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**Documents of the World Administrative Radio Conference on the Aeronautical Mobile (R) Service
(WARC-Aer2) (Geneva, 1978)**

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

- This PDF includes Document No. 201-300
- The complete set of conference documents includes Document No. 1-364, DT No. 1-65, DL No. 2-4

INTERNATIONAL TELECOMMUNICATION UNION

AERONAUTICAL (R) CONFERENCE

(Geneva, 1978)

Document No. 201-E

20 February 1978

Original : English

COMMITTEE 5

State of Kuwait

FREQUENCY BAND 21 870 - 22 000 kHz

The State of Kuwait requests a provision for one frequency in the above frequency band.



AERONAUTICAL (R) CONFERENCE

(Geneva, 1978)

Document No. 202-E

20 February 1978

Original : French

Republic of Senegal

FREQUENCY REQUIREMENTS IN THE BAND 21 870-22 000 kHz

The principle of frequency allotment for the Aeronautical Mobile Service in the band 21 870-22 000 kHz having been accepted, the Republic of Senegal requests a frequency in this band for long-range operational control.



AERONAUTICAL (R) CONFERENCE

(Geneva, 1978)

Document No. 203-E

20 February 1978

Original : English

COMMITTEE 5

People's Republic of Bangladesh

FREQUENCY BAND 21 870-22 000 kHz

In view of the fact that frequencies in the band 21 870-22 000 kHz will be planned for allotment, Bangladesh has a requirement for one frequency in this band for long-distance operation control.



AERONAUTICAL (R) CONFERENCE

(Geneva, 1978)

Document No. 204-E
21 February 1978
Original: English

PLENARY MEETING
COMMITTEE 7

FIRST REPORT OF COMMITTEE 6

1. Committee 6, hereby, presents its first report. The decisions taken on the texts of the Radio Regulations, including Appendix 27, Resolutions and Recommendations, examined by Committee 6 are shown in the Annex to this document.
2. The text of the definition of A Family of Frequencies in the Aeronautical Mobile Service (No. 27/9) represents a majority decision. A number of Delegations reserved their position in respect of this text.
3. The Committee decided that the Table given in No. 27/189 should be extended to include the frequencies intended to be used on a world-wide basis. A consequential amendment in the text of No. 27/188 would also be required.
4. The Committee unanimously adopted following dates:
 - Entry into force of the Final Acts: 1 September 1979
 - Entry into force of the New Frequency Allotment Plan: 1 February 1983

R.J. BUNDLE
Chairman of Committee 6

Annex: 1



ANNEX

- MOD 201A The frequencies 2 182 kHz, 3 023 kHz, 5 680 kHz 8 364 kHz,
Spa2 121.5 MHz, 156.8 MHz and 243 MHz may also be used, in accordance with the
procedures in force for terrestrial radiocommunication services, for
search and rescue operations concerning manned space vehicles.
- The same applies to the frequencies 10 003 kHz, 14 993 kHz
and 19 993 kHz, but in each of these cases emissions must be confined
in a band of ± 3 kHz about the frequency.
- MOD 205A The carrier (reference) frequencies 3 023 kHz and 5 680 kHz may
also be used, in accordance with Nos. 1326C and 1353B respectively, by
stations of the Maritime Mobile Service engaged in coordinated search
and rescue operations.
- MOD 969A (3) The aeronautical carrier (reference) frequencies 3 023 kHz and
Mar2 5680 kHz may be used by mobile stations for search and rescue scene-of-
action coordination purposes, including communication between these
stations and participating land stations, in accordance with any special
arrangements by which the Aeronautical Mobile Service is regulated (see
Nos. 1326C and 1353B).
- MOD 1326C The aeronautical carrier (reference) frequency 3 023 kHz may be used for
intercommunication between mobile stations when engaged in coordinated
search and rescue operations, including communication between these
stations and participating land stations, in accordance with the
provisions of Appendix 27.
- MOD 1353B 15A. The aeronautical carrier (reference) frequency 5 680 kHz may be used for
intercommunication between mobile stations when engaged in coordinated
search and rescue operations, including communication between these
stations and participating land stations, in accordance with the provisions
of Appendix 27.
- MOD Appendix 1 3. In any case where there are one or more reference frequencies
page 15, in a particular transmission (e.g. in the case of (a) the frequency of
para. 3 the reduced carrier in an independent or single-sideband emission, and
 (b) the frequencies of the sound and vision carriers in a television
 emission), such reference frequencies shall be supplied. In the case of
 television broadcasting stations in Region 1, each notice shall include,
 as supplementary information, both the frequency of the other carrier
 and the assigned frequency.

MOD 27/9 A Family of Frequencies in the Aeronautical Mobile (R) Service contains two or more frequencies selected from different Aeronautical Mobile (R) bands and is intended to permit communication at any time within the authorized area of use (see Nos. 27/189 to 27/207) between aircraft stations and appropriate aeronautical stations.

SUP 27/17

SUP 27/18

SUP 27/19

MOD 27/194 A "common channel" is a channel allotted in common to two or more areas within interference distance of each other and its use is subject to agreement between the Administrations concerned.

ADD 27/194A The world-wide frequency allotments appearing in the tables at [No. 27/189 and Nos. 27/195 to 27/207] except for carrier (reference) frequencies 3023 kHz and 5680 kHz are for assignment by administrations to stations operating under authority granted by the administration concerned for the purpose of serving one or more aircraft operating agencies. Such assignments are to provide communications between an appropriate aeronautical station and an aircraft station anywhere in the world for exercising control over regularity of flight and for safety of aircraft. World-wide frequencies are not to be assigned by administrations for MWARA, RDARA and VOLMET purposes. Where the operational area of an aircraft lies wholly within a RDARA or Sub-RDARA boundary, frequencies allotted to those RDARAs and Sub-RDARAs shall be used.

	1	2	3
MOD 27/196	3 023	World-wide, (R) and (OR)	See Art 3
MOD 27/201	5 680	World-wide, (R) and (OR)	See Art 3

PART II

ADD

SECTION II

ARTICLE 3

Frequencies for common use

27/... The carrier (reference) frequencies 3 023 kHz and 5 680 kHz are intended for common use on a world-wide basis.

27/... The use of these frequencies in any part of the world is authorized 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;

27/... at aeronautical stations for aerodrome and approach control under the following conditions :

- a) with mean power limited to a value of not more than 20 watts in the antenna circuit;
- b) special attention must be given in each case to the type of antenna used in order to avoid harmful interference;
- c) the power of aeronautical stations which use these frequencies in accordance with the above conditions may be increased to the extent necessary to meet certain operational requirements subject to coordination between the Administrations directly concerned and those whose services may be adversely affected.

27/... Notwithstanding these provisions, the frequency 5 680 kHz may also be used at aeronautical stations for communication with aircraft stations when other frequencies of the aeronautical stations are either unavailable or unknown. However, this use shall be restricted to such areas and conditions that harmful interference cannot be caused to other authorized operations of stations in the Aeronautical Mobile Service.

27/... Additional particulars regarding the use of these channels for the above purposes may be recommended by the meetings of ICAO.

27/... Frequencies 3 023 kHz and 5 680 kHz may also be used by stations of other mobile services participating in coordinated air-surface search and rescue operations, including communications between these stations and participating land stations. Aeronautical stations are authorized to use these frequencies to establish communications with such stations.

27/... These channels may be used for A1 or A3 emissions, in accordance with special arrangements. Such channels shall not be subdivided.

27/... All stations participating directly in coordinated search/rescue operations and using frequencies 3 023 kHz and 5 680 kHz shall transmit solely on the upper single sideband (see also MOD/27/73) except in the cases provided for in Numbers 27/50 and 27/73.

Emissions of Class A3 and A3H may be used in accordance with / Resolution Aer 2-(A), paragraph 4.4) /.

SUP Resolution No. 14

SUP Resolution No. Aer 1

SUP Resolution No. Aer 2

SUP Resolution No. Aer 3

SUP Resolution No. Aer 4

SUP Resolution No. Aer 5

SUP Recommendation No. Aer 1

ADD

RESOLUTION No. A

Relating to the Unauthorized Use of Frequencies
in the Bands allocated to the Aeronautical Mobile
(R) Service.

The World Aeronautical Administrative Radio Conference,
Geneva, 1978

considering

- a) that monitoring observations of the use of the frequencies in the bands between 2850 and 17970 kHz allocated exclusively to the aeronautical mobile (R) service show that a number of frequencies in these bands are still being used by stations of services other than the aeronautical mobile (R) service, notably by high powered broadcasting stations, some of which are operating in contravention of No. 422 of the Radio Regulations;
- b) that these stations are causing harmful interference to the aeronautical mobile (R) service and that a considerable number of emissions, the sources of which could not be positively identified, were observed in these bands;
- c) that radio is the sole means of communication of the aeronautical mobile (R) service and that this service is a safety service;

considering, in particular

- d) that it is of paramount importance that channels directly concerned with the safe and regular conduct of aircraft operations be kept free from harmful interference, since they are essential for the protection of the safety of life and property;

resolves to urge administrations

1. to ensure that stations of services other than the aeronautical mobile (R) service abstain from using frequencies in the Aeronautical Mobile (R) Service bands other than under the conditions specified in Nos. 115 and 415;
2. to make every effort to identify and locate the source of any unauthorized emission capable of causing harmful interference to the aeronautical mobile (R) service and thereby endangering this safety service and to communicate their findings to the IFRB;
3. to participate in the monitoring programs that the IFRB may organize pursuant to this Resolution;
4. to request their governments to enact such legislation as is necessary to prevent stations located on-board aircraft operating in contravention of No. 422 of the Radio Regulations;

requests the International Frequency Registration Board

1. to continue to organize monitoring programmes in the bands exclusively allocated to the aeronautical mobile (R) service with a view to eliminating the emissions of out-of-band stations which cause, or are likely to cause, harmful interference to the aeronautical mobile (R) service;
2. to take the necessary steps with a view to the elimination of the emissions of out-of-band stations which cause, or are likely to cause harmful interference to the aeronautical mobile (R) service;
3. to seek, as appropriate, the co-operation of administrations in identifying the sources of out-of-band emissions by all available means, and in securing the cessation of these emissions.

ADD

RESOLUTION No. B

Relating to the use of frequencies of the
Aeronautical Mobile (R) Service

The World Administrative Radio Conference on the Aeronautical Mobile (R) Service, Geneva, 1978,

considering

- a) that the Allotment Plan adopted in 1966 and developed for the use of high frequency channels for the Aeronautical Mobile (R) Service (Appendix 27 to the Radio Regulations) has been substantially revised by this Conference;
- b) that air operations are subject to continuous changes;
- c) that these changes require attention by the Administrations concerned, but,
- d) that, in seeking to satisfy new communication requirements, no decision should be taken that will prevent or handicap the coordinated utilization of those high frequency (R) band allotments as prescribed in the Plan;
- e) that the families of frequencies allotted to the Major World Air Route Areas (MWARAs), Regional and Domestic Air Route Areas (RDARAs) and Sub-Areas and VOLMET areas have been chosen considering propagation conditions which allow for the selection of the most suitable frequencies for the distance involved;
- f) that specific steps should be taken to ensure that the correct order of frequency is used;
- g) that it is essential to distribute the communication traffic load as uniformly as possible over frequencies available;
- h) that frequencies have been allotted for world-wide use

resolves

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

1. to make as great a use as possible of higher frequencies in order to lessen the load on the high frequency (R) bands;
2. to make as great a use as possible of antennae of appropriate directivity and efficiency in order to minimize possibilities of mutual interference within an area or between areas;

3. to coordinate the use of families of frequencies necessary for a given route segment in accordance with the technical principles in Appendix 27 and, in the light of the 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;
4. to improve operating techniques and procedures and to use equipment which will make it possible to attain the highest possible efficiency in handling air-ground high frequency communications;
5. to collect precise data on the operation of their high frequency communication systems, particularly that having a bearing on technical and operating standards, so as to facilitate future re-examination of this Plan;
6. to establish, through regional agreements, the best method to provide the required communications for any new long-distance international or regional air operation which is not or cannot be accommodated within the system of MWARA and RDARA, in such a manner as not to cause harmful interference to the utilization of frequencies as prescribed in the Aeronautical Mobile (R) Frequency Plan.

ADD

RESOLUTION No. C

Relating to the use of higher frequency bands in the
Aeronautical Mobile (R) Service and the Aeronautical
Mobile-Satellite (R) Service for communication
and for meteorological broadcasts

The World Administrative Radio Conference on the Aeronautical Mobile (R)
Service, Geneva, 1978.

considering

- a) that from an aeronautical viewpoint, higher frequency bands can provide a more reliable and more interference free communication system than HF;
- b) that from a technical and operational viewpoint, the use of VHF by aviation has progressed significantly;
- c) that the future possibility of communications utilizing satellite technology is now recognized;
- d) that owing to the ever-increasing development of aeronautical telecommunications in all areas of the world, there is an increasing demand for frequencies for communication and for meteorological broadcasts to aircraft in flight

resolves

that Administrations, taking into account the respective economic and technical factors, consider to the maximum extent possible, meeting their requirements for communication and for meteorological broadcasts by frequencies in frequency bands, higher than the HF bands, which are allocated to the Aeronautical Mobile (R) Service and the Aeronautical Mobile-Satellite (R) Service.

ADD

RESOLUTION No. D

relating to the use of frequencies 3 023 and 5 680 kHz
common to the Aeronautical Mobile (R) and (OR) Services

The World Administrative Radio Conference on Aeronautical Mobile (R)
Service, Geneva, 1978

having noted

that some anomalies appeared to exist in the conditions prescribed in
Appendix 26 to the Radio Regulations, Geneva, 1959, for the use of the
frequencies 3 023 and 5 680 kHz, as contained in Article 2 of the Frequency
Allotment Plan, Column 3, clauses 2 a) and 2 b) and having taken steps to remove
these anomalies;

considering

1. that the coordination of search and rescue operations at the scene of
a disaster would be improved if the use of the frequencies 3 023 and 5 680 kHz,
in such operations, was extended to include communication between mobile stations
and participating land stations;

2. that it would be in the general interests of the Aeronautical Mobile
Service if the same provisions relating to the use of the frequencies 3 023
and 5 680 kHz were applied to operations both in the Aeronautical Mobile (R)
Service and the Aeronautical Mobile (OR) Service;

resolves

to invite Administrations to apply in the Aeronautical Mobile (OR)
Service, as from the date of coming into force of the Final Acts of the Conference,
the provisions governing the use of the frequencies 3 023 and 5 680 kHz specified
in Appendix 27 (Nos. 27/196 and 27/201).

ADD

RECOMMENDATION No. A

Relating to the development of Techniques which
would help to reduce congestion in the High
Frequency bands allocated to the Aeronautical
Mobile (R) Service

The Aeronautical World Administrative Radio Conference, Geneva, 1978,

considering

- a) that several Administrations are actively engaged in the development of communication techniques the wider use of which in the Aeronautical Mobile (R) Service would help to reduce congestion in the high frequency bands allocated to that service; such developments include the use of higher frequencies with remotely controlled stations, directional antennae, space radiocommunication techniques and automatic data transmission;
- b) that knowledge of these developments would be useful to other Administrations in considering the application of these techniques to their Aeronautical Mobile (R) Communication Services;
- c) that the International Civil Aviation Organization (ICAO) is actively engaged in coordinating the operational development of such techniques;

recommends

Administrations engaged in the development of techniques which would help to reduce congestion in the HF bands to inform the IFRB periodically of the progress achieved;

instructs

the IFRB periodically to circulate the information so obtained to Administrations and to ICAO.

ADD

RECOMMENDATION No. B

to the 1979 General WARC relating to the inapplicability
of Resolution No. 13 in respect of the Aeronautical
Mobile (R) Service

The Aeronautical Mobile (R) Service Conference, Geneva, 1978,

considering

- a) that Resolution No. 13 was of the opinion that the Aeronautical Mobile Service Plans contained in the then Appendix 26 of the Radio Regulations would have to be reviewed;
- b) that Resolution No. 13 was also of the opinion that an Extraordinary Administrative Radio Conference should be convened to review Appendix 26 and associated Radio Regulations and to complete its work before the next Ordinary Administrative Radio Conference;
- c) that relevant Administrative Radio Conferences were duly held in 1964, 1966, and 1978 and the Plans have been reviewed;
- d) that no further Administrative Radio Conferences are to be convened before the 1979 General WARC;

recommends

that in so far as the Aeronautical Mobile (R) Service is concerned the 1979 General WARC should abrogate Resolution No. 13;

invites Administrations

to consider whether Resolution No. 13 could be abrogated and to submit to the 1979 General WARC proposals to this effect.

AERONAUTICAL (R) CONFERENCE

(Geneva, 1978)

Document No. 205-E

20 February 1978

Original : French

COMMITTEE 5

Turkey

FREQUENCY REQUIREMENTS IN THE 22 000 kHz BAND

In view of the fact that there is to be frequency allotment planning in the 21 870-22 000 kHz band for the Aeronautical Mobile (R) Service, Turkey wishes to state that it will need a frequency in this band.



AERONAUTICAL (R) CONFERENCE

(Geneva, 1978)

Document No. 206-E

20 February 1978

Original : French

COMMITTEE 7

SUMMARY RECORD

OF THE

FIRST MEETING OF COMMITTEE 7

(EDITORIAL)

Wednesday, 15 February 1978, at 1330 hrs

Chairman : Mr. C.J. DHENIN (France)

Subjects dealt with

1. Terms of reference of the Editorial Committee (No. 527 of the International Telecommunication Convention, Malaga - Torremolinos)
2. Constitution of the Committee
3. Organization of the Committee's work
4. Spanish initials for the International Frequency Registration Board (IFRB)



1. Terms of reference of the Editorial Committee (No. 527 of the International Telecommunication Convention, Malaga - Torremolinos)

The Committee took note of its terms of reference.

2. Constitution of the Committee

2.1 The Chairman said that the Committee comprised representatives of the ITU's three working languages and requested delegations present to supply the name of one of their members who would take part in the work of the Committee.

2.2 The delegate of Spain requested participants to excuse Mr. Valbuena Granados, one of the two Vice-Chairmen, who had been unable to attend the meeting, but who would resume his functions on the next day and would take an active part in the Committee's work. He himself and Mr. Otero Mosteirín (Argentina) would assist Mr. Valbuena Granados on questions relating to the Spanish language.

2.3 The delegate of the United Kingdom said that the member of his delegation who would assist him in the work assigned to the Committee was Mr. Jeffery and that the member of the United States delegation was Mr. Anderson.

2.4 The Chairman said that the French-speaking participants would be Mr. Bisner, who would arrive later in Geneva, and he himself.

2.5 The Secretary of the Committee said that the members of the Language Division instructed to assist the Committee would be Mr. Brodsky for French, Mr. Jones or Mr. Jennings for English and Mr. Peñaranda for Spanish.

3. Organization of the Committee's work

3.1 The Chairman said that the Committee's meetings would start the following week and would be held, so far as possible, in normal working hours. He also said that he had contacted the Chairman of Committee 4 whose work was practically finished and which would therefore shortly be in a position to submit its documents to the Editorial Committee for consideration.

4. Spanish initials for the International Frequency Registration Board (IFRB)

4.1 The delegate of Spain said that the English IFRB (International Frequency Registration Board) should be replaced in Spanish documents by JIRF (Junta Internacional de Registro de Frecuencias).

4.2 The delegate of Argentina said that, in Spanish texts, the full name "Junta Internacional de Registro de Frecuencias" should be spelt out each time it was mentioned.

4.3 The Chairman said that it was not for the Editorial Committee to take either of the proposed initiatives. He referred, as an example, to Article 5 of the International Telecommunication Convention which contained, on the one hand, the English initials "IFRB" and, on the other, the French and Spanish initials "CCIR" and "CCITT". The Plenipotentiary Conference had adopted initials from one language or another as the case might be; there had been certain historical reasons for this which should also be taken into account. The amendments proposed by the Spanish-language delegates could only be introduced by a Plenipotentiary Conference which undertook to revise the Convention.

4.4 The delegate of the United Kingdom shared the Chairman's view.

4.5 The delegate of Spain agreed that it was for the Plenipotentiary Conference to take a decision on the matter, but considered, for his part, that a mistake had been made when the English initials "IFRB" had been adopted for all languages.

4.6 The Chairman said that it was sensible to have the same initials in all three languages for reasons of simplicity.

4.7 The delegate of Argentina requested that the discussion be noted in the Summary Record.

The meeting rose at 1355 hours.

The Secretary :

R. MACHERET

The Chairman :

C.J. DHENIN

INTERNATIONAL TELECOMMUNICATION UNION

AERONAUTICAL (R) CONFERENCE

(Geneva, 1978)

Document No. 207(Rev.2)-E

25 February 1978

Original : English

COMMITTEE 5

FREQUENCY REQUIREMENTS FOR RDARAs

The frequency requirements for RDARAs as approved at the sixth meeting of Committee 5 appear in the attached Annex.

M. CHEF

Chairman of Committee 5

Annex : 1



A N N E X EA N N E XA N E X O

Groupe de fréquences Frequency Group Grupo de frecuencias	I	II	III	IV	V	Voie commune à Common channel to Canal común a
Bandes Bands Bandas (MHz)	3, 3.5	4.7, 5.6, 6.6	9, 10, 11.3	13.3	18	
1	-	1	2	1	-	
1A	-	-	-	-	-	
1B	1 5**)	4	1	-	-	
1C	4	4	2	-	-	
1D	6	6	4	1	-	
1E	1 1*	2 -	1 -	- -	- -	1E 4A
2	2 - 1*	2 2* -	10 2* -	3 - -	1 - -	3 3C
2A	4 8* 7* -	9 6* 7* -	4 2* 1* 1*	- - - -	- - - -	2C 2B 3A 3B
2B	2 6* 4* 7*	7 7* 4* 7*	5 1* 4* 1*	- - - -	- - - -	2C 3B 2C 2A 3A

**) pendant le jour - daytime - durante el día.

Groupe de fréquences Frequency Group Grupo de frecuencias	I	II	III	IV	V	Voie commune à Common channel to Canal común a
Bandes Bands Bandas (MHz)	3, 3.5	4.7, 5.6, 6.6	9, 10, 11.3	13.3	18	
2C	3 8* 6* 4* 1*	8 6* 7* 4* -	5 2* 1* 4* -	- - - - -	- - - - -	2A 2B 3B 2B 3
3	2 - 1*	2 2* -	8 2* -	2 - -	2 - -	2 2C
3A	4 4* 4* 7*	8 6* 4* 7*	6 3* 1* 1*	1 - - -	- - - -	3C 3B 2A 2B
3B	4 6* 4* 4* -	9 7* 4* 3* -	7 1* 1* 3* 1*	1 - - - -	- - - - -	2B 2C 3A 3C 2A
3C	5 4* 4* 1*	6 6* 3* -	6 3* 3* -	2 - - -	- - - -	3A 3B 2
4	-	1 (6.6 MHz)	1 (9 MHz)	2	1	
4A	2+1** 1*	1**(4.7 MHz)+5 -	6 -	2 -	- -	1E 4A
4B	3	6	2	1	-	
5	-	-	6	2	2	
5A	1 1*	2 2*	2 1*	1	-	5A 5C

**) pendant le jour - daytime - durante el día

Groupe de fréquences Frequency Group Grupo de frecuencias	I	II	III	IV	V	Voie commune à Common channel to Canal común a
Bandes Bands Bandas (MHz)	3, 3.5	4.7, 5.6, 6.6	9, 10, 11.3	13.3	18	
5B	4	6	4	-	-	
5C	1 1*	- 2*	- 1*	- -	- -	5A 5C
5D	2	6	2	-	-	
6	-	-	2	1	1	
6A	3 2*	8 2* (4.7 MHz)	6 2*	- 1*	- -	6E
6B	4 -	6 -	4 2*	1 -	1 -	6F
6C	3 -	1 (4.7 MHz)+4 -	4 -	- 1*	- -	6D 6F
6D	3	9	5	1*	-	6C 6F
6E	4 2*	6 2* (4.7 MHz)	7 2*	- 1*	- -	6A
6F	4 - -	4 - -	3 2* -	- - 1*	- - -	6B 6C 6D
6G	37	53	34	5	1	
7	-	2	2	1	-	
7A	-	-	-	-	-	
7B	3	3	2	-	-	
7C	2	3	3	-	-	
7D	1	1	1	-	-	
7E	2	3	2	-	-	
7F	2	3	2	-	-	

Groupe de fréquences Frequency Group Grupo de frecuencias	I	II	III	IV	V	Voie commune à Common channel to Canal común a
Bandes Bands Bandas (MHz)	3, 3.5	4.7, 5.6, 6.6	9, 10, 11.3	13.3	18	
8	-	-	-	-	-	
9	-	3	4	-	-	
9A	-	-	-	-	-	
9B	8	10	10	-	-	
9C	2 1*	2 -	2 2*	- -	- -	9D
9D	1 1*	2 -	- 2*	- -	- -	9C
10	-	4	6	1	1	
10A	9	11	7	-	-	
10B	5	13	3	-	-	
10C	3	11	1	-	-	
10D	5	13	2	-	-	
10E	5	9	3	-	-	
10F	1	4	2	-	-	
11	-	-	-	-	-	
11A	-	-	-	-	-	
11B	9	15	8	1	1	
11C	-	-	-	-	-	
12	1	1	1	1	1	
12A	2	2	-	-	-	

Groupe de fréquences Frequency Group Grupo de frecuencias	I	II	III	IV	V	Voie commune à Common channel to Canal común a
Bandes Bands Bandas (MHz)	3, 3.5	4.7, 5.6, 6.6	9, 10, 11.3	13.3	18	
12B	-	-	-	-	-	
12C	5	14	6	-	-	
12D	2	4	2	-	-	
12E	- 1* - - 4*	5 2* 3* 1* -	3 1* 2* - -	- - - - -	- - - - -	12J 12F 12F 12H 12F 12G 12H
12F	1 - - - 1* 4*	3 3* 1* 1* - -	2 2* - - - -	- - - - - -	- - - - - -	12E 12E 12H 12H 12J 12E 12G 12H
12G	1 4*	6 -	- -	- -	- -	12E 12F 12H
12H	- - - 4*	- 1* 1* -	- - - -	- - - -	- - - -	12F 12E 12F 12E 12F 12G
12I	-	-	-	-	-	
12J	3 1* 1*	3 2* -	3 1* -	- - -	- - -	12E 12F
13	-	-	-	1	1	
13A	- -	- -	1* -	- -	- 1*	13B 13B 13E 13F
13B	- - -	- - -	- 1* -	- - -	- - 1*	13A 13A 13E 13F

Groupe de fréquences Frequency Group Grupo de frecuencias	I	II	III	IV	V	Voie commune à Common channel to Canal común a
Bandes Bands Bandas (MHz)	3, 3.5	4.7, 5.6, 6.6	9, 10, 11.3	13.3	18	
13C	4 - 2*	8 - 2*	5 - 2*	- 1* -	- - -	13K 13J 13K
13D	4 -	4 2*	4 1*	- -	- -	13M
13E	1 1* -	1 6* -	1 1* -	- 1* -	- - 1*	13F 13A 13B 13F
13F	4 1* -	2 6* -	5 1* -	- 1* -	- - 1*	13E 13A 13B 13E
13G	5	6	7	-	-	
13H	4	6	6	1	-	
13I	3 1*	6 1*	2 -	- -	- -	13J
13J	5 2* 1* -	9 2* 1* -	3 2* - 1*	- - - -	- - - -	13C 13K 13I 13K
13K	5 2* - -	8 2* - -	6 2* 1* -	- - - 1*	- - -	13C 13J 13J 13C
13L	-	-	-	-	-	
13M	4 -	4 2*	4 1*	- -	- -	13D
13N	2	3	2	-	-	
14	5	4	6	1	1	

Groupe de fréquences Frequency Group Grupo de frecuencias	I	II	III	IV	V	Voie commune à Common channel to Canal común a
Bandes Bands Bandas (MHz)	3, 3.5	4.7, 5.6, 6.6	9, 10, 11.3	13.3	18	
14A	- 1* 1* -	2 - - 1*	2 - - -	- - - -	- - - -	14D 14E 14G
14B	- 1* -	3 - 1*	2 - -	- - -	- - -	14F 14C
14C	2 -	2 1*	2 -	- -	- -	14B
14D	1 1* -	3 - 1*	2 - -	- - -	- - -	14A 14G
14E	- 1*	2 -	2 -	- -	- -	14A
14F	- 1*	2 -	2 -	- -	- -	14B
14G	2 - -	2 1* 1*	2 - -	- - -	- - -	14A 14D

AERONAUTICAL (R) CONFERENCE

(Geneva, 1978)

Document No. 207(Rev.1)-E

24 February 1978

Original : English

COMMITTEE 5

FREQUENCY REQUIREMENTS FOR RDARAs

As indicated in Document No. 225, discussions were held with a number of delegations and certain RDARA requirements were modified. The revised requirements appear in the attached Annex.

M. CHEF

Chairman of Committee 5

Annex : 1



A N N E X E

A N N E X

A N E X O

Groupe de fréquences Frequency Group Grupo de frecuencias	I	II	III	IV	V	Voie commune à Common channel to Canal común a
Bandes Bands Bandas (MHz)	3, 3.5	4.7, 5.6, 6.6	9, 10, 11.3	13.3	18	
1	-	1	2	1	-	
1A	-	-	-	-	-	
1B	1 5**)	4	1	-	-	
1C	4	4	2	-	-	
1D	6	6	4	1	-	
1E	1 1*	2 -	1 -	- -	- -	1E 4A
2	2 - 1*	2 2* -	10 2* -	3 - -	1 - -	3 3C
2A	4 8* 7* -	9 6* 7* -	4 2* 1* 1*	- - - -	- - - -	2C 2B 3A 3B
2B	2 6* 4* 7*	7 7* 4* 7*	5 1* 4* 1*	- - - -	- - - -	2C 3B 2C 2A 3A

Groupe de fréquences Frequency Group Grupo de frecuencias	I	II	III	IV	V	Voie commune à Common channel to Canal común a
Bandes Bands Bandas (MHz)	3, 3.5	4.7, 5.6, 6.6	9, 10, 11.3	13.3	18	
2C	3 8* 6* 4* 1*	8 6* 7* 4* -	5 2* 1* 4* -	- - - - -	- - - - -	2A 2B 3B 2B 3
3	2 - 1*	2 2* -	8 2* -	2 - -	2 - -	2 2C
3A	4 4* 4* 7*	8 6* 4* 7*	6 3* 1* 1*	1 - - -	- - - -	3C 3B 2A 2B
3B	4 6* 4* 4* -	9 7* 4* 3* -	7 1* 1* 3* 1*	1 - - - -	- - - - -	2B 2C 3A 3C 2A
3C	5 4* 4* 1*	6 6* 3* -	6 3* 3* -	2 - - -	- - - -	3A 3B 2
4	-	1 (6.6 MHz)	1 (9 MHz)	2	1	
4A	2+1** 1*	1**(4.7 MHz)+5 - 2*	6 - 2*	2 - -	- - -	1E 4A 4A 4B
4B	3	6	2	1	-	
5	-	-	6	2	2	
5A	1 1*	2 2*	2 1*	1	-	5A 5C

**) pendant le jour - daytime - durante el día

Groupe de fréquences Frequency Group Grupo de frecuencias	I	II	III	IV	V	Voie commune à Common channel to Canal común a
Bandes Bands Bandas (MHz)	3, 3.5	4.7, 5.6, 6.6	9, 10, 11.3	13.3	18	
5B	4	6	4	-	-	
5C	1 1*	- 2*	- 1*	- -	- -	5A 5C
5D	2	6	2	-	-	
6	-	-	2	1	1	
6A	3 2*	8 2* (4.7 MHz)	6 2*	- 1*	- -	6E
6B	4 -	6 -	4 2*	1 -	1 -	6F
6C	3 -	1 (4.7 MHz)+4 -	4 1*	- -	- -	6F
6D	3	9	5	-	-	
6E	4 2*	6 2* (4.7 MHz)	7 2*	- 1*	- -	6A
6F	4 - -	4 - -	3 2* 1*	- - -	- - -	6B 6C
6G	37	56	35	5	1	
7	-	2	2	1	-	
7A	-	-	-	-	-	
7B	5	6	4	-	-	
7C	2	3	3	-	-	
7D	1	1	1	-	-	
7E	2	3	2	-	-	
7F	-	-	-	-	-	

Groupe de fréquences Frequency Group Grupo de frecuencias	I	II	III	IV	V	Voie commune à Common channel to Canal común a
Bandes Bands Bandas (MHz)	3, 3.5	4.7, 5.6, 6.6	9, 10, 11.3	13.3	18	
8	-	-	-	-	-	
9	-	3	4	1	-	
9A	-	-	-	-	-	
9B	4	6	6	-	-	
9C	2 1*	2 -	2 2*	- -	- -	9D
9D	1 1*	2 -	- 2*	- -	- -	9C
10	-	4	6	1	1	
10A	9	11	7	-	-	
10B	5	13	3	-	-	
10C	3	11	1	-	-	
10D	5	13	2	-	-	
10E	5	9	3	-	-	
10F	1	4	2	-	-	
11	-	-	-	-	-	
11A	-	-	-	-	-	
11B	9	15	8	1	1	
11C	-	-	-	-	-	
12	1	1	6	1	1	
12A	2	2	-	-	-	

Groupe de fréquences Frequency Group Grupo de frecuencias	I	II	III	IV	V	Voie commune à Common channel to Canal común a
Bandes Bands Bandas (MHz)	3, 3.5	4.7, 5.6, 6.6	9, 10, 11.3	13.3	18	
12B	-	-	-	-	-	
12C	5	14	6	-	-	
12D	2	4	2	-	-	
12E	- 1* - - 4*	5 2* 3* 1* -	3 1* 2* - -	- - - - -	- - - - -	12J 12F 12F 12H 12F 12G 12H
12F	1 - - - 1* 4*	3 3* 1* 1* - -	2 2* - - - -	- - - - - -	- - - - - -	12E 12E 12H. 12H 12J 12E 12G 12H
12G	1 4*	6 -	- -	- -	- -	12E 12F 12H
12H	- - - 4*	- 1* 1* -	- - - -	- - - -	- - - -	12F 12E 12F 12E 12F 12G
12I	-	-	-	-	-	
12J	3 1* 1*	3 2* -	3 1* -	- - -	- - -	12E 12F
13	-	-	-	1	1	
13A	- -	- -	1* -	- -	- 1*	13B 13B 13E 13F
13B	- - -	- - -	- 1* -	- - -	- - 1*	13A 13A 13E 13F

Groupe de fréquences Frequency Group Grupo de frecuencias	I	II	III	IV	V	Voie commune à Common channel to Canal común a
Bandes Bands Bandas (MHz)	3, 3.5	4.7, 5.6, 6.6	9, 10, 11.3	13.3	18	
13C	4 - 2*	8 - 2*	5 - 2*	- 1* -	- - -	13K 13J 13K
13D	4 -	4 2*	4 1*	- -	- -	13M
13E	1 1* -	1 6* -	1 1* -	- 1* -	- - 1*	13F 13A 13B 13F
13F	4 1* -	2 6* -	5 1* -	- 1* -	- - 1*	13E 13A 13B 13E
13G	5	6	7	-	-	
13H	4	6	6	1	-	
13I	3 1*	6 2*	2 -	- -	- -	13J
13J	5 2* 1* -	9 2* 1* -	3 2* - 1*	- - - -	- - - -	13C 13K 13I 13K
13K	5 2* - -	8 2* - -	6 2* 1* -	- - - 1*	- - - -	13C 13J 13J 13C
13L	-	-	-	-	-	
13M	4 -	4 2*	4 1*	- -	- -	13D
13N	2	3	2	-	-	
14	5	4	6	1	1	

Groupe de fréquences Frequency Group Grupo de frecuencias	I	II	III	IV	V	Voie commune à Common channel to Canal común a
Bandes Bands Bandas (MHz)	3, 3.5	4.7, 5.6, 6.6	9, 10, 11.3	13.3	18	
14A	- 1* 1* -	2 - - 1*	2 - - -	- - - -	- - - -	14D 14E 14G
14B	- 1* -	3 - 1*	2 - -	- - -	- - -	14F 14C
14C	2 -	2 1*	2 -	- -	- -	14B
14D	1 1* -	3 - 1*	2 - -	- - -	- - -	14A 14G
14E	- 1*	2 -	2 -	- -	- -	14A
14F	- 1*	2 -	2 -	- -	- -	14B
14G	2 - -	2 1* 1*	2 - -	- - -	- - -	14A 14D

INTERNATIONAL TELECOMMUNICATION UNION

AERONAUTICAL (R) CONFERENCE

(Geneva, 1978)

Document No. 207-E

20 February 1978

Original : English

COMMITTEE 5

Working Group 5B

FREQUENCY REQUIREMENTS FOR RDARAs

Having considered Document No. DT/39 at its tenth meeting on 20 February 1978, Working Group 5B approved it with some amendments. The requirements as approved appear in the attached Annex.

Annex : 1



A N N E X EA N N E XA N E X O

Groupe de fréquences Frequency Group Grupo de frecuencias	I	II	III	IV	V	Voie commune à Common channel to Canal común a
Bandes Bands Bandas (MHz)	3, 3.5	4.7, 5.6, 6.6	9, 10, 11.3	13.3	18	
1	-	1	2	1	-	
1A	-	-	-	-	-	
1B	1 5**)	4	1	-	-	
1C	4	4	3	-	-	
1D	6	6	4	1	-	
1E	1 1*	2 -	1 -	- -	- -	1E 4A
2	- -	- 1*	10 3*	3 -	1 -	3
2A	22 2*	25 2*	5 2*	- -	- -	2C
2B	15 4*	24 6*	2 4*	- -	- -	2C
2C	24 2* 4*	21 2* 6*	6 2* 4*	- - -	- - -	2A 2B
3	- -	- 1*	7 3*	2 -	2 -	2
3A	15 3*	17 4*	4 3*	- -	- -	3C

**) pendant le jour - daytime - durante el día

Groupe de fréquences Frequency Group Grupo de frecuencias	I	II	III	IV	V	Voie commune à Common channel to Canal común a
Bandes Bands Bandas (MHz)	3, 3.5	4.7, 5.6, 6.6	9, 10, 11.3	13.3	18	
3B	19 2*	22 3*	10 3*	- -	- -	3C
3C	15 2* 3*	17 3* 4*	- 3* 3*	- - -	- - -	3B 3A
4	-	-	-	2	1	
4A	5 1*	7 - 2*	7 - 2*	3 - -	- - -	1E 4A 4A 4B
4B	3	6 2*	2 2*	1	-	4A 4B
5	-	-	6	2	2	
5A	1 1*	2 2*	2 1*	1	-	5A 5C
5B	4	6	4	-	-	
5C	1 1*	- 2*	- 1*	- -	- -	5A 5C
5D	2	6	2	-	-	
6	-	-	2	1	1	
6A	3 2*	10 2*	7 2*	- 1*	- -	6E
6B	4 -	6 -	4 2*	1 -	1 -	6F
6C	2 -	8 -	4 -	- 1*	- -	6F
6D	3	9	4	1	-	
6E	5 2*	8 2*	8 2*	- 1*	- -	6A

Groupe de fréquences Frequency Group Grupo de frecuencias	I	II	III	IV	V	Voie commune à Common channel to Canal común a
Bandes Bands Bandas (MHz)	3, 3.5	4.7, 5.6, 6.6	9, 10, 11.3	13.3	18	
6F	6 - -	5 - -	4 2* -	- - 1*	- - -	6B 6C
6G	37	61	35	5	1	
7	-	2	2	1	-	
7A	-	-	-	-	-	
7B	5	6	4	-	-	
7C	2	3	3	-	-	
7D	1	1	1	-	-	
7E	2	3	2	-	-	
7F	-	-	-	-	-	
8	-	-	-	-	-	
9	-	3	4	1	-	
9A	-	-	-	-	-	
9B	4 4*	6 4*	6 4*	- -	- -	9C
9C	- 4* 1*	- 4* -	- 4* 2*	- - -	- - -	9B 9D
9D	1 1*	2 -	- 2*	- -	- -	9C
10	-	4	6	1	1	
10A	9	14	9	-	-	
10B	5	13	3	-	-	

Groupe de fréquences Frequency Group Grupo de frecuencias	I	II	III	IV	V	Voie commune à Common channel to Canal común a
Bandes Bands Bandas (MHz)	3, 3.5	4.7, 5.6, 6.6	9, 10, 11.3	13.3	18	
10C	3	11	2	-	-	
10D	5	14	2	-	-	
10E	5	10	4	-	-	
10F	1	4	2	-	-	
11	-	-	-	-	-	
11A	-	-	-	-	-	
11B	11	18	8	1	1	
11C	-	-	-	-	-	
12	1	1	6	1	1	
12A	2	2	-	-	-	
12B	-	-	-	-	-	
12C	5	14	6	-	-	
12D	2	4	2	-	-	
12E	- 1* - - 4*	5 2* 3* 1* -	3 1* 2* - -	- - - - -	- - - - -	12J 12F 12F 12H 12F 12G 12H
12F	1 - - - 1* 4*	3 3* 1* 1* - -	2 2* - - - -	- - - - - -	- - - - - -	12E 12E 12H 12H 12J 12E 12G 12H
12G	1 4*	6 -	- -	- -	- -	12E 12F 12H

Groupe de fréquences Frequency Group Grupo de frecuencias	I	II	III	IV	V	Voie commune à Common channel to Canal común a
Bandes Bands Bandas (MHz)	3, 3.5	4.7, 5.6, 6.6	9, 10, 11.3	13.3	18	
12H	- - - 4*	- 1* 1* -	- - - -	- - - -	- - - -	12F 12E 12F 12E 12F 12G
12I	-	-	-	-	-	
12J	3 1* 1*	4 2* -	3 1* -	- - -	- - -	12E 12F
13	-	-	-	1	1	
13A	- -	- -	1* -	- -	- 1*	13B 13B 13E 13F
13B	- - -	- - -	- 1* -	- - -	- - 1*	13A 13A 13E 13F
13C	6 -	10 -	7 -	- 2*	- -	13K
13D	4 -	4 2*	4 1*	- -	- -	13M
13E	1 1* -	1 6* -	1 1* -	- 1* -	- - 1*	13F 13A 13B 13F
13F	4 1* -	2 6* -	5 1* -	- 1* -	- - 1*	13E 13A 13B 13E
13G	5	6	7	-	-	
13H	4	6	6	1	-	
13I	3 1*	6 2*	2 -	- -	- -	13J

Groupe de fréquences Frequency Group Grupo de frecuencias	I	II	III	IV	V	Voie commune à Common channel to Canal común a
Bandes Bands Bandas (MHz)	3, 3.5	4.7, 5.6, 6.6	9, 10, 11.3	13.3	18	
13J	6 1* -	10 2* -	5 - 1*	- - -	- - -	13I 13K
13K	7 - -	10 - -	8 1* -	- - 2*	- - -	13J 13C
13L	-	-	-	-	-	
13M	4 -	4 2*	4 1*	- -	- -	13D
13N	2	3	2	-	-	
14	3	4	8	2	1	
14A	2	5	3	-	-	
14B	2	5	3	-	-	
14C	2	5	3	-	-	
14D	2	5	3	-	-	
14E	2	5	3	-	-	
14F	2	5	3	-	-	
14G	2	5	3	-	-	

AERONAUTICAL (R) CONFERENCE

(Geneva, 1978)

Document No. 208-E

20 February 1978

Original : English

COMMITTEE 4

SUMMARY RECORD

OF THE

THIRD MEETING OF COMMITTEE 4

(TECHNICAL)

Tuesday, 14 February 1978, at 1400 hrs

Chairman : Mr. G. KOVÁCS (Hungary)

Subjects discussed

Document No.

- | | |
|---|-------------|
| 1. Summary Record of the First Meeting | 128 |
| 2. Second Report of Working Group 4A | 137 |
| Report of Working Group 4A | 126 |
| 3. First Report of Working Group 4B (continued) | 132 & DT/12 |
| 4. Second Report of Working Group 4B | 134 |
| 5. Maps of the polar areas | 133 |



The Chairman opened the meeting.

1. Summary Record of the First Meeting (Document No. 128)

The Summary Record of the First Meeting was approved.

2. Second Report of Working Group 4A (Document No. 137) and
Report of Working Group 4A (Document No. 126)

2.1 The Chairman of Working Group 4A introduced Document No. 137 to the Committee and drew attention to the Group's proposal (contained in point 2) to replace Section 1.6 of Document No. 126 by the final paragraph of Document No. 137. The Group had considered it appropriate that the Committee decide where to insert the three indented paragraphs under point 1.

2.2 The delegate of the United States of America, referring to the second of those indented paragraphs, third line, pointed out that the word "reflection" should be replaced by the word "repetition".

2.3 The delegate of the Union of Soviet Socialist Republics, referring to the same paragraph, agreed in theory with the repetition factors contained in the first sentence. He considered, however, that account should be taken of the possibility, indeed the probability, that higher repetition factors might well be required in some cases.

2.4 The Chairman of Working Group 4A explained that the Group had taken into consideration theoretical interference probabilities based on the material available to it. If operational considerations entered into frequency planning, the matter would fall into the competence, not of the Group, but of Committee 4 or another Committee. It might well happen that a repetition factor even more than 4 might be obtained in certain traffic conditions.

2.5 The delegate of the Union of Soviet Socialist Republics hoped the matter would be brought to the attention of Committee 5.

2.6 It was agreed that, once Committee 4 had taken a decision on the second indented paragraph under point 1, it would transmit that decision, together with an explanatory note from the Chairman of Committee 4, to Committee 5.

2.7 The Chairman offered two suggestions concerning the manner in which the three indented paragraphs under point 1 might be inserted in the Annex to Document No. 126.

2.8 It was agreed to amend Section 4. Sharing conditions between areas of the Annex to Document No. 126 as follows :

- To insert a new sub-title "4.1 Frequency bands 3-11.3 MHz" above present paragraph 4.1.
- To renumber paragraph 4.1 as paragraph 4.1.1.
- To delete from the second and third columns of the table all references to bands 13 - 18 / 22 MHz, time separation and transparencies.

- To renumber paragraph 4.2 as paragraph 4.1.2.
- To insert a new sub-title "4.2 Frequency bands 13 - 18 / 22 MHz" after present paragraph 4.2.
- To insert under that sub-title the text of the three indented paragraphs under point 1 of Document No. 137.

2.9 It was further agreed to amend the title of Section 5 to read as follows :
"5. Method of use of transparencies for the frequency bands 3 - 11.3 MHz". (mode d'emploi des calques pour les bandes de fréquence 3 - 11 MHz).

2.10 The Chairman believed that the text of the three indented paragraphs should be made more affirmative.

2.11 The delegate of Australia suggested that the second indented paragraph should begin "For the 13 MHz band, the repetition factor should be at least of 2 ...".

2.12 It was agreed to replace the indefinite article "a" in the first line of the first indented paragraph by the definite article "the", to place the verbs in all three indented paragraphs in the present tense and to submit the text to the Editorial Committee.

2.13 The delegate of the United States of America said he would appreciate it if the Committee were given the opportunity to consider in writing the revised text of Document No. 126 which it had just approved.

2.14 The delegate of India believed it would be useful to forward the revised text to Committee 5.

2.15 It was agreed to publish the revised text of Document No. 126 as soon as possible, to transmit it to Committee 5 and to place it on the agenda of a meeting of Committee 4 as soon as it was available to enable that Committee to see if any minor adjustments were required.

2.16 The Chairman called for comments on the proposal contained in Document No. 137 to replace Section 1.6 of Document No. 126 by the text of the final paragraph of Document No. 137.

2.17 The delegate of Argentina considered that the text of the note in the last paragraph in Document No. 137 should contain the relevant reference numbers of the technical documentation issued by the IFRB.

2.18 The representative of the IFRB, pointing out that the information in question was brought up to date every two years at the IFRB Seminar, said that the reference numbers of the documents issued might change. However, it might be possible to assign one document number to the documents relating to the Aeronautical Mobile Service and issue subsequent ones in the form of revisions.

2.19 It was agreed to include the number of the IFRB document in the note which was to replace paragraph 1.6 in Document No. 126.

2.20 The Chairman thanked the Chairman and members of Working Group 4A for completing their task.

3. First Report of Working Group 4B (continued) (Documents Nos. 132 and DT/12)

3.1 The Chairman suggested that the wording of the first two lines of MOD 27/10 (Document No. 132) be re-drafted in a more affirmative form.

The delegate of Argentina observed that the translation into Spanish of those two lines was incorrect and would have to be brought into line with the English version.

It was so agreed.

3.2 The Chairman of Working Group 4B said that as certain corrections made in Document No. DT/12 had not been carried over into Document No. 132, presumably a revised text would have to be issued. He also recalled that certain points arising out of Working Group 4B's first Report had been referred to Committee 6.

4. Second Report of Working Group 4B (Document No. 134)

4.1 The Chairman of Working Group 4B, introducing its second Report (Document No. 134), said that the following corrections had to be made.

4.2 The last line of the second column of the table in paragraph 2.1 should read "aircraft stations". In the French text of the last column the figure in the last line should be "100 W.". In the English text of the note on page 3, fourth line, the word "from" should read "form". The last line should refer to Committee 7 and not Committee 6.

4.3 The Chairman invited the Committee to examine the Report paragraph by paragraph.

4.4 MOD 27/52

The Chairman of Working Group 4B said that the reference to MOD 27/65 and MOD 27/66 should be in square brackets as those provisions had not yet been dealt with.

4.5 The delegate of Cuba said that the Spanish translation of the second sentence in the note was incorrect and must be brought into line with the English.

Subject to that correction being made, MOD 27/52 was adopted.

4.6 SUP 27/53

Adopted.

4.7 MOD 27/54

Adopted.

4.8 MOD 27/55

Adopted.

4.9 MOD 27/56

Adopted.

4.10 NOC 27/57-61

NOC 27/57-61 were adopted and the note was referred to Committee 7.

4.11 MOD 27/62

Adopted, subject to alignment of the Spanish text.

5. Maps of the polar areas (Document No. 133)

5.1 The delegate of Norway introduced his Administration's proposal to replace existing maps for the polar regions with maps of an enlarged scale for the reasons set out in the first paragraph of Document No. 133. The map annexed as an example had been prepared by the Secretariat and was in an equal area projection. The new map would extend from the pole to 30° latitude and the scale would be enlarged to the size of an A3 sheet. It would show figures for circles of latitude and the auroral zones and should be printed in two colours. The corresponding new transparencies which would have to be made for the new projection could be simplified and would contain curves of concentric circles, one in each frequency band for either night or day propagation. If the proposal were adopted the text of 27/33 and 27/38 in Annex 27 would have to be amended and some consequential changes would have to be made in Document No. 126.

5.2 The representative of the IFRB said that it should be technically possible to print such maps in two colours with the proposed range contour changes.

5.3 In answer to a question by the delegate of Argentina, the delegate of Norway confirmed that his Administration's proposal was to redesign the maps for both poles.

5.4 The delegate of India wondered whether it was feasible to undertake the formidable task of plotting new areas and preparing transparencies in the short time available before the signature of the Final Act of the Conference.

5.5 The representative of the IFRB said that the work which was primarily a matter of printing could be carried out after the end of the Conference if the Norwegian proposal was accepted. The IFRB could not promise that the new maps would be ready in time for inclusion in the Final Act but they could be issued fairly soon after the end of the Conference.

5.6 The delegate of India said that such a procedure should be acceptable.

5.7 The Chairman suggested that the Committee might report to the Plenary that in principle it approved the Norwegian proposal to adopt new projections for the two polar regions. The first draft of one map might be circulated before the end of the Conference for examination and all of them would subsequently be circulated in their final form as soon as possible after the signature of the Final Act.

It was so agreed.

The meeting rose at 1530 hours.

The Secretary :

L. SONESSON

The Chairman :

G. KOVACS

AERONAUTICAL (R) CONFERENCE

(Geneva, 1978)

Document No. 209-E

21 February 1978

Original : French

COMMITTEE 5

People's Republic of Poland

FREQUENCY REQUIREMENTS IN THE BAND 21 870-22 000 kHz

Since the frequencies in the band 21 870-22 000 kHz are exclusively planned for allotment to the Aeronautical Mobile (R) Service, the People's Republic of Poland requests a frequency for world-wide use in this band.



INTERNATIONAL TELECOMMUNICATION UNION

AERONAUTICAL (R) CONFERENCE

(Geneva, 1978)

Document No. 210-E

21 February 1978

Original : English

COMMITTEE 5

Thailand

FREQUENCY REQUIREMENT IN THE 22 000 kHz BAND

In view of the fact that frequency in the band 21 870 - 22 000 kHz will be planned for allotment to the Aeronautical Mobile (R) Service, Thailand requests one frequency in this band.



AERONAUTICAL (R) CONFERENCE

(Geneva, 1978)

Document No. 211-E
21 February 1978
Original : English

COMMITTEE 6

United States of America

EXCERPTS FROM ICAO GUIDANCE FOR FREQUENCY MANAGEMENT
OF OPERATIONAL CONTROL COMMUNICATIONS

Having in mind consideration by Committee 6 of alternate texts for MOD 27/20, and in the light of helpful interventions by representatives of the IFRB, we wish to bring to the attention of Committee members the attached excerpts from the Report of the Communications Divisional Meeting of ICAO, Montreal, September 1976.

These excerpts set forth procedures and guiding principles with respect to the frequency management aspects of long distance operational control communications.

Annex : 1



A N N E X

6-2

Report on Agenda Item 6

6.3.2 The Meeting then considered the sequential steps necessary in the co-ordination process:

- a) the determination of specific operational requirements by the aircraft operating agency;
- b) the submission to the State aeronautical authority, in whose territory the aeronautical station is to be located, of a specific proposal and associated detailed operational and technical description of the facilities proposed to be established (including inter alia location of station, complement and order of frequencies required, transmitter power, area of service expected in each frequency order, hours of operation, number of aircraft to be served, expected channel loadings, etc., including, as appropriate, specifically requested assignments);
- c) liaison between the State aeronautical authority concerned and ICAO Headquarters in the light of b) above for the latter to determine the suitability or otherwise of frequencies to be assigned thus resulting in appropriate advice from ICAO to the State concerned. This process could be done in collaboration with the IFRB under the terms of paragraph 27/20 of Appendix 27 (Rev) to the ITU Radio Regulations and the State telecommunication authorities as appropriate;
- d) established notification action by the State concerned with regard to registration of the assignments with the IFRB, etc.;
- e) subsequent to the establishment of assignments, State authorities concerned should take action to determine that frequencies are not used in an unauthorized manner nor subject to harmful interference.

6.3.3 The Meeting also took notice that long distance operational control communications had been discussed in ICAO in 1973. After assessing States' comments, the ICAO Council approved certain interim guiding principles for operational control communications and State letter AN 7/6.6 - 74/43 of 10 April 1974 was subsequently sent to all ICAO member States as policy guidance material. The Meeting decided to consider at further meetings the set of controlling principles contained in the ICAO State letter. The Meeting observed that although the aforementioned guiding principles were originally intended for an interim measure under the constrained circumstances of only limited Appendix 27 world-wide frequencies being at that time available, the principles could be refined for a more permanent application.

6.3.4 Using as a basis the interim guiding principles contained in State letter AN 7/6.6 - 74/43, the Meeting developed a set of basic principles, noting that it may be necessary to further develop and add to these principles as time progresses. It agreed that these principles should be included in Annex 10 for the guidance of States, and formulated the following Recommendation accordingly.

RSPP

RECOMMENDATION 6/1 - AMENDMENT OF ANNEX 10, - GUIDING
PRINCIPLES FOR LONG DISTANCE
OPERATIONAL CONTROL COMMUNICATIONS

That Annex 10, Volume I be amended as follows:

ADD a new Attachment C to Part II:

ATTACHMENT C TO PART II - GUIDING PRINCIPLES FOR LONG
DISTANCE OPERATIONAL CONTROL COMMUNICATIONS

Note (1) These principles are intended primarily for the guidance of States during the period pending a suitable revision of the Frequency Allotment Plan for the Aeronautical Mobile (R) Service (Appendix 27 to the ITU Radio Regulations).

Note (2) The numerical sequence of the clauses below does not signify any order of relative importance.

- 1) Aeronautical Operational Control HF Stations should be authorized where no other means for the exercise of long distance operational control are available or where the use of the normal communication services provided for safety and regularity of flights are unsuitable or inadequate;
- 2) the total number of ground stations on the world-wide channels should be kept to a minimum consistent with economic and operational efficiency;
- 3) thus, if possible, and practicable, one station should serve aircraft operating agencies in two (or more) adjacent States and there should not normally be more than one station per State;
- 4) aeronautical stations could be operated by States on behalf of one or more aircraft operating agencies providing the agencies' requirements for flexibility and direct communication to their aircraft can be met, or aeronautical stations could be operated by an aircraft operating agency or a communication agency serving the interests of one or more airlines and operating under licence issued by the State or States concerned;
- 5) the licences should be issued on a regular renewal basis to permit their withdrawal or amendment, if necessary, to meet ICAO requirements, and pursuant to RR 415 and 432 should prohibit "public correspondence" or point-to-point type traffic;

6-4

Report on Agenda Item 6

RSPP

RECOMMENDATION 6/1 - AMENDMENT OF ANNEX 10, - GUIDING
(cont'd) PRINCIPLES FOR LONG DISTANCE
OPERATIONAL CONTROL COMMUNICATIONS

- 6) VHF (GP or OPC channels) and not HF should be used when an aircraft is within the coverage of an appropriate VHF aeronautical station.

Note:- The specific categories of messages that may be handled on Aeronautical Mobile (R) Service channels are prescribed in Annex 10, Volume II, Chapter 5, para 5.1.8. The same Chapter defines the Standard communications procedures for the Service including the requirements for maintaining watch in para 5.2.2. In accordance with RR 730, Article 18 of the ITU Radio Regulations, licences should define the purpose of the station for Operational Control (as defined in Annex 6, Part I of ICAO) and should specify the general characteristics in accordance with Appendix 27 of the Radio Regulations.

6.3.5 The Meeting expressed the view that frequencies cannot normally be assigned for exclusive use by one aircraft operating agency, but that frequency sharing techniques should be employed.

AERONAUTICAL (R) CONFERENCE

(Geneva, 1978)

Document No. 212-E

21 February 1978

Original : English

COMMITTEE 5

United Arab Emirates

FREQUENCY BAND 21 870-22 000 kHz

Taking into consideration that the band 21 870-22 000 kHz will be planned for frequency allotment to the Aeronautical Mobile Service, the United Arab Emirates requests one frequency in this band.



AERONAUTICAL (R) CONFERENCE

(Geneva, 1978)

Document No. 213-E

21 February 1978

Original : English

COMMITTEE 5

The Republic of Korea

FREQUENCY REQUIREMENTS IN THE 22 000 kHz BAND

In view of the fact that frequencies in the band 21 870 - 22 000 kHz shall be planned for allocation to the Aeronautical Mobile (R) Service, the Republic of Korea requests one (1) frequency in the band for Long-Range Operational Control.



