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FREQUENCY ALLOTMENT PLAN

FOR THE

AERONAUTICAL MOBILE SERVICE

AND

FINAL AGREEMENT

GENEVA 1948-1949

GENERAL SECRETARIAT
OF THE INTERNATIONAL TELECOMMUNICATION UNION
GENEVA 1949

CONTENTS

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pages

PART II

Plan for the Allotment of Frequencies for the Aeronautical Mobile R Service

PART III

Plan for the Allotment of Frequencies for the Aeronautical Mobile OR Service

PART IV

Statements, Final Formula and Signatures

PREAMBLE

The delegates of the following countries, being duly accredited to that effect by their respective Administrations, met in Geneva (Switzerland) from May 15 to September 25, 1948, then from August 1 to October 14, 1949 :

PEOPLE'S REPUBLIC OF ALBANIA ; ARGENTINE REPUBLIC ; AUSTRALIA (COMMONWEALTH OF) ; AUSTRIA ; BELGIUM ; THE BIELORUSSIAN SOVIET SOCIALIST REPUBLIC ; BRAZIL ; PEOPLE'S REPUBLIC OF BULGARIA ; CANADA ; CHILE ; CHINA [1] ; COLOMBIA (REPUBLIC OF) ; PORTUGUESE COLONIES ; COLONIES, PROTECTORATES, OVERSEAS TERRITORIES AND TERRITORIES UNDER MANDATE OR TRUSTEESHIP OF THE UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND ; OVERSEAS TERRITORIES OF THE FRENCH REPUBLIC AND TERRITORIES ADMINISTERED AS SUCH ; BELGIAN CONGO AND TERRITORIES OF RUANDA URUNDI ; CUBA ; DENMARK ; DOMINICAN REPUBLIC ; EGYPT ; ECUADOR [2] ; UNITED STATES OF AMERICA ; FRANCE ; GREECE ; HONDURAS (REPUBLIC OF) [1] ; PEOPLE'S REPUBLIC OF HUNGARY ; INDIA ; INDONESIA ; IRELAND ; ICELAND ; ITALY ; LUXEMBOURG ; MEXICO ; NICARAGUA ; NORWAY ; NEW ZEALAND ; PAKISTAN ; PARAGUAY ; NETHERLANDS, CURAÇAO AND SURINAM ; PHILIPPINES (REPUBLIC OF THE) ; POLAND (REPUBLIC OF) ; PORTUGAL ; FRENCH PROTECTORATES OF MOROCCO AND TUNISIA ; PEOPLE'S FEDERAL POPULAR REPUBLIC OF YUGOSLAVIA ; THE UKRAINIAN SOVIET SOCIALIST REPUBLIC ; ROUMANIAN PEOPLE'S REPUBLIC ; UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND ; SWEDEN ; SWITZERLAND (CONFEDERATION) ; CZECHOSLOVAKIA ; TERRITORIES OF THE UNITED STATES OF AMERICA ; UNION OF SOUTH AFRICA AND THE MANDATED TERRITORY OF SOUTH WEST AFRICA ; UNION OF SOVIET SOCIALIST REPUBLICS ; URUGUAY (ORIENTAL REPUBLIC OF) ; VENEZUELA (UNITED STATES OF).

The delegates whose signatures appear at the end of the present Agreement have adopted the following provisions :

[1] Only participated in the 1st Session.
[2] Sent a delegate at the 1st Session and an observer at the 2nd Session.

INTRODUCTION

HISTORICAL BACKGROUND OF THE INTERNATIONAL ADMINISTRATIVE AERONAUTICAL RADIO CONFERENCE

1. The International Radio Conference of Atlantic City (1947), in a Resolution Relating to the Preparation of the New International Frequency List (Page 14 of the " Recommendations and Resolutions "), defined the functions of the various bodies entrusted with the coordination and publication of this List.

   An Annex to this Resolution gives Directives for the Provisional Frequency Board (P.F.B.) and specifies that an International Administrative Aeronautical Conference under the auspices of the International Telecommunication Union (I.T.U.) might deal with the exclusive Aeronautical Mobile Service bands.

2. In a Resolution adopted during its Second Session (Geneva, January-February 1948), the Administrative Council of the I.T.U. decided to convene in Geneva an International Administrative Aeronautical Radio Conference (I.A.A.R.C.), to be preceded by a Preparatory Committee of nine members. This Committee met on 26 April 1948.

3. Under its terms of reference, as set forth in the documents of the Atlantic City Conference, the I.A.A.R.C. was to deal with the assignments of frequencies in the exclusive aeronautical mobile frequency bands between 2,850 and 18,030 kc/s. These bands are listed numerically on page 28 of the third part of the final document of the Atlantic City Radio Conference.

4. The I.A.A.R.C. began its work on 15 May 1948 under the Chairmanship of Mr. Arthur L. Lebel, Head of the United States Delegation, who had been previously elected Chairman of the Preparatory Committee.

5. With reference to the operational uses to be made of frequencies from R bands and OR bands respectively, the Conference has assumed that a strict interpretation would be given numbers 256 and 257 of the 1947 Atlantic City Radio Regulations *.

6. At its first Session, the I.A.A.R.C. was able to carry out its terms of reference for the OR bands. This was not possible, however, for the R bands. The main difficulty was to reconcile the small amount of spectrum space reserved for the R service with the volume of requirements submitted by Administrations for the regional and domestic air route areas while complying with the exigencies of the technical principles adopted by the Conference.

* These provisions are quoted in the " Definitions ", Part I, Section I hereinafter.

7. On 15 September, 1948, after a considerable amount of work, the Conference was compelled to adopt a Resolution to suspend its work temporarily as of 25 September 1948.

The I.A.A.R.C. prepared an Interim Report which was sent to all administrations.

8. Faced with this temporary stalemate, the Conference invited the *Administrations* to examine the results of the work in its First Session, to study some of its documents which showed certain working methods and numerical standards likely to be taken into consideration by the Second Session of the Conference, and to coordinate the results of their studies with those of other Administrations at regional conferences.

It also invited the *International Civil Aviation Organization* (I.C.A.O.) to study the part of the draft plan which concerned the International routes of its Member States, to try to reduce the requirements of the Major World Air Routes to a minimum, and to establish a draft frequency allotment plan for the international services of its Member States.

Reports on all this work were to reach the Secretary General of the Union by 30 June 1949, at the latest.

9. Most of the Administrations supplied the information in the required form. Also, I.C.A.O. Member States conducted the studies which they had been requested to undertake and I.C.A.O. was able to prepare a coordinated report on these studies and to submit to the Secretariat of the I.T.U. their " calculated requirements " for the Aeronautical Mobile R Service.

10. The second session of I.A.A.R.C. met in Geneva on 1 August 1949 (Circular No. 600 of 30 March 1949 of the Radio Division and Notification No. 572 of 1 April 1949, both issued in compliance with Resolution No. 58 of the Administrative Council, 3rd session 1948).

11. The Conference then adopted as the basis for its work the material mentioned in paragraph 9 above, as well as the findings of the regional meetings of I.C.A.O. and of the I.T.U. Region 2 Conference, Washington, 1949.

Calculated requirements for the regional and domestic air route areas were submitted by I.C.A.O. and by the Region 2 Conference. These calculated requirements, although lower than the requirements submitted by Administrations at the first session, were still too high for the amount of spectrum space to be allotted.

12. Thus, during the first weeks of the second session, the Conference had to review its basic material and examine the possibility of transferring certain frequencies from some areas to less favoured ones in the Eastern Hemisphere*. In some cases this could be done only by lowering the technical standards envisaged in the previous year.

13. This Final document of the I.A.A.R.C., containing the plans drawn up for the R and OR mobile services, will be submitted to the P.F.B. for integration in the New Draft International Frequency List, in accordance with paragraph *(e)* of Article 6 of the Annex to the « Resolution Relating to the Preparation of the New International Frequency List ».

* For the meaning of the expression " Eastern Hemisphere " see the definitions in Section I of Part I hereinafter.

PART I

GENERAL PROVISIONS

Section I

DEFINITIONS

1. The words " *Radio Regulations* " mean the Radio Regulations annexed to the International Telecommunication Convention signed at Atlantic City in 1947 or any revision which may replace them, once it has become effective.

2. The words " *Interim Report* " mean all the documents prepared by the First Session of the Conference, either in conclusion of its work, or to prepare for the Second Session. These documents form four volumes :

Volume I : Report prepared at the First Session together with Annex I—Minimum and Maximum Range Charts for use as a Guide to the Allotment of Frequencies.

Volume II : Final Report on the Plan for the Allotment of Frequencies for the Aeronautical Mobile OR Service.

Volume III : Interim Report on the Establishment of the Plan for the Allotment of Frequencies for the Aeronautical Mobile R Service.

Volume IV : Recommendations and Resolutions.

3. The word " *Plan* " means " *The Geneva Plan* " for the Aeronautical Mobile Service, as given in this document.

4. *Terminology :*

(a) The Conference has observed that certain doubts might arise in regard to the terms used for the frequency distribution, and that such doubts are apt to lead to confusion.

The terms used by the Conference are therefore given below :

Distribution to	French	English	Spanish
Services	Allocation (allouer)	Allocation (to allocate)	Distribución (Distribuir)
Areas, Regions	Attribution (attribuer)	Allotment (to allot)	Distribución (Distribuir)
Stations	Assignation (assigner)	Assignment (to assign)	Asignación (Asignar)

(b) For *technical words or expressions* the Conference has taken the definitions given in Articles 1 and 2 of the Radio Regulations.

5. The definitions of the categories *R* and *OR* in the Aeronautical Mobile Service are given in Nos. 256 and 257 of the Radio Regulations, as follows :

Category R applies to communications between any aircraft and those aeronautical stations primarily concerned with the safety and regularity of flight along national or international civil air routes.

Category OR applies to communications between any aircraft and aeronautical stations other than those primarily concerned with flight along national or international civil air routes.

6. To simplify this document, the Conference has used the expressions " *Western Hemisphere* " and " *Eastern Hemisphere* ".

(a) The *Western Hemisphere* is Region 2 of the ITU, whose boundaries are defined in Chapter III, Article 5 of the Radio Regulations.

(b) The *Eastern Hemisphere* is the whole of Regions 1 and 3 of the ITU whose boundaries are defined in Chapter III, Article 5 of the Radio Regulations.

The areas and sub-areas are based on the frontiers of the Western and Eastern Hemispheres (lines B and C defined in Nos. 105 and 106 of the Regulations).

A map showing the outlines of ITU Regions 1, 2 and 3 is shown on page 286 of the Radio Regulations.

7. 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.

8. A *Major World Air Route Area (MWARA)* is an area embracing a certain 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.

9. *Regional and Domestic Air Routes* are all those using the Aeronautical Mobile R Service not covered by the definition of Major World Air Routes in paragraph 7 above.

10. A *Regional and Domestic Air Route Area (RDARA)* is one embracing a certain number of the air routes defined in the foregoing paragraph.

Section II

TECHNICAL AND OPERATIONAL PRINCIPLES USED FOR THE ESTABLISHMENT OF THE PLAN OF ALLOTMENT OF FREQUENCIES IN THE AERONAUTICAL MOBILE "R" AND "OR" SERVICES

ARTICLE 1

DETERMINATION OF CHANNEL WIDTH

1. Frequency Separation.

The Conference adopted frequency separations adequate to permit high capacity means of communication, as indicated in the following table :

Bands	*Separation*	*Band*	*Separation*
2850- 3155 kc/s	7 kc/s	8815- 9040 kc/s	8.5 kc/s
3400- 3500 kc/s	7 kc/s	10005-10100 kc/s	9 kc/s
3900- 3950 kc/s	7 kc/s	11175-11400 kc/s	9.5 kc/s
4650- 4750 kc/s	7 kc/s	13200-13360 kc/s	10 kc/s
5450- 5480 kc/s	7.5 kc/s	15010-15100 kc/s	10 kc/s
5480- 5730 kc/s	7.5 kc/s	17900-18030 kc/s	10 kc/s
6525- 6765 kc/s	7.5 kc/s		

(1) It is assumed that A3 modulation frequencies will be limited to 3000 cycles and that the sideband radiation of A1 emissions will not exceed that of A3 emissions. The use of a receiver with good selectivity characteristics is assumed.

(2) The use of channels as derived from the above table, for the various classes of emissions (A1, A2, A3, A4 and F1), will be subject to special arrangements by the administrations concerned in order to avoid the interference which may result from the simultaneous use of the same channel for several classes of emission, no inherent priority being given to any particular class of emission.

(3) It was recognized that as a practical matter it might be possible for two or more A1 channels to be derived from each of the channels provided under this frequency separation plan and that there is a present requirement for manual telegraph communication in many parts of the world.

(4) The grouping of adjacent channels derived from the above table to permit the satisfaction of particular requirements, will be subject to special arrangements by the administrations concerned.

(5) The arrangements contemplated in (2), (3) and (4) above should be made under the provisions of Article 40 of the International Telecommunication Convention and Article 4 of the Radio Regulations.

2. Frequencies to be allotted.

The following is a list of frequencies to be allotted in the exclusive aeronautical mobile bands, on the basis of the frequency separation provided for under paragraph 1 above. At the top and bottom of each column is shown, in percentage, the maximum deviation of the first and last frequency of each band which may be permitted in the direction of the band edge, assuming double sideband modulation with a maximum modulation frequency of 3000 cycles.

Band:	*2850-3155 kc/s*	*3400-3500 kc/s*	*3900-3950 kc/s**	*4650-4750 kc/s*
	(0.035%)	(0.044%)	(0.025%)	(0.032%)
	2854	3404.5	3904	4654.5
	2861	3411.5	3911	4661.5
	2868	3418.5	3918	4668.5
	2875	3425.5	3925 (7) OR	4675.5 (7) R
	2882	3432.5	3932	4682.5
	2889	3439.5	3939	4689.5
	2896	3446.5 (14) R	3946	4696.5
	2903	3453.5		
	2910	3460.5	(0.025%)	4703.5
	2917	3467.5		4710.5
	2924	3474.5		4717.5
	2931 (24) R	3481.5		4724.5 (7) OR
	2938	3488.5		4731.5
	2945	3495.5		4738.5
	2952			4745.5
	2959	(0.043%)		
	2966			(0.032%)
	2973			
	2980			
	2987			
	2994			
	3001			
	3008			
	3015			
	3023.5 R + OR			
	3032			
	3039			
	3046			
	3053			
	3060			
	3067			
	3074			
	3081			
	3088 (18) OR			
	3095			
	3102			
	3109			
	3116			
	3123			
	3130			
	3137			
	3144			
	3151			
	(0.032%)			

* This band was considered at the request of the delegates of the countries of I.T.U. Region 1.

Band: *5450-5480 kc/s* (0.018%)	*5480-5730 kc/s* (0.018%)	*6525-6765 kc/s* (0.023%)	*8815-9040 kc/s* (0.022%)	*10 005-10 100 kc/s* (0.04%)
***5454	5484	6529.5	8820	10 012
***5461,5 R	5491.5	6537	8828.5	10 021
***5469 (4)	5499	6544.5	8837	10 030
***5476,5	5506.5	6552	8845.5	10 039
	5514	6559.5	8854	10 048 R
	5521.5	6567	8862.5	10 057 (10)
	5529	6574.5	8871	10 066
	5536.5	6582	8879.5	10 075
	5544	6589.5	8888 R	10 084
	5551.5	6597 R	8896.5 (18)	10 093
	5559	6604.5 (21)	8905	
	5566.5	6612	8913.5	(0.04%)
	5574 R	6619.5	8922	
	5581.5 (26)	6627	8930.5	
	5589	6634.5	8939	
	5596.5	6642	8947.5	
	5604	6649.5	8956	
	5611.5	6657	*/**8961.5	
	5619	6664.5		
	5626.5	6672	8967	
	5634	6679.5	8975.5	
	5641.5		8984	
	5649	*6685	8992.5 OR	
	5656.5	*6687.5	9001 (9)	
	5664	6693	9009.5	
	5671.5	6700.5	9018	
		6708	9026.5	
	5680 R+OR	66715.5 OR	9035	
		6723 (12)		
	5688	6730.5	(0.022%)	
	5695.5	6738		
	5703 OR	6745.5		
	5710.5 (6)	6753		
	5718	6760.5		
	5725.5			
		(0.022%)		
	(0.026%)			

* Available for A1 emission only.

** It is necessary that only equipment having a high degree of stability be used on this channel.

*** These frequencies are included in the Plan in accordance with a recommendation of Region II I.T.U. (Washington 1949).

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*
	(0.022%)	(0.019%)	(0.02%)	(0.01955%)
	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
	11 209	13 235.5	15 046	17 936.5
	11 218.5	13 245.5	15 056	17 946.5
	11 228	13 255.5	15 066	17 956.5
	11 237.5		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
		13 304.5	(0.02%)	18 003.5
	11 280.5	13 314.5		18 013.5
	11 290	13 324.5		18 023.5
	11 299.5	13 334.5		
	11 309	13 344.5		(0.0194%)
	11 318.5	13 354.5		
	11 328			
	11 337.5	(0.0187%)		
	11 347			
	11 356.5			
	11 366			
	11 375.5			
	11 385			
	11 394.5			
	(0.022%)			

OR (11) — R (13) — OR (6) — R (10) — OR (10) — R (7) — OR (6)

3. Channels Common to R and OR Services.

(1) The channels common to the R and OR services, centered at 3023.5 and 5680 kc/s are authorized for use world-wide as follows :

(a) aboard aircraft for :

— communications with approach and aerodrome control,

— communication with an aeronautical station when other frequencies of the station are either unavailable or unknown ;

(b) at aeronautical stations for aerodrome and approach control under the following conditions :

— for approach control with power limited to a value that will produce 20 μv/m at 100 km and in any case no more than 20 watts in the antenna circuit ;

— for aerodrome control with the power limited to a value that will produce 20 μv/m at 40 km and in any case no more than 20 watts in the antenna circuit ;

special attention must be given in each case to the type of antenna used in order to avoid harmful interference ;

* Available for A1 emission only.

*** Although the separation between 17 966.5 and 17 975 kc/s and between 17 975 and 17 983.5 kc/s is smaller than the standard separation adopted for this band in paragraph 1 above, the use of the different classes of emission is contemplated on the channel centered at this frequency in the same manner as on the other channels.

— the power of aeronautical stations which use these frequencies and which operate under the conditions presented above may be increased through I.T.U. and/or I.C.A.O. regional agreements to the extent necessary to meet certain operational requirements.

(c) for intercommunication between mobile stations engaged in coordinated search and rescue operations at the scene of a disaster.

(2) The specific application of these common channels for these purposes may be decided at regional aeronautical conferences.

(3) With respect to the use of 5680 kc/s for approach and aerodrome control, it is recognized that this frequency is not appropriate for these purposes and its use should be abandoned as soon as possible. In the meantime it should be used with careful regard to its propagation characteristics.

(4) These channels may be used for A1 or A3 emission, in accordance with special arrangements. They shall not be subdivided.

4. Adjacent Channels.

In the interest of the suppression of adjacent channel interference, the Conference in preparing its Plan has endeavoured to avoid, as far as possible, the allotment of adjacent channels within the same areas unless such allotments were specifically requested.

ARTICLE 2

TECHNICAL PRINCIPLES AND STANDARDS

1. Introduction.

In developing the allotment plan it was necessary for the Conference to make a number of assumptions, and to develop a means for the determination of the areas of service and areas of interference for each assignable frequency. To facilitate this work a large number of curves were prepared, and technical standards adopted. These were published together with an explanation of their use as part of Volume I of the Interim Report, specifically Sections II and III and Annex I. A brief summary of this information follows :

2. Radiated powers.

(a) A1 emissions :

Ground station	1.0 kilowatt radiated (peak),
Aircraft	50 watts radiated (peak).

(b) A3 emissions :

Ground station	4.0 kilowatts radiated (peak), 100% modulated,
Aircraft	200 watts radiated (peak), 100% modulated.

3. Bandwidths.

See Art. 1 para. **1.** (1).

4. Noise levels.

(a) Local noise level at the aircraft assumed 5 μv/m.

(b) Atmospheric noise level was classified as to noise grade and a series of charts for each grade utilized. This gives the field intensity necessary to provide 15 db signal-to-noise ratio 90% of the time for the reception of A3 with a receiver having a bandwidth of 6 kc/s.

5. Accepted signal-to-noise and signal-to-interference ratios.

(a) A3 — 15 db signal-to-noise or signal-to-interference ratio.

(b) A1 — 0 db signal-to-noise or signal-to-interference ratio.

6. Antennas.

(a) Aircraft — Effective height assumed 1 m.

(b) Ground station — Efficiency of antenna was assumed great enough so that receiver noise is never a controlling factor in limiting the maximum range.

7. Required field intensity.

(a) A3 — 28 μv/m for 15 db above 5 μv/m. As in the future with new aircraft and with properly serviced used aircraft it will be possible to reduce the noise level below 5 μv/m. a value of 20 μv/m was therefore accepted.

(b) A1 — 5 μv/m.

8. Signal-to-interference (protection) ratios.

(a) A3 — 30 db at the aircraft at the limit of the service range downgraded to 25 db in individual cases where additional allotment were thereby made possible. This was finally reduced to 15 db (See paragraph 12).

(b) A1 — 20 db and downgraded to 15 db in individual cases for the same reasons as given in *(a)* above.

9. Propagation characteristics.

Skywave was assumed at all times.

10. Channel Loading and Capacity.

The previous paragraphs have outlined the standards which were used by the Conference in determining the order of frequencies which would be required to serve any particular aircraft operation and in determining the extent to which any particular frequency could be repeated throughout the world and used simultaneously to serve different air traffic areas. Certain other assumptions were necessary in order to determine the number of frequencies required to handle the volume of communications which might arise in the conduct of any particular aircraft operation. The determination of this number depended upon two factors :

(1) the expected peak number of aircraft which would be in the air in any one operation during any hour,

(2) the number of aircraft that can be accommodated on any single frequency.

The Conference was unable to develop an exact means of determining the peak number of aircraft which might be expected because of the large number of variables. However, it developed and used an empirical formula based upon the length of the route, the number of weekly flights and the average speed of the aircraft utilised on that route. This formula produces a figure which the Conference believed was sufficiently close to that actually experienced to justify its use in the allotment of frequencies.

In the case of Major World Air Routes, the Conference determined that a family of frequencies could be expected to accommodate a maximum of 12 aircraft in one hour, but that if a route was served by a single frequency, that frequency could accomodate 10 aircraft. Because of the shortage of the number of frequencies available it was impossible to allot sufficient frequencies in the majority of cases to meet these standards. Therefore it is to be expected that under the Allotment Plan, a greater number of aircraft will frequently have to be accommodated, with a consequent loss of efficiency.

In the regional and domestic air routes it was found impossible to apply a single figure uniformly. In this case, it was assumed that it would be satisfactory to schedule aircraft communications for 40 minutes of each hour for a single frequency and for a somewhat longer time for a family of frequencies. The average time required for an aircraft to conduct its communications was determined for the various areas, and the capacity of a frequency was determined by dividing the useful minutes by the time occupied, the latter figure varying from 2 to 6 minutes.

In adopting the above procedures, the Conference took into account that, in regions where meteorological conditions and density of air traffic so require, it will be necessary to organize the broadcast of meteorological information destined to aircraft in flight on frequencies other than those used for routine air/ground communications. Otherwise requests for special weather information by aircraft in flight may overload those frequencies.

11. Application of Principles.

Based on the assumptions described and using the procedures discussed in detail in Volume I of the Interim Report, frequencies have been allotted for each operation to assure that all aircraft in flight will have available frequencies of the proper order considering the time of day, the season of the year and the phase of the sunspot cycle and that

sufficient frequencies of each order are allotted to give a reasonable assurance that all aircraft in flight will be able to handle promptly both routine and emergency communications.

12. Inability to meet standards.

The Conference was compelled because of the scarcity of available channels, to reduce the protection ratios mentioned in paragraph 8 above to 15 db for A3 in order to increase the repetition possibilities of frequencies. It nevertheless maintains its view that minimums of 25 and 15 db protection ratio for A3 and A1 respectively, as adopted, are necessary to provide sound standards for aeronautical mobile communications.

ARTICLE 3

INTERFERENCE RANGE CONTOURS

1. Definition of contours.

The transparencies inserted in the pocket at the end of this Volume show contours which indicate the minimum acceptable distance separating two ground stations of 1.0 kW radiated power (unmodulated) for the frequencies stated and for producing a protection ratio of 15 db of desired signal to interfering signal on the same frequency at an aircraft operating at the limit of the service range of the desired ground transmitter.

The service range is not included in the contour.

2. Type of map used.

These transparencies can be used only on a mercators projection world map of the scales given on each transparency, and *will not be suitable* for use on any other scale of mercators projection or any other projection. The world maps accompanying this volume, depicting RDARA and MWARA boundaries are to the correct scale and the transparencies carrying the interference range contours can be directly used on these maps.

3. Change of scale or projection.

Should any other mercator scale be desired, then, by using the coordinates given in the tables shown below, new interference range contours can be drawn to fit the new scales.

It must be remembered that when the new transparencies are constructed, the intersection of the vertical line of symmetry, *i.e.*, the meridian of longitude and the horizontal line of latitude should be at 00° latitude for the 00° contour, 20°N for the 20° contour, 40°N for the 40° contour, etc.

The coordinates shown in the above-mentioned tables are given with reference to the 180° meridian taken as the axis of symmetry for the construction of the contours.

4. Sharing conditions between areas.

The transparencies were constructed on the basis of sharing conditions agreed at the IAARC, namely :

MWARA to MWARA:

Bands: 3 - 6.6 Mc/s — night
9 -11.3 Mc/s — day
13 -18 Mc/s — time separation

Note: 6.6 Mc/s and 5.6 Mc/s conditions considered the same.

MWARA to RDARA:

Bands: 3 - 5.6 Mc/s — night
6.6-11.3 Mc/s — day
13 -18 Mc/s — time separation

RDARA to RDARA:

Bands: 3 - 4.7 Mc/s — night
5.6-11.3 Mc/s — day
13 -18 Mc/s — time separation

The additional contours for day included for 3, 3.5 and 4.7 Mc/s are for determining daylight sharing possibilities.

The data on which the contours are based will be found in tables 1, 2, 5 and 6 of Aer./Doc. 211, which was prepared by the First Session of the Conference.

5. Method of Use.

Take the MWARA or the RDARA maps accompanying this Volume and select the transparency for the frequency order and sharing conditions under consideration.

Place the center of the transparency (*i.e.*, the intersection of the axis of symmetry and the latitude line) over the boundary of the area or at the location of the transmitter. Note the latitude of this point and select the contour corresponding to this latitude. A transmitter located at any point outside the contour will result, as defined in paragraph 1 above, in a protection ratio of better than 15 db. Any transmitter located at a point inside the contour will result in a protection ratio of less than 15 db.

For the Northern Hemisphere the contours should be used in their natural position as published, but for the Southern Hemisphere the transparency should be inverted. This point should be carefully observed when following the boundaries of areas which involve the transition of the equator.

6. Data for tracing interference contours.

3.0 Mc/s, NIGHT

Latitude	00°		20°		40°		50°		60°	
Interference Range	N-S 31.5°	E-W 31.5°	N-S 31.5°	E-W 33.6°	N-S 31.5°	E-W 41°	N-S 31.5°	E-W 49°	N-S 31.5°	E-W 64°
Co-ordinates for plotting of contours	Long.	Lat.	Long.	Lat.	Long.	Lat.	Long.	Lat.	Long.	Lat.
	180°	31.5°N	180°	51.5°N	160°W	70°N	127°W	70°N	106°W	70°N
	155°W	20°N	160°W	47°N	140°W	60°N	125°W	60°N	115°W	60°N
	148.5°W	00°	150°W	39°N	138°W	50°N	131°W	50°N	128°W	50°N
	155°W	20°S	146°W	30°N	140°W	40°N	138°W	40°N	140°W	40°N
	180°	31.5°S	146°W	20°N	143°W	30°N	150°W	29°N	150°W	35°N
			150°W	07°N	150°W	22°N	160°W	23°N	160°W	32°N
			160°W	05°S	160°W	14°N	167°W	20°N	170°W	29°N
			170°W	10°S	169°W	10°N	180°	18,5°N	180°	28.5°N
			180°	11.5°S	180°	08.5N°				

3.5 Mc/s, NIGHT

Latitude	00°		20°		40°		50°		60°	
Interference Range	N-S 36°	E-W 36°	N-S 36°	E-W 38°	N-S 36°	E-W 47°	N-S 36°	E-W 56°	N-S 36°	E-W 73°
Co-ordinates for plotting of contours	Long.	Lat.	Long.	Lat.	Long.	Lat.	Long.	Lat.	Long.	Lat.
	180°	36°N	180°	56°N	140°W	70°N	118°W	70°N	93°W	70°N
	170°W	35°N	170°W	55°N	133°W	60°N	119°W	60°N	100°W	68°N
	159°W	30°N	160°W	53°N	131°W	50°N	124°W	50°N	110°W	58°N
	150°W	21°N	150°W	47°N	133°W	40°N	132°W	40°N	120°W	50°N
	145°W	10°N	144°W	40°N	140°W	27°N	140°W	32°N	130°W	43°N
	144°W	00°	140°W	20°N	150°W	16°N	150°W	24°N	140°W	35°N
	145°W	10°S	145°W	10°N	160°W	08°N	160°W	17°N	150°W	30°N
	150°W	21°S	150°W	00°	170°W	05°N	170°W	15°N	160°W	27°N
	160°W	30°S	160°W	10°S	180°	04°N	180°W	14°N	170°W	25°N
	170°W	35°S	170°W	14°S					180°	24°N
	180°	36°S	180°	16°S						

4.7 Mc/s, NIGHT

Latitude	00°		20°		40°		50°		60°	
Interference Range	N-S 50°	E-W 50°	N-S 50°	E-W 53°	N-S 50°	E-W 65°	N-S 50°	E-W 77°	N-S 50°	E-W 100°
Co-ordinate for plotting of contours	Long.	Lat.	Long.	Lat.	Long.	Lat.	Long.	Lat.	Long.	Lat.
	160°W	47°N	180°	70°N	103°W	70°N	83°W	70°N	50°W	70°N
	147°W	40°N	150°W	66°N	110°W	50°N	94°W	60°N	78°W	60°N
	138°W	30°N	130°W	50°N	115°W	40°N	103°W	50°N	98°W	50°N
	133°W	20°N	126°W	40°N	127°W	20°N	114°W	40°N	112°W	40°N
	131°W	10°N	125°W	30°N	140°W	06°N	124°W	30°N	130°W	28°N
	130°W	00°	127°W	20°N	150°W	02°S	134°W	21°N	140°W	19°N
	131°W	10°S	130°W	07°N	160°W	07°S	140°W	16°N	160°W	12°N
	133°W	20°S	140°W	10°S	170°W	09°S	150°W	07°N	170°W	10.5°N
	138°W	30°S	150°W	20°S	180°	10°S	160°W	05°N	180°	10°N
	147°W	40°S	170°W	29°S			180°	00°		
	160°W	47°S	180°	30°S						
	170°W	48°S								
	180°	50°S								

5.6 Mc/s AND 6.6 Mc/s, NIGHT

Latitude	00°		20°		40°		50°		60°	
Interference Range	N-S 58°	E-W 58°	N-S 58°	E-W 63°	N-S 58°	E-W 76°	N-S 58°	E-W 92°	N-S 58°	E-W 116°
Co-ordinates for plotting of contours	Long.	Lat.	Long.	Lat.	Long.	Lat.	Long.	Lat.	Long.	Lat.
	180°	58°N	130°W	70°N	80°W	70°N	48°W	70°N	08°W	70°N
	122°W	00°	120°W	60°N	92°W	60°N	73°W	60°N	66°W	60°N
	180°	58°S	118°W	50°N	98°W	50°N	88°W	50°N	88°W	50°N
			115°W	40°N	104°W	40°N	99°W	40°N	104°W	40°N
			115°W	30°N	111°W	30°N	110°W	30°N	120°W	25°N
			117°W	20°N	118°W	20°N	120°W	20°N	125°W	20°N
			120°W	10°N	127°W	10°N	130°W	10°N	143°W	10°N
			122°W	00°	134°W	00°	146°W	00°	180°	02°N
			130°W	10°S	150°W	10°S	180°	08°S		
			138°W	20°S	180°	18°S				
			150°W	30°S						
			180°	38°S						

3.0 AND 3.5 Mc/s, DAY

Latitude	00°		20°		40°		60°	
Interference Range	N-S 6.3°	E-W 6.3°	N-S 6.3°	E-W 6.7°	N-S 6.3°	E-W 8.5°	N-S 6.3°	E-W 12.6°

4.7 Mc/s, DAY

Latitude	00°		20°		40°		60°	
Interference Range	N-S 10.8°	E-W 10.8°	N-S 10.8°	E-W 11.5°	N-S 10.8°	E-W 14°	N-S 10.8°	E-W 21.6°

5.6 Mc/s, DAY

Latitude	00°		20°		40°		60°	
Interference Range	N-S 13.6°	E-W 13.6°	N-S 13.6°	E-W 14.5°	N-S 13.6°	E-W 17.6°	N-S 13.6°	E-W 27.2°

6.6 Mc/s, DAY

Latitude	00°		20°		40°		60°	
Interference Range	N-S 17.2°	E-W 17.2°	N-S 17.2°	E-W 18.3°	N-S 17.2 °	E-W 22.4°	N-S 17.2°	E-W 34.4°

Note: For 3.0, 3.5, 4.7, 5.6 and 6,6 day intermediate plotting points are unncessary as contours approximate the circumference of a circle.

