW	C	X	
							CIRAF 47,52,53,57	C	X	
D	7015	10A	NOR	21	4 14 9 5 0 5 4 5 8	1200 1300	1300/1430	B	Y	
D	7015	11	G	30	27 28	1030 1400	INT CH10A NOR,TUN	A	Y	

1	2	3	4	5	6	7	8	9	10	11
D	7015	11	G	6036373846		07000900	15MC/FREQ	C	Y	
D	7015	11A	CGO	15 8		13001400	17MC	C	X	
D	7015	11A	CGO	16 8		23000200	9MC	B	Y	
D	7015	11A	HOL	1955 60		09001030	INT CH12A AUS	A	Y	
D	7015	12	PAK	41555859 60		10301130	0900/1000	C	Y	
D	7015	12	SUI	153940		07000900	1700/1830, 15MC CH27A	B	Y	
D	7015	12A	AUS	156063		09301030	0930/1130	F	Y	
D	7015	13	CLN	14182829394041 49		01300400	0130/0430	B	Y	
D	7015	14	AUS	146063		22002245	2200/2300	F	X	
D	7015	14	I	8411 12		00000400	0000/0500	B	Y	
							INT CH13A CLM	D	Y	
							15MC/FREQ	C	Y	
D	7015	14A	ETH	11 1415		00000100	0200/0300	F	X	
							100KW AZM270 170B	F	Y	
							CIRAF 12,13	F	Y	
D	7015	15A	IND	75525357		18002000	INT COCH B	A	Y	
D	7015	18A	D	1955 5859		08001000	17MC 21MC	C	Y	
D	7015	16A	I	62 4 6 /13		16001630	CIRAF 4,6/15	C	X	
D	7015	16A	PAK	3141 49		01000400	INT CH16 KOR , CH17 VTN	D	Y	
D	7015	17A	MLA/G	1143 4449		11301300	15MC/FREQ	C	Y	
D	7015	17A	MLA/G	1549		14001500	15MC/FREQ	B	Y	
D	7015	18	CAN	151828		15002100	1400/2100	F	X	
							AZM50/60	F	X	
							CIRAF 18,27,28,29	F	X	
D	7015	18A	IND	101495 0		11001200	INT CH17A MLA/G	A	Y	
D	7015	18A	IND	12256		08001000	INT CH17A MLA/G	A	Y	
D	7015	18A	IND	12259 58596 0		10001100	INT CH17A MLA/G	A	Y	
D	7015	18A	PAK	641		06000800	INT CH19 URS	A	Y	
D	7015	18A	PAK	2240 41		03000400	INT CH19 URS	D	Y	
D	7015	20	NGN	427		07000900	17MC,21MC	B	Y	
D	7015	21	HOL	637		08000900	2000/2100	C	Y	
							SEP CH22 HOL	C	Y	
D	7015	21	HOL	1041		11001530	1500/1700	B	Y	
							15MC CHX	C	Y	
D	7015	21	HOL	1349		12301700	INT	C	Y	
D	7015	21	HOL	1863		09001100	AZM55	E	X	
							SEP CH22 HOL	C	Y	
							INT	A	Y	
D	7015	21	HOL	2452 53		17001900	1800/2000	B	Y	
D	7015	22	HOL	2252 53		08001100	1800/2100	C	Y	
							SEP CH21 HOL	C	Y	
D	7015	22A	AUS	4041 495 4		23000700	CIRAF 49,54	F	X	
							17MC 21MC	F	Y	
D	7015	23	MEX	2527		21002200	INT CH22 USA CH24 CLM	C	Y	
D	7015	23A	I	45394041 48		14301600	INT CH23 UKR	A	Y	
D	7015	24	MLA/G	23 1 /10		13001700	15MC/FREQ	B	Y	
D	7015	25	I	42394041 48		10301300	INT CH24A KOR	C	Y	
							INT CH25A BRM	C	Y	
D	7015	26A	I	72 4 6 7 8 910		16001700	NOREQ	C	X	
D	7015	27	BEL	552		08001200	21MC	C	X	
D	7015	27	G	9839 47 48		16001700	1530/1800	B	Y	
							INT CH26A I	A	Y	
D	7015	27A	MLA/G	22 1 / 9		23000100	15MC/FREQ	C	Y	
D	7015	27A	PAK	4643 4445		09301100	INT CH27 URS	D	Y	
D	7015	28A	ARS	836		06000800	REYADH , 100KW	F	X	
							11MC , GRP 9,12,19	F	Y	
D	7015	28A	ARS	836		17002000	DEL	F	X	
D	7015	28A	ARS	1039		03000600	DEL	F	X	
D	7015	28A	ARS	1039		14001700	DEL	F	X	
D	7015	28A	ARS	1146		12001400	DEL	F	X	
D	7015	28A	ARS	1549		10001200	REYADH , 0900/1200	F	X	
							100KW AZM75/90	F	X	
							CIRAF 49,50,54	F	X	
D	7015	29	MEX	23 6 710		22300300	11MC CH27	C	Y	
D	7015	29A	AUS	2854		22002300	CIRAF 49,54	F	X	
D	7015	29A	AUS	2841 4954		23000300	CIRAF 49,54	F	X	
							17MC	F	Y	
D	7015	29A	AUS	2941		09000930	0900/1000 , CIRAF 49,54	F	X	
D	7015	29A	AUS	2949 54		10301100	1000/1100	F	X	
D	7015	29A	AUS	2944 50		09301000	0800/0900	F	X	

1	2	3	4	5	6	7	8	9	10	11
D	7015	29A	AUS	4157		1500 1730	11MC	F	Y	
D	7015	30	ALB	94159		0700 0900	1000/1200	F	Y	
D	7015	30	PAK	5037 39		0530 0730	9MC	D	Y	
							CIRAF 37/39	E	X	
							1800/1930	C	Y	
							50KW	E	X	
D	7015	31A	I	7311 12		1600 1630	150KW	C	X	
							INT	A	Y	
D	7015	32A	I	4739		0600 0700	AZM90 CIRAF 40,41	C	X	
D	7015	33	PAK	5128 37 38 39 40		1600 1830	CIRAF 28,37,38	D	Y	
							9MC	D	Y	
							1730/1800	B	Y	
D	7015	33A	G	155 1/ 10		1400 1600	INT CH33 BUL	A	Y	
							INT CH34 G	A	Y	
D	7015	34	G	36 18 28 29		1430 1530	INT CH33A G	A	Y	
D	7015	34	G	100 28 29 30 39 40		1330 1430	INT CH33A G	A	Y	
D	7015	34	G	106 28 29 38 39 40		1530 1700	1530/2000	B	Y	
							INT CH33A G,S	A	Y	
							15MC/FREQ	B	Y	
D	7015	34	G	140 43 44 45		1100 1200	15MC/FREQ	B	Y	
D	7015	34	G	161 11 12 13 14 15 16		2200 2400	15MC/FREQ	B	Y	
D	7015	34	IND	44 38 39		0430 0600	INT CH33 URS	A	Y	
D	7015	35	G	67 37 46		1050 2100	15MC/FREQ	B	Y	
D	7015	35	G	117 51 55 58 59		0500 0900	15MC/FREQ	C	Y	
D	7015	35	G	154 12 13 14 15 16		2300 2400	15MC/FREQ	B	Y	
D	7015	35	G	156 10 11 12		2100 2400	INT CH34A CHL	A	Y	
							15MC/FREQ	B	Y	
D	7017	1	BEL	954		1100 1200	1200/1300	C	X	
							21MC	C	X	
D	7017	1	G	72 47 48 52 53 57		1400 1515	1600/1715	B	Y	
							INT CH1A G	A	Y	
D	7017	1	G	74 47 48 52 53 57		1515 1600	1715/1800	B	Y	
							INT CH1A G	A	Y	
D	7017	1	G	99 28 38 39		1200 1400	INT CH1A G	A	Y	
D	7017	1	G	121 51 55 58 59		0500 0900	17MC/FREQ	C	Y	
D	7017	1	NZL	359		2100 0500	17MC/FREQ	G	Z	
D	7017	1A	G	166 1/ 10		1130 1600	INT CH1 BEL,G	A	Y	
							INT CH2 POL	A	Y	
D	7017	1A	G	170 10 11 12		1600 2100	INT CH2 POL	A	Y	
D	7017	2A	BEL	652		0800 1200	21MC	C	Y	
D	7017	2A	I	67 4 6 7 8 9 10		1600 1700	1630/1730	C	Y	
							AZM310	C	X	
D	7017	2A	I	7411 12		1530 1600	1600/1630	C	Y	
							INT CH3 BRM	A	Y	
D	7017	2A	I	7811 12		1200 1300	21MC	B	X	
D	7017	2A	I	8316		1500 1530	CIRAF 13,14,15,16	E	X	
D	7017	3	D	1645		0600 0800	0800/1400	C	Y	
D	7017	4A	AUS	20 56 61		0230 0400	INT COCH EQA	A	Y	
							0230/0430	F	X	
D	7017	4A	ETH	84752		0600 0730	100KW AZM270 16DB	F	X	
							CIRAF 46,47	F	X	
D	7017	4A	ETH	84752		0730 0900	100KW AZM242 16DB	F	X	
							CIRAF 52	F	X	
D	7017	4A	ETH	84752		1200 1300	100KW AZM270 16DB	F	X	
							CIRAF 46,47	F	X	
D	7017	4A	ETH	84752		1300 1400	100KW AZM242 16DB	F	X	
							CIRAF 52	F	X	
D	7017	4A	ETH	85357		1800 2000	100KW AZM199 16DB	F	X	
D	7017	5	G	132 41 49 50 51 54 58 59		0930 1600	0930/1600	B	Y	
							17MC/FREQ	B	Y	
D	7017	5	G	168 12 13 14 15 16		1800 2000	17MC/FREQ	B	Y	
D	7017	6	J	20 27 28 29		0700 0900	0800/1000	C	Y	
D	7017	6	NOR	2254		1000 1130	1300/1430	B	Y	
D	7017	6A	I	52 37 38 48		1000 1200	1000/1300	C	X	
							CIRAF 37,38,39,48	C	Y	
							INT CH7 TUR	A	Y	
D	7017	7A	G	108 38 47 48		1600 1800	AZM126	C	Y	
							CIRAF 38,39,40,47,48	C	Y	
							17MC/FREQ	B	Y	
D	7017	8	CLN	18 30 40 41		0300 1100	0430/1100	F	X	
D	7017	8	CLN	19 30 40 41		1100 1600	1100/1730	B	X	
D	7017	9	ETH	1354		1400 1500	100KW AZM90 17DB	F	X	
D	7017	9	MEX	24 6 10 11		1500 2100	INT CH9 MLA/G	D	Y	
D	7017	10	G	125 44 51		0800 1000	INT CH9A ONU	A	Y	
D	7017	10A	I	32 48 52 53 57		1400 1600	1500/1630	C	Y	
D	7017	10A	I	68 11 12		1700 1800	1630/1730	C	Y	

1	2	3	4	5	6	7	8	9	10	11
D	70	17	11A	G	9538	0730 1100	INT CH11 TCH	A	Y	
							INT CH12 POL	A	Y	
D	70	17	12	AUS	3949	1030 1130	1100/1400	F	Y	
							15MC	G	Z	
D	70	17	13	PAK	374950	0500 0530	CIRAF 43/45,50	E	X	
D	70	17	13	PAK	374950	1330 1400	CIRAF 50,54	E	X	
							1230/1330	B	Y	
D	70	17	13	PAK	4743444 45	0930 1100	15MC	G	Z	
D	70	17	13A	CAN	1427	1100 1400	1100/1500	F	X	
							AZM50/60	F	X	
							CIRAF 18,27,28,29	F	X	
D	70	17	14	EGY	6424344 45	1000 1200	1000/1100	F	X	
D	70	17	14	EGY	9414449 5154	1200 1600	1100/1800	F	Y	
							CIRAF 41,49,51,54	F	X	
D	70	17	15	ALB	1041586 59	0900 1100	AZM110/85 CIRAF 58,59	F	X	
D	70	17	17	AUS	166063	2300 0500	2300/0600	F	Y	
D	70	17	17	AUS	3041495 4	0600 1000	CIRAF 49,54	F	X	
D	70	17	18	AUS	2245	0830 1200	0800/1200	F	X	
D	70	17	18	YUG	163141	0600 0700	1700/1800	C	Y	
							CIRAF 49	F	X	
							17MC/FREQ	C	Y	
D	70	17	18	YUG	2440 49	1400 1500	17MC/FREQ	C	Y	
D	70	17	18A	BEL	752	1500 1700	15MC	C	Y	
D	70	17	18A	BEL	752	1700 1800	9MC	C	Y	
D	70	17	18A	NZL	856	0200 0400	AZM 25, CIRAF 56,62	B	X	
							0200/0500	B	X	
D	70	17	19	G	10228 29 30 39 40	1500 1600	1600/1730	B	Y	
							INT CH18A BEL	A	Y	
							17MC/FREQ	G	Z	
D	70	17	19	G	172 1/ 10	1600 2000	1700/2200	B	Y	
							INT CH18A BEL	A	Y	
							INT CH19A AUS	A	Y	
D	70	17	19	HOL	1654	1200 1500	1400/1700	B	Y	
D	70	17	19A	AUS	2541495 4	1500 2100	1200/2100	B	Y	
							INT CH19 G	G	Z	
D	70	21	1	AUS	3241	0200 0800	CIRAF 41,49	F	X	
D	70	21	1	MLA/G	1740 41	1200 1600	INT CH1A SUI	A	Y	
D	70	21	2	G	125 51 55 58 59	1000 1100	INT CH1A SUI	A	Y	
							INT CH2A GRC	A	Y	
D	70	21	4	YUG	1631	1000 1100	21MC/FREQ	C	Y	
D	70	21	7	G	96 39 40	1000 1030	INT CH6A F	A	Y	
							INT CH7A I	A	Y	
D	70	21	7	G	139 41 49 54	1030 1430	INT CH6A F	A	Y	
							INT CH7A I	A	Y	
D	70	21	7A	I	3546 47 48 52	0900 1000	AZM130/220	C	X	
							CIRAF 46,47,48	C	X	
D	70	21	7A	I	4348	1000 1300	INT	A	Y	
D	70	21	8	NGN	354	1200 1500	9MC,11MC,15MC	B	Y	
D	70	21	9	J	1150	1000 1200	1030/1230	C	Y	
D	70	21	9	J	1254	1200 1400	1230/1430	C	Y	
D	70	21	10A	BEL	852	1500 1700	15MC	C	Y	
D	70	21	10A	I	3052 53 57	1200 1300	NOREQ	C	X	
D	70	21	11	ARS	1354	1000 1100	DEL	F	X	
D	70	21	11	SUI	1240	1300 1400	DEL	B	X	
D	70	21	11A	I	3052 53 57	0800 1100	1030/1200	C	Y	
							INT	A	Y	
D	70	21	11A	I	3352 53 57	1500 1600	1500/1630	C	Y	
							INT CH12 CHN	A	Y	
D	70	21	12A	SUI	1240	0800 1000	DEL	B	X	
D	70	21	13	J	10 59 60	0800 1000	0900/1100	C	Y	
D	70	21	13A	G	173 1/ 10	1400 2100	1500/2200	B	Y	
							21MC/FREQ	B	Y	
D	70	21	16	G	109 29 30 39	1400 1500	1700/1800	B	Y	
D	70	21	16	G	129 41 49 54	0900 0930	INT CH16A I	A	Y	
D	70	21	16	G	135 41 49 50 54	0930 1400	INT CH16A I	A	Y	

1	2	3	4	5	6	7	8	9	10	11
D	70	21	16A	AFS	11 46 47 48	1300 1800	1200/1800	B	Y	
							AZM347 18DB	F	Y	
							CIRAF 18,27,28	F	Y	
D	70	21	16A	I	36 52 53 57	0900 1000	INT CH17 CVA	A	Y	
D	70	21	16A	I	53 37 36 39 48	1000 1300	INT CH16 G	A	Y	
D	70	21	17	AUS	33 44 45 50	2100 2200	15MC	D	X	
D	70	21	18	ARS	14 50 54	0300 0500	DEL	F	X	
D	70	21	18	ARS	16 41 43	1200 1400	DEL	F	X	
D	70	21	18	AUS	36 41 49 54	2300 2400	CIRAF 49,54	F	X	
							17MC	F	X	
D	70	21	20	EGY	7 52 53	1600 1800	1300/2000	C	Y	
							17MC CH3A	C	Y	
D	70	21	20	G	96 39 48 47	1030 1530	INT CH19A BUL	A	Y	
D	70	21	23	G	85 36 37 46	1000 1400	INT CH22A F	A	Y	
D	70	21	23	G	65 36 37 46	1600 2100	1400/2100	B	Y	
							21MC/FREQ	B	Y	
D	70	21	26	CGO	13 54	0800 1000	0900/1100	B	Y	
D	70	21	26	ETH	12 40 41 49	1500 1600	100KW AZM82 18DB	F	X	
D	70	21	29	IND	45 36 39	0430 0530	INT	A	Y	
D	70	21	29	NOR	10 36 48 68	1600 1800	1600/1730	C	X	
D	70	21	29A	D	9 52 53 57	1300 1500	1600/1800	C	Y	
D	70	21	29A	I	41 39 40	0900 1200	1000/1300	C	X	
							INT	A	Y	
D	70	26	12	SUI	25 13 14 15 18	1400 1800	1700/1900	C	X	
D	70	26	34	AFS	16 9 / 14 27 28	1300 2100	1000/1500	C	Y	
D	70	26	42	ARS	18 50	0500 0600	DEL	F	X	
D	70	26	42	ARS	17 50 54	0900 1200	DEL	F	X	
D	70	26	42	ARS	19 43	0600 0700	1200/1300	B	Y	
							CIRAF 43,44	F	X	
							11MC , GRP 8,9,12	F	Y	
D	70	26	42	ARS	19 41	0700 0900	1300/1500	B	Y	
							CIRAF 40,41	F	X	
							11MC , GRP 8,9,12	F	Y	
D	70	26	42	ARS	21 28	1200 1300	DEL	F	X	
D	70	26	42	ARS	24 8 13 14 15	1400 1600	DEL	F	X	
D	70	7	14	ALB	NA 27	1800 2000	RST 60KW AZM300 18DB	F	Y	TIRANE
D	70	7	17	ALB	NA 27 36 39	0600 0700	RST 100KW AZM120/300	F	Y	TIRANE
D	70	17	15	ALB	NA 41	1300 1400	RST 60KW AZM85 18DB	F	Y	TIRANE
D	70	11		BEL	NA 52	0500 0600	RST 100KW AZM167 12DB	C	X	BRUXELLES
D	70	6		CGO	NA 52	1600 2000	3KW ND	B	Y	STANLEYVILLE
D	70	11		CGO	NA 8	2300 2400	50KW AZM300 12DB	B	Y	LEOPOLDVILLE
D	70	11		CGO	NA 27	1900 2100	50KW AZM350 12DB	B	Y	LEOPOLDVILLE
D	70	11		CHL	NA 14 18	0000 0400	RST 5KW AZM360 8DB	C	Y	SANTIAGO
D	70	17		CLN	NA 18 28 29 39 40 41 49	1130 1730	RST 35KW AZM350 8DB	B	Y	EKALA
D	70	9		D	NA 10 11	0200 0800	RST 100KW AZM285 20DB	B	Y	JULICH
D	70	6		FLK	NA 16	2100 0200	RST 0,5KW ND	E	X	PT STANLEY
D	70	15		FNL	NA 6 7 8	1300 1500	100KW AZM305 20DB	C	Y	
D	70	15		FNL	NA 12 13 14 15	1000 1200	100KW AZM234 20DB	C	Y	
D	70	7		G	NA 16 28 29 30 31 32	0300 0400	RST 100KW AZM58 20DB	B	Y	DAVENTRY,ETC
D	70	7		G	NA 27 28	2200 2400	RST 100KW AZM146 17DB	B	Y	DAVENTRY,ETC
D	70	7		G	NA 36 37	0400 0500	RST 100KW AZM172 20DB	B	Y	DAVENTRY,ETC
D	70	7		G	NA 28 37	2200 2400	RST 100KW AZM169 20DB	B	Y	DAVENTRY,ETC
D	70	11		G	NA 47 48 52 53 57	2015 2100	RST 100KW AZM160 20DB	B	Y	DAVENTRY,ETC
D	70	6		HOL	NA 16 27 28 37	1530 2100	RST 40KW ND	C	Y	LOPIK
D	70	6		HOL	NA 28	2100 2200	RST 100KW AZM90 8DB	C	Y	LOPIK
D	70	7		HOL	NA 27	2100 2200	RST 100KW AZM90 8DB	C	Y	LOPIK
	70	17		HOL	NA 52 53 57	1600 1900	RST 100KW AZM160 18DB	B	X	LOPIK
D	70	6		I	NA 28	0300 0600	RST 60KW AZM350 15DB	B	Y	ROMA
D	70	7		I	NA 37	2100 2200	RST 60KW AZM270 12DB	C	Y	ROMA
D	70	9		I	NA 37	2100 2200	RST 100KW AZM270 15DB	C	Y	ROMA
D	70	9		I	NA 27 28 29 39	1730 2200	RST 100KW ND 6DB	C	Y	ROMA
D	70	11		I	NA 27 28 29 39	1730 2200	RST 150KW ND 6DB	C	Y	ROMA
D	70	6		IND	NA 37 38 39	1845 2000	RST 100KW AZM282 12DB	C	Y	DELHI
D	70	6		IND	NA 36 38	1745 2000	RST 100KW AZM282 16DB	C	Y	DELHI
D	70	6		IND	NA 41	1300 1430	RST 100KW ND	C	Y	DELHI
D	70	7		IND	NA 27 28 37	1945 2100	RST 100KW AZM312 16DB	C	Y	DELHI
D	70	7		IND	NA 37 38 39	1845 2000	RST 100KW AZM282 16DB	C	Y	DELHI

1	2	3	4	5	6	7	8	9	10	11
D	70	7	IND	NA	38 39	1745 2000	RST 100KW AZM282 16DB	C	Y	DELHI
D	70	7	IND	NA	41	1300 1430	RST 20KW ND	C	Y	DELHI
D	70	9	IND	NA	46	1815 1930	RST 100KW AZM102 16DB	C	Y	DELHI
D	70	11	IND	NA	42 43 44	1215 1330	RST 100KW AZM65 16DB	C	Y	DELHI
D	70	6	NOR	NA	18 27	1900 2300	RST 5KW ND	B	Y	OSLO
D	70	26	NOR	NA	40 41 49 54 58	1300 1430	RST 10KW AZM110 20DB	E	X	FREDRIKSTAD
D	70	9	PAK	NA	41	1000 1200	10KW AZM170 6DB	B	Y	KARACHI
D	70	9	PAK	NA	40 41	0700 0900	10KW AZM227 6DB	B	Y	LAHORE
D	70	11	S	NA	7 8 9 10 11	0100 0300	RST 100KW AZM295 20DB	B	Y	HOERBY
D	70	9	YUG	NA	39	2200 2400	RST/100KW AZM115 20DB	B	Y	BEOGRAD
D	70	11	AFS	NEW	57	0800 1400	20KW ND	F	X	BLOEMFONTEIN
D	70	11	AFS	NEW	57	0800 1400	20KW ND	F	X	BLOEMFONTEIN
D	70	11	AFS	NEW	57	0800 1400	20KW ND	F	X	BLOEMFONTEIN
D	70	8	CAN	NEW	2	0000 2400	1KW AZM298	F	X	VANCOUVER
D	70	9	CGO	NEW	52	0430 0700	50KW ND	F	X	LEOPOLDVILLE
D	70	9	CGO	NEW	52	1430 2230	50KW ND	F	X	LEOPOLDVILLE
D	70	11	CGO	NEW	52	0700 1300	50KW ND	F	X	LEOPOLDVILLE
D	70	7	CLN	NEW	41	0100 0400	7,5KW AZM350 8DB	F	X	EKALA
D	70	7	CLN	NEW	41	1130 1730	7,5KW AZM350 8DB	F	Y	EKALA
D	70	9	CLN	NEW	41	0430 1130	7,5KW AZM350 8DB	F	Y	EKALA
D	70	6	CTO	NEW	46	0600 2300	2,5KW ND	F	X	ACCRA
D	70	6	CTO	NEW	46	0600 2300	5KW ND	F	X	ACCRA
D	70	6	CTO	NEW	46	0600 2300	5KW ND	F	X	ACCRA
D	70	6	CTO	NEW	46	0600 2300	5KW ND	F	Y	ACCRA
D	70	6	CTO	NEW	46	0600 2300	5KW ND	F	Y	ACCRA
D	70	9	CTO	NEW	46	0600 2300	5KW ND	F	X	ACCRA
D	70	9	CTO	NEW	46	0600 2300	5KW ND	F	X	ACCRA
D	70	7 15	CVA	NEW	27 37	1300 1430	100KW AZM340 15DB	F	Y	S MARIA DI G
D	70	9 4A	CVA	NEW	40 49	0000 0200	100KW AZM85 15DB	F	Y	S MARIA DI G
D	70	9 4A	CVA	NEW	27 28 29 37	1600 1700	100KW ND	F	Y	S MARIA DI G
D	70	9 4A	CVA	NEW	49 54	2200 2300	100KW AZM85 15DB	F	Y	S MARIA DI G
D	70	9 9	CVA	NEW	6 7 8 9	2300 0200	100KW AZM325 15DB	F	Y	S MARIA DI G
D	70	11 3	CVA	NEW	46 47	0500 0700	100KW AZM193 15DB	F	Y	S MARIA DI G
D	70	11 3	CVA	NEW	27 28 29 37	0830 1000	100KW ND	F	X	S MARIA DI G
D	70	11 3	CVA	NEW	27 28 29 37	2000 2200	100KW ND	F	X	S MARIA DI G
D	70	11 6	CVA	NEW	55 58	1900 2100	100KW AZM70 18DB	F	Y	S MARIA DI G
D	70	11 6	CVA	NEW	44 45	2100 2300	100KW AZM58 18DB	F	Y	S MARIA DI G
D	70	15 25	CVA	NEW	51 54	0400 0600	100KW AZM75 18DB	F	Y	S MARIA DI G
D	70	15 25	CVA	NEW	27 28 29 37	1030 1300	100KW ND	F	Y	S MARIA DI G
D	70	15 25	CVA	NEW	27 28 29 37	1700 1600	100KW ND	F	Y	S MARIA DI G
D	70	15 25	CVA	NEW	47 57	1900 2100	100KW AZM175 18DB	F	X	S MARIA DI G
D	70	15 25	CVA	NEW	50 51	2100 2200	100KW AZM75 18DB	F	X	S MARIA DI G
D	70	17 12	CVA	NEW	48 53	1400 1600	50KW AZM140 18DB	F	Y	S MARIA DI G
D	70	17 12	CVA	NEW	55 60	1900 2100	50KW AZM90 18DB	F	Y	S MARIA DI G
D	70	17 13A	CVA	NEW	48 57	0600 0730	50KW AZM175 18DB	F	X	S MARIA DI G
D	70	17 13A	CVA	NEW	12 13 14 15 16	2200 2400	50KW AZM270 18DB	F	Y	S MARIA DI G
D	70	21 20A	CVA	NEW	7 11 14	1600 1800	50KW AZM250/320 15DB	F	X	S MARIA DI G
D	70	21 20A	CVA	NEW	13 14 15 16	2300 0100	50KW AZM240 18DB	F	Y	S MARIA DI G
D	70	21 27	CVA	NEW	44 45	1030 1200	50KW AZM58 18DB	F	Y	S MARIA DI G
D	70	6	E	NEW	6 7 8 9 10 11	0000 0745	100KW AZM300 18DB	F	Y	ARGANDA
D	70	6	E	NEW	6 7 8 9 10 11	0400 0700	100KW AZM300 18DB	F	Y	ARGANDA
D	70	6	E	NEW	18 27 28 29	1700 2400	100KW AZM45 6DB	F	Y	ARGANDA/MALAGA
D	70	6	E	NEW	27 28 36 37	1600 2200	100KW ND	F	Y	ARGANDA
D	70	9	E	NEW	18 27 28 29	1700 2400	100KW AZM45 6DB	F	Y	ARGANDA
D	70	9	E	NEW	27 28 36 37	1600 2200	50KW ND	F	Y	ARGANDA
D	70	9	E	NEW	12 13 14 15 16	0030 0400	100KW AZM240 18DB	F	Y	ARGANDA
D	70	11	EGY	NEW	40	1400 1600	50KW AZM68 9DB	F	Y	ABU ZAABAL
D	70	11	EGY	NEW	39	1600 1900	50KW AZM360 9DB	F	Y	ABU ZAABAL
D	70	11	EGY	NEW	45	1000 1130	100KW AZM50 15DB	F	Y	ABU ZAABAL
D	70	11	EGY	NEW	50	1130 1300	100KW AZM82 15DB	F	Y	ABU ZAABAL
D	70	15	EGY	NEW	46	1500 2200	100KW AZM245 15DB	F	Y	ABU ZAABAL
D	70	9	ETH	NEW	39	1700 1600	50KW AZM19			ADDIS ABEBA
D	70	11	ETH	NEW	37	1900 2000	50KW AZM312			ADDIS ABEBA
D	70	11	ETH	NEW	38	1800 1900	50KW AZM349			ADDIS ABEBA
D	70	6	I	NEW	18 19 27 28 29 30 *	2200 0600	25KW ND, * 37/40,46/48	F	Y	CALTANISSETTA
D	70	9	I	NEW	18 19 27 28 29 30 *	2200 0600	25KW ND, * 37/40,46/48	F	Y	CALTANISSETTA
D	70	9	IOB	NEW	11	1300 2000	5KW ND	F	X	GRENADA
D	70	9	IOB	NEW	11	1000 0300	5/50KW AZM294 10DB	F	Y	GRENADA
D	70	9	IOB	NEW	11	1000 0300	0,25/1KW AZM294 8DB	F	Y	GRENADA
D	70	6	J	NEW	44 45 56 4	1000 1500	50KW AZM11/254 5DB	F	Y	
D	70	6	J	NEW	44 45 56 4	2000 2300	50KW AZM11/254 5DB	F	Y	
D	70	9 15A	J	NEW	52 53 57	1800 2000	100KW AZM265 6DB	F	Y	TOKYO
D	70	9 19	J	NEW	44 64	2000 2200	50KW AZM170/270 10DB	F	Y	
D	70	9 25A	J	NEW	34 35	2100 0600	50KW AZM7 6DB	F	Y	TOKYO
D	70	15 10	J	NEW	10 11	0200 0500	100KW AZM52 10DB	F	X	TOKYO
D	70	15 24A	J	NEW	6 10	2100 2300	100KW AZM54 17DB	F	X	
D	70	17 3A	J	NEW	59 60	2200 2400	100KW AZM170 11DB	F	X	
D	70	8	KEN	NEW	48	0300 1600	10KW ND	F	Y	NAIROBI
D	70	7	KEN	NEW	48	0300 1400	7MC, 5KW ND	F	Y	MOMBASA
D	70	7	KEN	NEW	48	0300 1400	7MC, 5KW ND	F	Y	KISUMU
D	70	7	KEN	NEW	48	0300 1400	7MC, 6KW ND	F	Y	NAIROBI
D	70	7	KEN	NEW	48	0300 1400	7MC, 6KW ND	F	Y	NAIROBI

1	2	3	4	5	6	7	8	9	10	11
D	70	7	KEN	NEW	48	0300 1400	7MC, 10KW ND	F	Y	NAIROBI
D	70	6	KOR	NEW	43444 5	0830 1530	SUWON 10KW AZM270 10DB	F	Y	
D	70	7	KOR	NEW	4344	2300 0100	SUWON 50KW AZM270 10DB	F	X	
D	70	7	KOR	NEW	45	2100 2300	SUWON 50KW AZM100 10DB	F	X	
D	70	9	KOR	NEW	4344	1400 1600	SUWON 50KW AZM270 10DB	F	Y	
D	70	9	KOR	NEW	6 10	1300 1500	SUWON 100KW AZM50 10DB	F	Y	
D	70	9	KOR	NEW	45	1200 1400	SUWON 50KW AZM100 10DB	F	X	
D	70	11	KOR	NEW	4344	1400 1600	SUWON 50KW AZM270 10DB	F	Y	
D	70	11	KOR	NEW	45	1200 1400	SUWON 50KW AZM100 10DB	F	Y	
D	70	11	KOR	NEW	3940	1800 2000	SUWON 100KW AZM260 10DB	F	Y	
D	70	11	KOR	NEW	61	1600 1800	SUWON 100KW AZM100 10DB	F	Y	
D	70	11	KOR	NEW	6 10	0500 0700	SUWON 100KW AZM50 10DB	F	Y	
D	70	11	KOR	NEW	2728	2100 2300	SUWON 100KW AZM315 10DB	F	Y	
D	70	11	KOR	NEW	1415	0930 1130	SUWON 100KW AZM130 10DB	F	Y	
D	70	15	KOR	NEW	48 5054	2300 0100	SUWON 100KW AZM200 14DB	F	X	
D	70	15	KOR	NEW	41	1600 1800	SUWON 100KW AZM240 14DB	F	Y	
D	70	15	KOR	NEW	3940	0400 0500	SUWON 100KW AZM260 14DB	F	X	
D	70	15	KOR	NEW	51 5559	2000 2100	SUWON 100KW AZM180 14DB	F	X	
D	70	15	KOR	NEW	61	0700 0900	SUWON 100KW AZM100 14DB	F	X	
D	70	15	KOR	NEW	61	0700 0900	SUWON 100KW AZM100 14DB	F	X	
D	70	15	KOR	NEW	6 10	0500 0700	SUWON 100KW AZM50 14DB	F	X	
D	70	15	KOR	NEW	2728	0600 0800	SUWON 100KW AZM315 14DB	F	Y	
D	70	15	KOR	NEW	1415	0100 0300	SUWON 100KW AZM130 14DB	F	X	
D	70	17	KOR	NEW	49 5054	1500 1700	SUWON 100KW AZM200 14DB	F	X	
D	70	17	KOR	NEW	41	0100 0200	SUWON 100KW AZM240 14DB	F	X	
D	70	21	KOR	NEW	51 5559	1100 1300	SUWON 100KW AZM180 14DB	F	Y	
D	70	9	MCO	NEW	37	0500 0800	100KW AZM225 8DB	F	Y	FONTBONNE
D	70	9	MCO	NEW	18	1700 2300	100KW AZM13 6DB	F	Y	FONTBONNE
D	70	11	MCO	NEW	3839	0500 0800	100KW AZM114 5DB	F	Y	FONTBONNE
D	70	11	MCO	NEW	37	0800 1700	100KW AZM225 6DB	F	Y	FONTBONNE
D	70	11	MCO	NEW	46	1700 2300	100KW AZM212 8DB	F	Y	FONTBONNE
D	70	15	MCO	NEW	46	0800 1700	100KW AZM212 8DB	F	Y	FONTBONNE
D	70	7	MLA	NEW	54	1300 1500	50KW	F	Y	KUALA LUMPUR
D	70	9	MLA	NEW	54	1200 1300	50KW	F	Y	KUALA LUMPUR
D	70	11	MLA	NEW	49	1300 1400	50KW	F	Y	KUALA LUMPUR
D	70	13	MLA	NEW	49	1100 1200	50KW	F	Y	KUALA LUMPUR
D	70	15	MLA	NEW	49	1200 1300	50KW	F	X	KUALA LUMPUR
D	70	15	MLA	NEW	3839	1630 1830	50KW AZM300	F	Y	KUALA LUMPUR
D	70	17	MLA	NEW	50	1000 1100	50KW AZM60	F	Y	KUALA LUMPUR
D	70	17	MLA	NEW	44	1100 1200	50KW AZM35	F	Y	KUALA LUMPUR
D	70	17	MLA	NEW	41	1400 1630	50KW AZM300	F	Y	KUALA LUMPUR
D	70	21	MLA	NEW	59	0730 0830	50KW AZM130	F	X	KUALA LUMPUR
D	70	21	MLA	NEW	58	0830 0900	50KW AZM155	F	X	KUALA LUMPUR
D	70	21	MLA	NEW	45	0900 1000	50KW AZM35	F	Y	KUALA LUMPUR
D	70	6	PAK	NEW	4041	0000 0400	100KW AZM22 6DB	F	Y	KARACHI
D	70	6	PAK	NEW	41	0000 0200	100KW AZM105 6DB	F	Y	LAHORE
D	70	7	PAK	NEW	3040	1400 1600	100KW AZM22 6DB	F	Y	KARACHI
D	70	7	PAK	NEW	40	1500 1700	100KW AZM300 6DB	F	Y	KARACHI
D	70	7	PAK	NEW	37	2000 2100	100KW AZM300 10DB	F	Y	KARACHI
D	70	7	PAK	NEW	27	2000 2100	100KW AZM317 10DB	F	Y	KARACHI
D	70	7	PAK	NEW	4041	1600 1900	100KW AZM22 6DB	F	Y	KARACHI
D	70	7	PAK	NEW	41	0200 1000	100KW ND	F	Y	LAHORE
D	70	7	PAK	NEW	41	1200 1900	100KW ND	F	Y	LAHORE
D	70	9	PAK	NEW	3040	0200 0400	100KW AZM22 6DB	F	Y	KARACHI
D	70	9	PAK	NEW	3839	1700 2200	100KW AZM300 10DB	F	Y	KARACHI
D	70	9	PAK	NEW	37	2000 2100	100KW AZM300 10DB	F	Y	KARACHI
D	70	9	PAK	NEW	39	1800 2000	100KW AZM317 10DB	F	Y	KARACHI
D	70	9	PAK	NEW	27	2000 2100	100KW AZM317 10DB	F	Y	KARACHI
D	70	9	PAK	NEW	4041	0400 1600	100KW AZM22 6DB	F	Y	KARACHI
D	70	11	PAK	NEW	43444 5	1100 1200	100KW AZM80 10DB	F	Y	KARACHI
D	70	11	PAK	NEW	40	0400 0500	100KW AZM300 6DB	F	Y	KARACHI
D	70	11	PAK	NEW	3839	1700 2200	100KW AZM300 10DB	F	Y	KARACHI
D	70	11	PAK	NEW	3839	0500 0700	100KW AZM300 10DB	F	Y	KARACHI
D	70	11	PAK	NEW	39	1800 2000	100KW AZM317 10DB	F	Y	KARACHI
D	70	11	PAK	NEW	49	0000 0500	100KW AZM96 10DB	F	Y	KARACHI
D	70	11	PAK	NEW	4041	0000 0500	100KW AZM278 10DB	F	Y	DACCA
D	70	15	PAK	NEW	49	1500 1900	100KW AZM96 10DB	F	Y	KARACHI
D	70	15	PAK	NEW	41	1000 1200	100KW AZM105 6DB	F	Y	LAHORE
D	70	15	PAK	NEW	4041	1400 1900	100KW AZM278 10DB	F	Y	DACCA
D	70	17	PAK	NEW	55 5859 60	0800 0900	100KW AZM120 10DB	F	Y	KARACHI
D	70	17	PAK	NEW	43444 5	1100 1200	100KW AZM80 10DB	F	Y	KARACHI
D	70	17	PAK	NEW	49 514	1200 1300	100KW AZM120 10DB	F	Y	KARACHI
D	70	17	PAK	NEW	49	1300 1400	100KW AZM96 10DB	F	Y	KARACHI
D	70	17	PAK	NEW	39	0500 0700	100KW AZM317 10DB	F	Y	KARACHI
D	70	17	PAK	NEW	4041	1200 1400	100KW AZM278 10DB	F	Y	DACCA
D	70	21	PAK	NEW	55 5859 60	0800 0900	100KW AZM120 10DB	F	Y	KARACHI
D	70	21	PAK	NEW	49 514	1200 1300	100KW AZM120 10DB	F	Y	KARACHI
D	70	21	PAK	NEW	49	1300 1400	100KW AZM96 10DB	F	Y	KARACHI
D	70	21	PAK	NEW	49	0500 1000	100KW AZM96 10DB	F	Y	KARACHI
D	70	21	PAK	NEW	49	1000 1200	100KW AZM96 10DB	F	Y	KARACHI
D	70	21	PAK	NEW	49	1200 1500	100KW AZM96 10DB	F	Y	KARACHI
D	70	21	PAK	NEW	4041	0500 1000	100KW AZM278 10DB	F	Y	DACCA
D	70	21	PAK	NEW	4041	1000 1200	100KW AZM278 10DB	F	Y	DACCA
D	70	9	PRG	NEW	2728	1800 2200		F	Y	ASUNCION
D	70	15	PRG	NEW	7 8	0000 0400		F	Y	ASUNCION
D	70	6	SDN	NEW	38474 8	0300 2000	20KW ND 0/600KM	F	X	OMDURMAN
D	70	9	SDN	NEW	3839474 8	0300 2000	20KW ND 400/2000KM	F	X	OMDURMAN
D	70	9	SDN	NEW	2728	1800 2000	100KW AZM335 15DB	F	Y	OMDURMAN
D	70	11	SDN	NEW	3839474 8	0800 1500	100KW ND 600/2400KM	F	Y	OMDURMAN
D	70	11	SDN	NEW	2728	1500 1800	100KW AZM335 15DB	F	Y	OMDURMAN
D	70	17	SDN	NEW	2728	0600 0800	100KW AZM335 15DB	F	X	OMDURMAN
D	70	6	SIK	NEW	41	0700 1200	GANGTOK, 7,5KW ND	F	Y	
D	70	7	SIK	NEW	41	0400 0700	GANGTOK, 7,5KW ND	F	X	
D	70	6	TGK	NEW	53	0315 0500	10KW ND	F	X	DAR ES SALAAM
D	70	6	TGK	NEW	53	1430 1930	10KW ND	F	Y	DAR ES SALAAM
D	70	6	TGK	NEW	53	0315 0500	10KW ND	F	X	DAR ES SALAAM
D	70	6	TGK	NEW	53	1430 1930	10KW ND	F	Y	DAR ES SALAAM
D	70	6	TGK	NEW	53	0315 0500	10KW ND	F	X	MWANZA
D	70	6	TGK	NEW	53	1430 1930	10KW ND	F	Y	MWANZA
D	70	6	TGK	NEW	53	0315 0500	10KW ND	F	X	MBEYA
D	70	6	TGK	NEW	53	1430 1930	10KW ND	F	Y	MBEYA
D	70	7	TGK	NEW	53	0800 1115	10KW ND	F	Y	DAR ES SALAAM
D	70	9	TGK	NEW	53	0800 1115	5KW ND	F	Y	DAR ES SALAAM

1	2	3	4	5	6	7	8	9	10	11
D	70	6	UGA	NEW48		0300 2100	10KW ND	F	Y	KAMPALA
D	70	6	UGA	NEW48		0300 2100	10KW ND	F	Y	KAMPALA
D	70	7	UGA	NEW48		0300 2100	10KW ND	F	Y	KAMPALA
D	70	9	UGA	NEW48		0600 1500	10KW ND	F	Y	KAMPALA
D	70	11	UGA	NEW48		0600 1500	10KW ND	F	Y	KAMPALA
D	70	9	27A YUG	NEW40		1600 1700	100KW AZM75	F	Y	BEOGRAD
D	70	9	27A YUG	NEW58		1700 1800	100KW AZM120	F	Y	BEOGRAD
D	70	9	27A YUG	NEW29		1830 2000	100KW AZM45	F	Y	BEOGRAD
D	70	9	27A YUG	NEW30		2000 2100	100KW AZM60	F	Y	BEOGRAD

Symboles utilisés pour représenter les commentaires des administrations et leur analyse par l'I.F.R.B.

Colonne 8: Commentaires des administrations

Symbole	
ADD	A ajouter
AZM	Azimut (suivi de la valeur en degrés)
CH	Voie (suivi du numéro de la voie, ou de X lorsque la voie n'est pas nommément désignée)
CIRAF	Région de réception (numéro de Zone CIRAF)
COCH	Dans la même voie
DB	Gain de l'antenne, en décibels
DEL	A biffer
FREQ/	Fréquence allouée dans une bande trop basse (exemple: FREQ/6MC)
/FREQ	Fréquence allouée dans une bande trop élevée (exemple: 21 MC/FREQ)
GRP	Cette allocation devrait être groupée dans une voie commune avec d'autres allocations désignées par le numéro qu'elles portent dans l'Index
INT	Allocation insuffisamment protégée contre la voie et l'allocation indiquées
KW	Puissance, en kilowatts
MC	Bande, en mégacycles par seconde
NA	Demande pour laquelle aucune allocation n'a été faite (indiquée dans la colonne "INDEX No.")
NEW	Nouvelle demande pour laquelle il convient qu'une allocation soit prévue (indiquée dans la colonne "INDEX No.")
NOREQ	Cette allocation ne correspond à aucune demande de l'administration intéressée
RST	Aucune allocation n'a été faite pour cette demande; il convient d'en prévoir une
SEP	Il convient de prévoir un plus grand écart de fréquence entre cette allocation et la voie mentionnée
(NOTE:	Si des données figurent dans cette colonne sans aucune indication de la mesure que désire l'Administration, cela signifie que cette dernière désire que les caractéristiques figurant dans le projet de plan soient remplacées par ces nouvelles données)

Colonnes 9 et 10: Analyse des commentaires par l'I.F.R.B.

A	Les commentaires de l'Administration intéressée sont une conséquence de l'application générale des normes techniques utilisées pour l'établissement des projets de plan (voir le numéro 101 de l'Accord de la C.A.E.R. et la Préface aux projets de plan)
B	Les commentaires de l'Administration intéressée sont une conséquence de la réduction générale des demandes, ou d'un léger ajustement de l'horaire d'émission, de la bande de fréquences ou d'autres caractéristiques figurant dans la demande
C	Les commentaires de l'Administration intéressée sont une conséquence de l'application générale des méthodes d'établissement des projets de plans autres que celles auxquelles référence est faite dans l'explication des symboles A et B
D	Les commentaires de l'Administration intéressée résultent d'une défectuosité du projet de plan
E	Les commentaires de l'Administration intéressée résultent d'un malentendu ou d'une erreur
F	Les commentaires de l'Administration intéressée résultent de ce que celle-ci a notifié des demandes nouvelles ou modifiées alors que l'essentiel des travaux d'établissement des projets de plans était déjà terminé
G	Les commentaires de l'Administration intéressée ne sont pas confirmés par les données techniques dont dispose le Comité ni par l'application de ces données
X	Il est facile de satisfaire les desiderata exprimés par l'Administration intéressée dans ses commentaires sans que d'autres allocations en soient affectées, ou moyennant un léger remaniement de certaines allocations
Y	Il n'est possible de satisfaire les desiderata exprimés par l'Administration intéressée dans ses commentaires que moyennant une révision complète du projet de plan et un abaissement des normes techniques ou une réduction supplémentaire de l'ensemble des demandes.
Z	L'Administration intéressée pourrait retirer ses commentaires si certains malentendus pouvaient être éclaircis ou si les bases techniques des projets de plan lui étaient mieux exposés

Codes used for Administrations' Comments and Analysis by the I.F.R.B.

Column 8: Administrations' Comments

Symbol	
ADD	To be added
AZM	Azimuth (followed by the number of degrees)
CH	Channel (followed by the channel number, or by X when the channel is not specifically designated)
CIRAF	Reception zone (CIRAF numbering)
COCH	Co-channel
DB	Antenna gain in decibels
DEL	To be deleted
FREQ/	Assigned frequency band too low (example: FREQ/6 MC)
/FREQ	Assigned frequency band too high (example: 21 MC/FREQ)
GRP	This allocation should be grouped in a common channel with other allocations designated by their Index No.
INT	Allocation not sufficiently protected against channel and allocation mentioned
KW	Power in kilowatts
MC	Band in Megacycles per second
NA	Non-allocated requirement (shown in column "INDEX NO.")
NEW	This new requirement should be allocated (shown in column "INDEX NO.")
NOREQ	This allocation does not correspond to any requirement from the Administration
RST	This requirement, which was not allocated, should be included
SEP	A greater frequency separation between this allocation and the channel mentioned should be provided

(NOTE: If particulars are included in this column without any indication of action desired, this means that the Administration wishes to replace the particulars in the draft plan by this new information).

Columns 9 and 10: Analysis by the I.F.R.B.

A	The Administration's comments are a consequence of the general application of the technical standards used in the establishment of the draft plans (see No. 101 of the E.A.R.C. Agreement and the Preface to the draft plans)
B	The Administration's comments are a consequence of the general reduction of requirements, or a slight adjustment of the time sohedule, the frequency band or other characteristics of the requirement
C	The Administration's comments are a consequence of the general application of other policies adopted for the planning
D	The Administration's oomments result from a deficiency in the draft plan
E	The Administration's comments result from a misunderstanding or error
F	The Administration's oomments result from amended or new requirements being notified after the basic planning work had been completed
G	The Administration's oomments are not supported by the technical data available to the Board, or the application of these data
X	The Administration's oomments can easily be met without affecting other allocations or by a slight re-arrangement of allocations
Y	The Administration's comments can only be met by a complete revision of the draft plan and by a lowering of the technical standards or a further reduction of the overall requirements
Z	The Administration's comments might be withdrawn, if certain misunderstandings could be clarified or the technical bases explained

Símbolos utilizados para los comentarios de las administraciones y su análisis por la I.F.R.B.

Columna 8: Comentarios de las administraciones

Símbolo	
ADD	Agréguese
AZM	Azimut (seguido del número de grados)
CH	Canal (seguido del número del canal, o de X cuando éste no ha sido designado específicamente)
CIRAF	Zona de recepción (numeración de la CIRAF)
COCH	Canal común
DB	Ganancia de la antena en decibelios
DEL	Suprímase
FREQ/	Banda de frecuencias asignada demasiado baja (ejemplo: FREQ/6 MC)
/FREQ	Banda de frecuencias asignada demasiado alta (ejemplo: 21 MC/FREQ)
GRP	Esta atribución debe agruparse en un canal común con otras designadas mediante su número de Indice
INT	Atribución insuficientemente protegida contra el canal y atribución indicados
KW	Potencia en kilovatios
MC	Banda en Megaciclos por segundo
NA	Necesidad que no ha sido objeto de atribución (figura en la columna "N° DE INDICE")
NEW	Esta nueva necesidad tiene que ser objeto de atribución (figura en la columna "N° DE INDICE")
NOREQ	Esta atribución no corresponde a necesidad alguna de la Administración
RST	Hay que incluir esta necesidad que no fué objeto de atribución
SEP	Hay que prever mayor separación de frecuencia entre esta atribución y el canal indicado

(NOTA: De figurar características en esta columna pero ninguna indicación sobre las disposiciones que se desea se adopten, significa que la Administración considerada quiere que se sustituyan las características del proyecto de plan por esta nueva información).

Columnas 9 y 10: Análisis por la I.F.R.B.

A	Los comentarios de la Administración son consecuencia de la aplicación general de las normas técnicas utilizadas para preparar los proyectos de planes (véase el Nº 101 del Acuerdo de la C.A.E.R. y el Prefacio a los proyectos de planes)
B	Los comentarios de la Administración son consecuencia de la reducción general de las necesidades, de un ligero reajuste del horario, de la banda de frecuencia o de otras características de la necesidad considerada
C	Los comentarios de la Administración son consecuencia de la aplicación general de otros métodos adoptados para la preparación de los planes
D	Los comentarios de la Administración resultan de una deficiencia del proyecto de plan
E	Los comentarios de la Administración resultan de una mala interpretación o de un error
F	Los comentarios de la Administración son consecuencia de haberse notificado nuevas necesidades o necesidades modificadas después de terminado el trabajo fundamental de preparación los de planes
G	Los comentarios de la Administración no se apoyan en los datos técnicos de que dispone la Junta ni en la aplicación de los mismos
X	Los comentarios de la Administración pueden atenderse fácilmente sin repercusión alguna para otras atribuciones, o mediante una pequeña reorganización de la atribuciones
Y	Los comentarios de la Administración sólo pueden atenderse mediante una revisión completa del proyecto de plan y una reducción de las normas técnicas, o mediante una nueva reducción de las necesidades en su conjunto
Z	La Administración retiraría sus comentarios si pudieran aclararse varias interpretaciones erróneas o explicar las bases técnicas

COMMENTAIRES FORMULÉS PAR LES ADMINISTRATIONS

à l'égard des

PROJETS DE PLANS

pour le

SERVICE DE RADIODIFFUSION A HAUTES FRÉQUENCES

(Articles 11 et 28 de l'Accord de la C.A.E.R.)

FASCICULE C

Commentaires détaillés relatifs aux projets de plans
pour l'indice d'activité solaire 125

COMMENTS BY ADMINISTRATIONS

on the

DRAFT PLANS

for the

HIGH FREQUENCY BROADCASTING SERVICE

(Articles 11 and 28 of the E.A.R.C. Agreement)

BOOKLET C

Detailed comments on the draft plans
for Sunspot Number 125

COMENTARIOS FORMULADOS POR LAS ADMINISTRACIONES

sobre los

PROYECTOS DE PLANES

para el

SERVICIO DE RADIODIFUSIÓN POR ALTAS FRECUENCIAS

(Artículos 11 y 28 del Acuerdo de la C.A.E.R.)

FASCÍCULO C

Comentarios detallados relativos a los proyectos de planes
para el índice de actividad solar 125

J 125

Phase Phase Fase	Bande/Band/Banda	Voie/Channel/Canal	Pays Country País	Index Index Indice nº	Zones de réception Reception Zones Zonas de recepción	Heures d'émission Hours of transmis. Horario de operac.	Commentaires de l'Administration Comments from the Administration Comentarios de la Administración	Analyse par l'IFRB Analysis by IFRB Análisis de la IFRB		Observations Remarks Observaciones
1	2	3	4	5	6	7	8	9	10	11
J125	6	1	AUS	159		08301400	INT COCH URS	A	Y	
							INT CH1A BRN	A	Y	
J125	6	1	BUR	112		11000400	INT 2400/0400	D	Y	
J125	6	1	BUR	112		11000400	INT 1100/1300 2100/2400	A	Y	
J125	6	1A	BRN	154		03001400	0300/1600 2200/0100	F	X	
J125	6	2	CLN	441		01000230	SEP CH1 CLN	C	X	
J125	6	2A	NIG	246		09001600	FREQ/6MC	C	Y	
							AZM55 6DB	F	X	
J125	6	3	AUS	259		08301400	INT CH3A INS	A	Y	
J125	6	3	I	128		03000500	AZM40 CIRAF 28,29	C	Y	
J125	6	3	I	2827 28		17302200	ND CIRAF 27,28,29	C	Y	
							7MC	C	Y	
J125	6	3A	INS	1054		22001600	MENADO	F	X	
J125	6	4	IND	1341		16001800	INT CH3A BLR	A	Y	
J125	6	5A	MLA	154		22301630	SINGAPORE	F	X	
J125	6	7	BRM	149		00001630	INT CH7A PHL	A	N	
J125	6	8	KEN	148		07001100	6KW 0300/1100	F	X	
J125	6	8	KEN	148		13002000	6KW 1300/1600	F	X	
J125	6	9	Q	2528		18001900	INT CH8A F	A	Y	
J125	6	9	YUG	328		10001800	DEL	F	X	
J125	6	9A	CGO	252		16002000	50KW ND	F	X	
							LEOPOLDVILLE	F	X	
J125	6	10	I	728		05302330	ND CIRAF 27,37,38,39	C	Y	
J125	6	10	IND	2341		00300400	INT	A	Y	
J125	6	10	IND	2341		11001730	INT CH10A INS	A	Y	
J125	6	11	Q	382728		16002315	INT CH11A URS	A	Y	
J125	6	11	IND	641		00301600	INT	G	N	
J125	6	11A	IND	3641		00451600	INT CH11 IWD	A	Y	
							INT COCH URS	A	Y	
J125	6	12	I	122629		13001400	9MC	C	Y	
J125	6	13	CTO	546		06002300	ACCRA	F	X	
J125	6	13A	CLN	541		01000230	SEP CH1 CLN	C	X	
J125	6	13A	EGY	13839		03000900	0300/1500	F	X	
J125	6	13A	EGY	13839		15002330	1500/2400	F	X	
J125	6	14	ATN	111		12000500	INT 2100/0230	D	Y	
J125	6	14	NOR	21627		07300930	0700/0900	C	Y	
J125	6	14	NOR	61827		20002300	1900/2300	F	Y	
J125	6	15	IOB	111		15001800	1000/1300	F	X	
							INT COCH CLM	C	Y	
							INT CH14A DOM	C	Y	
J125	6	15	IOB	111		21000200	2000/0300	F	X	
							INT COCH CLM	C	Y	
							INT CH14A DOM	C	Y	
J125	6	15A	AFS	157		14001800	DEL	F	X	
J125	6	15A	IND	541		00451400	INT CH15 MLA/G	A	Y	
J125	6	16	MCO	1272837		06301800	0600/2300	C	Y	
J125	6	16	YUG	428		21002330	1000/2330	F	Y	
J125	6	17	HOL	1182728 37		15300100	INT	D	Y	
J125	6	18A	IND	1241		11001745	INT CH19 D/USA	D	Y	
							INT CH19 D/USA	A	Y	
							INT CH19 D/USA	D	Y	
J125	6	19A	IND	141		01001600	INT COCH B	A	Y	
							INT CH19 INS	G	N	
J125	6	19A	NIG	148		06002100	FREQ/6MC	C	Y	

1	2	3	4	5	6	7	8	9	10	11
J125	6	20A	ARS	339		04002100	JEDDAH , 0330/2100	F	X	
							50KW , 9MC	F	Y	
J125	6	21	AUT	1	1827282937	09001500	50KW	F	X	
J125	6	22A	IND	3741		01000500	INT	A	Y	
J125	6	24	IND	1741		01001600	INT	G	Z	
J125	6	24A	ETH	548		04000800	50KW	F	X	
J125	6	25	PAK	1140	41	12001800	1200/1700	F	X	
J125	7	1	G	19	2728	14001600	INT COCH URS	A	Y	
J125	7	1	NIG	846		07001600	20KW AZM55 6DB	F	X	
							FREQ/7MC	C	Y	
J125	7	2	AUS	351		20001400	INT COCH CHN,TUR	A	Y	
							INT CH1A MLA	A	Y	
							INT CH2A BRM	A	Y	
J125	7	2A	AFS	257		14001800	1600/1900	F	Y	
							ADD 0300/0600	F	X	
J125	7	2A	BRM	249		10001630	INT CH2 CHN	A	Z	
J125	7	3A	IND	1441		03001530	INT	G	Z	
J125	7	4	G	39	2728	16001700	INT CH3A IWD	A	Y	
J125	7	4	G	43	1828	17001830	INT CH3A IWD	A	Y	
J125	7	4	G	50	2728	22002400	INT CH4A UKR	A	Y	
J125	7	4A	CGO	1152		16002000	BUKAVU	F	X	
J125	7	5	I	19	1827282937 38	16301730	ND CIRAF 27,28,37,38	C	X	
							FREQ/7MC	C	Y	
J125	7	5	I	23	2829	13001500	INT COCH CHN	D	Y	
J125	7	5	I	28	1827282937	15001630	INT COCH CHN	D	Y	
							9MC	C	Y	
J125	7	5	I	50	37383948	10001300	INT	C	Y	
J125	7	5	I	54	3738	20002100	AZM175/220	C	X	
J125	7	5A	CLN	641		11301700	1130/1730	B	Y	
J125	7	6	AUT	2	1827282937	09001300	50KW	F	X	
J125	7	6A	NIG	746		0600 2100	ND	F	X	
J125	7	7	AFS	457		14001800	0300/0600 1600/1900	F	X	
J125	7	7A	PAK	940	41	06300930	RAWALPINDI	E	X	
J125	7	8	NOR	1	17 1827	06000800	0700/0900	C	X	
J125	7	8	NOR	5	1827	13001800	1500/1900	C	Y	
J125	7	8	NOR	7	17 1827	18002400	1800/2300	F	X	
J125	7	8A	EGY	2	3839	04002300	0400/2400	B	Y	
J125	7	9A	PAK	36	4149	10301530	0930/1530	F	X	
J125	7	10	J	2	44 45 64	20001400	2000/1500	F	Y	
J125	7	11A	AFS	657		14001800	0300/0600 1600/1900	F	X	
J125	7	11A	NIG	646		07301400	20KW , 0730/1600	F	X	
J125	7	11A	PAK	2040		13301500	1400/1530	F	Y	
							CIRAF 40,41	E	X	
J125	7	11A	PAK	2541		15001700	1330/1700	F	Y	
							CIRAF 40,41	E	X	
J125	7	12A	ARS	239		09001300	RIYADH , 100KW	F	X	
							0330/2100	F	Y	
J125	7	12A	IND	1841		01000700	INT CH12 D/USA	A	Y	
J125	7	12A	TGK	153		07000900	5KW ND	F	Y	
J125	7	12A	TGK	153		13001700	DEL	F	X	
J125	7	13	PAK	44	31 40 42	15001800	1400/1700	B	X	
							10KW	B	Y	
							CIRAF 30,31,40/42	B	Y	
J125	7	13A	PAK	28	4041	01000330	0200/0400	F	X	
J125	7	13A	UGA	148		06001000	10KW	F	X	
							0300/1400	F	Y	
J125	7	13A	UGA	148		14002000	10KW	F	X	
							1400/2100	F	Y	
J125	7	14A	CLN	741		04001600	0400/1730	B	Y	
J125	7	14A	KEN	248		07001100	10KW	F	X	
				48			0300/1100	F	Y	
J125	7	14A	KEN	248		13002000	10KW 1100/1400	F	X	
J125	7	15A	CGO	952		09001900	0800/1900	C	X	

1	2	3	4	5	6	7	8	9	10	11
J125	7	15A	CGO	9	32	1900 2000	1630/2200	B	Y	
J125	7	15A	PAK	24	40 41	1500 1630	AZM22	E	X	
J125	7	15A	PAK	43	30 3, 1 40 42	1730 1800	AZM22	E	X	
J125	7	16	YUG	1	28	0630 2330	0400/2330	F	Y	
							ND	F	X	
J125	7	17	ALB	5	27 38 39	1200 1800	1200/2300	F	Y	
							CIRAF 27,28,38,39	F	X	
J125	7	17A	ETH	1	48	0300 0800	10/20KW	F	X	
J125	7	17A	IND	9	41	0800 1100	INT	A	Y	
J125	7	17A	IND	2	7 41	0030 0700	INT COCH POR	D	Y	
							INT COCH POR	A	Y	
J125	7	19A	IND	3	5 41	0045 1300	INT CH20 INS	A	Y	
J125	7	19A	NIG	5	46	0800 1600	20KW	F	X	
J125	9	1	ETH	6	48	0900 1100	50KW	F	X	
J125	9	1	ETH	6	48	1100 1130	100KW AZM349 160B	F	X	
							CIRAF 38	F	X	
J125	9	1	ETH	6	48	1130 1200	100KW AZM19 160B	F	X	
							CIRAF 39	F	X	
J125	9	1	HOL	3	5 10	0200 0400	INT	A	Y	
J125	9	1	IND	9	3 54	2300 2400	INT CH2 INS	A	Y	
J125	9	1A	CTO	1	46	0600 1700	0600/2300	F	X	
J125	9	3A	BRN	2	54	0300 1200	0300/1500 2200/0100	F	X	
							ADD 1500/1600	F	Y	
J125	9	4A	CHL	8	14	1900 2200	1900/0200	C	Y	
J125	9	5	CTO	2	46	0800 1700	0600/2300	F	X	
J125	9	5	IND	3	3 41	0400 1300	INT COCH NCL	A	Y	
J125	9	5	IND	7	5 5 2 3 5 7	1800 2000	INT CH4A CVA	A	Y	
J125	8	5	IND	6	7 4 9 5 0 54	0100 0200	INT CH6 PHL	A	Y	
J125	9	5	BUR	2	11	2300 0330	INT	A	Y	
J125	9	6A	G	4	7 27 28	1830 2200	INT CH6 URS	A	Y	
J125	9	7A	G	3	7 18 28	1800 1900	INT CH7 URS	A	Y	
J125	9	7A	G	11	2 28 38	1900 2000	INT CH7 URS	A	Y	
J125	9	9	IND	1	1 41	1100 1400	INT CH9A URS	A	Y	
J125	9	9A	ONK	1	1 6 27 28 37	1900 2200	INT	A	Y	
J125	9	10A	I	4	6 39 40 41	0800 0900	INT CH11 URS	A	Y	
J125	9	11	ETH	7	48	1600 1800	50KW	F	X	
J125	9	11	IND	3	4 41	0900 1300	INT COCH URS	A	Y	
J125	9	11A	AUT	4	39	0500 0600	50KW	F	X	
J125	8	11A	I	8	0 5 5 5 9	1900 2000	INT	A	Y	
J125	9	13	NOR	3	1 7 18	1000 1400	1000/1300	F	X	
J125	9	13A	EGY	4	27 28	2030 2300	1800/2300	B	Y	
J125	9	13A	EGY	5	37	2300 2400	AZM320 , CIRAF 27,28	F	X	
J125	9	14	NZL	7	5 6 62	1800 2000	INT CH14A ONU, CH13A IRN	A	Y	
J125	9	14A	BEL	3	52	2300 0200	CH25	C	Y	
J125	9	14A	I	2	28 29	0300 0600	INT CH14 S	A	Y	
J125	9	14A	IND	5	4 27 28 37	2200 2300	INT CH15A TGR/USA	A	Y	
J125	9	14A	IND	5	4 27 28 37	2200 2300	1945/2100	C	Y	
							INT CH13A EGY.	A	Y	
J125	9	15A	I	18	18 27 29	1630 1730	CIRAF 18,27,28,29	C	X	
J125	9	16	ATN	2	11	2300 2400	INT	A	Y	
J125	9	16	IND	1	5 41	0700 1100	INT COCH URS	A	Y	
J125	9	16	AFS	3	57	0630 1400	0430/1630	F	X	
J125	9	16A	I	4	28 29	0400 0600	INT COCH URS	A	Y	
J125	9	16A	I	24	28 29	1300 1500	INT COCH URS	D	Y	
J125	9	16A	I	39	37	0600 0630	INT COCH URS	A	Y	
J125	9	19A	I	8	27 28 37 38 39	0700 2400	0530/2330	C	Y	
J125	9	20	CTO	4	46	0600 2100	0600/2300	F	X	
							ACCRA	F	X	
J125	9	20A	ALB	6	27	2000 2100	ADD 1800/1900	F	Y	
J125	9	20A	I	49	27 28 37	0700 0900	NOREQ	C	X	
J125	9	20A	I	49	38	0900 1000	CIRAF 37,38	C	X	

1	2	3	4	5	6	7	8	9	10	11
J125	9	21	AFS	5	57	06301400	0430/1630	F	X	
J125	9	21A	G	14	8 3 4 5 7 8 9 10	23000345	INT CH22 B	A	Y	
J125	9	22	UGA	2	48	06001000	10KW	F	X	
							0600/1300	F	Y	
J125	9	22	UGA	2	46	14001600	10KW	F	X	
							1300/1500	F	X	
J125	9	22A	HOL	3	410	00000400	INT	A	Y	
J125	9	22A	IND	5	226	18301900	INT CH21A G	A	Y	
J125	9	22A	PAK	4	5 3 0 3 1 4 0 4 1 4 2	04000600	10KW	C	Y	
J125	9	23	G	9	0 2 6 3 8	04000600	INT CH23A POL	A	Y	
J125	9	23	MLA/G	1	5 1 5 4	08001045	INT CH23A URS	A	Y	
J125	9	24A	ARS	4	39	05300900	11MC , GRP 5,6,7	F	Y	
J125	9	24A	ARS	4	39	15001900	11MC , GRP 5,6,7	F	Y	
J125	9	24A	NOR	4	1 6 2 7 2 8	10001500	1000/1300	F	X	
J125	9	25	CTO	3	46	06001700	0600/2300	F	X	
							ACCRA	F	X	
J125	9	25	NGN	1	51	00300600	INT 0030/0400	A	Y	
J125	9	25A	EGY	3	3 6 3 9 4 0 4 7 4 8	04002300	0400/2400	B	Y	
J125	9	25A	EGY	3		04002300	ADD CIRAF 37	F	X	
J125	9	25A	G	15	3 1 0 1 1 1 2	23000400	INT CH25 CHL	A	Y	
							INT CH26 BOL	D	Y	
J125	9	26	AFS	7	57	06301400	0430/1630	F	X	
J125	9	26	IND	2	641	07001100	INT	A	Y	
J125	9	26A	NZL	9	54	11001500	INT COCH B	A	Y	
J125	9	27A	I	9	2 7 2 8 3 7 3 8	09002030	0730/2230	C	Y	
J125	9	27A	NOR	1	8 7 8 9 10 11	23000030	0100/0230	C	X	
							6MC	C	Y	
J125	11	1	IND	12	3 5 5 5 8 5 9 6 0	10001100	INT CH2 CHN	A	Y	
							INT CH1A URS	A	Y	
J125	11	1	PAK	4	1 5 5 5 8 5 9 8 0	09001000	17MC	D	X	
J125	11	2	ARS	8	39	08001000	0330/2100, GRP 4,5,7	F	Y	
							JEDDAH , ADD AZM300	F	X	
J125	11	2	I	2	237	21002200	AZM270	C	X	
J125	11	2	I	2	5 2 8 2 9	13001500	INT COCH CHN	D	Y	
							INT CH1A,CH2A URS	D	Y	
J125	11	2	YUG	6	29	07000730	AZM45	F	X	
							CH6	C	X	
J125	11	2	YUG	1	736	06000700	CH6	F	X	
J125	11	3	AUS	2	249	08301200	0600/1200	F	X	
							15MC	C	Y	
J125	11	3	CGO	1	7 8	00000200	0000/0500	B	Y	
J125	11	3	IND	8	8 4 9 5 0	23300100	INT CH4 G	A	Y	
J125	11	3A	G	15	0 1 2 1 3 1 4 1 5 1 6	22000300	INT CH4 G	A	Y	
J125	11	4	G		4 2 8 2 9 3 0	03000400	INT CH4A AUT	A	Y	
J125	11	4	G	5	4 4 6 4 7 5 2 5 3	04000600	INT CH4A AUT,I	A	Y	
J125	11	4	G	9	4 2 8 2 9	06000730	INT CH4A I	A	Y	
J125	11	4	G	9	5 3 8	07301100	INT CH4A I	A	Y	
J125	11	4	G	14	9 1 /10	22000300	INT CH3A G	A	Y	
J125	11	4	G	15	1 1 0 1 1 1 2	01000300	INT CH3A G	A	Y	
J125	11	4A	AUS	1	0 5 3	08301400	INT CH4 USA	G	Z	
J125	11	4A	I	5	7 5 5 5 8 5 9 6 0	05000830	INT COCH EGA	A	Y	
							INT CH4 USA	A	Y	
J125	11	5	EGY	6	3 7 3 8 3 9 4 0 4 7 4 8	04001800	0400/2400	B	Y	
							ND	B	X	
J125	11	5	IND	9	1 4 9 5 0	00000200	INT COCH EGY	G	Z	
J125	11	5A	I	8	6 1 4 1 5 1 6	23000400	2200/0300	C	Y	
J125	11	6	ETH	3	48	08001900	10/20KW	F	X	
J125	11	6	ETH	1	0 6 7 8	00000200	100KW AZM312 18DB	F	Y	
							CIRAF 6,7,8,10	F	Y	
J125	11	6A	AUS	2	5 4 1 4 9 5 4	13001900	1200/1900	B	Y	
J125	11	6A	NIG	1	046	08001800	11MC/FREQ	G	Z	
							20KW AZM55 6DB	F	Y	
J125	11	7	CAN	6	2 3	22000500	INT COCH F	G	Z	
J125	11	7A	PAK	2	41	11001400	1200/1400	C	X	
							10DB	C	X	
J125	11	7A	PAK	2	7 4 0 4 1	06001100	0830/0930	F	X	
J125	11	8A	AFS	9	5 2 5 3	14001500	DEL	F	X	
J125	11	8A	AFS	9	5 2 5 3 5 8 5 9	15001600	DEL	F	X	
J125	11	8A	AFS	9	5 2 5 3	16001800	DEL	F	X	

1	2	3	4	5	6	7	8	9	10	11
J	125	11	8A	G	18 01 11 12	2200 0200	INT CH8,CH9 HNG	A	Y	
J	125	11	9	ARS	9 3 5 8 3 9 4 6	1100 1400	REYADH , CIRAF 37	F	X	
							100KW AZM280 15DB	F	X	
							0800/0900	F	Y	
							GRP 8,12,19,20,22	F	Y	
J	125	11	9A	AUS	14 5 16 2	2000 2200	17MC 15MC	C	X	
J	125	11	9A	AUS	14 6 0 6 3	2200 2230	2200/2300	F	X	
							21MC 17MC	D	X	
J	125	11	10A	D	27 10 11	0200 0500	AZM285	F	X	
J	125	11	11	I	13 2 7	1300 1400	CIRAF 28,29	C	X	
J	125	11	11	I	27 18 28 29	1500 1600	INT CH10A RYU/USA	D	Y	
J	125	11	11A	AUS	15 6 0 6 3	0900 1000	0930/1130	F	Y	
J	125	11	11A	IND	4 1 3 9 4 0	0200 0330	INT CH12A ARS	A	Y	
J	125	11	12	D	25 6 7 8 9	2300 0600	AZM295/320	F	X	
J	125	11	12A	AR6	5 3 9	0400 0800	GRP 4,6,7	F	Y	
J	129	11	12A	ARS	5 3 9	1400 1700	GRP 4,6,7	F	Y	
J	125	11	12A	ARS	12 5 0 5 4	0200 0400	AZM75/100 , CIRAF 50,54	F	X	
							GRP 8,9,19,20,22	F	Y	
J	125	11	12A	CAN	1 1 2	1600 0800	INT COCH HOL	G	Z	
							INT CH12 D	G	Z	
							INT CH13 HOL	G	Z	
J	125	11	12A	NZL	5 5 6 2	1600 2100	INT CH12 CHN	A	Y	
J	125	11	13	HOL	26 8	0100 0300	0100/0230	C	X	
J	125	11	13	HOL	26 8	0100 0300	INT	A	Y	
J	125	11	13	HOL	33 1 1 12	0300 0400	0230/0400	C	X	
J	125	11	14	ARS	7 3 9	1800 2000	GRP 4,5,6	F	Y	
J	125	11	15	G	28 2 7 3 7	1000 1700	INT CH14A URS	A	Y	
J	125	11	16	AUS	21 4 5	0900 1800	INT CH15 CHN	G	Z	
							INT CH16A URS	D	Y	
J	125	11	17A	G	5 3 5 2 3 7	0345 0500	INT CH18 POL	A	Y	
J	125	11	17A	G	11 8 5 5 3 8 5 9	0500 0600	INT CH18 POL	A	Y	
J	125	11	18	YUG	8 2 9	1300 1400	AZM90 CIRAF 54	F	Y	
J	125	11	19	ARS	22 8	2300 2400	0000/0200	F	Y	
							GRP 8,9,12,19,20	F	Y	
J	125	11	19	G	10 7 2 8 3 8 3 9 4 0	1600 2100	INT CH18A F	A	Y	
J	125	11	19	YUG	2 8 1 3 1 4	0200 0400	0000/0200	C	Y	
							CH18	C	Y	
J	125	11	19A	IND	1 1 4 1	0700 1100	INT CH19 CHN	A	Y	
J	125	11	20	G	23 18 28 29	0900 1400	INT COCH HWA	A	Y	
J	125	11	20	IND	8 9 4 9 5 0	2300 0100	INT CH21 PHL	A	Y	
J	125	11	20A	NOL	27 4	2200 2400	INT	A	Y	
J	125	11	21	AUS	38 4 1 4 9 5 4	1000 1530	CIRAF 49,54	F	X	
							INT COCH G	D	Y	
J	125	11	21	G	15 9 1 4 1 5 1 6	2200 0300	INT CH20A HOL	A	Y	
							INT CH21A D	A	Y	
J	125	11	21	IND	5 3 2 7 2 8	2000 2200	INT CH22 TCH	A	Y	
J	125	11	21A	D	24 6 7 8 9	2300 0600	AZM295/320	F	X	
J	125	11	22	G	5 1 3 7 3 8 3 9 4 6 4 7 4 8	0345 0515	INT CH21A D	A	Y	
J	125	11	22	G	15 7 1 0 1 1 1 2	0030 0330	INT CH21A D	A	Y	
J	125	11	23	G	3 1 8 2 7 2 8 2 9 3 8 3 7 3 8	0900 1800	INT CH23A URS	G	Z	
J	125	11	24	AUS	3 9 4 9	1100 1200	1100/1400	F	Y	
							INT CH24A J	A	Y	
J	125	11	24	G	7 3 2 7 3 7 3 8 4 8	1700 1900	INT CH23A URS	A	Y	
J	125	11	24	G	7 8 3 7 3 8 4 8	1900 2000	INT CH23A URS	A	Y	
J	125	11	24A	CAN	20 10 11 12	0400 0600	0300/0600	F	Y	
J	125	11	25	AUS	2 3 4 1	1500 2000	1400/2000	B	Y	
							CIRAF 41,49	F	X	
							INT CH25A URS	A	Y	
J	125	11	25	ETH	9 1 8 2 7 2 8	2000 2300	100KW AZM336/349 17DB	F	X	
J	125	11	26	MLA/G	16 3 9 4 0 4 1	0000 0200	INT CH25A USA	C	Y	
J	125	11	26A	CHL	21 14 16	1500 1700	1700/2000	C	Y	
J	125	11	26A	D	6 4 6 4 7	1700 2200	AZM160/200	F	Y	
J	125	11	27	SEL	4 5 2	2300 0330	2300/0200	C	X	

1	2	3	4	5	6	7	8	9	10	11
J	12	5	11 27A	IND	46 41 42	1000 1200	15MC 1200/1330	C	Y	
J	12	5	11 27A	PAK	7 40 41	1330 1700	AZM278	E	X	
J	12	5	11 27A	PAK	48 39 40	1730 1900	1800/1930	B	Y	
							50KW	E	X	
J	12	5	11 27A	PAK	58 28	1900 1930	1730/1800	B	Y	
							CIRAF 39,40	B	X	
J	12	5	15 1	CAN	13 27	1800 2300	CIRAF 27,28	F	X	
J	12	5	15 3	SUI	8 52 57	0500 0630	21MC CH2A	C	Y	
J	12	5	15 3	SUI	11 46 47 48 57	1800 2200	21MC CH8	C	Y	
J	12	5	15 3A	AFS	8 52 53	1200 1400	DEL	F	X	
J	12	5	15 4	AUS	26 45	2200 2400	21MC 17MC	C	X	
J	12	5	15 4	I	37 38 39 41 48	1830 1900	150KW	C	X	
							CIRAF 38,39,47,48	C	X	
J	12	5	15 4	I	40 39 46	0600 0630	150KW	C	X	
							INT CH3A,CH4A URS	A	Y	
J	12	5	15 4	I	64 43 44 45	0830 1000	INT CH3A,CH4A URS	C	Y	
							INT CH4A AUS	C	Y	
J	12	5	15 4	I	7 7 11 12	1900 2000	INT CH3A B	C	Y	
J	12	5	15 4	I	8 7 12 14 15 16	0000 0500	2200/0300	C	Y	
J	12	5	15 4A	AUS	13 58	0230 1000	INT CH5 J	G	Z	
J	12	5	15 5	J	5 44 64	2200 0900	2000/0900	F	Y	
J	12	5	15 5A	NOR	19 44 45 51 55 59 60	1030 1200	1000/1130	C	X	
J	12	5	15 5A	YUG	15 30 39	1730 1930	1730/1800 AZM90 CIRAF 41	F	X	
							1800/1900 AZM180	F	Y	
							CIRAF 38,39	F	Y	
							1900/1930 AZM75	F	X	
							CIRAF 30,39	F	X	
J	12	5	15 6	CLN	15 29 39 40 41	0200 0500	0130/0500	B	Y	
J	12	5	15 6A	AUS	17 61 62	0830 1000	INT CH7 RYU/USA	A	Y	
J	12	5	15 6A	YUG	27 6	0200 0400	0100/0300	C	Y	
							11MC CH6	C	Y	
J	12	5	15 7A	AUS	27 45	2200 2330	21MC 17MC	C	X	
J	12	5	15 7A	D	7 46 47	1800 2200	AZM200	F	X	
J	12	5	15 7A	I	29 52 53 57	1030 1300	INT	A	Y	
J	12	5	15 7A	I	8 41 1 12	0300 0500	CH14	B	Y	
J	12	5	15 7A	I	8 6 12 13 15	2300 0300	2200/0300	C	Y	
J	12	5	15 8A	ALB	13 13 14 15	0000 0200	DEL	F	X	
J	12	5	15 9A	INS	29 37 38	2000 2200	1900/2100	B	Y	
J	12	5	15 10	E	9 49 50	2300 0100	11MC	G	YZ	
J	12	5	15 11A	CGO	15 8	1300 1400	17MC	C	Y	
J	12	5	15 11A	CGO	16 8	0000 0200	0000/0500	B	Y	
J	12	5	15 13	CLN	14 16 28 29 39 40 41 49	0130 0400	0130/0430	B	X	
J	12	5	15 13A	G	1 19 56 60	0600 1100	INT CH13 CLN	C	Y	
							INT CH14 FOR	A	Y	
J	12	5	15 14	I	8 41 1 12	0000 0330	0000/0300	B	X	
J	12	5	15 14A	ETH	11 14 15	0000 0100	0200/0300	F	Y	
							100KW AZM270 17DB	F	Y	
							CIRAF 12 13	F	Y	
J	12	5	15 14A	IND	47 41 42	1000 1200	11MC 1200/1330	C	Y	
J	12	5	15 14A	IND	7 34 85 25 3	1700 1830	INT CH15A IND	A	Y	
J	12	5	15 15A	IND	58 48 52 53	1530 1600	INT CH14A IND	A	Y	
J	12	5	15 16	CAN	14 27	1100 1400	1100/1500	C	X	
							AZM50/60	F	X	
							CIRAF 18,27,28,29	F	X	
							17MC 21MC	C	X	
J	12	5	15 16A	I	62 4 6 /13	1800 1630	CIRAF 4,6/15	C	X	
J	12	5	15 16	CAN	15 16 28	1500 2300	AZM50/60	F	X	
							CIRAF 18,27,28,29	F	X	
J	12	5	15 16	FNL	4 27 28 37	0700 1000	GRP 4 1400/1700	C	Y	
J	12	5	15 16A	IND	59 52 53 57	0400 0530	INT CH19 URS	A	Y	
J	12	5	15 16A	IND	10 14 9 50	1100 1500	INT CH17A MLA/G	A	Y	
							INT CH17A MLA/G	C	Y	
J	12	5	15 16A	IND	12 25 6	0800 1000	INT CH17A MLA/G	C	Y	
J	12	5	15 16A	IND	12 25 55 65 85 9 60	0800 1100	INT CH17A MLA/G	A	Y	
J	12	5	15 16A	PAK	6 41	0000 0800	CIRAF 40,41	F	X	
J	12	5	15 19A	AFS	10 47 48	0530 1000	DEL	F	X	
J	12	5	15 19A	AFS	10 47 48	1400 1700	DEL	F	X	
J	12	5	15 19A	HOL	7 38 39	1700 1600	INT	A	Y	

1	2	3	4	5	6	7	8	9	10	11
J	125	15	19A	HOL	7 38 39	1700 1800	SEP CH21 HOL	C	Y	
J	125	15	19A	YUG	21 37	1900 2100	2000/2100	F	X	
J	125	15	20	ATN	4 27	2100 2200	INT	D	Y	
J	125	15	20	NGN	4 27	1800 1900	INT	D	Y	
J	125	15	21	AUS	45 27 28	0600 0800	0600/0900	F	Y	
J	125	15	21	HOL	6 29	1700 1800	AZM90	C	Y	
J	125	15	21	HOL	6 29	1700 1800	INT	A	Y	
J	125	15	21	HOL	6 29	1700 1800	SEP CH19A HOL	C	Y	
J	125	15	21	HOL	12 45	1030 1200	INT	A	Y	
J	125	15	21	HOL	13 49	1230 1700	INT	D	Y	
J	125	15	21	HOL	18 63	0400 0600	INT	A	Y	
J	125	15	21	HOL	18 63	0400 0600	SEP CH22 HOL	C	Y	
J	125	15	21	HOL	37 1315	2330 0100	SEP CH22 HOL	C	Y	
J	125	15	22	HOL	19 63	0400 0530	INT	A	Y	
J	125	15	22	HOL	19 63	0400 0530	SEP CH21 HOL	C	Y	
J	125	15	22	HOL	26 9	2200 2400	SEP CH21 HOL	C	Y	
J	125	15	22A	AUS	40 41 49 54	2300 0700	CIRAF 49,54	F	X	
							21MC 17MC	F	Y	
							INT COCH LUX	A	Y	
J	125	15	23	FNL	4 27 28 37	1400 1700	GRP 4 0700/1000	C	Y	
J	125	15	24	MLA/G	14 34 43 44 45 49	1300 1700	INT COCH TGR/USA	C	Y	
J	125	15	25	I	42 39 40 41 48	1030 1300	INT CH24A KOR	C	Y	
							INT CH25A BRM	C	Y	
J	125	15	27	BEL	5 52	0700 1200	21MC	C	X	
J	125	15	27A	PAK	5 0 37 39	1830 2000	1800/1930	B	Y	
							50KW	E	X	
							CIRAF 37/39	BD	Y	
J	125	15	27A	S	21 6 7	0300 0400	11MC CH2	G	X	
J	125	15	28A	ARS	8 38	0600 0800	REYADH , 100KW , 11MC	F	X	
							GRP 9,12,19,20,22	F	Y	
J	125	15	28A	ARS	8 38	1800 2100	DEL	F	X	
J	125	15	28A	ARS	10 39	0300 0600	DEL	F	X	
J	125	15	28A	ARS	10 39 40	1400 1800	DEL	F	X	
J	125	15	28A	ARS	11 46	1200 1400	DEL	F	X	
J	125	15	28A	ARS	15 49	1000 1200	100KW AZM75/90 , REYADH	F	X	
							0900/1200,CIRAF 49,50,54	F	X	
							GRP 23	F	Y	
J	125	15	28A	G	15 8 12 13 14 15 16	2200 0100	INT CH28 ARG	D	Y	
							INT CH29 MEX	A	Y	
J	125	15	29	G	12 35 55 56 58 59	0600 0900	INT CH29A MEX	C	Y	
J	125	15	29A	AUS	28 54	2200 2300	CIRAF 49,54	F	X	
J	125	15	29A	AUS	28 41 49 54	2300 0300	CIRAF 49,54	F	X	
							21MC 17MC	C	X	
							INT COCH D	D	X	
J	125	15	29A	AUS	29 49 54	1030 1100	1000/1100	F	X	
J	125	15	30	ALB	11 7 8	0900 1000	1300/1400	F	Y	
J	125	15	30	ALB	11 7 8	2300 0300	AZM310/250 CIRAF 7,8,13	F	Y	
J	125	15	31A	HOL	31 8	2200 2300	2200/2330	B	Y	
J	125	15	31A	I	5 13 8 39 48	1000 1300	INT COCH IND	C	Y	
J	125	15	31A	I	7 31 1 12	1600 1630	150KW	C	X	
J	125	15	32	G	5 28 29 30	0300 0400	INT CH32A ROU	A	Y	
J	125	15	32A	I	47 39	0600 0700	AZM90 CIRAF 40,41	C	X	
J	125	15	33	PAK	5 12 8 37 38 39 40	1800 1830	1730/1800	B	Y	
J	125	15	34	G	16 1 11 12 13 14 15 16	2200 0100	INT CH33A BUL,POR	A	Y	
J	125	15	34	IND	44 38 39	0430 0600	INT CH33 URS	A	Y	
J	125	15	35	G	8 9 38 39 40	0330 0600	INT CH34A URS	D	Y	
J	125	17	1	G	7 24 7 48 52 53 57	1600 1715	INT CH1A G	A	Y	
J	125	17	1	G	7 44 7 48 52 53 57	1715 2015	INT CH1A G	A	Y	
J	125	17	1	G	8 6 47 48 52 53 57	2015 2100	INT CH1A G	A	Y	
J	125	17	1	G	9 9 28 38 39	1200 1400	INT CH1A G	A	Y	
J	125	17	1	G	13 6 33 44 45	1000 1100	INT CH1A G	A	Y	
J	125	17	1	G	14 0 43 44 45	1100 1200	INT CH1A G	A	Y	
J	125	17	1	G	14 34 0 41 49 50 54	1400 1600	INT CH1A G	A	Y	
J	125	17	1A	G	106 1 /10 11 12	1030 1600	INT CH1 G	A	Y	
							INT CH2 POL,S	A	Y	
J	125	17	1A	G	17 0 10 11 12	1600 2100	INT CH1 G	A	Y	
							INT CH2 ONU	A	Y	
J	125	17	2	S	9 41 49 54 58	1400 1530	INT CH2A ISR	G	Z	
J	125	17	2A	I	67 4 6 7 8 9 10	1600 1700	1630/1730	C	Y	
							AZM310	C	X	

1	2	3	4	5	6	7	8	9	10	11
J12517		2A	I	7411 12		1530 1600	1600/1630	C	Y	
J12517		2A	I	7811 12		1900 2000	INT CH3 CAN	A	Y	
J12517		2A	I	65141516		2200 0100	AZM270 CIRAF 10,11,12	C	Y	
J12517		3	CAN	1818 29		2000 2300	AZM50/80	F	X	
							CIRAF 18,27,28,29	F	X	
							INT CH2A I	F	Y	
J12517		3	CAN	2457		1800 2000	CIRAF 46,57	F	Y	
							INT CH2A FNL,I	F	Y	
J12517		3	D	19555859		0800 1000	AZM70	F	X	
J12517		3A	EGY	75253		1600 1800	1300/2000	B	Y	
J12517		4	G	10539		1430 1800	INT CH3A B	A	Y	
J12517		4	G	1384149 54		1030 1430	INT CH3A F	A	Y	
J12517		4A	AUS	205651		0230 0400	0230/0430	F	X	
							INT COCH EQA	A	Y	
J12517		4A	ETH	84752		1200 1300	100KW AZM270 18DB	F	X	
							CIRAF 46,47	F	X	
J12517		4A	ETH	84752		1300 1400	100KW AZM242 18DB	F	X	
							CIRAF 52	F	X	
J12517		4A	ETH	85357		1800 2000	100KW AZM199 18DB	F	X	
J12517		5	G	1175135585 59		0600 0900	0500/0900	B	Y	
							INT CH4A EQA	C	Y	
J12517		5	G	1314149 54		0900 0930	INT CH4A EQA	A	Y	
J12517		5	G	1324149 30515458 59		0930 1800	INT CH4A EQA	C	Y	
J12517		5	G	137544445		0900 0930	17MC CHX	B	Y	
J12517		5	G	16812131415 16		1800 2300	INT CH5A IRL	A	Y	
J12517		5A	AFS	104748		1000 1400	AZM132 18DB	F	Y	
							CIRAF 55,58,59	F	Y	
J12517		6	J	183940		1800 2000	1700/2000	C	Y	
J12517		6A	AUS	47 6		0300 0430	21MC	F	X	
J12517		6A	HOL	2557		1800 2000	INT	A	Y	
J12517		6A	I	3548474852		0900 1000	AZM130/220	C	X	
							CIRAF 40,47,48	C	X	
J12517		6A	I	52373848		1000 1200	1000/1300	C	Y	
							CIRAF 37,38,39,48	C	Y	
J12517		7	AUT	1041		1800 1800	1300/1500 1330/1530	C	Y	
							15MC CH5A	C	Y	
J12517		7	HOL	1144		1030 1200	INT	A	Y	
J12517		7	YUG	1430		1230 1300	CIRAF 59	F	X	
J12517		7A	ALB	12 8 1315		0100 0400	0000/0400	F	Y	
							AZM310/250 15DB	F	X	
J12517		8	CLN	18304041		0300 1100	0430/1100	F	X	
J12517		8	CLN	1930 4041		1100 1600	1130/1730	B	Y	
J12517		9	GTH	1354		1400 1500	100KW AZM90 17DB	F	X	
J12517		9	I	5851 3455 3585 9 60		0630 1100	INT CH8A F	A	Y	
J12517		9	MLA/G	12344344 45		1100 1400	INT CH9A URS	A	Y	
J12517		9	MLA/G	184041		1500 1600	INT CH9A D	A	Y	
J12517		10	G	1254451 3558 59		0800 1100	INT CH10A I	A	Y	
J12517		10	IND	1094950		1100 1400	INT CH9 MLA/G	A	Y	
J12517		10A	I	3052 3357		0800 1100	1030/1200	C	Y	
J12517		10A	I	3052 3357		1200 1300	NOREQ	C	X	
J12517		10A	I	32485 25357		1400 1600	1500/1630	C	Y	
J12517		11	HOL	940		1700 1800	INT	A	Y	
J12517		11	HOL	1449		1400 1700	INT	A	Y	
J12517		11	HOL	1754		1100 1400	INT	A	Y	
J12517		12A	G	16912131415 16		0930 1100	INT CH12 CVA	G	Z	
J12517		13	PAK	344149		1200 1330	1200/1230	F	X	
J12517		13	PAK	3749 50		0500 0530	CIRAF 43/45,50	E	X	
J12517		13	PAK	3749 50		1330 1400	1230/1330	B	X	
							CIRAF 50,54	E	X	
J12517		13	PAK	375054		1100 1200	CIRAF 49,50	F	X	
J12517		14	AFS	1318 1728		1600 1700	AZM312/347	F	X	
							CIRAF 2/9,18,27,28	F	X	
J12517		14	AFS	17 2 / 9		1700 1900	AZM312/347	F	X	
							CIRAF 2/9,18,27,28	F	X	
J12517		14	EGY	941444951 54		1200 1800	1200/1800	F	Y	
J12517		15	ALB	941 8659		1100 1200	1100/1300	F	Y	
							AZM85/100	F	X	
J12517		15	ALB	1041 8659		0900 1100	AZM 85/100 CIRAF 58,29	F	X	
J12517		15	EGY	1112131415 16		2300 0200	2300/0300	B	Y	
							15MC	G	Y	
J12517		15A	J	1741		1700 1900	1530/1730	C	Y	
J12517		15A	J	1941		1900 2100	1730/1930	C	Y	
J12517		17	AUS	16503		2300 0500	2300/0600	F	Y	
							INT COCH AEF	G	Z	
J12517		17	AUS	2941		0800 0830	AZM342 CIRAF 44,50	F	X	
							INT CH16A URS	A	Y	
J12517		17	AUS	3045		2200 2300	2130/2300	F	Y	
J12517		17	AUS	3045		2200 2300	2130/2300	F		