AERONAUTICAL (R) CONFERENCE

(Geneva, 1978)

Document No. 214-E

21 February 1978

Original : Spanish

COMMITTEE 5

Cuba

FREQUENCY REQUIREMENTS IN BAND 21 870-22 000 kHz

In connection with the planning of the allotment of frequencies in band 21 870-22 000 kHz for the Aeronautical Mobile (R) Service, the Administration of Cuba wishes to submit a requirement for a frequency in this band for operational air control communications.



AERONAUTICAL (R) CONFERENCE

(Geneva, 1978)

Document No. 215-E

21 February 1978

Original : Spanish

COMMITTEE 5

Spain

FREQUENCY REQUIREMENTS IN THE 21 870-22 000 kHz BAND

In view of the fact that there is to be frequency allotment planning for the Aeronautical Mobile (R) Service in the 21 870-22 000 kHz band, Spain wishes to state that it will require two frequencies in this band for aeronautical operational control.



COMMITTEE 5

Republic of Zaire

CONSIDERATION OF PROPOSALS BY THE PEOPLE'S REPUBLIC OF ANGOLA

RDARA boundary descriptions and allotment requirements

1. The Administration of the Republic of Zaire agrees in principle with the amendments suggested by the People's Republic of Angola in points AGL/86/2 MOD 27/113 and AGL/86/2 MOD 27/135 in Document No. 113 and in point AGL/87/3 ADD 27/138A in Document No. 198.

2. The question of national VOLMET emissions, which is raised in Document No. 87, can be settled by means of a regional agreement.

However, the Republic of Zaire can make ATIS or OFIS VOLMET emissions via the VOR radiotelephone channel from its international aerodromes, in accordance with Recommendation 14/19 in Document 7474/20 AFI V (Regional RDARA ICAO/AFI).

3. With regard to the coexistence of Sub-areas of Areas 7B and 7F, the Administration of the Republic of Zaire agrees in principle to the establishment of the sub-area of Area 7F for the national requirements of the People's Republic of Angola, but the Republic of Zaire wishes to draw the particular attention of its sister Republic of Angola to the fact that Sub-Area 7B COVERS THE WHOLE OF THE TWO TERRITORIES (Angola and Zaire) as shown on the annexed RDARA map.

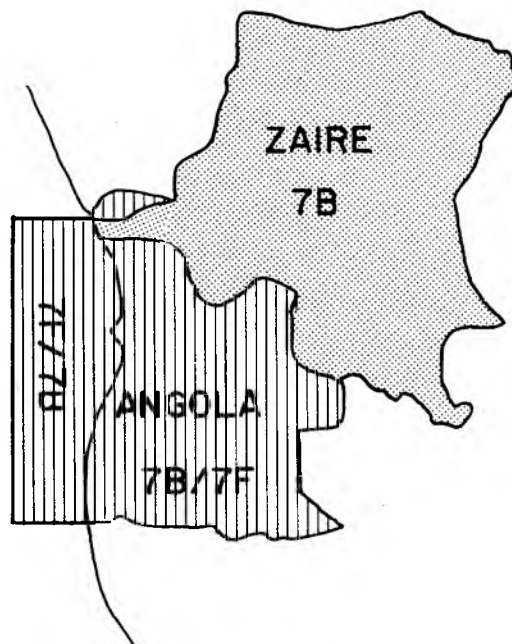
Annex : 1 map





A N N E X E

A N N E X

A N E X O



 = 7B

 = 7F dans 7B
7F in 7B
7F dentro de 7B

AERONAUTICAL (R) CONFERENCE

(Geneva, 1978)

Document No. 217(Rev.1)-E

24 February 1978

Original : French

English

Spanish

COMMITTEE 6

Note from the Chairman of Working Group 6A

In the discussions at Working Group level and in Committee 6, when it dealt with the sixth Report of Working Group 6A, doubts have been expressed as to whether the meaning of the Spanish text of No. 429 of the Radio Regulations corresponds to the French and English text, noting that the English terms used derived from the ICAO Convention which was signed in 1944.

In order to enable the WARC 1979 to align all three texts of Radio Regulations No. 429, the annexed draft Recommendation has been drafted. This draft has not been discussed in the Working Group but could be considered by Committee 6 as an adequate means to obtain the envisaged objective.

K. OLMS

Chairman of Working Group 6A

Annex : 1



A N N E X

DRAFT

RECOMMENDATION No. / C /

Relating to the concordance of the French, English and Spanish texts of
No. 429 of the Radio Regulations

The World Administrative Radio Conference on the Aeronautical Mobile (R)
Service, Geneva, 1978,

considering

- a) that doubts have been expressed as to whether the meaning of the phrase "régularité de la navigation aérienne" in French, "regularity of flight" in English and "regularidad de la navegación aérea" in Spanish to concord to each other;
- b) that this phrase emanates originally from the ICAO Convention, Chicago 1944, drafted in English;
- c) that it is necessary and imperative that the three texts be equivalent in form and content;
- d) that its terms of reference did not include the revision of No. 429 of the Radio Regulations;

recommends

that the World Administrative Radio Conference planned for 1979 should try to overcome this apparent lack of concordance in the texts of No. 429 of the Radio Regulations.

COMMITTEE 6

Note from the Chairman of Working Group 6A

In the discussions at Working Group level and in Committee 6, when it dealt with the sixth Report of Working Group 6A, doubts have been expressed as to whether the meaning of the Spanish text of No. 429 of the Radio Regulations corresponds to the French and English text, noting that the English terms used derived from the ICAO Convention which was signed in 1944.

In order to enable the WARC 1979 to align all three texts of Radio Regulations No. 429, the annexed draft Recommendation has been drafted. This draft has not been discussed in the Working Group but could be considered by Committee 6 as an adequate means to obtain the envisaged objective.

K. OLMS
Chairman of Working Group 6A

Annex : 1



A N N E X

DRAFT

RECOMMENDATION No. / C /

Relating to the concordance of the French, English and Spanish texts of
No. 429 of the Radio Regulations

The World Administrative Radio Conference on the Aeronautical Mobile (R)
Service, Geneva, 1978

considering

- a) that doubts have been expressed as to whether the meaning of the phrase "regularidad de la navegación aérea" in the Spanish text of the cited paragraph corresponds to the meanings of the texts of the other two working languages of the ITU ("régularité de la navigation aérienne", in French, and "regularity of flight", in English);
- b) that it is necessary and imperative that the three texts be equivalent in form and content;
- c) that its terms of reference did not include the revision of No. 429 of the Radio Regulations;

recommends

that the World Administrative Radio Conference planned for 1979 should consider this apparent lack of concordance in the official texts of No. 429 of the Radio Regulations, and should take a decision accordingly.

AERONAUTICAL (R) CONFERENCE**(Geneva, 1978)**

Document No. 218-E

21 February 1978

Original : EnglishCOMMITTEE 5People's Democratic Republic of Yemen

FREQUENCY REQUIREMENTS

1. The Delegation of the People's Democratic Republic of Yemen confirms the following requirements for long-distance operational control as indicated previously :

Frequency Band (kHz)	Long-Distance Operational Control (LDOCC)	
From-To		Remarks
2 850- 3 025	1	AFI/ME
3 400- 3 500	1	AFI/ME
4 650- 4 700	1	AFI/ME
5 450- 5 480(Reg 2)		
5 480- 5 680	1	AFI/ME
6 525- 6 685	1	AFI/ME SEA
8 815- 8 965	1	AFI/ME SEA
10 005-10 100	1	AFI/ME SEA EU
11 275-11 400	1	AFI/ME SEA EU
13 265-13 360	1	SEA EU
17 900-17 970	1	SEA EU

2. It also submits the following requirement for long-distance operational control :

21 870-22 000	1	World-wide
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INTERNATIONAL TELECOMMUNICATION UNION

AERONAUTICAL (R) CONFERENCE

(Geneva, 1978)

Document No. 219-E

21 February 1978

Original : English

COMMITTEE 5

Fiji

FREQUENCY REQUIREMENTS IN THE BAND 21 870-22 000 kHz

In view of the planning principles adopted at Committee level on the exclusive allocation of band 21 870-22 000 kHz to the Aeronautical Mobile (R) Service, Fiji hereby requests one (1) frequency in this band for world-wide use.



AERONAUTICAL (R) CONFERENCE

(Geneva, 1978)

Document No. 220-E

21 February 1978

Original : English

COMMITTEE 7

Note from the Chairman of Committee 5
to the Chairman of Committee 7

At its fifth meeting held on 21 February 1978 Committee 5 adopted the following decisions :

1. MOD 27/16 (Document No. 181)

The channelling arrangement and carrier (reference) frequencies contained in the proposals by the Federal Republic of Germany, United States, France, Mauritius and the United Kingdom shall be used for preparation of the table in No. 27/16. In view of the fact that classes of emission other than A3J are permitted, it was decided that the assigned frequency shall not be indicated but a reference shall be made in MOD 27/16 to Nos. MOD 27/72 to MOD 27/73 (Document No. 181).*)

2. "MOD 27/135 - Sub-Area 7B

From the points 05°S 10°E to 05°S 12°E. Thence along the northern border of the Republic of Zaire, Cabinda Territory being included in this area, to the junction of the borders of Uganda, Republic of Zaire and Sudan. Thence south along the eastern and southern border of the Republic of Zaire, including the Republic of Burundi and the Republic of Rwanda, and along the eastern and southern border of the People's Republic of Angola to the coast of the South Atlantic. Thence to the point 17°S 10°E, and then to close the sub-area at 05°S 10°E."

3. "ADD 27/138A - Sub-Area 7F

From the point 05°S 10°E to 05°S 12°E, along the border between the People's Republic of the Congo and the People's Republic of Angola to the junction point of the borders of the People's Republic of the Congo, the People's Republic of Angola, and the Republic of Zaire. Thence along the border between the People's Republic of Angola and the Republic of Zaire until the coast of the Atlantic, along the line coast until the Zaire River and thence along the northern, eastern and southern border of the People's Republic of Angola to the coast of the South Atlantic. Thence to the point 17°S 10°E and then to close the sub-area at 05°S 10°E."

4. ADD 27/165B - Sub-Area 13N (Document No. 165)

"From the point 22°30'S 62°30'W along the borders of Paraguay with Bolivia to 20°10'S 58°W, along the borders of Paraguay with Brazil to 25°50'S 54°30'W and thence along the borders of Paraguay with Argentina to close the sub-area at the point 22°30'S 62°30'W."

*) The frequencies are indicated on pages 31 and 32 of Document No. DT/1.



5. Nos. 27/1 and 27/3 to 27/8 and 27/74 to 27/79

It was decided that these numbers should be retained without modification.

"NOC 27/1
NOC 27/3 to 27/8
NOC 27/74 to 27/79"

M. CHEF
Chairman of Committee 5

AERONAUTICAL (R) CONFERENCE

(Geneva, 1978).

Document No. 221-E

21 February 1978

Original : English

COMMITTEE 6

Note from the Chairman of Committee 5
to the Chairman of Committee 6

Committee 5, at its fifth meeting, adopted the decision in principle to indicate in the Plan the frequencies to be designated for Long-Distance Operational Control Communications as frequencies available for world-wide use and not to prepare a Plan to allot these frequencies to specific countries or geographical areas.

This has reference to paragraphs 5 and 6 of Document No. 144.

M. CHEF
Chairman of Committee 5



INTERNATIONAL TELECOMMUNICATION UNION

AERONAUTICAL (R) CONFERENCE

(Geneva, 1978)

Document No. 222-E

21 February 1978

Original : French

COMMITTEE 5

People's Republic of Bulgaria

FREQUENCY REQUIREMENTS IN THE 22 000 kHz BAND

In view of the fact that frequencies in the band 21 870-22 000 kHz will be included in the frequency allotment plan for the Aeronautical Mobile (R) Service, the Bulgarian Delegation requests a frequency in this band for world-wide use.



INTERNATIONAL TELECOMMUNICATION UNION
AERONAUTICAL (R) CONFERENCE
(Geneva, 1978)

Document No. 223-E
21 February 1978
Original : English

COMMITTEE 5

Arab Republic of Egypt

FREQUENCY REQUIREMENT IN THE 21 870-22 000 kHz BAND

Since there is to be frequency allotment planning for the AM(R)S in the band 21 870-22 000 kHz, the Arab Republic of Egypt requests two frequencies in that band.

Reasons : To meet their world-wide long-range operational control requirements.



INTERNATIONAL TELECOMMUNICATION UNION

AERONAUTICAL (R) CONFERENCE

(Geneva, 1978)

Document No. 224-E

22 February 1978

Original: English

French

Spanish

PLENARY MEETING

COMMITTEE 7

SECOND REPORT OF COMMITTEE 6

Committee 6, hereby, presents its second report. The decisions taken, unanimously, on the texts of Appendix 27 and Recommendations examined by Committee 6, are shown in the Annex to this document.

R.J. BUNDLE
Chairman of Committee 6

Annex



ANNEX

MOD 27/20 The International Civil Aviation Organization (ICAO)
[Doc. DT/44] co-ordinates radiocommunications of the Aeronautical
Mobile (R) Service with international aeronautical
operations and this Organization should be consulted
in all appropriate cases in the operational use of
the frequencies in the Plan.

MOD 27/23 Resort to the coordination described in No. 27/20 shall be
[Doc. 176] made where appropriate and desirable for the efficient utilization of the
frequencies in question, and especially when the procedures of No. 27/22
are not satisfactory.

ADD

RECOMMENDATION No. D

[Doc. 186] relating to the inclusion of the band [21,870-22,000] kHz
in the Frequency Allotment Plan for the Aeronautical Mobile
(R) Service (Appendix 27 [rev.] to the Radio Regulations)

The World Administrative Radio Conference for the Aeronautical
Mobile (R) Service, Geneva, 1978,

considering

- a) that there is a need to add an additional frequency band to
Appendix 27 [rev.] to provide world-wide frequencies suitable for
long-distance communications and to reduce traffic congestion in existing
bands;
- b) that there is a suitable band at [21,870 - 22,000] kHz at
present allocated to the Aeronautical Fixed and Aeronautical Mobile (R)
Services;
- c) that if the band were to be allocated exclusively to the
Aeronautical Mobile (R) Service it could be incorporated into Appendix 27
[rev.];
- d) that the decision to re-allocate the band could be taken by the
1979 General World Administrative Radio Conference;
- e) that the decision to incorporate a plan for the band into
Appendix 27 [rev.] could be taken by the 1979 General WARC;

has established

a plan for the band [21,870 - 22,000] kHz with associated
consequential provisions for modifying the procedures of Appendix 27 [rev.]
and related Radio Regulations for this purpose (see Annex);

recommends

1. that the 1979 General World Administrative Radio Conference should consider the reallocation of the band [21,870 - 22,000] kHz exclusively to the Aeronautical Mobile (R) Service to meet the requirements mentioned in considering a) above;
2. if it so decides, then to include the plan and associated provisions to Appendix 27 [rev.] as an integral part thereof and to come into force on [1 February 1983] and to make the necessary consequential changes to the Radio Regulations;

urges Administrations

to submit to the 1979 General WARC proposals to this effect.

ANNEX TO RECOMMENDATION No. D

OUTLINE OF CHANGES TO BE MADE TO APPENDIX 27 [rev.]
AND RELATED RADIO REGULATIONS TO BE SET OUT ULTIMATELY
IN DETAIL AS THE ANNEX TO THE RECOMMENDATION

APPENDIX 27

Page 3 Table of Contents, Part II, in the title in italics, delete 17,920 kHz, substitute the upper edge of the new exclusive band [] kHz, to be decided by Committee 5.

No. 27/10 Insert new band [] to be decided by Committee 5, with separation to be established by Committee 4.

No. 27/16 Insert new frequencies in the Table of Frequencies, to be decided by Committee 5.

Page 25 Part II, amend title as for page 3 above.

MOD No. 27/189 Set out the new column for the new band to be added to the Table on pages 39-43.

ADD No. 27/207A Add the new Table for the new band.

RADIO REGULATIONS

Set out the required modification in the Table of Frequency Allocations for the band 21,870 - 22,000 kHz in Article 5 to show the new exclusive allocation to the Aeronautical Mobile (R) Service reflected in No. 27/10 above.

RR431 delete 18,030 kHz, substitute upper edge of band limit, to be decided by Committee 5.

RR552 delete 17,970 kHz, substitute upper edge of band limit, to be decided by Committee 5.

RR589 delete 17,970 kHz as above.

ADD

RECOMMENDATION No. E

[Doc. 189]

Relating to public correspondence with aircraft

The World Administrative Radio Conference on the Aeronautical Mobile (R) Service, Geneva 1978.

considering

- a) that Recommendation No. 19 (Geneva 1959) gives an initial indication of interest in public correspondence with aircraft;
- b) that some Administrations have expressed requirements for long distance public correspondence with aircraft;
- c) that provisions of No. 432 of the Radio Regulations do not permit public correspondence in the exclusive aeronautical mobile bands, unless permitted by special Aeronautical Regulations;
- d) that appropriate satellite systems for this purpose are not yet operational;

recommends

- 1. that Administrations should give due consideration to the technical, operational and administrative aspects of public correspondence with aircrafts in order to permit of orderly implementation at the appropriate time;
- 2. that Administrations should make any proposals on this subject to the next competent World Administrative Radio Conference;

requests the Secretary-General

to bring this Recommendation to the attention of the World Administrative Radio Conference, Geneva 1979.

INTERNATIONAL TELECOMMUNICATION UNION

AERONAUTICAL (R) CONFERENCE

(Geneva, 1978)

Document No. 225-E

21 February 1978

Original : English

COMMITTEE 5

AND ITS WORKING GROUPS

Time-table of the work of Committee 5

Consequent to the proposal made by the Chairman, Committee 5 adopted at its fifth meeting on 21 February 1978 the time-table of its work as indicated in the Annex.

M. CHEF

Chairman of Committee 5

Annex : 1



A N N E XTIME-TABLE OF THE WORK OF COMMITTEE 5

<u>Date</u>	<u>Time</u>	
1. 22.2.1978 Wednesday	1400 - 1700 hrs	1) WG 5B to receive, discuss and approve the Report of WG 5B1 with such modifications as necessary. 2) Discuss reductions of frequency requirements of MWARAs and VOLMET Areas.
2. 23.2.1978 Thursday	0900 - 1200 hrs 1400 - 1700 hrs	1) Chairmen of Committee 5, WG 5A, 5B and 5C and Secretary of Committee 5 to discuss with delegates possible reduction in frequency requirements of RDARAs and finalize all frequency requirements for second draft Plan. 2) Corrections and finalizing of sharing matrices.
24.2.1978 Friday	0900 - 1200 hrs 1400 - 1700 hrs	
3. 25.2.1978 Saturday	0900 - 1200 hrs	Committee 5 meets to approve the revised frequency requirements and remaining provisions of Appendix 27 and related Regulations.
4. 27.2.1978 Monday	0800 hrs	Second draft Plan distributed.
5. 27.2.1978 Monday	1400 - 1700 hrs	Committee 5 discusses second draft Plan.
6. 28.2.1978 Tuesday	0900 - 1700 hrs	Chairman and Vice-Chairman of Committee 5 with Chairman of IFRB, Mr. Berrada and Mr. Perrin to have final consultations with delegations for further reductions in frequency requirements, if necessary.
7. 1.3.1978 Wednesday	0800 hrs	Third and final draft Plan for approval of Committee 5.
8. 1.3.1978 Wednesday	1400 - 1700 hrs	Final approval of draft Plan. Committee 5 finishes its work.

AERONAUTICAL (R) CONFERENCE

(Geneva, 1978)

Document No. 226-E

1 March 1978

Original : French

COMMITTEE 2

SUMMARY RECORD

OF THE

SECOND MEETING OF COMMITTEE 2

(CREDENTIALS)

Monday, 27 February 1978, at 1400 hrs

Chairman : Mr. C.J. MARTINEZ (Venezuela)

Subjects discussed :

1. Reports of the Working Group
2. Draft Report of Committee 2 to the Plenary Meeting

Document No.

155, 249

DT/53



1. Reports of the Working Group (Documents Nos. 155 and 249)

Note was taken of the first and second Reports of the Committee 2 Working Group.

2. Draft Report of Committee 2 to the Plenary Meeting (Document No. DT/53)

The Secretary of the Committee gave the following indications for the updating of the Annex :

Point 1.1.1 - Add the names of the following countries : Afghanistan (Republic of), Byelorussian Soviet Socialist Republic, Ecuador, Spain, Mauritius, Ukrainian Soviet Socialist Republic.

Point 1.1.2 - Add the names of the following countries : Cameroon (United Republic of) and Ivory Coast (Republic of the).

Point 2 - Insert the names of the following countries : Australia, Brazil (Federative Republic of), Egypt (Arab Republic of), Mongolian People's Republic, Turkey, Zaire (Republic of).

Point 3 - Delete under this point all the names of countries listed above, in view of their insertion under 1.1.1, 1.1.2 or 2.

The draft Report of Committee 2 to the Plenary Meeting, thus amended, was approved.

The meeting rose at 1425 hours.

The Secretary :
A. WINTER-JENSEN

The Chairman :
C.J. MARTINEZ

AERONAUTICAL (R) CONFERENCE

(Geneva, 1978)

Document No. 227-E

22 February 1978

Original : English

COMMITTEE 5

State of Qatar

FREQUENCY REQUIREMENT IN THE BAND 21 870 - 22 000 kHz

Since the frequencies in the band 21 870 - 22 000 kHz are exclusively planned for allotment to the Aeronautical Mobile (R) Service, the State of Qatar requests a frequency for world-wide use in this band.



COMMITTEE 6

Report of Committee 6 Drafting Group to Committee 6

MODIFICATIONS TO ARTICLE 9

As requested by Committee 6, a small drafting group comprising the United Kingdom, the United States of America and the representative of the I.F.R.B. has assembled the following suggested modifications to Article 9, made in Committee 6, on 21 February 1978.

ADD 553A a) the notice is in conformity with the provisions of No. 501;

Reasons : To assure that all aeronautical stations in bands allocated exclusively to the Aeronautical Mobile (R) Service conform to the Convention and applicable Radio Regulations before being recorded in the Master International Frequency Register. This action is similar to that taken by the Maritime Conference, 1974, in adopting ADD RR548A and bearing in mind the provisions of RR611.

(MOD) 557 Plan ;

ADD 557A (2A) A notice which is not in conformity with the provisions of No. 553A shall be examined with respect to Nos. 520 and 521. The date to be entered in Column 2b shall be that determined according to the relevant provisions of Section III of this Article.

Reasons : To provide instructions to the I.F.R.B. on the treatment of a notice which is not in conformity with the provisions of ADD RR553A similar to those adopted by the Maritime Conference in RR549A.



INTERNATIONAL TELECOMMUNICATION UNION
AERONAUTICAL (R) CONFERENCE
(Geneva, 1978)

Document No. 229-E
22 February 1978
Original : English

COMMITTEE 6

SUMMARY RECORD
OF THE
FIRST MEETING OF COMMITTEE 6
(REGULATORY PROCEDURES)

Thursday, 9 February 1978, at 1400 hrs

Chairman : Mr. R.J. BUNDLE (New Zealand)

Subjects discussed :

Document No.

- | | |
|--|--|
| 1. Consideration of the documents assigned to the Committee | 4, 5, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 20, 21, 22, 25, 27, 29, 33, 34(Rév.1), 43, 44, 46, 54, 56, 57, 60, 61(Rév.1) 62, 63 and Corr., 65 and Corr., 67, 68, 78, 80, 88, 89, 90, 91. |
| 2. Organization of the work of the Committee | DT/7 |
| 3. Allotment of frequencies from the band 21 870-22 000 kHz for inclusion in Appendix 27 | 46, 63, 88 |
| 4. Work of Working Group 6A | DT/7 |
| 5. Public Correspondence | 34(Rév.1), 61 |



1. Consideration of the documents assigned to the Committee

1.1 The delegate of the United States of America introduced Document No. 4 and said that the proposals USA/4/14-16, 39, 47, 53-60, 65-76 and 79-81 contained in it were relevant to the Committee's work.

1.2 The delegate of the Federal Republic of Germany introduced Documents Nos. 5 and 8-18 containing proposals to revise the Radio Regulations and Appendix 27. His delegation realized that Appendix 27 was also being dealt with by other Committees and that different proposals had been submitted on subjects of interest to it. It was ready to consider such proposals with an open mind.

1.3 The delegate of Canada said that the proposals submitted in Document No. 20 were all-inclusive and were of interest to the Technical and Planning Committees as well as the Regulatory Procedures Committee. Amendments were submitted to Articles 7 and 9 of the Radio Regulations and to Appendix 3 and Appendix 27. It was proposed to delete some Resolutions and to introduce two new ones.

1.4 The representative of ICAO said he understood that the material submitted in the Annex to Document No. 21 submitted by ICAO had served as the basis for several proposals.

1.5 The delegate of France introduced the proposals contained in Document No. 22.

1.6 The delegate of the United States of America introduced Documents No. 25 containing a method for the transition to universal single sideband operation and No. 27 containing the background material on the worldwide aeronautical operational control.

1.7 The delegate of the Union of Soviet Socialist Republics introduced Document No. 29 containing proposals for the work of the Conference.

1.8 The delegate of Switzerland introduced Document No. 34(Rev.1) containing in particular a proposal to provide for the future introduction of an aeronautical mobile service for public correspondence with aircraft.

1.9 The delegate of the United Kingdom introduced Document No. 43. Generally, the proposals contained therein were based on the ICAO Report annexed to Document No. 21.

1.10 The delegate of Japan introduced Document No. 44.

1.11 The delegate of Canada introduced Document No. 46 containing his Administration's views on the inclusion of the band 21 870-22 000 kHz within Appendix 27 for the Aeronautical Mobile (R) Service in that part of the spectrum. In view of the many comments made in the ICAO forum in favour of the provision of such an allotment, his Administration believed the Conference should take decisions on the following five points : (1) what are the requirements for the Aeronautical Mobile (R) Service in the 22 000 kHz band which should be introduced into Appendix 27; (2) what consequential additional provisions should be inserted in Appendix 27; (3) which part of the band 21 870-22 000 kHz was best suited for the purpose, bearing in mind the fixed assignments already contained in it; (4) which provisions of the Radio Regulations would require amendment following the introduction of the band 21 870-22 000 kHz into Appendix 27; and (5) which approach was most likely to ensure that any allotments in that band might be implemented at the same time as other revised provisions of Appendix 27. His delegation sincerely hoped the Conference would ensure that the problem was solved to the satisfaction of all, and would support any suggestions likely to lead to its solution.

- 1.12 The delegate of Argentina introduced Document No. 60.
- 1.13 The delegate of Spain introduced Documents Nos. 61(Rev.1), 62, 63(+ Corr.1) and 67. He briefly discussed the matters relating to safety and regularity of flight, operational control communications and introduction of public correspondence.
- 1.14 The delegate of Brazil introduced Document No. 65(+ Corr.1).
- 1.15 The delegate of Sweden introduced Document No. 80 calling for the inclusion of operational control communications in the Plan for the Aeronautical Mobile (R) Service.
- 1.16 The delegate of the United Kingdom introduced Document No. 88 brought out in response to Document No. 46 of Canada. While sympathizing with its aim, his Administration believed that, as presented, the Canadian proposal fell outside the competence of the present Conference. It had therefore sought an alternative method of attaining the same aim within the competence of the Conference and that method consisted in the adoption by the Conference of a recommendation for submission to the 1979 Conference and to Administrations making proposals to the latter. If the problem were dealt with in that way, the present Conference would plan the band 21 870-22 000 kHz, decide how much of the band would be needed, provide for the required amendment of Appendix 27 and ensure that the implementation dates for frequency allotments and for the revised provisions would coincide. The matter could thus be placed before the 1979 Conference and the revised version of Appendix 27 reproduced following it, well before the provisions came into effect. All five points raised by the delegate of Canada might thus be met.
- 1.17 The delegate of Papua New Guinea introduced Document No. 90 to the Committee. He sincerely hoped that account would be taken of the serious problems likely to be faced by the developing countries in the application of transitional procedures.
- 1.18 The delegate of Saudi Arabia introduced Document No. 91.
2. Organization of the work of the Committee (Document No. DT/7)
- 2.1 The Chairman drew attention to the proposed terms of reference for Working Groups 6A and 6B contained in Document No. DT/7.
- The terms of reference of Working Groups 6A and 6B were adopted.
- 2.2 On the Chairman's proposal, Mr. K. Olms (Federal Republic of Germany) and Mr. F.S. Urbany (United States of America) were nominated as Chairman of Working Group 6A and Chairman of Working Group 6B respectively.
3. Allotment of frequencies from the band 21 870-22 000 kHz for inclusion in Appendix 27 (Documents Nos. 46, 63, 88)
- 3.1 The delegate of Canada, referring to Document No. 88, thanked the delegate of the United Kingdom for his cooperation and efforts in providing an approach to a problem which could be the basis of a compromise. It was not unusual for a Conference agenda to be interpreted variously by different Administrations. The Conference agenda might have been worded more precisely, but there were a number of examples where conferences had adopted a flexible approach to achieve their objectives.

While the objectives of the United Kingdom and Canada were identical, their methods of approach were different. He would leave it to the discretion of the Committee to decide on the best way of handling the matter with the objective that Administrations' requirements might be satisfied and implemented at the same time as the revision of Appendix 27 came into effect.

3.2 The delegate of Spain said that in view of the desirability of achieving harmony in bands available for the future development of long-range communications in the only service still without public communications facilities, his delegation had deleted operative paragraphs 2 and 3 of Document No. 63 from its revised version of that document. A draft Recommendation concerning the 21 870-22 000 kHz band would soon appear (Document No. 97). His Administration's view was similar to that of the United Kingdom. A rigid interpretation of the terms of reference as set forth in operative paragraph 2.1.1 of the Annex to Document No. 1 could lead to stumbling blocks in the consideration of a number of conference documents, and might prevent the Conference from dealing with the allotment of the 22 MHz band for the purposes of the Plan.

3.3 The delegate of the United Kingdom said that the Conference was bound by the Convention to conform with its agenda. His delegation had provided a solution which enabled the Conference to get its job done. Committee 5 first of all had to decide whether it wanted the band in question, and how much of it, which was not a matter for Committee 6, whose job was to decide on the correct way in which that work should be done. The Plan should be contained in the bands exclusively allocated to the Aeronautical Mobile (R) Service. In conclusion he drew attention to a typographical error in the draft Recommendation in Document No. 88 : the words "has formulated" appearing after the fifth preambular paragraph should be a separate heading and therefore underlined.

3.4 The delegates of the Federal Republic of Germany, Singapore, Italy and the United States of America expressed support for the views and solution put forward by the United Kingdom.

3.5 The delegate of Switzerland said that he fully subscribed to the views expressed in Document No. 88. As quite clearly many requirements had been put to the Conference for the 22 MHz band, the ITU's interpretation of the terms of reference set forth in Document No. 1 would be most welcome.

3.6 The Secretary-General said that in the light of Article 7 of the Convention, only items included in the agenda could be discussed by the Conference. It was up to the Conference, however, to interpret the agenda.

3.7 The representative of the IFRB drew the attention of the meeting to the fact that the band 21 870-22 000 kHz was allocated with equal rights to the Aeronautical Mobile (R) Service and to the Aeronautical Fixed Service, with no priorities other than those which would arise from the date in column 2. According to the Radio Regulations, frequency assignments in accordance with Appendix 27, or its revised version, would have a date in column 2a, while the Aeronautical Fixed Service assignments were governed by the provisions of No. 500 and subsequent, giving them a date in column 2d. Stations of the Aeronautical Mobile Service in the Plan would be entitled to international protection by virtue of the dates in column 2a while that would not be the case for the stations of the Aeronautical Fixed Service. Administrations should, at conference level, endeavour to coordinate the use of a given frequency band. "Planning" could be undertaken on a provisional basis by the Conference subject to its final adoption by a competent Administrative Conference, which would also decide upon the order of priority.

3.8 The delegate of the USSR said that, having heard the explanations given by the Secretary-General of ITU and the representative of the IFRB, he supported the United Kingdom's views expressed in Document No. 88. He was not prepared to comment on the attached draft Recommendation for the time being.

3.9 The delegate of Canada said that, in view of the support for the United Kingdom's approach, his delegation would also accept it and follow the Committee's decision. The draft Recommendation annexed to Document No. 88, however, needed to be studied in greater detail.

3.10 The Chairman thanked the delegate of Canada for his agreement to compromise.

3.11 The delegate of Argentina said that his Administration had no objection to the allocation of the band to the Aeronautical Mobile Service, but the Aeronautical Fixed Service also had to be taken into account. If the band was exclusively allocated to the Mobile Service, proper arrangements would have to be made for the Fixed Service.

The Chairman pointed out that that would be done by Committee 5 when Committee 6 had come to a decision.

3.12 The delegate of the United Kingdom, fully accepting that the terms of the draft Recommendation would need to be made more precise, said that he hoped the way was clear for the Chairman to inform Committee 5 to proceed with its planning operations since it was vital that that should start without delay.

3.13 The delegate of Canada fully agreed that Committee 5 should proceed as soon as possible; since some aspects needed to be considered by the Technical Committee, he requested that the relevant documents should also be submitted to it.

3.14 The Chairman proposed that at that stage the principle proposed by the United Kingdom should be agreed, and that the draft Recommendation should be studied by a drafting group convened by the United Kingdom and comprising Canada, Spain and the USSR.

It was so agreed.

The delegate of Algeria said that he would also like to participate in the drafting group.

3.15 The Chairman said that he would inform Committees 4 and 5 accordingly.

4. Work of Working Group 6A (Document No. DT/7)

4.1 The Chairman of Working Group 6A said that, in accordance with its terms of reference in Document No. DT/7, the Group would discuss the possible introduction and definition of aeronautical operational control communications, proposals to revise Radio Regulations 429, ADD 429A, including proposals to introduce an 8A in Appendix 27. Work would in principle be focussed on Document No. DT/1 and Addendum 1 which contained all proposals known at the time of compilation. Delegates should verify that no omission had been made. The Working Group would also consider Resolutions and Recommendations, consequential changes in the Radio Regulations relating to search and rescue (Articles 5, 28 and 38), the coordination of communications relating to international air operations, in particular the modification of 27/20 and 27/23, and questions relating to public correspondence.

4.2 The delegate of the United Kingdom said that he had been surprised to hear that the Working Group was to consider the provisions of the Radio Regulations concerning search and rescue since they would merely concern frequency changes and changes in the use of equipment which subjects were within the competence of Committees 4 or 5. The only change that properly came within the purview of Committee 6 would be in relation to Article 9.

4.3 The Chairman observed that any points which did not pertain to the terms of reference of Committee 6 would be left aside.

The proposed programme of work for Working Group 6A was approved subject to the deletion of any points that might come within the terms of reference of other Committees.

5. Public correspondence (Documents Nos. 34(Rev.1), 61)

5.1 The delegate of Switzerland stated that the Swiss Administration was operating a station on what was called a long-distance operational control service which had proved efficient though some difficulties had been encountered in handling the traffic for which it was specifically designed. The aim had always been to operate the station in strict conformity with the existing Radio Regulations and, in particular, to avoid any harmful interference with the Aeronautical Mobile (R) Service. The numerous requests received in the past for a public correspondence circuit had been turned down because the time had not been ripe to introduce public correspondence on the basis of the provisions in No. 432 of the Radio Regulations.

The Swiss Administration, now believing that there was a real and pressing need for a public correspondence service, had been considering how to proceed. With the progressive implementation of a VHF infrastructure there was reason to expect that the HF Aeronautical Mobile Service allocations would be reduced and that part of the spectrum would become available if the Service went over on an integral basis to single sideband operation which would result in doubling the available channels.

Bearing in mind the provisions of Resolution No. 14 of the 1959 Administrative Conference and that one of the tasks assigned to the present Conference was to satisfy, within the minimum amount of spectrum necessary, the needs of the Aeronautical Mobile (R) Service and the trend towards the application of VHF, his Administration had been examining how to prepare the way for introducing, as soon as possible, public correspondence with aircraft. The provisions of Article 27 of the Radio Regulations were regarded as inadequate for the establishment of that service but some progress might be made on the basis of No. 432 of the Radio Regulations.

In the light of the foregoing considerations, his Administration had put forward its proposal and a draft Resolution in Document No. 34(Rev.1) which, if adopted, would enable the 1979 Conference to identify the frequency bands which might be used for the introduction of a public correspondence service on a planned basis and in full conformity with No. 432.

5.2 The delegate of Spain agreed with the previous speaker and said that his Administration had for long been of the same opinion. In spite of Recommendation No. 19 of the Radio Regulations adopted at the 1959 Administrative Radio Conference, the establishment of public correspondence had been discouraged on the ground that it could cause harmful interference to other services, so that no progress had been achieved during the past 20 odd years. Yet one of the objects of the Union according to Article 4 (b) of the ITU Convention was "to promote the development of technical facilities and their most efficient operation with a view to improving the efficiency of telecommunications services, increasing their usefulness and making them, as far as possible, generally available to the public".

In Spain surprise had been expressed at the fact that there was still no public correspondence with aircraft, although modern techniques should make it possible. Great strides had been made in public correspondence with ships in the Maritime Mobile Service and in the Land Mobile Service but in regard to the Aeronautical Mobile (R) Service progress was frustrated because of certain provisions in Article 7 of the Radio Regulations. It also appeared that under No. 429 the frequency bands allocated to the Aeronautical Mobile Service were reserved exclusively for priority requirements.

The Spanish Administration had proposed a modification (Document No. 61) to No. 432, whereby public correspondence might be permitted in the frequency bands allotted to the Aeronautical Mobile Service provided that the absolute priority of safety and control messages was recognized. However, his delegation was inclined to support the Swiss draft Resolution which was more comprehensive than the modification proposed by Spain and which should open the way to establishing a public correspondence system in the near future. As the present Conference should achieve a reduction in the number of channels, the Aeronautical Mobile (R) Service should dispose of enough bandwidth so that frequencies allocated to it could be used for other forms of communication.

5.3 The delegate of the United States of America agreed in principle with the Swiss draft Resolution which would give Administrations an opportunity to study the problem and to present proposals to the 1979 World Administrative Radio Conference. However, some of the points, both in the preamble and in the operative part, were within the competence of Committee 5 and would have to be held over until it had reached a decision on the spectrum and what frequencies would be available for public correspondence.

5.4 The delegate of the USSR considered that it was premature to discuss assigning frequencies for public correspondence : the proper time to do so would be the 1979 Conference. The provisions of No. 432 in the Radio Regulations did not authorize the use of channels for such a purpose.

5.5 The delegate of Japan said that a number of problems, such as the compatibility of the radio equipment, the risk to the safety of navigation and the number of requests for public correspondence likely to arise, must first be studied before a Recommendation concerning public correspondence with aircraft could be formulated.

5.6 The delegate of the United Kingdom said that he could not support the Swiss proposal in paragraph 2.2 of Document No. 34(Rev.1) because the Conference was not competent to reserve part of the band for public correspondence services. According to the terms of its Agenda and the Union's intention it was only empowered to make provision for flight regularity and safety services in the Aeronautical Mobile (R) Service. The most that could be done was to frame a Recommendation concerning public correspondence and it would be for the 1979 Conference to decide how any available part of the spectrum was to be used.

Sub-paragraph c) in the Swiss draft Resolution did not accord with the facts and sub-paragraph d) did not appear to be correct.

He entirely agreed with the delegates of the USSR and Japan that the problem was too great from the point of view of equipment compatibility in the aircraft, operational and frequency difficulties and that in any case it would be too complicated for the Conference to discuss the subject of public correspondence in sufficient detail to justify considering a draft Resolution at that juncture.

5.7 The delegates of the United States of America and France agreed with the previous speaker.

The meeting rose at 1700 hours.

Secretary :

M. AHMAD

Chairman :

R.J. BUNDLE

AERONAUTICAL (R) CONFERENCE

(Geneva, 1978)

Corrigendum No. 1 to
Document No. 230-E
28 February 1978
Original : English

COMMITTEE 4

SUMMARY RECORD

OF THE

FOURTH AND LAST MEETING OF COMMITTEE 4

(TECHNICAL)

Paragraph 2.7

Replace the last sentence of the first sub-paragraph by the following :

"To compensate for the difference in A0 type unwanted emissions, the 3 dB had been added and 50 watts increased to 100."

Paragraph 2.11

Replace by the following :

"The delegate of Australia suggested that the possible technical discrepancies which caused the delegate of Finland concern would be removed by placing the figure of 57 dB in a note under MOD 27/66, the note to be similar to that under 27/66B."



SUMMARY RECORD

OF THE

FOURTH AND LAST MEETING OF COMMITTEE 4

(TECHNICAL)

Thursday, 16 February 1978, at 1100 hrs

Chairman : Mr. G. KOVÁCS (Hungarian People's Republic)

Subjects discussed :

Document No.

1. Report of Working Group 4A
(continued)

126(Rev.1)

2. Final Report of Working Group 4B

159

3. Completion of the Committee's work

-



The Chairman opened the meeting.

1. Report of Working Group 4A (continued) (Document No. 126(Rev.1))

1.1 The Chairman asked if the Committee wished to comment on the Report which was submitted in accordance with the decision taken at the previous meeting.

The Report was adopted.

2. Final Report of Working Group 4B (Document No. 159)

2.1 The Chairman of Working Group 4B introduced the Report and drew attention to the following corrections :

Page 2 : At the end of the footnote replace "in paragraph 2.1_" by "in paragraph 2.2_".

Page 4 : Insert in the table under the heading "Appendix 3", below the first proposed modification :

in the left-hand column "3. Mobile stations" and beneath it,
"c) Aircraft stations";
in the central column "200*";
and in the right-hand column "100* r)".

At the end of the second proposed modification under "3. Mobile stations" insert "c. Aircraft stations", "200*", and "100 r)".

In ADD r) 3, insert two asterisks against the reference to 50 Hz and against the word "Note".

2.2 Title and paragraph 1 - adopted.

2.3 MOD 27/63

The delegate of Argentina proposed that the level (dB) for aircraft stations read "N < -26" and for aeronautical stations "N < -40".

The proposal was adopted.

The sentence in square brackets below the table was deleted, but the delegates of New Zealand and Norway wished to record their disappointment at the retention of -26 dB for aircraft stations.

MOD 27/63, as amended, was adopted.

2.4 SUP MOD. 27/64, MOD 27/65

Adopted.

2.5 MOD 27/66 considered with ADD 27/66B

The delegate of Canada proposed addition of a Note to paragraph 2.2 :
"Transmitters manufactured after / 1 February 1983 / will comply with the specifications contained in MOD 27/66B."

The delegate of India believed it would be inappropriate as a matter of principle to refer to the manufacture of equipment in the text but in view of the support for the proposal expressed by the delegates of Finland, the Federal Republic of Germany, the United Kingdom, New Zealand, France and Belgium, he did not press the point.

The Canadian proposal was adopted.

2.6 The delegate of the United Kingdom proposed firstly the deletion of the footnote to the table in paragraph 2.2 and the reinsertion in the table against Aeronautical Stations of the formula contained in Appendix 27 and secondly, in the footnote to the table in paragraph 2.4 (ADD 27/66B) that the figures 100 watts and 63 dB be replaced by 50 watts and 60 dB.

The delegate of Argentina recalled that the Working Group had agreed on 63 dB by a majority decision and wondered if it was in order for the Committee to modify that decision.

The delegate of the United States of America supported the United Kingdom proposals. The table in 27/66 had proved its worth and the figures proposed for ADD 27/66B would be in line with the decision reached by CCIR Study Group 8.

The delegates of Australia and Canada also supported those proposals.

2.7 The delegate of Finland, supported by the delegate of Norway, explained how the Working Group had arrived at 100 watts and 63 dB. After approving the table in MOD 27/66 it had noticed that MOD 27/66 referred to mean power and ADD 27/66B to peak power. That meant that even for two-tone modulating signals peak power was already 3 dB higher than mean power. To compensate for the difference in zero type transmissions, the 3 dB had been added and 50 watts increased to 100.

If the United Kingdom proposal were adopted it might be asked why the requirement for unwanted emissions had been relaxed for new transmitters while it was more stringent for old transmitters. A 1 kW transmitter could attain 73 dB but 6 kW transmitters would be required not to exceed 60 dB.

2.8 The delegate of New Zealand said that after confused discussions the Working Group had managed to formulate a text but it would still create severe problems for some Administrations, which the United Kingdom proposal sought to alleviate. His own Administration had not been entirely satisfied with the original table in 27/66 but for the sake of others could accept that proposal as well as the proposal regarding 27/66B although the latter would pose some technical difficulties.

2.9 The delegate of Papua New Guinea agreed to the United Kingdom proposal; the delegate of France said he considered it acceptable in view of the conclusions reached by CCIR Study Group 8.

2.10 The delegate of Switzerland saw some difficulties with the reason for the amendment, which seemed to be inconsistent with the other figures in the Note. The attenuation figure of at least 63 dB for transmitter powers of more than 100 watts should be acceptable.

2.11 The delegate of Australia suggested that the possible technical discrepancies which caused the delegate of Finland concern would be removed by changing the figure to 57 dB.

2.12 The delegate of Argentina opposed that suggestion.

2.13 The United Kingdom proposal to revert to the original text of the table in Appendix 27/66 and to delete the note in MOD 27/66 was adopted.

2.14 The Chairman observed that the sentence in square brackets below the table would not appear in the Committee's Report to the Plenary.

2.15 The introductory sentence to ADD 27/66B was adopted.

2.16 The delegate of Cuba expressed his reservations in relation with the note heading the table of ADD 27/66B, considering that it should read as follows :

"For transmitters of aircraft stations and for transmitters of aeronautical stations whose initial installation will be effected after / 1 February 1983 /."

2.17 The delegate of Finland proposed deletion of the two sentences following the table in 27/66B and insertion of a new line at the bottom of the right-hand column of the table : " $43+10 \log_{10} P_p$ (watts)", which would bring the table into line with 27/66 and forestall any question as to why requirements for new transmitters were less rigorous than for existing transmitters.

The delegate of Argentina supported that amendment and drew attention to the danger of unwanted emissions from high power transmitters in the vicinity of airports.

The delegate of Australia was unable to accept the Finnish amendment and was in favour of the United Kingdom proposal.

The delegate of New Zealand said that he also was obliged to oppose the Finnish amendment as it would increase the attenuation of maximum power transmitters to 80 dB which was quite unacceptable.

2.18 The United Kingdom proposal for ADD 27/66B was put to the vote and adopted by 19 votes to 5.

2.19 The Chairman said that the Committee's Report to the Plenary would include a statement explaining that some delegations had opposed the United Kingdom proposal and would have preferred the Finnish amendment. The reference to the Australian delegate's view in the first sentence of the paragraph in square brackets need not be reproduced.

2.20 ADD 27/66A

Adopted.

2.21 SUP 27/67 - 71

Adopted.

2.22 ADD E., MOD 27/72, ADD 27/72A, ADD 27/72B and MOD 27/73

Adopted.

2.23 APPENDIX 3 and ADD r)

Adopted, with the editorial corrections indicated by the Chairman of Working Group 4B.

3. Completion of the Committee's work

The Chairman thanked the CCIR and ICAO for their preparatory work which had greatly facilitated the Committee's task, and the IFRB for its help during the Conference itself. He also thanked the Vice-Chairman, the two Working Group Chairmen, the members of the Committee for their efforts to reach agreement, the staff of the General Secretariat, and the secretaries of the Committee.

The meeting rose at 1210 hours.

The Secretary :

L. SONESSON

The Chairman :

G. KOVÁCS

COMMITTEE 5

SUMMARY RECORD

OF THE

FOURTH MEETING OF COMMITTEE 5

(PLANNING)

1. Page 4, paragraph 4D.3 :

Replace "The delegate of Korea ..." by "The delegate of the Democratic People's Republic of Korea ..."

2. Page 8, paragraphs 6.33 and 6.34 :

Replace by the following :

"6.33 The delegate of the Democratic People's Republic of Korea said that his delegation supported the Chinese proposal in principle and hoped that problems relating to the creation of Sub-RDARA 6G would be solved through discussion. The delegate of Pakistan also supported the Chinese proposal.

6.34 The delegate of the Republic of Korea supported the Japanese proposal."



COMMITTEE 5

SUMMARY RECORD

OF THE

FOURTH MEETING OF COMMITTEE 5

(PLANNING)

Wednesday, 15 February 1978, at 1400 hrs and
Thursday, 16 February 1978, at 0900 hrs

Chairman : Mr. M. CHEF (France)

<u>Subjects discussed</u> :	<u>Document No.</u>
1. Summary Record of the First Meeting	146
2. Summary Record of the Second Meeting	147
3. Summary Record of the Third Meeting	149
4. Adoption of the boundaries of MWARAs	DT/10, 131
4A. MWARA-AFI	119(Rev.)
4B. MWARA-CAR (Report by the ad hoc Group)	-
4C. MWARA-MID	105, 142
4D. MWARA-NCA	DT/35
5. Adoption of the boundaries of VOLMET Allotment and Reception Areas	DT/14
5A. VOLMET PAC-MET	DT/34
5B. VOLMET SAT-MET	82 + Addendum
6. Report of Working Group 5A and Adoption of the boundaries of RDARAs	156, 153, 55, 85, 102, DT/9
7. Report of Working Group 5B	164
8. Creation of Working Group 5C - Terms of reference	DT/32
9. Status of other Committee 5 documents	87, 133, 144, 151, 167, 168 and 170

1. Summary Record of the First Meeting (Document No. 146)

1.1 Paragraph 2.23

The delegate of China said that the words "and domestic" should be inserted after "international" in the last line.

1.2 Paragraph 2.26

The delegate of Argentina said that the last sentence should be amended to read : "It intended to submit, together with Uruguay, a proposal concerning the boundaries of the Rio de la Plata VOLMET area."

1.3 Paragraph 2.31

The delegate of India said that the last part of the first sentence should read : "... in response to Circular-letter No. 386 and included in Circular-letter No. 400."

The Summary Record of the First Meeting, as amended, was approved.

2. Summary Record of the Second Meeting (Document No. 147)

2.1 Approved, subject to correction of a typing error in the English text of paragraph 2.10.

3. Summary Record of the Third Meeting (Document No. 149)

3.1 Paragraph 2.5

The delegate of Malaysia said that the phrase "and would be further elaborated at an opportune time" should be added at the end of his statement.

Approved, as amended.

4. Adoption of the boundaries of MWARAs (Documents Nos. DT/10, 131)

4.1 Nos. 27/82 to 27/85A, 27/87 to 27/94, 27/96 and 27/97.

Adopted.

4.2 MOD 27/98

The delegate of Brazil proposed that point 10°S 40°W be replaced by 19°S 53°W (Document No. 131).

Adopted.

4.3 Nos. 27/99 to 27/103A

Adopted.

4A. MWARA-AFI (No. 27/95) (Document No. 119(Rev.1))

4A.1 The delegate of Algeria introduced the document, observing that the changes had been coordinated with the other countries concerned.

MOD 27/95 was adopted.

4B. MWARA-CAR(Report by the ad hoc Group) (No. 27/80)

4B.1 The delegate of Brazil said that his delegation had completed its discussions with other countries, referred to during the second meeting (paragraph 2.4 of the Summary Record), and had reached the conclusion that no change was necessary.

NOC 27/80 was adopted.

4B.2 The Chairman observed that No. 27/81 could now be deleted, since the necessary extension of boundaries had been adopted.

It was so agreed.

4C. MWARA-MID (No. 27/86) (Documents Nos. 105, 142)

4C.1 The delegate of Saudi Arabia, introducing Document No. 105, said that his delegation's proposal to extend MWARA-MID to cover the areas actually served by Saudi Arabia could well be amalgamated, with minor adjustments, with other proposals to the same end, such as those in Document No. 142 submitted by the People's Democratic Republic of Yemen.

4C.2 The delegate of the People's Democratic Republic of Yemen endorsed that view.

4C.3 The delegate of Australia observed that the purpose of the proposal in Document No. 142, to provide for communications between aircraft flying along the Aden/Bombay route, might perhaps be served by using RDARA frequencies, rather than by extending a MWARA boundary.

4C.4 The delegate of the People's Democratic Republic of Yemen, supported by the delegate of India, said that the reason why it was proposed to extend MWARA communications in the area was that there was no RDARA frequency between Aden and Bombay. The route was widely used for traffic from the Middle East to points beyond Bombay; while he had no statistics on that traffic, it was bound to increase over the years for which the Plan was being prepared.

4C.5 The delegate of Australia, speaking also as Chairman of Working Group 5B, said that, although he had no formal objection to the proposal, it nevertheless served as an illustration of a point of principle in connection with the general approach that should be adopted towards establishing boundaries and providing frequencies in allotment areas. Communication between aircraft flying from one country to another could certainly be effected on RDARA frequencies; it was important to bear that fact in mind, since the extension of MWARAs gave rise to frequency-sharing problems which were relatively easy to avoid by using RDARA frequencies.

4C.6 The delegate of the United States of America observed that, whereas the establishment of a new MWARA-INO and the extension of MWARA-MID implied recognition of the need for a considerable overlap of MWARA boundaries, it was also necessary to keep the size of MWARAs down to a minimum, in the interests of frequency repeatability. In his view, therefore, there were two alternatives : either to extend MWARA-MID as proposed and to reduce MWARA-INO correspondingly, or to leave the existing boundaries unchanged.

4C.7 The delegate of the People's Democratic Republic of Yemen said that the proposed extension would not create any frequency sharing problems.

4C.8 The delegate of Afghanistan said that, whereas his country was for the moment comprised in MWARA-MID only, the revision in Document No. DT/6 showed that it would be covered by no fewer than four MWARAs. Did that mean that Afghanistan had to have all the relevant MWARA frequencies available in its territory ?

4C.9 The Chairman observed that under No. 27/20, which Committee 6 had left unchanged, countries should consult ICAO if necessary, particularly on the operational use of the frequencies in the Plan.

4C.10 The delegate of the United States of America reiterated his view that the extension of MWARAs should be minimized in the interests of frequency conservation. While such extensions undoubtedly improved the flexibility of a Plan which was to be operational for 10 to 20 years, such flexibility could be achieved only at the expense of frequency repeatability. An analogy to the case cited by the delegate of Afghanistan might be found in that of Honolulu, where three MWARAs converged and five frequency families had had to be provided, resulting in great operational and economic problems.

4C.11 The Chairman, summing up the discussion, suggested that the proposals of Saudi Arabia and the People's Democratic Republic of Yemen should be adopted and that the arguments advanced by the delegates of Australia and the United States of America should be borne in mind by all delegates.

MOD 28/86 was adopted.

4D. MWARA-NCA (Document No. DT/35)

4D.1 The Chairman, introducing the document, said that since it had been drafted, further boundary adjustments had been proposed so that the whole of Mongolia was included in the NCA area. The new coordinates, proposed as a compromise by the delegations involved, were 45°N 113°E, 46°30'N 120°E, 49°N 116°E, which would be inserted between the coordinates 42°N 110°E and 54°N 123°E.

4D.2 The delegate of Mongolia thanked the Committee for the spirit of cooperation which had prompted the proposed compromise.

The new MWARA-NCA area, as amended, was adopted.

4D.3 The delegate of Korea said that as he had only just received Document No. DT/35 he would submit his views at a later date.

5. Adoption of the boundaries of VOLMET Allotment and Reception Areas
(Document No. DT/14)

5.1 Document No. DT/14, reproducing decisions taken at the preceding Committee meeting, was adopted.

5A. VOLMET PAC-MET (Document No. DT/34)

5A.1 The Chairman of Working Group 5A (Vice-Chairman of the Committee) said that the Working Group's recommendation had been to leave the allotment area unchanged and to cut down the reception area by reducing the maximum point north from 80° to 75° and the maximum point south from 50° to 65°.

The document was adopted.

5B. VOLMET SAT-MET (Document No. 82 + Add.)

5B.1 The Chairman of Working Group 5A said that, as the Group had been unable to reach a clear decision on the proposed boundaries, some members thinking that the purposes could be served by RDARA frequencies or inclusions in the SAM-VOLMET area, it had to submit them to the Committee for a decision.

5B.2 The delegate of Argentina said that he could make no further contribution until he received instructions from his Administration. The matter was urgent, however, and he considered that the proposals should be retained.

5B.3 The Chairman suggested that, subject to further information from the Argentinian Administration, the international VOLMET areas should be considered adopted, the proposed SAT-MET boundaries in Document No. 82 + Addendum being considered as regional requirements for planning purposes.

It was so agreed.

6. Report of Working Group 5A and Adoption of the boundaries of RDARAs
(Documents Nos. 156, 153, 55, 85, 102, DT/9)

6.1 The Chairman of Working Group 5A introduced the Report, drawing attention to the fact that the Working Group had been unable to agree on the proposals concerning sub-areas of RDARA-6 and -7.

6.2 NOC 27/104 (Area 1)

Adopted.

6.3 MOD 27/105 (Sub-Area 1A)

Adopted.

6.4 MOD 27/106 (Sub-Area 1B)

Adopted, subject to the insertion of coordinate 50°N 10°W after 60°N 20°W at the end of the second line, and the correction of typographical errors.

6.5 MOD 27/107 (Sub-Area 1C)

Adopted.

6.6 NOC 27/108 (Sub-Area 1D)

Adopted.

6.7 MOD 27/109 (Sub-Area 1E)

Adopted, subject to insertion of coordinate 50°N 10°W in the last line by analogy with Sub-Area 1B.

6.8 NOC 27/110-113 (Area 2, Sub-Areas 2A, 2B, 2C) - adopted.

NOC 27/114-117 (Area 3, Sub-Areas 3A, 3B, 3C) - adopted.

NOC 27/118-119 (Area 4, Sub-Area 4A) - adopted.

6.9 MOD 27/120 (Area 4, Sub-Area 4B) - adopted, subject to correction of geographical names.

6.10 MOD 27/121 (Area 5) - adopted.

6.11 MOD 27/122 (Sub-Area 5A)

The delegate of the People's Democratic Republic of Yemen said that he wished to amend the coordinates given in the proposal in Document No. 143 to read "11°45'N 42°E direct to 11°45'N 55°E, then to 20°N 52°E."

The delegate of Saudi Arabia asked if he might defer his approval of that new boundary for the time being.

MOD 27/122 was considered adopted, as amended.

6.12 NOC 27/123-125 (Sub-Areas 5B, 5C and 5D) - adopted.

6.13 NOC 27/126, 27/127 and 27/131 (Area 6, Sub-Areas 6A and 6E) - adopted.

6.14 MOD 27/133 (RDARA-7)

Adopted, subject to insertion of the words "through the points" before "11°S 65°E" in the last line of the English text.

6.15 NOC 27/134, MOD 27/136, MOD 27/137, MOD 27/138 (Sub-Areas 7A, 7C, 7D and 7E)

Adopted.

6.16 MOD 27/139 (RDARA-8)

Adopted, subject to correction of a typographical error in the English text.