9.0 Mc/s, DAY

Latitude	00°		20°		40°		50°		60°	
Interference Range	N-S 34.3°	E-W 34.3°	N-S 34.3°	E-W 36.5°	N-S 34.3°	E-W 44.8°	N-S 34.3°	E-W 53.5°	N-S 34.3°	E-W 69°
Co-ordinates for plotting of contours	Long.	Lat.	Long.	Lat.	Long.	Lat.	Long.	Lat.	Long.	Lat.
	180°	34°N	180°	54°N	148°W	70°N	122°W	70°N	100°W	69°N
	170°W	33°N	160°W	50°N	135°W	60°N	122°W	60°N	111°W	60°N
	160°W	28°N	150°W	42°N	133°W	50°N	127°W	50°N	120°W	53°N
	150°W	17°N	145°W	30°N	135°W	40°N	134°W	40°N	130°W	45°N
	146°W	00°	146°W	20°N	140°W	28°N	140°W	34°N	140°W	37°N
	150°W	17°S	147°W	10°N	150°W	17°N	150°W	24°N	150°W	32°N
	160°W	28°S	153°W	00°	160°W	11°N	160°W	20°N	160°W	28.5°N
	170°W	33°S	160°W	08°S	170°W	07°N	170°W	17°N	170°W	26°N
	180°	34°S	170°W	13°S	180°	06°N	180°	16°N	180°	25°N
			180°	14°S						

10,0 Mc/s, DAY

Latitude	00°		20°		40°		50°		60°	
Interference Range	N-S 49.5°	E-W 49.5°	N-S 49.5°	E-W 53°	N-S 49.5°	E-W 64.5°	N-S 49.5°	E-W 78°	N-S 49.5°	E-W 100°
Co-ordinate for plotting of contours	Long.	Lat.	Long.	Lat.	Long.	Lat.	Long.	Lat.	Long.	Lat.
	180°	49.5°N	180°	69.5°N	102°W	70°N	100°W	70°N	50°W	70°N
	170°W	49°N	160°W	68°N	103°W	60°N	90°W	60°N	70°W	66°N
	160°W	46°N	140°W	62°N	109°W	50°N	101°W	50°N	80°W	60°N
	150°W	41°N	130°W	52°N	115.5W	40°N	110°W	40°N	98°W	50°N
	140°W	32°N	127°W	40°N	120°W	31°N	120°W	30°N	110°W	42°N
	133°W	20°N	127°W	30°N	130°W	17°N	130°W	22°N	120°W	36°N
	131°W	10°N	130°W	11°N	140°W	07°N	140°W	12°N	130°W	30°N
	130.5°W	00°	140°W	08°S	150°W	00°	150°W	07°N	140°W	22°N
	131°W	10°S	150W°	18°S	160°W	06°S	160°W	03°N	150°W	16°N
	133°W	20°S	160°W	25°S	170°W	09°S	170°W	01°N	160°W	13°N
	140°W	32°S	170°W	28°S	180°	09.5°S	180°	00.5°N	170°W	11°N
	150°W	41°S	180°	29.5°S					180°	10.5°N
	160°W	46°S								
	170°W	49°S								
	180°	49.5°S								

11,3 Mc/s, DAY

Latitude	00°		20°		40°		50°		60°	
Interference Range	N-S 54°	E-W 54°	N-S 54°	E-W 58°	N-S 54°	E-W 71°	N-S 54°	E-W 85°	N-S 54°	E-W 109°
Co-ordinates for plotting of contours	Long.	Lat.	Long.	Lat.	Long.	Lat.	Long.	Lat.	Long.	Lat.
	180°	54°N	145°W	70°N	93°W	70°N	64°W	70°N	30°W	70°N
	160°W	52°N	128°W	60°N	98°W	60°N	80°W	62°N	71°W	60°N
	150°W	47°N	123°W	50°N	104°W	50°N	95°W	50°N	90°W	50°N
	140°W	40°N	120°W	40°N	109°W	40°N	110°W	35°N	107°W	40°N
	132°W	30°N	120°W	30°N	120°W	24°N	120°W	26°N	120°W	32°N
	128°W	20°N	122°W	20°N	130°W	12°N	140°W	08°N	140°W	15°N
	127°W	10°N	124°W	10°N	140°W	00°	150°W	03°N	150°W	11°N
	126°W	00°	130°W	04°S	150°W	06°S	160°W	01°S	160°W	08°N
	127°W	10°S	140°W	17°S	160°W	10°S	170°W	03°S	170°W	07°N
	128°W	20°S	150°W	25°S	180°	14°S	180°	04°S	180°	06°N
	132°W	30°S	170°W	33°S						
	140°W	40°S	180°	34°S						
	150°W	47°S								
	160°W	52°S								
	180°	54°S								

Section III

RECOMMENDATIONS AND RESOLUTIONS

ARTICLE 1

PROVISIONS OF A SPECIAL OR TEMPORARY NATURE

Recommendation No. 1

to the Provisional Frequency Board concerning the Protection of Radiocommunications at the Edges of the Frequency Bands of the Aeronautical Mobile Service

The International Administrative Aeronautical Radio Conference,

CONSIDERING :

that, between 2850 kc/s and 27 500 kc/s, the frequency bands allocated to the Aeronautical Mobile Service and those allocated to the services under the jurisdiction of the Provisional Frequency Board have common dividing points ;

RECOMMENDS :

that every appropriate step be taken by the Provisional Frequency Board in order that aeronautical radiocommunications, as provided for by the International Administrative Aeronautical Radio Conference [1], will be protected at common dividing points against possible radiation from stations of other services outside the bandwidth that will be defined by the Provisional Frequency Board for each of these stations.

Recommendation No. 2

to the High Frequency Broadcasting Conferences [2], concerning the Protection of Aeronautical Radiocommunications at the Edges of the Frequency Bands of the Aeronautical Mobile Service

The International Administrative Aeronautical Radio Conference,

CONSIDERING :

that, between 2850 kc/s and 27 500 kc/s, the frequency bands allocated to the Aeronautical Mobile Service and those allocated to the broadcasting service have common dividing points ;

RECOMMENDS :

that every appropriate measure be taken by the High Frequency Broadcasting Conferences, in order that aeronautical radiocommunications, as provided for by the International Administrative Aeronautical Radio Conference [1], will be protected at common dividing points against possible radiation from broadcasting stations outside the 10 kc/s bandwith as recommended for each of these stations by the High Frequency Broadcasting Conference, Atlantic City (1947).

[1] For the precautions taken by the Conference, see Part 1, Section II, Article 1, § 1.

[2] This recommendation was addressed to the High Frequency Broadcasting Conference held at Mexico City (1948).

Recommendation No. 3

to the Provisional Frequency Board relating to Frequency Assignments to Stations in the Aeronautical Fixed Service

The International Administrative Aeronautical Radio Conference,

CONSIDERING :

that it is necessary to avoid the possibility of mutual interference between emissions of stations in the Aeronautical Mobile R Service and those in the Aeronautical Fixed Service, especially in the frequent cases where an aeronautical station is located at the same place as an aeronautical fixed station ;

RECOMMENDS :

that, when assigning to a station of the Aeronautical Fixed Service a frequency in a fixed service band contiguous with an Aeronautical Mobile R Service band, the Provisional Frequency Board take care, to the greatest possible extent, to select a frequency which will allow a sufficient separation (approximately 15 kc/s if possible) between that frequency and the junction of the bands, to avoid mutual interference.

Recommendation No. 4

concerning the Preparation of Station Frequency Assignments for the Aeronautical Mobile R Service

The International Administrative Aeronautical Radio Conference,

CONSIDERING :

1. that the next step following the adoption of an Aeronautical Mobile R Service frequency allotment plan by this Conference is the assignment of frequencies to stations on the basis of that plan;

2. that it is essential, in view of the nature of the international aeronautical operations involved, that those frequency assignments be coordinated between the countries interested in each area as a whole, both for the MWARA's and for the RDARA's;

3. that the United Nations has recognized the I.C.A.O. as the specialized international agency for the coordination of questions concerning international civil aviation;

4. that in the case of a large number of RDARA's and in the majority of MWARA's the interested administrations deem it convenient to arrange (via the appropriate channels) for the I.C.A.O. to convene regional or special meetings, as appropriate and necessary, in order that the administrations concerned may develop their frequency assignment plans as referred to in (1) above and notify the Provisional Frequency Board accordingly;

5. that, however, a different situation exists in other areas such as RDARA 1, as a consequence of the fact that not all countries in those areas are members of I.C.A.O.,

RECOMMENDS :

(a) that for RDARA's and MWARA's comprising only countries which are members of I.C.A.O., this organization should take the measures necessary to hold regional or special meetings, for the purpose contemplated in (4) above ;

(b) that in RDARA's and MWARA's where the interested countries are not all members of I.C.A.O. but where nevertheless the interested administrations will find it possible to convene I.C.A.O. meetings for the purpose of establishing their station frequency assignments, that course be followed ;

(c) that in RDARA 1 those station frequency assignments be established by means of regional agreements or special arrangements concluded by I.T.U. member states comprised in that area ;

(d) that in the sub-areas including countries which are members neither of I.C.A.O. nor of I.T.U. the frequencies allotted to the said sub-areas be assigned to stations by regional agreements or special arrangements.

(e) that, if possible, the agreements or special arrangements mentioned in *(a)*, *(b)*, *(c)* and *(d)* above be concluded before September 1950.

ARTICLE 2

PROVISIONS OF A GENERAL OR PERMANENT NATURE

Resolution No. 5

concerning the Handling of Public Correspondence aboard Aircraft

The International Administrative Aeronautical Radio Conference,

CONSIDERING :

1. that paragraph 255 of the Radio Regulations provides : "Administrations shall not permit public correspondence in the frequency bands allocated exclusively to the Aeronautical Mobile Service, unless allowed by special aeronautical regulations adopted by an Aeronautical Administrative Conference to which all interested members of the Union have been invited. Such regulations must recognize the absolute priority of safety and control messages " ;

2. that aircrafts stations are permitted to communicate with stations in the Maritime Mobile Service and may transmit to such stations public correspondence on frequencies allocated to that service provided that the I.C.A.O. Air Traffic Control Regulations are adhered to (Radio Regulations, 1947, pars. 569 to 572, 668, 761, 771, 779 and 792),

RESOLVES :

(a) that the transmission of public correspondence be not permitted on the frequencies allocated exclusively to the Aeronautical Mobile Service ;

(b) that in those cases where provision for the handling of public correspondence is deemed necessary, aircraft stations be authorized by the various administrations to employ frequencies of the Maritime Mobile Service for handling of public correspondence with

stations in that service, provided that such handling of public correspondence will in no case interfere with the transmission or reception of messages relating to the safety or control of the aircraft and that for these cases special arrangements be made in accordance with Article 40 of the International Telecommunication Convention (1947), and,

(c) that in the case when messages of public correspondence are handled on frequencies of the Maritime Mobile Service, aircraft be required to be in a position to observe simultaneous and continuous watch on the frequencies used for aeronautical mobile communications.

Resolution No. 6

concerning the Form of the Frequency List established by the International Administrative Aeronautical Radio Conference for Bands allocated to the Aeronautical Mobile R Service

The International Administrative Aeronautical Radio Conference,

CONSIDERING :

1. that it was the task of the Conference to prepare a list of frequencies of stations in the Aeronautical Mobile Service for submission to the Provisional Frequency Board for incorporation into the draft new International Frequency List which is being prepared by this Board and which will subsequently be considered by the Extraordinary Administrative Conference ;
2. that one of the objects of a frequency list is to establish a basis on which an administration may make a choice of a frequency for notification to the International Frequency Registration Board (I.F.R.B.) which, in accordance with its rules, will include the frequency in the Master Frequency Register ;
3. that in the special case of the Aeronautical Mobile R Service a list showing only the different aeronautical stations using a particular frequency would not serve the purpose. The more important information is, in effect, an indication of the area in which the use of each particular frequency is authorised ;
4. that, with the exception of the Aeronautical Mobile OR Service, the information submitted on Form 2 by the various administrations, in accordance with the decisions of the International Administrative Radio Conference, is not an adequate guide in the consideration of the problem of the allotment of frequencies to the Aeronautical Mobile R Service, for the reasons that :
   (a) the information contained thereon was prepared on the basis of an uncoordinated system of frequency assignments and its use would require a greater number of frequencies than is available ;
   (b) it does not indicate the areas of aircraft operations served by the various aeronautical stations ; and
   (c) it was prepared on the basis of systems of aircraft operations which in many respects are out-of-date ;
5. that as a result of the wartime development of new methods of aircraft manufacture and operations and in view of the increasing interest shown in air transport, both for passengers and freight, the civil air transport system is undergoing rapid expansion and, in addition, its methods of operation and its organization are changing rapidly ;
6. that it is the role of the I.T.U. to ensure that the most equitable distribution of frequencies is made among the various branches of the aeronautical communication service ; and

7. that the aeronautical mobile service should have the maximum freedom to adopt that method of frequency employment considered best suited to its operational requirements ;

RESOLVES :

(a) that it is not necessary to present the basic allotment plan of this Conference to the Provisional Frequency Board, in the form of the International Frequency List, as provided for in Appendix 6 (List I), to the Radio Regulations) ;

(b) that these allotments (per area and sub-area) can appear as suitable entries in colum 4a of List I of the new International Frequency List to be prepared by the Provisional Frequency Board ; those headings can be printed in bold type or in italics and will serve to govern the general use of the channels of the Aeronautical Mobile R Service. The following reference can be inserted underneath these entries : " (I.A.A.R.C.) " ;

(c) that the insertion of those entries must not prevent the appearance in the new International Frequency List of any specific assignments to stations, provided that these assignments were notified by the administrations within the required time and in accordance with the provisions of Article 11 of the Radio Regulations ;

(d) that in the event the assignments to stations are made in conformity with the entries specifying the general use of each channel (*i.e.* with the plan developed by the I.A.A.R.C.), they be recorded in the REGISTRATION column. If the assignments are not in conformity with the said entries, they be recorded in the NOTIFICATION column unless allotments additional to those in the I.A.A.R.C. Plan (provided that the technical standards adopted by the I.A.A.R.C. are respected) permit the frequency to be listed in the REGISTRATION column. Article 11 of the Radio Regulations would establish the procedure to be observed in both cases ;

(e) that all notifications made before the publication of the new International Frequency List and included in its first edition would bear the same date, that is, the date of approval of the new International Frequency List. Any notification made afterwards would be published in supplements to the List (see number 470 of the Radio Regulations) ;

(f) that, however, assignments made in conformity with the allotment plan of the Conference be given no priority as among themselves, irrespective of the dates on which they will have been notified, and shall bear the same date, that is, the date of approval of the new International Frequency List ;

(g) that such interference or conflicts as may occur be dealt with by direct arrangements between the administrations concerned, as provided for by number 332 of the Radio Regulations.

Recommendation No. 7

concerning Coordination of Telecommunications between the Aeronautical and Maritime Services for the Requirements of Rescue Work at Sea

The International Administrative Aeronautical Radio Conference,

CONSIDERING :

1. that the Preparatory Committee to the International Administrative Aeronautical Radio Conference recommended that the subject of frequencies for distress and scene of action purposes should be considered by the Conference and, in order to assist in such

consideration, sent a letter to the Safety of Life at Sea and in the Air Conference (London) to request comments on the matter. Copies of the letter and of the reply are attached hereto as Appendices 1 and 2 respectively ;

2. that the Radio Regulations provide for the use of a number of frequencies available jointly to the Maritime and Aeronautical Services for use in the interest of safety, distress, and search and rescue. Appendix 3 attached hereto lists the paragraphs of the Radio Regulations, which outline the purposes for which the frequencies are to be used and the restrictions placed on such use ;

3. that, while it is agreed that much is yet to be done to ensure to the greatest extent the most effective use of telecommunications for the safety of life at sea and in the air, the Conference and the I.T.U. in general have gone as far as their fields of activity permit, considering the information available;

4. that the problems of safety of life at sea differ in major respects from those concerning the safety of life in the air. In the case of an aircraft, the time between imminence of distress and complete disaster may be very short. Therefore, aircraft place primary reliance on their ground operational organization to initiate and direct search and rescue operations. As aircraft normally fly the air path shortest in time between the point of origin and destination, they do not necessarily operate over the lanes used by ships. Moreover, weight and bulk limitations restrict the capability of airborne survival craft communication equipment and make it unsafe to rely solely on 500 kc/s as a means of initiation of search by surface vessels. For this reason, the International Administrative Radio Conference (1947), has provided (paragraph 180 of the Radio Regulations for the use of 8364 kc/s for aircraft survival equipment which, by reason of the long range characteristics of such a wave, ensures additional protection. Thus coastal stations are capable of intercepting distress signals and of informing the authorities participating in the operation of rescue facilities (paragraph 910 of the Radio Regulations) ;

5. that the foregoing considerations led to the creation of a Search and Rescue Organization within the framework of I.C.A.O., which organization calls upon many agencies, civil and government, surface and air, for assistance in case of distress (Appendix 4 hereto contains a detailed description of typical cases of distress, followed by search and rescue) ;

6. that communications with respect to distress of aircraft over the sea comprise three phases :—first the period of distress, next the period of search, and finally the rescue. In the first phase the aircraft places primary reliance on the aeronautical working frequencies and on organizations for the distress call and for the planning and execution of relief measures, and in the second phase various agencies join in the search for the distressed aircraft or its survivors. Similarly, aircraft can and frequently do join in the search for the distressed surface ships and survivors. If survivors, either of air or surface craft, are observed by air search, surface agencies must be directed to the location so that the final stage (*i.e.* rescue) may be completed. In the three phases of aeronautical operation (distress, search and rescue) the equipment and the means of communication at

present used by the various agencies concerned are believed to be inadequate. The distress frequency of 500 kc/s is available as a means of communication but this is neither satisfactory nor appropriate for the reasons that :

(a) 500 kc/s equipment with adequate power is too heavy and bulky for modern high speed aircraft ;

(b) antenna drag is excessive ;

(c) a long trailing antenna increases fire hazard due to lightning ;

(d) radiation efficiency of a fixed antenna is low.

The use of the frequency of 8364 kc/s, while partly solving the problem of long range distress communication, is unsuitable for scene of action short range communication and is useful only for communication with stations of the maritime mobile service (paragraph 571 of the Radio Regulations) ;

7. that there is required, therefore, for distress, search and rescue functions, scene of action frequencies of the order of 3 and 6 Mc/s which would be employed by those agencies joining in the search task and would be used for coordination of the efforts in conducting an efficient and thorough search. It should be noted that since the use of these frequencies would only occur in connection with coordinated operations which would of necessity have to be prearranged, there is no need for a watch to be maintained on these frequencies except by those actively participating in a search operation. Therefore consideration might be given to permitting the use of the frequencies 3023.5 kc/s and 5680 kc/s, allotted by the Conference for this and other purposes ; and

8. that the Preparatory Committee of Experts, London, 1948, which was charged with the study of the method of coordination of aviation, maritime and telecommunication interests on matters of safety at sea and in the air, and in which experts of the I.T.U. participated, in its Report of February 6, 1948 (see paragraph 21 of the Report, subparagraph F and paragraph 5 of the Annex) recommended coordination between the I.T.U., I.C.A.O. and the Intergovernmental Maritime Consultative Organization on matters of distress, search and rescue operations ;

RECOMMENDS :

(a) that, in accordance with Article 27 of the International Telecommunication Convention (1947), and the Report of the Preparatory Committee of Experts, London, 1948, the Administrative Council of the I.T.U. suggest to I.C.A.O. and to the Intergovernmental Maritime Consultative Organization the creation of a small working group composed of experts of the three organizations to study this subject with a view to the formulation of a coordinated plan of action which will ensure, in cases of distress, the maximum benefit from telecommunication facilities ; and

(b) that, in the meantime, on the basis of the provisions of the Radio Regulations cited in Appendix 3 hereof, and with the help of the frequencies set aside for the purpose, the I.C.A.O. take the necessary steps within its organization towards formulation of a plan of coordination of distress, search and rescue operations.

APPENDIX I

14 May, 1948

Secretary General,
International Conference of Safety of Life at Sea and in the Air,
c/o General Post Office,
LONDON

Dear Sir,

I am directed by the plenary assembly of the Preparatory Committee for the International Administrative Radio Aeronautical Conference, meeting here in Geneva, to call your attention to the following suggestion approved by that Conference :

" In connection with the allocation of special frequencies for distress and scene of action purposes, it is suggested that the Safety of Life at Sea and in the Air Conference now meeting in London make a recommendation to the World Aeronautical Radio Conference (International Administrative Aeronautical Radio Conference) concerning suitable frequencies for such purposes ".

It will be very much appreciated if any recommendations you may have on this subject be referred to the undersigned at your earliest convenience.

Sincerely yours,

Gerald C. GROSS
Assistant Secretary General

APPENDIX 2

59662 London 133/8 252 8 1614 Etat

To : Palais Wilson,

The Preparatory Committee for the International Administrative Radio Aeronautical Conference,

GENEVA,

The International Conference on Safety of Life at Sea and in the Air have received your telegram concerning the allocation of special frequencies for distress and scene of action purposes which might be used jointly for aviation and marine purposes STOP The Preparatory Committee of experts on the coordination of Safety at Sea and in the Air who recently met in London recognized that communications played an important part both in precautionary measures as well as in actual distress incidents and considered that it would be useful if the matter was examined by representatives of the three agencies concerned namely the International Civil Aviation Organization, the Intergovernmental Maritime Consultative Organization, and the International Telecommunication Union and the necessary coordination secured between them STOP The Committee further suggested that the International Civil Aviation Organization after further consideration of the matter should if it deems this desirable raise the matter of frequencies other than 500 kc/s with the other agencies named above STOP The International Conference on Safety of Life at Sea and in the Air feels that having regard to the fact that the allocation of frequencies falls within the field of the International Telecommunication Union and that representatives technically instructed on this matter by the three organizations are not in attendance at this Conference the best course would be for the matter to be dealt with as suggested by the Preparatory Committee of experts and recommends accordingly STOP Secretary-General International Conference on Safety of Life at Sea and in the Air — London.

APPENDIX 3

Provisions of the Radio Regulations, governing joint use of frequencies by the Aeronautical and Maritime Services

The following paragraphs of the Radio Regulations relate to the use of frequencies available for distress purposes either to the Maritime Mobile Service, or to the Aeronautical Mobile Service, or to both :

GENERAL PROVISIONS

239 — 271 — 378/79 — 570 — 571 — 598 — 599 — 761 — 762 — 775 — 779 — 780 — 805 — 861 862 — 865 — 871 — 891

PROVISIONS RELATING TO 500 kc/s

714 — 718 — 720 — 721 — 722 — 733 — 600 — 601

PROVISIONS RELATING TO 2182 kc/s

813 — 814 — 815 — 819 — 826 — 827 *

PROVISIONS RELATING TO 8364 kc/s

277 — 600 — 601

PROVISIONS RELATING TO 156.80 Mc/s

198 — 830 — 832

APPENDIX 4

Example of operation of air sea rescue services

Standard aeronautical procedures generally specify that an aircraft in distress or anticipating such circumstances will first attempt to contact the ground communication station having the receiving guard for this aircraft on the route frequency normally in use, for example 6577 kc/s. The ground station upon receipt of such advice immediately notifies the Air Traffic Control Centre which has the responsibility for further advice to the coordinated Air-Sea Rescue Service.

The ground communication station then immediately clears all other aircraft from 6577 kc/s, transferring them to the remaining channels of the frequency family authorized for this route, which, in this example, consists of 3395, 8577 and 11 369 kc/s, to permit of the exclusive use of 6577 kc/s for additional emergency communications. The ground station at this time also notifies via the remaining air ground channels, and available point-to-point circuits all other aircraft and ground stations in the area concerned to permit them to render any assistance possible.

In the ocean areas, all Government and Civil facilities available for life saving services, are coordinated as a combined unit under the Air-Sea Rescue Service Centre. This Center is tied closely by telephone and teletype lines with all agencies concerned and with the direction finding networks, and those agencies are alerted for immediate action by the Air-Sea Rescue Centre upon advice from the Air Traffic Control Centre of aircraft emergencies.

Multi-motored aircraft capable of long distance overseas flights and fully equipped with modern life saving apparatus are available to the Air-Sea Rescue Service for aeronautical and marine rescue, and, upon advice from the Air-Sea Rescue Centre, that there is emergency, they proceed immediately to the location where the aircraft has been reported to be in distress, followed, if advisable, by any available surface vessels. The Coastal Stations through the marine communication system also notify all vessels in the area concerned, for such assistance as they may be able to render.

* Relate to Region 1 only.

Should the distressed aircraft prove difficult to locate, and the search become extensive, it is probable that a large number of air and marine craft may assemble in a given area, thereby complicating the problem of efficient scene of action search control. No general radio frequency channels are presently authorized for such control service although in certain areas common frequency channels have been designated by the Military services to expedite their own activities at joint " Scene of Action " operations. Consequently, a great deal of communication is carried on between individual units engaged in the search and their respective home bases, to obtain the necessary coordination required for efficient search organization. Much of this communication is carried on the frequencies authorized for use of the air routes traversing the search area resulting in serious disruption to all other normal air-ground-air communications in this area.

Use of available Air-Sea Rescue Services is by no means restricted solely to the benefit of distressed aircraft but is utilized to a considerable extent in connection with life saving services rendered to marine craft. As an example of such aid to the marine services one of the most extensive aerial searches ever organized was recently conducted over a period of several weeks in the Central Pacific area to locate a barge carrying a small group of men, which had been cut loose from a towing tug in the vicinity of Palmyra Island due to lack of fuel. The towing vessel after refueling at Palmyra Island was unable to locate the barge. The Palmyra Island Aeronautical Communication station was notified by the tug of its difficulties and this advice was forwarded to the U.S. Coast Guard Headquarters at Honolulu. Air and marine craft of the Air-Sea Rescue Service then engaged in the search for the barge without success. During the succeeding days, as no trace of the barge was found, additional military and civil aircraft were pressed into service and the search area widened. Due to the long distance at which the aircraft were operating from their home base, it became necessary to establish temporary search control headquarters at Palmyra Island as well as additional temporary facilities for servicing such aircraft and subsistence for their crews. A Naval Aircraft Carrier was dispatched to the search area and aircraft from this vessel with the others surveyed large areas of the Pacific before finally locating the barge, which due to the strong ocean currents prevailing in this area, had drifted a considerable distance from its original location.

Communication between the temporary search headquarters at Palmyra Island and craft engaged in the search was carried on by the Palmyra Island aeronautical communication station on the frequencies utilized by the military services for their joint " Scene of Action " operations. The heavy communication load between Palmyra Island and the home bases of the search units at Honolulu was carried by the aeronautical point-to-point communication circuits between these points thereby leaving the air-route frequencies free for other essential communications.

Recommendation No. 8

concerning the Publication by the International Telecommunications Union of Certain Service Documents

The International Administrative Aeronautical Radio Conference, in response to a communication from the Secretary General of the International Telecommunication Union dated April 26, 1948 (a copy of which is appended hereto) requesting the advice of the Conference regarding the publication of certain service documents,

RECOMMENDS, with regard to the publication of the :

A. *List of Aeronautical and Aircraft Stations,*

that until the effective date of the new International Frequency List, the Secretary General of the Union take all measures which he may deem appropriate regarding the publication of this document, account being taken both of new information received and of any orders submitted by Administrations.