1	2	3	4	5	6	7	8	9	10	11
J	12	5	17	17A	NGN	427	0600 0800	AZM140	F	X	
J	12	5	17	18	YUG	1631	1000 1100	DEL	F	X	
J	12	5	17	18	YUG	1631 41	1700 1800	1700/1730 AZM70 CIRAF 44	F	X	
								1730/1800 AZM90 CIRAF 41	F	X	
								CH7	C	Y	
J	12	5	17	18	YUG	2440 49	1400 1500	1400/1430 AZM90 CIRAF 54	F	X	
								1430/1500 AZM90 CIRAF 45	F	X	
J	12	5	17	18A	NZL	85662	1900 0200	INT CH18 KOR	A	Y	
J	12	5	17	18A	NZL	85662	0200 0500	0200/0500	B	X	
								CIRAF 56,62 AZM25	B	Y	
J	12	5	17	19	G	172 1 /10	1700 2200	INT CH18A BEL	A	Y	
J	12	5	17	19	HOL	30 7	2200 2400	2200/2330	C	X	
J	12	5	21	1	AUS	3241	0200 0800	CIRAF 41,49	F	X	
J	12	5	21	1	G	10838394047 48	1600 1800	INT CH1A I	A	Y	
J	12	5	21	1A	I	68 1112	1700 1800	1630/1730	C	X	
								INT CH2 POR	A	Y	
J	12	5	21	5	IND	10449 50 54	1100 1500	INT CH6 IND	A	Y	
J	12	5	21	5A	ETH	84752	0600 0730	100KW AZM270 16DB	F	X	
								CIRAF 46,47	F	X	
J	12	5	21	5A	ETH	84752	0730 0900	100KW AZM242 16DB	F	X	
								CIRAF 52	F	X	
J	12	5	21	6	HOL	1041	1500 1700	INT	A	Y	
J	12	5	21	7	G	77535 7	1600 1730	INT CH8A I	A	Y	
J	12	5	21	7	G	98394 0	1000 1030	INT CH6A F	A	Y	
J	12	5	21	7	G	10429 39 40	1430 1600	INT CH6A F	A	Y	
J	12	5	21	7	G	13941 49 54	1030 1430	INT CH6A F	A	Y	
J	12	5	21	7A	I	4348	1000 1300	INT	A	Y	
J	12	5	21	7A	I	72 4 6 7 8 9 10	1600 1730	NOREG	C	X	
J	12	5	21	9	J	1150	1000 1200	1030/1230	C	Y	
J	12	5	21	9	J	1254	1200 1400	1230/1430	C	Y	
J	12	5	21	10	AUT	1159	1100 1300	100KW 17MC CH7A	D	Y	
J	12	5	21	11	ARS	1354	1000 1100	DEL	F	X	
J	12	5	21	11A	I	33525357	1500 1600	1500/1630	C	Y	
								INT CH12 CHN	A	Y	
J	12	5	21	12	AFS	14182728	1600 1700	1200/2000	F	Y	
								CIRAF 18,27,28,37,38	F	X	
J	12	5	21	13	IND	72465253	1445 1630	INT CH13A G	A	Y	
J	12	5	21	13A	G	173 1 /10	1500 2200	INT CH13 D	A	Y	
								INT CH14 F	A	Y	
J	12	5	21	14A	G	17116	1500 1700	INT CH14 F	A	Y	
J	12	5	21	15	BEL	954	1100 1200	1200/1300	C	Y	
J	12	5	21	16	G	12941 49 54	0900 0930	INT CH16A I	A	Y	
J	12	5	21	16	G	13541 49 50 54	0930 1700	INT CH16A AFS,I	A	Y	
J	12	5	21	16A	AFS	11464748	1300 1800	CIRAF 48,47,48,52,53	F	X	
J	12	5	21	16A	I	53373839 48	1000 1300	INT CH16 G	A	Y	
J	12	5	21	17	AUS	30414954	0600 1000	CIRAF 49,54	F	X	
								INT CH18 RYU/USA	G	Z	
J	12	5	21	17	AUS	33445550	2100 2200	15MC	F	X	
								INT CH17A URS	A	X	
J	12	5	21	17	HOL	165155	1100 1400	INT	A	Y	
J	12	5	21	17	HOL	1654	1400 1700	INT	A	Y	
J	12	5	21	17	HOL	225253	1800 2100	INT	A	Y	
J	12	5	21	18	ARS	145054	0200 0400	DEL	F	X	
J	12	5	21	18	ARS	18414 3	1200 1400	DEL	F	X	
J	12	5	21	18	AUS	36414954	2300 2400	CIRAF 49,54	F	X	
J	12	5	21	18A	ARS	2028 37	2000 2200	11MC	D	Y	
								GRP 8,9,12,19,22	F	Y	
J	12	5	21	18A	ARS	23 813 14 15	2200 0100	2200/2400	F	X	
								AZM240 , CIRAF 13/15	F	X	
								15MC , GRP 15	F	Y	
J	12	5	21	19	G	10228 29 30 39 40	1600 1730	INT CH18A E	A	Y	
J	12	5	21	20	G	9839 4748	1030 1800	INT CH19A FNL	A	Y	

1	2	3	4	5	6	7	8	9	10	11
							INT CM20A J	A	Y	
J	12	52	120	G	10 7 10 11 12	1800 2100	INT CM19A LBY	A	Y	
J	12	52	126	CGO	13 5 4	0800 1000	0900/1100	B	Y	
J	12	52	126	ETH	12 4 0 4 1 4 9	1500 1600	100KW AZM62 16DB	F	X	
J	12	52	128	I	38 5 2 5 3 5 7	1700 1900	1630/1900	C	X	
							CIRAF 47,52,53,57	C	X	
J	12	52	129	NOR	10 3 6 4 6 6 8	1900 1800	1600/1730	C	X	
J	12	52	129	NOR	2 1 4 1 4 9 5 0 5 4 5 6	1300 1400	1300/1430	C	Y	
J	12	52	613	AFS	12 27 28 37 38	1200 1400	CIRAF 18,27,28	F	X	
J	12	52	613	AFS	19 27 28 37 38	0600 1200	CIRAF 18,27,28	F	X	
J	12	52	613	AFS	19 27 28 37 38	1400 1600	CIRAF 16,27,28	F	X	
J	12	52	634	AFS	16 9 14 27 28	1600 2400	1600/1700	F	X	
							20KW AZM347	F	X	
							CIRAF 18,27,26	F	X	
J	12	52	641	AFS	15 16 27 28	1200 1400	50KW AZM250/280/310/347	F	X	
							CIRAF 9/14,18,27,28	F	X	
J	12	52	642	ARS	18 5 0	0200 0300	DEL	F	X	
J	12	52	642	ARS	17 5 0 5 4	0900 1200	DEL	F	X	
J	12	52	642	ARS	19 4 3	1200 1300	CIRAF 43,44	F	X	
							11MC	F	Y	
							GRP 8,9,12,20,22	F	Y	
J	12	52	642	ARS	19 4 1	1300 1500	CIRAF 40,41	F	X	
							11MC , GRP 8,9,12,20,22	F	Y	
J	12	52	642	ARS	2 1 2 8	2100 2200	DEL	F	X	
J	12	52	642	ARS	24 8 13 14 15	2200 0100	DEL	F	X	
J	12	52	649	E	17 6/ 14 5 2 5 3 5 7	1000 0400	DEL	C	X	
J	12	51	715	ALB	NA 4 1	1300 1400	RST 60KW AZM85 18DB	F	Y	TIRANE
J	12	51	11	BEL	NA 5 2	0500 0600	RST 100KW AZM167 12DB	C	Y	BRUXELLES
J	12	5	6	CGO	NA 5 2	1600 2000	3KW ND	B	Y	STANLEYVILLE
J	12	51	11	CGO	NA 8	2300 2400	50KW AZM300 12DB	B	Y	LEOPOLDVILLE
J	12	51	11	CGO	NA 2 7	1900 2100	50KW AZM350 12DB	B	Y	LEOPOLDVILLE
J	12	51	11	CHL	NA 14 16	0000 0400	RST 5KW AZM360 8DB	C	Y	SANTIAGO
J	12	51	7	CLN	NA 16 26 29 39 40 41 49	1130 1730	RST 35KW AZM350 8DB	B	Y	EKALA
J	12	51	5	D	NA 10 11	0200 0600	RST 100KW AZM285 20DB	B	Y	JULICH
J	12	5	6	FLK	NA 16	2100 0200	RST 0,5KW ND	E	X	PT STANLEY
J	12	5	7	I	NA 37	2100 2200	RST 60KW AZM270 12DB	C	Y	ROMA
J	12	5	9	I	NA 37	2100 2200	RST 100KW AZM270 15DB	C	Y	ROMA
J	12	5	9	I	NA 27 28 29 39	1730 2200	RST 100KW ND 6DB	C	Y	ROMA
J	12	51	11	I	NA 27 28 29 39	1730 2200	RST 150KW ND 6DB	C	Y	ROMA
J	12	5	9	IND	NA 41	1300 1430	RST 100KW ND	C	X	DELHI
J	12	51	11	IND	NA 27 28 37	1945 2100	RST 100KW AZM312 16DB	C	Y	DELHI
J	12	51	11	IND	NA 41	1300 1430	RST 20KW ND	C	X	DELHI
J	12	51	15	IND	NA 37 38 39	1845 2000	RST 100KW AZM282 12DB	C	Y	DELHI
J	12	51	15	IND	NA 38 39	1745 2000	RST 100KW AZM282 16DB	C	Y	DELHI
J	12	51	17	IND	NA 42 43 44	1215 1330	RST 100KW AZM65 16DB	C	Y	DELHI
J	12	51	17	IND	NA 37 38 39	1845 2000	RST 100KW AZM282 18DB	C	Y	DELHI
J	12	51	17	IND	NA 38 39	1745 2000	RST 100KW AZM282 16DB	C	Y	DELHI
J	12	52	1	IND	NA 46	1815 1930	RST 100KW AZM102 16DB	C	Y	DELHI
J	12	52	6	NOR	NA 4 1 4 9 5 0 5 4 5 6	1300 1430	RST 10KW AZM110 20DB	E	X	FREDRIKSTAD
J	12	51	11	PAK	NA 4 1	0930 1200	10KW AZM137 6DB	S	Y	KARACHI
J	12	51	11	PAK	NA 4 0 4 1	0700 0900	10KW AZM227 6DB	B	Y	LAHORE
J	12	51	11	S	NA 36 47 52 57	1700 1800	RST 100KW AZM183 20DB	B	Y	HOERBY
J	12	51	11	AFS	NEW 57	0600 1600	20KW ND	F	X	BLOEMFONTEIN
J	12	51	11	AFS	NEW 57	0600 1600	20KW ND	F	X	BLOEMFONTEIN
J	12	51	11	AFS	NEW 57	0600 1600	20KW ND	F	Y	BLOEMFONTEIN
J	12	51	15	AFS	NEW 57	0730 1300	20KW ND	F	X	BLOEMFONTEIN
J	12	51	15	AFS	NEW 57	0730 1300	20KW ND	F	X	BLOEMFONTEIN
J	12	51	15	AFS	NEW 57	0730 1300	20KW ND	F	Y	BLOEMFONTEIN
J	12	5	6	CAN	NEW 2	0000 2400	1KW AZM298	F	X	VANCOUVER
J	12	5	9	CGO	NEW 52	0430 0700	50KW ND	F	X	LEOPOLDVILLE
J	12	5	9	CGO	NEW 52	1430 2230	50KW ND	F	X	LEOPOLDVILLE
J	12	51	11	CGO	NEW 52	0700 1300	50KW ND	F	Y	LEOPOLDVILLE

1	2	3	4	5	6	7	8	9	10	11
C 125	7		CLN	NEW41		0100 0400	7,5KW AZM350 8DB	F	X	EKALA
C 125	7		CLN	NEW41		1130 1730	7,5KW AZM350 8DB	F	Y	EKALA
C 125	9		CLN	NEW41		0430 1130	7,5KW AZM350 8DB	F	Y	EKALA
C 125	0		CTO	NEW46		0600 2300	2,5KW ND	F	X	ACCRA
C 125	6		CTO	NEW46		0600 2300	5KW ND	F	X	ACCRA
C 125	6		CTO	NEW46		0600 2300	5KW ND	F	X	ACCRA
C 125	6		CTO	NEW46		0600 2300	5KW ND	F	Y	ACCRA
C 125	8		CTO	NEW46		0600 2300	5KW ND	F	Y	ACCRA
C 125	9		CTO	NEW46		0600 2300	5KW ND	F	X	ACCRA
C 125	9		CTO	NEW46		0600 2300	5KW ND	F	X	ACCRA
C 125	7	15	CVA	NEW2757		1300 1430	100KW AZM340 15DB	F	Y	S MARIA DI G
C 125	9	4A	CVA	NEW4049		0000 0200	100KW AZM85 15DB	F	Y	S MARIA DI G
C 125	9	4A	CVA	NEW2728 29 37		1600 1700	100KW ND	F	X	S MARIA DI G
C 125	9	9	CVA	NEW 6 7 8 9		2300 0200	100KW AZM325 15DB	F	Y	S MARIA DI G
C 125	9	4A	CVA	NEW4954		2200 2300	100KW AZM85 15DB	F	Y	S MARIA DI G
C 125	11	3	CVA	NEW4647		0500 0700	100KW AZM193 15DB	F	Y	S MARIA DI G
C 125	11	3	CVA	NEW2728 2937		2000 2200	100KW ND	F	Y	S MARIA DI G
C 125	11	6	CVA	NEW5558		1900 2100	100KW AZM70 18DB	F	Y	S MARIA DI G
C 125	11	6	CVA	NEW4445		2100 2300	100KW AZM58 18DB	F	Y	S MARIA DI G
C 125	11	3	CVA	NEW2728 2937		0830 1000	100KW ND	F	X	S MARIA DI G
C 125	15	25	CVA	NEW5154		0400 0600	100KW AZM75 18DB	F	X	S MARIA DI G
C 125	15	25	CVA	NEW2728 2937		1030 1300	100KW ND	F	Y	S MARIA DI G
C 125	15	25	CVA	NEW2728 2937		1700 1500	100KW ND	F	Y	S MARIA DI G
C 125	15	25	CVA	NEW4757		1900 2100	100KW AZM175 18DB	F	Y	S MARIA DI G
C 125	15	25	CVA	NEW5051		2100 2200	100KW AZM75 18DB	F	Y	S MARIA DI G
C 125	17	12	CVA	NEW4853		1400 1600	50KW AZM140 18DB	F	Y	S MARIA DI G
C 125	17	12	CVA	NEW5560		1900 2100	50KW AZM90 18DB	F	Y	S MARIA DI G
C 125	17	13A	CVA	NEW4857		0600 0730	50KW AZM175 18DB	F	X	S MARIA DI G
C 125	17	13A	CVA	NEW12 13 14 15 16		2200 2400	50KW AZM270 18DB	F	Y	S MARIA DI G
C 125	21	20A	CVA	NEW 7 11 14		1600 1800	50KW AZM250/320 15DB	F	X	S MARIA DI G
C 125	21	20A	CVA	NEW13 14 15 16		2300 0100	50KW AZM240 18DB	F	X	S MARIA DI G
C 125	21	27	CVA	NEW4445		1030 1200	50KW AZM58 18DB	F	Y	S MARIA DI G
C 125	7		E	NEW2829		1700 2100	100KW AZM45 6DB	F	Y	ARGANDA
C 125	9		E	NEW27		1800 2200	100KW AZM45 6DB	F	Y	ARGANDA
C 125	9		E	NEW2829		1700 2100	100KW AZM45 6DB	F	Y	ARGANDA
C 125	9		E	NEW3637		1100 1500	100KW AZM180 6DB	F	X	ARGANDA
C 125	9		E	NEW 6 7 8 9 10 11		0000 0400	6/9MC 100KW AZM300 18DB	F	Y	ARGANDA
C 125	9		E	NEW 8 7 8 9 10 11		2200 2400	6/9MC 100KW AZM300 18DB	F	Y	ARGANDA
C 125	9		E	NEW12 13 14 15 16		0000 0400	6/9MC 100KW AZM240 18DB	F	Y	ARGANDA
C 125	9		E	NEW12 13 14 15 16		2200 2400	6/9MC 100KW AZM240 18DB	F	Y	ARGANDA
C 125	9		EGY	NEW39		1600 1900	100KW AZM380 9DB	BF	Y	ABU ZAABAL
C 125	15		EGY	NEW40		1400 1600	100KW AZM68 9DB	BF	Y	ABU ZAABAL
C 125	15		EGY	NEW3839		0400 2400	100KW ND	F	Y	ABU ZAABAL
C 125	17		EGY	NEW46		1500 2200	100KW AZM245 15DB	BF	Y	ABU ZAABAL
C 125	17		EGY	NEW50		1130 1300	100KW AZM50 15DB	BF	Y	ABU ZAABAL
C 125	17		ETH	NEW38		1800 1900	50KW AZM349			ADDIS ABEBA
C 125	17		ETH	NEW39		1700 1800	50KW AZM19			ADDIS ABEBA
C 125	21		ETH	NEW37		1900 2000	50KW AZM312			ADDIS ABEBA
C 125	15		FNL	NEW 8 7 8		1300 1500	100KW AZM305 20DB	F	X	
C 125	15		FNL	NEW12 13 14 15		1700 1900	100KW AZM234 20DB	F	Y	
C 125	6		I	NEW18 19 27 28 29 30	*	2200 0600	25KW ND, * 37/40,46/48	F	Y	CALTANISSETTA
C 125	9		I	NEW18 19 27 28 29 30	*	2200 0800	25KW ND, * 37/40,46/48	F	Y	CALTANISSETTA
C 125	9		IOB	NEW11		1300 2000	5KW ND	F	X	GRENADA
C 125	11		IOB	NEW11		1000 0300	5 50KW AZM294 10DB	F	Y	GRENADA
C 125	11		IOB	NEW11		1000 0300	0,25/1KW AZM294 8DB	F	Y	GRENADA
C 125	6	17A	J	NEW444564		1000 1500	50KW AZM11/254 5DB	F	Y	
C 125	6	17A	J	NEW444564		2000 2300	50KW AZM11/254 5DB	F	X	
C 125	9	11	J	NEW5253 57		1800 2000	100KW AZM265 6DB	F	Y	TOKYO
C 125	9	9A	J	NEW3435		2100 0600	50KW AZM7 6DB	F	Y	TOKYO
C 125	17	14A	J	NEW 6 10		2100 2300	100KW AZM54 17DB	F	Y	
C 125	21	29	J	NEW1011		0200 0500	100 KW AZM5210DB	F	X	TOKYO
C 125	21	13A	J	NEW5960		2200 2400	100KW AZM170 11DB	F	X	
C 125	6		KEN	NEW48		0300 1600	10KW ND	F	Y	NAIROBI
C 125	7		KEN	NEW48		0300 1400	5KW ND	F	Y	MOMBASA
C 125	7		KEN	NEW48		0300 1400	5KW ND	F	Y	KISUMU
C 125	7		KEN	NEW48		0300 1400	0KW ND	F	Y	NAIROBI
C 125	7		KEN	NEW48		0300 1400	0KW ND	F	Y	NAIROBI
C 125	7		KEN	NEW48		0300 1400	10KW ND	F	Y	NAIROBI
C 125	6		KOR	NEW434445		0830 1530	SUWON 10KW AZM270 10DB	F	X	
C 125	9		KOR	NEW4344		2300 0100	SUWON 50KW AZM270 10DB	F	X	
C 125	11		KOR	NEW4344		1400 1600	SUWON 50KW AZM270 10DB	F	Y	
C 125	11		KOR	NEW45		1200 1400	SUWON 50KW AZM100 10DB	F	X	
C 125	11		KOR	NEW 6 10		1300 1500	SUWON 100KW AZM50 10DB	F	Y	
C 125	11		KOR	NEW45		2100 2300	SUWON 50KW AZM100 10DB	F	Y	
C 125	15		KOR	NEW4344		1400 1600	SUWON 50KW AZM270 14DB	F	Y	
C 125	15		KOR	NEW45		1200 1400	SUWON 50KW AZM100 14DB	F	X	
C 125	15		KOR	NEW3940		1800 2000	SUWON 100KW AZM260 14DB	F	Y	
C 125	15		KOR	NEW61		1600 1800	SUWON 100KW AZM100 14DB	F	Y	
C 125	15		KOR	NEW 6 10		0500 0700	SUWON 100KW AZM50 14DB	F	X	
C 125	15		KOR	NEW2728		2100 2300	SUWON 100KW AZM315 14DB	F	Y	
C 125	15		KOR	NEW1415		0930 1130	SUWON 100KW AZM130 14DB	F	X	
C 125	17		KOR	NEW49 50 54		2300 0100	SUWON 100KW AZM200 14DB	F	X	
C 125	17		KOR	NEW41		1600 1800	SUWON 100KW AZM240 14DB	F	Y	
C 125	17		KOR	NEW3940		0400 0500	SUWON 100KW AZM260 14DB	F	X	
C 125	17		KOR	NEW51 55 59		2000 2100	SUWON 100KW AZM180 14DB	F	X	
C 125	17		KOR	NEW61		0700 0900	SUWON 100KW AZM100 14DB	F	X	
C 125	17		KOR	NEW 6 10		0500 0700	SUWON 100KW AZM50 14DB	F	X	
C 125	17		KOR	NEW1415		0100 0300	SUWON 100KW AZM130 14DB	F	Y	
C 125	21		KOR	NEW49 50 54		1500 1700	SUWON 100KW AZM200 14DB	F	X	
C 125	21		KOR	NEW41		0100 0200	SUWON 100KW AZM240 14DB	F	X	
C 125	21		KOR	NEW51 55 59		1100 1300	SUWON 100KW AZM180 14DB	F	Y	
C 125	21		KOR	NEW61		0700 0900	SUWON 100KW AZM100 14DB	F	X	
C 125	21		KOR	NEW2728		0600 0800	SUWON 100KW AZM315 14DB	F	Y	
C 125	9		MCO	NEW18		1700 2300	100KW AZM13 6DB	F	Y	FONTBONNE

1	2	3	4	5	6	7	8	9	10	11
J	125	11		MCO	NEW37	0500 0800	100KW AZM225 6DB	F	Y	FONTBONNE
J	125	11		MCO	NEW37	0800 1700	100KW AZM225 6DB	F	Y	FONTBONNE
J	125	15		MCO	NEW46	0800 1700	100KW AZM212 8DB	F	Y	FONTBONNE
J	125	15		MCO	NEW46	1700 2300	100KW AZM212 8DB	F	Y	FONTBONNE
J	125	17		MCO	NEW3839	0500 0800	100KW AZM114 10DB	F	Y	FONTBONNE
J	125	9		MLA	NEW54	1200 1300	50KW	F	X	KUALA LUMPUR
J	125	9		MLA	NEW54	1300 1500	50KW	F	X	KUALA LUMPUR
J	125	15		MLA	NEW49	1100 1200	50KW	F	Y	KUALA LUMPUR
J	125	15		MLA	NEW49	1200 1300	50KW	F	X	KUALA LUMPUR
J	125	15		MLA	NEW49	1300 1400	50KW	F	Y	KUALA LUMPUR
J	125	15		MLA	NEW3839	1630 1830	50KW AZM300	F	Y	KUALA LUMPUR
J	125	17		MLA	NEW41	1400 1630	50KW AZM300	F	Y	KUALA LUMPUR
J	125	21		MLA	NEW50	1000 1100	50KW AZM60	F	X	KUALA LUMPUR
J	125	21		MLA	NEW44	1100 1200	50KW AZM35	F	X	KUALA LUMPUR
J	125	21		MLA	NEW59	0730 0830	50KW AZM130	F	Y	KUALA LUMPUR
J	125	21		MLA	NEW58	0830 0900	50KW AZM155	F	Y	KUALA LUMPUR
J	125	21		MLA	NEW45	0900 1000	50KW AZM35	F	X	KUALA LUMPUR
J	125	9		PAK	NEW40	1600 1700	100KW AZM300 6DB	F	Y	KARACHI
J	125	9		PAK	NEW4041	0000 0400	100KW AZM22 6DB	F	Y	KARACHI
J	125	9		PAK	NEW4041	1600 1900	100KW AZM22 8DB	F	Y	KARACHI
J	125	9		PAK	NEW41	0000 0200	100KW AZM105 6DB	F	Y	LAHORE
J	125	9		PAK	NEW41	0200 1000	100KW ND	F	Y	LAHORE
J	125	11		PAK	NEW3040	1400 1600	100KW AZM22 6DB	F	Y	KARACHI
J	125	11		PAK	NEW3040	0200 0400	100KW AZM22 6DB	F	Y	KARACHI
J	125	11		PAK	NEW40	0400 0500	100KW AZM300 6DB	F	Y	KARACHI
J	125	11		PAK	NEW49	0000 0500	100KW AZM96 10DB	F	Y	KARACHI
J	125	11		PAK	NEW4041	0400 1600	100KW AZM22 6DB	F	Y	KARACHI
J	125	11		PAK	NEW41	1200 1900	100KW ND	F	Y	LAHORE
J	125	15		PAK	NEW3839	1700 2200	100KW AZM300 10DB	F	Y	KARACHI
J	125	15		PAK	NEW3839	0500 0700	100KW AZM300 10DB	F	Y	KARACHI
J	125	15		PAK	NEW37	2000 2100	100KW AZM300 10DB	F	Y	KARACHI
J	125	15		PAK	NEW39	1800 2000	100KW AZM317 10DB	F	Y	KARACHI
J	125	15		PAK	NEW27	2000 2100	100KW AZM317 10DB	F	Y	KARACHI
J	125	15		PAK	NEW41	1000 1200	100KW AZM105 6DB	F	Y	LAHORE
J	125	15		PAK	NEW4041	1400 1900	100KW AZM278 10DB	F	Y	DACCA
J	125	17		PAK	NEW555859 60	0800 0900	100KW AZM120 10DB	F	Y	KARACHI
J	125	17		PAK	NEW3839	1700 2200	100KW AZM300 10DB	F	Y	KARACHI
J	125	17		PAK	NEW37	2000 2100	100KW AZM300 10DB	F	Y	KARACHI
J	125	17		PAK	NEW39	1800 2000	100KW AZM317 10DB	F	Y	KARACHI
J	125	17		PAK	NEW27	2000 2100	100KW AZM317 10DB	F	Y	KARACHI
J	125	17		PAK	NEW4041	0000 0500	100KW AZM278 10DB	F	Y	DACCA
J	125	17		PAK	NEW4041	0500 1000	100KW AZM278 10DB	F	Y	DACCA
J	125	17		PAK	NEW4041	1200 1400	100KW AZM278 10DB	F	Y	DACCA
J	125	21		PAK	NEW555859 60	0800 0900	100KW AZM120 10DB	F	Y	KARACHI
J	125	21		PAK	NEW434445	1100 1200	100KW AZM80	F	Y	KARACHI
J	125	21		PAK	NEW434445	1100 1200	100KW AZM80	F	Y	KARACHI
J	125	21		PAK	NEW495154	1200 1300	100KW AZM120 10DB	F	Y	KARACHI
J	125	21		PAK	NEW495154	1200 1300	100KW AZM120 10DB	F	Y	KARACHI
J	125	21		PAK	NEW49	1300 1400	100KW AZM96 10DB	F	Y	KARACHI
J	125	21		PAK	NEW39	0500 0700	100KW AZM317 10DB	F	Y	KARACHI
J	125	21		PAK	NEW49	0500 1000	100KW AZM96 10DB	F	Y	KARACHI
J	125	21		PAK	NEW49	1000 1200	100KW AZM96 10DB	F	Y	KARACHI
J	125	21		PAK	NEW49	1200 1500	100KW AZM96 10DB	F	Y	KARACHI
J	125	21		PAK	NEW49	1500 1900	100KW AZM96 10DB	F	Y	KARACHI
J	125	21		PAK	NEW4041	1000 1200	100KW AZM276 10DB	F	Y	DACCA
J	125	26		PAK	NEW49	1300 1400	100KW AZM96 10DB	F	Y	KARACHI
J	125	21		PRG	NEW 7 8	0000 0400		F	Y	ASUNCION
J	125	21		PRG	NEW2728	1800 2200		F	Y	ASUNCION
J	125	6		SDN	NEW384748	0300 2000	20KW ND 0/600KM	F	X	OMDURMAN
J	125	9		SDN	NEW3839 4748	0300 2000	20KW ND 400/2000KM	F	X	OMDURMAN
J	125	11		SDN	NEW3839 4748	0800 1500	100KW ND 600/2400KM	F	Y	OMDURMAN
J	125	17		SDN	NEW2726	0600 0800	100KW AZM335 15DB	F	X	OMDURMAN
J	125	17		SDN	NEW2728	1500 1800	100KW AZM335 15DB	F	Y	OMDURMAN
J	125	17		SDN	NEW2728	1800 2000	100KW AZM335 15DB	F	Y	OMDURMAN
J	125	7		SIK	NEW41	0045 0700	GANGTOK, 7,5KW ND	F	X	
J	125	9		SIK	NEW41	0700 1200	GANGTOK, 7,5KW ND	F	Y	
J	125	6		TGK	NEW53	0315 0500	10KW ND	F	X	DAR ES SALAAM
J	125	6		TGK	NEW53	1430 1930	10KW ND	F	Y	DAR ES SALAAM
J	125	6		TGK	NEW53	0315 0500	10KW ND	F	X	DAR ES SALAAM
J	125	6		TGK	NEW53	1430 1930	10KW ND	F	Y	DAR ES SALAAM
J	125	6		TGK	NEW53	0315 0500	10KW ND	F	X	MWANZA
J	125	6		TGK	NEW53	1430 1930	10KW ND	F	Y	MWANZA
J	125	6		TGK	NEW53	0315 0500	10KW ND	F	X	MBEYA
J	125	6		TGK	NEW53	1430 1930	10KW ND	F	Y	MBEYA
J	125	7		TGK	NEW53	0800 1115	10KW ND	F	Y	DAR ES SALAAM
J	125	9		TGK	NEW53	0800 1115	5KW ND	F	X	DAR ES SALAAM
J	125	6		UGA	NEW48	0300 2100	10KW ND	F	Y	KAMPALA
J	125	6		UGA	NEW48	0300 2100	10KW ND	F	Y	KAMPALA
J	125	7		UGA	NEW48	0300 2100	10KW ND	F	Y	KAMPALA
J	125	9		UGA	NEW48	0600 1500	10KW ND	F	Y	KAMPALA
J	125	11		UGA	NEW48	0600 1500	10KW ND	F	Y	KAMPALA
J	125	9	27A	YUG	NEW40	1600 1700	100KW AZM75	F	Y	BEOGRAD
J	125	9	27A	YUG	NEW38	1700 1800	100KW AZM120	F	Y	BEOGRAD
J	125	9	27A	YUG	NEW29	1800 2000	100KW AZM45	F	Y	BEOGRAD
J	125	9	27A	YUG	NEW30	2000 2100	100KW AZM60	F	Y	BEOGRAD
J	125	11	6	YUG	NEW29	1200 1300	100KW AZM45	F	Y	BEOGRAD
J	125	11	6	YUG	NEW37	1300 1400	100KW AZM280	F	Y	BEOGRAD
J	125	11	6	YUG	NEW41	1400 1500	100KW AZM90	F	Y	BEOGRAD
J	125	15	5A	YUG	NEW59	1100 1200	100KW AZM90	F	Y	BEOGRAD
J	125	15	5A	YUG	NEW54	1230 1300	100KW AZM90	F	Y	BEOGRAD
J	125	15	6A	YUG	NEW14	0000 0100	100KW AZM240	F	Y	BEOGRAD
J	125	15	6A	YUG	NEW13	0100 0200	100KW AZM240	F	Y	BEOGRAD
J	125	21	4	YUG	NEW40	1400 1500	100KW AZM85	F	Y	BEOGRAD

E 125

Phase Phase Fase	Bande/Band/Banda	Voie/Channel/Canal	Pays Country País	Index Index Indice nº	Zones de réception Reception Zones Zonas de recepción	Heures d'émission Hours of transmis. Horario de operac.	Commentaires de l'Administration Comments from the Administration Comentarios de la Administración	Analyse par l'IFRB Analysis by IFRB Análisis de la IFRB		Observations Remarks Observaciones
1	2	3	4	5	6	7	8	9	10	11
E125	6	1	AUS	159		0830 1400	INT COCH URS INT CH1A BRN	A A	Y Y	
E125	6	1	SUR	112		1100 0400	INT	A	Y	
E125	6	1	SUR	112		1100 0400	INT	D	Y	
E125	6	1A	BRN	154		0300 1400	0300/1600 2200/0100	F	X	
E125	6	2	CLN	441		0100 0230	SEP CH1 CLN	C	X	
E125	6	2A	NIG	246		0900 1600	FREQ/6MC AZM55 6DB	C F	Y X	
E125	6	3	AUS	259		0830 1400	INT CH3A INS	A	Y	
E125	6	3	I	128		0300 0600	AZM40 CIRAF 28,29	C	Y	
E125	6	3	I	28 27 28		1730 2200	ND CIRAF 27,28,29 7MC	C C	Y Y	
E125	6	3A	INS	1054		2200 1600	MENADO	F	X	
E125	6	5A	MLA	154		2230 1630	SINGAPORE	F	X	
E125	6	7	BRM	149		0000 1630	INT CH7A PHL	A	Z	
E125	6	8	IND	3241		0045 0400	INT CH8A IRQ	A	Y	
E125	6	8	KEN	148		0700 1100	0300/1100	F	Y	
E125	6	8	KEN	148		0700 1100	6KW	F	X	
E125	6	8	KEN	148		1300 2000	6KW , 1100/1600	F	X	
E125	6	9	G	2528		1800 1900	INT CH8A F	A	Y	
E125	6	9	YUG	328		1000 1800	DEL	F	X	
E125	6	9	YUG	1118		2300 2330	2200/2300 AZM350 11MC CH2	C F C	Y X Y	
E125	6	9A	CGO	252		1800 2000	50KW ND LEOPOLDVILLE	F F	X X	
E125	6	10	I	728		0530 2330	ND CIRAF 27,37,38,39	C	Y	
E125	6	10	IND	2341		0030 0400	INT COCH BOL	A	Y	
E125	6	10	IND	2341		1100 1730	INT CH10A INS	A	Y	
E125	6	11A	IND	3641		0045 1600	INT CH11 IND	A	Y	
E125	6	12	I	12 28 29		1300 1400	9MC	C	Y	
E125	6	13	GTO	546		0600 2300	ACCRA	F	X	
E125	6	13A	CLN	541		0100 0230	SEP CH12A CLN	C	X	
E125	6	13A	EGY	136 39		0300 0900	0300/1500	F	X	
E125	6	13A	EGY	136 39		1500 2330	1500/2400	F	X	
E125	6	14	ATN	111		1200 0500	INT 2100/0230	D	Y	
E125	6	14	NOR	21827		0730 0930	0700/0900	C	Y	
E125	6	14	NOR	61827		2000 2300	1900/2300	F	Y	
E125	6	15	IOB	111		1600 1800	1000/1300 INT COCH CLM INT CH14A DOM	F C C	X Y Y	
E125	6	15	IOB	111		2100 0200	2000/0300 INT COCH CLM INT CH14A DOM	F C C	X Y Y	
E125	6	15	MLA/G	7495054		0800 1300	INT CH15A IND	A	Y	
E125	6	15	MLA/G	749 50		1300 1700	INT CH15A IND,URS	A	Y	
E125	6	15A	AFS	157		1400 1800	DEL	F	X	
E125	6	15A	IND	541		0045 1400	INT	G	Z	
E125	6	16	MCO	1278837		0830 1600	0600/2300	B	Y	
E125	6	16	YUG	428		2100 2330	0900/2330	F	Y	
E125	6	17	HOL	1182728 37		1530 0100	INT INT	D A	Y Y	
E125	6	18A	IND	1241		1100 1745	INT CH19 INS	A	Y	
E125	6	19	MLA/G	5434449 50		2200 0200	INT CH19A IND	A	Y	
E125	6	19A	IND	141		0100 1600	INT INT	A G	Y Z	

1	2	3	4	5	6	7	8	9	10	11
E125	6	19A	NIG	146		0730 1730	FREQ/6MC	C	Y	
E125	6	20A	ARS	339		0400 2100	JEDDAH	F	X	
							50KW , 9MC	F	Y	
E125	6	21	AUT	1182728293 7		0900 1500	50KW	F	X	
E125	6	22	YUG	228		1100 2230	1000/2330	F	Y	
E125	6	22A	IND	3741		0100 0500	INT	A	Y	
E125	6	24A	ETH	548		0400 0600	50KW	F	X	
E125	6	25	PAK	114041		1200 1800	1200/1700	F	X	
E125	7	1	G	192728		1400 1600	INT COCH URS	C	Y	
E125	7	1	NIG	846		0700 1600	20KW AZM55 6DB	F	X	
							FREQ/7MC	C	Y	
E125	7	2	AUS	351		2000 1400	INT COCH CHN,TUR	A	Y	
							INT CH1A MLA	A	Y	
							INT CH2A BRM	A	Y	
E125	7	2A	AFS	257		1400 1800	1600/1900	F	Y	
							ADD 0300/0600	F	X	
E125	7	2A	BRM	249		1000 1830	INT CH2 CHN	A	Z	
E125	7	3A	IND	1441		0300 1530	INT CH4 MNG	A	Y	
							INT COCH F	A	Y	
E125	7	3A	IND	9554		2300 0030	INT CH3 POR	A	Y	
E125	7	4	G	2182829303132		0300 0400	INT COCH MNG	A	Y	
E125	7	4	G	502728		2200 2400	INT CH4A URS	A	Y	
E125	7	4A	CGO	1152		1600 2000	BUKAVU	F	X	
E125	7	5	G	92728		0400 0700	7MC/FREQ	B	Y	
E125	7	5	I	1918272829373 8		1630 1730	ND CIRAF 27,28,37,38	C	X	
							FREQ/7MC	C	Y	
E125	7	5	I	2328 29		1300 1500	INT COCH CHN	D	Y	
E125	7	5	I	2618272829 37		1500 1630	INT COCH CHN	D	Y	
							9MC	C	Y	
E125	7	5	I	5037383948		1000 1300	INT	C	Y	
E125	7	5	I	543738		2000 2100	AZM175/220	C	X	
E125	7	5A	CLN	841		1130 1700	1130/1730	B	Y	
E125	7	6	AUT	2182728293 7		0900 1300	50KW	F	X	
E125	7	6A	IND	2441		0400 1100	INT	G	Z	
E125	7	6A	NIG	746		0600 2100	ND	F	X	
E125	7	7	AFS	457		1400 1800	0300/0600 1600/1900	F	Y	
E125	7	7A	PAK	94041		0630 0930	RAWALPINDI	E	X	
E125	7	8	NOR	11718 27		0600 0800	0700/0900	E	X	
E125	7	8	NOR	5182 7		1300 1800	1500/1900	C	Y	
E125	7	8	NOR	7171827		1800 2400	1800/2300	F	X	
E125	7	8A	EGY	23839		0400 2300	0400/2400	B	Y	
E125	7	9	G	72728		0400 0800	7MC/FREQ	B	Y	
E125	7	9	G	202728		0800 1700	INT CH8A EGY	A	Y	
E125	7	9	G	442728		1700 2300	INT CH8A EGY	A	Y	
E125	7	9A	PAK	364149		1030 1530	0930/1530	F	X	
E125	7	10	J	2444564		2000 1400	2000/1500	F	Y	
E125	7	10A	IND	2041		0045 0400	INT CH10 POR	A	Y	
E125	7	10A	IND	2041		0400 1500	INT CH10 J	A	Y	
E125	7	11A	AFS	657		1400 1800	1600/1900	F	Y	
							ADD 0300/0600	F	X	
E125	7	11A	NIG	646		0730 1400	20KW , 0730/1600	F	X	
E125	7	11A	PAK	2040		1330 1500	1400/1530	F	Y	
							CIRAF 40,41	E	X	
E125	7	11A	PAK	2541		1500 1700	1330/1700	F	Y	
							CIRAF 40,41	E	X	
E125	7	12A	ARS	239		0900 1300	RIYADH , 100KW	F	X	
							0330/2100	F	Y	
E125	7	12A	TGK	153		0700 0900	5KW 0800/1115	F	Y	
E125	7	12A	TGK	153		1300 1700	DEL	F	X	
E125	7	13	PAK	4431404 2		1500 1600	10KW CIRAF 30,31,40/42	B	Y	
E125	7	13	PAK	4431404 2		1500 1600	1400/1700	B	X	

1	2	3	4	5	6	7	8	9	10	11
E125	7	13A	PAK	28	40 41	01000330	0200/0400	F	X	
E125	7	13A	UGA	1	48	06001000	10KW	F	X	
							0300/1400	F	Y	
E125	7	13A	UGA	1	48	14002000	10KW	F	X	
							1400/2100	F	Y	
E125	7	14A	CLN	7	41	04001600	0400/1730	B	Y	
E125	7	14A	KEN	2	48	07001100	10KW	F	X	
							0300/0700	F	Y	
E125	7	14A	KEN	2	48	13002000	10KW 1100/1400	F	X	
E125	7	15A	CGO	9	52	09001900	0800/1900	C	X	
E125	7	15A	CGO	9	52	19002200	1830/2200	B	Y	
E125	7	15A	PAK	24	40 41	15001630	AZM22	E	X	
E125	7	15A	PAK	43	30 31 40 42	17301800	AZM22	E	X	
E125	7	16	YUG	1	28	06302230	0400/2400	F	Y	
							ND CIRAF 27,28	F	X	
E125	7	16	YUG	12	29	22302300	DEL	F	X	
E125	7	16	YUG	12	27	23000030	DEL	F	X	
E125	7	17	ALB	5	27 38 39	12001800	1200/2300	F	Y	
							CIRAF 27,28,38,39	F	X	
E125	7	17A	ETH	1	48	03000800	10/20KW	F	X	
E125	7	17A	IND	9	41	08001100	INT CH17 CHN	A	Y	
E125	7	19A	IND	35	41	00451300	INT CH20 INS	A	Y	
E125	7	19A	NIG	5	46	06001600	20KW	F	X	
E125	9	1	AUT	6	7 8	23000200	100KW 6MC CH20A	G	Z	
E125	9	1	ETH	6	48	09001100	50KW	F	X	
E128	9	1	ETH	6	48	11001130	100KW AZM349 1606	F	X	
							CIRAF 38	F	X	
E125	9	1	ETH	6	48	11301200	100KW AZM19 160B	F	X	
							CIRAF 39	F	X	
E125	9	1	HOL	6	37	22002300	2000/2100	B	Y	
E125	9	1	HOL	35	10	02000400	INT	A	Y	
E125	9	1	IND	9	35 4	23000100	INT CH2 INS	A	Y	
E125	9	1A	CTO	1	46	06001700	0600/2300	F	X	
E125	9	2A	ALB	12	8 13 15	03000500	15MC CH8A 0000/0400	F	Y	
							AZM310/250 150B	F	X	
E125	9	3A	BRN	2	54	03001200	0300/1500 2200/0100	F	X	
							ADD 1500/1600	F	Y	
E125	9	4A	CHL	8	14	19002200	1900/0200	C	Y	
E125	9	4A	G	10	27 28	04150700	9MC/FREQ	B	Y	
E125	9	5	CTO	2	46	06001700	0600/2300	F	X	
E125	9	5	MLA/G	19	27 28 29 39 40 41	23002400	INT COCH SUR	A	Y	
E125	9	5	SUR	2	11	23000330	INT	A	Y	
E125	9	6A	G	47	27 28	16302200	INT CH6 URS	A	Y	
							9MC/FREQ	C	Y	
E125	9	7A	G	37	16 28	16001900	INT CH7 URS	A	Y	
E125	9	7A	G	11	28 38	19002000	INT CH7 URS	A	Y	
E125	9	8A	G	5	28 29 30	03000400	INT CH8 D	A	Y	
E125	9	10A	I	46	39 40 41	06000900	INT CH11 URS	A	Y	
E125	9	11	ETH	7	48	16001800	50KW	F	X	
E125	9	11	IND	34	41	09001300	INT COCH URS	A	Y	
E125	9	11A	AUT	4	39	05000600	50KW	F	X	
E125	9	11A	G	27	18 27 28	10001630	INT CH11 URS	A	Y	
E125	9	11A	G	42	18 28 29	16301900	INT CH11 URS	A	Y	
E125	9	11A	I	60	55 59	19002000	INT	A	Y	
E125	9	12	MLA/G	13	43 44 49 50	11301245	INT CH12A URS	A	Y	
E125	9	13	NOR	3	17 18	10001400	1000/1300	F	X	
E125	9	13A	EGY	4	27 28	20302300	1600/2300	B	Y	
E125	9	13A	EGY	5	37	23002400	AZM320 , CIRAF 27,28	F	X	
E125	9	14A	BEL	3	52	23000200	CH25	C	Y	
E125	9	14A	I	2	28 29	03000800	INT CH14 S	A	Y	
E125	9	14A	IND	54	27 28 37	22002300	INT CH15A TGR/USA	A	Y	
E125	9	14A	IND	54	27 28 37	22002300	7MC 1945/2100	C	Y	
E125	9	15A	I	18	18 27 29	16301730	CIRAF 18,27,28,29	C	X	
E125	9	16	ATN	2	11	23002400	INT	A	Y	
E125	9	18	AFS	3	57	06301400	1430/1630	F	X	

1	2	3	4	5	6	7	8	9	10	11
E125	918A	I		42829		04000800	INT COCH URS	A	Y	
E125	918A	I		24829		13001500	INT COCH URS	D	Y	
E125	918A	I		3937		06000630	INT COCH URS	A	Y	
E125	919A	I		82728373839		07002400	0530/2330	C	Y	
E125	920	CTO		446		06002100	0600/2300	F	X	
							ACCRA	F	X	
E125	920A	ALB		627		20002100	ADD 1800/1900	F	Y	
E125	920A	I		492728 37		07000900	NOREQ	C	X	
E125	920A	I		4938		09001000	CIRAF 37,38	C	X	
E125	921	AFS		557		06301400	0430/1630	F	Y	
E125	921	HOL		30 7		21002300	9MC CH22A, 2200/2330	F	Y	
E125	921	IND		2941		01000415	INT CH21A G	A	Y	
E125	921A	G		855253 57		21002300	INT CH21 HOL	A	Y	
E125	921A	G		113283839 48		18152200	INT CH21 HOL	A	Y	
E125	921A	G		148 3 4 5 7 8 910		23000345	INT CH22 B	A	Y	
E125	922	UGA		248		06001000	10KW	F	X	
							0600/1300	F	Y	
E125	922	UGA		248		14001600	10KW	F	X	
							1300/1500	F	X	
E125	922A	HOL		3410		00000400	INT	A	Y	
E125	922A	IND		503940		16001800	INT CH21A G	A	Y	
E125	922A	IND		5228		18301900	INT CH23A POL	A	Y	
E125	922A	RAK		45303140 4142		04000600	10KW	C	Y	
E125	922A	YUG		102729		09301030	CIRAF 27	F	X	
E125	922A	YUG		2137		22002330	2200/2230 AZM60 CIRAF 29	F	X	
							2230/2330 AZM270 27	F	X	
E125	923	G		902838		04000800	INT CH9A POL	A	Y	
E125	924A	ARS		439		05300900	11MC , GRP 5,6,7	F	Y	
E125	924A	ARS		439		15001900	11MC , GRP 5,6,7	F	Y	
E125	924A	ARS		739		09001000	11MC , GRP 4,5,6	F	Y	
E125	924A	NOR		4182728		10001500	1000/1300	F	X	
E125	925	CTO		346		06001700	0600/2300	F	X	
							ACCRA	F	X	
E125	925A	EGY		3383940 4748		04002300	0400/2400	B	Y	
							ADD CIRAF 37	F	X	
E125	925A	G		1531011 12		23000400	INT CH26 BOL	D	Y	
							INT CH26 CHL	A	Y	
E125	925A	G		155 1 /10		01300300	9MC CHX	B	Y	
E125	926	AFS		757		06301400	0430/1630	F	Y	
E125	926	E		94950		23000100	11MC	G	YZ	
E125	926	IND		2841		07001100	INT	A	Y	
E125	928A	G		1225660		06000900	INT CH26 TCH	A	Y	
E125	927	PAK		194041		01000400	0200/0500	B	X	
							7MC	A	Y	
E125	927A	I		92728 3738		09002030	0730/2230	C	Y	
E125	927A	NOR		16 7 6 9 10 11		23000030	0100/0230	C	Y	
							6MC	C	Y	
E125	927A	YUG		2554 5859		02300500	AZM91	G	Z	
E12511	1	ARS		202837		22002300	2000/2200	B	Y	
							GRP 8,9,12,19,22	F	Y	
E12511	1	ARS		23 6		23002400	DEL	F	X	
E12511	1	IND		12355585960		10001100	INT CH2 CHN	A	Y	
E12511	2	ARS		639		08001000	0330/2100 , GRR 4,5,7	F	Y	
							JEDDAH , AZM300/ND	F	X	
E12511	2	I		2237		21002200	AZM270	C	X	
E12511	2	I		252829		13001500	INT COCH CHN	D	Y	
							INT CH1A,CH2A URS	D	Y	
E12511	2	I		80 3 4 6 7 8 9		03000400	11MC/FREQ	C	Y	
E12511	2	G		21657		04000500	0300/0400	B	Y	
E12511	2	YUG		629		07000730	0630/0700	F	X	
							CH6	F	X	
E12511	2	YUG		1738		06000700	0600/0630	F	X	
							CH6	C	X	
E12511	3	AUS		955		20002330	INT COCH HOL	A	Y	
E12511	3	CGO		17 6		00000200	0000/0500	B	Y	
E12511	3	IND		884950		23000100	INT CH2 PHL	A	Y	
E12511	3A	G		1501213 14151618		22000300	INT CH4 G	A	Y	
E12511	3A	HOL		2063		04000530	15MC AZM80 CIRAF59	D	Y	
E12511	3A	HOL		2063		04000530	0900/1030	C	Y	
E12511	4	G		4282930		03000400	INT CH4A AUT	A	Y	
E12511	4	G		5446475253		04000600	INT CH4A AUT,I	A	Y	
E12511	4	G		942829		06000730	INT CH4A I	A	Y	
E12511	4	G		149 1 /10		22000300	INT CH3A G	A	Y	

1	2	3	4	5	6	7	8	9	10	11
E125	11	4	G	15	10 11 12	0100 0300	INT CH3A G	A	Y	
E125	11	4A	AUS	10	55	0830 1400	INT CH4 USA	G	Z	
E125	11	4A	I	57	55 56 59 60	0500 0630	INT COCH EQA	A	Y	
							INT CH4 USA	A	Y	
E125	11	5	EGY	6	37 38 39 40 47 48	0400 1800	0400/2400	B	Y	
							NO	B	X	
E125	11	5A	I	66	14 15 16	2300 0400	2200/0300	C	Y	
							CIRAF 12,14,15,16	C	X	
E125	11	6	ETH	3	48	0800 1900	10/20KW	F	X	
E125	11	6	ETH	10	6 7 8	0000 0200	100KW AZM312 16DB	F	Y	
							CIRAF 6,7,8,10	F	Y	
E125	11	6	YUG	27	8	0200 0400	0100/0300	C	Y	
E125	11	6A	AUS	25	41 49 54	1300 1900	1200/1900	B	Y	
E125	11	6A	NIG	10	46	0600 1800	20KW AZM55 8DB	F	Y	
E125	11	7	CAN	6	2 3	2200 0500	INT COCH F	G	Z	
E125	11	7A	I	84	11 12	0330 0400	INT CH8 GRC	D	Y	
E125	11	7A	I	87	12 14 15 16	0200 0300	0200/0400	B	Y	
E125	11	7A	I	89	11 12	0300 0330	INT CH8 GRC	D	Y	
E125	11	7A	PAK	2	41	1100 1400	1200/1400 , 10DB	C	X	
E129	11	7A	PAK	27	40 41	0600 1100	0630/0930	F	X	
E125	11	8A	AFS	9	52 53	1400 1500	DEL	F	X	
E125	11	8A	AFS	9	52 53 58 59	1500 1600	DEL	F	X	
E125	11	8A	AFS	9	52 53	1600 1800	DEL	F	X	
E125	11	8A	CAN	22	56 60	0800 1100	INT CH9 USA	A	X	
							9MC	B	X	
E125	11	8A	G	180	11 12	2200 0200	INT CH8 F,HNG	A	Y	
							INT CH9 HNG	A	Y	
							INT CH9 EQA	D	Y	
E125	11	9	ARS	9	36 39 46	1100 1400	REYADH , CIRAF 37	F	X	
							100KW AZM280 15DB	F	X	
							0800/0900	F	Y	
							GRP 8,12,19,20,22	F	Y	
E125	11	9A	FNL	11	55 58 59	2000 2200	17MC 0900/1100	C	Y	
E125	11	9A	G	155	1 /10	2300 2400	INT CH10 ROU	A	Y	
E125	11	10A	D	27	10 11	0200 0500	AZM285	F	X	
E125	11	11	I	13	27	1300 1400	CIRAF 28,29	C	X	
E125	11	11	I	27	18 28 29	1500 1600	INT CH10A RYU/USA	D	Y	
E125	11	11A	IND	41	39 40	0200 0330	INT CH12A ARS	A	Y	
E125	11	12	D	25	6 7 8 9	2300 0600	AZM295/320	F	X	
E125	11	12A	ARS	5	39	0400 0800	GRP 4,6,7	F	Y	
E125	11	12A	ARS	5	39	1400 1700	GRP 4,6,7	F	Y	
E125	11	12A	ARS	12	50 54	0200 0400	AZM75/100 , CIRAF 50,54	F	X	
							GRP 8,9,19,20,22	F	Y	
E125	11	12A	CAN	1	1 2	1600 0800	INT COCH FNL,HOL	G	Z	
							INT CH13 HOL	G	Z	
E125	11	12A	HOL	36	14	2330 0100	INT	A	Y	
E125	11	12A	HOL	36	14	2330 0100	SEP CH13 HOL	C	Y	
E125	11	13	CAN	23	56 60 62 63	0600 0800	0500/0700	B	Y	
E125	11	13	HOL	2	26	1700 1800	INT	A	Y	
E125	11	13	HOL	28	8	0100 0300	0100/0230	C	X	
E125	11	13	HOL	28	8	0100 0300	INT	A	Y	
E125	11	13	HOL	29	8	0000 0100	9MC 0100/0230	B	Y	
E125	11	13	HOL	33	11 12	0300 0400	0230/0400	F	Y	
E125	11	13A	IND	12	41 3 14 15	0100 0230	INT CH14A TCH	A	Y	
E125	11	14	MLA/G	24	1 9	2300 2400	INT CH13A SUI	A	Y	
E125	11	15	G	28	26 27 57	1000 1700	INT CH14A URS	A	Y	
E125	11	15	G	4	26	1700 1900	INT CH14A URS	A	Y	
E125	11	15	G	1	14 28 29 36 39 40	1900 2000	INT CH14A URS	A	Y	
E125	11	15	G	1	45 51 55 58 59	2000 2215	INT CH15A POL	A	Y	
E125	11	15	YUG	30	6 10	2230 0100	0100/0300	C	Y	
							AZM300	F	X	
							15MC CH9A	C	Y	
E125	11	16	AUS	2	45	0900 1800	INT CH15 CHN	G	Z	
							INT CH16A URS	D	Y	
E125	11	16A	I	65	14 15 16	2200 2400	2200/0300	B	Y	
							AZM270 CIRAF10,11,12	C	X	
							INT	C	Y	
E125	11	17A	G	55	52 57	0345 0500	INT CH18 POL	A	Y	
E125	11	17A	G	116	55 58 59	0500 0600	INT CH18 POL	A	Y	
E125	11	18	YUG	20	36	1730 1900	CIRAF 36,48	F	X	
E125	11	19	ARS	22	6	2300 2400	0000/0200	F	Y	
							GRP 8,9,12,19,20	F	Y	

1	2	3	4	5	6	7	8	9	10	11
E125	11	19	G	10	28 38 39 40	1600 2100	INT CH18A F	A	Y	
E125	11	19	YUG	28	13 14	0200 0400	8200/2400	C	Y	
							15MC CH5A	C	Y	
E125	11	20	G	8	0 37 38 46	2000 2300	INT CH20A HOL	A	Y	
E125	11	20	IND	8	9 49 50	2300 0100	INT CH21 PHL	A	Y	
E125	11	20A	HOL	27	4	2200 2400	INT	A	Y	
E125	11	21	AUS	38	41 49 54	1000 1530	INT COCH G	D	Y	
							CIRAF 49,54	F	X	
E125	11	21	G	15	9 14 15 16	2200 0300	INT CH21A D,ROU	A	Y	
E125	11	21	IND	5	3 27 28	2000 2200	INT CH20 G	A	Y	
E125	11	21A	D	24	6 7 8 9	2300 0600	AZM295/320	F	X	
E125	11	22	G	5	1 37 38 39 46 47 48	0345 0515	INT CH21A D	A	Y	
E125	11	22	G	15	7 10 11 12	0030 0330	INT CH21A D	A	Y	
E125	11	22	G	16	2 10 11 12	2200 2300	INT CH21A ROU	A	Y	
E125	11	23	G	3	1 8 27 28 29 36 37 38	0900 1600	INT CH23A URS	G	Z	
E125	11	23	SUI	24	6	0530 0700	0130/0400	B	Y	
E125	11	24	CAN	16	1 8 29	2000 2200	2000/2300	B	Y	
							AZM50/60	F	X	
							CIRAF 18,27,28,29	F	X	
E125	11	24	G	7	3 27 37 38 46	1700 1900	INT CH23A URS	A	Y	
E125	11	24	G	7	8 37 38 46	1900 2000	INT CH23A URS	A	Y	
E125	11	24A	CAN	20	1 0 11 12	0400 0600	0300/0600	F	Y	
E125	11	24A	IND	9	0 49 54	2300 0100	INT	A	Y	
E125	11	25	AUS	23	4 1	1500 2000	1400/2000	B	Y	
							CIRAF 41,49	F	X	
							INT CH25A URS	A	Y	
E125	11	25	ETH	9	1 8 27 28	2000 2300	100KW AZM336/349 17DB	F	X	
E125	11	26	MLA/G	16	3 9 40 41	0000 0200	INT CH25A USA	C	Y	
E125	11	26A	CHL	21	1 4 16	1500 1700	1700/2000	C	Y	
E125	11	26A	D	6	4 6 47	1700 2100	AZM160/200	F	Y	
E125	11	27	BEL	4	5 2	2300 0330	2300/0200	C	X	
E125	11	27A	IND	4	6 4 1 42	1000 1200	15MC 1200/1330	C	Y	
E125	11	27A	PAK	7	4 0 41	1330 1700	AZM278	E	X	
E125	11	27A	PAK	4	8 3 9 40	1730 1900	1800/1930	B	Y	
							50KW	E	X	
E125	11	27A	PAK	4	8 27 28 39	1930 2100	2030/2130	B	Y	
E125	11	27A	PAK	5	6 28	1900 1930	1730/1800	B	Y	
							CIRAF 39,40	F	X	
E125	15	1	CAN	1	3 27	1800 2300	CIRAF 27,28	F	X	
E125	15	1	NZL	9	5 4	1000 1400	1100/1500	B	Y	
							INT CH1A AGL, B	A	Y	
E125	15	2	NZL	1	5 9	0500 0700	INT CH2A USA	A	Y	
E125	15	3	SUI	8	5 2 5 7	0500 0630	21MC CH2A	C	Y	
E125	15	3	SUI	1	1 4 6 47 48 57	1600 2200	21MC CH20A	C	Y	
E125	15	3A	AFS	8	5 2 5 3	1200 1400	DEL	F	X	
E125	15	4	AUS	2	6 4 5	2200 2400	21MC 17MC	C	X	
E125	15	4	I	37	3 6 39 41 48	1630 1900	150KW	C	X	
							CIRAF 38,39,47,48	C	X	
E125	15	4	I	4	0 3 9 46	0600 0630	150KW	C	X	
							INT CH3A,CH4A URS	A	Y	
E125	15	4	I	6	4 4 3 44 45	0530 1000	INT CH3A,CH4A URS	C	Y	
							INT CH4A AUS	C	Y	
E125	15	4	I	7	7 1 1 12	1900 2000	INT CH3A B	C	Y	
E125	15	4A	AUS	1	3 5 6	0230 1000	INT CH5 J	G	Z	
E125	15	5	J	5	4 4 5 4	2200 0900	2000/0900	F	Y	
E125	15	5A	NOR	19	4 4 4 5 5 1 5 5 5 9 6 0	1030 1200	1000/1130	C	X	
E125	15	5A	YUG	1	5 3 7	1500 1530	AZM91 CIRAF 41	F	Y	
E125	15	6	CLN	15	2 9 3 9 40 41	0200 0500	0130/0500	B	Y	
E125	15	6A	AUS	17	6 1 6 2	0630 1000	INT CH7 RYU/USA	A	Y	
E125	15	7A	AUS	2	7 4 5	2200 2330	17MC 21MC	C	X	
E125	15	7A	D	7	4 6 47	1800 2200	AZM200	F	X	
E125	15	7A	I	29	5 2 8 3 5 7	1030 1300	INT	A	Y	
E125	15	7A	I	6	8 12 13 15	2300 0100	8200/0300	C	Y	
E125	15	6A	ALB	13	1 3 14 15	0000 0200	DEL	F	X	

1	2	3	4	5	6	7	8	9	10	11
E125	15	9A	INS	29	37 38	2000 2200	1900/2100	B	Y	
E125	15	10A	IND	56	48 52 53	1900 2100	INT CH9A INS	A	Y	
E125	15	10A	IND	87	49 50 54	0100 0200	INT	Q	Z	
E125	15	11	G	30	27 28	1030 1400	15MC/FREQ	B	Y	
E125	15	11A	CDO	15	8	1300 1400	26 OR 21MC	C	X	
E125	15	11A	CDO	16	8	0000 0200	0000/0500	B	Y	
E125	15	12A	AUS	15	60 63	0930 1030	0930/1130	F	X	
E125	15	13	CLN	14	18 28 29 39 40 41 49	0130 0400	0130/0430	B	X	
E125	15	13A	G	11	9 56 60	0800 1100	INT CH13 CLN	C	Y	
							INT CH14 POR	A	Y	
							15MC/FREQ	B	Y	
E125	15	14	HOL	24	52 53	1800 2000	15MC CH21	F	X	
E125	15	14	I	84	11 12	0000 0330	0000/0500	C	Y	
E125	15	14A	ETH	11	14 15	0000 0100	0200/0300	F	Y	
							100KW AZM270 17DB	F	Y	
							CIRAF 12,13	F	Y	
E125	15	14A	IND	47	41 42	1000 1200	11MC 1200/1330	C	Y	
E125	15	14A	IND	73	48 52 53	1700 1800	INT CH15A IND	A	Y	
E125	15	15A	IND	58	48 52 53	1530 1830	INT CH14A IND	A	Y	
E125	15	15A	IND	58	52 53 57	0400 0530	INT CH15 USA	A	Y	
E125	15	16A	I	82	4 6 /13	1600 1630	CIRAF 4,6/15	C	X	
E125	15	16A	PAK	41	55 58 59 60	0900 1000	17MC	D	Y	
E125	15	16	CAN	15	18 26	1500 2300	1400/2300	F	X	
							AZM50/60	F	X	
							CIRAF 18,27,28,29	F	X	
							17MC 1500/2100	C	Y	
E125	15	16	FNL	4	27 28 37	0700 1000	GRP 4 1400/1700	C	Y	
E125	15	16	I	80	3 4 6 7 8 9	2300 0100	2200/0300	B	Y	
							15MC/FREQ	C	Y	
E125	15	16A	IND	59	52 53 57	0400 0530	INT CH19 URS	A	Y	
E125	15	16A	IND	101	49 50	1100 1200	INT CH17A MLA/G	A	Y	
E125	15	16A	IND	101	49	1200 1330	INT CH17A MLA/G	A	Y	
E125	15	16A	IND	101	49 50	1330 1500	INT CH17A MLA/G	A	Y	
E125	15	16A	IND	122	55 56 58 59 60	0800 1100	INT CH17A MLA/G	A	Y	
E125	15	16A	PAK	6	41	0600 0800	CIRAF 40,41	F	X	
E125	15	19A	AFS	10	47 48	0530 1000	DEL	F	X	
E125	15	19A	HOL	7	38 39	1700 1800	INT	A	Y	
E125	15	20	ATN	4	27	2100 2200	INT	D	Y	
E125	15	20	NGN	4	27	1800 1900	INT	D	Y	
E125	15	21	HOL	6	29	1700 1800	AZM90	C	Y	
E125	15	21	HOL	6	29	1700 1800	INT	A	Y	
E125	15	21	HOL	6	29	1700 1800	SEP CH19A HOL	C	Y	
E125	15	21	HOL	6	29	2100 2200	INT	A	Y	
E125	15	21	HOL	12	45	1030 1200	INT	A	Y	
E125	15	21	HOL	13	49	1230 1700	INT	D	Y	
E125	15	21	HOL	18	63	0400 0600	21MC AZM55 CIRAF55,60	D	Y	
E125	15	21	HOL	18	63	0400 0600	0900/1030	C	Y	
E125	15	21	HOL	22	52 53	1800 2100	15MC CH14	F	X	
E125	15	21	HOL	37	13 15	2350 0100	SEP CH22 80L	C	Y	
E125	15	21A	BEL	2	52	1800 2000	2100/2300	B	X	
E125	15	22	AUS	44	27 28	0700 0900	INT CH23 UKR	A	Y	
E125	15	22	HOL	19	63	0400 0530	17MC AZM55 CIRAF55,60	D	Y	
E125	15	22	HOL	19	63	0400 0530	0900/1100	C	Y	
E125	15	22	HOL	26	9	2200 2400	SEP CH21 HOL	C	Y	
E125	15	22A	AUS	40	41 49 54	2300 0700	CIRAF 49,54	F	X	
							21MC 17MC	F	Y	
E125	15	23	FNL	4	27 28 37	1400 1700	GRP 4 0700/1000	C	Y	
E125	15	24	MLA/G	14	34 43 44 45 49	1300 1700	INT COCH TGR/USA	C	Y	
E125	15	25	G	9	33 39 40	0400 0600	INT CH25A CHN	A	Y	
E125	15	25	I	42	39 40 41 48	1030 1300	INT CH24A KOR	C	Y	
							INT CH25A BRM	C	Y	
E125	15	27	BEL	3	52	0700 1200	21MC	C	Y	
E125	15	27A	PAK	50	37 39	1830 2000	1800/1930	B	Y	
							50KW	E	X	
							CIRAF 37/39	BD	Y	
E125	15	27A	S	11	44 45 59 60	1200 1300	INT CH28 TGR/USA	A	Y	
E125	15	28A	ARS	8	38	0600 0600	RIYADH, 100KW, 11MC	F	X	
							GRP 9,12,19,20,22	F	Y	
E125	15	28A	ARS	8	38	1800 2100	DEL	F	X	
E125	15	28A	ARS	10	39	0300 0600	DEL	F	X	
E125	15	28A	ARS	10	39	1400 1800	DEL	F	X	
E125	15	28A	ARS	11	46	1200 1400	DEL	F	X	

1	2	3	4	5	6	7	8	9	10	11
E125	15	28A	ARS	14 5 0 5 4		1000 1200	REYADH , 0900/1200	F	X	
							100KW AZM75/90	F	X	
							CIRAF 49,50,54	F	X	
							GRP 23	F	Y	
E125	15	28A	G	15 8 12 13 14 15 16		2200 0100	INT CH29 MEX	A	Y	
E125	15	29	G	12 3 5 5 5 6 5 8 5 9		0600 0900	INT CH15A MEX	A	Y	
E125	15	29A	AUS	22 4 9		1100 1400	1100/1500	F	Y	
E125	15	29A	AUS	28 5 4		2200 2300	CIRAF 49,54	F	X	
E125	15	29A	AUS	28 4 1 4 9 5 4		2300 0300	CIRAF 49,54	F	X	
							21MC 17MC	C	X	
							INT COCH D	D	X	
E125	15	29A	AUS	29 4 9 5 4		1030 1100	1000/1100	F	X	
E125	15	29A	AUS	4 1 5 7		1500 1730	11MC	F	Y	
E125	15	30	ALB	11 7 8		0900 1000	1300/1400	F	Y	
E125	15	30	ALB	11 7 8		2300 0300	AZM310/250 CIRAF 7,8,13	F	Y	
E125	15	31A	HOL	31 8		2200 2300	2200/2330	C	Y	
E125	15	31A	I	72 4 6 7 8 9 10		1600 1730	NOREQ	C	X	
E125	15	31A	I	73 11 12		1600 1630	150KW	C	X	
E125	15	32A	I	47 39		0600 0700	AZM90 CIRAF 40,41	C	X	
E125	15	33	PAK	51 28 37 38 39 40		1800 1830	1730/1800	B	Y	
E125	15	34	G	10 6 28 29 38 39 40		1530 2000	15MC/FREQ	C	Y	
E125	15	34	G	16 1 11 12 13 14 15 16		2200 0100	INT CH33A BUL,POR	A	Y	
E125	15	34	IND	44 38 39		0430 0600	INT CH35 G	A	Y	
E125	15	34	IND	57 48 52 53		0330 0430	INT CH35 G	A	Y	
E125	15	35	G	89 38 39 40		0330 0600	15MC/FREQ	B	Y	
E125	15	35	G	116 5 1 5 5 5 8 5 9		0500 0900	15MC/FREQ	B	Y	
E125	17	1	G	72 47 48 52 53 57		1600 1715	INT CH1A G	A	Y	
E125	17	1	G	74 47 48 52 53 57		1715 2015	INT CH1A G	A	Y	
E125	17	1	G	88 47 48 52 53 57		2015 2100	INT CH1A G	A	Y	
E125	17	1	G	99 28 38 39		1200 1400	17MC/FREQ	C	Y	
E125	17	1	G	136 33 44 45		1000 1100	INT CH1A G	A	Y	
E125	17	1	G	140 43 44 45		1100 1200	INT CH1A G	A	Y	
E125	17	1	G	143 40 41 49 50 54		1400 1600	INT CH1A G	A	Y	
E125	17	1A	G	166 1 7 12		1030 1600	INT CH1 G	A	Y	
							17MC/FREQ	C	Y	
E125	17	1A	G	170 10 11 12		1600 2100	INT CH1 G	A	Y	
E125	17	2A	I	67 4 6 7 8 9 10		1600 1700	1630/1730	C	Y	
							AZM310	C	X	
E125	17	2A	I	74 11 12		1530 1600	1600/1630	C	Y	
E125	17	2A	I	78 11 12		1900 2000	INT CH3 CAN	A	Y	
E125	17	3	CAN	24 57		1800 2000	CIRAF 46,57	F	Y	
							INT CH2A FNL,I	F	Y	
E125	17	3	D	19 5 5 8 5 9		0600 1000	AZM70	F	X	
E125	17	4	G	136 41 49 54		1030 1430	INT CH3A F	A	Y	
E125	17	4A	AUS	20 5 6 61		0230 0400	INT COCH EQA	A	Y	
							0230/0430	F	X	
E125	17	4A	ETH	84 7 52		1200 1300	100KW AZM270 16DB	F	X	
							CIRAF 46,47	F	X	
E125	17	4A	ETH	84 7 52		1300 1400	100KW AZM242 16DB	F	X	
							CIRAF 52	F	X	
E125	17	4A	ETH	85 3 57		1800 2000	100KW AZM199 16DB	F	X	
E125	17	5	G	117 5 1 5 5 8 5 9		0600 0900	0500/0900	B	Y	
E125	17	5	G	132 41 49 50 51 54 58 59		0930 1800	INT CH5A AFS	A	Y	
E125	17	5	G	137 34 44 45		0900 0930	17MC CHX	B	Y	
E125	17	5	G	168 12 13 14 15 16		1800 2300	INT CH5A IRL	A	Y	
E125	17	5	IND	87 48 52 53		0300 0400	INT CH5A CHL	A	Y	
E125	17	5A	AFS	10 47 48		1000 1400	0900/1200	F	Y	
							AZM360/132	F	Y	
							CIRAF 52,53,55,58,59	F	Y	
E125	17	5A	AFS	18 5 5 8 5 9		0400 0530	AZM360/132	F	X	
E125	17	5A	AFS	18		0400 0530	CIRAF 52,53,55,58,59	F	X	
E125	17	6	AUS	30 45		2200 2300	2130/2300	F	X	
E125	17	6	IND	71 48 52 53		1600 1800	INT CH5 G	A	Y	
E125	17	6	J	18 39 40		1800 2000	1700/2000	C	Y	
E125	17	6A	AUS	42 57		0430 0600	21MC	C	X	
E125	17	6A	HOL	25 57		1800 2000	INT	A	Y	
E125	17	6A	I	52 37 38 48		1000 1200	1000/1300	C	Y	
							CIRAF 37,38,39,48	C	Y	
E125	17	7	AUT	10 41		1600 1800	1300/1500 1330/1530	C	Y	
							15MC CH5A	C	Y	
E125	17	7	HOL	11 44		1030 1200	INT	A	Y	
E125	17	7	YUG	14 30		1230 1300	AZM90 CIRAF 49	F	X	
E125	17	7	YUG	23 45		1000 1030	1100/1130	F	Y	
E125	17	7	YUG	23 44		1200 1230	1130/1230	F	Y	
E125	17	8	CLN	18 30 40 41		0300 1100	0430/1100	F	X	
E125	17	8	CLN	19 30 40 41		1100 1600	1130/1730	B	Y	

1	2	3	4	5	6	7	8	9	10	11
E12517		8	YUG	2857		2000 2100	CIRAF 52,57 CH7	F C	X Y	
E12517		9	ETH	1354		1400 1500	100KW AZM90 17DB	F	X	
E12517		9	I	58515455585960		0630 1100	INT CH8A F	A	Y	
E12517		9	MLA/G	3555585565560		1200 1400	17MC CHX	B	Y	
E12517		9	MLA/G	1840 41		1500 1800	INT CH8A F	A	Y	
E12517		10	G	12544315958 59		0800 1100	INT CH9A NOR INT CH10A ROU	A A	Y Y	
E12517		10	IND	10949 50		1100 1400	INT CH9 MLA/G	A	Y	
E12517		10A	I	3248525357		1400 1600	1500/1630	C	Y	
E12517		11	HOL	940		1700 1800	INT	A	Y	
E12517		11	HOL	1449		1400 1700	INT	A	Y	
E12517		11	HOL	1754		1100 1400	INT	E	Z	
E12517		11	HOL	2357		1800 2100	INT	A	Y	
E12517		11A	G	9538		0730 1100	INT CH11 BUL,ONU	A	Y	
E12517		12	AUS	2249		0800 1130	0800/1200	F	Y	
E12517		12A	G	169 1 /16		0930 1100	INT CH12 AUS	A	Y	
E12517		13	PAK	3441 49		1200 1330	1200/1230	F	X	
E12517		13	PAK	3749 50		0500 0530	CIRAF 43/45,50	E	X	
E12517		13	PAK	3750 54		1100 1200	CIRAF 49,50	F	X	
E12517		13	PAK	3749 50		1330 1400	1230/1330 CIRAF 50,54	B E	X X	
E12517		13	PAK	5348 52		0330 0500	0400/0600	B	Y	
E12517		13A	CAN	1427		1100 1400	1100/1500 AZM50/60 CIRAF 18,27,28,29	F F F	X X X	
E12517		14	AFS	13 16 27 28		1600 1700	AZM312/347 CIRAF 2/9,18,27,28	F F	X X	
E12517		14	AFS	17 2 / 9		1700 1900	AZM312/347 CIRAF 2/9,18,27,28	F F	X X	
E12517		14	EGY	9414449 51 54		1200 1600	1200/1800	F	Y	
E12517		15	ALB	9415859		1100 1200	1100/1300 AZM85/100	F F	Y X	
E12517		15	ALB	10415859		0900 1100	AZM85/100 CIRAF 58,59	F	X	
E12517		15	EGY	11 12 13 14 15 16		2300 0200	2300/0300 15MC	F C	Y Y	
E12517		15A	J	1741		1700 1900	1530/1730	C	Y	
E12517		15A	J	1941		1900 2100	1730/1930	C	Y	
E12517		17	AUS	166083		2300 0500	2300/0600	F	Y	
E12517		17	AUS	2941		0800 0830	AZM342 CIRAF 44,50 INT CH16A URS	F A	X Y	
E12517		17	AUS	4357		0500 0600	21MC	C	X	
E12517		18	YUG	1651 41		1700 1800	AZM90 CIRAF 41 1600/1700 CH7	F F C	X Y Y	
E12517		18	YUG	2440 49		1400 1500	AZM90 CIRAF 40 CH7	F C	X Y	
E12517		18A	BEL	752		1200 1800	21MC	C	Y	
E12517		18A	NZL	856		0200 0400	0200/0500 AZM 25 , CIRAF 56,62	B B	X Y	
E12517		19	G	172 1 /10		1700 2200	INT CH18A BEL	A	Y	
E12521		1	AUS	3241		0200 0800	CIRAF 41,49	F	X	
E12521		1	G	10 6 56 39 40 47 48		1600 1800	INT CH1A I AZM126 CIRAF 38,39,40,47,48	A C C	Y Y Y	
E12521		1	MLA/G	1740 41		1200 1600	INT CH1A SUI	A	Y	
E12521		1A	I	68 1 1 12		1700 1800	1630/1730 INT CH2 POR	C A	X Y	
E12521		4	AUS	2411 49 54		1000 1200	INT CH3 URS	G	Y	
E12521		5	IND	10449 50 54		1100 1500	INT CH6 IND	A	Y	
E12521		5A	ETH	8 47 52		0600 0730	100KW AZM270 16DB CIRAF 46,47	F F	X X	
E12521		5A	ETH	8 47 52		0730 0900	100KW AZM242 16DB CIRAF 52	F F	X X	
E12521		6	HOL	1041		1500 1700	INT	A	Y	
E12521		7	G	7753 57		1800 1730	INT CH6A I	A	Y	
E12521		7	G	9 6 39 40		1000 1030	INT CH6A F	A	Y	
E12521		7	G	10 4 29 39 40		1430 1600	INT CH6A F	A	Y	
E12521		7	G	13 9 41 49 54		1030 1430	INT CH6A F	A	Y	

1	2	3	4	5	6	7	8	9	10	11
E	12	52	1 7A	I	35464748 52	0900 1000	AZM130/220	C	X	
							CIRAF 46,47,48	C	X	
E	12	52	1 7A	I	4348	1000 1300	INT	A	Y	
E	12	52	1 8	IND	70465253	1800 1800	INT CH9 CHL	A	Y	
E	12	52	1 9	J	1150	1000 1200	1030/1230	C	Y	
E	12	52	1 9	J	1254	1200 1400	1230/1430	C	Y	
E	12	52	1 10A	I	30525357	1200 1300	NOREQ	C	X	
E	12	52	1 11	ARS	1354	1000 1100	DEL	F	X	
E	12	52	1 11	PAK	3241149	0530 0900	0600/0930	B	Y	
E	12	52	1 11	PAK	5246852	0330 0530	0400/0600	B	Y	
E	12	52	1 11A	I	30525357	0800 1100	1030/1200	C	Y	
							INT	A	Y	
E	12	52	1 11A	I	33525357	1500 1600	1500/1630	C	Y	
							INT CH12 CHN	A	Y	
E	12	52	1 13	IND	72465253	1445 1630	INT CH12 AFS	A	Y	
E	12	52	1 13A	G	173 1 /10	1500 2200	INT CH13 D	A	Y	
							INT CH14 F	A	Y	
E	12	52	1 14A	G	17116	1500 1700	INT CH14 F	A	Y	
E	12	52	1 15	DEL	954	1100 1200	1200/1300	C	Y	
E	12	52	1 16	G	1294149 54	0900 0930	INT CH18A I	A	Y	
E	12	52	1 16	G	1354149 5064	0930 1700	INT CH18A AFS,I	A	Y	
E	12	52	1 16A	AFS	1148474 8	1300 1800	CIRAF 46,47,48,52,53	F	X	
E	12	52	1 16A	I	5337583 948	1000 1300	INT CH16 G	A	Y	
E	12	52	1 17	AUS	3041495 4	0600 1000	CIRAF 49,54	F	X	
E	12	52	1 17	AUS	3344455 0	2200 2300	INT CH17A URS	A	X	
							15MC	F	X	
E	12	52	1 17	AUS	3949	1000 1100	1100/1400	F	Y	
							15MC	F	Y	
E	12	52	1 17	HOL	165135	1100 1400	INT	A	Y	
E	12	52	1 17	HOL	1654	1400 1700	INT	A	Y	
E	12	52	1 18	ARS	184143	1200 1400	DEL	F	X	
E	12	52	1 18	AUS	3641495 4	2300 2400	CIRAF 49,54	F	X	
E	12	52	1 18A	ARS	2313141 5	2300 0100	2200/2400	F	X	
							CIRAF 13/15	F	X	
							15MC , GRP15	F	Y	
E	12	52	1 19	G	10228295 03940	1600 1730	21MC/FREQ	C	Y	
E	12	52	1 20	EGY	75253	1800 1800	1300/2000	B	Y	
							17MC CH3A	C	Y	
E	12	52	1 20	G	9839474 8	1030 1530	1030/1800	B	Y	
							INT CH19A BUL,FNL	A	Y	
E	12	52	1 23	G	6936537 46	1000 2100	INT CH22A F	A	Y	
							21MC/FREQ	B	Y	
E	12	52	1 26	CGO	1354	0800 1000	0900/1100	B	Y	
E	12	52	1 26	ETH	1240414 9	1500 1600	100KW AZM82 16DB	F	X	
E	12	52	1 27	NGN	354	1200 1500	21/FREQ 9MC/CH6	F	X	
E	12	52	1 29	IND	9949305 4	0200 0430	INT CH30 INS	A	Y	
E	12	52	1 29	J	2261	0700 0900	0630/0830	B	Y	
E	12	52	1 29	NOR	1036466 6	1600 1600	1600/1730	C	X	
E	12	52	1 29	NOR	2141495 05458	1300 1400	1300/1430	C	Y	
E	12	52	1 29A	I	413940	0900 1200	1000/1300	C	X	
E	12	52	6 13	AFS	1227285 738	1200 1400	CIRAF 18,27,28	F	X	
E	12	52	6 13	AFS	1927285 738	0800 1200	CIRAF 18,27,28	F	X	
E	12	52	6 13	AFS	1927285 738	1400 1600	CIRAF 18,27,28	F	X	
E	12	52	6 34	AFS	16 9 /142728	1600 2400	1200/2000	F	Y	
E	12	52	6 42	ARS	1650	0200 0300	DEL	F	X	
E	12	52	6 42	ARS	175054	0900 1200	DEL	F	X	
E	12	52	6 42	ARS	1943	1200 1300	CIRAF 43,44	F	X	
							11MC	F	Y	
							GRP 8,9,12,20,22	F	Y	
E	12	52	6 42	AFS	1941	1300 1500	CIRAF 40,41	F	X	
							11MC	F	Y	
							GRP 8,9,12,20,22	F	Y	
E	12	52	6 42	AFS	2128	2100 2200	DEL	F	X	
E	12	52	6 42	ARS	24 8131415	2200 0100	DEL	F	X	
E	12	52	6 49	E	17 8/ 145253 57	1400 0400	DEL	C	X	

1	2	3	4	5	6	7	8	9	10	11
E	12	5	17	15	ALB	NA	41	1300	1400	RST 60KW AZM85 18DB	F	Y	TIRANE
E	12	5	11		BEL	NA	52	0500	0600	RST 100KW AZM167 12DB	C	Y	BRUXELLES
E	12	5	6		CGO	NA	52	1600	2000	3KW ND	B	Y	STANLEYVILLE
E	12	5	11		CGO	NA	8	2300	2400	50KW AZM300 12DB	B	Y	LEOPOLDVILLE
E	12	5	11		CGO	NA	27	1900	2100	50KW AZM350 12DB	B	Y	LEOPOLDVILLE
E	12	5	11		CHL	NA	14	16		0000	0400	RST 5KW AZM380 8DB	C	Y	SANTIAGO
E	12	5	17		CLN	NA	18	28	29	39	40	41	49	1130	1730	RST 35KW AZM350 8DB	B	Y	EKALA
E	12	5	15		D	NA	10	11						0200	0600	RST 100KW AZM285 20DB	B	Y	JULICH
E	12	5	6		FLK	NA	16							2100	0200	RST 0,5KW ND	E	X	PT STANLEY
E	12	5	15		FNL	NA	6	7	8					1300	1500	100KW AZM305 20DB	C	Y	
E	12	5	15		FNL	NA	12	13	14	15				1000	1200	100KW AZM234 20DB	C	X	
E	12	5	7		I	NA	37							2100	2200	RST 60KW AZM270 12DB	C	Y	ROMA
E	12	5	9		I	NA	37							2100	2200	RST 100KW AZM270 15DB	C	Y	ROMA
E	12	5	9		I	NA	27	28	29	39				1730	2200	RST 100KW ND 6DB	C	Y	ROMA
E	12	5	11		I	NA	27	28	29	39				1730	2200	RST 150KW ND 6DB	C	Y	ROMA
E	12	5	7		IND	NA	41							1300	1430	RST 100KW ND	C	Y	DELHI
E	12	5	9		IND	NA	41							1300	1430	RST 20KW ND	C	X	DELHI
E	12	5	11		IND	NA	27	28	37					1945	2100	RST 100KW AZM312 18DB	C	Y	DELHI
E	12	5	11		IND	NA	37	38	39					1845	2000	RST 100KW AZM282 12DB	C	Y	DELHI
E	12	5	15		IND	NA	37	38	39					1845	2000	RST 100KW AZM282 16DB	C	Y	DELHI
E	12	5	15		IND	NA	38	39						1745	2000	RST 100KW AZM282 16DB	C	Y	DELHI
E	12	5	17		IND	NA	42	43	44					1215	1330	RST 100KW AZM63 16DB	C	Y	DELHI
E	12	5	17		IND	NA	46							1815	1930	RST 100KW AZM102 16DB	C	Y	DELHI
E	12	5	17		IND	NA	38	39						1745	2000	RST 100KW AZM282 16DB	C	Y	DELHI
E	12	5	26		NOR	NA	41	49	50	54	58			1000	1130	RST 10KW AZM110 20DB	E	X	FREDRIKSTAD
E	12	5	26		NOR	NA	41	49	50	54	58			1300	1430	RST 10KW AZM110 20DB	E	X	FREDRIKSTAD
E	12	5	11		PAK	NA	41							0900	1200	10KW AZM137 6DB	B	Y	KARACHI
E	12	5	11		PAK	NA	40	41						0700	0900	10KW AZM227 6DB	B	Y	LAHORE
E	12	5	11		AFS	NEW	57							0600	1600	20KW ND	F	X	BLOEMFONTEIN
E	12	5	11		AFS	NEW	57							0600	1600	20KW ND	F	Y	BLOEMFONTEIN
E	12	5	11		AFS	NEW	57							0600	1600	20KW ND	F	Y	BLOEMFONTEIN
E	12	5	15		AFS	NEW	57							0730	1300	20KW ND	F	X	BLOEMFONTEIN
E	12	5	15		AFS	NEW	57							0730	1300	20KW ND	F	X	BLOEMFONTEIN
E	12	5	15		AFS	NEW	57							0730	1300	20KW ND	F	Y	BLOEMFONTEIN
E	12	5	6		CAN	NEW	2							0000	2400	1KW AZM298	F	X	VANCOUVER
E	12	5	9		CGO	NEW	52							0430	0700	50KW ND	F	X	LEOPOLDVILLE
E	12	5	9		CGO	NEW	52							1430	2230	50KW ND	F	X	LEOPOLDVILLE
E	12	5	11		CGO	NEW	52							0700	1300	50KW ND	F	X	LEOPOLDVILLE
E	12	5	7		CLN	NEW	41							0100	0400	7,5KW AZM350 8DB	F	X	EKALA
E	12	5	7		CLN	NEW	41							1130	1730	7,5KW AZM350 8DB	F	Y	EKALA
E	12	5	9		CLN	NEW	41							0430	1130	7,5KW AZM350 8DB	F	Y	EKALA
E	12	5	6		CTO	NEW	46							0600	2300	2,5KW ND	F	X	ACCRA
E	12	5	6		CTO	NEW	46							0600	2300	5KW ND	F	X	ACCRA
E	12	5	6		CTO	NEW	46							0600	2300	5KW ND	F	X	ACCRA
E	12	5	6		CTO	NEW	46							0600	2300	5KW ND	F	Y	ACCRA
E	12	5	6		CTO	NEW	46							0600	2300	5KW ND	F	Y	ACCRA
E	12	5	9		CTO	NEW	46							0600	2300	5KW ND	F	X	ACCRA
E	12	5	9		CTO	NEW	46							0600	2300	5KW ND	F	X	ACCRA
E	12	5	7	15	CVA	NEW	27	37						1300	1430	100KW AZM340 15DB	F	Y	S MARIA DI G
E	12	5	9	4A	CVA	NEW	40	49						0000	0200	100KW AZM85 15DB	F	Y	S MARIA DI G
E	12	5	9	4A	CVA	NEW	27	28	29	37				1600	1700	100KW ND	F	X	S MARIA DI G
E	12	5	9	4A	CVA	NEW	49	54						2200	2300	100KW AZM85 15DB	F	Y	S MARIA DI G
E	12	5	9	9	CVA	NEW	6	7	8	9				2300	0200	100KW AZM325 15DB	F	X	S MARIA DI G
E	12	5	11	3	CVA	NEW	46	47						0500	0700	100KW AZM193 15DB	F	Y	S MARIA DI G
E	12	5	11	3	CVA	NEW	27	28	29	37				0830	1000	100KW ND	F	X	S MARIA DI G
E	12	5	11	3	CVA	NEW	27	28	29	37				2000	2200	100KW ND	F	Y	
E	12	5	11	8	CVA	NEW	45	55						2100	2300	100KW AZM58 18DB	F	Y	S MARIA DI G
E	12	5	11	8	CVA	NEW	55	58						1900	2100	100KW AZM70 18DB	F	Y	S MARIA DI G
E	12	5	15	25	CVA	NEW	51	54						0400	0600	100KW AZM75 18DB	F	Y	S MARIA DI G
E	12	5	15	25	CVA	NEW	27	28	29	37				1030	1300	100KW ND	F	Y	S MARIA DI G
E	12	5	15	25	CVA	NEW	27	28	29	37				1700	1800	100KW ND	F	Y	S MARIA DI G
E	12	5	15	25	CVA	NEW	47	57						1900	2100	100KW AZM175 18DB	F	Y	S MARIA DI G
E	12	5	15	25	CVA	NEW	50	51						2100	2200	100KW AZM75 18DB	F	X	S MARIA DI G
E	12	5	17	12	CVA	NEW	48	53						1400	1600	50KW AZM140 18DB	F	Y	S MARIA DI G
E	12	5	17	12	CVA	NEW	55	60						1900	2100	50KW AZM90 18DB	F	Y	S MARIA DI G
E	12	5	17	13A	CVA	NEW	48	57						0600	0730	50KW AZM175 18DB	F	X	S MARIA DI G
E	12	5	17	13A	CVA	NEW	12	13	14	15	16			2200	2400	50KW AZM270 18DB	F	Y	S MARIA DI G
E	12	5	21	20A	CVA	NEW	7	11	14					1600	1800	50KW AZM250/320 15DB	F	X	S MARIA DI G
E	12	5	21	20A	CVA	NEW	13	14	15	16				2300	0100	50KW AZM240 18DB	F	Y	S MARIA DI G
E	12	5	21	27	CVA	NEW	44	45						1030	1200	50KW AZM58 18DB	F	Y	S MARIA DI G
E	12	5	7		E	NEW	28	29						1700	2100	100KW AZM45 6DB	F	Y	ARGANDA
E	12	5	9		E	NEW	27							1800	2200	100KW AZM45 6DB	F	Y	ARGANDA
E	12	5	9		E	NEW	28	29						1700	2100	100KW AZM45 6DB	F	Y	ARGANDA
E	12	5	9		E	NEW	36	37						1100	1500	100KW AZM180 6DB	F	Y	ARGANDA