6.17 SUP 27/140 (Sub-Area 8A) - adopted.

6.18 MOD 27/141, SUP 27/142, MOD 27/143, NOC 27/144, MOD 27/145
(RDARA-9, Sub-Areas 9A, 9B, 9C and 9D)

Adopted.

- 6.19 ADD 27/145A, MOD 27/146, NOC 27/147 to 27/150, ADD 150A (RDARA-10, Sub-Areas 10A, 10B, 10C, 10D, 10E and 10F)

Adopted.

- 6.20 ADD 27/150B, MOD 27/151, MOD 27/152, ADD 27/152A (RDARA-11, Sub-Areas 11A, 11B and 11C)

Adopted.

- 6.21 ADD 27/152B, NOC 27/153 to 155, MOD 27/156, NOC 27/157, MOD 27/158 to 160, NOC 27/161 (RDARA-12, Sub-Areas 12A, 12B, 12C, 12D, 12E, 12F, 12G, 12H and 12I)

Adopted.

- 6.22 ADD 27/161A (Sub-Area 12J)

In reply to a question by the delegate of Ecuador, the Chairman said that the frequency requirements for Sub-RDARA 12J were being considered in Working Group 5B.

ADD 27/161A was adopted.

- 6.23 ADD 27/161B, NOC 27/162 and 163, MOD 27/164 (RDARA-13, Sub-Areas 13A, 13B and 13C)

Adopted.

- 6.24 NOC 27/165 (Sub-Area 13D)

The delegate of Paraguay drew attention to the Peruvian Administration's request for the establishment of a new Sub-Area 13M, exclusive to Peru (Document No. 153). His Administration had submitted a similar request, namely that a new Sub-Area 13N should be created exclusively for Paraguay.

The delegate of Bolivia said that his Administration had requested that the boundaries of Sub-Area 13D be modified so that they corresponded exactly to those of Bolivian national territory.

The Chairman suggested that the Committee approve the above three requests and entrust the Secretariat with the task of tracing the boundaries of Sub-Areas 13D, 13M and 13N so that they corresponded to the national boundaries of the countries concerned. If that procedure was acceptable to the Committee, NOC 27/165 would be replaced by MOD 27/165 concerning the new delineation of Sub-Area 13D for Bolivia, ADD 27/165A concerning the creation of Sub-Area 13M for Peru and ADD 27/165B concerning the creation of Sub-Area 13N for Paraguay.

It was so agreed.

- 6.25 NOC 27/166 to 170, MOD 27/171 and 172, NOC 27/173 (Sub-Areas 13E, 13F, 13G, 13H, 13I, 13J, 13K and 13L)

Adopted.

6.26 ADD 27/173A to 173H (RDARA-14, Sub-Areas 14A, 14B, 14C, 14D, 14E, 14F, and 14G)

Adopted.

The Report of Working Group 5A and its Annex (Document No. 156) as a whole were adopted, as amended.

6.27 The Chairman then turned to the outstanding questions connected with four sub-areas of Area 6 and one sub-area of Area 7. He appreciated the efforts still being made to reach solutions and reminded the Committee that decisions needed to be taken without delay, so that planning elements could be forwarded.

6.28 The delegate of China said that the proposal to create a new Sub-Area 6G (ADD 27/132A) contained in Document No. 53 was designed to satisfy the requirements of domestic flights in the area.

6.29 The delegate of the Philippines said that proposal MOD 27/130 in Document No. 55 regarding Sub-Area 6D was motivated by protection of national interests and he hoped that the Committee could find it acceptable.

6.30 The delegate of Malaysia outlined the proposal MOD 27/130 in Document No. 85 which was along similar lines; for geographical reasons there was a large volume of domestic traffic over the South China Sea and many regional flights.

6.31 The delegate of Japan described the proposal MOD 27/128 in Document No. 102 to divide Sub-Area 6B into two parts to meet aeronautical requirements in that area more effectively.

6.32 The delegate of Singapore and the delegate of Indonesia supported the proposal in Documents Nos. 55 and 85. The delegate of Australia asked whether the coordinates were correct. The delegate of Indonesia said they should read "0°S 141°E."

6.33 The delegate of the Democratic People's Republic of Korea and the delegate of Pakistan supported the Chinese proposal regarding Sub-Area 6G.

6.34 The delegate of the Democratic People's Republic of Korea also supported the Japanese proposal.

6.35 The delegate of Roumania said that, in view of the increasing development of domestic air routes, it was desirable for a country's national territory to be comprised in a single area or sub-area. Consequently, his delegation supported the proposal by the Chinese delegation and hoped that the States concerned would make every effort to solve the related problems in a spirit of international cooperation.

6.36 The delegate of Papua New Guinea said that the alteration made by the Indonesian delegation to the boundary of Sub-Area 6D was acceptable in so far as it affected Papua New Guinea.

6.37 The delegate of the United States of America said that, subject to further scrutiny, his delegation could tentatively approve the Indonesian modification in so far as it affected Sub-Area 6C.

6.38 The Chairman said that, given the difficulties encountered in resolving the problems under discussion, he intended to apply No. 453 of the Convention and propose a solution which, although unlikely to satisfy all concerned, might enable the Committee to reach a compromise and meet the deadline imposed by the computer program. Since the Committee was not a forum in which general political or territorial issues could be solved, his proposal would be based on purely technical considerations and its acceptance would not preclude subsequent alterations as a result of informal consultations between the delegations concerned.

First, he drew attention to the map in Document No. DT/9 which showed the boundaries of Sub-Areas 6G, 6D and 6F. On the basis of the present situation, where 6D and 6F overlapped in the area between the Equator and 20°N latitude, he proposed the extension along 20°N latitude, between 100°E and 120°E, of a line which would then turn round the Island of Hainan as in Appendix 27. The southern part of Sub-Area 6G thus delineated would be common to Sub-Areas 6D, 6F and 6G.

With regard to the boundary between Sub-Areas 6G and 6F in the area between 20°N and 40°N latitude, he proposed that the boundary line shown on the map in Document No. DT/9 should be interrupted at the two points at the base of the hump and that, for the purposes of the computer program, it would be assumed that there was a provisional, imaginary line between those two points.

6.39 The delegate of the Philippines said that his delegation, which had no political motivations for attending the Conference and was concerned only with resolving technical and operational problems, took note of the provisional nature of the Chairman's proposal and of the fact that the line between the two points in question was purely imaginary. On that understanding, and in the interests of establishing a firmer basis for the final decision to be taken by the Committee and the Conference, he could accept the use of the data proposed by the Chairman for the purposes of the computer program.

His delegation was appreciative of the support expressed for its proposal in Document No. 55 and would willingly continue consultations with those concerned so that a generally acceptable solution could be found to the related problems.

6.40 The delegate of Malaysia endorsed the comments by the previous speaker. His delegation's sole concern was to protect Malaysian domestic air routes, and he would welcome further cooperation and consultations with a view to solving outstanding difficulties.

6.41 Replying to a question by the delegate of Japan, the Chairman said that the imaginary line to which he had referred was not necessarily a straight line and that it was certainly not a definite line.

6.42 The delegate of Japan made the following statement :

"Considering that discussions and coordination are still taking place among the delegations concerned with regard to the RDARA-6 boundaries, the Japanese delegation supports the views put forth by the Philippine delegation, and wishes to state that any imaginary or provisional line which might be introduced in order to run computers for the temporary calculation of frequency requirements shall not be construed to prejudice or prejudice its position concerning the delineation of RDARA-6."

6.43 The delegate of Singapore said that the Chairman's proposal was acceptable to his delegation.

6.44 The delegate of China made the following statement :

"I thank the Chairman of the Committee and Working Group 5A for their efforts to help find solutions. I would also like to express our thanks to some delegations for their support of our proposal concerning the establishment of RDARA Sub-Area 6G.

The Chinese delegation understands that the Chairman's proposal is of a provisional nature, and that this question will be settled finally at the Plenary. We would continue consultations with the delegations concerned. At this juncture, I wish simply to state that we have reservations in respect of the Chairman's proposal concerning the eastern boundary of Sub-Area 6G. We would reserve our right, if necessary, to elaborate our position at the Plenary."

6.45 The delegate of Senegal endorsed the Chairman's comments and proposal.

6.46 The delegate of the United States of America said that his delegation could in principle support the Chairman's proposals, recognizing their conditional nature and also that the immediate interest was to proceed with the computer program.

6.47 After further discussion, the Chairman said he was well aware that his proposals were far from satisfactory. They neither put an end to the general debate on the issues at stake nor did they preclude the continuation of bilateral consultations and negotiations. Maps showing both the final delineations resulting from the adoption of Document No. 156 and the provisional lines corresponding to his proposals would be prepared by the Secretariat and issued as soon as possible.

7. Report of Working Group 5B (Document No. 164)

7.1 The Chairman of Working Group 5B introduced the document.

7.2 The delegate of Norway said that the frequency requirements set out in Document No. 164 caused his delegation some concern. It was to be hoped that some of them could be transferred to RDARAs and also that VHF networks would be developed which could take over part of the traffic. The requirements which appeared in the document would probably be found to be too high in almost all regions, and Administrations would no doubt have to reconsider their actual needs. In his view, therefore, the figures before the Committee should be regarded as temporary.

7.3 The Chairman observed that Document No. 164, which was the outcome of the very first stage of the planning process, contained only preliminary basic data intended for the first computer run. If he heard no objection he would take it that the Committee was prepared to approve the document on that understanding.

It was so agreed.

8. Creation of Working Group 5C - Terms of reference (Document No. DT/32)

8.1 The Chairman said that the task of Working Group 5C would be to review sharing matrices, determine the data to be processed by the computer and consider questions such as, for example, whether areas might be regarded as non-adjacent when only their extremities met at one of the poles. Furthermore, he suggested that the terms of reference set out in Document No. DT/32 might be expanded in order to entrust the

Working Group with the next stage of the planning process, through the addition of the following sentence : "To prepare the first draft Plan on the basis of the results of Working Groups 5A and 5B, and to suggest such modifications to the boundaries and requirements as to make a draft Plan to satisfy the requirements within the minimum amount of the spectrum necessary."

8.2 The Technical Secretary said that the matrices prepared for each frequency band on the basis of the proposals submitted to the Conference needed to be reviewed in the light of the modifications made to certain areas. Furthermore, a list had been drawn up of many cases where the application of interference range contours would probably indicate that sharing was not possible but where, on the basis of purely operational considerations, sharing might in fact be envisaged. The polar cap situation was one of those cases. Appendix 27 already contained many allotments which did not conform to strict application of the sharing criteria. For instance, interference range contours might overlap a border by only one or two millimetres on a map; strictly speaking, sharing should not take place in such cases but, practically speaking, it was possible. It was proposed that Working Group 5C should work together with engineers from the Secretariat in order to review the matrices and reach agreement on the cases where sharing could be envisaged.

8.3 It was hoped that Working Group 5B would succeed in defining most requirements by Friday, 17 February. The first computer run would take place on Saturday, 18 February and a draft Plan would be ready for distribution to delegations on Monday, 20 February. The draft would not necessarily have the same format as Appendix 27, but it would indicate the number of channels needed to meet the MWARA, RDARA and VOLMET requirements on which agreement had been reached in Working Group 5B.

8.4 The Chairman of Working Group 5B, referring to the Chairman's proposed addition to the terms of reference of Working Group 5C, observed that the review of the sharing matrices would involve a fair amount of work. He was not convinced that it would be desirable to entrust Working Group 5C with any further tasks. Requirements would certainly need to be re-examined when the first draft Plan had been produced; it would, therefore, be more appropriate for the draft to be considered by Working Group 5B, which had been responsible from the outset for dealing with requirements.

8.5 In reply to a question by the delegate of Senegal, he said that only those requirements which had actually been presented to the Conference or the IFRB were being taken into consideration by Working Group 5B.

8.6 The Chairman said that in view of those remarks, if there were no objections, he would propose that the Working Group be set up with the original terms of reference set out in Document No. DT/32.

It was so agreed.

Mr. Young (United Kingdom) was designated as Chairman of Working Group 5C, and the following delegations announced their intention to participate : Australia, Canada, China, Finland, India, Japan, Norway, Senegal, Sweden, USA and USSR.

9. Status of other Committee 5 documents

9.1 The Chairman said that the delineation of RDARA-7, and in particular Sub-Areas 7B and 7F (Documents Nos. 87 and 133) were outstanding and would be discussed at the Committee's next meeting.

9.2 Documents Nos. 167 and 168 (submitted by Bolivia and Paraguay respectively) concerning the creation of a new RDARA could be considered adopted.

9.3 The Netherlands proposal in Document No. 151, together with Documents Nos. 144 and 170, would be the subject of consultations between the Chairmen of Working Groups 5A, 5B and 5C, the delegate of the Netherlands and himself, with a view to preparing comments and recommendations for consideration by the Committee at its next meeting.

The meeting rose at 1040 hours on Thursday, 16 February 1978.

The Secretary :

M. SANT

The Chairman :

M. CHEF

INTERNATIONAL TELECOMMUNICATION UNION
AERONAUTICAL (R) CONFERENCE
(Geneva, 1978)

Document No. 232-E
22 February 1978
Original : English

COMMITTEE 5

USSR

FREQUENCY REQUIREMENT IN THE 21 870-22 000 kHz BAND

In case of planning of the frequency band 21 870-22 000 kHz for the Aeronautical Mobile (R) Service at this Conference, the USSR delegation requests the provision for the USSR :

- one frequency for MWARA-NCA
- three frequencies for Area 2 RDARA
- three frequencies for Area 3 RDARA
- two frequencies for operational control.



INTERNATIONAL TELECOMMUNICATION UNION
AERONAUTICAL (R) CONFERENCE
(Geneva, 1978)

Addendum No. 1 to
Document No. 233-E
23 February 1978
Original : English/
French/
Spanish

COMMITTEE 6

ADDENDUM TO THE SECOND REPORT OF
WORKING GROUP 6B TO COMMITTEE 6

Working Group 6B agreed to the following modifications and additions to be made to its second report contained in Document No. 233.

1. Delete the square brackets from "resolves 1." on page 3 of Document No. 233.
2. Modify the end of the second line and the third line of "resolves 2." on the same page 3, to read :

"appearing in Part II, Section II, Article 2, Appendix 27(Rev.);"

3. Include the following text under "resolves" of Resolution No. Aer 2-(G) appearing on page 6 of Document No. 233 :

"1) that, ninety days before the entry into force of the new Plan, the Administrations shall notify to the IFRB the modifications necessary to bring the assignments existing in the Master Register in conformity with the new Plan."

Renumber present paragraphs 1, 1.1, 1.2 and 1.3 as 2, 2.1, 2.2 and 2.3 respectively.

4. To recommend the abolition of Resolution No. Aer 6 of the EARC, Geneva 1966, which is now obsolete.



AERONAUTICAL (R) CONFERENCE

(Geneva, 1978)

Document No. 233-E

22 February 1978

Original : English

COMMITTEE 6

SECOND REPORT OF WORKING GROUP 6B TO COMMITTEE 6

The texts appearing in the Annexes to this report were agreed in Working Group 6B and are recommended for adoption by Committee 6.

F. URBANY

Chairman of Working Group 6B

Annexes : 2



A N N E X 1

ADD

RESOLUTION No. Aer 2 /E/

Relating to implementation of the new arrangement
applicable to bands allocated /exclusively/ to
the Aeronautical Mobile (R) Service between
2 850 and /17 970/ kHz.

The Aeronautical World Administrative Conference, Geneva, 1978,
considering

- a) that the use of each of the frequency bands between 2 850 and 17 970 kHz allocated exclusively to the Aeronautical Mobile (R) Service by the Administrative Radio Conference, Geneva, 1959, has been modified by the Extraordinary Administrative Radio Conference, Geneva, 1966;
- b) that the Extraordinary Administrative Radio Conference, Geneva, 1966, resolved that the Administrations shall effect, as soon as possible, a progressive conversion of their radiocommunications services in the Aeronautical Mobile (R) Service from double-sideband to single-sideband operations, in consequence of which the use of the above bands has been further modified by this Conference to provide for SSB techniques;
- c) that a considerable number of frequency assignments of both aircraft and aeronautical stations will be transferred from existing frequencies to the new frequencies and channels designated by the present Conference;
- d) that changes in frequency assignments should be made as soon as possible so that the advantages of the new channels designated by the present Conference may be realized at the earliest opportunity;
- e) that the transfer of assignments should be made with the least possible disruption of the service rendered by each station;
- f) that the transfer of assignments should be made in such a manner that harmful interference between stations involved is avoided during the implementation period;
- g) that the Final Acts of this Conference will enter into force on 1 September 1979;
- h) that the new Frequency Allotment Plan contained in Appendix 27(Rev.) will enter into force on 1 February 1983;

recognizing

- a) that the Aeronautical Mobile (R) Service is primarily a safety service;
- b) that some frequencies have been allotted for world-wide use;

c) that the implementation of the decisions made by the present Conference relating to the new arrangements of the frequency bands allocated to the Aeronautical Mobile (R) Service between 2 850 and 17 970 kHz should follow an orderly procedure for the transfer of existing services from the old to the new assignments;

resolves

1. that between the entering into force of the Final Acts of this Conference on 1 September 1979 and the entering into force of the new Frequency Allotment Plan contained in Appendix 27(Rev.) on 1 February 1983, channel utilization for any new SSB operation shall be in accordance with the following provisions :

1.1 the carrier (reference) frequency of the single-sideband channel in the upper half of the previous double-sideband channel shall be the same as the carrier (reference) frequency of that channel;

1.2 the carrier (reference) frequency of the single-sideband channel in the lower half of the previous double-sideband channel shall be 3 kHz lower than the carrier (reference) frequency of the previous double-sideband channel;

1.3 that, prior to 1 February 1983, aeronautical and aircraft stations fitted with single-sideband equipment may employ either half of the previous double-sideband channel (the single-sideband carrier (reference) frequency being that in 1.1 and 1.2 above);

1.4 channels in the new Plan may be used by any Administration provided that no harmful interference occurs to users of channels in the present Plan. For the operational use of the channels concerned Administrations should take into account the provisions of No. MOD 27/20 of Appendix 27(Rev.) of the Radio Regulations;

2. that on 1 February 1983, the frequencies appearing in Appendix 27 to the Radio Regulations, shall be replaced by the frequencies appearing in Section II, Article I, Appendix 27(Rev.);

3. that the Administrations take all the necessary measures with a view to converting to single-sideband as soon as possible by not permitting the installation of new double-sideband equipment as from 1 April 1981. Aircraft and aeronautical stations shall be capable of single-sideband operation at the earliest possible date; furthermore, they shall discontinue double-sideband emissions as early as possible, and, in any event, not later than 1 February 1983;

4. that, until 1 February 1983, aeronautical and aircraft stations equipped for single-sideband operation shall also be equipped to transmit class A3H emissions where required to be compatible with reception by double-sideband equipment;

5. that, unless specified otherwise in the Final Acts of the present Conference, the use of classes of emissions A2H, A3J, A7J and A9J only shall be authorized as of 1 February 1983. Double-sideband operations may, however, be continued for domestic use until 1 February 1987, provided this operation is conducted in accordance with RR 667 and RR 674 and that no harmful interference will be caused to the International Aeronautical Mobile (R) Service operating in the single-sideband mode. Administrations requiring such an extension of the period of full implementation of single-sideband are, nevertheless, urged to cease double-sideband operations as soon as possible.

A N N E X 2

ADD

RESOLUTION No. Aer 2 - (F)

Relating to the treatment of notices concerning frequency assignments to aeronautical stations in the Aeronautical Mobile (R) Service in the bands allocated exclusively to that service between 2 850 and 17 970 kHz

The Aeronautical World Administrative Radio Conference, Geneva, 1978,
considering

- a) that the Final Acts of this Conference will enter into force on 1 September 1979;
- b) that the new Frequency Allotment Plan contained in Appendix 27(Rev.) will enter into force at 0001 hours GMT on 1 February 1983;
- c) that some Administrations may wish to implement certain provisions of the revised Frequency Allotment Plan in advance of the latter date when this may be done without causing harmful interference to stations working in accordance with the present Frequency Allotment Plan;
- d) that it will therefore be necessary to provide an interim procedure to facilitate transition from the present Frequency Allotment Plan to the new Frequency Allotment Plan;

resolves

- 1. that during the interim period between the date of entry into force of the Final Acts and the date of entry into force of the new Frequency Allotment Plan :
 - 1.1 the provisions of Nos. 553 to 558 of the Radio Regulations, shall continue to be applied in the examination of notices concerning frequency assignments to aeronautical stations in the Aeronautical Mobile (R) Service in the allotments of the existing Plan;
 - 1.2 all such assignments shall be recorded in the Master International Frequency Register according to the findings reached by the IFRB;
 - 1.3 frequency assignments in a channel of the new Plan shall be examined by the IFRB in order to determine whether the protection specified in Appendix 27 (Part I, Section IIA, paragraph 5) is afforded to the allotments in the existing Plan. In doing so, the Board shall assume that the frequency will be used in accordance with the sharing conditions between areas specified in Appendix 27, Part I, Section IIB, paragraph 4;
 - 1.4 all such assignments mentioned in paragraph 1.3 having received a favourable finding shall be recorded in the Master International Frequency Register;

1.5 the date to be entered in Column 2a or 2b of the Master International Frequency Register shall be as follows :

- a) if the finding is favourable with respect to Nos. 554 to 557, the date of 29 April 1966 shall be entered in Column 2a;
- b) if the finding is favourable with respect to No. 558, the date of 29 April 1966 shall be entered in Column 2b;
- c) for all other assignments (including those which may be in conformity with the revised Frequency Allotment Plan but not in conformity with the present Frequency Allotment Plan) the date of receipt of the notice by the IFRB shall be entered in Column 2b;

1.6 any assignment which is in accordance with the revised Frequency Allotment Plan shall be so indicated by the insertion by the IFRB of an appropriate symbol in the Remarks Column of the Master International Frequency Register;

2. that on the date of coming into force of the new Frequency Allotment Plan, the IFRB shall examine those frequency assignments to aeronautical stations in the Aeronautical Mobile (R) Service in the bands allocated exclusively to that service between 2 850 and 17 970 kHz, which are contained in the Master International Frequency Register from the point of view of their conformity with the new Frequency Allotment Plan following the relevant parts of the procedure described in Nos. 553 to 558 of the Radio Regulations, and shall record against them in the Master International Frequency Register a date in Column 2a or 2b as follows :

2.1 assignments with double-sideband emission (A3), already appearing in the Master Register on the date of coming into force of the new Frequency Allotment Plan, shall retain the date recorded in Column 2a or 2b as appropriate until 1 February 1983. A date in Column 2a for a frequency assignment using double-sideband (A3) shall be transferred to Column 2b on 2 February 1983. On 1 January 1987 the IFRB shall review the entries and, in consultation with Administrations concerned, cancel those entries which are no longer in use, retaining the others for information only, without a date in Column 2b;

2.2 assignments found favourable with respect to Nos. / 553A and / 554 to 557 shall have (the date of signing of the AWARC Agreement, Geneva, 1978) entered in Column 2a;

2.3 assignments found favourable with respect to No. / 553A and / 558 shall have (the date of signing of the AWARC Agreement, Geneva, 1978) entered in Column 2b;

2.4 all other assignments shall have (the day AFTER the date of signing the AWARC Agreement, Geneva, 1978) entered in Column 2b;

3. that, on the date of entry into force of the new Frequency Allotment Plan, the allotments therein shall replace in the Master International Frequency Register those allotments in the present Frequency Allotment Plan;

invites

Administrations to notify to the IFRB as soon as possible the cancellation of frequency assignments released as a consequence of bringing into use the allotments in the new Frequency Allotment Plan.

ADD

RESOLUTION No. Aer 2 - (G)

Relating to the implementation of the Frequency Allotment Plan in the high frequency bands allocated exclusively to the Aeronautical Mobile (R) Service between 2 850 and 17 970 kHz

The Aeronautical World Administrative Radio Conference, Geneva, 1978,
considering

a) that the bands allocated exclusively to the Aeronautical Mobile (R) Service between 2 850 and 17 970 kHz by the Administrative Radio Conference, Geneva, 1959, were modified by the Extraordinary Administrative Radio Conference, Geneva, 1966;

b) that the 1966 Conference set up procedures to be followed by Administrations relating to the implementation of the modifications;

c) that the necessary provisions were made for the IFRB to carry out these procedures;

recognizing

d) that the Aeronautical Mobile (R) Service is primarily a safety service;

e) that the present Conference has further modified the said bands to provide for SSB techniques;

f) that there is a need for all Administrations to implement the modifications made by the present Conference, with a view to avoiding any harmful interference to the services rendered by stations operating in accordance with the Radio Regulations;

resolves

1. that the assignments existing in the Master Register on 1 February 1983 which are not in conformity with the decisions of the present Conference on that date shall be treated as follows :

1.1 the IFRB will send relevant extracts from the Master Register to the Administrations concerned, within 30 days from 1 February 1983, advising that, in accordance with the terms of the present Resolution, the assignments concerned are to be transferred to the appropriate frequencies within a period of 180 days after the dispatch of the extracts;

1.2 if an Administration does not notify the IFRB of the transfer within the prescribed period, the original entry shall be retained in the Master Register without a date in Column 2 and with a suitable remark in the Remarks Column. The Administrations shall be advised of this action;

2. that, if an Administration so desires, the IFRB shall give it all necessary assistance. In so doing, the IFRB shall apply the provisions of Nos. 629 to 633 of the Radio Regulations.

AERONAUTICAL (R) CONFERENCE

(Geneva, 1978)

Document No. 234(Rev.1)-E

25 February 1978

Original : English

COMMITTEE 5

REPORT OF WORKING GROUP 5C

1. Comments received from delegations in response to paragraph 3 of Document No. 234 have been considered by Working Group 5C and corrections inserted in the matrices where necessary.
2. The attached set of matrices, one for each frequency band contained in Appendix 27, are submitted for use in the computer preparation of the Frequency Allotment Plan to be incorporated in Appendix 27 (Revised).
3. Delegates may wish to note that the matrices prepared for the frequency bands 13 MHz, 18 MHz and 22 MHz have been revised on the basis of 90° separation in longitude for the 13 MHz band and 60° in longitude separation for the 18 MHz and 22 MHz bands in accordance with the decision taken by Committee 5 at its Sixth Meeting on 25 February 1978.

W.T. YOUNG

Chairman of Working Group 5C

Annex : 1



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page 4

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AERONAUTICAL (R) CONFERENCE

(Geneva, 1978)

Document No. 234-E

22 February 1978

Original: English

COMMITTEE 5

REPORT OF WORKING GROUP 5C

1. Working Group 5C has met four times to review and improve the sharing matrices developed by the I.F.R.B. in accordance with the terms of reference in Document No. DT/32. The first set of matrices were included as Annex 3 to Document No. DT/40. Since that time in accordance with Document No. DT/42, a number of comments have been received on errors in the matrices and also errors have been detected by the I.F.R.B. Secretariat. Attached are the final matrices for your approval for use in the final plan.
2. Working Group 5C also considered the Lambert Equal Area maps proposed by Committee 4 for inclusion in Appendix 27 (Revised) to replace the Gnomonic projections. The new maps will have a better and more easily interpreted geographic presentation but will conform to the same interference criteria as used with the present projection. New interference range contours will have to be developed but as the interference ranges remain unchanged Working Group 5C concluded that no changes were necessary to the existing matrices.
3. Delegations are invited to study these matrices and communicate to Mr. W.T. YOUNG, Box No. 106 any final comment on the sharing possibilities by, at the latest, Friday, 24 February 1978, at 16 p.m. After incorporation of comments received, the matrices will be used in the preparation of the final plan.

Annex: 1 (11 pages)

W.T. YOUNG
Chairman of Working Group 5C



ANNEXE - ANNEX - ANEXO

MATRICES DE PARTAGE - SHARING MATRICES - MATRICES DE COMPARTICION

V - - - Indique Zone VOLMET
 Indicates VOLMET Area
 Indica Zona VOLMET



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Indicates sharing possible
Indica que la compartición es posible



Indique un partage impossible
Indicates sharing not possible
Indica que la compartición no es posible

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ANNEXE AU DOCUMENT N° 234-F/E/S
page 13

[illegible][illegible]

AERONAUTICAL (R) CONFERENCE

(Geneva, 1978)

Document No. 235-E

23 February 1978

Original : French

COMMITTEE 5

Turkey and the Syrian Arab Republic

AMENDMENT TO THE LIMITS OF RDARA SUB-AREA 1D

For their domestic flights, Turkey and the Syrian Arab Republic propose the following amendment to number 27/108 :

First six lines remain unchanged up to "parallel to the 40°E meridian".
Then read :

"... North along the 40°E meridian to the intersection with the border between the Syrian Arab Republic and Iraq and along this border up to the Turkish border. Then along the border between Turkey and Iraq, Iran and the USSR up to the Black Sea coast. Thence along the Black Sea coast of Turkey ...".

Rest of paragraph unchanged.



INTERNATIONAL TELECOMMUNICATION UNION

AERONAUTICAL (R) CONFERENCE

(Geneva, 1978)

Document No. 236-E

23 February 1978

Original : Spanish

COMMITTEE 5

Panama

FREQUENCY REQUIREMENTS IN THE BAND 21 870-22 000 kHz

In view of the need to plan the allotment of frequencies in the band 21 870-22 000 kHz for the Aeronautical Mobile (R) Service, the delegation of Panama requests a frequency in this band to cover its requirements for long-range operational control communications.



AERONAUTICAL (R) CONFERENCE

(Geneva, 1978)

Document No. 237-E

22 February 1978

Original: English

PLENARY MEETING
COMMITTEE 7

THIRD REPORT OF COMMITTEE 6

Committee 6, hereby presents its third report. The decisions taken, unanimously, on the texts of Radio Regulations, its Appendix 27, and Resolutions examined by Committee 6, are shown in the Annex to this Document.

R.J. BUNDLE
Chairman of Committee 6

Annex



ANNEX

ADD 553A a) the notice is in conformity with the provisions
of No. 501;

(MOD) 557 Plan ;

ADD 557A (2A) A notice which is not in conformity with the provisions
of No. 553A shall be examined with respect to Nos. 520 and 521.
The date to be entered in Column 2b shall be that determined
according to the relevant provisions of Section III of this
Article.

MOD 556 (3) In the case of a notice in conformity with the provisions
Aer of Nos. 553A to 556, but not with those of No. 557, the Board
shall examine whether the protection specified in Appendix 27
(Part I, Section IIA, paragraph 5), is afforded to the allotments in
the Plan. In doing so, the Board shall assume that the frequency
will be used in accordance with the "Sharing conditions between
areas" specified in Appendix 27, Part I, Section II B, paragraph 4 .

ADD 27/16.1 For the calculation of the assigned frequency
from a carrier (reference) frequency given in
the table, refer to No. 27/72.

SUP Resolution No. Aer 6

ADD RESOLUTION No. E

Relating to implementation of the new arrangement
applicable to bands allocated exclusively to
the Aeronautical Mobile (R) Service between
2 850 and 17 970 kHz.

The Aeronautical World Administrative Conference, Geneva, 1978,
considering

- a) that the use of each of the frequency bands between 2 850 and 17 970 kHz allocated exclusively to the Aeronautical Mobile (R) Service by the Administrative Radio Conference, Geneva, 1959, has been modified by the Extraordinary Administrative Radio Conference, Geneva, 1966;
- b) that the Extraordinary Administrative Radio Conference, Geneva, 1966, resolved that the Administrations shall effect, as soon as possible, a progressive conversion of their radiocommunications services in the Aeronautical Mobile (R) Service from double-sideband to single-sideband operations, in consequence of which the use of the above bands has been further modified by this Conference to provide for SSB techniques;
- c) that a considerable number of frequency assignments of both aircraft and aeronautical stations will be transferred from existing frequencies to the new frequencies and channels designated by the present Conference;
- d) that changes in frequency assignments should be made as soon as possible so that the advantages of the new channels designated by the present Conference may be realized at the earliest opportunity;
- e) that the transfer of assignments should be made with the least possible disruption of the service rendered by each station;
- f) that the transfer of assignments should be made in such a manner that harmful interference between stations involved is avoided during the implementation period;
- g) that the Final Acts of this Conference will enter into force on 1 September 1979;
- h) that the new Frequency Allotment Plan contained in Appendix 27(Rev.) will enter into force on 1 February 1983;

recognizing

- a) that the Aeronautical Mobile (R) Service is primarily a safety service;
- b) that some frequencies have been allotted for world-wide use;

c) that the implementation of the decisions made by the present Conference relating to the new arrangement of the frequency bands allocated to the Aeronautical Mobile (R) Service between 2 850 and 17 970 kHz should follow an orderly procedure for the transfer of existing services from the old to the new assignments;

resolves

1. that between the entering into force of the Final Acts of this Conference on 1 September 1979 and the entering into force of the new Frequency Allotment Plan contained in Appendix 27(Rev.) on 1 February 1983, channel utilization for any new SSB operation shall be in accordance with the following provisions :

1.1 the carrier (reference) frequency of the single-sideband channel in the upper half of the previous double-sideband channel shall be the same as the carrier (reference) frequency of that channel;

1.2 the carrier (reference) frequency of the single-sideband channel in the lower half of the previous double-sideband channel shall be 3 kHz lower than the carrier (reference) frequency of the previous double-sideband channel;

1.3 that, prior to 1 February 1983, aeronautical and aircraft stations fitted with single-sideband equipment may employ either half of the previous double-sideband channel (the single-sideband carrier (reference) frequency being that in 1.1 and 1.2 above);

1.4 channels in the new Plan may be used by any Administration provided that no harmful interference occurs to users of channels in the present Plan. For the operational use of the channels concerned Administrations should take into account the provisions of No. MOD 27/20 of Appendix 27(Rev.) of the Radio Regulations;

2. that on 1 February 1983, the frequencies appearing in Appendix 27 to the Radio Regulations, shall be replaced by the frequencies appearing in Part II, Section II, Article 2, Appendix 27(Rev.);

3. that the Administrations take all the necessary measures with a view to converting to single-sideband as soon as possible by not permitting the installation of new double-sideband equipment as from 1 April 1981. Aircraft and aeronautical stations shall be capable of single-sideband operation at the earliest possible date; furthermore, they shall discontinue double-sideband emissions as early as possible, and, in any event, not later than 1 February 1983;

4. that, until 1 February 1983, aeronautical and aircraft stations equipped for single-sideband operation shall also be equipped to transmit class A3H emissions where required to be compatible with reception by double-sideband equipment;

5. that, unless specified otherwise in the Final Acts of the present Conference, the use of classes of emissions A2H, A3J, A7J and A9J only shall be authorized as of 1 February 1983. Double-sideband operations may, however, be continued for domestic use until 1 February 1987, provided this operation is conducted in accordance with RR 667 and RR 674 and that no harmful interference will be caused to the international Aeronautical Mobile (R) Service operating in the single-sideband mode. Administrations requiring such an extension of the period of full implementation of single-sideband are, nevertheless, urged to cease double-sideband operations as soon as possible.

ADD

RESOLUTION No.

F

Relating to the treatment of notices concerning frequency assignments to aeronautical stations in the Aeronautical Mobile (R) Service in the bands allocated exclusively to that service between 2 850 and 17 970 kHz

The Aeronautical World Administrative Radio Conference, Geneva, 1978,
considering

- a) that the Final Acts of this Conference will enter into force on 1 September 1979;
- b) that the new Frequency Allotment Plan contained in Appendix 27(Rev.) will enter into force at 0001 hours GMT on 1 February 1983;
- c) that some Administrations may wish to implement certain provisions of the revised Frequency Allotment Plan in advance of the latter date when this may be done without causing harmful interference to stations working in accordance with the present Frequency Allotment Plan;
- d) that it will therefore be necessary to provide an interim procedure to facilitate transition from the present Frequency Allotment Plan to the new Frequency Allotment Plan;

resolves

- 1. that during the interim period between the date of entry into force of the Final Acts and the date of entry into force of the new Frequency Allotment Plan :
 - 1.1 the provisions of Nos. 553 to 558 of the Radio Regulations, shall continue to be applied in the examination of notices concerning frequency assignments to aeronautical stations in the Aeronautical Mobile (R) Service in the allotments of the existing Plan;
 - 1.2 all such assignments shall be recorded in the Master International Frequency Register according to the findings reached by the IFRB;
 - 1.3 frequency assignments in a channel of the new Plan shall be examined by the IFRB in order to determine whether the protection specified in Appendix 27 (Part I, Section IIA, paragraph 5) is afforded to the allotments in the existing Plan. In doing so, the Board shall assume that the frequency will be used in accordance with the sharing conditions between areas specified in Appendix 27, Part I, Section IIB, paragraph 4;
 - 1.4 all such assignments mentioned in paragraph 1.3 having received a favourable finding shall be recorded in the Master International Frequency Register;

1.5 the date to be entered in Column 2a or 2b of the Master International Frequency Register shall be as follows :

- a) if the finding is favourable with respect to Nos. 554 to 557, the date of 29 April 1966 shall be entered in Column 2a;
- b) if the finding is favourable with respect to No. 558, the date of 29 April 1966 shall be entered in Column 2b;
- c) for all other assignments (including those which may be in conformity with the revised Frequency Allotment Plan but not in conformity with the present Frequency Allotment Plan) the date of receipt of the notice by the IFRB shall be entered in Column 2b;

1.6 any assignment which is in accordance with the revised Frequency Allotment Plan shall be so indicated by the insertion by the IFRB of an appropriate symbol in the Remarks Column of the Master International Frequency Register;

2. that on the date of coming into force of the new Frequency Allotment Plan, the IFRB shall examine those frequency assignments to aeronautical stations in the Aeronautical Mobile (R) Service in the bands allocated exclusively to that service between 2 850 and 17 970 kHz, which are contained in the Master International Frequency Register from the point of view of their conformity with the new Frequency Allotment Plan following the relevant parts of the procedure described in Nos. 553 to 558 of the Radio Regulations, and shall record against them in the Master International Frequency Register a date in Column 2a or 2b as follows :

2.1 assignments with double-sideband emission (A3), already appearing in the Master Register on the date of coming into force of the new Frequency Allotment Plan, shall retain the date recorded in Column 2a or 2b as appropriate until 1 February 1983. A date in Column 2a for a frequency assignment using double-sideband (A3) shall be transferred to Column 2b on 2 February 1983. On 1 January 1987 the IFRB shall review the entries and, in consultation with Administrations concerned, cancel those entries which are no longer in use, retaining the others for information only, without a date in Column 2b;

2.2 assignments found favourable with respect to Nos. 553A to 557 shall have (the date of signing of the AWARC Agreement, Geneva, 1978) entered in Column 2a;

2.3 assignments found favourable with respect to No. 553A and No. 558 shall have (the date of signing of the AWARC Agreement, Geneva, 1978) entered in Column 2b;

2.4 all other assignments shall have (the day AFTER the date of signing the AWARC Agreement, Geneva, 1978) entered in Column 2b;

3. that, on the date of entry into force of the new Frequency Allotment Plan, the allotments therein shall replace in the Master International Frequency Register those allotments in the present Frequency Allotment Plan;

invites

Administrations to notify to the IFRB as soon as possible the cancellation of frequency assignments released as a consequence of bringing into use the allotments in the new Frequency Allotment Plan.

ADD

RESOLUTION No. G

Relating to the implementation of the Frequency Allotment Plan in
the high frequency bands allocated exclusively to the Aeronautical
Mobile (R) Service between 2 850 and 17 970 kHz

The Aeronautical World Administrative Radio Conference, Geneva, 1978,
considering

- a) that the bands allocated exclusively to the Aeronautical Mobile (R) Service between 2 850 and 17 970 kHz by the Administrative Radio Conference, Geneva, 1959, were modified by the Extraordinary Administrative Radio Conference, Geneva, 1966;
- b) that the 1966 Conference set up procedures to be followed by Administrations relating to the implementation of the modifications;
- c) that the necessary provisions were made for the IFRB to carry out these procedures;

recognizing

- a) that the Aeronautical Mobile (R) Service is primarily a safety service;
- b) that the present Conference has further modified the said bands to provide for SSB techniques;
- c) that there is a need for all Administrations to implement the modifications made by the present Conference, with a view to avoiding any harmful interference to the services rendered by stations operating in accordance with the Radio Regulations;

resolves

1. that, ninety days before the entry into force of the new Plan, the Administrations shall notify to the IFRB the modifications necessary to bring the assignments existing in the Master Register in conformity with the new Plan;
2. that the assignments existing in the Master Register on 1 February 1983 which are not in conformity with the decisions of the present Conference on that date shall be treated as follows :
 - 2.1 the IFRB will send relevant extracts from the Master Register to the Administrations concerned, within 30 days from 1 February 1983, advising that, in accordance with the terms of the present Resolution, the assignments concerned are to be transferred to the appropriate frequencies within a period of 180 days after the dispatch of the extracts;
 - 2.2 if an Administration does not notify the IFRB of the transfer within the prescribed period, the original entry shall be retained in the Master Register without a date in Column 2 and with a suitable remark in the Remarks Column. The Administrations shall be advised of this action;
3. that, if an Administration so desires, the IFRB shall give it all necessary assistance. In so doing, the IFRB shall apply the provisions of Nos. 629 to 633 of the Radio Regulations.

AERONAUTICAL (R) CONFERENCE

(Geneva, 1978)

Document No. 238-E

23 February 1978

Original : English

COMMITTEE 5

Iran

FREQUENCY REQUIREMENT IN THE (21 870 - 22 000) kHz BAND

As has been observed, the Conference of Aeronautical Mobile (R) Service has received very many proposals concerning the inclusion of the band (21 870 - 22 000) kHz for the Aeronautical Mobile (R) Service. If the Conference is going to insert the aforesaid band in the new frequency plan, then the delegation of Iran requests the provision for the country of Iran :

- one frequency for MWARA-MID
- two frequencies for LDOCC.



B.1

PLENARY MEETING

1st SERIES OF TEXTS SUBMITTED BY THE
EDITORIAL COMMITTEE TO THE PLENARY MEETING

The following texts are submitted to the Plenary Meeting for first reading:

<u>Source</u>	<u>Document No.</u>	<u>Title</u>
C.5	165/ 200	<u>APPENDIX 27</u> Part II — Section I: Description of the Boundaries of the MWARA, RDARA, Sub-RDARA and VOLMET Areas
C.6	204	Resolutions A, B, C and D
C.6	204	Recommendations AA y BB

C. J. DHENIN
Chairman of the
Editorial Committee

Annex: **28** pages



PART II

(MOD) **Plan for the Allotment of Frequencies for the
Aeronautical Mobile (R) Service in the Exclusive Bands
between 2850 and 17 970 kHz**

Section I

NOC **Description of the Boundaries of the MHARA, RDARA,
Sub-RDARA and VOLMET Areas**

NOC **27/74**

NOC **27/75**

(MOD) **27/76** 3. References to the name of a country or of a geographical area in the descriptions or on the maps and the borders shown on the maps do not imply the expression of any opinion whatsoever on the part of the ITU concerning the political status of such a country or any official recognition of these borders.

NOC **27/77**

NOC **27/78**

NOC **27/79**

ARTICLE 1

NOC	Description of the boundaries of the major world air route areas (MWARAs)
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NOC 27/80

SUP 27/81

MOD 27/82 Major World Air Route Area - CENTRAL EAST PACIFIC
(MWARA-CEP)

From the point 50°N 122°W through the points 38°N 120°W, 15°N 110°W, 20°S 145°W, 20°S 152°W, 30°N 165°W, to the point 50°N 122°W.

MOD 27/83 Major World Air Route Area - CENTRAL WEST PACIFIC
(MWARA-CWP)

From the point 40°N 117°E through the points 25°N 155°W, 17°N 155°W, 00° 165°W, 00° 170°E, 12°S 165°E, 12°S 136°E, 09°N 115°E, 23°N 114°E, to the point 40°N 117°E.

MOD 27/84 Major World Air Route Area -- EUROPE
(MWARA-EUR)

From the point $33^{\circ}\text{N } 12^{\circ}\text{W}$ through the points $54^{\circ}\text{N } 12^{\circ}\text{W}$, $70^{\circ}\text{N } 00^{\circ}$, $74^{\circ}\text{N } 40^{\circ}\text{E}$, $74^{\circ}\text{N } 52^{\circ}\text{E}$, $60^{\circ}\text{N } 52^{\circ}\text{E}$, $40^{\circ}\text{N } 36^{\circ}\text{E}$, $29^{\circ}\text{N } 35^{\circ}30'\text{E}$, $32^{\circ}\text{N } 13^{\circ}\text{E}$, to the point $33^{\circ}\text{N } 12^{\circ}\text{W}$.

SUP 27/85

ADD 27/85A Major World Air Route Area - INDIAN OCEAN
(MWARA-INO)

From the South Pole through the points $30^{\circ}\text{S } 26^{\circ}\text{E}$, $20^{\circ}\text{N } 35^{\circ}\text{E}$, $30^{\circ}\text{N } 60^{\circ}\text{E}$, $30^{\circ}\text{N } 90^{\circ}\text{E}$, $30^{\circ}\text{S } 120^{\circ}\text{E}$, $40^{\circ}\text{S } 160^{\circ}\text{E}$ to the South Pole.

MOD 27/86 Major World Air Route Area - MIDDLE EAST
(MWARA-MID)

From the point 51°N 30°E through the points 57°N 37°E, 50°N 80°E, 44°N 94°E, 08°N 76°E, 11°45'N 42°E, 16°N 42°E, 30°N 30°E, to the point 51°N 30°E.

MOD 27/87 Major World Air Route Area - NORTH ATLANTIC
(MWARA-NAT)

From the North Pole through the points 60°N 135°W, 49°N 120°W, 49°N 74°W, 39°N 78°W, 18°N 66°W, 05°N 55°W, 16°N 26°W, 32°N 08°W, 44°N 02°E, 60°N 20°E, to the North Pole.

ADD 27/87A Major World Air Route Area -- NORTH CENTRAL ASIA
(MWARA-NCA)

From the North Pole through the points 75°N 10°E, 60°N 25°E, 30°N 25°E, 30°N 73°E, 37°N 73°E, 49°N 85°E, 42°N 97°E, 42°N 110°E, 45°N 113°E, 46°30'N 120°E, 49°N 116°E, 54°N 123°E, 45°N 133°E, 40°N 124°E, 30°N 124°E, 25°N 135°E, 65°N 170°W, to the North Pole.

SUP 27/88

SUP 27/89

SUP 27/90

SUP 27/91

SUP 27/92

SUP 27/93

MOD 27/94 Major World Air Route Area -- NORTH PACIFIC
(MWARA-NP)

From the North Pole through the points 60°N 135°W, 47°N 118°W, 30°N 165°W, 30°N 115°E, 41°N 116°E, 55°N 135°E to the North Pole.

MOD 27/95 Major World Air Route Area -- AFRICA-INDIAN OCEAN
(MWARA-AFI)

From the point 40°N 35°W, through the points 37°N 03°W, 37°N 44°E, the border between the Republic of Iraq and Iran, the points 29°N 48°E, 25°N 52°E, 26°N 56°E, 20°N 62°E, 22°S 60°E, 35°S 30°E, 35°S 16°E, 05°N 03°W, 05°N 35°W, to the point 40°N 35°W.

SUP 27/96

SUP 27/97

MOD 27/98 Major World Air Route Area -- SOUTH ATLANTIC
(MWARA-SAT)

From the South Pole through the points 30°S 75°W, 19°S 53°W, 00° 60°W, 20°N 60°W, 25°N 25°W, 41°N 15°W, 41°N 03°W, 15°N 03°W, 20°S 32°E to the South Pole.

SUP 27/99

MOD 27/100 Major World Air Route Area --SOUTH AMERICA
(MWARA-SAM)

From the South Pole through the points 15°N 125°W, 15°N 60°W, 10°N 60°W, 05°S 30°W, 36°S 52°W, to the South Pole.

SUP 27/101

MOD 27/102 Major World Air Route Area - SOUTH EAST ASIA
(MWARA-SEA)

From the point $26^{\circ}\text{N } 130^{\circ}\text{E}$, through the points 00°
 130°E , $00^{\circ} 135^{\circ}\text{E}$, $12^{\circ}\text{S } 145^{\circ}\text{E}$, $12^{\circ}\text{S } 160^{\circ}\text{E}$, $25^{\circ}\text{S } 155^{\circ}\text{E}$, $40^{\circ}\text{S } 150^{\circ}\text{E}$,
 $35^{\circ}\text{S } 115^{\circ}\text{E}$, $18^{\circ}\text{N } 62^{\circ}\text{E}$, $26^{\circ}\text{N } 65^{\circ}\text{E}$, to the point $26^{\circ}\text{N } 130^{\circ}\text{E}$.

MOD 27/103 Major World Air Route Area - SOUTH PACIFIC
(MWARA-SP)

From the South Pole through the points $38^{\circ}\text{S } 145^{\circ}\text{E}$, 00°
 167°E , $00^{\circ} 175^{\circ}\text{W}$, $22^{\circ}\text{N } 158^{\circ}\text{W}$, $22^{\circ}\text{N } 156^{\circ}\text{W}$, $00^{\circ} 120^{\circ}\text{W}$ to the
South Pole.

ADD 27/103A Major World Air Route Area - EAST ASIA
(MWARA-EA)

From the point $55^{\circ}\text{N } 124^{\circ}\text{E}$ through the points 37°N
 145°E , $26^{\circ}\text{N } 130^{\circ}\text{E}$, $00^{\circ} 130^{\circ}\text{E}$, $00^{\circ} 80^{\circ}\text{E}$, $18^{\circ}\text{N } 62^{\circ}\text{E}$, $37^{\circ}\text{N } 67^{\circ}\text{E}$,
 $55^{\circ}\text{N } 80^{\circ}\text{E}$ to the point $55^{\circ}\text{N } 124^{\circ}\text{E}$.

ARTICLE 2

NOC

Description of the boundaries of the regional and domestic air route areas**(RDARAs)**

(MOD) 27/104

Regional and Domestic Air Route Area-1
(RDARA-1)

From the North Pole along the 15°W meridian to the point $72^{\circ}\text{N } 15^{\circ}\text{W}$, then through the points $40^{\circ}\text{N } 50^{\circ}\text{W}$, $30^{\circ}\text{N } 30^{\circ}\text{W}$, $30^{\circ}\text{N } 10^{\circ}\text{W}$, $31^{\circ}\text{N } 10^{\circ}\text{W}$, to the point $31^{\circ}\text{N } 10^{\circ}\text{E}$. Then along the Libya-Tunisia border to the Mediterranean, thence along the coast of Libya and the Arab Republic of Egypt to Alexandria. Thence to Cairo, and eastward along the Cairo 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 Roumania and the U.S.S.R., thence along the border between the U.S.S.R. and the following countries: Roumania, Hungary, the Czechoslovak Socialist Republic and Poland. Thence along the U.S.S.R. Baltic Sea coast, to the border between Finland and the U.S.S.R. Then to the point $70^{\circ}\text{N } 32^{\circ}\text{E}$, and along the 32°E meridian to the North Pole.

MOD 27/105 Sub-Area 1A

From the point $65^{\circ}\text{N } 26^{\circ}\text{W}$, and through the points $40^{\circ}\text{N } 50^{\circ}\text{W}$, $40^{\circ}\text{N } 20^{\circ}\text{W}$, $60^{\circ}\text{N } 20^{\circ}\text{W}$, $60^{\circ}\text{N } 26^{\circ}\text{W}$, to the point $65^{\circ}\text{N } 26^{\circ}\text{W}$.

MOD 27/106 Sub-Area 1B

From the North Pole along the 15°W meridian to the point $72^{\circ}\text{N } 15^{\circ}\text{W}$, then through the points $65^{\circ}\text{N } 26^{\circ}\text{W}$, $60^{\circ}\text{N } 26^{\circ}\text{W}$, $60^{\circ}\text{N } 20^{\circ}\text{W}$ to the points $50^{\circ}\text{N } 20^{\circ}\text{W}$ and $50^{\circ}\text{N } 10^{\circ}\text{W}$, thence east along the territorial waters between the Channel Islands and French coastline, reaching the latter at the meridian 03°W . Thence following the [French coastline northeastward] and the frontier of France with Belgium, Luxembourg and the Federal Republic of Germany. Thence along the border between Switzerland and the Federal Republic of Germany and along the border between the latter and Austria. Thence along the border between the Czechoslovak Socialist Republic and the Federal Republic of Germany, then along the border between the Federal Republic of Germany and the German Democratic Republic towards the Baltic Sea. Then west along

the coastline of the Federal Republic of Germany to the border between the latter and Denmark. Along this border to the North Sea. Thence along the 55°N parallel to a point $55^{\circ}\text{N } 04^{\circ}\text{E}$, then through the points $56^{\circ}\text{N } 03^{\circ}\text{E}$, $59^{\circ}\text{N } 02^{\circ}\text{E}$, $62^{\circ}\text{N } 01^{\circ}\text{E}$. Thence along the 01°E meridian to the North Pole.

MOD 27/107 Sub-Area 1C

From the North Pole along the meridian 01°E to the point $62^{\circ}\text{N } 01^{\circ}\text{E}$. Thence through the points $59^{\circ}\text{N } 02^{\circ}\text{E}$, $56^{\circ}\text{N } 03^{\circ}\text{E}$, $55^{\circ}\text{N } 04^{\circ}\text{E}$ and then east along the 55°N parallel and the border between Denmark and the Federal Republic of Germany to the Baltic Sea and along the Baltic Sea coast of the Federal Republic of Germany to the border between the Federal Republic of Germany and the German Democratic Republic. Along this border and continuing along the western borders of the Czechoslovak Socialist Republic and Austria to the borders between Austria and Switzerland, Austria and Liechtenstein and Austria and Switzerland. Thence eastward along the southern borders of Austria and Hungary, thence along the border between Hungary and Roumania. Thence, along the border between the U.S.S.R. and the following countries: Hungary, the Czechoslovak Socialist Republic and Poland. Thence to the Baltic Sea, along the U.S.S.R. Baltic Sea coast, [along the borders between Finland and the U.S.S.R. and between Norway and the U.S.S.R. to the point $70^{\circ}\text{N } 32^{\circ}\text{E}$, then along the 32°E meridian to the North Pole].

(MOD) 27/108 Sub-Area 1D

From the junction of the borders of the U.S.S.R., 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 $43^{\circ}\text{N } 10^{\circ}\text{E}$ to $41^{\circ}\text{N } 10^{\circ}\text{E}$ to $41^{\circ}\text{N } 07^{\circ}\text{E}$, 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 the Arab Republic of 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 U.S.S.R., thence along this border to the junction of the borders of the U.S.S.R., Hungary and Roumania.

MOD 27/109 Sub-Area 1E

From the point $50^{\circ}\text{N } 20^{\circ}\text{W}$, through the points $40^{\circ}\text{N } 20^{\circ}\text{W}$, $40^{\circ}\text{N } 50^{\circ}\text{W}$, $30^{\circ}\text{N } 39^{\circ}\text{W}$, $30^{\circ}\text{N } 10^{\circ}\text{W}$, $31^{\circ}\text{N } 10^{\circ}\text{W}$, to the point $31^{\circ}\text{N } 10^{\circ}\text{E}$. Then along the border between Libya and Tunisia to the Mediterranean, thence along the Tunisian coast to intersect the 10°E meridian. Thence along this meridian to the point $43^{\circ}\text{N } 10^{\circ}\text{E}$; thence to the borders between Italy and France and between Italy and Switzerland, Austria and Switzerland, Austria and Liechtenstein, Austria and Switzerland, Switzerland and the Federal Republic of Germany,

and between France and the Federal Republic of 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 points 50°N 10°W and 50°N 20°W .

(MOD) 27/110

Regional and Domestic Air Route Area-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 border between the U.S.S.R. and Poland. Thence along the border between the U.S.S.R. and the following countries: Poland, the Czechoslovak Socialist Republic, 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.

(MOD) 27/111 [Concerns the Spanish text only]

(MOD) 27/112 [Does not concern the English text]

(MOD) 27/113 Sub-Area 2C

From the point 55°N 60°E , to Moscow, to 55°N 20°E . Thence south along the border between the U.S.S.R. and Poland. Thence along the border between the U.S.S.R. and the following countries: Poland, the Czechoslovak Socialist Republic, 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 coastline to the junction of the border between 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 point 47°N 53°E to 55°N 60°E .

(MOD) 27/114 [Does not concern the English text]

(MOD) 27/115 [Does not concern the English text]

(MOD) 27/116 [Concerns the Spanish text only]

(MOD) 27/117 [Does not concern the English text]

(MOD) 27/118

Regional and Domestic Air Route Area-4
(RDARA-4)

From the point $30^{\circ}\text{N } 39^{\circ}\text{W}$, and through the points $10^{\circ}\text{N } 20^{\circ}\text{W}$, $05^{\circ}\text{S } 20^{\circ}\text{W}$, to the point $05^{\circ}\text{S } 12^{\circ}\text{E}$. Thence along the border between People's Republic of Congo and People's Republic of Angola, then along the northern border of the Republic of Zaire, and the borders of the Central African Empire and the Republic of the Sudan. Thence north along the western border of the Sudan. Along the western border of the Arab Republic of Egypt, northwards to the Mediterranean and along the Mediterranean and Atlantic coasts of North Africa to the point $30^{\circ}\text{N } 10^{\circ}\text{W}$. West along the 30°N parallel to close the area at $30^{\circ}\text{N } 39^{\circ}\text{W}$.

(MOD) 27/119 Sub-Area 4A

From the point $30^{\circ}\text{N } 39^{\circ}\text{W}$ to $21^{\circ}\text{N } 31^{\circ}\text{W}$. Thence to Gao and to Zinder. From Zinder, along the northern border of Nigeria, to a point west of N'Djamena. Then along the parallel to $12^{\circ}\text{N } 22^{\circ}\text{E}$. Thence north along the western border of the Sudan, and along the western border of the Arab Republic of Egypt to the Mediterranean. Along the North African Mediterranean coast and Atlantic coast to a point $30^{\circ}\text{N } 10^{\circ}\text{W}$. Thence along the 30°N parallel to close the sub-area at $30^{\circ}\text{N } 39^{\circ}\text{W}$.

MOD 27/120 Sub-Area 4B

From the point $21^{\circ}\text{N } 31^{\circ}\text{W}$, through the points $10^{\circ}\text{N } 20^{\circ}\text{W}$, $05^{\circ}\text{S } 20^{\circ}\text{W}$ to $05^{\circ}\text{S } 12^{\circ}\text{E}$. Thence along the southern border of the People's Republic of the Congo and the Central African Empire to the junction between the Republic of Zaire, the Sudan and the Central African Empire. Along the western border of the Sudan to the point $12^{\circ}\text{N } 22^{\circ}\text{E}$. Thence along the N'Djamena parallel to the Nigerian border. Then westward along this border [to the point], through [Zinder] and [Gao], to the point $21^{\circ}\text{N } 31^{\circ}\text{W}$. 20°W , $05^{\circ}\text{S } 20^{\circ}\text{W}$ to $05^{\circ}\text{S } 12^{\circ}\text{E}$. Thence along the southern border of the People's Republic of the Congo and the Central African Empire to the junction between the Republic of Zaire, the Sudan and the Central African Empire. Along the western border of the Sudan to the point $12^{\circ}\text{N } 22^{\circ}\text{E}$. Thence along the N'Djamena parallel to the Nigerian border. Then westward along this border [to the point], through [Zinder] and [Gao], to the point $21^{\circ}\text{N } 31^{\circ}\text{W}$.