RECOMMENDS, with regard to the publication of the :

B. *Map of Land Stations Open to Public Correspondence with Aircraft Stations.*

1. that the map should be published in accordance with the Radio Regulations and should contain all land stations providing an international public correspondence service to aircraft stations only ; and

2. that the Secretary General use his discretion regarding the areas, scale, projection, etc. . . . bearing in mind that this map will be utilized solely for identifying the location of such stations ; and

with regard to the publication of the :

C. *Map of Radionavigation Land Stations*

CONSIDERING :

1. that for the aeronautical service, the publication of such a map presents a particularly intricate problem, because
— such a map is of interest to airmen only if it is possible to use it for navigation purposes as well, a requirement which involves the use of special types of projection,
— radionavigation land stations undergo constant revision in meeting the expanding and changing needs of aviation ;
2. that meeting these requirements would involve the establishment of extensive cartographic services, supported by a rapid means of revision to keep abreast of new developments and installations. Such an undertaking would involve heavy expenditure for the International Telecommunication Union ;
3. that the International Civil Aviation Organization (I.C.A.O.), which is a specialized agency of the United Nations, through its Member States, has established standards for and has arranged for the publication of charts and maps, which contain all pertinent information on aeronautical radionavigation stations. These charts and maps undergo constant revision through an accepted I.C.A.O. procedure, namely, Notice to Airmen (NOTAM) messages to all interested operating agencies ;
4. that the " Recommendations of the United Nations ", contained in Annex 5 (Article IV, Paragraph I) to the International Telecommunication Convention, 1947, stresses the need " for the coordination of policies and activities of specialized agencies " ;
5. that the publication of such a map by the I.T.U., in addition to the List of Radiolocation Stations, in so far as the aeronautical mobile service is concerned, would be a duplication of a service now being provided by another specialized agency of the United Nations and, in view of the agreement referred to under (4) above, between the I.T.U. and the UN, such duplication cannot be contemplated and, therefore, an adjustment of the Radio Regulations would have to be considered in this respect ; and
6. that, however, all I.T.U. members are not members of I.C.A.O. and if such a map is not published by the I.T.U., those States which are not members of I.C.A.O. will have to make individual arrangements with the latter organization in order to obtain such charts and maps in case they consider the information contained in the List of Radiolocation Stations published by I.T.U. (paragraph 453 of the Radio Regulations) to be insufficient ;

RECOMMENDS :

that the Administrative Council (third session) instruct the Secretary General not to include aeronautical radionavigation land stations in the " Map of Radionavigation Land Stations " referred to in paragraph 464 of the Radio Regulations.

APPENDIX

to the Recommendations concerning the Publication by the ITU of Certain Service Documents

COMMUNICATION FROM THE SECRETARY-GENERAL OF THE INTERNATIONAL TELECOMMUNICATIONS UNION TO THE CHAIRMAN OF THE CONFERENCE

Berne, 26 April, 1948.

INTERNATIONAL TELECOMMUNICATIONS UNION
Division of Radiocommunication

To the Chairman of the International Administrative Aeronautical Radio Conference, GENEVA.

Sir :

According to the Radio Regulations adopted at Atlantic City, the Secretary-General of the Union is responsible for publishing, among hers, the following documents :

1. (452) List V. List of aeronautical and aircraft stations.
2. (463) The Map of land stations open to public correspondence with aircraft.
3. (464) The Map of radionavigation land stations.

re 1. It is laid down, with regard to the list of aeronautical and aircraft stations, that only aircraft operating on international routes shall appear on this list.

The information we at present possess on aircraft stations seems to be out of date. Hence it would seem desirable to avoid publishing information of this kind and to publish, in so far as Part C is concerned (Particulars of aircraft stations), only recent data relative to aircraft operating on international routes.

We would be grateful if you would inform us whether the Conference concurs with this opinion.

re 2. No information is given, either in the Acts of the Atlantic City Conference, or in the documentsof that Conference, with regard to the way in which the map of land stations open to public correspondence with aircraft should be published.

(i) As provision is made for communication between aircraft operating over the sea and coastal stations, it would seem that these latter should also appear in the map of aeronautical stations. In our opinion, however, such an addition would overload the map to such a point as to make it difficult to use ; recourse should rather be had to the map of coastal stations already published by the Secretariat in the form of a small 9-page atlas.

(ii) What areas should be shown on these maps ? We would like to know how the world should be represented on the various maps (alternatively which particular areas and/or particular routes).

(iii) What scale should be selected ?

(iv) Which type of projection would be most suitable, bearing in mind the area to be represented and the specific purposes of the map ?

An answer to these questions would enable us to determine the number of sheets in the maps which are to be prepared. In general, we would be extremely grateful for any guidance the Conference could give which would allow us to give satisfaction to all concerned and at the same time to avoid duplication with other maps of similar type.

re 3. The same remarks apply to radionavigation land stations.

(i) In view of the fact that there exists a maritime radionavigation service, and an aeronautical radionavigation service, the map should include the stations of both.

(ii) Consideration might be given to the question whether a map should be published showing both services, or whether separate sheets should be published for each of the two services.

(iii) This question having been settled, the areas to be shown on these maps might then be determined.

(iv) Choice of a scale for these maps.

(v) The type of projection to be used.

(vi) How should the stations be shown ?

(a) in the case of radio-direction-finding stations.

(b) in the case of radio-beacons.

In general, the General Secretariat of the Union would be glad to know the sense of the Conference on the points mentioned above. It would be grateful if the distinguished specialists represented at the Conference could devote a few moments to their consideration, so that the Secretariat might proceed forthwith to publish the documents in question.

We beg to draw your attention to article X of the agreement between the United Nations and the I.T.U., according to which these two organizations will enter into consultation to avoid any possible duplication in their work. In this case, we have in mind the publications issued by I.C.A.O. — another specialized agency of the United Nations. Our own publications must not overlap with those of I.C.A.O.

It may be remembered, in this connection, that the Economic and Social Council of the United Nations, on the 24th February, 1948, adopted a resolution E/695 (see annex) on the coordination of cartographic services between specialized agencies and international organizations.

The Secretariat of the Union would be glad if it could be informed when this subject is likely to be discussed, so that the member or members of the General Secretariat entrusted with the publication of these documents may be detached to the Conference.

We thank you in advance for the assistance to be given us in this connection, and send you every good wish for the success of your work.

I am, Sir.....

Your obedient servant,

F. v. ERNST
Secretary-General

ANNEX

To the Communication of April 26, 1948 fron the Secretary General of the I.T.U.

UNRESTRICTED E/695
24 February, 1948
ORIGINAL : ENGLISH

UNITED NATIONS
ECONOMIC AND SOCIAL COUNCIL

COORDINATION OF CARTOGRAPHIC SERVICES BETWEEN SPECIALIZED AGENCIES AND INTERNATIONAL ORGANIZATIONS

Resolution of 19 February, 1948

CONSIDERING :

that the full development of the world's resources pre-supposes the existence of accurate maps, as these resources are in many cases to be found in areas of the world comparatively little explored ; and

CONSIDERING :

that such maps promote international trade, further the security both of aeronautical and maritime navigation, provide data necessary for the study of such measures of peaceful settlement as are provided for in Chapter VI of the Charter, and for the implementation of the security measures provided for in Chapter VII of this Charter ; and

CONSIDERING :

that the coordination of the cartographic services of the United Nations and of the specialized agencies, together with those of Member States, would mean a considerable saving in time, money and man-power, and would help to improve the technique and the value of cartography ; and

CONSIDERING

that a number of Member States have already announced their interest in the drawing-up of a coordinated programme of international cartography : *

The Economic and Social Council therefore RECOMMENDS :

1. Member States to promote the carrying out of accurate surveys and the production of accurate maps of their own territory.

2. The Secretary-General to take all necessary steps within the limits of the financial resources available to :

   (a) Support efforts made with this in view, by promoting the exchange of technical data, and by other means ; in particular, by preparing a study of modern methods of cartography which would deal at the same time with the establishment of uniform international standards in this respect ;

   (b) Coordinate the plans and programmes drawn up by the United Nations and the specialized agencies on cartographic matters, taking into account the work done in this field by various inter-governmental and non-governmental organizations, and to report on this matter to the Council at a later session ;

   (c) Cooperate closely with the national cartographic services of the Member States concerned.

Recommendation No. 9

concerning the Use of Aeronautical Mobile R Frequencies for the Aeronautical Fixed Service

The International Administrative Aeronautical Radio Conference,

CONSIDERING :

1. that the spectrum space allocated to the Aeronautical Mobile R Service is inadequate to satisfy all the requirements of that service ; and

2. that the use of frequencies of the Aeronautical Mobile R Service by the Aeronautical Fixed Service would limit further the number of frequencies available to the Aeronautical Mobile R Service ;

RECOMMENDS :

that the use of frequencies of the aeronautical mobile R service for aeronautical fixed communications be generally avoided ; that such use of the aeronautical mobile R frequencies be made only in exceptional circumstances and be discontinued as soon as possible.

Recommendation No. 10

concerning the Repetition of Frequency Assignments for the Aeronautical Mobile R Service

The International Administrative Aeronautical Radio Conference,

CONSIDERING :

1. that the frequencies available to the Aeronautical Mobile R Service are insufficient to enable a plan to be assembled which will adequately provide for all the requirements of the service ; and

* Documents E/257, E/258, and E/483.

2. that individual requirements will arise from time to time for which no specific provision may be made in the present plan ;

RECOMMENDS :

that although frequencies have been exclusively allotted for use within the defined Major World Air Route Areas and Regional and Domestic Route Areas boundaries, any administration is nevertheless permitted to utilise frequencies on a secondary basis both inside and outside the area or areas to which they are specifically allotted on condition, however :

(a) that no harmful interference be caused thereby to the services using them in the areas and for the purposes for which they are primarily allotted, and

(b) that the provisions of Articles 3 and 11 of the Radio Regulations are met.

Recommendation No. 11

on Cooperation between I.T.U. and I.C.A.O.

The International Administrative Aeronautical Radio Conference,

CONSIDERING :

1. that Article 27 of the Telecommunication Convention of Atlantic City, 1947, states : " In furtherance of complete international coordination, on matters affecting telecommunication, the Union will cooperate with international organisations having related interests and activities " ;

2. that there exist in the field of aeronautical telecommunications many matters of common interest to I.C.A.O. and the I.T.U. on which it is highly desirable that the two organisations should act in close cooperation with each other, within the general framework established by the Charter of the United Nations, in order to facilitate the attainment of the purposes for which they were created ; and

3. that moreover, the Conference has agreed to recognise I.C.A.O. as the specialized agency qualified to carry out the purposes contemplated in paragraph 390 of the Radio Regulations ;

RECOMMENDS :

that the Administrative Council of the I.T.U. make appropriate arrangements with I.C.A.O. to provide :

(a) that, subject to Chapter 2 of the General Regulations annexed to the International Telecommunication Convention, 1947, each organisation be automatically invited by the other to those of its conference where matters of common interest will be studied ;

(b) that each organisation include on the agenda of its meetings, after such preliminary consultation as may be necessary, any question submitted by the other organisations ;

(c) that each organisation keep the other fully informed concerning projected activities and programs of work in which there may be a common interest, and that, subject to such arrangements as may be necessary for the safeguarding of confidential material, they

make a full and prompt exchange of information and documents concerning matters of common interest ; and

(d) that joint committees or other inter-agency machinery or arrangements be established, whenever desirable, to facilitate cooperation in specific matters with which the two organisations may be concerned.

Resolution No. 12

concerning the Communication to the International Civil Aviation Organisation of Copies of Complaints and Reports relating to Interference within the Aeronautical Mobile Service Frequency Bands

The International Administrative Aeronautical Radio Conference,

CONSIDERING :

1. that paragraph 390 of the Radio Regulations provides as follows : " If there is a specialized international organization for a particular service, complaints and reports of irregularities and of infractions relating to interference caused by the stations in this service may * be addressed to such organization at the same time as to the administration or centralising office concerned. " ;

2. that it may serve a useful purpose, with regard to the aeronautical mobile service, to furnish copies of complaints and reports of irregularities and of infractions relating to interference caused by stations in the aeronautical mobile service to an international agency particularly familiar with aeronautical problems ; and

3. that the United Nations has recognized, for its purposes, the International Civil Aviation Organization as the specialized agency in the aeronautical field ;

RESOLVES :

In conformity with Article 27 of the International Telecommunication Convention, 1947, and insofar as the aeronautical mobile service is concerned, to recognize that the International Civil Aviation Organization is the specialized agency qualified to carry out the purposes contemplated in paragraph 390 of the Radio Regulations.

Note : *The Administrative Council of the Union took up the substance of this Resolution in Resolution 111 of its Third Session (Geneva, September/October 1948).*

Recommendation No. 13

concerning Technical Measures to facilitate the Aeronautical Mobile R Service on High Frequencies

The International Administrative Aeronautical Radio Conference

CONSIDERING :

1. that the Plan developed for the use of HF channels for the Aeronautical Mobile R Service will probably not be implemented prior to 1951 ;

* The English text and the Spanish text (Atlantic City edition) of this paragraph in the Radio Regulations read " . . . shall be addressed . . . " The French text which is the authentic text reads " . . . peuvent être . . ." which corresponds to the expression " . . . may be addressed . . .".

2. that, in the intervening period, and even during and after the implementation period, air traffic operations are subject to continuous changes ;

3. that those changes will require attention by the Administrations concerned, but

4. that, in seeking to satisfy new communication requirements, no decision should be taken that will prevent or handicap the coordinated utilisation of those HF R band allotments as prescribed in the Plan adopted at this Conference ;

5. that the families of high frequencies alloted to the Major World Air Route Areas, Regional and Domestic Air Route Areas and sub-Areas have been chosen considering propagation conditions which will allow for the selection of the most suitable frequencies for the distance involved ;

6. that it is essential to distribute the communication load as uniformly as possible over the frequencies of the same order ;

7. that specific steps should be taken to ensure that the correct order of frequency is used ;

RECOMMENDS :

that Administrations, individually or in collaboration, take the necessary steps :

(a) to make as great a use as possible of VHF in order to lessen the load on the HF R bands ;

(b) to make as great a use as possible of antennas of appropriate directivity and efficiency in order to minimize possibilities of mutual interference within an area or between areas ;

(c) to coordinate the use of families of frequencies necessary for a given route segment in accordance with the technical principles adopted by the Conference and in the light of the latest propagation data available in order that the most appropriate frequencies be used with an aircraft at a given distance from the aeronautical station providing service over the route segment concerned ;

(d) to improve operating techniques and procedures and to use the best equipment possible in order to attain the highest possible efficiency in handling air-ground HF communications ;

(e) to collect precise data on the operation of their HF communication systems and having a bearing on the technical and operating standards adopted by the Conference so as to facilitate such re-examination of this Plan as may be undertaken in the future ;

(f) to establish, through regional agreements, the best method to provide the required communications for any new long distance international or regional air traffic which is not or cannot be accommodated within the system of MWARA and RDARA adopted by the Conference, in such a manner as not to cause any interference to the utilisation of frequencies as prescribed in the R Frequency Plan adopted by this Conference.

Recommendation No. 14

concerning the Organisation of the Aeronautical Mobile R Service

The International Administrative Aeronautical Radio Conference,

CONSIDERING :

1. that the number of channels available for the Aeronautical Mobile R Service is very limited ; and

2. that the number of aircraft now in operation is not only large but increasing ; and

3. that a natural corollary of limited frequency spectrum is the need for rigid circuit discipline, maximum efficiency and the application of uniform procedures ; and

4. that it is essential that frequencies allotted be made available to all users of the Aeronautical Mobile R Service without discrimination ; and without detriment to the services to which these frequencies are allotted ;

5. that satisfactory communication may be unobtainable if implementation of radio frequencies is carried out by independent and uncoordinated means which do not allow for the most efficient and economical use of the radio frequency spectrum ;

RECOMMENDS :

that the various administrations, individually and in collaboration, take the necessary steps to ensure

(a) the satisfactory utilization of frequency channels and efficiency of service so that the aeronautical mobile R frequencies be made available without discrimination to all users and without detriment to the services to which these frequencies are allotted ;

(b) that, as far as possible, service should be provided by a single aeronautical communications agency at any one location. Where this is not possible, close coordination between agencies must be made and maintained. In any case, the administration authorising the operation of the aforementioned agency or agencies should be responsible for discipline and for taking the necessary disciplinary measures.

PART II

PLAN FOR THE ALLOTMENT OF FREQUENCIES FOR THE AERONAUTICAL MOBILE "R" SERVICE

Section I

DESCRIPTION OF THE MWARA, RDARA AND SUB-RDARA BOUNDARIES

1. The boundary descriptions which follow cover the areas to which frequencies are allotted under the frequency Allotment Plan of the Conference.

2. These areas are also shown graphically on maps included with this document.
   If there is any difference between the area as shown on the maps and as described, the written description is to be considered correct.

3. National boundaries used in the written descriptions are those of September, 1949.

4. In the description of the Major World Air Route Areas (MWARA's) all lines between points not otherwise specified are defined as great circles.
   In the descriptions of the Regional and Domestic Air Route Areas (RDARA's) and Sub-Areas lines not otherwise specified are defined as straight lines on a Mercator Projection Map.

ARTICLE 1

DESCRIPTION OF THE MAJOR WORLD AIR ROUTE AREA (MWARA) BOUNDARIES

Major World Air Route Area — CENTRAL EAST PACIFIC
(MWARA-CEP)

From the coordinate 32°N-117°W through the coordinates 16°N-159°W, 22°N-159°W, 50°N-122°W, 38°N-120°W, to the coordinate 32°N-117°W.

Major World Air Route Area — CENTRAL WEST PACIFIC
(MWARA-CWP)

From the coordinate 17°N-155°W through the coordinates 10°N-160°E, 10°N-117°E, 23°N-114°E, 40°N-117°E, 25°N-155°W, to the coordinate 17°N-155°W.

Major World Air Route Area — EUROPE
(MWARA-EU)

From the coordinate 33°N-12°W through the coordinates 32°N-13°E, 29°N-35.5°E, 40°N-34°E, 42°N-30°E, then along borders between following countries: Bulgaria and Turkey, Greece and Bulgaria, Greece and Yugoslavia, Greece and Albania to the coordinate 40°N-19°E, through the coordinate 45°N-13°E; then along the borders between Yugoslavia and Italy, Yugoslavia and Austria, Hungary and Austria, Hungary and Czechoslovakia, U.S.S.R. and Czechoslovakia, Poland and Czechoslovakia, Poland and Germany then through the coordinates 55°N-14°E, 60°N-20°E, 60°N-27°E, excluding all U.S.S.R. and Republic of Poland Territories, thence along border between U.S.S.R. and Finland and through the coordinates 72°N-30°E, 70°N-00°, 54°N-12°W, to the coordinate 33°N-12°W.

Major World Air Route Area — FAR EAST - 1
(MWARA-FE-1)

From the coordinate 40°S-145°E, through the coordinates 10°S-106°E, 05°N-77°E, 15°N-77°E, 24°N-92°E, 11°N-107°E, 18°S-147°E, 23°S-154°E, 40°S-154°E, to the coordinate 40°S-145°E.

Major World Air Route Area — FAR EAST - 2
(MWARA-FE-2)

From the coordinate 12°N-124°E, through the coordinates 33°N-133°E, 35°N-132°E, 24°N-88°E, 08°S-105°E, 15°S-130°E, 15°S-158°E, 00°-168°E, 00°-135°E, to the coordinate 12°N-124°E.

Major World Air Route Area — MIDDLE EAST
(MWARA-ME)

From the coordinate 05°N-80°E, through the coordinates 17°N-70°E, 28°N-30°E, 37°N-10°W, 60°N-10°W and 60°N-20°E, then along the border of the EU MWARA to a point 45°N-13°E then through the coordinates 40°N-14°E, 37°N-51°E, 24°N-93°E, to the coordinate 05°N-80°E.

Note: Only one family of frequencies to enter the MWARA-EU Area beyond a line connecting the following terminals: Sollum, Alexandria, Cyprus, Ankara, noted in the Frequence Allotment Tables as ME(Ext).

Major World Air Route Area — NORTH ATLANTIC
(MWARA-NA)

From the coordinate 39°N-78°W, through the coordinates 47°N-75°W, 68°N-20°W, 60°N-20°E, then South along the border of the EU MWARA and the Northern border of Czechoslovakia to the coordinate 50.5°N-12.5°E; then through the coordinates 45°N-10°E, 32°N-07°W, 35°N-25°W, 30°N-62°W, 16°N-78°W, 21°N-86°W, to the coordinate 39°N-78°W.

Note 1: Only one family of frequencies allotted to this area is available for use S. and W. of a line extending from 39°N-78°W to 30°N-62°W, noted in the Frequency Allotment Tables as NA(Ext).

Note 2: Only one family of frequencies is extended into the European Area beyond a line connecting the following terminals: Stavanger, Amsterdam, Brussels, Paris, Madrid, Lisbon, Casablanca, noted in the Frequency Allotment Tables as NA(Ext).

Major World Air Route Area — NORTH PACIFIC
(MWARA-NP)

From the coordinate 46°N-122°W, through the coordinates 50°N-170°W, 33°N-138°E, 38°N-138°E, 50°N-166°E, 62°N-150°W, 55°N-110°W, to the coordinate 46°N-122°W.

Major World Air Route Area — NORTH-SOUTH AFRICA - 1
(MWARA-NSA - 1)

From the coordinate 31°S-35°E, through the coordinates 31°S-24°E, 16°N-26°W, 40°N-12°W, 52°N-06°W, 60°N-10°E, 60°N-20°E then along the border of the EU MWARA to the coordinate 43°N-15°E; then through the coordinates 37°N-14°E, 00°-28°E, 11°S-28°E, 20°S-35°E, to the coordinate 31°S-35°E.

Major World Air Route Area — NORTH-SOUTH AFRICA - 2
(MWARA-NSA - 2)

From the coordinate 30°S-34°E, through the coordinates 22°S-60°E, 10°N-52°E, 30°N-35°E, to the coordinate 40°N-19°E; then along the border EU MWARA to the coordinate 60°N-20°E, thence through the coordinates 60°N-10°W, 48°N-05°W, 37°N-07°E, 00°-24°E, 30°S-24°E, to the coordinate 30°S-34°E.

Major World Air Route Area — NORTH-SOUTH AMERICA - 1
(MWARA-NSAM - 1)

From the coordinate 36°S-73°W, through the coordinates 36°S-52°W, 26°S-63°W, 05°S-63°W, 05°N-75°W, 27°N-75°W, 35°N-107°W, 40°N-128°W, 20°N-114°W, 00°-93°W, to the coordinate 36°S-73°W.

Major World Air Route Area — NORTH-SOUTH AMERICA - 2
(MWARA-NSAM - 2)

From the coordinate 34°S-74°W, through the coordinates 36°S-52°W, 05°S-30°W, 10°N-60°W, 34°N-60°W, 48°N-75°W, 40°N-77°W, 23°N-86°W, 02°N-79°W, 20°S-50°W, to the coordinate 34°S-74°W.

Major World Air Route Area — SOUTH ATLANTIC
(MWARA-SA)

From the coordinate 34°S-74°W, through the coordinates 36°S-52°W, 13°N-14°W, 40°N-13°E, 48°N-13°E, 51°N-16°E, thence along the border of the EU MWARA to 60°N-20°E; then through the coordinates 61°N-05°E, 47°N-17° W, 25°N-25°W, 03°S-40°W, to the coordinate 34°S-74°W.

Note: Only one family of frequencies extended into the MWARA-EU beyond a line connecting the following terminals: Algiers, Madrid, Lisbon, noted in the Frequency Allotment Tables as SA(Ext).

Major World Air Route Area — SOUTH PACIFIC
(MWARA-SP)

From the coordinate 22°N-158°W, through the coordinates 22°N-156°W, 20°S-145°W, 50°S-170°W, 50°S-145°E, 38°S-145°E, 28°S-152°E, 00°-167°E, 00°-175°W, to the coordinate 22°N-158°W.

ARTICLE 2

DESCRIPTION OF THE REGIONAL AND DOMESTIC AIR ROUTE AREA (RDARA) BOUNDARIES

Regional and Domestic Air Route Area no. 1

(RDARA - 1)

From the North Pole along the 15°W meridian to the coordinate 72°N-15°W, then through the coordinates 40°N-50°W, 30°N-39°W, 30°N-10°W, 31°N-10°W, to the coordinate 31°N-10°E. Then along the Libya-Tunisia border to the Mediterranean, thence along the coast of Libya and Egypt to Alexandria, thence to Cairo, and eastward along the parallel to intersect the 40°E meridian, and north along the 40°E meridian to the South Coast of the Black Sea, thence west along the Black Sea coast of Turkey to intersect the 30°E meridian, then along the 30°E meridian to the border of Rumania and the U.S.S.R., thence along the border between the U.S.S.R. and the following countries: Rumania, Hungary, Czechoslovakia, Poland; along the U.S.S.R. Baltic Sea Coast, to the border between Finland and the U.S.S.R. Then to the coordinate 70°N-32°E, and along the 32°E meridian to the North Pole.

Sub-Area 1A.

From the coordinate 65°N-26°W, and through the coordinates 40°N-50°W, 40°N-13°W, 60°N-13°W, 60°N-26°W, to the coordinate 65°N-26°W.

Sub-Area 1B.

From North Pole along the 15°W meridian to the coordinate 72°N-15°W; then through the coordinates 65°N-26°W, 60°N-26°W, 60°N-13°W, to the coordinate 50°N-13°W; thence east along the waters between the Channel Islands and French Coastline. Thence following the northeastern boundary of France, touching the following countries: Belgium, Luxemburg and Germany. Thence along the border between Switzerland and Germany, and along the border between Austria and Germany. Then following the boundary between the Eastern and Western Occupied Zones of Germany, touching the Western border of Czechoslovakia to the Baltic Sea. Then west along the German coast line to the boundary between Germany and Denmark. Along this boundary to the North Sea. Thence along the 55°N parallel to a point 55°N-04°E. Thence along the 04°E meridian to the North Pole.

Sub-Area 1C.

From the North Pole along the meridian 04°E to the 55°N parallel. Thence east along the 55°N parallel and the border between Denmark and Germany to the Baltic Sea. Then along the German Baltic Sea coast to the boundary between Eastern and Western Occupied Germany. Along this boundary touching the Western borders of Czechoslovakia and Austria to the Swiss border. Thence eastward along the southern borders of Austria and Hungary and thence to the junction of the borders of Czechoslovakia, Hungary and Roumania, thence along the border between the U.S.S.R. and the following

countries : Czechoslovakia, Poland. To the Baltic Sea along the U.S.S.R. Baltic Sea coast, to the boundary between Finland and the U.S.S.R. at 70°N-32°E, then along the 32°E meridian to the North Pole.

Sub-Area 1D.

From the junction of the borders of Czechoslovakia, Hungary and Roumania, westward along the southern borders of Hungary and Austria to the border between Switzerland and Italy and the border between France and Italy to the Mediterranean Sea. Thence to 43°N-10°E to 41°N-10°E, 41°N-07°E thence along the 07°E meridian to the North African coast. Then along the North African coast including Tunis, Tripoli, Benghazi, to the coastal border between Libya and Egypt. Thence along the coast to Alexandria, then to Cairo, and along the Cairo parallel to the 40°E meridian. North along the 40°E meridian to the South Coast of the Black Sea. Thence west along the Black Sea coast of Turkey to intersect the 30°E meridian. Along the 30°E meridian to the border of Roumania and the Ukraine, thence along this border to the junction of the borders of Czechoslovakia, Hungary and Roumania.

Sub-Area 1E.

From the coordinate 50°N-13°W, and through the coordinates 40°N-13°W, 40°N-50°W, 30°N-39°W, 30°N-10°W, 31°N-10°W, to the coordinate 31°N-10°E. Then along the Libya-Tunisia border to the Mediterranean thence along the Tunisian coast to intersect the 10°E meridian. Thence to the coordinate 43°N-10°E ; thence to the border between Italy and France and between Italy and Switzerland, Switzerland and Austria, Switzerland and Germany, and between France and Germany, France and Luxembourg, and France and Belgium to the Channel coast. Thence west through the territorial waters between the Channel Islands and the French coast to the coordinate 50°N-13°W.

Regional and Domestic Air Route Area no. 2

(RDARA - 2)

From the North Pole along the 32°E meridian to the 70°N parallel. Then along the border between Finland and the U.S.S.R. to the Baltic coast. Along the territorial waters of the U.S.S.R. Baltic coast to the boundary between the U.S.S.R. and Poland. Thence along the border between the U.S.S.R. and the following countries: Poland, Czechoslovakia, Hungary, and Roumania, to the Black Sea coast at the intersection of the 30°E meridian. Then along the 30°E meridian to the Black Sea coast of Turkey. Along the Black Sea coast of Turkey to the junction of the borders of Turkey and the U.S.S.R. Thence along this common border and the Iran-U.S.S.R. border to the Caspian Sea. Then along the Iran Caspian Sea coast and the southern border of the U.S.S.R. to the intersection of the Mongolia-China-U.S.S.R. borders at approximately 49°N-88°E. Then along the 88°E meridian to 55°N. Then along the 55°N parallel to 60°E, and along the 60°E meridian to the North Pole.

Sub-Area 2A.

From the North Pole along the 32°E meridian to 70°N. Then along the border between Finland and the U.S.S.R. to the Baltic coast, and along the territorial waters of the U.S.S.R. Baltic coast, to the coordinate 55°N-20°E, and thence to Moscow. Then to 55°N-60°E, and along the 60°E meridian to the North Pole.

Sub-Area 2B.

From the coordinate 55°N-88°E and through the coordinate 55°N-60°E, to the coordinate 47°N-53°E. Thence along the East coast of the Caspian Sea to the Iran coast. Thence east along the southern border of the U.S.S.R. to the intersection of the Mongolia-China U.S.S.R. borders at approximately 49°N-88°E ; thence along the 88°E meridian to 55°N.

Sub-Area 2C.

From the coordinate 55°N-60°E, to Moscow, to 55°N-20°E. Thence south along the boundary between the U.S.S.R. and Poland. Thence along the border between the U.S.S.R. and the following countries : Poland, Czechoslovakia, Hungary and Roumania, to the Black Sea coast at the meridian 30°E. Along the meridian 30°E to the Black Sea coast of Turkey. Along this coast-line to the junction of the borders of Turkey and the U.S.S.R. Thence along this common border and the Iran-U.S.S.R. border to the Caspian Sea then along the south coast of the Caspian Sea and thence north along the East Caspian Sea coast and through the coordinate 47°N-53°E ; to 55°N-60°E.