1	2	3	4	5	6	7	8	9	10	11
E125	9		E	NEW	6 7 8 9 10 11	0000 0400	6/9MC 100KW AZM300 18DB	F	Y	ARGANDA
E125	9		E	NEW	6 7 8 9 10 11	2200 2400	6/9MC 100KW AZM300 18DB	F	Y	ARGANDA
E125	9		E	NEW	12 13 14 15 16	0000 0400	6/9MC 100KW AZM240 18DB	F	Y	ARGANDA
E125	9		E	NEW	12 13 14 15 16	2200 2400	6/9MC 100KW AZM240 18DB	F	Y	ARGANDA
E125	6		EGY	NEW	39	1600 1900	100KW AZM360 9DB	BF	Y	ABU ZAABAL
E125	15		EGY	NEW	40	1400 1600	100KW AZM68 9DB	BF	Y	ABU ZAABAL
E125	15		EGY	NEW	38 39	0400 2400	100KW ND	F	Y	ABU ZAABAL
E125	17		EGY	NEW	48	1500 2200	100KW AZM245 15DB	BF	Y	ABU ZAABAL
E125	17		EGY	NEW	50	1130 1300	100KW AZM50 15DB	BF	Y	ABU ZAABAL
E125	17		ETH	NEW	37	1900 2000	50KW AZM312			ADDIS ABEBA
E125	17		ETH	NEW	38	1800 1900	50KW AZM349			ADDIS ABEBA
E125	17		ETH	NEW	39	1700 1800	50KW AZM19			ADDIS ABEBA
E125	6		I	NEW	16 19 27 28 29 30 *	2200 0600	25KW ND, * 37/40,46/48	F	Y	CALTANISSETTA
E125	9		I	NEW	16 19 27 28 29 30 *	2200 0600	25KW ND, * 37/40,46/48	F	Y	CALTANISSETTA
E125	9		IOB	NEW	11	1300 2000	5KW ND	F	X	GRENADA
E125	11		IOB	NEW	11	1000 0300	5/50KW AZM294 10DB	F	Y	GRENADA
E125	11		IOB	NEW	11	1000 0300	0,25/1KW AZM894 8DB	F	Y	GRENADA
E125	6	6	J	NEW	44 45 54	1000 1500	50KW AZM11/254 5DB	F	Y	
E125	6	9	J	NEW	44 45 54	2000 2300	50KW AZM11/254 5DB	F	Y	
E125	9	11	J	NEW	52 53 57	1800 2000	100KW AZM52 10DB	F	Y	TOKYO
E125	9	9A	J	NEW	34 35	2100 0600	50KW AZM7 6DB	F	Y	TOKYO
E125	17	14A	J	NEW	6 10	2100 2300	100KW AZM54 17DB	F	Y	
E125	21	13A	J	NEW	59 60	2200 2400	100KW AZM170 11DB	F	X	
E125	8		KEN	NEW	48	0300 1600	10KW ND	F	Y	NAIROBI
E125	7		KEN	NEW	48	0300 1400	5KW ND	F	Y	MOMBASA
E125	7		KEN	NEW	48	0300 1400	5KW ND	F	Y	KISUMU
E125	7		KEN	NEW	48	0300 1400	6KW ND	F	Y	NAIROBI
E125	7		KEN	NEW	46	0300 1400	6KW ND	F	Y	NAIROBI
E125	7		KEN	NEW	48	0300 1400	10KW ND	F	Y	NAIROBI
E125	8		KOR	NEW	43 44 45	0830 1530	SUWON 10KW AZM270 10DB	F	X	
E125	9		KOR	NEW	43 44	2300 0100	SUWON 50KW AZM270 10DB	F	X	
E125	9		KOR	NEW	45	2100 2300	SUWON 50KW AZM100 10DB	F	X	
E125	11		KOR	NEW	43 44	1400 1600	SUWON 50KW AZM270 10DB	F	Y	
E125	11		KOR	NEW	45	1200 1400	SUWON 50KW AZM100 10DB	F	Y	
E125	11		KOR	NEW	39 40	1800 2000	SUWON 100KW AZM280 10DB	F	Y	
E125	11		KOR	NEW	6 10	1300 1500	SUWON 100KW AZM50 10DB	F	Y	
E125	11		KOR	NEW	27 28	2100 2300	SUWON 100KW AZM315 10DB	F	Y	
E125	15		KOR	NEW	43 44	1400 1600	SUWON 50KW AZM270 14DB	F	Y	
E125	15		KOR	NEW	45	1200 1400	SUWON 50KW AZM100 14DB	F	X	
E125	15		KOR	NEW	49 50 54	2300 0100	SUWON 100KW AZM200 14DB	F	X	
E125	15		KOR	NEW	41	1600 1800	SUWON 100KW AZM240 14DB	F	Y	
E125	15		KOR	NEW	39 40	0400 0500	SUWON 100KW AZM260 14DB	F	X	
E125	15		KOR	NEW	51 55 59	2000 2100	SUWON 100KW AZM180 14DB	F	X	
E125	15		KOR	NEW	61	0700 0900	SUWON 100KW AZM100 14DB	F	X	
E125	15		KOR	NEW	6 10	0500 0700	SUWON 100KW AZM50 14DB	F	X	
E125	15		KOR	NEW	27 28	0600 0800	SUWON 100KW AZM315 14DB	F	Y	
E125	15		KOR	NEW	14 15	0930 1130	SUWON 100KW AZM130 14DB	F	Y	
E125	15		KOR	NEW	61	1500 1800	SUWON 100KW AZM100 14DB	F	X	
E125	17		KOR	NEW	41	0100 0200	SUWON 100KW AZM240 14DB	F	X	
E125	17		KOR	NEW	61	0700 0900	SUWON 100KW AZM100 14DB	F	X	
E125	17		KOR	NEW	6 10	0500 0700	SUWON 100KW AZM50 14DB	F	X	
E125	17		KOR	NEW	14 15	0100 0300	SUWON 100KW AZM130 14DB	F	Y	
E125	21		KOR	NEW	49 50 54	1500 1700	SUWON 100KW AZM200 14DB	F	Y	
E125	21		KOR	NEW	51 55 59	1100 1300	SUWON 100KW AZM180 14DB	F	Y	
E125	9		MCO	NEW	18	1700 2300	100KW AZM13 6DB	F	Y	FONTBONNE
E125	11		MCO	NEW	37	0500 0800	100KW AZM225 6DB	F	Y	FONTBONNE
E125	11		MCO	NEW	37	0800 1700	100KW AZM225 6DB	F	Y	FONTBONNE
E125	15		MCO	NEW	46	0800 1700	100KW AZM212 8DB	F	Y	FONTBONNE
E125	15		MCO	NEW	46	1700 2300	100KW AZM212 8DB	F	Y	FONTBONNE
E125	17		MCO	NEW	38 39	0500 0800	100KW AZM114 10DB	F	Y	FONTBONNE
E125	9		MLA	NEW	54	1200 1300	50KW	F	X	KUALA LUMPUR
E125	9		MLA	NEW	54	1300 1500	50KW	F	X	KUALA LUMPUR
E125	15		MLA	NEW	49	1100 1200	50KW	F	Y	KUALA LUMPUR
E125	15		MLA	NEW	49	1200 1300	50KW	F	X	KUALA LUMPUR
E125	15		MLA	NEW	49	1300 1400	50KW	F	Y	KUALA LUMPUR
E125	15		MLA	NEW	38 39	1630 1830	50KW AZM300	F	Y	KUALA LUMPUR
E125	17		MLA	NEW	41	1400 1630	50KW AZM300	F	Y	KUALA LUMPUR
E125	21		MLA	NEW	59	0730 0830	50KW AZM130	F	Y	KUALA LUMPUR
E125	21		MLA	NEW	58	0830 0900	50KW AZM155	F	Y	KUALA LUMPUR
E125	21		MLA	NEW	45	0900 1000	50KW AZM35	F	Y	KUALA LUMPUR
E125	21		MLA	NEW	50	1000 1100	50KW AZM60	F	Y	KUALA LUMPUR
E125	21		MLA	NEW	44	1100 1200	50KW AZM35	F	Y	KUALA LUMPUR
E125	9		PAK	NEW	40	1600 1700	100KW AZM300 6DB	F	Y	KARACHI
E125	9		PAK	NEW	40 41	0000 0400	100KW AZM22 6DB	F	Y	KARACHI
E125	9		PAK	NEW	40 41	1600 1900	100KW AZM22 6DB	F	Y	KARACHI
E125	9		PAK	NEW	41	0000 0200	100KW AZM105 8DB	F	Y	LAHORE
E125	9		PAK	NEW	41	0200 1000	100KW ND	F	Y	LAHORE
E125	11		PAK	NEW	30 40	1400 1600	100KW AZM22 6DB	F	Y	KARACHI
E125	11		PAK	NEW	30 40	0200 0400	100KW AZM22 6DB	F	Y	KARACHI
E125	11		PAK	NEW	49	0000 0500	100KW AZM96 10DB	F	Y	KARACHI
E125	11		PAK	NEW	38 39	1700 2200	100KW AZM300 10DB	F	Y	KARACHI
E125	11		PAK	NEW	37	2000 2100	100KW AZM300 10DB	F	Y	KARACHI
E125	11		PAK	NEW	39	1800 2000	100KW AZM317 10DB	F	Y	KARACHI
E125	11		PAK	NEW	40	0400 0500	100KW AZM300 6DB	F	Y	KARACHI
E125	11		PAK	NEW	40 41	0400 1600	100KW AZM22 6DB	F	Y	KARACHI
E125	11		PAK	NEW	41	1200 1900	100KW ND	F	Y	LAHORE
E125	15		PAK	NEW	38 39	1700 2200	100KW AZM300 10DB	F	Y	KARACHI
E125	15		PAK	NEW	38 39	0500 0700	100KW AZM300 10DB	F	Y	KARACHI
E125	15		PAK	NEW	37	2000 2100	100KW AZM300 10DB	F	Y	KARACHI
E125	15		PAK	NEW	39	1800 2000	100KW AZM317 10DB	F	Y	KARACHI
E125	15		PAK	NEW	27	2000 2100	100KW AZM317 10DB	F	Y	KARACHI
E125	15		PAK	NEW	41	1000 1200	100KW AZM105 6DB	F	Y	LAHORE
E125	15		PAK	NEW	40 41	0000 0500	100KW AZM278 10DB	F	Y	DACCA
E125	17		PAK	NEW	55 58 59 60	0800 0900	100KW AZM120 10DB	F	Y	KARACHI
E125	17		PAK	NEW	49 51 54	1200 1300	100KW AZM120 10DB	F	Y	KARACHI
E125	17		PAK	NEW	39	0500 0700	100KW AZM317 10DB	F	Y	KARACHI
E125	17		PAK	NEW	27	2000 2100	100KW AZM317 10DB	F	Y	KARACHI
E125	17		PAK	NEW	40 41	0500 1000	100KW AZM278 10DB	F	Y	DACCA
E125	17		PAK	NEW	40 41	1400 1900	100KW AZM278 10DB	F	Y	DACCA
E125	21		PAK	NEW	49 51 54	1200 1300	100KW AZM120 10DB	F	Y	KARACHI

1	2	3	4	5	6	7	8	9	10	11
E125	21		PAK	NEW	43 44 45	1100 1200	100KW AZM80 10DB	F	Y	KARACHI
E125	21		PAK	NEW	43 44 45	1100 1200	100KW AZM80 10DB	F	Y	KARACHI
E125	21		PAK	NEW	49	1300 1400	100KW AZM96 10DB	F	Y	KARACHI
E125	21		PAK	NEW	49	0500 1000	100KW AZM96 10DB	F	Y	KARACHI
E125	21		PAK	NEW	49	1000 1200	100KW AZM96 10DB	F	Y	KARACHI
E125	21		PAK	NEW	49	1200 1500	100KW AZM96 10DB	F	Y	KARACHI
E125	21		PAK	NEW	49	1500 1900	100KW AZM96 10DB	F	Y	KARACHI
E125	21		PAK	NEW	40 41	1000 1200	100KW AZM278 10DB	F	Y	DACCA
E125	21		PAK	NEW	40 41	1200 1400	100KW AZM278 10DB	F	Y	DACCA
E125	21		PAK	NEW	55 58 59 60	0800 0900	100KW AZM120 10DB	F	Y	KARACHI
E125	26		PAK	NEW	49	1300 1400	100KW AZM96 10DB	F	Y	KARACHI
E125			PRG	NEW	27 28	1800 2200		F	Y	ASUNCION
E125	17		PRG	NEW	7 8	0000 0400		F	Y	ASUNCION
E125	6		SDN	NEW	35 47 48	0300 2000	20KW ND 0/600KM	F	X	OMDURMAN
E125	9		SDN	NEW	38 39 47 48	0300 2000	20KW ND 400/2000KM	F	X	OMDURMAN
E125	11		SDN	NEW	38 39 47 48	0800 1500	100KW ND 600/2400KM	F	Y	OMDURMAN
E125	15		SDN	NEW	27 28	1800 2000	100KW AZM335 15DB	F	Y	OMDURMAN
E125	17		SDN	NEW	27 28	1500 1800	100KW AZM335 15DB	F	Y	OMDURMAN
E125	21		SDN	NEW	27 28	0600 0800	100KW AZM335 15DB	F	X	OMDURMAN
E125	7		SIK	NEW	41	0045 0400	GANGTOK, 7,5KW ND	F	X	
E125	9		SIK	NEW	41	0400 1200	GANGTOK, 7,5KW ND	F	Y	
E125	6		TGK	NEW	53	0315 0500	10KW ND	F	X	DAR ES SALAAM
E125	6		TGK	NEW	53	1430 1930	10KW ND	F	Y	DAR ES SALAAM
E125	6		TGK	NEW	53	0315 0500	10KW ND	F	X	DAR ES SALAAM
E125	6		TGK	NEW	53	1430 1930	10KW ND	F	Y	DAR ES SALAAM
E125	6		TGK	NEW	53	0315 0500	10KW ND	F	X	MWANZA
E125	6		TGK	NEW	53	1430 1930	10KW ND	F	Y	MWANZA
E125	6		TGK	NEW	53	0315 0500	10KW ND	F	X	MBEYA
E125	6		TGK	NEW	53	1430 1930	10KW ND	F	Y	MBEYA
E125	7		TGK	NEW	53	0800 1115	10KW ND	F	Y	DAR ES SALAAM
E125	9		TGK	NEW	53	0800 1115	5KW ND	F	X	DAR ES SALAAM
E125	6		UGA	NEW	48	0300 2100	10KW ND	F	Y	KAMPALA
E125	6		UGA	NEW	48	0300 2100	10KW ND	F	Y	KAMPALA
E125	7		UGA	NEW	48	0300 2100	10KW ND	F	Y	KAMPALA
E125	9		UGA	NEW	48	0600 1500	10KW ND	F	Y	KAMPALA
E125	11		UGA	NEW	48	0600 1500	10KW ND	F	Y	KAMPALA
E125	9	27A	YUG	NEW	27 39	1600 1700	100KW AZM75	F	Y	BEOGRAD
E125	9	27A	YUG	NEW	38	1700 1800	100KW AZM120	F	Y	BEOGRAD
E125	9	27A	YUG	NEW	29	1830 2000	100KW AZM45	F	Y	BEOGRAD
E125	9	27A	YUG	NEW	30	2000 2100	100KW AZM60	F	Y	BEOGRAD
E125	11	2	YUG	NEW	29	1900 2000	100KW AZM60	F	Y	BEOGRAD
E125	11	2	YUG	NEW	37	2000 2100	100KW AZM270	F	Y	BEOGRAD
E125	11	2	YUG	NEW	39	2100 2130	100KW AZM90	F	Y	BEOGRAD
E125	11	2	YUG	NEW	28	2130 2200	100KW AZM360	F	Y	BEOGRAD
E125	11	16	YUG	NEW	13	0000 0100	100KW AZM240	F	Y	BEOGRAD

PAGE INTENTIONALLY LEFT BLANK

PAGE LAISSEE EN BLANC INTENTIONNELLEMENT

D 125

Phase Phase Fase	Bande/Band/Banda	Voie/Channel/Canal	Pays Country País	Index Index Indice nº	Zones de réception Reception Zones Zonas de recepción	Heures d'émission Hours of transmis. Horario de operac.	Commentaires de l'Administration Comments from the Administration Comentarios de la Administración	Analyse par l'IFRB Analysis by IFRB Análisis de la IFRB		Observations Remarks Observaciones
1	2	3	4	5	6	7	8	9	10	11
D125	6	1	AUS	159		08301400	INT COCH URS	A	Y	
							INT CH1A BRN	A	Y	
D125	6	1	BUR	112		11000400	INT	D	Y	
D125	6	1	SUR	112		11000400	INT	A	Y	
D125	6	1A	BRN	154		03001400	0300/1600	F	Y	
							ADD 2200/0100	F	X	
D125	6	2	CAN	5 3		12300400	INT CH1A CHN	G	N	
D125	6	2	CLN	441		01000230	SEP CH1 CLN	C	X	
D125	6	2A	NIG	246		09001600	FREQ/6MC	C	Y	
							AZM55 6DB	F	X	
D125	6	3	ALB	439		03000500	0400/0600	F	Y	
D125	6	3	AUS	259		08301400	INT CH3A INS	A	Y	
D125	6	3	I	128		05000600	0300/0600	B	Y	
							AZM40 CIRAF 28,29	C	Y	
D125	6	3	I	28272 8		17302200	ND CIRAF 27,28,29	C	Y	
D125	6	3	IND	1541		00450700	INT COCH ALB	D	Y	
D125	6	3A	INS	1054		22001600	MENADO	F	X	
D125	6	5	IND	2541		00300700	INT COCH URS	D	Y	
D125	6	5A	MLA	154		22301630	SINGAPORE	F	X	
D125	6	6	CAN	3 2		15000100	1500/0200	F	X	
D125	6	7	BRM	149		00001630	INT CH7A PHL	A	N	
D125	6	8	IND	3241		00450400	INT CH8A IRQ	A	Y	
							INT COCH POL	A	Y	
D125	6	8	KEN	148		07001100	0300/1100	F	Y	
D125	6	8	KEN	148		07001100	6KW	F	X	
D125	6	8	KEN	148		13002000	6KW , 1100/1600	F	X	
D125	6	9	G	52829 30		04000500	INT CH9A IRN	A	Y	
D125	6	9	G	628 37		05000600	0400/0500	B	Y	
D125	6	9	G	2528		18001900	INT CH8A F	A	Y	
D125	6	9	IND	2141		00450400	INT COCH POL	A	Y	
D125	6	9	YUG	328		10001800	DEL	F	X	
D125	6	9	YUG	1118		23002330	DEL	F	X	
D125	6	9A	CGO	252		16002000	50KW ND	F	X	
							LEOPOLDVILLE	F	X	
D125	6	10	I	728		05301900	0530/2330	B	Y	
							ND CIRAF 27,37,38,39	C	Y	
D125	6	10	I	92728 38		19002100	CIRAF 27,28,37,38	C	X	
D125	6	11	G	38272 8		16002315	6MC/FREQ	C	Y	
D125	6	11	IND	641		00301600	INT CH11A IND	A	Y	
							INT CH11A IND0800/0930	A	Y	
D125	6	11	S	15 7 8 9 10 11		01000200	9MC	C	Y	
D125	6	11A	IND	3641		00451600	INT	A	Y	
							INT COCH URS	A	Y	
D125	6	12	I	12282 9		13001400	11MC	C	Y	
D125	6	12	S	21 6 7		03000400	9MC	C	Y	
D125	6	13	CTO	546		06002300	ACCRA	F	X	
D125	6	13	DNK	118272837		07001000	1900/2200	C	Y	
D125	6	13A	CLN	541		01000230	SEP CH12A CLN	C	X	
D125	6	13A	EGY	13839		03000900	0300/1500	F	X	
D125	6	13A	EGY	13839		15002330	1500/2400	F	X	
D125	6	14	ATN	111		12000500	INT 2100/0230	D	Y	
D125	6	14	NOR	21827		07300930	0700/0900	C	Y	
D125	6	14	NOR	61827		09301100	NOREQ	C	X	
D125	6	14	NOR	61827		20002100	1900/2300	B	Y	
D125	6	15	IOB	111		16001600	1000/1300	F	X	
							INT COCH CLM	C	Y	
							INT CH14A DOM	C	Y	
D125	6	15	IOB	111		21000200	2000/0300	F	X	
							INT COCH CLM	C	Y	
							INT CH14A DOM	C	Y	
D125	6	15	MLA/G	749 50 54		08001300	INT CH14A USA	D	Y	
D125	6	15	MLA/G	749 50		13001700	INT COCH SUI	A	Y	

1	2	3	4	5	6	7	8	9	10	11
D123	G	15	MLA/G	749		12000200	INT COCH IOB	A	Y	
D125	G	15A	AFS	157		14001600	DEL	F	X	
D125	G	16	MCO	1278837		06301600	0600/2300	C	Y	
D125	G	16	YUG	428		21002330	1000/2330	F	Y	
D125	G	17	G	142728		05000830	6MC/FREQ	C	Y	
D125	G	17	HOL	1182728837		15302100	INT	D	Y	
D125	G	17	HOL	1182728837		23000100	INT	A	Y	
D125	G	17	HOL	838		22002300	2000/2100	B	Y	
D123	G	18A	IND	1241		00450700	IND CH19 D/USA	D	Y	
D125	G	18A	IND	1241		11001745	INT COCH USA	A	Y	
D125	G	19	G	462728		18152200	1815/2315	B	Y	
							6MC/FREQ	C	Y	
D125	G	19	G	472728		18152200	6MC CHX 1630/2200	B	Y	
D125	G	19	MLA/G	5434449 50		22000200	INT COCH G	C	Y	
							INT COCH D/USA	D	Y	
D125	G	19A	IND	141		01001600	INT	G	N	
							INT	G	N	
D125	G	19A	NIG	148		07301730	FREQ/6MC	D	Y	
D125	G	20A	ARS	339		04002100	JE00AH	F	X	
							0330/2100, 50KW, 9MC	F	Y	
D125	G	21	AUT	1182728 2937		09001500	50KW	F	X	
D125	G	22	YUG	226		11002230	1000/2330	F	Y	
D125	G	22	YUG	1227		20002100	DEL	F	X	
D125	G	22	YUG	2237		21002230	DEL	F	X	
D125	G	22A	IND	3741		01000500	INT	A	Y	
D125	G	24	G	135 1 /10		02000330	INT COCH PRU	D	Y	
D125	G	24	IND	1741		01001800	INT	A	Y	
							INT	G	N	
D125	G	24A	ETH	548		04000600	50KW	F	X	
D125	G	25	G	112728		06000830	0430/0830	B	Y	
							INT CH24A MRF	A	Y	
							6MC/FREQ	C	Y	
D125	G	25	PAK	114041		12001800	1200/1700	F	X	
D125	7	1	G	628637		07000800	0600/0700	B	Y	
D125	7	1	G	192728		14001600	INT COCH URS	C	Y	
D125	7	1	G	6536 37		11001400	1800/2100	B	Y	
							INT COCH URS	D	Y	
D125	7	1	NIG	846		07001600	20KW AZM55 6DB	F	X	
							FREQ/7MC	F	Y	
D125	7	2	AUS	351		20001400	INT COCH CHN	A	Y	
							INT CH1A MLA	A	Y	
D125	7	2A	AFS	257		14001800	0300/0600 1600/1900	F	Y	
D125	7	2A	BRM	245		10001630	INT CH2 CHN	A	N	
D125	7	2A	PAK	134041		02000430	6MC	C	Y	
D125	7	3A	IND	1441		03001530	INT COCH F	A	Y	
							INT CH3 URS	A	Y	
							INT CH4 MNG	A	Y	
D125	7	4	G	2182829303132		03000400	INT COCH MNG	A	Y	
D125	7	4	G	312728		10001400	INT COCH MNG	A	Y	
D125	7	4A	CGO	1152		18002000	BUKAVU	F	X	
D125	7	4A	PAK	234041		01000330	6MC	C	Y	
D125	7	5	G	92728		08000700	0500/0800	B	Y	
							7MC/FREQ	B	Y	
D125	7	5	G	8938 3940		04000600	7MC CHX 0330/0500	B	Y	
D125	7	5	I	1818272829373 8		16301730	ND CIRAF 27,28,37,38	C	X	
D125	7	5	I	2237		21002200	AZM270	C	X	
D125	7	5	I	2328 29		13001500	INT COCH CHN	D	Y	
D125	7	5	I	2618272829 37		15301630	INT COCH CHN	D	Y	
							9MC	C	Y	
D125	7	5	I	5037383948		10001300	INT	C	Y	
D125	7	5	I	543738		20002100	AZM175/220	C	X	
D125	7	5A	CLN	641		11301700	1130/1730	B	Y	
D125	7	6	AUT	2182728 2937		09001300	50KW	F	X	
D125	7	6A	IND	2441		04001100	INT	G	N	
							INT	G	N	
							INT	A	Y	
D125	7	6A	NIG	748		06002100	ND	F	X	
D125	7	7	AFS	457		14001800	0300/0600 1600/1900	F	Y	

1	2	3	4	5	6	7	8	9	10	11
D125	7	7	ARS	439	1100 1500	11MC , GRP 5,6,7	F	Y	
D125	7	7	HOL	629	1700 1800	AZM90	C	X	
D125	7	7	HOL	629	1700 1800	INT	A	Y	
D125	7	7A	FNL	11555859	2000 2200	17MC 0900/1100	C	Y	
D125	7	7A	PAK	94041	0630 0930	RAWALPINDI	E	X	
D125	7	8	BEL	252	2000 2200	2100/2300	B	Y	
D125	7	8	NOR	1171827	0700 0800	0700/0900	E	X	
D125	7	8	NOR	51827	1300 1800	1500/1900	C	Y	
D125	7	8	NOR	7171827	0800 1300	1800/2300	C	Y	
D125	7	8A	EGY	23639	0400 2300	0400/2400	B	Y	
D125	7	9	G	72728	0400 0600	INT CH8A EGY	A	Y	
						7MC/FREQ	B	Y	
D125	7	9	G	202728	0800 1700	INT CH8A EGY	A	Y	
D125	7	9	G	442728	1700 1900	1700/2300	A	Y	
						INT CH8A EGY	B	Y	
D125	7	9	HOL	637	2200 2300	2000/2100	B	Y	
D125	7	9A	PAK	364149	1030 1530	0930/1530	F	X	
D125	7	10	ALB	32728	2200 2400	1600/1800	F	Y	
						7MC CH14	F	Y	
D125	7	10	G	82728	0400 0900	INT COCH J	A	Y	
						7MC/FREQ	B	Y	
D125	7	10	G	2418228	0900 1100	INT COCH J	A	Y	
D125	7	10	J	2444564	2000 1400	2000/1500	F	Y	
D125	7	10A	IND	2041	0400 1530	INT CH10 J	A	Y	
D125	7	11	MCO	22728 37	0600 2000	0600/2300	B	Y	
D125	7	11A	AFS	657	1400 1800	1600/1900	F	Y	
						ADD 0300/0600	F	X	
D125	7	11A	NIG	646	0730 1400	20KW , 0730/1600	F	X	
D125	7	11A	PAK	2040	1330 1500	1400/1530	F	Y	
						CIRAF 40,41	E	X	
D125	7	11A	PAK	2541	1500 1700	1330/1700	F	Y	
						CIRAF 40,41	E	X	
D125	7	12A	ARS	239	0900 1300	REYAOH , 100KW	F	X	
						0330/2100	F	Y	
D125	7	12A	IND	1841	0100 0700	INT	G	Z	
D125	7	12A	NZL	259	0700 1400	FREQ/7MC	C	X	
D125	7	12A	TGK	153	0700 0900	5KW 0800/1115	F	Y	
D125	7	12A	TGK	153	1300 1700	DEL	F	X	
D125	7	13A	PAK	284041	0100 0330	0200/0400	F	X	
D125	7	13A	PAK	4431404 2	1500 1800	CIRAF 30,31,40/42 , 10KW	B	Y	
						1400/1700	B	X	
D125	7	13A	UGA	148	0600 1000	10KW 0300/2100	F	Y	
D125	7	13A	UGA	148	0600 1000	10KW	F	X	
						0300/1400	F	Y	
D125	7	13A	UGA	148	1400 2000	10KW	F	X	
						1400/2100	F	Y	
D125	7	14	G	102728	0730 0930	0500/0700	B	Y	
						7MC/FREQ	C	Y	
D125	7	14A	CLN	741	0400 1600	0400/1730	B	Y	
D125	7	14A	KEN	248	0700 1100	10KW	F	X	
						0300/0700	F	Y	
D125	7	14A	KEN	248	1300 2000	10KW 1100/1400	F	X	
D125	7	15A	COO	952	0900 1900	0800/1900	C	X	
D125	7	15A	COO	952	1900 2200	1830/2200	B	Y	
D125	7	15A	PAK	2440 41	1500 1630	AZM22	E	X	
D125	7	15A	PAK	3040	1630 1730	6MC	C	Y	
D125	7	15A	PAK	4330314042	1730 1800	AZM22	E	X	
D125	7	16	YUG	126	0630 1800	0400/2400	F	Y	
						ND	F	X	
D125	7	16	YUG	1229	2230 2300	DEL	F	X	
D125	7	16	YUG	1227	2300 0030	DEL	F	X	
D125	7	16	YUG	153039	1800 2000	1730/1930	C	X	
						15MC CH5A	C	X	
D125	7	16A	G	1154154	0030 0230	INT CH17 URS	D	Y	
D125	7	17	ALB	5273839	1200 1800	1200/2300	F	Y	
						CIRAF 27,28,38,39	F	X	
D125	7	17	ALB	738	2000 2100	9MC CH20A	F	Y	
D125	7	17A	ETH	148	0300 0800	10/20KW	F	X	
D125	7	17A	IND	2741	0045 0700	INT CH18 POR	A	Y	
						INT CH18A G	A	Y	
D125	7	18	E	949 50	2300 0100	11MC	G	YZ	
D125	7	18	IND	5327 28	2100 2300	INT CH19 TCH	A	Y	
D125	7	19A	IND	3541	0045 1300	INT	G	Z	
D125	7	19A	NIG	546	0600 1600	20KW	F	X	
D125	7	20	G	412728	1600 2000	1600/2200	B	Y	
						7MC/FREQ	C	Y	

1	2	3	4	5	6	7	8	9	10	11
D125	9	1	AUT	8 7 6		23000200	100KW 6MC CH20A	C	Y	
D125	9	1	ETH	848		09001100	50KW	F	X	
D125	9	1	ETH	848		11001130	100KW AZM349 1608	F	X	
							CIRAF 38	F	X	
D125	9	1	ETH	848		11301200	100KW AZM19 1608	F	X	
							CIRAF 39	F	X	
D125	9	1	HOL	3510		02000400	INT	A	Y	
D125	9	1	IND	9354		23002400	INT CH2 INS	A	Y	
D125	9	1A	CTO	148		06001700	0600/2300	F	X	
D125	9	2A	I	841112		00000300	0000/0500	C	Y	
D125	9	3	IND	441		04000700	INT	A	Y	
D125	9	3A	ALB	1213 15		03000500	0000/0400	F	Y	
							15MC CH8A	F	Y	
							1508	F	X	
D125	9	3A	BRN	254		03001200	0300/1500	F	X	
							ADD 1500/1600 2200/0100	F	Y	
D125	9	3A	D	746 47		18002200	AZM200	F	X	
D125	9	3A	D	1341		17002100	9MC/CHX	B	Y	
							1300/1700 , 1400/1800	B	Y	
D125	9	4A	CHL	814		19002200	1900/0200	C	Y	
D125	9	4A	DNK	713 14 15 16		01000300	0200/0400	C	X	
D125	9	4A	G	5537		06000700	0500/0600	B	Y	
D125	9	5	CTO	246		06001700	0600/2300	F	X	
D125	9	5	IND	3341		04001300	INT	A	Y	
D125	9	5	MLA/G	19 27 26 29 39 40 41		23002400	9MC/FREQ	B	Y	
D125	9	5A	I	37 36 39 41 48		18002000	1630/1900	B	Y	
							150KW	C	X	
							CIRAF 38,39,47,48	C	X	
D125	9	6A	NOR	1126 36 48 53		18002200	SEP COCH NOR	C	Y	
							AZM150 CIRAF 28,38,48,53	C	Y	
							11MC	C	Y	
D125	9	7A	CGO	2027		20002100	1800/2100	B	Y	
D125	9	7A	G	16 27 28 37		07000830	9MC/FREQ	B	Y	
D125	9	7A	G	10 28 29 36 39 40		17002000	9MC CHX	B	Y	
D125	9	7A	G	11 2636		19002000	9MC/FREQ	B	Y	
D125	9	7A	G	164 1 /10		05000615	9MC/FREQ	B	Y	
D125	9	9	IND	1141		04000700	INT	G	Z	
D125	9	10A	CAN	1527		21002200	AZM50/60	F	X	
							CIRAF 18,27,28,29	F	X	
D125	9	10A	CAN	15 16 28		22002300	AZM50/60	F	X	
							CIRAF 18,27,28,29	F	X	
							11MC	G	Z	
D125	9	10A	CAN	16 18 29		18002100	AZM50/60	F	X	
							CIRAF 18,27,28,29	F	X	
							11MC	G	Z	
D125	9	10A	DNK	6 6 7 6 13 14 15 16		02000400	0400/0600	C	Y	
D125	9	10A	I	46 39 40 41		08000900	INT CH11 URS	A	Y	
D125	9	10A	I	80 3 4 8 7 6 9		23000100	2200/0300	B	Y	
D125	9	11	BEL	552		19002100	1800/2100	B	Y	
D125	9	11	ETH	748		16001800	50KW	F	X	
D125	9	11A	AUT	439		05000600	50KW	F	X	
D125	9	11A	BEL	1C 7 6 9		23000100	0100/0200	B	Y	
D125	9	11A	D	25 6 7 8 9		01000500	AZM295/320	F	X	
D125	9	11A	G	27 16 27 28		10001630	INT CH8A URS	A	Y	
D125	9	11A	G	42 16 28 29		16301900	INT CH11 URS	A	Y	
D125	9	11A	I	55 39 40		20002100	INT CH11 URS	A	Y	
D125	9	11A	I	80 55 59		19002000	INT	A	Y	
D125	9	12	D	17 55 58 59		05000700	11MC	G	Z	
D125	9	12	MLA/G	13 43 44 49 50		11301245	INT CH12A URS	G	Y	
D125	9	12	MLA/G	13 43 49		14451645	INT CH12A URS	A	Y	
D125	9	12A	BEL	11 7 6 9		22002400	2100/2300	B	X	
D125	9	12A	I	71 4 6 7 8 9 10		00000200	2300/0100	B	Y	
							INT	C	Y	
D125	9	13	HOL	528		09001000	2100/2200	BC	Y	
D125	9	13	NOR	3 17 16		10001400	1000/1300	F	X	
D125	9	13A	EGY	42728		20302300	1800/2300	B	Y	
							7MC	D	Y	
D125	9	13A	EGY	537		23002400	AZM320 , CIRAF 27,28	F	X	
							7MC	D	Y	
D125	9	14A	BEL	352		23000200	CH25	C	Y	
D125	9	14A	IND	54 27 28 37		22002300	INT CH13A EGY	A	Y	
D125	9	14A	IND	54 27 28 37		22002300	7MC 1945/2100	C	Y	
							INT CH15A AFG	A	Y	
D125	9	15	CAN	17 13 14 15		01000300	11MC 15MC	D	Y	
D125	9	15	IND	6 13 45		14001500	INT CH16 URS	A	Y	
D125	9	15A	I	16 16 27 29		16301730	CIRAF 18,27,28,29	C	X	

1	2	3	4	5	6	7	8	9	10	11
D125	9	15A	I	5 6	4 0	19002000	2000/2100	C	Y	
							INT CH16 URS	A	Y	
D125	9	16	ATN	2	1 1	23002400	INT	A	Y	
D125	9	16A	SUI	1 4	3 8 3 9	17001830	11MC CH17A	B	Y	
							1700/1900	B	Y	
D125	9	17A	BEL	1 2	1 5	22002400	2100/2300	B	Y	
							11MC	B	Y	
D125	9	18	AFS	3	5 7	06301400	0430/1630	F	X	
D125	9	18A	I	4	2 8 2 9	04000600	INT COCH URS	A	Y	
D125	9	18A	I	2 4	2 8 2 9	13001500	INT COCH URS	D	Y	
D125	9	18A	I	3 9	3 7	06000830	INT COCH URS	A	Y	
D125	9	19A	I	8	2 7 2 8 3 7 3 8 3 9	07002400	0530/2330	C	Y	
D125	9	20	CTO	4	4 6	06002100	0600/2300	F	X	
							ACCRA	F	X	
D125	9	20A	G	3	2 8 2 9 3 0	03000345	9MC/FREQ	B	Y	
D125	9	20A	I	4 9	3 8	09001000	GIRAF 37,38	C	X	
D125	9	20A	I	4 9	2 7 2 8 3 7	07000900	NOREQ	C	X	
D125	9	20A	PAK	5 7	2 8 2 9	19002000	1930/2030	B	Y	
D125	9	20A	PAK	5 7	2 7 2 8	20002100	2030/2130	B	Y	
							7MC	D	Y	
D125	9	21	AFS	5	5 7	06301400	0430/1630	F	Y	
D125	9	21	HOL	3 0	7	21002300	9MC CH22A , 2200/2300	B	Y	
D125	9	21	IND	2	9 4 1	01000415	INT COCH FNL,S	D	Y	
D125	9	21A	G	1	2 2 8 2 9	05150600	9MC/FREQ	B	Y	
D125	9	21A	G	1	7 1 8 2 7 2 8	07001600	9MC/FREQ	C	Y	
D125	9	21A	Q	8 5	5 2 5 3 5 7	21002300	INT GH21 HOL	A	Y	
D125	9	21A	Q	1 1 3	2 8 3 8 3 9 4 8	16152200	9MC/FREQ	C	Y	
D125	9	21A	Q	1 4 8	3 4 5 6 7 9 1 0	23000345	INT CH22 ARS,EGY	A	Y	
							9MC/FREQ	B	Y	
D125	9	22	ARS	2 3	1 3 1 4 1 5	00000200	2200/2400 , 11MC	F	Y	
							CIRAF 13,14,15	F	X	
							GRP 8,9,12,19,20,22	F	Y	
D125	9	22	EGY	1 1	1 2 1 3 1 4 1 5 1 6	02000500	2300/0300	F	Y	
D125	9	22	UGA	2	4 8	06001000	10KW	F	X	
							0600/1300	F	Y	
D125	9	22	UGA	2	4 8	14001600	10KW	F	X	
							1300/1500	F	X	
D125	9	22A	HOL	3 4	1 0	00000400	INT	A	Y	
D125	9	22A	IND	5	0 3 9 4 0	16001800	INT CH23A HOL	A	Y	
D125	9	22A	IND	5	2 2 8	18301900	INT CH21A G	A	Y	
D125	9	22A	J	1	8 3 9 4 0	19002000	1700/2000	B	Y	
D125	9	22A	J	2	1 2 7 2 8 2 9	21002200	2000/2200	B	Y	
D125	9	22A	PAK	4 5	3 0 3 1 4 0 4 1 4 2	04000600	10KW	C	Y	
D125	9	22A	YUG	1	0 2 7 2 9	09301030	0900/1000	F	X	
							CIRAF 27	F	X	
D125	9	22A	YUG	1	0 2 9	10301100	1000/1100	F	X	
D125	9	23	G	9	0 2 8 3 6	04000600	9MC/FREQ	B	Y	
D125	9	23	MLA/G	1	5 1 5 4	08001045	INT CH23A URS	A	Y	
D125	9	23A	SUI	1 1	4 6 4 7 4 8 5 7	21002200	21MC CH7A, 1800/2000	B	Y	
D125	9	24A	ARS	4	3 9	05300900	11MC, GRP 5,6,7	F	Y	
D125	9	24A	ARS	5	3 9	15001800	11MC , GRP 4,6,7	F	Y	
D125	9	24A	ARS	7	3 9	09001000	11MC , GRP 4,5,6	F	Y	
D125	9	24A	ARS	1 0	3 9	18001900	DEL	F	X	
D125	9	24A	G	4 9	2 8 2 9 3 0	21002200	9MC/FREQ	B	Y	
D125	9	24A	NOR	4	1 8 2 7 2 8	10001500	1000/1300	F	X	
D125	9	25	CAN	1 2	8 9	11302300	INT CH24A G,SUI	A	Y	
D125	9	25	CTO	3	4 6	06001700	0600/2300	F	X	
							ACCRA	F	X	
D125	9	25A	EGY	3	3 8 3 9 4 0 4 7 4 8	04002300	0400/2400	B	Y	
							ADD CIRAF 37	F	X	
D125	9	25A	G	1 5 3	1 0 1 1 1 2	23000400	INT CH25 F,CHL	A	Y	
D125	9	26	AFS	7	5 7	06301400	0430/1630	F	Y	
D125	9	26A	G	1 2 2	5 6 5 0	06000900	INT CH27 ROV	A	Y	
D125	9	26A	INS	2	9 3 7 3 8	22002300	1900/2100	B	Y	
D125	9	27	PAK	1 9	4 0 4 1	01000400	7MC	D	Y	
							0200/0500	B	Y	
D125	9	27A	G	1 2 0	5 6 8 0	05000900	INT CH27 ROV	A	Y	
D125	9	27A	G	1 4 6	5 1 5 5 6 5 9	20302300	9MC/FREQ	B	Y	
D125	9	27A	HOL	2 2	3 2 5 3	18002030	9MC GRP HOL	C	Y	
D125	9	27A	I	9	2 7 2 8 3 7 3 8	09001800	0730/2230	B	Y	
D125	9	27A	NOR	1 8	7 8 9 1 0 1 1	23000030	0100/0230	C	Y	
							6MC	C	Y	
D125	9	27A	YUG	2 5	5 4 5 6 5 9	02300500	AZM95	G	Z	

1	2	3	4	5	6	7	8	9	10	11
D125	11	1	ARS	20 28 37		2200 2300	2000/2200	B	Y	
							GRP 8,9,12,19,22,23	F	Y	
D125	11	1	ARS	23 6		2300 2400	DEL	F	X	
D125	11	1	CGO	20 27		1800 1900	1700/1800	B	Y	
D125	11	1	G	13 24 1 4 9 5 0 5 1 5 4 5 8 5 9		1400 1700	1500/1800	B	Y	
							INT CH1A URS	A	Y	
D125	11	1	IND	12 35 5 5 8 5 9 6 0		1000 1100	INT COCH URS	A	Y	
D125	11	1	PAK	5 0 3 7 3 9		1900 2000	1600/1930	B	Y	
							50KW CIRAF 37/39	E	X	
D125	11	2	ARS	6 3 9		0800 1000	0330/2100 , GRP4,5,7	F	Y	
							JEDDAH , AZM300/ND	F	X	
D125	11	2	AUS	46 8		1200 1400	15MC	C	Y	
D125	11	2	AUS	46 7		1400 1500	15MC	C	Y	
D125	11	2	AUS	48 6		1500 1600	15MC	C	Y	
D125	11	2	AUS	46 8		1200 1400	INT COCH CHN	D	X	
							15MC	G	Z	
D125	11	2	AUS	46 7		1400 1500	15MC	G	Z	
D125	11	2	AUS	46 6		1500 1600	15MC	G	Z	
D125	11	2	I	25 28 29		1300 1500	INT COCH CHN	D	Y	
							INT CH1A,CH2A,URS	D	Y	
D125	11	2	I	7 0 4 6 7 8 9 10		2200 0300	9MC	C	Y	
D125	11	2	I	7 9 11 12		1600 1900	1900/2000	B	Y	
							INT CH1A,CH2A B	D	Y	
D125	11	2	I	6 0 3 4 6 7 8 9		0300 0400	11MC/FREQ	C	Y	
D125	11	2	YUG	6 2 9		0700 0730	AZM45	F	X	
							CH18	F	X	
D125	11	2	YUG	17 36		0600 0700	CH18	C	Y	
D125	11	3	AUS	45 27 28		0600 0830	17MC	F	Y	
D125	11	3	CGO	17 8		0000 0200	0000/0500	B	Y	
D125	11	3	IND	8 8 4 9 5 0		2330 0100	INT CH4 PHL	A	Y	
D125	11	3A	G	8 7 4 6		2000 2100	2100/2300	B	Y	
							INT CH4 POR	A	Y	
D125	11	3A	G	15 0 12 13 14 15 16		2200 0300	INT CH4 G	A	Y	
							11MC/FREQ	B	Y	
D125	11	3A	G	16 6 12 13 14 15 16		2100 2200	2000/2100	B	Y	
							INT CH4 POR	A	Y	
D125	11	3A	HOL	20 6 3		0400 0530	0900/1030	C	Y	
D125	11	3A	HOL	20 6 3		0400 0530	15MC AZM80 CIRAF59	D	Y	
D125	11	4	G	4 28 29 30		0730 0830	0400/0500	A	Y	
							INT CH4A I	B	Y	
D125	11	4	G	9 4 28 29		0600 0630	INT CH11 BUL,ONU,TCH	A	Y	
D125	11	4	G	14 9 1 / 10		2200 0300	INT CH3A G	A	Y	
D125	11	4A	AUT	7 11 12 13 14 15		0230 0500	9MC CH26A	C	Y	
D125	11	4A	I	57 55 58 59 60		0500 0830	INT COCH EQA	A	Y	
D125	11	5	EGY	8 37 38 39 40 47 48		0400 1800	0400/2400	B	Y	
							ND	B	X	
D125	11	5	EGY	10 6 7 8		0000 0300	9MC	D	Y	
D125	11	5A	I	8 8 14 15 16		2300 0400	2200/0300	C	Y	
							CIRAF 12,14,19,16	C	X	
D125	11	6	ETH	3 4 6		0800 1900	10/20KW	F	X	
D125	11	6	ETH	10 6 7 8		0000 0200	100KW AZM312 18DB	F	Y	
							CIRAF 6,7,8,10	F	Y	
D125	11	6	YUG	26 57		2100 2200	2100/2130	F	X	
							CH18	C	Y	
D125	11	6A	NIG	10 46		0600 1600	11MC/FREQ	G	Z	
							20KW AZM55 6DB	F	Y	
D125	11	7	CAN	8 2 3		2200 0500	INT COCH F	A	Y	
D125	11	7A	I	8 7 12 14 15 16		0200 0300	0200/0400	C	Y	
D125	11	7A	I	6 9 11 12		0300 0400	11MC/FREQ	C	Y	
D125	11	7A	PAK	2 4 1		1100 1400	1200/1400 , 10DB	C	X	
D125	11	7A	PAK	2 7 4 0 4 1		0800 1100	0800/0930	F	X	
D125	11	8A	AFS	9 5 2 5 3		1400 1500	DEL	F	X	
D125	11	8A	AFS	9 5 2 5 3 5 8 5 9		1500 1600	DEL	F	X	
D125	11	8A	AFS	9 5 2 5 3		1600 1600	DEL	F	X	
D125	11	8A	CAN	22 56 60		0800 1100	INT CH9 HWA	A	X	
							9MC	B	X	
D125	11	8A	G	16 0 11 12		2200 0200	INT CH6 F,HNG	A	Y	
D125	11	9	ARS	9 36		1100 1400	REYADH , CIRAF 37	F	X	
							100KW AZM280 15DB	F	X	
							0800/0900	F	Y	
							GRP 8,12,19,20,22,23	F	Y	
D125	11	9A	G	15 5 1 / 10		2300 2400	0000/0200	B	Y	
							INT CH9 EQA	A	Y	
D125	11	10	IND	5 1 3 9 4 0		1530 1900	INT	G	Z	
D125	11	10A	D	27 10 11		0200 0500	AZM285	F	X	
D125	11	11	I	13 27		1300 1400	CIRAF 28,29	C	X	
D125	11	11	J	24 8 10		0300 0800	0400/0700	B	Y	
D125	11	11A	IND	4 1 3 9 4 0		0200 0330	INT CH11 I&R	G	Y	
							INT CH12A ARS	A	Y	
D125	11	12	D	25 6 7 8 9		2300 0200	AZM295/320	F	X	

1	2	3	4	5	6	7	8	9	10	11
0125	11	12A	ARS	5	39	04000800	GRP 4,6,7	F	Y	
0125	11	12A	ARS	12	50 54	02000400	AZM 75/100, CIRAF 50,54	F	X	
							GRP 8,9,19,20,22,23	F	X	
0125	11	12A	CAN	1	1 2	17000800	INT COCH HOL	A	Y	
							INT CH12 D	A	Y	
							INT CH13 HOL	A	Y	
0125	11	12A	G	18	8 10 11 12	10301130	INT CH13 POR	A	Y	
0125	11	12A	HOL	36	14	23300100	SEP CH13 HOL	C	Y	
0125	11	12A	NZL	5	56 62	18002100	INT CH12 CHN, LOR	A	Y	
0125	11	13	CAN	23	56 58 06 26 3	06000800	0300/0700	B	Y	
0125	11	13	HOL	2	28	17001800	INT	A	Y	
0125	11	13	HOL	21	59 60	04000600	0900/1100	C	Y	
0125	11	13	HOL	21	59 60	04000600	17MC AZM80 CIRAF59	B	Y	
0125	11	13	HOL	25	57	18002000	INT	A	Y	
0125	11	13	HOL	26	8	01000300	0100/0230	G	X	
0125	11	13	HOL	26	8	01000300	INT	A	Y	
0125	11	13	HOL	29	8	00001100	9MC 0100/0230	B	Y	
0125	11	13	HOL	33	11 12	03000400	0230/0400	C	X	
0125	11	13	SUI	11	46 47 48 57	20002200	21MC CH7A	B	Y	
0125	11	13A	IND	12	4 13 14 15	01000230	INT CH14A TCH	A	Y	
0125	11	14	NZL	7	56 62	18002000	INT CH13A UKR	A	Y	
0125	11	15	G	28	27 37	10001700	INT CH14A URS	A	Y	
0125	11	15	YUG	30	8 10	22300100	0100/0200	C	Y	
							AZM310 CIRAF 8	C	Y	
							0200/0300	C	Y	
							AZM280 CIRAF 10	C	Y	
							CH18	C	Y	
0125	11	16	AUS	21	45	09001800	INT COCH POR	D	Y	
							INT CH15 CHN	G	Z	
							INT CH18A URS	D	Y	
0125	11	16A	I	8	5 14 15 16	22002400	2200/0300	B	Y	
							AZM270 CIRAF 10,11,12	C	X	
							11MC/FREQ	C	Y	
0125	11	17A	AUS	44	27 28	06000700	0600/0900	B	Y	
							15MC	G	Y	
0125	11	17A	G	55	52 57	03450500	11MC/FREQ	B	Y	
0125	11	18	HOL	23	57	19002100	ADD 17MC CH11 1800/1900	F	Y	
0125	11	18	YUG	20	38	17301900	1730/1830	F	X	
0125	11	19	ARS	22	8	23002400	0000/0200	F	Y	
							GRP 8,9,12,19,20,23	F	Y	
0125	11	19	G	32	18 19 28 29	12001245	INT CH18A F	A	Y	
0125	11	19	G	107	28 36 39 40	18002100	INT CH18A F	A	Y	
							11MC/FREQ	B	Y	
0125	11	19	G	163	1 / 10	04000800	11MC/FREQ	B	Y	
0125	11	19	YUG	28	13 14	02400400	0000/0100	C	Y	
							CIRAF 13	F	X	
							CH18	C	Y	
0125	11	20	G	74	47 48 52 53 57	18002000	1800/2015	B	Y	
							INT CH20A SUI	A	Y	
0125	11	20	G	80	37 38 46	20002300	INT CH20A HOL	A	Y	
0125	11	20	G	81	47 48 52 53 57	20002300	11MC/FREQ	C	Y	
0125	11	20	IND	42	39 40	02000330	INT CH19A SYR	D	Y	
0125	11	20	IND	88	49 50	23000100	INT CH21 PHL	A	Y	
0125	11	20A	HOL	27	4	22002400	INT	A	Y	
0125	11	20A	SUI	12	40	17001900	15MC CH8	B	Y	
							1530/1830	B	Y	
0125	11	21	AUS	36	41 49 54	10001530	CIRAF 49,54	F	X	
							INT COCH G	D	Y	
							15MC 17MC	B	Y	
0125	11	21	G	158	12 13 14 15 16	04000500	2200/0100	B	Y	
							11MC/FREQ	B	Y	
0125	11	21	G	159	14 15 16	22000300	INT CH21A ROU	A	Y	
							11MC/FREQ	B	Y	
0125	11	21	G	188	12 13 14 15 16	03000400	2200/2300	B	Y	
							11MC/FREQ	B	Y	
0125	11	21	NGN	4	27	19002000	11MC/FREQ 7MC 1800/1900	B	Y	
0125	11	21A	D	24	6 7 8 9	23000600	AZM295/320	F	X	
0125	11	22	G	51	37 38 39 46 47 48	03450515	11MC/FREQ	B	Y	
0125	11	22	G	157	10 11 12	00300330	INT CH21A D	A	Y	
0125	11	22	G	162	10 11 12	22002300	INT CH21A ROU	A	Y	
0125	11	22A	HOL	37	13 15	02300330	9MC 2330/0100	B	Y	
0125	11	22A	U	19	41	17001900	1730/1930	B	Y	
0125	11	22A	SUR	2	11	23000030	9MC/CH5	B	Y	
0125	11	23	ALB	11	7 8	00000200	AZM310/250 CIRAF 7,8,13	F	Y	
0125	11	23	S	31	8 27 28 29 36 37 38	09001800	INT CH23A URS	G	Z	
0125	11	24	G	73	27 37 38 46	17001900	11MC/FREQ	B	Y	
0125	11	24	HOL	26	6 9	21002200	9MC 2200/2400	B	Y	
0125	11	24	HOL	31	8 9	20002100	2200/2330	B	Y	
0125	11	24A	CAN	20	10 11 12	04000600	0300/0600	F	Y	
							INT COCH TGR/USA	A	Y	
							INT CH25 USA	A	Y	

1	2	3	4	5	6	7	8	9	10	11
D	12	5	11 25	AUS	2341	1500 2000	1400/2000	F	Y	
							CIRAF 41,49	F	X	
							INT CH25A URS	A	Y	
D	12	5	11 25	ETH	9 18 27 28	2000 2300	100KW AZM336/349 1708	F	X	
D	12	5	11 25A	SUI	16 44 45	1430 1600	1300/1430	B	Y	
D	12	5	11 26	HOL	7 38 39	1730 1900	1700/1800	B	Y	
D	12	5	11 26	HOL	7 38 39	1730 1900	INT	A	Y	
D	12	5	11 26	I	6 35 55 9	2100 2200	6MC	C	Y	
D	12	5	11 26	MLA/G	16 39 40 41	0000 0200	INT CH26A URS	C	Y	
D	12	5	11 26A	CHL	21 14 16	1500 1700	1700/2000	C	Y	
D	12	5	11 26A	D	8 46 47	1700 2100	AZM160/200	F	Y	
D	12	5	11 27	BEL	4 52	2300 0330	2300/0200	C	X	
							9MC	C	Y	
D	12	5	11 27A	IND	4 6 41 42	1000 1200	INT CH27 D/USA	A	Y	
D	12	5	11 27A	IND	4 6 41 42	1000 1200	1200/1330	C	Y	
D	12	5	11 27A	PAK	7 40 41	1330 1700	AZM 278	E	X	
D	12	5	11 27A	PAK	4 8 39 40	1730 1900	1800/1930	B	Y	
							50KW	E	X	
D	12	5	11 27A	PAK	4 6 27 28 39	1930 2100	2030/2130	B	Y	
							7MC	D	Y	
D	12	5	11 27A	PAK	5 52 8	1900 1930	1730/1800	B	Y	
							CIRAF 39,40	F	X	
D	12	5	15 1	CAN	13 27	1600 2100	1600/2300	C	X	
							CIRAF 27,28	F	X	
D	12	5	15 3	SUI	8 52 57	0500 0630	21MC CH2A	C	Y	
D	12	5	15 3	SUI	1 14 6 47 48 57	1600 1800	21MC CH7A	B	Y	
D	12	5	15 3A	AFS	8 52 53	1200 1400	DEL	F	X	
D	12	5	15 4	AUS	26 45	2200 2400	21MC 17MC	C	X	
D	12	5	15 4	I	38 52 53 57	1630 1900	150KW	C	X	
							CIRAF 47,52,53,57	C	X	
D	12	5	15 4	I	4 0 39 48	0800 0630	150KW	C	X	
							INT CH3A,CH4A URS	A	Y	
D	12	5	15 4	I	64 43 44 45	0630 1000	INT CH3A,CH4A URS	C	Y	
							INT CH4A AUS	C	Y	
D	12	5	15 4	I	7 7 11 12	1900 2000	INT CH3A B	C	Y	
D	12	5	15 4A	AUS	13 58	0230 1000	INT CH5 J	G	Z	
D	12	5	15 5	J	5 44 64	2200 0900	2000/0900	F	Y	
D	12	5	15 5	J	6 44	1000 1200	GRP 7 9MC CH27A	B	Y	
D	12	5	15 5A	AUT	10 41	1200 1400	1300/1500 1330/1530	C	Y	
D	12	5	15 5A	YUG	16 31 41	0530 0630	0530/0600 AZM75 CIRAF 31	F	X	
							0600/0630 AZM90 CIRAF 41	F	X	
D	12	5	15 5A	YUG	19 37	1500 1530	CIRAF 40	C	Y	
D	12	5	15 6	CLN	15 29 39 40 41	0200 0500	0130/0500	B	Y	
D	12	5	15 6A	AUS	17 61 62	0830 1000	INT CH7 RYU/USA	A	Y	
D	12	5	15 7A	AUS	27 45	2200 2330	17MC 21MC	C	X	
D	12	5	15 7A	I	29 52 53 57	1030 1300	INT	A	Y	
D	12	5	15 7A	I	8 8 12 13 15	2300 0100	2200/0300	C	Y	
D	12	5	15 8A	ALB	13 13 14 15	0000 0200	DEL	F	X	
D	12	5	15 10A	IND	6 45 25 35 7	0400 0600	INT CH10 INS	A	Y	
D	12	5	15 10A	J	17 41	1530 1730	GRP 15 11MC CH22A	B	Y	
D	12	5	15 11A	CGO	15 8	1300 1400	26,21 OR 17MC	C	X	
D	12	5	15 11A	CGO	16 6	2300 0200	9 OR 11MC	B	Y	
D	12	5	15 12	SUI	15 39 40	0700 0900	15MC CH27A	B	Y	
							1700/1830	B	Y	
D	12	5	15 12A	AUS	15 50 63	0930 1030	0930/1130	F	X	
D	12	5	15 13	CLN	14 16 28 29 39 40 41 49	0130 0400	0130/0430	B	X	
D	12	5	15 13A	G	1 19 56 60	0800 1100	INT CH14 POR	A	Y	
D	12	5	15 14	HOL	10 41	1200 1400	1530/1700	B	Y	
D	12	5	15 14A	IND	4 7 41 42	1000 1200	9MC 1200/1330	C	Y	
D	12	5	15 14A	J	22 51	0700 0900	0630/0830	C	Y	
D	12	5	15 15A	IND	7 55 25 35 7	1830 2030	INT	G	Z	
D	12	5	15 16A	I	62 4 6 /13	1600 1630	CIRAF 4,6/15	C	X	
D	12	5	15 16A	PAK	41 55 58 59 60	0900 1000	17MC	D	Y	

1	2	3	4	5	6	7	8	9	10	11
D	12	5	15	17A	MLA/G	11	43	44	49	11301300	INT CH18 ISR	A	Y	
D	12	5	15	18	CAN	15	18	28		15002100	1500/2200	C	X	
											AZM50/60	F	X	
											CIRAF 18,27,28,29	F	X	
											17MC	C	Y	
											INT COCH ISR	A	Y	
											INT CH17A E	A	Y	
											INT CH18A IND	A	Y	
D	12	5	15	18	FNL	4	27	28	37	07001000	GRP 4 1400/1700	C	Y	
D	12	5	15	18A	IND	5	9	52	53	57	04000530	INT CH19 URS	A	Y	
D	12	5	15	18A	IND	10	14	9	50		13301500	INT CH17A MLA/G	A	Y	
D	12	5	15	18A	IND	12	25	6			08001000	INT CH17A MLA/G	A	Y	
												INT CH19 URS	A	Y	
D	12	5	15	18A	IND	12	25	5	58	59	60	10001100	INT CH17A MLA/G	A	Y	
D	12	5	15	18A	PAK	8	41				06000800	CIRAF 40,41	F	X	
D	12	5	15	19A	AFS	10	47	48			05301000	DEL	F	X	
D	12	5	15	19A	AFS	10	47	48			14001700	DEL	F	X	
D	12	5	15	20	ETH	11	14	15			00000100	0200/0300	F	Y	
												100KW AZM270 1708	F	X	
												CIRAF 12,13	F	X	
D	12	5	15	20	G	12	75	6	58	59	60	08001000	INT CH20A D	A	Y	
D	12	5	15	21	HOL	12	45				10301200	INT	A	Y	
D	12	5	15	21	HOL	13	49				12301700	INT	D	Y	
D	12	5	15	21	HOL	18	63				04000600	21MC AZM55 CIRAF55,60	D	Y	
D	12	5	15	21	HOL	18	63				04000600	0900/1100	C	Y	
D	12	5	15	22	HOL	19	63				04000530	0900/1030	C	Y	
D	12	5	15	22	HOL	19	63				04000530	17MC AZM55 CIRAF55,60	D	Y	
D	12	5	15	22A	AUS	4	04	14	95	4	23000700	CIRAF 49,54	F	Y	
												21MC 17MC	F	Y	
D	12	5	15	23	FNL	4	27	28	37		14001700	GRP 4 0700/1000	C	Y	
D	12	5	15	24	MLA/G	14	34	43	44	45	49	13001700	INT COCH TGR/USA	C	Y	
D	12	5	15	24	MLA/G	23	1	/10				13001700	15MC/FREQ	B	Y	
D	12	5	15	25	I	4	23	9	40	41	48	10301300	INT CH24A KOR	C	Y	
													INT CH25A BRM	C	Y	
D	12	5	15	27	BEL	5	52				07001200	21MC	C	Y	
D	12	5	15	28A	ARS	8	38				06000800	REYADH , 100KW	F	X	
												11MC	F	Y	
												GRP 9,12,19,20,22,23	F	Y	
D	12	5	15	28A	ARS	8	36				17002000	DEL	F	X	
D	12	5	15	28A	ARS	10	39				03000600	DEL	F	X	
D	12	5	15	28A	ARS	10	39				14001700	DEL	F	X	
D	12	5	15	28A	ARS	11	46				12001400	DEL	F	X	
D	12	5	15	28A	ARS	15	49				10001200	REYADH , 0900/1200	F	X	
												100KW AZM75/90	F	X	
												CIRAF 49,50,54	F	X	
D	12	5	15	29	G	12	35	5	6	58	59	06000900	INT CH29A MEX	A	Y	
D	12	5	15	29A	AUS	22	49				11001400	1100/1500	F	Y	
												INT CH30 URS	A	Y	
D	12	5	15	29A	AUS	28	54				22002300	CIRAF 49,54	F	X	
D	12	5	15	29A	AUS	28	4	14	95	4	23000300	CIRAF 49,54	F	X	
												21MC 17MC	C	X	
D	12	5	15	29A	AUS	29	49	54			10301100	1000/1100	F	X	
D	12	5	15	31A	I	7	2	4	6	7	8	9	10	16001730	NOREQ	C	X	
D	12	5	15	31A	I	7	31	1	12					16001630	150KW	C	X	
D	12	5	15	32	NOR	19	44	45	51	55	59	60		10301200	1000/1130	C	X	
D	12	5	15	32A	I	4	7	39						06000700	AZM90 CIRAF 40,41	C	X	
D	12	5	15	33	PAK	5	12	8	37	38	39	40		16001630	1730/1600	BD	Y	
															9MC	G	Z	
D	12	5	15	34	IND	4	4	38	39					04300600	INT CH33 URS	A	Y	
D	12	5	15	35	G	6	7	37	46					10302100	15MC/FREQ	B	Y	
D	12	5	15	35	G	11	6	5	13	55	58	59		05000900	15MC/FREQ	B	Y	
D	12	5	15	35	G	13	5	4	14	9	50	54		14001700	15MC CHX	B	Y	
D	12	5	17	1	G	7	24	7	48	52	53	57		16001715	INT CH1A G	A	Y	
D	12	5	17	1	G	7	44	7	48	52	53	57		17151800	INT CH1A G	A	Y	
D	12	5	17	1	G	9	9	28	38	39				12001400	INT CH1A G	A	Y	
D	12	5	17	1	G	12	15	5	5	58	59			05000900	17MC/FREQ	B	Y	
D	12	5	17	1	G	14	04	34	44	45				11001200	INT CH1A G	A	Y	
D	12	5	17	1	G	14	34	0	41	49	50	54		14001600	INT CH1A G	A	Y	
D	12	5	17	1A	G	16	6	1	/10					11301600	INT CH1 G	A	Y	
															17MC/FREQ	B	Y	
D	12	5	17	1A	G	17	0	10	11	12				16002100	INT CH1 G	A	Y	

1	2	3	4	5	6	7	8	9	10	11
012517		2A	I	87	4 6 7 8 9 10	1800 1700	1630/1730	C	Y	
							AZM310	C	X	
012517		2A	I	74	11 12	1530 1600	1600/1630	C	Y	
012517		2A	I	76	11 12	1900 2000	INT CH3 CAN	A	Y	
012517		2A	I	83	11 12	1500 1530	INT CH3 AUS	A	Y	
012517		3	CAN	24	57	1800 2000	CIRAF 46,57	F	Y	
							INT CH2A FNL,I	F	Y	
012517		3	O	19	55 58 59	0800 1000	AZM70	F	X	
012517		4	G	136	41 49 54	1030 1430	INT CH3A F	A	Y	
012517		4A	AUS	20	56 61	0230 0400	INT COCH EQA	A	Y	
							0230/0430	F	X	
012517		4A	ETH	84	752	1200 1300	100KW AZM270 1608	F	X	
							CIRAF 46,47	F	X	
012517		4A	ETH	84	752	1300 1400	100KW AZM240 1608	F	X	
							CIRAF 52	F	X	
012517		4A	ETH	85	357	1800 2000	100KW AZM199 1608	F	X	
012517		5	G	98	39 47 48	1530 1800	17MC CHX	B	Y	
012517		5	G	108	38 47 48	1600 1800	17MC CHX	B	Y	
012517		5	G	117	51 55 58 59	0600 0900	0500/0900	B	Y	
012517		5	G	132	41 49 50 51 54 58 59	0930 1500	INT CH4A ETH	A	Y	
012517		5	G	137	34 44 45	0900 0930	17MC CHX	B	Y	
012517		5A	AFS	10	47 48	1000 1400	AZM132 CIRAF 55,58,59	F	Y	
012517		6	AUS	30	45	2200 2300	2130/2300	F	X	
012517		6	IND	71	48 52 53	1600 1800	INT CH5 G	A	Y	
012517		6A	I	52	37 38 48	1000 1200	1000/1300	C	Y	
							CIRAF 37,38,39,48	C	Y	
012517		7	HOL	11	44	1030 1200	INT	A	Y	
012517		8	CLN	18	30 40 41	0300 1100	0430/1100	F	X	
012517		8	CLN	19	30 40 41	1100 1600	1130/1730	B	Y	
012517		9	ETH	13	54	1400 1500	100KW AZM90 1708	F	X	
012517		9	I	58	51 54 55 58 59 60	0630 1100	INT CH6A F	A	Y	
012517		9	MLA/G	3	55 56 58 59 60	1200 1400	17MC CHX	B	Y	
012517		9	MLA/G	18	40 41	1500 1800	INT CH6A F	A	Y	
012517		10	G	125	44 51	0800 0930	INT CH9A NOR	A	Y	
012517		10A	I	32	48 52 53 57	1400 1600	1500/1630	C	Y	
012517		11	HOL	16	54	1400 1700	INT	A	Y	
012517		11	HOL	175	155	1100 1400	INT	A	Y	
012517		12	AUS	22	49	0800 1130	0800/1200	F	X	
012517		13	PAK	34	41 49	1200 1330	1200/1230	F	X	
012517		13	PAK	37	49 50	0500 0530	CIRAF 43/45,50	E	X	
012517		13	PAK	37	50 54	1100 1200	CIRAF 49,50	F	X	
012517		13	PAK	37	49 50	1330 1400	1230/1330	B	X	
							CIRAF 50,54	E	X	
012517		13	PAK	53	48 52	0330 0500	0400/0600	B	Y	
012517		13A	CAN	14	27	1100 1400	1100/1500	F	X	
							AZM50/60	F	X	
							CIRAF 18,27,28,29	F	X	
012517		14	AFS	13	18 27 28	1600 1700	AZM312/347	F	X	
							CIRAF 2/9,18,27,28	F	X	
012517		14	AFS	17	2 / 9	1700 1900	AZM312/347	F	X	
							CIRAF 2/9,18,27,28	F	X	
012517		14	EGY	9	41 44 49 51 54	1200 1600	1200/1800	F	Y	
012517		15	ALB	9	41 58 59	1100 1200	1100/1300	F	Y	
							AZM85/100	F	X	
012517		15	ALB	10	41 58 59	0900 1100	AZM85/100 CIRAF 58,59	F	X	
012517		17	AUS	166	063	2300 0500	2300/0800	F	Y	
012517		17	AUS	29	41	0800 0830	INT CH16A URS	A	Y	
							AZM342 CIRAF 44,50	F	X	
012517		17	AUS	29	44 50	0630 0900	INT CH18A URS	A	Y	
012517		18	YUG	24	40 49	1400 1500	CH7	C	Y	
012517		18A	BEL	7	52	0900 1700	21MC	C	Y	
012517		18A	NZL	8	56	0200 0400	0200/0500	B	X	
							AZM25 , CIRAF 58,62	B	X	
012517		19	G	102	28 29 30 39 40	1500 1630	1530/1730	B	Y	
							INT CH18A BEL	A	Y	
							17MC/FREQ	C	Y	
012517		19	G	172	1 / 10	1630 2200	INT CH18A BEL	A	Y	
							17MC/FREQ	B	Y	
012517		19A	HOL	40	9	1430 1530	INT	A	Y	

1	2	3	4	5	6	7	8	9	10	11
D	125	21	1	AUS	3241	0200	0800	CIRAF 41,49	F	X
D	125	21	1A	I	681112	1700	1800	1630/1730	C	X
D	125	21	4	AUS	24414954	1000	1200	INT CH3 URS	G	Y
D	125	21	5	IND	1044950 54	1100	1500	INT CH8 IND	A	Y
D	125	21	5A	ETH	84752	0800	0730	100KW AZM270 16DB	F	X
								CIRAF 46,47	F	X
D	125	21	5A	ETH	84752	0730	0900	100KW AZM242 16DB	F	X
								CIRAF 52	F	X
D	125	21	7	G	775357	1600	1730	INT CH6A I	A	Y
D	125	21	7	G	963940	1000	1030	INT CH6A F	A	Y
D	125	21	7	G	1245155556585 9	0800	0900	21MC/FREQ	C	Y
D	125	21	7	G	139414954	1030	1430	INT CH6A F	A	Y
D	125	21	7A	I	3548474852	0900	1000	AZM130/220	C	X
								CIRAF 46,47,48	C	X
D	125	21	7A	I	4348	1000	1300	INT	A	Y
D	125	21	8	IND	7048525 3	1600	1800	INT CH7 G	A	Y
D	125	21	9	J	1150	1000	1200	1030/1230	C	Y
D	125	21	9	J	1254	1200	1400	1230/1430	C	Y
D	125	21	10A	I	3052535 7	1200	1300	NOREQ	C	X
D	125	21	11	ARS	1354	1000	1100	DEL	F	X
D	125	21	11	PAK	324149	0530	0900	0600/0930	B	Y
D	125	21	11	PAK	524852	0330	0530	0400/0600 , 17MC	B	Y
D	125	21	11	SUI	1240	1430	1530	15MC CH8	B	Y
								1500/1530	B	Y
D	125	21	11A	I	3052535 7	0800	1100	1030/1200	C	Y
								INT	A	Y
D	125	21	11A	I	3352535 7	1500	1600	1500/1630	C	Y
								INT CH12 CHN	A	Y
D	125	21	12	AFS	1418272 8	1600	1700	1200/2000	F	Y
								CIRAF 18,27,28,37,38	F	X
D	125	21	13	IND	69485253	1630	1830	INT CH12 AFS	A	Y
D	125	21	13	IND	72485253	1445	1630	INT CH12 AFS	A	Y
D	125	21	13A	G	173 1 /10	1500	2200	INT CH14 F	A	Y
								21MC/FREQ	B	Y
D	125	21	14A	G	6946	1000	1030	INT CH15 YUG	A	Y
D	125	21	14A	G	17116	1500	1700	INT CH14 F	A	Y
D	125	21	15	BEL	954	1100	1200	1200/1300	C	Y
D	125	21	16	G	1092930 39	1400	1500	1700/1800	B	Y
D	125	21	16	G	1294149 54	0900	0930	INT CH16A I	A	Y
D	125	21	16	G	1354149 5054	0930	1400	INT CH16A I	A	Y
D	125	21	16A	AFS	1146474 8	1300	1800	CIRAF 46,47,48,52,53	F	X
D	125	21	16A	I	5237383948	1000	1300	INT CH16 G	A	Y
D	125	21	17	AUS	3041495 4	0600	1000	CIRAF 49,54	F	X
D	125	21	17	AUS	3344455 0	2200	2300	15MC	F	X
D	125	21	17	AUS	3949	1000	1100	1100/1400	F	Y
								15MC	F	Y
D	125	21	18	ARS	145054	0300	0500	DEL	F	X
D	125	21	18	ARS	164143	1200	1400	DEL	F	X
D	125	21	18	AUS	3641495 4	2300	2400	CIRAF 49,54	F	X
D	125	21	20	EGY	75253	1600	1800	1300/2000	B	Y
								17MC CH3A	C	Y
D	125	21	20	G	9639474 8	1030	1530	INT CH19A BUL,FNL	A	Y
D	125	21	20	G	1255155558 59	0900	1030	0930/1100	B	Y
D	125	21	23	G	8536374 6	1000	1600	INT CH22A F	A	Y
D	125	21	26	CGO	1354	0800	1000	0900/1100	B	Y
D	125	21	26	ETH	1240414 9	1500	1600	100KW AZM62 16DB	F	X
D	125	21	27	NGN	354	1200	1500	21MC/FREQ 15MC/11MC/9MC	B	Y
D	125	21	29	NOR	1036466 6	1600	1800	1600/1730	C	X
D	125	21	29	NOR	2141495 05458	1300	1400	1300/1430	C	Y
D	125	21	29A	I	413940	0900	1200	1000/1300	C	X
								INT	A	Y

1	2	3	4	5	6	7	8	9	10	11
D125	26	12	BVI	25	13 14 15 16	1400 1600	1700/1900	C	X	
D125	26	13	AFS	12	27 28 37 38	1200 1400	CIRAF 18,27,28	F	X	
D125	26	13	AFS	19	27 28 37 38	0900 1200	0800/1200	F	Y	
							CIRAF 18,27,28	F	X	
D125	26	13	AFS	19	27 28 37 38	1400 1600	CIRAF 18,27,28	F	X	
D125	26	34	AFS	16	9 / 14 27 28	1300 2100	1600/1700	F	X	
							20KW AZM347	F	X	
							CIRAF 18,27,28	F	X	
D125	26	41	AFS	15	18 27 28	1200 1400	50KW AZM250/280/310/347	F	X	
							CIRAF 9/14,27,28	F	X	
D125	26	42	ARS	16	50	0500 0600	DEL	F	X	
D125	26	42	ARS	17	50 54	0900 1200	DEL	F	X	
D125	26	42	ARS	19	43	0600 0700	CIRAF 43,44	F	X	
							1200/1300	B	Y	
							11MC	F	Y	
							GRP 8,9,12,20,22,23	F	Y	
D125	26	42	ARS	19	41	0700 0900	CIRAF 40,41	F	X	
							11MC , 1300/1500	F	Y	
							GRP 8,9,12,20,22,23	F	Y	
D125	26	42	ARS	21	28	1200 1300	DEL	F	X	
D125	26	42	ARS	24	8 13 14 15	1300 1600	DEL	F	X	
D125	26	49	E	17	6/ 14 52 53 57	1400 0400	DEL	C	X	
D125	7	17	ALB	NA	27 38 39	0600 0700	RST 100KW AZM120/300	F	Y	TIRANE
D125	7	14	ALB	NA	27	1600 2000	RST 60KW AZM300 18DB	F	Y	TIRANE
D125	9	2	ALB	NA	7 8	1200 1300	RST 100KW AZM310 150B	F	Y	TIRANE
D125	17	15	ALB	NA	41	1300 1400	RST 60KW AZM85 18DB	F	Y	TIRANE
D125	11		BEL	NA	52	0500 0600	RST 100KW AZM187 12DB	C	Y	BRUXELLES
D125	15		BEL	NA		1700 1800	RST 100KW AZM162 18DB	B	X	
D125	8		CGO	NA	32	1600 2000	3KW ND	B	Y	STANLEYVILLE
D125	11		CGO	NA	8	2300 2400	50KW AZM300 12DB	B	Y	LEOPOLDVILLE
D125	11		CGO	NA	27	1900 2100	50KW AZM350 12DB	B	Y	LEOPOLDVILLE
D125	11		CHL	NA	14 16	0000 0400	RST 5KW AZM360 8DB	C	Y	SANTIAGO
D125	17		CLN	NA	18 28 29 39 40 41 49	1130 1730	RST 35KW AZM350 8DB	B	Y	EKALA
D125	11		D	NA	10 11	0200 0600	RST 100KW AZM285 20DB	B	Y	JULICH
D125	6		FLK	NA	16	2100 0200	RST 0,5KW ND	E	X	PT STANLEY
D125	15		FNL	NA	6 7 8	1300 1500	100KW AZM305 20DB	C	X	
D125	15		FNL	NA	12 13 14 15	1000 1200	100KW AZM234 20DB	C	X	
D125	6		G	NA	27 28	2200 2400	RST 100KW AZM146 17DB	B	Y	DAVENTRY ETC
D125	11		G	NA	47 48 52 53 57	2015 2100	RST 100KW AZM160 20DB	B	Y	DAVENTRY ETC
D125	6		HOL	NA	18 27 28 37	2100 2300	40KW ND	B	Y	LOPIK
D125	7		HOL	NA	27	2100 2200	100KW AZM90 8DB	B	Y	LOPIK
D125	7		HOL	NA	28	2100 2200	100KW AZM90 8DB	B	Y	LOPIK
D125	7		I	NA	37	2100 2200	RST 60KW AZM270 12DB	C	Y	ROMA
D125	9		I	NA	37	2100 2200	RST 100KW AZM270 15DB	C	Y	ROMA
D125	9		I	NA	27 28 29 39	1730 2200	RST 100KW ND 6DB	C	Y	ROMA
D125	11		I	NA	27 28 29 39	1730 2200	RST 150KW ND 8DB	C	Y	ROMA
D125	7		IND	NA	37 38 39	1845 2000	RST 100KW AZM282 12DB	C	Y	DELHI
D125	7		IND	NA	41	1300 1430	RST 100KW ND	C	Y	DELHI
D125	9		IND	NA	27 28 37	1945 2100	RST 100KW AZM312 16DB	C	Y	DELHI
D125	9		IND	NA	37 38 39	1845 2000	RST 100KW AZM282 16DB	C	Y	DELHI
D125	9		IND	NA	38 39	1745 2000	RST 100KW AZM282 16DB	C	Y	DELHI
D125	9		IND	NA	41	1300 1430	RST 20KW ND	C	Y	DELHI
D125	11		IND	NA	38 39	1745 2000	RST 100KW AZM282 16DB	C	Y	DELHI
D125	15		IND	NA	42 43 44	1215 1330	RST 100KW AZM65 16DB	C	Y	DELHI
D125	15		IND	NA	46	1815 1930	RST 100KW AZM102 16DB	C	Y	DELHI
D125	11		J	NA	49	1400 1600	RST 10DKW AZM257 9DB	B	Y	NAZAKI
D125	26		NOR	NA	36 46 66 67	1000 1130	RES 10KW AZM225 20DB	E	X	FREDRIKSTAD
D125	26		NOR	NA	41 49 50 54 58	1300 1430	RES 10KW AZM95 20DB	E	X	FREDRIKSTAD
D125	26		NOR	NA	13 15 16 36 46	1600 1730	RES 10KW AZM225 20DB	E	X	FREDRIKSTAD
D125	11		PAK	NA	41	0930 1200	10KW AZM137 6DB	B	Y	KARACHI
D125	11		PAK	NA	40 41	0700 0900	10KW AZM227 6DB	B	Y	LAHORE
D125	11		AFS	NEW	57	0600 1600	20KW ND	F	Y	BLOEMFONTEIN
D125	11		AFS	NEW	57	0600 1600	20KW ND	F	Y	BLOEMFONTEIN
D125	11		AFS	NEW	57	0600 1600	20KW ND	F	Y	BLOEMFONTEIN
D125	15		AFS	NEW	57	0730 1300	20KW ND	F	X	BLOEMFONTEIN
D125	15		AFS	NEW	57	0730 1300	20KW ND	F	X	BLOEMFONTEIN
D125	15		AFS	NEW	57	0730 1300	20KW ND	F	Y	BLOEMFONTEIN

1	2	3	4	5	6	7	8	9	10	11
D125	9		CGO	NEW	52	0430 0700	50KW ND	F	X	LEOPOLDVILLE
D125	11		CGO	NEW	52	1430 2230	50KW ND	F	X	LEOPOLDVILLE
D125	11		CGO	NEW	52	0700 1300	50KW ND	F	X	LEOPOLDVILLE
D125	7		CLN	NEW	41	0100 0400	7,5KW AZM350 8DB	F	X	EKALA
D125	7		CLN	NEW	41	1130 1730	7,5KW AZM350 8DB	F	Y	EKALA
D125	9		CLN	NEW	41	0430 1130	7,5KW AZM350 8DB	F	Y	EKALA
D125	6		CTO	NEW	46	0600 2300	5KW ND	F	X	ACCRA
D125	6		CTO	NEW	46	0600 2300	2,5KW ND	F	X	ACCRA
D125	6		CTO	NEW	46	0600 2300	5KW ND	F	X	ACCRA
D125	6		CTO	NEW	46	0600 2300	5KW ND	F	Y	ACCRA
D125	6		CTO	NEW	46	0600 2300	5KW ND	F	Y	ACCRA
D125	9		CTO	NEW	46	0600 2300	5KW ND	F	X	ACCRA
D125	9		CTO	NEW	46	0600 2300	5KW ND	F	X	ACCRA
D125	7	15	CVA	NEW	27 37	1300 1430	100KW AZM340 15DB	F	Y	S MARIA DI G
D125	9	4A	CVA	NEW	4049	0000 0200	100KW AZM85 15DB	F	Y	S MARIA DI G
D125	9	4A	CVA	NEW	27 28 29 37	1600 1700	100KW ND	F	Y	S MARIA DI G
D125	9	4A	CVA	NEW	4954	2200 2300	100KW AZM85 15DB	F	Y	S MARIA DI G
D125	9	9	CVA	NEW	6 7 8 9	2300 0200	100KW AZM325 15DB	F	Y	S MARIA DI G
D125	11	3	CVA	NEW	4647	0500 0700	100KW AZM193 15DB	F	Y	S MARIA DI G
D125	11	3	CVA	NEW	27 28 29 37	0830 1000	100KW ND	F	X	S MARIA DI G
D125	11	3	CVA	NEW	27 28 29 37	2000 2200	100KW ND	F	X	S MARIA DI G
D125	11	6	CVA	NEW	5558	1900 2100	100KW AZM70 18DB	F	Y	S MARIA DI G
D125	11	6	CVA	NEW	4445	2100 2300	100KW AZM56 18DB	F	Y	S MARIA DI G
D125	15	25	CVA	NEW	5154	0400 0600	100KW AZM75 18DB	F	X	S MARIA DI G
D125	15	25	CVA	NEW	27 28 29 37	1030 1300	100KW ND	F	Y	S MARIA DI G
D125	15	25	CVA	NEW	27 28 29 37	1700 1800	100KW ND	F	Y	S MARIA DI G
D125	15	25	CVA	NEW	4757	1900 2100	100KW AZM175 18DB	F	Y	S MARIA DI G
D125	15	25	CVA	NEW	5051	2100 2200	100KW AZM75 18DB	F	X	S MARIA DI G
D125	17	12	CVA	NEW	4853	1400 1600	50KW AZM140 18DB	F	Y	S MARIA DI G
D125	17	12	CVA	NEW	5560	1900 2100	50KW AZM90 18DB	F	Y	S MARIA DI G
D125	17	13A	CVA	NEW	4857	0600 0730	50KW AZM175 15DB	F	X	S MARIA DI G
D125	17	13A	CVA	NEW	12 13 14 15 16	2200 2400	50KW AZM270 18DB	F	Y	S MARIA DI G
D125	21	20A	CVA	NEW	7 11 14	1600 1800	50KW AZM250/320 15DB	F	X	S MARIA DI G
D125	21	20A	CVA	NEW	13 14 15 16	2300 0100	50KW AZM240 15DB	F	Y	S MARIA DI G
D125	21	27	CVA	NEW	4445	1030 1200	50KW AZM58 18DB	F	Y	S MARIA DI G
D125	7		E	NEW	28 29	1700 2100	100KW AZM45 6DB	F	Y	ARGANDA
D125	9		E	NEW	27	1800 2200	100KW AZM45 6DB	F	Y	ARGANDA
D125	9		E	NEW	28 29	1700 2100	100KW AZM45 6DB	F	Y	ARGANDA
D125	9		E	NEW	36 37	1100 1500	100KW AZM160 6DB	F	Y	ARGANDA
D125	9		E	NEW	6 7 8 9 10 11	0000 0400	6/9MC 100KW AZM300 18DB	F	Y	ARGANDA
D125	9		E	NEW	6 7 8 9 10 11	2200 2400	6/9MC 100KW AZM300 18DB	F	Y	ARGANDA
D125	9		E	NEW	12 13 14 15 16	0000 0400	6/9MC 100KW AZM240 18DB	F	Y	ARGANDA
D125	9		E	NEW	12 13 14 15 16	2200 2400	6/9MC 100KW AZM240 18DB	F	Y	ARGANDA
D125	6		EGY	NEW	39	1600 1900	100KW AZM380 9DB	BF	Y	ABU ZAABAL
D125	11		EGY	NEW	40	1400 1600	100KW AZM68 9DB	BF	Y	ABU ZAABAL
D125	15		EGY	NEW	46	1500 2200	100KW AZM245 15DB	BF	Y	ABU ZAABAL
D125	15		EGY	NEW	38 39	0400 2400	100KW ND	F	Y	ABU ZAABAL
D125	17		EGY	NEW	50	1130 1300	100KW AZM50 15DB	BF	Y	ABU ZAABAL
D125	17		ETH	NEW	38	1800 1900	50KW AZM349			ADDIS ABEBA
D125	17		ETH	NEW	39	1700 1800	50KW AZM19			ADDIS ABEBA
D125	21		ETH	NEW	37	1900 2000	50KW AZM312			ADDIS ABEBA
D125	6		I	NEW	18 19 27 28 29 30 *	2200 0600	25KW ND, * 37/40,46/46	F	Y	CALTANISSETTA
D125	9		I	NEW	18 19 27 28 29 30 *	2200 0600	25KW ND, * 37/40,46/48	F	Y	CALTANISSETTA
D125	9		IOB	NEW	11	1300 2000	5KW ND	F	X	GRENADA
D125	9		IOB	NEW	11	1000 0300	5/50KW AZM294 10DB	F	Y	GRENADA
D125	6	17A	J	NEW	44 45 64	1000 1500	50KW AZM11/254 5DB	F	Y	
D125	6	17A	J	NEW	44 45 64	2000 2300	50KW AZM11/254 5DB	F	X	
D125	9	11	J	NEW	52 53 57	1800 2000	100KW AZM285 6DB	F	Y	TOKYO
D125	9	9A	J	NEW	34 35	2100 0600	50KW AZM7 6DB	F	Y	TOKYO
D125	15	4	J	NEW	10 11	0200 0500	100KW AZM52 10DB	F	Y	TOKYO
D125	17	14A	J	NEW	6 10	2100 2300	100KW AZM54 17DB	F	Y	
D125	21	13A	J	NEW	59 60	2200 2400	100KW AZM170 11DB	F	X	
D125	6		KEN	NEW	48	0300 1600	10KW ND	F	Y	NAIROBI
D125	7		KEN	NEW	48	0300 1600	5KW ND	F	Y	MOMBASA
D125	7		KEN	NEW	48	0300 1400	5KW ND	F	Y	KISUMU
D125	7		KEN	NEW	48	0300 1400	6KW ND	F	Y	NAIROBI
D125	7		KEN	NEW	48	0300 1400	6KW ND	F	Y	NAIROBI
D125	7		KEN	NEW	48	0300 1400	10KW ND	F	Y	NAIROBI
D125	6		KOR	NEW	43 44 45	0830 1530	SUWON 10KW AZM270 10DB	F	Y	
D125	7		KOR	NEW	43 44	2300 0100	SUWON 50KW AZM270 10DB	F	X	
D125	7		KOR	NEW	45	2100 2300	SUWON 50KW AZM100 10DB	F	X	
D125	9		KOR	NEW	43 44	1400 1600	SUWON 50KW AZM270 10DB	F	Y	
D125	9		KOR	NEW	6 10	1300 1500	SUWON 100KW AZM50 10DB	F	Y	
D125	9		KOR	NEW	45	1200 1400	SUWON 50KW AZM100 10DB	F	X	
D125	11		KOR	NEW	43 44	1400 1600	SUWON 50KW AZM270 10DB	F	Y	
D125	11		KOR	NEW	45	1200 1400	SUWON 50KW AZM100 10DB	F	Y	
D125	11		KOR	NEW	39 40	1800 2000	SUWON 100KW AZM260 10DB	F	Y	
D125	11		KOR	NEW	61	1600 1600	SUWON 100KW AZM100 10DB	F	Y	
D125	11		KOR	NEW	6 10	0500 0700	SUWON 100KW AZM50 10DB	F	Y	
D125	11		KOR	NEW	27 28	2100 2300	SUWON 100KW AZM315 10DB	F	Y	
D125	11		KOR	NEW	14 15	0930 1130	SUWON 100KW AZM130 10DB	F	Y	
D125	15		KOR	NEW	49 50 54	2300 0100	SUWON 50KW AZM200 14DB	F	X	
D125	15		KOR	NEW	41	1600 1800	SUWON 100KW AZM240 14DB	F	Y	
D125	15		KOR	NEW	39 40	0400 0500	SUWON 100KW AZM260 14DB	F	X	
D125	15		KOR	NEW	51 55 59	2000 2100	SUWON 100KW AZM180 14DB	F	X	
D125	15		KOR	NEW	61	0700 0900	SUWON 100KW AZM100 14DB	F	X	
D125	15		KOR	NEW	61	0700 0900	SUWON 100KW AZM100 14DB	F	X	
D125	15		KOR	NEW	6 10	0500 0700	SUWON 100KW AZM50 14DB	F	X	
D125	15		KOR	NEW	27 28	0600 0800	SUWON 100KW AZM315 14DB	F	Y	
D125	15		KOR	NEW	14 15	0100 0300	SUWON 100KW AZM130 14DB	F	Y	
D125	17		KOR	NEW	49 50 54	1500 1700	SUWON 100KW AZM200 14DB	F	Y	
D125	17		KOR	NEW	41	0100 0200	SUWON 100KW AZM240 14DB	F	X	
D125	21		KOR	NEW	51 55 59	1100 1300	SUWON 100KW AZM180 14DB	F	Y	
D125	9		MCO	NEW	37	0500 0800	100KW AZM225 8DB	F	Y	FONTBONNE
D125	9		MCO	NEW	18	1700 2300	100KW AZM13 6DB	F	Y	FONTBONNE

1	2	3	4	5	6	7	8	9	10	11
D125	11		MCO	NEW	38 39	0500 0800	100KW AZM114 6DB	F	Y	FONTBONNE
D125	11		MCO	NEW	37	0800 1700	100KW AZM225 6DB	F	Y	FONTBONNE
D125	11		MCO	NEW	46	1700 2300	100KW AZM212 6DB	F	Y	FONTBONNE
D125	15		MCO	NEW	46	0800 1700	100KW AZM212 6DB	F	Y	FONTBONNE
D125	9		MLA	NEW	54	1300 1500	50KW	F	Y	KUALA LUMPUR
D125	11		MLA	NEW	54	1200 1300	50KW	F	X	KUALA LUMPUR
D125	15		MLA	NEW	49	1100 1200	50KW	F	Y	KUALA LUMPUR
D125	15		MLA	NEW	49	1200 1300	50KW	F	X	KUALA LUMPUR
D125	15		MLA	NEW	49	1300 1400	50KW	F	Y	KUALA LUMPUR
D125	15		MLA	NEW	38 39	1630 1830	50KW AZM300	F	Y	KUALA LUMPUR
D125	17		MLA	NEW	50	1000 1100	50KW AZM60	F	X	KUALA LUMPUR
D125	17		MLA	NEW	41	1400 1630	50KW AZM300	F	Y	KUALA LUMPUR
D125	21		MLA	NEW	59	0730 0830	50KW AZM130	F	Y	KUALA LUMPUR
D125	21		MLA	NEW	58	0830 0900	50KW AZM155	F	Y	KUALA LUMPUR
D125	21		MLA	NEW	45	0900 1000	50KW AZM35	F	Y	KUALA LUMPUR
D125	21		MLA	NEW	44	1100 1200	50KW AZM35	F	Y	KUALA LUMPUR
D125	7		PAK	NEW	40 41	0000 0400	100KW AZM22 6DB	F	Y	KARACHI
D125	7		PAK	NEW	37	2000 2100	100KW AZM300 10DB	F	Y	KARACHI
D123	7		PAK	NEW	41	0000 0200	100KW AZM105 6DB	F	Y	LAHORE
D125	9		RAK	NEW	30 40	1400 1600	100KW AZM22 6DB	F	Y	KARACHI
D125	9		PAK	NEW	40 41	1600 1900	100KW AZM22 6DB	F	Y	KARACHI
D125	9		PAK	NEW	40	1600 1700	100KW AZM300 6DB	F	Y	KARACHI
D125	9		PAK	NEW	37	2000 2100	100KW AZM300 10DB	F	Y	KARACHI
D125	9		PAK	NEW	27	2000 2100	100KW AZM317 10DB	F	Y	KARACHI
D125	9		PAK	NEW	41	0200 1000	100KW ND	F	Y	LAHORE
D125	9		PAK	NEW	41	1200 1900	100KW ND	F	Y	LAHORE
D125	11		PAK	NEW	49	0000 0500	100KW AZM98 10DB	F	Y	KARACHI
D125	11		PAK	NEW	30 40	0200 0400	100KW AZM22 6DB	F	Y	KARACHI
D125	11		RAK	NEW	38 39	1700 2200	100KW AZM300 10DB	F	Y	KARACHI
D125	11		PAK	NEW	38 39	0500 0700	100KW AZM300 10DB	F	Y	KARACHI
D125	11		PAK	NEW	39	1800 2000	100KW AZM317 10DB	F	Y	KARACHI
D125	11		PAK	NEW	27	2000 2100	100KW AZM317 10DB	F	Y	KARACHI
D125	15		PAK	NEW	43 44 45	1100 1200	100KW AZM80 10DB	F	Y	KARACHI
D125	15		PAK	NEW	40 41	0400 1600	100KW AZM22 6DB	F	Y	KARACHI
D125	15		PAK	NEW	40	0400 0500	100KW AZM300 6DB	F	Y	KARACHI
D125	15		RAK	NEW	38 39	1700 2200	100KW AZM300 10DB	F	Y	KARACHI
D125	15		PAK	NEW	39	1800 2000	100KW AZM317 10DB	F	Y	KARACHI
D125	15		PAK	NEW	40 41	0000 0500	100KW AZM278 10DB	F	Y	DACCA
D125	17		PAK	NEW	55 56 59 60	0800 0900	100KW AZM120 10DB	F	Y	KARACHI
D125	17		PAK	NEW	49 51 54	1200 1300	100KW AZM120 10DB	F	Y	KARACHI
D125	17		PAK	NEW	41	1000 1200	100KW AZM105 6DB	F	Y	LAHORE
D125	17		PAK	NEW	40 41	1400 1900	100KW AZM278 10DB	F	Y	DACCA
D125	21		PAK	NEW	55 58 59 60	0800 0900	100KW AZM120 10DB	F	Y	KARACHI
D125	21		PAK	NEW	49 51 54	1200 1300	100KW AZM120 10DB	F	Y	KARACHI
D125	21		PAK	NEW	49	1300 1400	100KW AZM96 10DB	F	Y	KARACHI
D125	21		PAK	NEW	49	0500 1000	100KW AZM96 10DB	F	Y	KARACHI
D125	21		PAK	NEW	49	1000 1200	100KW AZM96 10DB	F	Y	KARACHI
D125	21		PAK	NEW	49	1200 1500	100KW AZM96 10DB	F	Y	KARACHI
D12	21		PAK	NEW	49	1500 1900	100KW AZM96 10DB	F	Y	KARACHI
D12	21		PAK	NEW	43 44 45	1100 1200	100KW AZM80 10DB	F	Y	KARACHI
D125	21		PAK	NEW	39	0500 0700	100KW AZM317 10DB	F	Y	KARACHI
D125	21		RAK	NEW	40 41	0500 1000	100KW AZM278 10DB	F	Y	DACCA
D125	21		PAK	NEW	40 41	1000 1200	100KW AZM278 10DB	F	Y	DACCA
D125	21		PAK	NEW	40 41	1200 1400	100KW AZM278 10DB	F	Y	DACCA
D125	26		PAK	NEW	49	1300 1400	100KW AZM96 10DB	F	Y	KARACHI
D125	11		PRG	NEW	27 28	1800 2200		F	Y	ASUNCION
D125	15		PRG	NEW	7 8	0000 0400		F	Y	ASUNCION
D125	6		SDN	NEW	38 47 48	0300 2000	20KW ND 0/600KM	F	X	OMDURMAN
D125	9		SDN	NEW	36 39 47 48	0300 2000	20KW ND 400/2000KM	F	X	OMDURMAN
D125	9		SDN	NEW	27 28	1800 2000	100KW AZM335 15DB	F	X	OMDURMAN
D125	11		SDN	NEW	38 39 47 48	0800 1500	100KW ND 600/2400KM	F	Y	OMDURMAN
D125	11		SDN	NEW	27 28	1500 1800	100KW AZM335 15DB	F	X	OMDURMAN
D125	21		SDN	NEW	27 28	0600 0800	100KW AZM335 15DB	F	X	OMDURMAN
D125	6		SIK	NEW	41	0045 0400	GANGTOK, 7,5KW ND	F	X	
D125	9		SIK	NEW	41	0400 1200	GANGTOK, 7,5KW ND	F	Y	
D125	6		TGK	NEW	53	0315 0500	10KW ND	F	X	DAR ES SALAAM
D125	6		TGK	NEW	53	1430 1930	10KW ND	F	Y	DAR ES SALAAM
D125	6		TGK	NEW	53	0315 0500	10KW ND	F	X	DAR ES SALAAM
D125	6		TGK	NEW	53	1430 1930	10KW ND	F	Y	DAR ES SALAAM
D125	6		TGK	NEW	53	0315 0500	10KW ND	F	X	MWANZA
D125	6		TGK	NEW	53	1430 1930	10KW ND	F	Y	MWANZA
D125	6		TGK	NEW	53	0315 0500	10KW ND	F	X	MBEYA
D125	6		TGK	NEW	53	1430 1930	10KW ND	F	Y	MBEYA
D125	7		TGK	NEW	53	0800 1115	10KW ND	F	Y	DAR ES SALAAM
D125	9		TGK	NEW	53	0800 1115	5KW ND	F	Y	DAR ES SALAAM
D125	6		UGA	NEW	48	0300 2100	10KW ND	F	Y	KAMPALA
D125	6		UGA	NEW	48	0300 2100	10KW ND	F	Y	KAMPALA
D125	7		UGA	NEW	48	0300 2100	10KW ND	F	Y	KAMPALA
D125	9		UGA	NEW	48	0800 1500	10KW ND	F	Y	KAMPALA
D125	11		UGA	NEW	46	0800 1500	10KW ND	F	Y	KAMPALA
D125	9	22A	YUG	NEW	39 40 41	1600 1700	100KW AZM90	F	Y	BEOGRAD
D125	9	22A	YUG	NEW	27 28	1700 1800	100KW AZM300	F	Y	BEOGRAD
D125	9	22A	YUG	NEW	39 40 41	1830 2000	100KW AZM90	F	Y	BEOGRAD
D125	9	22A	YUG	NEW	28 37 38 46	2000 2300	100KW AZM240/380	F	Y	BEOGRAD
D125	11	18	YUG	NEW	27 29	1600 1730	100KW ND	F	Y	BEOGRAD
D125	11	18	YUG	NEW	27 28 29	1830 2100	100KW AZM60/310	F	Y	BEOGRAD
D125	11	18	YUG	NEW	27 28	2130 2300	100KW AZM40/300	F	Y	BEOGRAD
D125	15	5A	YUG	NEW	54	1200 1300	100KW AZM95	F	Y	BEOGRAD
D125	15	5A	YUG	NEW	44 45	1300 1400	100KW AZM60	F	Y	BEOGRAD
D125	15	5A	YUG	NEW	41	1530 1600	100KW AZM91	F	Y	BEOGRAD
D125	15	5A	YUG	NEW	49	1600 1700	100KW AZM91	F	Y	BEOGRAD
D125	15	5A	YUG	NEW	12 15	2200 2400	100KW AZM240/280	F	Y	BEOGRAD
D125	17	7	YUG	NEW	41	1500 1600	100KW AZM90	F	Y	BEOGRAD

Symboles utilisés pour représenter les commentaires des administrations et leur analyse par l'I.F.R.B.