(MOD) 27/121

Regional and Domestic Air Route Area-5
(RDARA-5)

From the point $41^{\circ}\text{N } 40^{\circ}\text{E}$ to the point $37^{\circ}\text{N } 40^{\circ}\text{E}$. Then along the border between Turkey and the Syrian Arab Republic to the Mediterranean coast. Thence to the common border of Libya and the Arab Republic of Egypt on the North African coast excluding Cyprus. Southward along the western border of the Arab Republic of Egypt, and the Sudan to the border of Kenya. Thence east along the northern border of Kenya, and then south

along the border between Kenya and to the East African coast at $02^{\circ}\text{S } 41^{\circ}\text{E}$. Then through the point $02^{\circ}\text{S } 73^{\circ}\text{E}$ to $37^{\circ}\text{N } 73^{\circ}\text{E}$. Then east along the border between Afghanistan and Pakistan, and west along the southern border of the U.S.S.R. to the Caspian Sea. Then along the northern border of Iran and Turkey to close the area at $41^{\circ}\text{N } 40^{\circ}\text{E}$.

MOD 27/122 Sub-Area 5A

From the point $37^{\circ}\text{N } 40^{\circ}\text{E}$, along the border between Turkey and the Syrian Arab Republic to the Mediterranean coast. Thence to the Libya-Egyptian border on the North African coast, excluding Cyprus. Southward, along the western border of the Arab Republic of Egypt and east along the common border of the Arab Republic of Egypt and the Sudan to $24^{\circ}\text{N } 37^{\circ}\text{E}$. Then through the points $11^{\circ}45'\text{N } 42^{\circ}\text{E}$, $11^{\circ}45'\text{N } 55^{\circ}\text{E}$, $20^{\circ}\text{N } 52^{\circ}\text{E}$, to the point $26^{\circ}\text{N } 52^{\circ}\text{E}$. Thence along the border between Iran and Iraq, and the border between Iraq and Turkey, to the point $37^{\circ}\text{N } 40^{\circ}\text{E}$.

NOC 27/123

(MOD) 27/124 [Concerns the Spanish text only]

(MOD) 27/125 Sub-Area 5D

From the junction of the Arab Republic of Egypt, Libya and the Sudan southward along the western border of Sudan to the border of Kenya. Thence along the northern border of Kenya. Then south along the border between Kenya and Somalia to the east African coast, at the point $02^{\circ}\text{S } 42^{\circ}\text{E}$. Then through the points $02^{\circ}\text{S } 54^{\circ}\text{E}$, $13^{\circ}\text{N } 54^{\circ}\text{E}$, $13^{\circ}\text{N } 52^{\circ}\text{E}$ to the point $12^{\circ}\text{N } 44^{\circ}\text{E}$. Thence northwest along the middle of the Red Sea to $24^{\circ}\text{N } 37^{\circ}\text{E}$. Thence along the southern border of the Arab Republic of Egypt to close the sub-area.

NOC 27/126

(MOD) 27/127 Sub-Area 6A

From the point $37^{\circ}\text{N } 75^{\circ}\text{E}$, along the border between Pakistan and Afghanistan, and Iran and Pakistan to the point $23^{\circ}\text{N } 61^{\circ}\text{E}$. Thence to Bombay. From Bombay to $24^{\circ}\text{N } 80^{\circ}\text{E}$. Thence to Calcutta. Thence along the coast of Bangladesh and Burma to reach the border between Burma and Thailand. North along this border and that between Burma and Lao People's Democratic Republic. Thence along the border between China and Burma. Thence westward along the southern border of China to the point $37^{\circ}\text{N } 75^{\circ}\text{E}$.

27/128 [Pending]

27/129 [Pending]

27/130 [Pending]

(MOD) 27/131 Sub-Area 6E

From the point $20^{\circ}\text{N } 73^{\circ}\text{E}$, and through the points $02^{\circ}\text{S } 73^{\circ}\text{E}$, $02^{\circ}\text{S } 92^{\circ}\text{E}$, through Weh Island (off the north coast of Sumatra) to $10^{\circ}\text{N } 97^{\circ}\text{E}$. Thence along the coasts of Burma, Bangladesh and India to Calcutta. Then through the points $24^{\circ}\text{N } 80^{\circ}\text{E}$ to $20^{\circ}\text{N } 73^{\circ}\text{E}$.

27/132 [Pending]

MOD 27/133 Regional and Domestic Air Route Area-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 border between People's Republic of Congo and People's Republic of Angola, then along the northern border of the Republic of Zaire, along the border between Uganda and Sudan, and the borders between Kenya and Sudan, Ethiopia and Somalia, to the point $02^{\circ}\text{S } 42^{\circ}\text{E}$. Then to $02^{\circ}\text{S } 60^{\circ}\text{E}$ and along the 60°E meridian to 11°S , then through the points $11^{\circ}\text{S } 65^{\circ}\text{E}$, $40^{\circ}\text{S } 65^{\circ}\text{E}$, $40^{\circ}\text{S } 60^{\circ}\text{E}$ to the South Pole.

(MOD) 27/134 [Concerns the Spanish text only]

MOD 27/135 Sub-Area 7B

From the point $05^{\circ}\text{S } 10^{\circ}\text{E}$ to $05^{\circ}\text{S } 12^{\circ}\text{E}$. Thence along the border between People's Republic of Congo and People's Republic of Angola, then along the northern border of the Republic of Zaire, to the junction of the borders of Uganda, Republic of Zaire and Sudan. Thence along the eastern borders of the Republic of Zaire, the Republic of Rwanda, the Republic of Burundi, and the Republic of Zaire. Thence along the southern borders of the Republic of Zaire and the People's Republic of Angola to the coast of the South Atlantic. Thence to the point $17^{\circ}\text{S } 10^{\circ}\text{E}$, and then to the point $05^{\circ}\text{S } 10^{\circ}\text{E}$.

MOD 27/136 Sub-Area 7C

From the junction of the borders of Uganda, Republic of Zaire and Sudan along the western border of Uganda and Tanzania, and then along the southern border of Tanzania to the coast. Thence through the points $11^{\circ}\text{S } 41^{\circ}\text{E}$, $11^{\circ}\text{S } 60^{\circ}\text{E}$, $02^{\circ}\text{S } 60^{\circ}\text{E}$, to $02^{\circ}\text{S } 41^{\circ}\text{E}$ and thence to the east coast of Africa. Then north along the eastern border of Kenya, then west along the northern borders Kenya and Uganda to close the sub-area at the junction of the borders of the Republic of Zaire, Sudan and Uganda.

MOD 27/137 Sub-Area 7D

From the border between Tanzania and Mozambique on Lake Nyasa, south along the west border of Mozambique to the east coast of Africa, then through the points $27^{\circ}\text{S } 33^{\circ}\text{E}$, $40^{\circ}\text{S } 33^{\circ}\text{E}$, $40^{\circ}\text{S } 65^{\circ}\text{E}$, $11^{\circ}\text{S } 65^{\circ}\text{E}$, to $11^{\circ}\text{S } 41^{\circ}\text{E}$. Thence along the northern border of Mozambique to Lake Nyasa.

MOD 27/138 Sub-Area 7E

From the point $17^{\circ}\text{S } 10^{\circ}\text{E}$, and through the points $40^{\circ}\text{S } 10^{\circ}\text{E}$, $40^{\circ}\text{S } 33^{\circ}\text{E}$, to $27^{\circ}\text{S } 33^{\circ}\text{E}$. Thence along the west border of Mozambique and the part of the western border of Tanzania as far as the northern point of Lake Nyasa. Thence along the borders between Malawi and Tanzania and between Zambia and Tanzania and along the borders between the Republic of Zaire and Zambia, the People's Republic of Angola and Zambia, and the People's Republic of Angola and Namibia to the coast at the point $17^{\circ}\text{S } 10^{\circ}\text{E}$.

ADD 27/138A Sub-Area 7F

From the point $05^{\circ}\text{S } 10^{\circ}\text{E}$ to $05^{\circ}\text{S } 12^{\circ}\text{E}$, along the border between the People's Republic of the Congo and the People's Republic of Angola to the junction point of the borders of the People's Republic of the Congo, the People's Republic of Angola, and the Republic of Zaire. Thence along the border between the People's Republic of Angola and the Republic of Zaire until the coast of the Atlantic, along the coastline until the Zaire River and thence along the northern, eastern and southern border of the People's Republic of Angola to the coast of the South Atlantic. Thence to the point $17^{\circ}\text{S } 10^{\circ}\text{E}$ and then to the point $05^{\circ}\text{S } 10^{\circ}\text{E}$.

MOD 27/139 Regional and Domestic Air Route Area-8
(RDARA-8)

From the South Pole along the 60°E meridian to 40°S then through the points $40^{\circ}\text{S } 65^{\circ}\text{E}$, $11^{\circ}\text{S } 65^{\circ}\text{E}$, $11^{\circ}\text{S } 60^{\circ}\text{E}$, $02^{\circ}\text{S } 60^{\circ}\text{E}$, $02^{\circ}\text{S } 92^{\circ}\text{E}$, $10^{\circ}\text{S } 92^{\circ}\text{E}$, to $10^{\circ}\text{S } 110^{\circ}\text{E}$. Then along the 110°E meridian to the South Pole.

SUP 27/140

MOD 27/141 Regional and Domestic Air Route Area-9
(RDARA-9)

From the South Pole along the 160°E meridian to 27°S . Then through the points $19^{\circ}\text{S } 153^{\circ}\text{E}$, $10^{\circ}\text{S } 145^{\circ}\text{E}$, $10^{\circ}\text{S } 141^{\circ}\text{E}$, $00^{\circ} 141^{\circ}\text{E}$, $00^{\circ} 160^{\circ}\text{E}$, $03^{\circ}30'\text{N } 160^{\circ}\text{E}$, $03^{\circ}30'\text{N } 120^{\circ}\text{W}$. Then along the 120°W meridian to the South Pole.

SUP 27/142

MOD 27/143 Sub-Area-9B

From the point $00^{\circ} 141^{\circ}\text{E}$ through points $10^{\circ}\text{S } 141^{\circ}\text{E}$, $10^{\circ}\text{S } 145^{\circ}\text{E}$, $27^{\circ}\text{S } 160^{\circ}\text{E}$, $27^{\circ}\text{S } 157^{\circ}\text{W}$, $03^{\circ}30'\text{N } 157^{\circ}\text{W}$, $03^{\circ}30'\text{N } 160^{\circ}\text{E}$, $00^{\circ} 160^{\circ}\text{E}$ to the point $00^{\circ} 141^{\circ}\text{E}$.

(MOD) 27/144 [Concerns the Spanish text only]

MOD 27/145 Sub-Area 9D

From the South Pole along the 160°E meridian to 27°S . Then through the point $27^{\circ}\text{S } 170^{\circ}\text{W}$ and along the 170°W meridian to the South Pole.

ADD 27/145A Regional and Domestic Air Route Area-10
(RDARA-10)

From the point $50^{\circ}\text{N } 164^{\circ}\text{E}$ to $66^{\circ}\text{N } 169^{\circ}\text{W}$. Then along the 169°W meridian to the North Pole. Then through the points $82^{\circ}\text{N } 30^{\circ}\text{E}$, $82^{\circ}\text{N } 00^{\circ}$, $73^{\circ}\text{N } 00^{\circ}$, $73^{\circ}\text{N } 15^{\circ}\text{W}$. Then along the 15°W meridian to 72°N . Then through the points $40^{\circ}\text{N } 50^{\circ}\text{W}$, $40^{\circ}\text{N } 65^{\circ}\text{W}$ to $44^{\circ}30'\text{N } 73^{\circ}\text{W}$, $41^{\circ}\text{N } 81^{\circ}\text{W}$, $41^{\circ}\text{N } 88^{\circ}\text{W}$, $48^{\circ}\text{N } 91^{\circ}\text{W}$, $48^{\circ}\text{N } 127^{\circ}\text{W}$, $50^{\circ}\text{N } 130^{\circ}\text{W}$, then westward to the point $50^{\circ}\text{N } 164^{\circ}\text{E}$.

MOD 27/146 Sub-Area 10A

From the point $50^{\circ}\text{N } 164^{\circ}\text{E}$ to $66^{\circ}\text{N } 169^{\circ}\text{W}$, along the 169°W meridian to the North Pole, along the 130°W meridian to 50°N , then westward to the point $50^{\circ}\text{N } 164^{\circ}\text{E}$.

(MOD) 27/147 [Concerns the Spanish text only]

(MOD) 27/148 [Concerns the Spanish text only]

(MOD) 27/149 [Concerns the Spanish text only]

(MOD) 27/150 [Concerns the Spanish text only]

ADD 27/150A Sub-Area 10F

From the North Pole through the points $82^{\circ}\text{N } 30^{\circ}\text{E}$, $82^{\circ}\text{N } 00^{\circ}$, $73^{\circ}\text{N } 00^{\circ}$, $73^{\circ}\text{N } 20^{\circ}\text{W}$, $70^{\circ}\text{N } 20^{\circ}\text{W}$, $63^{\circ}30'\text{N } 39^{\circ}\text{W}$, $58^{\circ}30'\text{N } 43^{\circ}\text{W}$, $58^{\circ}30'\text{N } 50^{\circ}\text{W}$, $63^{\circ}30'\text{N } 55^{\circ}44'\text{W}$, $65^{\circ}30'\text{N } 58^{\circ}39'\text{W}$, $74^{\circ}\text{N } 68^{\circ}18'\text{W}$, $76^{\circ}\text{N } 76^{\circ}\text{W}$, $78^{\circ}\text{N } 75^{\circ}\text{W}$, $82^{\circ}\text{N } 60^{\circ}\text{W}$ to the North Pole.

ADD 27/150B Regional and Domestic Air Route Area-11
(RDARA-11)

From the point $29^{\circ}\text{N } 180^{\circ}$ through the points $50^{\circ}\text{N } 164^{\circ}\text{E}$, $50^{\circ}\text{N } 127^{\circ}\text{W}$. Then along the border between the United States of America and Canada to $46^{\circ}\text{N } 67^{\circ}\text{W}$, then to $40^{\circ}\text{N } 65^{\circ}\text{W}$, $40^{\circ}\text{N } 50^{\circ}\text{W}$, $25^{\circ}\text{N } 35^{\circ}\text{W}$, $25^{\circ}\text{N } 98^{\circ}\text{W}$, $33^{\circ}\text{N } 119^{\circ}\text{W}$, $33^{\circ}\text{N } 153^{\circ}\text{W}$, $29^{\circ}\text{N } 153^{\circ}\text{W}$ to the point $29^{\circ}\text{N } 180^{\circ}$.

MOD 27/151 Sub-Area 11A

From the point $29^{\circ}\text{N } 180^{\circ}$, through the points $50^{\circ}\text{N } 164^{\circ}\text{E}$, $50^{\circ}\text{N } 130^{\circ}\text{W}$, $33^{\circ}\text{N } 130^{\circ}\text{W}$, $33^{\circ}\text{N } 153^{\circ}\text{W}$, $29^{\circ}\text{N } 153^{\circ}\text{W}$, to the point $29^{\circ}\text{N } 180^{\circ}$.

MOD 27/152 Sub-Area 11B

From the point $50^{\circ}\text{N } 130^{\circ}\text{W}$ and through the points $33^{\circ}\text{N } 130^{\circ}\text{W}$, $33^{\circ}\text{N } 119^{\circ}\text{W}$, $25^{\circ}\text{N } 98^{\circ}\text{W}$, $25^{\circ}\text{N } 65^{\circ}\text{W}$, $40^{\circ}\text{N } 65^{\circ}\text{W}$, $46^{\circ}\text{N } 67^{\circ}\text{W}$. Then along the border between the United States of America and Canada through $50^{\circ}\text{N } 127^{\circ}\text{W}$, to point $50^{\circ}\text{N } 130^{\circ}\text{W}$.

ADD 27/152A Sub-Area 11C

From the point $25^{\circ}\text{N } 65^{\circ}\text{W}$ and through the points $40^{\circ}\text{N } 65^{\circ}\text{W}$, $40^{\circ}\text{N } 50^{\circ}\text{W}$, $25^{\circ}\text{N } 35^{\circ}\text{W}$, to the point $25^{\circ}\text{N } 65^{\circ}\text{W}$.

ADD 27/152B Regional and Domestic Air Route Area-12
(RDARA-12)

From the point $03^{\circ} 30' \text{N } 170^{\circ}\text{W}$ to the point $10^{\circ}\text{N } 170^{\circ}\text{W}$, then along the boundary between ITU Regions 2 and 3 to $29^{\circ}\text{N } 180^{\circ}$, and thence to $29^{\circ}\text{N } 153^{\circ}\text{W}$, $33^{\circ}\text{N } 153^{\circ}\text{W}$, through the points $33^{\circ}\text{N } 120^{\circ}\text{W}$, $35^{\circ}\text{N } 120^{\circ}\text{W}$, $32^{\circ}\text{N } 104^{\circ}\text{W}$, $25^{\circ}\text{N } 91^{\circ}\text{W}$, $26^{\circ}\text{N } 91^{\circ}\text{W}$, $26^{\circ}\text{N } 79^{\circ}\text{W}$, $27^{\circ}\text{N } 79^{\circ}\text{W}$, $27^{\circ}\text{N } 76^{\circ}30'\text{W}$, $25^{\circ}\text{N } 70^{\circ}\text{W}$, $25^{\circ}\text{N } 35^{\circ}\text{W}$ and along the boundary between ITU Regions 1 and 2 to $00^{\circ} 20^{\circ}\text{W}$. Thence through the points $00^{\circ} 44^{\circ}\text{W}$, $04^{\circ}24' \text{N } 50^{\circ} 39^{\circ}\text{W}$. Then along the boundary between Brazil and the French Department of Guiana, Surinam, Guyana, Venezuela, Colombia to the junction of Brazil, Peru and Colombia then along the boundary between Peru and Colombia and Peru and Ecuador to the point $04^{\circ}\text{S } 93^{\circ}\text{W}$. Then to the point $05^{\circ}\text{S } 93^{\circ}\text{W}$ and through the points $05^{\circ}\text{S } 120^{\circ}\text{W}$, $03^{\circ}30' \text{N } 120^{\circ}\text{W}$ to the point $03^{\circ}30' \text{N } 170^{\circ}\text{W}$.

(MOD) 27/153 Sub-Area 12A

From the point $03^{\circ}30' \text{N } 170^{\circ}\text{W}$ to the point $10^{\circ}\text{N } 170^{\circ}\text{W}$, then along the boundary between ITU Regions 2 and 3 to $29^{\circ}\text{N } 180^{\circ}$, and thence through the points $29^{\circ}\text{N } 153^{\circ}\text{W}$, $03^{\circ}30' \text{N } 153^{\circ}\text{W}$ to the point $03^{\circ}30' \text{N } 170^{\circ}\text{W}$.

(MOD) 27/154 Sub-Area 12B

From the point $03^{\circ}30' \text{N } 153^{\circ}\text{W}$ to $33^{\circ}\text{N } 153^{\circ}\text{W}$, through the points $33^{\circ}\text{N } 120^{\circ}\text{W}$, $17^{\circ}\text{N } 115^{\circ}\text{W}$, $14^{\circ}\text{N } 93^{\circ}\text{W}$, $02^{\circ}\text{N } 86^{\circ}\text{W}$, $02^{\circ}\text{N } 93^{\circ}\text{W}$, $05^{\circ}\text{S } 93^{\circ}\text{W}$, $05^{\circ}\text{S } 120^{\circ}\text{W}$, $03^{\circ}30' \text{N } 120^{\circ}\text{W}$, to the point $03^{\circ}30' \text{N } 153^{\circ}\text{W}$.

(MOD) 27/155 Sub-Area 12C

From the point $33^{\circ}\text{N } 120^{\circ}\text{W}$, through the points $35^{\circ}\text{N } 120^{\circ}\text{W}$, $32^{\circ}\text{N } 104^{\circ}\text{W}$, $25^{\circ}\text{N } 91^{\circ}\text{W}$, $23^{\circ}\text{N } 83^{\circ}\text{W}$, $22^{\circ}\text{N } 83^{\circ}\text{W}$, $13^{\circ}\text{N } 90^{\circ}\text{W}$, $16^{\circ}\text{N } 116^{\circ}\text{W}$, to the point $33^{\circ}\text{N } 120^{\circ}\text{W}$.

MOD 27/156 Sub-Area 12D

From the point $20^{\circ}\text{N } 91^{\circ}\text{W}$, through the points $26^{\circ}\text{N } 91^{\circ}\text{W}$, $26^{\circ}\text{N } 79^{\circ}\text{W}$, $27^{\circ}\text{N } 79^{\circ}\text{W}$, $27^{\circ}\text{N } 76^{\circ}30'\text{W}$, $26^{\circ}\text{N } 73^{\circ}\text{W}$, $17^{\circ}\text{N } 58^{\circ}\text{W}$, to $10^{\circ}\text{N } 58^{\circ}\text{W}$. Thence through Panama City, Colon, Swan Islands, and Belize City to the point $20^{\circ}\text{N } 91^{\circ}\text{W}$.

(MOD) 27/157 [Concerns the French text only]

MOD 27/158 Sub-Area 12F

From the point $02^{\circ}\text{N } 79^{\circ}\text{W}$ to the point $08^{\circ}\text{N } 83^{\circ}\text{W}$, then along the border between Panama and Costa Rica, through the points $10^{\circ}\text{N } 83^{\circ}\text{W}$, $13^{\circ}\text{N } 83^{\circ}\text{W}$, $13^{\circ}\text{N } 70^{\circ}\text{W}$, $08^{\circ}\text{N } 70^{\circ}\text{W}$, $06^{\circ}\text{N } 67^{\circ}\text{W}$ and $01^{\circ}\text{N } 66^{\circ}\text{W}$. Then along the border between Brazil and Colombia to $04^{\circ}\text{S } 70^{\circ}\text{W}$. Thence along the border between Colombia and Peru, continuing along the border between Colombia and Ecuador, to the point $02^{\circ}\text{N } 79^{\circ}\text{W}$.

MOD 27/159 Sub-Area 12G

From the point $07^{\circ}\text{N } 73^{\circ}\text{W}$, through the points $14^{\circ}\text{N } 73^{\circ}\text{W}$, $14^{\circ}\text{N } 58^{\circ}\text{W}$, $01^{\circ}31'\text{N } 58^{\circ}\text{W}$ and along the borders of Brazil with Guyana, Venezuela, Colombia through the points $01^{\circ}57'\text{N } 68^{\circ}\text{W}$, $05^{\circ}\text{N } 69^{\circ}\text{W}$, to the point $07^{\circ}\text{N } 73^{\circ}\text{W}$.

MOD 27/160 Sub-Area 12H

From the point $05^{\circ}\text{N } 70^{\circ}\text{W}$, through the points $08^{\circ}45'\text{N } 60^{\circ}\text{W}$, $08^{\circ}\text{N } 58^{\circ}\text{W}$, $08^{\circ}\text{N } 49^{\circ}\text{W}$, $04^{\circ}10'\text{N } 51^{\circ}36'\text{W}$, and along the borders of Brazil with the French Department of Guiana, Surinam, Guyana, Venezuela and Colombia to the junction of the borders of Brazil, Colombia and Peru, to the point $05^{\circ}\text{N } 70^{\circ}\text{W}$.

(MOD) 27/161 Sub-Area 12I

From the point $25^{\circ}\text{N } 70^{\circ}\text{W}$, through the point $25^{\circ}\text{N } 35^{\circ}\text{W}$ and along the boundary between ITU Regions 1 and 2, to $00^{\circ} 20^{\circ}\text{W}$. Thence through the points $00^{\circ} 44^{\circ}\text{W}$, $08^{\circ}\text{N } 54^{\circ}\text{W}$, $08^{\circ}\text{N } 58^{\circ}\text{W}$, $17^{\circ}\text{N } 58^{\circ}\text{W}$, to the point $25^{\circ}\text{N } 70^{\circ}\text{W}$.

ADD 27/161A Sub-Area 12J

From the point $04^{\circ}\text{S } 93^{\circ}\text{W}$, through the points $02^{\circ}\text{N } 93^{\circ}\text{W}$, $02^{\circ}\text{N } 79^{\circ}\text{W}$. Then along the border between Ecuador and Colombia to the junction with the borders of Colombia, Peru and Ecuador. Thence along the border between Peru and Ecuador to the point $04^{\circ}\text{S } 93^{\circ}\text{W}$.

ADD 27/161B Regional and Domestic Air Route Area-13
(RDARA-13)

From the South Pole along the 120°W meridian to 05°S . Then through the points $05^{\circ}\text{S } 93^{\circ}\text{W}$, $04^{\circ}\text{S } 82^{\circ}\text{W}$, and along the southern border of Ecuador, Colombia, Venezuela, Guyana, Surinam, the French Department of Guiana, to the point $04^{\circ}24'\text{N } 50^{\circ}39'\text{W}$. Then through the points $04^{\circ}24'\text{N } 47^{\circ}\text{W}$, $00^{\circ}32^{\circ}\text{W}$ to the point $00^{\circ}20^{\circ}\text{W}$, and along the 20°W meridian to the South Pole.

(MOD) 27/162 Sub-Area 13A

From the point $05^{\circ}\text{S } 120^{\circ}\text{W}$ through the points $05^{\circ}\text{S } 93^{\circ}\text{W}$, $04^{\circ}\text{S } 82^{\circ}\text{W}$, $19^{\circ}\text{S } 81^{\circ}\text{W}$, $57^{\circ}\text{S } 81^{\circ}\text{W}$, to $57^{\circ}\text{S } 90^{\circ}\text{W}$. Thence to the South Pole to the point $05^{\circ}\text{S } 120^{\circ}\text{W}$.

(MOD) 27/163 Sub-Area 13B

From the point $29^{\circ}\text{S } 111^{\circ}\text{W}$, through the points $24^{\circ}\text{S } 111^{\circ}\text{W}$, $24^{\circ}\text{S } 104^{\circ}\text{W}$, $29^{\circ}\text{S } 104^{\circ}\text{W}$, to the point $29^{\circ}\text{S } 111^{\circ}\text{W}$.

MOD 27/164 Sub-Area 13C

From the point $15^{\circ}\text{S } 47^{\circ}\text{W}$, through the points $20^{\circ}\text{S } 44^{\circ}\text{W}$, $23^{\circ}19'\text{S } 42^{\circ}\text{W}$, $25^{\circ}\text{S } 45^{\circ}\text{W}$, $22^{\circ}30'\text{S } 50^{\circ}39'\text{W}$, $19^{\circ}52'\text{S } 58^{\circ}\text{W}$, and along the borders of Brazil with Paraguay, Bolivia, Peru, Colombia, Venezuela, Guyana, Surinam and the French Department of Guiana to $04^{\circ}24'\text{N } 50^{\circ}39'\text{W}$, $04^{\circ}24'\text{N } 47^{\circ}\text{W}$, to the point $15^{\circ}\text{S } 47^{\circ}\text{W}$.

MOD 27/165 Sub-Area 13D

From $11^{\circ}\text{S } 69^{\circ}30'\text{W}$ along the border between Bolivia and Brazil and through the point $20^{\circ}10'\text{S } 58^{\circ}\text{W}$, along the border between Bolivia and Paraguay to $22^{\circ}30'\text{S } 62^{\circ}30'\text{W}$. Then along the border between Bolivia and Argentina and through the point $23^{\circ}\text{S } 67^{\circ}\text{W}$ along the border between Bolivia and Chile and through the point $16^{\circ}30'\text{S } 69^{\circ}30'\text{W}$ following the border between Bolivia and Peru to the point $11^{\circ}\text{S } 69^{\circ}30'\text{W}$.

ADD 27/165A Sub-Area [13M]

From the point $19^{\circ}\text{S } 81^{\circ}\text{W}$, $04^{\circ}\text{S } 82^{\circ}\text{W}$, $03^{\circ}\text{S } 80^{\circ}\text{W}$, following the border between Peru and Ecuador and the border between Peru and Colombia to the point $11^{\circ}\text{S } 69^{\circ}30'\text{W}$, along the border of Peru with Bolivia to $17^{\circ}30'\text{S } 69^{\circ}30'\text{W}$, then along the border of Peru with Chile to the point $19^{\circ}\text{S } 81^{\circ}\text{W}$.

ADD 27/165B Sub-Area [13N]

From the point $22^{\circ}30'\text{S } 62^{\circ}30'\text{W}$ along the border of Paraguay with Bolivia to $20^{\circ}10'\text{S } 58^{\circ}\text{W}$, along the border of Paraguay with Brazil to $25^{\circ}50'\text{S } 54^{\circ}30'\text{W}$ and thence along the border of Paraguay with Argentina to the point $22^{\circ}30'\text{S } 62^{\circ}30'\text{W}$.

(MOD) 27/166 Sub-Area 13E

From the point $32^{\circ}\text{S } 81^{\circ}\text{W}$ through the point $19^{\circ}\text{S } 81^{\circ}\text{W}$, up to the intersection of the coast with the border between Chile and Peru, Bolivia and Argentina, to the point of intersection with 32°S and then to the point $32^{\circ}\text{S } 81^{\circ}\text{W}$.

(MOD) 27/167 Sub-Area 13F

From the point $57^{\circ}\text{S } 81^{\circ}\text{W}$, through the point $32^{\circ}\text{S } 81^{\circ}\text{W}$ to the intersection of 32°S with the border between Chile and Argentina, through the points $52^{\circ}\text{S } 67^{\circ}\text{W}$, $57^{\circ}\text{S } 67^{\circ}\text{W}$, $57^{\circ}\text{S } 40^{\circ}\text{W}$ to the South Pole to the point $57^{\circ}\text{S } 81^{\circ}\text{W}$.

(MOD) 27/168 Sub-Area 13G

From the point $36^{\circ}\text{S } 55^{\circ}\text{W}$ to the intersection of 32°S with the border between Argentina and Chile, then north along the borders of Argentina with Bolivia, Paraguay, Brazil and Uruguay to the point $36^{\circ}\text{S } 55^{\circ}\text{W}$.

(MOD) 27/169 Sub-Area 13H

From the point $57^{\circ}\text{S } 90^{\circ}\text{W}$ and through the point $57^{\circ}\text{S } 70^{\circ}\text{W}$ to $52^{\circ}\text{S } 70^{\circ}\text{W}$. Then along the border between Chile and Argentina to its intersection by 32°S and through the points $36^{\circ}\text{S } 55^{\circ}\text{W}$, $57^{\circ}\text{S } 55^{\circ}\text{W}$, $57^{\circ}\text{S } 25^{\circ}\text{W}$ to the South Pole and then to the point $57^{\circ}\text{S } 90^{\circ}\text{W}$.

(MOD) 27/170 Sub-Area 13I

From the point $40^{\circ}\text{S } 50^{\circ}\text{W}$ through the point $36^{\circ}\text{S } 55^{\circ}\text{W}$ and along the borders between Uruguay, Argentina and Brazil, then through the point $35^{\circ}\text{S } 45^{\circ}\text{W}$ to the point $40^{\circ}\text{S } 50^{\circ}\text{W}$.

MOD 27/171 Sub-Area 13J

From the point $15^{\circ}\text{S } 47^{\circ}\text{W}$ through the points $20^{\circ}\text{S } 44^{\circ}\text{W}$, $23^{\circ}19'\text{S } 42^{\circ}\text{W}$, $29^{\circ}\text{S } 40^{\circ}\text{W}$, $35^{\circ}\text{S } 45^{\circ}\text{W}$, and thence along the borders of Brazil with Uruguay, Argentina, Paraguay and Bolivia to the point $19^{\circ}52'\text{S } 58^{\circ}\text{W}$, then through the point $18^{\circ}\text{S } 57^{\circ}37'\text{W}$ to the point $15^{\circ}\text{S } 47^{\circ}\text{W}$.

MOD 27/172 Sub-Area 13K

From the point $22^{\circ}30'\text{S } 50^{\circ}39'\text{W}$ and through the points $25^{\circ}\text{S } 45^{\circ}\text{W}$, $29^{\circ}\text{S } 40^{\circ}\text{W}$, $20^{\circ}\text{S } 32^{\circ}\text{W}$, $00^{\circ}32'\text{W}$, $04^{\circ}24'\text{N } 47^{\circ}\text{W}$, $04^{\circ}24'\text{N } 50^{\circ}39'\text{W}$ to the point $22^{\circ}30'\text{S } 50^{\circ}39'\text{W}$.

(MOD) 27/173 Sub-Area 13L

From the point $00^{\circ}32'\text{W}$ through the points $00^{\circ}20'\text{W}$, the South Pole, $57^{\circ}\text{S } 55^{\circ}\text{W}$, $36^{\circ}\text{S } 55^{\circ}\text{W}$, $40^{\circ}\text{S } 50^{\circ}\text{W}$, $20^{\circ}\text{S } 32^{\circ}\text{W}$, to the point $00^{\circ}32'\text{W}$.

ADD 27/173A Regional and Domestic Air Route Area-14
(RDARA-14)

From the South Pole along the 110°E meridian to 10°S . Then through the points $10^{\circ}\text{S } 145^{\circ}\text{E}$, $19^{\circ}\text{S } 153^{\circ}\text{E}$, $27^{\circ}\text{S } 160^{\circ}\text{E}$. Then along the 160°E meridian to the South Pole.

ADD 27/173B Sub-Area 14A

From the South Pole along the 110°E meridian to 19°S . Then through the points $19^{\circ}\text{S } 118^{\circ}\text{E}$, $24^{\circ}\text{S } 120^{\circ}\text{E}$, $24^{\circ}\text{S } 131^{\circ}\text{E}$. Then along the 131°E meridian to the South Pole.

ADD 27/173C Sub-Area 14B

From the point $19^{\circ}\text{S } 110^{\circ}\text{E}$ to the point $10^{\circ}\text{S } 110^{\circ}\text{E}$,
thence through $10^{\circ}\text{S } 131^{\circ}\text{E}$, $24^{\circ}\text{S } 131^{\circ}\text{E}$, $24^{\circ}\text{S } 120^{\circ}\text{E}$,
 $19^{\circ}\text{S } 118^{\circ}\text{E}$ to the point $19^{\circ}\text{S } 110^{\circ}\text{E}$.

ADD 27/173D Sub-Area 14C

From the point $24^{\circ}\text{S } 131^{\circ}\text{E}$ to the point $10^{\circ}\text{S } 131^{\circ}\text{E}$,
thence through $10^{\circ}\text{S } 139^{\circ}\text{E}$, $24^{\circ}\text{S } 139^{\circ}\text{E}$ to the point
 $24^{\circ}\text{S } 131^{\circ}\text{E}$.

ADD 27/173E Sub-Area 14D

From the South Pole along the 131°E meridian to
 24°S , then through the points $24^{\circ}\text{S } 139^{\circ}\text{E}$, $27^{\circ}\text{S } 139^{\circ}\text{E}$,
 $27^{\circ}\text{S } 142^{\circ}\text{E}$, $34^{\circ}\text{S } 142^{\circ}\text{E}$, $34^{\circ}\text{S } 139^{\circ}\text{E}$. Then along
the 139°E meridian to the South Pole.

ADD 27/173F Sub-Area 14E

From the point $24^{\circ}\text{S } 139^{\circ}\text{E}$ along the 139°E meridian
to 10°S , then through the points $10^{\circ}\text{S } 145^{\circ}\text{E}$, $19^{\circ}\text{S } 153^{\circ}\text{E}$
to the point $24^{\circ}\text{S } 139^{\circ}\text{E}$.

ADD 27/173G Sub-Area 14F

From the point $27^{\circ}\text{S } 139^{\circ}\text{E}$ along the 139°E meridian
to 24°S , then through the points $19^{\circ}\text{S } 153^{\circ}\text{E}$, $27^{\circ}\text{S } 160^{\circ}\text{E}$
to the point $27^{\circ}\text{S } 139^{\circ}\text{E}$.

ADD 27/173H Sub-Area 14G

From the South Pole along the 139°E meridian to
 34°S , then through the points $34^{\circ}\text{S } 142^{\circ}\text{E}$, $27^{\circ}\text{S } 142^{\circ}\text{E}$, $27^{\circ}\text{S } 160^{\circ}\text{E}$. Then along the 160°E meridian
to the South Pole.

ARTICLE 3

NOC	Description of the boundaries of the volmet allotment areas and volmet reception areas
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NOC VOLMET Area - AFRICA-INDIAN OCEAN
(AFI-MET)

MOD 27/174 The AFI-MET allotment area is defined by a line drawn from the point 29°N 20°W, through the points 37°N 03°W, 37°N 36°E, 30°N 35°E, 10°N 52°E, 22°S 60°E, 35°S 35°E, 35°S 15°E, 08°S 15°W, 12°N 20°W, to the point 29°N 20°W.

MOD 27/175 The AFI-MET reception area is defined by a line drawn from the point 37°N 03°W, through the points 37°N 36°E, 30°N 35°E, 10°N 52°E, 10°N 100°E, the South Pole, 29°N 40°W, 29°N 20°W, to the point 37°N 03°W.

MOD	<u>VOLMET Area - NORTH ATLANTIC</u> (NAT-MET)
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MOD 27/176 The NAT-MET allotment area is defined by a line drawn from the point 41° N 78° W, through the points 51° N 55° W, 24° N 50° W, 24° N 74° W, to the point 41° N 78° W.

MOD 27/177 The NAT-MET reception area is defined by a line drawn from the point 24°N 97°W, through the points 24°N 85°W, 75°N 85°W, 75°N 20°W, 00° 20°W, 00° 95°W, to the point 24°N 97°W.

MOD	<u>VOLMET Area — EUROPE</u> (EUR-MET)
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MOD 27/178 The EUR-MET allotment area is defined by a line drawn from the point 33°N 12°W, through the points 54°N 12°W, 70°N 00°, 74°N 40°E, 40°N 36°E, 29°N 35°30'E, 32°N 13°E, to the point 33°N 12°W.

MOD 27/179 The EUR-MET reception area is defined by a line drawn from the point 15° N 20° W, through the points 40° N 50° W, 75° N 50° W, 75° N 45° E, 15° N 45° E, to the point 15° N 20° W.

MOD	<u>VOLMET Area - MIDDLE EAST</u> (MID-MET)
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	11
12	12
13	13
14	14
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92	92
93	93
94	94
95	95
96	96
97	97
98	98
99	99
100	100

MOD 27/180 The MID-MET allotment area is defined by a line drawn from the point 50°N 80°E, through the points 29°N 80°E, 27°N 85°E, 16°N 78°E, 22°N 56°E, 16°N 42°E, 30°N 30°E, 51°N 30°E, 57°N 37°E, to the point 50°N 80°E.

- MOD 27/181 The MID-MET reception area is defined by a line drawn from the point 50° N 80° E, through the points 50° N 90° E, 35° N 90° E, 27° N 85° E, 16° N 78° E, 22° N 56° E, 16° N 42° E, 30° N 30° E, 51° N 30° E, 57° N 37° E, to the point 50° N 80° E.
- ADD VOLMET Area - NORTH CENTRAL ASIA
(NCA-MET)
- ADD 27/181A The NCA-MET allotment area is defined by a line drawn from the point 76° N 32° E, through the points 80° N 90° E, 75° N 168° W, 66° N 168° W, 48° N 160° E, 42° N 135° E, 50° N 130° E, 50° N 90° E, 35° N 70° E, 45° N 30° E, 60° N 20° E, to the point 76° N 32° E.
- ADD 27/181B The NCA-MET reception area is defined by a line drawn from the North Pole, through the points 40° N 168° W, 30° N 140° E, 35° N 70° E, 30° N 20° E, to the North Pole.
- NOC VOLMET Area - PACIFIC
(PAC-MET)
- MOD 27/182 The PAC-MET allotment area is defined by a line drawn from the point 52° N 132° E, through the points 63° N 149° W, 38° N 120° W, 50° S 120° W, 50° S 145° E, 28° S 145° E, 03° S 129° E, 22° N 112° E to the point 52° N 132° E.
- MOD 27/183 The PAC-MET reception area is defined by a line drawn from the point 60° N 100° E through the points 75° N 160° W, 75° N 110° W, 65° S 110° W, 65° S 145° E, 28° S 145° E, 03° S 129° E, 05° N 80° E, 40° N 80° E, to the point 60° N 100° E.
- NOC VOLMET Area - SOUTH EAST ASIA
(SEA-MET)
- MOD 27/184 The SEA-MET allotment area is defined by a line drawn from the point 55° N 75° E, through the points 55° N 135° E, 45° N 135° E, 35° N 130° E, 10° N 130° E, 10° S 155° E, 35° S 155° E, 35° S 116° E, 08° N 75° E, 26° N 65° E, to the point 55° N 75° E.
- MOD 27/185 The SEA-MET reception area is defined by a line drawn from the point 55° N 50° E, through the points 55° N 180°, 50° S 180°, 50° S 70° E, 08° N 70° E, 08° N 50° E, to the point 55° N 50° E.
- ADD VOLMET Area - CARIBBEAN
(CAR-MET)
- ADD 27/185A The CAR-MET allotment area is defined by a line drawn from the point 30° N 110° W, through the points 30° N 75° W, 00° 50° W, following equator to 00° 80° W to the point 30° N 110° W.
- ADD 27/185B The CAR-MET reception area is defined by a line drawn from the point 40° N 120° W, through the points 40° N 20° W, 25° S 20° W, 25° S 120° W, to the point 40° N 120° W.

ADD

VOLMET Area - SOUTH AMERICA
(SAM-MET)

ADD

27/185C

The SAM-MET allotment area is defined by a line drawn from the point $15^{\circ}\text{N } 83^{\circ}\text{W}$, through the points $15^{\circ}\text{N } 7^{\circ}\text{W}$, $05^{\circ}\text{S } 35^{\circ}\text{W}$, $55^{\circ}\text{S } 60^{\circ}\text{W}$, $55^{\circ}\text{S } 83^{\circ}\text{W}$, to the point $15^{\circ}\text{N } 83^{\circ}\text{W}$.

ADD

27/185D

The SAM-MET reception area is defined by a line drawn from the point $30^{\circ}\text{N } 120^{\circ}\text{W}$ through the point $30^{\circ}\text{N } 00^{\circ}$, the South Pole, to the point $30^{\circ}\text{N } 120^{\circ}\text{W}$.

RESOLUTION No. Aer2 - A

**Relating to the unauthorized use of frequencies
in the bands allocated to the aeronautical mobile
(R) service**

The World Administrative Radio Conference on the Aeronautical Mobile (R) Service, Geneva, 1978

considering

a) that monitoring observations of the use of the frequencies in the bands between 2850 and 17 970 kHz allocated exclusively to the aeronautical mobile (R) service show that a number of frequencies in these bands are still being used by stations of services other than the aeronautical mobile (R) service, notably by high-powered broadcasting stations, some of which are operating in contravention of No. 422 of the Radio Regulations;

b) that these stations are causing harmful interference to the aeronautical mobile (R) service and that a considerable number of emissions, the sources of which could not be positively identified, have been observed in these bands;

c) that radio is the sole means of communication available to the aeronautical mobile (R) service and that this service is a safety service;

considering, in particular

d) that it is of paramount importance that channels directly concerned with the safe and regular conduct of aircraft operations be kept free from harmful interference, since they are essential for the protection of the safety of life and property:

resolves to urge administrations

1. to ensure that stations of services other than the aeronautical mobile (R) service refrain from using frequencies allocated to this service other than under the conditions specified in Nos. 115 and 415 of the Radio Regulations;

2. a) to make every effort to identify and locate the source of any unauthorized emission capable of causing harmful interference to the aeronautical mobile (R) service, thereby endangering this safety service;

b) and to communicate their findings to the IFRB;

3. to participate in the monitoring programmes that the IFRB may organize pursuant to this Resolution;

4. to request their governments to enact such legislation as is necessary to prevent stations located on board aircraft operating in contravention of No. 422 of the Radio Regulations;

requests the IFRB

1. to continue to organize monitoring programmes in the bands exclusively allocated to the aeronautical mobile (R) service with a view to eliminating the emissions of out-of-band stations which cause, or are likely to cause, harmful interference to the aeronautical mobile (R) service;
2. to take steps to eliminate the emissions of out-of-band stations which cause, or are likely to cause, harmful interference to the aeronautical mobile (R) service;
3. to seek, as appropriate, the co-operation of administrations in identifying the sources of out-of-band emissions by all available means, and in securing the cessation of these emissions.

RESOLUTION No. Aer2 - B

Relating to the use of frequencies of the aeronautical
mobile (R) service

The World Administrative Radio Conference on the aeronautical mobile (R) service, Geneva, 1978,

considering

a) that the Frequency Allotment Plan adopted in 1966 and developed for the use of high frequency channels for the aeronautical mobile (R) service (Appendix 27 to the Radio Regulations) has been substantially revised by this Conference;

b) that air operations are subject to continuous changes;

c) that these changes require attention by the administrations concerned, but,

d) that, in seeking to satisfy new communication requirements, no decision should be taken that will prevent or handicap the coordinated utilization of those high frequency (R) band allotments as prescribed in the Plan;

e) that the families of frequencies allotted to the Major World Air Route Areas (MWARAs), Regional and Domestic Air Route Areas (RDARAs) and Sub-Areas and VOLMET areas have been chosen considering propagation conditions which allow for the selection of the most suitable frequencies for the distance involved;

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

g) that it is essential to distribute the communication traffic load as uniformly as possible over the frequencies available;

h) that frequencies have been allotted for world-wide use;

resolves

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

1. to make as great a use as possible of higher frequencies in order to lessen the load on the high frequency (R) bands;
2. to make as great a use as possible of antennae of appropriate directivity and efficiency in order to minimize the possibilities of mutual interference within an area or between areas;

3. to coordinate the use of families of frequencies necessary for a given route segment in accordance with the technical principles in Appendix 27 and in the light of the propagation data available, to ensure that the most appropriate frequencies are used with an aircraft at a given distance from the aeronautical station providing service over the route segment concerned;
4. to improve operating techniques and procedures and to use equipment which will make it possible to attain the highest possible efficiency in handling air-ground high frequency communications;
5. to collect precise data on the operation of their high frequency communication systems, particularly data having a bearing on technical and operating standards, so as to facilitate re-examination of the Plan;
6. to establish, through regional arrangements, the best method of providing the communications required for any new long-distance international or regional air operation which is not or cannot be accommodated within the system of MWARA and RDARA, in such a manner as not to cause harmful interference to the utilization of frequencies as prescribed in the Aeronautical Mobile (R) Frequency Plan.

RESOLUTION No. Aer2 - C

**Relating to the use of higher frequency bands in the
aeronautical mobile (R) service and the aeronautical
mobile-satellite (R) service for communication
and for meteorological broadcasts**

The World Administrative Radio Conference on the Aeronautical
Mobile (R) Service, Geneva, 1978,

considering

- a) that from an aeronautical viewpoint, higher frequency bands can provide a more reliable and more interference-free communication system than HF;
- b) that from a technical and operational viewpoint, the use of VHF by aviation has progressed significantly;
- c) that the future possibility of communications utilizing satellite technology is now recognized;
- d) that, owing to the ever-increasing development of aeronautical telecommunications in all areas of the world, there is an increasing demand for frequencies for communication with and for meteorological broadcasts to aircraft in flight;

resolves

that administrations, taking into account the relevant economic and technical factors, consider to the maximum extent possible meeting their requirements for communication and for meteorological broadcasts by frequencies in frequency bands, higher than the HF bands, which are allocated to the aeronautical mobile (R) service and the aeronautical mobile-satellite (R) service.

RESOLUTION No. Aer2 - D

**relating to the use of frequencies 3023 and 5680 kHz
common to the aeronautical mobile (R) and (OR) services**

The World Administrative Radio Conference on the Aeronautical Mobile (R) Service, Geneva, 1978,

having noted

that some anomalies appeared to exist in the conditions prescribed in Appendix 26 to the Radio Regulations, Geneva, 1959, for the use of the frequencies 3023 and 5680 kHz, as contained in Article 2 of the Frequency Allotment Plan, Column 3, clauses 2 a) and 2 b) and having taken steps to remove these anomalies;

considering

1. that the coordination of search and rescue operations at the scene of a disaster would be improved if the use of the frequencies 3023 and 5680 kHz, in such operations, was extended to include communication between mobile stations and participating land stations;

2. that it would be in the general interests of the aeronautical mobile service if the same provisions relating to the use of the frequencies 3023 and 5680 kHz were applied to operations both in the aeronautical mobile (R) service and the aeronautical mobile (OR) service;

resolves

to invite administrations to apply in the aeronautical mobile (OR) service, as from the date of coming into force of the Final Acts of the Conference, the provisions governing the use of the frequencies 3023 and 5680 kHz specified in Appendix 27Aer2 (Nos. 27/196 and 27/201).

RECOMMENDATION No. Aer2 - AA

relating to the development of techniques which would help to reduce congestion in the high frequency bands allocated to the aeronautical mobile (R) service

The World Administrative Radio Conference on the Aeronautical Mobile (R) Service, Geneva, 1978,

considering

a) that several administrations are actively engaged in the development of communication techniques the wider use of which, in the aeronautical mobile (R) service, would help to reduce congestion in the high frequency bands allocated to that service; such developments include the use of higher frequencies with remotely controlled stations, directional antennae, space radiocommunication techniques and automatic data transmission;

b) that knowledge of these developments would be useful to other administrations in considering the application of these techniques to their aeronautical mobile (R) communication services;

c) that the International Civil Aviation Organization (ICAO) is actively engaged in coordinating the operational development of such techniques;

recommends

administrations engaged in the development of techniques which would help to reduce congestion in the HF bands to inform the IFRB periodically of the progress achieved;

instructs

the IFRB periodically to circulate the information so obtained to administrations and to ICAO.

RECOMMENDATION No. Aer2 - BB

to the General World Administrative Radio Conference (1979) relating to
the inapplicability of Resolution No. 13
to the aeronautical mobile (R) service

The World Administrative Radio Conference on the Aeronautical
Mobile (R) Service, Geneva, 1978,

considering

a) that Resolution No. 13 expressed the opinion that the
aeronautical mobile service plans contained in the then Appendix 26
of the Radio Regulations would have to be reviewed;

b) that Resolution No. 13 also stated that an Extraordinary
Administrative Radio Conference should be convened to review
Appendix 26 and the associated Radio Regulations and to complete
its work before the next Ordinary Administrative Radio Conference;

c) that administrative radio conferences of the aeronautical
mobile service were held in 1964, 1966, and 1978 and the Plans were
reviewed;

d) that no further Administrative Radio Conferences are to be
convened before the General Conference of 1979;

recommends

that, in so far as the aeronautical mobile (R) service is
concerned, the General Conference of 1979 should abrogate
Resolution No. 13;

invites Administrations

to consider whether Resolution No. 13 could be abrogated and to
submit proposals to this effect to the General Conference of 1979.

COMMITTEE 6

Denmark, Norway and Sweden

PROPOSALS FOR THE WORK OF THE CONFERENCE

DRAFT

RECOMMENDATION AER...

Relating to the use of frequencies for
exercising control over regularity of
flight and for safety of aircraft

The World Administrative Radio Conference for the Aeronautical Mobile (R)
Service, Geneva, 1978,

considering

- a) that the Conference has allotted world-wide frequencies for exercising control over regularity of flight and for safety of aircraft;
- b) that where the operational area of an aircraft lies wholly within a RDARA or Sub-RDARA boundary, frequencies allotted to those RDARAs and Sub-RDARAs shall be used;

recommends

- 1. that HF stations for exercising control over regularity of flight and for safety of aircraft should be authorized where no other means are available for such purposes;
- 2. that the total number of ground stations on the world-wide channels should be kept to a minimum consistent with economic and operational efficiency;
- 3. that, if possible, and practicable, one station should serve aircraft operating agencies in adjacent countries and there should not normally be more than one station per country;
- 4. that VHF and not HF should be used when an aircraft is within the coverage of an appropriate VHF aeronautical station.



INTERNATIONAL TELECOMMUNICATION UNION
AERONAUTICAL (R) CONFERENCE
(Geneva, 1978)

Document No. 241-E
24 February 1978
Original : English

PLENARY MEETING

FINAL PROTOCOL

For the Democratic People's Republic of Korea

The delegation of the Democratic People's Republic of Korea participating in the Conference cannot agree to the description of the boundary on the sea adjacent to our country used in the definition of the NCA-MWARA in Document No. 165 discussed at the Plenary Meeting, since it does not reflect the actual situation.

The delegation of the Democratic People's Republic of Korea therefore considers that the question of the description of the boundary on the sea between the Democratic People's Republic of Korea and the Chinese People's Republic should be decided between the two countries.



INTERNATIONAL TELECOMMUNICATION UNION

AERONAUTICAL (R) CONFERENCE

(Geneva, 1978)

Document No. 242-E

24 February 1978

Original : English

COMMITTEE 5

People's Democratic Republic of Yemen

RDARA 5A BOUNDARIES

It is confirmed that the boundaries of RDARA 5A are as shown in Document No. 165 (MOD 27/122).

The present document cancels the coordinates as shown in Document No. 143(Rev.).



COMMITTEE 6Canada and IrelandFREQUENCY SEPARATION REQUIRED BETWEEN ASSIGNED FREQUENCIES AT
AERONAUTICAL STATIONS FOR THE AVOIDANCE OF LOCAL INTERCHANNEL INTERFERENCENoting that :

1. This matter was considered by the Special Meeting of CCIR Study Group 8 for the Aeronautical Mobile (R) Conference at its meeting in March 1976 and at the recent Final Meeting of Study Group 8. The views of these meetings on interference from inter-modulation products and adjacent channel protection criteria are set out in Annex 1 and Annex 2 of the Addendum to Document No. 2 of this Conference.
2. The distance between transmitting and receiving sites at the Gander and Shannon Aeronautical Stations is of the order of 5 kms.
3. In accordance with provision No. 27/66B, the tolerable power level of emissions outside the necessary bandwidth of a channel N, employing a 6 kW PFP transmitter, is of the order of (see MOD 27/55) :

	Mean effective radiated power in the channel. milliwatts
Channel N \pm 1 channel	1000
" N \pm 2 channels	150
" N \pm 3 channels	1.0

4. Any interference generated by VOLMET broadcast transmitters at the same Aeronautical Station will be of a continuous nature.
5. Interchannel interference has been a recurring problem at Aeronautical Stations.

It is considered that :

- a) The minimum frequency separation assigned to existing Aeronautical Stations with a distance in the order of 5 kms or less between transmitting and receiving sites should be 2 channels or 9 kHz between the carrier (reference) frequencies, to ensure that serious interchannel interference problems do not impair the efficient operation of those Stations.



b) In addition, since the Aeronautical Stations operated by Canada and Ireland to serve the NAT MWARA, the NAT and EUR VOLMET broadcasts will have large frequency complements, it is most desirable that the frequencies assigned to these Stations be selected so that they are not so related that they will be subject to intermodulation product-type of interference.

INTERNATIONAL TELECOMMUNICATION UNION
AERONAUTICAL (R) CONFERENCE
(Geneva, 1978)

Addendum No. 1 to
Document No. 244-E
27 February 1978
Original: English

APPENDIX

Information to be supplied in Accordance
with No.

(See Article)

- | | | |
|--------|---|---|
| 1. 1.1 | Proposed frequency | Carrier kHz
Assigned kHz |
| 1. 1.2 | Alternative proposed frequency | Carrier kHz
Assigned kHz |
| 1. 1.3 | Frequency to be replaced
(No.) | Carrier kHz
Assigned kHz |
| 2. 2.1 | Country or area in which
aeronautical station is
to be situated | |
| 3. 3.1 | Main service area | |
| 4. | Peak envelope power of the
transmitter in kW | |

5. Transmitting antenna characteristics
(for details see Appendix 1):
- 5.1 In the case of a non-directional antenna,
insert the symbol "ND"
- 5.2 In the case of a directional antenna,
indicate:
- a) the azimuth of maximum radiation
- b) the angular width of main lobe
- c) relative gain of the antenna in dB
6. Planned scheduled hours of
operation of the proposed fre-
quency to hrs (GMT)
7. Indicate, if possible:
- a) the estimated peak hours of
traffic to hrs (GMT)
- b) the estimated daily volume
of traffic in minutes
8. Planned date of first use of channel
(month) (year)
9. Co-ordination [text model to be taken from Ap. 1A]
10. Agreements [text model to be taken from Ap. 1A]
11. Operating Administration or Company
[text model to be taken from Ap. 1A]



COMMITTEE 6

Report of Working Group 6 Ad Hoc
set up to draft procedures for use of frequencies
designated for world wide use

The Group consisting of the Chairman and Vice-Chairman of Committee 6 and the Chairmen of Working Groups 6A and 6B in consultation with the IFRB considered the proposals made at the Fifth Meeting of Committee 6 in regard to the procedures to be adopted for the use of the frequencies designated for world wide use for the purposes referred to in No. 27/194A.

The results of the work are contained in the annexes attached which are submitted for consideration by Committee 6.

R.J. BUNDLE
Chairman of Committee 6

- Annexes: A : Modifications to Appendix 27
B : Resolution relating to the procedure
for providing the initial entries in Part II,
Section II, Article 3 of Appendix 27 Aer2
C : Article 9C of Radio Regulations



ANNEX A to Document No. 244

Modifications to Part II, Section II of Appendix 27

MOD

ARTICLE 2

Frequency Allotment Plan for MWARA, VOLMET and RDARA

ADD

ARTICLE 3

Frequency Allotment Plan in channels
designated for World-Wide Use.

ADD

General Notes:

ADD 27/...

A frequency allotment in a channel designated for world-wide use shows the frequency to be used by an aeronautical station to be located in a country for serving this country or a group of countries

[ADD 27/...

Class of stations:

Class of emission:

Power:

Hours]

[ADD 27/...

TABLE]

Note to Committee 7 from Committee 6

Article 3 on page B 2-18 of Document No. 245 is to be renumbered as Article 4.