Regional and Domestic Air Route Area no. 3

(RDARA - 3)

From the North Pole to the coordinate 55°N-60°E, thence along the 55°N parallel to 88°E. Then along the 88°E meridian to the intersection of the Mongolia-China-U.R.S.S. borders at approximately 49°N-88°E. Then along the border between Mongolia and China, and U.S.S.R. and China, to the coast. Between the territorial waters of U.S.S.R. and Japan to the coordinate 43°N-147°E and through the coordinate 50°N-164°E, to 65°N-170°W. Then along the 170°W meridian to the North Pole.

Sub-Area 3A.

From the North Pole along the 60°E meridian to 55°N. Then along the 55°N parallel to 88°E. Then through the coordinate 60°N-88°E to 60°N-110°E, and along the 110°E meridian to the North Pole.

Sub-Area 3B.

From the North Pole along the 110°E meridian to 60°N-110°E, and through the coordinates 60°N-147°E, 43°N-147°E, 50°N-164°E, to 65°N-170°W. Then along the 170°W meridian to the North Pole.

Sub-Area 3C.

From the coordinate 60°N-88°E to the intersection of Mongolia-China-U.S.R.R. border at approximately 49°N-88°E. Along the border between Mongolia and China, and U.S.S.R. and China, to the Coast. Between the territorial waters of U.S.S.R. and Japan to the coordinate of 43°N-147°E. Then through the coordinate of 60°N-147°E to the coordinate 60°N-88°E.

Regional and Domestic Air Route Area no. 4

(RDARA - 4)

From the coordinate 30°N-39°W, and through the coordinates 10°N-20°W, 05°S-20°W, to the coordinate 05°S-12°E. Thence along the northern border of the Belgian Congo, excluding Cabinda territory, to the border between Anglo-Egyptian Sudan and French Equatorial Africa. Thence north along the western border of Anglo-Egyptian Sudan. Along the western border of Egypt, northwards to the Mediterranean and along the North African Mediterranean coast and Atlantic coast to a point 30°N-10°W. West along the 30°N parallel to close the area at 30°N 39°W.

Sub-Area 4A.

From the coordinate 30°N-39°W to 21°N-31°W. Thence to Gao and to Zinder. From Zinder, along the northern border of Nigeria, to a point west of Fort-Lamy. Then along the Fort-Lamy parallel to 12°N-22°E. Thence north along the western border of Anglo-Egyptian Sudan, and along the western border of Egypt, to the Mediterranean. Along the North African Mediterranean coast and Atlantic coast to a point 30°N-10°W. Thence along the 30°N parallel to close the sub-area at 30°N-39°W.

Sub-Area 4B.

From the coordinate 21°N-31°W through the coordinates 10°N-20°W, 05°S-20°W, to 05°S-12°E. Thence along the southern border of French Equatorial Africa, to the junction between Belgian Congo, Anglo-Egyptian Sudan and French Equatorial Africa. Along the western border of Anglo-Egyptian Sudan to the coordinate 12°N-22°E. Thence along the Fort-Lamy parallel to the Nigerian border. Then west along this border to Zinder. From Zinder through Gao to close the sub-area at 21°N-31°W.

Regional and Domestic Air Route Area no. 5

(RDARA - 5)

From the coordinate 41°N-40°E to the coordinate 37°N-40°E. Then along the border between Turkey and Syria to the Mediterranean Coast. Thence to the common

border of Libya and Egypt on the North African coast excluding Cyprus. Southwards along the western boundary of Egypt, and Anglo-Egyptian Sudan to the border of Kenya. Thence east along the northern border of Kenya, and then south along the border between Kenya and Somaliland, to the East African coast at 02°S-41°E. Then through the coordinate 02°S-73°E to 37°N-73°E. Then east along the border between Afghanistan and Pakistan, and west along the southern boundary of the U.S.S.R. to the Caspian Sea. Then along the northern border of Iran and Turkey to close the area at 41°N-40°E.

Sub-Area 5A.

From the coordinate 37°N-40°E, along the border between Turkey and Syria to the Mediterranean coast. Thence to the common border of Libya and Egypt on the North African coast, excluding Cyprus. Southward, along the western boundary of Egypt and east along the common border of Egypt and Anglo-Egyptian Sudan to 24°N-37°E. Then through the coordinates 12°N-44°E, 12°N-49°E, to the coordinate 30°N-49°E. Thence along the border between Iran and Iraq, and the border between Iraq and Turkey to 37°N-40°E.

Sub-Area 5B.

From the coordinate 41°N-40°E to 37°N-40°E. Thence east along the borders between Turkey and Syria, and Turkey and Iraq, and along the border between Iraq and Iran to a point 30°N-49°E. Thence along the middle of the Persian Gulf to a point 24°N-60°E, to Bombay. Then to 37°N-73°E. Then east along the Afghanistan-Pakistan border and west along the southern boundary of the U.S.S.R. to the Caspian Sea. Then along the northern border of Iran and Turkey to close the sub-area at 41°N-40°E.

Sub-Area 5C.

From the coordinate 30°N-49°E, and through the coordinates of 12°N-49°E, 13°N-54°E, 02°S-54°E, 02°S-73°E, to Bombay. Then to 24°N-60°E. Then along the middle of the Persian Gulf to 30°N-49°E.

Sub-Area 5D.

From the junction point of Egypt, Libya and Anglo-Egyptian Sudan southwards along the western border of the Anglo-Egyptian Sudan to the border of Kenya. Thence along the northern border of Kenya. Then south along the border between Kenya and Somaliland to the east African coast, at a point 02°S-42°E. Then through the coordinates of 02°S-54°E, 13°N-54°E, 12°N-49°E to the coordinate of 12°N-44°E. Thence northwest along the middle of the Red Sea to 24°N-37°E. Thence along the southern border of Egypt to close the sub-area.

Regional and Domestic Air Route Area no. 6

(RDARA - 6)

From the coordinate 49°N-88°E, along the border between China and the U.S.S.R. and between Afghanistan and Pakistan, and Iran and Pakistan to a point 23°N-61°E. Thence to Bombay. Then along the 73°E meridian to the coordinate of 02°S-73°E, and through the coordinates of 02°S-92°E, 10°S-92°E, 10°S-141°E, 00°-141°E, 00°-170°W, 10°N-170°W, 50°N-164°E, to the coordinate 43°N-147°E. Thence east between the territorial waters of Japan and the U.S.S.R. and along the northeastern and northern boundary of China, to the coordinate of 49°N-88°E.

Sub-Area 6A.

From the coordinate of 37°N-75°E, along the border between Pakistan and Afghanistan, and Iran and Pakistan to a point 23°N-61°E. Thence to Bombay. From Bombay to 24°N-80°E. Thence to Calcutta. Thence along the coast of Pakistan and Burma to reach the border between Burma and Thailand. North along this border and that between Burma and French Indo-China. Thence along the border between China and the following countries: Burma, Bhutan, Nepal, India to the coordinate of 37°N-75°E.

Sub-Area 6B.

From the coordinate 49°N-88°E, along the common border between China and the U.S.S.R. to the coordinate 37°N-75°E. Thence along the border between China and the following countries: India, Nepal, Bhutan, India, Burma, French Indo-China to the coast of the South China Sea. Thence along the south territorial waters of Hainan Island to the coordinate 20°N-113°E, and through the coordinates 20°N-176°W, 50°N-164°E, to 43°N-147°E. Thence east between the territorial waters of Japan and the U.S.S.R. and then along the border between China and the U.S.S.R., and along the border between China and Mongolia to the coordinate 49°N-88°E.

Sub-Area 6C.

From the coordinate of 20°N-130°E, through the coordinate 04°N-130°E, to 04°N-118°E. Thence along the border between North Borneo and Indonesian Borneo to the coordinate 03°N-109°E, and through the coordinates 03°N-106°E, 10°S-106°E, 10°S-141°E, 00°-141°E, 00°-170°W, 10°N-170°W, 20°N-176°W, to 20°N-130°E.

Sub-Area 6D.

From the junction of the border of China, India and Burma, south along the India-Burma and Pakistan-Burma borders to the Bay of Bengal. Along the coast of Burma to its southernmost point. Then to the coordinate of 02°S-92°E, and through the coordinate 10°S-92°E, to 10°S-113°E. Then along the 113°E meridian to the border between North Borneo and Indonesian Borneo. Thence east along this border to a point 04°N-118°E, and through the coordinates of 04°N-130°E, 20°N-130°E, to 20°N-113°E.

Thence south around the island of Hainan, and along the border between China and French Indo-China, and China and Burma to close the sub-area at the junction of China, India and Burma.

Sub-Area 6E.

From the coordinate of 20°N-73°E, and through the coordinates of 02°S-73°E, 02°S-92°E, to 10°N-97°E. Thence along the coast of Burma, Pakistan and India to Calcutta. Then through the coordinate 24°N-80°E to 20°N-73°E.

Sub-Area 6F.

From the junction of the China-India-Burma borders northeast to the 100°E meridian. North on this meridian to the northern boundary of Sub-Area 6B. Eastward along this boundary to 130°E. Thence south along the 130°E meridian to 04°N. Then west and along the boundary of Sub-Area 6D to the junction of the China-India-Burma borders.

Regional and Domestic Air Route Area no. 7

(RDARA - 7)

From the South Pole along the 20°W meridian to 05°S. Then along the 05°S parallel to 12°E. Thence along the northern border of the Belgian Congo, including Cabinda Territory, along the border between Uganda, and Anglo-Egyptian Sudan, and between Kenya and the following countries: Anglo-Egyptian Sudan, Abyssinia, Somaliland to the coordinate of 02°S-42°E. Then to 02°S-60°E, and along the 60°E meridian to the South Pole.

Sub-Area 7A.

From the South Pole along the 20°W meridian to 05°S. Then through the coordinates of 05°S-10°E, 40°S-10°E, to 40°S-60°E. Then along the 60°E meridian to the South Pole.

Sub-Area 7B.

From the coordinate 05°S-10°E to 05°S-12°E. Thence along the northern border of the Belgian Congo, including Cabinda territory, to the junction of Uganda, Belgian Congo and Anglo-Egyptian Sudan. Thence south along the eastern and southern border of Belgian Congo, including the Territories of Ruanda Urundi, and along the eastern and southern border of Angola to the coast of the South Atlantic. Thence to the coordinate of 17°S-10°E, and then to close the sub-area at 05°S-10°E.

Sub-Area 7C.

From the junction of Uganda, Belgian Congo and Anglo-Egyptian Sudan along the western border of Uganda and Tanganyika and then along the southern border of Tanganyika to the coast. Thence through the coordinates of 11°S-41°E, 11°S-60°E, 02°S-60°E, to 02°S-41°E. Thence to the east coast of Africa. Then north along the

border between Kenya and Somaliland. Then west along the northern borders of Kenya and Uganda to close the sub-area at the junction of the borders of Belgian Congo, Anglo-Egyptian Sudan and Uganda.

Sub-Area 7D.

From the border of Tanganyika and Mozambique on the Lake Nyasa, south along the west border of Mozambique to the African East coast. Then through the coordinates 27°S-33°E, 40°S-33°E, 40°S-60°E, 11°S-60°E, to 11°S-41°E. Thence along the northern border of Mozambique to Lake Nyasa.

Sub-Area 7E.

From the coordinate 17°S-10°E, and through the coordinates 40°S-10°E, 40°S-33°E, to 27°S-33°E. Thence along the west border of Mozambique to Lake Nyasa. Thence along the border between Rhodesia and Tanganyika and along the border between Belgian Congo and Rhodesia and between Angola and Rhodesia and Angola and South-West Africa to the coordinate 17°S-10°E.

Regional and Domestic Air Route Area no. 8

(RDARA - 8)

From the South Pole along the 60°E meridian to 02°S. Then through the coordinates 02°S-92°E, 10°S-92°E, to 10°S-110°E. Then along the 110°E meridian to the South Pole.

Sub-Area 8A.

From the South Pole along the 60°E meridian to 02°S. Then through the coordinates 02°S-92°E, 10°S-92°E, to 10°S-110°E. Then along the 110°E meridian to the South Pole.

Regional and Domestic Air Route Area no. 9

(RDARA - 9)

From the South Pole along the 110°E meridian to 10°S. Then through the coordinates of 10°S-141°E, 00°-141°E, 00°-170°W, 10°N-170°W, to 05°S-120°W. Then along the 120°W meridian to the South Pole.

Sub-Area 9A.

From the coordinate 10°S-110°E, and through the coordinates 24°S-110°E, 24°S-141°E, 10°S-141°E, to 10°S-110°E.

Sub-Area 9B.

From the coordinate 00°-141°E, and through the coordinates 24°S-141°E, 24°S-170°W, 00°-170°W, to 00°-141°E.

Sub-Area 9C.

From the South Pole along the 170°W meridian to 10°N. Then through 05°S-120°W, and along the 120°W meridian to the South Pole.

Sub-Area 9D.

From the South Pole along the 139°E meridian to 24°S. Then through the co-ordinate 24°S-170°W, and along the 170°W meridian to the South Pole.

Sub-Area 9E.

From the South Pole along the 110°E meridian to 24°S. Then along the 24°S parallel to 139°E, and along the 139°E meridian to the South Pole.

Regional and Domestic Air Route Area no. 10

(RDARA - 10)

Sub-Area 10A.

From the coordinate 50°N-164°E to 66°N-169°W. Then along the 169°W meridian to the North Pole. Then along the 130°W meridian to 57°N. Thence through the coordinates of 57°N-150°W, 50°N-175°W, to close the sub-area at 50°N-164°E.

Sub-Area 10B.

From the coordinate 57°N-140°W, along the 140°W meridian to the North Pole. Then along the 91°W meridian to 48°N. Thence through the coordinates 48°N-127°W. 57°N-139°W, to 57°N-140°W.

Sub-Area 10C.

From the coordinate of 57°N-140°W, and through the coordinates 60°N-140°W, 60°N-91°W, 48°N-91°W, 48°N-127°W, 57°N-139°W, to 57°N-140°W.

Sub-Area 10D.

From the coordinate 48°N-98°W, along the 98°W meridian to the North Pole, Then along the 45°W meridian to 69°N. Then through the coordinates 61°N-70°W, 45°N-72°W, 41°N-81°W, 41°N-88°W, 48°N-91°W, to 48°N-98°W.

Sub-Area 10E.

From the coordinate of 45°N-74°W, and through the coordinate 61°N-72°W to 69°N-47°W. Then along the 47°W meridian to the North Pole. Then along the 15°W meridian to 72°N. Then through the coordinates 40°N-50°W, 40°N-65°W, to close the sub-area at 45°N-74°W.

Regional and Domestic Air Route Area no. 11

(RDARA - 11)

Sub-Area 11A.

From the coordinate 29°N-180°, along the ITU boundary between Regions 2 and 3, to 50°N-164°E. Then through the coordinates 50°N-150°W, 57°N-139°W,

50°N-127°W, 33°N-127°W, 33°N-153°W, 29°N-153°W, to close the sub-area at 29°N-180°.

Sub-Area 11B.

From the coordinate 33°N-127°W, and through the coordinates 50°N-127°W, 50°N-104°W, 27°N-104°W, 33°N-119°W, to close the sub-area at 33°N-127°W.

Sub-Area 11C.

From the coordinate 29°N-106°W, and through the coordinates 50.5°N-106°W, 50.5°N-92°W, 47°N-72°W, 45°N-72°W, 40°N-81°W, 40°N-85°W, 30°N-85°W, 25°N-96°W, to close the sub-area at 29°N-106°W.

Sub-Area 11D.

From the coordinate 29°N-90°W, and through the coordinates 50°N-90°W, 47°N-64°W, 23°N-78°W, 23°N-83°W, to close the sub-area at 29°N-90°W.

Sub-Area 11E.

From the coordinate of 39°N-125°W, and through the coordinates 50°N-125°W, 50°N-93°W, 46°N-93°W, 42°N-86°W, 36°N-86°W, 36°N-121°W, to close the sub-area at 39°N-125°W.

Sub-Area 11F.

From the coordinate 46°N-94°W, and through the coordinates 49°N-94°W, 47°N-65°W, 36°N-74°W, 36°N-88°W, 42°N-88°W, to close the sub-area at 46°N-94°W.

Sub-Area 11G.

From the coordinate 29°N-95°W, and through the coordinates 39°N-95°W, 44°N-66°W, 23°N-77°W, 23°N-83°W, 23°N-91°W, to close the sub-area at 29°N-95°W.

Sub-Area 11H.

From the coordinate 33°N-127°W, and through the coordinates 40°N-127°W, 40°N-89°W, 29°N-89°W, 25°N-98°W, 33°N-119°W. to close the sub-area at 33°N-127°W.

Sub-Area 11I.

From the coordinate 25°N-77°W, and through the coordinates 42°N-68°W, 40°N-65°W, to 40°N-50°W. Then along the I.T.U. boundary between Regions 1 and 2 to 25°N-35°W. Then to close the sub-area at 25°N-77°W.

Regional and Domestic Air Route Area no. 12

(RDARA - 12)

Sub-Area 12A.

From the coordinate of 10°N-170°W, along the I.T.U. boundary between Regions 2 and 3 to 29°N-180°. Thence through the coordinates 29°N-153°W, 10°N-153°W, to close the sub-area at 10°N-170°W.

Sub-Area 12B.

From the coordinate of 10°N-170°W, along the I.T.U. boundary between Regions 2 and 3, to 29°N-180°. Then through the coordinates 29°N-153°W, 33°N-153°W, 33°N-120°W, 17°N-115°W, 14°N-93°W, 02°N-86°W, 02°N-93°W, 05°S-93°W, to 05°S-120°W. Then along the ITU boundary between Regions 2 and 3 to close the sub-area at 10°N-170°W.

Sub-Area 12C.

From the coordinate 33°N-120°W, through the coordinates 35°N-120°W, 32°N-104°W, 25°N-91°W, 23°N-83°W, 22°N-83°W, 13°N-90°W, 16°N-116°W, to close the sub-area at 33°N-120°W.

Sub-Area 12D.

From the coordinate 20°N-91°W, and through the coordinates 26°N-91°W, 26°N-79°W, 27°N-79°W, 27°N-76.5°W, 26°N-73°W, 17°N-58°W, to 10°N-58°W. Thence through Balboa, Canal Zone, Swan Island, and Belize to close the sub-area at 20°N-91°W.

Sub-Area 12E.

From the coordinate 15°N-95°W, and through the coordinates of 23°N-92°W, 23°N-85°W, 19°N-85°W, 09°N-77°W, 02°N-79°W, 02°N-86°W, 14°N-93°W, to close the sub-area at 15°N-95°W.

Sub-Area 12F.

From the coordinate of 04°S-93°W, and through the coordinates of 02°N-93°W, and 02°N-79°W, to Balbao, Canal Zone. Then to 13°N-77°W, and through the coordinates of 13°N-70°W, 08°N-70°W, 06°N-67°W, 01°N-66°W, to 04°S-70°W. Then along the frontier between Colombia and Peru to the junction of the borders of Colombia, Peru and Ecuador. Then along the frontier between Peru and Ecuador through 04°S-81°W to close the sub-area at 04°S-93°W.

Sub-Area 12G.

From the coordinate of 07°N-73°W, and through the coordinates of 14°N-73°W, 14°N-58°W, 01°N-58°W, 01°N-68°W, 05°N-69°W, to close the sub-area at 07°N-73°W.

Sub-Area 12H.

From the coordinate of 04°S-70°W, and through the coordinates of 05°N-70°W, 05°N-61°15′W, 08°45′N-60°W, 08°N-58°W, 08°N-54°W, 00°-44°W, 04°S-44°W, to close the sub-area at 04°S-70°W.

Sub-Area 12I.

From the coordinate of 25°N-70°W, through the coordinate of 25°N-35°W and along the I.T.U. boundary between Regions 1 and 2, to 00°-20°W. Thence through the coordinates 00°-44°W, 08°N-54°W, 08°N-58°W, 17°N-58°W, to close the sub-area at 25°N-70°W.

Sub-Area 12J.

From the coordinate of 31°N-117°W, and through the coordinates 33°N-107°W, 33°N-96°W, 31°N-81°W, 33°N-64°W, 18°N-59°W, 08°N-59°W, 08°N-85°W, 18°N-102°W, to close the sub-area at 31°N-117°W.

Regional and Domestic Air Route Area no. 13
(RDARA - 13)

Sub-Area 13A.

From the coordinate 05°S-120°W, and through the coordinates of 05°S-81°W, 19°S-81°W, 19°S-73°W, 25°S-73°W, 25°S-81°W, 57°S-81°W, to 57°S-90°W. Thence along the 90°W meridian to the South Pole. Thence along the 120°W meridian to close the sub-area at 05°S-120°W.

Sub-Area 13B.

From the coordinate of 29°S-111°W, and through the coordinates of 24°S-111°W, 24°S-104°W, 29°S-104°W, to close the sub-area at 29°S 111°W.

Sub-Area 13C.

From the coordinate 19°S-81°W, and through the coordinates 04°S-82°W, 03°S-80°W, and along the northern frontier between Peru and Ecuador to 00°-75°W. Then along the northern frontier between Peru and Colombia and along the border between Colombia and Brazil to 00°-69°W. Then through the coordinates 11°S-69°W, 11°S-67°W,19°S-67°W, to close the sub-area at 19°S-81°W.

Sub-Area 13D.

From the coordinate of 19°S-73°W, and through the coordinates 15°S-73°W, 15°S-70°W, 09°S-70°W, 09°S-65°W, 18°S-56°W, 21°S-56°W, 24°S-61°W, 24°S-69°W, 19°S-69°W, to close the sub-area at 19°S-73°W.

Sub-Area 13E.

From the coordinate of 57°S-81°W, and through the coordinates of 25°S-81°W, 25°S-73°W, 16°S-73°W, 16°S-68°W, to 22°S-67°W. Then along the frontier between Chile and Argentina to 52°S-67°W. Then through the coordinates of 57°S-67°W, 57°S-40°W, and along the 40°W meridian to the South Pole. Thence along the 90°W meridian through the coordinate 57°S-90°W to close the sub-area at 57°S-81°W.

Sub-Area 13F.

From the coordinate of 57°S-81°W, and through the coordinate of 32°S-81°W, to 32°S-69°W. Then along the frontier between Chile and Argentina to 52°S-67°W. Then through the coordinates of 57°S-67°W, 57°S-40°W, and along the 40°W meridian to the South Pole. Then along the 90°W meridian through the coordinate 57°S-90°W to close the sub-area at 57°S-81°W.

Sub-Area 13G.

From the coordinate of 57°S-90°W, and through the coordinate of 57°S-70°W, to 52°S-70°W. Then along the frontier between Argentina and Chile to 21°S-68°W. Then through the coordinates of 21°S-62°W, 25°S-56°W, 25°S-53°W, 28°S-53°W, 29°S-56°W, 57°S-56°W, to 57°S-40°W. Then along the 40°W meridian to the South Pole. Then along the 90°W meridian to close the sub-area at 57°S-90°W.

Sub-Area 13H.

From the coordinate of 57°S-90°W, and through the coordinate of 57°S-70°W, to 52°S-70°W. Then along the frontier between Argentina and Chile to 32°S-70°W, and through the coordinates of 34°S-56°W, 57°S-56°W, to 57°S-40°W. Then along the 40°W meridian to the South Pole. Then along the 90°W meridian to close the sub-area at 57°S-90°W.

Sub-Area 13I.

From the coordinate 24°S-63°W, through the coordinates 18°S-63°W, 18°S-56°W, 22°S-56°W, 22°S-53°W, 29°S-53°W, 29°S-47°W, 37°S-56°W, 37°S-59°W, 25°S-59°W, to close the sub-area at 24°S-63°W.

Sub-Area 13J.

From the coordinate 01°S-70°W, and through the coordinates of 01°S-63°W, 03°N-63°W, 03°N-60°W, 01°S-60°W, 01°S-48°W, 03°S-48°W, 03°S-50°W, 16°S-50°W, 16°S-48°W, 20°S-39°W, 32°S-50°W, 20°S-58°W, to 10°S-66°43′W. Then along the borders between Brazil, Bolivia and Peru to 07°33′S-74°W. Then through the coordinate of 04°S-74°W, to close the sub-area at 01°S-70°W.

Sub-Area 13K.

From the coordinate of 04°30′N-52°W, and through the coordinates of 04°30′N-51°W, 00°-48°W, 03°S-38°W, 03°S-32°W, 05°S-32°W, 20°S-39°W, 27°S-45°W, 20°S-50°W, 03°S-50°W, 03°S-52°W, to close the sub-area at 04°30′N-52°W.

Sub-Area 13L.

From the coordinate of 20°S-58°W, and through the coordinates of 20°S-53°W, 16°S-53°W, 16°S-48°W, 20°S-39°W, 34°30′S-52°40′W, 30°S-58°W, to close the sub-area at 20°S-58°W.

Sub-Area 13M.

From the coordinate of 00°-32°W, to 00°-20°W. Thence along the 20°W meridian to the South Pole. Thence along the 40°W meridian to the coordinate 57°S-40°W. Thence through the coordinates 57°S-56°W, 37°S-56°W, 20°S-38°W, 40°S-32°W, to close the sub-area at 00°-32°W.

Section II

ALLOTMENT OF FREQUENCIES TO THE AERONAUTICAL MOBILE "R" SERVICE

ARTICLE 1

FREQUENCY ALLOTMENT PLAN
(PER MWARAs, RDARAs AND SUB-RDARAs)

Note: *(a)* ◆ = For exact nature of restriction refer to: col. 3 of article 2 of the Frequency Allotment Plan (per numerical order of frequencies).

(b) The following listing does not include the world common "R" and "OR" frequencies of 3023.5 kc/s and 5680 kc/s.

Band Mc/s	3	3,5	4,7	5,6	6,6	9	10	11,3	13,3	18
Areas	kc/s	kc/s	kc/s	kc/s	kc/s	kc/s	kc/s	kc/s	kc/s	kc/s
Atlantic-MET	3001 ◆			5559◆		8828,5 ◆				
CEP		3432,5 3446,5 3467,5 3481,5		5551,5 5604	6612 6679,5	8879,5 8930,5	10 048 10 084	11 299,5 11 318,5	13 304,5 13 334,5	17 926,5
CWP	2966			5506,5		8862,5			13 354,5	17 906,5
EU	2889 2910	3467,5 3481,5	4654,5 4689,5	5551,5	6552 6582	8871 8930,5		11 299,5		17 906,5
EU-MET	2980 ◆			5574 ◆		8905 ◆				
FE1	2987			5671,5		8879,5 8930,5			13 324,5	17 966,5
FE2	2868			5611,5		8871			13 284,5	17 966,5
ME		3404,5		5604		8845,5				
ME(Ext)		3446,5			6627		10 021		13 334,5	17 926,5
ME-MET	3001 ◆			5559 ◆		8828,5 ◆				
NA	2868 2945 2987			5626,5 5641,5 5671,5		8862,5 8888 8913,5			13 264,5 13 284,5 13 324,5	
NA(Ext)	2931			5611,5		8947,5			13 354,5	17 966,5
NP	2987			5521,5		8939			13 274,5	17 906,5
NSA1		3411,5		5521,5		8820			13 304,5	17 946,5
NSA2	2966			5506,5		8956			13 334,5	17 926,5
NSAM1	2889		4696,5		6664,5	8820			13 314,5	17 916,5
NSAM2	2910 2966	3404,5		5566,5 5581,5	6567	8845,5 8871		11 290 11 337,5	13 344,5	17 916,5
Pacif.-Met	2980 ◆			5574 ◆		8905 ◆				
SA	2875				6612 6679,5	8879,5 8939				
SA(Ext)		3432,5			6597		10 048		13 274,5	17 946,5
SP	2945			5641,5		8845,5			13 344,5	17 946,5

Band Mc/s	3	3,5	4,7	5,6	6,6	9	10	11,3	13,3	18
Areas	kc/s	kc/s	kc/s	kc/s	kc/s	kc/s	kc/s	kc/s	kc/s	kc/s
1	2854 ◆ 2896 ◆ 2917 ◆ 2938 ◆ 2952 ◆ 2959 ◆ 2973 ◆	3425,5 ◆ 3453,5 ◆ 3495,5 ◆	4668,5 ◆ 4675,5 ◆	5499 ◆ 5544 ◆ 5589 5649 ◆	6567 ◆ 6634,5 ◆ 6649,5 ◆ 6664,5 ◆	8837 ◆ 8854 ◆ 8961,5 ◆	10 066 ◆ 10 084 ◆	11 356,5 ◆	13 314,5 ◆	
1B	2903 2973 ◆	3418,5 ◆ 3474,5 ◆ 3495,5 ◆		5529	6529,5 ◆	8961,5 ◆				
1C	2973 ◆	3418,5 ◆ 3495,5 ◆			6529,5 ◆	8961,5 ◆				
1D	2973 ◆ 3015 ◆	3418,5 ◆ 3495,5 ◆	4682,5 ◆	5619	6529,5 ◆ 6544,5	8961,5 ◆				
1E	2861 2973 ◆ 3015 ◆	3418,5 ◆ 3495,5 ◆		5484 ◆ 5656,5 ◆	6604,5 ◆	8961,5 ◆				
2	2882 2924 2973 ◆ 2994 ◆ 3008 ◆	3439,5 3460,5 ◆ 3488,5 ◆ 3495,5 ◆	4661,5 ◆ 4696,5	5536,5 5596,5 ◆ 5664 ◆	6589,5 ◆ 6619,5 6642 ◆ 6657 ◆ 6672 ◆	8922 ◆ 8961,5 ◆	10 012 ◆ 10 030 ◆ 10 039 ◆ 10 057 ◆ 10 075 ◆ 10 093 ◆	11 290 ◆ 11 309 11 347 ◆ 11 366 ◆ 11 375,5 11 394,5 ◆	13 344,5	17 956,5 ◆
2A	2973 ◆	3404,5 ◆ 3495,5 ◆		5514 ◆	6559,5 6574,5 6612 ◆	8961,5 ◆				
2B	2854 ◆ 2868 ◆ 2938 ◆ 2973 ◆ 2980 ◆	3495,5 ◆	4654,5 ◆	5484	6597	8961,5 ◆				
2C	2945 ◆ 2973 ◆ 2987 ◆	3495,5 ◆		5491,5 5514 ◆ 5634	6612 ◆	8961,5 ◆				
3	2875 2973 ◆ 2994 ◆ 3008 ◆ 3015 ◆	3432,5 ◆ 3446,5 ◆ 3460,5 ◆ 3488,5 ◆ 3495,5 ◆	4661,5 ◆ 4682,5	5566,5 5581,5 5596,5 ◆ 5649 5664 ◆	6552 6589,5 ◆ 6642 ◆ 6657 ◆ 6672 ◆	8922 ◆ 8961,5 ◆	10 012 ◆ 10 030 ◆ 10 039 ◆ 10 075 ◆	11 328 11 347 ◆ 11 366 ◆	13 264,5	17 956,5 ◆
3A	2861 2973 ◆	3481,5 ◆ 3495,5 ◆	4675,5 ◆		6544,5 6567	8961,5 ◆	10 057 ◆ 10 093 ◆	11 290 ◆ 11 394,5 ◆		17 916,5 ◆
3B	2854 2903 ◆ 2938 2952 ◆ 2959 2973 ◆	3404,5 3495,5 ◆	4689,5 ◆	5484 5529 5619	6529,5 6612 6634,5 6649,5 6679,5	8845,5 8947,5 ◆ 8961,5 ◆				
3C	2896 2903 ◆ 2917 2952 ◆ 2973 ◆	3425,5 ◆ 3453,5 ◆ 3495,5 ◆	4668,5 ◆		6604,5 6627	8913,5 8947,5 ◆ 8961,5 ◆	10 057 ◆ 10 093 ◆	11 280,5		17 916,5 ◆
4	2973 ◆	3495,5 ◆			6537 ◆	8896,5 ◆ 8961,5 ◆		11 385 ◆		17 936,5 ◆
4A	2973 ◆	3495,5 ◆		5664	6574,5	8961,5 ◆				
4B	2924 2973 ◆	3495,5 ◆		5484 5596,5	6559,5 6589,5 6642 6657 6672	8961,5 ◆				