Colonne 8: Commentaires des administrations

Symbole	
ADD	A ajouter
AZM	Azimut (suivi de la valeur en degrés)
CH	Voie (suivi du numéro de la voie, ou de X lorsque la voie n'est pas nommément désignée)
CIRAF	Région de réception (numéro de Zone CIRAF)
COCH	Dans la même voie
DB	Gain de l'antenne, en décibels
DEL	A biffer
FREQ/	Fréquence allouée dans une bande trop basse (exemple: FREQ/6MC)
/FREQ	Fréquence allouée dans une bande trop élevée (exemple: 21 MC/FREQ)
GRP	Cette allocation devrait être groupée dans une voie commune avec d'autres allocations désignées par le numéro qu'elles portent dans l'Index
INT	Allocation insuffisamment protégée contre la voie et l'allocation indiquées
KW	Puissance, en kilowatts
MC	Bande, en mégacycles par seconde
NA	Demande pour laquelle aucune allocation n'a été faite (indiquée dans la colonne "INDEX No.")
NEW	Nouvelle demande pour laquelle il convient qu'une allocation soit prévue (indiquée dans la colonne "INDEX No.")
NOREQ	Cette allocation ne correspond à aucune demande de l'administration intéressée
RST	Aucune allocation n'a été faite pour cette demande; il convient d'en prévoir une
SEP	Il convient de prévoir un plus grand écart de fréquence entre cette allocation et la voie mentionnée
(NOTE:	Si des données figurent dans cette colonne sans aucune indication de la mesure que désire l'Administration, cela signifie que cette dernière désire que les caractéristiques figurant dans le projet de plan soient remplacées par ces nouvelles données)

Colonnes 9 et 10: Analyse des commentaires par l'I.F.R.B.

A	Les commentaires de l'Administration intéressée sont une conséquence de l'application générale des normes techniques utilisées pour l'établissement des projets de plan (voir le numéro 101 de l'Accord de la C.A.E.R. et la Préface aux projets de plan)
B	Les commentaires de l'Administration intéressée sont une conséquence de la réduction générale des demandes, ou d'un léger ajustement de l'horaire d'émission, de la bande de fréquences ou d'autres caractéristiques figurant dans la demande
C	Les commentaires de l'Administration intéressée sont une conséquence de l'application générale des méthodes d'établissement des projets de plans autres que celles auxquelles référence est faite dans l'explication des symboles A et B
D	Les commentaires de l'Administration intéressée résultent d'une défectuosité du projet de plan
E	Les commentaires de l'Administration intéressée résultent d'un malentendu ou d'une erreur
F	Les commentaires de l'Administration intéressée résultent de ce que celle-ci a notifié des demandes nouvelles ou modifiées alors que l'essentiel des travaux d'établissement des projets de plans était déjà terminé
G	Les commentaires de l'Administration intéressée ne sont pas confirmés par les données techniques dont dispose le Comité ni par l'application de ces données
X	Il est facile de satisfaire les desiderata exprimés par l'Administration intéressée dans ses commentaires sans que d'autres allocations en soient affectées, ou moyennant un léger remaniement de certaines allocations
Y	Il n'est possible de satisfaire les desiderata exprimés par l'Administration intéressée dans ses commentaires que moyennant une révision complète du projet de plan et un abaissement des normes techniques ou une réduction supplémentaire de l'ensemble des demandes.
Z	L'Administration intéressée pourrait retirer ses commentaires si certains malentendus pouvaient être éclaircis ou si les bases techniques des projets de plan lui étaient mieux exposés

Codes used for Administrations' Comments and Analysis by the I.F.R.B.

Column 8: Administrations' Comments

Symbol	
ADD	To be added
AZM	Azimuth (followed by the number of degrees)
CH	Channel (followed by the channel number, or by X when the channel is not specifically designated)
CIRAF	Reception zone (CIRAF numbering)
COCH	Co-channel
DB	Antenna gain in decibels
DEL	To be deleted
FREQ/	Assigned frequency band too low (example: FREQ/6 MC)
/FREQ	Assigned frequency band too high (example: 21 MC/FREQ)
GRP	This allocation should be grouped in a common channel with other allocations designated by their Index No.
INT	Allocation not sufficiently protected against channel and allocation mentioned
KW	Power in kilowatts
MC	Band in Megacycles per second
NA	Non-allocated requirement (shown in column "INDEX NO.")
NEW	This new requirement should be allocated (shown in column "INDEX NO.")
NOREQ	This allocation does not correspond to any requirement from the Administration
RST	This requirement, which was not allocated, should be included
SEP	A greater frequency separation between this allocation and the channel mentioned should be provided

(NOTE: If particulars are included in this column without any indication of action desired, this means that the Administration wishes to replace the particulars in the draft plan by this new information).

Columns 9 and 10: Analysis by the I.F.R.B.

A	The Administration's comments are a consequence of the general application of the technical standards used in the establishment of the draft plans (see No. 101 of the E.A.R.C. Agreement and the Preface to the draft plans)
B	The Administration's comments are a consequence of the general reduction of requirements, or a slight adjustment of the time schedule, the frequency band or other characteristics of the requirement
C	The Administration's comments are a consequence of the general application of other policies adopted for the planning
D	The Administration's comments result from a deficiency in the draft plan
E	The Administration's comments result from a misunderstanding or error
F	The Administration's comments result from amended or new requirements being notified after the basic planning work had been completed
G	The Administration's comments are not supported by the technical data available to the Board, or the application of these data
X	The Administration's comments can easily be met without affecting other allocations or by a slight re-arrangement of allocations
Y	The Administration's comments can only be met by a complete revision of the draft plan and by a lowering of the technical standards or a further reduction of the overall requirements
Z	The Administration's comments might be withdrawn, if certain misunderstandings could be clarified or the technical bases explained

Símbolos utilizados para los comentarios de las administraciones y su análisis por la I.F.R.B.

Columna 8: Comentarios de las administraciones

Símbolo	
ADD	Agréguese
AZM	Azimut (seguido del número de grados)
CH	Canal (seguido del número del canal, o de X cuando éste no ha sido designado específicamente)
CIRAF	Zona de recepción (numeración de la CIRAF)
COCH	Canal común
DB	Ganancia de la antena en decibelios
DEL	Suprímase
FREQ/	Banda de frecuencias asignada demasiado baja (ejemplo: FREQ/6 MC)
/FREQ	Banda de frecuencias asignada demasiado alta (ejemplo: 21 MC/FREQ)
GRP	Esta atribución debe agruparse en un canal común con otras designadas mediante su número de Indice
INT	Atribución insuficientemente protegida contra el canal y atribución indicados
KW	Potencia en kilovatios
MC	Banda en Megaciclos por segundo
NA	Necesidad que no ha sido objeto de atribución (figura en la columna "N° DE INDICE")
NEW	Esta nueva necesidad tiene que ser objeto de atribución (figura en la columna "N° DE INDICE")
NOREQ	Esta atribución no corresponde a necesidad alguna de la Administración
RST	Hay que incluir esta necesidad que no fué objeto de atribución
SEP	Hay que prever mayor separación de frecuencia entre esta atribución y el canal indicado

(NOTA: De figurar características en esta columna pero ninguna indicación sobre las disposiciones que se desea se adopten, significa que la Administración considerada quiere que se sustituyan las características del proyecto de plan por esta nueva información).

Columnas 9 y 10: Análisis por la I.F.R.B.

A	Los comentarios de la Administración son consecuencia de la aplicación general de las normas técnicas utilizadas para preparar los proyectos de planes (véase el Nº 101 del Acuerdo de la C.A.E.R. y el Prefacio a los proyectos de planes)
B	Los comentarios de la Administración son consecuencia de la reducción general de las necesidades, de un ligero reajuste del horario, de la banda de frecuencia o de otras características de la necesidad considerada
C	Los comentarios de la Administración son consecuencia de la aplicación general de otros métodos adoptados para la preparación de los planes
D	Los comentarios de la Administración resultan de una deficiencia del proyecto de plan
E	Los comentarios de la Administración resultan de una mala interpretación o de un error
F	Los comentarios de la Administración son consecuencia de haberse notificado nuevas necesidades o necesidades modificadas después de terminado el trabajo fundamental de preparación los de planes
G	Los comentarios de la Administración no se apoyan en los datos técnicos de que dispone la Junta ni en la aplicación de los mismos
X	Los comentarios de la Administración pueden atenderse fácilmente sin repercusión alguna para otras atribuciones, o mediante una pequeña reorganización de la atribuciones
Y	Los comentarios de la Administración sólo pueden atenderse mediante una revisión completa del proyecto de plan y una reducción de las normas técnicas, o mediante una nueva reducción de las necesidades en su conjunto
Z	La Administración retiraría sus comentarios si pudieran aclararse varias interpretaciones erróneas o explicar las bases técnicas

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No. 21-E
ADDENDUM No. 3
29 September 1959

PLENARY MEETING

COMMENTS BY ADMINISTRATIONS ON THE DRAFT PLANS FOR THE HIGH FREQUENCY BROADCASTING SERVICES

BOOKLET D

General Comments on the Draft Plans for Sunspot No. 12

The attached page is to be inserted in Booklet D.

Annex : 1

ARCHIVES U.I.T. GENÈVE

SS 12

S - Sweden

Ref.: Letter Rb/Art 1, Uh/Sjö,
dated 14 July 1959

"We are very anxious for the established transmission times for the programmes to be left unchanged through all the phases. This demand has been met in the draft plans for sunspot numbers 70 and 125 almost entirely. However, we think that the draft plan for sunspot number 12 with its different transmission schedules will be inconvenient to our listeners. We are also of the opinion that in some cases the frequency bands chosen are unsuitable and the time-sharing will cause interference. On these grounds, we propose the following modifications to be made."

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No. 21-E
ADDENDUM No. 2
24 September, 1959

PLENARY MEETING

COMMENTS BY ADMINISTRATIONS ON THE DRAFT PLANS FOR THE HIGH FREQUENCY BROADCASTING SERVICE

BOOKLET D

General Comments on the draft plans for Sunspot Number 12

The attached page is to be inserted in Booklet D.

Annex 1

ARCHIVES U.I.T. GENÈVE

SS 12

AUS - Australia

Ref: Letter G.315/8/95
dated 6 July, 1959

"The Phase 12 plans are generally unacceptable to this Administration. The allocations for internal services are not in accord with the requirements, chiefly because it apparently has not been realized that these requirements are not necessarily direct projections of the basic requirements. The situation of the external services is worse than in the other two phases as a result of many allocations having been made with apparently non-optimum frequencies, and the J-12 plan is particularly unsatisfactory because of the increased number of allocation displacements in relation to the projected requirements. As with the other phases, a substantial number of the allocations are inadequately protected, and the results of a retailed assessment for external services are given. This Administration must therefore reiterate its request in the February letter that the Australian allocations be reviewed with the object of removing the present objections, taking into account the detailed comments which have been submitted in these letters."

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No. 21-E
ADDENDUM No.1.
14 September, 1959

PLENARY MEETING

COMMENTS BY ADMINISTRATIONS ON THE DRAFT PLANS FOR THE HIGH FREQUENCY BROADCASTING SERVICE

BOOKLET D

General Comments on the draft plans for Sunspot Number 12

Annex: 1

ARCHIVES U.I.T. GENÈVE

COMMENTS BY ADMINISTRATIONS

on the

DRAFT PLANS

for the

HIGH FREQUENCY BROADCASTING SERVICE

(Articles 11 and 28 of the E.A.R.C. Agreement)

BOOKLET D

General comments on the draft plans
for Sunspot Number 12

CONTENTS

SS 12

AFS - Union of South Africa and
Territory of South-West Africa

Ref: Letter 33A/11445/52,
dated 21 May 1959

Detailed comments only.

SS 12

AUT - Austria

Ref: Letter 28535 - 8/1959,
dated 22 June 1959

"A. General Remarks:

This Administration has taken due note (and is duly grateful) that the I.F.R.B. has tried to embody almost all of Austria's minimum requirements in the draft plans for phases of low solar activity. But we hope you will be able so to revise the draft plan for December 12 that three evening frequency-hours, like those provided for in the draft plans for Equinox 12 and June 12, can be provided opposite our requirement No. 3.

In view of the fading likely in certain relations, we suggest an increase in power. This request is, we feel, justified for most relations, for we have observed power increases in the adjacent channels, which leads us to fear lest our transmissions may suffer interference. We do not intend to use the increase requested if the power provided for in the plans suffices to ensure a high quality for our broadcasts.

We venture to ask for some little changes in transmission times to avoid overlapping of programmes broadcast by the same transmitter."

SS 12

BEL - Belgium

Ref: Letter R1/1.852/279,
dated 1 June 1959

"After a careful scrutiny of these documents, we observe that the reference plan for June 70, in its general outline, has been kept. Hence we can but confirm the various comments" ... "about the reference plan for June 70" ... "the plans for December and Equinox 70 and June, December, and Equinox 125."

We have, however, observed that the plans for N = 12 are decidedly inferior to the previous ones. Whereas, quantitatively, the Belgian requirements appear in your draft, we have repeatedly noticed that the frequencies proposed by the International Frequency Registration Board did not suffice for the service required. More especially, the frequencies proposed frequently exceed the optimum working frequencies, and, indeed, the maximum usable frequencies."

SS 12

BRM - Burma (Union of)

Ref: Letter F/F-12(99),
dated 15 June 1959.

"The proposed assignments are acceptable to this Administration for present purposes provided other countries also abide by the plan."

SS 12

BWA - British West Africa

Ref: Letters EW/0559/298 of 16 February 1959
and EW/0559/1150 of 10 June 1959

Detailed comments only.

SS 12

CAN - Canada

Ref: Letter 6653-13/6206-70,
dated 15 January 1959

"While the Plans are generally acceptable to Canada, our comments include numerous request for changes involving hours of use, areas of reception and directivity of transmissions."

SS 12

CGO - Belgian Congo and
Territory of Ruanda-Urundi

Ref: Letter 661/3492,
dated 30 May 1959

Detailed comments only.

SS 12

CVA - Vatican City State

Ref: Letter N.4529/E22,
dated 23 July 1959

... "that after having carefully examined the draft plan relative to the three periods of low sunspot activity (Index 12), it only remains for me to confirm the observations, conclusions and proposals contained in my letter of 13 February 1959" ...

SS 12

D - Federal German Republic

Ref: Letter IIbC - FuB 3 5023-0/1 No. 3225, dated 16 June 1959

I wish to submit the following general comments:

1. The draft plans (Index 12) do not make provision for the strict, indispensable minimum to which the Federal German Republic has already reduced its requirements.

2. In some cases, it seems to me that, because of propagation conditions in the ionosphere, the frequencies provided for the directions and transmission times in question are not all suitable.

3. In some cases, the average minimum field strength of forty-three and a half decibels requested (see the Preface to the Draft High-Frequency Broadcasting Plans, paragraph 9.8) is not always obtained, especially during the last few hours of transmission towards Australia (International High-Frequency Broadcasting Conference 55-60). I would admit, though, that because of propagation conditions in the ionosphere, it was probably impossibly to find better frequencies for these particular times.

4. In my comments sent with letter IIbC-FuB 3 5023-0/1 No. 3260, dated 29 December, 1958, I indicated the probability of harmful interference caused by use of the same or adjacent channels. And in the draft plans for index 12 there are cases, too, in which the ratios between desired and undesired field strengths are far

...

indeed from the desired signal-to-noise ratios (see the Preface, paragraphs 9.7 and 9.5).

I venture to quote some interesting examples:

a) Interference with the same channels:

D 12: 6175 kc/s (channel 23) Bolivia (0000-0400 hours GMT)

J 12: 15180 kc/s (channel 7a) Dominican Republic (1000-1100 hours GMT)

15390 kc/s (channel 29a) Shepperton (0000-0300 hours GMT)

b) Interference with adjacent channels:

D 12: 15180 kc/s (channel 8a) - interference on adjacent channel 15171 kc/s Okinawa (0800-1000 hours GMT)

J 12: 11790 kc/s (channel 9a) - interference on adjacent channel 11795 kc/s - Tokyo (0500-0830 hours GMT)

11910 kc/s (channel 21a) - interference on adjacent channel 11915 kc/s - Daventry (0000-0200 hours GMT).

5. It seems unlikely that coverage of Europe can be obtained by high-frequency broadcasting for a certain time, because the frequencies shewn for the reception area Europe (International High-Frequency Broadcasting Conference 18, 19, 27-29, 37) in the draft plan for June 70 (the basic plan) have not been adequately included in the draft plans for Index 12.

...

D
(page 3)

Hence I enclose my requests for changes in the draft plans for Index 12, and would ask you to act thereon as far as possible when changes are made in the draft plans later."

SS 12

DNK - Denmark

Ref: Letter I.T. 7563, 7564, 7565,
dated 30 June 1959

"Our technical equipment does not permit transmission on 2 frequencies at the same time, for that reason we would appreciate not to have simultaneous transmissions" ...

SS 12

E - Spain

Ref: Letter No. 878,
dated 8 June 1959

Individual comments only.

SS 12

EGY - United Arab Republic (Egyptian Region)

Ref: Letter 5/18/5 (1802),
dated June 1959

... "we wish to repeat our comments on the original revised draft plan June 70, which is rejected by our administration and hence we also reject the plan for the above three phases as it ignores certain important requirements and also due to cutting down other requirements to unsuitable transmission time."

SS 12

ETH - Ethiopia

Ref: Letter 75/GNM/MS,
dated 19 May 1959

"If the basic plan for 'June 70' would satisfy our present requirements, the small changes involved in the projection of draft plans for the phases 125 and 12 might be considered as acceptable.

In view, however, of our comments for the draft plans 'SS 70' and 'SS 125'" ... "the same comments would, also apply for the phase 12 draft plans.

If our requirements, as detailed in the forementioned letter, can be accommodated in the phase 70 June basic draft plan, then any small changes that would be required in order to have our requirements accommodated in the other seasons and phases would be acceptable."

SS 12

FNL - Finland

Ref: Letter V 6/60,
dated 1 June 1959

... "we have informed you that we cannot accept the procedure whereby Finland is assigned two or more frequencies in the same band in such a fashion that one frequency has to be used in the morning and another one in the evening for broadcasts to one and the same country.

The same comments as these hold good, too, for solar phase 12 (June, Equinox, and December)."

SS 12

GRC - Greece

Ref: Letter 105010,
dated 23 June 1959

"1. The frequency-hours assigned to my country by the draft plans for Equinox 12 and December 12 ($58\frac{1}{2}$ and 44 respectively) are not sufficient to ensure a suitable service. Hence, while recognizing the technical difficulties involved, my Administration finds itself obliged to submit a request for an increase in the number of frequency hours up to a minimum of 50 for phase December 12.

. 2. The frequencies assigned to my country are shared in general with other countried and since we do not possess the necessary data, it is difficult for us to give an opinion now on whether the degree of protection of our emissions is sufficient. Hence, the frequency-hours assigned to my country are accepted by my Administration subject to the reservation that reception of our broadcast transmissions be fully assured."

SS 12

I - Italy

Ref: Letter XI 20479/231,
dated 1 July 1959

"The plans for December 12 and Equinox 12 do not contain allocations for Italy between 2200 and 2400 hours, and only three simultaneous transmissions divided over four frequencies have been allocated between 0000 and 0400 hours.

In this way, the chief transmissions for America are completely done away with between 2200 and 2400 hours, and reduced to only three between 0000 and 0400 hours.

In the plan for June 12, Italian emissions to America between 2000 and 0400 hours are distributed as follows:

none	from	2200	to 2230	hours
one	"	2230	to 2300	"
five	"	2300	to 0330	"
four	"	0330	to 0430	"

Moreover, they are split up and allocated on seven different frequencies which are generally too high with respect to the OWF.

The absence of uniformity in the number of simultaneous emissions already noted for the plans relative to sunspot phases 70 and 125 is aggravated in the plans for phase 12 (e.g. in the plan for December 12, with an average of only 7 simultaneous emissions, a maximum of 16 is reached in an average period of one day).

It is thus obvious that the plans in question are totally inadequate for the requirements of our service, especially when it is considered that for several years we have been making five simultaneous transmissions

...

in the direction of North, South and Central America.

These transmissions take place from 2200 hours GMT to 0400 hours GMT on the most appropriate frequencies according to the sunspot index.

A more detailed examination of the above-mentioned plans, extended to all transmissions as well as to the control of protection, will almost certainly reveal other drawbacks.

In any case, even taking into account the special difficulties involved in the preparation of plans for periods of low sunspot activity, the comments given above suffice to demonstrate that the draft plans in question are inacceptable for Italy."

SS 12

IND - India (Republic of)

Ref: Letter W-5(2)/59,
dated 30 May 1959

"As in other Plans, the Draft Plans for Phase 12 also do not include the most essential requirements. It is necessary to take into account all our essential requirements as per detailed comments given below" ...

"A number of essential Regional and National service requirements have not been provided for." ... "The unassigned services" ... "would seriously affect the service contemplated at the respective stations. Some of these services are already in operation and some are likely to be commissioned in the near future. It is, therefore, essential to assign frequencies for the unassigned services" ...

"The News Services broadcasts are required for direct reception by the general public all over the country. These are meant for listeners speaking various languages and living in various parts of the country. Broadcast of news services in different languages from a central location is essential to ensure reception by all the people interested in a particular language. In view of these considerations, it is essential that the International Frequency Registration Board should also allocate frequencies for the remaining unassigned periods for news services requirements" ...

"In a few cases, the power of the transmitters for internal services has also been reduced. The reduction of power would affect the services contemplated from the

...

respective transmitters and is, therefore, not acceptable. It is essential that the power of the transmitters should be restored to those asked for" ...

"A number of megacycle order of assignments made in these Plans are not optimum for intended service. It is essential that the frequency bands in respect of certain requirements are restored to optimum bands." ...

"A number of requirements some of which refer to important services in operation have not been met."

"As in the other Draft Plans" ... "changes have been made in a number of cases in respect of periods of transmission, intended area of reception, power of transmitter, frequency bands, antenna gain and directivity. Even though, slight alterations in transmission periods can be accepted as a compromise, major shifts in time blocks and changes in power of transmitters and other transmission characteristics are not acceptable as this will seriously affect the listening potentialities in the target areas." ...

"Protections afforded to various assignments in the draft plans for Phase 12 have been studied and are found to be unsatisfactory in a large number of cases."

SS 12

ISL - Iceland

Ref: Telegram dated 1 June 1959

"We consider the HF broadcasting plans for SS 12 prepared by the I.F.R.B. acceptable as they stand" ...

SS 12

J - Japan

Ref: Letter MP/R 94-L,
dated 29 May 1959

"We beg to avail ourselves of this opportunity to submit our highest esteem to the effort exerted by the I.F.R.B. for the preparation of the draft plan for the High Frequency Broadcasting Service.

It is much to be regretted that, as the result of our examination on this draft plan, we have found out some points which are desirous of further adjustment in the continuity and operating hours of frequency in use, the order of frequency, or the correlation between each phase and season."

"Taking the existing state of our national and international broadcasting into consideration, we should like to request herewith" ... "new circuits and additional region of intended reception".

"With regard to the domestic broadcasting, for one part of which the use of the lower power than that of our original request has been planned, though this had been found in the I.F.R.B. plan for sunspot numbers 70 and 125, we hope to use such power as stated in our original request. Therefore, in cases of sunspot numbers 12, 70 and 125, it is requested that the power be restored to that of our original request" ...

SS 12

JOR - Jordan (Hashemite Kingdom of)

Ref: Letter FR/G/5,
dated 8 June 1959

"I have requested the I.F.R.B. to consider 8 new frequencies for assignment to the Hashemite Kingdom of Jordan Broadcasting Services and when a final decision is reached, I shall supply you with all the necessary particulars concerning these new frequency assignments to include them in the future high Frequency Broadcasting Services Draft Plans." ...

SS 12

MLA - Malaya (Federation of)

Ref: Letter MB ITU.230/B1/71,
dated 26 May 1959

"The Administrations of Borneo, Sarawak and the Broadcast Administrations of Singapore and the Federation of Malaya have been asked for their comments on the draft plan for Phase 12 and also for their general comments on the plan as a whole.

2. Judging by the comments which have been received it is obvious that these Administrations are not satisfied with the plans as they stand.

3. Looking back through the records available, it is difficult to obtain a full history of the beginnings of this plan and how the requirements of the Malaya/Borneo territories were originally put forward. It appears that the United Kingdom Colonial Ensemble put forward certain requirements based on our Broadcast Services in 1953/4 but this plan has been under discussion now for so many years, that many changes and developments have taken place in these territories during this period, changes which make the original requirements completely untenable now.

4. Since the original requirements were put up, the Malaya/Borneo Group have become Associate members of the Union and the Federation of Malaya has now become a fully independent country and a full member of the Union. In all territories great advances, technically, politically and economically have taken place and as far as broadcasting services are concerned, a much wider population

...

has now to be catered for and it has become particularly necessary to reach the population in the rural areas, a population which is both multi-racial and multi-lingual. This gives a basic requirement for simultaneous broadcasting in at least three languages i.e. Malay, English and Chinese.

5. Being in a tropical zone, medium frequencies do not cover the rural areas satisfactorily and H/F must be used. Whilst all Administrations in these territories have a number of allocations in the broadcast bands from 2300 - 5060 kc/s, and although in accordance with Radio Regulation 253, broadcast services in the tropical zone should have priority within these bands, in practice this is not so, and the quality of reception in the average rural area as a whole on these transmissions has no entertainment value due to interference from other transmissions on or near the received frequencies.

6. As V.H.F. F/M broaccasting is, for some time to come, impracticable in these territories for economic reasons, it is necessary for these Administrations to maintain their internal broadcasting services on H/F, and as long as conditions for broadcasting are so poor in the 2300-5060 kc/s bands, these Administrations are hoping for some measure of relief under the new H.F. Broadcast Plan." ...

... "It should be noted that all these Administrations are using Vertical Incident arrays with High Angle Radiation and this to some extent should lessen the possibilities of interference. It is also considered that the period of 1000-1630 hours GMT is an essential period, being that of peak listening.

The position would be eased to some extend by planning certain bands in this spectrum from 2300-5060 kc/s exclusive to the use of tropical broadcasting." ...

...

MLA
(page 3)

... "the Federation of Malaya, now as an independent country, are requesting some additional frequencies for external broadcasting. It is appreciated that at this stage it will be very difficult to fit any additional assignments but once again the Director of Broadcasting, Federation of Malaya, has asked me to approach you with the request that this aspect be considered when the overall plan is being finalised."

SS 70

NOR - Norway

Ref: Letter IV.Rt.Jd/Bs,
18 June 1959

"As it will be seen from our letter of 26 November 1958 with comments regarding the Draft Plans for Solar Activity SS 125, it is of fundamental importance for our attitude to the Plans that our transmissions may take place in accordance with a time-table that should remain unchanged through all seasons and sunspot phases.

The plans submitted for Solar Activity SS 12 show quite substantial deviations from the time schedule which followed as enclosure to our letter of 26 November 1958 and where the preferred transmission time for the stations Fredrikstad, Oslo and Tromsö had been indicated.

We are, however, not unwilling to consider proposals regarding minor deviations from the transmission times indicated in our schedule, if, as a consequence, it would be easier to lay down a time-table which could remain unchanged through all seasons and sunspot phases.

We do not consider it necessary at this stage to undertake a detailed appreciation of the latest Plans, but we should like to point out the fact that the carrying out of the proposal of utilising 7 different frequencies in the 15 Mc/s band during the season June 12 will entail considerable difficulties and inconveniences both on the transmitting and the receiving side."

SS 12

NZL - New Zealand

Ref: Letter P. & T. 1959/703,
dated 26 June 1959

"The New Zealand Administration provisionally approves the allocations to New Zealand in the Draft Plans for Phase June, December and Equinox 12 on the basis that before the full Plan is developed and approved by an Administrative Radio Conference this Administration will need to put forward several matters which are detailed below. The general position is, however, one of agreement."

SS 12

PAK - Pakistan

Ref: Letter PWB.8-2/58,
dated 17 August 1959

"It will be observed from the detailed comments that a lot remains to be desired in the matter of fulfilment of the original requirements and the quality of service that will result from low protection ratios. On some of the requirements there is no protection at all. In some cases of the Projection of the requirements from the Draft Reference Plan of June 70 to the Plans for other seasons, due consideration does not appear to have been given to the considerations of O.W.F. required for the circuits. It is, therefore, the considered view of this administration that the serious limitations of the plan pointed out will have to be removed before it can be accepted.

The set of nine plans have been prepared on the basis of requirements submitted seven years ago. During this period the requirements of this administration have increased further. Additional requirements of frequencies for two 100 K.W. High Frequency Transmitters were sent to the International Frequency Registration Board a few months ago. Since that is a very important part of development programme, those additional requirements must also be provided for besides the previous requirements submitted seven years ago."

SS 12

SUI - Switzerland (Confederation)

Ref: Letter 86,5.103.1,
dated 21 August 1959

Individual comments only.

SS 12

YUG - Federal People's Republic of Yugoslavia

Ref: Letter 532/1,
dated 5 June 1959

"1. After perusal of the plans for June 12, Equinox 12 and December 12, we observe that the schedule of the frequencies allotted (in many cases and bearing in mind the reception areas) is incomplete and frequently unsatisfactory.

2. The separate frequencies allotted in most of the bands are pointlessly numerous. In some bands, only two, or even only one hour is allotted. That, we feel, is unnecessary and cannot but complicate the plans and their applications.

3. Yugoslav requirements in the 6, 7, 9, 11 and 15 Mc/s bands have not been met. Hence we call for an increase" ...

"Our proposal, we trust will be borne in mind. It is based on our actual minimum requirements. This would enable Yugoslavia to adopt the allocation plans. Our views as to the need for a common agreement in this field remain unshaken."

INTERNATIONAL TELECOMMUNICATION UNION

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

E

Document No. 22-E
14 August 1959
Original: English

UNITED KINGDOM

Proposal

RECOMMENDATION

Number of Proposal

4869 The Administrative Radio Conference (Geneva, 1959),

considering,

the need to facilitate the planning of new maritime radiobeacon stations in the band 285-315 kc/s, especially in the neighbouring localities of the European and African Areas

recommends,

that the countries of the African Area be invited to adopt provisions similar to those contained in the "Regional Arrangement for Maritime Radio Beacons in the European Area of Region I, Paris, 1951".

Reasons

To facilitate the planning and to secure co-ordination of new radiobeacon stations in localities of the African Area adjacent to localities of the European Area in which the Paris Radiobeacon Plan is in operation.

ARCHIVES U.I.T. GENEVE

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No. 23-E
14 August 1959
Original: English

UNITED KINGDOM

Proposals

ARTICLE 5

Number of Proposal		
3503	107.	Proposal No. 3503 should be amended as follows: After this No. add the following new paragraphs:

§ 4. bis.

The European Maritime Area is bounded: on the North by a line extending along parallel 72 degrees North from its intersection with Meridian 55 degrees East to its intersection with Meridian 5 degrees West, then along Meridian 5 degrees West to its intersection with parallel 67 degrees North thence along parallel 67 degrees North to its intersection with Meridian 30 degrees West; on the West by a line extending along Meridian 30 degrees West to its intersection with parallel 30 degrees North; on the South by a line extending along parallel 30 degrees North to its intersection with Meridian 43 degrees East; on the East by a line extending along Meridian 43 degrees East to its intersection with parallel 60 degrees North, thence along parallel 60 degrees North to its intersection with Meridian 55 degrees East and thence along Meridian 55 degrees East to its intersection with parallel 72 degrees North.

Reasons:

To incorporate the definition contained in the European Regional Convention for the Maritime Mobile Radio Service, Copenhagen, 1948.

ARCHIVES U.I.T. GENÈVE

Number of Proposal

3503 bis

§ 4. ter. The "African Area" includes that part of Region 1 lying to the South of the parallel 30° North. It also includes that part of the territories of Iraq and Saudi Arabia situated to the North of that parallel.

Reasons:

To incorporate 10 of E.A.R.C. Agreement.

The following proposal is additional to those already submitted:

	Frequency Band and (Bandwidth) Mc/s	Amend entry in Column(s) headed:	As follows:
4870	2450-2550 (100)	World-wide	(a) Fixed (b) Mobile (c) Radiopositioning 106) 107) 107 bis.)
4871	2550-2700 (150)	World-wide	(a) Fixed (b) Mobile 107 ter.) 107 quator)

221. After this No., add the following new footnotes:

4872 107 bis.) In the band 2450-2550 Mc/s, the fixed and mobile services shall not cause harmful interference to the radiopositioning service.

4873 107 ter.) In Region 1, the tropospheric-scatter service may be accommodated in the band 2550-2700 Mc/s under arrangements to be agreed between Administrations concerned or affected.

4874 107 quater) In the United Kingdom, the radiopositioning service may operate in the band 2550-2600 Mc/s, provided that no harmful interference is caused to the tropospheric-scatter service.

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No. 24-E
14 August 1959
Original: English

UNITED KINGDOM

Proposals

ARTICLE 9

Number of proposal

4875 261. After this No. add the following new provisions :

§ 7. bis (1) In the bands 255-285 kc/s and 315-405 kc/s in Region 1, aeronautical radiobeacon stations are established, as a general rule, on the following field strengths by day at the indicated service range :

70 microvolts per metre for beacons North of latitude 30° N.,
120 microvolts per metre for beacons South of latitude 30° N.

(2) The assignment of frequencies to the aeronautical radiobeacons in these bands is based upon a protection against interference of at least 10 db for each beacon throughout its service area.

Reasons

To incorporate 26 and 27 of E.A.R.C. Agreement.

4876 Section III bis

Maritime Radionavigation Service

§ 7.ter (1) In the band 285-315 kc/s in Region 1, maritime radiobeacon stations are established, as a general rule, on the following field strengths by day at the indicated service range :

ARCHIVES U.I.T. GENEVE

Number of proposal

50 microvolts per metre for beacons North of latitude 43° N.,

75 microvolts per metre for beacons between 30° N. and 43° N.,

100 microvolts per metre for beacons South of latitude 30° N.

(2) The assignment of frequencies to maritime radiobeacons in this band is based on a separation of 2.3 kc/s between adjacent channels used for class A2 emissions.

(3) The depth of modulation of maritime radiobeacons should be at least 70%.

Reasons

To incorporate 28, 32, and 50 of E.A.R.C. Agreement.

4877 § 7. quater In the band 405-415 kc/s in Region 1, no frequency is assigned to coast stations, in order to protect the frequency 410 kc/s which is designated for the Maritime Radionavigation Service (radio direction finding).

Reasons

To incorporate 39 of E.A.R.C. Agreement.

4878 At the beginning of Section IV insert the following new paragraph:

§ 7. quinquiens (1) In the Africa Area of Region 1, in the bands 415-490 kc/s and 510-525 kc/s, the separation between

Number of proposal

adjacent channels used by coast stations is, as a general rule, 3 kc/s. However, in order that the channels may coincide with those used in the European Area in these bands this spacing is reduced in certain cases.

(2) The separation between adjacent channels used by coast stations on the one hand and ship stations on the other, is 4 kc/s.

Reasons

To include the provisions of 6.1, 6.2 and 6.3 of the African Plan.

Proposal No. 1077 should be amended as follows :

1077 262. After this No. add the following new paragraphs

§ 8.bis (1) In Region 1, frequencies assigned to stations of the Maritime Mobile Service, operating in the bands between 1,605 and 3,800 kc/s (see Article 5) should, whenever possible, be in accordance with the following sub-division :

1,605-1,625 kc/s	Telegraphy exclusively
1,625-1,670 kc/s	Low-power Telephony
1,670-1,950 kc/s	Coast stations
1,950-2,045 kc/s	Ship stations working to Coast stations
2,065-2,176 kc/s	Ship stations working to Coast stations
2,176-2,188 kc/s	Guard-band for the distress frequency 2 182 kc/s
2,188-2,440 kc/s	Intership working
2,440-2,578 kc/s	Ship stations working to Coast stations

Number of proposal

2,578-2,850 kc/s	Coast stations
3,155-3,340 kc/s	Ship stations working to Coast stations
3,340- 3,400 kc/s	Intership working
3,500-3,600 kc/s	Intership working
3,600-3,800 kc/s	Coast stations

Reasons

To include 40 of the E.A.R.C. Agreement.

1077 bis (2) As far as possible in these bands, the frequencies assigned to the Maritime Mobile Service are spaced by :

7 kc/s when two adjacent frequencies are used for telephony,

3 kc/s when two adjacent frequencies are used for telegraphy,

5 kc/s when one frequency is used for telephony and the adjacent frequency is used for telegraphy.

However, in the case of the intership bands, the spacing is reduced to 5 kc/s for adjacent frequencies used for telephony.

Reasons

To incorporate 41 of E.A.R.C. Agreement.

1077 ter § 8.ter In the bands 1,605-2,850 kc/s in Region 3, in addition to the specific frequencies prescribed for common use in certain services, the following frequencies are used :

Number of proposal

2,091 kc/s As an exclusive ship radiotelegraph calling frequency with a guard band 2,088.5-2,093.5 kc/s,

2,638 kc/s As an intership radiotelephony working frequency with a guard band of 2,634-2,642 kc/s,

3,805 kc/s As an aeronautical distress frequency in Afghanistan, Burma, Ceylon, India and Pakistan only.

Reasons

To incorporate 64 of E.A.R.C. Agreement.

4879 268. After this No. insert the following new sub-paragraph :

§ 2.bis. A frequency allotment plan for coastal radiotelephone stations operating in the exclusive bands of the Maritime Mobile Service between 4,000 and 23,000 kc/s (See 265), appears in Appendix 12 ter. (proposal ....).

Reasons

To incorporate 65 of E.A.R.C. Agreement.

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No. 25-E
14 August 1959
Original: English

UNITED KINGDOM

Proposals

ARTICLE 28

Number of Proposal		
4880	600.	Delete second sentence

Reason

See proposal for 600 bis.

4881 600. After this No. add the following new sub-paragraph:

(2 bis.) In cases where the equipment provides for the use of frequencies between 4,000 and 23,000 kc/s, it must be able to transmit on the frequency 8,364 kc/s, preferably class A2 emission. The radiated signals should be as strong as possible and stable in frequency in order to ensure the greatest accuracy in determining bearings, and should, if possible, include long dashes sent over a period of not less than five minutes for direction-finding purposes.

Reason

To include second sentence of 600 and to incorporate part 7 and the first part of part 8 of C.C.I.R. Recommendation No. 217.

INTERNATIONAL TELECOMMUNICATION UNION

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

E

Document No. 26-E
15 August 1959
Original: English

FEDERAL REPUBLIC OF GERMANY

Proposal

ARTICLE 5

Number of proposal	
4883	The functions of the Red Cross are of such a world-wide importance that it appears to be justified to allocate and protect frequencies on an international level for the fixed and mobile radio services which will become necessary between the Red Cross organizations. The Administrative Radio Conference should therefore include certain frequencies for the Red Cross in the table of frequency allocations.

ARCHIVES U.I.T. GENÈVE

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No. 27-E
15 August 1959
Original: English

FEDERAL REPUBLIC OF GERMANY

Proposal

ARTICLE 11

Number of proposal

4884

One of the aims of the Ordinary Administrative Radio Conference (Geneva 1959) should be in accordance with the decisions of the E.A.R.C. to establish or prepare an International Frequency List which reflects the actual usage of the radio frequency spectrum ("Frequency Usage List") and which provides for an optimum use of the spectrum. It is, therefore, felt that the provisions of Article 11 of the RR should be revised and amended with a view to improving and perfecting the examination and the finding on a frequency assignment by the I.F.R.B.

It is known that the present regulations of the RR provide for the international protection of a frequency assignment when three criteria are fulfilled, viz. those that are contained in No. 327, 328 and 329 of the RR. The examination according to these three criteria will result, in the opinion of the Federal German Republic, in a more or less theoretical finding. This theoretical finding should be accomplished by an additional examination according to a fourth criterion, viz. the actual operation free of interferences. The provisions of No. 343-345 of the RR point into the direction of this principle.

The Federal German Administration is not yet in a position - and does not deem it appropriate for the time being - to present an explicitly formulated proposal as regard this matter; it is, however, felt that it would be desirable for the Administrative Radio Conferences, when discussing the wording of Article 11, to pay due regard to the considerations presented above. The Federal German Administration will consider to submit to the conference a detailed proposal on this subject at an appropriate stage of the deliberations.

ARCHIVES U.I.T. GENÈVE

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No. 28-E
16 August 1959
Original: English

UNITEL KINGDOM

Proposals

ARTICLE 29

Number of proposal		
		Proposal No. 1753 should be amended as follows:
	607.	After this number add the following new sub-paragraphs:
1753		(2. bis.) Automatic calling devices may be used in the mobile radiotelephone service.
		Reasons
		808 transferred to a more appropriate place.
1753 bis		(2. ter.) Unnecessary continuous emissions (such as the unduly prolonged emission of call slips) shall be avoided in the Maritime Mobile Coast Radiotelegraph Service (see 372).
		Reasons
		To incorporate 76 of E.A.R.C. Agreement.

INTERNATIONAL TELECOMMUNICATION UNION

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

E

Document No. 29-E
16 August, 1959
Original: English

UNITED KINGDOM

Proposals

ARTICLE 34

Number of proposal		
		Proposal 2256 should be amended as follows:
2256	833.	Amend to read:

The use of frequency modulation is compulsory in the maritime mobile service; the frequency deviation should not be greater than plus or minus 15 kc/s. Vertical polarisation shall be used.

Reason

To make frequency modulation mandatory in all regions and to incorporate parts 1.1.1 and 1.2 of C.C.I.R. Recommendation No. 223.

Add after this No. the following new paragraph:

2256 bis

§ 15 bis. The output power of ship-station transmitters should not exceed 20 watts, except in special circumstances to be determined by individual administrations.

Reason

To incorporate part 1.7.2 of C.C.I.R. Recommendation No. 223.

ARCHIVES U.I.T. GENÈVE

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No. 30-E
16 August 1959
Original: English

UNITED KINGDOM

Proposals

Number of proposal

4882

After Appendix 12 add a further new Appendix:

APPENDIX 12 ter.

FREQUENCY ALLOTMENT PLAN FOR COAST RADIOTELEPHONE STATIONS OPERATING IN THE EXCLUSIVE MARITIME MOBILE BANDS BETWEEN 4,000 AND 23,000 kc/s

Note 1 The power indicated in these plans is the "mean power" as defined in 63 of Article 1, Chapter 1.

Note 2 It is recommended that when countries bring additional frequencies into use the assistance of the I.F.R.B. should be sought in choosing specific frequencies so as to avoid harmful interference to assignments which are in conformity with the above frequency allotment plan.

Insert here the text of pages 3 to 32 inclusive of Annex 5 to the E.A.R.C. Agreement with the following amendments:

Page 3: Delete the heading

After Section I insert:

Frequencies for which a date shall be recorded in the Registration Column of the Master International Frequency Register upon their assignment and notification in accordance with Article 11.

ARCHIVES U.I.T. GENEVE

Page 29: After Section II insert:

Frequencies for which a date shall be entered in the Notification Column of the Master International Frequency Register upon their assignment and notification in accordance with Article 11.

Reasons:

To incorporate 67, 68 and Annex 5, Part A, Sections 1 and 2 of E.A.R.C. Agreement.

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No. 31-E
17 August, 1959
Original: English

PLENARY MEETING

AGENDA

for the Opening Plenary Meeting
Monday, 17 August, at 1500 hours

1. Address by the Chairman of the Administrative Council, formally opening the Conference
2. Reply address on behalf of visiting delegations
3. Statement by the Acting Secretary-General concerning the preparation for and organization of the Conference
4. Election of the Chairman of the Conference
5. Election of the Vice-Chairmen of the Conference
6. Constitution of the Secretariat of the Conference
7. Committee Structure of the Conference (Document No.19)
8. Miscellaneous

ARCHIVES U.I.T. GENÈVE

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No. 32-E
17 August, 1959
Original: English

PLENARY MEETING

PROPOSALS BY THE HEADS OF DELEGATIONS FOR THE COMMITTEE STRUCTURE OF THE CONFERENCE

At their First Meeting on 17 August 1959, the Heads of Delegations proposed the following Committee structure :

Committee No. 1	-	Steering
Committee No. 2	-	Credentials
Committee No. 3	-	Finance Control
Committee No. 4	-	Frequency Allocation
Committee No. 5	-	Frequency Registration Procedure
Committee No. 6	-	Technical
Committee No. 7	-	Operations
Committee No. 8	-	Drafting

ARCHIVES U.I.T. GENÈVE

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No. 33-E
17 August, 1959
Original: English

PLENARY MEETING

AGENDA

for the 2nd Plenary Meeting

Tuesday, 18 August, at 1500 hours

1. Reference to Article 11 and Annex 5 of the Convention
2. Proposals by the Chairman for Chairmen and Vice-Chairmen of Committees
3. Invitations to the Conference. (Documents Nos. 3 and 18)
4. Situation of certain countries with respect to the Convention. (Documents Nos. 4 and 18)
5. Admission of International Organizations. (Document No. 5)
6. Working hours of the Conference
7. Schedule of Meetings
8. Miscellaneous

ARCHIVES U.I.T. GENÈVE

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No.34-E
17 August, 1959
Original: English

HEADS OF DELEGATIONS

DRAFT AGENDA FOR THE SECOND MEETING OF THE HEADS OF DELEGATIONS
TUESDAY, 18 AUGUST 1959, SALLE E AT 10.00 HOURS

1. Reference to Article 11 of, and Annex 5 to the Convention
2. Invitations to the Conference (Document Nos.3 and 18)
3. Situation of Certain Countries with respect to the Convention (Document Nos.4 and 18)
4. Admission of International Organizations (Document No.5)
5. Working hours of the Conference
6. Schedule of meetings
7. Miscellaneous

ARCHIVES U.I.T. GENÈVE

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No. 35-E
17 August 1959
Original: English

PLENARY MEETING

IRAQ

Resolution No. 31 of the Plenipotentiary Conference,
Buenos Aires, 1952

I have the honour to submit to the Conference the attached letter dated 14 August, 1959, which I have received from the Head of the Delegation of Iraq.

Gerald C. GROSS
Acting Secretary-General

Annex : 1

ARCHIVES U.I.T. GENÈVE

PAGE INTENTIONALLY LEFT BLANK

PAGE LAISSEE EN BLANC INTENTIONNELLEMENT

ANNEX

MINISTRY OF GUIDANCE

Geneva, 14 August, 1959

The Acting Secretary-General,
International Telecommunication Union,
Palais Wilson,
GENEVA

Subject: Amendment to the Radio Regulations so as to provide for the inclusion of the Iraqi Republic in the European Area as defined in the Radio Regulations.

Dear Sir,

As it was recognized at the Plenipotentiary Conference at Buenos Aires, the geographical position of Iraq makes it imperative, for all practical and technical purposes, to have the Iraqi Republic included within the European Area.

It is evident that the close cooperation between the Iraqi Republic and the European Area is of special importance in the preparation of the frequency assignment plans, especially for medium wave broadcasting stations. Such would facilitate the participation of Iraq in regional conferences and the general utilisation of frequency assignments.

As Head of the Delegation from the Iraqi Republic for the Administrative Radio Conference, I appreciate very much the fact that Resolution No. 31 has been included in the first series of Proposals for consideration by the Administrative Radio Conference, and the purpose of this letter is to emphasize the necessity for a favourable decision; that the subject be given priority for early consideration by the Conference, and placed on the Agenda for an early Session. This is essential, firstly, so that the areas for the frequency assignments in the Radio Regulations may be defined, and secondly, so that I may take part in the deliberations of the Conference on this subject, prior to my return to Iraq in a fortnight.

It would seem to me that paragraph 107 of the Radio Regulations could be easily interpreted so that Iraq is actually in the European Region. It is to be noted that the present boundary of the European Area includes part of the Iraqi Republic.

Yours faithfully,

(Sign.) M.A. BAGHDADI
Chief Engineer
Iraqi Broadcasting

INTERNATIONAL TELECOMMUNICATION UNION

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

E

Document No. 36-E
17th August, 1959
Original: Spanish

SPAIN

Proposals

ARTICLE 7

Number of proposal.

4485 236. Replace the existing text of clause a) by the following:

a) A fixed station which communicates over short or medium distances with several other stations of the same class may, as a secondary service, communicate with mobile land stations by transmitting on the frequencies assigned to it for its main service.

Reasons:

Communication by a fixed station using its own frequencies with maritime mobile sea or aeronautical stations is not necessary or convenient at the present time. Moreover communication by a fixed station with other mobile stations should not be permitted when the fixed station is only for long distance communications (for example, for international communications); nor should this be allowed over short distances except when there are several correspondent stations and the station concerned has adequate equipment (especially an antenna system) for communicating with mobile stations.

4486 Replace the existing text of clause b) by the following:

b) A land station may, as a secondary service, communicate with fixed stations or other land stations by transmitting on the frequencies assigned to it for its main service.

ARCHIVES U.I.T. GENÈVE

Reasons:

1. In the existing text it is not clear that the use of mobile service frequencies for other purposes is authorized. However this is the only reason why this clause is included in Article 7.

2. Communications between different classes of land stations may be useful; for example between coast and aeronautical stations in cases of emergency.

4487 238. Delete

Reasons:

It is not advantageous for mobile stations to use frequencies assigned to a coast station and this may cause harmful interference.

INTERNATIONAL TELECOMMUNICATION UNION

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

E

Document No. 37-E
17 August, 1959
Original: Spanish

SPAIN

Proposals

ARTICLE 9

Number of the proposal:		
4888	245 and 246.	Delete.

Reasons:

Unnecessary if Nos. 247 to 249 be deleted, as we propose.

4889	247.	Delete.

Reasons:

There is no call to affirm this principle explicitly. The normal practice, everywhere accepted, is not to assign out-of-band frequencies to radio stations below 2,000 kc/s.

4890	248 and 249.	Delete.

Reasons:

There is no call for an express reference to a special conference in this part of the Radio Regulations. Any special agreements that may be necessary can be reached in accordance with Article 4. See the Spanish proposals about frequency notification and registration in the band 525-1605 kc/s and about the convening of a new European broadcasting conference.

ARCHIVES U.I.T. GENEVE

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No. 38-E
17 August 1959
Original : Spanish

SPAIN

Proposals

CHAPTER IV

Number of Proposal		General Comments
4891	1.	These proposals have been formulated in the light of the proposals by the various countries, published by the General Secretariat (first series) and those by the countries which have kindly communicated them to the Spanish Administration as they were formulated. Although the present proposals were, on certain points, inspired by those of the other countries, they nevertheless represent a particular point of view, and so differ from the others in form as well as in substance, in the latter case sometimes to a considerable extent.
	2.1	The proposals are based on the assumption that, since it will be very difficult for the Conference to succeed in compiling a compatible frequency list for the whole spectrum, it will be practically impossible to establish a single procedure for the examination and recording of frequency assignments. There may, however, be many points in common in the various procedures, such as: information to be notified, deadlines, principles for the review of entries, etc; it is felt that it would be most useful for the Administrations if everything possible was unified (even at the cost of compromise where procedures differ), such as setting out in order and separately the different stages in the procedure for the notification, examination and recording of frequencies.
	2.2	In accordance with this criterion, the subjects dealt with in Chapter IV have been rearranged as follows:
		Art. 10 - Duties of the International Frequency Registration Board.
		Art. 11 - Notification and recording of frequency assignments.

ARCHIVES U.I.T. GENEVE

Section I	Notification of frequency assignments and of changes in assignments
Section II	Treatment of notifications by the Board prior to examination and recording
Section III	Examination of notices by the Board
Section IV	Master Frequency Assignment Record. Original entries
Section V	Notification of additional information concerning the original entries
Section VI	Recording of assignments (and changes in entries) in the Master Record
Section VII	Categories of entries
Section VIII	Review of the Board's findings
Section IX	Cancellation of assignments of which no effective use has been notified. Powers of the Board to obtain the change or cancellation of other recordings

Art.11(2) Studies and recommendations to be made by the Board.

Art.11(3) Notification by Administrations of their programmes for the use of HF broadcasting assignments and the examination, handling and publication of these by the Board.

Art.11(4) General provisions to be taken into account by the Board.

Art.12 Rules of Procedure of the Board.

The Spanish Administration requests that its proposals concerning Article 11 and the new articles to be inserted between Articles 11 and 12 should be presented to the Administrations and to the delegations at the Conference as a whole for each article, and not divided according to paragraph.

The Spanish Administration submits proposals concerning Article 14, which is closely related to the questions dealt with in Chapter IV. Similarly, although

it makes no concrete proposals concerning Article 20, it submits an explanation of certain principles which it would wish to see applied in this article to maintain a certain relationship with its proposals concerning Chapter IV.

2.3 In regard to Article 10, it is felt, with the majority of countries which have submitted proposals, that questions concerning the membership of the Board, the qualifications of its members, and the manner of their election should be left for the Convention. The change in the title is consequential on the change in the content of the article.

In Article 11, different stages and questions of the procedure are clearly separated. Only in Sections IV and VI is it necessary to make a distinction in the provisions to be applied according to the frequency bands, in order to avoid similar distinctions in the rest of the article. These two sections, on the other hand, are in sub-divisions which are related between sections. Section VII contains a series of provisions concerning the relative priorities or rights (status) of entries. In the proposals made by other countries, such provisions are scattered throughout the article, with no specific place.

All provisions which do not refer clearly and exclusively to the procedure for the handling of notifications, the compilation of the Frequency Record and the entry of assignments, have been removed from Article 11.

3. In regard to the substance, the main points of the Spanish proposals are as follows:

1. A tendency to unite the procedures for the different frequency bands, even if there has to be a compromise on questions such as the deadline for notifications, where, in certain respects, some variation might be an advantage. The diversity of standards is very inconvenient for Administrations.

2. A different recording procedure (in regard to the dates to be entered in Columns 2a and 2b, and to the respective categories or priorities of one entry in relation to another), in the case of bands for which suitable lists or plans have been obtained, and in the case of bands for which it has not been possible to do so; and, in consequence, different rules for the original entries in the Frequency Record. If the Conference should establish a list or plans for new parts of the spectrum for which up till now there have been none, the provisions proposed in Sections IV and VI of Article 11 could be modified.

3. Proposals for the bands 415-1,605 kc/s in the European Region in accordance with the special situation of these bands, to which neither the Atlantic City procedure for notification and recording nor the E.A.R.C. agreement applies under the regulations at present in force.

4. Maintenance of the principle that an assignment may be cancelled or changed only if the Administration concerned makes a new notification. In the course of its inquiries, all the Board can do is to ask the Administration to make the necessary notifications so as to bring their frequency entries up to date. If an Administration does not reply or replies evasively, however, it shall be taken to mean that the Administration agrees with the request. Except in such a case, the Board may not amend the information given by the Administrations and entered in the Record, nor may it add any further information.

5. Establishment of a procedure whereby changes in assignments may be recorded without cancelling earlier entries if they happen to be more favourable, so that the Administration concerned may revert to them if necessary. The purpose of this procedure is to avoid the tendency to refrain from notifying changes for fear of sacrificing the advantages of earlier entries.

6. Inclusion of a new item in the information to be given, concerning the number of simultaneous circuits between a station and each given point (fixed services) or in a given service (or services); naming of the circuits if there are more than one. This information is very important for the studies and recommendations made by the Board with a view to the most profitable use of the spectrum, because it would enable the Board to judge whether the number of frequencies assigned to a station is more than is necessary in the light of propagation conditions. This information should not be obligatory since some official services have difficulty in providing it. However Administrations are encouraged to send such information because certain advantages are given to entries which include it (See Article 11, Section VII, Article 11b and Article 14). The requirements and convenience of the Administrations should be considered here, because official services which, more than others, might have difficulty in providing this information, probably use the frequencies much less frequently and so the need for it for the general use of the Record and the disadvantages with regard to other assignments arising from this lacuna are of less importance for the Administration concerned.

7. Encouragement of studies and recommendations by the Board, which should be obligatory sometimes in certain cases so that administrations may be furnished with solutions, to be adopted voluntarily by them, which may improve the situation with regard to certain interference problems or problems in parts of the spectrum.

8. To consider the difficulty some Administrations or private operating agencies have because, although they have various frequencies of the same order of magnitude assigned to the same stations and on the same circuit, none of them is in fact sufficiently free from interference. This circumstance, which is met with most frequently in stations of small countries, should be held in mind when dealing with harmful interference and also in the studies and recommendations of the Board, which should try to solve this problem by suggesting that the various unsatisfactorz frequencies be replaced by a single one free from interference.

9. The use of the expression "change in the use of frequencies", proposed by the English speaking countries, is rejected because it is considered to be unclear. (Unwanted changes in the use of frequencies may occur, such such as deviation beyond the tolerance and others caused by station operators which are not authorized by the Administration; these do not need to be notified.) The expression "assignments or changes in assignments" is proposed instead.

4. With regard to high frequency broadcasting, the Spanish administration considers that the American proposal with regard to the notification and publication by the Board of the assignment schedules prepared by the Administrations may be useful should the Conference not adopt the plans drawn up by the I.F.R.B. The provisions relating to this question should be put in another Article in Chapter IV and not in Article 11 in order to avoid any confusion with the general procedure for notifying and recording frequency assignments which include high frequency broadcasting assignment, according to the American proposal.

Observations on the Presentation of the Proposals

1. The Secretariat is requested to present the proposals with regard to Article 11 and the new Articles to be inserted between 11 and 12 in direct sequence and not divided into paragraphs.

2. The paragraphs in each Article have been numbered and numbered subdivisions for each paragraph have been used as required. When a paragraph relates to a number in the Atlantic City text, this has been indicated in the margin to make comparison easier; in the same way reference has been made to the deletion of certain numbers of the Atlantic City text, when it is convenient to make a comparison with this text. However, many paragraphs do not relate directly to the text. These new paragraphs have been marked with a dash in the margin.

3. For cross-reference between paragraphs, the numbering of the paragraphs and their subdivisions has been used in some cases and the numbering of the Atlantic City paragraphs in others. Where possible the latter references have been used for their handiness because they are often known by heart by those who consult the Regulations frequently. It should be pointed out, however, that reference is made to the corresponding paragraphs in the form in which (the Spanish administration proposes) they should remain.

4. For similar reasons it has been found preferable to use expressions like "Board observations column" and "information with regard to the number and names of simultaneous circuits" in order to avoid confusion until a new numbering is adopted for the Frequency Record columns. The references can then be simplified and the information entered in the Frequency Record designated by the appropriate column number.

Proposals

ARTICLE 10

Number of proposal | New title | Duties of the International Frequency Registration Board

4892

Reason

The title fits the contents of the Article as drafted in accordance with our proposals.

4893 284. § 1. The essential duties of the International Frequency Registration Board are defined in paragraph 1, Article 6, of the Convention. The Convention determines the membership of the Board, the manner of electing its members and the qualifications which they must have.

Number of proposal

4894 285 Delete.

4895 286 Delete.

Reasons : (See numbers 284, 285 and 286)

1) The essential duties of the Board are defined in the Convention (Article 6). Reference should be made to them, but it is unnecessary to repeat them because the provisions of the Convention are developed in the paragraphs which follow (Nos. 287 and 295).

2) Further on we propose to delete Nos. 297 to 307 and to insert in the Convention the provisions on the membership of the Board and the election and qualifications of its Members. For this reason these provisions of the Convention should be referred to at the beginning of the Article.

4896 287 § 2. As a supplement to the above-mentioned provisions of the Convention the duties of the Board are listed below :

Reasons: Following on our proposals for Nos. 284, 285 and 286.

4897 288 a) The compilation and daily maintenance, in accordance with the provisions of Article 11, of the Master International Frequency Record.

Reasons : This results from our proposal to delete No. 285 and also to make it clear that the Frequency Record must be compiled and maintained in accordance with the provisions of Article 11. We propose the name "International Frequency Master Record" - ("Registro-base internacional de frecuencias radioeléctricas"), which is more appropriate in Spanish and in order to distinguish the new record from the M.R.F.R.

4898 289 b) The compilation, for publication in suitable form by the Secretary General in accordance with the provisions of Article 20, of frequency lists which give the contents of the Master Record at certain dates as well as the weekly circular referred to in No. 322 and § 1 of Article 11, Section 4, the lists of "assignment schedules for high frequency broadcasting stations" which are referred to in Article 11, Section 3, and other documents relating to the assignments and use of frequencies which may be conveniently published.

Number of proposal

Reasons: To distinguish clearly the duties of the Board and the Secretary-General. To make it clear that the frequency lists to which reference is made are those which give the contents of the Master Record at certain dates. Finally to include explicitly other publications provided for in our proposals (See the publications relating to the new Articles 11, Section 3 and 11, Section 4)

4899 290 c) (Keep the existing text, replacing the words "Secretary-General of the Union" by "Secretary-General").

4900 291 d) The review of entries in the Master Record with an invitation to the Administrations concerned to give notice of the changes or cancellations which might result when the Board has good reason to suspect that such notifications ought to have been made in accordance with the provisions of Nos. 314, 315 and 369.

Reasons: To make it clearer and in accordance with our proposals for a new Section 9 in Article 11.

4901 292 e) (Keep the existing text)

4902 293 f) (At the end of the existing text replace the words "in order to allow the establishment of new circuits" by "in order to obtain a better use of the frequency spectrum")

Reasons: To include objectives like avoiding harmful interference, improving the quality of the services, reducing the frequency changes needed for running the circuits, etc.

4903 294 g) (Keep the existing text)

4904 295 h) The participation in an advisory capacity, upon invitation by the organizations or Administrations or governments concerned, in conferences and meetings where questions relating to the assignment and use of frequencies are discussed.

Number of proposal

Reasons: To ensure the presence of members of the I.F.R.B. at meetings and conferences where this may be useful although no regional or service agreements have to be established at them.

4905 296 to 307 Delete

Reasons: The provisions relating to the membership of the Board, the election of its members and their qualifications are more appropriate in the Convention. It is unnecessary to repeat them in the Regulations.

4906 308 S S 3. In order to carry out its duties the Board shall have the assistance of a specialized secretarial staff who shall work on the lines of the directives laid down by the Board and under the direction of the Chairman in carrying out the work of the Board.

Reasons: The word "small" has been deleted because experience has shown that the Secretariat of the Board has to be fairly substantial. The conditions relating to the recruitment of staff for the Secretariat of the Board are given in the Convention (Article 8, paragraph b) and do not need to be repeated here.

Number of proposal

ARTICLE 11

4907 New title — Notification and recording of frequency assignments

---

4908 309 to 313 — Delete

Reasons: Given the diversity of procedures required, according to the frequency bands, for examining and recording the assignments, it is not possible to make a summary as simple as the one that was made in these paragraphs. Moreover a summary of this kind is not necessary.

4909 New title

Section I

Notification of frequency assignments and changes in assignments

---

4910 314 § 1 (1) All frequency assignments and changes in previous assignments which the Administration of a Member allocates to a station of any type except mobile ones or mobile radionavigation and amateur stations must be notified to the Board by the Administration whenever the frequency has to be used for international radiocommunications or for radiocommunications which risk causing harmful interference to other communications of another Member, and also whenever international recognition is required for using the frequency.

Reasons: To simplify the drafting. To make it clear that the notification must be made by the Administration which makes the assignment.

4911 315 (2) Similar notice shall be given of the assignments or changes of frequency assignments to mobile stations or mobile radionavigation stations of a mobile service or of given radionavigation service for working with land stations or with other mobile stations, provided one of the factors stipulated in the previous number is present.

Reason: To include frequencies used for communicating betweeen mobile stations.

Number of proposal

4912 316 (3) Specific frequencies prescribed by the present Regulations for common use by stations of a given service (for example, 500 kc/s and the frequencies of HF ship stations of the maritime mobile service, etc.) shall not be notified to the Board.

Reasons: To add further examples to that of the well-known 500 kc/s.

4913 317 § 2 (1) Wherever possible, frequency assignments or changes in assignments prescribed in § 1 of this Article must be notified to the Board before they are brought into use. Notifications shall not be made, however, more than three months beforehand.

4914 (2) Where it has not been possible to make the notification in advance, it shall in every case be made within thirty days from the date on which the frequency is brought into use or on which the conditions of its use are changed.

4915 (3) Where a notification of assignment or of change in assignment is made before it is brought into use, the date on which the assignment or change comes into effect must be communicated to the Board within thirty days of that date.

Reasons: (See 2.) To establish time limits within which notifications shall be made. (See, however, the provisions for suspending this period contained in § 33). If the notification is made in advance, it is necessary to confirm afterwards the bringing into actual use of the assignment or the taking effect of the change.

4916 318 § 3 (1) The notifications referred to in § 1 (1) shall include the following information:

Name of the notifying country.

Frequency.

Call sign or characteristic signal used for station identification.

Station location (Name of the locality in which the transmitting antennae are situated and its geographical coordinates in degrees and minutes).

Class of station (in accordance with Article 1).

Number of Proposal

Locality (or localities) in which reception is monitored, in the case of a fixed service, or reception or service area, in the case of other services.

Class of emission and necessary bandwith.

Power.

Maximum working schedule of the circuit or service.

Phase of the sunspot cycle in which the frequency is to be used (when it is intended to be used in certain phases only).

In the case of a frequency used with different emission, power, time and phase characteristics for each reception point or area, these characteristics shall be specified separately for each of those points or areas.

Further, if the assignment is subject to any special arrangement, reference must be made to that arrangement.

4917 (2) The notifications referred to in § 1 (2) must include the following information:

Name of the notifying member.

Frequency.

Class of station (in accordance with Article 1).

Area or areas of service.

Indication whether the emissions are intended to be received by land stations or by mobile stations.

Class of emission and bandwith necessary.

Power of mobile stations (maximum, where variable).

Further, if the assignment is subject to any special arrangement, reference must be made to that arrangement.

4918 (3) If the notification is made after the assignment or the change in assignment has taken effect, the date on which this happened must also be included. If the notification is made in advance, the date on which it is intended to bring it into effect must be indicated, but in that case, in accordance with the provision in § 2 (3), the date on which the assignment was in fact brought into use must be confirmed afterwards.

Number of proposal

Reasons : (See (1), (2) and (3). To define clearly the information which must be notified . In regard to the meanin g of power, the definition given in Article 1 will apply. The schedules refer to the circuit and not to the frequency, in accordance with the opinion of the E.A.R.C., which considered it impracticable to determine the schedule of each frequency.

4919 (4) For the purposes of this article, complete notification shall mean one containing the information required under (1) or (2), as the case may be, and under (3).

Reasons : To define a term used in the rest of our proposals on this article.

4920 (5) It is recommended that notifications should be made in the form proposed in Appendix 1, using a separate form for each assignment or change of assignment and supplying the additional information indicated in the form, where applicable, as well as any additional information, not so indicated , which may be appropriate.

4921 319 Delete

Reasons : It is not practicable.

4922 350 § 4. In case of permanent discontinuance of the use of any recorded frequency, the notifyinf Member shall inform the Board of such discontinuance within three months, and the entry shall be removed from the Master Record without any further action.

Reasons : This provision is more appropriately placed in this section, which includes all the provisions concerning the notifications to be made by Administrations.

4923 New title

Section II

Handling of notices by the Board prior to examination and recording

---

Number of proposal

4924 § 5 (1) The Board shall check the notices immediately on receipt, to see whether they are complete and in accordance with the provisions of Section I, § 3.

4925 (2) When a notice is incomplete, it shall be returned to the notifying Administration, with a brief explanation of the information which is incomplete or not in accordance with the provisions of Section I, § 3. Notices thus returned shall in no way be taken into account by the Board.

4926 321-322 (3) When a notice is complete, the Board shall publish it and the date of its receipt in a circular which shall be sent by airmail at intervals of one week to the Administrations of Members. The inclusion of the notice in this circular shall serve as the acknowledgment of receipt to the notifying Administration.

4927 321-322 (4) The weekly circular shall contain the information in the notice set out in the same way as in the frequency list mentioned in No. .... Each circular shall include all the notices received since the date of the last previous notice.

4928 320 § 6. The date of receipt by the Board of a complete notice shall govern the order of its consideration.[1)]

4929 320.1 1) Undue delay in the delivery of a notice attributable, after verification, to the post, shall not in any way affect priority of recording of the notice.

4930 323-325 Delete.

Reasons : It must be the concern of the Board to safeguard the assignments previously recorded without it being necessary for the Administrations to do so. At the same time, the handling of the notices is shortened to four weeks, which is important.

Number of proposal	New title	
		Section III Examination of notices
4932	326	§ 7 (1) The Board shall examine each notice with respect to :
4933	327	a) Its conformity with the table and the rules for allocation of frequencies.
4934	328	b) Its conformity with the Convention and with the other provisions of these Regulations (with the exception of those relating to the probability of harmful interference).
4935	329	c) The probability of harmful interference, over a full sunspot cycle, either to the service of a station for which a frequency assignment with a date in Column 2a has been entered in the Master Record, or to a service operated in accordance with Nos. 327 and 328 on a frequency registered with a date in Column 2b, in respect to which the Board has not received information to the effect that it is causing harmful interference.
4936	-	(2) The examination referred to in c) (No. 329) will nevertheless be dispensed with in the cases envisaged in § 13 (1) and § 19; in the cases referred to in § 15 and § 17 (1) it will be replaced by the comparison which, in each of these cases, is shown in the corresponding No.

Reasons : (These refer to (1) and (2)). The amendments relating to the corresponding numbers of the present Regulations are only drafting amendments, in most cases, except as regards the reference to the solar cycle. The new (2) is in line with our subsequent proposals (see Section VI thereof).

Number of proposal

4937 330 (3) Where appropriate, the Board shall also examine the notice as regards its conformity with a regional or a service agreement. Where there is a discrepancy, and assuming that the notifying Member is a party to the said agreement, this shall be brought to its notice and to the notice of the other Members parties to the agreement.

4938 332 (4) In other respects the procedure to be followed for the examination of assignment notices or amendments to assignments made in conformity with a regional or a service agreement notified to the Board shall be as specified in § 7 (1), except that the Board shall not take part in examining the question of interference between the contracting parties.

Reasons : Improved drafting.

4939 - (5) Similarly, in the case of assignments made by special agreement between two or more Members and communicated by them to the Board, the latter shall play no part in the examination of the question of interference between the parties to such an agreement.

Reasons : To extend the principle applied to regional and service agreements to special agreements in general.

4940 331 Delete.

Reasons : Unnecessary, since it deals with a well-known technical principle.

4941 369 § 8. Notices received by a Board shall in practice be considered as soon as possible, a delay being permissible only if a decision cannot be made for lack of sufficient data. However, the Board shall not give a ruling upon any notice which has a technical bearing on an earlier notice still under consideration by the Board, until such time as it has reached a finding with respect to such earlier notice.

Reasons : With the necessary drafting changes, this is a more suitable position for No. 369.

Number of proposal

4942 New title

Section IV
Master frequency assignment Record
Original entries

4943 § 9 The Board shall set up a Master Record of frequency assignments in which shall be entered, as original entries, the entries appearing in the Master Radio Frequency Record (established in the E.A.R.C. Agreement) on the date of entry into force of this Article; the recordings shall be included in one of the following groups:

4944 Group A Entries corresponding to the bands below 1,605 kc/s which, in conformity with No. 328, carry dates in Columns 2a and 2c or in olumns 2b and 2c of the M.R.F.R.

4945 For these entries the dates in Column 2a or 2b and 2c of the M.R.F.R. shall be transferred to the same columns in the Master Record.

Moreover, and in the entries relating to European Area assignments in the bands 415-1,605 kc/s, the Board shall include in the column of "Remarks by the Board" in the Master Record, any comment relating to dates of notification or usage appearing in the M.R.F.R. or recorded in the archives of the Board, although not recorded in the M.R.F.R., provided that, in the latter case, the notifying Administration so requests, giving the necessary reasons.

4946 The original entries in the Master Record included in this group A which do not conform to the criterion of No. 327 shall be marked with an X in the column "Remarks by the Board". Those relating to assignments in the European Area in the bands 415-1,605 kc/s shall be marked with the symbol Y in the same column, unless the symbol X also applies to them, in which case they shall bear only the latter.

4947 Group B Entries relating to aeronautical stations included in one of the bands allocated exclusively to the aeronautical mobile R service between 2,850 and 17,970 kc/s which do not conflict with the provisions of No. 328.

Number of proposal

4948 For these entries the dates to be shown in Columns 2a or 2b of the Master Record shall be determined as follows: If the entry is in line with the four provisions specified in paragraph 15 (Section VI), the date 3.12.51 shall be entered in Column 2a of the Master Record; if it conforms to provisions 1, 3 and 4 but not to 2, that same date shall be entered in Column 2b; in all other cases the date on which the Board first received the relevant notice shall be entered in Column 2b.

As regards Column 2c of the Master Record, this shall include the date, as notified to the Board, when the assignment was first used, according to the records in the Board's archives and, if necessary, any comments relating to the date that may be appropriate.

4949 Group C Entries relating to aeronautical stations included in one of the bands allocated exclusively to the aeronautical mobile OR service between 3,025 and 18,030 kc/s. which do not conflict with the provisions of No. 328.

4950 For these entries the dates to be shown in Columns 2a or 2b of the Master Record shall be determined as follows: If the entry is in line with one of the primary allotments in the plan for the aeronautical mobile OR service and with the conditions specified in that plan (Appendix No. ...) the date 3.12.51 shall be entered in Column 2a of the Master Record; if it is in line with one of the secondary allotments in the plan, and fulfills the conditions specified in the plan, the date 3.12.51 shall be entered in Column 2b of the Master Record; in other cases the date on which the Board received the notification in the first place shall be entered in Column 2b.

With regard to Column 2c of the Master Record, this shall include the date, as notified to the Board, when the assignment was first used, according to the records in the Board's archives and, if necessary, any comments relating to the date that may be appropriate.

Number of proposal

4951 Group D Entries relating to coast stations included in one of the maritime mobile exclusive bands between 4,063 and 22,720 kc/s, which do not conflict with the criterion of No. 328.

4952 For these entries the dates to be shown in Columns 2a or 2b of the Master Record shall be those shown in the M.R.F.R. in the same columns. Also, any comments relating to notification dates appearing in the M.R.F.R., or in the archives of the Board but not in the M.R.F.R., shall be entered in the column for the comments of the Board, provided, in the latter case, that the notifying Administration requests that this be done and supplies the necessary reasons.

With regard to Column 2c of the Master Record, this shall include the date, as notifed to the Board, when the assignment was first used, according to the records in the Board's archives and, if necessary, any comments relating to the date that may be appropriate.

4953 Group E Entries relating to broadcasting stations in the exclusive broadcasting bands between 5,950 and 26,100 kc/s, which do not conflict with the criterion of No. 328.

4954 The following entries shall be made in the Master Record:

Column 2b - Date on which the Board received the notice for the first time, unless prior to 1 April 1952, in which case the date to be entered is 1 April 1952.

Column 2c - Date appearing in Column 2c of the M.R.F.R., unless there is a comment in Column 13 referring to a date of use, in which case this is the date which should be entered.

Number of proposal

Where appropriate, and if the notifying Administration so requests, any comments relating to dates of notification and use may be added, after they have been checked in the archives of the Board.

4955 The letter "W" shall be inserted in the column "Comments of the Board" of the Master Record in the case of original entries for Group E.

4956 Group F Entries relating to assignments above 1,605 kc/s which are not covered by Groups B, C, D or E and which are in conformity with the provisions of No. 328 and bear a date in Column 2c of the M.R.F.R. but none in Columns 2a and 2b.

4957 The following entries shall be made in the Master Record:

Column 2b - Date on which the Board received the notice for the first time, unless prior to 1 April 1952, in which case the date to be entered is 1 April 1952.

Column 2c - Date appearing in Column 2c of the M.R.F.R., unless there is a comment in Column 13 referring to a date of use, in which case this is the date which should be entered.

Where appropriate, and if the notifying Administration so requests, any comments relating to dates of notification and use may be added, after they have been checked in the archives of the Board.

4958 Any entries which have no date in Columns 2a or 2b, nor in Column 2c, but which bear a comment in Column 13 of the M.R.F.R. relating to a date of use shall be considered as coming under Group F, as though a date did appear in Column 2c.

Number of proposal

4959 The letter "U" shall be inserted in the column "Comments of the Board" of the Master Record in the case of original entries for Group F, provided they were notified in conformity with No. 272 of the E.A.R.C. Agreement or, if they were not, provided that they were entered in the M.R.F.R. as the result of a favourable finding of the Board, in accordance with the provisions of the E.A.R.C. Agreement. The letter "V" shall be inserted if the entry was made at the insistance of the notifying Administration after an unfavourable finding by the Board, in accordance with the above-mentioned provisions. However, should the assignments be in conflict with the provisions of No. 327, the letter "X" will be inserted.

4960 § 10 Entries will also be made by the Board in the Master Record (and considered as original entries) in respect of the shared frequencies indicated in the Regulations (No. 316); in this case there will be no date in Columns 2a, 2b and 2c but instead a reference to the number of the Regulation which covers its shared use.

Reasons: (With reference to the whole of Section IV) This Section specifies the form in which the new Master Record should be constituted for the application of the procedure for assignment entry provided in this Article according to our proposals. As there are variations to this procedure for the different frequency bands (see proposals relating to Section VI), the conditions for the original entries must be different. The choice of the variant to be applied in each case (and therefore also of the form in which the original entries must be made in the Master Record) depends upon the bands and services, which we consider the clearest criterion. The details of our proposal on this Section are in harmony with our other proposals on this Article (see Sections VI and VII of our proposals in particular). The Annex mentioned as dealing with entries for aeronautical mobile services is a reproduction of the I.A.A.R.C. plan, adopted by the E.A.R.C., which we propose to include as an Annex to the Regulations. We advocate the use of letters, such as X, Y, U, V, W ...., to indicate the entries in the Master Record which may be found in certain characteristic places.

Number of proposal

4961 New title

Section V
Notification of data for the completion of original entries in the Master Record

---

4962 § 11 (1) Administrations should endeavour to notify within six months from the date of entry into fofce of this Article information relating to "number of circuits or channels operated simultaneously by a station situated between two given points or for a given service and their identification" (see Annex 1), for the original entries in the Master Record, whenever they wish these to appear with this information for the purposes set out in Section VII of this Article and in Articles 11 bis and 14.

4963 (2) For this notification it is not necessary to await publication of the first edition of the International Frequency List mentioned in Article 20 (which has to contain the original entries of the Master Record) as these are in principle known to Administrations already - they are included in the latest edition of the Radio Frequency Record (published in accordance with the provisions of the E.A.R.C.) with the changes notified by each Administration since the date of the latest edition.

4964 (3) The provisions of (1) do not preclude that information may be supplied subsequently, as notification of a change in assignment, concerning the "number of circuits or channels in simultaneous use" in the case of any entry appearing in the Master Record without this information.

Reasons: (Refer to the whole of Section V) In accordance with our proposals relating to Annex 1, the "information concerning number of circuits or channels in simultaneous use by the station situated between two given points or in a given service" should be given in new notices although this is not obligatory. (See point 3, para. 6, of the general comments on our proposals regarding Chapter IV). As this date does not appear in the M.R.F.R., the procedure for completing entries in the Master Record has to be set up.

Number of proposal

4965 New title

Section VI
Entry of assignments and changes in entries in the Master Record

A. Bands below 1,605 kc/s (except for the bands and regions referred to in Note A')

4966 333 §§ 12 (1) Whatever the findings of the Board may be as a result of the examination provided for in Section III of this Article (No. 326), new assignments shall be entered in the following manner :

4967 334 (2) Favourable finding from the point of view of Nos. 327, 328 and 329.

The assignment shall be entered in the Master Record and the date of receipt of the complete notice shall be inserted in Column 2a.

4968 335 (3) Unfavourable finding with regard to No. 328.

The notice shall be returned immediately, by airmail, to the notifying Administration with a brief account of the reasons for this decision.

4969 336 (4) Favourable findings from the point of view of Nos. 327 and 328 but unfavourable with regard to No. 329.

The notice shall be returned immediately, by airmail, to the notifying Administration with an account of the reasons for the finding, and any suggestions which the Board may care to make in view of a satisfactory solution to the problem.

Number of proposal

4970 337 If the notifying Administration should decide, in view of the Board's findings and suggestions, to make any changes in the assignment, a new notice must be submitted bearing the new date. This notice shall be treated by the Board as new and as such shall follow the usual course of processing, regardless of the fact that the Administration may refer to its previous submission in order to facilitate the examination of the Board by making use of part of the studies previously carried out.