ANNEX B to Document No. 244

RESOLUTION No. []

relating to the procedure for providing the initial
entries in Section II, Article 3, of Appendix 27 Aer 2

The World Administrative Radio Conference on the Aeronautical
Mobile (R) Service, Geneva, 1978,

considering

- a) that the frequencies designated in No. 27/189 for world-wide
use referred to in No. 27/194A should be used on a planned basis;
- b) that it was not possible in the time available for the
Conference to establish an allotment plan for these frequencies;
- c) that any procedure applied should be based on the equality
of right of countries to operate on these frequencies;
- d) that certain Administrations may wish to apply the provisions
of No. 27/20 for the use of these frequencies;

resolves

- 1. that the Administrations which contemplate bringing into
operation frequency assignments for the purpose described in No. 27/194A
shall send to the IFRB before 1.1.1980 the information listed in Appendix [X];
- 2. that on 1.3.1980 the IFRB shall examine simultaneously all the
proposed allotments which it has received with a view to determining probable
incompatibilities, using for this purpose the technical data contained in
Appendix 27 Aer 2 and, where necessary, the IFRB Technical Standards;
- 3. that if the IFRB finds that there is a probability of incompatibility
among certain proposed allotments it shall study the matter with a view to
improving the sharing possibilities taking into account any prior coordination
between the Administrations concerned;
- 4. that the Board shall include in the results of the study the
names of the Administrations among which coordination is still required and
any appropriate recommendations and shall communicate these results before
1.6.1980 to the Administrations having submitted proposed allotments in
"resolves 1." ;

5. if an Administration considers that the modifications to its proposed allotments as suggested by the IFRB are not acceptable, it shall attempt to resolve the resultant difficulties by consulting with the other Administrations concerned, where necessary, with the assistance of the IFRB;
6. that Administrations shall re-submit their proposed allotments to the IFRB by 31.12.1981, where necessary modified as suggested by the Board or as a result of coordination between Administrations concerned;
7. the IFRB shall enter as allotments, received in pursuance of paragraph 6 above, in Article 3, Section II, Appendix 27 Aer 2 , and it shall apply the provisions of No. [V] ;
8. the provisions of Article 9C shall apply with effect from 31.12.1981; however, the time limits specified in [T] shall apply from 1.2.1983.

Note to the Editorial Committee from Committee 6

It is suggested that consideration be given to the restructuring Appendix 27 with a view to elimination of the "Sections" in titles.

A N N E X C

ARTICLE 9C

Procedure for bringing up to date the Frequency
Allotments in channels designated for
worldwide use by the Aeronautical Mobile (R) Service
in Article 3, Section II, of Appendix 27 Aer 2

[A] § 1. (1) Before notifying to the International Frequency Registra-
tion Board or bringing into use at any aeronautical station a
frequency assignment in accordance with No. 27/194A but
not covered by an allotment in Article 3, Section 2,
Part II of Appendix 27 Aer 2, an administration which

- a) intends to establish an aeronautical station
using these frequencies and has no allotment
in Article 3, Section 2, Part II of
Appendix 27 Aer 2 or
- b) intends to expand its service and requires
an additional allotment

shall send the information listed in Appendix [X]¹
to the Board not earlier than two years in the case
of a) above, or not earlier than six months in the
case of b) above, before the projected date of bringing
into service of the planned service but in any case
not later than three months before that date.

[B] (2) The Board shall publish normally within
ninety days the information sent under No.
[A] in a special section of the I.F.R.B. weekly circular together with
such apparent incompatibilities between the proposed allotment which
is the subject of the publication and any other existing or proposed
allotments which the Board can indicate. The Board shall also indicate
any information of a technical nature and make suggestions as it may
be able to offer with a view to avoiding these incompatibilities.

¹ Appendix [X] is under preparation by the
Chairmen of Committees 6 and 4.

[C] (3) If it is requested by any administration, particularly by an administration of a country in need of special assistance, and if the circumstances appear to warrant, the Board, using such means at its disposal as are appropriate in the circumstances, shall render the following assistance:

- a) indication of a suitable channel or channels for the service projected by the administration before that administration submits the information for publication;
- b) carry out the procedure for which provision is made in No. / D /
- c) any other assistance of a technical nature for completion of the procedure in the present Article.

[D] § 2. (1) At the same time as sending the information listed in Appendix / X /¹ to the Board for publication, an administration shall seek the agreement of the administrations having an allotment in the same channel as the proposed allotment. A copy of the relevant correspondence shall be sent to the Board.

[E] (2) Any administration which, upon examining the information published by the I.F.R.B., considers that its existing services or services planned within the time limits mentioned in No. / A / would be affected, shall have the right to be brought into the procedure undertaken pursuant to No. / D /.

[F] § 3. (1) An administration which receives a request under No. / D / shall acknowledge receipt thereof immediately by telegram. If no acknowledgement is received within thirty days after the date of the I.F.R.B. weekly circular containing the information published under No. / B / the administration seeking agreement shall dispatch a telegram requesting acknowledgement, to which the receiving administration shall reply within a further period of fifteen days.

¹ Appendix / X / is under preparation by the Chairmen of Committees 6 and 4.

[G] (2) Upon receipt of the request under No. D an administration shall, having regard to the proposed date of bringing into use of the assignment(s) corresponding to the allotment for which agreement was requested, promptly examine the matter with regard to harmful interference which would be caused to the services rendered by its aeronautical station(s) :

- a) using a frequency assignment corresponding to an allotment appearing in Article 3, Section 2, Part II of Appendix 27 Aer 2, or
- b) to be brought into service in conformity with an allotment appearing in Article 3, Section 2, Part II of Appendix 27 Aer 2 within the time limit prescribed in No. T , or
- c) to be brought into service within the time limit prescribed in No. T in conformity with a proposed allotment for which the information has been submitted to the I.F.R.B. under No. A for publication under No. B .

[H] (3) Any administration which receives a request under No. D and which considers that the proposed use of a channel will not cause harmful interference to the services rendered by its aeronautical stations as outlined in No. G shall, as soon as possible and not later than sixty days from the date of the relevant IFRB weekly circular, notify its agreement to the administration seeking agreement.

[I] (4) Any administration which receives a request under No. D and which considers that the proposed use of a channel may cause harmful interference to the services rendered by its aeronautical stations as outlined in No. G shall inform the administration concerned of

the reasons for its disagreement as soon as possible and not later than sixty days from the date of the relevant I.F.R.B. weekly circular and shall furnish any information and suggestions with a view to reaching a satisfactory solution of the problem. The administration seeking agreement shall try, as far as possible, to adjust its requirements according to the comments received.

[J] (5) In a case where the administration seeking agreement has no allotment in the band concerned, the administration(s) with which agreement is sought shall, in consultation with the requesting administration, explore all means of meeting the requirement of the requesting administration.

[K] § 4. (1) An administration seeking agreement may at any time request the Board to endeavour to obtain such agreement.

[L] (2) Either the administration seeking agreement or an administration with which agreement is sought, or the Board, may request additional information which it may require in studying any problem relating to this agreement.

[M] (3) Where an administration fails to reply within thirty days of the Board's request for agreement in pursuance of No. [K] it shall be deemed that the administration with which agreement was sought has undertaken, once the projected allotment is included in Article 3, Section 2, Part II of Appendix 27 Aer 2

- a) that no complaint will be made in respect of any harmful interference which may be caused to the services rendered by its aeronautical stations by the use of assignments in accordance with the allotment for which agreement was requested and

- b) that its existing or projected aeronautical stations will not cause harmful interference to the use of assignments in conformity with the allotment for which agreement was requested.

The Board shall enter a remark in the Remarks Column of the Master Register for each assignment covered by the allotment in question, indicating that this assignment does not benefit from the provisions of No. 607 of the Radio Regulations with respect to assignments of the administration seeking the agreement.

[N]

(4) The Board shall examine the proposed allotment with respect to the probability of harmful interference which it may receive from an allotment in the Plan of the administration which failed to reply or which indicated disagreement without supplying the reasons: if the finding is favourable and where the application of the present procedure with respect to the other administrations concerned permits, it enters the proposed allotment in Article 3, Section 2, Part II of Appendix 27 Aer 2.

[O]

(5) In the event of an unfavourable finding resulting, the Board informs the administration concerned of the result of the examination: if the administration insists, and where the application of the present procedure with respect to the other administrations concerned permits, it enters the proposed allotment in Article 3, Section 2, Part II of Appendix 27 Aer 2.

[P]

(6) In the case of continuing disagreement the Board shall examine the proposed allotment from the point of view of harmful interference which may be caused to the services rendered by the stations of the administration having declared its disagreement. In the case where the Board's finding is favourable and where the application of the present procedure with respect to the other administrations concerned permits, it enters the proposed allotment in Article 3, Section 2, Part II of Appendix 27 Aer 2.

[Q] (7) If, after the examination under No. [P] the Board reaches an unfavourable finding, it shall then examine the proposed allotment from the point of view of harmful interference which may be caused to the services on all the various channels. Should the Board reach an unfavourable finding in each case, it shall determine the channel which is the least affected and, if so requested by the administration seeking agreement, it shall enter the proposed allotment in this channel in Article 3, Section 2, Part II of Appendix 27 Aer 2.

[R] § 5. An administration seeking agreement for a proposed allotment shall inform the Board of the results of its consultations with the administrations concerned. When the Board finds that the procedure prescribed in the present Article has been applied with respect to each administration concerned the Board shall publish its finding in a special section of the I.F.R.B. weekly circular and, as the case may be, bring Article 3, Section 2, Part II of Appendix 27 Aer 2 up to date.

[S] § 6. Notwithstanding the above provisions and if the circumstances justify, an administration may, in exceptional circumstances, notify to the Board for provisional entry in the Master Register an assignment which is not covered by an allotment in Article 3, Section 2, Part II of Appendix 27 Aer 2.

It shall, however, begin forthwith the procedure prescribed in the present Article.

[T] § 7. When, within twelve months from the date of the inclusion of the allotment in Article 3, Section 2, Part II of Appendix 27 Aer 2, the Board does not receive a notice of a first frequency assignment corresponding to this allotment, or where the first notified frequency assignment has not been brought into use within the time limits prescribed in the Radio Regulations, before proceeding with the deletion of the allotment from Article 3, Section 2, Part II of Appendix 27 Aer 2, it shall consult with the administration concerned on the appropriateness of such a deletion and of publishing this information in connection with bringing Article 3, Section 2, Part II of Appendix 27 Aer 2 up to date. However, in the case where the Board, in the light of a request from the administration concerned, finds that exceptional circumstances warrant an extension of this period, the extension shall in no case exceed six months, except in the case of an administration which has no aeronautical station in service in which case the period may be extended to eighteen months.

[U] § 8. Any administration in whose name an allotment is shown in Article 3, Section 2, Part II of Appendix 27 Aer 2 and which has a need to replace this allotment by another allotment in the same frequency band with a view to improving its service, shall apply the procedure described in the present Article. When that administration arrives at a positive result in applying this procedure, the Board, at its request, shall replace the existing allotment in Article 3, Section 2, Part II of Appendix 27 Aer 2 by the proposed allotment.

[V] § 9. The Board shall maintain an up-to-date master copy of Article 3, Section 2, Part II of Appendix 27 Aer 2 resulting from the application of this procedure. It shall prepare in a suitable form, for publication by the Secretary-General, the whole or part of the revised version of Article 3, Section 2, Part II of Appendix 27 Aer 2 as and when the circumstances justify and in any case once annually.

AERONAUTICAL (R) CONFERENCE
GENEVA, 1978

E

B.2

PLENARY MEETING2nd SERIES OF TEXTS SUBMITTED BY THE
EDITORIAL COMMITTEE TO THE PLENARY MEETING

The following texts are submitted to the Plenary Meeting for first reading:

<u>Source</u>	<u>Document No.</u>	<u>Title</u>
C.7	-	Partial Revision of the RR
C.5	220	Appendix 27 - Part I - Section 1
C.6	204	
C.4	181	Appendix 27 - Part I - Section 2
C.6	204	Appendix 27 - Part II - Section 2, Art. 3
C.7	-	Final Protocol
C.6	224	Recommendations CC and DD

C.J. DHENIN
Chairman of the
Editorial Committee

Annex: 23 pages



PARTIAL REVISION OF THE RADIO REGULATIONS ¹

The Plenipotentiary Conference, Malaga-Torremolinos, 1973, at its 25th Plenary Meeting, approved the principle of convening a World Administrative Radio Conference on the Aeronautical Mobile (R) Service subject to receipt of a sufficient number of requests from administrations of Members of the Union.

At its 29th Session (1974) the Administrative Council examined requests to convene the Conference from four countries Members of the Union. It also took note of a letter from the Secretary-General of the International Civil Aviation Organization (ICAO) on this question. The Administrative Council instructed the Secretary-General to request Members to inform him of their views.

At the 30th Session (1975) the Administrative Council examined the Secretary-General's report on this enquiry and, after consulting the Members of the Union, adopted Resolution No. 763 containing the agenda of the Conference and stipulating that it should meet in Geneva on 7 March 1977 for a maximum duration of four weeks.

At its 31st Session (1976), having examined the budget and in view of financial difficulties, the Administrative Council proposed to Members of the Union that the Conference be postponed until 6 February 1978, that its duration should not exceed four weeks and that the agenda item concerning the re-arrangement of the Radio Regulations be transferred to the World Broadcasting-Satellite Administrative Radio Conference (Geneva, 1977). Those proposals were approved by the Members of the Union.

#

#

¹ Namely the Radio Regulations, Geneva, 1959, as partially revised by the Extraordinary Administrative Radio Conference to Allocate Frequency Bands for Space Radiocommunication Purposes (Geneva, 1963), by the Extraordinary Administrative Radio Conference for the Preparation of a Revised Allotment Plan for the Aeronautical Mobile (R) Service (Geneva, 1966), by the World Administrative Radio Conference to Deal with Matters Relating to the Maritime Mobile Service (Geneva, 1967) by the World Administrative Radio Conference for Space Telecommunications (Geneva, 1971) and by the World Maritime Administrative Radio Conference (Geneva, 1974).

The World Administrative Radio Conference on the Aeronautical Mobile (R) Service accordingly convened on the appointed date, and considered and revised the relevant parts of the Radio Regulations in conformity with its agenda. Particulars of this revision are given in Annexes 1 and 2 hereto.

The revised provisions of the Radio Regulations shall form an integral part of the Radio Regulations which are annexed to the International Telecommunication Convention. These revised provisions shall come into force on and from the [1st of September 1979], except for the Frequency Allotment Plan for the Aeronautical Mobile (R) Service contained in Appendix 27 Aer2 which shall come into force at [hours G.M.T. on the 1st of February 1983]. The provisions of the Radio Regulations, which are cancelled, superseded or modified by these revised provisions shall be abrogated on the dates of the entry into force of the revised provisions.

The delegates signing this revision of the Radio Regulations hereby declare that, should an administration make reservations concerning the application of one or more of the revised provisions of the Radio Regulations, no other administration shall be obliged to observe that provision or those provisions in its relations with that particular administration.

#

#

Members of the Union shall inform the Secretary-General of their approval of the revision of the Radio Regulations by the World Administrative Radio Conference on the Aeronautical Mobile (R) Service (Geneva, 1978). The Secretary-General will inform Members of the Union regarding receipt of such notifications of approval as they are received.

In witness whereof the delegates of the Members of the Union represented at the World Administrative Radio Conference on the Aeronautical Mobile (R) Service (Geneva, 1978) have signed in the names of their respective countries this revision of the Radio Regulations in a single copy which will remain in the archives of the International Telecommunication Union and of which a certified copy will be delivered to each Member of the Union.

Done at Geneva, March 1978.

ANNEX 2

Revision of Appendix 27 to the Radio Regulations

Appendix 27 to the Radio Regulations shall be amended as follows:

MOD

APPENDIX 27 Aer2

to the Radio Regulations

**Frequency Allotment Plan for the Aeronautical Mobile
(R) Service and Related Information**

(See Article 7 of the Radio Regulations)

PART I

General Provisions**Section 1****Definitions**

NOC 27/1
to
27/8

MOD 27/9 9. A family of Frequencies in the Aeronautical Mobile (R) Service contains two or more frequencies selected from different aeronautical mobile (R) bands and is intended to permit communication at any time within the authorized area of use (see Nos. 27/189 to 27/207) between aircraft stations and appropriate aeronautical stations.

Section II

NOC

**Technical and Operational Principles used for the
Establishment of the Plan of Allotment of Frequencies
in the Aeronautical Mobile (R) Service**

MOD

A. Channel Characteristics and utilization

NOC

1. Frequency Separation

MOD

27/10

- 1.1 The frequency separation between carrier (reference) frequencies shall be 3 kHz. This is adequate to permit communications using the classes of emission referred to in Nos. **27/49-27/52** in the frequency bands between 2850 kHz and 17 970 kHz allocated exclusively to the aeronautical mobile (R) service. The carrier (reference) frequency of the channels in the Plan shall be an integral multiple of 1 kHz.

MOD

27/11

- 1.2 For radiotelephone emissions the audio frequencies will be limited to between 300 and 2700 Hz and the occupied bandwidth of other authorized emissions will not exceed the upper limit of A3J emissions. In specifying these limits, however, no restriction in their extension is implied in so far as emissions other than A3J are concerned, provided that the limits of unwanted emissions are met (see ADD **27/66A** and ADD **27/66B**).

Note.— For aircraft and aeronautical station transmitter types first installed before [1 February 1983] the audio frequencies will be limited to 3000 Hz.

ADD

27/11A

- 1.3 On accounting the possibility of interference, a given channel should not be used in the same allotment area for radiotelephony and data transmissions.

MOD

27/12

- 1.4 The use of channels indicated in **27/16** for the various classes of emissions other than A3J and A2H will be subject to special arrangements by the Administrations concerned and affected in order to avoid harmful interference which may result from the simultaneous use of the same channel for several classes of emission.

SUP

27/13

- MOD 27/14 1.5 To preclude the possibility of interference, adjacent channels in the list of frequencies in No. 27/16 have not as a rule been allotted to the same MWARA, RDARA or VOLMET areas. However, to satisfy particular needs in the assignment of adjacent channels derived from the table (No. 27/16), special arrangements may be made by the administrations concerned.
- MOD 27/15 1.6 The arrangements contemplated in No. 27/12 and No. 27/14 should be made under the Articles of the International Telecommunication Convention and the Radio Regulations entitled "Special Arrangements".
- MOD 2. Frequencies allotted
- MOD 27/16 The list of carrier (reference) frequencies allotted in the bands allocated exclusively to the aeronautical mobile (R) service, on the basis of the frequency separation provided for under No. 27/10, will be found in the following table: ¹
- ADD 27/16.1 ¹ To calculate the assigned frequency from a carrier (reference) frequency given in the table, reference should be made to No. 27/72.

kHz							
<u>2850 - 3025</u>		<u>3400 - 3500</u>	<u>4650 - 4700</u>	<u>5480 - 5680</u>		<u>6525 - 6685</u>	
2851	2953	3401	4651	5481	5583	6526	6628
2854	2956	3404	4654	5484	5586	6529	6631
2857	2959	3407	4657	5487	5589	6532	6634
2860	2962	3410	4660	5490	5592	6535	6637
2863	2965	3413	4663	5493	5595	6538	6640
2866	2968	3416	4666	5496	5598	6541	6643
2869	2971	3419	4669	5499	5601	6544	6646
2872	2974	3422	4672	5502	5604	6547	6649
2875	2977	3425	4675	5505	5607	6550	6652
2878	2980	3428	4678	5508	5610	6553	6655
2881	2983	3431	4681	5511	5613	6556	6658
2884	2986	3434	4684	5514	5616	6559	6661
2887	2989	3437	4687	5517	5619	6562	6664
2890	2992	3440	4690	5520	5622	6565	6667
2893	2995	3443	4693	5523	5625	6568	6670
2896	2998	3446	4696	5526	5628	6571	6673
2899	3001	3449	(16) CHNLS	5529	5631	6574	6676
2902	3004	3452	*4699	5532	5634	6577	6679
2905	3007	3455		5535	5637	6580	6682
2908	3010	3458		5538	5640	6583	(53) CHNLS
2911	3013	3461	<u>5450 - 5480</u>	5541	5643	6586	
2914	3016	3464	REGION 2	5544	5646	6589	
2917	3019	3467	5451	5547	5649	6592	
2920	3023(R/OR)	3470	5454	5550	5652	6595	
2923	(58) CHNLS	3473	5457	5553	5655	6598	
2926		3476	5460	5556	5658	6601	
2929		3479	5463	5559	5661	6604	
2932		3482	5466	5562	5664	6607	
2935		3485	5469	5565	5667	6610	
2938		3488	5472	5568	5670	6613	
2941		3491	5475	5571	5673	6616	
2944		3494		5574	5676	6619	
2947		3497	(9) CHNLS	5577	5680(R/OR)	6622	
2950		(33) CHNLS	*5478	5580	(67) CHNLS	6625	

* Guard Band
B.2-6

<u>8815 - 8965</u>	<u>10005 - 10100</u>	<u>11275 - 11400</u>	<u>13260 - 13360</u>	<u>17900 - 17970</u>
8816 8921	10006	11276 11384	13261	17901
8819 8924	10009	11279 11387	13264	17904
8822 8927	10012	11282 11390	13267	17907
8825 8930	10015	11285 11393	13270	17910
8828 8933	10018	11288 11396	13273	17913
8831 8936	10021	11291 (41) CHNLS	13276	17916
8834 8939	10024	11294 *11399	13279	17919
8837 8942	10027	11297	13282	17922
8840 8945	10030	11300	13285	17925
8843	10033	11303	13288	17928
8846 8948	10036	11306	13291	17931
8849 8951	10039	11309	13294	17934
8852 8954	10042	11312	13297	17937
8855 8957	10045	11315	13300	17940
8858 8960	10048	11318	13303	17943
8861 (49) CHNLS	10051	11321	13306	17946
8864 *8963	10054	11324	13309	17949
8867	10057	11327	13312	17952
8870	10060	11330	13315	17955
8873	10063	11333	13318	17958
8876	10066	11336	13321	17961
8879	10069	11339	13324	17964
8882	10072	11342	13327	17967
8885	10075	11345	13330	(23) CHNLS
8888	10078	11348	13333	
8891	10081	11351	13336	
8894	10084	11354	13339	
8897	10087	11357	13342	
8900	10090	11360	13345	
8903	10093	11363	13348	
8906	10096	11366	13351	
8909	(31) CHNLS	11369	13354	
8912	*10099	11372	13357	
8915		11375	(33) CHNLS	
8918		11378		
		11381		

* Guard Band

SUP 27/17

SUP 27/18

SUP 27/19

MOD 27/20 4. The International Civil Aviation Organization (ICAO) coordinates radiocommunications of the aeronautical mobile (R) service with international aeronautical operations and this Organization should be consulted in all appropriate cases in the operational use of the frequencies in the Plan.

.....

MOD 27/23 7. The coordination described in No. 27/20 shall be where appropriate and desirable for the efficient utilization of the frequencies in question, and especially when the procedures of No. 27/22 are unsatisfactory.

NOC

B. Interference Range ContoursMOD 27/24 1. General provisionsADD 27/24A 1.1 Service range

Due to factors such as the power of the transmitter, propagation loss, noise level, etc., there is a limit to the distance at which reliable communications can be effected between an aeronautical station and an aircraft station. This limiting distance, based on the weakest path, is the service range. The boundary of the air route area is often assumed to be the limiting distance.

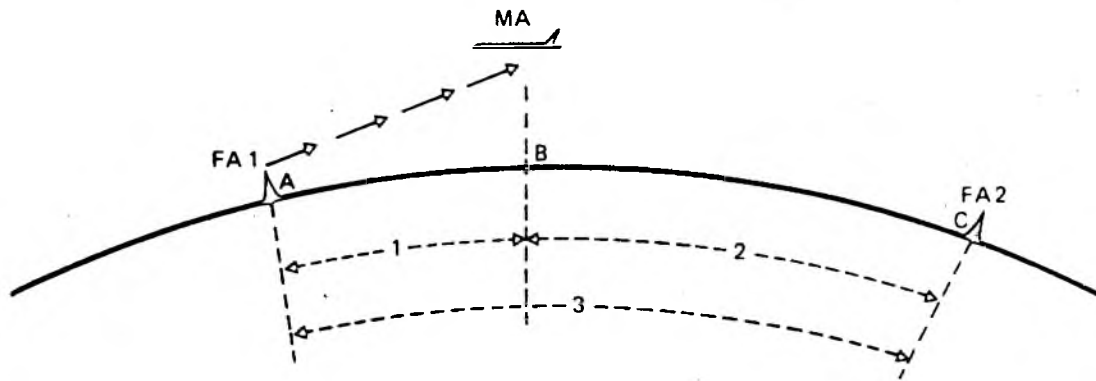
ADD 27/24B 1.2 Interference range

This is the minimum distance from the limit of the service range of a wanted station to a potentially interfering station needed to produce a protection ratio of 15 dB. This protection ratio is between the wanted signal at an aircraft station at the limit of the service range and the signal from a potentially interfering aeronautical station operating on the same frequency. The interference range has been calculated for different frequencies indicated on the data tables contained in Nos. 27/39-27/48 for day and night conditions, for median latitudes, for conditions of median sunspot activity and for a mean effective radiated power of 1 kW at the aeronautical station.

ADD 27/24C 1.3 Repetition distance

This is the distance at which a frequency may be successfully shared and is equal to the sum of the service range and the interference range.

ADD 27/24D 1.4 Figure 1 illustrates the use of the concept of interference range in frequency planning through the determination of repetition distance.



FA1 = aeronautical station in communication with aircraft station MA
 FA2 = aeronautical station in communication with aircraft stations other than MA
 MA = aircraft station in communication with aeronautical station FA1
 1 = service range AB
 2 = interference range CB
 3 = repetition distance AC

FIGURE 1

Service range, interference range, repetition distance

- ADD 27/24E 1.5 The transparencies associated with this Appendix show, for the frequencies stated, the interference range described in No. 27/24B between an interfering aeronautical station and an aircraft station operating at the limit of its service range. Because of the variability of propagation conditions not only from hour to hour within the daytime and nighttime periods but also from day to day, with season, with solar activity level and geographic location, the 15 dB protection ratio may be expected to have marked variations and accordingly a greater protection may be available much of the time, especially when the aircraft is not operating at the limit of its service range.
- ADD 27/24F 1.6 Supplementary information on service range, interference range and repetition distance, as well as on the use of the transparencies can be found in the technical documentation issued by the IFRB (such as texts of the IFRB Seminar on frequency management and use of the frequency spectrum; Doc. No. 11).]
- MOD 27/25 1.[7] Two types of transparencies are provided for use respectively with the Mercator projection world maps and the Lambert azimuthal equal area projection maps for the polar areas. The Mercator projection transparencies encompass the area between latitude 60° North and 60° South. The transparencies associated with the Polar area projections encompass the areas north of latitude 30° North and south of latitude 30° South. The Mercator projection overlaps the Polar projection maps between latitudes 30° - 60° North and 30° - 60° South. This overlap is intended to provide continuity between transparencies of the two projections.

NOC 2. Type of maps used

MOD 27/26 The transparencies mentioned in Nos. 27/24E and 27/25, can be used only on a world or polar map of the projection and scales given on each transparency and will not be suitable for use on any other projection or scale. The world and polar maps associated with this Appendix, depicting MWARA, RDARA and VOLMET areas, are to the correct scale so that the transparencies carrying the interference range contours can be directly used on these maps. The auroral zones are marked on the polar maps.

NOC 3. Change of Scale of Projection

NOC 27/27

NOC 27/28

NOC 27/29

NOC 4. Sharing conditions between areas

ADD 4.1 Frequency bands 3-11.3 MHz

MOD 27/30 4.1.1 The transparencies are constructed on the basis of the following sharing conditions:

Areas	Bands between : MHz	Sharing conditions
MWARA or VOLMET area to MWARA or VOLMET area	3 - 6.6 9 - 11.3	night propagation day propagation Note : 6.6 MHz and 5.6 MHz sharing conditions are considered to be the same
MWARA or VOLMET area to RDARA	3 - 5.6 6.6 - 11.3	night propagation day propagation
RDARA TO RDARA	3 - 4.7 5.6 - 11.3	night propagation day propagation

MOD 27/31 4.1.2 The additional "Day" contours included for 3 MHz, 3.5 MHz and 4.7 MHz are for determining daylight sharing possibilities.

ADD 4.2 Frequency bands 13 and 18 MHz

ADD 27/31A 4.2.1 The revised Frequency Allotment Plan for the 13 and 18 MHz bands is based on day time protection only. This results in the following sharing possibilities:

- ADD 27/31B 4.2.2 For the 13 MHz band, the repetition factor is at least 2 whilst for 18 MHz it is 3. It is to be noted that the longitudinal separation might be decreased to allow for a repetition of 3 (at 13 MHz) and 4 (at 18 MHz), taking into account operational and local circumstances;
- ADD 27/31C 4.2.3 The sharing takes into account the likely locations of the aeronautical stations rather than the area boundaries.
- MOD 5. Method of use of the transparencies for the bands 3-11.3 MHz
- MOD 27/32 5.1 Take the appropriate MWARA, RDARA or VOLMET area map associated with this Appendix and select the transparency for the frequency order and sharing conditions under consideration.
- Note. - Transparencies are equally applicable for MWARA, RDARA and VOLMET world-wide use.
- MOD 27/33 5.2 The equal area projections are applicable in the polar areas north of 60°N and south of 60°S ; and the Mercator projections are applicable between 60°N and 60°S .
- MOD 27/34 5.3 Place the centre of the transparency (i.e. the intersection of the axis of symmetry and the latitude line) over the boundary of the area (use the reception area boundary in the case of VOLMET) at the point on the boundary nearest to the potentially interfering transmitter or at the location of the interfering transmitter. Note the latitude of the selected point and use the interference range contour corresponding to this latitude.
- MOD 27/35 5.4 A transmitter located at any point outside the contour will result, as defined in No. 27/24B, in a protection ratio of better than 15 dB.
- MOD 27/36 5.5 A transmitter located at any point inside the contour will result in a protection ratio of less than 15 dB. However, if the transmitter is located inside the contour but the propagation path traverses an auroral zone, it is assumed that the signal attenuation within this zone will result in a protection ratio of better than 15 dB.
- MOD 27/37 [Concerns the Spanish text only]
- MOD 27/38 5.7 For either the north or south polar areas, the transparency should be positioned so that the north-south line (terminated with an arrow) is paralled to the meridian of longitude, with the arrow pointing towards the pole.
- NOC 27/39
to
27/48

C. Classes of emission and power

NOC 1. Classes of emission

MOD 27/49 In the aeronautical mobile (R) service the use of emissions such as those listed below is permissible subject to compliance with the special provisions applicable to each case and provided that such use does not cause harmful interference to other users of the channel concerned.

MOD 27/50 1.1 Telephony - Amplitude modulation:

- double sideband (A3) *
 - single sideband, full carrier (A3H) *
 - single sideband, suppressed carrier (A3J)
- * A3 and A3H to be used only on 3023 kHz and 5680 kHz and in accordance with [Resolution Aer2 - (A), paragraph 4.4]

NOC 1.2 Telegraphy (including automatic data transmission)MOD 27/51 1.2.1 Amplitude modulation:

- telegraphy without the use of a modulating audio frequency (by on-off keying) (A1) **
- telegraphy by the on-off keying of an amplitude modulating audio frequency or audio frequencies or by the on-off keying of the modulated emission and including selective calling, single sideband, full carrier (A2H)
- multichannel voice frequency telegraphy, single sideband, suppressed carrier (A7J)
- other transmission such as automatic data transmission, single sideband, suppressed carrier (A9J)

MOD 27/52 1.2.2 Frequency modulation

- telegraphy by frequency shift keying without the use of a modulating audio frequency, one of two frequencies being emitted at any instant (F1) **

** A1 and F1 are permitted provided they do not cause harmful interference to the classes of emission A2H, A3J, A7J and A9J. In addition, A1 and F1 emissions shall be in accordance with the provisions in 27/65 to

27/66B and care should be taken to place these emissions at or near the centre of the channel. However, a modulating audio frequency is permitted with single sideband transmitters, where the carrier is suppressed in accordance with No. 27/63.

SUP 27/53

NOC 2. Power

MOD 27/54 2.1 Unless otherwise specified in Part II of this Appendix, the peak envelope powers supplied to the antenna transmission line shall not exceed the maximum values indicated in the table below; the corresponding peak effective radiated powers being assumed to be equal to two-thirds of these values:

Class of emission	Stations	Maximum peak envelope power
A2H, A3J, A7J, A9J A3*), A3H*) (100 μ modulation)	Aeronautical stations Aircraft stations	6 kW 400 W
Other emissions such as A1, F1	Aeronautical stations Aircraft stations	1.5 kW 100 W

*) A3 and A3H to be used only on 3 023 kHz and 5 680 kHz, and in accordance with / Resolution Aer2 - (A), paragraph 4.4_7.

MOD 27/55 2.2 It is assumed that the maximum peak envelope powers specified above for aeronautical stations will produce the mean effective radiated power of 1 kW (for emissions such as A1 and F1) used as a basis for the interference range contours.

MOD 27/56 2.3 In order to provide satisfactory communication with aircraft, aeronautical stations serving MWARA, VOLMET [and world-wide areas] may exceed the power limits specified in No. 27/54. [Except in the case of 3023 kHz and 5680 kHz which are subject to special provisions No. 27/196 and 27/201]. In each such case, the administration having jurisdiction over the aeronautical station shall note RR 694 and ensure:

NOC 27/57

NOC 27/58

NOC 27/59

NOC 27/60

NOC 27/61

MOD 27/62 2.4 It is recognized that the power employed by aircraft transmitters may, in practice, exceed the limits specified in No. 27/54. However, the use of such increased power (which normally should not exceed 600 W Pp) shall not cause harmful interference to stations using frequencies in accordance with the technical principles on which the Allotment Plan is based.

ADD D. Limits to the power levels of unwanted emissions

MOD 1. Technical provisions relating to the use of single-sideband emissions.

MOD 27/63 1.1 Definitions of carrier modes:

Carrier mode	Level N (dB) of the carrier with respect to peak envelope power
Full carrier (for example A2H)	$0 \geq N \geq -6$
Suppressed carrier (for example A3J)	Aircraft Stations - $26 > N$ Aeronautical Stations - $40 > N$

SUP 27/64

MOD 2. Tolerance for levels of emission outside the necessary bandwidth.

MOD 27/65 2.1 In a single-sideband transmission, the mean power of any emission supplied to the antenna transmission line of an aeronautical or aircraft station on any discrete frequency, shall be less than the mean power (Pm) of the transmitter in accordance with the following table:

MOD 27/66 2.2 For aircraft station transmitter types and for aeronautical station transmitters first installed before [1 February 1983]:

Frequency separation Δ from the assigned frequency kHz	Minimum attenuation below mean power (P_m) dB
$2 \leq \Delta < 6$	25
$6 \leq \Delta < 10$	35
$10 \leq \Delta$	Aircraft Stations 40 Aeronautical Stations $43 + 10 \log_{10} P_m \text{ (watts)}$

Note. - All transmitters first placed in operation after [1 February 1983] shall comply with the specifications contained in 27/66B.

ADD 27/66A 2.3 In a single-sideband transmission, the peak envelope power (P_p) of any emission supplied to the antenna transmission line of an aeronautical or aircraft station on any discrete frequency, shall be less than the peak envelope power (P_p) of the transmitter in accordance with the following table.

ADD 27/66B 2.4 For aircraft station transmitters first installed after [1 February 1983] and for aeronautical station transmitters in use after [1 February 1983].

Frequency separation Δ from the assigned frequency kHz	Minimum attenuation below peak envelope power (P_p) dB
$1.5 \leq \Delta < 4.5$	30
$4.5 \leq \Delta < 7.5$	38
$7.5 \leq \Delta$	Aircraft Stations 43 Aeronautical Stations *)

*) For transmitter powers up to and including 50 watts
 $43 + 10 \log_{10} P_p \text{ (watts)}$

For transmitter powers more than 50 watts, the attenuation shall be at least 60 dB.

SUP 27/67
to
27/71

ADD

E. Other technical provisions

MOD

1. Assigned frequencies

MOD

27/72

1.1 For single-sideband emissions, except class of emission A2H, the assigned frequency shall be at a value 1400 Hz above the carrier (reference) frequency.

ADD

27/72A

1.2 Aeronautical stations equipped with selective calling systems shall indicate in Supplementary Information column of the Form of Notice (see Appendix 1 to the Radio Regulations) the class of emission A2H.

ADD

27/72B

1.3 For classes of emission A1 and F1 the assigned frequency shall be chosen in accordance with the provisions of the footnote to 27/51 and 27/52.

MOD

27/73

1.4 Stations employing double-sideband emissions (A3) shall operate with an assigned frequency at 3023 kHz or 5680 kHz (see 27/50).

PART 11

Section II

ADD

ARTICLE 3

Frequencies for common use

ADD 27/208 The carrier (reference) frequencies 3023 kHz and 5680 kHz are intended for common use on a world-wide basis.

ADD 27/209 The use of these frequencies in any part of the world is authorized 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;

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

a) with mean power limited to a value of not more than 20 watts in the antenna circuit;

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

c) the power of aeronautical stations which use these frequencies in accordance with the above conditions may be increased to the extent necessary to meet certain operational requirements subject to coordination between the administrations directly concerned and those whose services may be adversely affected.

ADD 27/210 Notwithstanding these provisions, the frequency 5680 kHz may also be used at aeronautical stations for communication with aircraft stations when other frequencies of the aeronautical stations are either unavailable or unknown. However, this use shall be restricted to such areas and conditions that harmful interference cannot be caused to other authorized operations of stations in the aeronautical mobile service.

ADD 27/211 Additional particulars regarding the use of these channels for the above purposes may be recommended by the meetings of ICAO.

ADD 27/212 Frequencies 3023 kHz and 5680 kHz may also be used by stations of other mobile services participating in co-ordinated air-surface search and rescue operations, including communications between these stations and participating land stations. Aeronautical stations are authorized to use these frequencies to establish communications with such stations.

ADD 27/213 These channels may be used for A1 or A3 emissions, in accordance with special arrangements. Such channels shall not be subdivided.

ADD 27/214 All stations participating directly in co-ordinated search/rescue operations and using frequencies 3023 kHz and 5680 kHz shall transmit solely on the upper single sideband (see also [MOD]27/73) except in the cases provided for in Numbers 27/50 and 27/73.

Emissions of Class A3 and A3H may be used in accordance with [Resolution Aer2 - (A), paragraph 4.4)].

FINAL PROTOCOL

At the time of signing the Final Acts of the World Administrative Radio Conference on the Aeronautical Mobile (R) Service, Geneva, 1978, the undersigned delegates take note of the following statements made by signatory delegations:

[Documents No. and No. give a list of the Conference documents in which the statements in question are reproduced].

RECOMMENDATION No. Aer2 - CC

**relating to the inclusion of the band
[21,870-22,000] kHz in the Frequency
Allotment Plan for the aeronautical mobile
(R) service (Appendix 27 Aer - 2
to the Radio Regulations)**

The World Administrative Radio Conference on the
Aeronautical Mobile (R) Service, Geneva, 1978,

considering

a) that there is a need to add a further
frequency band to Appendix 27 Aer - 2, to provide world-wide
frequencies suitable for long-range communications and to
reduce congestion in the bands currently used;

b) that there is a suitable band at
[21,870-22,000] kHz at present allocated to the aeronautical
fixed and aeronautical mobile (R) services;

c) that if the band were to be allocated
exclusively to the aeronautical mobile (R) service it could
be incorporated into Appendix 27 Aer - 2;

d) that the decision to re-allocate the band
could be taken by the General World Administrative Radio
Conference, 1979;

e) that the decision to incorporate a plan for
the band into Appendix 27 Aer - 2 could be taken by the
General Conference, 1979;

has established

a plan for the band [21,870-22,000] kHz with the
relevant associated provisions for modifying the procedures of
Appendix 27 Aer - 2 and related Radio Regulations
(see Annex);

recommends

1. that the General World Administrative Radio
Conference, 1979, should consider the allocation of the band
[21,870-22,000] kHz exclusively to the aeronautical mobile
(R) service to meet the requirements mentioned in
considering a) above;

2. that, if the Conference decides on such a re-allocation, it should include the plan for this band with the associated provisions in Appendix 27 Aer - 2 as an integral part thereof, to come into force on [1 February, 1983], and should make the necessary consequential changes to the Radio Regulations;

urges Administrations

to submit proposals to this effect to the General Conference, 1979.

ANNEX TO RECOMMENDATION Aer2 - CC

**Outline of changes to be made to
Appendix 27 Aer - 2 and related Radio Regulations**

APPENDIX 27

Page 3 Table of Contents, Part II, in the title in italics, delete 17,970 kHz, substitute the upper edge of the new exclusive band [] kHz, [to be decided by Committee 5].

No. 27/16 Insert the following new frequencies in the Table of Frequencies, [the frequencies to be indicated by Committee 5].

Page 25 Part II, amend title as indicated above for Table of Contents.

No. 27/189 Set out a new column for the new band to be added to the Table.

No. 27/207A Add a new Table for the new band.

RADIO REGULATIONS

Modify the Table of Frequency Allocations for the band 21,870-22,000 kHz in Article 5 to show the new exclusive allocation to the aeronautical mobile (R) service.

RR431 delete 18,030 kHz, substitute upper edge of band limit, [to be decided by Committee 5].

RR552 delete 17,970 kHz, substitute upper edge of band limit, [to be decided by Committee 5].

RR589 delete 17,970 kHz as above.

RECOMMENDATION No. Aer2 - DD

Relating to public correspondence with aircraft

The World Administrative Radio Conference on the Aeronautical Mobile (R) Service, Geneva 1978;

considering

- a) that Recommendation No. 19 (Geneva 1959) gave an initial indication of interest in public correspondence with aircraft;
- b) that some administrations have expressed requirements for long distance public correspondence with aircraft;
- c) that provisions of No. 432 of the Radio Regulations do not permit public correspondence in the exclusive aeronautical mobile bands, unless permitted by special aeronautical regulations;
- d) that appropriate satellite systems for this purpose are not yet operational;

recommends

- 1. that administrations should give due consideration to the technical, operational and administrative aspects of public correspondence with aircraft in order to permit orderly implementation at the appropriate time;
- 2. that administrations should make proposals on this subject to the next competent World Administrative Radio Conference;

requests the Secretary-General

to bring this Recommendation to the attention of the General World Administrative Radio Conference, 1979.



AERONAUTICAL (R) CONFERENCE
GENEVA, 1978

Document No. 246-E
27 February 1978

E

B.3

PLENARY MEETING

3rd SERIES OF TEXTS SUBMITTED BY THE
EDITORIAL COMMITTEE TO THE PLENARY MEETING

The following texts are submitted to the Plenary Meeting for first reading:

<u>Source</u>	<u>Document No.</u>	<u>Title</u>
C.6	204 237	RR Art. 5, 9, 28, 35 and App. 1
C.4	181	RR App. 3
C.6	237	Resolutions E, F and G

C.J. DHENIN
Chairman of the
Editorial Committee

Annex: 13 pages



ANNEX 1

**Partial revision of Articles 5, 9, 28 and 35 of the
Radio Regulations and Appendices 1 and 3 to these Regulations**

ARTICLE 5

MOD 201A The frequencies 2182 kHz, 3023 kHz, 5680 kHz, 8364 kHz, 121.5 MHz, 156.8 MHz and 243 MHz may also be used, in accordance with the procedures in force for terrestrial radiocommunication services, for search and rescue operations concerning manned space vehicles.

The same applies to the frequencies 10 003 kHz, 14 993 kHz and 19 993 kHz, but in each of these cases emissions must be confined in a band of ± 3 kHz about the frequency.

MOD 205A The carrier (reference) frequencies 3023 kHz and 5680 kHz may also be used, in accordance with Nos. 1326C and 1353B respectively, by stations of the maritime mobile service engaged in coordinated search and rescue operations.

ARTICLE 9

ADD 553A a) the notice is in conformity with the provisions of No. 501;

(MOD) 557Plan i

ADD 557A (2A) A notice which is not in conformity with the provisions of No. 553A shall be examined with respect to Nos. 520 and 521. The date to be entered in Column 2B shall be determined in accordance with the relevant provisions of Section III of this Article.

MOD 558 (3) In the case of a notice in conformity with the provisions of Nos. 553A to 556, but not with those of No. 557, the Board shall examine whether the protection specified in Appendix 27 Aer2 (Part I, Section IIA, paragraph 5) is afforded to the allotments in the Plan. In doing so, the Board shall assume that the frequency will be used in accordance with the "Sharing conditions between areas" specified in Appendix 27 Aer2, Part I, Section IIB, paragraph 4.

ARTICLE 28

MOD 969A (3) The aeronautical carrier (reference) frequencies 3023 kHz and 5680 kHz may be used by mobile stations for search and rescue scene-of-action coordination purposes, including communication between these stations and participating land stations, in accordance with any special arrangements by which the aeronautical mobile service is regulated (see Nos. 1326C and 1353B).

ARTICLE 35

MOD 1326C The aeronautical carrier (reference) frequency 3023 kHz may be used for intercommunication between mobile stations when engaged in coordinated search and rescue operations, including communication between these stations and participating land stations, in accordance with the provisions of Appendix 27 Aer2.

MOD 1353B 15A. The aeronautical carrier (reference) frequency 6580 kHz may be used for intercommunication between mobile stations when engaged in coordinated search and rescue operations, including communication between these stations and participating land stations, in accordance with the provisions of Appendix 27 Aer2.

APPENDIX 1

Paragraph 3 on page AP1-15 of the Radio Regulations (1976 Edition) has been replaced by the following text:

MOD

3. In any case where there are one or more reference frequencies in a particular transmission (e.g. in the case of (a) the frequency of the reduced carrier in an independent or single-sideband emission, and (b) the frequencies of the sound and vision carriers in a television emission), such reference frequencies shall be supplied. In the case of television broadcasting stations in Region 1, each notice shall include, as supplementary information, both the frequency of the other carrier and the assigned frequency.

APPENDIX 3

[Mar Mar2] Aer2

The following modifications were made to Appendix 3 to the Radio Regulations:

Table of frequency tolerances*

(See Article 12)

Frequency bands (lower limit exclusive, upper limit inclusive) and Categories of stations	Tolerances applicable until 1st January, 1966*) to transmitters in use and to those to be installed before 1st January, 1964	Tolerances applicable to new transmitters installed after 1st January, 1964 and to all transmitters after 1st January, 1966*
	*) 1st January, 1970 in the case of all tolerances marked with an asterisk	
.....		
Band : 1 605 to 4 000 kHz		
.....		
2. Land stations		
- power 200 W or less	100	100 h) 1) <u>r</u>)
- power above 200 W	50	50 h) 1) <u>r</u>)
3. Mobile stations		
.....		
c) Aircraft stations	200*	100* r)
Band : 4 to 29.7 MHz		
.....		
2. Land stations :		
.....		
b) Aeronautical stations :		
- power 500 W or less	100	100 <u>r</u>)
- power above 500 W	50	50 <u>r</u>)
.....		
3. Mobile stations :		
.....		
c) Aircraft stations	200*	100* r)

ADD

r) For single-sideband transmitters operating in the frequency bands 1605-4000 kHz and 4-29.7 MHz which are allocated exclusively to the aeronautical mobile (R) service, the tolerance on the carrier (reference) frequency is:

1. for all Aeronautical Stations 10 Hz
2. for all Aircraft Stations operating on international services 20 Hz
3. for Aircraft Stations operating exclusively on national services 50 Hz **

** Note: In order to achieve maximum intelligibility it is suggested that Administrations encourage the reduction of this tolerance to 20 Hz.

RESOLUTION No. Aer2 - E

**Relating to implementation of the new arrangement
applicable to bands allocated exclusively to
the aeronautical mobile (R) service between
2850 and 17 970 kHz**

The World Administrative Radio Conference on the Aeronautical Mobile (R) Service, Geneva, 1978,

considering

a) that the use of each of the frequency bands between 2850 and 17 970 kHz allocated exclusively to the aeronautical mobile (R) service by the Administrative Radio Conference, Geneva, 1959, was modified by the Extraordinary Administrative Radio Conference, Geneva, 1966;

b) that the 1966 Conference resolved that administrations shall effect, as soon as possible, a progressive conversion of their radiocommunications in the aeronautical mobile (R) service from double-sideband to single-sideband operation, in consequence of which the use of the above bands has been further modified by the present Conference to provide for SSB techniques;

c) that a considerable number of frequency assignments of both aircraft and aeronautical stations will be transferred from existing frequencies to the new frequencies and channels designated by the present Conference;

d) that changes in frequency assignments should be made as soon as possible so that the advantages of the new channels designated by the present Conference may be realized at the earliest opportunity;

e) that the transfer of assignments should be made with the least possible disruption of the service rendered by each station;

f) that the transfer of assignments should be made so as to avoid harmful interference between the stations involved during the implementation period;

g) that the Final Acts of the present Conference will enter into force on 1 September 1979;

h) that the new Frequency Allotment Plan contained in Appendix 27 Aer2 will enter into force on 1 February 1983;

recognizing

a) that the aeronautical mobile (R) service is primarily a safety service;

b) that some frequencies have been allotted for world-wide use;

c) that the implementation of the decisions made by the present Conference relating to the new arrangement of the frequency bands allocated to the aeronautical mobile (R) service between 2850 and 17 970 kHz should follow an orderly procedure for the transfer of existing services from the old to the new assignments;

resolves

1. that between the entry into force of the Final Acts of this Conference on 1 September 1979 and the entry into force of the new Frequency Allotment Plan contained in Appendix 27 Aer2 on 1 February 1983, channel utilization for any new SSB operation shall be in accordance with the following provisions:

1.1 the carrier (reference) frequency of the single-sideband channel in the upper half of the previous double-sideband channel shall be the same as the carrier (reference) frequency of that channel;

1.2 the carrier (reference) frequency of the single-sideband channel in the lower half of the previous double-sideband channel shall be 3 kHz lower than the carrier (reference) frequency of channel;

1.3 that, prior to 1 February 1983, aeronautical and aircraft stations fitted with single-sideband equipment may employ either half of the previous double-sideband channel (the single-sideband carrier (reference) frequency being that in 1.1 and 1.2 above);

1.4 channels in the new Plan may be used by any administration provided that no harmful interference occurs to users of channels in the present Plan. For the operational use of the channels concerned administrations should take into account the provisions of No. 27/20 of Appendix 27 Aer2 of the Radio Regulations;

2. that on 1 February 1983, the frequencies appearing in Appendix 27 to the Radio Regulations, shall be replaced by the frequencies appearing in Part II, Section II, Article 2, Appendix 27 Aer2;
3. that administrations take all the necessary measures with a view to converting to single-sideband operation as soon as possible by not permitting the installation of new double-sideband equipment as from 1 April 1981. Aircraft and aeronautical stations shall be capable of single-sideband operation at the earliest possible date; furthermore, they shall discontinue double-sideband emissions as early as possible, and, in any event, not later than 1 February 1983;
4. that, until 1 February 1983, aeronautical and aircraft stations equipped for single-sideband operation shall also be equipped to transmit class A3H emissions where required to be compatible with reception by double-sideband equipment;
5. that, unless otherwise specified in the Final Acts of the present Conference, the use of classes of emissions A2H, A3J, A7J and A9J only shall be authorized as of 1 February 1983. Double-sideband operations may, however, be continued for domestic use until 1 February 1987, provided this operation is conducted in accordance with Nos. 667 and 674 of the Radio Regulations and that no harmful interference is caused to the international aeronautical mobile (R) service operating in the single-sideband mode. Administrations requiring such an extension of the period of full implementation of single-sideband operations are, nevertheless, urged to cease double-sideband operations as soon as possible.

RESOLUTION No. Aer2 - F

Relating to the treatment of notices concerning frequency assignments to aeronautical stations in the aeronautical mobile (R) service in the bands allocated exclusively to that service between 2850 and 17 970 kHz

The World Administrative Radio Conference on the Aeronautical Mobile (R) Service, Geneva, 1978,

considering

a) that the Final Acts of the present Conference will enter into force on 1 September 1979;

b) that the new Frequency Allotment Plan contained in Appendix 27 Aer2 will enter into force at 0001 hours GMT on 1 February 1983;

c) that some administrations may wish to implement certain provisions of the revised Frequency Allotment Plan in advance of the latter date when this may be done without causing harmful interference to stations operating in accordance with the present Frequency Allotment Plan;

d) that it will therefore be necessary to provide an interim procedure to facilitate transition from the present Frequency Allotment Plan to the new Frequency Allotment Plan;

resolves

1. that during the interim period between the date of entry into force of the Final Acts and the date of entry into force of the new Frequency Allotment Plan:

1.1 the provisions of Nos. 553 to 558 of the Radio Regulations shall continue to be applied in the examination of notices concerning frequency assignments to aeronautical stations in the aeronautical mobile (R) service in the allotments of the existing Plan;

1.2 all such assignments shall be recorded in the Master International Frequency Register in accordance with the findings reached by the IFRB;

1.3 frequency assignments in a channel of the new Plan shall be examined by the IFRB in order to determine whether the protection specified in Appendix 27 Aer2 (Part I, Section IIA, paragraph 5) is afforded to the allotments in the existing Plan. In so doing, the Board shall assume that the frequency will be used in accordance with the sharing conditions between areas specified in Appendix 27 Aer2, Part I, Section IIB, paragraph 4;

1.4 all such assignments mentioned in paragraph 1.3 having received a favourable finding shall be recorded in the Master International Frequency Register;

1.5 the date to be entered in Column 2a or 2b of the Master International Frequency Register shall be as follow:

- a) if the finding is favourable with respect to Nos. 554 to 557, the date of 29 April 1966 shall be entered in Column 2a;
- b) if the finding is favourable with respect to No. 558, the date of 29 April 1966 shall be entered in Column 2b;
- c) for all other assignments (including those which may be in conformity with the revised Frequency allotment Plan but not in conformity with the present Frequency allotment Plan) the date of receipt of the notice by the IFRB shall be entered in Column 2b;

1.6 any assignment which is in accordance with the revised Frequency Allotment Plan shall be so indicated by the insertion by the IFRB of an appropriate symbol in the Remarks Column of the Master International Frequency Register;

2. that on the date of the entry into force of the new Frequency Allotment Plan, the IFRB shall examine those frequency assignments to aeronautical stations in the aeronautical mobile (R) service in the bands allocated exclusively to that service between 2850 and 17 970 kHz which are contained in the Master International Frequency Register from the point of view of their conformity with the new Frequency Allotment Plan following the relevant parts of the procedure described in Nos. 553 to 558 of the Radio Regulations, and shall record against them in the Master International Frequency Register a date in Column 2a or 2b as follows:

2.1 assignments with double-sideband emissions (A3) already appearing in the Master Register on the date of the entry into force of the new Frequency Allotment Plan shall retain the date recorded in Column 2a or 2b as appropriate until 1 February 1983. A date in Column 2a for a frequency assignment using double-sideband operations (A3) shall be transferred to Column 2b on 2 February 1983. On 1 January 1987 the IFRB shall review the entries and, in consultation with the administrations concerned, cancel those entries which are no longer in use, retaining the others for information only, without a date in Column 2b;

2.2 assignments found favourable with respect to Nos. 553A to 557 shall have the date of the signing of the Final Acts of the present Conference entered in Column 2a;

2.3 assignments found favourable with respect to No. 553A and No. 558 shall have the date of the signing of the Final Acts of the present Conference entered in Column 2b;

2.4 all other assignments shall have the day AFTER the date of the signing of the Final Acts of the present Conference entered in Column 2b;

3. that, on the date of the entry into force of the new Frequency Allotment Plan, the allotments therein shall replace in the Mater International Frequency Register the allotments appearing in the present Frequency Allotment Plan;

invites

Administrations to notify to the IFRB as soon as possible the cancellation of frequency assignments released as a consequence of bringing into use the allotments in the new Frequency Allotment Plan.

RESOLUTION No. Aer2 - G

**Relating to the implementation of the Frequency
Allotment Plan in the high frequency bands allocated
exclusively to the aeronautical mobile (R) service
between 2850 and 17 970 kHz**

The World Administrative Radio Conference on the Aeronautical Mobile (R) Service, Geneva, 1978,

considering

a) that the bands allocated exclusively to the aeronautical mobile (R) service between 2850 and 17 970 kHz by the Administrative Radio Conference, Geneva, 1959 were modified by the Extraordinary Administrative Radio Conference, Geneva, 1966;

b) that the Extraordinary Administrative Radio Conference, Geneva, 1966, established procedures to be followed by Administrations relating to the implementation of the modifications;

c) that the necessary arrangements were made for the IFRB to carry out these procedures;

recognizing

a) that the aeronautical mobile (R) service is primarily a safety service;

b) that the present Conference has further modified the said bands to provide for single-sideband techniques;

c) that there is a need for all administrations to implement the modifications made by the present Conference with a view to avoiding any harmful interference to the services rendered by stations operating in accordance with the Radio Regulations;

resolves

1. that, not later than ninety days before the entry into force of the new Plan, administrations shall notify to the IFRB the modifications necessary to bring the assignments existing in the Master Register in conformity with this Plan;

2. that the assignments existing in the Master Register on 1 February 1983 which are not in conformity with the decisions of the present Conference on that date shall be treated as follows:

2.1 the IFRB will send relevant extracts from the Master Register to the Administrations concerned, within 30 days from 1 February 1983, advising them that, in accordance with the terms of the present Resolution, the assignments concerned are to be transferred to the appropriate frequencies within a period of 180 days after the dispatch of the extracts;

2.2 if an administration does not notify the IFRB of the transfer within the prescribed period, the original entry will be retained in the Master Register without a date in Column 2 and with a suitable remark in the Remarks Column. The administrations will be advised of this action;

3. that, if an administration so desires, the IFRB will give it all necessary assistance. In so doing, the IFRB will apply the provisions of Nos. 629 to 633 of the Radio Regulations.

INTERNATIONAL TELECOMMUNICATION UNION

AERONAUTICAL (R) CONFERENCE

(Geneva, 1978)

Document No. 247-E

27 February 1978

Original : French
English
Spanish

COMMITTEE 6

THIRD AND LAST REPORT OF WORKING GROUP 6B TO COMMITTEE 6

The Working Group unanimously agreed to recommend to Committee 6 the adoption of the attached draft Recommendation.

F. URBANY
Chairman of Working Group 6B

Annex : 1



A N N E X

ADD

RECOMMENDATION No. AER 2 - []

Relating to the transition to the Frequency Allotment Plan in the high frequency bands allocated exclusively to the Aeronautical Mobile (R) Service between 2 850 and 17 970 kHz in Appendix 27(Rev.)

considering

- a) that the final acts of this Conference will enter into force on 1 September 1979;
- b) that the new Frequency Allotment Plan contained in Appendix 27(Rev.) will enter into force at 0001 hours GMT on 1 February 1983;
- c) that some Administrations may wish to implement certain provisions of the revised Frequency Allotment Plan in advance of the latter date when this may be done without causing harmful interference to stations working in accordance with the present Frequency Allotment Plan;
- d) that, following the 1966 Aeronautical Extraordinary Administrative Radio Conference, the International Civil Aviation Organization (ICAO), under the provisions of No. 27/20 of Appendix 27 and within the spirit and framework of Resolution No. Aer 6 of that Conference developed a transition programme for the Aeronautical Mobile (R) Service to convert the Frequency Allotment Plan in Appendix 26 to that in Appendix 27;
- e) that the ICAO transition programme was subsequently promulgated by the International Frequency Registration Board to ITU member Administrations;
- f) that it will be useful again to adopt a programme to facilitate transition from the present Frequency Allotment Plan to the new Frequency Allotment Plan;

recommends

1. that the International Civil Aviation Organization be invited to develop a transition programme, within the framework of Appendix 27(Rev.), for the operational use by aeronautical stations of the frequencies contained in the Frequency Allotment Plan excepting those RDARAs which are not involved in international operations;
2. that the International Civil Aviation Organization be invited to forward to the International Frequency Registration Board for distribution to Administrations the transition programme for the revised Frequency Allotment Plan;
3. that Administrations implement the provisions of the transition programme in coordination with ICAO and in conformity with the principles set forth in 27/20;

requests the Secretary-General to bring this Recommendation to the attention of the International Civil Aviation Organization.