Band Mc/s	3	3,5	4,7	5,6	6,6	9	10	11,3	13,3	18
Areas	kc/s	kc/s	kc/s	kc/s	kc/s	kc/s	kc/s	kc/s	kc/s	kc/s
5	2973 ◆	3495,5 ◆			6537 ◆	8896,5 ◆ 8961,5 ◆		11 385 ◆		17 936,5 ◆
5A	2973 ◆	3495,5 ◆	4682,5 ◆	5529		8961,5 ◆				
5B	2903 ◆ 2973 ◆	3495,5 ◆		5656,5 ◆	6604,5	8961,5 ◆				
5C	2903 ◆ 2973 ◆	3495,5 ◆		5656,5 ◆		8961,5 ◆				
5D	2903 ◆ 2973 ◆	3495,5 ◆		5536,5 5656,5 ◆		8961,5 ◆				
6	2973 ◆	3411,5 3495,5 ◆		5491,5 5634	6582	8961,5 ◆		11 337,5		
6A	2931 ◆ 2945 ◆ 2959 ◆ 2973 ◆	3432,5 ◆ 3474,5 3495,5 ◆		5514 ◆ 5566,5 ◆ 5581,5 ◆	6529,5 ◆ 6544,5 6559,5 ◆ 6567 6634,5 6649,5 6679,5 ◆	8888 ◆ 8939 8961,5 ◆	10 048 ◆			
6B	2889 2910 2973 ◆	3418,5 3467,5 3495,5 ◆		5514 ◆ 5544 5589	6559,5 ◆ 6574,5 6664,5	8956 ◆ 8961,5 ◆				
6C	2882 2924 2973 ◆	3439,5 3495,5 ◆	4668,5 ◆	5536,5 5656,5	6552 6604,5 6619,5 ◆ 6672 ◆	8820 ◆ 8961,5 ◆	10 084 ◆		13 304,5 ◆	
6D	2973 ◆	3425,5 3453,5 3481,5 3495,5 ◆	4668,5 ◆ 4689,5	5529 5596,5 5619	6589,5 6619,5 ◆ 6642 6657 6672 ◆	8820 ◆ 8961,5 ◆	10 048 ◆			
6E	2861 2931 ◆ 2945 ◆ 2973 ◆	3432,5 ◆ 3495,5 ◆		5514 ◆ 5566,5 ◆ 5581,5 ◆ 5649	6529,5 ◆ 6559,5 ◆ 6612 6679,5 ◆	8961,5 ◆	10 048 ◆			
6F	2945 ◆ 2973 ◆	3495,5 ◆			6537 ◆ 6597	8837 8854 8888 ◆ 8961,5 ◆	10 048 ◆ 10 066		13 294,5	
7	2868 2973 ◆ 3008	3495,5 ◆		5499 ◆ 5544 5574 5589	6552 6649,5 ◆	8862,5 8947,5 ◆ 8961,5 ◆		11 318,5 ◆		17 936,5 ◆
7A	2973 ◆	3495,5 ◆				8961,5 ◆				
7B	2973 ◆ 2987	3474,5 3495,5 ◆		5634	6529,5 6597 ◆ 6627 6664,5 6679,5 ◆	8913,5 8961,5 ◆				
7C	2973 ◆	3495,5 ◆			6597 ◆	8961,5 ◆				
7D	2854 2938 2973 ◆ 2994	3439,5 3460,5 3495,5 ◆	4696,5	5484 5649 5664	6567 ◆ 6597 ◆	8871 8922 8961,5 ◆				
7E	2882 2896 2917 2952 2973 ◆	3425,5 3432,5 3453,5 3495,5 ◆	4682,5	5491,5	6567 ◆ 6582 6597 ◆ 6679,5 ◆	8879,5 8930,5 8961,5 ◆	10 039 10 075	11 328		

Band Mc/s	3	3,5	4,7	5,6	6,6	9	10	11,3	13,3	18
Areas	kc/s	kc/s	kc/s	kc/s	kc/s	kc/s	kc/s	kc/s	kc/s	kc/s
8A	2973 ◆	3495,5 ◆		5499 ◆	6649,5 ◆	8947,5 ◆ 8961,5 ◆		11 318,5 ◆		
9	2854 2973 ◆	3404,5 3495,5 ◆		5484 5514 5664	6559,5 6574,5 6627 6679,5	8896,5 8922 8947,5 ◆ 8961,5 ◆		11 356,5 11 375,5		
9A	2959 2973 ◆ 3008 ◆	3488,5 3495,5 ◆	4654,5 ◆	5589	6612 ◆ 6649,5 ◆ 6664,5 ◆	8939 8961,5 ◆				
9B	2861 2973 ◆ 3015	3460,5 3495,5 ◆	4654,5 ◆	5499 ◆ 5544 5626,5	6529,5 6612 ◆ 6634,5 6664,5 ◆	8913,5 8961,5 ◆	10 093 ◆	11 309 11 394,5		
9C	2973 ◆	3495,5 ◆				8961,5 ◆				
9D	2875 2903 2910 2917 2931 2938 2973 ◆ 2994 3008 ◆	3418,5 3432,5 3446,5 3474,5 3481,5 ◆ 3495,5 ◆	4654,5 ◆ 4661,5 4675,5 4682,5 4696,5	5499 ◆ 5529 5596,5 5619 5656,5	6537 6567 6589,5 6612 ◆ 6642 6657 6664,5 ◆ 6672	8888 8961,5 ◆	10 021 10 057 ◆ 10 093 ◆	11 280,5 11 290 11 328		
9E	2889 2896 2952 2966 2973 ◆	3467,5 3495,5 ◆	4654,5 ◆	5551,5	6544,5 6612 ◆ 6649,5 ◆ 6664,5 ◆	8961,5 ◆	10 057 ◆ 10 093 ◆			
10A	2931	3411,5	4668,5	5544	6567	8961,5 ◆		11 328 ◆	13 294,5 ◆	17 936,5 ◆ 17 956,5 ◆
10B	2917 2973 ◆			5461,5 ◆	6597	8896,5 8961,5 ◆		11 328 ◆ 11 375,5	13 294,5 ◆	17 936,5 ◆ 17 956,5 ◆
10C	2861 ◆ 2952 ◆	3474,5	4689,5	5499 5514	6582 6627	8961,5 ◆	10 057	11 328 ◆ 11 356,5	13 294,5 ◆	17 936,5 ◆ 17 956,5 ◆
10D	3008	3439,5 3488,5	4661,5	5536,5 5649 5664	6552 6664,5	8961,5 ◆	10 039	11 309 11 328 ◆	13 294,5 ◆	17 936,5 ◆ 17 956,5 ◆
10E	2882	3460,5 ◆	4682,5	5454 ◆	6612 6679,5	8879,5 8961,5 ◆		11 328 ◆	13 294,5 ◆	17 936,5 ◆ 17 956,5 ◆
11B	2903 2938 ◆		4682,5	5634	6537 6619,5 6634,5	8956 8961,5 ◆		11 280,5 11 328 ◆	13 294,5 ◆	17 936,5 ◆ 17 956,5 ◆
11C	2994		4654,5	5589	6529,5	8961,5 ◆	10 012	11 328 ◆ 11 347	13 294,5 ◆	17 936,5 ◆ 17 956,5 ◆
11D	3015		4668,5	5506,5 5529 5544	6559,5 6574,5	8854 8961,5 ◆		11 328 ◆	13 294,5 ◆	17 936,5 ◆ 17 956,5 ◆
11E		3418,5			6589,5 6672	8961,5 ◆	10 066	11 328 ◆ 11 394,5	13 294,5 ◆	17 936,5 ◆ 17 956,5 ◆
11F	2854	3453,5		5476,5 ◆ 5491,5	6544,5 6604,5 ◆ 6642	8961,5 ◆	10 093	11 328 ◆	13 294,5 ◆	17 936,5 ◆ 17 956,5 ◆
11G	2896 2924			5596,5 5656,5	6627 6649,5	8961,5 ◆	10 075	11 328 ◆	13 294,5 ◆	17 936,5 ◆ 17 956,5 ◆
11H	2959	3495,5		5469 ◆ 5484	6657	8961,5 ◆	10 030	11 328 ◆	13 294,5 ◆	17 936,5 ◆ 17 956,5 ◆

Band Mc/s	3	3,5	4,7	5,6	6,6	9	10	11,3	13,3	18
Areas	kc/s	kc/s	kc/s	kc/s	kc/s	kc/s	kc/s	kc/s	kc/s	kc/s
12A		3453,5			6649,5	8961,5 ◆		11 328 ◆		
12C	2875	3411,5 3460,5 ◆	4661,5 4675,5	5454 ◆ 5536,5 5649 5664	6544,5 ◆ 6552 6582 6604,5	8922 8961,5 ◆		11 328 ◆ 11 385	13 294,5 ◆	17 936,5 ◆ 17 956,5 ◆
12D	2861 ◆ 2903 ◆ 2938 ◆ 2973 ◆		4689,5	5461,5 ◆ 5499 5514	6537 6597 6619,5 6634,5	8837 8961,5 ◆		11 328 ◆ 11 366	13 294,5 ◆	17 936,5 ◆ 17 956,5 ◆
12E	2882 3001			5521,5	6612	8961,5 ◆		11 328 ◆	13 294,5 ◆	17 936,5 ◆ 17 956,5 ◆
12F		3446,5 3467,5		5476,5 ◆ 5589 5634	6529,5 6589,5 6627 6672	8939 8961,5 ◆		11 328 ◆	13 294,5 ◆	17 936,5 ◆ 17 956,5 ◆
12G	2980		4682,5	5491,5 5544	6642 6657	8961,5 ◆	10 057	11 328 ◆	13 294,5 ◆	17 936,5 ◆ 17 956,5 ◆
12H		3481,5		5529	6574,5	8930,5 8961,5 ◆		11 328 ◆	13 294,5 ◆	17 936,5 ◆ 17 956,5 ◆
12J	2952 ◆	3425,5 ◆		5619		8961,5 ◆	10 021	11 328 ◆	13 294,5 ◆	17 936,5 ◆ 17 956,5 ◆
13C	2917	3453,5		5596,5 5656,5	6604,5	8896,5 8961,5 ◆		11 328 ◆	13 294,5 ◆	17 936,5 ◆ 17 956,5 ◆
13D	2994	3495,5		5469 ◆	6619,5	8961,5 ◆	10 066	11 328 ◆	13 294,5 ◆	17 936,5 ◆ 17 956,5 ◆
13E	2924 3015	3439,5	4654,5	5454 ◆ 5664	6627	8913,5 8961,5 ◆	10 039	11 328 ◆ 11 356,5	13 294,5 ◆	17 936,5 ◆ 17 956,5 ◆
13F	2861 2938 ◆	3446,5	4675,5 4689,5		6559,5	8837 8961,5 ◆		11 328 ◆	13 294,5 ◆	17 936,5 ◆ 17 956,5 ◆
13G	2868 2952 3008 ◆	3425,5 ◆	4668,5	5491,5 5544	6552 6642	8862,5 8961,5 ◆		11 309 11 328 ◆	13 294,5 ◆	17 936,5 ◆ 17 956,5 ◆
13H	2938 ◆ 2980 3008 ◆	3481,5	4682,5	5551,5 5604 5619		8947,5 8961,5 ◆	10 075	11 328 ◆ 11 394,5	13 294,5 ◆	17 936,5 ◆ 17 956,5 ◆
13I	2987	3411,5 3474,5		5649	6582	8961,5 ◆	10 030	11 328 ◆	13 294,5 ◆	17 936,5 ◆ 17 956,5 ◆
13J	2854 2959	3488,5		5484 5536,5	6544,5 6627 6649,5	8956 ◆ 8961,5 ◆	10 084	11 299,5 11 318,5 ◆ 11 328 ◆	13 294,5 ◆	17 936,5 ◆ 17 956,5 ◆
13K	2896 2945	3460,5	4661,5	5506,5 5596,5	6589,5 6604,5 6634,5	8854 8956 ◆ 8961,5 ◆	10 093	11 318,5 ◆ 11 328 ◆ 11 375,5	13 294,5 ◆	17 936,5 ◆ 17 956,5 ◆
13L	2882 2931 2973	3418,5		5461,5 ◆ 5656,6 ◆	6529,5	8888 8922 8961,5 ◆	10 012	11 280,5 11 328 ◆	13 294,5 ◆	17 936,5 ◆ 17 956,5 ◆

ARTICLE 2

FREQUENCY ALLOTMENT PLAN
(per numerical order of frequencies)

General Notes: (1) Class of stations : FA
Types of emission : A1, A2, A3, A4 and F1
Power : 4 kW (peak) for aeronautical stations unless otherwise indicated
200 W (peak) for aircraft station unless otherwise indicated
Hours : H 24 unless otherwise indicated.

(2) A frequency alloted on "day-time basis" may be used on a secondary basis during the period one hour after sunrise to one hour before sunset when the identical channel is allotted on a primary basis to Major World Air Route Areas, Regional and Domestic Air Route Areas, or Sub-Regional and Domestic Air Route Areas which receive full protection during the twenty-four hours. The use of frequencies on a secondary basis is subject to their being no interference with the primary allotment.

(3) A "shared channel" is a channel allotted in common to adjacent areas within interference range of each other and its use is subject to agreement between the administrations concerned.

"R" FREQUENCY PLAN

Frequency kc/s 1	Authorised area of use 2	Remarks 3
2854	RDARA : 1, 2B, 3B, 7D, 9, 11F, 13J.	1 to be used East of 11° West. 2B on day-time basis.
2861	RDARA : 1E, 3A, 6E, 9B, 10C, 12D, 13F.	10C and 12D night-time protection of 12 db.
2868	MWARA : FE2, NA. RDARA : 2B, 7, 13G.	2B on day-time basis.
2875	MWARA : SA RDARA : 3, 9D, 12C.	
2882	RDARA : 2, 6C, 7E, 10E, 12E, 13L.	
2889	MWARA : EU, NSAM1. RDARA : 6B, 9E.	
2896	RDARA : 1, 3C, 7E, 9E, 11G, 13K.	1 to be used East of 11° West.
2903	RDARA : 1B, 3B, 3C, 5B, 5C, 5D, 9D, 11B, 12D.	3B and 3C shared. 5B, 5C and 5D shared. 12D to be used East of 70° West.
2910	MWARA : EU, NSAM2. RDARA : 6B, 9D.	
2917	RDARA : 1, 3C, 7E, 9D, 10B, 13C.	1 to be used East of 11° West.
2924	RDARA : 2, 4B, 6C, 11G, 13E.	
2931	MWARA : NA(Ext). RDARA : 6A, 6E, 9D, 10A, 13L.	6A and 6E shared.
2938	RDARA : 1, 2B, 3B, 7D, 9D, 11B, 12D, 13F, 13H.	1 to be used East of 11° West. 2B on day-time basis. 11B and 12D night-time protection of 12 db. 13F and 13H shared.

"R" FREQUENCY PLAN

Frequency kc/s 1	Authorised area of use 2	Remarks 3
2945	MWARA : NA, SP. RDARA : 2C., 6A, 6E, 6F, 13K.	2C on day-time basis. 6A, 6E and 6F shared.
2952	RDARA : 1, 3B, 3C, 7E, 9E, 10C, 12J, 13G.	1 to be used East of 11° West. 3B and 3C shared. 10C and 12J night-time protection 12 db.
2959	RDARA : 1, 3B, 6A, 9A, 11H, 13J.	1 to be used East of 11° West. 6A to be used East of 80° East.
2966	MWARA : CWP, NSA2, NSAM2. RDARA : 9E.	
2973	RDARA : 1, 2, 3, 4, 5, 6, 7, 8, 9, 10B, 12D, 13L.	1 to be used East of 11° West. 10B and 12D night-time protection of 12 db. Authorised for use in Regional and Domestic Air Route Areas 1, 2, 3, 4, 5, 6, 7, 8, 9 and the respective Sub-Regional and Domestic Air Route Areas as follows: (1) aboard aircraft for communications with approach and aerodrome control; (2) at aeronautical stations for aerodrome and approach control under the following conditions: *(a)* for approach control with power limited to a value that will produce 20 μv/m at 100 km and in any case no more than 20 watts in the antenna circuit, *(b)* for aerodrome control with the power limited to a value that will produce 20 μv/m at 40 km and in any case no more than 20 watts in the antenna circuit, *(c)* the power of aeronautical stations which use this frequency under the conditions prescribed above may be increased through ITU and/or ICAO regional agreements to the extent necessary to meet special operational difficulties such as those introduced by high atmospheric noise level; (3) for any other aeronautical mobile communication requirement on the condition that no harmful interference be caused thereby to stations employing it for aerodrome and approach control purposes; (4) the specific application of this frequency for the above purposes may be decided at ITU and/or ICAO regional aeronautical conferences.
2980	Pacific and EU Meteorological broadcasts. RDARA : 2B, 12G, 13H.	Authorized for ground to air meteorological broadcasts serving the Major World Air Routes traversing the Pacific Ocean Areas and for ground to air meteorological broadcasts in the European Major World Air Route Area. 2B on day-time basis.
2987	MWARA : FE1, NA, NP. RDARA : 2C, 7B, 13I.	2C on day-time basis.
2994	RDARA : 2, 3, 7D, 9D, 11C, 13D.	2 and 3 shared.
3001	Atlantic and ME Meteorological broadcasts. RDARA : 12E.	Authorized for ground to air meteorological broadcasts serving the Major World Air Routes traversing the Atlantic Ocean Areas. Authorized for ground to air meteorological broadcasts in that part of the Middle East Major World Air Route Area East of 25° East subject to the condition that its night-time use is restricted to that part of the Middle East Major World Air Route Area East of 40° East.
3008	RDARA : 2, 3, 7, 9A, 9D, 10D, 13G, 13H.	2 and 3 shared. 9A and 9D shared. 13G and 13H shared.
3015	RDARA : 1D, 1E, 3, 9B, 11D, 13E.	1E to be used East of 11° West. 1D and 1E shared. 3 to be used East of 80° East.

"R" FREQUENCY PLAN

Frequency kc/s 1	Authorised area of use 2	Remarks 3
3023.5	World-wide.	Authorized for world-wide use for the "R" and "OR" services as follows: (1) aboard aircraft for: *(a)* communications with approach and aerodrome control, *(b)* communication with an aeronautical station when other frequencies of the station are either unavailable or unknown; (2) at aeronautical stations for aerodrome and approach control under the following conditions: *(a)* for approach control with power limited to a value that will produce 20 μv/m at 100 km and in any case no more than 20 watts in the antenna circuit, *(b)* for aerodrome control with the power limited to a value that will produce 20 μv/m at 40 km and in any case no more than 20 watts in the antenna circuit, *(c)* special attention must be given in each case to the type of antenna used in order to avoid harmful interference, *(d)* the power of aeronautical stations which use this frequency and which operate under the conditions prescribed above may be increased through ITU and/or ICAO regional agreements to the extent necessary to meet certain operational requirements; (3) for intercommunication between mobile stations engaged in coordinated search and rescue operations at the scene of a disaster; (4) the specific application of this frequency for the above purposes may be decided at regional aeronautical conferences; (5) This channel may be used for A1 or A3 emission in accordance with special arrangements. It shall not be subdivided.
3404.5	MWARA: ME, NSAM2. RDARA: 2A, 3B, 9.	2A on day-time basis.
3411.5	MWARA: NSA1. RDARA: 6, 10A, 12C, 13I.	
3418.5	RDARA: 1B, 1C, 1D, 1E, 6B, 9D, 11E, 13L.	1B, 1C, 1D and 1E shared. 1B and 1E to be used East of 11° West.
3425.5	RDARA: 1, 3C, 6D, 7E, 12J, 13G.	1 to be used East of 11° West. 3C on day-time basis. 12J, 13G: night-time protection of 12 db.
3432.5	MWARA: CEP, SA(Ext). RDARA: 3, 6A, 6E, 7E, 9D.	3 on day-time basis. 6A and 6E shared.
3439.5	RDARA: 2, 6C, 7D, 10D, 13E.	
3446.5	MWARA: CEP, ME(Ext). RDARA: 3, 9D, 12F, 13F.	3 on day-time basis.
3453.5	RDARA: 1, 3C, 6D, 7E, 11F, 12A, 13C.	1 to be used East of 11° West. 3C on day-time basis.
3460.5	RDARA: 2, 3, 7D, 9B, 10E, 12C, 13K.	2 and 3 shared. 10E, 12C: night-time protection of 12 db.
3467.5	MWARA: CEP, EU. RDARA: 6B, 9E, 12F.	
3474.5	RDARA: 1B, 6A, 7B, 9D, 10C, 13I.	1B to be used East of 11° West.
3481.5	MWARA: CEP, EU. RDARA: 3A, 6D, 9D, 12H, 13H.	3A on day-time basis. 9D to be used East of 160° East.
3488.5	RDARA: 2, 3, 9A, 10D, 13J.	2 and 3 shared.

"R" FREQUENCY PLAN

Frequency kc/s 1	Authorised area of use 2	Remarks 3
3495.5	RDARA: 1, 2, 3, 4, 5, 6, 7, 8, 9, 11H, 13D.	Authorized for use in Regional and Domestic Air Route Areas 1, 2, 3, 4, 5, 6, 7, 8, 9 and the respective Sub-Regional and Domestic Air Route Areas as follows: (1) aboard aircraft for communications with approach and aerodrome control; (2) at aeronautical stations for aerodrome and approach control under the following conditions: *(a)* for approach control with power limited to a value that will produce 20 μv/m at 100 km and in any case no more than 20 watts in the antenna circuit, *(b)* for aerodrome control with the power limited to a value that will produce 20 μv/m at 40 km and in any case no more than 20 watts in the antenna circuit, *(c)* the power of aeronautical stations which use this frequency under the conditions prescribed above may be increased through ITU and/or ICAO regional agreements to the extent necessary to meet special operational difficulties such as those introduced by high atmospheric noise level; (3) for any other aeronautical mobile communication requirement on the condition that no harmful interference be caused thereby to stations employing it for aerodrome and approach control purposes; (4) the specific application of this frequency for the above purposes may be decided at ITU and/or ICAO regional aeronautical conferences.
4654.5	MWARA: EU. RDARA: 2B, 9A, 9B, 9D, 9E, 11C, 13E.	2B on day-time basis. 9A, 9B, 9D and 9E shared.
4661.5	RDARA: 2, 3, 9D, 10D, 12C, 13K.	2 and 3 shared.
4668.5	RDARA: 1, 3C, 6C, 6D, 10A, 11D, 13G.	1 to be used East of 11° West. 3C on day-time basis. 6C and 6D shared.
4675.5	RDARA: 1, 3A, 9D, 12C, 13F.	1 to be used East of 11° West. 3A on day-time basis.
4682.5	RDARA: 1D, 3, 5A, 7E, 9D, 10E, 11B, 12G, 13H.	1D on day-time basis. 5A for use in Egyptian territory with radiated power not to exceed 100 watts
4689.5	MWARA: EU. RDARA: 3B, 6D, 10C, 12D, 13F.	3B on day-time basis.
4696.5	MWARA: NSAM1. RDARA: 2, 7D, 9D.	
5454	RDARA: 10E, 12C, 13E.	ITU Region 2 exclusive "R" channel.
5461.5	RDARA: 10B, 12D, 13L.	ITU Region 2 exclusive "R" channel.
5469	RDARA: 11H, 13D.	ITU Region 2 exclusive "R" channel.
5476.5	RDARA: 11F, 12F.	ITU Region 2 exclusive "R" channel.
5484	RDARA: 1E, 2B, 3B, 4B, 7D, 9, 11H, 13J.	1E to be used East of 11° West.
5491.5	RDARA: 2C, 6, 7E, 11F, 12G, 13G.	
5499	RDARA: 1, 7, 8A, 9B, 9D, 10C, 12D.	1 to be used East of 11° West. 7, 8A, 9B and 9D shared.

"R" FREQUENCY PLAN

Frequency kc/s 1	Authorised area of use 2	Remarks 3
5506.5	MWARA: CWP, NSA2. RDARA: 11D, 13K.	
5514	RDARA: 2A, 2C, 6A, 6B, 6E, 9, 10C, 12D.	2A and 2C shared. 6A, 6B and 6E shared.
5521.5	MWARA: NP, NSA1. RDARA: 12E.	
5529	RDARA: 1B, 3B, 5A, 6D, 9D, 11D, 12H.	
5536.5	RDARA: 2, 5D, 6C, 10D, 12C, 13J.	
5544	RDARA: 1, 6B, 7, 9B, 10A, 11D, 12G, 13G.	1 to be used East of 11° West.
5551.5	MWARA: CEP, EU. RDARA: 9E, 13H.	
5559	Atlantic and ME Meteorological broadcasts.	Authorized for ground to air meteorological broadcasts serving the Major World Air Routes traversing the Atlantic Ocean Areas. Authorized on a day-time only basis for ground to air meteorological broadcasts in that part of the Middle East Major World Air Route Area East of 25° East.
5566.5	MWARA: NSAM2. RDARA: 3, 6A, 6E.	6A and 6E shared.
5574	Pacific and EU Meteorological broadcasts. RDARA: 7.	Authorized for ground to air meteorological broadcasts serving the Major World Air Routes traversing the Pacific Ocean Areas and for ground to air meteorological broadcasts in the European Major World Air Route Area.
5581.5	MWARA: NSAM2. RDARA: 3, 6A, 6E.	6A and 6E shared.
5589	RDARA: 1, 6B, 7, 9A, 11C, 12F.	
5596.5	RDARA: 2, 3, 4B, 6D, 9D, 11G, 13C, 13K.	2 and 3 shared.
5604	MWARA: CEP, ME. RDARA: 13H.	
5611.5	MWARA: FE2, NA(Ext).	
5619	RDARA: 1D, 3B, 6D, 9D, 12J, 13H.	
5626.5	MWARA: NA. RDARA: 9B.	
5634	RDARA: 2C, 6, 7B, 11B, 12F.	
5641.5	MWARA: NA, SP.	
5649	RDARA: 1, 3, 6E, 7D, 10D, 12C, 13I.	1 to be used East of 11° West.
5656.5	RDARA: 1E, 5B, 5C, 5D, 6C, 9D, 11G, 13C, 13L.	1E to be used East of 11° West. 5B, 5C and 5D shared. 13L reduced power nearest boundary 13C.
5664	RDARA: 2, 3, 4A, 7D, 9, 10D, 12C, 13E.	2 and 3 shared.

"R" FREQUENCY PLAN

Frequency kc/s 1	Authorised area of use 2	Remarks 3
5671.5	MWARA: FE1, NA.	
5680	World-wide.	Authorized for world-wide use for the "R" and "OR" services as follows: (1) aboard aircraft for: *(a)* communications with approach and aerodrome control, *(b)* communication with an aeronautical station when other frequencies of the station are either unavailable or unknown; (2) at aeronautical stations for aerodrome and approach control under the following conditions: *(a)* for approach control with power limited to a value that will produce 20 μv/m at 100 km and in any case no more than 20 watts in the antenna circuit, *(b)* for aerodrome control with the power limited to a value that will produce 20 μv/m at 40 km and in any case no more than 20 watts in the antenna circuit, *(c)* special attention must be given in each case to the type of antenna used in order to avoid harmful interference, *(d)* the power of aeronautical stations which use this frequency and which operate under the conditions prescribed above may be increased through ITU and/or ICAO regional agreements to the extent necessary to meet certain operational requirements; (3) for intercommunication between mobile stations engaged in coordinated search and rescue operations at the scene of a disaster; (4) the specific application of this frequency for the above purposes may be decided at regional aeronautical conferences; (5) this channel may be used for A1 or A3 emission, in accordance with special arrangements. It shall not be subdivided.
6529.5	RDARA: 1B, 1C, 1D, 3B, 6A, 6E, 7B, 9B, 11C, 12F, 13L.	1B to be used East of 11° West. 1B, 1C and 1D shared. 6A and 6E shared.
6537	RDARA: 4, 5, 6F, 9D, 11B, 12D.	4 and 5 shared. 6F to be used East of 95° East.
6544.5	RDARA: 1D, 3A, 6A, 9E, 11F, 12C, 13J.	12C to be used South of 20° North.
6552	MWARA: EU. RDARA: 3, 6C, 7, 10D, 12C, 13G.	
6559.5	RDARA: 2A, 4B, 6A, 6B, 6E, 9, 11D, 13F.	6A, 6B and 6E shared.
6567	MWARA: NSAM2. RDARA: 1, 3A, 6A, 7D, 7E, 9D, 10A.	1 to be used East of 11° West. 7D and 7E shared.
6574.5	RDARA: 2A, 4A, 6B, 9, 11D, 12H.	
6582	MWARA: EU. RDARA: 6, 7E, 10C, 12C, 13I.	
6589.5	RDARA: 2, 3, 4B, 6D, 9D, 11E, 12F, 13K.	2 and 3 shared.
6597	MWARA: SA(Ext). RDARA: 2B, 6F, 7B, 7C, 7D, 7E, 10B, 12D.	7B, 7C, 7D and 7E shared.
6604.5	RDARA: 1E, 3C, 5B, 6C, 11F, 12C, 13C, 13K.	1E to be used East of 11° West. 11F to be used North of 40° North.