4971 338 The notifying Administration may decide, on the other hand, to maintain the assignment as originally notified, with the reservation that it does not in fact cause harmful interference as mentioned in § 28 for second class entries. In this case, the notice must be re-submitted to the Board within a period of two months from the date of publication of the unfavourable finding in the weekly circular. It should be accompanied by a note to the effect that the Administration insists upon the inclusion of this assignment in spite of the finding of the Board. After checking the examination of the assignment, and the finding, and provided these are in order, the Board will enter the assignment in the Master Record, inserting the date of receipt of the first notice in Column 2b and indicating the finding of the Board in the column "Comments of the Board".

4972 If the notice is re-submitted to the Board without change, but after the time-limit of sixty days from the date of publication of the finding in the weekly circular, it shall be treated as a new notice.

4973 339 (5) Favourable finding in respect of Nos. 328 and 329, but unfavourable with regard to No. 327.

The assignment shall be entered in the Master Record with the date of receipt of the notice by the Board in Column 2b and the letter X in the "Comments of the Board" column.

Reasons: (Refer to the whole of Note A) The procedure given in Note A is fundamentally identical with that provided in the Atlantic City Regulations, the only changes being improved wording, for the sake of clarity, except for one new point : the setting of a time limit for re-submitting notices, instead of maintaining the date of the first notice for those which are re-submitted within the prescribed period.

Number of proposal

4974 A. Assignments in the European region relating to the 415 - 1,605 kc/s band

4975 § 13 (1) So long as the special conferencesfor the European region referred to in Resolution ... of the Administrative Radio Conferonce, Geneva, 1959, are unable to draw up preliminary lists for the bands concerned in this note, the examination provided for in No. 329 will not be made.

4976 (2) If the finding is unfavourable with regard to No. 328, the notice shall be returned immediately to the notifying Administration with a brief account of the Board's reasons.

4977 (3) If the finding is favourable with regard to No. 328 but unfavourable from the point of view of No. 327, the assignment shall be entered in the Master Record with the date of receipt of the notification by the Board in Column 2c and the letter X in the "Comments of the Board" column.

4978 (4) If the finding is favourable with regard to Nos. 327 and 328, the assignment shall be entered in the Master Record with the date upon which the Board received the complete notice in Column 2b, and the letter Y in the "Comments of the Board" column.

4979 14. Once a list of frequencies for the 415-525 kc/s or 525-1,605 kc/s portions has been established, and the corresponding agreement for the European region provided for in the Resolution quoted in § 13 (1), by one of the special conferences mentioned in § 13 (1), for subsequent assignments or changes to assignments covered by Note A', the procedure laid down in Note A or Note F, whichever appropriate, shall be applied in accordance with the above-mentioned Resolutions.

Reasons: (Refer to the whole of Note A'). Until now, neither the Atlantic City Regulations nor the Interim Procedure could be applied with clarity to the 415 - 1,605 kc/s bands in the European region. Our

Number of proposal

proposals are intended to correct this situation (see our draft Conference Resolution regarding the holding of new European Broadcasting and Radio Maritime Conferences). Until such time as these conferences draw up a new working list, the interim procedure given in Note A' should be applied. Later, when these special conferences have succeeded in drawing up a suitable working list, as it is to be hoped that they will, the procedure given in Note A would come into force. However, should the list prepared prove to be unsuitable - a possibility which, although improbable and undesirable, must be covered - the procedure given in Note F should be applied.

4980 B. Assignments relating to aeronautical stations in the aeronautical mobile R service in bands between 2,850 and 17,970 kc/s allotted exclusively to this service

---

4981 § 15. In the case of assignments covered by this Note, the examination provided for in No. 329 will be replaced by a check-up to see whether or not the assignment satisfies the following conditions:

4982 1. Whether the frequency corresponds to one of the frequencies specified in Column 1 of the Allotment plan for the Aeronautical Mobile R service (Annex ..., Part II, Section II).

4983 2. If the service area comes inside the limits of the Major World Air Routes Areas (MWARA) or the Regional and Domestic Air Route Areas (RDARA) as set out in Column 2 of the Allotment plan (Annex ..., Part II, Section II).

4984 3. Whether the limitations of use set out in Column 3 of the above-mentioned plan (Annex ..., Part II, Section II) have been complied with.

Number of proposal

4985 4. Whether the class of station, type of emission, power and schedule are in accordance with the general notes contained in this plan.

4986 § 16 (1) If the Board's finding is favourable with regard to Nos. 327 and 328 and if the assignment satisfies the four conditions given above, the assignment shall be entered in the Master Record with the date 3.12.51 in Column 2a.

4987 (2) If the Board's finding is favourable with regard to Nos. 327 and 328, and the assignment also satisfies conditions 1, 3 and 4 but not condition 2, then it shall be entered in the Master Record with the date 3.12.51 in Column 2b.

4988 (3) Any assignment which does not come under (1) or (2) above shall be entered in the Master Record with the date upon which the Board received the complete notice in Column 2b, unless the Board's finding is unfavourable with regard to No. 328, in which case the notice shall be returned to the notifying Administration with a brief account of the reasons for this decision.

Reasons: The procedure provided for in Notes B and C is based upon the incorporation of the I.A.A.R.C. plans, adopted by the E.A.R.C., as Annexes to the Regulations.

4989 C. Assignments relating to aeronautical stations in the Aeronautical mobile OR service in the bands between 3,025 and 18,030 kc/s allotted exclusively to this service.

4990 § 17 (1) The examination prescribed in No. 329 shall be replaced, in the case of the assignments covered by this Note, by a check-up to see whether or not the assignment tallies with an allotment in the Plan and satisfies the conditions specified therein at Annex ... for the aeronautical mobile OR service.

Number of proposal

4991 (2) If the Board's finding is favourable with regard to Nos. 327 and 328, and if the assignment appears, as a result of the check mentioned in (1) above, to tally with one of the primary allotments of the plan, the assignment should be entered with the date 3.12.51 in Column 2a.

4992 (3) If the Board's finding is favourable with regard to Nos. 327 and 328, and the assignment appears, as a result of the check mentioned in (1) above, to tally with one of the secondary allotments given in the plan, the assignment shall be entered in the Master Record with the date 3.12.51 in Column 2b.

4993 (4) In any other case, the assignment shall be entered in the Master Record with the date upon which the Board received the complete notice in Column 2b, unless it received an unfavourable finding with regard to No. 328, in which case it shall be returned to the notifying Administration with a brief account of the reasons for this decision.

4994 (5) However, should the assignment differ from the allotments in the plan inasmuch as the type of emission has been changed and is not in the form admitted in the plan, without, however, there being any increase in the bandwidth occupied, the assignment shall be entered as if it came under cases (2) and (3) above, in spite of the fact that the difference in class of emission indicated means that the frequency assigned does not correspond numerically with one of the frequencies specified in the plan. This however should be done only if, apart from this, the assignment satisfies all the conditions necessary to make it tally with one of the primary or secondary allotments of the plan.

Reasons: The procedure provided for in Notes B and C is based upon the incorporation as Annexes to the Regulations of the I.A.A.R.C. plans, adopted by the E.A.R.C.

4995 D. Assignments relating to coast stations in the bands exclusively allotted to the maritime mobile service between 4,063 and 22,720 kc/s

---

Number of proposal

4995 bis

§ 18 The procedure stipulated in Note A shall also be followed for assignments under this heading.

Reasons: The plans adopted by the E.A.R.C. may also serve as a suitable working list.

4996

E. Assignments relating to broadcasting stations in the bands allotted exclusively to this service between 5,950 and 26,100 kc/s

---

4997

§ 19. The examination prescribed in No. 329 shall be omitted in the case of assignments coming under this heading.

4998

§ 20.(1) Whenever the Board's finding is favourable with regard to No. 328, the assignment shall be entered with the date the Board received the complete notice in Column 2b. The letter W shall be inserted in the "Comments of the Board" column.

4999

(2) If the Board's finding is unfavourable with regard to No. 328, the notice shall be returned immediately to the Administration concerned, with an account of the reasons for this decision.

Reasons: Interim procedure to be followed if the Conference is unable to adopt HF broadcasting plans. The purpose of this procedure is to leave some trace in the Master Record of all frequency assignments. In order to attempt to make its use possible with a minimum of interference, a notification procedure with complementary information relating to HF broadcasting services (notification of detailed schedules of the frequencies) would have to be used, which would be referred to in a different Article (See our proposals relating to a new Article 11 bis.)

5000

F. Assignments in bands above 1,605 kc/s, except those covered by Notes B, C, D and E.

Number of proposal

5001 § 21 (1) According to the findings reached by the Board as a result of the examination provided for in No. 326, the following procedure shall be applied for the entry of new assignments:

5002 (2) Favourable finding with regard to Nos. 327,328 and 329.

The assignment shall be entered in the Master Record and the date of receipt of the complete notice shall be noted in Column 2b, and the letter U inserted in the "Comments of the Board" column.

5003 (3) Unfavourable finding with regard to No. 328. The notice shall be returned immediately, by airmail, to the notifying Administration, with a brief account of the reasons for the Board's decision.

5004 (4) Favourable findings with regard to Nos. 327 and 328, but unfavourable with regard to 329.

The assignment shall be entered in the Master Record, and the date of receipt of the complete notice shall be inserted in Column 2b, and the letter V in the "Comments of the Board" column. This does not preclude the Board from carrying out the studies provided for in Nos. 352 and 353, if appropriate, and from making any suggestions to the notifying Administration that it may deem helpful in finding a solution to the problem.

5005 (5) Finding favourable with respect to Nos. 328 and 329, but unfavourable with respect to 327.

The assignment shall be entered in the Master Record. In Column 2b shall be entered the date on which the Board received the full assignment notice, and the symbol X shall appear in the remarks column.

Number of proposal

Reasons: The procedure envisaged in this section F is similar to the E.A.R.C. procedure, except that assignments with an unfavourable finding with respect to the risk of interference are entered without being referred back, provided always that harmful interference be not experienced during a period of six months (see the Spanish proposals for the category II entries in Section VI of our proposals about Article 11). Should no interference be experienced within this period, the Board will begin an inquiry into the points mentioned in our Article 11 "bis". Should it discern any contradiction between the data in the Master Record and those known to exist, it must ask the Administrations affected to make such notifications as may be requisite if such contradictions are to disappear (see the Spanish proposals in connection with a new Section IX in Article 11).

5006 G. Provisions Common to all Bands:

5007 22. Assignments which merit an unfavourable I.F.R.B. finding with respect to No. 328 shall not be entered in the Master Record.

Reasons: To confirm the provisions relative to such assignments, as provided for in Sections A, A', B, and F.

5008 23. (1) For every entry made in the Master Record, an entry shall be made in Column 2c showing the date notified to the Board as that on which the assignment actually came into use on the circuit, or in the service, concerned, provided always that this date be not more than one calendar month before the date on which the Board received the information about the effective use of the assignment. Should this be so, the date to be entered in Column 2c shall be the date of reception of the notice by the Board minus one calendar month.

5009 (2) So long as the notifying Administration does not give the information about the actual use of an assignment the entry in the Master Record should remain with a blank in Column 2c. The provisions of 33 (Section IX) should be applied to these entries.

Number of proposal

Reasons: (1) and (2) above give the information which should be entered in every case in Column 2c in accordance with our proposals above (See our § 2 of Article 11).

5010 § 24 (1) With regard to entering changes of assignments previously recorded, once the notice of the change has been examined in the manner laid down in No. 326 the procedure shall be the same as for a new assignment according to the frequency band and the type of station, with the following amendments:

5011 (2) If the changed assignment fits a category (of those indicated in Section VII of this Article) better than the original assignment or if in the second category, the changed assignment fits the letter U, whereas the original assignment had the letter V, the recording should be amended in conformity with the information provided, by entering the date in Column 2a or 2b as if it were a new assignment. However the date of the original assignment shall be kept in Column 2c, whilst in the Column entitled "Remarks by the Board" should be entered the date from which the change of assignment took effect or else an entry to show that such a notification is pending.

5012 (3) If the changed assignment fits the same category as the original assignment and an examination by the Board as laid down in No. 329 shows that the change does not increase the risk of harmful interference to transmissions which have already been recorded, the original assignment can be changed, at the same time keeping the dates as they are in Column 2a or 2b and in Column 2c: in the remarks column the date on which the assignment has been changed effectively must be entered or else an entry to show that such a notification is pending. The entry may be omitted if the change is not of a fundamental kind (i.e. a change in the name of a place without a change in its geographical position, or a change of call sign, etc., which have no bearing on the likelihood of interference).

Number of proposal

5013 (4) If the finding with regard to the changed assignment is favourable as regards Nos. 327 and 328 but the Board finds under No. 329 that the change from the original assignment implies an increased risk of harmful interference to other assignments in the Master Record, the changed assignment shall be entered, with the appropriate dates, observations and letters, as if it were a new assignment; however, the original recording in the Master Record shall not be deleted, but kept as a reference to the previous use of the frequency under other conditions, with the letter Z in the Column entitled "Remarks by the Board", indicating that the recording is of an assignment changed subsequently and retained only as a record of the former conditions of use of the frequency. The notifying Administration has the right to change the assignment back to the original conditions, if it so desires, if the lower category of the new recording should result in interference.

5014 § 25 The provisions of § 23 shall be applicable to the entries in the remarks column mentioned in (2) and (3), concerning the date on which the assignment has been changed effectively.

5015 § 26 If an assignment is changed two or three times in succession, the provisions of § 24 shall be applied in each case, so as to leave some trace in the Master Record of previous situations where the category of the entry may have been better than that actually used, or give priority of date within the same category. The appropriate letter should be inserted, in the case of each change, in the column "Remarks by the Board", in accordance with § 24 (4).

5016 § 27 Notice of cancellation of an assignment which is in fact a modification of a previous assignment will imply cancellation of the assignment as well as of those which appear in the Master Record with the letter Z, in view of the provisions of § 24 (4) and § 26, unless the notifying Administration makes it clear that the

Number of proposal

cancellation is in fact a return to previous conditions already entered. In this case the entry or entries shall be cancelled and the letter Z removed.

Reasons: § § 24, 25, 26 and 27 refer to entering changes in assignments. Their purpose is to keep some trace of previous entries, in case they should be more favourable, and thus discourage Administrations from omitting to notify changes for fear of losing the advantages relating to the entry as compared with others.

5017 New title

Section VII
Categories of recording

5018 § 28 For the purpose of establishing the priority of one assignment over another in the case of harmful interference, and for the purposes expressly indicated in this chapter and in Article 14, definitions are given below of certain categories of assignments, subject to the rights and limitations indicated for each one:

5019 311 First category. Assignments recorded in the Master Record with a date in Column 2a, except those with the letter Y (namely, those in the band 415 - 1,605 kc/s in the European Area), and recordings without a date in Columns 2a, 2b and 2c in accordance with No. 316 (frequencies prescribed by the Regulations for common use).

Emissions which are in accordance with these assignments and which are subject to all provisions of these Regulations have the right to international protection from harmful interference causod by emissions of any other category.

In the case of regional bands, however, this right shall be understood to apply only within that region.

Number of proposal

5020 In principle, no priority shall be deemed to be established among assignments of the same category, irrespective of the date in Column 2a. Nevertheless, if within a period of six months from the time a new assignment comes into operation, or from the time a change in assignment takes effect, within this category, harmful interference should arise between this assignment and another in the same category, and if the emissions on both are completely in accord, in other respects, with these Regulations, the Board shall, having first checked the facts, if necessary, take appropriate steps to review its findings under Section VIII of this article.

5021 Second category. Dated assignments entered under Column 2b in the Master Record.

Assignments in this category must not interfere with the assignments in the previous category, granted that the emissions corresponding to the latter are completely in line with the conditions laid down and with all the other provisions of these Regulations.

5022 Of the assignments in this category with the letters U and V (those corresponding to bands over 1,605 kc/s except the exclusive maritime mobile, aeronautical and broadcast bands) priority is granted in principle to those with the letter U and within each of these two groups to entries which include "information with regard to the number of circuits used simultaneously by the station" in preference to those which do not include this information; with regard to other circumstances priority is granted according to the time lapse since date 2b was entered. If there is actual interference, however, it should be remembered that this priority is not absolute; in such a case Article 14 should be applied.

Number of proposal

5023 In any case, if, in the course of six months after using a new assignment or a change of assignment for which there is an entry in this category, harmful interference occurs in emissions which tally with previously recorded assignments in the first or second categories, this means that the new assignment or change of assignment is not in accordance with No. 87 and should be changed in order to eliminate the interference. If the Board finds after enquiry that harmful interference has in fact occurred within the time mentioned, this constitutes "prima facie" evidence that the use of the assignment conflicts with the Regulations. If the notifying Administration does not change the assignment immediatly, the Board must make an observation in the Master Record explicitly calling attention to this fact.

5024 339 Third category. Assignments which meet with an unfavourable finding under the terms of No. 327, the entries of which are marked in the Master Record with the letter X in the column "Remarks by the Board".

Assignments in this category are subject to the condition that if their use causes harmful interference emissions of any station operating in accordance with the frequency allocation table, they must be suspended upon receipt of advice of this interference. The conditions which ensure that harmful interference does not recur shall not be modified.

5025 Provisional category. Assignments with the letter X (relating to bands between 415 and 1605 kc/s, European zone) and assignments with the letter W (relating to broadcasting stations in the bands allocated to this service between 5950 kc/s and 26100 kc/s).

For so long as frequency lists cannot be established in the corresponding bands, Administrations shall try as far as possible in a spirit of mutual good will to avoid interference between transmissions with recordings in this category.

Number of proposal

5026 § 29 Remarks (apart from letters X, Y, U, V, W and the observation giving evidence of infringement of the Regulations) which appear in the Master Record in the column "Remarks by the Board" must not in any way determine the priority of any entries over others.

Reasons (See all of Section VII). This Section contains some rules of priority (or relative status) for assignments which until now were spread out over Article 11 in a rather disordered way. The rules have also been supplemented and new provisions have been added in line with the rest of our provisions on this Article.

5027 New Title

SECTION VIII

Review of the Board's findings

5028 340 30 (1) A request may be made for a new examination by the Board of an assignment already entered in the Master Record, with a view to a revision of the finding :

a) By the notifying Administration.

b) By any other Administration interested in the question, but, in the latter case, only on the grounds of actual harmful interference.

(2) The Board may also undertake such an examination on its own initiative when there is good reason for a revision.

5029 341 Delete

5030 342 (3) In the light of all the available information, the Board shall draw up and inform the Administration concerned of such further findings as the circumstances warrant, making the appropriate corrections in the Master Record with regard solely to the dates, remarks and symbols already entered by the Board.

Number of proposal

5031 343 & 344 § 31 (1) In the case of entries which were the subject of an unfavourable finding under No. 329, but which were nevertheless entered in accordance with the provisions of Section VI of the present Article, the Board shall review the matter

(a) at the request of one or more of the Administrations affected, after a suitable lapse of time from the date on which the assignment was actually put into use; or

(b) on receipt of a report, in pursuance of No. 391, concerning the existence of harmful interference.

5032 (2) The provisions of § 30 (3) shall also be applicable in this case.

5033 345 (3) If, as a result of the review, the Board finds that the assignment in question is actually causing harmful interference to assignments in the first category (Section VII of this Article), the finding shall constitute "prima facie" evidence that that the use of the assignment is a contravention of these Regulations. If the notifying Administration does not immediately cancel the assignment, the Board shall include a note in the Master Record drawing attention to this contravention.

5034 345 § 32 If, after six years of fairly continuous use, duly proved, of an assignment on which the Board gave an unfavourable finding under the terms of No. 329, no information has reached the Board to prove that it is causing harmful interference to other assignments (except those in the third category, Section VII of this Article), the Master Record shall be amended to the effect that the entry shall remain in it as if the original finding under No. 329 had been satisfactory.

Number of proposal

Reasons: (These refer to §§ 30, 31 and 32). The existing provisions are on the whole retained, except the one referring to the notifying of Administrations prior to reconsideration; it is made clear that the amendments resulting from the review are not based on information supplied by Administrations but only on remarks added by the Board when entering the information in question; some drafting amendments are introduced, in line with the rest of our proposals.

5035 346 Delete

Reasons: The provisions relating to the entry of amendments to assignments are transferred to Section VI, where they are more appropriately placed and are amplified.

5036 New title

Section IX

Cancellation of assignments whose actual use has not been notified. Steps to be taken by the Board towards the amendment or cancellation of other entries

---

5037 § 33 (1) If the communication subsequent to the effective date of the assignment or amended assignment prescribed in § 3 (3) is not received within four months from the date of the notification of the assignment or amended assignment, it shall be understood that the notification in question is valueless and the Board shall proceed to cancel the entry or the amendment that would have been made in the Master Record, unless

---

5038 a) it concerns a frequency intended, for reasons based on the characteristics, for the propagation of radio waves only during specific phases of the sunspot cycle, in which case the provisions of § 34 (3) will be applicable.

5039 b) the notifying Administration states, within four months from the notification, that there are reasons which make difficult or impede the setting up or alteration of the necessary equipment or services for which the assignment was to be used. In that case the three-month period prescribed in § 2 (1), during which

Number of proposal

the assignment or amendment should have come into effect, may be prolonged to two years, provided the Administration undertakes to send a three-monthly report to the Board on the progress made and the development of the situation and provided also that the Board considers that the reports in question justify the prolongation.

5040 c) it concerns assignments or amendments which are the subject of regional or service agreements communicated to the Board, and as long as no assignments are notified that might conflict with the entry in question.

5041 (2) Cancellations made in accordance with the provisions of (1) shall be communicated by the Board to the notifying Administration. If the latter notifies it again, such a notice shall be treated in every respect as a new notice.

Reasons: (These refer to the whole of §§ 33). Entries not put into effect within the period laid down in § 2 must be cancelled. It is nevertheless advisable to make provision for certain cases in which this period may be prolonged, but with guarantees which will avoid the inclusion in the Master Record, through an oversight, of entries relating to assignments which were abandoned before they came into effect.

5042 347 § 34 (1) Provided that the Board has reasons, based on the available information or on the studies it has undertaken in conformity with Article 11 bis, for assuming that a frequency assignment entered in the Master Record is not used or is being used contrary to the basic recorded data or in conditions which conflict with the Convention or these Regulations, it shall request the notifying Administration to notify the relevant cancellation or amendment.

5043 (2) If the Administration concerned does not reply within a period of forty days, the request shall be repeated; if within a second period of the same duration the Board does not receive a reply, it shall be understood that the Administration assumes that the cancellation or amendment indicated by the Board is being made and the latter must then proceed as though the corresponding notice had been received on the last day of the

Number of proposal

period specified. This shall also apply if, although a reply has been received, it does not explicitly confirm whether or not the assignment is being used in accordance with the data in the entry or, in the event of an amendment to these, give new data in the form of a complete notice.

5044 348 (3) In the case of a frequency for use only during years of high or low sunspot activity, the entry should not be deleted, even if the assignment has not been used for three years, if the Board, in conjunction with the notifying Administration, finds that the circumstances warrant the retention of the notice.

5045 348 (4) In this event a case similar to that described in (1) and (2) will be reconsidered after a further three years if the assignment has not been brought into use during all this time.

Reasons: (See all § 34). So that the Board may ensure that the entries in the Master Record are in keeping with the actual state of affairs except for omissions on the part of the Administrations. At the same time the principle shall be maintained that only after prior notification may the information relating to the conditions on which the frequencies are assigned be changed.

5046 349 Delete

Reasons: Obviously unnecessary

5047 350 Delete

Reasons: Transferred to Section I, § 4).

5048 351 Delete

Reasons: Unnecessary on account of the drafting proposed for No. 348 (3) and (4) above.

ARTICLE 11 bis

5049 Title Studies and recommendations by the Board

Number of proposal

5050 353 § 1. If, in the course of the examination envisaged in 329, the Board gives an unfavourable finding, but the examination shows that with a minor amendment in the frequency value or in some other characteristic of the assignment, or that by means of a special agreement between the notifying Administration and the other Administration, which would not appear difficult to arrange, the finding could be amended, the Board shall inform the notifying Administration accordingly, as provided for in § 12 (4) and § 21 (4) of Article 11, supplying any necessary details.

Reasons : No. 353 is transferred to this Article, with minor amendments, since it concerns recommendations that the Board makes to Administrations, and in accordance with the new distribution we propose for the whole of Chapter IV.

5051 § 2. (1) If an assignment requiring study in respect of No. 329 has been recorded, in conformity with the procedure laid down in Article 11, in spite of having received an unfavourable finding, in that respect and if after six months from the date of use given in Column 2c the Board has not been informed that the assignment in question has caused harmful interference, the Board shall undertake a study to ascertain, both for the entry in question and for all those considered to be liable to interference, the following details :

a) To what extent each assignment has actually been in use throughout the solar cycle,

b) To what extent the stations are operating in accordance with the basic characteristics of the corresponding entries in the Master Record, and

c) If they are being used in contravention of some rule in the Convention or the Regulations.

5052 (2) For this study the Board may make use of any methods available to it, including :

a) Direct correspondence with the notifying Administrations.

Number of proposal

b) The information contained in the register of monitoring information to be kept by the Board.

c) Special monitoring reports made for this special purpose.

d) For assignments in the fixed service, the information the Board obtains from the Administrations controlling the receiving stations in reply to questions addressed to them my the Board for the purpose copies of which will be sent to the Administrations of the corresponding transmitting stations.

5053 (3) When the study referred to in (1) is completed, the Board shall

a) inform the Administrations concerned of the results of the study;

b) supply the interested Administrations with the information received by the Board concerning harmful interference; and

c) when appropriate, request Administrations, in accordance with the provisions of Section IX of Article 11, to notify any alteration to one or more assignments in the Master Record, so that the latter shall reflect as accurately as possible the actual use made of the assignments confirmed by the Board.

Reasons : (These refer to the whole of § 2). If the Board foresaw that an assignment would cause interference and this does not occur, it is an indication that the information recorded and actual conditions do not tally, and the Board must carry out the necessary investigations to bring these discrepancies to light. Nevertheless, before making any corrections, it must have the agreement of the Administrations concerned, in accordance with what is laid down in our proposals for a new Section IX of Article 11.

5054 § 3. (1) When appropriate, taking into account the studies referred to in § 2 (1), and in a systematic manner within its possibilities, the Board shall undertake studies to determine to what extent there is justification and need for the number of frequencies assigned to a circuit or service, on the basis

Number of proposal

of the data supplied by Administrations as "information relating to the number of simultaneous circuits and their identification". To this end the Board shall keep, either permanently or only temporarily for specific studies, additional records in which the frequencies are classified by stations and circuits. For these studies it will also be able to refer to the data enumerated in § 2 (2) or other similar data.

5055 (2) If it is seen from this study that a number of frequencies of the same order of magnitude are being used for the same circuit with the sole object of avoiding interference in its operation, the Board shall study the overall situation of the circuits which are causing interference and shall issue recommendations for improving the situation, proposing special agreements where appropriate, with a view to seeing that each circuit shall have assigned to it only the number of frequencies required, according to propagation conditions, to ensure liaison between the hours of service.

5056 (3) For the purpose of these studies, it shall take into account, for those stations that on occasions work "alternately" with a number of others, that, in view of the requirements and advantages of such a working method, allowance should in principle be made for the act that it is reasonable that the number of frequencies required to ensure connection should be the same as if each circuit operated completely independently.

Reasons : (These refer to the whole of § 3). To encourage studies by the Board towards a reduction in the number of frequencies used for each circuit by reducing the probability of interference on each one, with a view to progressing towards the ideal situation in which the number of frequencies is based solely on propagation requirements.

Number of proposal

5057 § 4 The Board should also, within its possibilities, carry out a study and prepare a report with the appropriate recommendations on matters relating to the provision of additional channels and an improvement in the efficient working of a specific portion of the spectrum to which some Member may refer or which the Board itself may consider advisable.

Reasons: To prepare the way for other studies by the Board which may be of advantage in certain cases.

5058 355 § 5 If one or more of the interested Administrations so requests, the Board shall investigate any contravention or non-observation of these Regulations, or any harmful interference, and shall prepare a report which will be forwarded to the Administrations concerned, which will contain its findings and recommendations for the solution of the problem.

Reasons: With minor amendments, the number in the existing Regulations, as shown in the margin, is retained.

5059 356 to 359 Delete.

Reasons: We doubt whether it is advisable or feasible to apply these provisions of the existing Regulations.

ARTICLE 11 ter

5060 New title Notification by Administrations of their "schedules for broadcasting assignments" in the bands of this service between 5,950 and 26,100 kc/s, and their examination, processing and publication by the Board.

Observation: If the Conference does not adopt new high frequency broadcasting lists based on the plans drawn up by the I.F.R.B., the Spanish Administration considers

Number of proposal

that the procedure proposed by the United States Administration for notifying the schedules of high frequency broadcasting stations would be of value.

However the Spanish Administration is of the opinion that the provisions relating to this procedure should be included in a different Article from No. 11. This new Article should be restricted to the general procedure for notifying, processing and recording frequency assignments of all services in the Master Record.

ARTICLE 11 quarto

5061 New title

Various provisions relating to the Board

5062

§ 1 The Weekly Circular provided for in § 5 (3)and (4) of Article 11 and the information provided for in these paragraphs and in § 12 (4) of Article 11 shall include a tabulated statement of the recordings entered in the Master Record in accordance with the procedure of Article 11 as from the Circular immediately preceding. This can also be used for the purposes mentioned in Article 11 ter. It can moreover be used as the normal means of corresponding with Administrations of Members whenever matters that have to be made known to the Administrations in general or at least to some of them are concerned.

The Board shall make as many parts or separate sections in the Circular as it considers necessary for the various uses to which it is to be put.

5063

§ 2 The technical standards to be used by the Board in carrying out the work entrusted to it in these Regulations should be based on the following: the appendices to the Regulations, the documents of the Administrative Conferences of the Union, the recommendations of the C.C.I.R., the present state of radio technique taking account of the latest progress, and in the case of the aeronautical R and OR services on the conditions for sharing frequencies laid down in Part I, Section II and Part III, Section II respectively of the Appendix to these Regulations.

Number of proposal

5064 360 § 3 The Board shall make available to the interested Administrations for their information, and to the Secretary-General for prompt publication in the three working languages, all reports of its findings and reasons therefor.

5065 361 § 4 In case a Member avails itself of the provisions of Article 25 of the Convention, the Board shall, upon request, make its records available for such proceedings as are prescribed in the Convention for the settlement of international disagreements.

Reason: This article sums up various provisions which deal with the various duties of the Board.

ARTICLE 12

5066 369 Delete:

Reasons :

In accordance with our proposals relating to Article 11, this number has been transferred, with some amendments, to Article 11, following on No. 332, as this is a more suitable place for it.

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No. 39-E
17 August, 1959
Original: Spanish

SPAIN

Proposals

APPENDIX 1

Our proposal relates solely to the form of notice (see the sheet attached) and to the instructions for using the form. We propose the inclusion of the following instructions, apart from any others which might be appropriate:

Number of Proposal: 5067

General Instructions:

See Article 11, paragraph 3 (5).

In that part laid out in tabulated form, a horizontal line should be used for every reception point or area. If, for one and the same point or area, some of the other data should vary, according to circumstances, separate lines should be used for each variant. The figures in Column 7, nevertheless, always refer to the total simultaneous radio circuits for each reception point or area.

5068 Instructions for particular spaces or columns:

Space 2c: Date on which the assignment comes into force - See Article 1, Section I, §§ 2 and 3 (3).

Column 9: Phase of the solar cycle - See Article 11, Section I, § 3 (1).

Column 7: Number of radio circuits simultaneously operated by the station with each reception point or area. In this column, shew the number of radio circuits simultaneously operated by the station (defined by the data shewn in spaces 5a and 5b) with each point or area mentioned in Column 6. This number should indicate the radio channels on which separate information is tramsmitted. Hence, should one single radio carrier carry several telegraph channels, telephone channels, or others, this will be reflected in Column 11, but not in Column 7. If the samc information be

ARCHIVES U.I.T. GENÈVE

transmitted with frequency diversity, it should be understood that this does not mean a multiplicity of circuits or relations and should not be reflected as such in Column 7. If the number of circuits simultaneously operated varies with the time or with the traffic, shew the maximum number (the requisite explanations may be added in Column 15a). This figure does not obligatorily have to be notified. Nevertheless, see Article 11, Section VII (second-category entries), Article 11 "bis", paragraph 3, and Article 14, paragraph 2, for the advantages Administrations derive in supplying this information.

Note:

The above references relate to the Articles dealt with under the Spanish proposals.

No. ...

Date ...

NOTIFICATION OF AN ASSIGNMENT (OR MODIFICATION THEREIN)

Number of proposal 5069

..... Member ..... New assignment ..... Modification ..... Cancellation

1 ..... kc/s
..... Mc/s

2c ..... Date of entry into force

3 ..... Call sign or identif. signal

4 ..... Class of station and nature of service

Site of station

5a ..... Place

5b ..... Longitude
Latitude

5c ..... Country

6 Reception points or areas	7 No. of simultaneous circuits	8 Maximum hours of use	9 Solar phase	10 Class of emission and band width	11 Additional information relating to Column 9	12 Power	13a Direction of max. rad. of antenna	13b Angle of main antenna lobe	13c Antenna gain

14 Centralizing Office

15a Observations (additional technical data) . . . . . .

15b Special, regional, or service agreements . . . . . .

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No. 40-E (Rev.)
19 August, 1959
Original: Spanish

SPAIN

Proposal

NEW PLANS FOR THE BANDS BETWEEN 415 kc/s AND 1,605 kc/s IN THE EUROPEAN AREA AND RESOLUTIONS IN CONNECTION THEREWITH

Note: These proposals do not refer to changes in the Regulations - they are connected with our proposals in relation to Article 11 (see Section VI, Sub-Section A', of our proposals in connection with this Article).

Number of proposal

5070

Some General Comments

1. The present position in the bands between 415 kc/s and 1,605 kc/s, in the European Area, in the light of the Atlantic City Regulations, is exceedingly obscure. In addition, the de facto position is most unsatisfactory, especially for the broadcasting service between 525 and 1,605 kc/s. Interference between stations of different countries is of frequent occurrence. In some countries (Spain, for instance) the quality of service that can be at present obtained leaves a very great deal to be desired.

2. In relation to the Regulations, the following points can be made: For the remaining services and frequency bands, the E.A.R.C. Agreement (Geneva, 1951) either laid down when Article 11 of the Radio Regulations should come into force (while decreeing the establishment of the new Frequency List for the particular band, a necessary basis for the application of the procedure laid down in Article 11) or defined the interim procedure to be used for notification and registration of frequencies during such time as this Article was not in force. But the bands and services in question, in the European Area, were deliberately excluded from the purview of the Extraordinary Administrative Radio Conference. The only

ARCHIVES U.I.T. GENEVE

allusion made in the E.A.R.C. Final Acts to these bands and this Area is to be found in the note to No. 178 of the Agreement, referring to Region 1, except for the African Area. This says that: "The bands 150 - 255 kc/s and 415 - 1,605 kc/s, as well as certain assignments in the bands between 255 and 415 kc/s, became effective on 15 March, 1950 (Copenhagen Plan, 1948)." This note merely confirms that these bands were not dealt with by the E.A.R.C.

2.1 Hence it was that the I.F.R.B. was left without any rules during the last few years as to the procedure for frequency registration in these bands and in this Area. This being so, the I.F.R.B. decided, that all it could do was to apply the procedure set forth in Article 11 of the Regulations, considering the list in the Copenhagen Plan as the basic frequency list. This did not fully satisfy either the countries which had signed the Copenhagen Convention or those which had not signed. Spain, in particular, acknowledged that the I.F.R.B. could really do nothing else until such time as it received instructions from an Administrative Radio Conference, and recognized the decision it had taken as a "modus vivendi". However, Spain continued to believe that a full and unambiguous set of relations was required for these bands and this Area, and continued to affirm the fact that it did not accept the Copenhagen Convention.

3. The Spanish view in connection with the Copenhagen Conferences and Conventions for the Maritime Mobile and Broadcasting Services in the European Area can be summarized thus:

a) For the purposes of the Regulations, the Copenhagen Conventions are special agreements. The Broadcasting Convention, especially, can be identified with that mentioned in Article 9 of the Regulations (Section I, Broadcasting Service, § 2, Nos. 245 to 249). Both are in any case subject to Article 4. As special Agreements, they cannot replace or add to the Regulations as far as non-signatory countries are concerned.

b) 1) The Copenhagen Conferences could not drawn up a new International Frequency List, firstly, for the reasons shown in paragraph a), and secondly, because Article 47 of the Regulations lays down that the List has to be drawn up by an Administrative Radio Conference, and the Copenhagen Conferences were not administrative conference within the meaning of the Atlantic City Convention, which was in force when these conferences were held.

2) Hence what is said in Article 9, paragraph 1, of the Copenhagen Convention about broadcasting, namely, that the frequencies allocated in the Plan should bear the date on which the Convention was signed, as the date of notification in the international frequency list, has no statutory force. Only as a stop-gap measure has the I.F.R.B. been able to use the list thus made up with a view to application of a frequency assignment and registration procedure.

3) Similarly, Article 11, paragraphs 1 and 3 of the Copenhagen Convention, relative to the maritime mobile service, run counter to the regulations.

c) 1) The Copenhagen Broadcasting Convention remains, for all practical purposes, null and void, even for those who signed it, because the signatories thereof have not observed what was laid down in:

- Article 1, paragraph 2 (1), forbidding the use of frequencies other than those mentioned in the Plan;

- Article 8, about the circumstances in which changes can be made in the Plan;

- Article 7, paragraph 1, about revision of the convention and Plan by another Conference.

And, finally, because the Convention no longer bears any relation to the present state of European broadcasting.

2) Similarly, as regards the Copenhagen Convention for the Maritime Mobile Service, although it may be said that it does not depart from reality so much as does the broadcasting agreement, Article 8 (on revision of the Convention and Plan) has not been complied with either, since the conference mentioned in that article should, according to the article itself, have been convened within eighteen months of the E.A.R.C. (which was undoubtedly an administrative conference). Now that eleven years have elapsed without the review provided for by its signatories, this Convention, quite clearly, needs reconsideration.

d) There are contradictions between :

- Article 9, Section I, § 2 (especially Nos. 248 and 249), of the Radio Regulations, and :
- the Copenhagen Conventions for both services;
- the general procedure for frequency notification, examination and registration provided for in Article 10 of the Radio Regulations.

Hence a new set of regulations, clear and complete, is required for these bands in the European Area.

4. The Spanish proposals in relation to new frequency lists for the European Area in the bands between 415 kc/s and 1,605 kc/s comprise :

1. A proposal for deletion of paragraph 2 (broadcasting in the European Area) in Article 9, Section I, of the Radio Regulations (see our proposals for changes in this Article 9) (Document No. 37);

2. proposals in connection with Article 11 of the Regulations, as regards the procedure for examination and registration of assignments from these bands in the European Area (see proposals relative to Article 11, especially Section VI of the proposals);

3. a proposal that the Conference should pass resolutions in favour of convening separate special conferences, one for European broadcasting, one for the maritime mobile service in the European Area, giving instructions for them. Draft resolutions on these matters appear hereinafter.

5. Furthermore, the Administration of Spain reserves the right to submit new proposals in connection with :

a) inclusion in the Regulations of certain provisions and principles appearing in Articles 3 and 4 of the Copenhagen maritime mobile plan, as standards to be applied for the maritime mobile service in the European Area;

b) adoption of common limits for the European Area, i.e., limits applicable to both the maritime mobile and the broadcasting services, with a view to simplification and clarification of the regulations.

Number of proposal

5071

Draft resolution - convening of a special European broadcasting conference.

The Administrative Radio Conference ,

considering

1. The present state of broadcasting in the European Area.

2. The time that has elapsed since signature of the Copenhagen Broadcasting Convention (1948) without a review of that Convention, contrary to the stipulations thereof.

3. The misgivings entertained these last few years by Members of the Union which signed the Copenhagen Convention as well as by those which did not, with regard to the procedure to be used by the I.F.R.B. for the examination and recording of frequency assignments, or notices of changes in existing assignments made to European Area broadcasting stations.

4. The need for an unambiguous initial frequency list for the above-mentioned bands in the European Area, to be used as a basis for application of the frequency notification examination and registration procedure adopted in the new regulations for the bands in which this list exists.

5. Article 10 of the International Telecommunication Convention and Article 4 of the Radio Regulations, on special agreements,

hereby resolves

a) To convene a special Europeam Broadcasting Conference in Geneva during (1960), to which all I.T.U. Members and Associate Members the countries of which are in the European Area shall be invited. This conference shall be called upon to draw up an initial frequency list for the afore-mentioned bands in the European Area.

b) To ask the Secretary-General to arrange for the convening and organization of this conference, which should meet not later than (.....,1960), and to endeavour to ensure that it coincides with the special European Area Maritime Radio Conference.

ANNEX

Instructions for the European Broadcasting Conference

I

1. The Conference shall inquire into the possibility of drawing up a compatible list of frequency assignments for European Area stations, for which purpose it shall consider all stations which on the opening date of the Conference were operating in the European Area countries.

2. A "compatible" list shall be taken to mean a list comprising the frequencies of all stations, with such characteristics of use as are considered as basic notification data in No. .... of the Radio Regulations (Geneva, 1959), chosen in such a fashion that simultaneous operation shall be possible without harmful interference, and with a satisfactory quality of service. Furthermore, operation of the stations in the circumstances laid down in the list shall not cause harmful interference nor appreciably reduce the quality of service of stations outside the European Area in accordance with the frequency apportionment table given in the Regulations.

3. For the purposes of the Special Conference, the European Area shall be taken to mean the area bounded on the SOUTH by parallel 30° North; on the WEST by a line extending from the North Pole along meridian 10° West of Greenwich to its intersection with parallel 72° North, thence by great-circle arc to the point of intersection of meridian 50° West and parallel 40° North, and thence by a line leading to the point of intersection of meridian 40° West and parallel 30° North; on the EAST by meridian 40° East of Greenwich, so as to include the western part of the Union of Soviet Socialist Republics (U.S.S.R.) and the territories bordering on the Mediterranean Sea, with the exception of the parts of Arabia and Saudi Arabia which are included in this sector.

II

1. Should the Conference conclude that no compatible frequency list can be obtained shewing all the stations operating and their characteristics, it shall try to draw up a new plan and a new, compatible list, based on:

a) an equitable apportionment of the available channels between the countries in the Area, with an eye to their populations, their areas, the number of stations in operation when the Conference began, the

quality of service obtained, etc. It shall endeavour to see that at least one exclusive channel is allotted to each Member and Associate Member in the Area. If necessary, it shall to this end limit the number of stations and programmes and the frequencies used for these programmes.

b) a limitation of the powers used by stations. If necessary, it may decree that different day and night-time powers shall be used.

c) the greatest possible use of technical progress, in connection with directive antennae, synchronised net-works, use of (compatible) single-sideband, etc.

d) Such services as cannot be accommodated in the plan adopted shall be transferred by agreement into other broadcasting bands above 27.5 Mc/s.

2. The plan thus devised shall be capable of implementation by 1 January, 1962, at the latest. By this is meant that even though the plan itself may not have come into force fully by that date, no stations shall operate after 1 January, 1962, in a way which would run counter to the plan.

3. Rules shall be included for transition from the existing state of affairs to the plan thus devised.

III.

Should the Conference succeed in devising a plan which, in its essentials at least, is acceptable to all Members and Associate Members in the Area, it shall in addition lay down the technical standards to be observed by the International Frequency Registration Board in examining new assignment notices or notices of changes in assignments in accordance with the procedure defined in the Radio Regulations, with an eye to the possibility of interference being caused to European Area stations previously entered in the Master Radio Frequency Record.

IV

Should the Conference be unable to draw up a compatible plan acceptable to all the countries in the Area, it shall merely:

a) draw up a list of the assignments in force at the date of the Conference, to be used as an initial list to which can be applied the procedure for registration of new assignments or changes in assignments, defined in the Radio Regulations (Geneva, 1959) for the bands above 1,605 kc/s (except the maritime mobile and broadcasting exclusive bands), for which it has proved impossible to obtain a compatible initial situation. This list shall include the stations which were working when the Conference began, with their actual characteristics of use, in so far as such stations do not constitute a breach of the Radio Regulations.

b) Define the standards to be applied by the I.F.R.B. in the technical examination of new assignments or changes in assignments when applying the procedure laid down in paragraph a), with an eye to the possibility of interference being caused to European Area stations previously entered in the Master Radio Frequency Record.

Number of Proposal

5072 Draft Resolution - Convening of a Special European Area Maritime Mobile Conference

The Administrative Radio Conference:

considering

1. The present position with regard to the maritime mobile service in the European Area.

2. The time that has elapsed since the European Convention for the Maritime Mobile Service was signed (Copenhagen, 1948), without a review of that Convention, contrary to the stipulations thereof.

3. The misgivings entertained these last few years by Members of the Union which did not sign the Copenhagen Convention as well as those which did, with regard to the procedure to be used by the I.F.R.B. for the examination and recording of frequency assignments, or notices of changes in existing assignments made to European Area coast stations in the band 415-525 kc/s.

4. the need for an unambiguous initial frequency list for the above-mentioned band in the European Area, to be used as a basis for application of the frequency notification and registration procedure adopted in the new Regulations for the bands in which the list exists;

5. Article 10 of the International Telecommunication Convention and Article 4 of the Radio Regulations, on special agreements;

hereby resolves:

a) to convene a special European Maritime Mobile Conference in Geneva (1960), to which all ITU Members and Associate Members the countries of which are in the European Area shall be invited. This conference shall be called upon to draw up an initial frequency list for the afore-mentioned bands in the European Area;

b) to ask the Secretary-General to arrange for the convening and organization of this conference, which should meet not later than ....., 1960, and to endeavour to ensure that it coincides with the special European Area Broadcasting Conference.

ANNEX

Instructions for the European Maritime Mobile Conference

I

1. The Conference shall inquire into the possibility of drawing up a compatible list of frequency assignments for European Area stations, for which purpose it shall consider all stations which on the opening date of the Conference were operating in the European Area countries.

2. A compatible list shall be taken to mean a list comprising the frequencies of all stations, with such characteristics of use as are considered as basic notification data in No. ..... of the Radio Regulations (Geneva, 1959), chosen in such a fashion that simultaneous operation shall be possible without harmful interference, and with a satisfactory quality of service. Furthermore, operation of the stations in the circumstances laid down in the list shall not cause harmful interference nor appreciably reduce the quality of service of stations outside the European Area in accordance with the frequency apportionment table given in the Regulations.

3. For the purposes of the Special Conference, the European maritime Area shall be taken to mean the area bounded to the North by a line along parallel 72° N from its intersection with meridian 55° E to its intersection with meridian 5° W, thence along this meridian to its intersection with parallel 67° N and thereafter along this parallel to its intersection with meridian 30° W; to the West by a line following meridian 30° W to its intersection with parallel 30° N; to the South by a line following parallel 30° N to its intersection with meridian 43° E; and to the East by a line following meridian 43° E to its intersection with parallel 60° N, thence along this parallel until its intersection with meridian 55° E and finally along this meridian until its intersection with parallel 72° N.

II

1. Should the Conference conclude that no compatible frequency list can be obtained showing all the stations operating and their characteristics, it shall try to draw up a new plan and a new compatible list, based on:

a) an equitable apportionment of the available channels between the countries in the Area, with an eye to their populations, their areas, the number of stations in operation when the Conference began, the quality of service obtained, etc. It shall endeavour to see that at least one exclusive channel is allotted to each Member and Associate Member in the Area. If necessary, it shall to this end limit the number of stations and programmes and the frequencies used for these programmes;

b) a limitation of the powers used by stations. If necessary, it may decree that different day and night-time powers shall be used;

c) the greatest possible use of technical progress, wherever considered applicable. Should it be considered that particular services would function better in other bands, then the Conference shall arrange for their transfer to those bands.

2. The plan thus prepared must be capable of implementation by (1 January, 1962) at the latest, it being understood by this that although the plan may not be fully in operation by that date, after that date stations shall not operate under conditions which conflict with the plan.

3. Standards to be observed during the transition from the present situation to the plan thus obtained shall be included.

III

Should the Conference succeed in devising a plan which in its essentials at least, is acceptable to all Members and Associate Members in the Area, it shall in addition lay down the technical standards to be observed by the International Frequency Registration Board in examining new assignment notices or notices of changes in assignments in accordance with the procedure defined in the Radio Regulations, with an eye to the possibility of interference being caused to European Area stations previously entered in the Master Radio Frequency Record,

IV

Should the Conference be unable to draw up a compatible plan acceptable to all the countries in the Area, it shall merely:

a) draw up a list of the assignments in force at the date of the Conference, to be used as an initial list to which can be applied the procedure for registration of new assignments or changes in assignments, defined in the Radio Regulations (Geneva, 1959) for the bands above 1,605 kc/s (except the maritime mobile and broadcasting exclusive bands), for which it has proved impossible to obtain a compatible initial situation. This list shall include the stations which were working when the Conference began, with their actual characteristics of use, in so far as such stations do not constitute a breach of the Radio Regulations;

b) define the standards to be applied by the I.F.R.B. in the technical examination of new assignments or changes in assignments when applying the procedure laid down in paragraph a), with an eye to the possibility of interference being caused to European Area stations previously entered in the Master Radio Frequency Record.

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No. 40-E
19 August, 1959
Original: Spanish

SPAIN

Proposal

NEW PLANS FOR THE BANDS BETWEEN 415 kc/s AND 1,605 kc/s IN THE EUROPEAN AREA AND RESOLUTIONS IN CONNECTION THEREWITH

Note: These proposals do not refer to changes in the Regulations - they are connected with our proposals in relation to Article 11 (see Section VI, Sub-Section A', of our proposals in connection with this Article).

Number of proposal

5070

Some General Comments

1. The present position in the bands between 415 kc/s and 1,605 kc/s, in the European Area, in the light of the Atlantic City Regulations, is exceedingly obscure. In addition, the de facto position is most unsatisfactory, especially for the broadcasting service between 525 and 1,605 kc/s. Interference between stations of different countries is of frequent occurrence. In some countries (Spain, for instance) the quality of service that can be at present obtained leaves a very great deal to be desired.

2. In relation to the Regulations, the following points can be made: For the remaining services and frequency bands, the E.A.R.C. Agreement (Geneva, 1951) either laid down when Article 11 of the Radio Regulations should come into force (while decreeing the establishment of the new Frequency List for the particular band, a necessary basis for the application of the procedure laid down in Article 11) or defined the interim procedure to be used for notification and registration of frequencies during such time as this Article was not in force. But the bands and services in question, in the European Area, were deliberately excluded from the purview of the Extraordinary Administrative Radio Conference. The only

allusion made in the E.A.R.C. Final Acts to these bands and this Area is to be found in the note to No. 178 of the Agreement, referring to Region 1, except for the African Area. This says that: "The bands 150 - 255 kc/s and 415 - 1,605 kc/s, as well as certain assignments in the bands between 255 and 415 kc/s, became effective on 15 March, 1950 (Copenhagen Plan, 1948)." This note merely confirms that these bands were not dealt with by the E.A.R.C.

2.1 Hence it was that the I.F.R.B. was left without any rules during the last few years as to the procedure for frequency registration in these bands and in this Area. This being so, the I.F.R.B. decided, that all it could do was to apply the procedure set forth in Article 11 of the Regulations, considering the list in the Copenhagen Plan as the basic frequency list. This did not fully satisfy either the countries which had signed the Copenhagen Convention or those which had not signed. Spain, in particular, acknowledged that the I.F.R.B. could really do nothing else until such time as it received instructions from an Administrative Radio Conference, and recognized the decision it had taken as a "modus vivendi". However, Spain continued to believe that a full and unambiguous set of relations was required for these bands and this Area, and continued to affirm the fact that it did not accept the Copenhagen Convention.

3. The Spanish view in connection with the Copenhagen Conferences and Conventions for the Maritime Mobile and Broadcasting Services in the European Area can be summarized thus:

a) For the purposes of the Regulations, the Copenhagen Conventions are special agreements. The Broadcasting Convention, especially, can be identified with that mentioned in Article 9 of the Regulations (Section I, Broadcasting Service, § 2, Nos. 245 to 249). Both are in any case subject to Article 4. As special Agreements, they cannot replace or add to the Regulations as far as non-signatory countries are concerned.

b) 1) The Copenhagen Conferences could not drawn up a new International Frequency List, firstly, for the reasons shown in paragraph a), and secondly, because Article 47 of the Regulations lays down that the List has to be drawn up by an Administrative Radio Conference, and the Copenhagen Conferences were not administrative conference within the meaning of the Atlantic City Convention, which was in force when these conferences were held.

2) Hence what is said in Article 9, paragraph 1, of the Copenhagen Convention about broadcasting, namely, that the frequencies allocated in the Plan should bear the date on which the Convention was signed, as the date of notification in the international frequency list, has no statutory force. Only as a stop-gap measure has the I.F.R.B. been able to use the list thus made up with a view to application of a frequency assignment and registration procedure.

3) Similarly, Article 11, paragraphs 1 and 3 of the Copenhagen Convention, relative to the maritime mobile service, run counter to the regulations.

c) 1) The Copenhagen Broadcasting Convention remains, for all practical purposes, null and void, even for those who signed it, because the signatories thereof have not observed what was laid down in:

- Article 1, paragraph 2 (1), forbidding the use of frequencies other than those mentioned in the Plan;

- Article 8, about the circumstances in which changes can be made in the Plan;

- Article 7, paragraph 1, about revision of the convention and Plan by another Conference.

And, finally, because the Convention no longer bears any relation to the present state of European broadcasting.

2) Similarly, as regards the Copenhagen Convention for the Maritime Mobile Service, although it may be said that it does not depart from reality so much as does the broadcasting agreement, Article 8 (on revision of the Convention and Plan) has not been complied with either, since the conference mentioned in that article should, according to the article itself, have been convened within eighteen months of the E.A.R.C. (which was undoubtedly an administrative conference). Now that eleven years have elapsed without the review provided for by its signatories, this Convention, quite clearly, needs reconsideration.

d) There are contradictions between :

- Article 9, Section I, § 2 (especially Nos. 248 and 249), of the Radio Regulations, and :
- the Copenhagen Conventions for both services;
- the general procedure for frequency notification, examination and registration provided for in Article 10 of the Radio Regulations.

Hence a new set of regulations, clear and complete, is required for these bands in the European Area.

4. The Spanish proposals in relation to new frequency lists for the European Area in the bands between 415 kc/s and 1,605 kc/s comprise :

1. A proposal for deletion of paragraph 2 (broadcasting in the European Area) in Article 9, Section I, of the Radio Regulations (see our proposals for changes in this Article 9);

2. proposals in connection with Article 11 of the Regulations, as regards the procedure for examination and registration of assignments from these bands in the European Area (see proposals relative to Article 11, especially Section VI of the proposals);

3. a proposal that the Conference should pass resolutions in favour of convening separate special conferences, one for European broadcasting, one for the maritime mobile service in the European Area, giving instructions for them. Draft resolutions on these matters appear hereinafter.

5. Furthermore, the Administration of Spain reserves the right to submit new proposals in connection with :

a) inclusion in the Regulations of certain provisions and principles appearing in Articles 3 and 4 of the Copenhagen maritime mobile plan, as standards to be applied for the maritime mobile service in the European Area;

b) adoption of common limits for the European Area, i.e., limits applicable to both the maritime mobile and the broadcasting services, with a view to simplification and clarification of the regulations.

Number of proposal

5071

Draft resolution - convening of a special European broadcasting conference.

The Administrative Radio Conference ,

considering

1. The present state of broadcasting in the European Area.

2. The time that has elapsed since signature of the Copenhagen Broadcasting Convention (1948) without a review of that Convention, contrary to the stipulations thereof.

3. The misgivings entertained these last few years by Members of the Union which signed the Copenhagen Convention as well as by those which did not, with regard to the procedure to be used by the I.F.R.B. for the examination and recording of frequency assignments, or notices of changes in existing assignments made to European Area broadcasting stations.

4. The need for an unambiguous initial frequency list for the above-mentioned bands in the European Area, to be used as a basis for application of the frequency notification examination and registration procedure adopted in the new regulations for the bands in which this list exists.

5. Article 10 of the International Telecommunication Convention and Article 4 of the Radio Regulations, on special agreements,

hereby resolves

a) To convene a special Europeam Broadcasting Conference in Geneva during (1960), to which all I.T.U. Members and Associate Members the countries of which are in the European Area shall be invited. This conference shall be called upon to draw up an initial frequency list for the afore-mentioned bands in the European Area.

b) To ask the Secretary-General to arrange for the convening and organization of this conference, which should meet not later than (.....,1960), and to endeavour to ensure that it coincides with the special European Area Maritime Radio Conference.

ANNEX

Instructions for the European Broadcasting Conference

I

1. The Conference shall inquire into the possibility of drawing up a compatible list of frequency assignments for European Area stations, for which purpose it shall consider all stations which on the opening date of the Conference were operating in the European Area countries.

2. A "compatible" list shall be taken to mean a list comprising the frequencies of all stations, with such characteristics of use as are considered as basic notification data in No. .... of the Radio Regulations (Geneva, 1959), chosen in such a fashion that simultaneous operation shall be possible without harmful interference, and with a satisfactory quality of service. Furthermore, operation of the stations in the circumstances laid down in the list shall not cause harmful interference nor appreciably reduce the quality of service of stations outside the European Area in accordance with the frequency apportionment table given in the Regulations.

3. For the purposes of the Special Conference, the European Area shall be taken to mean the area bounded on the SOUTH by parallel 30° North; on the WEST by a line extending from the North Pole along meridian 10° West of Greenwich to its intersection with parallel 72° North, thence by great-circle arc to the point of intersection of meridian 50° West and parallel 40° North, and thence by a line leading to the point of intersection of meridian 40° West and parallel 30° North; on the EAST by meridian 40° East of Greenwich, so as to include the western part of the Union of Soviet Socialist Republics (U.S.S.R.) and the territories bordering on the Mediterranean Sea, with the exception of the parts of Arabia and Saudi Arabia which are included in this sector.

II

1. Should the Conference conclude that no compatible frequency list can be obtained shewing all the stations operating and their characteristics, it shall try to draw up a new plan and a new, compatible list, based on:

a) an equitable apportionment of the available channels between the countries in the Area, with an eye to their populations, their areas, the number of stations in operation when the Conference began, the

quality of service obtained, etc. It shall endeavour to see that at least one exclusive channel is allotted to each Member and Associate Member in the Area. If necessary, it shall to this end limit the number of stations and programmes and the frequencies used for these programmes.

b) a limitation of the powers used by stations. If necessary, it may decree that different day and night-time powers shall be used.

c) the greatest possible use of technical progress, in connection with directive antennae, synchronised net-works, use of (compatible) single-sideband, etc.

d) Such services as cannot be accommodated in the plan adopted shall be transferred by agreement into other broadcasting bands above 27.5 Mc/s.

2. The plan thus devised shall be capable of implementation by 1 January, 1962, at the latest. By this is meant that even though the plan itself may not have come into force fully by that date, no stations shall operate after 1 January, 1962, in a way which would run counter to the plan.

3. Rules shall be included for transition from the existing state of affairs to the plan thus devised.

III.

Should the Conference succeed in devising a plan which, in its essentials at least, is acceptable to all Members and Associate Members in the Area, it shall in addition lay down the technical standards to be observed by the International Frequency Registration Board in examining new assignment notices or notices of changes in assignments in accordance with the procedure defined in the Radio Regulations, with an eye to the possibility of interference being caused to European Area stations previously entered in the Master Radio Frequency Record.

IV

Should the Conference be unable to draw up a compatible plan acceptable to all the countries in the Area, it shall merely:

a) draw up a list of the assignments in force at the date of the Conference, to be used as an initial list to which can be applied the procedure for registration of new assignments or changes in assignments, defined in the Radio Regulations (Geneva, 1959) for the bands above 1,605 kc/s (except the maritime mobile and broadcasting exclusive bands), for which it has proved impossible to obtain a compatible initial situation. This list shall include the stations which were working when the Conference began, with their actual characteristics of use, in so far as such stations do not constitute a breach of the Radio Regulations.

b) Define the standards to be applied by the I.F.R.B. in the technical examination of new assignments or changes in assignments when applying the procedure laid down in paragraph a), with an eye to the possibility of interference being caused to European Area stations previously entered in the Master Radio Frequency Record.

Number of Proposal

5072 Draft Resolution - Convening of a Special European Area Maritime Mobile Conference

The Administrative Radio Conference:

considering

1. The present position with regard to the maritime mobile service in the European Area.

2. The time that has elapsed since the European Convention for the Maritime Mobile Service was signed (Copenhagen, 1948), without a review of that Convention, contrary to the stipulations thereof.

3. The misgivings entertained these last few years by Members of the Union which did not sign the Copenhagen Convention as well as those which did, with regard to the procedure to be used by the I.F.R.B. for the examination and recording of frequency assignments, or notices of changes in existing assignments made to European Area coast stations in the band 415-525 kc/s.

4. the need for an unambiguous initial frequency list for the above-mentioned band in the European Area, to be used as a basis for application of the frequency notification and registration procedure adopted in the new Regulations for the bands in which the list exists;

5. Article 10 of the International Telecommunication Convention and Article 4 of the Radio Regulations, on special agreements;

hereby resolves:

a) to convene a special European Maritime Mobile Conference in Geneva (1960), to which all ITU Members and Associate Members the countries of which are in the European Area shall be invited. This conference shall be called upon to draw up an initial frequency list for the afore-mentioned bands in the European Area;

b) to ask the Secretary-General to arrange for the convening and organization of this conference, which should meet not later than ....., 1960, and to endeavour to ensure that it coincides with the special European Area Broadcasting Conference.

ANNEX

Instructions for the European Maritime Mobile Conference

I

1. The Conference shall inquire into the possibility of drawing up a compatible list of frequency assignments for European Area stations, for which purpose it shall consider all stations which on the opening date of the Conference were operating in the European Area countries.

2. A compatible list shall be taken to mean a list comprising the frequencies of all stations, with such characteristics of use as are considered as basic notification data in No. ..... of the Radio Regulations (Geneva, 1959), chosen in such a fashion that simultaneous operation shall be possible without harmful interference, and with a satisfactory quality of service. Furthermore, operation of the stations in the circumstances laid down in the list shall not cause harmful interference nor appreciably reduce the quality of service of stations outside the Europoan Area in accordance with the frequency apportionment table given in the Regulations.

3. For the purposes of the Special Conference, the European Area shall be taken to mean the area bounded on the South by parallel 30°N; on the West by a line extending from the North Pole along meridian 10°W of Greenwich to its intersection with parallel 72°N, thence by great-circle arc to the point of intersection of meridian 50°W and parallel 40°N, and thence by a line leading to the point of intersection of meridian 40°W and parallel 30°N; on the East by meridian 40°E of Greenwich, so as to include the western part of the Union of Soviet Socialist Republics (U.S.S.R.) and the territories bordering on the Mediterranean Sea, with the exception of the parts of Arabia and Saudi Arabia which are included in this sector.

II

Should the Conference conclude that no compatible frequency list can be obtained showing all the stations operating and their characteristics, it shall try to draw up a new plan and a new compatible list, based on:

a) an equitable apportionment of the available channels between the countries in the Area, with an eye to their populations, their areas, the number of stations in operation when the Conference began, the quality of service obtained, etc. It shall endeavour to see that at least one exclusive channel is allotted to each Member and Associate Member in the Area. If necessary, it shall to this end limit the number of stations and programmes and the frequencies used for these programmes;

b) a limitation of the powers used by stations. If necessary, it may decree that different day and night-time powers shall be used;

c) the greatest possible use of technical progress, in connection with directive antennae, synchronised networks, use of (compatible) single-sideband, etc.

III

Should the Conference succeed in devising a plan which in its essentials at least, is acceptable to all Members and Associate Members in the Area, it shall in addition lay down the technical standards to be observed by the International Frequency Registration Board in examining new assignment notices or notices of changes in assignments in accordance with the procedure defined in the Radio Regulations, with an eye to the possibility of interference being caused to European Area stations previously entered in the Master Radio Frequency Record.

IV

Should the Conference be unable to draw up a compatible plan acceptable to all the countries in the Area, it shall merely:

a) draw up a list of the assignments in force at the date of the Conference, to be used as an initial list to which can be applied the procedure for registration of new assignments or changes in assignments, defined in the Radio Regulations (Geneva, 1959) for the bands above 1,605 kc/s (except the maritime mobile and broadcasting exclusive bands), for which it has proved impossible to obtain a compatible initial situation. This list shall include the stations which were working when the Conference began, with their actual characteristics of use, in so far as such stations do not constitute a breach of the Radio Regulations;

b) define the standards to be applied by the I.F.R.B. in the technical examination of new assignments or changes in assignments when applying the procedure laid down in paragraph a), with an eye to the possibility of interference being caused to European Area stations previously entered in the Master Radio Frequency Record.

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No. 41-E
17 August, 1959
Original: Spanish

SPAIN

Proposal

ARTICLE 14

Number of Proposal

5073 (At the beginning of this Article add the following before No. 386).

1. (1) Administrations should show all good will and readiness for collaboration when applying the provisions of Article 45 of the Convention and this Article to solve problems of interference.

5074 (2) If the Administrations concerned do not object, problems of interference can be dealt with and solved by the staff running the stations concerned. There is no need to refer the matter to a higher level so long as there is no question of changing the circumstances in which the frequency assignments were made.

5075 2. If, in spite of the efforts of Administrations to abide by No. 87 in notifying their frequency assignments, an assignment entered in the Master Record as laid down in Article 11, Section VI, which receives an unfavourable finding from the Board with respect to No. 329 or else has not been examined in this respect, causes harmful interference after six working months to emissions adjusted to previous entries in the Master Record (except for those of the third category, in accordance with Section VII of Article 11), it must be borne in mind, with an eye to the readjustment of frequencies or their conditions of use so as to eliminate harmful interference, that the dates of entry are merely one factor to be considered, the others being as follows:

ARCHIVES U.I.T. GENÈVE

a) the actual use being made of the frequencies in accordance with the registered characteristics and the continuity of their use over a considerable lapse of time;

b) whether the service carried on by the stations between which interference is produced is more or less continuous, or just sporadic. To help in assessing this point, it shall be assumed that when data relative to the number of simultaneous circuits and their identification are lacking, then the services in question are more sporadic in character than those for which this information is provided;

c) the number of frequencies of the same order of magnitude as those on which the interference is experienced, assigned to both of the stations, and the category thereof, with an especial eye to the difficulties experienced by a station when none of its frequencies are sufficiently free from the risk of interference;

d) an adjustment in equipment or operating conditions, leading to speedy elimination of interference, can perhaps be most speedily made by whichever Administration or operating agency has a prior date for the assignment;

e) the mutual advantage derived by all countries from use of modern engineering processes and equipment capable of using the spectrum to best advantage, with special reference to possible action to avoid a recurrence of interference in stations between which interference is experienced, for example, by the use of receivers of sufficient selectivity and well-designed antennas;

f) the degree to which the principles laid down in Nos. 234, 235, and 373 to 376 have been applied by each of the affected stations or services.

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No. 42-E
17 August, 1959
Original: Spanish

SPAIN

Proposal

ARTICLE 19

Number of proposal 5076

413. After this number add the following new clause:

(2"bis") Broadcasting stations are forbidden to use call signs of an international series other than those used by the country to which the stations belong; nor may they use call signs that may leave some doubt as to the country to which they belong or as to their geographical position.

Reason:

To avoid any confusion for international monitoring stations.

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No. 43-E
17 August, 1959
Original: Spanish

SPAIN

Proposal

ARTICLE 20

Number of proposal

5077

The Spanish Administration will closely study the various proposals made in connection with this Article. It has no proposals to make but it would be desirable that in future lists of stations and especially in the List of Fixed Stations, where stations are grouped together by countries, stations should be grouped by services and circuits so that the list gives a clear survey of all the frequencies used by each station on each circuit as well as their call signs. "Information relating to the identification and number of services or circuits between two points used simultaneously by one station" would be useful for this purpose. In the Spanish proposals on Article 11 we propose to include this information amongst the data which should be - but do not have to be - notified by Administrations. The frequencies of circuits and services which for lack of such information cannot be identified should be entered for each station (identified by the place name) in the appropriate list underneath the identified circuits and services.

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No. 44-E
17 August, 1959.
Original: English

PLENARY MEETING

INTERNATIONAL ORGANIZATIONS

I have the honour to submit herewith a request for admission to the Conference received from the International Astronautical Federation subsequent to the publication of Document No. 5.

Gerald C. GROSS
Secretary of the Conference

Annex : 1

ARCHIVES U.I.T. GENÈVE

PAGE INTENTIONALLY LEFT BLANK

PAGE LAISSEE EN BLANC INTENTIONNELLEMENT

ANNEX

INTERNATIONAL ASTRONAUTICAL FEDERATION
I.A.F.

Geneva, 17 August 1959

Mr. Gerald C. Gross
Acting Secretary-General
International Telecommunication Union,
Geneva.

Dear Mr. Gross :

With reference to your letter of 18 August 1958, ref.no.1867/55/R, the International Astronautical Federation hereby makes formal application for admission to the Administrative Radio Conference, 1959.

(Sd.) ANDREW G. HALEY
President

by R.P. HAVILAND
American Astronautics
Society Delegate to the I.A.F.

INTERNATIONAL TELECOMMUNICATION UNION

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No. 45-E
18 August, 1959
Original: English

E

PLENARY MEETING

PROPOSALS BY CHAIRMAN OF CONFERENCE FOR CHAIRMEN AND VICE-CHAIRMEN OF COMMITTEES
(Annex 5 to Convention, Chapter 9, Rule 7)

No. 1	Steering Committee (Chairman and Vice-Chairmen of Conference)	Chairman: Mr. Charles J. Acton (Canada) Vice-Chairmen: Mr. Juan A. Autelli (Argentine) Dr. M.B. Sarwate (India)
No. 2	Credentials Committee	Chairman: Dr. F. Nicotera (Italy) Vice-Chairmen: Dr. Líbero Oswaldo de Miranda (Brazil) Mr. I.M. Trifonov (Bulgaria)
No. 3	Financial Control Committee	Chairman: Mr. George Searle (New Zealand) Vice-Chairman: Mr. G.E. Enright (Ireland)
No. 4	Frequency Allocation Committee	Chairman: Mr. Gunnar Pedersen (Denmark) Vice-Chairmen: Mr. E.J. Stewart (Australia) Mr. E. Oltuskiy Ozaki (Cuba)
No. 5	Frequency Registration Procedure and International Frequency List Committee	Chairman: Dr. M. Joachim (Czechoslovakia) Vice-Chairman: Mr. M.A. Vieira (Portugal)
No. 6	Technical Committee	Chairman: Mr. M.N. Mirza (Pakistan) Vice-Chairman: Mr. Lazaro Barajas Gutierrez (Mexico)
No. 7	Operations Committee	Chairman: Mr. Ehnle (Netherlands) Vice-Chairman: Mr. Y. Nomura (Japan)
No. 8	Drafting Committee	Chairman: Mr. A. Henry (France) Vice-Chairman: Mr. José Maria Revuelta Prieto (Spain)

***

(The above recommendations were approved unanimously at the meeting of Heads of Delegations, 10.00 hrs., Tuesday, 18 August, 1959)

ARCHIVES U.I.T. GENÈVE

INTERNATIONAL TELECOMMUNICATION UNION

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No. 46-E
18 August, 1959
Original: English

UNITED KINGDOM

Proposal

ARTICLE 9

Number of proposal

5078

At the beginning of Section II add the following new paragraph:

§3 bis. Frequencies in the bands allocated to the Aeronautical Mobile Service between 2,850 and 18,030 kc/s (see Article 5) shall be assigned in conformity with the technical principles and standards contained in Appendix 16 bis and the allotment plans contained in Appendix 16 ter to these Regulations.

Reasons

To incorporate these allotment plans and principles in the Regulations.

ARCHIVES U.I.T. GENEVE

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No. 47-E
18 August 1959
Original: English

UNITED KINGDOM

Proposals

Number of proposal

5079 After Appendix 16 add the following new appendices:

APPENDIX 16 bis

The Aeronautical Mobile Service in the bands between 2,850 and 18,030 kc/s.

Definitions, technical principles and standards.

(See Article 9)

SECTION I

DEFINITIONS

1. Frequency Allotment Plan: a plan which shews the frequencies to be used in particular areas or by particular countries without specifying the stations to which the frequencies are to be assigned.

2. The terms used to define the different methods of frequency distribution as used in this Appendix have the following meanings:

Distribution to Services	:	Allocation
" " Areas, Regions	:	Allotment
" " Stations	:	Assignment

ARCHIVES U.I.T. GENEVE

3. A Family of frequencies in the Aeronautical Mobile Service is a group of frequencies selected from different aeronautical mobile service frequency bands in such a way as to permit communication, at any time and over any distance, between aircraft in flight and appropriate aeronautical stations.

4. A Major World Air Route is considered to be a long distance route, made up of one or more segments, essentially international in character, extending through more than one country and requiring long distance communications facilities.

5. A Major World Air Route Area (MWARA) is an area embracing a number of Major World Air Routes which generally follow the same traffic pattern and are so related geographically that the same frequency families may logically be applied.

6. Regional and Domestic Air Routes are all those using the Aeronautical Mobile (R) Service not covered by the definition of para. 4 above.

7. A Regional and Domestic Air Route Area (RDARA) is one embracing a number of the air routes defined in the foregoing paragraph.

SECTION II

TECHNICAL PRINCIPLES AND STANDARDS ON WHICH ARE BASED THE FREQUENCY ALLOTMENT PLANS IN THE AERONAUTICAL MOBILE (R) AND (OR) SERVICES

1. The separations between assignable frequencies in the bands allocated exclusively to the Aeronautical Mobile Service are as follows:-

Band	Separation	Band	Separation
2,850 - 3,025 kc/s	7 kc/s	8,815 - 9,040 kc/s	8.5 kc/s
3,400 - 3,500 kc/s	7 kc/s	10,005 - 10,100 kc/s	9 kc/s
3,900 - 3,950 kc/s	7 kc/s	11,175 - 11,400 kc/s	9.5 kc/s
4,650 - 4,750 kc/s	7 kc/s	13,200 - 13,360 kc/s	10 kc/s
5,450 - 5,480 kc/s	7.5 kc/s	15,010 - 15,100 kc/s	10 kc/s
5,480 - 5,730 kc/s	7.5 kc/s	17,900 - 18,030 kc/s	10 kc/s
6,525 - 6,765 kc/s	7.5 kc/s		

(1) For speech emissions (A3) the highest modulating frequency is not to exceed 3,000 cycles per second. The sideband radiation of A1 emissions is not to exceed that of A3 emissions.

(2) The use of channels derived from the above table for various classes of emission (e.g. A1, A2, A3, A4, F1) will be subject to special arrangements by the concerned administrations in order to avoid the interference which may result from the simultaneous use of the same channel for different classes of emission, no priority being given to any particular class of emission.

(3) It is recognised that two or more channels for A1 emissions can be derived from each of the channels provided by the above table.

(4) The grouping of adjacent channels obtained by such subdivision will be subject to special arrangements by the Administrations concerned.

(5) The arrangements contemplated under (2) (3) and (4) above should be made under the provisions of Article 41 of the International Telecommunication Convention and Article 4 of these Regulations.

2. The following is the list of assignable frequencies allotted in the bands allocated exclusively to the Aeronautical Mobile Service on the basis of the frequency separations established in paragraph 1 above:

Band:

2,850 - 3,155 kc/s	3,400 - 3,500 kc/s	3,900 - 3,950 kc/s	4,650-4,750 kc/s
2,854)	3,404.5)	3,904)	4,654.5)
2,861)	3,411.5)	3,911)	4,661.5)
2,868)	3,418.5)	3,918)	4,668.5)
2,875)	3,425.5)	3,925) (OR)	4,675.5) (R)
2,882)	3,432.5)	3,932) 7	4,682.5) 7
2,889)	3,439.5)	3,939)	4,689.5)
2,896)	3,446.5) (R)	3,946)	4,696.5)
2,903)	3,453.5) 14		
2,910)	3,460.5)		4,703.5)
2,917)	3,467.5)		4,710.5)
2,924)	3,474.5)		4,717.5)
2,931) (R)	3,481.5)		4,724.5) (OR)
2,938) 24	3,488.5)		4,731.5) 7
2,945)	3,495.5)		4,738.5)
2,952)			4,745.5)
2,959)			
2,966)			
2,973)			
2,980)			
2,987)			
2,994)			
3,001)			
3,008)			
3,015)			

Band :

2,850 - 3,155 kc/s (cont.)

3,023.5 (R) and (OR)

3,032)
3,039)
3,046)
3,053)
3,060)
3,067)
3,074) (OR)
3,081) 18
3,088)
3,095)
3,102)
3,109)
3,116)
3,123)
3,130)
3,137)
3,144)
3,151)

Band :

5,450 - 5,730 kc/s		6,525 - 6,765 kc/s		8,815 - 9,040 kc/s		10,005 - 10,100 kc/s	
5,454)		6,529.5)		8,820)		10,012)	
5,461.5)		6,537)		8,828.5)		10,021)	
5,469)		6,544.5)		8,837)		10,030)	
5,476.5)		6,552)		8,845.5)		10,039)	(R)
5,484)		6,559.5)		8,854)		10,048)	10
5,491.5)		6,567)		8,862.5)		10,057)	
5,499)		6,574.5)		8,871)		10,066)	
5,506.5)		6,582)		8,879.5)		10,075)	
5,514)		6,589.5)		8,888)	(R)	10,084)	
5,521.5)		6,597)	(R)	8,896.5)	18	10,093)	
5,529)		6,604.5)	21	8,905)			
5,536.5)		6,612)		8,913.5)			
5,544)		6,619.5)		8,922)			
5,551.5)		6,627)		8,930.5)			
5,559)		6,634.5)		8,939)			
5,566.5)	(R)	6,642)		8,947.5)			
5,574)	30	6,649.5)		8,956)			
5,581.5)		6,657)		*/**8,961.5)			
5,589)		6,664.5)					
5,596.5)		6,672)		8,967)			
5,604)		6,679.5)		8,975.5)			

---

* Available for Al emission only.
** It is necessary that equipment having a high degree of stability be used on this channel.

Band :

5,450-5,730 kc/s(cont.)		6,525-6,765 kc/s(cont.)		8,815-9,040 kc/s (cont.)	
5,611.5				8,984	
5,619		*6,685		8,992.5	(OR)
5,626.5		*6,687.5		9,001	9
5,634		6,693		9,009.5	
5,641.5		6,700.5		9,018	
5,649		6,708		9,026.5	
5,656.5		6,715.5	(OR)	9,035	
5,664		6,723	12		
5,671.5		6,730.5			
		6,738			
5,680	(R) and (OR)	6,745.5			
		6,753			
5,688		6,760.5			
5,695.5					
5,703					
5,710.5	(OR)				
5,718					
5,725.5					

Band

11,175-11,400 kc/s		13,200-13,360 kc/s		15,010-15,100 kc/s		17,900-18,030 kc/s	
11,180.5		13,205.5		15,016		17,906.5	
11,190		13,215.5		15,026		17,916.5	
11,199.5		13,225.5		15,036		17,926.5	(R)
11,209		13,235.5	OR	15,046		17,936.5	7
11,218.5		13,245.5	6	15,056	(OR)	17,946.5	
11,228	(OR)	13,255.5		15,066	10	17,956.5	
11,237.5	11			15,076		17,966.5	
11,247		13,264.5		15,086			
11,256.5		13,274.5		*15,092.5		*17,975	
11,266		13,284.5		*15,096.5		17,983.5	
*11,273		13,294.5				17,993.5	(OR)
		13,304.5	(R)			18,003.5	6
11,280.5		13,314.5	10			18,013.5	
11,290		13,324.5				18,023.5	
11,299.5		13,334.5					
11,309		13,344.5					
11,318.5		13,354.5					
11,328	(R)						
11,337.5	13						
11,347							
11,356.5							
11,366							
11,375.5							
11,385							
11,394.5							

* Available for Al emission only.

** It is necessary that equipment having a high degree of stability be used on this channel.

3. The channels 3,023.5 kc/s and 5,680 kc/s are common to the (R) and (OR) services. The conditions of use of these frequencies are stated in Part I of Appendix 16 ter to these Regulations.

4. Radiated powers.

The maximum radiated powers to be employed in the Aeronautical Mobile Service are :

(a) A1 emissions :

Aeronautical station	1.0 kilowatt radiated (peak)
Aircraft station	50 watts " "

(b) A3 emissions :

Aeronautical Station	4.0 kilowatts radiated (peak), 100% modulated
Aircraft station	200 watts radiated (peak), 100% modulated

APPENDIX 16 ter
(See Article 9)

Part I

Number of proposal

5080 Plan for the allotment of frequencies for the Aeronautical Mobile (R) Service in the exclusive bands between 2,350 kc/s and 27,500 kc/s.

Insert here the text of pages 1-30 inclusive of Annex 8 to the E.A.R.C. Agreement with the following amendments :

Page 1 :	Delete "Annex 8"
	Delete "of the Conference" in Section 1, paragraph 1
Pages 1 and 17	Delete "Article 1" and substitute "A"
Pages 4 and 22	Delete "Article 2" and substitute "B"
Page 22	Delete Note (1) of the General Notes and renumber the remaining Notes.

Part II

Plan for the allotment of frequencies for the Aeronautical Mobile (OR) Service in the bands between 2,850 kc/s and 27,500 kc/s.

Insert here the text of pages 31-57 inclusive of Annex 9 to the E.A.R.C. Agreement with the following amendments :

Page 31 :	Delete "Annex 9" (in addition, some minor emendment may be required to the country designators)
Page 32 :	Delete the Footnote.

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No. 48-E
18th August, 1959
Original: English

UNITED KINGDOM

Proposal

RECOMMENDATION

Number of proposal

5081 The Administrative Radio Conference (Geneva, 1959),

considering

a) that the main advantages of single-sideband working (SSB, i.e. A3a) compared with double sideband (DSB, i.e. A3) for mobile radio telephony are as follows:

(i) reduction of bandwidth required per channel

(ii) increase in signal-to-noise ratio or, alternatively, reduction in transmitter power (and hence antenna voltage) for the same signal-to-noise ratio, improvements dependent upon the degree of carrier suppression

(iii) reduction of the type of distortion that is due to selective fading

(iv) reduction of interference, particularly that due to beat notes between carriers dependent on the degree of carrier suppression

(v) reduction of interference, due to cross-modulation between adjacent channel transmissions:

b) that the disadvantages of SSB compared with DSB for mobile radio telephony are as follows:-

(i) more rigorous requirements for transmitter and receiver stability

(ii) greater complexity of apparatus

ARCHIVES U.I.T. GENÈVE

(iii) higher prices of the equipment

(iv) higher maintenance costs for the equipment

(v) impracticability of conversion of existing mobile DSB equipments for SSB operation

(vi) Doppler effects that are significant for very high speed mobile units

c) that the MF-Radiotelephony bands used in the maritime services (i.e. world-wide 1605 to 2850 kc/s and additionally in Region 1 3155 to 3800 kc/s)·

(i) include the international calling and distress frequency 2182 kc/s.

(ii) are shared with fixed services

(iii) are used by many low tonnage ships, some compulsorily and others voluntarily fitted exclusively with DSB MF-Radiotelephone equipments:

d) that the parts of the HF bands (i.e. 4000 kc/s to 23000 kc/s for mobile maritime and 2850 kc/s to 24000 kc/s for aeronautical use) allocated to the respective services:

(i) do not include any international distress frequency

(ii) are exclusively allocated to these services:

e) that in the maritime mobile services the advantages of SSB operation predominate over the disadvantages to a greater extent in the HF than in the MF band:

f) that, in the maritime mobile services, in the interests of safety of life at sea, the introduction of SSB operation should not be allowed to discourage the extension of voluntary fitting of DSB MF-Radiotelephony equipment:

noting

that for the aeronautical mobile service, Recommendation No..... of the C.C.I.R. calls upon the Director of the C.C.I.R. to:

a) formally acquaint the I.C.A.O. of the interest of the C.C.I.R. in the study of SSB working in the aeronautical and maritime mobile services;

b) invite the I.C.A.O. to advise the C.C.I.R. of any technical or operational problems on which they would like the assistance of the C.C.I.R.;

c) offer to keep the I.C.A.O. informed of progress made by the C.C.I.R. in the study of the application of SSB working in the maritime mobile services;

d) request the I.C.A.O. to keep the C.C.I.R. informed of progress made by the I.C.A.O. in the study of the application of SSB working in the aeronautical mobile services.

recommends

for the maritime mobile services:

1. that SSB operation be introduced as far as operationally required in the MF and HF Radiotelephony bands;

2. that coast stations be prepared to communicate with DSB and SSB shipborne equipment;

3. that for SSB equipment the following technical characteristics be employed:

3.1 for an interim period the degree of carrier reduction should be 16 - 26 db below peak envelope power and every endeavour should be made to achieve a carrier suppression of at least 40 db as soon as possible;

3.2 the carrier frequency of the transmitter should be maintained within the following tolerances:

3.2.1 for coast stations ± 20 c/s

3.2.2 for ship stations the short term limits (of the order of 15 minutes) should be ± 40 c/s*)

3.2.3 for ship stations long term limits of ± 350 c/s (in the 8, 12, 16, and 22 Mc/s bands) and ± 100 c/s (in the 2 and 4 Mc/s bands) should be permitted for an interim period and every endeavour should be made to achieve limits of ± 100 c/s as soon as possible in all bands

3.3 the carrier frequency stability of SSB receivers should be maintained within the following tolerances:

3.3.1 for coast stations ± 20 c/s

3.3.2 for ship stations the short term limits should be ± 40 c/s

---

*) This value may be maintained either manually or by other means.

3.3.3 if spot frequency (i.e. fixed frequency pre-tuned) shipborne receivers are used, long term limits of ± 350 c/s should be permitted for an interim period and every endeavour should be made to achieve limits of ± 100 c/s as soon as possible

3.4 the upper sideband should be used;**)

3.5 the channel arrangements should be such that two SSB channels are accommodated within each existing DSB channel and the bandwidth of the SSB emissions should be kept within such limits as will permit this to be done;

3.6 the transmitter audio frequency band should be 350 to 2700 c/s with a permitted amplitude variation of 6 db;

3.7 the unwanted frequency modulation of the SSB carrier should be sufficiently low to prevent harmful distortion;

3.8 in the MF maritime mobile Radiotelephony bands SSB ship stations should be able to insert a carrier at a level sufficient to permit satisfactory reception by DSB receivers when communicating with DSB stations;

3.9 in the particular case of transmissions on the radio-telephone calling and distress frequency 2182 kc/s all transmissions should be made either by DSB, or by SSB with carrier insertion sufficient to permit satisfactory reception by DSB receivers;

4. that the attention of administrations should be drawn to the fact that there would be technical and operational advantages in designating certain frequencies for international common use for ship-shore and intership working;

Reasons

Reproduces the substance of C.C.I.R. Recommendation No..... (Los Angeles Doc. 581) in the interest of encouraging the use of SSB working.

Para. 4 of the proposed recommendation may, it is hoped, be deleted in the light of decisions taken at the Conference.

**) Exceptionally, in the 4-23 Mc/s bands independent sideband (ISB) may may be used by special arrangement between administrations.

INTERNATIONAL TELECOMMUNICATION UNION

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No. 49-E
18 August, 1959
Original : English

E

MINUTES

OF THE

FIRST MEETING OF THE HEADS OF DELEGATIONS

Geneva, 17 August 1959, at 10.15 a.m.

Chairman : Mr. Gerald C. GROSS, Acting Secretary-General of the I.T.U.

Subjects discussed :

1. Organization and Committee structure of the Conference (Document No. 2)
2. Proposals for the Chairman and Vice-Chairman of the Conference.
3. Constitution of the Secretariat.
4. Agenda of the First and Second Plenary Meetings.
5. Further organizational matters relating to the Conference.

The heads of the following Delegations were present :

Argentina (Republic); Australia (Commonwealth of); Austria; Belgium; Bielorussian S.S.R.; Burma (Union of); Brazil; Bulgaria (People's Republic of); Cambodia (Kingdom of); Canada; Ceylon; China; Vatican City (State of the); Colombia (Republic of); Colonies, Protectorates, Overseas Territories and Territories under mandate or Trusteeship of the United Kingdom of Great Britain and Northern Ireland; Belgian Congo and Territory of Ruanda-Urundi; Korea (Republic of); Cuba; Denmark; Group of the different Territories represented by the French Overseas Postal and Telecommunication agency; Spain; United States of America; Ethiopia; Finland; France; Ghana; Greece; India (Republic of); Irak; Ireland; Iceland; Israel (State of); Italy; Japan; Libya (United Kingdom of); Luxembourg; Malaya (Federation of); Morocco (Kingdom of); Mexico; Monaco; Norway; New Zealand; Pakistan; Paraguay; Netherlands, Surinam, Netherlands Antilles, New Guinea; Philippines (Republic of the); Poland (People's Republic of); Portugal; Portuguese Oversea Provinces; Federal German Republic; Federal People's Republic of Yugoslavia; Ukrainian S.S.R.; United Kingdom of Great Britain and Northern Ireland; Sweden; Swiss Confederation; Czechoslovakia; Thailand; Tunisia; Turkey; Union of South Africa and Territory of Southwest Africa; Union of Soviet Socialist Republics.

ARCHIVES U.I.T. GENÈVE

1. Organization and Committee structure of the Conference (Document No. 2)

The Chairman drew attention to Rule 1 of Chapter 9 of the General Regulations annexed to the International Telecommunication Convention (Buenos Aires, 1952), in which it was stated that "The Conference shall be opened by a person appointed by the inviting government. When there is no inviting government, it shall be opened by the Chairman of the Administrative Council or in his absence by the Secretary-General". Welcoming the presence of the Chairman of the Administrative Council, he observed that the present meeting was merely an informal meeting to prepare the way for the Opening Plenary Meeting to be held at 3 p.m. on the same day. It was not empowered to take any binding decisions, but its work would be of help to the Chairman of the Administrative Council when he came to open the first Plenary Meeting.

He proposed that the meeting adopt its agenda (Document No. 7).

It was so agreed.

The Chairman drew attention to the list of committees for the Conference suggested in Annex 1 to Document No. 2. In view of the fact that several delegations had suggested that Committees 5 and 6 should be fused, he proposed that the Committee structure be altered to read as follows:

Committee No. 1 - Steering
" No. 2 - Credentials
" No. 3 - Finance Control
" No. 4 - Frequency Allocation
" No. 5 - Frequency Registration Procedure
" No. 6 - Technical
" No. 7 - Operations
" No. 8 - Drafting.

It was so agreed.

2. Proposals for the Chairman and Vice-Chairmen of the Conference

The delegate of the United Kingdom proposed that the meeting recommend that Mr. Charles J. Acton (Canada) be elected Chairman of the Conference. It was well known that the Conference would be a difficult one, and that the position of Chairman would therefore be of vital importance. In view of Mr. Acton's qualifications and long experience with the Union, it was clear that he was the man for the position.

The delegates of Italy, Union of Soviet Socialist Republics, Colombia and India warmly supported the United Kingdom proposal. They had all had experience of Mr. Acton's outstanding ability.

The United Kingdom proposal to recommend that Mr. Acton be elected Chairman of the Conference was adopted by acclamation.

The delegate of Canada thanked the meeting for the confidence which it had shown in him. There were undoubtedly many difficulties facing the Conference, and it would be necessary for the Chairman to exercise complete impartiality and to consult with heads of delegations on every possible occasion. He hoped that he would prove worthy of the great honour which had been done to him and to his country and said that he would do his utmost to ensure that the conference came to a successful conclusion in the shortest possible time.

The Chairman said that he wished to congratulate Mr. Acton on his forthcoming election and the meeting on its choice.

The delegate of the United States of America proposed that the meeting recommend that Mr. J.A. Autelli (Argentina) be elected First Vice-Chairman of the Conference. His lengthy experience and the high position which he held in the world of telecommunications in his own country well fitted him for the position.

The delegate of Cuba, in supporting the United States proposal, said that he believed that he was expressing the view of all Latin American countries.

The United States proposal to recommend that Mr. Autelli be elected Vice-Chairman of the Conference was adopted by acclamation.