INTERNATIONAL TELECOMMUNICATION UNION
AERONAUTICAL (R) CONFERENCE
(Geneva, 1978)

Document No. 248-E
25 February 1978
Original : English
French
Spanish

PLENARY MEETING
COMMITTEE 7

SECOND REPORT OF COMMITTEE 5

At the 6th Meeting of Committee 5 on 25 February 1978 the Committee agreed to the texts of Nos. 27/186, 27/188, 27/192 and 27/193 as shown in the Annex.

M. CHEF

Chairman of Committee 5

Annex : 1



A N N E X

Section II

Allotment of Frequencies to the Aeronautical Mobile (R) Service

ARTICLE 1

MOD 27/186 Frequency Allotment Plan by Areas

NOC 27/187

MOD 27/188 The following list does not include the world-wide common (R) and (OR) frequencies of 3 023 and 5 680 kHz. The allotment of these frequencies is shown in Article 2.

ARTICLE 2

**Frequency Allotment Plan
(in numerical order of frequencies)**

General Notes:

MOD 27/192 1. Class of stations: FA.

Classes of emission: see Nos. 27/49, 27/52.

Power: Unless otherwise indicated in the Plan, the power values for aeronautical and aircraft stations are those shown in Nos 27/54-27/62.

Hours: H24 unless otherwise indicated.

MOD 27/193 2. A frequency allotted on a "day-time basis" may be used during the period one hour after sunrise to one hour before sunset.

AERONAUTICAL (R) CONFERENCE

(Geneva, 1978)

Document No. 249-E

24 February 1978

Original : French

COMMITTEE 2

Second Report of the
Working Group of Committee 2

CREDENTIALS

At its meeting of 24 February 1978, the Working Group examined the credentials of the following delegations :

United Arab Emirates
Gabon Republic
Indonesia (Republic of)
Iran
Nigeria (Federal Republic of)
Philippines (Republic of the)
Portugal
Syrian Arab Republic
Roumania (Socialist Republic of)
Senegal (Republic of the)
Sweden
Thailand
Uruguay (Oriental Republic of)
Venezuela (Republic of)

The Working Group is happy to report to Committee 2 that these credentials meet all the criteria of Nos. 361, 364, 365 and 366 of the Convention.

C.J. MARTINEZ
Chairman of the Working Group of Committee 2



COMMITTEE 2

REPORT OF COMMITTEE 2 TO THE PLENARY MEETING

Credentials

1. Terms of reference of the Committee

The Committee's terms of reference are contained in Document No. 76.

2. Meetings

Committee 2 held two meetings, on 8 February and 27 February 1978.

The Working Group established by the Committee with the task of examining, pursuant to the provisions of the Convention, the credentials deposited at the Conference, met on 13, 24 and 27 February 1978.

The Chairman and Vice-Chairman of the Committee and the delegates of the Federal Republic of Germany, the Hungarian People's Republic and the Republic of Kenya participated in the meetings of the Working Group.

3. Conclusions

The Committee's conclusions, contained in annex, are submitted to the Plenary Meeting for adoption.

4. Final remarks

The Committee recommends to the Plenary Meeting that the Chairman and the Vice-Chairman of Committee 2 should be empowered to examine any credentials received after the date of this report and to convey their findings to the Plenary Meeting.

C.J. MARTINEZ
Chairman of Committee 2

Annex : 1



A N N E X

CONCLUSIONS OF COMMITTEE 2

SUBMITTED TO THE PLENARY MEETING FOR APPROVAL

1. Credentials deposited

1.1 Credentials found to be in order

- 1.1.1 Credentials from countries which have ratified (or have acceded to) the Convention or to which the provisions of No. 97 of the Convention do not apply.

Afghanistan (Republic of)

Algeria (Algerian Democratic and Popular Republic)

Germany (Federal Republic of)

Angola (People's Republic of)

Saudi Arabia (Kingdom of)

Argentine Republic

Bahrain

Bangladesh (People's Republic of)

Byelorussian Soviet Socialist Republic

Bulgaria (People's Republic of)

Canada

Chile

China (People's Republic of)

Colombia (Republic of)

Korea (Republic of)

Cuba

Denmark

United Arab Emirates

Ecuador

Spain

United States of America

Fiji

Finland

France

Greece

Guinea (Republic of)

Hungarian People's Republic

India (Republic of)

Indonesia (Republic of)

Iran

Ireland

Italy

Japan

Kuwait (State of)

Libya (Socialist People's Libyan Arab Jamahirya)

Malaysia

Mauritius

Mauritania (Islamic Republic of)

Mexico

Monaco

Norway
New Zealand
Pakistan (Islamic Republic of)
Papua New Guinea
Paraguay (Republic of)
Netherlands (Kingdom of the)
Philippines (Republic of the)
Poland (People's Republic of)
Portugal
Syrian Arab Republic
German Democratic Republic
Democratic People's Republic of Korea
Ukrainian Soviet Socialist Republic
Roumania (Socialist Republic of)
United Kingdom of Great Britain and Northern Ireland
Sao Tome and Principe (Democratic Republic of)
Senegal (Republic of the)
Singapore (Republic of)
Sweden
Switzerland (Confederation of)
Tanzania (United Republic of)
Czechoslovak Socialist Republic
Thailand
Union of Soviet Socialist Republics
Uruguay (Oriental Republic of)
Venezuela (Republic of)
Yemen Arab Republic
Yugoslavia (Socialist Federal Republic of)

Conclusion : the delegations of these countries are entitled to vote and to sign the Final Acts.

- 1.1.2 Countries which have not ratified (or which have not acceded to) the Convention or to which the provisions of No. 97 of the Convention apply (see Document No. 58).

Belgium
Bolivia (Republic of)
Cameroon (United Republic of)
Ivory Coast (Republic of the)
Gabon Republic
Guatemala (Republic of)
Upper Volta (Republic of)
Kenya (Republic of)
Liberia (Republic of)
Nigeria (Federal Republic of)
Panama (Republic of)
Yemen (People's Democratic Republic of)

Conclusion : the delegations of these countries are not entitled to vote; they are entitled to sign the Final Acts.

2. Provisional credentials deposited

The provisional credentials deposited by the delegations of the following countries were found to be in order.

2.1 Credentials from countries which have ratified (or have acceded to) the Convention or to which the provisions of No. 97 of the Convention do not apply.

Australia
Brazil (Federative Republic of)
Egypt (Arab Republic of)
Mongolian People's Republic

Conclusion : The delegations of these countries are entitled to vote; they are not entitled to sign the Final Acts.

2.2 Credentials from countries which have not ratified (or which have not acceded to) the Convention or to which the provisions of No. 97 of the Convention apply (see Document No. 58).

Turkey
Zaire (Republic of)

Conclusion : The delegations of these countries are not entitled to vote; they are not entitled to sign the Final Acts.

3. Delegations which have not deposited credentials

Congo (People's Republic of the)
Ethiopia
Morocco (Kingdom of)
Niger (Republic of the)
Qatar (State of)
Tunisia

Conclusion : The delegations of these countries are not entitled to vote; they are not entitled to sign the Final Acts.

INTERNATIONAL TELECOMMUNICATION UNION

AERONAUTICAL (R) CONFERENCE

(Geneva, 1978)

Document No. 251-E

27 February 1978

Original : English

PLENARY MEETING

FINAL PROTOCOL

For the Yemen Arab Republic

The Delegation of the Yemen Arab Republic to the World Administrative Radio Conference for the Aeronautical Mobile (R) Service (Geneva, 1978) reserves the right of its Government, in respect of the text of MOD 27/9 of this Frequency Allotment Plan, as communication between aircraft on ground in the Yemen Arab Republic and any station outside its territory is not allowed without prior permission from the authorities concerned.



COMMITTEE 5

COMMITTEE 6

Japan

WORLD-WIDE ALLOTMENT AREAS AND ASSOCIATED FREQUENCY REQUIREMENTS

Reference is made to Document No. 44 wherein allotment areas were proposed for world-wide application (Document No. 44, paragraph 4).

Reference is also made to Document No. 221 wherein Committee 5 notified Committee 6 of the decision not to prepare a plan to allot the frequencies to specific countries or geographical areas.

Subsequent Conference deliberations, including DT/45(Rev.1) which developed associated frequency requirements, and considerations as to how these would be operationally applied, has resulted in further deliberations between this Administration and others. These deliberations have resulted in a conclusion that allotment areas for this world-wide use are necessary and must be established by this Conference in the interests of good frequency management.

Accordingly this Administration proposes the following be included in Appendix 27 Revised :

ADD 27/8A A world-wide allotment area is one in which frequencies are allotted to provide long distance communications from an aeronautical station within that allotment area to aircraft operating anywhere in the world.

ADD ARTICLE 4

Description of the boundaries of the
world-wide allotment areas

World-wide Area I

27/XX [The boundaries of this allotment area will be defined so as
to include RDARAs 1, 2 and 3.]

World-wide Area II

27/XX [The boundaries of this allotment area will be defined so as
to include RDARAs 10, 11, 12A, 12B, 12C and 12D.]

World-wide Area III

27/XX [The boundaries of this allotment area will be defined so as
to include RDARAs 6, 8, 9 and 14.]



World-wide Area IV

27/XX [The boundaries of this allotment area will be defined so as
to include RDARAs 12E to 12J inclusive and 13.]

World-wide Area V

27/XX [The boundaries of this allotment area will be defined so as
to include RDARAs 4, 5 and 7.]

MOD 27/189 In the table indicate the frequencies to be allotted
world-wide areas in accordance with the following requirements :

Frequency Group	I	II	III	IV	V	VI	
Bands (MHz)	3, 3.5	4.7, 5.6, 6.6	9, 10, 11.3	13.3	18	21	
WORLDWIDE AREA I	1	4	6	4	1	7	
II	2	5	6	2	2	3	
III	1	2	3	3	2	2	
IV	1	1	2	1	1	2	
V	1	2	3	2	2	4	

In the table at 27/195 to 27/207, consequential changes are required to reflect the world-wide areas to which specific frequencies have been allotted and to indicate that the reception area is world-wide with respect to each of the allotment areas concerned.

INTERNATIONAL TELECOMMUNICATION UNION

AERONAUTICAL (R) CONFERENCE

(Geneva, 1978)

Document No. 253-E

27 February 1978

Original : French

PLENARY MEETING

FINAL PROTOCOL

Republic of the Senegal

In signing the Final Acts of the present Conference, the Delegation of the Republic of the Senegal reaffirms its support for international cooperation in the field of telecommunications and with due respect for the rights and interests of all Members. However, it reserves for its Government the right to take any action it may consider necessary to safeguard the interests of its telecommunications services should the reservations made or the measures taken by one or more Members jeopardize the efficient operation of these services.



INTERNATIONAL TELECOMMUNICATION UNION
AERONAUTICAL (R) CONFERENCE
(Geneva, 1978)

Document No. 254-E
27 February 1978
Original : English

PLENARY MEETING

FINAL PROTOCOL

For the People's Democratic Republic of Yemen

The Delegation of the People's Democratic Republic of Yemen to the World Administrative Radio Conference (Geneva 1978) reserves the right of its Government to :

- 1) Consider the text of MOD 27/9 for communication between aircraft stations in-flight and appropriate aeronautical stations;
- 2) Allow or not aircraft stations on ground to communicate with appropriate aeronautical stations located outside the territory of the People's Democratic Republic of Yemen.



INTERNATIONAL TELECOMMUNICATION UNION

AERONAUTICAL (R) CONFERENCE

(Geneva, 1978)

Document No. 255-E

27 February 1978

Original : Spanish

PLENARY MEETING

FINAL PROTOCOL

For the Republic of Venezuela

The Administration of Venezuela reserves the right to authorize or prohibit operation of the stations of aircraft having landed at airports on Venezuelan territory, in accordance with Appendix 27 to the Radio Regulations, No. 27/9(Rev.1978).



INTERNATIONAL TELECOMMUNICATION UNION

AERONAUTICAL (R) CONFERENCE

(Geneva, 1978)

Document No. 256-E

27 February 1978

Original : English

PLENARY MEETING

FINAL PROTOCOL

For the United Republic of Cameroon

In signing the Final Acts of the World Administrative Radio Conference for the Aeronautical (R) Service (Geneva, 1978), the Delegation of the United Republic of Cameroon declares that the sovereignty of her State takes preference over all other considerations in the eventual application of any one of the reservations formulated by other Members of the Union, to the Final Acts of the above Conference.

In keeping with this policy, the delegation further reaffirms her position as expressed in the reservation formulated by her delegation at the Plenipotentiary Conference, contained in the Final Protocol of the International Telecommunication Convention (Malaga-Torremolinos, 1973), No. XXXII.



INTERNATIONAL TELECOMMUNICATION UNION

AERONAUTICAL (R) CONFERENCE

(Geneva, 1978)

Document No. 257-E

27 February 1978

Original : French

PLENARY MEETING

Algeria

FRENCH TRANSLATION OF PROVISION No. 27/20
(APPENDIX 27 Aer. 2) FROM THE ENGLISH

In view of the fact that "in case of dispute, the French text shall prevail" (Article 16 of the International Telecommunication Convention), it is important that French translations should reflect as closely as possible the letter and spirit of the texts drafted in the other working languages of the Union.

Consequently, the English version of provision No. 27/20 of Appendix 27 Aer 2 being the following :

"The International Civil Aviation Organization (ICAO) coordinates radiocommunications of the Aeronautical Mobile (R) Service with international aeronautical operations and this Organization should be consulted in all appropriate cases in the operational use of the frequencies in the Plan",

the Algerian Delegation proposes the following translation :

"L'Organisation de l'Aviation Civile Internationale (OACI) assure la coordination internationale des radiocommunications du service mobile aéronautique (R). Cette Organisation devrait être consultée, dans tous les cas appropriés, pour utiliser en exploitation les fréquences prévues dans le Plan".



INTERNATIONAL TELECOMMUNICATION UNION
AERONAUTICAL (R) CONFERENCE
(Geneva, 1978)

Document No. 258-E
27 February 1978
Original : Spanish

PLENARY MEETING

FINAL PROTOCOL

For the Argentine Republic

In signing the Final Acts, the Delegation of the Argentine Republic declares that its Government does not accept any obligation in respect of Appendix 27 Aer 2, 1978, governing the Aeronautical Mobile (R) Service or in respect of the related provisions and application procedures that may affect its telecommunication services.

The Argentine Republic will nevertheless observe the provisions of Appendix 27 Aer 2 and the application procedures as far as possible while reserving the right to take any action it may consider necessary to safeguard its aeronautical radiocommunication services.



AERONAUTICAL (R) CONFERENCE

(Geneva, 1978)

Document No. 259-E

27 February 1978

Original : French/English

COMMITTEE 6

SUMMARY RECORD

OF THE

SECOND MEETING OF COMMITTEE 6

(Regulatory Procedures)

Friday, 17 February 1978, at 1030 hrs and at 1400 hrs

Chairman : Mr. R.J. BUNDLE (New Zealand)

<u>Subjects discussed</u> :	<u>Document No.</u>
1. First Report of Working Group 6A	144
2. Second Report of Working Group 6A	145
3. Third Report of Working Group 6A	148
4. Fourth Report of Working Group 6A	160
5. Fifth Report of Working Group 6A	175
6. Sixth Report of Working Group 6A	176
7. First Report of Working Group 6B	177
8. Inclusion of carrier and assigned frequencies in the table relating to 27/16	159, 170
9. Assignment of documents to Working Group 6B	139, 140



1. First Report of Working Group 6A (Document No. 144)

1.1 The Chairman of Working Group 6A introduced the document, explaining that two Sub-Groups had been set up to accelerate the work, and he thanked them for their effective collaboration. He then explained briefly the new provision proposed on page 2 for insertion in Appendix 27. The square brackets around the words "3 023 kHz and 5 680 kHz" should be deleted.

1.2 The representative of the IFRB said that in the third line of the French text the words "du numéro 24/195 au numéro 27/207" should be enclosed in square brackets, and that the end of the text should read : "les fréquences alloties à ces ZLARN et subdivision de ZLARN".

1.3 The delegate of Venezuela, supported by the delegates of Uruguay, Argentina and Spain, said that the expression "serán asignadas" was too categorical and suggested that it should be replaced, for instance, by "podrán ser asignadas".

The Deputy Secretary-General indicated that the Spanish version did not correspond with the intention of the provision in the other two language versions.

It was therefore decided that the Editorial Committee would bring the Spanish text into line with the other two versions.

1.4 Replying to a question from the delegate of Kenya, the Chairman said that the word "Administration" should be understood in its usual ITU meaning, i.e. as the Aeronautical Administration of the country concerned or some other authority dependent on that Administration.

1.5 The Chairman of Working Group 6A said that the question had been discussed in Working Group 6A. He thought that the English text was sufficiently clear.

1.6 In reply to a remark by the delegate of India concerning a possible amendment to No. 27/188, consequent on the Committee's approval of point 2 of the Report, the Chairman of Committee 5 said that the Report would be included in the agenda of the next meeting of his Committee.

Subject to the above amendments and explanations, Document No. 144 was approved.

2. Second Report of Working Group 6A (Document No. 145)

2.1 The Chairman of Working Group 6A said that the English term "overwhelming", which appeared in the first line of the text, was very strong and, for that reason, had been translated into French by "à une très forte majorité".

The delegate of Spain said that the expression "à une grande majorité" would be sufficient.

The delegate of Switzerland reserved the right to raise the subject of the document again at an appropriate venue.

Document No. 145 was approved, with that amendment.

3. Third Report of Working Group 6A (Document No. 148)

3.1 The Chairman of Working Group 6A briefly introduced Document No. 148 and said that the reference to Resolution Aer2 - E at the beginning of the English text should be deleted.

Subject to that correction, Document No. 148 was approved.

4. Fourth Report of Working Group 6A (Document No. 160)

4.1 MOD 27/20

The Chairman of Working Group 6A introduced the document and gave some explanations regarding the discussions which had led to the wording of this paragraph, which had been adopted in the Working Group on a majority basis.

The delegate of the United Kingdom suggested that MOD 27/20 (Document No. 160) be considered in conjunction with Document No. 180, which also dealt with that question, and with an ICAO document on the same subject which was in the course of preparation. He requested that the consideration of item 1 of Document No. 160 be postponed to a later date.

The delegates of the United States and the Federal Republic of Germany agreed with that view.

The United Kingdom proposal was adopted.

4.2 MOD 27/9

The Chairman of Working Group 6A introduced the text of MOD 27/9, mentioning that the delegates of Argentina, Brazil and Venezuela had reserved their position on the text proposed.

4.3 The delegate of Argentina said that the text was not in conformity with No. 32 of the Radio Regulations. His Administration had asked whether an airport should be regarded as a specified or an unspecified point and he proposed that the words "in flight" be inserted after "aircraft stations" in the last line.

That proposal was supported by the delegate of Venezuela, who pointed out that the existing text of the definition contained in 27/9 referred to "aircraft in flight and appropriate aeronautical stations". It would therefore be logical to retain those words in the new proposed text, which would otherwise be contrary to the Preamble to the Convention.

The delegate of Uruguay also supported the Argentine proposal.

4.4 The delegate of Brazil said his Administration had found itself in disagreement with the majority of members of the Working Group. In his view, in the definition of "mobile station" in No. 32 of the Radio Regulations the words "at unspecified points" were subject to different interpretations. In any event, an airport could not be an "unspecified point". It was undesirable for an aircraft station to be able to use the HF band when it was on the ground, unless the airport where the aircraft found itself had no other means of radiocommunication. It would therefore perhaps be desirable to introduce a few words to cover that case of exceptional use, but the text as it stood was unacceptable.

4.5 The delegate of the United Kingdom said that No. 32 of the Radio Regulations should not be invoked to argue that a mobile station could find itself in the situation of a fixed station and that, in that case, its position should be assimilated to a specified and unchangeable fixed point of the Fixed Service. He pointed out that on every airport there were a number of Mobile Service stations working for the airport's operational requirements, alongside fixed stations.

4.6 The delegate of Argentina said that he could not agree with the interpretation given by the delegate of the United Kingdom, and he hoped that the Committee would take account of the Brazilian proposal.

4.7 The delegates of Japan, the Federal Republic of Germany and the United States shared the views expressed by the delegate of the United Kingdom.

4.8 The delegate of the United States said that the amendment made to No. 27/9 of Appendix 27 was aimed precisely at broadening the possibilities for using the frequency bands in question for the benefit of long-range communications. The amendment answered to a need which had made itself universally felt in the field of aeronautical activities.

4.9 The delegate of Papua New Guinea said that the insertion of the words "in flight" was not acceptable to his Administration because the national services of his country did not possess appropriate installations for ensuring the long-distance radiocommunications necessary for the Aeronautical Service by other means.

4.10 The delegate of Brazil said that messages relating to the safety of aircraft and the regularity of flights (long-range flight control) should not be transmitted over bands allocated for that purpose once an aeroplane had completed its landing operations. From that moment, an aircraft should use the local services of the place in which it had landed. In case of emergency, the pilot would use any services available to him, but that was an exceptional situation.

4.11 The observer of ICAO referred to the historical background of the existing text of No. 27/9 and to the problems of safety and of interference, as well as to operational difficulties encountered in some parts of the world.

4.12 The Chairman invited the delegations of Argentina, Brazil, Uruguay and Venezuela to discuss the wording of MOD 27/9 with him during the suspension of the meeting.

The meeting was suspended at 1200 hrs and resumed at 1400 hrs.

4.13 The Chairman invited the above-named delegations to inform the Committee of the conclusions they had reached.

4.14 The delegates of Venezuela, Uruguay and Argentina said they intended to enter reservations concerning the text in the Final Acts to protect their countries' rights in regard to regulating the use of these frequencies in their territories as related to MOD 27/9.

4.15 The delegate of the USSR fully understood that States should wish to safeguard their sovereignty in the matter and decide themselves whether or not they wished certain services to be made available over their territories.

4.16 The text of MOD 27/9, as given in Document No. 160, was adopted.

5. Fifth Report of Working Group 6A (Document No. 175)

5.1 The Chairman of Working Group 6A introduced the Fifth Report.

It was agreed to request the Editorial Committee to align the introductory sentence of the five Annexes.

5.2 SUP Resolution No. 14

Adopted.

5.3 ADD Resolution No. B

The word "Geneva" was deleted from preambular paragraph a), third line. Preambular paragraphs a) to h) and operative paragraphs 1 to 5 were adopted.

5.4 The observer of IATA asked if paragraph 6 of Resolution 14 had not been inadvertently omitted; he understood that it was still applicable and valid and that one Administration had proposed its retention.

After a brief discussion, the delegate of the United Kingdom recalled that proposal had indeed been put forward towards the end of the Drafting Group's work but that no decision had been taken on it. If it were submitted again he would support it. The delegate of Canada also supported that view.

The proposal was adopted.

5.5 Resolution B, as a whole, as amended was adopted.

5.6 ADD Resolution No. C

Preambular paragraphs a) to d) were adopted.

The Chairman considered that the operative paragraph required some editing.

After a brief discussion, the delegate of the United Kingdom proposed the following redrafting of the fourth line : "bands, higher than the HF bands, which are allocated to the Aeronautical Mobile (R) Service and the".

It was agreed to redraft the text of the operative paragraph and submit the revised version to Committee 6 at a subsequent meeting.

5.7 MOD Resolution Aer 1

Adopted, subject to delegation of the reference "MOD".

5.8 ADD Recommendation No. A

Adopted.

5.9 ADD Recommendation No. B

Adopted; the Deputy Secretary-General suggested that the Editorial Committee examine the wording, in particular the reference in the heading to the 1979 General WARC.

6. Sixth Report of Working Group 6A (Document No. 176)

Paragraph 1

The Chairman invited the Committee to consider the Annex to the Report.

6.1 The Chairman of Working Group 6A said that the changes to the Radio Regulations in the first six paragraphs of the Annex were proposed in consequence of the decision to adopt the new carrier (reference) frequency 3 023 kHz. The proposed deletion of the last sentence of paragraph 3 on page 15 of Appendix 1 to the Radio Regulations was also consequential upon decisions taken in Committee 4. Turning to page 3 of the document, he observed that the Working Group had not dealt with MOD 27/23 pending a final decision on proposed amendments to No. 27/20. In MOD 27/194, the Working Group had incorporated the words "two or more" between "common to" and "areas". Finally, a new Article 3 had been added to Section II of Part II of Appendix 27; the square brackets in the penultimate paragraph had been inserted to remind the Editorial Committee to delete the symbol "MOD", and those in the last paragraph, because the matter was still under discussion in Working Group 6B.

6.2 MOD 201A Spa 2, MOD 205A, MOD 969A Mar 2, MOD 1326C, MOD 1353B

The delegate of New Zealand drew attention to the decision of Committee 4 that carrier frequencies should always be designated as "carrier (reference) frequencies". Perhaps that decision should be applied to MOD 205A.

The delegate of the United Kingdom supported that suggestion.

The delegate of Argentina also endorsed the New Zealand suggestion, adding that Committee 4's decision to distinguish between "assigned" and "carrier (reference)" frequencies should be applied to all the texts concerned.

6.3 The delegate of Norway, supported by the delegate of Canada, suggested that the word "carrier" should be deleted from MOD 205A, since that provision was one of many footnotes to Article 5 of the Radio Regulation in which no such qualification appeared.

6.4 The representative of the IFRB said that in the case of single-sideband, carrier frequency has the reference frequency. The word "frequency" alone was used in all other cases. Thus it was correct to use the unqualified word in MOD 201A Spa 2, but the words "carrier (reference)" might be inserted before "frequencies" in all the other provisions concerned.

After a brief discussion, it was so agreed.

With those amendments, the Annex to Document No. 196 was approved.

6.5 Paragraph 2

The Chairman of Working Group 6A said that two main trends had emerged from the discussion of proposals intended to modify No. 429 of the Radio Regulations. It would be seen from points 2.1 and 2.2 in which those trends were summarized that there was general agreement on the Conference's lack of competence to modify No. 429, because frequency bands other than those of Appendix 27 were involved. On the other hand, the view that the provision already broadly covered the communications concerned had seemed to prevail.

6.6 The delegate of Argentina said he could not agree with that description of the situation. His delegation had moved that No. 429 should be studied by the Joint Study Group on Vocabulary with a view to its submission to the 1979 Conference, because the texts of the provision in the three working languages gave rise to different interpretations. Moreover, the statement that the dominant view "appeared" to be that in 2.1 was inadmissible in a conference document.

6.7 The Chairman of Working Group 6A said that whereas the Joint Study Group on Vocabulary, as a CCIR body, could not be involved in such an exercise, the problem raised by the Argentine delegate had been discussed, although no solution had been found in the Working Group. He would however be prepared to replace the word "appeared" by "was", since the view set out in paragraph 2.1 had predominated.

6.8 The delegate of Sweden, supported by the delegate of Japan, said that he would not press his Administration's proposals to specify the application of No. 429 to operational control communications, provided it was clearly mentioned in the summary record of the Meeting that the existing wording was broad enough to cover those communications.

6.9 The Deputy Secretary-General, tracing the historical background of No. 429, said that the provision had remained unchanged since its adoption at the Atlantic City Conference in 1947. The English text had not been amended from the Committee to the Plenary stage, but the French text had been modified, at the proposal of the French delegation, to replace the words "trafic aérien" by "navigation aérienne". After the Final Acts had been signed, their editing had been entrusted to a committee with a French-language chairman and some English-language members; the Spanish text had emerged only later, presumably on the basis of the French version.

6.10 The delegate of Argentina said it was essential to make it quite clear which of the two different concepts was the correct one. "Aerial navigation" was certainly a much broader term than "flight".

6.11 The delegate of France, supplementing the explanation given by the Deputy Secretary-General, said that pertinent provisions of the Atlantic City Convention were based on the 1944 Chicago Convention on Aeronautical Navigation, which had been signed and ratified in English only, on the understanding that the depositary would provide a French text. In the final official version, issued only some 15 years later in the form of an Additional Protocol to the Chicago Convention, reference was made to the safety and regularity of flight in all three language texts. It would thus be seen that no official French version of the Chicago Convention had existed at the time of the signature of the Atlantic City Convention and the Radio Regulations, so that the term "navigation aérienne" had been introduced in the absence of proper concordance. In his view, however, the normal French interpretation of that term covered the communications at issue.

6.12 The delegate of the United Kingdom observed that the matter might be dealt with by the Editorial Committee of the 1979 Conference or by that of the Conference on the Mobile Services tentatively scheduled for 1981. The different terms had given rise to no difficulty for several decades, and the status quo could be allowed to continue for another two or three years.

6.13 The delegate of Spain said that although the discrepancy might have remained unnoticed for decades, the new circumstances made it necessary to align the texts as soon as possible. Perhaps the Secretary-General could suggest the modalities for such alignment.

6.14 The Secretary-General drew attention to No. 101 of the Convention, under which "in case of dispute, the French text shall prevail". In any case, it would be for the 1979 Conference to settle the problem.

6.15 The delegate of Argentina proposed that the Conference should recommend the 1979 WARC to study the matter.

The delegates of Canada and Sweden supported that proposal.

The Argentine proposal was approved.

6.16 The delegate of the United States of America said he hoped that No. 101 of the Convention, in that case, would not be applied without taking full note of the fact that the provision had originally been based on an English text. He hoped that the Summary Record would show the situation clearly.

The Deputy Secretary-General said that a recommendation to the 1979 Conference could be included under item 2.9 of the agenda of the Conference, to enable the matter to be considered by that Conference.

The Committee approved the alternative set out in point 2.1 of the Report.

6.17 Paragraph 3

The Chairman of Working Group 6A said that, after a long discussion, the majority of the Group had expressed the view that no additional definitions need be introduced into Section I of Appendix 27.

Paragraph 3 was approved.

Document No. 176 as a whole, as amended, was approved.

7. First Report of Working Group 6B (Document No. 177)

7.1 The Chairman of Working Group 6B, introducing the document, said that the Working Group had agreed on 1 September 1979 as a compromise date for the entry into force of the Final Acts, having encountered difficulties with the two other possible dates put forward. 1 February 1983 had been the only date submitted for the entry into force of the new Frequency Allotment Plan. Both dates had been agreed unanimously in the Working Group.

The two dates recommended by the Working Group were approved.

8. Inclusion of carrier and assigned frequencies in the table relating to 27/16 (Documents Nos. 159, 170)

8.1 The Chairman explained that Document No. 170 had been submitted by Committee 4 to Committees 5 and 6 and invited the Chairman of Committee 4 to introduce the subject.

The Chairman of Committee 4 said that Committee 6 was being asked to decide whether or not the table on page 7 of Appendix 27 relating to 27/16 should include both carrier and assigned frequencies. Committee 5's view was that, in the interests of simplicity, only carrier frequencies should be shown.

8.2 The delegate of France emphasized that as far as the Aeronautical Service was concerned, only the carrier (reference) frequency was required in the table. The assigned frequency was in any event easily obtained by adding 1 400 to the carrier frequency.

That view was supported by the delegates of the United Kingdom and Spain.

8.3 The delegate of India suggested that to facilitate references a footnote might be added to the table which would draw attention to the assigned frequency; that would help Administrations with their notifications.

8.4 The Chairman of Committee 4 drew attention to page 3 of Document No. 159 which listed all the provisions relating to the assigned frequencies decided upon by Committee 4.

8.5 The delegate of the USSR said that No. 27/16 should contain a list of both carrier and assigned frequencies in bands exclusive to the Aeronautical Service, envisaged in the proposals. Generally speaking, he was therefore in favour of the proposal put forward by the delegate of India.

8.6 The delegate of the United Kingdom said that as he understood it, the delegate of India had only suggested the inclusion of an explanatory footnote. If such were the case, he would support the suggestion.

8.7 After a short discussion, it was agreed that a footnote be included with the table, which would show carrier reference frequencies only.

9. Assignment of documents to Working Group 6B (Documents Nos. 139, 140)

9.1 The Chairman said that Documents Nos. 139 and 140 had been referred to Committee 6 and he suggested they be forwarded to Working Group 6B.

It was so agreed.

The meeting rose at 1640 hours.

The Secretary :

M. AHMAD

The Chairman :

R.J. BUNDLE

INTERNATIONAL TELECOMMUNICATION UNION

AERONAUTICAL (R) CONFERENCE

(Geneva, 1978)

Document No. 260-E

27 February 1978

Original: English

PLENARY MEETING
COMMITTEE 7

FOURTH REPORT OF COMMITTEE 6

The texts of the two Recommendations, unanimously adopted by Committee 6, are annexed herewith.

R.J. BUNDLE
Chairman of Committee 6

Annexes: 2



A N N E X 1

ADD

RECOMMENDATION No. Aer2

Relating to the transition to the Frequency Allotment Plan in the high frequency bands allocated exclusively to the Aeronautical Mobile (R) Service between 2 850 and 17 970 kHz in Appendix 27 Aer2

considering

- a) that the final acts of this Conference will enter into force on 1 September 1979;
- b) that the new Frequency Allotment Plan contained in Appendix 27 Aer2 will enter into force at 0001 hours GMT on 1 February 1983;
- c) that some Administrations may wish to implement certain provisions of the revised Frequency Allotment Plan in advance of the latter date when this may be done without causing harmful interference to stations working in accordance with the present Frequency Allotment Plan;
- d) that, following the 1966 Aeronautical Extraordinary Administrative Radio Conference, the International Civil Aviation Organization (ICAO), under the provisions of No. 27/20 of Appendix 27 and within the spirit and framework of Resolution No. Aer 6 of that Conference developed a transition programme for the Aeronautical Mobile (R) Service to convert the Frequency Allotment Plan in Appendix 26 to that in Appendix 27;
- e) that the ICAO transition programme was subsequently promulgated by the International Frequency Registration Board to ITU member Administrations;
- f) that it will be useful again to adopt a programme to facilitate transition from the present Frequency Allotment Plan to the new Frequency Allotment Plan;

recommends

- 1. that the International Civil Aviation Organization be invited to develop a transition programme, within the framework of Appendix 27 Aer2, for the operational use by aeronautical stations of the frequencies contained in the Frequency Allotment Plan excepting those RDARAs which are not involved in international operations;
- 2. that the International Civil Aviation Organization be invited to forward to the International Frequency Registration Board for distribution to Administrations the transition programme for the revised Frequency Allotment Plan;
- 3. that Administrations implement the provisions of the transition programme in coordination with ICAO and in conformity with the principles set forth in No. 27/20;

requests the Secretary-General to bring this Recommendation to the attention of the International Civil Aviation Organization.

A N N E X 2

ADD

RECOMMENDATION No. Aer2 ...

Relating to the concordance of the French, English and Spanish texts of
No. 429 of the Radio Regulations

The World Administrative Radio Conference on the Aeronautical Mobile (R)
Service, Geneva, 1978,

considering

- a) that doubts have been expressed as to whether the meaning of the phrase "régularité de la navigation aérienne" in French, "regularity of flight" in English and "regularidad de la navegación aérea" in Spanish do concord with each other;
- b) that this phrase emanates originally from the ICAO Convention, Chicago 1944, drafted in English;
- c) that it is necessary and imperative that the three texts be equivalent in form and content;
- d) that its terms of reference did not include the revision of No. 429 of the Radio Regulations;

recommends

that the World Administrative Radio Conference planned for 1979 should try to overcome this apparent lack of concordance in the texts of No. 429 of the Radio Regulations.

PLENARY MEETING

FINAL REPORT OF THE BUDGET CONTROL COMMITTEE
TO THE PLENARY MEETING

The Budget Control Committee held two meetings during the Conference and examined the various points arising from its terms of reference.

Under Chapter XI, Article 77, Point 5, Nos. 442-445 of the International Telecommunication Convention, the task of Committee 3 is :

- a) to determine the organization and the facilities available to the delegates, and
- b) to examine and approve the accounts for expenditure incurred throughout the duration of the Conference.

1. Determination of the organization and the facilities available to the delegates

Since no delegation has ventured any criticism on the subject, Committee 3 notes that the organization and the facilities made available to the delegates have given entire satisfaction.

2. Budget of the Conference

Committee 3 noted the budget of the Conference as adopted by the ITU Administrative Council, namely :

- a) preparatory work included in the 1976 budget : 350,000 Swiss francs, raised to 363,800 Swiss francs to take account of salary adjustments pursuant to Administrative Council Resolution No. 647. Committee 3 noted that the Union's accounts show, under this head, a total expenditure of 26,010 Swiss francs, or 337,790 Swiss francs less than the revised budget. This large difference is due to the fact that the credit in question was granted by the Administrative Council in 1975, that the Aeronautical Conference was postponed for one year, and that, from 1977, the structure of the budget has been changed;
- b) the work of the Conference itself, included in the 1977 budget : 1,073,000 Swiss francs.



3. Situation of Conference expenditure in 1978

In accordance with Nos. 442-445 of the Convention, the Budget Control Committee shall present a Report to the Plenary Meeting showing, as accurately as possible, the estimated total expenditure of the Conference.

Accordingly, Annex 1 contains a statement showing the budget allocated by the Administrative Council with the planned breakdown according to the various sub-heads and items, any credit transfers, and expenditure incurred up to 24 February 1978. This statement is supplemented by an indication of the commitments to expenditure up to that date and estimates of foreseeable expenditure until the close of the Conference.

It can be seen from this statement that total expenditure is estimated at 951,000 Swiss francs, which leaves a margin of 122,000 Swiss francs as compared to the budget.

4. Final Acts of the Conference

Administrative Council Resolution No. 83 (amended) provides that :

"... if a conference or meeting prints, for its own use, documents of which typographical composition can subsequently be used, in full or in part, for the printing of the Final Acts, it must bear a percentage of the composition costs and the whole of the printing costs of the said documents;

... the percentage of the composition cost mentioned in a) above ... shall be decided by the plenary meeting of the conference or meeting."

The documents constituting the Final Acts of the Conference submitted to delegations for signature will be produced in the Union's printing unit. These documents will be used in the production of the sales edition of the Final Acts. The Plenary Meeting of the Conference, therefore, has to decide the percentage of the composition cost to be borne by the Conference Budget and by the Supplementary Publications Budget respectively.

In the light of the decisions taken by previous conferences, the Budget Control Committee proposes that :

1/3 of the costs shall be charged to the Conference Budget, and

2/3 of the cost shall be charged to the Supplementary Publications Budget.

The estimate of expenditure contained in Annex 1 takes account of this apportionment of the costs.

5. Contributions of recognized private operating agencies and of non-exempted international organizations

Under Article 16 of the ITU Financial Regulations, the Report of the Budget Control Committee to the Plenary Meeting must include a list of the recognized private operating agencies and the international organizations which are required to contribute to the expenses of the Conference. That list should be supplemented by a list of the international organizations exempted from any contribution under No. 548 of the Convention.

The statement in question is contained in Annex 2 to this document.

* * *

Under No. 445 of the Convention, this Report, together with the observations of the Plenary Meeting, shall be transmitted to the Secretary-General for submission to the Administrative Council at its next annual session.

* * *

The Plenary Meeting is invited to approve this Report.

A.M. DIONE
Chairman

Annexes : 2

[illegible]

[illegible]

Item	Title	Budget approved by AC	Revised budget 1)	Transfer of credits		Credits available	Expenditure at 24 February 1978				Difference +/-
				Item/Item	sub-head/sub-head ²⁾		actual	committed	estimated	total	
1	2	3	4	5	6	7	8	9	10	11	12
11.115	Post, Telegraph and Telephone										
	Post	6,000	6,000	-	-	6,000	3,368	-	6,632	10,000	- 4,000
	Telephone	3,000	3,000	-	-	3,000	-	-	-	-	+ 3,000
	Telegrams	1,000	1,000	-	-	1,000	-	-	-	-	+ 1,000
		10,000	10,000	-	-	10,000	3,368	-	6,632	10,000	-
11.116	Technical material										
		3,000	3,000	-	-	3,000	-	-	-	-	+ 3,000
11.117	Sundry and unforeseen										
		5,000	5,000	-	-	5,000	837	-	4,163	5,000	-
TOTAL	SUB-HEAD II	381,000	381,000	-	-	381,000	115,078	121,440	88,482	325,000	+ 56,000
Sub-head III - Other expenses											
11.121	Final Acts of the Conference										
	Final Acts	50,000	50,000	-	-	50,000	-	-	50,000	50,000	-
	Chinese transl.	12,500	12,500	-	-	12,500	-	-	12,500	12,500	-
	Russian transl.	12,500	12,500	-	-	12,500	-	-	12,500	12,500	-
TOTAL	SUB-HEAD III	75,000	75,000	-	-	75,000	-	-	75,000	75,000	-
GRAND TOTAL		1,073,000	1,073,000	-	-	1,073,000	121,274	637,012	192,714	951,000	+ 122,000

Item	Title	Budget approved by AC	Revised budget 1)	Transfers of credits		Credits available	Expenditure at 24 February 1978				Difference +/-
				Item/Item	sub-head/sub-head 2)		actual	committed	estimated	total	
1	2	3	4	5	6	7	8	9	10	11	12
	<u>Pro mem. :</u>										
	Budget 1976										
	Preparatory work	350,000	363,800			363,800	26,010	-	-	26,010	+ 337,790

Notes : 1) Budget approved by the Administrative Council and taking into account the additional credits under Administrative Council Resolution No. 647.

2) In accordance with the Union's Financial Regulations, Article 15, paragraph 3.

3) Following a change in the budgetary structure adopted by the Administrative Council in 1976, expenditure on staff under the heading of the General Secretariat's Common Services is shown in a special section (Section 17) for the 1977 budget onwards.

A N N E X 2

PARTICIPATION OF INTERNATIONAL ORGANIZATIONS AND
RECOGNIZED PRIVATE OPERATING AGENCIES IN THE WORK
OF THE CONFERENCE

Class
of
contribution

Class of
contribution

1. International organizationsi) United Nations

*)

United Nations Environment Programme

*)

ii) Specialized agenciesInternational Civil Aviation Organization
(ICAO)

*)

Inter-Governmental Maritime Consultative
Organization (IMCO)iii) Other organizationsAgency for the Safety of Air Navigation in
Africa and Madagascar (ASECNA)1
2

International Air Transport Association (IATA)

*)

International Amateur Radio Union (IARU)

*)

2. Recognized private operating agencies

None

*) Exempted from any contribution under ITU Administrative Council Resolution No. 574.

R.1 (Rev.1)

PLENARY MEETING1st SERIES OF TEXTS SUBMITTED BY THE
EDITORIAL COMMITTEE TO THE PLENARY MEETING

The following texts are submitted to the Plenary Meeting for second reading:

<u>Source</u>	<u>Document No.</u>	<u>Title</u>
B.2	245	Partial Revision of the RR Appendix 27 - Part I - Sections 1 and 2 Part II - Section 2, Art. [3]
		Final Protocol
		Recommendation DD

C.J. DHENIN
Chairman of the
Editorial Committee

Annex: 21 pages



**PARTIAL REVISION
OF THE RADIO REGULATIONS ¹**

The Plenipotentiary Conference, Malaga-Torremolinos, 1973, at its 25th Plenary Meeting, approved the principle of convening a World Administrative Radio Conference on the Aeronautical Mobile (R) Service subject to receipt of a sufficient number of requests from administrations of the Members of the Union.

At its 29th Session (1974) the Administrative Council examined requests to convene the Conference from four countries Members of the Union. It also took note of a letter from the Secretary-General of the International Civil Aviation Organization (ICAO) on this question. The Administrative Council instructed the Secretary-General to request Members to inform him of their views.

At the 30th Session (1975) the Administrative Council examined the Secretary-General's report on this enquiry and, after consulting the Members of the Union, adopted Resolution No. 763 containing the agenda of the Conference and stipulating that it should meet in Geneva on 7 March 1977 for a maximum duration of four weeks.

At its 31st Session (1976), having examined the budget and in view of financial difficulties, the Administrative Council proposed to Members of the Union that the Conference be postponed until 6 February 1978, that its duration should not exceed four weeks and that the agenda item concerning the re-arrangement of the Radio Regulations be transferred to the World Broadcasting-Satellite Administrative Radio Conference (Geneva, 1977). Those proposals were approved by the Members of the Union.

*

* *

¹ Namely the Radio Regulations, Geneva, 1959, as partially revised by the Extraordinary Administrative Radio Conference to Allocate Frequency Bands for Space Radiocommunication Purposes (Geneva, 1963), by the Extraordinary Administrative Radio Conference for the Preparation of a Revised Allotment Plan for the Aeronautical Mobile (R) Service (Geneva, 1966), by the World Administrative Radio Conference to deal with matters relating to the Maritime Mobile Service (Geneva, 1967) by the World Administrative Radio Conference for Space Telecommunications (Geneva, 1971) and by the World Maritime Administrative Radio Conference (Geneva, 1974).

The World Administrative Radio Conference on the Aeronautical Mobile (R) Service accordingly convened on the appointed date, and considered and revised the relevant parts of the Radio Regulations in conformity with its agenda. Particulars of this revision are given in Annexes 1 and 2 hereto.

The revised provisions of the Radio Regulations shall form an integral part of the Radio Regulations which are annexed to the International Telecommunication Convention. These revised provisions shall come into force on and from 1 September 1979, except for the Frequency Allotment Plan for the aeronautical mobile (R) service contained in Appendix 27 Aer2 which shall come into force at 0001 hours G.M.T. on 1 February 1983. The provisions of the Radio Regulations which are cancelled, superseded or modified by these revised provisions shall be abrogated on the dates of the entry into force of the revised provisions.

The delegates signing this revision of the Radio Regulations hereby declare that, should an administration make reservations concerning the application of one or more of the revised provisions of the Radio Regulations, no other administration shall be obliged to observe that provision or those provisions in its relations with that particular administration.

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Members of the Union shall inform the Secretary-General of their approval of the revision of the Radio Regulations by the World Administrative Radio Conference on the aeronautical mobile (R) service (Geneva, 1978). The Secretary-General will inform Members of the Union regarding receipt of such notifications of approval as they are received.

In witness whereof the delegates of the Members of the Union represented at the World Administrative Radio Conference on the aeronautical mobile (R) service (Geneva, 1978) have signed in the names of their respective countries this revision of the Radio Regulations in a single copy which will remain in the archives of the International Telecommunication Union and of which a certified copy will be delivered to each Member of the Union.

Done at Geneva, March 1978.

ANNEX 2

Revision of Appendix 27 to the Radio Regulations

Appendix 27 to the Radio Regulations shall be amended as follows:

MOD

APPENDIX 27 Aer2

to the Radio Regulations

**Frequency Allotment Plan for the Aeronautical Mobile
(R) Service and Related Information**

(See Article 7 of the Radio Regulations)

PART I

General Provisions**Section 1****Definitions**

NOC 27/1
to
27/8

MOD 27/9 9. A Family of Frequencies in the Aeronautical Mobile (R) Service contains two or more frequencies selected from different aeronautical mobile (R) bands and is intended to permit communication at any time within the authorized area of use (see Nos. 27/189 to 27/207) between aircraft stations and appropriate aeronautical stations.

Section II

NOC **Technical and Operational Principles used for the
Establishment of the Plan of Allotment of Frequencies
in the Aeronautical Mobile (R) Service**

MOD **A. Channel characteristics and utilization**

NOC 1. Frequency separation

MOD 27/10 1.1 The frequency separation between carrier (reference) frequencies shall be 3 kHz. This is adequate to permit communications using the classes of emission referred to in Nos. 27/49-27/52 in the frequency bands between 2850 kHz and 17 970 kHz allocated exclusively to the aeronautical mobile (R) service. The carrier (reference) frequency of the channels in the Plan shall be an integral multiple of 1 kHz.

MOD 27/11 1.2 For radiotelephone emissions the audio frequencies will be limited to between 300 and 2700 Hz and the occupied bandwidth of other authorized emissions will not exceed the upper limit of A3J emissions. In specifying these limits, however, no restriction in their extension is implied in so far as emissions other than A3J are concerned, provided that the limits of unwanted emissions are met (see Nos. 27/66B and 27/66C).

ADD 27/11A Note: For aircraft and aeronautical station transmitter types first installed before 1 February 1983 the audio frequencies will be limited to 3000 Hz.

ADD 27/11B 1.3 On account of the possibility of interference, a given channel should not be used in the same allotment area for radiotelephony and data transmissions.

MOD 27/12 1.4 The use of channels derived from the frequencies indicated in No. 27/16 for the various classes of emissions other than A3J and A2H will be subject to special arrangements by the administrations concerned and affected in order to avoid harmful interference which may result from the simultaneous use of the same channel for several classes of emission.

SUP 27/13

MOD 27/14 1.5 To preclude the possibility of interference, adjacent channels in the list of frequencies in No. 27/16 have not as a rule been allotted to the same MWARA, RDARA or VOLMET areas. However, to satisfy particular needs, the administrations concerned may conclude special arrangements for the assignment of adjacent channels derived from the frequencies in the table (No. 27/16).

MOD 27/15 1.6 The arrangements contemplated in Nos. 27/12 and 27/14 should be made under the Articles of the International Telecommunication Convention and the Radio Regulations entitled "Special Arrangements".

MOD 2. Frequencies allotted

MOD 27/16 The list of carrier (reference) frequencies allotted in the bands allocated exclusively to the aeronautical mobile (R) service, on the basis of the frequency separation provided for under No. 27/10, will be found in the following table: ¹

[TABLE]

ADD 27/16.1 ¹ To calculate the assigned frequency from a carrier (reference) frequency given in the table, reference should be made to Nos. 27/72 and 27/72B.

		kHz					
<u>2850 - 3025</u>		<u>3400 - 3500</u>	<u>4650 - 4700</u>	<u>5480 - 5680</u>	<u>6525 - 6685</u>		
2851	2953	3401	4651	5481	5583	6526	6628
2854	2956	3404	4654	5484	5586	6529	6631
2857	2959	3407	4657	5487	5589	6532	6634
2860	2962	3410	4660	5490	5592	6535	6637
2863	2965	3413	4663	5493	5595	6538	6640
2866	2968	3416	4666	5496	5598	6541	6643
2869	2971	3419	4669	5499	5601	6544	6646
2872	2974	3422	4672	5502	5604	6547	6649
2875	2977	3425	4675	5505	5607	6550	6652
2878	2980	3428	4678	5508	5610	6553	6655
2881	2983	3431	4681	5511	5613	6556	6658
2884	2986	3434	4684	5514	5616	6559	6661
2887	2989	3437	4687	5517	5619	6562	6664
2890	2992	3440	4690	5520	5622	6565	6667
2893	2995	3443	4693	5523	5625	6568	6670
2896	2998	3446	4696	5526	5628	6571	6673
2899	3001	3449	(16) CHNLS	5529	5631	6574	6676
2902	3004	3452		5532	5634	6577	6679
2905	3007	3455		5535	5637	6580	6682
2908	3010	3458		5538	5640	6583	(53) CHNLS
2911	3013	3461	<u>5450 - 5480</u>	5541	5643	6586	
2914	3016	3464	REGION 2	5544	5646	6589	
2917	3019	3467	5451	5547	5649	6592	
2920	3023	(R) and 3470	5454	5550	5652	6595	
2923	(OR) 3473	(58) CHNLS	5457	5553	5655	6598	
2926		3476	5460	5556	5658	6601	
2929		3479	5463	5559	5661	6604	
2932		3482	5466	5562	5664	6607	
2935		3485	5469	5565	5667	6610	
2938		3488	5472	5568	5670	6613	
2941		3491	5475	5571	5673	6616	
2944		3494		5574	5676	6619	
2947		3497	(9) CHNLS	5577	(R) and 5680	6622	
2950		(33) CHNLS		5580	(OR) 5680	6625	(67) CHNLS

<u>8815 - 8965</u>	<u>10005 - 10100</u>	<u>11275 - 11400</u>	<u>13260 - 13360</u>	<u>17900 - 17970</u>
8816 8921	10006	11276 11384	13261	17901
8819 8924	10009	11279 11387	13264	17904
8822 8927	10012	11282 11390	13267	17907
8825 8930	10015	11285 11393	13270	17910
8828 8933	10018	11288 11396	13273	17913
8831 8936	10021	11291 (41) CHNLS	13276	17916
8834 8939	10024	11294	13279	17919
8837 8942	10027	11297	13282	17922
8840 8945	10030	11300	13285	17925
8843	10033	11303	13288	17928
8846 8948	10036	11306	13291	17931
8849 8951	10039	11309	13294	17934
8852 8954	10042	11312	13297	17937
8855 8957	10045	11315	13300	17940
8858 8960	10048	11318	13303	17943
8861 (49) CHNLS	10051	11321	13306	17946
8864	10054	11324	13309	17949
8867	10057	11327	13312	17952
8870	10060	11330	13315	17955
8873	10063	11333	13318	17958
8876	10066	11336	13321	17961
8879	10069	11339	13324	17964
8882	10072	11342	13327	17967
8885	10075	11345	13330	(23) CHNLS
8888	10078	11348	13333	
8891	10081	11351	13336	
8894	10084	11354	13339	
8897	10087	11357	13342	
8900	10090	11360	13345	
8903	10093	11363	13348	
8906	10096	11366	13351	
8909	(31) CHNLS	11369	13354	
8912		11372	13357	
8915		11375	(33) CHNLS	
8918		11378		
		11381		

SUP 27/17

SUP 27/18

SUP 27/19

MOD 27/20 4. The International Civil Aviation Organization (ICAO) coordinates radiocommunications of the aeronautical mobile (R) service with international aeronautical operations and this Organization should be consulted in all appropriate cases in the operational use of the frequencies in the Plan.

NOC 27/21

NOC 27/22

MOD 27/23 7. The coordination described in No. 27/20 shall be effected where appropriate and desirable for the efficient utilization of the frequencies in question, and especially when the procedures of No. 27/22 are unsatisfactory.

NOC

B. Interference range contoursMOD 27/24 1. General provisionsADD 27/24A 1.1 Service range

Due to factors such as the power of the transmitter, propagation loss, noise level, etc., there is a limit to the distance at which reliable communications can be effected between an aeronautical station and an aircraft station. This limiting distance, based on the weakest communication path (from the aircraft to the aeronautical station), is the service range. The boundary of the air route area is often assumed to be the limiting distance.

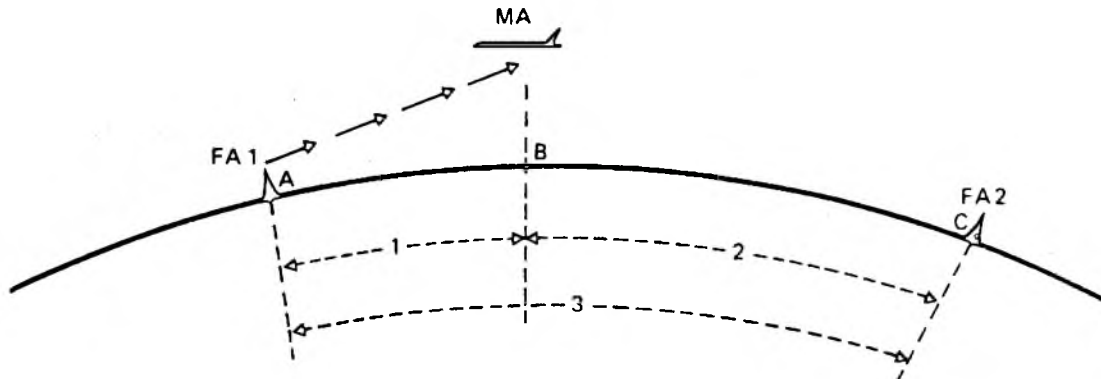
ADD 27/24B 1.2 Interference range

This is the minimum distance from the limit of the service range of a wanted station to a potentially interfering station needed to produce a protection ratio of 15 dB. This protection ratio is between the wanted signal at an aircraft station at the limit of the service range and the signal from a potentially interfering aeronautical station operating on the same frequency. The interference range has been calculated for different frequencies indicated on the data tables contained in Nos. 27/39-27/48 for day and night conditions, for median latitudes, for conditions of median sunspot activity and for a mean effective radiated power of 1 kW at the aeronautical station.

ADD 27/24C 1.3 Repetition distance

This is the distance at which a frequency may be successfully shared and is equal to the sum of the service range and the interference range.

ADD 27/24D 1.4 Figure 1 illustrates the use of the concept of interference range in frequency planning through the determination of repetition distance.



FA1 = aeronautical station in communication with aircraft station MA
 FA2 = aeronautical station in communication with aircraft stations other than MA
 MA = aircraft station in communication with aeronautical station FA1
 1 = service range AB
 2 = interference range CB
 3 = repetition distance AC

FIGURE 1

Service range, interference range, repetition distance

- ADD 27/24E 1.5 The transparencies associated with this Appendix show, for the frequencies stated, the interference range defined in No. 27/24B between an interfering aeronautical station and an aircraft station operating at the limit of its service range. Because of the variability of propagation conditions not only from hour to hour within the daytime and night time periods but also from day to day, with season, with solar activity level and geographic location, the 15 dB protection ratio may be expected to have marked variations and accordingly a greater protection may be available much of the time, especially when the aircraft is not operating at the limit of its service range.
- ADD 27/24F 1.6 Supplementary information on service range, interference range and repetition distance, as well as on the use of the transparencies can be found in the technical documentation issued by the IFRB, such as texts of the IFRB Seminar on frequency management and use of the frequency spectrum; Doc. No. 11/76 or revisions thereof.
- MOD 27/25 1.7 Two types of transparencies are provided for use respectively with the Mercator projection world maps and the Lambert azimuthal equal area projection maps for the polar areas. The Mercator projection transparencies encompass the area between latitude 60° North and 60° South. The transparencies associated with the Polar area projections encompass

the areas north of latitude 30° North and south of latitude 30° South. The Mercator projection overlaps the Polar projection maps between latitudes 30° and 60° North and 30° and 60° South. This overlap is intended to provide continuity between transparencies of the two projections.

NOC 2. Type of maps used

MOD 27/26 The transparencies mentioned in Nos. 27/24E and 27/25, can be used only on a world or polar map of the projection and scales given on each transparency and will not be suitable for use on any other projection or scale. The world and polar maps associated with this Appendix, depicting MWARA, RDARA and VOLMET areas, are to the correct scale so that the transparencies carrying the interference range contours can be directly used on these maps. The auroral zones are marked on the polar maps.