"R" FREQUENCY PLAN

Frequency kc/s 1	Authorised area of use 2	Remarks 3
6612	MWARA: CEP, SA. RDARA: 2A, 2C, 3B, 6E, 9A, 9B, 9D, 9E, 10E, 12E.	2A and 2C shared. 9A, 9B, 9D and 9E shared.
6619.5	RDARA: 2, 6C, 6D, 11B, 12D, 13D.	6C and 6D shared.
6627	MWARA: ME (Ext). RDARA: 3C, 7B, 9, 10C, 11G, 12F, 13E, 13J.	
6634.5	RDARA: 1, 3B, 6A, 9B, 11B, 12D, 13K.	1 to be used East of 11° West.
6642	RDARA: 2, 3, 4B, 6D, 9D, 11F, 12G, 13G.	2 and 3 shared.
6649.5	RDARA: 1, 3B, 6A, 7, 8A, 9A, 9E, 11G, 12A, 13J.	1 to be used East of 11° West. 7, 8A, 9A and 9E shared.
6657	RDARA: 2, 3, 4B, 6D, 9D, 11H, 12G.	2 and 3 shared.
6664.5	MWARA: NSAM1. RDARA: 1, 6B, 7B, 9A, 9B, 9D, 9E, 10D.	1 to be used East of 11° West. 9A, 9B, 9D and 9E shared.
6672	RDARA: 2, 3, 4B, 6C, 6D, 9D, 11E, 12F.	2 and 3 shared. 6C and 6D shared.
6679.5	MWARA: SA, CEP. RDARA: 3B, 6A, 6E, 7B, 7E, 9, 10E.	6A and 6E shared. 7B and 7E shared.
8820	MWARA: NSA1, NSAM1. RDARA: 6C, 6D.	6C and 6D shared.
8828.5	Atlantic and ME Meteorological broadcasts.	Authorized for ground to air meteorological broadcasts serving the Major World Air Routes traversing the Atlantic Ocean Areas. Authorized on a day-time only basis for ground to air meteorological broadcasts in that part of the Middle East Major World Air Route Area East of 25° East. The use of this frequency in this area East of 65° East is on a primary basis and West of 65° East on a secondary basis.
8837	RDARA: 1, 6F, 12D, 13F.	1 to be used East of 11° West.
8845.5	MWARA: ME, NSAM2, SP. RDARA: 3B.	
8854	RDARA: 1, 6F, 11D, 13K.	1 to be used East of 11° West.
8862.5	MWARA: CWP, NA. RDARA: 7, 13G.	
8871	MWARA: EU, FE2, NSAM2. RDARA: 7D.	
8879.5	MWARA: CEP, FE1, SA. RDARA: 7E, 10E.	
8888	MWARA: NA. RDARA: 6A, 6F, 9D, 13L.	6A and 6F shared.
8896.5	RDARA: 4, 5, 9, 10B, 13C.	4 and 5 shared.
8905	Pacific and EU Meteorological broadcasts.	Authorized for ground to air meteorological broadcasts serving the Major World Air Routes traversing the Pacific Ocean Areas and for ground to air meteorological broadcasts in the European Major World Air Route Area.

"R" FREQUENCY PLAN

Frequency kc/s 1	Authorised area of use 2	Remarks 3
8913.5	MWARA : NA. RDARA : 3C, 7B, 9B, 13E.	
8922	RDARA : 2, 3, 7D, 9, 12C, 13L.	2 and 3 shared.
8930.5	MWARA : CEP, EU, FE1. RDARA : 7E, 12H.	
8939	MWARA : NP, SA. RDARA : 6A, 9A, 12F.	
8947.5	MWARA : NA(Ext). RDARA : 3B, 3C, 7, 8A, 9, 13H.	3B and 3C shared. 7, 8A and 9 shared.
8956	MWARA : NSA2. RDARA : 6B, 11B, 13J, 13K.	6B to be used East of 90° East. 13J and 13K shared. 13K to be used on a non interference basis.
8961.5	World-Wide for RDARA's and Sub RDARA's (except 12B, 12I, 13A, 13B and 13M).	High stability A1 emission only.
10 012	RDARA : 2, 3, 11C, 13L.	2 and 3 Shared.
10 021	MWARA : ME(Ext). RDARA : 9D, 12J.	
10 030	RDARA : 2, 3, 11H, 13I.	2 and 3 shared.
10 039	RDARA : 2, 3, 7E, 10D, 13E.	2 and 3 shared.
10 048	MWARA : CEP, SA(Ext). RDARA : 6A, 6D, 6E, 6F.	6A, 6D, 6E and 6F shared.
10 057	RDARA : 2, 3A, 3C, 9D, 9E, 10C, 12G.	2, 3A and 3C shared. 9D and 9E shared.
10 066	RDARA : 1, 6F, 11E, 13D.	1 to be used East of 11° West.
10 075	RDARA : 2, 3, 7E, 11G, 13H.	2 and 3 shared.
10 084	MWARA : CEP. RDARA : 1, 6C, 13J.	1 to be used East of 11° West. 6C to be used West of 140° East.
10 093	RDARA : 2, 3A, 3C, 9B, 9D, 9E, 11F, 13K.	2, 3A and 3C shared. 9B, 9D and 9E shared.
11 280.5	RDARA : 3C, 9D, 11B, 13L.	
11 290	MWARA : NSAM2. RDARA : 2, 3A, 9D.	2 and 3A shared.
11 299.5	MWARA : CEP, EU. RDARA : 13J.	
11 309	RDARA : 2, 9B, 10D, 13G.	
11 318.5	MWARA : CEP. RDARA : 7, 8A, 13J, 13K.	7 and 8A shared. 7 to be used East of 20° East. 13J and 13K shared.
11 328	RDARA : 3, 7E, 9D, 10, 11, 12, (except 12 B and 12 I) 13 (except 13 A, 13 B and 13 M)	10, 11, 12 and 13 shared. To be used in 10A, 10B, 10C and 10D on a basis non-interference to area 3.
11 337.5	MWARA : NSAM2. RDARA : 6.	

"R" FREQUENCY PLAN

Frequency kc/s 1	Authorised area of use 2	Remarks 3
11 347	RDARA: 2, 3, 11C.	2 and 3 shared.
11 356.5	RDARA: 1, 9, 10C, 13E.	1 to be used East of 11° West.
11 366	RDARA: 2, 3, 12D.	2 and 3 shared.
11 375.5	RDARA: 2, 9, 10B, 13K.	
11 385	RDARA: 4, 5, 12C.	4 and 5 shared.
11 394.5	RDARA: 2, 3A, 9B, 11E, 13H.	2 and 3A shared.
13 264.5	MWARA: NA. RDARA: 3.	
13 274.5	MWARA: NP, SA(Ext).	
13 284.5	MWARA: FE2, NA.	
13 294.5	RDARA: 6F, 10, 11, 12C, 12D, 12E, 12F, 12G, 12H, 12J, 13. (except 13 A, 13 B and 13M).	10, 11, 12C, 12D, 12E, 12F, 12G, 12H, 12J and 13 shared.
13 304.5	MWARA: CEP, NSA1. RDARA: 6C.	6C to be used West of 140° East.
13 314.5	MWARA: NSAM1. RDARA: 1.	1 to be used East of 11° West.
13 324.5	MWARA: FE1, NA.	
13 334.5	MWARA: CEP, ME(Ext), NSA2.	
13 344.5	MWARA: NSAM2, SP. RDARA: 2.	
13 354.5	MWARA: CWP, NA(Ext).	
17 906.5	MWARA: CWP, EU, NP.	
17 916.5	MWARA: NSAM1, NSAM2. RDARA: 3A, 3C.	3A and 3C shared.
17 926.5	MWARA: CEP, ME(Ext), NSA2.	
17 936.5	RDARA: 4, 5, 7, 10, 11, 12C, 12D, 12E, 12F, 12G, 12H, 12J, 13 (except 13A, 13B and 13M).	4, 5 and 7 shared. 10, 11, 12C, 12D, 12E, 12F, 12G, 12H, 12J and 13 shared.
17 946.5	MWARA: NSA1, SA(Ext), SP.	
17 956.5	RDARA: 2, 3, 10,11, 12C, 12D, 12E, 12F, 12G, 12H, 12J, 13 (except 13A, 13B and 13M).	2 and 3 shared. 10, 11, 12C, 12D, 12E, 12F, 12G, 12H, 12J and 13 shared.
17 966.5	MWARA: FE1, FE2, NA(Ext).	

PART III

PLAN FOR THE ALLOTMENT OF FREQUENCIES FOR THE AERONAUTICAL MOBILE "OR" SERVICE

Section I

DETERMINATION OF REQUIREMENTS

1. Compilation of Requirements.

In order to have the necessary information concerning requirements for aeronautical mobile OR band frequencies, the following action was taken :

(a) All the Forms 2 concerning the aeronautical mobile service (either submitted at Atlantic City or received by the Provisional Frequency Board (P.F.B.) before 10th April 1948 or subsequently up to 15th May 1948, the opening date of the Conference) were assembled.

(b) All countries members of the I.T.U. were requested by the Preparatory Committee to submit modifications, additions and deletions concerning OR requirements before 15th May 1948 and supplementary information before 30th May 1948.

(c) The information supplied in compliance with the request shown at *(b)* was incorporated with the material mentioned in *(a)*.

(d) Requirements concerning the OR service were segregated as far as possible from those concerning the R service. In cases of doubt the countries concerned were requested to submit supplementary information before 10th June 1948.

2. Minimum Information Necessary.

(1) Statements of the requirements of the various countries on Form 2, or in a form giving essentially the same information as Form 2, were to be used as a basis for determining the requirements of the various countries in the aeronautical mobile OR service.

(2) Although desirable to have all the information called for on Form 2, it was found, nevertheless, possible to make frequency allotments in the aeronautical mobile OR

service without some of the details contained therein. There remained, however, a limit below which the amount of information required could not be allowed to fall, if engineering principles were to be applied.

(3) Consequently, only those requirements were considered for which the following minimum information was available :

— the approximate location of the transmitter [1) 2)],
— the type of emission,
— hours of operation (G.M.T.),
— power delivered to the antenna (kW), and
— order of frequencies desired.

(4) The foregoing provisions were not rigidly applied in cases where sufficient information was available to facilitate the application of the agreed technical principles to the formulation of the OR frequency allotment plan.

3. Study and Disposition of Information.

(1) Requirements received after 30th May 1948 could not be dealt with in the time at the disposal of the Conference ; therefore, all available relative information, including the date on which it was received, was passed to the I.F.R.B., to be dealt with in accordance with the terms of paragraphs 16 and 17 of the resolution of the International Administrative Radio Conference, Atlantic City 1947, " Relating to the Preparation of the New International Frequency List ", and with the decisions of the present Conference.

(2) The requirements of countries which had been submitted up to and including 30th May 1948 in accordance with paragraphs 1 and 2, but which did not contain the information mentioned in paragraph 2 (3), were considered on equal terms with those of countries which had provided full information by that date, subject to the receipt of the necessary additional information before 10th June 1948.

(3) The manner in which the OR requirements of the various countries were dealt with is shown below.

A. Members of the I.T.U. whose OR requirements have been studied by the Conference.

Albania (People's Republic of)
Saudi Arabia (Kingdom of)
Argentine Republic
Australia (Commonwealth of) (including Mandated Territory of New Guinea)
The Bielorussian Soviet Socialist Republic
Bolivia
Brazil
Bulgaria (People's Republic of)
Canada (including the stations operated by agreement in Labrador)
Chile
China
Colombia (Republic of)
Portuguese Colonies (Azores, Angola, Cape Verde Islands, Portuguese Guinea, Portuguese Indies, Macau, Mozambique, S. Tomé and Principe, Portuguese Timor)

1) *(a)* For frequencies of 6 Mc/s and below, used in daylight, the location of the transmitter is to be stated to within 50 km in the frontier zone of each country, and to within 300 km outside this zone.
(b) For frequencies above 6 Mc/s used both by day and by night, the location of the transmitter is to be stated to within 100 km in the frontier zone of each country, and to within 600 km outside this zone.
(c) For frequencies below 6 Mc/s used by night, the location of the transmitter is to be stated as in *(b)*

2) The frontier zone of a country is defined for this purpose as the zone 600 km wide inside the country extending along the frontier.

Colonies, Protectorates, Overseas Territories and territories under mandate or trusteeship of the United Kingdom of Great Britain and Northern Ireland (Cyprus, Gibraltar, Hongkong, Kenya, Malaya, Malta, British Somaliland)
Overseas Territories of the French Republic and Territories administrated as such French Equatorial Africa, French West Africa, Cameroons (Territory under trusteeship of France), French Somaliland, Indo-China, Madagascar and Dependencies, New Caledonia and Dependencies, New Hebrides (Anglo-French Condominium), French Settlements in Oceania, Togo (Territory under Trusteeship of France)
Cuba
Denmark (including Greenland)
Egypt
United States of America (including the following stations operated by the United States of America by agreement in Bermuda, China, Guantanamo (Cuba), Greenland, British Guiana, British West Indies, Labrador, Morocco, Philippines, Newfoundland, Panama Canal Zone)
Finland
France (including Algeria and the overseas departments: Guadeloupe and Dependencies, French Guiana, Martinique, La Réunion)
Honduras (Republic of)
India
Indonesia
Iran
Iraq
Iceland
Italy
Lebanon
Mexico
Nicaragua
Norway
New Zealand (including the stations operated by agreement in Fiji)
Pakistan
Netherlands, Curaçao and Surinam
Philippines (Republic of)
Poland (Republic of)
Portugal
French Protectorates of Morocco and Tunisia
Federal People's Republic of Yugoslavia
The Ukrainian Soviet Socialist Republic
Southern Rhodesia
People's Republic of Roumania
United Kingdom of Great Britain and Northern Ireland (including the following stations operated by the United Kingdom by agreement in Ceylon, Iraq, Libya, Suez Canal Zone)
Sweden
Swiss (Confederation)
Syria
Czechoslovakia
Territories of the United States of America (Alaska, Johnston Islands, Wake Island, Midway Islands, Puerto Rico, Hawaiian Island)
Union of South Africa and the mandated territories of South-West Africa
Union of Soviet Socialist Republics
Uruguay (Oriental Republic of)

B. Members of the I.T.U. operating stations in occupied territories, the OR requirements for which have been studied by the Conference.

France, in French zones of Germany and Austria
United Kingdom of Great Britain and Northern Ireland, in British zone of Germany
United States of America, in United States zone of Germany, Caroline Islands, Mariana Islands, Marshall Islands, Ryukyu, Japan
Union of Soviet Socialist Republics, in USSR zone of Germany

C. Members of the I.T.U. whose requests arrived after 10th June, and have been sent to the I.F.R.B.

Belgium — Ethiopia — Guatemala

D. Members of the I.T.U. who have submitted Forms 2 for the aeronautical service but who have not made it clear whether these forms included requirements for the OR service.

Costa Rica — El Salvador (Republic of) — Peru
Ecuador — Greece — Thailand
Ireland

E. Country non-member of the I.T.U. which has submitted Forms 2 for the aeronautical service but which has not made it clear whether this form included requirements for the OR service.

Spain

Section II

AVAILABLE FREQUENCY BANDS AND CHANNELS

1. Bands.

The frequency bands available to the OR service fall into three distinct categories, *i.e.*

(a) bands allocated exclusively to the aeronautical mobile OR service,

(b) bands which specifically provide for the aeronautical mobile OR service, but which are shared with other services, and

(c) bands for the general mobile services, from which the aeronautical mobile OR service is not specifically excluded.

2. Assignable Frequencies.

(1) *Exclusive Bands.*

The assignable frequencies for the bands allocated exclusively to the aeronautical mobile OR service are indicated in Part I.

(2) *Shared Bands.*

(a) In studying the allotment of frequencies in the bands shared by the aeronautical mobile OR service with other services, particular account was taken of the decision taken by the Administrative Council (second meeting) to adopt the recommendations of the P.F.B. (See note [1]).

[1] PROVISIONAL FREQUENCY BOARD (P.F.B.)
GENEVA, 1948

Document No. 66-E

9 February 1948

RECOMMENDATION OF PROVISIONAL FREQUENCY BOARD TO ADMINISTRATIVE COUNCIL

" It is recommended that :

A. The Administrative Council draw the attention of all administrations concerned to the necessity of convening suitable regional conferences and propose the following action be taken by the administrations concerned :

(1) The Copenhagen Broadcasting Conference to integrate the European aeronautical and maritime mobile requirements [see note [11]), page 23 Reg's] with those of broadcasting within the band 255-285 kc/s.

(2) The Copenhagen Maritime Conference integrate the European requirements within the band 405-415 kc/s.

(3) The Oslo Conference consider all European services sharing the band 1605-2850 kc/s and include in its deliberations the bands 3155-3400 kc/s and 3500-3900 kc/s.

(4) For those parts of Region 1 outside the European Area overall regional conferences be called to consider the requirements in the shared bands lying between 150 and 3900 kc/s.

(5) The Administrations of Region 3 convene a regional conference to deal with the several service requirements in the shared bands lying between 150 and 3900 kc/s.

B. Regional arrangements should be coordinated by the I.F.R.B. in accordance with its statutes.

C. A list of the frequency requirements between 150 and 4000 kc/s submitted on Forms 1 and 2 in frequency order for the fixed, maritime mobile, aeronautical and other mobile services for the countries of the European area of Region 1 be furnished by P.F.B. to all Region 1 conferences for their use (The costs for the establishment of 100 copies of this list will be approximately 1400.— Swiss francs).

D. Lists similar to those of C above be furnished on request to other regional conferences."

The Chairman:
Paul D. MILES

(b) The channels proposed for allotment to the OR service in the shared bands have the same separation as those in the exclusive bands. No specific frequencies were recorded, however, for these shared band channels. The numbers of OR allotments proposed in the shared bands were assessed primarily on the basis of the size of the bands and the number of services sharing them. (See Section VI.)

3. Selection of Frequencies.

(1) *Exclusive Bands.*

All requirements including those common to more than one region were, to the limit of the spectrum space available, accommodated in the bands allocated exclusively to the OR service on a worldwide basis. Excess requirements in respect of Region 1 were met, as far as possible, from the band (3900 to 3950 kc/s) allocated exclusively to the OR service in that region.

(2) *Shared Bands.*

(a) The balance of the requirements was accommodated to the maximum extent in the bands mentioned in paragraph 1 *(b)* and 1 *(c)* of Section II in that order of preference.

(b) It was decided that all information (including the technical standards considered desirable for the aeronautical mobile OR service) concerning the proposed allotments in the shared bands, between 3 and 4 Mc/s, should be submitted to the I.F.R.B. for transmission to the various regional conferences. Moreover, similar information concerning the proposed allotments in the shared bands, between 4 and 27.5 Mc/s, should be submitted to the P.F.B.

Section III

ADAPTATION OF TECHNICAL PRINCIPLES

1. Division of Channels.

In order to utilize most efficiently the available bands, it was found necessary that one A3 channel satisfy either one A3 or two Al requirements. In the latter instance the two half channels were never to be allotted to different administrations.

2. Modification of Class of Emission.

Recognizing the necessity, on the one hand, of avoiding harmful interference, and on the other hand, of using the spectrum space to its full capacity, it was decided a change from one type of emission to another is permissible in those cases where no additional band space is thereby occupied.

3. Allotment of Adjacent OR Channels.

(1) It was decided that, in the frequency allotment plan, similar classes of emission were to be assembled, wherever possible, into contiguous channels. In practice, however, it proved impossible to apply this principle except in a small number of cases.

(2) Furthermore, where a country so desires, the allotments to that country were to be assembled into contiguous channels where geographical considerations permit and where otherwise practicable.

4. Repetition of Assignments.

(1) The Conference compared a summary of the requirements with a summary of the exclusive OR band channels, using various protection ratios in order to assess the possibilities of repetition of the same assignment. The theoretical possibilities of satisfying the demands for OR allotments, if all stations were equally distributed over the earth's surface, were then known. This comparison is reproduced in the following Table.

Frequency Band kc/s	Channels Available	Protection Ratio	Daytime Repetitions possible	Total daytime assignments possible	Night time Repetitions possible	Total night time assignments possible	Total requirements (Forms 2)	Percentage of requirements satisfied	
								Daytime	Night time
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
3025-3155	18	20	172	3100	7	125	1005	306	12.5
		25	130	2340	6	108		230	10
		30	77	1385	5	90		137	9
4700-4750	7	20	122	854	7	49	643	132	7.6
		25	98	686	5	35		106	5.5
		30	66	462	2	14		72	2.2
5680-5730	6	20	53	318	4	24	323	99	7.5
		25	40	240	3	18		74	5.6
		30	30	180	2	12		56	3.7
6685-6765	10	20	40	400	4	40	672	60	6
		25	26	260	3	30		39	4.5
		30	22	220	2	20		32	3
8965-9040	8	20	7	56	3	24	275	20	9
		25	6	48	2	16		17	6
		30	4	32	2	16		12	6
11175-11275	10	20	8	80	2	20	258	31	8
		25	4	40	2	20		15	8
		30	3	30	2	20		12	8
13200-13260	6	20	6	36	2	12	225	16	5
		25	4	24	2	12		11	5
		30	3	18	2	12		8	5
15010-15100	8	20	3	24	—	8	138	17	—
		25	3	24	—	8		17	—
		30	3	24	—	8		17	—
17970-18030	5	20	3	15	—	5	215	7	—
		25	3	15	—	5		7	—
		30	3	15	—	5		7	—

(2) After a study of the information contained in the above Table and other appropriate technical factors, and after taking into account the practical considerations which permit satisfaction of the maximum number of requirements consistent with minimum technical standards, the protection ratios and propagation conditions indicated below were adopted for the repetition of assignments in the various bands :

BAND (Mc/s)	PROTECTION RATIOS (db)	PROPAGATION CONDITIONS
3	30	30° from the day/night line (Summer sunspot minimum)
4	25	" " " " " " " " "
5	20	" " " " " " " " "
6	20	" " " " " " " " "
9	20	" " " " " " " " "
11	20	" " " " " " " " "
13	20	Sub-solar point " " "
15	20	" " " " " "
18	20	" " " " " "

(a) It was found that if an assignment is repeated only at distances permitting its simultaneous use during the night the frequency concerned could not be assigned a sufficient number of times to satisfy a reasonable number of requirements. Therefore, as indicated in the above table, only daylight propagation conditions have been considered in all the OR bands. A distinction in propagation conditions was made however, between the aeronautical mobile OR frequencies above and below 13 Mc/s because it is recognized that during most of the sunspot cycle frequencies above 13 Mc/s are only useful for long range communication for a few hours before and after mid-day.

(b) Although, as indicated above, frequencies were allotted on a basis of daytime use, it was considered that night-time use of these frequencies is possible assuming the probability that a reasonable percentage of stations will close at night and that the others will achieve, by distance separation, a protection ratio which, although considerably below the daytime figure, will permit them to operate with some degree of satisfaction.

(3) The percentage of requirements for each of the bands which it is considered possible to satisfy, applying the above technical standards, and assuming that all stations are equally distributed over the earth's surface, is shown in the following Tables.

TABLE OF STATISTICS

SHOWING ROUGHLY THE POSSIBILITIES OF FREQUENCY ASSIGNMENT AS A FUNCTION OF THE CHANNELS IN EACH BAND AND AS A FUNCTION OF THE NUMBER OF TIMES THESE FREQUENCIES MAY BE REPEATED WITHIN THE LAND MASSES OF DIFFERENT REGIONS

REGION 1

BANDS	EUROPE					AFRICA				
	Number of channels	Number of repetitions	Average No. of assigned frequencies	No. of requirements	% of possible assignment	Number of channels	Number of repetitions	Average No. of assigned frequencies	No. of requirements	% of possible assignment
3025—3155	25*	8	200	385	52%	25*	25	625	90	700%
4700—4750	7	5	35	220	16%	7	22	154	71	217%
5680—5730	6	3	18	162	11%	6	11	66	43	153%
6625—6765	12	3	36	167	21.5%	12	9	108	86	125%
8965—9040	9	2	18	91	20%	9	4	36	52	70%

* In region 1 the 3900-3950 kc/s band is also exclusively allocated to the aeronautical mobile OR service.

REGION 2

BANDS	NORTH AMERICA					SOUTH AND CENTRAL AMERICA				
	Number of channels	Number of repetitions	Average No. of assigned frequencies	No. of requirements	% of possible assignment	Number of channels	Number of repetitions	Average No. of assigned frequencies	No. of requirements	% of possible assignment
3025—3155	18	15	270	126	214%	18	17	306	190	161%
4700—4750	7	9	63	130	48%	7	13	91	111	82%
5680—5730	6	5	30	33	99%	6	8	48	81	59%
6625—6765	12	5	60	171	35%	12	6	72	93	77.5%
8965—9040	9	3	27	11	245%	9	3	27	92	30%

REGION 3

BANDS	ASIATIC CONTINENT					AUSTRALASIA				
	Number of channels	Number of repetitions	Average No. of assigned frequencies	No. of requirements	% of possible assignment	Number of channels	Number of repetitions	Average No. of assigned frequencies	No. of requirements	% of possible assignment
3025—3155	18	15	270	183	147%	18	16	288	180	160%
4700—4750	7	13	91	141	64.5%	7	14	98	93	105%
5680—5730	6	7	42	45	93%	6	8	48	47	102%
6625—6765	12	5	60	132	45.5%	12	7	84	119	70%
8965—9040	9	3	27	49	55%	9	4	36	49	73%

WORLD WIDE

BANDS	Number of channels	Number of repetitions	Average No. of assigned frequencies	No. of requirements	% of possible assignment
11175—11275	11	8	88	260	35.5%
13200—13260	6	6	36	226	16%
15010—15100	10	3	30	138	21.7%
17970—18030	6	3	18	215	8.4%

5. Lower Standards.

(1) In areas where it was found necessary to secure a greater repetition of assignments, the Conference agreed that the same frequency shall be allotted to more than one requirement of an administration even though this results in a reduction of protection ratio between the emissions of the stations concerned. This principle was adopted because it was considered more practicable for one administration to control the interference thereby caused than to downgrade the standard protection ratios between the stations of different administrations.

(2) It was agreed that in certain areas where peaks of requirements occur, *e.g.*, Europe, protection ratios may be lowered by agreement between the countries concerned.

(3) *Time Sharing.*

Certain assignments have been repeated where there will undoubtedly be interference between stations of different administrations. This was done, however, in the belief that the working time of any one of the stations so treated would be intermittent. In these cases each station has an equal right to use the frequency, and no one station or group of stations is given priority.

(4) *Secondary Assignments.*

It was further decided in some cases to assign a number of frequencies on a "secondary" basis. In such cases, a station having the use of a frequency as a " primary " assignment is protected from any other station using the same frequency as a " secondary " assignment by the following provisions :

— a station using a frequency on a secondary basis must be inferior in power to the station operating on a primary basis,

— such a station must be distant from the station operating on a primary basis by not less than half of the repetition distance required for a protection ratio of 20 db, and

— where frequencies are allotted on a secondary basis, they should be recorded in the Master International Frequency Register in the notification column and the frequencies may then be used in accordance with the rules laid down in the Radio Regulations.

Section IV

PREPARATION OF THE ALLOTMENT PLAN FOR THE AERONAUTICAL MOBILE "OR" SERVICE BANDS

1. Allotment Data.

The Conference therefore had at its disposal :

— an accurate list of all stated requirements,

— a list of the channels available to the aeronautical mobile OR service in the various bands, and

— the necessary technical and other principles required for the establishment of the allotment plan.

2. Allotment Procedure.

(1) To ensure the establishment of the best overall plan and to take into account the peculiarities of Regions, the allotment of frequencies to the countries of the various regions was made by representatives of the countries situated in the region concerned. Each Region was considered independently for allotments in the bands of 6 Mc/s and below, with coordination at the boundaries of the Regions, while allotments in the higher frequency bands were considered by representatives of all regions, working together.

(2) Requests by a country to have all or some of the same frequencies for its overseas territories as for the home country were satisfied on condition that maximum economy in the allotment of frequencies was achieved, and that the full possibilities of geographical duplication were taken into account. However, the requirements for overseas territories were considered on exactly the same terms as those of other countries in the same area without giving any priority to the countries requiring the same frequencies in their home and overseas territories.

(3) The problem peculiar to the European Area of Region 1 and the Southern and Central Areas of Region 2 are indicated in sub-paragraphs (4), (5) and (6) respectively.

(4) *European Area of Region 1*

(a) In the European Area of Region 1 the allotment of frequencies in the bands :

3025 to 3155 kc/s
4700 to 4750 kc/s
5680 to 5730 kc/s

was made by effecting a preliminary distribution of all the frequencies of each band (with the exception of one or two so-called reserve frequencies) in each of two parts of the area separated by the western frontiers of Poland, Czechoslovakia, Roumania and Yugoslavia. In this distribution of frequencies the possibilities of repetition of assignments were taken into account.

Before adopting the final distribution of these frequencies it was verified that the allotments made to the countries bordering the line of partition were acceptable from the point of view of interference. The application of the reserve frequencies permitted complete latitude for carrying out a re-allotment of the unacceptable frequencies.

(b) For the bands 6685 to 6765 kc/s and 8965 to 9040 kc/s, this procedure was inapplicable by reason of the excessive interference ranges which cover practically all of Europe. The allotment plan was therefore established by considering the total requirements stated by the various countries of Region 1 and by seeking to utilize the small number of available channels in each of the bands in a manner which would best satisfy the requirements of the various countries, while restricting the interference possibilities to a minimum.

(5) *Southern Area of Region 2 (South America)*

(a) The following South American countries and territories submitted requirements containing the necessary data :

Argentina	Chile	British Guiana
Bolivia	Colombia	Surinam
Brazil	French Guiana	Uruguay

(b) Since some of the countries not listed above might have requirements for the OR service, it was decided by the Conference to leave available to the countries concerned the following channels in the 3, 4 and 5 Mc/s bands :

3067	4703.5	5688
3081	4710.5	5695.5
3095	4731.5	
3116	4745.5	
3130		
3137		

The countries concerned are :

— Ecuador and Peru, which have submitted Form 2 in respect of the aeronautical service but which have not made it clear whether requirements for the OR service were included,

— Paraguay and Venezuela, which have not submitted Form 2.

(c) The frequency of 3151 kc/s was agreed for use in South America by tourist aircraft for air to ground communication.

(6) *Central Area of Region 2 (Central America and Caribbean Countries)*

(a) The following countries and territories of this area submitted requirements containing the necessary data :

Cuba
Curaçao
French Overseas Departments (Guadeloupe and Martinique)
Honduras (Republic of)
Mexico
Nicaragua
Territories of the United States of America (Puerto Rico)
United States of America—for its stations operated by agreement in Bermuda, British West Indies, Canal Zone of Panama, and Guantanamo (Cuba).