The delegate of Argentina thanked the meeting for the confidence which it had shown in him and said that he would do his utmost to work for the success of the Conference.

The delegate of the Netherlands proposed that the meeting recommend that Dr. M.B. Sarwate (India) be elected Second Vice-Chairman of the Conference. His personal qualifications and the great services he had already rendered to the Union were known to all.

The delegates of Italy, U.S.S.R., and the Philippines warmly supported the Netherlands proposal.

The Netherlands proposal to recommend that Dr. Sarwate be elected Vice-Chairman of the Conference was adopted by acclamation.

The delegate of India thanked the meeting for the confidence that it had shown in him. He would be pleased to give of his best to help make the Conference a success.

The Chairman congratulated the two Vice-Chairmen on their forthcoming election and the meeting on its choice.

3. Constitution of the Secretariat

The Chairman drew attention to Rule 3 of Chapter 9 of the General Regulations annexed to the International Telecommunication Convention (Buenos Aires, 1952), in which it was stated that "at the first meeting of the Plenary Assembly ..... the Conference Secretariat ..... shall be constituted". In view of the great importance of the Conference he proposed to take on himself the direction of the Conference Secretariat. The list of senior Secretariat officials would then be as follows:

Secretary of the Conference	: Mr. Gerald C. Gross
Deputy Secretary of the Conference	: Mr. Clifford Stead
Head of Documents services	: Mr. Jean Millot
Head of Administrative services	: Mr. René Prélax
Head of Delegates services	: Mr. Robert Lafrance
Public Relations Officer	: Mr. Léon Boussard
Staff Control Officer	: Mr. H.A. Vergin.

The Chairman drew attention to paragraph 6 (1) of Article 14 of the International Telecommunication Convention (Buenos Aires, 1952), which dealt with the question of the working languages to be used at Union conferences. In accordance with that article, the Russian interpreters at the Conference were being supplied by the U.S.S.R. at no cost to the Union.

Thanking the meeting for the confidence it had shown in approving the recommendations for the constitution of the Secretariat, it was his recommendation that in the interests of economy the Secretariat for the Administrative Radio Conference should also serve for the Plenipotentiary Conference.

4. Agenda of the first and second meetings of the Plenary Assembly.

The Chairman drew attention to the draft agenda for the opening Plenary Meeting (Document No. DT/1).

The draft agenda was approved.

The Chairman drew attention to the draft agenda for the second Plenary Meeting (Document No. DT/2). He pointed out that, in view of the work that had already been done by the meeting, item 1 of the agenda could be deleted.

The delegate of Italy proposed that a new item 1 be inserted on the agenda entitled "Rules of Procedure for Conference" to ensure that those rules would be the same as those appearing in the General Regulations annexed to the International Telecommunication Convention.

It was so agreed.

5. Further organizational matters relating to the Conference.

The Chairman requested delegates to make at least three, preferably four, copies of proposals which they submitted.

Mr. Stead, I.T.U. Secretariat, informed delegates that documents, such as credentials, verbatim statements which they wished included in the minutes of plenary assemblies, and manuscripts which were to be published as conference documents, could be handed in to Office No. 3. He hoped that delegations at plenary assemblies would not exceed 10 members per delegation in view of the shortage of space. He also hoped that, for the same reason, delegations would not object to being seated in a slightly different alphabetical order from that normally followed.

The Chairman observed that hopes had been expressed that the Drafting Committee could begin its work at an earlier stage in the Conference than usual. A special room would be equipped for the use of that Committee.

He expressed the hope that delegates would be able to find suitable hotel accommodation during their stay in Geneva. The Union could not undertake responsibility for such matters, but the reception office would do its best to assist delegates in every other way.

With regard to the question of Committees, he pointed out that any delegation was free at any time to attend any meeting of any committee. He was extremely gratified to note that all recommendations at the meeting had been adopted unanimously. The splendid spirit of goodwill that had been shown augured well for the success of the Conference.

The meeting rose at 11.30 a.m.

Rapporteurs:

C. Mackenzie

S. Vittèse

Acting Secretary General of the I.T.U.:
Chairman of the Meeting:

Gerald C. GROSS

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No. 50-E
4 September, 1959

LIST OF DOCUMENTS PUBLISHED BY THE CONFERENCE

Nos. 1 to 50

Document No.	Origin	Destination	Title
1	General Secretariat	Plenary Meeting	Report by the Administrative Council to the Administrative Radio Conference
2	"	"	Agenda of the Conference
3	"	"	Invitations to the Conference
4	"	"	Situation of certain countries with respect to the Convention
5	"	"	International Organizations
6	"	"	Proposal for the work of the Conference
7	"	Heads of Delegations	Draft Agenda for the first meeting of the Heads of Delegations, Monday, 17 August 1959, at 10.00 hrs.
8	Pakistan		Proposals, Article 1
9	"		Proposals, Article 3
10	Republic of Colombia		Proposals, Article 1
11(Rev)	"	Plenary Meeting-Committee 6	Proposals, Article 1
12			Cancelled
13			Cancelled
14			Cancelled
15			Cancelled
16			Cancelled
17			Cancelled

ARCHIVES U.I.T. GENÈVE

Document No.	Origin	Destination	Title
18	General Secretariat	Plenary Meeting	Situation of certain countries with respect to the Convention
19	"	"	Organization and Committee structure of the Conference
20	"	"	Report by the International Frequency Registration Board (I.F.R.B.) to the Conference
21	"	"	Comments by Administrations on the Draft Plans for the high frequency broadcasting service
22	United Kingdom		Proposal - Recommendation
23	"		Proposals, Article 5
24	"		Proposals, Article 9
25	"		Proposals, Article 28
26	Federal Republic of Germany		Proposal, Article 5
27	"		Proposal, Article 11
28	United Kingdom		Proposals, Article 29
29	"		Proposals, Article 34
30	"		Proposals
31	Heads of Delegations	Plenary Meeting	Agenda for the opening Plenary Meeting, 17 August, 1959 at 15.00 hrs.
32	"	"	Proposals by the Heads of Delegations for the Committee Structure of the Conference
33	"	"	Agenda for the 2nd Plenary Meeting, 18 August, 1959, at 15.00 hrs.
34	General Secretariat	Heads of Delegations	Draft Agenda for the second meeting of the Heads of Delegations, 18 August, 1959, at 10.00 hrs.
35	"	Plenary Meeting	Iraq - Resolution No.31 of the Plenipotentiary Conference, Buenos Aires, 1952

Document No.	Origin	Destination	Title
36	Spain		Proposals, Article 7
37	"		Proposals, Article 9
38	"		Proposals, Chapter IV
39	"		Proposals, Appendix 1
40(Rev)	"		Proposal - New Plans for the bands between 415 kc/s and 1,605 kc/s in the European Area and resolutions in connection therewith
41	"		Proposal, Article 14
42	"		Proposal, Article 19
43	"		Proposal, Article 20
44	Secretariat	Plenary Meeting	International Organizations
45	Chairman of the Conference	"	Proposals by Chairman of Conference for Chairmen and Vice-Chairmen of Committees
46	United Kingdom		Proposal, Article 9
47	"		Proposals
48	"		Proposal - Recommendation
49	Heads of Delegations		Minutes of the First Meeting of the Heads of Delegations, 17 August, 1959, at 10.15 hrs.
50	Secretariat		List of Documents published by the Conference, Nos. 1 to 50

ARCHIVES U.I.T. GENÈVE

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No. 51-E
19 August, 1959
Original: English

PLENARY MEETING

AGENDA

FOR THE THIRD PLENARY MEETING

Wednesday, 19 August at 15.00 hours

1. Terms of reference of Committees (Document No. 52)
2. Report of the Administrative Council to the Conference (Document No. 1)
3. Report of the I.F.R.B. to the Conference (Document No. 20)
4. Proposals for the work of the Conference (Document No. 6)
5. Resolution No. 31 of the Buenos Aires Plenipotentiary Conference (Document No. 35)
6. Time limit for the work of the Credentials Committee
7. Miscellaneous

ARCHIVES U.I.T. GENEVE

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE
RADIO CONFERENCE

GENEVA, 1959

Document No. 52-E
19 August 1959
Original : English

PLENARY MEETING

TERMS OF REFERENCE FOR COMMITTEES 4, 5, 6 AND 7 PROPOSED BY THE STEERING COMMITTEE

Committee 4. Frequency Allocation Committee

Broadly speaking Committee 4 will have to deal with Chapter III of the Radio Regulations.

The specific items would be those listed on pages 8 and 9 of Annex 1 to Document No. 2.

Committee 5. Frequency Registration Procedure and International Frequency List Committee

Broadly speaking Committee 5 will have to deal with Chapter IV of the Radio Regulations, Chapter VII of the E.A.R.C. Agreement and to review the International Frequency List and connected provisions adopted for certain parts of the spectrum by the E.A.R.C. (or in certain cases by Regional Conferences), and possibly to amend them in accordance with the proposals which may be adopted in this respect, or to prepare any appropriate procedure for their revision. This Committee will also have to consider the draft plans prepared by the I.F.R.B. for the High Frequency Broadcasting Service, and to study how they should be dealt with, taking into account any proposals submitted in this connection. The Committee will also have to study the situation in other frequency bands.

Committee 6. Technical Committee

Broadly speaking Committee 6 will have to deal with Chapters I, II, V and VI of the Radio Regulations, as well as with a number of provisions of the E.A.R.C. Agreement.

The specific items would be those listed on page 17 of Annex 1 to Document No. 2.

Committee 7. Operations Committee

Broadly speaking Committee 7 will have to deal with Chapters VII-XVI of the Radio Regulations and with the Additional Radio Regulations, and with various provisions of the E.A.R.C. Agreement.

The specific items would be those listed on pages 18, 19 and 20 of Annex 1 to Document No. 2.

Note : References in Document No. 2 to Groups will of course be modified in accordance with the organization of the Committees decided by the Conference itself.

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No. 53-EFS
19 August, 1959

CORRIGENDUM
to Document No. 5-E

In the list of INTERNATIONAL ORGANIZATIONS, on page 1,

1. Instead of :

International Radio Maritime Commission (C.I.R.M.)

Read :

International Radio Maritime Committee (C.I.R.M.)

2. Instead of :

International Association of Radio-Maritime Interests (A.I.I.R.N.)

Read:

International Association of Radio-Maritime Interests (A.I.I.R.M.)

Ne concerne que le texte anglais

Sólo concierne al texto inglés

ARCHIVES U.I.T. GENÈVE

INTERNATIONAL TELECOMMUNICATION UNION

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

E

Document No. 54-E
19 August 1959
Original : French

BELGIUM

Proposals

ARTICLE 5

Number of proposal

	Frequency band and (bandwidth) Mc/s	Allocation to Services		Observations
		World-wide	Region 1	
516	100 - 108 (8)	Broadcasting		
	610 - 960 (350)	610 - 860 (200)		Unchanged
556			860 - 960 (100) Broadcasting FIXED	

These proposals are a fuller version of proposals 516 and 556 (first series), which they replace.

INTERNATIONAL TELECOMMUNICATION UNION

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

E

Document No. 55-E
19 August 1959
Original: English

PLENARY MEETING

MINUTES

OF THE

OPENING PLENARY MEETING

Geneva, 17 August 1959, at 3 p.m.

Chairman: Mr. A. Langenberger (Switzerland),
Chairman of the Administrative Council
(for Items 1, 2, 3 and 4.)

Subjects discussed:

1. Address by the Chairman of the Administrative Council, formally opening the Conference.

2. Reply address on behalf of the visiting delegations.

3. Statement by the Acting Secretary-General concerning the preparation for and organization of the Conference.

4. Election of the Chairman of the Conference.

5. Election of the Vice-Chairman of the Conference.

6. Constitution of the Secretariat of the Conference.

7. Committee Structure of the Conference (Docs. Nos. 19 and 32).

The following countries were represented:

Argentina (Republic); Australia (Commonwealth of); Austria; Belgium; Bielorussian S.S.R.; Burma (Union of); Brazil; Bulgaria (People's Republic of); Cambodia (Kingdom of); Canada; Ceylon; China; Vatican City (State of the); Colombia (Republic of); Colonies, Protectorates, Overseas Territories and Territories under mandate or Trusteeship of the United Kingdom of Great Britain and Northern Ireland; Belgian Congo and Territory of Ruanda Urundi; Korea (Republic of); Cuba; Denmark; Group of the different Territories represented by the French Overseas Postal and Telecommunication agency; Spain; United States of America; Ethiopia; Finland; France; Ghana; Greece; India; Iraq (Republic of); Ireland; Iceland; Israel (State of); Italy; Japan; Libya (United Kingdom of); Luxembourg; Malaya (Federation of); Morocco (Kingdom of); Mexico; Monaco; Norway; New Zealand; Pakistan; Paraguay; Netherlands, Surinam, Netherlands Antilles, New Guinea; Philippines (Republic of the); Poland (People's Republic of); Portugal; Portuguese Oversea Provinces; Federal German Republic; Federal People's Republic of Yugoslavia; Ukrainian S.S.R.; United Kingdom of Great Britain and Northern Ireland; Sweden; Swiss Confederation; Czechoslovakia; Thailand; Tunisia; Turkey; Union of South Africa and Territory of Southwest Africa; Union of Soviet Socialist Republics.

ARCHIVES U.I.T. GENEVE

1. Address by the Chairman of the Administrative Council, formally opening the Conference

Mr. A. Langenberger (Switzerland), Chairman of the Administrative Council, made the following statement:

" On behalf of the Administrative Council of the International Telecommunication Union, I wish you all a hearty welcome to the headquarters of the Union. I hope that you have found the facilities required for your personal well-being throughout your stay in Geneva, and that Zeus will be kind and give you many more days of sunshine, to make the atmosphere of your meetings as pleasant as possible.

" The tasks encumbent upon this Conference are well known to you all. They derive from Article 10 of the International Telecommunication Convention, which says:

" 'Ordinary administrative conferences shall:

a) revise the Regulations provided for in Article 12, paragraph 2, of this Convention with which they are respectively concerned;

b) deal with all other matters deemed necessary within the terms of the Convention and the General Regulations and any directives given by the plenipotentiary conference.

In addition, the Ordinary Administrative Radio Conference shall:

a) elect the members of the International Frequency Registration Board;

b) review the activities of the Board.'

" After considering the situation and the progress accomplished in your field, the Administrative Council, in agreement with a very large majority of Administrations, decided to convene the Administrative Radio Conference for mid-summer 1959. It also entrusted the General Secretariat, which since the untimely death of the late Dr. Marco Aurelio Andrada is directed with distinction by Mr. Gerald Connop Gross, Acting Secretary-General, with the organization and faultless running of the Conference. The Administrative Council even gave him instructions to take any steps necessary, within the framework of the Convention, to postpone the opening of the Conference, should any major diplomatic conferences be held in Geneva at the same time. The adjournment of the Foreign Ministers' Conference enabled the arrangements already made to be maintained. We hope that you will be favourably impressed by all that the Acting Secretary-General and his assistants have done to give you the best working conditions possible, both from the point of view of the organization of the Conference, and the offices and technical installations which you will be using. The General Secretariat hopes that nothing has been overlooked to facilitate your work to the utmost.

" You have been sent two series of Proposals submitted by the Administrations of Members and Associate Members; the third series was distributed today. The General Secretariat regrets the delay, which was beyond its control, in connection with the latter series.

" Let me say here that the Administrative Council has a very special interest in all questions concerning radiocommunications. It accomplished diligently and carefully the missions entrusted to it by the Plenipotentiary Conference, Buenos Aires, 1952, and by the Extraordinary Administrative Radio Conference, Geneva 1951. I do not wish to anticipate your work, but would like to point out that it prepared a special report for your attention, giving the results achieved in the accomplishment of these missions. Fully cognizant of the volume and importance of the tasks incumbent upon the Conference, it had first of all envisaged fixing the duration at five months. However, in view of the unfavourable financial situation of the Union, it became necessary to reduce this to 4 months, with the closing meeting on 16 December 1959. It also decided, with the consent of the great majority of Administrations, that the Plenipotentiary Conference, which should normally be held every 5 years, would take place in Autumn 1959, simultaneously with the second half of the Radio Conference.

" There are others more competent than I to sum up the situation as regards the evolution of radiocommunications in general. This evolution is becoming more and more rapid and often in quite different directions. It follows laws of physics which we do not yet know sufficiently well. There is no doubt that the scientific discoveries and the technical progress made have deeply modified some of the data of many radiocommunication problems. There will be still more changes. The Regulations drawn up some twelve years ago must therefore be modified and adapted, bearing in mind what has taken place since that time and the development foreseen in the near and more distant future. International cooperation in the field of telecommunications is becoming more and more essential. All agreements on this subject will contribute to the peace and prosperity towards which all men on earth aspire.

" In the presence of 65 delegations of Members and Associate Members of the Union, and referring to paragraph 1, Chapter 1, of the General Regulations annexed to the International Telecommunication Convention, I now declare open the 7th Administrative Radio Conference of the International Telecommunication Union. The Administrative Council wishes the Conference complete success in its work, and hopes that it may attain its objectives for the good of international radiocommunications and for international telecommunications in general."

2. Reply address on behalf of visiting delegations

The Chairman gave the floor to the delegate of the United States, Dean of the Conference.

The delegate of the United States of America said that he had not realized until a short while before that he was the dean of the Conference. In fact, had he realized this, he would probably have exercised the good judgement demonstrated by many of his contemporaries and remained at home. However, he had felt that this conference would be a great challenge and he was sure that the other delegates felt the same way.

The weather had been mentioned as a good omen, and perhaps, the Festival of Geneva which had just taken place could also be considered to augur well for the success of the Conference. The hospitality of the city of Geneva and the beauty of Switzerland made it difficult to concentrate on mundane matters, but the fact remained that the earth had so shrunken under the impact of electronic communications that the problems engendred by this mode of communication had to be met and defeated, or a state of chaos would result which would be difficult to solve.

In view of the fact that they were dealing with a dynamic art having a drastic impact upon the social and economic interests of every nation on the face of the earth; inasmuch as young nations as well as old recognized the value of and the need for electronic aids in this connection; and in the light of the limitations imposed by the radio spectrum, it was obvious to all that the world was rapidly approaching cross-roads in its use of the radio spectrum and the need for cooperation among nations had never been greater.

Delegates attending the Conference were experts in communications and not conversant in political matters; they were professional men versed in modes of operation and technical phases of communications; they were dedicated to the mission of improving the methods of communication between nations. They were not concerned with the contents of the messages transmitted, only with their mode of communication.

The need for cooperation had been mentioned. The delegate of the United States of America was confident that it would be possible for this group of experts to work in close cooperation to accomplish the greatest good for the greatest number.

Differences among proposals were inevitable. Different countries had different requirements and different conditions to be met. But they were all reasonable people and among reasonable people compromises could and must be reached. He know that all nations, large and small, represented at the Conference shared his view, and were prepared to work in harmony with each other.

Finally, the delegate of the United States of America thanked the Chairman for his very warm welcome.

3. Statement by the Acting Secretary-General concerning the preparation for and organization of the Conference

Mr. Gerald C. Gross, Acting Secretary-General of the Union, made the following statement:

" As our distinguished present Chairman of the Administrative Council has indicated in his opening address, this is one of the most important conferences to be held by the International Telecommunication Union since the end of the war. Some radical changes were made in the international regulations of Radiocommunications at the Atlantic City Conference in 1947, which many of you attended, and although normally such conferences are reconvened every five years, it has been found necessary and desirable this time to wait some twelve years before calling the nations of the world together to revise the International Radio Regulations.

" Later on during these proceedings there will be read a list of distinguished people in the telecommunication world who are no longer with us, and at that time we shall pay an appropriate tribute to them with the traditional minute of silence. However I cannot proceed further without mentioning briefly the tragic death of our past Secretary-General, Dr. Marco Aurelio Andrada, who died suddenly on the 18th of June, 1958 in the service of the Union, and who was known for his outstanding qualities to all of us and was indeed a close personal friend of many of us.

" A great deal of preparatory work has been done during those twelve years, not only by the Permanent Organs of the Union here in Geneva engaged in Radio matters (including the C.C.I.R., the I.F.R.B. and the General Secretariat of the Union), but by a very considerable number of special conferences both regional and world-wide.

" Among these conferences are the various regional broadcasting conferences such as the European Broadcasting Conference at Copenhagen in 1948, the North American Broadcasting Agreement Conference of 1949, the Mexico City and Florence/Rapallo High Frequency Broadcasting Conferences of 1948 and 1950, the European Broadcasting Conference held in Stockholm in 1952; in the field of maritime radio the European Maritime Mobile Conference of Copenhagen in 1948, the Baltic and North Sea Radiotelephone Conference in Göteborg in 1955, the Maritime VHF Radiotelephone Conference in the Hague in 1957, not to mention the earlier conference held in Paris in 1951 on the subject of maritime radio beacons.

" Then of course there have been the various conferences of Region one, Region two and Region three, which, together with the work of the Provisional Frequency Board in 1948 and 1949, led to the decisions of the Extraordinary Administrative Radio Conference which was held here in Geneva in 1951.

" I have taken the time to mention these various international meetings because all of them have in one way or another contributed to the study and to the preparatory work which led to the final preparation of the two very voluminous Books of Proposals which are now before you, as well as the proposals which will be made here in Geneva during the next 4 months.

" These Books of Proposals, prepared for your convenience in loose-leaf form, themselves constitute something of a record as regards volume since, without counting supplements and correction pages, they total some 869 printed pages with more than 4,500 separate proposals by our Member governments. The size and complexity of the proposals contained in these two big volumes in an indication of the amount of work that has been done in preparation for this Conference.

" A separate report has also been prepared jointly by the C.C.I.R. and the General Secretariat, with recommendations from the C.C.I.R. which may be suitable for incorporation into the Radio Regulations. This is in accordance with Chapter 18 of the General Regulations, Annex 5 to the Telecommunication Convention.

" We are happy to welcome here representatives of our sister specialized agencies in the family of the United Nations, among which I include the International Civil Aviation Organization, the World Meteorological Organization, the United Nations Educational, Scientific and Cultural Organization, as well as the distinguished representatives of the United Nations themselves.

" The International Civil Aviation Organization particularly has collaborated very closely with the International Telecommunication Union in the study of radio facilities for international civil aviation. Representatives of the two organizations regularly attend each other's meetings on this subject. The importance of this can be seen when we stop to consider that everyone of us who ever leaves the ground as a passenger on a given aircraft has a very personal stake in the safe flight and safe landing of that particular aircraft. Without adequate communications, air traffic, as we know it today, could not exist.

" We also extend a special welcome to the representatives of the new Maritime Organization formed in London this year - the Intergovernmental Maritime Consultative Organization - which now will have the same general concern for shipping on the high seas that I.C.A.O. has for air transportation.

" On looking around this room it is evident that while there are many new faces present there are also among our Membership many who have worked with us closely over the years. Among others, I recognize Mr. Gunnar Pedersen of Denmark who has been so active in our Radio Conferences

for many years, Mr. Van der Toorn of the Netherlands who contributed such a great deal to the Union which he served so successfully as Chairman of the E.A.R.C. We are also honoured by having among us some other distinguished personalities who have participated in I.T.U. activities with great success : I notice Mr. Ivan Klokov, Deputy Minister of Communications of the U.S.S.R., Mr. Santiago Quijano, former Member of the Administrative Council and now Chairman of the Colombian Delegation, Captain Booth, active leader of the United Kingdom Delegation in so many of our Radio Conferences, and Mr. Henry of France who was so active at the Göteborg Conference, among others. Obviously I am not attempting to go down the whole list because it would be almost like calling the roll, but I am trying to single out a few of those who have done so much for our Union and I hope that the many friends and valuable contributors to the I.T.U. whose names I have not mentioned will forgive me since time is a little short.

" The basic problems of the Conference of course revolve around the International Table of Frequency Allocations which ever since the 1927 Radio Telegraph Conference of Washington has been the heart of the Radio Regulations.

" Incidentally I am happy to recognize in the person of the distinguished Chairman of the American Delegation, Commissioner T.A.M. Craven, an engineer who, on account of his years of service in telecommunications and seniority in international telecommunication conferences, is undoubtedly the Dean of our Conference. I mention Mr. Craven particularly in this connection because he was the original father of the Allocation Table approved as such for the first time at the Washington Conference in 1927. While Commissioner Craven would undoubtedly disclaim paternity for the whole Allocation Table, nevertheless from my personal observation as a veryjunior member of that conference in 1927, I know that the basic idea was his. Mr. Craven's participation in Telecommunication Conferences goes back to 1920.

" Quite apart from the Allocation Table, of course, there are the questions concerning the revision of the entire set of Radio Regulations. These cover definitions; technical characteristics of transmissions; procedure for interference cases; international monitoring; procedures in the mobile servies; service documents; notification and registration of frequency assignments and the activities of the I.F.R.B. These, Gentlemen, are very important questions to which, I am convinced, this Conference will find successful solutions.

" The vital importance of telecommunication to the public at large and the general ignorance of the public on such matters have thrown greater and greater emphasis on the problem of public relations.

" As a result of an initiative taken by Dr. Haakan Sterky, Director General of Telecommunications in Sweden, who so ably chaired the Telegraph and Telephone Conference last year, and to fill a long felt need, the Administrative Council at its last session decided to request the Acting

Secretary-General to give particular attention at these important conferences in Geneva this year to Public Relations and Public Information. The Council devoted one whole meeting of its 14th Session, which terminated in June of this year, to a discussion with Dr. Sterky of ways and means of achieving this. Among other things which are being planned are a series of lectures by speakers of world-wide renown. They will be scheduled at the time when both the Radio Conference and the Plenipotentiary Conference will meet simultaneously in Geneva, probably during the month of November.

" In addition, I advised the Council that the Council President of I.C.A.O. and its Secretary-General had been kind enough to permit the secondment of their distinguished Head of Public Information in I.C.A.O. for the duration of the conferences. I am particularly happy about this arrangement because, before his elevation to this important post with I.C.A.O., Mr. Boussard had been the first editor of the Morning Electron at the Atlantic City Conference. It is a pleasure to welcome him back among us, and to see the Morning Electron rise like a phoenix from the ashes.

" There has never been such a need and also such an opportunity for publicizing the deeds, achievements and plans of the oldest and most world-wide of all the international governmental organizations.

" Now a word as to physical and administrative arrangements. As I had occasion to tell our Administrative Council last year and this year, and as you can judge for yourselves, I am sorry to say that the physical arrangements for a conference as big and as important as this one are not entirely what they should be. The fact is that there is not available in Geneva a suitable building which could house all of our activities at the same time; consequently, we are divided between the Bâtiment Electoral and the Palais des Expositions and must depend on a delivery service which we have had to establish from one building to another in order to transport the rather considerable flow of documents which is inevitable in a conference of this technical importance. Secondly, in the absence of an Inviting Government the General Secretariat of the Union has had to do the best it could with limited funds with respect to local arrangements, including a Reception Committee for the delegations, functions which are normally those of a host government. Thirdly, until the Foreign Ministers Conference took a formal decision to adjourn on Wednesday the 5th of August, we had no definite indication that this building, which had been used as Press headquarters for the 1,700 journalists attending that Conference, would be available to us in time. As a consequence there has been some last minute hustle and bustle in getting our services installed, and the premises are not quite as spic and span as we would have liked them.

" I say all of this not in a spirit of apology, because we have done the best we could under the circumstances. In case some of the delegations find that the facilities are not quite what they might normally expect, I trust that they will bear with us and understand some of our problems. May I say at this time that I invite constructive suggestions for improvements, and promise you that whenever possible these suggestions will be carried out as rapidly and as efficiently as possible.

" Please let me assure you that the whole General Secretariat of the I.T.U. is at your disposal to help you in every possible way. The Members of the I.F.R.B. are all here and will have offices in this building; they are at your disposal in helping you to solve the complicated frequency allocation problems which are before you. The Senior Officials of the C.C.I.R. are equally at your disposal during this Radio Conference to give any assistance that may be required.

" I am sorry that Dr. Metzler, Director of the C.C.I.R., is not here in person. He has asked me to apologize for his absence which I am sorry to say is due to illness. His place will, I know, be ably taken by the Vice-Director, Mr. Hayes.

" We have a very busy four months ahead of us, Ladies and Gentlemen, and I assure you that the headquarters staff of the International Telecommunication Union (a service organization created for the sole purpose of serving the Members of the Union) is prepared to expend all efforts toward the achievement of a constructive and thoroughly successful conference. Thank you very much."

The Acting Secretary-General then proposed a minute's silence in the honour of deceased colleagues and, in particular, in memory of the late Dr. Marco Aurelio Andrada, Secretary-General.

Delegates then rose for a minute's silence.

4. Election of the Chairman of the Conference

The Chairman said that it had been decided unanimously and by applause at the meeting of the Heads of Delegations that morning to propose for election as chairman of the Conference Mr. Charles Acton, Head of the Canadian delegation.

(Applause)

Mr. Charles Acton was unanimously elected, and took the chair amid further applause.

Mr. A. Langenberger, Chairman of the Administrative Council, congratulated Mr. Acton on his brilliant election and wished him a happy and successful Chairmanship.

Mr. Charles Acton (Canada) said that he had been most deeply impressed at the meeting of the Heads of Delegations that morning when he had been chosen unanimously as Chairman. He had no alternative but to graciously accept this nomination. On behalf of his country, and personally, he thanked all the delegations for this very great honour. He would try to set an example by being very brief - he was not given to speaking at great length.

The problems facing the Conference were known to all. They had been mentioned by the Chairman of the Administrative Council, the Acting Secretary-General, and by the Head of the delegation of the United States of America. A unique phase in telecommunications was now being entered. New methods were constantly being devised. He felt that all delegates would find the Conference most interesting when the various technical committees reached the stage of detailed work.

There were probably many present who had never before attended a major radio conference, such as the one held at Atlantic City. On the other hand, he had recognized many faces from those days, and others from various other conferences such as the Extraordinary Administrative Radio Conference, 1951. One of the greatest joys of attending conferences was the pleasure during the first few days of shaking hands with former conference friends. Before very long, he hoped he would know all the delegates. He looked upon them all as his friends and he knew that he could rely upon them at any time to assist him in the work of the conference. He assured them that he would need their assistance because there were many present better qualified than himself, such as Commissioner Craven, Dr. van der Toorn and many others who had more experience. He could not help feeling that many of these "others" would have been a better chairman than he - nevertheless he thanked them all once again for the very great honour.

5. Election of the Vice-Chairmen of the Conference

The Chairman announced that it had been decided unanimously at the meeting of the Heads of Delegations that morning to recommend the election of Mr. Autelli (Argentine) as first Vice-Chairman, and Dr. Sarwate (India) as second Vice-Chairman.

(Applause)

The election of Mr. Autelli (Argentine) as First Vice-Chairman and Dr. Sarwate (India) as Second Vice-Chairman was unanimously approved.

The two Vice-Chairmen, amid applause, took place at the Chairman's table.

Mr. J. Autelli (Argentine), First Vice-Chairman, on behalf of his country, expressed his thanks for the great honour which had been bestowed upon him. He would do his utmost to cooperate with the Chairman and all the delegates in dealing with the problems facing the Conference, in the hope that a satisfactory solution could be found in as short a time as possible.

Dr. M. B. Sarwate (India), Second Vice-Chairman, thanked them for selecting him to assist their distinguished Chairman in the work of this important Conference. Apart from the great personal pleasure which his election gave him, he felt it was significant of the important role which the countries of his part of the world were playing in the work of this great and old organization. No country, and particularly in his part of the world, could afford to keep itself apart from the work of an organization of this type.

Previous speakers had mentioned the enormous developments that had taken place in the field of radio and electronics. Time and space had assumed new dimensions. All were conscious of the tremendous potentialities of these developments for the future of mankind. They were privileged to have a part to play in the moulding of the future of world telecommunications. He could only say that in his modest way he would do his best to fulfil the expectations they had of him, and to assist the Chairman in bringing the Conference to the success it deserved.

6. Constitution of the Secretariat of the Conference

The Acting Secretary-General said that, in accordance with Rule 3 of the Rules of Procedure of the Conference contained in Chapter 9 of the General Regulations, the Conference Secretariat was constituted by the Plenary Assembly at its first meeting.

The following nominations had been recommended unanimously at the meeting of Heads of Delegations that morning:

Secretary of the Conference: Mr. Gerald C. Gross, Acting Secretary-General

Deputy Secretary of the Conference: Mr. Clifford Stead, Chief Engineer, Radio Division

Head of Documents Services: Mr. Jean Millot

Head of Administrative Services: Mr. René Prelaz

Head of Delegates Services: Mr. Robert Lafrance

Public Relations Officer: Mr. Léon Boussard

Staff Management Officer: Mr. H. A. Vergin

Since no application had been made for the use, in accordance with the provisions of Article 14, paragraph 6, of the Convention, of an additional language or languages, oral or written, the organization of the Secretariat proposed was based on the use of the three working languages of the Union, i.e. English, French and Spanish.

The Secretariat constituted by the Plenary Assembly of the Radio Conference was also expected to serve as the Secretariat of the Plenipotentiary Conference.

The Administrative Council, which, in between Plenipotentiary Conferences, had jurisdiction for the financial affairs of the Union, had decided that, to cover the period when the two Conferences would overlap, the total budget of the Conferences should be divided in the proportion two-thirds to one-third. The Financial Control Committee which operated for the Radio Conference could well be expected to continue for the

Plenipotentiary Conference. This decision might be considered arbitrary, but was based on past experience at other Conferences including the Atlantic City Conference.

The constitution of the Secretariat of the Conference, as proposed by the Acting Secretary-General, was unanimously approved.

7. Committee Structure of the Conference (Documents Nos. 19 and 32)

a) Document No. 19

The delegate of the U.S.S.R. suggested that Document 19 should not be considered at this meeting, but submitted to Committee 5. There being no objection, this course was adopted.

b) Document No. 32

The Chairman explained, on a point raised by the delegate of the U.S.S.R., that Committee 5, under "Frequency Registration Procedure", would also cover International Frequency List problems.

With the agreement of the delegate of the United States of America, it was decided to include "International Frequency List problems" under the terms of reference of Committee 5, and the proposals of the Heads of Delegations for the Committee Structure of the Conference were unanimously approved.

The meeting rose at 4.20 p.m.

Rapporteur:	Chairman of the Conference:	Secretary of the Conference:
W. Bouladon	Charles J. Acton	Gerald C. Gross

CONFERENCE ADMINISTRATIVE
DES RADIOCOMMUNICATIONS
GENEVE, 1959

Document N° 56-FES
19 août 1959

PROGRAMME DES SEANCES POUR LE 20 ET 21 AOUT 1959

SCHEDULE OF MEETINGS FOR 20 AND 21 AUGUST 1959

PROGRAMA DE SESIONES PARA LOS DÍAS 20 Y 21 DE AGOSTO DE 1959

Heure Time Hora	Lundi Monday Lunes	Mardi Tuesday Martes	Mercredi Wednesday Miércoles	Jeudi Thursday Jueves	Vendredi Friday Viernes
0900-1000	-	-	-	-	-
1000-1115	-	-	-	Commission 4 Salle A Committee 4 Room A Comisión 4 Sala A	Commission 6 Salle A Committee 6 Room A Comisión 6 Sala A
1130-1230	-	-	-	Commission 5 Salle A Committee 5 Room A Comisión 5 Sala A	Commission 7 Salle A Committee 7 Room A Comisión 7 Sala A
1500-1800	-	-	-	Commission 2 Salle E Committee 2 Room E Comisión 2 Sala E	Commission 4 Salle A Committee 4 Room A Comisión 4 Sala A

ARCHIVES U.I.T. GENÈVE

CONFERENCE ADMINISTRATIVE
DES RADIOCOMMUNICATIONS
GENEVE, 1959

Document N° 57 (Rev-1)-F
22 août 1959

PROGRAMME (REVISE) DES SEANCES POUR LA SEMAINE DU 24 AU 30 AOUT 1959

	Lundi				Mardi				Mercredi				Jeudi					Vendredi			
	1000	1130	1500	1630	1000	1130	1500	1630	1000	1130	1500	1630	0930	1000	1130	1500	1630	1000	1130	1500	1630
Commission 1 - Plénière	-	-	-	-	-	-	-	-	-	-	-	-	E	-	-	-	-	-	-	-	-
Commission 2 - Plénière	-	-	-	E	-	-	-	E	-	-	-	E	-	-	-	-	E	-	-	-	E
Commission 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Commission 4 - Plénière	-	-	A	A	-	-	-	-	-	-	A	A	-	-	-	-	-	-	-	A	A
Commission 4 - Groupe de travail	-	-	-	-	-	-	A	A	-	-	-	-	-	-	-	A	A	-	-	-	-
Commission 5 - Plénière	B	B	-	-	-	-	-	-	B	B	-	-	-	-	-	-	-	B	B	-	-
Commission 5 - Groupe de travail	-	-	-	-	-	-	B	B	-	-	-	-	-	-	-	B	B	-	-	-	-
Commission 6-Groupe de travail 6A	-	-	-	-	C	C	-	-	-	-	C	C	-	-	-	-	-	-	-	-	-
Commission 7 - Plénière	-	-	-	-	-	-	-	-	-	-	-	-	-	D	D	-	-	-	-	-	-
Sous-Commission 7A	D	D	-	-	-	-	-	-	D	D	-	-	-	-	-	-	-	-	-	-	-
Sous-Commission 7B	-	-	-	-	D	D	-	-	-	-	D	D	-	-	-	-	-	-	-	-	-
Sous-Commission 7C	-	-	-	-	-	-	D	D	-	-	-	-	-	-	-	-	-	D	D	-	-
Sous-Commission 7D	-	-	D	D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	D	D
Commission 8	-	-	-	-	-	-	J	J	-	-	-	-	-	-	-	-	-	-	-	-	-

Note : Les lettres, figurant dans les colonnes des heures, indiquent la salle où la séance aura lieu.

CONFERENCE ADMINISTRATIVE
DES RADIOCOMMUNICATIONS

GENEVE, 1959

Document N° 57-FES
19 août 1959

PROGRAMME DES SEANCES POUR LA SEMAINE DU 24 AU 30 AOUT 1959

SCHEDULE OF MEETINGS FROM 24 TO 30 AUGUST 1959

PROGRAMA DE REUNIONES DEL 24 AL 30 DE AGOSTO 1959

Heure Time Hora	Lundi Monday Lunes	Mardi Tuesday Martes	Mercredi Wednesday Miércoles	Jeudi Thursday Jueves	Vendredi Friday Viernes
0930				Commission 1 Salle E Committee 1 Room E Comisión 1 Sala E	
1000-1115	Commission 5 Salle A Committee 5 Room A Comisión 5 Sala A	Commission 6 Salle C Committee 6 Room C Comisión 6 Sala C	Commission 5 Salle A Committee 5 Room A Comisión 5 Sala A	Commission 7 Salle A Committee 7 Room A Comisión 7 Sala A	Commission 5 Salle A Committee 5 Room A Comisión 5 Sala A
1500-1800	Commission 4 Salle B Committee 4 Room B Comisión 4 Sala B	Com. 4 - G.T. Salle B Com. 4 - W.G. Room B Com. 4 - G.T. Sala B Com. 5 - G.T. Salle D Com. 5 - W.G. Room D Com. 5 - G.T. Sala D Com. 8 - Salle J Com. 8 - Room J Com. 8 - Sala J	Commission 4 Salle B Committee 4 Room B Comisión 4 Sala B Com. 6 - G.T. Salle C Com. 6 - W.G. Room C Com. 6 - G.T. Sala C	Com. 4 - G.T. Salle B Com. 4 - W.G. Room B Com. 4 - G.T. Sala B Com. 5 - G.T. Salle D Com. 5 - W.G. Room D Com. 5 - G.T. Sala D	Commission 4 Salle B Committee 4 Room B Comisión 4 Sala B Com. 7 - G.T. Salle C Com. 7 - W.G. Room C Com. 7 - G.T. Sala C
1630-1800	Commission 2 Salle E Committee 2 Room E Comisión 2 Sala E	Commission 2 Salle E Committee 2 Room E Comisión 2 Sala E	Commission 2 Salle E Committee 2 Room E Comisión 2 Sala E	Commission 2 Salle E Committee 2 Room E Comisión 2 Sala E	Commission 2 Salle E Committee 2 Room E Comisión 2 Sala E

G.T. = Groupe de travail - Grupo de Trabajo

W.G. = Working Group.

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No. 58-E
19 August, 1959
Original : French

TELECOMMUNICATIONS AND THE USE OF OUTER SPACE

Most delegations to this Conference probably know that the United Nations takes a keen interest in the use of outer space for peaceful purposes.

At its 1958 ordinary session, the United Nations General Assembly decided to set up a special committee to draft a report on the various aspects of this matter. This report has now been published for perusal at the ordinary session of the United Nations General Assembly, which will begin in New York on 15 September, 1959.

Some of the committee's working documents confirm that among the questions of concern to the United Nations in this field, telecommunication is of particular importance. Hence we asked the secretary of this committee to send us the report just published.

This is an exceedingly important document for the Administrative Radio Conference. It is accordingly annexed hereto.

The Conference will decide how it should be dealt with and which committee or committees should consider it first of all.

I would emphasize that this is a report by a committee of experts, to be considered by the United Nations General Assembly this autumn.

Gerald C. GROSS
Acting Secretary-General

Annex : 1

ARCHIVES U.I. GENEVE

PAGE INTENTIONALLY LEFT BLANK

PAGE LAISSEE EN BLANC INTENTIONNELLEMENT

A N N E X

UNITED NATIONS
GENERAL ASSEMBLY

A/4141
14 July 1959
Original : English

REPORT OF THE AD HOC COMMITTEE ON THE PEACEFUL USES OF OUTER SPACE

TABLE OF CONTENTS

Pages

NOTE BY THE RAPPORTEUR

1. By resolution 1348 (XIII), of 13 December 1958, the General Assembly established an Ad Hoc Committee on the Peaceful Uses of Outer Space consisting of the representatives of Argentina, Australia, Belgium, Brazil, Canada, Czechoslovakia, France, India, Iran, Italy, Japan, Mexico, Poland, Sweden, the Union of Soviet Socialist Republics, the United Arab Republic, the United Kingdom of Great Britain and Northern Ireland and the United States of America.

2. The work of the Ad Hoc Committee was conducted at United Nations Headquarters in New York. It began on 6 Maz and concluded on 25 June 1959.

3. The representatives of the following States took part in the work: Argentina, Australia, Belgium, Brazil, Canada, France, Iran, Italy, Japan, Mexico, Sweden, the United Kingdom of Great Britain and Northern Ireland and the United States of America.

4. The Committee elected the following officers:

Chairman: Dr. Koto Matsudaira (Japan);

Vice-Chairman: Dr. Mario Amadeo (Argentina);

Rapporteur: Mr. Joseph Nisot (Belgium).

5. The Committee established two committees of the whole, one technical under the chairmanship of Dr. D.C. Rose (Canada), and the other legal under the chairmanship of Prof. Antonio Ambrosini (Italy). The Technical Committee prepared the report on paragraph 1 (b) and the Legal Committee the report on paragraph 1 (d). At the request of the Ad Hoc Committee, the Secretary-General presented a report covering paragraph 1 (a) of the General Assembly resolution which constituted the basis for the Committee's report on that paragraph.

6. The Ad Hoc Committee and its committees of the whole have held twenty-five meetings. They were given valuable assistance by the United Nations Secretariat, especially by Dr. Sanford Schwarz, Secretary of the Ad Hoc Committee and of the Technical Committee, Mr. Oscar Schachter, Secretary of the Legal Committee, and Mr. Geoffrey S. Murray, the representative of the Secretary-General.

7. By the terms of resolution 1348 (XIII), the Ad Hoc Committee was required to report to the General Assembly on the four following matters described in paragraph 1 of the resolution:

"(a) The activities and resources of the United Nations, of its specialized agencies and of other international bodies relating to the peaceful uses of outer space;

"(b) The area of International co-operation and programmes in the peaceful uses of outer space which could appropriately be undertaken under United Nations auspices to the benefit of States irrespective of the state of their economic or scientific development, taking into account the following proposals, inter alia:

(i) Continuation on a permanent basis of the outer space research now being carried on within the framework of the International Geophysical Year;

(ii) Organization of the mutual exchange and dissemination of information on outer space research;

(iii) Co-ordination of national research programmes for the study of outer space, and the rendering of all possible assistance and help towards their realization;

"(c) The future organizational arrangements to facilitate international co-operation in this field within the framework of the United Nations;

"(d) The nature of legal problems which may arise in the carrying out of programmes to explore outer space."

8. Each of these four matters is the subject of a separate part of the present report, which the Ad Hoc Committee adopted unanimously on 25 June 1959:

Part I: paragraph 1 (a)
Part II: paragraph 1 (b)
Part III: paragraph 1 (d)
Part IV: paragraph 1 (c)

PART I

(PARAGRAPH 1 a) OF GENERAL ASSEMBLY RESOLUTION 1348 (XIII))

1. The Ad Hoc Committee on the Peaceful Uses of Outer Space, at its first meeting on 6 May 1959, requested the Secretary-General to prepare a report on the subject matter of paragraph 1 a) of General Assembly resolution 1348 (XIII), namely, "The activities and resources of the United Nations, of itsspecialized agencies and of other international bodies relating to the peaceful uses of outer space". On 16 June, the Secretary-General submitted a comprehensive and valuable report (A/AC.98/4) to the Committee on these matters, which stands as a part of the documentary records of the Committee.

2. The present Part I is based on the Secretary-General's report. The Committee has sought to summarize the pertinent data in such a way as to facilitate future United Nations discussions relating to the peaceful uses of outer space.

I. INTERNATIONAL SCIENTIFIC ORGANIZATIONS

A. The international scientific unions

3. The principal non-governmental international bodies which are interested and active in space research are the international scientific unions in the several major fields of science which benefit by experiments utilizing sounding rockets, satellites, and space probes. These are:

International Astronomical Union (IAU)
International Union of Geodesy and Geophysics (IUGG)
International Union of Pure and Applied Chemistry (IUPAC)
International Scientific Radio Union (URSI)
International Union of Pure and Applied Physics (IUPAP)
International Union of Biological Sciences (IUBS)
International Union of Theoretical and Applied Mechanics (IUTAM)
International Union of Physiological Sciences (IUPS)
International Union of Biochemistry (IUB)

4. The International Union of Mathematics (IUM) has also expressed some interest. The interests of the remaining three international scientific unions, i.e. International Geographical Union (IGU), International Union of Crystallography (IUCr) and International Union of the History of Science (IUHS) lie outside the space field.

5. The objects of the unions are:

a) To promote the study of problems relating to their scientific fields;

b) To initiate, facilitate and co-ordinate research into, and investigation of, those problems which require international co-operation;

c) To provide for discussion, comparisons and publication.

6. The unions are maintained by the voluntary, part-time work of a small group of active scientists elected for limited terms. The administration is small and flexible. The activities are directed toward organizing meetings ranging in size from small symposia on specialized topics to large congresses devoted to all aspects of the whole discipline, and in maintaining or encouraging publications.

7. The unions maintain contact with scientists in the various countries through national committees or equivalent bodies, one for each discipline. Annual national contributions to the unions are paid by the national committees, the total for all thirteen unions amounting to between $150,000 and $200,000 per year. The national committees are often organized by or related to the national academies or research councils in the respective countries.

B. The International Council of Scientific Unions

8. The establishment of the International Council of Scientific Unions (ICSU) in 1931 provided a central organization to deal with problems of common interest and to encourage international scientific co-operation.

9. Further objects of the Council are:

a) To encourage international scientific activity in subjects which do not fall within the purview of any existing international organization;

b) To enter, through the national adhering organizations, into relations with the Governments of the countries adhering to the Council in order to promote scientific investigation in these countries;

c) To maintain relations with the United Nations and its specialized agencies;

d) To make such contacts and mutual arrangements as are deemed necessary with other international councils or unions, where common interests exist in the field of the natural sciences covered by the Council.

10. The General Assembly of ICSU consists or representatives of the thirteen scientific unions and of national representatives from the national academies or research councils of the forty-five countries adhering to ICSU. The Assembly meets triennially and elects an Executive Board, which meets annually. There is an administrative office in The Hague with a small full-time secretariat.

11. The financial resources of ICSU consist of contributions from the national adhering bodies amounting to about $50,000 per year and an annual grant of about $200,000 from the United Nations Educational, Scientific and Cultural Organization (UNESCO) to support the scientific activities of the unions.

12. There are always a certain number of tasks which lie on the borderline between two or more unions. The Council takes special care to fill needs for co-operation or joint activities involving the disciplines of several unions or many national academies. Typical examples are the International Geophysical Year, Antarctic Research and Space Research. The Council copes with these tasks as they arise in international scientific life by the formation of special committees, such as the Special Committee for the International Geophysical Year (CSAGI), which was formed in 1953 and will continue to the end of June 1959, the Special Committee on Oceanographic Research (SCOR), first established in 1957, and the Special Committee on Antarctic Research (SCAR), 1958.

C. The International Geophysical Year

13. The activities of ICSU in space research began as a part of the programme of the Special Committee for the International Geophysical Year (CSAGI).

14. At a CSAGI conference in Rome, in 1954, a resolution was passed urging that as many nations as possible consider the development of satellites carrying scientific instruments, which would be placed in orbits around the earth during the International Geophysical Year. The resolution stated:

"In view of the great importance of observations during extended periods of time of extra-terrestrial radiations and geophysical phenomena in the upper atmosphere, and in view of the advanced state of present rocket techniques, CSAGI recommends that thought be given to the launching of small satellite vehicles, to their scientific instrumentation, and to the new problems associated with satellite experiments, such as power supply, telemetering, and orientation of the vehicle."

15. Within a year, both the United States and the U.S.S.R. indicated their intention to launch satellites. Successively, attention was devoted by CSAGI to the several phases of the earth satellite-tracking programmes. Special emphasis was placed on the need for wide international co-operation in tracking satellites to develop their full scientific potential. Many nations indicated a willingness to set up satellite observation stations.

16. Being non-governmental in organization, and with limited financial resources, CSAGI achieved great success through the voluntary co-operation of the participating national committees. Particularly in the rocket and satellite programmes, the financial and logistic support of the programme by the several national governments was essential.

17. With the termination of the International Geophysical Year, there was a wide-spread desire to continue international co-operation in the planning and co-ordination of space research as well as other activities of the year. This led to a programme of International Geophysical Co-operation 1959 (IGC) and to the formation of several special committees, including a Committee on Space Research (COSPAR).

D. The Committee on Space Research

18. The Committee on Space Research (COSPAR) was established, provisionally for an initial period of one year ending 31 December 1959, by a resolution of the eighth General Assembly of ICSU (Washirgton, D.C., 2-6 October 1958). The resolution stated that the primary purpose of

COSPAR was "to provide the world scientific community with the means whereby it may exploit the possibilities of satellites and space probes of all kinds for scientific purposes, and exchange the resulting data on a co-operative basis".

19. The Committee is concerned with scientific research in the broadest sense. This is made clear by the provisional charter according to which the Committee shall promote fundamental research on space, on an international scale, but shall not normally concern itself with such technological problems as propulsion, construction of rockets, guidance and control. This objective shall be achieved through the maximum development of space research programmes by the international community of scientists working through ICSU and its adhering national academies and international scientific unions. The Committee shall report to ICSU those measures needed in the future to achieve the participation in international programmes of space research of all countries of the world with those which are already actively engaged in research programmes within the domain of COSPAR.

20. The Committee's composition has been provisionally established to consist of:

a) The representatives of national scientific institutions of the seven countries launching satellites or having a major programme in rocket research;*

b) The representatives of the national scientific institutions of three of the countries involved in tracking or other forms of space research on an agreed system of rotation;

c) The representatives of nine international scientific unions.

21. The Committee has held two meetings to date, an organizational meeting in London in November 1958 and a second meeting at The Hague in March 1959. The actions taken may be summarized as follows:

---

* These seven institutions (Australia, Canada, France, Japan Union of Soviet Socialist Republics, United Kingdom and United States) contributed or were to contribute the $55,000 making up COSPAR's budget.

22. All the countries that had taken part in the rocket and satellite programme of the International Geophysical Year, namely, Australia, Canada, France, Japan, the Union of Soviet Socialist Republics, the United Kingdom and the United States were admitted to membership under group a) mentioned in paragraph 20 above. India, Peru and the Union of South Africa were invited as the first rotating members under group b), but only the Union of South Africa accepted and was present at the second meeting. Group c) contains the representatives of the nine unions previously listed as interested and active in space research.

23. Three continuing working groups were established as follows: 1) Tracking and Transmission of Scientific Information; 2) Scientific Experiments (including biological experiments); 3) Data and Publications. Ad hoc committees were established to consider matters relating to experiments with biological implications and contamination by atomic explosions.

24. The task of the Working Group on Tracking and Transmission of Scientific Information is to: a) delineate problems that may exist in this area; b) propose and facilitate specific working arrangements for and among operating networks; c) study the compatibility of frequencies, equipment and problems of radio interference. Among the matters of concern to this Working Group are methods whereby tracking systems can obtain "acquisition data" in time to permit tracking of space probes and satellites by the tracking equipment; problems of synchronizing observations on different networks; telemetry techniques; and the continuing need for optical as well as radio tracking. In connection with point c) above, the Working Group has not been called to assume responsibility for requesting frequency allocations, but it will work to ensure adequate and timely action through existing organizations responsible for such activity (International Telecommunications Union and International Radio Consultative Committee).

25. The task of the Working Group on Scientific Experiments is to: a) evaluate scientific experiments submitted by countries which do not have facilities for launching space vehicles in order to determine the scientific desirability and feasibility of incorporating them in some form of space vehicle; b) draw attention to fields of research not receiving sufficient emphasis, which might profitably be investigated through use of space vehicles; c) arrange for co-ordinated activities by participating countries.

26. The task of the Working Group of Data and Publications is to study the need for various forms of data exchange and for the publication of results, continuing in this connection the use of existing world data centres and arranging for the continued operation of any recommended means for such publications and exchange.

27. The Committee further recommended that C.O.S.P.A.R. should: a) inform all participating committees engaged in rocket programmes about the purposes of a proposed series of "rocket weeks", requesting suggestions and proposals for scheduling such co-operative groups of firing, including specific suggestions for a first such Rocket Week to be held in November 1959; b) inform the same participating committees of the United States offer to undertake the launching into space of suitable and worthy experiments proposed by scientists of other countries.

28. At C.O.S.P.A.R.'s second plenary meeting, in March 1959, delegates from Australia, Canada, France, Japan, the Union of South Africa, the Union of Soviet Socialist Republics, the United Kingdom and the United States reported on the programmes being carried out by their respective national scientific institutions.

29. The Soviet Delegate, illustrating the status of space research in the Soviet Union, divided the primary scientific tasks of space research into three categories: a) study of the phenomena occurring on the earth and in the upper atmosphere and the influence of cosmic rays; b) the properties of cosmic space as a medium in which man has to work and to travel; c) the study of the phenomena on the planets and the stars which are impossible to observe from the earth's surface as the result of interference by the earth's atmosphere. The research in the upper parts of the atmosphere and in outer space was being continued by the Soviet Union. The rocket would be used as a routine means of studying the upper atmosphere; their number and the number of launching places would be increased. Satellite research would be continued, including experiments of a biological and astrophysical nature.

30. At the same meeting, the United States Delegate stated that, although the scientific planning was still in its preliminary stages, it was hoped that in each of the next two years between 75 and 100 sounding rockets might be launched in the United States and approximately one or two satellites or space probes every two months. In the rocket-sounding programme, emphasis would be placed on experiments relating to atmospheric structure; electric and magnetic fields; astronomy; energetic particles in

the ionosphere. The satellite programme would emphasize atmospheres; ionospheres; astronomy; energetic particles, electrical and magnetic fields and gravitation. Space probes would investigate energetic particles, fields and ionospheres. In each case, the objectives were set out in detail and the planned programme was outlined separately for the long-range and for the immediate future.

E. Other international organizations

31. The following international organizations are non-governmental, but they are not affiliated with I.C.S.U.

32. The Council for International Organizations of Medical Sciences (C.I.O.M.S.) has a professed interest in the medical aspects of manned space flight, a subject whose research interests are also represented during the present preliminary stages by the International Union of the Physiological Sciences, represented in I.C.S.U. and in C.O.S.P.A.R.

33. The Union of International Engineering Organizations (U.A.T.I.) and several of its constituent organizations have a potential interest in the progress of space research.

34. The International Astronautical Federation (I.A.F.) was founded in 1950 by representatives of a number of national societies interested in rocketry and space exploration meeting in the first International Astronautical Congress. The constitution of the I.A.F., adopted in 1952, states that the purposes of the organization are to promote and stimulate the achievement of space flight as a peaceful objective, to secure the widespread dissemination of technical information, to stimulate public interest in space flight through the major media of mass communication, and to foster research and development.

II. INTER-GOVERNMENTAL ORGANIZATIONS

A. United Nations

35. As with other problems in international political co-operation and international economic and social collaboration among its Members, the ground on which the activities and resources of the United Nations in this field rest is the provision in Article 1, paragraph 4 of the Charter that the United Nations shall be a centre for harmonizing the actions of its Members in attaining their common ends, and the pledge given by Members in Article 56 "to take joint and separate action in co-operation with the Organization for the achievement" of solutions of international economic, social, health, cultural and educational problems. The General Assembly, the Economic and Social Council, and their subsidiary organs, as central organs for harmonizing

the actions of Members, have developed international co-operative activities in fields affected with a scientific interest.

36. The Secretary-General has similarly used his functions to promote co-operation among Governments. In this he has sometimes acted on his own initiative and sometimes in response to requests from the General Assembly, asking him to make studies, to take procedural steps or, in some cases, to make proposals.

37. There are other areas of United Nations activity to which developments in the peaceful uses of outer space are relevant. These lie in the domain of promotion of the economic, social and cultural development of States and in the progressive development of international law. The Economic and Social Council is concerned with major inventions or technological improvements which affect existing patterns of economic and social activity. The progress anticipated in the near future in outer space in the fields of meteorology, climatology, telecommunications, transport, and possibly biology, is important from the standpoint of long-range economic policies.

38. One of the more important functions of the Organization is to assist in co-ordinating the activities of the specialized agencies. In this capacity, through the Economic and Social Council, it follows the work of the specialized agencies and assists in inter-agency co-ordination, at the Secretariat level, through the Administrative Committee on Co-ordination and its Preparatory Committee.

39. Of relevance also is the function of the General Assembly under Article 13 of the Charter to initiate studies and make recommendations for the purpose of encouraging the progressive development of international law and its codification.

B. United Nations Educational, Scientific and Cultural Organization

40. In accordance with its constitutional responsibilities, UNESCO has, since its inception, undertaken as one of its major tasks to promote scientific co-operation between its Member States. In doing so, UNESCO has worked in the closest collaboration with the United Nations, the specialized agencies and the International Atomic Energy Agency (I.A.E.A.). To this end the General Conference, at each of its sessions, has included in the regular programmes of the Organization a resolution relating to the promotion of scientific research through international co-operation. The relevant resolution in the programme for 1959-1960, adopted by the General Conference at its tenth session (November-December 1958), reads as follows:

> "10C/Resolution 2.41: The Director-General is authorized, in co-operation with the United Nations, the specialized agencies, and other appropriate international organizations and national

and regional research bodies, on the advice of advisory committees when appropriate, to study scientific problems, the solution of which may help to improve the living conditions of mankind, to stimulate research on these problems and to promote when appropriate the adoption of international or regional measures for the development of such research, particularly in the following fields:

(a) General problems of scientific research;
(b) (b) Humid tropical zone;
(c) (c) Marine sciences;
(d) Cell biology;
(e) Basic research in nuclear physics;
(f) New sources of energy;
(g) Numerical processing of information and electronic computation;
(h) Interdisciplinary brain research; and
(i) Exploration of extra-terrestrial space; and

to participate in the activities of member States, at their request, in scientific research in the fields of humid tropics research, marine sciences, basic research in nuclear physics, and the numerical processing of information and electronic computation."

41. In the past, UNESCO has carried out a programme of this type either by drawing up practical proposals to be implemented by groups of member States, or by assuming direct responsibility for international scientific research projects.

42. In fulfilling its scientific functions, UNESCO resorts to a number of methods:

a) Co-operation with international non-governmental scientific organizations. UNESCO has created, or sponsored the creation of, international non-governmental organizations, such as the Union of International Engineering Organizations and the Council of International Medical Organizations. Special mention should be made of the collaboration between UNESCO and I.C.S.U. An agreement between the two organizations, signed in 1951, provides that they will assist one another with a view to facilitating the execution of their joint programme in the field of international scientific co-operation, and that they shall consult each other on all questions falling within their common sphere of interest.

UNESCO has undertaken to grant I.C.S.U. an annual subvention designed to facilitate the co-ordination of the activities of the Council's member organizations and to provide funds for such scientific projects included in the programme of I.C.S.U. as are of international interest and in line with UNESCO's aims. I.C.S.U. has undertaken to give specialized advice to UNESCO, at the latter's request, on the planning of its programme in the field of international scientific co-operation, and to advise UNESCO on its working relationship with the non-governmental organizations within its field. It has further undertaken to give particular attention to, and to develop to the utmost, those of its programme activities which come within the framework of UNESCO's basic programme.

b) Organization of international scientific conferences on important new subjects which are not yet being dealt with by international governmental or non-governmental organizations and of symposia on specific subjects related to the implementation of UNESCO's programme.

c) Programme of co-ordinated research, surveys, training, etc., carried out with the help of special advisory committees composed of leading scientists and representatives of international scientific unions.

43. Mention should also be made of the Provisional International Computation Centre (P.I.C.C.) established by a bilateral agreement concluded in September 1957 between UNESCO and the Italian Institute of Higher Mathematics (Istituto Nazionale di Alta Matematica), pending the establishment of an International Computation Centre on a permanent basis. The Provisional Centre has been created for a period of two years but will automatically cease to exist when the inter-governmental Convention establishing an International Computation Centre comes into force.

44. The Provisional Centre commenced its activities in January 1958, in Rome. The main functions of the Centre are: (a) to ensure mutual assistance and international collaboration between existing bodies dealing with computation and information processing, in particular as regards scientific and technological studies; (b) to promote the exchange of information both on scientific matters and on the facilities existing in various countries; (c) to assist, on request, the countries which do not possess their own computation equipment, and this assistance may consist either in undertaking certain computation tasks with the help of existing services or in giving advice for the creation of national centres; (d) to help international organizations which require its assistance; (e) to promote the training of specialized staff; (f) to act as a link between the users and the designers of computation equipment.

C. World Meteorological Organization

45. The objectives of the World Meteorological Union (W.M.O.), as stated in the World Meteorological Convention of 1947, are:

"a) To facilitate world-wide co-operation in the establishment of networks of stations for the making of meteorological observations or other geophysical observations related to meteorology and to promote the establishment and maintenance of meteorological centres charged with the provision of meteorological services;

b) To promote the establishment and maintenance of systems for the rapid exchange of weather information;

c) To promote standardization of meteorological observations and to ensure the uniform publication of observations and statistics;

d) To further the application of meteorology to aviation, shipping, agriculture, and other human activities;

e) To encourage research and training in meteorology and to assist in co-ordinating the international aspects of such research and training."

46. The Organization acts as a clearing-house for the exchange of information among its members, and for the promotion of agreements among its members regarding both the routine and exceptional transmission of meteorological data. It is not, however, an operational organization. It operates neither weather stations nor communication facilities. Its recommendations and agreements are carried out only through the co-operation of the meteorological services of the member countries.

47. Since earth satellites represent a new observational tool of great potential value to meteorology, early in 1958 W.M.O. began to consider its role in connexion with international co-operation and programmes in the peaceful uses of outer space.

48. The subject was placed on the agenda of the tenth session of the Executive Committee of W.M.O. (29 April-17 May 1958). The Committee decided (resolution 14 (EC-X)) that W.M.O. should accept responsibility for meteorological questions related to artificial satellites in so far as they call for action or study by a specialized agency of the United Nations. The Committee further requested the President of its technical Commission for Aerology (C.A.E.) to nominate a rapporteur to study the meteorological aspects of artificial satellites and to report to the eleventh session of the Executive Committee on any possible activities which might legitimately be undertaken by W.M.O. in this field.

49. The report prepared by Dr. H. Wexler, was submitted in April 1959 to the Third Congress of W.M.O. which (resolution T.9 (Cg-III)) laid down the following policy: the organization would encourage the development and use of artificial satellites as a means of providing valuable meteorological data, and collaborate as required with the United Nations, other specialized agencies and scientific organizations, in particular C.O.S.P.A.R., in artificial satellite programmes of interest to meteorologists or on which the advice of meteorologists would be useful.

50. The eleventh session of the Executive Committee, which took place immediately after the Third Congress, took note (resolution P.6 (EC-XI)) of the latter's policy and directives. It further arranged for an evaluation to be made of the above-mentioned report by the relevant technical commissions of W.M.O. The Executive Committee also set up a panel of experts, including representatives from its Commissions for Aerology (C.A.E.) and Synoptic Meteorology (C.S.M.), with the following terms of reference: (a) to keep a continuing review of the possible uses of artificial satellites for meteorological purposes; (b) to make suggestions as to how W.M.O. can best assist in these activities; (c) to present a report to the next session of the Executive Committee.

51. The Organization is thus officially seized of the question of artificial satellites in so far as they have meteorological aspects and applications. It is understood that the members of W.M.O. are commonly agreed that while it is difficult to foresee all the aspects of the utilization of data from artificial satellites, satellites not only have opened the way to investigations of fundamental problems which are needed for the understanding of the general atmospheric circulation, the behaviour of rainfall patterns, and other phenomena of meteorological interest, but also offer an opportunity for the immediate operational use of observational data in forecasting throughout the world.

52. The Organization has directed its attention to both these aspects. The meteorological research interest in space is high because observations from satellites could well furnish completely new types of data having an ultimate significance which cannot be foreseen. The operational aspect is also of great importance as it offers a practical means for obtaining otherwise unknown synoptic information, for example concerning cloud cover over the uninhabited oceans. This is of particular significance in respect of the large oceanic areas of the Southern Hemisphere, but the resulting benefit would apply to the whole world. It would be possible, for instance, to conduct realistic studies of the exchange of energy between the polar regions - particularly the Antartic continent - and the equatorial belts. This exchange necessarily affects the general circulation, with consequential effects to the north no less than to the south of the Equator.

53. Bearing in mind that the meteorological components will probably be only a portion of the total instrumentation in any particular satellite, the meteorological utility could well be examined against the background of the over-all daily observational programme which has been organized by

the members of W.M.O. As an example, mention can be made of the fact that several hundred radiosonde observations are made each day, at an annual cost running into millions of dollars. An effective meteorological design related to their research and synoptic use could thus strongly support a co-ordinated programme of research in other directions.

54. From a practical point of view, the operational use of satellite weather data would require co-ordinated facilities, (1) for interrogating the satellites and rapidly reducing the data to a form amenable for use in synoptic meteorology, and (2) for the systematic world-wide exchange of the data for immediate use.

55. The interrogating stations need not be designed solely for meteorological purposes. The existing space-vehicle tracking stations could be so utilized with a little co-ordination, but it would probably be necessary to institute an additional number related to the extent of the over-all satellite programme which could be supported at any one time. Consideration could be given to the question as to whether it would not be a natural extension of W.M.O.'s present responsibilities for it to take part in the planning of the space vehicle tracking stations and in the design of the necessary computational practices and techniques for the reduction of the data to amenable forms for practical use. The existing W.M.O. concern and responsibility in the design of codes for the world-wide exchange of data and the co-ordination of meteorological telecommunications could readily be extended to deal with satellite data.

D. International Telecommunication Union

56. The International Telecommunication Union (I.T.U.) is the body responsible for the international co-ordination and rational use of all forms of telecommunications by landline, submarine cable or radio means. It is advised by two technical committees, the International Telegraph and Telephone Consultative Committee (C.C.I.T.) and the International Radio Consultative Committee (C.C.I.R.), which deal with line and radio problems respectively. In the field of radio communication, I.T.U. drafts regulations which among other things define the conditions, procedure and standards for all applications of radio to the communication of intelligence in any form, including telegraphy, telephone, picture transmission, broadcasting, television, radar, navigational aids, and scientific uses such as radio astronomy.

International control of radio transmission: the technical problem

57. Radio communication involves the radiation of electromagnetic waves, one of the important characteristics of which is their frequencies. Different bands of frequencies are allotted for different services within a spectrum which has rapidly become overcrowded as the applications of radio have increased, and this is in spite of the fact that for the present and in the foreseeable future the radio spectrum covers the range of 10

kilocycles per second to 3 million megacycles per second. It is thus necessary for all users to conform to very strict rules regarding the area within the band which they may use for their transmissions. Radio transmissions, and the codes and procedure used in connexion therewith, are subject to the control of national administrations, who, as members or associate members of I.T.U., are allotted precise radio frequencies and may operate transmissions only within their allotment. Consequently, the basic function of I.T.U. is to establish international regulations and codes of operation, and to act as the world agent for the equitable and effective distribution of radio frequencies to all users. These regulations and frequency allocations are subject to adjustments from time to time as may be required, owing to changing conditions or as a result of the improvement of radio techniques. Among the problems facing engineers are the vagaries in the propagation of radio waves around the earth, interference due to atmospheric disturbances, and variations in the troposphere (lower atmosphere) and ionosphere (upper atmosphere) through which the waves travel. The ionosphere, in particular, is subject to disturbance due to solar activity, with the consequent dislocation of terrestrial radio transmissions. It is obvious, therefore, that any launching of rockets or earth satellites which carry radio transmitters must be of concern to all persons connected with telecommunications, since these transmitters are potential sources of further interference with other terrestrial users of the radio spectrum. Over the past year many statements have been made, and there is considerable documentation about the pollution of the radio spectrum and the consequent difficulties for world communications.

58. As an indication of the future dangers that could be expected for the telecommunication services, it is easily possible for a satellite equipped with an effective radio transmitter to be supplied with batteries charged by solar radiation to continue in orbit for many decades. This could seriously interfere with communications that operate on the same frequency or adjacent frequencies to the satellite's transmission during its travel around the earth every hundred-odd minutes. But it is well to remember that it is explicit in the I.T.U. regulations that no such avoidable interference may be caused.

59. According to the 1947 Convention drawn up at Atlantic City, I.T.U. (a) acts as the general agent for the allocation of radio frequencies; (b) promotes the development of technical facilities by establishing standards and operating rules in order to improve telecommunication services; and (c) harmonizes the activities of nations for the attainment of these ends. To implement this work, the Convention set up an eleven-member International Frequency Registration Board (I.F.R.B.), whose duties are to record the frequencies allocated by members to users in accordance with the provisions in the Radio Regulations and to furnish advice regarding the maximum practicable number of radio channels in those portions of the spectrum where harmful interference

may occur. To assist it in this aspect of its work, I.T.U. has also the advice of C.C.I.R. This is a scientific body which meets every three years to consider various technical radio questions and to make recommendations for action either by its national members or by I.T.U. Further, C.C.I.R. has adopted the practice, in recent years, of calling upon U.R.S.I. for its advice. This is a strictly non-political body which fosters international research in scientific radio, and brings a detached scientific approach to any radio problem including those that might in application have a political colouration. It is possible, or even likely, that C.O.S.P.A.R., if it continues in being, could similarly act in an advisory capacity in collaboration with U.R.S.I.

60. At the recent Los Angeles meeting of C.C.I.R., a recommendation concerning the allocation of frequencies to transmitters on space vehicles was made; this will be presented during the Administrative Radio Conference of I.T.U., which will open on 17 August at Geneva. In its working paper presented to the Ad Hoc Committee, I.T.U. indicates that the Conference agenda will also carry the item "Communications with outer space". Whether this will necessitate the amendment of the 1947 Convention remains to be seen. There appears to be no doubt, however, that efforts will be made for the reallocation of the radio spectrum to provide special bands for communications with and between locations in space.

The International Radio Consultative Committee and its recommendations

61. As already mentioned, the Committee meets in Plenary Assembly at intervals of about three years to consider questions that had been referred to one or more of fourteen study groups dealing with specific subjects. Recommendations adopted at its plenary meetings are submitted to I.T.U. as a basis for action. Some technical and frequency problems are, however, settled by direct agreement at C.C.I.R. level. The very nature of radio communication makes mutual international agreement on frequency allocation essential. The Committee makes a study of the propagation of radio waves and reception characteristics in different parts of the world to enable it to recommend to I.T.U. the best frequencies for the various services, from the point of view of reliability and freedom from interference. Atmospheric disturbances have been analysed and an atlas of thunderstorm activity prepared to facilitate the planning of world-wide radio communication systems.

62. In recent years frequencies had been assigned to radio astronomers, and their need for the exclusive use of certain bands in the radio spectrum has had to be recognized. The Committee has recommended that I.T.U. should afford complete protection to the frequencies used in radio astronomy:
(a) molecular or atomic nuclear frequencies, particularly in the hydrogen

line of the spectrum; (b) bands allocated for standard frequency and time-signal transmissions; and (c) seven other frequency bands that needed to be kept clear of man-made interference. The case of radio astronomy has thus established a precedent for the allocation and protection of frequency bands for a specific scientific purpose.

63. In the case of space research, C.O.S.P.A.R. has already recommended that special frequencies should be assigned, and C.C.I.R., at its Plenary Assembly held at Los Angeles in April 1959, considered the technical aspects of the matter. In a detailed technical report on "Factors Affecting the Selection of Frequencies for Telecommunication with and between Space Vehicles" (document 662), the relevant requirements are considered. In some cases, it is desired to use radio waves which will be deviated in the transmission through the ionosphere and troposphere, so that the characteristics of these regions can be studied by tracking signals received from satellites in known positions. In some other cases, it is desired to use frequencies for which the atmosphere is quite transparent, so that the waves pursue a straight line trajectory between the space vehicle and the receiver. In a third case, frequencies are required for intercommunication between the space vehicle and the receiver. Finally, frequencies are required for intercommunication between space vehicles under conditions that the corresponding waves may not be receivable at the earth's surface and so cause no interference with world communications using the same frequencies.

64. These brief comments serve to illustrate the fact that the allocation of frequencies for use in communications with and between space vehicles is a matter that requires some considerable study of the technical problems involved.

65. The Los Angeles Plenary Assembly of C.C.I.R. made recommendations and adopted resolutions on "Selection of Frequencies used in Telecommunication with and between Artificial Earth Satellites and other Space Vehicles" (document 531), "Influence of the Troposphere on Frequencies used for Telecommunication with and between Space Vehicles" (document 530), and "Effects of the Ionosphere on Radio Waves for Telecommunication with and between Space Vehicles beyond the Lower Atmosphere" (document 538).

66. In addition to making these recommendations and resolutions, C.C.I.R. set up a new Study Group "to study the technical questions regarding systems of telecommunications with and between locations in space". While the work of the study group will produce more specific recommendations as to what frequencies are appropriate for space communications, it seems likely that the progress of space science will necessitate I.T.U. having to take early action in allotting frequencies for use in space vehicles, even if these are only available on a temporary basis.

E. International Civil Aviation Organization

67. The objects of the International Civil Aviation Organization (I.C.A.O.) are to develop the principles and techniques of international air navigation and to foster the planning and development of international air transport so as to ensure the safe and orderly growth of international civil aviation throughout the world.

68. While I.C.A.O. has not so far carried out any specific activity directly related to the peaceful uses of outer space, a number of problems of outer space fall within the field of interest of the Organization.

69. The Convention on International Civil Aviation of 7 December 1944 recognizes the sovereignty of each State over the air space above its territory, but includes no definition of air space. Such a definition would determine the scope of application of that Convention as well as of I.C.A.O.'s sphere of action. Furthermore, while the subject of the Convention is "aircraft", a definition of "aircraft" is not given therein. The Organization has adopted technical annexes to the Convention in which aircraft is defined as "any machine that can derive support in the atmosphere from the reactions of the air".

70. The launching of vehicles into outer space involves their passage through air space; such vehicles may subsequently re-enter air space. At the national level, the necessary co-operation between the responsible agencies has already been developed. At the international level, an equal degree of co-operation will be required in order to ensure the safety of air navigation during the time of launching or of re-entry of space craft through space used by aircraft.

71. One of the objects of I.C.A.O. is to "meet the needs of the peoples of the world for safe, regular, efficient and economical air transport". Technical developments may advance to the point where space vehicles will be used for transport of mail and other goods, and even of persons. Evidently, I.C.A.O. would have an interest in any system regulating the two activities.

72. In February 1959, the Council of I.C.A.O. decided to bring to the attention of the Assembly of the Organization, due to meet on 16 June 1959, a suggestion made to the Council that a study be made of the legal status of outer space and the regulation of the use of space craft, particularly with reference to the traffic of civil aircraft in air space. However, since the question relating to outer space is under special consideration by the United Nations, the Council has pointed out that any action by I.C.A.O. on the subject should take into account the need for co-ordination with the deliberations of the United Nations.

F. International Atomic Energy Agency

73. No work is contemplated by the International Atomic Energy Agency (I.A.E.A.) in the field of outer space in the immediate future. However, I.A.E.A. has an interest in the nuclear technology of outer space and might advise on its health and safety aspects.

G. World Health Organization

74. The World Health Organization (W.H.O.) is not now doing any work specific to outer space nor does it contemplate doing so in the immediate future. The Organization can, however, be most useful to any outer space programme in stimulating research, publishing medical findings and holding symposia and seminars pertinent to medical or health problems associated with space exploration and travel.

H. Inter-Governmental Maritime Consultative Organization

75. The Inter-Governmental Maritime Consultative Organization (I.M.C.O.) has at present no programmes in the field of outer space. However, in view of its over-all responsibilities for international shipping matters, particularly the problems of safety at sea, navigation and improved communications, it can be expected to become associated with outer space developments affecting these responsibilities.

PART II

(PARAGRAPH 1(b) OF GENERAL ASSEMBLY RESOLUTION 1348 (XIII))

I. INTRODUCTION

A. Mandate of the Committee

1. The task of the Ad Hoc Committee on the Peaceful Uses of Outer Space under paragraph 1(b) of General Assembly resolution 1348 (XIII) is to report on :

> "The area of international co-operation and programmes in the peaceful uses of outer space which could appropriately be undertaken under United Nations auspices to the benefit of States irrespective of the state of their economic or scientific development, taking into account the following proposals, inter alia :
>
> "(i) Continuation on a permanent basis of the outer space research now being carried on within the framework of the International Geophysical Year;
>
> "(ii) Organization of the mutual exchange and dissemination of information on outer space research;
>
> "(iii) Co-ordination of national research programmes for the study of outer space, and the rendering of all possible assistance and help towards their realization."

2. In preparing this report, the Committee has reviewed the present position and trends in peaceful space activities from a scientific and technical point of view. Drawing on the experience of its members in international scientific co-ordination, it has then analysed the present methods and organs for co-operation in the use of outer space and considered areas of present and future need for co-operation.

3. The Committee completed its task by specifying areas in which co-operation might appropriately be undertaken under the auspices of the United Nations.

B. Brief history

4. Man's interest in space is age-old. Until the last decade, however, his inquiries into the properties and objects of outer space have been confined to observations and measurements made from the surface of the earth

or near that level. Mountain-top observatories, aircraft and balloons served in the past to sharpen the scientist's measurements, but it remained for the high altitude rocket to open the domains of outer space to direct observation without the obscuring and distorting effect of the earth's atmosphere.

5. Rocket exploration of the upper atmosphere began in 1945. Since then both the development of rocket vehicles and of the techniques for making measurements by rocket-borne instruments have advanced rapidly. The year 1957 saw the advent of man-made satellites circulating around the earth in the adjoining space, and in 1959 vehicles were launched which passed out of the area predominately controlled by the earth's gravitation to become new planets circulating around the sun. It is now possible to explore the earth's atmosphere with many kinds of instruments to all heights, to place instrumented satellites above the atmosphere, and to probe the depths of space between the planets with automatically operating scientific equipment. Numerous facilities with varying capacities for the launching of scientific research rockets exist around the world, and many countries are expanding their activities in rocket research.

6. Looking into the future, and bearing in mind the rapid development during the past decade, it seems possible now to make reasonably realistic forecasts about expected developments valid for the next two to four years. Admittedly, present views into the future must be subject to continuous review and extension as new lines of thought are developed on the basis of technological achievements.

C. Problems that face us

7. In space activities, scientific and technological, there has been a great surge forward which opens new perspectives for human progress. Even more than in astronomy, they inherently ignore national boundaries. Space activities must to a large extent be an effort of Planet Earth as a whole. Along with the opportunities in prospect for all peoples in the space age, there are problems which face us in arranging for these advances in science and technology on a global scale.

8. Means must be found to utilize scientific and technical talent wherever it may exist, either in connexion with space experiments and undertakings themselves or in the invaluable supporting research and activities which must go along with them. Means must be found for co-ordination and facilitation of the activities of the scientific community. A widespread problem is the encouragement and support of space activities

nationally commensurate with the obvious international and popular interest. For some aspects the question of international financial support becomes important and would be on an unusually high scale compared with most previous international undertakings in science and technology.

9. Coming sooner than many realize are problems connected with effectively taking advantage of the practical applications of space science, some of which, like weather, are already over the horizon while others will surely rise in the near future.

10. The Committee recognizes that the great forward surge of space activities may also tend to widen the gap between the technologically advanced nations actively launching vehicles into space and other nations watching and wishing to take part in space activities, but feeling unable to do so. The problem is to make available and to exploit the possibilities that exist for participation by nations at all levels of development, from supporting research or operation of tracking stations to launching small vehicles or joining with others in more advanced undertakings. A related problem lies in arranging the sharing of basic scientific information and topical data so that wide-spread participation is possible.

11. The Committee feels strongly that the conduct of space activities must be effectively open and orderly. It is therefore important to find means for having peaceful space activities clearly announced right from the earliest stages and to make such activities known both to scientific specialists and to the world at large in an effecient manner. A determined attack on these problems is urgent, because the development of space activities is advancing at a staggering rate.

12. Finally, there is the over-all question of whether man's advancement in outer space will redound to his benefit. Here man's intent is of overriding importance, a point which was recognized during discussions at the last session of the General Assembly, when the resolution which established the Committee was adopted. The Committee has borne in mind throughout the fact that other organs within the United Nations have been given the important tasks of lessening international friction, encouraging mutual trust and confidence and facilitating progress on disarmament.

D. References to conclusions

13. The following sections of this report contain numerous specific conclusions. The Committee considered the desirability of restating these conclusions explicitly in a final section, but found that to do so would require considerable repetition of the text. The following section index calls attention to these conclusions :

14. Attention is also drawn to the general conclusions given at the end of the report.

II. SPACE ACTIVITIES

15. At the outset it is desirable to emphasize that scientific work in outer space embraces many disciplines involving both pure research and applied research. In the area of pure science, the primary objective is the advancement of knowledge of the environment in which the earth moves, and later the extension of this knowledge to other parts of the solar system, and even further afield. In the applied and more technological area there are two phases :

a) The development of space vehicles of a great variety of sizes and uses;

b) The use of these vehicles to advance applied science in such fields as meteorology and communication.

16. The development of vehicles which make possible the scientific study of outer space has, to a large extent, been the outcome of military objectives and therefore problems of national security have prohibited the free exchange of information. Nevertheless, the technology of these vehicles has developed along parallel lines in several countries and it may be stated that the problems are now more those of engineering than of science. In view of this, the Technical Committee has not considered it necessary to deliberate on the vehicles used for the exploration of outer space, but has started with the premise that these are available even though the larger vehicles are at present only available to countries whose industrial, technological and, especially, financial resources make them possible.

17. Although great resources are required to construct a space vehicle of extreme range, this does not in any way mean that scientific activities in space are limited only to large countries. Knowledge of the physical state of the upper atmosphere (the exact limits of which cannot be defined) at levels inaccessible to aircraft and balloons is far from satisfactory. Between the range attainable by aircraft and balloons and the lowest practicable satellite level, comparatively inexpensive rockets can be used for the conduct of scientific experiments and many countries should be able to participate in the experiments. The feasibility of such experiments has been well demonstrated by the excellent work carried out by Australian, Canadian, French, Japanese, Soviet, United Kingdom and United States scientists who have made valuable contributions quite apart from the more spectacular results of satellites and space probes.

A. Scientific investigations

18. The kinds of measurements made in space science programmes are mostly similar to, or developments of, those made from balloons or sounding rockets in the past several years. In this era of advancing space technology, more complex measurements in the lower atmosphere can be made. The regions accessible to measurement are now being extended to the earth's outer atmosphere, into interplanetary space, to the moon and planets and the sun. The simple experiments of today will soon develop into work with complex satellite or space observatories. Some of the aims of space investigations are to increase our knowledge by direct or improved observation of the following :

a) The atmospheres of the earth, sun and planets, as well as possible vestiges of an atmosphere on the moon, including the electrically conducting regions or ionospheres in these atmospheres;

b) Electric, magnetic, and gravitational forces throughout space in the solar system, whose strength and properties have hitherto only been inferred by very indirect reasoning;

c) Diluted gas and scattered dust particles in space between the planets and within comets;

d) Electrified particles, in some cases emanating from the sun, and always influenced by electric and magnetic forces within the solar system; such particles include those producing the polar auroras, those stored in the radiation belts in the vicinity of the earth, and the very energetic cosmic rays;

e) The details of the external form and the internal composition of the earth, planets, and moon;

f) Conceivable living organisms outside the earth, either on the surfaces of other planets or elsewhere;

g) Stellar and galactic objects and phenomena.

Special problems such as the verification of certain conclusions from Einstein's general theory of relativity, are also among the objectives of space experiments.

19. These objectives are attainable by series of individual experiments, each with its special instruments, especially designed and tested to withstand the rigours of launching and of the space environment. A whole new technology is involved in the systems for taking the results of the experiments and transmitting them back to earth.

20. The first use of earth satellities and space probes was made under the auspices of the International Geophysical Year (IGY). The Year enterprise wassponsored by the International Council of Scientific Unions (ICSU), a non-governmental body, and was carried out through the co-operation of national scientific groups in some sixty-six countries, each of which decided on its scientific programme and arranged for its support. Many countries had programmes in the IGY category "Rockets and Satellites". As a means of continuing this kind of voluntary international co-ordination and co-operation, ICSU has established the Committee on Space Research (COSPAR).

21. It is too early in the space age to envisage all, or even the ultimately most important applications of space research; however, experience from other areas of scientific inquiry started or spurred by some marked scientific or technological advance gives considerable assurance that the findings of space science will have a strong influence on the future of mankind.

B. Applications furthering human welfare

22. As a result of these scientific investigations, it can be expected that there will be many developments leading to practical applications which in turn will add materially to the comfort and well-being of the world at large. A few of the possible applications of space technology are now coming into focus and are at present in the earliest stages of development. How and when these applications will mature will depend on many factors which cannot now be predicted. Some of the applications which are now foreseen are: the collection of data, particularly for immediate meteorological purposes; the improvement of long distance radio communication; a means of improving man's view of the size and shape of the earth and of the distribution of land masses and water; and an all-weather global navigational system.

23. These and other applications of satellites that develop as a result of advancing technology will not become feasible immediately, but must necessarily depend upon an orderly sequence of technological developments. It must be realized, however, that the time when these applications will become available depends on many other factors over which the scientist can exercise no control.

C. Improvement of weather forecasting

24. Historically, meteorologists had to rely first on observations that could be made on the ground. Over the years, a meteorological network has been established using ground stations and many types of vehicles ranging from ships and aircraft to balloons. Despite the geographical extension of this network into many parts of the world, it is still inadequate. The earth is covered by such extensive regions of water, ice, and desert that only about one fifth of the atmosphere is under regular observation, and wide areas of storms or other extremes of weather remain inadequately observed until they arrive at populated areas. Vertically, balloons rarely reach higher than 30 kilometres, and they ascend slowly, drifting away from the observation station to inconvenient distances.

25. Meteorological rockets ascending vertically can be used for routine measurement of pressures, temperatures and humidity. This can be done inexpensively up to heights of 60 kilometres. Rockets can also be made to eject small bits of metal foil or other good targets for radar and in this way permit measurement of wind direction and speed up to as much as 45 kilometres height. Rockets carrying cameras can be used to photograph cloud areas from above, and thus aid in the detection of squalls, hurricanes, typhoons and other large cloud formations.

26. In a different way, satellites circulating in closed orbits around the earth will soon provide meteorologists with another tool for surveying the large, inadequately observed parts of the globe. Thus man will obtain a downward look at clouds, and with a proper distribution of such satellities, it should be possible to keep track of each major storm, to note the birth of new storms and rain areas, and the death of old ones.

27. Some of the earth satellite techniques required for this extension of the capabilities of meteorological systems may be available within a few years; others may require a development period of over a decade. An ultimate system to accomplish regular collection of meteorological data on a global basis might make use of perhaps six to eight satellites in 800 to 1,600 kilometre altitude polar orbits as well as several satellites in 35,000 kilometre altitude equatorial orbits.

28. Future progress in weather forecasting over longer periods than a few days depends on the delineation of large-scale features of weather over the globe, as distinct from local studies in limited areas. Another significant application is the comparison between the heat received from the sun and that reflected or radiated from the earth into space. Such satellite measurements may assist in anticipating climatic changes and may possibly contribute to the development of new systems of long range weather forecasting.

29. The use of meteorological satellite systems would not, of course, replace other observation techniques. These, with sounding rockets important among them, would continue to be needed to provide detailed knowledge of the structure of the atmosphere at lower altitudes. The total quantity of data collected would be tremendous and since the data would have to be used within a few hours, there would be a requirement for new techniques for interpretation and utilization. In this connexion it may be appropriate to suggest that the International Computation Centre at Rome, established with the assistance of UNESCO, is concerned with precisely such problems.

30. A foreseeable benefit would be to extend weather forecasting capabilities from the present limit of days to periods of several weeks and beyond. No less important than the obvious practical assistance to weather forecasting will be the contribution to basic knowledge of the workings of the atmosphere which may assist in anticipating climate changes. Ultimately these advances should afford direct benefits to agriculture, industry and transportation.

D. Improvement of radio communications

31. Currently available means of world-wide communications suffer from severe limitations of capacity. For example, the present transatlantic

cables are expected to be saturated by 1962. Owing to the anticipated increase in messages during the coming decade, a new cable with several times the capacity of the present ones will be saturated by the time it is available.

32. Apart from enclosed cables, world-wide communications depend on the presence of reflecting regions in the high atmosphere which permit radio waves to be sent from one part of the world to another, despite the obstacle presented by the curvature of the earth. Nature has provided such reflecting regions in the high levels of the atmosphere, from 70 kilometres upwards where free electric charges are created when the sun shines on the air. However, these natural reflecting layers are only useful on certain radio wave-lengths and are ineffective on other s. Since they are often disturbed by electromagnetic processes on the sun and by polar auroras, their properties are erratic at certain times and places which can only be anticipated in part.

33. In view of these circumstances, it has become desirable to search for new means of economical world communications; a promising approach to a truly world-wide system is the use of earth satellites as passive reflectors or active repeaters.

34. In the case of the passive reflector, an antenna using much shorter waves will beam a powerful signal at the satellite which will reflect it in such a manner that it may be received by suitable equipment anywhere within reach, or will reflect the signal in specific directions. Such a satellite might be used simultaneously by many, subject only to allocation of non-interfering frequencies. An operational system might involve some twenty-five satellites together with extensive ground equipment.

35. The technique of using active repeaters in satellites will involve directing a signal to a satellite, which in turn will rebroadcast it to the ground. Rebroadcasting may be accomplished instantaneously or with suitable delay until the satellite has moved into a good position relative to the intended receiver. Three such satellites spaced 120 degrees apart in 35,000 kilometre altitude orbits at the equator might comprise a useful system.

36. Each of the two techniques appears to have advantages and disadvantages. Passive reflector systems involve simple satellites but appear to require relatively large numbers and involve heavy requirements for ground transmitting and receiving equipment. Active repeater systems appear to require fewer satellites and reduced ground equipment; however, they would be susceptible to defective operation, have a limited frequency range, and require a continuing power supply on board.

37. Communications satellites are currently in a very early stage of development. Their technical aspects remain to be explored as does the full extent of their economic and other implications. However, the substantial increase in the amount of information that may be transmitted internationally in a given interval of time may ultimately have a major impact on the relations of countries throughout the world.

38. It should be noted that preliminary experiments conducted at moderate cost with vertically ascending rockets give ample scope for important contributions from scientists in many countries to this technical problem.