NOC 3. Change of scale of projection

NOC 27/27

NOC 27/28

NOC 27/29

NOC 4. Sharing conditions between areas

ADD 4.1 Frequency bands 3 MHz to 11.3 MHz

MOD 27/30 4.1.1 The transparencies are constructed on the basis of the following sharing conditions:

Areas	Bands between : MHz	Sharing conditions
MWARA or VOLMET area to MWARA or VOLMET area	3 - 6.6 9 - 11.3	night propagation day propagation Note : 6.6 MHz and 5.6 MHz sharing conditions are considered to be the same
MWARA or VOLMET area to RDARA	3 - 5.6 6.6 - 11.3	night propagation day propagation
RDARA to RDARA	3 - 4.7 5.6 - 11.3	night propagation day propagation

- MOD 27/31 4.1.2 The additional "Day" contours included for 3 MHz, 3.5 MHz and 4.7 MHz are for determining daylight sharing possibilities.
- ADD 4.2 Frequency bands 13 MHz and 18 MHz
- ADD 27/31A 4.2.1 The revised Frequency Allotment Plan for the 13 MHz and 18 MHz bands is based on daytime protection only. This results in the following sharing possibilities:
- ADD 27/31B 4.2.2 For the 13 MHz band, the repetition factor is at least 3 whilst for the 18 MHz band it is 4. It is to be noted that the longitudinal separation might be decreased to allow for a repetition of 4 (at 13 MHz) and 6 (at 18 MHz), taking into account operational and local circumstances;
- ADD 27/31C 4.2.3 The sharing takes into account the likely locations of the aeronautical stations rather than the area boundaries.
- MOD 5. Method of use of the transparencies for the bands 3 MHz to 11.3 MHz
- MOD 27/32 5.1 Take the appropriate MWARA, RDARA or VOLMET area map associated with this Appendix and select the transparency for the frequency order and sharing conditions under consideration.
- MOD 27/33 5.2 The equal area projections are applicable in the polar areas north of 60°N and south of 60°S; and the Mercator projections are applicable between 60°N and 60°S.
- MOD 27/34 5.3 Place the centre of the transparency (i.e. the intersection of the axis of symmetry and the latitude line) over the boundary of the area (use the reception area boundary in the case of VOLMET) at the point on the boundary nearest to the potentially interfering transmitter or at the location of the interfering transmitter. Note the latitude of the selected point and use the interference range contour corresponding to this latitude.
- MOD 27/35 5.4 A transmitter located at any point outside the contour will result, as defined in No. 27/24B, in a protection ratio of better than 15 dB.

- MOD 27/36 5.5 A transmitter located at any point inside the contour will result in a protection ratio of less than 15 dB. However, if the transmitter is located inside the contour but the propagation path traverses an auroral zone, it is assumed that the signal attenuation within this zone will result in a protection ratio of better than 15 dB.
- MOD 27/37 [Concerns the Spanish text only]
- MOD 27/38 5.7 For either the north or south polar areas, the transparency should be positioned so that the north-south line (terminated with an arrow) is parallel to the meridian of longitude, with the arrow pointing towards the pole.
- NOC 27/39
to
27/48

NOC **C. Classes of emission and power**

NOC 1. Classes of emission

- MOD 27/49 In the aeronautical mobile (R) service the use of emissions such as those listed below is permissible subject to compliance with the special provisions applicable to each case and provided that such use does not cause harmful interference to other users of the channel concerned.

MOD 27/50 1.1 Telephony - Amplitude modulation:

- double sideband (A3) *
- single sideband, full carrier (A3H) *
- single sideband, suppressed carrier (A3J)

* A3 and A3H to be used only on 3023 kHz and 5680 kHz as well as in cases covered by Resolution Aer2 - E, resolves 5.

NOC 1.2 Telegraphy (including automatic data transmission)

MOD 27/51 1.2.1 Amplitude modulation:

- telegraphy without the use of a modulating audio frequency (by on-off keying) (A1) **

- telegraphy by the on-off keying of an amplitude modulating audio frequency or audio frequencies or by the on-off keying of the modulated emission and including selective calling, single sideband, full carrier (A2H)
- multichannel voice frequency telegraphy, single sideband, suppressed carrier (A7J)
- other transmission such as automatic data transmission, single sideband, suppressed carrier (A9J)

MOD 27/52

1.2.2 Frequency modulation

- telegraphy by frequency shift keying without the use of a modulating audio frequency, one of two frequencies being emitted at any instant (F1) **

** A1 and F1 are permitted provided they do not cause harmful interference to the classes of emission A2H, A3J, A7J and A9J. In addition, A1 and F1 emissions shall be in accordance with the provisions in Nos. 27/65 to 27/66C and care should be taken to place these emissions at or near the centre of the channel. However, a modulating audio frequency is permitted with single sideband transmitters, where the carrier is suppressed in accordance with No. 27/63.

SUP 27/53

NOC 2. Power

MOD 27/54 2.1 Unless otherwise specified in Part II of this Appendix, the peak envelope powers supplied to the antenna transmission line shall not exceed the maximum values indicated in the table below; the corresponding peak effective radiated powers being assumed to be equal to two-thirds of these values:

Class of emission	Stations	Maximum peak envelope power
A2H, A3J, A7J, A9J A3*, A3H* (100% modulation)	Aeronautical stations Aircraft stations	6 kW 400 W
Other emissions such as A1, F1	Aeronautical stations Aircraft stations	1.5 kW 100 W

* A3 and A3H to be used only on 3 023 kHz and 5 680 kHz, as well as in cases covered by Resolution Aer2 - E, resolves 5.

- MOD 27/55 2.2 It is assumed that the maximum peak envelope powers specified above for aeronautical stations will produce the mean effective radiated power of 1 kW used as a basis for the interference range contours.
- MOD 27/56 2.3 In order to provide satisfactory communication with aircraft, aeronautical stations serving MWARA, VOLMET [and world-wide areas] may exceed the power limits specified in No. 27/54. Except in the case of 3023 kHz and 5680 kHz which are subject to the special provisions of Nos. 27/208 to 27/214. In each such case, the administration having jurisdiction over the aeronautical station shall note No. 694 of the Radio Regulations and ensure:
- NOC 27/57
- NOC 27/58
- NOC 27/59
- NOC 27/60
- NOC 27/61
- MOD 27/62 2.4 It is recognized that the power employed by aircraft transmitters may, in practice, exceed the limits specified in No. 27/54. However, the use of such increased power (which normally should not exceed 600 W Pp) shall not cause harmful interference to stations using frequencies in accordance with the technical principles on which the Allotment Plan is based.

ADD D. Limits to the power levels of unwanted emissions

MOD 1. Technical provisions relating to the use of single-sideband emissions.

MOD 27/63 1.1 Definitions of carrier modes:

Carrier mode	Level N (dB) of the carrier with respect to peak envelope power
Full carrier (for example A2H)	$0 \geq N \geq -6$
Suppressed carrier (for example A3J)	Aircraft stations $N < -26$ Aeronautical stations $N < -40$

SUP 27/64

MOD 2. Tolerance for levels of emission outside the necessary bandwidth.

MOD 27/65 2.1 In a single-sideband transmission, the mean power of any emission supplied to the antenna transmission line of an aeronautical or aircraft station on any discrete frequency, shall be less than the mean power (P_m) of the transmitter in accordance with the table following No. 27/66.

MOD 27/66 2.2 For aircraft station transmitter types and for aeronautical station transmitters first installed before 1 February 1983:

Frequency separation Δ from the assigned frequency kHz	Minimum attenuation below mean power (P_m) dB
$2 \leq \Delta < 6$	25
$6 \leq \Delta < 10$	35
($10 \leq \Delta$ (((Aircraft stations 40 Aeronautical stations $43 + 10 \log_{10} P_m$ (watts)

ADD 27/66A Note: All transmitters first placed in operation after 1 February 1983 shall comply with the specifications contained in No. 27/66C.

ADD 27/66B 2.3 In a single-sideband transmission, the peak envelope power (Pp) of any emission supplied to the antenna transmission line of an aeronautical or aircraft station on any discrete frequency, shall be less than the peak envelope power (Pp) of the transmitter in accordance with the table following No. 27/66C.

ADD 27/66C 2.4 For aircraft station transmitters first installed after 1 February 1983 and for aeronautical station transmitters in use after 1 February 1983.

Frequency separation Δ from the assigned frequency kHz	Minimum attenuation below peak envelope power (Pp) dB
$1.5 \leq \Delta < 4.5$	30
$4.5 \leq \Delta < 7.5$	38
$7.5 \leq \Delta$	Aircraft stations 43 Aeronautical stations *

* For transmitter power up to and including 50 watts;
 $43 + 10 \log_{10} P_p$ (watts).

For transmitter powers more than 50 watts, the attenuation shall be at least 60 dB.

SUP 27/67
to
27/71

ADD E. Other technical provisions

MOD 1. Assigned frequencies

MOD 27/72 1.1 For single-sideband emissions, except the class of emission A2H, the assigned frequency shall be at a value 1400 Hz above the carrier (reference) frequency.

ADD 27/72A 1.2 For aeronautical stations equipped with selective calling systems, the class of emission A2H shall be indicated in the Supplementary Information column of the Form of Notice (see Appendix 1 to the Radio Regulations).

ADD 27/72B 1.3 For classes of emission A1 and F1 the assigned frequency shall be chosen in accordance with the provisions of the footnote to Nos. 27/51 and 27/52.

MOD 27/73 1.4 The frequency assigned to stations which employ double sideband emissions (A3) shall be at 3023 kHz or 5680 kHz (see No. 27/50).

[PART II]

Section II

ADD

ARTICLE 3

Frequencies for common use

ADD 27/208 The carrier (reference) frequencies 3023 kHz and 5680 kHz are intended for common use on a world-wide basis.

ADD 27/209 The use of these frequencies in any part of the world is authorized:

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;

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

a) with mean power limited to a value of not more than 20 watts in the antenna circuit;

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

c) the power of aeronautical stations which use these frequencies in accordance with the above conditions may be increased to the extent necessary to meet certain operational requirements subject to coordination between the administrations directly concerned and those whose services may be adversely affected.

ADD 27/210 Notwithstanding these provisions, the frequency 5680 kHz may also be used at aeronautical stations for communication with aircraft stations when other frequencies of the aeronautical stations are either unavailable or unknown. However, this use shall be restricted to such areas and conditions that harmful interference cannot be caused to other authorized operations of stations in the aeronautical mobile service.

- ADD 27/211 Additional particulars regarding the use of these channels for the above purposes may be recommended by the meetings of ICAO.
- ADD 27/212 Frequencies 3023 kHz and 5680 kHz may also be used by stations of other mobile services participating in co-ordinated air-surface search and rescue operations, including communications between these stations and participating land stations. Aeronautical stations are authorized to use these frequencies to establish communications with such stations.
- ADD 27/213 These channels may be used for A1 or A3 emissions, in accordance with special arrangements. Such channels shall not be subdivided.
- ADD 27/214 All stations participating directly in co-ordinated search and rescue operations and using frequencies 3023 kHz and 5680 kHz shall transmit solely on the upper sideband except in the cases provided for in No. 27/50.

FINAL PROTOCOL

At the time of signing the Final Acts of the World Administrative Radio Conference on the Aeronautical Mobile (R) Service, Geneva, 1978, the undersigned delegates take note of the following statements made by signatory delegations:

[Documents No. and No. give a list of the Conference documents in which the statements in question are reproduced].

RECOMMENDATION No. Aer2 - DD

Relating to public correspondence with aircraft

The World Administrative Radio Conference on the Aeronautical Mobile (R) Service, Geneva 1978;

considering

- a) that Recommendation No. 19 (Geneva 1959) gave an initial indication of interest in public correspondence with aircraft;
- b) that some administrations have expressed requirements for long distance public correspondence with aircraft;
- c) that provisions of No. 432 of the Radio Regulations do not permit public correspondence in the exclusive aeronautical mobile bands, unless permitted by special aeronautical regulations;
- d) that appropriate satellite systems for this purpose are not yet operational;

recommends

- 1. that administrations should give due consideration to the technical, operational and administrative aspects of public correspondence with aircraft in order to permit orderly implementation at the appropriate time;
- 2. that administrations should make proposals on this subject to the next competent World Administrative Radio Conference;

requests the Secretary-General

to bring this Recommendation to the attention of the World Administrative Radio Conference, 1979.

AERONAUTICAL (R) CONFERENCE
GENEVA, 1978

E

R.1

PLENARY MEETING1st SERIES OF TEXTS SUBMITTED BY THE
EDITORIAL COMMITTEE TO THE PLENARY MEETING

The following texts are submitted to the Plenary Meeting for second reading:

<u>Source</u>	<u>Document No.</u>	<u>Title</u>
B.2	245	Partial Revision of the RR Appendix 27 - Part I - Sections 1 and 2 Part II - Section 2, Art. [3]
		Final Protocol
		Recommendation DD

C.J. DHENIN
Chairman of the
Editorial Committee

Annex: 21 pages



**PARTIAL REVISION
OF THE RADIO REGULATIONS ¹**

The Plenipotentiary Conference, Malaga-Torremolinos, 1973, at its 25th Plenary Meeting, approved the principle of convening a World Administrative Radio Conference on the Aeronautical Mobile (R) Service subject to receipt of a sufficient number of requests from administrations of the Members of the Union.

At its 29th Session (1974) the Administrative Council examined requests to convene the Conference from four countries Members of the Union. It also took note of a letter from the Secretary-General of the International Civil Aviation Organization (ICAO) on this question. The Administrative Council instructed the Secretary-General to request Members to inform him of their views.

At the 30th Session (1975) the Administrative Council examined the Secretary-General's report on this enquiry and, after consulting the Members of the Union, adopted Resolution No. 763 containing the agenda of the Conference and stipulating that it should meet in Geneva on 7 March 1977 for a maximum duration of four weeks.

At its 31st Session (1976), having examined the budget and in view of financial difficulties, the Administrative Council proposed to Members of the Union that the Conference be postponed until 6 February 1978, that its duration should not exceed four weeks and that the agenda item concerning the re-arrangement of the Radio Regulations be transferred to the World Broadcasting-Satellite Administrative Radio Conference (Geneva, 1977). Those proposals were approved by the Members of the Union.

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¹ Namely the Radio Regulations, Geneva, 1959, as partially revised by the Extraordinary Administrative Radio Conference to Allocate Frequency Bands for Space Radiocommunication Purposes (Geneva, 1963), by the Extraordinary Administrative Radio Conference for the Preparation of a Revised Allotment Plan for the Aeronautical Mobile (R) Service (Geneva, 1966), by the World Administrative Radio Conference to deal with matters relating to the Maritime Mobile Service (Geneva, 1967) by the World Administrative Radio Conference for Space Telecommunications (Geneva, 1971) and by the World Maritime Administrative Radio Conference (Geneva, 1974).

The World Administrative Radio Conference on the Aeronautical Mobile (R) Service accordingly convened on the appointed date, and considered and revised the relevant parts of the Radio Regulations in conformity with its agenda. Particulars of this revision are given in Annexes 1 and 2 hereto.

The revised provisions of the Radio Regulations shall form an integral part of the Radio Regulations which are annexed to the International Telecommunication Convention. These revised provisions shall come into force on and from the 1 September 1979, except for the Frequency Allotment Plan for the Aeronautical Mobile (R) Service contained in Appendix 27 Aer2 which shall come into force at 0001 hours G.M.T. on 1 February 1983. The provisions of the Radio Regulations, which are cancelled, superseded or modified by these revised provisions shall be abrogated on the dates of the entry into force of the revised provisions.

The delegates signing this revision of the Radio Regulations hereby declare that, should an administration make reservations concerning the application of one or more of the revised provisions of the Radio Regulations, no other administration shall be obliged to observe that provision or those provisions in its relations with that particular administration.

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Members of the Union shall inform the Secretary-General of their approval of the revision of the Radio Regulations by the World Administrative Radio Conference on the Aeronautical Mobile (R) Service (Geneva, 1978). The Secretary-General will inform Members of the Union regarding receipt of such notifications of approval as they are received.

In witness whereof the delegates of the Members of the Union represented at the World Administrative Radio Conference on the Aeronautical Mobile (R) Service (Geneva, 1978) have signed in the names of their respective countries this revision of the Radio Regulations in a single copy which will remain in the archives of the International Telecommunication Union and of which a certified copy will be delivered to each Member of the Union.

Done at Geneva, March 1978.

ANNEX 2

Revision of Appendix 27 to the Radio Regulations

Appendix 27 to the Radio Regulations shall be amended as follows:

MOD

APPENDIX 27 Aer2

to the Radio Regulations

**Frequency Allotment Plan for the Aeronautical Mobile
(R) Service and Related Information**

(See Article 7 of the Radio Regulations)

PART I

General Provisions**Section 1****Definitions**

NOC 27/1
to
27/8

MOD 27/9 9. A family of Frequencies in the Aeronautical Mobile (R) Service contains two or more frequencies selected from different aeronautical mobile (R) bands and is intended to permit communication at any time within the authorized area of use (see Nos. 27/189 to 27/207) between aircraft stations and appropriate aeronautical stations.

Section II

NOC **Technical and Operational Principles used for the
Establishment of the Plan of Allotment of Frequencies
in the Aeronautical Mobile (R) Service**

MOD **A. Channel characteristics and utilization**

NOC 1. Frequency separation

MOD 27/10 1.1 The frequency separation between carrier (reference) frequencies shall be 3 kHz. This is adequate to permit communications using the classes of emission referred to in Nos. 27/49-27/52 in the frequency bands between 2850 kHz and 17 970 kHz allocated exclusively to the aeronautical mobile (R) service. The carrier (reference) frequency of the channels in the Plan shall be an integral multiple of 1 kHz.

MOD 27/11 1.2 For radiotelephone emissions the audio frequencies will be limited to between 300 and 2700 Hz and the occupied bandwidth of other authorized emissions will not exceed the upper limit of A3J emissions. In specifying these limits, however, no restriction in their extension is implied in so far as emissions other than A3J are concerned, provided that the limits of unwanted emissions are met (see ADD 27/66A and ADD 27/66B).

Note.— For aircraft and aeronautical station transmitter types first installed before 1 February 1983 the audio frequencies will be limited to 3000 Hz.

ADD 27/11A 1.3 On account of the possibility of interference, a given channel should not be used in the same allotment area for radiotelephony and data transmissions.

MOD 27/12 1.4 The use of channels indicated in 27/16 for the various classes of emissions other than A3J and A2H will be subject to special arrangements by the administrations concerned and affected in order to avoid harmful interference which may result from the simultaneous use of the same channel for several classes of emission.

SUP 27/13

MOD 27/14 1.5 To preclude the possibility of interference, adjacent channels in the list of frequencies in No. 27/16 have not as a rule been allotted to the same MWARA, RDARA or VOLMET areas. However, to satisfy particular needs, the administrations concerned may conclude special arrangements for the assignment of adjacent channels derived from the table (No. 27/16).

MOD 27/15 1.6 The arrangements contemplated in No. 27/12 and No. 27/14 should be made under the Articles of the International Telecommunication Convention and the Radio Regulations entitled "Special Arrangements".

MOD 2. Frequencies allotted

MOD 27/16 The list of carrier (reference) frequencies allotted in the bands allocated exclusively to the aeronautical mobile (R) service, on the basis of the frequency separation provided for under No. 27/10, will be found in the following table: ¹

ADD 27/16.1 ¹ To calculate the assigned frequency from a carrier (reference) frequency given in the table, reference should be made to No. 27/72.

kHz							
<u>2850 - 3025</u>		<u>3400 - 3500</u>	<u>4650 - 4700</u>	<u>5480 - 5680</u>		<u>6525 - 6685</u>	
2851	2953	3401	4651	5481	5583	6526	6628
2854	2956	3404	4654	5484	5586	6529	6631
2857	2959	3407	4657	5487	5589	6532	6634
2860	2962	3410	4660	5490	5592	6535	6637
2863	2965	3413	4663	5493	5595	6538	6640
2866	2968	3416	4666	5496	5598	6541	6643
2869	2971	3419	4669	5499	5601	6544	6646
2872	2974	3422	4672	5502	5604	6547	6649
2875	2977	3425	4675	5505	5607	6550	6652
2878	2980	3428	4678	5508	5610	6553	6655
2881	2983	3431	4681	5511	5613	6556	6658
2884	2986	3434	4684	5514	5616	6559	6661
2887	2989	3437	4687	5517	5619	6562	6664
2890	2992	3440	4690	5520	5622	6565	6667
2893	2995	3443	4693	5523	5625	6568	6670
2896	2998	3446	4696	5526	5628	6571	6673
2899	3001	3449	(16) CHNLS	5529	5631	6574	6676
2902	3004	3452	*4699	5532	5634	6577	6679
2905	3007	3455		5535	5637	6580	6682
2908	3010	3458		5538	5640	6583	(53) CHNLS
2911	3013	3461	<u>5450 - 5480</u>	5541	5643	6586	
2914	3016	3464	REGION 2	5544	5646	6589	
2917	3019	3467	5451	5547	5649	6592	
2920	3023	3470	5454	5550	5652	6595	
2923	(R) and (OR) (58) CHNLS	3473	5457	5553	5655	6598	
2926		3476	5460	5556	5658	6601	
2929		3479	5463	5559	5661	6604	
2932		3482	5466	5562	5664	6607	
2935		3485	5469	5565	5667	6610	
2938		3488	5472	5568	5670	6613	
2941		3491	5475	5571	5673	6616	
2944		3494		5574	5676	6619	
2947		3497	(9) CHNLS	5577	5680	6622	
2950			*5478	5580	(R) and (OR) (67) CHNLS	6625	
		(33) CHNLS					

<u>8815 - 8965</u>	<u>10005 - 10100</u>	<u>11275 - 11400</u>	<u>13260 - 13360</u>	<u>17900 - 17970</u>
8816 8921	10006	11276 11384	13261	17901
8819 8924	10009	11279 11387	13264	17904
8822 8927	10012	11282 11390	13267	17907
8825 8930	10015	11285 11393	13270	17910
8828 8933	10018	11288 11396	13273	17913
8831 8936	10021	11291 (41) CHNLS	13276	17916
8834 8939	10024	11294 *11399	13279	17919
8837 8942	10027	11297	13282	17922
8840 8945	10030	11300	13285	17925
8843	10033	11303	13288	17928
8846 8948	10036	11306	13291	17931
8849 8951	10039	11309	13294	17934
8852 8954	10042	11312	13297	17937
8855 8957	10045	11315	13300	17940
8858 8960	10048	11318	13303	17943
8861 (49) CHNLS	10051	11321	13306	17946
8864 *8963	10054	11324	13309	17949
8867	10057	11327	13312	17952
8870	10060	11330	13315	17955
8873	10063	11333	13318	17958
8876	10066	11336	13321	17961
8879	10069	11339	13324	17964
8882	10072	11342	13327	17967
8885	10075	11345	13330	(23) CHNLS
8888	10078	11348	13333	
8891	10081	11351	13336	
8894	10084	11354	13339	
8897	10087	11357	13342	
8900	10090	11360	13345	
8903	10093	11363	13348	
8906	10096	11366	13351	
8909	(31) CHNLS	11369	13354	
8912	*10099	11372	13357	
8915		11375	(33) CHNLS	
8918		11378		
		11381		

* Guard Band

SUP 27/17

SUP 27/18

SUP 27/19

MOD 27/20 4. The International Civil Aviation Organization (ICAO) coordinates radiocommunications of the aeronautical mobile (R) service with international aeronautical operations and this Organization should be consulted in all appropriate cases in the operational use of the frequencies in the Plan.

NOC 27/21

NOC 27/22

MOD 27/23 7. The coordination described in No. 27/20 shall be effected where appropriate and desirable for the efficient utilization of the frequencies in question, and especially when the procedures of No. 27/22 are unsatisfactory.

NOC

B. Interference range contoursMOD 27/24 1. General provisionsADD 27/24A 1.1 Service range

Due to factors such as the power of the transmitter, propagation loss, noise level, etc., there is a limit to the distance at which reliable communications can be effected between an aeronautical station and an aircraft station. This limiting distance, based on the weakest path, is the service range. The boundary of the air route area is often assumed to be the limiting distance.

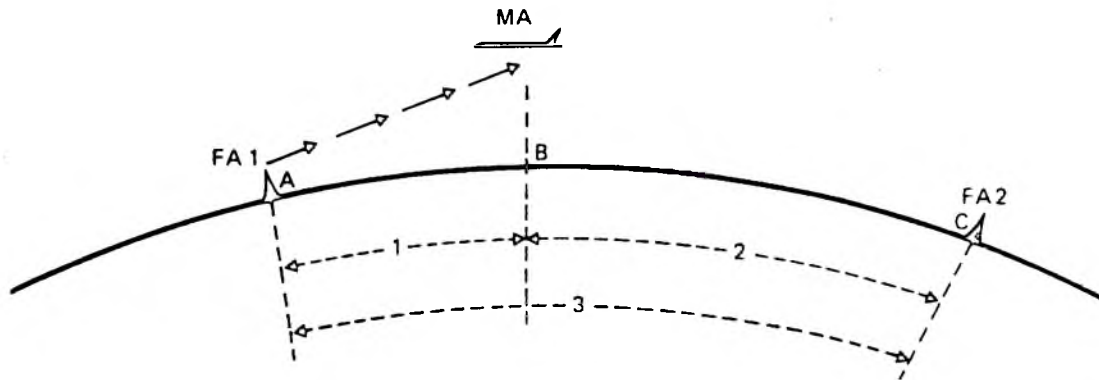
ADD 27/24B 1.2 Interference range

This is the minimum distance from the limit of the service range of a wanted station to a potentially interfering station needed to produce a protection ratio of 15 dB. This protection ratio is between the wanted signal at an aircraft station at the limit of the service range and the signal from a potentially interfering aeronautical station operating on the same frequency. The interference range has been calculated for different frequencies indicated on the data tables contained in Nos. 27/39-27/48 for day and night conditions, for median latitudes, for conditions of median sunspot activity and for a mean effective radiated power of 1 kW at the aeronautical station.

ADD 27/24C 1.3 Repetition distance

This is the distance at which a frequency may be successfully shared and is equal to the sum of the service range and the interference range.

ADD 27/24D 1.4 Figure 1 illustrates the use of the concept of interference range in frequency planning through the determination of repetition distance.



FA1 = aeronautical station in communication with aircraft station MA
 FA2 = aeronautical station in communication with aircraft stations other than MA
 MA = aircraft station in communication with aeronautical station FA1
 1 = service range AB
 2 = interference range CB
 3 = repetition distance AC

FIGURE 1

Service range, interference range, repetition distance

- ADD 27/24E 1.5 The transparencies associated with this Appendix show, for the frequencies stated, the interference range described in No. 27/24B between an interfering aeronautical station and an aircraft station operating at the limit of its service range. Because of the variability of propagation conditions not only from hour to hour within the daytime and nighttime periods but also from day to day, with season, with solar activity level and geographic location, the 15 dB protection ratio may be expected to have marked variations and accordingly a greater protection may be available much of the time, especially when the aircraft is not operating at the limit of its service range.
- ADD 27/24F 1.6 Supplementary information on service range, interference range and repetition distance, as well as on the use of the transparencies can be found in the technical documentation issued by the IFRB (such as texts of the IFRB Seminar on frequency management and use of the frequency spectrum; Doc. No. 11/76 or revisions.
- MOD 27/25 1.7 Two types of transparencies are provided for use respectively with the Mercator projection world maps and the Lambert azimuthal equal area projection maps for the polar areas. The Mercator projection transparencies encompass the area between latitude 60° North and 60° South. The transparencies associated with the Polar area projections encompass

the areas north of latitude 30° North and south of latitude 30° South. The Mercator projection overlaps the Polar projection maps between latitudes 30° and 60° North and 30° and 60° South. This overlap is intended to provide continuity between transparencies of the two projections.

NOC 2. Type of maps used

MOD 27/26 The transparencies mentioned in Nos. 27/24E and 27/25, can be used only on a world or polar map of the projection and scales given on each transparency and will not be suitable for use on any other projection or scale. The world and polar maps associated with this Appendix, depicting MWARA, RDARA and VOLMET areas, are to the correct scale so that the transparencies carrying the interference range contours can be directly used on these maps. The auroral zones are marked on the polar maps.

NOC 3. Change of Scale of Projection

NOC 27/27

NOC 27/28

NOC 27/29

NOC 4. Sharing conditions between areas

ADD 4.1 Frequency bands 3 MHz to 11.3 MHz

MOD 27/30 4.1.1 The transparencies are constructed on the basis of the following sharing conditions:

Areas	Bands between : MHz	Sharing conditions
MWARA or VOLMET area to MWARA or VOLMET area	3 - 6.6 9 - 11.3	night propagation day propagation Note : 6.6 MHz and 5.6 MHz sharing conditions are considered to be the same
MWARA or VOLMET area to RDARA	3 - 5.6 6.6 - 11.3	night propagation day propagation
RDARA RDARA	3 - 4.7 5.6 - 11.3	night propagation day propagation

- MOD 27/31 4.1.2 The additional "Day" contours included for 3 MHz, 3.5 MHz and 4.7 MHz are for determining daylight sharing possibilities.
- ADD 4.2 Frequency bands 13 MHz and 18 MHz
- ADD 27/31A 4.2.1 The revised Frequency Allotment Plan for the 13 MHz and 18 MHz bands is based on daytime protection only. This results in the following sharing possibilities:
- ADD 27/31B 4.2.2 For the 13 MHz band, the repetition factor is at least 3 whilst for the 18 MHz band it is 4. It is to be noted that the longitudinal separation might be decreased to allow for a repetition of 4 (at 13 MHz) and 6 (at 18 MHz), taking into account operational and local circumstances;
- ADD 27/31C 4.2.3 The sharing takes into account the likely locations of the aeronautical stations rather than the area boundaries.
- MOD 5. Method of use of the transparencies for the bands 3 MHz to 11.3 MHz
- MOD 27/32 5.1 Take the appropriate MWARA, RDARA or VOLMET area map associated with this Appendix and select the transparency for the frequency order and sharing conditions under consideration.
- Note. - Transparencies are equally applicable for MWARA, RDARA, VOLMET and [world-wide] use.
- MOD 27/33 5.2 The equal area projections are applicable in the polar areas north of 60°N and south of 60°S; and the Mercator projections are applicable between 60°N and 60°S.
- MOD 27/34 5.3 Place the centre of the transparency (i.e. the intersection of the axis of symmetry and the latitude line) over the boundary of the area (use the reception area boundary in the case of VOLMET) at the point on the boundary nearest to the potentially interfering transmitter or at the location of the interfering transmitter. Note the latitude of the selected point and use the interference range contour corresponding to this latitude.
- MOD 27/35 5.4 A transmitter located at any point outside the contour will result, as defined in No. 27/24B, in a protection ratio of better than 15 dB.

- MOD 27/36 5.5 A transmitter located at any point inside the contour will result in a protection ratio of less than 15 dB. However, if the transmitter is located inside the contour but the propagation path traverses an auroral zone, it is assumed that the signal attenuation within this zone will result in a protection ratio of better than 15 dB.
- MOD 27/37 [Concerns the Spanish text only]
- MOD 27/38 5.7 For either the north or south polar areas, the transparency should be positioned so that the north-south line (terminated with an arrow) is paralalled to the meridian of longitude, with the arrow pointing towards the pole.
- NOC 27/39
to
27/48

NOC C. Classes of emission and power

NOC 1. Classes of emission

MOD 27/49 In the aeronautical mobile (R) service the use of emissions such as those listed below is permissible subject to compliance with the special provisions applicable to each case and provided that such use does not cause harmful interference to other users of the channel concerned.

MOD 27/50 1.1 Telephony - Amplitude modulation:

- double sideband (A3) *
- single sideband, full carrier (A3H) *
- single sideband, suppressed carrier (A3J)

* A3 and A3H to be used only on 3023 kHz and 5680 kHz as well as in cases covered by Resolution Aer2 - E, resolves 5.

NOC 1.2 Telegraphy (including automatic data transmission)

MOD 27/51 1.2.1 Amplitude modulation:

- telegraphy without the use of a modulating audio frequency (by on-off keying) (A1) **

- telegraphy by the on-off keying of an amplitude modulating audio frequency or audio frequencies or by the on-off keying of the modulated emission and including selective calling, single sideband, full carrier (A2H)
- multichannel voice frequency telegraphy, single sideband, suppressed carrier (A7J)
- other transmission such as automatic data transmission, single sideband, suppressed carrier (A9J)

MOD 27/52

1.2.2 Frequency modulation

- telegraphy by frequency shift keying without the use of a modulating audio frequency, one of two frequencies being emitted at any instant (F1) **

** A1 and F1 are permitted provided they do not cause harmful interference to the classes of emission A2H, A3J, A7J and A9J. In addition, A1 and F1 emissions shall be in accordance with the provisions in 27/65 to 27/66B and care should be taken to place these emissions at or near the centre of the channel. However, a modulating audio frequency is permitted with single sideband transmitters, where the carrier is suppressed in accordance with No. 27/63.

SUP 27/53

NOC 2. Power

MOD 27/54

- 2.1 Unless otherwise specified in Part II of this Appendix, the peak envelope powers supplied to the antenna transmission line shall not exceed the maximum values indicated in the table below; the corresponding peak effective radiated powers being assumed to be equal to two-thirds of these values:

Class of emission	Stations	Maximum peak envelope power
A2H, A3J, A7J, A9J A3*), A3H*) (100 % modulation)	Aeronautical stations Aircraft stations	6 kW 400 W
Other emissions such as A1, F1	Aeronautical stations Aircraft stations	1.5 kW 100 W

*) A3 and A3H to be used only on 3 023 kHz and 5 680 kHz, as well as in cases covered by Resolution Aer2 - E, resolves 5.

- MOD 27/55 2.2 It is assumed that the maximum peak envelope powers specified above for aeronautical stations will produce the mean effective radiated power of 1 kW used as a basis for the interference range contours.
- MOD 27/56 2.3 In order to provide satisfactory communication with aircraft, aeronautical stations serving MWARA, VOLMET [and world-wide areas] may exceed the power limits specified in No. 27/54. Except in the case of 3023 kHz and 5680 kHz which are subject to special provisions [Nos. 27/196 and 27/201]. In each such case, the administration having jurisdiction over the aeronautical station shall note No. 694 of the Radio Regulations and ensure:
- NOC 27/57
- NOC 27/58
- NOC 27/59
- NOC 27/60
- NOC 27/61
- MOD 27/62 2.4 It is recognized that the power employed by aircraft transmitters may, in practice, exceed the limits specified in No. 27/54. However, the use of such increased power (which normally should not exceed 600 W Pp) shall not cause harmful interference to stations using frequencies in accordance with the technical principles on which the Allotment Plan is based.

ADD **D. Limits to the power levels of unwanted emissions**

MOD 1. Technical provisions relating to the use of single-sideband emissions.

MOD 27/63 1.1 Definitions of carrier modes:

Carrier mode	Level N (dB) of the carrier with respect to peak envelope power
Full carrier (for example A2H)	$0 \geq N \geq -6$
Suppressed carrier (for example A3J)	Aircraft stations $N < -26$ Aeronautical stations $N < -40$

SUP 27/64

MOD 2. Tolerance for levels of emission outside the necessary bandwidth.

MOD 27/65 2.1 In a single-sideband transmission, the mean power of any emission supplied to the antenna transmission line of an aeronautical or aircraft station on any discrete frequency, shall be less than the mean power (P_m) of the transmitter in accordance with the following table:

MOD 27/66 2.2 For aircraft station transmitter types and for aeronautical station transmitters first installed before 1 February 1983:

Frequency separation Δ from the assigned frequency kHz	Minimum attenuation below mean power (P_m) dB
$2 \leq \Delta < 6$	25
$6 \leq \Delta < 10$	35
$10 \leq \Delta$	Aircraft stations 40 Aeronautical stations $43 + 10 \log_{10} P_m \text{ (watts)}$

Note. — All transmitters first placed in operation after 1 February 1983 shall comply with the specifications contained in 27/66B.

ADD 27/66A 2.3 In a single-sideband transmission, the peak envelope power (Pp) of any emission supplied to the antenna transmission line of an aeronautical or aircraft station on any discrete frequency, shall be less than the peak envelope power (Pp) of the transmitter in accordance with the following table.

ADD 27/66B 2.4 For aircraft station transmitters first installed after 1 February 1983 and for aeronautical station transmitters in use after 1 February 1983.

Frequency separation Δ from the assigned frequency kHz	Minimum attenuation below peak envelope power (Pp) dB
$1.5 \leq \Delta < 4.5$	30
$4.5 \leq \Delta < 7.5$	38
$7.5 \leq \Delta$	Aircraft stations 43 Aeronautical stations *)

*) For transmitter powers up to and including 50 watts
 $43 + 10 \log_{10} P_p$ (watts)

For transmitter powers more than 50 watts, the attenuation shall be at least 60 dB.

SUP 27/67
to
27/71

ADD E. Other technical provisions

MOD 1. Assigned frequencies

MOD 27/72 1.1 For single-sideband emissions, except class of emission A2H, the assigned frequency shall be at a value 1400 Hz above the carrier (reference) frequency.

ADD 27/72A 1.2 For aeronautical stations equipped with selective calling systems, the class of emission A2H shall be indicated in the Supplementary Information column of the Form of Notice (see Appendix 1 to the Radio Regulations).

ADD 27/72B 1.3 For classes of emission A1 and F1 the assigned frequency shall be chosen in accordance with the provisions of the footnote to 27/51 and 27/52.

MOD 27/73 1.4 Stations employing double-sideband emissions (A3) shall operate with an assigned frequency at 3023 kHz or 5680 kHz (see 27/50).

[PART II]

Section II

ADD

ARTICLE [3]

Frequencies for common use

ADD 27/208 The carrier (reference) frequencies 3023 kHz and 5680 kHz are intended for common use on a world-wide basis.

ADD 27/209 The use of these frequencies in any part of the world is authorized 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;

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

- a) with mean power limited to a value of not more than 20 watts in the antenna circuit;
- b) special attention must be given in each case to the type of antenna used in order to avoid harmful interference;
- c) the power of aeronautical stations which use these frequencies in accordance with the above conditions may be increased to the extent necessary to meet certain operational requirements subject to coordination between the administrations directly concerned and those whose services may be adversely affected.

ADD 27/210 Notwithstanding these provisions, the frequency 5680 kHz may also be used at aeronautical stations for communication with aircraft stations when other frequencies of the aeronautical stations are either unavailable or unknown. However, this use shall be restricted to such areas and conditions that harmful interference cannot be caused to other authorized operations of stations in the aeronautical mobile service.

ADD 27/211 Additional particulars regarding the use of these channels for the above purposes may be recommended by the meetings of ICAO.

ADD 27/212 Frequencies 3023 kHz and 5680 kHz may also be used by stations of other mobile services participating in co-ordinated air-surface search and rescue operations, including communications between these stations and participating land stations. Aeronautical stations are authorized to use these frequencies to establish communications with such stations.

ADD 27/213 These channels may be used for A1 or A3 emissions, in accordance with special arrangements. Such channels shall not be subdivided.

ADD 27/214 All stations participating directly in co-ordinated search and rescue operations and using frequencies 3023 kHz and 5680 kHz shall transmit solely on the upper single sideband (see also 27/73) except in the cases provided for in Numbers 27/50 and 27/73.

Emissions of Class A3 and A3H may be used in accordance with Resolution Aer2 - E, resolves 5.

FINAL PROTOCOL

At the time of signing the Final Acts of the World Administrative Radio Conference on the Aeronautical Mobile (R) Service, Geneva, 1978, the undersigned delegates take note of the following statements made by signatory delegations:

[Documents No. and No. give a list of the Conference documents in which the statements in question are reproduced].

RECOMMENDATION No. Aer2 - DD

Relating to public correspondence with aircraft

The World Administrative Radio Conference on the Aeronautical Mobile (R) Service, Geneva 1978;

considering

- a) that Recommendation No. 19 (Geneva 1959) gave an initial indication of interest in public correspondence with aircraft;
- b) that some administrations have expressed requirements for long distance public correspondence with aircraft;
- c) that provisions of No. 432 of the Radio Regulations do not permit public correspondence in the exclusive aeronautical mobile bands, unless permitted by special aeronautical regulations;
- d) that appropriate satellite systems for this purpose are not yet operational;

recommends

- 1. that administrations should give due consideration to the technical, operational and administrative aspects of public correspondence with aircraft in order to permit orderly implementation at the appropriate time;
- 2. that administrations should make proposals on this subject to the next competent World Administrative Radio Conference;

requests the Secretary-General

to bring this Recommendation to the attention of the World Administrative Radio Conference, 1979.

INTERNATIONAL TELECOMMUNICATION UNION

AERONAUTICAL (R) CONFERENCE

(Geneva, 1978)

Document No. 263-E

27 February 1978

Original : English

COMMITTEE 6

Drafting Group of Committee 6

REPORT OF THE DRAFTING GROUP

The annexed text is recommended for adoption by Committee 6.

L. GRIMSTVEIT

Chairman of the Drafting Group

Annex : 1



A N N E X

DRAFT

RECOMMENDATION AER...

Relating to the efficient use of
Aeronautical Mobile (R) world-wide frequencies

The World Administrative Radio Conference for the Aeronautical Mobile (R)
Service, Geneva, 1978,

considering

a) that the Conference has allotted a limited number of world-wide frequencies
for exercising control over regularity of flight and for safety of aircraft;

recommends to Administrations

1. that the number of HF aeronautical stations on the world-wide channels
should be kept to a minimum consistent with the economic and efficient use of
frequencies;

2. that, if possible and practicable, one such station should serve aircraft
operating agencies in adjacent countries and there should not be more than one station
per country.

AERONAUTICAL (R) CONFERENCE

(Geneva, 1978)

Document No. 264-E

27 February 1978

Original : English

COMMITTEE 6

SUMMARY RECORD

OF THE

FOURTH MEETING OF COMMITTEE 6

(REGULATORY PROCEDURES)

Tuesday, 21 February 1978, at 1400 hrs

Chairman : Mr. R.J. BUNDLE (New Zealand)

Subjects discussed

Documents Nos.

- | | |
|--|-------------------------|
| 1. Consideration of the text of No. 27/20 (continued) | 160, 180, 183,
DT/44 |
| 2. Draft Recommendation for the frequency band
21 870-22 000 kHz | 186 |
| 3. Consideration of the text for Resolution C | 192 |
| 4. Draft Recommendation submitted by Spain and
Switzerland | 189 |
| 5. Draft modification to Article 9 submitted by the
United Kingdom and the United States of America | 180 |
| 6. Sixth report of Working Group 6A (continued) | 176 |



1. Consideration of the text of No. 27/20 (Documents Nos. 160, 180, 183, DT/44) (continued)

1.1 The Chairman announced that the small working group set up at the end of the previous meeting had agreed, after considerable discussion, on the text of No. 27/20 contained in Document No. DT/44. That wording was practically identical with the text submitted by Working Group 6A in Document No. 160.

1.2 The delegate of Algeria said that he could support the text in Document No. DT/44.

1.3 The delegate of the United States of America said he was somewhat disappointed that the wording suggested at the preceding meeting by the delegate of India had not been retained in the proposed text, since it reflected the Secretary-General's statement on the excellent past, present and expected future relations between ICAO and the ITU and the clear exposé of the representative of the IFRB on the roles of the Board and ICAO in bringing about the approval of aeronautical frequencies for use. The proposal submitted by the United Kingdom and United States delegations in Document No. 180 was intended to reflect the new challenges placed before the aeronautical community by such events as completion of the transfer to single-sideband operation, the new Allotment Plan and the use of long-distance high frequencies for the safety and regularity of flight, which caused some concern as to the individual and collective functions of Administrations, ICAO and the ITU. Nevertheless, his delegation realized that the Conference must proceed with its work and could accept the text in Document No. DT/44, in the anticipation that ICAO would continue to play its active part in the advancement of the interests of the aeronautical community, just as the ITU would in relation to telecommunications.

1.4 The delegate of the United Kingdom endorsed those remarks.

Document No. DT/44 was approved.

2. Draft Recommendation for the frequency band 21 870-22 000 kHz (Document No. 186)

2.1 The delegate of Spain introduced the document, pointing out that, although the Conference was not competent to include the band in question in the Allotment Plan, the necessary planning could be made, so as to avoid delay in implementation if the 1979 Conference decided to approve the proposed allotment.

2.2 In reply to a question by the Chairman, the representative of the IFRB said that the frequency band in question had been placed in square brackets because the final decision on the figures, would be taken by Committee 5.

Document No. 186 was approved.

3. Consideration of the text for Resolution C (Document No. 192)

3.1 The delegates of Argentina and Spain drew attention to the fact that in the Spanish text the word "higher" in the fourth line of the "resolves" paragraph appeared as "other".

The Chairman said that the Editorial Committee would align the texts.

Document No. 192 was approved.

4. Draft Recommendation submitted by Spain and Switzerland (Document No. 189)

4.1 The delegate of Switzerland, introducing the document, reminded the Committee that when the second Report of Working Group 6A (Document No. 145) had been approved, his delegation had reserved the right to submit a proposal concerning public correspondence in the aeronautical bands for submission to the 1979 WARC. All the existing references in the Radio Regulations to public correspondence on the frequencies in questions related exclusively to the protection of safety and regularity in flight, yet the possibility of meeting the requirements of aircraft passengers and telephone subscribers was becoming important for some countries. It would be seen that the draft Recommendation deliberately left specific solutions open until requirements could be defined more clearly. He felt that the criticisms against his delegation's original suggestions had been taken care of in the proposal presented in Document No. 189.

4.2 The delegate of Spain added that the draft, which was purposely worded in general terms, was intended to draw attention to the fact that the problem had become real and topical since it had first been raised in Recommendation No. 19 of the 1959 Conference. It was to be hoped that an appropriate solution would be found at the 1979 WARC; meanwhile, Administrations should study all aspects of the problem.

4.3 The delegate of Italy said he was not sure whether the 1979 WARC would be competent to discuss a problem relating to only one service. Perhaps the competent WARC would be the Conference on the Mobile Services.

4.4 The delegate of Venezuela suggested that the way to include the question in the agenda of the 1979 Conference would be to submit it to the ITU Administrative Council for insertion in that agenda.

4.5 The Deputy Secretary-General explained that in preparing the agenda for the 1979 Conference the Administrative Council had indeed drafted item 2.1 with a view to limiting the scope of the Conference and avoiding consideration of matters concerning one service only. On the other hand, under item 2.9 the Council had made provision for consideration of Recommendations and Resolutions of other Administrative Radio Conferences. Any Recommendation of the current Conference would thus be considered by the 1979 WARC - although, of course, the final decision on such a Recommendation could not be prejudged.

4.6 The delegate of Kenya said that, although he sympathized with the motives of the authors of the draft, he did not consider the Conference as such competent to approve the Recommendation. Public correspondence with aircraft was a luxury at this stage; a difficult situation would be created if, for example, during a three-hour flight 100 passengers in an aircraft wished to make calls; the quality of HF communications was very poor as compared to satellite links, and Kenya for instance, would not allow their connection to its public exchanges; finally, the "requests the Secretary-General" paragraph of the draft was inappropriate, since the Secretary-General acted on behalf of all the Members of the Union, and would thus be committing Administrations which were not in favour of the whole idea. In his view, only the interested Administrations should be involved in the exercise.

4.7 The delegates of the Federal Republic of Germany, Japan, Greece, the United States of America and Portugal, noting that the operative paragraphs were drafted in very general terms and agreeing that it would be useful to encourage further study of the question of long distance public correspondence with aircraft, expressed their support for the draft Recommendation.

4.8 The delegate of Norway, recalling the provisions of Article 27 of the Radio Regulations, and particularly No. 954 concerning public correspondence, proposed the addition of the following preambular paragraph :

"that No. 954 of the Radio Regulations permits aircraft stations to use frequencies allocated to the Maritime Mobile Service for public correspondence".

4.9 The delegate of Switzerland explained that the sponsors of the draft Recommendation had purposely omitted any reference to the provisions of Article 27 from the text. The latter concerned handling public correspondence with stations of the Maritime Mobile Service. The whole subject, however, required in-depth study.

4.10 The delegate of Venezuela believed that proposals on the matter could be submitted by Administrations alone and that they must be addressed to the 1979 WARC directly. He questioned the competence of the present Conference to discuss the question of public correspondence or to take any decision on it.

4.11 The Chairman said he understood that Administrations wishing to submit proposals to the 1979 WARC could do so by transmitting them through a Conference such as the present one. He believed the previous speaker to be the only one who questioned the competence of the present Conference to act in the way it was doing.

4.12 The Deputy Secretary-General said that the WARC 1979 could, under item 2.9 of its provisional agenda, consider any matter submitted to it by the present Conference. He understood the point made by the delegate of Italy but believed that the best way for the Conference to proceed, if it wished to bring the matter to the attention of the 1979 WARC and to avoid questions of competence being raised during that meeting, would be to adopt a Resolution or Recommendation on it.

4.13 The delegate of Japan accepted that interpretation.

4.14 The delegate of Argentina said his Administration would be opposed to taking the question of public correspondence any further, but did not object to discussing it in the context of long distance services. He could support the draft Recommendation as it stood.

4.15 The delegate of the Union of Soviet Socialist Republics found the draft Recommendation perfectly understandable and acceptable.

4.16 The Chairman noted that no support had been expressed for the Norwegian amendment.

The draft Recommendation contained in Document No. 189 was adopted.

5. Draft modification to Article 9 submitted by the United Kingdom and the United States of America (Document No. 180)

5.1 MOD 557 }
ADD 557A }

The delegate of the United States of America, introducing the proposal, explained that it was aimed at strengthening the relevant provisions of the Radio Regulations to assist the IFRB in overcoming certain problems arising in connection with the examination of notices.

5.2 The representative of the IFRB said that in accordance with No. 500 the Board at present did not examine the notices referred to in No. 552 to ensure their conformity with the Convention and Radio Regulations, but that if the proposal before the Conference were adopted it would be in a position to do so.

He suggested that the proposed new text which was identical with that of No. 501 be renumbered ADD 553A instead of ADD 577A.

If the Conference wished the provisions of No. 611 to be applied to notices referred to in No. 552, it might be advisable to modify the proposed text to read : "if the notice is in conformity with the provisions of No. 501 of the Radio Regulations". If that amendment were adopted, the Committee might wish to adopt supplementary provisions instructing the Board on the action it should take if a notice were not in conformity with No. 501. A number of possibilities might be envisaged. The 1974 Maritime Conference had examined the same problem and had decided that, if a notice were not in conformity with No. 501, the provisions of Nos. 520 and 521 were to be applied. In practice, that meant that when a notice was not in conformity with the Radio Regulations, the Board recorded the assignment only if the Administration invoked No. 115 but returned the notice if no such reference were made. The procedure was a simple one, but it did allow the Board, when reference was made to No. 115, to record assignments without ascertaining whether, or not, they were in conformity with the Plan.

5.3 The Chairman believed the Committee would welcome the opportunity to consider a text bringing out the points made by the previous speaker.

He proposed that the sponsors of the proposal and the representative of the IFRB draw up a revised version of the proposal for submission to the Committee in due course.

It was so decided.

6. Sixth Report of Working Group 6A (continued) (Document No. 176)

MOD 27/23 - Adopted.

The meeting rose at 1530 hours.

The Secretary :

M. AHMAD

The Chairman :

R.J. BUNDLE

INTERNATIONAL TELECOMMUNICATION UNION

AERONAUTICAL (R) CONFERENCE

(Geneva, 1978)

Document No. 265-E

27 February 1978

Original : English

COMMITTEE 6

NOTE FROM THE CHAIRMAN OF COMMITTEE 5

TO THE CHAIRMAN OF COMMITTEE 6

After considering Document No. 252(J) at its seventh meeting on 27 February 1978, Committee 5 decided to revise its decision contained in Document No. 221 and to consider provision of allotments by "World-wide Allotment Areas" as defined in Document No. 252(J) as a first approach to finalize the plan.



COMMITTEE 5Finland, Norway and Sweden

PROPOSALS FOR THE WORK OF THE CONFERENCE

World-wide allotment areas and associated requirements1. Introduction

Reference is made to Documents Nos. 252 and DT/45(Rev.1).

The Finnish, Norwegian and Swedish Administrations support the proposals made by Japan in Document No. 252 concerning a definition of allotment areas for aeronautical stations for communications with aircraft stations anywhere in the world. We can also accept the five "world-wide areas" as defined in that document.

The Finnish, Norwegian and Swedish Administrations can however not accept the table indicating how frequencies are to be allotted. A distribution of frequencies as indicated, i.e. each frequency to be allotted for use by aeronautical stations in only one limited part of the world, is not in the interests of good frequency management.

Unacceptable channel occupancy is likely to occur in many cases. Using the assumptions made by Sub-Working Group 5B1 in Document No. DT/45(Rev.1) (6 min./day per aircraft, overall growth until 1990 in transmission time 200 % and 300 % respectively and 10 hours usable time per day by sub-band) the following examples may be shown :

For "world-wide area" :

- I (RDARA 1, 2 and 3), frequency group II : 4 channels with 89 % average occupancy through 10 hours;
- II (RDARA 10-12D), frequency group I : 2 channels with 88 % average occupancy through 10 hours;
- III (RDARA 6, 8, 9 and 14), frequency group III : 3 channels with 81 % average occupancy through 10 hours;
- IV (RDARA 12E-12J and 13), frequency group II : 1 channel with 110 % average occupancy through 10 hours;
- V (RDARA 4, 5 and 7), frequency group III : 3 channels with 90 % average occupancy through 10 hours.

An allotment plan for the "world-wide areas" as indicated in Document No. 252 would be an apparent invitation to Administrations to assign frequencies allotted to other "world-wide areas" when the channel occupancy on the frequencies allotted to their own area is unacceptable.

Adjusting the calculations of Document No. DT/45(Rev.1) to the five "world-wide areas" gives the following results :

"B. Assumptions and calculations"

1 - 8 : NOC

"9. The distribution of transmission time (minutes/day) by sub-band, year 1990 projection :

Frequency group W-W Area	I	II	III	IV	V	VI
I	89	2134	2845	2045	267	1512
II	1052	2103	2404	901	751	300
III	42	375	1456	1289	956	42
IV	99	658	1087	658	396	396
V	148	987	1628	987	591	591

10, 11 : NOC

"C. Number of traffic channels"

The calculated number of channels for long-distance operational control purposes, based on the agreed assumptions as stated in Section B, year 1990 projection, is given below :

Frequency group W-W Area	I	II	III	IV	V	VI
I	1	9	12	9	2	7
II	4	9	10	4	4	2
III	1	2	6	6	4	1
IV	1	3	5	3	2	2
V	1	5	7	5	3	3

"D. Number of frequencies"

1 - 6 : Similar considerations of necessary number of frequencies based on repeatability as in Document No. DT/45(Rev.1) have been applied on the "world-wide areas".

"7. Summary table"

Frequency group	I	II	III	IV	V	VI
Number of frequencies	6	13	20	13	8	15

2. Proposal

The Administrations of Finland, Norway and Sweden propose, on the bases of the assumptions and calculations referred to above, that entries at suitable frequencies in the Frequency Allotment Plan, Nos. 27/195 - 207, be made as follows (the frequencies in this proposal are provisionally indicated by numbers) :

	Frequency / No. /	Authorized area of use	Remarks
I.	301 302 303 304 305 306	WW : I WW : II, III WW : II, V WW : II WW : II WW : IV	Aeronautical station, aircraft stations world-wide
II.	501 502 503 504 505 506 507 508 509 510 511 512 513	WW : I, IV WW : I, IV WW : I, IV WW : I, II WW : I, II WW : I, II WW : I, II, III WW : I, II, III WW : I, V WW : II, V WW : II, V WW : II, V WW : II, V	
III.	1001 1002 1003 1004	WW : I, IV WW : I, IV WW : I, IV WW : I, IV	

	Frequency / No. /	Authorized area of use	Remarks
III. (cont'd)	1005 1006 1007 1008 1009 1010 1011 1012 1013 1014 1015 1016 1017 1018 1019 1020	WW : I, IV WW : I, III WW : I, III WW : I, III WW : I, III WW : I, III WW : I, II WW : I, II WW : II, III WW : II, V WW : II, V WW : II, V WW : II, V WW : II, V WW : II, V WW : II, V	
IV.	1301 1302 1303 1304 1305 1306 1307 1308 1309 1310 1311 1312 1313	WW : I, III WW : I, III WW : I, III WW : I, III WW : I, III WW : I, IV WW : I, IV WW : I, IV WW : I, III, V WW : II, V WW : II, V WW : II, V WW : II, V	
V.	1801 1802 1803 1804 1805 1806 1807 1808	WW : I WW : I, III WW : II, III WW : II, III WW : II, V WW : II, V WW : III, IV WW : IV, V	
VI.	2101-2107 2108-2109 2110 2111-2112 2113-2115	WW : I WW : II WW : III WW : IV WW : V	

The Table 27/189 can then be completed by sorting out the appropriate frequencies for each "world-wide area". The number of frequencies for each area by frequency group will be the same as in "C. Number of traffic channels" above.

3. Final remark

It may be noted that the total number of frequencies to be reserved for "world-wide area" allotments according to this proposal for frequency groups I - V is 60, i.e. the same number as in Document No. 252. The number of assignable frequencies with the same status for aeronautical stations within each area is however considerably higher.

AERONAUTICAL (R) CONFERENCE

(Geneva, 1978)

Document No. 267-E
28 February 1978
Original : English

COMMITTEE 6

SUMMARY RECORD

OF THE

THIRD MEETING OF COMMITTEE 6

(REGULATORY PROCEDURES)

Monday, 20 February 1978, at 1400 hrs

Chairman : Mr. R.J. BUNDLE (New Zealand)

Subject discussed :

Document No.

1. Consideration of the text of No. 27/20

160, 180, 183



1. Consideration of the text of No. 27/20 (Document Nos. 160, 180, 183)

1.1 The Chairman drew attention to minor amendments in Document No. 183. The words "operation of the" were to be inserted after the words "the organization of the ..." at the beginning of sub-paragraphs 1 a) and 1 b), and the word "modified" in the last line of sub-paragraph 1 a) was to be replaced by "notified".

1.2 The Chairman of Working Group 6A, introducing Document No. 160, said that the Working Group, after considering all proposals, had worked out two divergent views, set forth in Document No. DT/27, on the possible revision of No. 27/20. After further discussion, concentrated in principle on the question of whether coordination of operational use should be on a mandatory basis through ICAO or whether No. 27/20 should be left unchanged as it had given rise to no problems in the past, there had been a majority agreement within the Working Group in favour of the text which appeared in paragraph 1 of the Document. The delegations of the United Kingdom and the United States of America had reserved their positions.

1.3 The delegate of Argentina was in favour of the text of Document No. 160, but drew attention to the fact that the word "international" did not appear in the corresponding phrase in the Spanish text.

The Chairman confirmed that the word "international" should be inserted.