(b) Since some of the countries not listed above might have requirements for the OR service, it was agreed to leave available to these countries the following channels in the 3 Mc/s band :

3032	3046	3053	3074	3130	3151

The countries concerned are :

— Guatemala, whose requirements arrived after 10th June 1948 [see Section I, Paragraph **3** (3) *C*]

— Costa Rica and El Salvador, which have submitted Forms 2 for the aeronautical service, but have not made it clear whether these forms included requirements for the OR service [see Section I, Paragraph **3** (3) *D*]

— Haiti, Dominican Republic and Panama, which did not submit Form 2.

3. Frequency Allotment Plan.

On the basis of all the foregoing data the OR Bands allotment plan contained in Section VI below was prepared.

4. Channels Common to R and OR Services.

The channels common to the R and OR services, centered at 3023.5 and 5680 kc/s are authorized for use world-wide as laid down in paragraph 3 of Section II of Part I.

Section V

CONCLUSIONS AND RECOMMENDATIONS

1. International Frequency List.

In the time available to the Conference, it was not possible to complete all of the details which are required for inclusion in the new International Frequency List. Arrangements were made to complete the compilation of a detailed frequency list from the allotment plan shown at Section VI after the conclusion of the Conference for transmittal to the P.F.B.

2. Future Allocation to the Aeronautical Mobile OR Service.

(1) Despite the fact that the requirements of all countries were not considered (see Section I), it was possible to satisfy only a limited number of the known requirements of the OR service in the spectrum space available.
It is considered that the allocations to this service by the International Administrative Radio Conference, 1947, were made on the basis of inadequate information of the requirements of the service and, therefore, have not taken all of those requirements into account.
It is further pointed out that the primary purpose of the communications in the OR service is to ensure the safety of flight.

(2) It was agreed to recommend that the next International Administrative Radio Conference, in deciding what changes shall be made in Article 5 of the Radio Regulations, should study this Plan carefully, together with all other necessary information.

3. Limitation of Power.

It was agreed further that Administrations should consider the possibility of a reduction in aeronautical station radiated power at night, with the view to a possible agreement on the subject at the next International Administrative Radio Conference (reference International Telecommunications Convention, 1947, Articles 11 and 13, paragraph 2).

Section VI

ALLOTMENT PLAN FOR THE AERONAUTICAL MOBILE "OR" SERVICE BANDS

1. Abbreviations used.

In this plan the following abbreviations have been used.

(a) *Alphabetical List of Country Designations*
(arranged in French alphabetical order)

AEF	French Equatorial Africa
AfrS	Union of South Africa
Alas	Alaska
Alba	Albania
Algé	Algeria
Ango	Angola
AOF	French West Africa
AraS	Saudi Arabia (Kingdom of)
AraS/G	Saudi Arabia (Kingdom of) (British stations)
Arge	Argentina
Aust	Australia
Autr/F	Austria (French stations)
Azor	Azores
B	Brazil
Berm/USA	Bermuda (USA stations)
Boli	Bolivia
Bulg	Bulgaria
Came	Cameroons (Territories under Trusteeship of France)
Cana	Canada
CapV	Cape Verde Islands
Ceyl	Ceylon
Chil	Chile
Chin	China
Chin/USA	China (USA stations)
Chyp	Cyprus
Colo	Colombia
Cuba	Cuba
Cuba/USA	Cuba (USA stations)
Cura	Curacao
D/F	Germany (French stations)
D/G	Germany (British stations)
D/USA	Germany (USA stations)
Dnk	Denmark
Egyp	Egypt
Egypt/G	Anglo-Egyptian Sudan, (Egypt 3rd Region) (British Stations)
Egypt-Suez/G	Suez Canal Zone (British Stations)
F	France
Fiji/NZel	Fiji (New Zealand stations)
Finl	Finland
G	Great Britain
Gibr	Gibraltar
Grön	Greenland
Grön/USA	Greenland (USA stations)
Guad	Guadeloupe and Dependencies
GuBr/USA	British Guiana (USA stations)
GuFr	French Guinea
GuiP	Portuguese Guinea
Hawa	Hawaiian Islands
Holl	Holland (Netherlands)
Hond	Honduras (Republic of)
I	Italy
Inde	India
IndN	Indonesia
Indo	Indo-China
IndP	Portuguese India
IOBr/USA	British West Indies (USA (stations)
Iran	Iran
Iraq	Iraq
Iraq/G	Iraq (British stations)
Isla	Iceland
J/USA	Japan (USA stations)
JCaro/USA	Caroline Islands (USA stations)
JMari/USA	Marianas Islands (USA stations)
JMars/USA	Marshall Islands (USA stations)
John	Johnston Island
Keny	Kenya
Kong	Hong Kong
Labr/USA	Labrador (USA stations)
Liba	Lebanon
Liby/G	Libya (British stations)
Maca	Macao
Mada	Madagascar and Dependencies
Mala	Malaya
Malt	Malta
MarF	Morocco (French Zone)

MarF/USA	Morocco (French Zone) (USA stations)
Mart	Martinique
Mexi	Mexico
Midw	Midway Island
Moza	Mozambique
NCal	New Caledonia
NHeb	New Hebrides (French-English Condominium)
Nica	Nicaragua
Nor	Norway
NZel	New Zealand
Ocea	French Settlements in Oceania
Pak	Pakistan
PanZ	Panama Canal Zone
Papu	Papua (Territory of)
Phil	Philippines
Phil/USA	Philippines (USA stations)
Polo	Poland
Port	Portugal
Reun	Reunion
RhoS	South Rhodesia
Rico	Puerto Rico
Roum	Rumania
RSSB	Bielorussian Soviet Socialist Republic
RSSU	Ukrainian Soviet Socialist Republic
S	Sweden
SomB	British Somaliland
SomF	French Somaliland
STPr	San Tomé and Principe
Suis	Swiss (Confederation)
Suri	Surinam (Netherlands Guiana)
Syri	Syria
Tche	Czechoslovakia
TerN/USA	Newfoundland (USA stations)
TimP	Portuguese Timor
Togo	Togoland (Territory under Trusteeship of France)
Tuni	Tunisia
URSS	Union of Soviet Socialist Republics
URSS-AM	Union of Soviet Socialist Republics—Middle Asia
URSS-C	Union of Soviet Socialist Republics—Caucasus
URSS-E	Union of Soviet Socialist Republics—Europe
URSS-SEO	Union of Soviet Socialist Republics—Siberia and Far East
Urug	Uruguay
USA	United States of America
Wake	Wake Island
Youg	Yugoslavia

(b) *Other abbreviations*

N = North S = South E = East W = West

Example: "N-46° N" means "North of 46° north".
"55° W-64° W and N-7° S" means "Between 55° west and 64° west and north of 7° south".

W = watts kW = kilowatts

Example: ,, Cuba (500 W)" means "Cuba power limited to 500 watts delivered to the antenna".

Note: The comma has been used in the following tables to denote the decimal portion of the frequency channel in order to simplify the printing process.

2. Plan des fréquences OR — OR Frequency Plan — Plan de frecuencias OR.

REGION 1 — BANDE — BAND — BANDA 3025-3155 kc/s

3032	3039	3046	3053	3060	3067
AEF Algé AOF Egyp F Iraq Mada MarF Nor Polo SomF (350 W) Tuni URSS-E URSS-SEO (1 kW)	AEF Algé AOF AraS Egyp F Mada MarF Nor RSSB SomF Tuni URSS-AM (500 W) URSS-C Youg	AEF Algé AOF Came F Isla Mada Port SomF Tche URSS-E URSS-SEO (1 kW)	AEF Alba AOF Azor Came Dnk F Mada Port RSSU Togo URSS-SEO (1 kW)	AEF AOF Azor D/USA Mada Port Syri URSS-AM URSS-E URSS-SEO (1 kW)	D/USA Port Roum S Syri URSS-AM (1 kW) URSS-E
3074	**3081**	**3088**	**3095**	**3102**	**3109**
Ango Azor Bulg CapV Egyp-Suez/G F G Gibr GuiP Moza Port S STPr Tuni URSS-AM (1 kW) URSS-E	AraS/G Azor Chyp D/G Egyp/G Egyp-Suez/G Finl G Iraq/G Keny Liby/G Malt Port Roum SomB URSS-E URSS-SEO (1 kW)	AfrS D/G Egyp G Port RSSU URSS-AM (1 kW) URSS-E	AraS/G (2,5 kW) Chyp Egyp/G Egyp-Suez/G F G Gibr Iraq/G Keny Liby/G Malt Polo RhoS SomB Suis URSS-AM (1 kW) URSS-C URSS-SEO (1 kW)	AfrS Egyp G Gibr Malt RSSB *URSS-C	AfrS Egyp G I MarF/USA S *URSS-E
3116	**3123**	**3130**	**3137**	**3144**	**3151**
AfrS Algé Egyp-Suez/G G Tche Tuni URSS-AM (1 kW) URSS-C *URSS-E URSS-SEO (1 kW)	Egyp G (N) Holl I MarF/USA RSSU URSS-E URSS-SEO (N-46° N & W-170° E)	Egyp G (N) Holl URSS-E URSS-SEO (1 kW)	Bulg Egyp Holl URSS-AM (1 kW) URSS-C URSS-E URSS-SEO (1 kW)	AEF Algé AOF Came D/USA Egyp Mada MarF RSSU Tuni URSS-C URSS-E URSS-SEO (1 kW) Youg	AEF Algé AOF Bulg Came D/F Egyp Mada MarF Tuni URSS-E URSS-SEO (1 kW)

* Cette fréquence sera aussi utilisée dans la zone d'occupation de l'U.R.S.S. en Allemagne. — This frequency will also be used in the U.S.S.R. occupation zone of Germany. — Esta frecuencia será usada también en la zona ocupada en Alemania por la U.R.S.S.

3032	3039	3046	3053	3060	3067
Alas Arge B (42° W-51° W & N-9° S) Colo Grön/USA Hawa Labr/USA TerN/USA USA ■ Grön	Alas Arge (S-43° S) B Berm/USA Grön/USA Guad Hawa Labr/USA Mart Nica TerN/USA USA ■ Grön	Arge Cana Colo (S-5° N) Hawa Mexi	Alas Arge B (55° W-64° W & N-7° S) Cana (E-98° W) Cuba Hawa USA (W-98° W)	B Cana Chil (N-41° S) (300 W) Chil (S-41° S) Guad Hawa Mart Mexi	Alas Arge (S-34° S) B (12°-21° S & 46°-53° W) Berm/USA Grön/USA Guantanamo (Cuba)/USA GuBr/USA Hawa IOBr/USA Labr/USA PanZ Rico TerN/USA USA
3074	3081	3088	3095	3102	3109
Alas Arge B (E-42° & N-10° S) Berm/USA Colo (N-4° N) Grön/USA Labr/USA TerN/USA USA	Arge (S-43° S) B (10° S-18° S & E-43° W) Cana Cuba GuFr Hawa	Alas B [1] Berm/USA Chil (N-31° S) (300 W) Chil (S-31° S) Grön/USA Guantanamo (Cuba)/USA Hawa Labr/USA PanZ Rico TerN/USA USA	Arge (S-28° S) B (42° W-57° W & N-9° S) Cana Hawa Mexi	Alas B Berm/USA Chil (N-36° S) (300 W) Chil (S-36° S) Grön/USA Guad Hond Labr/USA Mart TerN/USA USA	Alas B (40°-50° W & 9°-17° S) B (S-17° S) (350 W) Berm/USA Chil Grön/USA Guantanamo (Cuba)/USA GuBr/USA Hawa IOBr/USA Labr/USA PanZ/USA Rico TerN/USA USA
3116	3123	3130	3137	3144	3151
B (E-46° W & 18°-24° S) (S-24° S, 350 W) Cana Chil Mexi	Alas Arge (S-35° S) B (E-43° W & 10°-18° S) Berm/USA Boli Grön/USA GuBr/USA Hawa Labr/USA TerN/USA USA	Cana Chil (S-41° S) (N-41° S, 300 W) Cuba Cura Hawa Suri Urug	Alas B (E-46° W & 18°-24° S) (S-24° S, 350 W) Berm/USA Chil Grön/USA Hawa Labr/USA TerN/USA USA	Alas Arge B (E-42° W & N-10° S) Berm/USA Grön/USA GuBr/USA Hawa IOBr/USA Labr/USA PanZ/USA Rico/USA TerN/USA USA	Arge B Boli } [2] Cana Chil Colo } [2] Mexi Urug [2]

■ Sur une base secondaire. — On a secondary basis. — Sobre una base secundaria.

[1] Usage nocturne limité entre 7° et 16° sud et à l'ouest de 56° ouest. — With night use limited to 7° to 16° S and W of 56° W. — Uso nocturno limitado entre 7° S y 16° S y al W de 56° W.

[2] Stations d'aéronefs seulement. — Aircraft only. — Sólo aeronaves.

3032	3039	3046	3053	3060	3067
Aust (500 W) Chin Region 5 (3 kW) Inde (350 W) Indo (350 W) JCaro/USA JMari/USA JMars/USA John Midw NCal (1 kW) NHeb (1 kW) NZel (1 kW) Ocea (1 kW) Phil-Porto Princessa (300 W) Wake	Aust S (500 W) Chin Region 8 (3 kW) Inde (350 W) IndN (500 W) Indo (250 W) NCal (250 W) NHeb (250 W) NZel (1 kW) Ocea (250 W) Phil-Aparri (200 W)	Aust S (500 W) Chin Region 5 (500 W) Fiji/NZel (1 kW) IndN (500 W) Indo (250 W) Iran (250 W) NCal (250 W) NHeb (250 W) NZel (1 kW) Ocea (250 W) Pak (250 W) Phil-Mindoro (200 W) US Pacific except.: Philippines & Japon (1 kW)	Aust (500 W) Chin Region 6 (3 kW) Fiji/NZel (1 kW) Inde (350 W) IndN (500 W) Iran (250 W) JCaro/USA JMari/USA JMars/USA John Midw NZel (1 kW) Phil-Zamboanga (300 W) Saigon (250 W) Wake	Aust (500 W) Hanoi (500 W) IndN (500 W) John Midw Phil-Baler (200 W)	Aust (500 W) IndN (500 W) Indo (350 W) Iran (350 W) J/USA (1 kW) JCaro/USA JMari/USA JMars/USA (1 kW) John Manila/USA (1 kW) Midw Ryukyu/USA (1 kW) Wake
3074	3081	3088	3095	3102	3109
Aust (5 kW) Ceyl (2,5 kW) Chin Region 7 (3 kW) JCaro/USA JMari/USA JMars/USA John Kong (2,5 kW) Mala (2,5 kW) Manila/USA Midw Pak E (500 W) Karachi (500 W) Wake	Aust (5 kW) Ceyl (2,5 kW) Chin Region 2 (3 kW) Fiji/NZel (1 kW) Kong (2,5 kW) Mala (2,5 kW) NZel (1 kW) Phil-Labo (200 W)	Aust (1 kW) J/USA JCaro/USA JMari/USA JMars/USA John Midw Phil/USA Wake	Aust (5 kW) Ceyl (2,5 kW) Chin Region 2 (3 kW) Fiji/NZel (1 kW) Kong (2,5 kW) Mala (2,5 kW) NZel (1 kW) Pak E (250 W) Phil-Cebu (200 W)	Aust (500 W) Ceyl (2,5 kW) Chin Region 7 (3 kW) J/USA (1 kW) JCaro/USA (1 kW) JMari/USA (1 kW) JMars/USA (1 kW) John (1 kW) Kong (2,5 kW) Mala (2,5 kW) Midw (1 kW) Pak (250 W) Phil/USA (1 kW) Wake (1 kW)	Aust S (500 W) Chin Region 3 (3 kW) Chin/USA (1 kW) IndN (1 kW) J/USA (1 kW) JCaro/USA (1 kW) JMari/USA (1 kW) JMars/USA (1 kW) John (1 kW) Midw (1 kW) Pak W (250 W) Phil/USA (1 kW) Wake (1 kW)
3116	3123	3130	3137	3144	3151
Aust (500 W) Ceyl (2,5 kW) Kong (2,5 kW) Mala (2,5 kW) Phil-Cagayan (400 W) Misamis (400 W)	Aust S (500 W) Chin Region 1 (3 kW) Chin/USA (1 kW) Fiji/NZel (1 kW) IndN (500 W) J/USA (1 kW) JCaro/USA (1 kW) JMari/USA (1 kW) JMars/USA (1 kW) John (1 kW) Midw (1 kW) NZel (1 kW) Pak (350 W) Phil/USA (1 kW) Wake (1 kW)	Aust S (500 W) Chin Region 4 (3 kW) IndN (500 W) NCal (1 kW) NHeb (1 kW) NZel (1 kW) Ocea (1 kW) Pak-Karachi (1,5 kW) Phil-Cebu (300 W)	Aust S (5 kW) Chin Region 6 (3 kW) IndP (100 W) JCaro/USA JMari/USA JMars/USA John Midw Phil-Cebu (400 W) Phil/USA (1 kW) TimP (100 W) Wake	Aust (500 W) Chin/USA (1 kW) J/USA (1 kW) JCaro/USA (1 kW) JMari/USA (1 kW) JMars/USA (1 kW) John (1 kW) Midw (1 kW) Phil/USA (1 kW) Wake (1 kW)	Aust (500 W) Chin Region 4 (3 kW) IndN (500 W) Phil-Cagayan (400 W) Misamis (400 W)

REGION 1 — BANDE — BAND — BANDA 4700-4750 kc/s

4703,5	4710,5	4717,5	4724,5	4731,5
AfrS AraS/G Chyp Egyp/G Egyp-Suez/G G Gibr Iraq/G Keny Liby/G Malt Polo SomB URSS-C URSS-SEO	AfrS AraS/G Chyp D/G Egyp/G Egyp-Suez/G G Iraq/G Keny Liby/G Malt MarF/USA SomB URSS-AM URSS-E Youg	AEF-Ft. Lamy (1 kW) Alba Ango Azor Came-Douala (750 W) CapV GuiP Holl Moza Port RSSU SomF STPr Tuni URSS-AM URSS-E URSS-SEO ■ Algé (300 W) F-S (300 W) I Mada (300 W)	AEF-Ft. Lamy (1kW) Ango Azor Came-Douala (750 W) CapV D/USA Egyp GuiP I Moza Port SomF STPr URSS-C URSS-E URSS-SEO ■ Algé (100 W) F (Côte Occ.) (100 W) Mada (100 W)	AEF AfrS Algé AOF Bulg F Liba Mada MarF S SomF Tche Tuni URSS-C URSS-E

4738,5	4745,5
AEF AfrS AOF Autr/F Azor Bulg D/F Egyp F Mada Nor Port RSSB URSS-AM URSS-C	AEF Algé AOF Came Egyp Mada MarF Polo Reun SomF Suis Togo Tuni *URSS-SEO ■ I-S Port (400 W)

■ Sur une base secondaire. — On a secondary basis. — Sobre una base secundaria.

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REGION 2 — BANDE — BAND — BANDA 4700-4750 kc/s

4703,5	4710,5	4717,5	4724,5	4731,5
B (E-57° W) Cana Chil (N-33° S) (300 W) Chil (S-33° S) Hawa Mexi	Alas B (E-46° W & 3° S-13° S) (300 W) Berm/USA Chil (S-41° S) Grön/USA Guantanamo (Cuba)/USA GuBr/USA IOBr/USA Labr/USA PanZ Rico TerN/USA USA	Arge Berm/USA Colo Grön/USA Hawa Labr/USA TerN/USA USA	Alas (1 kW) Arge Berm/USA Grön/USA Guantanamo (Cuba)/USA GuBr/USA IOBr/USA PanZ Rico TerN/USA USA	Alas Berm/USA Cuba (750 W) Grön/USA Guad GuFr Hawa Labr/USA Mart Nica (300 W) TerN/USA Urug USA except. E-98° W & S-36° N ■ Grön

4738,5	4745,5
Arge (S-45° S) B Cana Guad (300 W) Hawa Mart (300 W) Mexi	Berm/USA Chil Grön/USA Hawa Hond (300 W) TerN/USA Urug (100 W) USA except. Florida Florida (300 W) ■ Grön

■ Sur une base secondaire. — On a secondary basis. — Sobre una base secundaria.

4703,5	4710,5	4717,5	4724,5	4731,5
Aust S (500 W) Ceyl (2,5 kW) Chin Region 2 (1 kW) Fiji/NZel (1 kW) IndP (100 W) JCaro/USA JMari/USA JMars/USA John Kong (2,5 kW) Maca (100 W) Mala (2,5 kW) Midw NZel (1 kW) Pak (E & N-W) (400 W) Phil S (400 W) TimP (100 W) Wake	Aust (500 W) Chin/USA (5 kW) Fiji/NZel (1 kW) Inde (350 W) IndN (500 W) Indo (1 kW) J/USA (5 kW) JCaro/USA (5 kW) JMari/USA (5 kW) JMars/USA (5 kW) John (5 kW) Midw (5 kW) NZel (1 kW) Phil/USA (5 kW) Wake (5 kW)	Aust (5 kW) Ceyl (2,5 kW) JMari/USA JMars/USA John Kong (2,5 kW) Mala (2,5 kW) Midw Pak E (400 W) Karachi (1,5 kW) Phil-Cebu (300 W) Wake	Aust S except. Brisbane (500 W) Chin/USA (3 kW) Indo (1 kW) IndP (100 W) Java W (1 kW) J/USA (3 kW) JCaro/USA (3 kW) JMari/USA (3 kW) JMars/USA (3 kW) John (3 kW) Midw (3 kW) NCal (1 kW) NHeb (1 kW) Ocea (1 kW) Pak (400 W) Phil/USA (3 kW) TimP (100 W) Wake (3 kW)	Aust S (500 W) Chin (3 kW) Inde except. Sadhiya (350 W) IndN (1 kW) JMari/USA JMars/USA John Midw NCal (500 W) NHeb (500 W) Ocea (500 W) Wake

4738,5	4745,5
Aust Chin Regions 4, 5 & 6 (3 kW) Fiji/NZel Inde (S-30° N & W-90° E) (350 W) J/USA (1 kW) JCaro/USA (1 kW) JMari/USA (1 kW) JMars/USA John Mala (2,5 kW) Midw NZel Wake	Aust (5 kW) Fiji/NZel (1 kW) Inde (350 W) Indo (500 W) Iran (500 W) JMari/USA JMars/USA John Midw NZel (1 kW) Phil N (400 W) Wake

REGION 1 — BANDE — BAND — BANDA 5680-5730 kc/s

5688	5695,5	5703	5710,5	5718	5725,5
Alba Ango Azor CapV D/G Egyp G GuiP Moza Port RSSB STPr URSS-AM (500W) URSS-C (500 W) URSS-E (500 W) URSS-SEO (500 W)	AEF (S-5° N) (750 W) AfrS AOF (W-0°) (750 W) AraS/G (W-55° E) (500 W) Came-Douala (750 W) Chyp Egyp/G Egyp-Suez/G G Gibr Iraq Keny Liby/G Mada (N-20° S) (750 W) Malt SomB Tche URSS-E URSS-SEO (1kW)	AEF AOF Azor Came Egyp Holl Mada Port RSSB SomF Togo URSS-E URSS-SEO (1kW) Youg ■ Algé-Oran (300W) MarF (300 W)	AEF AfrS Algé AOF Came F Iraq Mada MarF Nor Polo Reun SomF Syri Togo Tuni URSS-AM (50 W)	AEF AfrS Algé AOF Autr/F Bulg Came D/F Egyp F Mada MarF Reun SomF Togo Tuni URSS-AM URSS-C URSS-E URSS-SEO (50 W)	AEF (S-12° N) (750 W) AfrS AOF (750 W) Came (750 W) Egyp I Isla Mada (N-20° S) (750 W) RSSU S URSS-C (1 kW) *URSS-E ■ Algé (300 W) MarF (300 W) Port (400 W)

■ Sur une base secondaire. — On a secondary basis. — Sobre una base secundaria.

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REGION 2 — BANDE — BAND — BANDA 5680-5730 kc/s

5688	5695,5	5703	5710,5	5718	5725,5
Arge (S-36° S) Cana Cura (500 W) Mexi Suri (500 W)	Alas (1 kW) Arge (S-41° S) Berm/USA Boli Grön/USA Labr/USA TerN/USA USA	Arge Cana Colo Mexi	Alas B (E-55° W) Chil Colo Grön/USA Guad (300 W) Labr/USA Mart (300 W) TerN/USA USA	B Cana Cuba (400 W) Chil (N-41° S) (300 W) Chil (S-41° S)	Alas B except. N-8° S & W-47° W(350W) Berm/USA Chil Grön/USA Guantanamo (Cuba)/USA GuBr/USA IOBr/USA Labr/USA PanZ Rico TerN/USA Urug (100 W) USA

REGION 3 — BANDE — BAND — BANDA 5680-5730 kc/s

5688	5695,5	5703	5710,5	5718	5725,5
Aust (500 W) Chin Regions (4, 5 & 6) (1 kW) Inde (S-30° N) (350 W) IndN (Java & Sumatra) (1 kW) JMari/USA (1 kW) NCal (500 W) NHeb (500 W) Ocea (500 W) Phil S (400 W) Wake (1 kW)	Aust (5 kW) Cevl (2,5 kW) Fiji/NZel (1 kW) Kong (2,5 kW) Mala (2,5 kW) NZel (1 kW) Pak (500 W)	Aust S (500 W) Fiji/NZel (1 kW) Inde (350 W) IndN (500 W) Iran (500 W) Maca (100 W) NZel (1 kW) Phil (Cebu) (400 W) Phil N (400 W)	Aust S (500 W) Chin (3 kW) IndP (100 W) Mala (2,5 kW) Phil S (400 W) TimP (100 W)	Aust (5 kW) Chin/USA (1 kW) Fiji/NZel (1 kW) Indo (500 W) J/USA (1 kW) JCaro/USA (1 kW) JMari/USA (1 kW) JMars/USA (1 kW) John (1 kW) Midw (1 kW) NZel (1 kW) Pak-Karachi Phil/USA (1 kW) Wake (1 kW)	Aust (1 kW) Chin/USA (1 kW) Inde (350 W) Indo (500 W) J/USA (1 kW) JCaro/USA (1 kW) JMari/USA (1 kW) JMars/USA (1 kW) John (1 kW) Midw (1 kW) NCal (500 W) NHeb (500 W) Ocea (500 W) Phil/USA (1 kW) Wake (1 kW)

REGION 1 — BANDE — BAND — BANDA 6685-6765 kc/s

6685 (A1)	6687,5 (A1)	6693	6700,5	6708	6715,5
Ango AraS/G (S-20° N) CapV GuiP Moza Nor Port STPr Suis *URSS-AM URSS-C URSS-SEO	Alba AfrS Azor Egyp Finl G Youg	AraS/G Bulg Chyp Egyp/G Egyp-Suez/G G Gibr Iraq/G Keny Liby/G Malt SomB URSS-SEO	AraS/G (2,5 kW) Chyp D/G Egyp/G Egyp-Suez/G G Gibr Iraq/G Keny Liby/G Malt SomB URSS-SEO (1 kW)	AfrS Chyp Egyp/G Egyp-Suez/G G Iraq/G Keny Liby/G Malt SomB URSS-E URSS-SEO (1kW) Youg	AEF Algé AOF Autr/F Came D/F F Mada MarF Reun SomF Togo Tuni URSS

6723	6730,5	6738	6745,5	6753	6760,5
AfrS Egyp (1 kW) Holl MarF/USA URSS-C (1 kW) URSS-E ■ I (100 W)	Ango Azor CapV Dnk (300 W) D/USA GuiP Isla Moza Port Roum STPr Syri (300 W) URSS-AM (500 W)	Egyp (1 kW) G MarF Tche URSS-C (1 kW)	AEF Algé AOF Came Egyp F Finl Mada MarF Polo Reun SomF Togo Tuni URSS-E URSS-SEO	AEF Algé AOF Came Egyp (500 W) F Mada MarF Reun SomF Togo Tuni URSS-E	AEF Algé AOF AraS/G (S-20° N) Came F Isla Mada MarF RSSB RSSU Togo Tuni URSS-AM (1 kW) URSS-C

■ Sur une base secondaire. — On a secondary basis. — Sobre una base secundaria.

* Cette fréquence sera aussi utilisée dans la zone d'occupation de l'U.R.S.S. en Allemagne. — This frequency will also be used in the U.S.S.R. occupation zone of Germany. — Esta frecuencia será usada también en la zona ocupada en Alemania por la U.R.S.S.

6685 (A1)	6687,5 (A1)	6693	6700,5	6708	6715,5
B Cana Mexi	Alas B Nica (300 W) USA	Arge Cana Guad GuFr Mart Mexi	Arge Berm/USA Grön/USA Guantanamo (Cuba)/USA GuBr/USA Hawa IOBr/USA Labr/USA PanZ Rico TerN/USA USA ——— ■ Grön	B Cana Cuba	B Cana Mexi
6723	**6730,5**	**6738**	**6745,5**	**6753**	**6760,5**
Alas Arge Berm/USA Grön/USA Guantanamo (Cuba)/USA GuBr/USA IOBr/USA Labr/USA PanZ Rico TerN/USA USA	Alas Arge Berm/USA Grön/USA Guantanamo (Cuba)/USA GuBr/USA IOBr /USA Labr/USA PanZ Rico TerN/USA USA	Alas Berm/USA Chil Colo (100 W) Hawa Hond Urug (100 W) USA	Boli Cana Chil (S-33° S) (100 W) Cuba Guad (100 W) GuFr (100 W) Mart (100 W)	B Cana Chil (S-41° S) (300 W) Mexi	Alas Arge Berm/USA Cura Hawa USA

■ Sur une base secondaire. — On a secondary basis. — Sobre una base secundaria.