E. Geodetic and mapping satellites

39. Geodetic and mapping satellites offer the means of improving man's view of the size and shape of the earth and the distribution of land masses and water. Optical observation of geodetic satellites has the potentiality of yielding the observer's location to less than 30 metres while mapping satellites provide a means for charting the little explored regions of the world. Improved data on geographical details of the earth may be of economic as well as scientific significance.

F. Navigation satellite

40. The navigation satellite may provide the basis for an all-weather long-range navigation system for surface vehicles and aircraft. With the use of suitable ranges of frequencies for transmission, it would be possible to establish positions with great precision irrespective of the prevailing weather. At the present time, there is no such world-wide all-weather system of navigation.

G. Manned space flight and exploration

41. Initial interest in man's role in space has been concerned with the utilization of his unique characteristics which allow him to absorb a wide variety of observations, to remember and to make decisions in a way that cannot be duplicated by machines. Such human qualities as persistance, resourcefulness and the relative reliability of the complex human system further indicate the need for man's inclusion in the development of space flight and exploration.

42. Although unmanned vehicles will have preceded man in the exploration of space, perhaps effecting landings on the moon, penetrating interplanetary space, and at least approaching the planets, the addition of man to these efforts will constitute a dramatic innovation, one which is only in part "scientific" in purpose and only in a special sense a

"practical" application of space vehicles. The motivation of manned space exploration goes deeper than any scientific and other practical results. Apparent throughout man's history is a basic urge to discover and to explore, to go where no man has gone before, to go everywhere man has the means of going. As it becomes possible for man to explore outer space, he can confidently be expected to do so.

43. The first demonstrations of manned space flight can be expected in the near future, probably in the form of experiments with rockets followed by relatively simple manned orbital vehicles. Looking well beyond such initial efforts, it is possible to foresee the initiation of true manned exploration of space, that is the use of space vehicles to enable man to reach, investigate and return from the moon, interplanetary space, and ultimately at least the near planets. There does not appear to be any foreseeable prospect of manned exploration of interstellar space.

44. Although no insuperable problems have yet been identified, the scientific and technical problems of true manned space exploration are substantial, and the period required for full perfection of the necessary vehicles, equipment instrumentation and techniques will be measured in terms of decades rather than years.

III. TOOLS FOR SPACE ACTIVITIES

45. The development of vehicles for scientific activities in outer space is the key to executing a successful space programme. Over the centuries, man has accumulated a good deal of knowledge about his planet, the solar system and the universe, but any real penetration of space must still await the development of adequate vehicles. In terms of the mission to be accomplished by these vehicles, they can be classified as follows: (a) sounding rockets; (b) earth satellites; and (c) deep space probes.

A. Sounding rockets

46. Rocket exploration of the atmosphere began in 1945. Since then both the development of rocket vehicles and of the techniques for making measurements by rocket-borne instruments has advanced rapidly.

47. The phrase "sounding rockets" designates a rocket research vehicle that is used to sound the upper atmosphere, in much the same sense that the mariner sounds the ocean depths or the meteorologist uses sounding balloons for observations in the lower atmosphere. There exists a wide variety of sounding rockets; some can reach heights of only tens of kilometres, while others reach to hundreds or even thousands of kilometres.

In an effort to distinguish between sounding rockets and the deep space probe to be discussed below, an arbitrary definition is adopted as follows: a sounding rocket is a vehicle launched vertically or nearly vertically that reaches an altitude of no more than one earth's radius, or approximately 6,000 kilometres.

48. This definition is somewhat arbitrary, though not completely so. There are advantages to this definition in that vehicles to attain heights greater than about one earth's radius are substantially more expensive than those designed for lesser heights. Thus, one may anticipate the participation of many countries in sounding rocket programmes, whereas participation in the launching of deep space probes will probably be limited for economic reasons. Similarly, a sounding rocket operation can generally be carried out entirely within the domains of a single country.

49. With present technology, the state of the upper atmosphere can be studied by means less expensive than rockets, up to heights of about 30 kilometres. Relatively inexpensive sounding rocket experiments may start from this level and extend upwards. Satellites, as has been noted, cannot cover the intermediate levels between the 30 kilometres mentioned previously and the lowest practical satellite orbits of about 200 kilometres, yet knowledge of the physical state of the atmosphere at these levels is far from satisfactory.

50. Whereas we have much to learn about the methods and techniques of fully exploiting satellite and space probes, sounding rocket technology is now at the stage of becoming fully developed.

B. Earth satellites

51. An earth satellite is simply a man-made moon revolving about the earth. The work of the past year or two has already shown the possibilities of artificial earth satellites as a new technique for exploring the physical characteristics of the earth's atmosphere and the space beyond.

52. When launched in a satisfactory manner as to speed and direction, these satellites travel in elliptical orbits around the earth at heights which may range from a few hundred to many thousands of kilometres. Such a satellite forms a vehicle which may house a number of scientific instruments, and can carry out a number of functions simultaneously.

53. The data associated with the experiments can be obtained from a satellite in three ways: (a) by transmission directly to the earth by radio communication; (b) through storage in a suitable recorder which can be interrogated by radio command when the satellite is in a suitable position relative to a receiving station; or (c) eventually, through physi physical recovery of records from satellites that are returned to the earth.

54. In the case of (a) it is necessary to have suitable receiving stations deployed over the earth to collect the information at various points as the satellite travels round its trajectory. In the case of (b), although the stored information can be extracted when required, it is still necessary to have a network of tracking stations over the earth, in order to establish the positions of the satellite at the times the various scientific observations were made.

55. The orientation of the orbit of the satellite is predetermined by the launching conditions. When set at an appropriate angle to the meridian, this trajectory may either cover the entire surface of the earth as it rotates as it would in passing over the poles, or it may be confined to a relatively small zone about the equator. For different investigations, different orbital trajectories may be required and careful planning on an international scale is required to make the best use of this expensive type of technique.

56. Among the space vehicle operational techniques yet to be perfected are those related to the re-entry and recovery of vehicles. At this time, not all the problems associated with this type of operation can be fully evaluated, but because of the nature of the problem, it may be desirable to consider ways and means of minimizing the possibility of accidents.

C. Space probes

57. A space probe is defined as an exploratory vehicle, not an earth satellite, that goes into space beyond one earth's radius from the surface of the earth. Such vehicles can be instrumented for numerous important scientific investigations.

58. By launching a payload at a sufficiently great speed, a rocket can be used to project scientific instruments into interplanetary space. If the aim of such a space probe is simply to make measurements deep in space, far from earth without any particular reference to any celestial body such as a moon or planet, then it suffices to project the object at a sufficiently great speed in a general outward direction. On such a mission, control mechanisms can be kept at a minimum. On the other hand if, for example, it is desired to project the object close to the moon or close to Venus, then exacting control and timing requirements must be met.

D. Network of observing stations

59. Ground observing stations are essential to the successful conduct of any space activity involving satellites or space probes. The primary functions of such stations are: (a) tracking the space vehicle by radio, radar and optical methods, and (b) receiving and recording the radio signals transmitted from the vehicle. These signals contain in coded form the observational measurements made in the vehicle: this is called telemetry. Some stations may be used to give instructions by radio to the vehicle. In general, a world-wide network of stations is needed, although in some cases only a small number may be required. For sounding rocket experiments, for instance, usually only a single station or close-spaced group of stations is needed.

60. Tracking is done by radio techniques for satellites while they transmit. Optical and radar techniques can be employed throughout the life of a satellite. High accuracy of position and time are essential to allow the orbit to be determined well enough to predict future positions for many days in advance. Prompt reporting of tracking observations to computation centres, rapid calculations, and prompt dissemination of prediction information are requirements for an effective tracking network. Customarily, all available observations are used for calculations intended to improve subsequent predictions, while only the most precise tracking observations are used for determination of the definitive orbit needed in interpreting the scientific experiments which may be carried on the satellite.

61. Radio is almost the only way to track space probes. When these are at large distances from the earth, the signals are inevitably very weak and require the use of large radio telescopes such as those used in radio-astronomy for detection. However, few stations are needed in the tracking network for such experiments because at great distances the vehicle is observable from about half of the earth.

62. Telemetering signals are commonly recorded at the same stations which do radio tracking. For space probes this is almost essential because of the extreme sensitivity of receiving equipment needed for both purposes. However, for satellite experiments, telemetry may be recorded easily with radio receivers without the complicated arrangements for measuring the angular position of the radio transmitter. For many experiments, more telemetry stations are needed than tracking stations.

63. The operation of tracking and telemetry equipment in this network of ground stations has been an important way in which many countries have participated in space science beginning with the International Geophysical Year. Some countries have also used tracking-type observations of satellite radio transmissions to make significant findings about the earth's ionosphere. No single country extends over a sufficient

range of latitude and longitude to be able to track earth satellites adequately from its own stations. Earth satellite experiments have been wholly dependent upon international co-operation. This has been accomplished within the IGY-type framework. Necessary improvements and extensions can be handled within the existing framework.

64. Radio transmissions from satellites and space probes are the only practical way for the scientist to get information on experiments in progress; they also are the only practical way to track the course of the vehicle, at least until the orbit or trajectory is well determined. Thus the availability of radio frequencies which will not be interfered with by terrestrial radio transmissions is a matter of life and death to the progress of space activities. This is one of the important matters requiring international action in the field of space. The prospective number of satellites and space probes to be launched in the next few years is in the hundreds.

IV. SUPPORTING RESEARCH

65. Many research activities not directly connected with actual flights of sounding rockets, satellites and space probes are essential to the progress of space science and technology. A large portion of scientific research in the field of extra-terrestrial space is done on the ground either at sea level or in high mountains or with the help of balloons up to the altitude of about thirty kilometres. In addition, there are important studies to be done in the laboratory before or after the experiments using space vehicles; such studies may be theoretical or experimental. Contributions in these areas of research have been made in a large number of countries in recent years. In the future, the prospering of space science will continue to depend heavily on work done in countries and by groups of scientists that may not require direct access to space vehicles.

66. Examples of supporting research areas and topics would include the following:

A. Research which may lead to new or improved equipment to be flown in space vehicles

This includes:

a) Instrument components: power supplies, telemetres, light sources, image intensifiers, photon counters, photomultipliers, micro-electronics;

b) Instruments: magnetometres, spectrometres, pressure gauges, ion probes;

c) Materials: photosensitive, heat resistant;

d) Environmental tests: acceleration effects, radiation effects, vibrational effects;

e) Biological: life support systems, foods, removal of gases and poisons;

f) Psychological: confinement, effects of sensory deprivation.

B. Research which may lead to more nearly optimum trajectories or knowledge of orbits

This includes:

a) Aerodynamics;

b) Propulsion; methods, including plasma, ions and photons;

c) Guidance techniques and systems;

d) Tracking methods;

e) Computational methods for obtaining orbits and trajectories.

C. Ground-based physical observation and research

This includes:

a) Planetary astronomy: physical observations of planets and planetary atmospheres by optical and radio techniques;

b) Solar activity: optical flares, radio outbursts, corona, direct and indirect evidence of particle ejections;

c) Comets: photometry and spectroscopy;

d) Cosmic rays: study of primary or secondary cosmic ray particles accessible to ground or mountain-top stations and balloons;

e) Meteors: number, size, orbits by optical and radio techniques;

f) Meteorites: composition, structure;

g) Ionospheric studies: vertical soundings, scattering, whistlers;

h) Geomagnetism: survey of field at surface, variations, disturbances.

D. Theoretical research and mathematical methods

This includes

a) Magnetohydrodynamics;

b) Cosmology;

c) Astrophysics;

d) Celestial mechanics;

e) Information theory, including data processing and reduction.

67. Exchange of information is needed in all phases of space research. However, in the areas which are described here, this exchange is particularly valuable because scientific groups in so many countries participate in theoretical, laboratory and ground-based research. Modern techniques could be used to solve documentation and language problems involved in such exchange, which could also be encouraged by symposia, conferences and exchanges of research staff. Mechanisms for some of this exchange of information are being carried over from the period of the International Geophysical Year.

V. INTERNATIONAL CO-OPERATION IN THE CONDUCT OF SPACE ACTIVITIES

68. There is a wide area of activities in which international co-operation is desirable, and in some cases required, in order to realize to the fullest the potential benefits of space activities. In some cases, there is simply a requirement for mutual agreements on how to approach specific problems. Once such agreements have been arrived at for the openaand orderly conduct of space activities, they can form the basis of an international routine. In other cases, there is need for active co-operative endeavours in which groups of nations assist each other in carrying out various phases of space activities. The following list is illustrative of these kinds of international co-operation:

A. International agreements

Use of radio frequencies

69. Accomplishment of most uses of space vehicles will depend heavily upon the adequate availability of communications channels. Allocation of frequencies specifically for use by space vehicles and in space activities

will be necessary to assure that channels will be available as needed. There already exists in ITU and its advisory bodies the means for handling this problem. The Committee agrees that there is an urgent need for international co-ordination of radio frequencies for use in association with space vehicles for tracking, telemetry and research purposes. Interference by space vehicles might seriously affect radio services on the earth. Similarly, radio interference from terrestrial sources could cripple the conduct of space programmes. The Committee strongly urges that ITU and the States members of the 1959 Administrative Radio Conference of ITU allocate adequate frequencies for space programmes, with adequate bandwidths for the foreseeable needs of space programmes in the next three years.

Registration of orbital elements

70. Precise orbital elements are determined by launching countries from data acquired during the launching and initial orbital phases. In addition to scientific and technical usefulness, information concerning precise orbital elements might assist in identifying individual satellites. The problem of identification will become increasingly difficult as satellite traffic overloads the ground facilities. It will, therefore, probably be useful for orbital elements to be registered at a central point.

Continuing radio transmission

71. Solar-powered transmitters as well as possible future types of equipment may continue to transmit long after the experimental or other purpose of a satellite has been fulfilled. Such continued transmission can result in interference with transmission from space vehicles still performing a useful purpose. Therefore, it will be necessary to provide for termination of transmission at the end of the satellite's useful life.

Removal of spent satellites

72. The continued orbiting of satellites beyond the period of their useful operational life imposes the necessity of continuing their observation and registration. The foreseeable increase in this space "traffic" problem is formidable. Destruction or recovery of such spent satellites, if possible, might be desirable to limit the "traffic" problem to those satellites actually performing useful functions. This is feasible in larger satellites which are capable of carrying the necessary braking rockets required to cause the satellites to descend at the end of their useful lives. The "traffic" problem is, of course, not in space itself but in the capacity of ground tracking networks.

Re-entry and recovery of space vehicles

73. Among the space vehicle operational techniques yet to be perfected are those related to the planned re-entry and recovery of space vehicles. International co-operation may greatly aid the successful accomplishment of such operations while minimizing the possibility of accident. International arrangements will probably be especially important in the case of re-entry of manned vehicles.

Return of equipment

74. Where space vehicles re-enter the earth's atmosphere either through design or misadventure and any equipment or instrumentation is recovefed by countries other than the launching country, arrangements are needed for restoring such instrumentation and equipment to the launching country.

Identification of origin

75. Provision can be made in all space vehicles for identification of the launching country. Such identification would be useful where equipment is recovered from space vehicles which have re-entered the earth's atmosphere or where a question of liability arises in connection with possible damage caused upon re-entry.

Contamination

76. Scientific studies indicate that certain activities related to lunar and planetary impacts might result in biological, chemical, and radiation contamination jeopardizing subsequent physical and chemical studies and endangering possible living organisms. Release of chemical markers, radio-activity resulting from nuclear explosions, generation of gases in connexion with "soft" landings and the spreading of terrestrial micro-organisms carried within space vehicles represent possible sources of contamination to the moon and planets. The re-entry of space vehicles which have effected landings on the moon and planets might contaminate the earth on their return. It will probably be desirable to continue such studies of this problem as are already under way, for example, in COSPAR, with a view to arriving at appropriate agreements to minimize the adverse effects of possible biological, radiological and chemical contamination.

B. International co-operation in joint projects

Simultaneous sounding rocket launchings

77. In the use of sounding rockets to investigate the upper atmosphere and to conduct rocket astronomy experiments, there are several fields of investigation which would be promoted more effectively if simultaneous launchings were made in many countries, as happened during the International Rocket Week in 1958 during the International Geophysical Year, and as is planned for the autumn of 1959 by COSPAR. Organizations such as the International Council of Scientific Unions and the International Astronautical Federation are available to plan the scientific and technological programmes respectively, but some encouragement by the United Nations may be worth-while.

International use of launching ranges

78. Thought should be given to means of making available launching ranges for vertical sounding rockets on an international scale for the conduct of experiments for scientific purposes. This has already been done in several cases by mutual agreement between nations or research institutions. This procedure is suitable at the present stage and will continue to be valuable during coming years.

79. In the more distant future, however, these thoughts might be elaborated towards considering the creation of an international rocket range. This step is much more ambitious than earlier arrangements, but its impact on truly international space research would be substantial. Much advice on the selection of programmes for international launching of vertical sounding rockets can be given through the organizations associated with the international scientific unions; possibilities also exist in the United Nations family for the exchange of personnel and for negotiations relating to agreement between Governments on scientific matters. But undoubtedly government negotiation initiated, for instance, through the United Nations, would be a necessary step to take before it would be possible to establish one or more international ranges for sounding rocket research.

Instrumentation of satellites and deep space probes

80. In some cases it may be desirable to arrange international co-operative projects to provide instruments and scientific payloads in space vehicles. There are several ways in which this may be done.

81. First, one or more scientists from various countries may be invited to become part of the team that is preparing the payload for launching into space. These scientists would work on their part of the

instrument equipment in appropriate laboratories in the launching nations, participating as required in all phases of the work. This method seems quite workable and can confidently be expected to be effective.

82. Secondly, a scientist in the launching nation can be designated to prepare an experiment devised by a scientist of another country. He would then work in close co-operation with the originator, and represent him as necessary during all phases of the project. This method, too, is workable and can be effective.

83. Thirdly, one might envisage a scientist in one country preparing an experiment, sending the instrumentation as a box, or a group of boxes, to the launching nation for installation in the payload of the space vehicle. From experience, it can be said that this method will succeed only in exceptional cases, and should not be encouraged during the foreseeable future to the detriment of other approaches.

84. It appears that a strong element in the preparation of such joint instrumentation of space vehicles is the direct negotiation between the responsible scientific administrations. Similar conditions apply to the ground network of observatories at which the measurements must be made by scientists who may be trusted to organize their own co-operation in the most efficient manner.

85. It is worth noting that the international scientific organizations, such as the international scientific unions or UNESCO, can contribute substantially to the organization and planning of such forms of co-operation. In this field, however, it may well prove advantageous to have the supporting authority and goodwill of the United Nations, particularly to assist in the resolving of international problems confronting the scientists.

Tracking and telemetering

86. As discussed in paragraphs 59 to 64, the tracking of a space vehicle and the reception of telemetred signals from it are an essential part of obtaining the scientific or technical data for which the space vehicle is launched. In many cases it will be desirable to have several nations co-operate in the tracking of a space vehicle. Particularly in the case of earth satellites it may be desirable to continue such co-operative tracking for long periods of the satellite's operating life. In the case of space probes, on the other hand, co-operative tracking may well be required only during the first one or two days of the flight, after which only periodic tracking will be required which can probably be handled by the launching nation with its own facilities and tracking stations.

87. With regard to the telemetering of scientific information from space vehicles, similar remarks apply. It will be usual for the telemetering system to be an integral part of the tracking system. It will frequently be desirable to take continuous records for periods of from hours to days. In such cases, international co-operative reception and recording of the signals will be needed.

Data processing

88. The processing of tracking and telemetering data to useful form can be a formidable task, particularly in the case of earth satellites from which tremendous amounts of data may be received. It may be desirable to organize an international co-operative programme for such data processing.

Interpretation of data

89. The theoretical analysis and interpretation of experimental data from space vehicles comprise an area in which international co-operation is highly desirable. The most effective use can be made of experimental results by the participation of scientists throughout the world in interpreting those results and applying them to a further understanding of the universe and to the development of practical applications.

International exchange of data

90. Strong international support of existing organizations in the collection, cataloguing and dissemination of data and results obtained from space activities, including supporting research, is necessary if the world is to benefit fully from and to contribute to the advancement of the space era. Such support includes not only the financial assistance and management provided by the nations operating the already existing world data centres, but also an extension of the number and scope of such centres in view of the bigger role assigned to them by the channeling of data and results from all branches of space research and activities.

91. It appears also that some centralized advice and co-ordination in this area will be required, and this might well be continued within the UNESCO-ICSU framework.

Education

92. There will be a continuing need to inform not only the scientific and engineering communities, but also Governments and the public about space activities. UNESCO has had much experience in the preparation and dissemination of texts, manuals, lectures, television programmes, etc., and might be a suitable organization to assume the responsibility for this in the areas of space activities.

Meteorological satellites

93. It is to be foreseen that a meteorological satellite system of world-wide usefulness will be in operation some years from now. Some international arrangement will be necessary to ensure maximum effectiveness of this system in benefiting commerce, industry, agriculture, etc. WMO is an appropriate organization to undertake such co-ordination, and in fact has already begun to consider this question.

Communications satellites

94. In the foreseeable future a system of communications satellites may be placed in operation. As in the case of a meteorological system, the communications system will require international co-operation for maximum effectiveness. Problems of frequency allocations, the handling of message traffic, etc., will have to be solved. It would be well for ITU to begin a study of these problems at once.

International launchings

95. Launchings of satellites and space probes by an international team would be an extremely complex and organizationally difficult operation, which probably should not be attempted in the immediate future. On the other hand, it may be desirable on occasion for a single nation to undertake to launch a scientific satellite or space probe under the auspices of ICSU or the United Nations. In such an international project the scientific payload would be instrumented as a co-operative endeavour by some group of nations. In this manner scientists who would not otherwise have the opportunity of performing experiments in space vehicles may be brought more deeply into space research and engineering.

Advice on space activities

96. Much advice on an international scale on the selection of programmes, on the types of data that should be interchanged and placed in the world data centres, can be given through the organizations associated with the international scientific unions. Possibilities also exist in UNESCO for the exchange of personnel and for negotiations relating to agreements between Governments on scientific matters.

97. In support of these organizations and activities on the international scene, it would also be desirable to have national committees concerned with space activities in the individual countries; appropriate steps to encourage this should be taken.

VI. AREAS OF SPACE ACTIVITY IN WHICH INTERNATIONAL CO-OPERATION SHOULD BE STRENGTHENED

A. Conduct of space science

98. Advances in scientific knowledge are usually made by individual specialists or small groups who have reached the frontiers of knowledge in quite a narrow field. By way of example, if one considers such a frontier as the source and nature of the ionization of the upper atmosphere, the number of leading research workers in such a field is by no means too large for the personal exchange of views at meetings or by correspondence. A century ago it would have been only a few individuals who corresponded or met occasionally for a philosophical exchange of ideas or results. As the numbers grew, scientific organizations became desirable and since their aim was the advancement of knowledge which knows no national boundaries, scientific organization necessarily was cosmopolitan and soon became international in character. Many such organizations now exist and form the group of international scientific unions represented in ICSU. It must be emphasized that these unions matured only when the demand for them had grown. Thus, though their organization had been carefully worked out, the need was very apparent before the plan matured.

99. Even with these organizations, actual co-operative projects are often and very effectively carried out between interested and enthusiastic individuals or groups who have studied each other's publications, and, after meeting occasionally to exchange views, have decided to undertake a joint project. Where a national boundary exists between two such groups and an expenditure of money is involved, government approval or support may often be necessary. Such joint scientific activities, however, are by no means bilateral in the sense of excluding others. Their existence and nature are often known to interested colleagues elsewhere and the results are reported at scientific meetings. It may be expected that in the field of space research joint activities of this kind among specialized groups will continue to be an important means of advance. As long as these activities are carried on in an orderly and open manner, they should be fostered and supported since they represent the normal methods of co-operation among colleagues.

100. It is against this background of scientific co-operation that the impact of space science and its possible application must be examined. It is evident that co-operation in space activities will require international organizations of several kinds, but it is necessary to determine these requirements area by area, examining to what extent present organizations are adequate and establishing what need there may be for extensions or additions.

101. The crucial question is thus how international co-operation in the peaceful uses of outer space should be fostered. For example, international co-operation in programmes employing sounding rockets for basic research should probably be carried out by an organization dealing with space research under the aegis of ICSU or a specific international scientific union, but an active interest on the part of the United Nations would probably be necessary to extend such a programme in due course from the experimental stage into common practical application. Such interest by the United Nations might be expressed by a recommendation that Member States encourage their national scientific centres to expand their international relations in the field of space science generally. Another way might be to ask the Secretary-General to keep the development of international co-operation in this specific field under review and report to the next session of the General Assembly on the progress made. Encouragement of this kind might be effected through the establishment of a special United Nations body charged with keeping under review the co-operative arrangements of international scientific organizations, specialized agencies and States, in order to be able to report on the development in breadth and depth of programmes for the exchange of scientists and experts. Alternatively, this body might be advisory to the Secretary-General in this and other matters relating to outer space, leaving to him to report to the General Assembly with recommendations.

102. The General Assembly in paragraph 1 b) of resolution 1348 (XIII), asked for something more than a review of these areas where international co-operation is feasible. It referred expressly to the consideration of programmes of co-operation in the field of outer space under the auspices of the United Nations and did not envisage the limitation of programmes of international co-operation to non-governmental organizations.

103. While the Committee is of the belief that the world does not yet need an international agency for outer space, there is an evident need for efforts of co-ordination and encouragement by the United Nations in some areas by way of support for international co-operation in this field.

Promotion of scientific activities in this field

104. Where the objective is scientific, whether academic or applied, regulatory provisions requiring agreements among Governments are necessary only perifpherally to promote scientific co-operation. Most needs are cared for successfully by the international scientific unions.

105. Exploration into the unknown, such as those symbolized by space probes, are well covered by the activities of the international scientific unions and their affiliated bodies. Through their services, the scientific community exchanges views and ideas, circulates reasonable amounts of information, or establishes co-operation at various levels of formality. The administration of the international scientific unions is largely based on voluntary work by active scientists, supported by a minimum of professional staff. For example, the cost of the entire international administration of the International Geophysical Year for the administrative period 1952-1959 is estimated at less than $250,000.

106. The international scientific unions devote themselves to progress and consolidation in the advancing parts of science; they are less concerned with technical applications of established knowledge, or programmes of broader education and information. Their administrative structure of periodic assemblies and committee meetings, and to a lesser extent of permanent, large agencies, constitutes an inherent limitation on the consideration of problems of a longer range as distinct from day-to-day actions.

107. The expansion of activities into outer space was initiated during the International Geophysical Year and the first steps towards co-operation were part of that programme. It must be realized, however, that activities in outer space now expand at such a rate and into so many fields that the international scientific unions must share the load of international organization in this whole field with a number of other and different international organizations, such as those dealing with engineering and telecommunications.

108. Amongst typical topics falling well within the scope of the international scientific unions can be cited: a) to plan and co-ordinate general programmes for earth satellites and space probes; b) to stimulate research supporting space science; and c) to plan and co-ordinate simultaneous launchings of rockets in many parts of the world. The possibility of directing the attention of scientists from many different specialities to common problems in space exploration is a particularly valuable feature of the international scientific unions.

Development of national scientific capabilities in this field

109. It was mentioned earlier that scientific work in outer space involves no new scientific disciplines in the present epoch. Space vehicles are vehicles designed purely to carry instruments or living organisms into parts of the earth's environment which could not previously be reached. Previous knowledge of such regions had to be deduced from

indirect measurements. The present objective is to use space vehicles to advance knowledge in the fields of physics, geophysics, astronomy, chemistry and biology related to the environment in which the earth moves. A number of applications have been discussed, those nearest achievement being in meteorology and communications. When these have crystallized out of the research stage, a technology will develop and their application spread into common use.

110. In such applications, particularly in meteorology, both sounding rockets and satellites may be used. The development and use of the sounding rocket by several countries, large and small, shows that the use of this vehicle is not limited to countries having the greatest technological facilities. As they are used they will become cheaper and available to even more countries. The need for world-wide coverage of atmospheric studies at altitudes between about 30 kilometres and 200 kilometres will make international co-operation among many countries a necessity as soon as these applications have reached an appropriate phase.

111. There can be no monopoly of the research activities that are a part of space science. It is perhaps useful to point out also that no country could possibly have a monopoly on the production of scientists capable of making contributions in the specialized branches of science that are involved. These include atmospheric physics, ionospheric physics, aurora studies, meteor studies, many branches of astrophysics, and the physics, psychology and biology of unusual environments.

112. Earlier sections of this report have emphasized that the majority of the problems involved in these disciplines are still in the research stage; that there is need for work in them all over the world; and that laboratory work and theoretical work done on the ground on a small scale at no great cost can make important contributions which are required in the scientific utilization of satellites and space probes, although it is true that the launching of these is likely to remain for some time to come a preserve of the countries with the greatest technical facilities.

113. In any scientific endeavour the most effective way to learn is by experience, particularly in co-operation with those active in the field. Some of the countries active in space science offer fellowships and visiting professorships which may be held in government supported laboratories or universities where research in space is undertaken. Since no new basic science is involved, the requirements for any country to start research in space science are to assist its trained scientists in the fields of physics, geophysics, astronomy, or biology, in visiting centres of active space research in these fields, and to give them some facilities and time in their home institutions to undertake original work.

114. It is quite possible that the opportunities for visits and exchange of personnel are now adequate. In spreading information about opportunities for participation in space activities to many States not now taking part, and in the provision of material for wide-spread education, UNESCO occupies a key position.

115. Discussions indicate that t ere is need for a greater and more up-to-date exchange of scientific information, preferably through existing channels, which, however, require clearing and broadening. The arrangement of symposia on certain aspects of space science is also an important activity, to which UNESCO's attention might be drawn. These are projects best undertaken by organizations of the type of the international scientific unions which co-operate with UNESCO. Because the effects of space developments concern all mankind, it is essential that opportunities for co-operation and extensive distribution of information be made available to all countries, irrespective of the state of their scientific and economic development.

116. States with capabilities for launching satellites should be supported in including in them scientific experiments devised by other countries. The international scientific unions could properly play an important role in this kind of co-operation.

117. National contact with non-governmental international scientific organizations is normally made through academies or research councils recognized as the appropriate bodies to advise their Governments. More efficient contact between scientists in different countries can be furthered through the formation of national committees on space science. Such bodies could build on the experience of IGY national committees.

B. Application of the results of space science

118. As discussed in paragraphs 22 to 40, foreseeable applications in the field of outer space include the following: meteorological satellites, communications satellites, television and broadcasting satellites, geodetic satellites, and navigation satellites.

119. The foregoing activities will need an ever increasing degree of inter-governmental agreement.

120. Such inter-governmental scientific and technical agencies as WMO, ITU and its affiliated committees, ICAO and others, are the important channels for international co-operation in this field. Their attention is partly directed towards maintaining order in the conduct of many kinds of international activities, such as radio communication, the enormous data exchanged between weather services and others; in part it is also directed towards planning and preparation when new techniques are maturing to the stage where they can be put into practical application. Their experience in these fields should be brought to bear urgently on space activities.

C. The open and orderly conduct of space activities

121. From the description and analysis of the various aspects of peaceful uses of outer space, certain common lines emerge, and one can discern the outlines of a pattern, still sketchy and incomplete, but worth elaborating.

122. In all projects there is an emphasis placed on the need for systematic and regular description of progress, exchange of information stage by stage, and adherence to certain agreed rules. It is necessary to improve the means for the distribution and assimilation of knowledge about space activities throughout the world, so that there can be no doubt of the orderly character of such activities, and so that all countries may have the opportunity to take part in them irrespective of the state of their scientific and economic development.

123. Reviewing the wealth of present projects from this angle, some typical examples can be quoted.

124. A regular census of satellites which are circling the earth must be maintained. Their number will become considerable in the near future and they will ultimately be useful to many countries (see paragraphs 22-40 and 93-94). The register should contain data about orbits and radio transmission (see paragraphs 69-70); it will soon be useful to make periodic reviews of the position in order to agree when an individual satellite's useful life is ended and on the action to be taken to terminate its radio transmission or to remove the satellite (see paragraphs 71-72). Tracking of space vehicles and radio recording of data depend entirely on orderly procedures (see paragraphs 59-64).

125. International plans for the wide-spread use of sounding rockets to moderate heights have already been carried out (see paragraph 77). Their scope is widening (see paragraphs 15-17 and 24-30), spreading into further applications and to many countries. Looking into the future, thought might be given to the creation of international launching centres for sounding rockets (see paragraphs 78-79).

126. Re-entry and recovery of space vehicles returning to the earth are techniques in the course of perfection and calling for co-operation

(see paragraphs 73-75). Such re-entry may also involve the execution of international agreements, based on legal considerations, about procedures for dealing with information relating to the territories of many countries and of common benefit (see paragraphs 39-40).

127. Channels of information must be maintained and broadened to serve scientists already working on problems of outer space (see paragraphs 80-85, 89 and 104-108) to bring in new groups of scientists and students (see paragraphs 92 and 109-117) and to inform the general public reliably and effectively.

128. This set of examples, which is not exhaustive, shows that a principle of open and orderly conduct lies at the root of international co-operation directed towards the peaceful use of outer space. Adherence to this principle would further the progress of space science and technology, both in the narrow sense as activities in themselves, and in their relation to human progress. Such experience is not new, but is common to co-operation in any branch of science; as one example, it guided the success of the recent International Geophysical Year.

129. Another feature is also apparent. Space activities have wide implications, spreading beyond pure science into technical applications, international co-operation, and effects on the world at large. These implications involve many international organizations covering a wide range of interests, such as scientific societies, government organizations, international news services, etc.

130. This wide dispersion calls for a rallying point related to the United Nations, small in size and well informed. There exists already a variety of organizations to carry heavy loads of work in different areas of space activity, but there is a need for a centre, to which inquiries can be directed at any time, and by which information can be communicated effectively to the appropriate body in much the same way as ICSU meets a similar need for the existing international scientific unions.

131. Such a small central body, with expert technical knowledge, would have to act in intimate contact with existing technical agencies and international organizations. Starting modestly, its work would be directed to assisting and correlating the many efforts towards open and orderly conduct of space activities. As a corollary, it would naturally serve as a means for current summary of the position in this rapidly expanding field. Thereby it would provide a most useful continuing service for any panel of experts which from time to time might meet for more extensive reviews.

VII. GENERAL CONCLUSIONS

132. As the first technical area in which immediate international action is required, the Committee calls attention to the conclusion regarding allocation of radio frequencies for space activities.

133. On the basis of the specific conclusions reached in previous sections of this report and listed in paragraphs 13 and 14, the following general conclusions have emerged:

1) There is a need for a suitable centre related to the United Nations that can act as a focal point for international co-operation in the peaceful uses of outer space.

2) Progress, plans and needs in connexion with the peaceful uses of outer space should be reviewed again by the United Nations in about one year.

PART III

(PARAGRAPH 1(d) OF GENERAL ASSEMBLY RESOLUTION 1348 (XIII))

I. INTRODUCTION

A. Mandate of the Committee

1. The task of the Ad Hoc Committee on the Peaceful Uses of Outer Space under paragraph 1(d) of General Assembly resolution 1348 (XIII) is to report on:

> "The nature of legal problems which may arise in the carrying out of programmes to explore outer space."

2. The scope of the mandate thus given the Committee was the subject of discussion. It was recognized that the terms of reference of the Committee referred exclusively to the peaceful uses of outer space. One view expressed was that the task of the Committee related only to the identification and listing of legal problems which might arise in the carrying out of programmes to explore outer space and that the Committee was not called upon to formulate either general or particular solutions of those problems. Another view was that the Committee, in identifying and listing the problems, should give some indication of the significance and implications of each problem and the priority which might be given to its solution. Others stressed the importance of giving attention to certain relevant general principles, such as those contained in the preamble and operative paragraph 1(b) of resolution 1348 (XIII). It was also pointed out that, while paragraph 1(d) of resolution 1348 (XIII) referred only to problems which might arise in the exploration of outer space, it was not always possible in relation to certain activities to differentiate between exploration and exploitation of outer space and that both the exploration and the exploitation of outer space were expressly mentioned in the preamble to the resolution.

3. The Committee recognized that it would be impossible at this stage to identify and define, exhaustively, all the juridical problems which might arise in the exploration of outer space. Recognizing the multiplicity of these juridical problems, the Committee considered that it could most usefully fulfil its mandate from the General Assembly, in view of the complex character of these problems, by: (1) selecting and defining problems that have arisen, or are likely to arise in the near future, in the carrying out of space programmes; (2) dividing the problems into two groups, those which may be amenable to early treatment and those which do not yet appear to be ripe for solution; and (3) indicating, without definite

recommendation, various means by which answers to such problems might be pursued. The identification of legal problems entails, of necessity, some consideration of possible approaches to their solution, particularly with a view to presenting the best informed comment that can be made on the matter of priorities.

B. General observations

4. The Committee considered the relevance to space activities of the provisions of the United Nations Charter and of the Statute of the International Court of Justice, which synthesized the idea of co-operation between men and the joint achievement of great projects for the benefit of all mankind; it observed that as a matter of principle those instruments were not limited in their operation to the confines of the earth. It considered as a worthy standard for international co-operation and programmes in the peaceful uses of outer space which could appropriately be undertaken under United Nations auspices, to the benefit of States irrespective of the state of their economic or scientific development, the the principles set forth in the operative paragraph 1(b) and the preamble of resolution 1348 (XIII), in which the General Assembly called attention to Article 2, paragraph 1, of the Charter which states that the Organization is based on the principle of the sovereign equality of all its Members, recognized the common interest of mankind in outer space and the common aim that it should be used for peaceful purposes only, and expressed the desire of promoting energetically the fullest exploration and exploitation of outer space for the benefit of mankind.

5. It was unanimously recognized that the principles and procedures developed in the past to govern the use of such areas as the air space and the sea deserved attentive study for possibly fruitful analogies that might be adaptable to the treatment of legal problems arising out of the exploration and use of outer space. On the other hand, it was acknowledged that outer space activities were distinguished by many specific factual conditions, not all of which were now known, that would render many of its legal problems unique.

6. The Committee agreed that some of the legal problems of outer space activities were more urgent and more nearly ripe for positive international agreement than others. It was felt that the progress of activities in outer space and of advances in science and technology would continually pose new problems relevant to the international legal order and modify both the character and the relative importance of existing problems. For example, future arrangements among Governments or private groups of scientists for co-operation in space research or dissemination of space data may entail legal problems ranging from administrative or procedural arrangements to regulation or control. The Committee noted the indispensable usefulness of close and continuous co-operation between jurists and scientists to take these and other developments into account.

7. The Committee considered that a comprehensive code was not practicable or desirable at the present stage of knowledge and development. Despite the progress already made, it was emphasized that relatively little is so far known about the actual and prospective uses of outer space in all their possible varieties of technical significance, political context, and economic utility. It was pointed out that the rule of law is neither dependent upon, nor assured by, comprehensive codification and that premature codification might prejudice subsequent efforts to develop the law based on a more complete understanding of the practical problems involved. Although an attempt at comprehensive codification of space law was thought to be premature, the Committee also recognized the need both to take timely, constructive action and to make the law of space responsive to the facts of space.

8. For these reasons it was agreed that the rough grouping of legal problems according to the priority hereafter suggested should itself be kept under regular review by whatever means the General Assembly should deem fitting.

II. LEGAL PROBLEMS SUSCEPTIBLE OF PRIORITY TREATMENT

A. Question of freedom of outer space for exploration and use

9. During the International Geophysical Year 1957-1958 and subsequently, countries throughout the world proceeded on the premise of the permissibility of the launching and flight of the space vehicles which were launched, regardless of what territory they passed "over" during the course of their flight through outer space. The Committee, bearing in mind that its terms of reference refer exclusively to the peaceful uses of outer space, believes that, with this practice, there may have been initiated the recognition or establishment of a generally accepted rule to the effect that, in principle, outer space is, on conditions of equality, freely available for exploration and use by all in accordance with existing or future international law or agreements.

B. Liability for injury or damage caused by space vehicles

10. Since injury or damage might result from the launching, flight and return to earth of various kinds of space vehicles or parts thereof, a number of problems exist with respect to defining and delimiting liability of the launching State and other States associated with it in the space activity causing injury or damage. First of all there is the question of the type of interest protected: that is, the kind of injury for which recovery may be had. Second, there is the question of the type of conduct giving rise to liability: should liability be without regard to fault for some or all activities, or should it be based upon fault? Third, should a different principle govern, depending on whether the place of injury is on the surface of the earth, in the air space or in outer space? Fourth,

should liability of the launching State be unlimited in amount? Finally, where more than one State participates in a particular activity, is the liability joint or several?

11. What machinery should be utilized for determining liability and ensuring the payment of compensation if due? The Committee considered that early consideration should be given to agreement on submission to the compulsory jurisdiction of the International Court of Justice in disputes between States as to the liability of States for injury or damage caused by space vehicles.

12. When it considered the foregoing questions, the Committee noted that, in so far as concerns liability for surface damage caused by aircraft, there was formulated at Rome in 1952, under the aegis of I.C.A.O., the Convention on Damage Caused by Foreign Aircraft to Third Parties on the Surface. In the opinion of the Committee, that Convention and I.C.A.O. experience in relation thereto could be taken into account, inter alia, in any study that might be carried out in the future concerning liability for injury or damage caused by space vehicles. It was pointed out, however, that no international standards regarding safety and precautionary measures governing the launching and control of space vehicles had yet been formulated, and this fact also could be taken into account in studying analogies based on existing conventions.

C. Allocation of radio frequencies

13. It was recognized that there are stringent technical limits on the availability of radio frequencies for communications. The development of space vehicles will pose new and increasing demands on the radio spectrum. It was emphasized that rational allocation of frequencies for communications with and among space vehicles would be imperative. In this way, what might otherwise come to constitute paralysing interference among radio transmissions could be avoided.

14. Attention was drawn to the fact that there is already in existence and operation an international organization suited to the consideration of problems of radio frequency allocation for outer space uses, namely, I.T.U. A technical committee of this organization has already issued a recommendation and a report which bear the following titles: "Selection of Frequencies Used in Telecommunication with and between Artificial Earth Satellites and other Space Vehicles" and "Factors Affecting the Selection of Frequencies for Telecommunication with and between Space Vehicles". The findings contained in these two documents will be presented to the Administrative Radio Conference of I.T.U. which will open in Geneva on 17 August 1959.

15. Attention should also be given to the desirability of terminating transmissions from space vehicles once these transmissions have outlived their usefulness. Such a measure would help conserve and make optimum use of the frequencies which are assigned for outer space communications. In considering this problem, it would be necessary to balance this factor against the interest in conserving a means for continuous identification of space vehicles.

D. Avoidance of interference between space vehicles and aircraft

16. As the launchings of space vehicles become more numerous and wide-spread throughout the world, practical problems will clearly arise in regard to the prevention of physical interference between space vehicles, particularly rockets, and conventional aircraft. The latter are already employed in great numbers across the earth and in many areas air traffic is already congested. It was considered that Governments could give early attention to the problem of interference between aircraft and space vehicles and that technical studies could usefully be undertaken, if necessary with the assistance of competent specialized agencies.

E. Identification and registration of space vehicles and co-ordination of launchings

17. It is expected that the number of space vehicles will progressively increase. In the course of time, their numbers may become very large. This indicates the necessity of providing suitable means for identifying individual space vehicles. Such identification of space vehicles could be obtained by agreement on an allocation of individual call signs to these vehicles; the call signs could be emitted at stipulated regular intervals, at least until identification by other means had been established. Another means of identification is by orbital or transit characteristics of space vehicles.

18. As part of the problem of identification, there arises the question of placing suitable markings on space vehicles so that, particularly in the event of their return to earth, they may be readily identified.

19. Identification would be facilitated by a system of registration of the launchings of space vehicles, their call signs, markings and current orbital and transit characteristics. Registration would also serve a number of other useful purposes. For one example, one serious problem is the potential overloading of tracking facilities. Registration of launchings would help to avoid this. Registration might also afford a convenient means for the notification of launchings to other States, thus enabling them to make appropriate distinctions between the space vehicles so notified and other objects, and to take appropriate measures to protect their interests if necessary.

20. A further measure, beyond registration, would be agreement on the co-ordination of launchings.

F. Re-entry and landing of space vehicles

21. Problems of re-entry and landing of space vehicles will exist both with respect to unmanned space vehicles and later with respect to manned vehicles of exploration. Where space vehicles are designed for re-entry and return, it will be appropriate for the launching State to enter into suitable arrangements with the State on whose territory the space vehicle is intended to land and other States whose air space may be entered during descent. Recognizing, moreover, that such landings may occur through accident, mistake or distress, members of the Committee called attention to the desirability of the conclusion of multilateral agreements concerning re-entry and landing, such agreements to contain suitable undertakings on co-operation and appropriate provisions on procedures. Among the subjects that might be covered by such agreements would be the return to the launching State of the vehicle itself and - in the case of a manned vehicle - provision for the speedy return of personnel.

22. It was also considered that certain substantive rules of international law already exist concerning rights and duties with respect to aircraft and airmen landing on foreign territory through accident, mistake or distress. The opinion was expressed that such rules might be applied in the event of similar landings of space vehicles.

III. OTHER PROBLEMS

A. Question of determining where outer space begins

23. Under the terms of existing international conventions and customary international law, States have complete and exclusive sovereignty in the air space above their territories and territorial waters. The concurrent existence of a region in space which is not subject to the same regime raises such questions as where air space ends and where outer space begins. It was noted that these limits do not necessarily coincide. While they have been much discussed in scholarly writing, there is no consensus among publicists concerning the location of these limits.

24. A view was expressed that it might eventually prove essential to determine these limits. The Committee reviewed a number of possibilities in this connexion, including those based upon the physical characteristics of air and of aircraft. The difficulties involved were agreed to be great. An authoritative answer to the problem at this time would require an international agreement, and the opinion was expressed that such an agreement now, based on current knowledge and experience, would be premature. It was considered that, in the absence of an express agreement, further experience might lead to the acceptance of precise limits through a rule of customary law.

25. In the absence of a precise demarcation, another possible approach would be to set tentatively, on the basis of present experience and knowledge, a range within which the limits of air space and outer space would be assumed to lie. It was suggested that an approach of this kind should avoid a boundary so low as to interfere with existing aviation regimes or so high as unreasonably to fetter activities connected with the use and exploration of outer space.

26. There was also discussion as to whether or not further experience might suggest a different approach, namely, the desirability of basing the legal regime governing outer space activities primarily on the nature and type of particular space activities.

27. One development might be the conclusion of inter-governmental agreements, as necessary, to govern activities sufficiently close to the earth's surface and bearing such a special relationship to particular States as to call for their consent. Each such agreement could contain appropriate provisions as to the permissibility of a given activity by reference not only to altitude and "vertical" position but also to trajectory, flight mission, known or referred instrumentation, and other functional characteristics of the vehicle or object in question.

28. It was generally believed that the determination of precise limits for air space and outer space did not present a legal problem calling for priority consideration at this moment. The Committee noted that the solution of the problems which it had identified as susceptible of priority treatment was not dependent upon the establishment of such limits.

B. Protection of public health and safety: safeguards against contamination of outer space or from outer space

29. The Committee took note of the apprehensions that have been expressed that activities in outer space might bring to those regions, by inadvertence, living or other matter from the earth capable of interfering with orderly scientific research. It was agreed that further study should be encouraged under appropriate auspices to specify the types of risks, the gravity of dangers, and the technical possibility, as well as the cost, of preventive measures. Such study should also cover safeguards against similar contamination of the earth as a result of space activities as well as protection against other hazards to health and safety that might be created by the carrying out of programmes to explore outer space. These studies could be undertaken with a view to the possible formulation of appropriate international standards.

C. Questions relating to exploration of celestial bodies

30. The Committee was of the view that serious problems could arise if States claimed, on one ground or another, exclusive rights over all or part of a celestial body. One suggestion was that celestial bodies are incapable of appropriation to national sovereignty. Another suggestion was that the exploration and exploitation of celestial bodies should be carried out exclusively for the benefit of all mankind. It was also suggested that some form of international administration over celestial bodies might be adopted.

31. The Committee noted that, while scientific programmes envisaged relatively early exploration of celestial bodies, human settlement and extensive exploitation of resources were not likely in the near future. For this reason the Committee believed that problems relating to the settlement and exploitation of celestial bodies did not require priority treatment.

D. Avoidance of interference among space vehicles

32. It was agreed that, apart from problems of communications and overloading of tracking facilities, there was for the present little danger of interference of space vehicles with each other. It was pointed out that this situation might change in time, particularly if vehicles in space are used extensively for either global or interplanetary travel. There was discussion about the possible relevance to space travel of rules and experience developed in relation to air traffic. It was decided that more scientific information would be needed before rules could be drafted.

E. Additional questions raising legal problems

33. The Committee recognized that various other technical developments would probably call for legal arrangements and regulation. Particular reference was made in this connexion to meteorological activities in outer space which may require international measures to insure maximum effectiveness.

PART IV

(PARAGRAPH 1 (c) OF GENERAL ASSEMBLY RESOLUTION 1348 (XIII))

I. MANDATE OF THE COMMITTEE UNDER PARAGRAPH 1 (c) OF RESOLUTION 1348 (XIII)

1. The task of the Ad Hoc Committee on the Peaceful Uses of Outer Space under paragraph 1 (c) of General Assembly Resolution 1348 (XIII) is to report on:

> "The future organizational arrangements to facilitate international co-operation in this field within the framework of the United Nations".

2. The Ad Hoc Committee felt that its report under this paragraph should briefly survey the types of organizational arrangements which were possible within the framework of the United Nations, and relate these to studies made by the Committee in connexion with paragraphs 1 (a), 1 (b) and 1 (d) of Resolution 1348 (XIII). In performing this task the Committee was cognisant of the fact that these studies pointed to the need for continued study and review in this rapidly advancing field.

II. ORGANIZATIONAL POSSIBILITIES

3. There are a number of possible organizational arrangements within the framework of the United Nations.

A. United Nations agencies

4. The most elaborate and comprehensive organizational arrangement for facilitating international co-operation is the creation of a specialised agency. A specialised agency is an autonomous inter-governmental organization whose constitution is the product of international convention appropriately ratified by Member States. The entity thus created is brought into relationship with the United Nations, under Articles 57 and 63 of the Charter, through an agreement negotiated between the Economic and Social Council and the agency which is approved by the General Assembly. Such an organization reports annually on its activities to the Economic and Social Council.

5. Specialized agencies are contemplated by the Charter and are accorded certain privileges; they may, for example, be given the right by the General Assembly to refer questions to the International Court of Justice, and they automatically become members of inter-secretariat bodies such as the Joint Pension Fund and the Administrative Committee on Co-ordination. They maintain, however, their status as autonomous inter-governmental organizations, and they have responsibility for such activities as budgetary arrangements, staff rules and regulations, and rules of procedure.

6. Examples of specialized agencies now in existence which have some interest in outer space are UNESCO, I.T.U., W.H.O., W.M.O. and I.C.A.O. Those, as well as other agencies not so clearly interested in space activities, differ widely one from another in character of functions and in relationship to the United Nations.

7. The scope and nature of the functions of these agencies suggest the possibility of a comparable United Nations agency to deal with space activities. However, the tasks recommended in accompanying sections of this report would not appear to require the present establishment of a United Nations agency, with a professional staff, to co-ordinate and supplement other efforts, public and private, in international space co-operation.

B. Semi-autonomous bodies within the United Nations

8. The General Assembly may, by resolution, establish semi-autonomous operating bodies within the United Nations with mandates or terms of reference established by the General Assembly. The chief executive officer of such a body has broad authority under his mandate but is administratively responsible to the Secretary-General. Three such bodies, with somewhat differing structure, are in existence: the Office of the United Nations High Commissioner for Refugees, the United Nations Children's Fund (UNICEF), and the United Nations Relief and Works Agency for Palestine Refugees in the Near East (UNRWA).

9. In the case of UNICEF, the Director was appointed by the Secretary-General for an indefinite term, without reference to or approval of the General Assembly or the Economic and Social Council. His salary and those of his staff are paid for out of the UNICEF budget, which is based on voluntary contributions of Member States. For administrative purposes, however, the staff generally operates as any other office of the United Nations Secretariat. The Executive Board of UNICEF is elected by the Economic and Social Council for definite terms.

10. In the case of the Office of the United Nations High Commissioner for Refugees, the High Commissioner is appointed by the Secretary-General, with the approval of the General Assembly, for a limited term. The Director of UNRWA is appointed by the Secretary-General in consultation with an Advisory Commission but without reference to or approval of the General Assembly or the Economic and Social Council. In each case, there is an executive committee or advisory group. Financial arrangements also vary somewhat, the programme of the High Commissioner being financed partly from the Regular United Nations budget and partly from voluntary contributions, whereas the UNRWA and UNICEF programmes are financed entirely by voluntary contributions.

11. If, at some future time, it was believed that an international agency with a small professional staff would be a useful addition to other co-operative efforts in space, a semi-autonomous body within the United Nations might be appropriate.

C. Performance of functions by existing specialized agencies

12. As is apparent from other parts of the report of this Committee, existing United Nations specialized agencies can perform various useful functions with regard to space activities. Thus, UNESCO, I.T.U., I.C.A.O., W.M.O. and W.H.O. can all play a role in carrying out technical studies. It does not, however, seem that any of these agencies should be asked to undertake over-all responsibility for future arrangements to facilitate international co-operation in the field of outer space activities, although each can undoubtedly continue to play an important part within the area of its special competence and interest. Their functional interests should of course be welcomed and encouraged.

D. Other arrangements within the United Nations

13. The General Assembly may, by resolution, establish a permanent Committee, outline the work to be accomplished, and authorize the Secretary-General to employ appropriate personnel. This was done in the case of the Scientific Committee on the Effects of Atomic Radiation and in the case of the Secretary-General's Advisory Committee on the peaceful uses of atomic energy. In the case of the former, the Committee itself is responsible for reporting to the General Assembly. In the case of the latter, the General Assembly resolution places this responsibility on the Secretary-General. Personnel of the United Nations supporting these two committees are members of the United Nations Secretariat and covered by all of its administrative orders. The activities and any outside assistance of experts is covered by the regular United Nations budget.

14. Another possibility would be for the General Assembly to ask the Secretary-General to establish a small technical unit within the Secretariat to carry out certain limited functions. Arrangements could also be made for the establishment of an expert advisory committee composed of representatives of interested specialized agencies and key scientists to assist the Secretary-General in the execution of any functions that might be assigned to the Secretariat.

III. CONCLUSIONS

15. The Ad Hoc Committee has felt that its report under paragraph 1 (c) should briefly survey the types of long-term organizational arrangements which are possible within the framework of the United Nations, and relate these to the reports made in connexion with paragraphs 1 (a),

1 (b) and 1 (d) of Resolution 1348 (XIII). The findings in the reports on the reports on those paragraphs underline the importance already attached by the General Assembly to the common interest of mankind in outer space. While its studies fortify the belief expressed in General Assembly Resolution 1348 (XIII), which stressed the need for vigour in the development of programmes of international co-operation in the peaceful uses of outer space, the Committee recognizes that continued study and review of the problem is necessary. Accordingly, the Committee has limited its conclusions to the steps toward such development to be taken at the present stage without taking a position on the longer-range measures.

16. The Committee believes that it would not be appropriate at the present time to establish any autonomous inter-governmental organization for international co-operation in the field of outer space. Likewise, the Committee considers that it would not be suitable to ask any existing autonomous inter-governmental organization to undertake over-all responsibility in the outer space field.

17. The sections of this report dealing with legal and scientific aspects of the question of the peaceful uses of outer space suggest certain general functions and tasks that might appropriately be undertaken within the framework of the United Nations at the present time. These include:

a) To provide a focal point for facilitating international co-operation with respect to outer space activities undertaken by Governments, specialized agencies and international scientific organizations;

b) To study practical and feasible measures for facilitating international co-operation, including those indicated by the Ad Hoc Committee in its report under paragraph 1 (b) of the resolution;

c) To consider means, as appropriate, for studying and resolving legal problems which may arise in the carrying out of programmes for the exploration of outer space;

d) To review, as appropriate, the subject matter entrusted by the General Assembly, to the Ad Hoc Committee in Resolution 1348 (XIII).

18. The Committee believes that, for the most part, the questions involved under (b), (c) and (d) above may be such as to require consideration at the governmental level. The General Assembly, if it agrees with this conclusion, may wish to consider the establishment of an Assembly committee, composed of representatives of Member States and having such membership as the Assembly may decide, to perform these functions, to report to the General Assembly and to make recommendations as appropriate.

19. The Committee considers that the functions suggested in paragraph 17 (a) above, which primarily is intended to implement the conclusion of the Technical Committee that "there is a need for a suitable centre related to the United Nations that can act as a focal point for international co-operation in the peaceful uses of outer space", are of a different character. These are functions of the type frequently entrusted to an international secretariat. The General Assembly may, therefore, wish to consider among other possibilities that of requesting the Secretary-General to organize a small expert unit within the Secretariat for this purpose. Because the precise character of such a Secretariat unit can be developed only in the light of experience and after consultation with the various bodies involved, it may be desirable to provide a means whereby the Secretary-General can avail himself of the advice and assistance of those directly concerned in this field.

20. Consideration might therefore be given to provision for a small advisory committee, advisory to the Secretary-General, which could include representatives of the appropriate specialized agencies, scientists designated by international scientific organizations, and representatives of Member States, as necessary.

21. It would be possible for the General Assembly to adopt some or all of the suggestions described in paragraphs 18, 19 and 20, in any combination it deems appropriate.

22. The Committee believes that it would be appropriate for existing specialized agencies to continue to pursue lines of endeavour within their competence in regard to outer space activities. The Committee believes that the General Assembly might ask these agencies to include in their reports to the United Nations information on their activities in connexion with outer space.

INTERNATIONAL TELECOMMUNICATION UNION

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

E

Document No. 59-E
20 August, 1959
Original : English

FEDERAL GERMAN REPUBLIC

Proposals

ARTICLE 1

Number of proposal

5082 7. Replace the present text by the following :

Telegraphy : Branch of telecommunication which is concerned in any process providing reproduction at a distance of documentary matter such as written, printed or pictorial matter, or the reproduction at a distance of any kind of information in such a form.

Reasons

This more general definition is contained in the "List of definitions of essential telecommunication terms, part I : General terms, Telephony, Telegraphy", published by the I.T.U., Geneva, 1957.

5083 10. Replace the present text by the following :

Facsimile telegraphy : A system of telegraphy providing reproduction in the form of fixed images (photographic or otherwise), of the form and possibly of the depth of tone or of the colours, of an original document, whether written, printed or pictorial.

Reasons

This more general definition is contained in the "List of definitions of essential telecommunication terms, part I : General terms, Telephony, Telegrapny", published by the I.T.U., Geneva, 1957.

ARCHIVES U.I.T. GENÈVE

Number of proposal

5084 57. Replace the present text by the following :

Assigned frequency : The centre of the frequency band assigned to a station.

5085 57. After this No. add the following new definition :

Frequency band assigned to a station : The frequency band, the centre of which coincides with the frequency assigned to the station, and the width of which equals the necessary band-width, plus twice the absolute value of the frequency tolerance.

5086 Characteristic frequency of an emission : A frequency which can be easily identified and measured in a given emission.

5087 Reference frequency : A frequency having a fixed and specified position with respect to the assigned frequency. The displacement of this frequency with respect to the assigned frequency has the same absolute value and sign that the displacement of the characteristic frequency has with respect to the centre of the frequency band occupied by the emission.

5088 Note 1 : The idea of a reference frequency is made necessary by the fact that the centre frequency of certain classes of emission is not easily identified and measured.

5089 Note 2 : For certain classes of emission it is necessary to specify the value of one or more reference frequencies as well as the assigned frequency. For example, in the case of television broadcast stations, the characteristic frequencies are those of the vision and sound carriers, and the figures for the corresponding reference frequencies should be specified.

Number of proposal

Reasons

C.C.I.R. Recommendation No. 148 as revised in Los Angeles (C.C.I.R. Document No. 584 of 23 April, 1959).

5090 59. Replace the present text by the following :

Frequency tolerance : The maximum permissible deviation, with respect to the frequency assigned to a station , of the centre frequency of the frequency band occupied by the corresponding emission, or, with respect to the reference frequency, of the characteristic frequency of the emission. The frequency tolerance is expressed in c/s or as a fractional value of the assigned frequency.

5091 59.1 Delete

Reasons

C.C.I.R. Recommendation No. 148 as revised in Los Angeles. C.C.I.R. Document No. 584, para. 1.5, of 23 April, 1959.

5092 64. After this No. insert :

The relationship between peak and mean power for the different types of modulation are contained in the appurtenant recommendations of the C.C.I.R.

Reasons

C.C.I.R. Recommendation No. 73.

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No. 60-E
20 August, 1959
Original: English

FEDERAL GERMAN REPUBLIC

Proposals

ARTICLE 2

Number of proposal

5093 77. Replace g) by

"g) Composite transmissions 6".

Add:

"b) Cases not covered by the above 9".

Reasons

Contrary to the proposal contained in C.C.I.R. Recommendation No. 152, paragraph 4, it is felt that the Diplex (Duoplex) system should be designated by a supplementary characteristic (see proposal No. 5094 hereafter).

5094 78. Replace the present text by the following:

(3) Supplementary characteristics:

a)	Double sideband	z
b)	Single sideband	a
c)	Two independent sidebands	b
d)	Other emissions, not specified	c
e)	Pulse, amplitude modulated	d
f)	Pulse, width modulated	e
g)	Pulse, phase (or position) modulated	f
h)	Pulse, code modulated	g
i)	Step-coded multiplex	h
k)	Frequency-division multiplex (FDM)	i

l) Time-division multiplex (TDM) k
m) Sub-carrier frequency modulation (SCFM) l

The additional supplementary characteristics as e.g. full carrier, reduced or suppressed carrier, are indicated by adding another digit, with its meaning as follows:

Full carrier	no digit or 0
Reduced carrier	1
No carrier	2

Reasons

In view of the multitude of new transmission systems a more specified subdivision of the different types of emissions is called for. For double sideband modulation also the letter "a" could be chosen (with the other systems designated by the letters in alphabetical sequence) or any other letter. The systems under i), k) and l) could also be designated by v, u, t in accordance with the C.C.I.R. Recommendation No. 153, even for non-telegraphic transmissions where applicable.

The indication of the carrier condition by means of a special characteristic (digit) seems to have merits with a view to be free in the forming of any possible combination as might be required by the technical progress, at the same time preserving a simple and accurate system of designating the different types of emissions.

5095 80. Replace the present text by the following

§5. Classification of emissions:

Type of modulation	Type of Transmission	Supplementary Characteristics	Symbol
Amplitude Modulated	Absence of any modulation	-	A0
	Telegraphy without the use of modulating audio frequency (on-off keying)	-	A1
		Time division Multiplex	Alk

Type of modulation	Type of Transmission	Supplementary Characteristics	Symbol
	Telegraphy by the keying of a modulating audio frequency or audio frequencies or by the keying of the modulated emissions (special case: an unkeyed modulated emission)	-	A2
		Time division multiplex	A2k
	Telegraphy by the keying of several separate audio channels	Frequency division multiplex (e.g. VF telegr.)	A2i
	Telephony	Double sideband, full carrier	A3z
		Single sideband reduced carrier	A3a1
		Single sideband, suppressed carrier	A3a2
		Two independent sidebands, reduced carrier	A3b1
	Facsimile telegraphy	Audio frequency amplitude modulated	A4
		Audio frequency modulated	A41
	Television	Double sideband	A5z

Type of modulation	Type of Transmission	Supplementary Characteristics	Symbol
		Vestigial sideband	A5c
	Composite transmissions		A6
	Cases not covered by the above		A9
Frequency (or phase) Modulated	Absence of any modulation	-	F0
	Telegraphy without the use of modulating audio frequency (frequency shift keying)	-	F1
		Step-coded multiplex (e.g. diplex)	F1h
		Time division multiplex (e.g. TOM)	F1k
	Telegraphy by the keying of a modulating audio frequency or audio frequencies, or by the keying of the modulated emission (special case: an unkeyed emission modulated by audio frequency)	-	F2
		Time division multiplex	F2k
	Telegraphy by the keying of several separate audio channels	Frequency division multiplex (e.g. VF telegr.)	F2i
	Telephony	-	F3
	Facsimile telegraphy	-	F4
	Television	-	F5
	Composite transmissions	-	F6
	Cases not covered by the above	-	F9

Type of modulation	Type of Transmission	Supplementary Characteristics	Symbol
Pulse Modulated	Absence of any modulation intended to carry information	-	P0
	Telegraphy without the use of modulating audio frequency	-	P1
	Telegraphy by the keying of a modulating audio frequency or audio frequencies, or by the keying of the modulated pulse (special case: an unkeyed modulated pulse)	Audio frequency or audio frequencies modulating the pulse in amplitude	P2d
		Audio frequency or audio frequencies modulating the width of the pulse	P2e
		Audio frequency or audio frequencies modulating the phase (or position) of the pulse	P2f
		Pulse code modulated	P2g
	Telephony	Amplitude modulated	P3d
		Width modulated	P3e
		Phase (or position) modulated	P3f
	Composite transmissions		P6
	Cases not covered by the above		P9

Reasons

Evolves from the proposal ref. Nos. 77 and 78 of the RR regarding the extension of the "Supplementary characteristics" of emissions.

Number of proposal

5096 84. In the table the "Designations" should be amended and/or replaced as follows:

Item 3.	Amend the designation to read:	6 A3z0
Item 4.	Amend the designation to read:	3 A3al
Item 5.	Amend the designation to read:	6 A3bl
Item 6.	Replace the designation by:	6,000 A5c0, F3

The following new examples should be inserted:

Description	Designation
After item 1.:	
Amplitude modulated telegraphy, International Telegraph Alphabet No. 2, carrier keyed, one channel, signalling speed 50 bauds	0.25 A1
After item 2.:	
Amplitude modulated telegraphy, single sideband, reduced carrier, frequency division multiplex, two groups of 16 channels each, signalling speed in each channel 50 bauds; separation between first channel and carrier 425 c/s, interval between unspread and spread sideband 340 c/s, frequency deviation of a single channel ± 40 c/s at a channel separation of 170 c/s	5.93 A2ali
After item 6.:	
Frequency modulated telegraphy step-coded multiplex, 2 channels with signalling speed 50 bauds, synchronized keying, maximum deviation ± 600 c/s (diplex)	1.33 F1h

Description	Designation
Frequency modulated telegraphy time division multiplex, 4 channels, signalling speed in each channel 50 bauds, frequency deviation ± 200 c/s	0.6 F1k

Reasons

Evolves from the proposed extension of the "Characteristics" in Nos. 77 and 78 of the RR in consequence of the technical progress.

Number of proposal

5097 85. Replace the present text by the following:

The radio frequency spectrum shall be subdivided into bands that are listed in the Table below. Frequencies shall be expressed in Kilohertz (kHz) (= kc/s) at and below 3,000 kHz (kc/s), in Megahertz (MHz) (=Mc/s) above this frequency and at 3,000 MHz (Mc/s) and in Gigahertz (GHz) (=Gc/s) above this frequency.

Band number	Frequency range	Metric subdivision
4	3 to 30 kHz (kc/s)	Myriametric waves
5	30 to 300 kHz (kc/s)	Kilometric waves
6	300 to 3,000 kHz (kc/s)	Hectometric waves
7	3 to 30 MHz (Mc/s)	Decametric waves
8	30 to 300 MHz (Mc/s)	Metric waves
9	300 to 3,000 MHz (Mc/s)	Decimetric waves
10	3 to 30 GHz (Gc/s)	Centimetric waves
11	30 to 300 GHz (Gc/s)	Millimetric waves
12	300 to 3,000 GHz (Gc/s)	Decimillimetric waves

Note 1: "Band N" extends from 0.3×10^{N} Hz. (c/s).

Note 2: When a service adopts a reference number or letter to designate a specific frequency band allocated to it and situated, wholly or for the most part, in "Band N" of the above nomenclature, the prefix N should normally precede the reference in question. For example, for the 41 to 68 MHz (Mc/s) band, to which broadcast users give the reference "I", the appropriate designation is "broadcast band 8-I", since it refers to a part of "Band 8".

Reasons

C.C.I.R. Recommendation No. 225 as revised in Document 615 of Los Angeles and consistent with the decisions of the 9th General Conference for Weights and Measures of October 1956 in Paris.

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No. 61-E
20 August 1959
Original : English

FEDERAL GERMAN REPUBLIC

Proposals

ARTICLE 5

Number of proposal		
5098	109.	After this number add the following new note:

*Administrations authorizing the use of frequencies below 10 kc/s for special national purposes must ensure that no harmful interference is caused thereby to the authorized services in the bands above 10 kc/s.

5099	125.	After this number insert the following new note referring to the frequency allocation table:

13 bis) In Region 1 the frequency 314.5 kc/s is, in general, reserved for tests and experiments, which must not cause harmful interference with transmissions from the maritime radiobeacons indicated in the List.

Reasons

E.A.R.C. Agreement, Chapter II, Article 5, Section III, No. 33.

Number of proposal

5100 145. After this number insert the following new note referring to the frequency allocation table:

31 bis) Stations which use frequencies in the band 1,625 - 1,670 kc/s allocated for low-power telephony services, shall, in principle, employ a power which is as low as possible. Such power shall not exceed 20 watts (unmodulated carrier power).

Reasons

E.A.R.C. Agreement No. 31.

---

218. After this number insert the following new notes referring to the frequency allocation table:

5101 104 bis) In order to protect the radio astronomical measurements in the band 1,400 - 1,427 Mc/s, this band must as far as practicable be held free from harmful interferences.

5102 104 ter) In order to protect the radio astronomical measurements in the band 1,645 - 1,675 Mc/s this band must as far as practicable be held free from harmful interferences.

Reasons

C.C.I.R. Recommendation No. 173 as revised by Document No. 437 of Los Angeles.

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No. 62-E
20 August, 1959
Original: English

FEDERAL GERMAN REPUBLIC

Proposals

ARTICLE 9

Number of proposal

5103 261. After this Number, insert the following new Section:

SECTION III bis

Radio Beacons in Region 1

§ 7 bis (1) Radiobeacons should be classified according to service range, as determined by the minimum field strength required.

5104 (2) In the case of aeronautical beacons, the indicated service range assumes the following field strengths by day at that range:

70 µV/m for beacons North of latitude 30°N
120 µV/m for beacons South of latitude 30°N.

Reasons

E.A.R.C. Agreement, Chapter II, Section II, Nos. 26 - 29 and E.A.R.C. Recommendation No. 8

ARCHIVES U.I.T. GENÈVE

Number of proposal

5105 (3) The assignment of frequencies to aeronautical beacons in the MF band should, as far as possible, be based on a ratio of at least 15 db between the daytime service field strength of a beacon at the boundary of its rated coverage area and the interfering field strengths produced by transmitters working in the same or adjacent channels. As an exception, a small ratio, though not lower than 10 db may be admitted.

Reasons

E.A.R.C. Agreement, Chapter II, Section II, No. 26 - 29 and Recommendation No. 8 and in consideration of the Recommendations adopted by the Communications Division of the I.C.A.O. on its 6th Session in Montreal September/ October, 1957) (Document 7831-COM/551-1 Vol. I)

5106 (4) In the case of maritime radiobeacons, the service range given assumes the following field strengths by day at that range:

50 μV/m for beacons North of latitude 43°N

75 μV/m for beacons between latitudes 30°N and 43°N

100 μV/m for beacons South of latitude 30°N.

Reasons

E.A.R.C. Agreement, Chapter II, Section II, Nos. 26 - 29 and E.A.R.C. Recommendation No. 8

5107 262. After this Number, insert the following new paragraph:

S 8, bis The bands:

1,605 - 2,850 kc/s, 3,155 - 3,400 kc/s and 3,500 - 3,800 kc/s allocated to the Maritime Mobile Service in Region 1, sharing with other services, are subdivided as follows:

Number of proposal

1,605 - 1,625 kc/s	Telegraphy exclusively
1,625 - 1,670 kc/s	Low-power Telephony
1,670 - 1,950 kc/s	Coast stations
1,950 - 2,045 kc/s	Ship stations working to coast stations
2,065 - 2,170 kc/s	Ship stations working to coast stations
2,170 - 2,182 kc/s	Guard band for the distress frequency 2,182 kc/s
2,182 kc/s	Distress and calling frequency
2,182 - 2,194 kc/s	Guard band for the distress frequency 2,182 kc/s
2,194 - 2,440 kc/s	Intership working
2,440 - 2,578 kc/s	Ship stations working to coast stations
2,578 - 2,850 kc/s	Coast stations
3,155 - 3,340 kc/s	Ship stations working to coast stations
3,340 - 3,400 kc/s	Intership working
3,500 - 3,600 kc/s	Intership working
3,600 - 3,800 kc/s	Coast stations

Reasons

E.A.R.C. Agreement, Chapter II, Section III, No. 40.

Number of proposal

5108 269. After this Number, insert the following new paragraphs:

§ 9, bis In order to reduce adjacent channel interference, coast radiotelegraph stations operating in the maritime mobile exclusive bands between 4,000 kc/s and 27,500 kc/s shall not use class A2 emission.

Reasons

E.A.R.C. Agreement, Chapter II, Article 8, Section II, No. 75

5109 § 9, ter It is recommended that countries which share a channel in one of the exclusive bands between 4,000 kc/s and 27,500 kc/s with other countries afford special consideration to the countries among them which have no other channel in the same band and endeavour to use their primary channel to the greatest extent possible, in order to permit the latter countries to satisfy their minimum communication requirement.

Reasons

E.A.R.C. Agreement, Chapter II, Article 8, Section II, No. 78.

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No.63-E
20 August 1959
Original: English

FEDERAL GERMAN REPUBLIC

Proposals

ARTICLE 13

Number of proposal

5110 384. In fine add the following sentence:

The call sign emissions should as far as possible be made by employing the class of emission and type of transmission that have been proposed in the pertinent C.C.I.R. Recommendations.

Reasons

C.C.I.R. Recommendation No. 220.

ARCHIVES U.I.T. GENÈVE

INTERNATIONAL TELECOMMUNICATION UNION

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No. 64-E
20 August, 1959
Original: English

E

FEDERAL GERMAN REPUBLIC

Proposals

ARTICLE 34

Number of proposal

5111 814. Replace the present text by the following:

(2) Apart from the transmissions authorized on 2,182 kc/s all transmissions on the frequencies included between 2,170 and 2,194 kc/s are forbidden.

Reasons

E.A.R.C. Agreement No. 42. Protection of the frequency 2,182 kc/s.

5112 827. Replace ... 2,167 and 2,197 kc/s ... by ... 2,170 and 2,194 kc/s ...

Reasons

E.A.R.C. Agreement Nos. 40, 42 and 64.

5113 834. After this number insert the following new paragraph:

§ 16 bis. Each call by a coast station should, as far as practicable, be preceded by a calling tone signal of at least 1 sec. duration.

Reasons

Until a selective calling system is introduced (see C.C.I.R. Recommendation No. 223, para. 1.6), by virtue of a calling tone signal preceding the call proper sent out by a coast station it could be secured that the called station can be raised even when the loudspeaker has been turned to a low volume.

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No. 65-E
20 August 1959
Original: English

FEDERAL GERMAN REPUBLIC

Proposal

ARTICLE 37

Number of proposal		
5114		In fine, add the following sentence:
		In radiotelephony the transmissions should be made with the speech very well articulated and at dictation speed to enable for the receiving stations to directly write down, in the mentioned cases, the reports received (see Appendix 8, Section I, 3).
		Reasons
		No regulation on the speed of speech in distress cases etc. exists so far.
5115	867	After this number insert the following new paragraph:
		S S3 bis (1) In radiotelephony the distress and urgency reports as well as the safety reports directed "To all stations" (CQ) are transmitted in plain English language.
		(2) In the case of language difficulties the code words contained in Annex 11 should be used.
		(3) Stations that receive a distress report coded according to Annex 11 sent by a mobile station will likewise use the code words listed in Annex 11 for any distress traffic with the craft in distress.

ARCHIVES U.I.T. GENÈVE

Number of proposal

Reasons

Ref. (1): Chapter V, Regulation 2 (a) of the International Convention for the Safety of Life at Sea of 1948, in which it is prescribed that in danger-reports the English language should be preferably used.

Ref. (2): Recommendation No. 5 of the Gothenburg Agreement in which it is recommended that code words should be used for overcoming language difficulties.

Ref. (3): Follows from proposal ref. (2).

5116 877 Replace the present text by the following:

(2) When circumstances permit, the transmission of the distress call is separated from the end of the radiotelegraph alarm signal by an interval of two minutes. In this case the alarm signal must be followed immediately by the call sign sent three times of the mobile station in distress.

Reasons

Following from a proposal to be published later in which it is specified that automatic keying apparatus for the radiotelegraph alarm signal should also transmit automatically the call sign of the station.

Following from proposal 2536 in which it is established that in future only a single radiotelegraph alarm signal will be used and that radio autoalarm equipments, that are actuated by the distress signal ...---..., will in future no longer be required.

5117 879 After this number insert the following new paragraph:

S10 bis The radiotelephone alarm signal must be immediately followed by the name or the call sign of the station in distress (see 880). Then the transmission of the distress report may immediately begin.

Number of proposal

5118 923 First sentence, read:

(4) In cases of distress, the use of the radiotelegraph alarm signal is governed by 876 and the use of the radiotelephone alarm signal by 879. The transmission of the alarm signals should be such that it can be interrupted at any time. In the case of.....(remainder unchanged).

Reasons

a) Evolves from proposal ref. No. 879 (proposal 5117).

b) The situation of the ship in distress may become suddenly so grave that it might be mandatory to instantly transmit the distress report without having to wait for the end of the transmission of the alarm signal. In such a case, no transmitter must be blocked by the alarm signal keying equipment.

5119 925 Replace the present text by the following:

a) they must respond to the radiotelegraphy alarm signal transmitted by the telegraphic emissions of at least class A2 or B, and to the radiotelephony alarm signal by the emission of class A3.

Reasons

C.C.I.R. Recommendation No. 124 and 219, and Gothenburg Agreement, 1955, Resolution No. 6, in which different alarm signals for radiotelegraphy and radiotelephony are specified.

5120 929 Replace the present text by the following:

c) they must, in radiotelegraphy and, in radiotelephony as far as possible, automatically give warning of any fault which would prevent the apparatus from performing its normal functions during watch hours.

Reasons

Introduction of two different alarm signals and autoalarm receiving equipments.

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No. 66-E
20 August, 1959
Original : English

FEDERAL GERMAN REPUBLIC

Proposal

ARTICLE 41

Number of proposal		
5121	990-998.	Replace the present text by the wording of Nos. 984-996 of the Telegraph Regulations (Geneva Revision, 1958)

Reasons

Making for uniformity of the accounting procedure by revising the existing provisions of the RR to conform to those of the Telegraph and Telephone Regulations;

Consistent with Opinion No. 4 of the Telegraph Regulations (Geneva Revision, 1958).

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE
RADIO CONFERENCE

GENEVA, 1959

Document No. 67-E
20 August 1959
Original: English

FEDERAL GERMAN REPUBLIC

Proposal

APPENDIX 3

Number of proposal	
5122	This Appendix should be supplemented and/or replaced by the new tolerances that are proposed in C.C.I.R. Recommendation No. 148 as revised in Document No. 584 of Los Angeles.

Reasons

C.C.I.R. Recommendation No. 148 as revised in Document 584 of 23 April 1959, Los Angeles.

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No. 68-E
20 August 1959
Original: English

FEDERAL GERMAN REPUBLIC

Proposal

APPENDIX 4

Number of proposal	
5123	The terms "Harmonic and Parasitic Emissions" should be replaced by "Spurious Emissions".
	The table should be supplemented by the tolerances of C.C.I.R. Recommendation No. 147, para. 3 (as amended by C.C.I.R. Doc. No. 651, para. 3 of Los Angeles) eventually also with regard to para. 1.7 of C.C.I.R. Recommendation No. 223 including the graphical representations.
	Further, the contents of para. 6 of C.C.I.R. Recommendation No. 147 as amended by C.C.I.R. Doc. No. 651 para. 5 of Los Angeles should form the text of a new foot-note.
	Reasons
	C.C.I.R. Recommendations Nos. 147, para. 1.1 and 3 (as amended by Doc. 651 of 24 April 1959, Los Angeles) and para. 6 (para. 5 of the Document) and Recommendation No. 223, para. 1.7 (as amended by C.C.I.R. Doc. No. 645 of Los Angeles).

ARCHIVES U.I.T. GENÈVE

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No. 69-E
25 August, 1959

ARGENTINE REPUBLIC

Proposals

ARTICLE 1

Number of proposal

5236 5. Replace the existing text by the following:

Hertzian Waves: Electromagnetic waves of frequencies lower than 3 000 000 Mc/s propagated without guideance through free space.

Reasons:

a) The lower limit of 10 kc/s is deleted because it is thought to be subject to changes with the advance in technique.

b) The condition of free propagation has been laid down in order to clarify the definition.

5237 6. Replace the existing text by the following:

Radio: Electrical engineering in connection with the use of Hertzian waves.

Reasons:

To clarify the concept.

5238 6. After this number add the following new definition:

Radio Astronomy: A branch of astronomy which includes the reception of Hertzian waves coming from stellar space and not produced by man.

Reasons:

A necessary definition at the present time in view of developments in this science.

ARCHIVES U.I.T. GENÈVE

Number of proposal

5239 7. Replace the existing text by the following:

Telegraphy: A telecommunication procedure which enables written and printed matter, and static pictures, to be transmitted and reproduced at a distance.

Reasons:

a) "System" has been replaced by "procedure" to give the meaning more correctly.

b) The concept of reproduction has been added to make room for facsimile and similar systems.

5240 8. Replace the existing text by the following:

Telephony: A telecommunication procedure for the transmission of speech or other sounds.

Reasons:

a) The term procedure has been used for the reasons given in 7.

b) "Or, in some cases" has been deleted because it does not correspond to reality.

5241 9. Replace the existing text by the following:

Television: A telecommunication procedure for the transmission of transient images of fixed or moving objects not designed for permanent recording.

Reasons:

a) The term procedure is used for the reasons given in 7.

b) The condition that the pictures should not be recorded in a permanent form has been added to distinguish this procedure from facsimile.

5242 10. Replace the existing text by the following:

Facsimile: A branch of telegraphy for the reproduction of printed and written matter and pictures which are to be recorded in a permanent form.

Number of proposal

Reasons:

a) To include facsimile in the generic term "telegraphy".

b) To supplement the definition by adding written and printed matter.

5243 11. Replace the existing text by the following:

Radio-determination: Determination of a position, distance, speed or identification, etc., by means of the propagation properties of Hertzian waves.

Reasons:

a) "Radiolocation" has been replaced by "Radio-determination" because the latter will be used to define another term.

b) The text has been modified because the use of Hertzian waves for these purposes does not have to be based on only two of their properties (rectilinear propagation and constant velocity), nor does it have to be restricted to the determination of position or direction only.

5244 12. Replace the existing text by the following:

Radionavigation: Radio-determination intended solely for safety in navigating ships and aircraft or for obstruction warning, in navigation.

Reasons:

The new title of definition 11 is used and the drafting of the text is modified to make it clearer.

5245 12. Replace the existing text by the following:

Radiolocation: Radio-determination for purposes such as geodetic surveys, pursuit or surveillance in general, which do not exclude radionavigation.

Reasons:

Radio-determination covers all uses other than those of radionavigation.

Number of proposal

5246 13. Replace the existing text by the following:

Radar: Radio-determination intended to determine relative positions through the comparison of radio reference signals and reflections.

Reasons:

Radio-determination is used as defined in 11. A few restricting phrases are deleted, thus giving it a more general character.

5247 14. Delete:

Reasons:

Unnecessary.

5248 15. Delete:

Reasons:

Unnecessary.

5249 16. Replace the existing text by the following:

Radio Direction-Finding: Radio-determination intended to determine the direction of a station by means of its emissions.

Reasons:

a) "Radio-determination" is used as defined in 11.

b) The word "only" is unnecessary and so is deleted.

5250 17. Replace the existing text by the following:

Telegram: A document, or its contents, in written or printed form or as a picture, transmitted by a system of telegraphy and sent over the general telecommunication network.

Number of Proposal

This term also includes radiotelegrams, except when otherwise specified.

Reasons:

In order that the definition may include all systems in use at the present time. In the same way, to make a specific distinction between telegram and radiotelegram, taking account of the service by which each of them is sent.

5251 25. Retain the present definition, but with the deletion of the explanatory note 1) at the bottom of page 3 of the RR, (25.1) since it is merely a repetition of something that already appears in the regulation in question.

5252 27. Replace the present text by the following:

Radiolocation Service: Radio-determination for purposes such as geodetic surveys, pursuit or surveillance in general which do not exclude radionavigation.

Reasons:

This broadens the definition and corresponds to the new term Radio-determination as defined in No. 11.

5253 28. Replace the present text by the following:

Radionavigation Service: A service involving the use of radio-navigation.

Reasons:

The word "radiolocation" is left out since it is not in accordance with the new term Radio-determination (see No. 11) and because radiolocation is otherwise defined on becoming a generic term.

Number of Proposal

5254 31. Retain the title, but change "a service" to "an activity".

Reasons:

To provide a more correct definition. Normally this refers to an activity capable of being used as a service: hence the retention of the title.

5255 32. After this number, add the following new definition:

Radio-astronomy Service: "Service involving the use of Radio-astronomy".

Reasons: Radio-astronomy having been defined, this definition is necessary.

5256 34. Replace the present text by the following:

Special Service: A radio service, not otherwise defined in this article, carried on exclusively for specific needs of general utility, and not open to public correspondence.

Reasons:

The word "radio" is added to make the definitions uniform and to clarify the meaning.

5257 36. After this number, add the following new definition:

Portable station: An auxiliary station in a specific service which is easily portable and which does not operate while it is being moved.

Number of Proposal

Reasons:

It is considered necessary to include the new expression in the regulations inasmuch as it may facilitate the work of administrations in the matter of granting licences, permits etc. when it is not sufficiently clear which service controls these stations, which are not in a specific location nor on mobile stations.

5258 51. After this number, add the following new definitions:

Radiolocation Land Station: A station in the radiolocation service not intended to be used while in motion.

5259 Replace the present text by the following:

Radiolocation Mobile Station: A station in the radiolocation service intended for use while in motion or during halts at unspecified points.

5260 52. Delete.

Reasons:

This definition is included in earlier definitions.

5261 53. Replace the present text by the following:

Radiobeacon: A radionavigation station the emissions of which are intended to enable a mobile station to determine its position or bearing in relation to the radiobeacon.

5262 55. Replace the present text by the following:

Experimental Station: A station other than an amateur station utilizing Hertzian waves for experimental purposes.

Number of Proposal

Reasons:

The wording is amended so as to make it clear that the station is primarily for experimental purposes.

5263 57. Replace the present text by the following and add the following new note:

Frequency assigned to a Station: The frequency coinciding with the centre of the frequency band 1) in which the station is authorized to work. This frequency does not necessarily correspond to any frequency in an emission.

5264 1) In certain complex or multiplex emissions, the actual emission band at a given moment may not occupy the whole of the authorized band and also may not be distributed uniformly on both sides of the frequency assigned to the station, because it may be unnecessary to use certain channels in the emission band or because of other operational reasons.

Reasons:

This note is added to broaden and clarify the concept.

5265 57. After this number add the following new definitions:-

Reference Frequency: (As laid down by the I.R.C.C. in Circular No. 775, Annex A4-1.4 and notes 1 and 2).

5266 Characteristic Frequency: (As laid down by the I.R.C.C. in Circular No. 775, Annex A4-1.3).

Reasons:

Since this term is used in No. 59, it must be defined.

Number of proposal

5267 58. After this number, add the following new definitions and note:

Bandwidth necessarily occupied by an Emission: The minimum adequate bandwidth occupied by an emission to ensure the transmission of information with the desired quality at the output of the receiver 1) for the class of emission, the system used and the specified technical conditions. See Appendix 5.

5268 1) Any emission outside the band necessarily occupied shall be considered to be "out-of-band radiation"; this, however, does not include radiations on distant frequencies such as harmonics and parasitic emissions.

Reasons:

It is considered necessary to give this definition in the RR since it is used in Appendix 5 thereof; an explanatory note is added to define "out-of-band radiation" in accordance with Recommendation No. 147, paragraph 1.3 (Warsaw 1956) of the International Radio Consultative Committee.

5269 59. Replace the following text by the one referred to hereunder:

Frequency Tolerance: (As laid down by the International Radio Consultative Committee in Circular No. 775, Annex A4 - 1.5).

5270 60. Delete.

Reasons:

It would be useful to specify the degree of power referred to in cases where this term is used.

Number of proposal

5271 61. Add at the end: See annex.....

Reasons:

To facilitate assessment with a standard guide of the relation between mean and peak power as advocated in Recommendation No. 228 (Los Angeles, 1959), of the International Radio Consultative Committee.

5272 62. Delete.

Reasons:

as for 60.

5273 63. Add at the end: As a general rule, the time taken will be approximately 1/10th of a second during which the mean power is at its peak.

5274 63.1 Delete.

Reasons:

included in 63.

5275 64. Delete.

Reasons:

as for 60.

5276 66. Delete.

Reasons:

unnecessary.

Number of proposal

5277 67. Delete.

Reasons:

unnecessary.

5278 68. Delete.

Reasons:

unnecessary.

5279 69. Add the following new definition after this number:

Spurious radiation: Radiation on a frequency or frequencies outside the band occupied by an emission the level of which may be reduced without affecting the transmission of the information in question. It comprises harmonic radiations, intermodulation products outside the band occupied, and harmful interference.

Reasons:

Definition of spurious radiation in accordance with I.R.C.C. Recommendation No. 147, paragraph 1.1 (Warsaw, 1956).

5280 71. Delete.

Reasons:

unnecessary.

5281 72. Delete.

Reasons:

unnecessary.

Number of proposal

5282 Add the following new section:

SECTION VI

Frequency assignments, changes and recording

5283 Frequency assignment: Allocation of a frequency to a station to carry on a specific service.

5284 Appropriate band: Any band allocated to the service in question in accordance with the frequency band allocation table.

5285 Within-band assignment: Assignment of frequencies within an appropriate band.

5286 Out-of-band assignment: Assignment of frequencies outside an appropriate band.

5287 Change in frequency usage: Any change in the frequency or any basic characteristic of an existing assignment.

5288 Master Radio Frequency Record: Master frequency assignment record maintained in accordance with the Agreement of the Extraordinary Administrative Radio Conference, Geneva, 1951.

Reasons:

Inclusion in Chapter I of the Radio Regulations of a new section VIa entitled "Assignments, changes and frequency recording". Certain definitions incorporated in Article I of the E.A.R.C. Agreement set out in a more orderly fashion.

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No. 70-E
20 August, 1959
Original: English

FEDERAL GERMAN REPUBLIC

Proposal

APPENDIX 5

Number of proposal

5124

In table II, Frequency modulation, the entry in column 2 ("Necessary Bandwidth in Hz") for type F1 emissions (Frequency Shift Telegraphy) should be modified according to C.C.I.R. Recommendation No. 145, para. 2.5, as amended by C.C.I.R. Doc. 487, para 2.5 of 21 April, 1959, Los Angeles.

In a new column to be added to the present tables, the tolerances for the out-of-band radiation levels should be listed according to C.C.I.R. Recommendation No. 145 para. 2 as amended by C.C.I.R. Doc. 487 para. 2 of 21 April, 1959, Los Angeles.

Reasons

C.C.I.R. Recommendation No. 145 as amended by C.C.I.R. Doc. No. 487 of 21 April, 1959, of Los Angeles.

ARCHIVES U.I.T. GENÈVE

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE
RADIO CONFERENCE

GENEVA, 1959

Document No. 71-E
20 August 1959
Original: English

FEDERAL GERMAN REPUBLIC

Proposals

APPENDIX 7

Number of proposal

5125

Insert the following new Service Document Symbols:

AX = aeronautical fixed station *)

AT = amateur station *)

BC = sound broadcasting station (hitherto standing for any broadcasting station) *)

EX = experimental station *)

MA = aircraft station *)

ML = land mobile station *)

MO = mobile station, general *)

MS = ship station *)

NL = Maritime radionavigation land station *)

PX = station in the press service

RL = radionavigation land station *)

SM = station in the meteorological aids service *)

TV = television broadcasting station

TP = television broadcasting station, picture channel

TS = television broadcasting station, sound channel

ARCHIVES U.I.T. GENÈVE

Reasons

A more detailed classification for the accurate designation of the different classes of radio stations is necessary. The abbreviations marked with an asterisk (*)) have been taken from the Preface to the International Radio Frequency Record.