REGION 3 — BANDE — BAND — BANDA 6685-6765 kc/s

6685 (A1)	6687,5 (A1)	6693	6700,5	6708	6715,5
Aust (500 W) Ceyl Indo (500 W) Kong Mala	Aust S (500 W) Chin/USA (3 kW) Fiji/NZel (1 kW) Inde (350 W) J/USA (3 kW) JCaro/USA (3 kW) JMari/USA (3 kW) JMars/USA (3 kW) John (3 kW) Midw (3 kW) NCal (500 W) NHeb (500 W) Ocea (500 W) Phil/USA (3 kW) Wake (3 kW)	Aust (5 kW) Ceyl Fiji/NZel (1 kW) Inde (N-25° N & E-75° E) Kong Mala NZel (1 kW)	Aust (5 kW) Ceyl (2,5 kW) Kong (2,5 kW) Mala (2,5 kW) Pak (400 W) Phil S (400 W)	Aust S (500 W) Ceyl (250 W) Fiji/NZel (1 kW) IndN (1 kW) Maca (100 W) NZel (1 kW) Pak (1 kW)	Aust (500 W) except. Darwin Chin Regions 4, 5 & 6 (1 kW) Fiji/NZel (1 kW) IndN-Java IndP (100 W) NZel (1 kW) Phil S (400 W) TimP (100 W)
6723	**6730,5**	**6738**	**6745,5**	**6753**	**6760,5**
Aust except. Pt. Moresby (1 kW) Chin/USA (3 kW) Fiji/NZel (1 kW) Inde (500 W) J/USA (3 kW) JCaro/USA (3 kW) JMari/USA (3 kW) JMars/USA (3 kW) John (3 kW) Mala (2,5 kW) Midw (3 kW) NZel (1 kW) Phil/USA (3 kW) Wake (3 kW)	Aust (5 kW) except. Pt. Moresby Chin/USA (3 kW) Inde (S-30° N) J/USA (3 kW) JCaro/USA (3 kW) JMari/USA (3 kW) JMars/USA (3 kW) John (3 kW) Mala (2,5 kW) Midw (3 kW) Papu Pt. Moresby (500 W) Phil/USA (3 kW) Wake (3 kW)	Aust (1 kW) Ceyl (2,5 kW) Chin (3 kW) Mala (2,5 kW) NCal (1 kW) NHeb (1 kW) Ocea (1 kW) Pak-Karachi (400 W)	Aust (5 kW) except. Darwin Fiji/NZel (1 kW) Inde (500 W) Indo (500 W) Iran (500 W) NZel (1 kW) Phil (400 W)	Aust (500 W) except. Brisbane & Pt. Moresby Chin/USA (1 kW) Inde (500 W) except. Sadhiya Indo (1 kW) Java (500 W) J/USA (1 kW) JCaro/USA (1 kW) JMari/USA (1 kW) JMars/USA (1 kW) John (1 kW) Midw (1 kW) NCal (1 kW) NHeb (1 kW) NZel (500 W) Ocea (1 kW) Phil-Cebu (400 W) Wake (1 kW)	Aust (500 W) except. Darwin Chin Regions 4, 5 & 6 (1 kW) IndP (100 W) J/USA JCaro/USA JMari/USA JMars/USA John Mala (1 kW) Midw TimP (100 W) Wake

REGION 1 — BANDE — BAND — BANDA 8965-9040 kc/s

8967	8975,5	8984	8992,5	9001
AfrS AraS/G Chyp D/G Egyp/G Egyp-Suez/G G Gibr Iraq/G Keny Liby/G Malt SomB	AfrS Azor MarF/USA (1 kW) URSS	AEF Algé AOF Came F Liba Mada MarF Reun SomF Togo Tuni URSS-AM	Ango Azor CapV GuiP Moza Polo (500 W) Port STPr URSS-E URSS-SEO (50 W)	AEF Came Egyp Holl Mada Nor Reun RSSB ■ Algé-Oran (100 W) AOF (300 W) MarF (300 W) Tuni (100 W)

9009,5	9018	9026,5	9035
AEF (500 W) Bulg Came (500 W) G Mada (500 W) Reun (500 W) URSS-SEO Youg ■ AOF	AEF Algé AOF Came F Mada MarF Reun RSSU SomF Togo Tuni	AEF-Brazzaville (400 W) AOF-Dakar (400 W) D/USA Egyp Mada (400 W) Reun (400 W) Tche URSS-AM URSS-C ■ MarF-Rabat (300 W)	Dnk I MarF/USA Polo

■ Sur une base secondaire. — On a secondary basis. — Sobre una base secundaria.

REGION 2 — BANDE — BAND — BANDA 8965-9040 kc/s

8967	8975,5	8984	8992,5	9001
B Cana Hawa Mexi	Arge Cura Suri USA (1 kW)	Alas Arge Berm/USA Grön Guantanamo (Cuba)/USA GuBr/USA Hawa IOBr/USA PanZ Rico USA	Cana Chil Guad GuFr Mart Mexi	Alas B Cuba (300 W) USA

9009,5	9018	9026,5	9035
B Cana Mexi	Alas Boli Chil (S-41° S) (300 W) Cuba Hawa	Alas Arge Berm/USA Grön/USA (750 W) Guantanamo (Cuba)/USA GuBr/USA IOBr/USA Labr/USA (1 kW) PanZ Rico TerN/USA (1 kW) USA ▣ Grön	Alas Chil Colo (300 W) Labr/USA TerN/USA Urug (100 W) USA

▣ Sur une base secondaire. — On a secondary basis. — Sobre una base secundaria.

REGION 3 BANDE — BAND — BANDA 8965-9040 kc/s

8967	8975,5	8984	8992,5	9001
Aust Ceyl Fiji/NZel Kong Mala Midw NZel	Aust Ceyl Indo	Aust (500 W) Indo JMars/USA Wake	Fiji/NZel Inde Phil NZel	Chin/USA Inde J/USA JCaro/USA JMari/USA JMars/USA John Midw Phil Wake

9009,5	9018	9026,5	9035
Fiji/NZel IndN Iran NZel	Aust-Darwin (500 W) Chin John (1 kW) Mala NCal NHeb Ocea Pak W	Aust (500 W) Chin/USA IndP J/USA JCaro/USA JMari/USA JMars/USA John Kong Mala Midw Phil/USA Wake	ChinN Chin/USA J/USA JCaro/USA JMari/USA JMars/USA John Midw Pak Phil/USA TimP Wake

REGION 1 — BANDE — BAND — BANDA 11 175-11 275 kc/s

11 180,5	11 190	11 199,5	11 209	11 218,5	11 228
Ango Azor CapV Egyp GuiP Moza Nor Polo Port (250 W) STPr	AEF Algé AOF Came Mada MarF Reun SomF URSS	AraS/G Chyp D/G Egyp/G Egyp-Suez/G G Gibr Iraq/G Keny Liby/G Malt SomB	AEF Algé AOF Came F Mada MarF Reun SomF Togo Tuni URSS-SEO	AEF Algé AOF Autr/F Came D/F F Mada MarF Reun SomF Togo Tuni	D/USA MarF/USA ■ Egyp (300 W)

11 237,5	11 247	11 256,5	11 266	11 273 (A1)
AfrS URSS ■ Algé (500 W) AOF (500 W) MarF (500 W) Tuni (500 W)	Chyp (500 W) Dnk G Gibr Liby/G Malt Suez/G URSS-AM URSS-SEO	Holl RSSU URSS-AM URSS-C URSS-E URSS-SEO	Azor D/USA MarF/USA Port URSS-E (500 W)	Bulg Roum URSS-AM URSS-C URSS-E ■ AEF (500 W) Algé (500 W) AOF (500 W) Mada (500 W) MarF (500 W) Reun (500 W)

■ Sur une base secondaire. — On a secondary basis. — Sobre una base secundaria.

REGION 2 — BANDE — BAND — BANDA 11 175-11 275 kc/s

11 180,5	11 190	11 199,5	11 209	11 218,5	11 228
Alas Arge Colo Cura USA	Chil Labr/USA (1 kW) Mexi TerN/USA (1 kW)	B Berm/USA Hawa USA	Arge Cana Cuba	Alas Arge Berm/USA Grön/USA Guad GuFr Hawa Labr/USA Mart TerN/USA USA ■ Grön	Alas Berm/USA Chil Grön/USA Guantanamo (Cuba)/USA GuBr/USA Hawa IOBr/USA Labr/USA PanZ Rico TerN/USA USA

11 237,5	11 247	11 256,5	11 266	11 273 (A1)
Arge Berm/USA (1 kW) Labr/USA (1 kW) Mexi TerN/USA (1 kW)	B Cana (350 W) Mexi (400 W)	B USA	Alas Arge Berm/USA Grön/USA Guantanamo (Cuba)/USA GuBr/USA IOBr/USA Labr/USA PanZ Rico TerN/USA USA	B Cana Mexi (400 W)

■ Sur une base secondaire. — On a secondary basis. — Sobre una base secundaria.

REGION 3 — BANDE — BAND — BANDA 11 175-11 275 kc/s

11 180,5	11 190	11 199,5	11 209	11 218,5	11 228
Chin/USA Inde J/USA JCaro/USA JMari/USA JMars/USA John Midw Phil/USA Wake	IndN	Aust Ceyl Kong Mala Midw	Aust Indo	Indo Midw NCal NHeb Ocea	Chin/USA J/USA JCaro/USA JMari/USA JMars/USA John Midw Pak Phil/USA Wake

11 237,5	11 247	11 256,5	11 266	11 273 (A1)
Aust (500 W) Phil	Aust Ceyl Kong Mala	IndN	Chin/USA Inde J/USA JCaro/USA JMari/USA JMars/USA John Midw Phil/USA Wake	Phil

REGION 1 — BANDE — BAND — BANDA 13 200-13 260 kc/s

13 205,5	13 215,5	13 225,5	13 235,5	13 245,5	13 255,5
AraS/G Chyp D/G Egyp/G Egyp-Suez/G G Gibr Iraq/G Keny Liby/G Malt SomB	D/USA Egyp MarF/USA ■ AEF-Brazzaville & Bangui (1 kW) AOF-Dakar (1 kW) Came-Douala (1 kW) Mada (1 kW) Reun (1 kW)	AEF Algé AOF Came Mada MarF Reun SomF Togo Tuni (300 W) URSS	AEF Algé AOF Autr/F Came D/F F Mada MarF Reun SomF Togo Tuni URSS-AM (100 W)	AEF-Bangui (750 W) AEF-Brazzaville (750 W) AOF-Dakar (750 W) Came-Douala (750 W) Mada (750 W) Polo Reun (750 W) URSS	Ango Azor CapV GuiP Holl Moza Nor Port Roum STPr

■ Sur une base secondaire. — On a secondary basis. — Sobre una base secundaria.

REGION 2 — BANDE — BAND — BANDA 13 200-13 260 kc/s

13 205,5	13 215,5	13 225,5	13 235,5	13 245,5	13 255,5
Alas Arge Cura (300 W) Hawa (1 kW) Mexi	Alas Arge (300 W) Berm/USA Grön/USA Guantanamo (Cuba)/USA GuBr/USA Hawa IOBr/USA Labr/USA PanZ Rico TerN/USA USA	B Cana (350 W) Cuba (350 W)	Alas Arge (300 W) Berm/USA (300 W) Grön/USA (300 W) Guad Guantanamo (Cuba)/USA GuBr/USA GuFr IOBr/USA Labr/USA (400 W) Mart PanZ Rico TerN/USA (400 W) USA	B Berm/USA (1 kW) Labr/USA (1 kW) TerN/USA (1 kW) USA	Arge Cana Hawa Mexi

REGION 3 — BANDE — BAND — BANDA 13 200-13 260 kc/s

13 205,5	13 215,5	13 225,5	13 235,5	13 245,5	13 255,5
Aust Ceyl John (1 kW) Kong Mala Midw (1 kW)	Chin/USA J/USA JCaro/USA JMari/USA JMars/USA John Midw Pak Wake	Aust (500 W) Indo (100 W)	Chin/USA Indo J/USA JCaro/USA JMari/USA JMars/USA John Midw NCal NHeb Ocea Phil/USA Wake	Chin/USA J/USA JCaro/USA JMari/USA JMars/USA John Midw Phil Wake	Inde IndN Midw John

REGION 1 — BANDE — BAND — BANDA 15 010-15 100 kc/s

15 016	15 026	15 036	15 046	15 056
D/USA MarF/USA	Ango Azor CapV GuiP Moza STPr URSS	AEF AOF Came Mada Reun URSS ■ Algé (200 W) MarF (200 W)	G	AfrS MarF/USA Nor
15 066	**15 076**	**15 086**	**15 092,5 (A1)**	**15 096,5 (A1)**
AEF Algé AOF Came F Mada MarF Reun SomF Togo Tuni URSS-AM (50 W) URSS-SEO	AEF Algé AOF Autr/F Came D/F F Mada MarF Reun SomF Togo Tuni	Dnk Polo (500 W) URSS	G URSS-SEO	Holl

■ Sur une base secondaire. — On a secondary basis. — Sobre una base secundaria.

15 016	15 026	15 036	15 046	15 056
Alas Arge (S-30° S) (300 W) Berm/USA Grön/USA Guantanamo (Cuba)/USA GuBr/USA Hawa IOBr/USA Labr/USA PanZ Rico TerN/USA USA	Chil Mexi (N-19° N) (400 W)	B Grön/USA Labr/USA Mexi (N-19° N) (300 W) TerN/USA	Alas (1 kW) Arge Cuba (300 W)	Alas Arge (300 W) Berm/USA USA
15 066	15 076	15 086	15 092,5 (A1)	15 096,5 (A1)
Berm/USA Chil (300 W) Guantanamo (Cuba)/USA GuBr/USA IOBr/USA PanZ Rico USA	Alas Arge (300 W) USA	B (S-5° S & E-55° W) (300 W) Hawa (1 kW) Mexi	B Mexi (N-19° N) (300 W)	Alas Arge (300 W) Cura USA

REGION 3 BANDE — BAND — BANDA 15 010-15 100 kc/s

15 016	15 026	15 036	15 046	15 056
Chin/USA J/USA JCaro/USA JMari/USA JMars/USA John Midw Phil/USA Wake	IndP Maca TimP	—	Aust Pak	Chin/USA Inde J/USA JCaro/USA JMari/USA JMars/USA John Midw Phil/USA Wake
15 066	**15 076**	**15 086**	**15 092,5 (A1)**	**15 096,5 (A1)**
Aust Indo [1] (50 W)	Chin/USA Inde J/USA JCaro/USA JMari/USA JMars/USA John Midw NCal NHeb Ocea Phil/USA Wake	Aust (50 W)	Phil (300 W)	IndN

[1] Stations d'aéronefs seulement. — Aircraft only. — Sólo aeronaves.

REGION 1 — BANDE — BAND — BANDA 17 970-18 030 kc/s

17 975 (A1)	17 983,5	17 993,5	18 003,5	18 013,5	18 023,5
Ango Azor CapV D/USA GuiP I MarF/USA Moza STPr URSS (50 W)	AraS/G Chyp D/G Egyp/G Egyp-Suez/G G Gibr Iraq/G Keny Liby/G Malt SomB	AEF Algé AOF Autr/F Came D/F F Holl Mada MarF Reun SomF Togo Tuni	Polo URSS	AEF Algé AOF Came D/USA F Mada MarF MarF/USA Reun SomF Togo Tuni	URSS

REGION 2 — BANDE — BAND — BANDA 17 970-18 030 kc/s

17 975 (A1)	17 983,5	17 993,5	18 003,5	18 013,5	18 023,5
Alas Arge (300 W) Berm/USA Grön/USA Hawa (1 kW) Labr/USA TerN/USA USA	Alas B	Alas Arge Guad GuFr Mart	Arge Mexi	Alas Berm/USA Chil (300 W) Grön/USA Guantanamo (Cuba)/USA GuBr/USA Hawa IOBr/USA Labr/USA PanZ Rico TerN/USA USA	B Berm/USA (1 kW) Grön/USA (1 kW) Labr/USA (1 kW) TerN/USA (1 kW) USA (1 kW)

REGION 3 — BANDE — BAND — BANDA 17 970-18 030 kc/s

17 975 (A1)	17 983,5	17 993,5	18 003,5	18 013,5	18 023,5
IndP Maca TimP	Aust Ceyl Kong Mala Pak	Chin/USA Indo J/USA JCaro/USA JMari/USA John Midw NCal NHeb Ocea Phil/USA Wake	Aust (400 W)	Chin/USA J/USA JCaro/USA JMari/USA JMars/USA John Midw Phil/USA Wake	IndN

REGION 1 BANDE — BAND — BANDA 3900-3950 kc/s

3904	3911	3918	3925	3932
AEF AfrS Algé AOF Came D/G Egyp Isla Mada MarF Tuni URSS-AM URSS-E URSS-SEO (1 kW) Youg	AEF AOF Egyp F G Mada MarF RSSB (500 W) URSS-E URSS-SEO Youg	AfrS Alba Algé Egyp F G MarF RSSU (500 W) URSS-AM URSS-E URSS-SEO	Azor D/G Egyp F G Malt Port URSS-E URSS-SEO	AEF AfrS Algé AOF Autr/F Came G Mada MarF SomF Tuni *URSS-E URSS-SEO ■ Roum (W-25° E) (100 W)

3939	3946
G Polo *URSS-C URSS-SEO	AfrS Algé F MarF Nor Polo URSS-E URSS-SEO

■ Sur une base secondaire. — On a secondary basis. — Sobre una base secundaria.

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REGION 1 — BANDE — BAND — BANDA 3155-3200, 3200-3230 & 3800-3900 kc/s

A	B	C	D	E	F	G
G Malt	G Malt	Holl	Ango CapV F GuiP Moza Nor Port STPr	AEF Algé AOF Came F Holl Mada MarF Reun SomF Togo Tuni	AEF Algé AOF D/F F Mada MarF SomF Tuni	AEF Algé AOF D/USA F Mada MarF SomF Tuni

REGION 2 — BANDE — BAND — BANDA 2505-2850, 3155-3200 & 3200-3230 kc/s

Pour des accords régionaux.

For regional agreements.

Por acuerdos regionales.

REGION 3 — BANDE — BAND — BANDA 3155-3200, 3200-3230 & 3900-3930 kc/s

3155-3200

A	B	C	D	E
Aust (5 kW) Indo (1 kW) NCal (1 kW) NHeb (1 kW) Ocea (1 kW) Phil N (300 W)	Aust (500 W) Ceyl (2,5 kW) Kong (2,5 kW) Mala (2,5 kW) Phil S (300 W)	Aust S (500 W) IndP (100 W) Maca (100 W) Phil S (300 W) TimP (100 W)	Aust (500 W) Indo (1 kW) NCal (1 kW) NHeb (1 kW) Ocea (1 kW) Phil N (300 W)	Aust (500 W) Ceyl (2,5 kW) Kong (2,5 kW) Mala (2,5 kW) Phil S (300 W)

3200-3230	3900-3950		
A	A	B	C
Aust (500 W) Phil N (300 W)	Aust Phil S (300 W)	Aust Phil S (300 W)	Aust Phil N (300 W)

REGION 1 — BANDE — BAND — BANDA 4750-4850 kc/s

A	B	C	D	E
Egyp-Suez/G G Malt Roum-Bucarest (500 W)	G I MarF	Algé Egyp-Suez/G G Youg	Egyp F MarF	Algé F MarF S Tuni

REGION 2 — BANDE — BAND — BANDA 4438-4650 kc/s

A	B	C	D	E
Arge (S-45° S) B Cana Mexi	Alas Arge Berm/USA Grön/USA Guantanamo (Cuba)/USA GuBr/USA Hawa IOBr/USA PanZ Rico TerN/USA USA	Alas Arge B (N-10° S & E-50° W) Colo USA	B except. S Rio Grande Cana Chil Cuba (E-Santa Clara) (500 W) Mexi	B Cana Chil (S-35° S) Mexi

F	G
Alas Arge Berm/USA Guantanamo (Cuba)/USA GuBr/USA Hawa IOBr/USA PanZ Rico TerN/USA USA	Alas Arge B (N-15° S) Guad Hawa Mart Nica USA

REGION 1 BANDE — BAND — BANDA 5430-5480 kc/s

A	B	C
Azor Egyp Holl Port Youg	AEF Algé AOF Came F Mada MarF Reun Roum (100 W) SomF Togo Tuni	G I (S-40° N) (100 W) Suis
■ Algé (100 W) F (S & W) (100W) MarF (100W) Tuni (100 W)		

■ Sur une base secondaire. — On a secondary basis. — Sobre una base secundaria.

REGION 3 BANDE — BAND — BANDA 5430-5480 kc/s

A	B	C
Aust Ceyl Fiji/NZel Kong Mala NZel Pak Phil S	Inde (500 W) IndN (500 W) Indo (500 W) Maca (100 W) NCal (500 W) NHeb (500 W) Ocea (500 W) Phil (200 W) TimP (100 W)	Aust (500 W) Chin (1 kW) IndP (100 W) J/USA JCaro/USA JMari/USA JMars/USA John Midw Phil/USA Wake

REGION 1 — BANDE — BAND — BANDA 23 200-23 350 kc/s

A	B	C	D	E
AEF Algé AOF F Mada MarF SomF Tuni	Holl	D/USA MarF/USA	Algé F	D/USA MarF/USA

REGION 2 — BANDE — BAND — BANDA 23 200-23 350 kc/s

A	B	C	D	E	F
Arge	Alas Cura Hawa Suri	Alas Berm/USA Grön/USA Guantanamo (Cuba)/USA GuBr/USA Hawa IOBr/USA Labr/USA PanZ Rico TerN/USA USA	Alas Hawa	Alas Berm/USA Grön/USA Guantanamo (Cuba)/USA GuBr/USA Hawa IOBr/USA Labr/USA PanZ Rico TerN/USA USA	Hawa

REGION 3 — BANDE — BAND — BANDA 23 200-23 350 kc/s

A	B	C	D	E	F
Indo	IndN John Midw	Chin/USA J/USA JCaro/USA JMari/USA JMars/USA John Midw Phil/USA Wake	Chin/USA J/USA JCaro/USA JMari/USA JMars/USA John Midw Phil/USA Wake	Chin/USA J/USA JCaro/USA JMari/USA JMars/USA John Midw Phil/USA Wake	Chin/USA J/USA JCaro/USA JMari/USA JMars/USA John Midw Phil/USA Wake

PART IV

STATEMENTS

Canada

I

The Canadian Administration,

CONSIDERING

(a) that the Aeronautical Mobile R Service Frequency Allotment Plan formulated by the International Administrative Aeronautical Radio Conference provides the basic minimum requirements for the Major World Air Route Areas ;

(b) that the plan does not provide sufficient frequencies for Canadian domestic operations in Sub-areas 10B, 10C, 10D and 10E ;

(c) that adjacent channel assignments to these areas limit the use of certain frequencies ;

(d) that certain additional sharing possibilities are available in accordance with the sharing rules and technical principles adopted by the Conference ;

(e) that there are certain other sharing possibilities, such as the use of lower power or more restricted area of use than is provided for in the basic plan, which will provide the protection ratios adopted by the Conference ;

(f) that secondary sharing possibilities may be made available during joint consultation in implementation planning with other administrations concerned ;

(g) that some of the above possibilities are not under the control of the Canadian Administation ;

RESERVES THE RIGHT

in the event that the Aeronautical Mobile R Service frequency needs of Canada are in the opinion of the Canadian Telecommunication Administration not fully provided for at implementation meetings, to take whatever steps may be necessary with respect to the use of such additional frequencies as may be deemed essential to provide a reasonably satisfactory service in the interest of safety of life in the air.

II

The Aeronautical Mobile OR Frequency Allotment Plan lists certain frequencies for Newfoundland (U.S.A. stations) and Labrador (U.S.A. stations). The Canadian Government

reserves all rights with respect to any use of these frequencies in the Province of Newfoundland, which includes Labrador.

Egypt

The Egyptian Royal Government desires to direct attention to the radio frequency requirements submitted by the United Kingdom to this International Administrative Aeronautical Radio Conference for stations situated in Egypt in the Suez Canal Zone and to their intention to make, at the Extraordinary Administrative Radio Conference for the approval of the New Frequency List, a formal reservation on this matter, in so far as their sovereign rights to regulate telecommunications in Egypt are concerned.

United States of America

The U.S. Delegation accepts the R Frequency Allotment Plan prepared by this Conference. It has considered carefully the statement of the Canadian Delegation concerning this Plan, and feels that it contains a useful advance appraisal of the volume of work to be done during the period of implementation, particularly that part thereof which will deal with specific station assignment planning. We are fully confident that during that process substantial improvements will be made in the direction of further sharing possibilities. That, however, we feel, is a phase of the work which will come after this Conference, whose task ends with the adoption of a reasonably satisfactory basic allotment plan.

The United States also accepts the OR Frequency Allotment Plan but only subject to conditions that there be subsequent negotiations by the Governments of Region 2 as to matters affecting solely Region 2 for further adjustment of OR frequencies and subject further to the conditions that the plan may be reviewed at any time prior to final acceptance by the Extraordinary Administrative Conference.

India

India is not adequately satisfied with the plan at present made for the R Service although she agrees that under the present circumstances it is expedient that the work of the Conference be terminated at this stage. She fully expects that improvements could be made in the Extraordinary Radio Administrative Conference and signs the Final Acts on the understanding that it does not limit in any manner the carrying out of such improvements.

Pakistan

The Delegation of Pakistan has lent its support to the technical principles adopted by the Conference as basis for determining the frequency allotment plan for the Aeronautical Mobile R Service ; however, it finds itself in agreement with the considerations which

appear in the statement of the Canadian Administration ; and in the event that the needs of Pakistan for Aeronautical Mobile R Service frequencies are not fully provided for at the implementation meetings, the Government of Pakistan reserves the right to the use of such additional frequencies as may be deemed essential, in the opinion of the Pakistan Administration, to provide a reasonably satisfactory service in the interests of safety of life in the air.

Switzerland

On signing the Final Agreement of the International Administrative Aeronautical Radio Conference, the Swiss Delegation states that the 5 frequencies requested in the OR frequency bands represented the indispensable minimum for its services. The OR allotment plan provides for Switzerland only two assignments and one secondary assignment. Since these assignments are inadequate for the operation of the OR services, the Swiss Delegation reserves for its Administration the right to request additional indispensable assignments at the Extraordinary Administrative Conference.

Oriental Republic of Uruguay

The Oriental Republic of Uruguay cannot consider itself bound in respect of the allotment of the OR Plan, as the minimum requirements of this service have not been taken into account, and it therefore reserves the right to raise the question again in the Extraordinary Administrative Conference shortly to be convened for the final approval of the new International Frequency List.

United States of Venezuela

The Delegation of the United States of Venezuela considers that, within the available spectrum and in the technical form in which it has been prepared on the basis of objective factors, the Frequency Allotment Plan for the Aeronautical Mobile R Service is satisfactory. It does not believe that any better result could have been achieved ; however, it realizes that there are further possibilities for the use of frequencies already alloted in order to avoid harmful interference and to attain a maximum of safety for aircraft carrying out domestic services ; most of the delegations here present seem to be aware of this.

It hopes, therefore, that the negotiations to take place between the administrations included in the area to which it belongs will be directed towards a thorough study of these possibilities, so that their technical analysis may lead to a more suitable use of frequencies and a greater satisfaction of its domestic requirements.

The Venezuelan Administration does not consider that its requirements have been met by the frequencies assigned to it by the Frequency Allotment Plan for the Aeronautical Mobile OR Service ; it hopes that the countries concerned will cooperate in taking the

necessary steps to submit to the forthcoming Extraordinary Administrative Conference proposals for essential amendments to the Frequency Allotment Plan for the Aeronautical Mobile OR Service, with a view to obtaining a better use of the available spectrum.

The delegates to the International Administrative Aeronautical Radio Conference state that it is their understanding that, in accepting this Plan and Final Agreement, they bind their administrations only to the extent of the jurisdiction of the above-named Conference.

In witness whereof the delegates to the International Administrative Aeronautical Radio Conference, Geneva (1949), have signed in the names of their respective administrations the present Plan and Final Agreement in a single copy which will remain in the archives of the General Secretariat of the International Telecommunication Union, and of which a certified copy will be sent to every country Member of the Union.

Done at Geneva, the 14th of October, 1949.

For the Argentine Republic :

EGIDIO H. LURASCHI
ARNALDO N. V. HANSEN
ALBERTO PINEDA

For the Commonwealth of Australia :

D. J. ANDERSON
E. G. BETTS

For Austria :

Ing. H. PANGRATZ

For Belgium :

V. SEYDEL

For Brazil :

HELIO COSTA
EZEQUIEL MARTINS DA SILVA

For Canada :

CHARLES J. ACTON

For Chile :

A. SCHWERTER

For the Republic of Colombia :

SANTIAGO QUIJANO C.

For the Portuguese Colonies :

A. SOUTO CRUZ

For the Colonies, Proctectorates, Overseas Territories and Territories under mandate and trusteeship of the United Kingdom of Great Britain and Northern Ireland :

G. D. DEUCHARS

For the Overseas Territories of the French Republic and Territories administrated as such :

J. LALUNG-BONNAIRE

For the Belgian Congo and Territories of Ruanda Urundi :

L. LAMBIN

For Cuba :

E. TABIO

For Denmark :

K. SVENNINGSEN
B. NIELSEN

For the Dominican Republic :

TULIO FRANCO FRANCO

For Egypt :

JOHN BOCTOR
Col. H. M. TEWFIK

For the United States of America :

ARTHUR L. LEBEL
EDWIN L. WHITE
EDMOND V. SHORES

For France :

R. MOUCHEZ
G. SARRE
P. DE LA LANDE DE CALAN

For the Republic of Honduras :

BASILIO DE TELEPNEF

For India :

S. S. MOORTHY RAO

For Indonesia :

A. DE HAAS
J. LEUNIS

For Ireland :

T. E. O'DALAIGH

For Iceland :

G. BRIEM
EINAR PALSSON

For Italy :

A. DE VINCENTI

For Luxembourg :

J. STURM

For Mexico :

L. BARAJAS G.

For Nicaragua :

Dr. B. LIFSCHITZ, Consul

For Norway :

N. J. SÖBERG
ODD SANDVEI

For New Zealand :

G. SEARLE
F. R. W. ANDREWS

For Pakistan :

S. A. KHAN

For Paraguay :

E. ALFARO H.

For the Netherlands, Curaçao and Surinam :

OTTO SELIS

For the Republic of the Philippines :

ARCENIO F. ALVENDIA

For Portugal :

A. SOUTO CRUZ

For the French Protectorates of Morocco and Tunisia :

M. CHEF

For the United Kingdom of Great Britain and Northern Ireland :

H. A. ROWLAND

For Sweden :

THOMAS OVERGAARD
GORAN KRUSE

For the Swiss Confederation :

C. GILLIOZ
P. SENN

For the Territories of the United States of America :

ARTHUR L. LEBEL
EDWIN L. WHITE
EDMOND V. SHORES

For the Union of South Africa and the mandated territory of South-West Africa :

G. A. HARVEY

For the Oriental Republic of Uruguay :

Colonel (R) HECTOR J. BLANCO

For the United States of Venezuela :

JOSÉ A. LÓPEZ
A. FUENMAYOR