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No. 72-E
20 August 1959
Original: English

FEDERAL GERMAN REPUBLIC

Proposals

APPENDIX 13

Number of proposal

5126 Section I. Table

The Hours of Service in column 4 (8 hours) should be modified as follows:

Zone	Hours of Service (G.M.T. H8)			
A	07-09	11-13	15-17	19-21
B	03-05	07-09	11-13	15-17
C	01-03	05-07	09-11	13-15
D	01-03	05-07	09-11	21-23
E	00-02	04-06	16-18	20-22
F	00-02	12-14	16-18	20-22

Reasons

To avoid traffic peaks and to spread the load on the frequencies as far as possible.

ARCHIVES U.I.T. GENÈVE

INTERNATIONAL TELECOMMUNICATION UNION

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No. 73-E
20 August 1959
Original: English

FEDERAL GERMAN REPUBLIC

Proposal

APPENDIX 14

Number of proposal

5127 Specimen Form of Statement for Radio-telegram Accounting:

Between columns 2 and 3 a new column with the heading "Call Sign" should be inserted, in which the call sign of the mobile station (station of origin or station of destination, as the case may be) will be entered.

Reasons

Immediate identification of nationality of the mobile station; means for determining the correct name of the mobile station that, as experiences show, is often incompletely or inaccurately put down.

5128 After Appendix 14 add a new Appendix 14 bis:

The text will be that of Appendix No. 2 of the Telegraph Regulations (Geneva Revision, 1958).

Reasons

Consistent with proposal ref. RR 990-998 (proposal 5121).

ARCHIVES U.I.T. GENÈVE

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No. 74-E
20 August 1959
Original: English

FEDERAL GERMAN REPUBLIC

Proposals

ADDITIONAL RADIO REGULATIONS

ARTICLE 4

Number of proposal

5129 Title Read:

A. Charges for Radiotelegrams.

Reasons

Consistent with proposals 2130 and subsequent thereafter.

5130 2058. After this number add the following new provisions :

B. Charges for Radiotelephone Calls
Section III General.

1. Board station charge, land station charge, land-line charge

5131 § 1. The charge for a radiotelephone call originating in and/or intended for a mobile station comprises, according to circumstances:

5132 a) the board station charge or charges accruing to the mobile station of origin or destination, or to both of these stations; (the term "board station" relates to a ship or aircraft station only);

ARCHIVES U.I.T. GENÈVE

Number of proposal

5133 b) the land station charge or charges (see No. ... and ...) (Proposals 5145 and 5146) accruing to the land station or land stations which participate in the transmission (the term "land station" relates to a coast station or an aeronautical station only);

5134 c) the land-line charge or charges, i.e., the charge for transmission over the general telecommunication network, reckoned in accordance with the ordinary rules, accruing to the administrations and/or private operating agencies which participate in the transmission.

5135 d) the charges for accessory services requested by the person who booked the call. (See under 2). (Proposals 5158 and subsequent)

5136 § 2.(1) The board station charge, the land station charge and the land-line charge are fixed on the basis of an ordinary private radiotelephone call of 3 minutes' duration - the unit charge. Each of the charge components must be divisible by 3.

5137 (2) The maximum land station charge is:

a) for long-haul radiotelephone calls on short waves ... gold francs for one minute,

b) for short-haul calls on interval waves (2 Mc/s band) ... gold francs for one minute and

c) for short-haul calls on VHF ... gold francs for one minute.

5138 (3) The maximum board station charge is:

a) for long-haul radiotelephone calls on short waves ... gold francs for one minute,

b) for short-haul calls on 2 Mc/s ... gold francs for one minute and

c) for short-haul calls on VHF ... gold francs for one minute.

5139 (4) The board station will be the same for ship stations and aircraft stations of the same nationality under like conditions of installation and working.

Number of proposal

5140 (5) Which land station charge and board station charge is applicable depends on the distance (zone) from the land station in which the mobile station is located in the moment of the call. The mobile station should inform the land station of the distance (zone) in which - relative to the land station - it is located when booking the call. When the mobile station is passing from one zone to another, the charge of the cheaper zone will, in favour of the caller, prevail for the whole day on which the crossing occurs.

5141 (6) Administrations shall notify to the Secretary-General of the Union the rates fixed by them.

5142 (7) Each Administration, however, reserves to itself the right to fix and authorize land station or board station charges higher than the maximum charges in the case of land or board stations which are exceptionally costly on account of their installation or working.

5143 (8) The minimum charge will be that of a radiotelephone call of three minutes' duration.

5144 (9) When the duration of a radiotelephone call is more than three minutes, charging shall be by periods of one minute for the period exceeding the first three minutes. Any fraction of a minute shall be charged as one minute. The charge per minute shall be one-third of the charge for three minutes.

5145 § 3. (1) When a single land station is used as an intermediary for a radiotelephone call between two mobile stations, only one land station charge is collected. If the land station charge applicable to traffic with the mobile station booking the radiotelephone call is different from that applicable to traffic with the mobile station called, the higher of these two charges is collected.

5146 (2) When at the request of the person booking the radiotelephone call, two land stations are used as intermediaries for a radiotelephone call between two mobile stations, the land station charge of each station is collected and also the land-line charge between the two land stations. The land station charge of each of the two land stations will be governed by the zone in which the respective mobile station, with which it is in direct communication, is located.

Number of proposal

5147 § 4. As regards the land-line charges, the country in which a land station is situated that is used as an intermediary for a radiotelephone call between a mobile station and another country, will be considered as country of origin or country of destination and not as country of transit.

5148 § 5.(1) When handled through a land station the chargeable duration of a radiotelephone call will be fixed at the end of the call by the land station; if two land stations are participating in the handling of the radiotelephone call, the opinion of that land station will prevail which has accepted the call from the originating mobile station. This decision of the land station will also be valid for the international accounting.

5149 (2) The chargeable duration of a radiotelephone call between two mobile stations in direct communication with each other will be fixed by the mobile station booking the call.

5150 § 6.(1) When, through any occurence in the telecommunication service, the booking of a radiotelephone call is not followed by the calling and called stations being placed in communication, no charge shall be payable. If the amount of the charge has been paid, it shall be refunded.

5151 (2) When, through any occurence in the telecommunication service, the correspondents experience difficulty in the course of a radiotelephone conversation, the chargeable duration of the call shall be reduced to the total time during which speech conditions have been satisfactory. If this total time is less than three minutes a unit charge is nevertheless collected.

5152 § 7.(1) When after onward transmission of the booking particulars of a radiotelephone call, it is cancelled at the request of the person booking the call, or when a correspondent refuses to accept a call, or when the caller does not answer the call though his station is not engaged, or when the caller has become unavailable a report charge will be collected.

5153 (2) The report charge will be one-third of the charge of an ordinary radiotelephone call of three minutes' duration (see No. .....) (Proposal 5136) between the two stations concerned.

5154 § 8. The total charge for a radiotelephone call is collected from the calling station with the exception of collect calls.

Number of proposal

5155 § 9. Mobile stations must be acquainted with the tariffs necessary for charging for radio telephone calls. However, they are authorized, where necessary, to obtain such information from land stations; rates furnished by land stations are expressed in gold francs.

5156 § 10. Information on the land station or board station charges for radiotelephone calls concerning stations not yet included in the appropriate lists are to be obtained from the land station over which the traffic is directed.

5157 § 11. No new rate, and no modification either general or of detail relative to tariffs shall become effective until 15 days after its notification by the Secretary-General of the Union (excluding the day of despatch) and shall not be applied until the 1st or 16th of the month, whichever date next follows the expiration of this period.

2. Supplementary Charge

5158 § 12.(1) In radiotelephony the charge for a préavis call, a call with avis d'appel and a collect call shall be the same as that for an ordinary call of same duration, exchanged during the same charge period over the same route, with the addition of a supplementary charge equal to one-third of the board station charge, the land station charge and the land-line charge of a radiotelephone call of three minutes' duration for advising the called subscriber and other official communications.

5159 (2) The préavis charge will be payable when the telephone exchange or the radio station where the call was booked has already transmitted the particulars in respect of this booking. This charge will not be collected, when because of an occurence in the telecommunications service the call is not established or the station wanted had not been advised.

5160 (3) The avis d'appel charge will be payable when the mobile station has transmitted the particulars in respect of the booking.

5161 (4) The caller will be subject to pay the collect charge also, when the station called refuses to pay for the call and, therefore, the call is not established.

5162 (5) When the booking of a radiotelephone call which is liable to the payment of a supplementary charge (for example, a collect call) is accompanied by a préavis or an avis d'appel, only one supplementary charge shall be collected (viz. the préavis or avis d'appel charge).

Number of proposal

Section IV
Reduced-rate Radiotelephone Calls
Radiotelephone Calls of Immediate General Interest

5163 § 13. No charge for radio transmission in the mobile service is made for radiotelephone calls of immediate general interest, which fall within the following classes :

a) distress messages and replies thereto;

b) messages originating in mobile stations notifying the presence of icebergs, derelicts and mines, or announcing cyclones and storms;

c) messages announcing unexpected phenomena threatening air navigation or the sudden occurence of obstacles at airports;

d) messages originating in mobile stations notifying sudden changes in the position of buoys, the working of lighthouses, devices connected with buoyage, etc;

e) requests for medical advice (MEDICO calls) and replies thereto;

f) service calls in the mobile service; such calls may only be booked and made by the Secretary-General of the I.T.U. in official matters of the Union and by the Directors of the C.C.I.T.T. and the C.C.I.R. and by such persons as are authorized by their Administration (or by their recognized private operating agency) in official matters of the mobile service

Reasons

The ever-increasing Maritime Mobile Radiotelephone Service has been treated in the RR Article 34 (No. 804 - 812) only as regards its operation. No provisions regarding charges for radiotelephone calls are contained in the Additional Radio Regulations.

All difficulties encountered in the settling of accounts in this service are mainly due to the fact that the acquaintance with charging rules in the radiotelephone service and their application is not very widespread. This situation could be remedied by including into the RA appropriate provisions on charges.

Number of proposal

5164 2094. Replace the present text by the following:

12th Radiotelegrams to be retransmitted by one or two mobile stations at the sender's request (=RM=).

Reasons

According to the definitions in Nos. 40 and 44 of the RR both land stations and mobile stations belong to the category: "station of the mobile service". By the proposed revision of No. 2094 it will be definitely established that the service indication =RM= should exclusively be used in such radiotelegrams for which retransmission by one or two mobile stations has been requested by the sender.

5165 2129. Replace the present text by the following :

§ 1. Mobile stations must, if the sender so requests, serve as intermediaries for the exchange of radiotelegrams originating in or destined for other stations of the mobile service; the number of intermediary mobile stations is, however, limited to two.

5166 2131. Replace the present text by the following :

§ 3. The transit charge, whether two intermediary mobile stations are concerned or only one, is fixed uniformly at forty centimes (0 fr. 40) per word pure and simple, without the collection of a minimum charge. When two mobile stations have participated this charge is divided equally between them.

Reasons

Consistent with proposal 5164.

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No. 75-E
CORRIGENDUM No. 2 (*)
1 September, 1959

CORRIGENDUM

Minutes

of the

Second Meeting of the Heads of Delegations

18 August, 1959, 10.30 a.m.

On page 1 of Document No. 75-E, under the heading "The heads of the following delegations were present :"

Delete :

"Spanish Provinces in Africa"

(*)

Note from the Secretariat

For Corrigendum No. 1 to Document No. 75-E, please see Document No. 101-E

INTERNATIONAL TELECOMMUNICATION UNION

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No. 75-E
20 August, 1959
Original: English

E

MINUTES

OF THE

SECOND MEETING OF THE HEADS OF DELEGATIONS

Geneva, 18 August 1959, at 10.30 a.m.

Chairman: Mr. Charles J. ACTON (Canada)

Subjects discussed:

1. Proposals by Chairman of Conference for Chairmen and Vice-Chairmen of Committees (Annex 5 to Convention, Chapter 9, Rule 7)
2. Working hours of the Conference
3. Schedule of meetings
4. Further organizational matters relating to the Conference.

The heads of the following delegations were present:

Albania (People's Republic of); Argentina (Republic); Australia (Commonwealth of); Austria; Belgium; Bielorussian S.S.R.; Burma (Union of); Brazil; Bulgaria (People's Republic of); Cambodia (Kingdom of); Canada; Ceylon; China; Vatican City (State of the); Colombia (Republic of); Colonies, Protectorates, Overseas Territories and Territories under mandate or trusteeship of the United Kingdom of Great Britain and Northern Ireland; Belgian Congo and Territory of Ruanda-Urundi; Korea (Republic of); Costa Rica; Cuba; Denmark; Group of the different Territories represented by the French Overseas Postal and Telecommunication Agency; Spain; United States of America; Ethiopia; Finland; France; Ghana; Greece; India (Republic of); Indonesia (Republic of); Iraq (Republic of); Ireland; Iceland; Israel (State of); Italy; Japan; Libya (United Kingdom of); Luxembourg; Malaya (Federation of); Mexico; Monaco; Norway; Pakistan; Paraguay; Netherlands, Surinam, Netherlands Antilles, New Guinea; Philippines (Republic of the); Poland (People's Republic of); Spanish Provinces in Africa; Portuguese Overseas Provinces; Federal German Republic; Federal People's Republic of Yugoslavia; Ukrainian S.S.R.; United Kingdom of Great Britain and Northern Ireland; Sweden; Swiss Confederation; Czechoslovakia; Tunisia; Turkey; Union of Soviet Socialist Republics.

ARCHIVES U.I.T. GENÈVE

The Chairman said that, in view of the fact that items 1 to 4 of the Draft Agenda for the meeting (Document No.34) would be better discussed at the Plenary Meeting to be held the same day, he would propose that they be deleted from the Draft Agenda, and that the meeting begin by considering the Proposals by the Chairman of the Conference for Chairmen and Vice-Chairmen of Committees and then proceed to items 5, 6 and 7 of the Draft Agenda.

It was so agreed.

1. Proposals by Chairman of Conference for Chairmen and Vice-Chairmen of Committees. (Annex 5 to Convention, Chapter 9, Rule 7)

The Chairman said that, in the list of proposed Chairmen and Vice-Chairmen of Committees that he had drawn up in the Working Paper, he had endeavoured to achieve a balanced geographical distribution, although,in the case of the technical committees, the technical qualifications of the delegates concerned had had to be taken into consideration.

There were two corrections to be made to the list - the proposed Vice-Chairman of the Financial Control Committee would be Mr. G.E. Enright (Ireland) and the proposed Chairman of the Frequency Registration Procedure and International Frequency List Committee would be Dr. M. Joachim (Czechoslovakia).

He hoped that the meeting would authorize him to recommend the list of Chairmen and Vice-Chairmen of Committees that he had drawn up to the Plenary Assembly for approval.

The delegate of the United Kingdom said that his delegation approved the list that had been drawn up by the Chairman, and would do all in its power to assist the Chairmen and Vice-Chairmen when they were elected.

The delegates of the United States of America and the U.S.S.R. associated themselves with what had been said by the delegate of the United Kingdom.

The delegate of India, who also associated himself with the view expressed by the delegate of the United Kingdom, asked whether it would not be possible for a second Vice-Chairman to be elected for the Drafting Committee to represent the English language.

The delegate of China also thought that a second Vice-Chairman might be elected for the Drafting Committee in view of the fact that there were two Vice-Chairmen for the Credentials and Frequency Allocation Committees.

The Chairman explained that he had suggested two Vice-Chairmen for the Credentials and Frequency Allocation Committees in view of those Committees' importance. He had not suggested a second Vice-Chairman for the Drafting Committee to represent the English language since he had been unable to think of any single person who would be able to represent the different varieties of English spoken at the Conference. In any case, the English language would be represented on the Committee by the various English-speaking delegates taking part in its work.

The delegate of Costa Rica said that he approved the list drawn up by the Chairman.

It was decided that the Chairman be authorized to submit his proposals for Chairmen and Vice-Chairmen of the Committees to the Plenary Assembly for approval.

2. Working hours of the Conference

The Secretary of the Conference said that, in fixing the working hours of the Conference, it was necessary to take into account the fact that some delegations would need time for their own consultations and meetings. He therefore proposed that, in accordance with tradition, the working hours of the Conference should be from 10 a.m. to 12.30 p.m. and from 3 p.m. to 6 p.m. from Mondays to Fridays. He realised that, towards the end of the Conference, it would probably be necessary to extend those hours considerably. He hoped that Chairmen of Committees would be able to arrange for coffee breaks at different times, so as to avoid a rush at the coffee bar.

The Chairman pointed out that Chairmen of Committees might set up working groups which could meet at hours outside of those proposed.

The delegate of Colombia said that, in view of the hopes that had been expressed at the previous meeting that the Conference would complete its work in the shortest possible time, it might be advisable to adopt working hours from 9.30 a.m. to 12.30 p.m. and from 3 p.m. to 6.30 p.m.

The Chairman agreed that the hours suggested by the delegate of Colombia might become necessary after the opening weeks of the Conference. He nevertheless agreed with the Secretary of the Conference that, at the outset, delegations would need time for their own consultations, and he therefore considered that the working hours proposed should be adopted for at least the first week and that the Steering Committee should reconsider the whole question at its first meeting.

It was decided to recommend adoption of the working hours as proposed by the Secretary of the Conference.

3. Schedule of meetings

The Chairman announced that the Steering Committee would meet at 10 a.m. the following day to decide on the schedule of meetings.

4. Further organizational matters relating to the Conference

The delegate of India asked when it would be possible for a complete List of Participants at the Conference to be produced.

The Secretary of the Conference said that the existing incomplete List was based on information which had been received by the Secretariat up to Friday, 7 August. New lists would be produced as soon as all the necessary information had been made available to the Secretariat.

He wished to inform delegates that the Secretariat would be pleased to supply escorts for delegates who were unfamiliar with the location of the Palais des Expositions.

The meeting rose at 11.10. a.m.

Rapporteurs:	Acting Secretary General of the I.T.U. Secretary of the Conference:	Chairman:
C. Mackenzie S. Vittèse	Gerald C. GROSS	Charles J. ACTON

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No.76-E
21 August, 1959
Original: English

COMMITTEE 4

RADIO DIVISION CIRCULAR NO. 775

In accordance with the request made during the 1st meeting of Committee 4, Annex A 15 of Radio Division Circular No. 775 is distributed herewith.

Gerald C. GROSS
Secretary of the Conference

Annex : 1

ANNEX A 15

RECOMMENDATION No. 314 *)

PROTECTION OF FREQUENCIES USED FOR RADIO ASTRONOMICAL MEASUREMENTS

(London 1953 - Warsaw 1956 - Los Angeles 1959)

The C.C.I.R.,

considering

a) that the development of radio astronomy has already led to major technological advances, particularly in receiving techniques, and to improved knowledge of fundamental radio noise limitations of great importance to radio communication, and promises further important results;

b) that protection from interference on certain frequencies is absolutely essential to the advancement of radio astronomy and the associated measurements;

c) that, for the observation of known spectral lines, certain bands at specific frequencies are of particular importance;

d) that account should be taken of the Doppler shifts of the lines, resulting from the motion of the sources which are in general receding from the observer;

e) that for other types of radio astronomical observations a certain number of frequency bands are in use, the exact positions of which in the spectrum are not of critical importance;

f) that the sensitivity of radio astronomical receiving equipment, which is still steadily improving, greatly exceeds the sensitivity of communications and radar equipment;

g) that a considerable degree of protection can be achieved by appropriate frequency assignments on a national rather than an international basis;

h) that, nevertheless, it is impracticable to afford adequate protection without some international agreement;

---

*) This Recommendation replaces Recommendation No. 173.

unanimously recommends

1. that radio astronomers should be encouraged to choose sites as free as possible from interference;

2. that Administrations should afford all practicable protection to the frequencies used by radio astronomers in their own and neighbouring countries;

3. that particular care should be taken to give complete international protection from interference to observations of emissions known or thought to occur in the following bands :

Line	Line frequency (Mc/s)	Band to be protected (Mc/s)
Deuterium	327.4	322 - 329
Hydrogen	1420.4	1400 - 1427
OH	1667	1645 - 1675

4. that the bands allocated for standard frequency and time signal emissions at 2.5, 5.0, 10.0 and 20.0 Mc/s should not include anything other than the standard frequency and time signal emissions, thus permitting their use for reception in radio astronomy;

5. that consideration be given to securing adequate international protection of a number of narrow frequency bands throughout the spectrum above 30 Mc/s for the purpose of reception in radio astronomy;

6. that Administrations, in seeking to afford protection to particular radio astronomical observations, should take all practicable steps to reduce to the absolute minimum amplitude harmonic radiations falling within bands of frequencies to be protected for radio astronomy.

Note

Radio astronomers in a number of countries have indicated their desire to use for this purpose one frequency band at each of the following approximate positions (not necessarily in harmonic relation)

Frequency (Mc/s)	Bandwidth (Mc/s)
40	± 0.75
80	± 1.0
160	± 2.0
640	± 2.5
2560	± 5.0
5120	± 10.0
10240	± 10.0

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No. 77-E
21 August 1959
Original : English

UNION OF SOUTH AFRICA
AND TERRITORY OF SOUTH-WEST AFRICA

Proposal

ARTICLE 1

Number of proposal

5167 11. After this No. add the following new definition :

Radio Geodetic Survey Equipment : Radio equipment for the determination of position or geometric parameters in geodetic or similar survey.

Reasons

It is desirable to distinguish between low powered equipment used for geodetic survey and high powered equipment which is included in the definition of Radiopositioning Equipment. In addition this new term is used in these proposals.

ARCHIVES U.I.T. GENEVE

UNION INTERNATIONALE DES TÉLÉCOMMUNICATIONS

F

CONFÉRENCE ADMINISTRATIVE DES RADIOCOMMUNICATIONS

GENÈVE, 1959

Document N° 78-FES
CORRIGENDUM N° 1
10 septembre 1959

SEANCE PLENIERE
COMMISSION 4

UNION OS SOUTH AFRICA AND TERRITORY OF SOUTH WEST AFRICA

Proposition N°

Dans le document N° 78-F, page 2, remplacer le texte de la proposition 5171 par:

5171 193. Au début, supprimer les mots: "l'Union de l'Afrique du Sud, le territoire sous mandat de l'Afrique du Sud-Ouest".

In fine, ajouter la nouvelle phrase suivante: Dans l'Union de l'Afrique du Sud et le territoire de l'Afrique du Sud-Ouest, la bande 100-108 Mc/s est atribuée au service de radiodiffusion; les bandes 132-144 Mc/s, 146-156 Mc/s et 165-174 Mc/s sont attribuées aux services fixe et mobile; la bande 156-165 Mc/s est attribuée au service mobile maritime.

Proposal No.

In document No. 78-E, page 2, replace text of proposal 5171 by the following:

5171 193. At the beginning delete the words: "the Union of South Africa, the territory under mandate of South West Africa".

At the end add the following new sentence: In the Union of South Africa and the territory of South West Africa, the band 100-108 Mc/s is allocated for the broadcasting service: The bands 132-144, 146-156, and 165-174 Mc/s are allocated for the fixed and mobile services; the band 156-165 Mc/s is allocated for the maritime mobile service.

Número de la proposición

En el Documento N.° 78-S, página 2, sustitúyase el texto de la Proposición N.° 5171 por el siguiente:

5171 193. Suprímanse al principio las palabras: "la Unión Sudafricana, Territorios del Africa Sudoccidental bajo mandato".

Añádase al final la nueva frase siguiente: En la Unión Sudafricana y Territorio de Africa del Sudoeste, la banda 100-108 Mc/s se destina al servicio de radiodifusión, las bandas 132-144, 146-156 y 165-174 Mc/s, a los servicios fijo y móvil, y la banda 156-165 Mc/s, al servicio móvil marítimo.

ARCHIVES U.I.T. GENÈVE

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No. 78-E
21 August 1959
Original: English

UNION OF SOUTH AFRICA AND TERRITORY OF SOUTH-WEST AFRICA

Proposals

ARTICLE 5

Number of proposal		
5168	145.	After the words "the Union of South Africa" add the words "and the Territory of South-West Africa".
5169	172.	Replace the present text by the following: 38) In Region 2, Australia and New Zealand, the amateur service will operate within the band 26,960-227,230 kc/s.
5170	178.	At the beginning, delete the words: "the Union of South Africa, the territory under mandate of South-West Africa". At the end, add the following new sentence: In the Union of South Africa and the territory of South-West Africa, the band 41-50 Mc/s is allocated for the aeronautical radionavigation, fixed and mobile services, the band 50-54 Mc/s is allocated for the amateur service and the band 54-68 Mc/s is allocated for the fixed and land mobile services. Model control may operate in the band 53-54 Mc/s.

Number of proposal

5171 193. At the beginning, delete the words:

"the Union of South Africa, the territory under mandate of South-West Africa".

At the end, add the following sentence:

In the Union of South Africa and the territory of South-West Africa, the band 100-108 Mc/s is allocated for the broadcasting service; the bands 132-144 Mc/s and 146-156 Mc/s are also allocated for the fixed and land mobile services; the band 156-165 Mc/s is allocated for the maritime mobile service.

5172 202. At the beginning, delete the words:

"the Union of South Africa, the territory under mandate of South-West Africa".

At the end, add the following sentence:

In the Union of South Africa and the territory of South-West Africa, the bands 174-181 Mc/s and 213-216 Mc/s are allocated to the fixed and land mobile services.

5173 218. After this number, add the following new note:

104 bis) Radio Geodetic Survey Equipment may be operated in the band 1,215-1,400 Mc/s on condition that harmful interference is not caused to the radionavigation service.

Reasons

Equipment of this type is extensively used throughout the world and provision must be made in the spectrum for accommodating it. Exhaustive tests by several Administrations indicate that no harmful interference to the radionavigation services is to be expected.

Number of proposal

5174 222. After this number, add the following new note:

108 bis) Radio Geodetic Survey Equipment may be operated in the band 2,800-3,200 Mc/s on condition that harmful interference is not caused to the radio-navigation service.

5175 231. After this number, add the following new notes:

117 bis) Radio Geodetic Survey Equipment may be operated in the band 8,500-11,000 Mc/s on condition that harmful interference is not caused to the radio-navigation service.

5176 117 ter) In the Union of South Africa and the Territory of South-West Africa limited power fixed services of restricted range (such as burglar alarm systems) may operate in the band 10,000-10,500 Mc/s.

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE
RADIO CONFERENCE

GENEVA, 1959

Document No. 79-E
21 August 1959
Original : English

UNION OF SOUTH AFRICA
AND TERRITORY OF SOUTH-WEST AFRICA

Proposal

ARTICLE 19

Number of proposal		
5177	419.	As regard ZRA-ZUZ read :
		Union of South Africa and Territory of South-West Africa.

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No. 80-E
21 August 1959
Original: English

COMMITTEE 4

REPORT

First Meeting - Committee 4 (Frequency Allocation Committee)

Thursday 20 August at 10.00 hours - Room A

1. The Chairman opened the proceedings of the Committee with the following remarks:

"I feel greatly honoured by having been appointed Chairman of this most important Committee, and I hope that with the good assistance of the two Vice-Chairmen, Mr. Steward, of Australia, and Mr. Oltuski, of Cuba, I shall be able to carry out the work in a manner satisfactory to you all.

" We all know that the work will be difficult and that without your good cooperation it would be impossible to reach a satisfactory result.

" What we are going to do is really to prepare a balanced budget for the use of radio frequencies during the next five or ten years.

" The radio frequencies available for practical purposes are limited by laws of nature and to some extent by technology. But the need for radio frequencies is steadily increasing. For the past forty years, the frequency needs have increased with a factor of approximately 10 for each 10 years. We have good reason to believe that the same tendency will continue for the next decade, but the difficulty is not only the quentitative increase in frequency needs. Our problem is extending from being a two-dimensional one over the surface of the earth to a three-dimensional problem extending into space and out to the far-away stars.

" Your Chairman and your two Vice-Chairmen have been so selected that the team represents the so-called "3 Regions of the world" according to the Radio Regulations. I wonder if the next Ordinary Administrative Radio Conference will not find it necessary to have the third dimension represented at this table. But at this Conference, we must do our utmost to obtain world-wide allocations in all cases where possible. The allocation of frequencies above 30 Mc/s can no longer be considered as a purely regional problem after space communication has been introduced.

" The Atlantic City Conference did excelent work with the allocation table and the outcome has now after many difficulties been implemented to a large extent with good results.

ARCHIVES U.I.T. GENÈVE

" It will now be our duty to review the allocations taking into account the recent changes in techniques and in communication needs and methods. We must be very careful not to upset a delicate and well established balance between the allocations for various radio services unless this proves to be quite essential. All services need more frequencies in some bands especially in the HF bands. We have here the overall responsibility for allocating frequencies to all services and we cannot take any decision based solely on the needs of a single service. We have the duty to study the requirements of all services in the bands before making up our mind.

" It will be necessary for us in this Committee to produce results in order to allow other committees to make progress; I have especially in mind the work in Committee 5.

" In order to try to obtain early results I propose that we, for the time being, carry out the work in the full Committee. As many of the problems are independent we may be able to settle some questions in the full Committee and pass the results to the Drafting Committee at an early date. When serious difficulties are encountered, we may bypass them for the time being and later decide whether we will re-consider them here or turn them over to a working group.

" I suggest this procedure also in order to allow all delegations to take part in the discussion of proposals before they are turned over to a restricted group; the groups which may be set up will in this way derive some guidance for their work.

" If such a procedure is acceptable to you, we shall start our work to-morrow with the consideration of Articles 3, 4 and 5 of Chapter III. In accordance with the decision of the Plenary Assembly yesterday, we shall in this connection give priority to the request from Iraq."

The meeting agreed to this procedure.

The Delegate of the U.S.A. asked whether in accordance with precedent Radio Regulations Nos. 236-239 ought not to be included in the work programme of this Committee. After the Delegate of India had drawn attention to the fact that Article 7 had been attributed in Doc. 52, as agreed by the Plenary Session, to Committee 7, the Meeting accepted the proposal of the Chairman that he would take up this question with the Chairman of Committee 7.

In response to an invitation from the Chairman, Mr. J.A. GRACIE, Vice-President of I.F.R.B., indicated the willingness of I.F.R.B. to participate in the work of the Committee and nominated for this purpose Messrs. GAYER and IASTREBOV of the Board.

The Chairman drew attention to the terms of reference contained in Doc. 52 and expanded these into the following list of documents for study:

a) The yellow book of proposals, pp. 123, Revision 1 to 266 Revision 1 inclusive;

b) C.C.I.R. Recommendation 314, Circular 775, dealing with radio astronomy;

c) Report of I.F.R.B., Doc. 20;

d) Report of the Administrative Council, Doc. 1;

e) The proposal of Iraq, Doc. 35, Buenos Aires Resolution 31.

The Chairman asked the Secretariat to arrange to publish the relevant part of Circular 775, reference (b) above, as a Conference Document.

2. In response to an invitation from the Chairman, the Delegate of the United Kingdom agreed to nominate a rapporteur for the Committee.

The Delegate of France said that a member of his delegation would also take notes in French to help with the report, and the Chairman noted this fact.

3. On the proposal of the Delegate of France, the Chairman asked the Secretariat to prepare pro-formae which could be used by members of the Committee during their study of the Frequency Allocation Table. The Delegate of Colombia drew attention to the shortage of copies of the Radio Regulations in the Spanish text and the Chairman asked the Secretariat to look into the question of finding copies.

There being no further business the Chairman adjourned the Committee at 11.15 hours.

The Rapporteur:

A. James Bourne

Approved:

Gunnar Pedersen,
Chairman.

INTERNATIONAL TELECOMMUNICATION UNION

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

E

Document No. 81-E
21 August, 1959
Original : English

COMMITTEE 6

TERMS OF REFERENCE OF WORKING GROUPS OF COMMITTEE 6

Working Group 6A

Radio Regulations Article 1
" " Article 2 (Section III)

E.A.R.C. Agreement Article 1

C.C.I.R. Recommendations Nos. : 129, 230, 231, 232, 233, 310, 324 and Report No. 173.

Working Group 6B

Radio Regulations Article 2 Sections I and II
" " Paragraphs 232 and 271
" " Articles 16 and 17
" " Appendices 3 to 5

E.A.R.C. Agreement - paragraphs 294 to 300
" " - Recommendation No. 5

I.F.R.B. report on Technical Standards - Section IX

C.C.I.R. Recommendations Nos : 230, 232 and 233
" Amendment to Article 396 of RR as given in Radio Division Circular No. 775 by Study Group No. II
" Recommendations No. 100, 255 and 256

- -

Working Group 6C

Radio Regulations Articles 13, 14 and 18
" " Appendix 2

E.A.R.C. Agreement - Recommendations Nos. 11 and 12

I.F.R.B. Report on International Monitoring - Section X

C.C.I.R. Recommendation No. 19 (para. 5), No. 22 and No. 323

- -

ARCHIVES U.I.T. GENEVE

Matters to be referred to Committee 7

Radio Regulations	:	Recommendations Nos. 2, 5 and 6
" "		Appendix B

Matters to be discussed by Committee 6 itself

Radio Regulations	:	Recommendations Nos. 1, 3, 4, 7 and 8
" "		Appendices A and C
E.A.R.C. Agreement	-	Resolution No. 3
" "	-	Recommendation No. 14

Note : The Working Groups will deal with all the various proposals contained in the Yellow Book, Series 1, 2 and 3, and subsequent documents in so far as they relate to each Working Group under the above terms of reference.

M. N. MIRZA
Chairman, Committee 6

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No. 82-E
21 August 1959
Original : French

COMMITTEE 2

SUMMARY RECORD
OF THE FIRST MEETING OF COMMITTEE 2
(CREDENTIALS)

Geneva, 20 August 1959, 3 p.m.

Chairman: Dr. F. Nicotera, Head of the Italian delegation

Subject : Credentials.

The Chairman asked the French delegation to nominate a rapporteur. Mr. Martinez was nominated.

The Secretary read Chapter V of the General Regulations annexed to the International Telecommunication Convention (Buenos Aires, 1952).

The Chairman considered that the provisions of Chapter V were clear, and that three points should be borne in mind:

- credentials must be signed; telegrams could not, therefore, be accepted;
- credentials conferred the right to vote and to take part in the work of the Conference;
- credentials further provided for the signature of the Final Acts.

The Chairman, in reply to Mr. Sarwate, Delegate of India, explained that the time limit of one month fixed by the Plenary Meeting should enable delegations to put their credentials in order so that they could continue to take part in the work of the Conference and to vote in the Plenary Meetings. After considerable discussion in which many delegates took part, including those of Ceylon, the U.S.S.R., Australia, China, India, Spain and Monaco, the Chairman proposed:

- to begin immediately to examine, in alphabetical order, the requests to participate in the Conference received by the General Secretariat;

- to set up a Working Party, composed of the Chairman, the Vice-Chairmen, the Rapporteur, the Deputy Secretary of the Conference, and a number of delegates to be nominated at a later date, to examine the documents submitted by the Administrations.

In reply to a question by the Delegate of the U.S.S.R., the Chairman confirmed that the initial examination of the credentials did not imply their approval; that would be a matter for the Committee at a subsequent meeting, after the Working Party had examined the credentials in detail.

Mr. Acton, Delegate of Canada, was invited to give his opinion as Chairman of the Conference; he approved the proposed plan of work and suggested that requests to participate in the Conference should be classified under the three following headings:

1) countries which had deposited credentials conferring the right to participate in the work and votes of the Conference, and to sign the Final Acts;

2) countries which had deposited credentials limited to participation in the work and votes of the Conference;

3) countris which had deposited no credentials.

The countries in the last category would have to deposit their credentials within the period of four weeks fixed by the Plenary Meeting in order to retain their right to vote after the expiry of the time limit.

The following table contains the result of the examination of requests for participation submitted to the Committee :

Countries which have deposited full credentials	Countries which have deposited credentials limited to participation in works and votes	Countries which have deposited no credentials
Australia	Albania	Afghanistan
Austria	Burma	Saudi Arabia
Belgium	Bulgaria	Argentine Republic
Brazil	Canada	Bolivia
Ceylon	Vatican City	Cambodia
China	Korea	Chile
Belgian Congo	Costa Rica (1)	Colombia
Dominican Republic	Denmark	Colonies, Protectorates, Overseas Territories and Territories under Mandate or Trusteeship of the United Kingdom
Group of the different Territories represented by the French Office for the Protectorates and Overseas Territories	Spain	
	United States of America	
	Ghana	
	Guatemala	
Ethiopia	Italy	Cuba
Finland	Ireland	El Salvator
France	Israel	Ecuador (2)
Greece	Malaya	Guinea
Japan	Morocco	Haiti
India	Nicaragua	Honduras (3)
Iceland		Hungary
Kuwait		Indonesia
Luxembourg		Iran
Monaco		Iraq
Norway		Jordan
		Laos
		Lebanon
		Liberia (2)
		Libya
		Mexico
		Nepal

(1) Has not ratified the Buenos Aires Convention.

(2) Represented by an observer. Has not ratified the Convention.

(3) Has not ratified the Convention.

* * *

The credentials deposited by the Bielorussian Soviet Socialist Republic, which are drafted in Biolorussian, will be examinated when they have been translated into one of the working languages of the Union.

The Chairman said that the credentials of the other countries would be examinated at the next meeting of the Committee.

The meeting rose at 6 p.m.

The Rapporteur:

Martinez

Approved
The Chairman:

F.Nicotera

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No. 83-E
21 August 1959
Original: English

BRITISH WEST AFRICA

Proposals

ARTICLE 1

Number of proposal

5178 4. Replace the present text by the following:

Radio communications: Any Telecommunications by means of freely propagated Radio Frequency Waves.

Reasons

This definition uses present day terminology.

5179 5. Replace the present text by the following:

Radio Frequency Waves: Electromagnetic waves of frequencies between 10,000 cycles per second and 3,000,000 megacycles per second.

Reasons

Same as for proposal.....

5180 57. Replace the present text by the following:

Frequency assigned to a Station: the frequency which is used as the base frequency for application of modulation or frequency shift.

Number of proposal

Reasons

To take care of Single Sideband and Vestigial transmission.

5181 63. Replace the present text by the following:

Mean Power of a Radio Transmitter: The Root Mean Square (RMS) power supplied to the antenna during normal operation.

Reasons

The Root Mean Square Power is more easily ascertained.

5182 64. After this number add the following new definition:

Effective Radiated Power (E.R.P.): In a given direction, the R.M.S. power delivered by the transmitter to the antenna, multiplied by the gain of the antenna in that direction.

Reasons

Clearer definition.

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No. 84-E
21 August , 1959
Original : English

BRITISH WEST AFRICA

Proposals

ARTICLE 5

Table of Frequency Allocations
10 Kc/s to 10,500 Mc/s

Number of proposal	Frequency Band Kc/s	Allocation to Services. In column Region 1, Read:-
5183	5,730 - 5,950	a) Fixed b) Broadcasting
5184	6,765 - 7,000	a) Fixed b) Mobile
5185	7,300 - 8,195	a) Fixed b) Mobile
	Mc/s	
5186	68 - 86	a) Fixed b) Mobile except Aeronautical Mobile
5187	86 - 100	Broadcasting
5188	100 - 108	Mobile except Aeronautical Mobile
5189	132 - 144	a) Fixed b) Mobile
5190	144 - 146	Amateur

Number of proposal	Frequency Band Mc/s	Allocation to Services In column Region 1, Read:-
5191	146 - 174	a) Fixed and b) Mobile
5192	174 - 216	a) Fixed b) Broadcasting c) Mobile
5193	216 - 251	Broadcasting

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE
RADIO CONFERENCE

GENEVA, 1959

Document No. 85-E
21 August 1959
Original : English

BRITISH WEST AFRICA

Proposals

ARTICLE 11

Number of proposal		
5194	314.	Replace the present text by the following:

Every change in frequency usage at a station other than an Amateur Station shall be notified to the Board if the emission is capable of causing harmful interference with any service of another country, or if international recognition of the use of the frequency is desired.

Reasons:

It is considered that if the emission of any station is capable of causing interference or if protection is required, the change in frequency usage should be submitted for examination.

5195	315.	Delete.

Reasons:

If the suggestion in connection with RR. 314 is accepted the position of the land station will be shown in column 4b of the record and consequently further action will not be required.

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No. 86-E
21 August 1959
Original: English

BRITISH WEST AFRICA

Proposal

ARTICLE 23

Number of proposal		
5196	494	Replace the present text by the following:

The inspectors must have in their possession an identity card or badge issued by the competent authority which they must show on the request of the person in charge of the station for the time being.

Reasons

To provide for application to Mobile Stations generally and to take into account the possibility of the person "responsible" for the station not being present.

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No. 87-E
21 August 1959
Original: English

BRITISH WEST AFRICA

Proposals

APPENDIX 6

Number of proposal		
5197	List IV	Heading, read: List of Coast Stations
		Reasons
		Consequent upon proposals for Article 20.
5198		Part C. Delete heading and replace by:
		List of Ship Stations
		Reasons
		Consequent upon proposals for Article 20.

ARCHIVES U.I.T. GENÈVE

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No. 88-E
22 August 1959
Original: English

INDONESIA (REPUBLIC OF)

Proposals

ARTICLE 19

Number of proposal

5199 419 Amend the table of allocation of call signs as follows:

a) In column 1, against the series:
PKA - POZ
YBA - YHZ
for Netherlands Indies Read: Indonesia (Republic of)

b) In column 1, replace Netherlands Indies by:
Indonesia (Republic of) against PKA - POZ and YBA - YHZ.

c) Add:
Indonesia (Republic of): 6AA - 6IZ
7AA - 7IZ
8AA - 8IZ

Reasons

To confirm the present status of the Republic of Indonesia as a sovereign State.

The International series PKA-POZ and YBA-YHZ allocated to Indonesia in accordance with the present RR cannot satisfy the requirements for call signs due to the recent increase in number of radio stations. The proposed amendment is to meet the present requirements and to cope with the increasing number of radio stations in the near future.

5200 422 Replace the present text by the following:

b) However:
- the call signs of coast and aeronautical stations shall consist of three letters, or three lettersfollowed by one or two digits (the digit following immediately a letter other than 0 and 1)

Number of proposal

Reasons

Many coast and aeronautical stations operate on more than 8 frequencies.

- the call sign of fixed stations shall consist of three letters followed by three digits (other than digits 0 and 1 when immediately following a letter).

5201 432 Replace the present text by the following:

(5) Base stations, which use radio telephony may use as a call sign:
- a call sign established in conformity with 421;
- the geographical name of the place followed by any other particulars.

Reasons

To be more specific.

5202 432 After this number add the following new sub-paragraph:

(5 bis) A land mobile station when functioning as a parent radio telephone station may also use as a call sign:
- a call sign in conformity with 432
- two or three letters followed by 4 digits (other than the digits 0 or 1 in cases where they immediately follow a letter).

Reasons

There are cases that a land mobile station function as a parent radio telephone station forming a network with other land mobile stations. This proposal is meant to have a provision to ensure uniformity of call signs in this case.

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No. 89-E
CORRIGENDUM No. 1
1st September 1959

COMMITTEE 4

CORRIGENDUM

Summary Record

Second meeting - Committee 4

(Frequency Allocation Committee)

Friday 21 August 1959, 3 p.m.

Page 2 of Document 89-E

Add to the penultimate paragraph :

"Furthermore, on a proposal by the Italian delegation, seconded by the French delegation, the Committee considered that the proposals relating to receivers should be the subject of a Recommendation."

ARCHIVES U.I.T. GENÈVE

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No. 89-E
24 August, 1959
Original: English

COMMITTEE 4

REPORT

Second Meeting - Committee 4

Friday 21 August, 1959 at 1500 hrs - Room A

1. In opening the meeting the Chairman drew attention to the Agenda, Document No. DT 7, and pointed out that it might not be possible to complete the whole of this Agenda. The Committee accepted the Agenda and the Delegate of the United Kingdom took the opportunity to explain that United Kingdom proposals 3502 and 3503 bis which appeared under Item 4 of the Agenda had been drafted some time ago, that 3502 referred to Broadcasting and 3503 bis to the African Area; the United Kingdom proposals derived from a study of the EARC Agreement, particularly No. 10, and had not been made in the context nor in the light of the discussions at this Conference.

In the discussion on the inclusion of the Iraqi Republic in the European Area the speakers were divided between those including France, Columbia, Pakistan, who felt that a Working Group should be established to examine and report on the question, and those including Iraq, USSR, Kuwait, Czechoslovakia, Yugoslavia and India, who considered that the question could be settled immediately. The Delegate of Italy proposed a compromise solution which was to set up immediately a Working Party during a recess in the meeting to report back during the course of the afternoon. The Chairman invited the Delegate of Italy to take the chair at this Working Group and the meeting agreed on the above course of action. The following countries, Iraq, Kuwait, Libya, Morocco, Turkey, Pakistan, USSR, Tunisia, Czechoslovakia, France, Denmark, Bulgaria, Belgium, Italy, United Kingdom and United Kingdom Colonial Territories, indicated they would wish to take part. The Committee went into recess at 3.45 hrs, and reconvened at 5.05 hrs. On the invitation of the Chairman the Delegate of Italy, Dr. Nicotera, presented the report of the Working Group in the following terms:-

> "The Working Party set up to examine Document 35 having taken cognisance of the reasons, and the situation as it arises from Para. 107 of the Radio Regulations and Para. 10 of Articles 1 of the EARC Agreement, having examined the technical aspects which were presented by the Delegate of Iraq in addition to the letter addressed by the Government of Iraq to the Acting Secretary-General, considers that the inclusion of Iraq in the European Area may be accepted on condition that such inclusion

shall not lead to any revision at this Conference of either the Copenhagen or Stockholm plans or of any other regional plans including those of the Maritime Service. This decision of the Working Party has been taken with the assent and valuable collaboration of the Delegate of France."

Dr. Nicotera explained that this represented the unanimous decision of the Working Party. The Chairman thanked Dr. Nicotera and proposed that Committee 4 would submit a report on the above lines to the Plenary Assembly. This was agreed.

2. Proceeding to Item 2 of the Agenda which deals with Article 3 of the Radio Regulations the Chairman pointed out that many proposals appeared to be drafting changes and in such cases the work of the Committee could be shortened if the proposals were agreed without presentation or discussion. This procedure was agreed.

Proposal 3253 was agreed
" 371 " "
" 372 " "

Proposals 370 and 4728 appeared to contain changes of a substantial nature and it was agreed that these should be held in abeyance to be considered by a Working Group at a later date.

On the suggestion of the Chairman it was agreed to leave proposal 3254 in abeyance pending discussion by Committee 5 of the International Frequency List.

After some discussion on proposals 3255, 375 and 4729 it was agreed that these should be held in abeyance for study by a Working Group.

As there was no support for proposal 373 the Chairman ruled that this would be left out of consideration.

Proposal 374 was agreed.

After some discussion it was agreed that proposal 376 should be held in abeyance for a Working Group.

After some discussion on proposal 3256, and noting the similarity of proposal 3983, it was agreed that the proposal 3256 would be transferred to the Committee dealing with Article 13.

After discussion it was agreed that proposal 377 should be held in abeyance to be studied by a Working Group which would also discuss the question raised by the Delegate of the Netherlands in connection with a definition of the term "Sub Regions".

3. The time being 6 p.m. the Chairman proposed to adjourn the meeting and this was done after the Secretariat had explained that because of changed arrangements all meetings of Committee 4 or of its Sub Committees or Working Groups would be held in Room A.

Rapporteur:
A. James Bourne

Chairman:
Gunnar Pedersen

INTERNATIONAL TELECOMMUNICATION UNION

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

E

Document No. 90-E
24 August 1959
Original : English

UNITED STATES OF AMERICA

Proposals

ARTICLE 5

Modifications to the proposals made by the United States of America for the indicated bands are submitted as follows:

Number of proposal	Frequency Band Mc/s	Allocation to Services	Footnotes
3354	132.0 - 135.0 (81 bis)*	a) Fixed b) Mobile c) Radiopositioning	(81 bis) In the band 132-135 Mc/s, the aeronautical mobile (R) service shall be afforded protection from harmful interference from other services operating in the band
3354 bis	135.0 - 136.0 (81 ter)	a) Earth-Space * b) Fixed c) Mobile d) Radiopositioning e) Space *	(81 ter) In the band 135-136 Mc/s, the fixed, mobile and radiopositioning services shall not cause harmful interference to the earth-space and space services. This band is established primarily for communication with or between earth and space stations.
3365	*)400 - 401 (93 bis)	a) Earth - Space b) Meteorological Aids c) Space	(93 bis) In the band 400-401 Mc/s, the meteorological aids service shall not cause harmful interference to the earth-space services. This band is established primarily for communication with or between earth and space stations. Delete 208 [note 94)]
3365 bis	*)401 - 406	Meteorological Aids	Delete 208 [note 94)]

*) The U.S. considers that this allocation should be on a worldwide basis.

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No. 91-E
24 August, 1959
Original: Spanish

ARGENTINE (REPUBLIC)

Proposals

ARTICLE 5

Number of proposal	Frequency Band Mc/s	
		Comments on the Frequency Allocation Table between 4 and 27.5 Mc/s
5203		The Argentine Administration believes that the present table of Frequency Allocations should be maintained. Any changes therein might mean the loss of years of work in reaching a proper coordination of the frequency spectrum. It believes too, that the results so far obtained show that complete agreement can be reached on the present allocations. It would therefore be wiser to wait a while until all the plans which have yet to be completed are put into operation, which would make it possible to avoid any wastage of the efforts so far made by Administrations to maintain a table of frequency allocations which takes account of the actual needs of radio services throughout the world.
5204	14-70	Delete footnote 1) in 110 of the R.R. Reason: To provide for greater flexibility in the use of the band.

ARCHIVES U.I.T. GENÈVE

Number of proposal	Frequency band kc/s	
5205	70-90	Delete footnote 1) for Region 2. Reason: Same as for the preceding proposal.
5206	90-110	Delete the fixed and maritime mobile services, thus leaving the band for the exclusive use of radionavigation. Reason: Necessary for the functioning of a normal radionavigation system.
5207	200-285	Add to footnote 13) (R.R.125) the following: "and the aeronautical mobile service shall not cause harmful interference to this service". Reason: To emphasize the priority of the aeronautical radionavigation service.
5208	385-315	Extend footnote 15) (R.R. 127) to cover other Regions, in this band or part of it (Region 1, 285-315). Reason: To extend the possibilities of aeronautical radionavigation, without depriving the maritime radionavigation service of its priority.
5209	325-405	a) Delete aeronautical mobile service. b) Delete footnotes 17), 18) and 19) (R.R. 129, 130 and 131). c) Add the following note: 17 bis) - In this band the aeronautical mobile service may be authorized to use frequencies in certain areas subject to coordination between Administrations and on condition that it does not cause interference to the aeronautical radionavigation service.

Number of proposal	Frequency band kc/s	
		Reason:
		To give priority to the aeronautical radionavigation service and because we believe that the footnotes now cancelled are now superfluous.
5210	1800-2000	Replace 33) 147) RR by the following:
		33 bis) The Loran system of radionavigation has priority. Other authorized services may use any frequencies in this band which are not being used by Loran provided that they do not cause harmful interference with the radionavigation service operating on the Loran system.
		Reason:
		To give priority to this radionavigation system for its retention and development.
5211	2105-2174	No change to present distribution
5212	2174-2190	Mobile (calling and distress), with the following note:
		34 bis) The frequency 2182 kc/s is the distress and calling frequency for the mobile maritime radiotelephone service and may be used by aircraft stations for distress, emergency and security traffic. The conditions of use of this frequency are prescribed in Article 34.

Number of proposal	Frequency band kc/s	
5213	2190-2300	Present distribution unchanged. Note: Cancel 37) 151) RR in the 2105/2174 - 2174/2190 and 2190/2300 kc/s bands. Reason: To give the necessary protection to the frequency 2182 kc/s and add use by aircraft stations. With regard to the cancellation of footnote 37) 151) RR, this derives from the fact that the situation indicated in this footnote has now been covered by regional agreements, such as the South American Technical Meeting (Buenos Aires, 1951).
5214	2300-2495	Cancel 37) 151) RR. Reason: Same as that mentioned above 2105/2300 kc/s band)
5215	3200-3230	Cancel broadcasting with footnote 36) 150) RR. (The corresponding part of No. 244 of the RR will have to be changed accordingly). Reason: a) The Agreement of the South American Technical Regional Meeting, Buenos Aires (1951) did not coordinate any broadcasting services in this band. b) There are no assignments for broadcasting in the Radio Frequency Record for any Administrations belonging to Region 2. c) The lack of use of this band for the broadcasting service shows that it is not necessary for Region 2.

Number of proposal	Frequency band kc/s	
5216	3500-3750	Delete the Fixed and Mobile Service (except for the Aeronautical Mobile R - 35) from the present distribution for Region 2, so that it is for the exclusive use of radio amateurs. Reason: a) It seems inappropriate that this service should share a band with other services with which it is obviously incompatible. b) The South American Regional Technical Meeting of Buenos Aires (1951) established this band for their exclusive use as from this year, which has shown excellent results. c) Should this proposal be rejected by the Conference, it is requested that a note be included to clarify the situation of this band, in view of the fact that in Southern South America the 3500-3750 kc/s band is reserved for radio amateurs.
5217	3750-4000	Delete Amateurs from the present distribution of services Reason: Same as for the 3500-3750 kc/s band.

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No. 92-E
24 August 1959
Original: English

PLENARY MEETING

SITUATION OF CERTAIN COUNTRIES WITH RESPECT TO THE CONVENTION

I take pleasure in informing the Conference that an instrument of ratification of the International Telecommunication Convention by Costa Rica has to-day been deposited with the General Secretariat.

For the Secretary of the Conference
C. STEAD
Deputy Secretary

ARCHIVES U.I.T. GENÈVE

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No. 93-E
24 August, 1959
Original: English

COMMITTEE 7

MINUTES

OF THE

First Meeting of Committee 7

Geneva, 21 August 1959, at 11.30 a.m.

Chairman: Mr. A.J. Ehnle (Netherlands)

Agenda: Document No. DT6

1. Opening

In opening the meeting, the Chairman expressed his aim that, with the collaboration of the Vice-Chairman, Mr. Y. Nomura of the Delegation of Japan, the Committee should work in good spirit to complete its task in as short a time as possible.

He put before the meeting the Agenda contained in Document No. DT6 which was accepted.

2. Appointment of Reporter

The Chairman invited the Delegation of the United Kingdom to supply a reporter. Mr. G.F. Wilson was nominated, and accepted by the Committee.

The Delegations of France and Colombia asked for confirmation that it was not intended to depart from the agreed procedure that draft documents in the three official languages of the Conference should be prepared with the assistance of a small language group. The Chairman gave this confirmation and added that he would have to contact Delegations before returning to this point.

3. Organization of the Work of the Committee

The Plenary Meeting had accepted the Terms of Reference for Committees 4, 5, 6 and 7 as set out in Document No. 52. It was proposed

ARCHIVES U.I.T. GENÈVE

and accepted that these tasks as detailed in Annex 1 to Document No. 2, Pages 18-20 should be undertaken by four Sub-Committees (A, B, C and D).

4. Setting up of four Sub-Committees

Assignment of Chairmen and Vice-Chairmen

Chairmen and Vice-Chairmen for the various Sub-Committees were proposed and accepted, as follows:

Sub-Committee A

Chairman : Mr. P. Bouchier - Delegation of Belgium

Vice-Chairman : Mr. Martin Flores Cantero - Delegation of Mexico

Sub-Committee B

Chairman : Mr. R.M. Billington - Delegation of the United Kingdom

Vice-Chairman : Mr. Bes - Delegation of France

Sub-Committee C

Chairman : Capt. G. V. Graves - Delegation of the United States of America

Vice-Chairman : Mr. S. Gejer - Delegation of Sweden

Sub-Committee D

Chairman : Mr. A. Caruso - Delegation of Italy

Vice-Chairman : Mr. Flisack - Delegation of Poland

It was agreed that the Chairmen would themselves appoint a reporter for each Sub-Committee.

5. Terms of Reference of the Sub-Committees

It was proposed and agreed that basically the Terms of Reference of each Sub-Committee should be in accordance with the grouping set out in pages 18-20 of Annex 1 to Document No. 2 but that Chairmen of the Sub-Committees should agree between themselves such transfers of items as appeared necessary. The Chairman asked that their proposals should be made before the next meeting on Thursday, 27 August, 1959.

It has been suggested that Radio Regulations 236-239 should be transferred to Committee 4 and this was agreed.

6. Miscellaneous

(i) The Delegations of Colombia and Italy proposed that simultaneous meetings of the Sub-Committees should not be held.

This was agreed.

(ii) The Chairman announced that the Permanent Organs of the I.T.U. had designated the following to assist the Committee:

I.F.R.B. : Mr. R.E. Page and
Mr. T.K. Wang

(further assistance would be available as, and when, needed).

C.C.I.R. : Mr. L.W. Hayes would provide assistance if needed.

General Secretariat: Mr. J. Kunz had been placed at the disposal of the Committee

(iii) The Chairman hoped the Sub-Committees would commence their work on Monday, Tuesday and Wednesday (24 - 26 August, 1959) and that there would be useful discussion before the next meeting on Thursday, 27 August, 1959.

This concluded the business of the meeting.

Rapporteur: Chairman of the Meeting:

G.F. Wilson A. J. EHNLE

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No. 94-E
24 August 1959
Original: Spanish

ARGENTINE REPUBLIC

Proposals

CHAPTER IV

ARTICLE 10

Number of proposal		
5218		Delete. Incorporate in Article 6 of the Convention all those parts not at present appearing there.
		Reasons:
		It would be better if the subjects dealt with in this Article were incorporated in the Convention so as to avoid overlapping between the two documents.

ARTICLE 11

5219	309	Read as follows:
		§ 1. (1) All frequency assignments, or change in the use of frequencies carried out in accordance with the provisions of 87, in a fixed, land, broadcasting, radio-positioning or standard frequency stations used for international communication capable of causing harmful interference to the services of another Member or Associate Member, or which it is desired shall be recognized as international, shall be notified to the International Frequency Registration Board within thirty days following such assignment or change.

ARCHIVES U.I.T. GENÈVE

Number of proposal

The Board shall make the entry in the Master Radio Frequency Record in either of two columns, as shown below.

Reasons:

To employ more concrete and definite terms and also to come into line with the normal form used by Administrations for notifying frequencies to the International Frequency Registration Board.

5220 314 Delete

Reasons:

The terms in this Number are included in the proposed change to 309.

5221 317 Delete

Reasons:

Fully covered by the corrected text of 309.

5222 318 Read as follows:

§ 4. (1) The notification shall be made in the manner laid down in Appendix 1 and a separate notice shall be used for each assignment or change in frequency usage notified. The basic data marked in the Appendix with an asterisk shall be given as a minimum.

Reasons:

To improve the text and to increase the information given to the Board so that a more accurate analysis of the notices of each Member or Associate Member can be carried out. Moreover, the list given in the present 318 is eliminated since it is contained in Appendix 1.

Number of proposal

5223 319 Delete

Reasons:

Experience has shown that telegraphic notification is of no practical use, and it is thus considered unnecessary.

5224 320 Read as follows:

(3) The date of first receipt by the Board of such notice either in a complete form or in the form of basic data shall establish the order of its consideration. 1)

5225 320.1 Read as follows:

In the event of undue delay in delivery of a notice by post, that event, if and when verified, shall not in any way prejudice the priority of consideration of the registration for the Member or Associate Member which submitted the notice.

Reasons:

To improve the wording, in view of the deletion of 319 and the amendment of 318.

5226 321 Read as follows:

Upon receipt of a notice, the Board shall examine it to make sure that it contains the basic data laid down in Appendix 1. If not, it shall return the notice to the notifying Administration, giving the reasons for its return, without taking any further action.

Reasons:

To ensure that 318, as amended, is carried out.

ARCHIVES U.I.T. GENÈVE

Number of proposal

5227 331 Delete

Reasons:

No longer necessary.

5228 339 After the words "...cuadro de distribución..." add the word "...de bandas...".

Reasons:

To bring the wording into line with the terms used in the Regulations. (This change applies only to the Spanish text)

5229 345 Replace "...six years..." by "a complete solar cycle".

Reasons:

It is only possible to establish conclusively whether there is interference in a full solar cycle.

5230 346 Replace "318" by "Appendix 1".

Reasons:

The data mentioned appear in Appendix 1 in accordance with what is proposed by the Argentine Administration in 318.

5231 347 Replace the present second part of the sentence by the following:

"...unless it finds that the circumstances warrant the retention of the entry, in which case it may agree to do so on the basis of review every two years".

Reasons:

To make it possible for an Administration to keep an inscription for two or more years when necessary.

Number of proposal

5232 349 Place this Number immediately after the present 315.

Reasons:

This Number refers to the procedure for notification and not for cancellation, and it is thus better to place it after 315.

5233 360 Read as follows:

§ 20. The Board shall make available to the interested Members or Associate Members, for their information, and to the Secretary-General of the Union for prompt publication in the three working languages of the Union, all reports of its findings and reasons therefor.

Reasons:

To lay down the languages in which the documents shall be published.

ARTICLE 12

5234 Delete

Incorporate in Article 6 of the Convention the present provisions of Article 12 (except 369) together with any other referring to the rules of procedure of the International Frequency Registration Board, as the meeting may decide.

Reasons:

To follow the general structure of Union organs by making the Radio Regulations refer simply to the methods and rules relating to services.

5235 369 Transfer to Article 11 after 321.

Replace "Article 11" by "this Article".

Reasons:

This belongs to Article 11.

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No. 95-E
21 August, 1959
Original: English

COMMITTEE 7

TERMS OF REFERENCE OF THE SUB-COMMITTEES

Sub-Committee 7A (General Questions)

Radio Regulations

Article 15

Articles 19 and 20 (with the exception of Nos. 447, 448 and 470)

Articles 21 to 26 and Article 35 Section IV

Articles 42 to 45

Appendix 2 (in co-operation with Committee 6)

Appendix 6 (with the exception of List I)

Appendices 7, 8 and 15

Appendix B

E.A.R.C. Agreement

No. 294 (for information)

Resolution No. 8

Final Acts of the Baltic and North Sea Radiotelephone Conference, (Göteborg, 1955)

Resolution No. 7

I.T.U. Circular No. 766 dated 30 December, 1958, (with the exception of List I)

Sub-Committee 7B (Radiotelegraph and Radiotelephone Procedures in the Mobile Services)

Radio Regulations

Nos. 236 to 239

No. 262

ARCHIVES U.I.T. GENÈVE

No. 277
Articles 27 to 34
Article 35 except Section IV
Appendices 9, 11 and 13

E.A.R.C. Agreement

No. 294 (for information)
Recommendation No. 6

Final Acts of the Baltic and North Sea Radiotelephone Conference, (Göteborg, 1955)

Resolutions Nos. 3, 4 and 5
Recommendation No. 1
Recommendations Nos. 5 to 10
Supplementary Radio Regulations, Nos. 1 to 25

Final Acts of the International Maritime VHF Radiotelephone Conference, (The Hague, 1957)

Annex 1
Annex 2
Recommendations Nos. 1 to 6
Supplementary Radio Regulations, Nos. 1 to 26

Sub-Committee 7C (Distress and Safety)

Radio Regulations

No. 232 (in co-operation with Committee 6)
Article 8
Articles 36 and 37

E.A.R.C. Agreement

Article 24 (for information)
No. 294 (for information)

Final Acts of the Baltic and North Sea Radiotelephone Conference, (Göteborg, 1955)

Resolution No. 2

Resolution No. 6

Resolution No. 9

Recommendation No. 10

Supplementary Radio Regulations, Nos. 25 to 43

Final Acts of the International Maritime VHF Radiotelephone Conference, (The Hague, 1957)

Supplementary Radio Regulations, No. 27

Sub-Committee 7D (Radiotelegrams)

Radio Regulations

Articles 38 to 41

Appendix 14

Additional Radio Regulations

A.J. EHNLE
Chairman

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No. 96-E
CORRIGENDUM No. 1
29 August, 1959

COMMITTEE 3

CORRIGENDUM

Budgets of International Telecommunication Conferences

(Geneva, 1959)

On page 8 of Document No. 96, first column:

Instead of:	Read:
(see page 1 above)	(see pa e 4 above)
(see page 2 above)	(see page 5 above)
(see page 3 above)	(see page 6 above)
(see page 4 above)	(see page 7 above) (twice)

For the Secretary of the Conference

Clifford Stead
Assistant Secretary of the Conference

ARCHIVES U.I.T. GENÈVE

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No. 96-E
24 August, 1959
Original: French

COMMITTEE 3

BUDGETS OF INTERNATIONAL TELECOMMUNICATION CONFERENCES

GENEVA, 1959

I hereby submit on behalf of the Finance Control Committee, the budgets of the International Telecommunication Conferences, Geneva, 1959, approved by the Administrative Council at its Fourteenth Session (May/June, 1959).

Clifford Stead
Assistant Secretary of the Conference

For the Secretary

ARCHIVES U.I.T. GENÈVE

Annex: 1

PAGE INTENTIONALLY LEFT BLANK

PAGE LAISSEE EN BLANC INTENTIONNELLEMENT

A N N E X

EXPENDITURE FOR 1955 - 1958

AND

BUDGET FOR 1959

Administrative Radio Conference Plenipotentiary Conference

Geneva, 1959

1. ADMINISTRATIVE RADIO CONFERENCE - PREPARATORY WORK BY THE GENERAL SECRETARIAT

Expenditure subheads :	1958 Expenditure	1959 Budget	Total
Art. I. Staff expenses			
.1 Administration	-	-	-
.2 Languages	-	-	-
.3 Roneo	-	-	-
.4 Insurance	-	-	-
Art. II. Premises and equipment			
.5 Premises, furniture, machines	-	-	-
.6 Document production	-	-	-
.7 Office supplies and overheads	780.35	-	780.35
.8 Simultaneous interpretation and other technical equipment	-	-	-
.9 Unforeseen	-	-	-
Art. III Financial management expenses			
.10 Interest on advances	132.30	-	132.30
Expenses of an exceptional nature			
Art. VI Preparatory work			
.13 Publication and distribution of reports	21,682.85	307,200.-	328,882.85
	22,595.50	307,200.-	329,795.50

2. ADMINISTRATIVE RADIO CONFERENCE - PREPARATORY WORK BY THE I.F.R.B.

Expenditure subheads:	1955 Expenditure	1956 Expenditure	1957 Expenditure	1958 Expenditure	1959 Budget	Total
Art. I. Staff expenses						
.1 Administration	1,800.--	67,648.--	86,178.90	80,272.30	65,000.-*)	300,899.20
.2 Languages	-	-	-	-	-	-
.3 Roneo	-	-	-	-	-	-
.4 Insurance	-	3,046.80	8,457.05	18,714.50	-	30,218.35
Art. II. Premises and equipment						
.5 Premises, furniture, machines	-	-	-	-	-	-
.6 Document production	-	-	-	-	-	-
.7 Office supplies and overheads	-	-	-	-	-	-
.8 Simult.interpret.and other tech.equip.	-	-	-	-	-	-
.9 Unforeseen	-	-	-	-	-	-
Art. III. Financial management expenses						
.10 Interest on advances	8.90	1,395.35	5,129.55	9,752.25	-	16,286.05
Expenses of an exceptional nature						
Art. VI. Preparatory work						
.13 Publication and distribution of reports	-	5,333.04	7,123.60	34,325.15	20,000.--	66,781.79
	1,808.90	77,423.19	106,889.10	143,064.20	85,000.--	414,185.39

*) For six months only (January to June, 1959)

3. PLENIPOTENTIARY CONFERENCE - PREPARATORY WORK BY THE GENERAL SECRETARIAT

Expenditure subheads :	1959 Budget
Art. I. Staff expenses	
.1 Administration	-
.2 Languages	-
.3 Roneo	-
.4 Insurance	-
Art. II. Premises and equipment	
.5 Premises, furniture, machines	-
.6 Document production	-
.7 Office supplies and overheads	-
.8 Simultaneous interpretation and other technical equipment	-
.9 Unforeseen	-
Art. III. Financial management expenses	
.10 Interest on advances	-
Expenses of an exceptional nature	
Art. VI. Preparatory Work	
.13 Publication and distribution of reports	146,300.--
	146,300.--

4. INTERNATIONAL TELECOMMUNICATION CONFERENCES

(Administrative Radio Conference and Plenipotentiary Conference)

Expenditure subheads :		1959 Budget
Art. I. Staff expenses		
.1	Administration	289,000.—
.2	Languages	1,442.000.—
.3	Roneo	133,750.—
.4	Insurance	18,000.—
Art. II. Premises and equipment		
.5	Premises, furniture, machines	265,000.—
.6	Document production	250,000.—
.7	Office supplies and overheads	60,000.—
.8	Simultaneous interpretation and other technical equipment	140,000.—
.9	Unforeseen	20,000.—
Art. III. Financial management expenses		
.10	Interest on advances	50,000.—
		2,667,750.—

Special expenditure

Administrative Radio Conference: Administration (technical assistance)	150,000.—
Plenipotentiary Conference: Administration (Supplementary staff for the Staff Office and Finance Section)	18,700.—

5; RECAPITULATION

	Administrative Radio Conference	Plenipotentiary Conference
A.R.C. - Preparatory work by the General Secretariat (see page 1 above)	329,795,50	
A.R.C. - Preparatory work by the I.F.R.B. (see page 2 above)	414,185,39	
P.C. - Preparatory work by the General Secretariat (see page 3 above)		146,300.—
International Telecommunication Conferences (see page 4 above) 2,667,750.— Swiss francs of which 2/3 to the A.R.C.	1,778,500.—	
of which 1/3 to the P.C.		889,250.—
Special expenses (see page 4 above)	150,000.—	18,700.—
	2,672,480,89	1,054,250.—

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No. 97-E
24 August, 1959
Original: French

COMMITTEE 3

TEXTS CONCERNING TERMS OF REFERENCE OF THE BUDGETARY CONTROL COMMITTEES OF CONFERENCES AND MEETINGS OF THE UNION

I hereby bring to your attention :

- Article 19 of the I.T.U. Financial Regulations, and
- Administrative Council Resolution No. 83 (amended),

which concern the terms of reference of budgetary supervision committees at Union conferences and meetings.

Clifford STEAD
Assistant Secretary of the Conference
For the Secretary

ARCHIVES U.I.T. GENÈVE

Annexes : 2

PAGE INTENTIONALLY LEFT BLANK

PAGE LAISSEE EN BLANC INTENTIONNELLEMENT

A N N E X 1

Article 19

Organization and financing of conferences and meetings

1. The provisions applicable to the organization and financing of conferences and meetings are defined in Administrative Council Resolution No. 83 amended.[1)]

2. The report mentioned in Section C, paragraph 4, of Administrative Council Resolution No. 83 (amended) must include a complete list of the Members, Associate Members, recognized private operating agencies and any international organizations and scientific or manufacturing concerns which are to contribute to the expenses of the conference or meeting, together with a list of the international organizations which have been exempted from payment in accordance with Article 13, paragraph 3 (5) of the Convention. In the case of a meeting of a C.C.I., this list shall show, on the one hand, all those who actually attended the meeting, and on the other hand, the Members, Associate Members, private operating agencies and international organizations which, although they did not take part in the meeting, undertook to contribute to the extraordinary expenses of the C.C.I. concerned. For each contributor to the expenses, the contributory class shall be indicated.

---

1) See Annex 2.

PAGE INTENTIONALLY LEFT BLANK

PAGE LAISSEE EN BLANC INTENTIONNELLEMENT

A N N E X 2

Resolution No. 83.- (amended) ORGANIZATION, FINANCING AND LIQUIDATION OF THE ACCOUNTS OF CONFERENCES AND MEETINGS (cf. PV CA3/19 - October 1948, CA4/34 - September 1949, CA5/20 and 36 - October 1950, PV CA9/25 Doc. 1606/CA9 - May 1954)

The Administrative Council,

Considering

1. That all the conferences and meetings of the Union should be uniformly organized, as regards both the material provisions and the accounting and liquidation of accounts;

2. That every effort should be made to reduce the expenditure of conferences and meetings and to accelerate the recovery of participants' contributory shares;

3. That the question whether progress made by a conference is sufficient to justify its prolongation beyond the date for which funds have been provided in the procedure described in Section B is a matter which can only be decided by the conference itself;

4. That nevertheless it is essential that steps be taken to review the desirability of extending the duration of a conference before the credit is exhausted, and that this question should therefore be examined by the Plenary Assembly of the conference, which should have before it an interim statement of accounts, prepared by the Secretary-General, of the expenditure already incurred;

5. That Article 10, paragraphs 5 and 6 of the Buenos Aires Convention, 1952, is primarily concerned with the procedure for convening new conferences, and does not in terms apply to resumed sessions of conferences, and that it is desirable that the procedure described in Article 10, paragraphs 5 and 6 should apply equally to the latter;

6. That it is advisable to include, in the agreements to be concluded with inviting administrations for the preparation of conferences or meetings, provisions covering the possible cancellation, postponement or change of meeting-place, so that such eventualities should not cause unnecessary prejudice to the Union;

Resolves

that the following provisions shall be applied for all the conferences and meetings organized under the aegis of the Union.

A. Organization of conferences and meetings when there is an inviting administration

1. At such time as he deems appropriate, the Secretary-General shall negotiate an agreement with the inviting administration on the arrangement to be made by both the General Secretariat of the Union and that administration, in order to supply the conference or meeting with the necessary material means for the satisfactory progress of the work.

2. This agreement, which shall specify the respective functions of both parties, shall be based, as regards its principles, on the arrangements described in Document No. 166/CA3. It may deviate from them to take into account the views of each inviting administration and, in particular, the services which that administration is in a position to offer free of charge.

3. However, in order that the General Secretariat shall not be implicated in matters for which it does not have to assume responsibility, the agreement to be concluded should not deal with any question concerning the application of the Convention or the General Regulations, which falls exclusively within the competence of the conferences or meetings, or of the inviting administration.

4. In particular, the agreement shall include no stipulation concerning the right of administrations in the matter of participation in the conferences, nor the Rules of Procedure of the conferences.

5. In order to establish a draft budget, the agreement may include, as an indication, estimates concerning the number of committees, the linguistic services and the employment of the time, as well as an estimate of the duration of the conference.

B. Financing of conferences and meetings when there is an inviting administration

The agreement to be reached with the inviting administration should, in so far as possible, be based on the following data:

1. Where it does not cover the expenses itself, the inviting administration shall advance the necessary funds for the renting and preparation of premises, the reproduction and distribution of documents of the conferences and meetings, the payments of salaries of the lower grade of the Secretariat personnel recruited locally, the purchase of supplies, the purchase or renting of office equipment and any other equipment deemed necessary for the work of the conference. This list may vary according to the nature of the loans granted gratis by the inviting administration.

2. These expenses shall be refunded to the inviting administration by the General Secretariat of the Union, as soon as the latter has decided upon the shares to be allocated to those taking part in the conferences or meetings.

3. The inviting administration shall bear the expenses pertaining to a Reception Committee and, if the occasion arises, the entertainments and other diversions organized for the delegates.

4. For all the other expenses, the Secretary-General shall also endeavour to obtain the advance of the necessary funds from the inviting administration; these funds shall be subsequently refunded subject to the same conditions as those mentioned in paragraph 2 above. If this proves impossible, the Secretary-General shall have recourse to advances by the Swiss Government.

5. The agreement reached with the inviting administration and the draft budget of the conference or meeting shall be submitted for approval to the Administrative Council if the latter holds a Session prior to the conference or meeting.

6. If this should not be the case, the agreement and the draft budget shall be submitted to the Committee mentioned in the next section, at the beginning of the conference or meeting.

7. The agreement with the inviting administration must contain provisions covering cases where conferences or meetings are cancelled or postponed, or their meeting place is changed, as a result of a decision by the Union, adopted by means of its competent organs:

a) in general it shall be clearly established that in such an eventuality the Union shall be responsible to the inviting administration only for its commitments or actual expenditure in preparation for the conference - provided the administration has not agreed to bear such expenses itself - and only in so far as they are indispensable and cannot be cancelled or reduced;

b) if the cost of preparing premises to house the conference is to be borne by the Union, the agreement shall stipulate the details of the work to be done and its cost, and the maximum economy shall be sought compatible with satisfactory organization of the conference;

c) save in very special cases, the reservation of accommodation for delegates, staff, etc., must not entail any financial commitment for the Union.

8. If the inviting administration, instead of convening the conference or meeting, announces that it cannot receive the conference at the agreed place or time, the Union shall not be responsible for the expenses incurred by the inviting administration in preparation for the conference or meeting.

9. On request by the inviting country, and if exchange conditions are suitable, contributions owed to the Union by that country may be accepted in local currency in such a proportion as will enable the conference expenses to be settled in that currency to be met.

C. Committee for the Supervision of the Organization of conferences or meetings and the expenses resulting therefrom

1. At the opening of each conference or meeting, a special committee shall be set up to determine the organization and the facilities available to the delegates and the expenses involved throughout the duration of the conference or meeting.

2. This committee, which must, of course, include a representative of the General Secretariat and a representative of the inviting country, shall be appointed by the conference or meeting.

3. Before the exhaustion of the credit approved under the provisions of Section B above, the Budget Control Committee, in collaboration with the Secretariat of the conference, will present an interim statement of the expenditure incurred, so that the Plenary Assembly of the conference may take this into account in considering the question whether the progress made is sufficient to justify a prolongation of the conference after the date when the budget will be exhausted.

4. At the end of each conference or meeting, the committee shall present a report, showing as accurately as possible, for the different items, the total expenditure at the close of the conference or meeting.

5. This report shall be submitted to the closing Plenary Assembly and then entered, with the observations of the Plenary Assembly, on the agenda of the next session of the Administrative Council.

6. The provisions of Section C shall also apply to conferences convened at Geneva.

D. Settlement of the accounts of conferences or meetings

So as to reduce, as far as possible, the total interest on the sums advanced by the Swiss Government it is important that the contributory shares of participants in conferences or meetings should be recovered without delay. To this end:

a) when a conference covers a period running into the next financial year, the Secretary-General shall forward to the administrations or organizations concerned an account of their share of the expenses incurred during the current financial year;

b) if, at the close of a conference or meeting, it appears that the final accounts cannot be drawn up within one month, the Secretary-General shall immediately forward to the participants a principal account of their share of the expenses on the basis of the statement of expenditure approved by the closing Plenary Assembly; an additional account shall, if necessary, be subsequently forwarded if it appears, when the accounts are finally closed, that a balance remains to be recovered.

E. Limit of the prerogatives of conferences in financial matters

1. A conference has no power to arrange for future sessions of the same conference after the termination of the original session, or for further conferences, except by the procedure prescribed in Article 10 of the Buenos Aires Convention, 1952, for convening Administrative Conferences.

2. Save in the case when a conference decides to prolong its duration, no conference other than a Plenipotentiary Conference has the power to authorize the Secretary-General to ask the inviting administration to advance funds or to request the advance of funds from the Swiss Confederation to finance conferences. The Secretary-General can only act in this matter in accordance with the prescriptions of the Buenos Aires Convention and the directives of a Plenipotentiary Conference, or of the Administrative Council.

3. Administrative Conferences and Plenary Assemblies of Consultative Committees must bear in mind the provisions of paragraph 7 of Additional Protocol IV to the Buenos Aires Convention and must observe the provisions of paragraph 8 thereof.

F. Publication of the Final Acts of conferences or meetings

1. In principle, the final acts of conferences or meetings, whatever their method of reproduction, shall be published by the General Secretariat in their usual place of publication and with the minimum of cost.

2. However, this rule may be disregarded in recognized cases of urgency and at the special request of the conference or meeting.

3. In this connection:

a) if a conference prints, for its own use, documents of which typographical composition can subsequently be used, in whole or in part, for the printing of the final acts, it must bear part of the composition costs and the whole of the printing costs of the said document;

b) when this is not so, the printing costs of the final acts shall, in principle, be posted to the printed matter account, but the conference may decide, in special circumstances, to assume part of the cost;

c) in any event, the total printing costs attributed to a conference must be finally established by the closing Plenary Assembly, on the basis of the printer's estimate and/or any other element of appreciation, so that the heading "Printing Cost" in the budget shall not subsequently be changed in any way that might result in the recovery of the participants' shares being delayed.

4. The Final Acts of a conference or meeting are supplied to delegates free of charge, if a formal decision to this effect is taken on a report by the Budget Control Committee mentioned in Part C above.

All the provisions of this resolution may, at the Director's request, be applied to the Plenary Assemblies of the Consultative Committees in conformity with Chapter 13, paragraph 5 of the General Regulations.

Note: The provisions of Resolution No. 83 (amended) have been confirmed by Resolution No. 6 of the Plenipotentiary Conference of Buenos Aires, 1952.

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No. 98-E
24 August, 1959.

COMMITTEE 6

MINUTES

of the first meeting of Committee No. 6. (Technical)

21 August, 1959 at 10.00 hours

Chairman:- Mr. M.N. Mirza
Vice-Chairman : Mr. Lázaro Barajas.

Subjects discussed:

1. Appointment of Rapporteur, and the three language group of the Committee.
2. Terms of reference of Committee 6 and documents related thereto.
3. The organisation of the Committee, proposals for Working Groups and the possible assistance by I.F.R.B., C.C.I.R. and Secretariat.
4. Questions to be considered direct by the Committee and those to be assigned to Working Groups.
5. Miscellaneous.

Chairman's Opening Remarks.

In opening the meeting the Chairman referred to the dynamic state of radio developments. A review of definitions will be needed for new types of transmissions and services. New technical standards will also need consideration. The C.C.I.R. studies will be of great help in the review of the regulations. The problems of harmful interference, including that due to electrical appliances, will need to be studied and the procedure in the case of interference will need to be reviewed. The question of International Monitoring is also of importance because of the

congestion of the radio frequency spectrum. The I.F.R.B. report, particularly the section on interference, will be of great help.

The Chairman expressed his confident hope that with the co-operation of all delegations these studies would be carried to a satisfactory conclusion and that the Committee would help in making definitions and regulations that could be universally implemented in practice by countries both large and small.

1. Appointment of Rapporteur and the three language group of the Committee.

The delegate of the United Kingdom, in response to an invitation from the Chairman, offered the services of Mr. G.C. Benton as Rapporteur. This appointment was adopted and Mr. Benton took up his duties as Rapporteur for the Committee.

The Chairman invited the nomination of a member of the delegation of Switzerland to assist in the three language group of the Committee. The delegate of Switzerland said that he would be glad to accept this invitation and Mr. R. Monnat was nominated as member of the linguist group for the French language. The Chairman mentioned that the Vice-Chairman, Mr. Barajas had very kindly consented to assist the group for the Spanish language.

2. Terms of reference of Committee 6 and documents related thereto.

The Chairman pointed out that the terms of reference of Committee 6 were laid down by Plenary Meeting in Document No. 52. He indicated that the documents which the Committee would have to deal with would include:-

Radio Regulations. Chapters I, II, V and VI apply to Committee 6. Additional regulations will also need to be considered.

E.A.R.C. Agreement.

I.T.U. Circular No. 775. Sections containing the most recent relevant Recommendations of the C.C.I.R. refer.

Conference Proposals Volumes I and II.

Report by the I.F.R.B. Document No. 20 refers.

Report by the Administrative Council. Document No. 1 refers.

Document No. 2. Annex 1 page 17 applies to the Technical Committee and details the various sections of the Radio Regulations and the E.A.R.C. Agreement to be dealt with by the Committee.

The Chairman invited the meeting to say if there were any other documents to be considered. There was none.

3. The Organisation of the Committee, proposals for Working Groups, and the possible assistance by I.F.R.B., C.C.I.R. and Secretariat.

The Chairman invited the I.F.R.B. to nominate experts to assist in the work of the Committee. Mr. A.H. Cata and Mr. N.H. Roberts were nominated and took their place at the Chairman's table.

In response to the Chairman's invitation for assistance from the C.C.I.R., the C.C.I.R. representative said that the Director of C.C.I.R., Dr. E. Metzler was absent due to illness and the invitation would be referred to the Vice-Director, Mr. L.W. Hayes.

The Chairman asked if the Secretariat could help in the work of the Committee, particularly with regard to the reproduction of earlier documents in the form of Conference Documents. Mr. Stead said that the Secretariat would be glad to help as required. The delegate of Yugoslavia asked where documents relating to the technical standards of the C.C.I.R. could be seen. The Secretariat said that these would be available with other reference documents in Room No. 109. The delegate of the United Kingdom said that it may be desirable to reproduce Annex V of Radio Circular No. 772 as a Conference Document for use in Working Groups. The Secretariat said that this would be done and in response to the wishes of the Conference the whole of I.T.U. Circular No. 775 would be reproduced as a Conference Document. This would take about four days. The delegate of the Phillipines expressed his appreciation of the proposal to reproduce the I.T.U. Circular 775 in full.

The Chairman said that it was desirable for the Working Groups to start work as soon as possible as Committee 4 will require certain information from Committee 6. Committee 4 will indicate their requirements and priorities.

The Chairman invited comments on the suggestion to set up Working Groups in four categories:

Definitions

Technical characteristics of transmissions

Procedure in the case of interference

International monitoring.

The delegate of France said that this was an excellent suggestion but proposed that the last two categories should be combined as there were many problems common to these subjects. The delegates of Pakistan, South Africa, and the United States of America supported this proposal. The delegates of Spain and Mexico supported the French proposal but also proposed that the Working Groups should not meet simultaneously.

The Chairman invited the delegates of the United States of America, the United Kingdom, and Federal German Republic to nominate Chairmen for the three Working Groups and the following proposals were approved:-

Working Group No. 6A.	Definitions	
Chairman:	Mr. E.W. Allen (United States of America)	
Working Group No. 6B.	Technical characteristics of transmissions.	
Chairman:	Mr. J.K.S. Jowett (United Kingdom)	
Working Group No. 6C.	International monitoring and procedure in the case of interference.	
Chairman:	Mr. A. Heilmann (Federal German Republic)	

4. Questions to be considered direct by the Committee and those to be assigned to Working Groups.

The Chairman proposed that all relevant papers should be passed to the Working Groups and that the Working Groups should report to the Committee those questions suitable for discussion by the Committee before proceeding further. This proposal was agreed.

5. Miscellaneous

The delegate of Pakistan suggested that Working Group No. 6A should start work immediately and that a time limit should be given. The Chairman proposed that the question of a time limit should be considered at the next meeting of the Committee. The delegate of India said that it would be useful to have a time-table for Working Groups to follow and for the distribution of work. The Chairman indicated that he would arrange for the Committee to issue a statement on the various items to be dealt with by each Working Group.

The delegate of the United States of America pointed out that certain definitions were essential to the work of other Committees. There were many practical problems to be considered and it was desirable to have a list of priorities for the more important questions. The Chairman replied that it would be very reasonable to proceed quickly on a limited priority basis and said that he would expect the Chairmen of other Committees to indicate their requirements.

The delegate of India said that he would like to bring the attention of the Committee to the fact that the Working Group No. 6A may find that certain definitions may be dealt with by the C.C.I.T.T.

The Chairman of Working Group 6A agreed that this should be considered. He would arrange an early meeting of the Working Group No. 6A. The Secretariat asked that the Order of the Day Officer (Room 107) should be advised of the size of Working Group meetings. A show of hands indicated that between 40 and 50 delegations wished to be represented.

The Chairman proposed that in addition to the Working Group meeting scheduled for Wednesday, 26th August, the Working Group 6A should also meet in Room A at 10.00 hours on Tuesday, 25th August, instead of the Committee meeting scheduled. This was agreed. The Secretariat pointed out that the Document No. 57 should be amended. The times 1000 - 1115 should read 1000 - 1230. The delegate of South Africa mentioned that Document No. 57 gave no indication which room was in which building. The Secretariat indicated that Rooms B, C and D were in the Palais des Expositions and that a red card would be used on the notice board as an indication.

The delegate of Colombia suggested that as there was so much to remember it would be desirable to indicate on the notice board in full which building the rooms were in. He said that there was one further item for the meeting to deal with. The definitions within the International Telecommunications Convention have priority over the definitions within the Radio Regulations and the meeting should decide what should be done with the Convention definitions. The Chairman said that the Committee would consider the technical definitions and that the relevant proposals approved at this Conference would be forwarded to the Plenipotentiary Conference.

There were no further miscellaneous questions and the meeting closed at 11.15 a.m.

Approved:

M.N. Mirza

Chairman of Committee 6

Rapporteur:

G.C. Benton

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE
RADIO CONFERENCE

GENEVA, 1959

Document No. 99-E
25 August 1959
Original: Spanish

CORRIGENDUM

to Document No. 36-E

Number of proposal:

for

4485, 4486 and 4487

read

4885, 4886 and 4887 respectively.

INTERNATIONAL TELECOMMUNICATION UNION

E

ADMINISTRATIVE RADIO CONFERENCE

GENEVA, 1959

Document No. 100-E
4 September, 1959

LIST OF DOCUMENTS PUBLISHED BY THE CONFERENCE

Nos. 51 to 100

Document No.	Origin	Destination	Title
51	Plenary Meeting	Plenary Meeting	Agenda for the Third Plenary Meeting
52	"	"	Terms of Reference for Committees 4, 5, 6 and 7, proposed by the Steering Committee
53			Corrigendum to Document No. 5-E
54	Belgium		Proposals, Article 5
55	Plenary Meeting		Minutes of the Opening Plenary Meeting, 17 August, 1959 at 3 p.m.
56	Secretariat		Schedule of Meetings for 20 and 21 August, 1959.
57 (Rev.)	"		Schedule of Meetings from 24 to 30 August, 1959
58	General Secretariat		Telecommunications and the use of outer space
59	Federal German Republic		Proposals, Article 1
60	"		" " 2
61	"		" " 5
62	"		" " 9
63	"		" " 13
64	"		" " 34
65	"		Proposal " 37
66	"		" " 41
67	"		" Appendix 3
68	"		" Appendix 4

Document No.	Origin	Destination	Title
69	Argentine Republic		Proposals, Article 1
70	Federal German Republic		Proposal, Appendix 5
71	"		Proposals, Appendix 7
72	"		Proposals, Appendix 13
73	"		Proposal, Appendix 14
74	"		Proposals - Additional Radio Regulations, Article 4
75 75 Corr. No. 2	Plenary Meeting		Minutes of the Second Meeting of the Heads of Delegations, 18 August, 1959 at 10.30 a.m.
76	Secretariat	Committee 4	Radio Division Circular No. 775
77	Union of South Africa and Territory of S.W. Africa		Proposal, Article 1
78	"		Proposals, Article 5
79	"		Proposal, Article 19
80	Committee 4	Committee 4	Report, First Meeting, 20 August, 1959 at 10 a.m.
81	Committee 6	Committee 6	Terms of Reference of Working Groups of Committee 6
82	Committee 2	Committee 2	Summary Record of the First Meeting of Committee 2, 20 August, 1959 at 3 p.m.
83	British West Africa		Proposals, Article 1
84	"		" " 5
85	"		" " 11
86	"		" " 23
87	"		" Appendix 6

Document No.	Origin	Destination	Title
88	Indonesia (Republic of)		Proposals, Article 19
89 89 Corr. No.1	Committee 4	Committee 4	Report, Second Meeting, 21 August, 1959 at 3 p.m.
90	United States of America		Proposals, Article 5
91	Argentine Republic		" " 5
92	Secretariat	Plenary Meeting	Situation of certain countries with respect to the Convention
93	Committee 7	Committee 7	Minutes of the First Meeting of Committee 7, 21 August, 1959 at 11.30 a.m.
94	Argentine Republic		Proposals, Article 10
95	Committee 7	Committee 7	Terms of Reference of the Sub-Committees
96 96 Corr. No.1	Secretariat	Committee 3	Budgets of International Telecommunication Conferences (Geneva, 1959)
97	"	"	Texts concerning terms of reference of the budgetary central committees of conferences and meetings of the Union
98	Committee 6	Committee 6	Minutes of the First Meeting of Committee 6, 21 August, 1959 at 10 a.m.
99			Corrigendum to Document No. 36-E
100			List of Documents published by the Conference - Nos. 51 to 100