1.4 The delegate of the United States of America, introducing Document No. 180, said that to ensure the most effective implementation of the results of the present Conference, it was essential that ICAO be a direct and positive participant in the international operational use of the high frequencies under consideration, since they were used by the aeronautical community for the safety of flight and aircraft and the regularity of flight. ICAO's purpose and expertise complemented those of the ITU, and it was a task of the Conference to build an appropriate bridge between the two organizations. ICAO's role had to be a mandatory one in the use of high frequencies but it should in no way diminish or interfere with the role of the ITU. MOD 27/20 in Document No. 180 had been proposed to that end. Furthermore, ADD 557A had been proposed to strengthen the provisions of the Radio Regulations governing the IFRB's examination of notices sent in by Administrations.

1.5 The delegate of Argentina objected to the mandatory "shall" vis-à-vis sovereign Administrations members of ITU. The United States delegate was aware that there were a number of countries represented in the Organization of American States which were not represented in the ITU and that some of the latter's members were not represented in ICAO. He therefore suggested that the United States delegate might modify the words to make the text less mandatory.

1.6 The delegate of Japan said that from the legal point of view it would not be appropriate to deal with the interrelationship of ICAO and the ITU in MOD 27/20 as it appeared in Document No. 180, but that it should be dealt with by a resolution or by agreement between those two organizations. Furthermore, world-wide frequency allotment should not be dealt with in a mandatory way by ICAO. He was therefore unable to support Document No. 180 and considered that the text of No. 27/20 in Document No. 160 should be retained as it stood.

1.7 The delegate of the United Kingdom pointed out that the word "shall" was used elsewhere in the Radio Regulations without causing difficulty. In MOD 27/20 it was not mandatory on the use of frequencies but only if Administrations required a date entered in Column 2a. If read in conjunction with MOD 557A it meant that the IFRB would examine the frequency assignment to check whether there had been coordination through ICAO, the whole point of that action being that ICAO was the best organization to consider the matter in the most flexible way.

In the absence of coordination with ICAO, the IFRB would return the notice to the notifying Administration in the hope that the latter would seek such coordination. If the Administration decided not to do so, it nevertheless retained the right to have the assignment recorded with a date in Column 2b. To use the word "should" would only mean that it was desirable for ICAO to coordinate, and only ICAO was in a position to judge the appropriate frequency to be used, given the technical aspects of the problem.

1.8 The delegate of Indonesia supported the proposal in Document No. 180.

1.9 The delegate of the Federal Republic of Germany recalled that the majority of delegates in the Working Group had favoured use of "should". Having read the clear statement of ICAO's role, however, he favoured the word "shall"; considering that the wording in Document No. 180 was a satisfactory compromise between the original United States proposal and the existing text, and he therefore supported that document.

1.10 The delegate of Norway supported the text in Document No. 160. Coordination through ICAO should not be demanded, particularly in connection with frequencies for long-distance operational control communications. Such frequencies in his country would have to be operated by the Telecommunications Administration and he would want that Administration to have the choice of going through ICAO coordinating procedure or of coordinating between themselves.

1.11 The delegate of the USSR was anxious for the question not to be the source of conflict or dialogue on the relationship between ICAO and ITU. In the light of Nos. 15 and 16 of the International Telecommunications Convention the ITU could not pass over to any other body its coordinating role in the allocation of frequencies and the avoidance of interference. He had never seen conflicting situations with ICAO requiring changes in activities or past decisions. A situation could arise in future which might require a re-examination of interrelationship under Nos. 145 and 240 of the Convention, for example, but for the moment there was no such need and his delegation therefore supported MOD 27/20 as in Document No. 160 which did not reduce the role of ICAO in any way.

1.12 The delegate of Brazil also supported Document No. 160. Bearing in mind the comments by the United Kingdom delegate on operational procedures, however, a provision might usefully be added to Article 9 of the Radio Regulations indicating that the IFRB should work in close cooperation with ICAO in the examination of frequency assignment notices.

The Chairman said that Article 40 of the Convention already covered such cooperation.

1.13 The delegate of Argentina pointed out that as ICAO had not required mandatory clauses in the past to obtain world respect there was no reason to adopt such an approach with No. 27/20. He proposed that a small group be set up to harmonize the two texts in question.

1.14 The delegate of Hungary asked for clarification of the meaning of "communications" as used in Document No. 160. In his view the text in Document No. 180 was more precise and he supported it, except perhaps for the modification of the word "shall".

The Chairman replied that "communications" should be understood as communications in the area of civil aviation.

1.15 The delegate of Venezuela doubted whether a preliminary examination by ICAO of frequency compatibility would be useful. He believed it appropriate to retain MOD 27/20 as in Document No. 160, with the word "international" inserted in the Spanish text.

1.16 The delegate of the German Democratic Republic favoured the text proposed by Working Group 6A; presumably, adoption of ADD 557A would require a modification of No. 500 in the Radio Regulations.

1.17 The delegate of Canada said that despite the remarks made, his delegation still believed the Working Group's text was acceptable.

1.18 The delegate of Algeria, also supporting the Working Group's text, which underlined the importance of coordination by ICAO, said that it provided the requisite measure of flexibility needed to render the Final Acts acceptable.

1.19 The delegate of Switzerland said that from the operational point of view his Administration had not experienced any practical difficulties in providing services for many large and small airlines. He could not subscribe to the argument that without clear and strict rules chaos would ensue. Accordingly, he agreed with the purport of the Working Group's text.

1.20 The delegate of the United Kingdom, referring to the USSR delegate's comments, observed that Nos. 15 and 16 in Article 4 were expressed in broad terms and the joint United Kingdom/USA proposal certainly did not conflict with that Article. The inference made by some speakers that ITU had better facilities for making the final judgment about the international operational use of frequencies was surely mistaken. Each organization had its role. For instance, it was for the IFRB to ensure that the frequencies assigned were in conformity with Appendix 27.

1.21 The Norwegian delegate's assertion that it was for his own Administration to decide whether or not a frequency should be coordinated through ICAO was most disturbing because no Administration would be in possession of all the data needed for judging whether or not interference might be caused in the case of long-range operation. The possibility of a Telecommunication Administration wishing to coordinate through ICAO but not being permitted to do so despite the treaty obligation was a danger which the joint amendment was designed to avert.

1.22 The delegate of France agreed with the USSR delegate on the need to avoid any conflict between two specialized agencies each of which had its own sphere of competence. The Conference was engaged in discharging one of the Union's responsibilities under Article 4 of the Convention. The Frequency Allotment Plan for the Aeronautical Mobile (R) Service was based on areas and thus differed from the Maritime Mobile Service Plan which had been drawn up on a country basis. Under the former Plan, countries exercising air navigation control must, in the interests of safety, coordinate the allocation of frequencies. In Working Group 6A some delegations had pointed out the need to balance the requirements of international communications

against the special needs of long-distance world-wide communications and had emphasized that mutual consultation between Administrations was imperative so as to achieve a generally satisfactory distribution of frequencies which might be based on the number of aircraft registered by each Administration. In France coordination between the PTT and the Aeronautical Administration was excellent and they held a common view on such points as MOD 27/20.

Rather than reaching a decision by majority, it would be preferable to find a compromise based, for instance, on the French proposal in Document No. 22. The Working Group's text was perhaps too vague and would not ensure a smooth allocation of frequencies whereas the wording of the joint amendment was perhaps too rigorous.

1.23 The delegate of India said that although at the outset he would have accepted the Working Group's text, a difference of opinion had emerged as to whether or not the mutual consultation process should be made mandatory through ICAO. Accordingly, in order to provide for flexibility and to secure a consensus, he proposed alternative wording "Administrations shall mutually coordinate the international operational use of frequencies for MWARA, VOLMET and WORLD-WIDE purposes (excluding the common use frequencies 3 023 kHz and 5 680 kHz). For this purpose ICAO shall be consulted. The result of this consultation shall be indicated while submitting the notification of assignment of the frequencies contained in the Plan in No. 27/195 to 27/207 to the IFRB for examination."

1.24 The observer for IATA said that as a user of frequencies IATA was aware of ITU's role in the coordination procedure. It must also be said that the transitional period after adoption of Appendix 27 would have been difficult had it not been for the detailed examination of the Appendix by ICAO. The importance of ICAO's function should be recognized and indeed the provision in No. 27/23 seemed to be mandatory inasmuch as it called for coordination for the efficient utilization of frequencies. Perhaps a compromise might be reached on that basis of that provision.

1.25 The delegate of Finland said that his Administration favoured the more cautious wording proposed by Working Group 6A, either as it stood or as the basis of a compromise.

1.26 The delegate of the USSR said that it was desirable to hear the Secretary-General's views, in case the adoption of the joint proposal might endanger the balance in the relations between ICAO and ITU.

1.27 The delegate of France said that for his part he found the Indian proposal acceptable.

1.28 The Secretary-General began by the reminder that not all Members of the ITU were Members of ICAO. Citing the relevant provisions of the ITU Convention, he stressed the importance of the phrase in the preamble "While fully recognizing the sovereign right of each country to regulate its telecommunication ...". One of the purposes of the Union as stated in No. 16 was "to coordinate efforts to eliminate harmful interference between radio stations of different countries and to improve the use made of the radio frequency spectrum." In Article I of the Agreement between the United Nations and the ITU, the former recognized the ITU "as the specialized agency responsible for taking such action as may be appropriate under its basic instrument for the accomplishment of the purposes set forth therein;". Article 40 of the Convention prescribed how formal arrangement was to be effected between the Union and other international organizations. The collaboration between ITU and ICAO so far had been excellent, and neither body anticipated any difficulties in the future. That

collaboration consisted of extensive exchange of information and the maintenance of continuous contact between the Secretariats of the two organizations.

Should the relations between the Union and ICAO be placed on a formal footing, recourse could be made to the provisions of No. 240 of the Convention whereby the Administrative Council was empowered to conclude provisional agreements with the international organizations referred to in Article 40, which would then be submitted to the next Plenipotentiary Conference in accordance with No. 39. Action could thus be taken if an urgent need arose for such an agreement.

Finally, he drew attention to Resolution No. 800 adopted by the Administrative Council at its thirty-second session after considering the delicate question of other international organizations dealing with matters within the exclusive purview of the ITU, and in particular to the final paragraph of the preamble. The Resolution defined the Union's responsibilities and invited international organizations to have due regard to the role of the ITU in the regulation and standardization of telecommunications.

As the existing collaboration with ICAO was satisfactory, there would appear to be no need to change the provisions of No. 27/20, and if relations were to be rendered more formal that was a matter for the Administrative Council and the Plenipotentiary Conference and not for the present Conference.

1.29 The representative of the IFRB said that, as he understood from Document No. 183 submitted by ICAO, coordination in that organization was concerned with operation and was carried out by a Commission composed of delegates who were not duly accredited representatives of their Governments, whereas in ITU coordination was concerned with frequency utilization and was a more formal operation carried out by Administrations themselves at Conferences such as the present one. Coordination by ICAO, although very efficient, could not give legal status to an assignment, whereas a decision by an ITU Conference to enter a date for a frequency assignment in Column 2a entitled that frequency to international protection. Furthermore, it should be borne in mind that the IFRB did not coordinate frequency assignments for the aeronautical mobile or any other service unless it was asked to do so. He wished to stress that, to his knowledge, no problems had ever arisen in the relations between ITU - and in particular, the IFRB - and ICAO, neither could he see any reason why difficulties should be encountered in the future.

When considering the question of coordination, it was important to specify what was being coordinated, by whom and with whom. While the answer to the first two questions was relatively simple, the third question raised more complex issues. In his view, certain difficulties might arise if a mandatory provision of the type to which reference had been made was adopted; however, if the Conference were to decide in favour of such a provision, it would be necessary to spell out very clearly who would coordinate and with whom the coordination in question must be carried out.

1.30 The observer for ICAO, supplementing the information contained in Document No. 183, said that the aims and objectives of ICAO as laid down in Article 44 of the Convention on International Civil Aviation were to develop the principles and techniques of international air navigation and to foster the planning and development of international air transport. ICAO had developed regional air navigation plans, the observance of which by the States concerned secured the safe conduct of air transport from country to country. Those plans were amended from time to time at ICAO regional meetings and could also be modified through correspondence procedures. The Contracting States were responsible for making provision at the national level for their implementation.

Since ICAO was very deeply involved in problems of an aeronautical nature and since its 142 Contracting States were all Members of ITU, the two organizations were not totally unrelated. However, the issues at stake were ultimately the concern of the countries themselves. Whatever agreements, resolutions or recommendations emerged from the Conference, it would be for the PTT and Aeronautical Administrations, together with the ICAO and ITU Secretariats, to continue to work in close collaboration. ICAO, which firmly intended to pursue that end, did have a role to play and a unique contribution to make to the issues being discussed presently in the Committee.

1.31 The delegate of Argentina said that the comments by the Secretary-General corresponded to his Administration's views. Relations between ITU and ICAO had always been cordial and mutually beneficial, and there was no assurance that the establishment of a compulsory link between the two organizations would enable better - or even equally good - results to be achieved. He considered that Working Group 6A's proposal in Document No. 160, which had received the support of the majority of delegations, should be adopted as it stood.

1.32 The delegate of the United States of America said that his delegation's intention had not been to advocate any modification of the relations between ICAO and ITU or to press for the establishment of formal links between the two organizations, but rather to highlight the distinction which should be made between ICAO's operational coordination and the IFRB's task of legalizing frequency assignments in the framework of the Radio Regulations. It was clear that the assistance of both organizations was required. He could support the text proposed by the Indian delegate, since it accurately reflected the position which his delegation was seeking to establish.

1.33 In response to comments by the delegate of Switzerland and the representative of the IFRB, the delegate of India said that the word "consultation" in the last sentence of his proposed text should be replaced by the word "coordination".

1.34 The delegates of the Netherlands and the United Kingdom supported the substance of the Indian proposal, but considered that it might be desirable to add a sentence concerning the international use of RDARA frequencies, along the lines of the proposal in Document No. 180.

1.35 The delegate of Algeria said that he could not accept the Indian proposal as it stood. It was not clear what the situation would be if the efforts to coordinate an assignment that was in conformity with the Radio Regulations produced negative results. Would the related date be entered in Column 2b or in Column 2a ?

1.36 The delegate of India said that if no agreement was reached the negative results could be transmitted to the IFRB, which might review the details of the case and draw its own specific conclusions.

1.37 The delegate of Canada, supported by the delegate of Japan, said that due attention should be paid to the fact that coordination requirements were not the same for MWARA frequencies and frequencies used for world-wide purposes. Furthermore, ICAO did not have the same role to play in respect of MWARA frequencies on the one hand and RDARA frequencies on the other.

1.38 The delegate of Brazil said that his delegation could in principle support the Indian proposal. It would, however, be necessary to define very clearly all the steps involved in the coordination process.

1.39 The delegate of Switzerland said that he was unable to accept the text proposed by the Indian delegation.

1.40 The delegates of Colombia and the USSR expressed their preference for the text proposed in Document No. 160.

1.41 The Chairman suggested that the Indian proposal together with Documents Nos. 160 and 180 should be considered by a group consisting of himself, the Vice-Chairman of the Committee and representatives of ICAO, the ITU General Secretariat and the IFRB.

It was so agreed.

The meeting rose at 1715 hours.

The Secretary :

M. AHMAD

The Chairman :

R.J. BUNDLE

INTERNATIONAL TELECOMMUNICATION UNION

AERONAUTICAL (R) CONFERENCE

(Geneva, 1978)

Document No. 268-E

28 February 1978

Original : English

PLENARY MEETING

FINAL PROTOCOL

For Malaysia

Upon signing the Final Acts of the World Administrative Radio Conference for the Aeronautical (R) Service 1978, the Delegation of the Government of Malaysia reserves the right of its Government to take whatever action it deems necessary to safeguard its interests should Members in any way fail to comply with the Recommendations and/or the Final Acts of the Conference jeopardize its Aeronautical Mobile (R) Service.



INTERNATIONAL TELECOMMUNICATION UNION

AERONAUTICAL (R) CONFERENCE

(Geneva, 1978)

Addendum No. 1 to
Document No. 269-E
1 March 1978
Original : Spanish

PLENARY MEETING

FINAL PROTOCOL

For Mexico :

The Delegation of Mexico to the World Administrative Radio Conference on the Aeronautical Mobile (R) Service reserves its Government's right to apply its own national communications legislation in respect of the amended definition in No. 27/9, in view of the deletion of the words "in flight".



INTERNATIONAL TELECOMMUNICATION UNION

AERONAUTICAL (R) CONFERENCE

(Geneva, 1978)

Document No. 269-E

28 February 1978

Original : Spanish

PLENARY MEETING

FINAL PROTOCOL

For Mexico

On signing the Final Acts, the Delegation of Mexico to the World Administrative Radio Conference on the Aeronautical Mobile (R) Service reserves the right to take any measures it considers necessary in order to protect the interests of its services if the reservations entered or measures taken by another Member or Members are prejudicial to the proper operation of its telecommunication services.



INTERNATIONAL TELECOMMUNICATION UNION

AERONAUTICAL (R) CONFERENCE

(Geneva, 1978)

Document No. 270-E

28 February 1978

Original : French

PLENARY MEETING

FINAL PROTOCOL

For the Gabon Republic :

In signing the Final Acts of this Conference (Geneva, 1978) the Delegation of the Gabon Republic reserves its Government's right to accept or reject the consequences of the reservations entered at this Conference by other Governments where such reservations might jeopardize its telecommunication services.



INTERNATIONAL TELECOMMUNICATION UNION

AERONAUTICAL (R) CONFERENCE

(Geneva, 1978)

Document No. 271-E

28 February 1978

Original : English

PLENARY MEETING

FINAL PROTOCOL

For the Socialist People's Libyan Arab Jamahiriya

The Delegation of the Socialist People's Libyan Arab Jamahiriya reserves the right of its country to prevent any aircraft, when appropriate, from communicating with aeronautical stations while the aircraft is on land (see MOD 27/9).



INTERNATIONAL TELECOMMUNICATION UNION

AERONAUTICAL (R) CONFERENCE

(Geneva, 1978)

Document No. 272-E

28 February 1978

Original : French

PLENARY MEETING

FINAL PROTOCOL

For the Republic of the Ivory Coast :

In signing the Final Acts of the World Administrative Radio Conference on the Aeronautical Mobile (R) Service (Geneva, 1978), the Delegation of the Ivory Coast reserves its Government's right to take any action it may deem necessary to protect its interests :

- 1) against any attitude adopted by Members of the Union in conflict with the International Telecommunication Convention and the Radio Regulations;
- 2) against any reservation entered by Members of the Union which is liable to infringe its rights derived from this Conference.



AERONAUTICAL (R) CONFERENCE

(Geneva, 1978)

Document No. 273-E

28 February 1978

Original : English

PLENARY MEETING

FINAL PROTOCOL

For Iran

With respect to the MOD 27/9 (Rev.1978) to the Radio Regulations the Delegation of the country of Iran to the World Administrative Radio Conference, (Geneva, 1978), while reaffirming its permanent position for supporting the international cooperations in the field of telecommunication, reserves the right for its Government to take any necessary action to authorize or prohibit operations of the stations of aircrafts having landed at airports anywhere within the territories of the country of Iran to safeguard the interests of its concerned services.



AERONAUTICAL (R) CONFERENCE

(Geneva, 1978)

Document No. 274-E

28 February 1978

Original : French

PLENARY MEETING

FINAL PROTOCOL

For the Islamic Republic of Mauritania :

In signing the Final Acts of the World Administrative Radio Conference on the Aeronautical Mobile (R) Service, (Geneva, 1978) the Delegation of the Islamic Republic of Mauritania states that it reserves its Government's right to take any measures it sees fit in order to ensure the proper operation of its Aeronautical Mobile (R) Service if any Administration does not abide by the provisions of the Final Acts and the Associated Plan or enters reservations or takes measures liable to infringe the sovereign rights of the Islamic Republic of Mauritania.



AERONAUTICAL (R) CONFERENCE

(Geneva, 1978)

Document No. 275-E

28 February 1978

Original : English

PLENARY MEETING

FINAL PROTOCOL

For the Republic of Afghanistan

I. The Delegation of the Republic of Afghanistan to the Aeronautical (R) Conference (Geneva, 1978) reserves the right of its Government to take any measures it may deem necessary to protect its interests if other countries fail to observe the provisions adopted by the Conference.

II. The deletion of the words "in flight" in the modified definition of 27/9 changes the operational use of the frequencies. The Delegation of the Republic of Afghanistan reserves the right of its Government to enforce National Communication Regulations in this regard.



AERONAUTICAL (R) CONFERENCE

(Geneva, 1978)

Document No. 276-E

28 February 1978

Original : Spanish

PLENARY MEETING

FINAL PROTOCOL

For the Republic of Panama :

The Delegation of the Republic of Panama to the World Administrative Radio Conference on the Aeronautical Mobile (R) Service (Geneva, 1978) reserves the right to apply Appendix 27 Aer 2 1978 (Rev.) and the associated provisions regulating the Aeronautical Mobile (R) Service to the extent that the national economy and sovereignty are not thereby prejudiced.



AERONAUTICAL (R) CONFERENCE

(Geneva, 1978)

Document No. 277-E

28 February 1978

Original : English

PLENARY MEETING

FINAL PROTOCOL

For the Republic of Kenya :

In signing the Final Acts of the World Administrative Radio Conference for the Aeronautical Mobile (R) Service, 1978, the Delegation of the Republic of Kenya reserves the right of its Government to authorize or prohibit the use of operation control communications for aircraft not in flight.

The Republic of Kenya further reaffirms her position in the reservation expressed by her Delegation at the Plenipotentiary Conference, contained in Final Protocol No. XXXIII of the International Telecommunication Union (Malaga - Torremolinos, 1973).



AERONAUTICAL (R) CONFERENCE

(Geneva, 1978)

Document No. 278-E

28 February 1978

Original : English

PLENARY MEETING

FINAL PROTOCOL

For the Federative Republic of Brazil :

The Brazilian Administration reaffirms its support for international cooperation in the field of telecommunications and with due respect for the rights and interests of all Members of the International Telecommunications Union. However, it reserves its right, with regard to the definition of "Family of Frequencies" contained in No. 27/9 of Appendix 27(Rev.1978), to establish within the Brazilian territory and through national rules and regulations, the conditions for the use of the frequencies of this Frequency Allotment Plan (Rev.1978), by aircraft stations, in order to safeguard the interests of its telecommunications services.



INTERNATIONAL TELECOMMUNICATION UNION

AERONAUTICAL (R) CONFERENCE

(Geneva, 1978)

Document No. 279-E

28 February 1978

Original : Spanish

PLENARY MEETING

FINAL PROTOCOL

For Cuba :

The Delegation of Cuba to the World Administrative Radio Conference on the Aeronautical Mobile (R) Service hereby states on behalf of its Government that, in signing the Final Acts, it does not accept any obligation with regard to those provisions and procedures that may affect its telecommunication services, and reserves the right to take any measures it considers necessary.



PLENARY MEETING

FINAL PROTOCOL

For the Oriental Republic of Uruguay :

The Delegation of the Oriental Republic of Uruguay declares on behalf of its Government that signature of the Final Acts of the World Administrative Radio Conference on the Aeronautical Mobile (R) Service, Geneva, 1978, does not imply any obligation with respect to Appendix 27 Aer 2 1978 (Rev.) (27/9 Rev. and associated provisions) regulating the Aeronautical Mobile (R) Service in any cases which affect the country's economy or sovereignty.



INTERNATIONAL TELECOMMUNICATION UNION

AERONAUTICAL (R) CONFERENCE

(Geneva, 1978)

Document No. 281-E

28 February 1978

Original : English

PLENARY MEETING

FINAL PROTOCOL

For the Republic of India :

In signing the Final Acts of the World Administrative Radio Conference, Aeronautical Mobile (R) Service 1978, the delegation of the Republic of India reserves the right of its Government to take such measures as may be necessary to safeguard its interests should any country make reservations and/or not accept the provisions of the Final Acts including the Associated Plan.



INTERNATIONAL TELECOMMUNICATION UNION

AERONAUTICAL (R) CONFERENCE

(Geneva, 1978)

Document No. 282-E

28 February 1978

Original : English

PLENARY MEETING

FINAL PROTOCOL

For the Kingdom of Saudi Arabia :

The Kingdom of Saudi Arabia reserves the right to authorize or prohibit operation of HF communication station by aircraft as in MOD 27/9 of the Frequency Allotment Plan (1978) while on ground of Saudi Arabian territory.



AERONAUTICAL (R) CONFERENCE

(Geneva, 1978)

COMMITTEE 6

REPORT OF THE AD HOC DRAFTING GROUP OF COMMITTEE 6

The attached text concerning the Recommendation on Cooperation in the efficient use of Aeronautical Mobile (R) World-wide frequencies was unanimously agreed in the drafting group and is submitted to Committee 6 for consideration.

D.E. BAPTISTE
Chairman of the Ad Hoc Drafting Group

Annex: 1



ANNEX

RECOMMENDATION Aer2 -

Relating to cooperation in the efficient use
of world-wide frequencies in the Aeronautical Mobile (R) Service

The World Administrative Radio Conference on the Aeronautical
Mobile (R) Service, Geneva, 1978,

considering

- a) the need to make the most efficient use of aeronautical mobile (R) world-wide frequencies;
- b) that a plan has been adopted for the allotment by areas of world-wide frequencies in the Aeronautical Mobile (R) Service;
- c) the desirability of coordination between administrations within the areas to which the allotment plan applies;
- d) the right of a country to select and notify to the I.F.R.B. for recording in the Master International Frequency Register any frequency assignment in a channel allotted to the area in which that country is located;
- e) the role played by the I.F.R.B. in the regulatory procedures in Article 9 of the Radio Regulations;
- f) the role played by ICAO in the field of international aeronautical operations;

invites

1. administrations within an allotment plan area as they consider it appropriate and the International Civil Aviation Organization to seek the advice of the I.F.R.B. in determining the best choice of frequencies from a technical viewpoint in order to make the most efficient use of Aeronautical mobile (R) world-wide frequencies.
2. administrations within an allotment plan area as they consider it appropriate to mutually coordinate the use of these frequencies from the viewpoint of aeronautical operations and in this connection to bear in mind the benefit that could be gained by obtaining the advice of ICAO in this process;
3. the I.F.R.B. to assist any administration or group of administrations in an allotment plan area wishing to coordinate their requirements for world-wide frequencies and to continue its cooperation with ICAO for this purpose.

PLENARY MEETING

FINAL PROTOCOL

For the Republic of Bolivia :

In signing the Final Acts of the World Administrative Radio Conference on the Aeronautical Mobile (R) Service, Geneva, 1978, the Delegation of the Republic of Bolivia states :

1. that as far as possible it will apply the provisions of Appendix 27 Aer 2 to the Radio Regulations;
2. that it reserves the right to take any action it may consider necessary to safeguard the interests of its aeronautical radiocommunication services.



B.4

PLENARY MEETING4th SERIES OF TEXTS SUBMITTED BY THE
EDITORIAL COMMITTEE TO THE PLENARY MEETING

The following texts are submitted to the Plenary Meeting for first reading:

<u>Source</u>	<u>Document No.</u>	<u>Title</u>
		APPENDIX 27 - Part II - Section II
C.5	248	Article 1
C.6	204	Article 2
C.6	260	Recommendations EE and FF
C.6		Resolution H
C.7		

C.J. DHENIN
Chairman of the
Editorial Committee

Annex: 7 pages



PART II

Section II

(MOD)

**Allotment of Frequencies in the
Aeronautical Mobile (R) Service**

ARTICLE 1

MOD 27/186

Frequency Allotment Plan by AreasNotes:

NOC 27/187

MOD 27/188

- b) The following list does not include the world-wide common (R) and (OR) frequencies of 3023 and 5680 kHz. The allotment of these frequencies is shown in Article 2.
-

ARTICLE 2

NOC

**Frequency Allotment Plan
(in numerical order of frequencies)**General Notes:

MOD 27/192

1. Class of stations: FA.

Classes of emission: see Nos. 27/49-27/52.

Power: Unless otherwise indicated in the Plan, the power values for aeronautical and aircraft stations are those shown in Nos. 27/54-27/62.

Hours: H24 unless otherwise indicated.

MOD 27/193

2. A frequency allotted on a "day-time basis" may be used during the period one hour after sunrise to one hour before sunset.

MOD 27/194 A "common channel" is a channel allotted in common to two or more areas within interference distance of each other and its use is subject to agreement between the administrations concerned.

ADD 27/194A The world-wide frequency allotments appearing in the tables at [No. 27/189 and Nos. 27/195 to 27/207], except for carrier (reference) frequencies 3024 kHz and 5680 kHz, are reserved for assignment by administrations to stations operating under authority granted by the administration concerned for the purpose of serving one or more aircraft operating agencies. Such assignments are to provide communications between an appropriate aeronautical station and an aircraft station anywhere in the world for exercising control over regularity of flight and for safety of aircraft. World-wide frequencies are not to be assigned by administrations for MWARA, RDARA and VOLMET purposes. Where the operational area of an aircraft lies wholly within a RDARA or Sub-RDARA boundary, frequencies allotted to those RDARAs and Sub-RDARAs shall be used.

.....

	1	2	3
MOD 27/196	3 023	World-wide, (R) and (OR)	See Art. 3
MOD 27/201	5 680	World-wide, (R) and (OR)	See Art. 3

.....

RECOMMENDATION No. Aer2 - EE

**Relating to the transition from the existing to
the revised Frequency Allotment Plan in the
high frequency bands allocated exclusively to the
aeronautical mobile (R) service between 2850
and 17 970 kHz in Appendix 27 Aer2**

The World Administrative Radio Conference on the
Aeronautical Mobile (R) Service, Geneva, 1978,

considering

a) that the Final Acts of this Conference will enter into
force on 1 September 1979;

b) that the revised Frequency Allotment Plan contained in
Appendix 27 Aer2 will enter into force at 001 hours GMT on
1 February 1983;

c) that some administrations may wish to implement certain
provisions of the revised Frequency Allotment Plan in advance
of the latter date when this may be done without causing
harmful interference to stations working in accordance with
the present Frequency Allotment Plan;

d) that, following the Extraordinary Administrative Radio
Conference, Geneva, 1966, the International Civil Aviation
Organization (ICAO), under the provisions of No. 27/20 of
Appendix 27 and within the spirit and framework of
Resolution No. Aer6 of that Conference, developed a
transition programme for the aeronautical mobile (R) service
to convert the Frequency Allotment Plan in Appendix 26 to
that in Appendix 27;

e) that the ICAO transition programme was subsequently
promulgated by the International Frequency Registration Board
for distribution to ITU member administrations;

f) that it will be useful again to adopt a programme
to facilitate transition from the existing to the revised
Frequency Allotment Plan;

recommends

1. that the International Civil Aviation Organization be
invited to develop a transition programme, within the
framework of Appendix 27 Aer2, for the operational use by
aeronautical stations of the frequencies contained in the
Frequency Allotment Plan except for those RDARAs which are
not involved in international operations;

2. that the International Civil Aviation Organization be invited to forward the transition programme for the revised Frequency Allotment Plan; to the International Frequency Registration Board for distribution to administrations;

3. that administrations implement the provisions of the transition programme in coordination with ICAO and in conformity with the principles set forth in No. 27/20;

requests

the Secretary-General to bring this Recommendation to the attention of the International Civil Aviation Organization.

RECOMMENDATION No. Aer2 - FF

**Relating to the concordance of the French,
English and Spanish texts of No. 429
of the Radio Regulations**

The World Administrative Radio Conference on the
Aeronautical Mobile (R) Service, Geneva, 1978,

considering

a) that doubts have been expressed concerning the
concordance of the expressions "régularité de la navigation
aérienne" in French,, "regularity of flight" in English and
"regularidad de la navegación aérea in Spanish;

b) that this phrase originates from the ICAO Convention,
Chicago, 1944, drafted in English;

c) that it is essential that the three texts be
equivalent in form and content;

d) that its terms of reference do not include the
revision of No. 429 of the Radio Regulations;

recommends

that the World Administrative Radio Conference, 1979, should
endeavour to overcome this apparent lack of concordance in the
texts of No. 429 of the Radio Regulations.

RESOLUTION No. Aer2 - H

**Relating to the Abrogation of Various Resolutions and a
Recommendation of the Extraordinary Administrative Radio
Conference, Geneva, 1966, and a Resolution of the
Administrative Radio Conference, Geneva, 1959**

The World Administrative Radio Conference on the Aeronautical
Mobile (R) Service, Geneva, 1978,

considering

a) that the following Resolutions and the Recommendation of
the Extraordinary Administrative Radio Conference, Geneva, 1966,
were superseded as indicated:

Resolution No. Aer1 relating to the use of frequencies 3023.5
and 5680 kHz common to the aeronautical mobile (R) and (OR)
services, by Resolution No. Aer2 - D.

Resolution No. Aer2 relating to the use of frequencies in
the HF bands allocated exclusively to the aeronautical
mobile (R) service, by Resolution No. Aer2 - A;

Resolution No. Aer4 relating to the use of VHF for
communication in the aeronautical mobile (R) service, and
Resolution No. Aer5 relating to the use of VHF for
meteorological broadcasts in the aeronautical mobile (R)
service, by Resolution No. Aer2 - C;

Resolution No. Aer6 relating to the treatment of notices
concerning frequency assignments to aeronautical stations in
the aeronautical mobile (R) service in the bands allocated
exclusively to that service between 2850 and 17 970 kHz, by
Resolution No. Aer2 - F;

Recommendation No. Aer1 relating to the development of
techniques which would help to reduce congestion in the high
frequency bands allocated to the aeronautical mobile (R)
service, by Recommendation No. Aer2 - AA;

b) that Resolution No. 14 of the Administrative Radio Conference, Geneva, 1959, relating to the use of frequencies of the aeronautical mobile (R) service, was replaced by Resolution No. Aer2 - B;

c) that Resolution No. Aer3 of the Extraordinary Administrative Radio Conference, Geneva, 1966, relating to the introduction of single sideband techniques in the HF bands allocated to the aeronautical mobile (R) service is now obsolete;

resolves

that all the said Resolutions and the Recommendation are abrogated.

AERONAUTICAL (R) CONFERENCE

(Geneva, 1978)

Document No. 286-E

28 February 1978

Original : Spanish

PLENARY MEETING

FINAL PROTOCOL

For the Republic of Paraguay :

The Delegation of the Republic of Paraguay to the World Administrative Radio Conference on the Aeronautical Mobile (R) Service, Geneva, 1978, states that, in signing these Final Acts, it does not accept any obligation in respect of Appendix 27 Aer 2 1978 (Rev.) governing the Aeronautical Mobile (R) Service or in respect of the related provisions and application procedures that may affect its telecommunication services.

The Republic of Paraguay will nevertheless observe the provisions of Appendix 27 Aer 2 1978 (Rev.) and the application procedures as far as possible while reserving the right to take any action it may consider necessary to safeguard its aeronautical radiocommunication services.



AERONAUTICAL (R) CONFERENCE

(Geneva, 1978)

Document No. 287-E

28 February 1978

Original : English

PLENARY MEETING

FINAL PROTOCOL

For Thailand :

The Delegation of Thailand reserves for its Government the right to take such action as it may consider necessary to safeguard its interests in regard to the provisions of the Final Acts of this Conference and in respect of reservations by any country which may jeopardize the telecommunication services of Thailand.



INTERNATIONAL TELECOMMUNICATION UNION

AERONAUTICAL (R) CONFERENCE

(Geneva, 1978)

Document No. 288-E

28 February 1978

Original : English

PLENARY MEETING

FINAL PROTOCOL

For the Republic of the Philippines :

In affixing its signature to the Final Acts of the present Conference the Delegation of the Republic of the Philippines reaffirms its support for international economic cooperation in the field of telecommunications. It likewise reiterates its respect for the rights and interests of members.

However, should any reservations made or measures taken by other members jeopardize the interests and efficient operation of its telecommunication services, the Republic of the Philippines reserves the right to take such measures or actions as may be deemed necessary to safeguard and promote such interests.



PLENARY MEETING

FINAL PROTOCOL

For the Federal Republic of Nigeria :

In signing the Final Acts of the World Administrative Radio Conference (Aeronautical R) 1978, the delegation of the Federal Republic of Nigeria hereby declares that its Government reserves the right to take any action which it considers necessary to safeguard its interests at all times should certain Members not comply with the decisions of the Conference or should they fail in any other way to comply with the requirements of the Final Acts of the Conference or its Annexes or to the protocols attached thereto, or should reservations by other countries endanger the telecommunications services of the Federal Republic of Nigeria.



INTERNATIONAL TELECOMMUNICATION UNION
AERONAUTICAL (R) CONFERENCE
(Geneva, 1978)

Document No. 290-E
28 February 1978
Original : French

PLENARY MEETING

FINAL PROTOCOL

For the Republic of Guinea :

The Delegation of the Republic of Guinea reserves its Government's right to take any action it may consider necessary to safeguard its interests should certain Members not abide by the provisions adopted by the World Administrative Radio Conference on the Aeronautical Mobile (R) Service or should reservations made by other countries jeopardize the proper functioning of its telecommunication services or entail an increase in its contributory share in Union expenses.



AERONAUTICAL (R) CONFERENCE

(Geneva, 1978)

Document No. 291-E

28 February 1978

Original : English

PLENARY MEETING

FINAL PROTOCOL

For the Republic of Singapore :

The Delegation of the Republic of Singapore reserves for its Government the right to take such action as it may consider necessary to safeguard its interests in regard to the provisions of the Final Acts of this Conference and in respect of reservations by any country which may jeopardize the telecommunication services of the Republic of Singapore.



AERONAUTICAL (R) CONFERENCE

(Geneva, 1978)

Document No. 292-E

28 February 1978

Original : French

COMMITTEE 5

SUMMARY RECORD

OF THE

FIFTH MEETING OF COMMITTEE 5

(PLANNING)

Tuesday, 21 February, 1978 at 1400 hrs

Chairman : Mr. M. CHEF (France)

<u>Subjects discussed</u>	<u>Document No.</u>
1. Netherlands proposal : unplanned portions	151
2. Carrier frequencies to be allotted	170
3. Report of Working Group 5A and proposals by Angola and Paraguay	198, 200
4. Report of Working Group 5B	164, 185, 207 DT/40 (Annex 4)
5. Report of Working Group 5C	DT/40 (Annex 3)
6. Consideration of the first draft Plan	DT/40, DT/42
7. Consideration of provisions of Section I, Part I (Nos. 27/1 and 27/3-27/8) and of Section I, Part II (Nos. 27/74-27/79)	



1. Netherlands proposal : Unplanned portions (Document No. 151)

1.1 The delegate of the Netherlands, referring to Administrative Council Resolutions Nos. 763 and 802 and IFRB Circular Letter No. 386, urged that as little provision as possible should be made for the use of HF channels by the Aeronautical (R) Service. It was essential to leave WARC 1979 some elbow-room, since it would have to take account of the requirements of all radiocommunication services interested in those bands. As regards the interpretation of the expression in the last paragraph of Document No. 151, "Such unplanned portions should be chosen", translated into French as "Ces portions hors-plan pourraient être choisies", it should be understood as meaning simply "It would be preferable for such unplanned portions to be chosen ..."

1.2 It was agreed that Committee 5 would endeavour to follow the directive given in item 2.1.1 of the Conference agenda regarding economical use of the HF spectrum in the interests of all services.

2. Carrier frequencies to be allotted (Document No. 170)

2.1 The delegation of Canada supported the proposals put forward by France, the Federal Republic of Germany, Mauritius, the United Kingdom and the United States, with the reservation that the channel adjacent to 5 680 kHz was not allotted to RDARA 10 or its sub-RDARAs in which Canada was situated.

2.2 It was decided to adopt the list of frequencies in the Annex to Document No. 21 taking into account the reservations made by Canada.

It was also decided that only the carrier (reference) frequencies should be given in the list.

2.3 The Chairman of Committee 4, adding to the information in his note, stated that Committee 6 had decided that references to Nos. MOD 27/72 to MOD 27/73 should be included in the table of carrier (reference) frequencies in order to facilitate the calculation of the assigned frequency from the carrier (reference) frequency.

2.4 Committee 5 endorsed the decision of Committee 6 and decided to transmit the text to Committee 7, inviting it to determine what form those references should take.

3. Report of Working Group 5A and proposals by Angola and Paraguay (Documents Nos. 198 and 200)

Document No. 198

3.1 With reference to the Angolan proposal, the delegate of Zaire read out his Administration's acceptance, which was about to be circulated.

3.2 It was decided to adopt :

- a) MOD 27/135, i.e. maintenance of the present boundaries of Sub-RDARA 7B but with the names of the countries appearing in the present text of Appendix 27 amended to bring them up-to-date;
- b) ADD 27/138A, new Sub-Area 7F.

With regard to the frequency requirements requested for Sub-Area 7F, the delegation of Angola was asked to raise the matter in Working Group 5B.

Document No. 200

3.3 The proposal by Paraguay was accepted and the new delineation of Sub-Area 13N contained in the document was accordingly adopted.

3.4 The Chairman of Working Group 5A then reported on the work done since the last meeting of Committee 5.

On the advice of the delegates of Yugoslavia and Senegal, further efforts had been made to define the limits of some of the Sub-Areas of RDARA-6. He had held meetings with the interested parties. His intention had been to establish a proposal along the lines indicated at the previous meeting of Committee 5, with a view to arriving at a purely technical solution. All participants had collaborated enthusiastically to that end.

While it was not yet possible to report agreement, the discussions were continuing and for the information of members of the Committee it might be useful to outline briefly some of the features of two proposals which had been developed in response to discussions with the delegations concerned.

Regarding the area between 0° and 20°N , the principle followed was to divide Area 6G by straight lines rather than as shown in Document No. 53 and to allow for overlapping between Sub-Areas 6D, 6F and 6G in that region.

3.5 Referring to Document No. DT/9, he indicated some specific details of the proposal.

Addition concerning the region between 0° and 20°N

ADD 27/32A Starting at a point in the People's Republic of China Document No. 53, that is, at 21°N , 121°E and passing through 20°N , 120°E , and then following the line 120°E to the intersection of the existing Sub-Area 6C at a point 4°N , 120°E , then westerly along the existing limit of 6C to 2°N , 110°E , thence northerly along the 110°E longitude to a point 16°N 110°E and then through 20°N , 106°E and finally to $21^{\circ}33'\text{N}$, 108°E , which is a point on the line proposed in Document No. 53.

That proposal would be accompanied by the following statement :

ADD 27/132B "The area that is common to Sub-Areas 6D, 6F and 6G encompasses more area than is utilized for the domestic flights of the People's Republic of China. However, the limits are drawn as shown as a frequency planning convenience."

As regards the easterly boundary of proposed new Sub-Area 6G, there was a proposal under discussion to leave a space in the common limit between new Sub-Area 6G and 6B/F, between the points $32^{\circ}30'\text{N}$, 124°E and 25°N , 123°E . The following

explanatory note would be put on the map : "In this vicinity, the limits of Sub-Areas 6B/F and 6G are undefined."

That note would also be included in the description of Sub-Areas 6B, 6F and 6G.

In the opinion of the Chairman of Working Group 5C, that small undefined Sub-Area limit would not be an impediment to the application of the sharing criteria, i.e. the interference range contours.

3.6 In conclusion, he endorsed the earlier suggestion by the Chairman of Committee 5 that all Administrations should continue and intensify their discussions in a spirit of goodwill to resolve the question solely on a technical basis.

The Committee took note of the oral report by the Chairman of Working Group 5A.

4. Report of Working Group 5B (Documents Nos. 164, 185, 207; DT/40 - Annex 4)

4.1 The Chairman of Working Group 5B introduced and commented on the documents listed above, of which the Committee took note. Working Group 5B had considered that the frequencies needed for long-distance operational control should be included in Appendix 27 - as "world-wide" allotments.

A Sub-Working Group 5B1 had been set up to consider the method to be followed in determining frequency requirements for long-distance operational control. The Sub-Working Group was on the point of completing its work and submitting a report.

The Committee took note of the oral report just submitted and agreed to consider Documents Nos. 185 and 207 - in the same way as it had previously done with Document No. 164 - as having received preliminary approval subject to the development of the planning process.

4.2 The delegate of India considered it desirable to start on a discussion of the sharing criteria applicable to long-distance operational control forthwith, so that a decision could be reached quickly.

It was agreed that discussions on that subject should be continued actively in Working Groups 5B and 5B1.

5. Report of Working Group 5C (Document No. DT/40 - Annex 3)

5.1 The Chairman of Working Group 5C said that the Group's experts had drawn up the sharing matrices contained in Annex 3 to Document No. DT/40. The main task of the thirteen Administrations represented in the Group had been to check "by hand", all the sharing possibilities among the aeronautical areas agreed to by Committee 5 on the basis of the sharing criteria agreed to by Committee 4.

In order to validate the sharing matrices, it had been necessary to verify about 10,000 cases for each of the eleven frequency bands allocated to the Aeronautical Mobile (R) Service between 2 850 kHz and 17 970 kHz.

The Group's task had been to improve the possibilities for sharing, with a view to more intensive use of the available spectrum, so as to meet the requirements of the service with the minimum amount of spectrum.

In that part of the work, due account had been taken of all the planning material - e.g. 27/36 (auroral zone), 27/31A (prepared by Committee 4) and various considerations put forward by the Group's experts - in order to improve sharing conditions as far as possible.

After thanking the delegation experts and IFRB staff who had taken part, and stressing the size of the task, he said that the necessary steps would be taken to eliminate the few mistakes there might still be in the document.

In view of the particularly technical nature of Annex 3 of Document No. DT/40, the Committee decided not to undertake a detailed consideration of its contents, leaving that to the experts of the Working Group, who were requested to finalize the sharing matrices.

6. Consideration of the first draft Plan (Documents DT/40, DT/42)

6.1 The Chairman introduced the documents and invited participants to make comments and suggestions for the preparation of a final Plan. The frequency requirements put forward by different Administrations exceeded the capacity of the spectrum in all the bands. Drawing a parallel with the Maritime Mobile Service, which had come up many times during the work, he said that for the Maritime Mobile Service the speed was 25 knots whereas for the Aeronautical Service it was 500 knots. That meant that the requirements for air-ground communication with aircraft were different in kind. It would be Committee 5's task to reconcile the requirements with the present capacity of the spectrum. The figures in the table in Annex 1 to Document No. DT/40 should also be re-evaluated.

A first correction to be made to that table was that for the 3 MHz band the figure "90" in the last column should be replaced by "106".

6.2 The Chairman of Working Group 5B said that some delegates did not find the presentation of Document No. DT/40 clear. In some cases the frequencies had not yet been entered, but that would be done later.

6.3 The Technical Secretary of the Conference stated that in accordance with the agenda of the Conference, the IFRB developed its computer program with the objective of using the minimum spectrum necessary. Therefore the maximum possible sharing of frequency bands was generally shown in the first channels in the draft Plan.

6.4 The Chairman added that the computer had calculated the number of channels without establishing any priority. All the requirements put forward, except those for long-distance operational control, had been taken into consideration in the first pages of Document No. DT/40, and for each band the maximum allotment possibilities had been used, which corresponded to the sharing possibilities of each frequency band, and took account of the interference range contours.

Comparing the figures for the 1966 Plan and those for the present draft Plan, he noted that in 1966 the number of channels available had been 166, but it had now risen to 411, which meant that the scope for allotments to different services was two-and-a-half times greater.

Taking the comparison further, he gave the following particulars :

<u>1966</u>	<u>Present draft Plan</u>
132 allotments for MWARAs	203 allotments for MWARAs (establishment of 3 new MWARAs)
33 allotments for VOLMET areas	75 allotments for VOLMET areas (establishment of 3 new areas)
656 allotments for RDARAs	1,436 allotments for RDARAs

Nevertheless, the opportunities for sharing were less than in 1966, because of the extended limits of the different aeronautical areas, particularly MWARAs and VOLMET areas.

6.5 The Chairman of Working Group 5B said that there had been an excellent spirit of cooperation in the Group, so that it had been possible to reduce some of the requirements put forward by Administrations. For MWARAs, for example, the requirements had been reduced by about 30 %. It remained true, however, that the requirements reflected in the first draft Plan were still too high in relation to the number of channels available and that there would have to be a further reduction of 20 to 35 %, i.e. the requirements put forward would have to be re-evaluated.

6.6 The delegate of the United States congratulated Working Group 5B on the excellent work it had done, but thought that it was necessary to go still further and envisage a greater reduction in requirements for the sake of greater efficiency. It might, for example, be possible to review the delineation of certain MWARAs and limit their extent.

6.7 The Chairman of Working Group 5B shared the United States delegate's views. In his opinion, it would not be possible to review the sharing matrices within the Conference's schedule because the work had to be done by hand and thus took a great deal of time.

6.8 The delegate of the United Kingdom pointed out that the use of frequencies during the day had not been delimited, particularly in regional and domestic areas, where the peak hours for air traffic were known to be during the daytime.

6.9 The delegate of the Niger noted that Administrations were obviously going to be asked to reconsider their requirements with a view to reducing them in the light of certain priorities applicable to RDARAs, MWARAs and VOLMET areas, depending on the case and the country. It was important that Administrations should redetermine their requirements in the light of those priorities and on the basis of the situation in their region.

6.10 The delegate of Papua-New Guinea was of the opinion that the distribution of allotments needed to be improved.

6.11 The Chairman, after briefly summing up the discussion, said that Committee 5 would continue its work with a view to making the revision of Appendix 27 to the Radio Regulations more satisfactory. The establishment of new MWARAs had made it possible to lighten some of the traffic in certain parts of the globe where in 1966 there had only been regional and domestic areas. Committee 5 had taken into consideration the maximum possibilities offered by application of the technical criteria adopted by Committee 4.

He drew attention to certain points concerning the base value permitted for peak envelope power in certain services, namely 6 kW; also, in the VOLMET areas, transmission was either by radiotelephony or radiotelegraphy and several delegations had pointed out that not only the single sideband system, but also data transmission or A1 radiotelegraphy might be used for communications. The new Plan to be drawn up by the Conference would be a basic document; when other requirements had to be satisfied, the Administrations would apply No. 27/21 of the existing Appendix 27, which had been retained in its entirety.

6.12 He also referred to the period of validity of the new Plan, which in the opinion of some delegations should extend to the year 2000. For his part, he thought it difficult to foresee the increase in air traffic so far ahead in time and would prefer to set a closer date such as 1986, for example. Committee 6 should be asked to prepare a Resolution determining the period of validity of the Plan but also specifying that in the event of an unexpected increase in air traffic or of any special conditions arising, the Plan could always be revised.

6.13 The Chairman suggested :

- a) that Working Group 5B should be asked to revise world requirements, particularly with regard to the MWARA and VOLMET areas;
- b) that Working Group 5B1 should be invited to continue its work on requirements for long-distance communications, a task which would subsequently form part of the work of Group 5B;

- c) that a small group consisting of the Chairmen of Working Groups 5A, 5B and 5C, the Chairman and the Vice-Chairman of Committee 5 and the Secretary of the Committee should be asked to consider, with the delegations concerned, the problem of RDARA requirements and of the proposed date of 1986. In case of difficulty, reference might be made at a subsequent stage to the Union's appropriate authority, namely to the IFRB and more especially to the Chairman and two of its members who were particularly competent in the matter, Mr. Sowton, Mr. Perrin and Mr. Berrada.

He then outlined the timetable which he proposed for the work of the Committee's Groups and of the Committee itself for the coming days. It should be possible to distribute a second draft Plan to the delegates on 27 February and the third and last draft should be approved by Committee 5 on 1 March.

6.14 The delegate of Argentina emphasized the need to reduce the frequency requirements submitted by Administrations and, with the support of the delegate of Spain, suggested that Administrations should prepare new requirements, showing the allotments of the existing Appendix 27 side by side with the foreseeable needs for the coming 25 years.

The Chairman said that the suggestion would be taken into account.

6.15 In reply to a remark by the delegate of the Niger, the Chairman pointed out that the problems of world routes concerned a great many countries and should be dealt with by a large group, while the subject of regional and national areas was more restricted and could be considered by a small group of persons.

6.16 The delegates of the United States, the Federal Republic of Germany, Italy, Japan, Spain and Zaire approved the timetable and the method of work proposed by the Chairman without reservation.

Approval was also expressed by the delegates of India and the United Kingdom, who would however have preferred 1986 to be replaced by 1990.

The delegates of Australia and China preferred 1986.

The delegate of the USSR approved the Chairman's proposals, but thought that the question of the date should be treated separately.

The delegate of Senegal asked for further details to be supplied to the delegations concerning the contacts they were to have with the small group referred to earlier by the Chairman.

The timetable and the method of work were approved.

7. Consideration of the provisions of Section I, Part I (Nos. 27/1 and 27/3-27/8) of Section I, Part II (Nos. 27/74-27/79)

7.1 The Chairman recalled that no proposal for modification had been made for Nos. 27/1 and 27/3-27/8 and also for Nos. 27/74-27/79 of Appendix 27 to the Radio Regulations. He therefore proposed that the above texts should be retained, being preceded by the letters "NOC".

It was so decided.

The meeting rose at 1720 hours.

The Secretary :

M. SANT

The Chairman :

M. CHEF

AERONAUTICAL (R) CONFERENCE
GENEVA, 1978

E

PLENARY MEETING

R.2

2nd SERIES OF TEXTS SUBMITTED BY THE
EDITORIAL COMMITTEE TO THE PLENARY MEETING

The following texts are submitted to the Plenary Meeting for second reading:

<u>Source</u>	<u>Document No.</u>	<u>Title</u>
B.1	239	<u>APPENDIX 27</u>

Part II - Section I: Description of the
Boundaries of the MWARA, RDARA,
Sub-RDARA and VOLMET Areas

Resolutions A, B, C and D

Recommendations AA y BB

C.J. DHENIN
Chairman of the
Editorial Committee

Annex: 32 pages



PART II

(MOD) **Plan for the Allotment of Frequencies for the
Aeronautical Mobile (R) Service in the Exclusive Bands
between 2850 and 17 970 kHz**

Section I

NOC **Description of the Boundaries of the MWARA, RDARA,
Sub-RDARA and VOLMET Areas**

NOC 27/74

NOC 27/75

(MOD) 27/76 3. References to the name of a country or of a
geographical area in the descriptions or on the maps
and the borders shown on the maps do not imply
the expression of any opinion whatsoever on the part
of the ITU concerning the political status of such a
country or geographical area or any official
recognition of these borders.

NOC 27/77

NOC 27/78

NOC 27/79

ARTICLE 1

NOC **Description of the boundaries of the major world
air route areas (MWARAs)**

NOC 27/80

SUP 27/81

MOD 27/82 Major World Air Route Area — CENTRAL EAST PACIFIC
(MWARA-CEP)

From the point 50°N 122°W through the points 38°N 120°W, 15°N 110°W, 20°S 145°W, 20°S 152°W, 30°N 165°W, to the point 50°N 122°W.

MOD 27/83 Major World Air Route Area — CENTRAL WEST PACIFIC
(MWARA-CWP)

From the point 40°N 117°E through the points 25°N 155°W, 17°N 155°W, 00° 165°W, 00° 170°E, 12°S 165°E, 12°S 136°E, 09°N 115°E, 23°N 114°E, to the point 40°N 117°E.

MOD 27/84 Major World Air Route Area — EUROPE
(MWARA-EUR)

From the point 33°N 12°W through the points 54°N 12°W, 70°N 00°, 74°N 40°E, 74°N 52°E, 60°N 52°E, 40°N 36°E, 29°N 35°30'E, 32°N 13°E, to the point 33°N 12°W.

SUP 27/85

ADD 27/85A Major World Air Route Area — INDIAN OCEAN
(MWARA-INO)

From the South Pole through the points 30°S 26°E, 20°N 35°E, 30°N 60°E, 30°N 90°E, 30°S 120°E, 40°S 160°E to the South Pole.

MOD 27/86 Major World Air Route Area — MIDDLE EAST
(MWARA-MID)

From the point 51°N 30°E through the points 57°N 37°E, 50°N 80°E, 44°N 94°E, 08°N 76°E, 11°45'N 42°E, 16°N 42°E, 30°N 30°E, to the point 51°N 30°E.

MOD 27/87 Major World Air Route Area — NORTH ATLANTIC
(MWARA-NAT)

From the North Pole through the points 60°N 135°W, 49°N 120°W, 49°N 74°W, 39°N 78°W, 18°N 66°W, 05°N 55°W, 16°N 26°W, 32°N 08°W, 44°N 02°E, 60°N 20°E, to the North Pole.

ADD 27/87A Major World Air Route Area — NORTH CENTRAL ASIA
(MWARA-NCA)

From the North Pole through the points 75°N 10°E, 60°N 25°E, 30°N 25°E, 30°N 73°E, 37°N 73°E, 49°N 85°E, 42°N 97°E, 42°N 110°E, 45°N 113°E, 46°30'N 120°E, 49°N 116°E, 54°N 123°E, 45°N 133°E, 40°N 124°E, 30°N 124°E, 25°N 135°E, 65°N 170°W, to the North Pole.

SUP 27/88

SUP 27/89

SUP 27/90

SUP 27/91

SUP 27/92

SUP 27/93

MOD 27/94 Major World Air Route Area — NORTH PACIFIC
(MWARA-NP)

From the North Pole through the points 60°N 135°W, 47°N 118°W, 30°N 165°W, 30°N 115°E, 41°N 116°E, 55°N 135°E to the North Pole.

MOD 27/95 Major World Air Route Area — AFRICA
(MWARA-AFI)

From the point 40°N 35°W, through the points 37°N 03°W, 37°N 44°E, the border between the Republic of Iraq and Iran, the points 29°N 48°E, 25°N 52°E, 26°N 56°E, 20°N 62°E, 22°S 60°E, 35°S 30°E, 35°S 16°E, 05°N 03°W, 05°N 35°W, to the point 40°N 35°W.

SUP 27/96

SUP 27/97

MOD 27/98 Major World Air Route Area - SOUTH ATLANTIC
(MWARA-SAT)

From the South Pole through the points $30^{\circ}\text{S } 75^{\circ}\text{W}$, $19^{\circ}\text{S } 53^{\circ}\text{W}$, $00^{\circ} 60^{\circ}\text{W}$, $20^{\circ}\text{N } 60^{\circ}\text{W}$, $25^{\circ}\text{N } 25^{\circ}\text{W}$, $41^{\circ}\text{N } 15^{\circ}\text{W}$, $41^{\circ}\text{N } 03^{\circ}\text{W}$, $15^{\circ}\text{N } 03^{\circ}\text{W}$, $20^{\circ}\text{S } 32^{\circ}\text{E}$ to the South Pole.

SUP 27/99

MOD 27/100 Major World Air Route Area - SOUTH AMERICA
(MWARA-SAM)

From the South Pole through the points $15^{\circ}\text{N } 125^{\circ}\text{W}$, $15^{\circ}\text{N } 60^{\circ}\text{W}$, $10^{\circ}\text{N } 60^{\circ}\text{W}$, $05^{\circ}\text{S } 30^{\circ}\text{W}$, $36^{\circ}\text{S } 52^{\circ}\text{W}$, to the South Pole.

SUP 27/101

MOD 27/102 Major World Air Route Area - SOUTH EAST ASIA
(MWARA-SEA)

From the point $26^{\circ}\text{N } 130^{\circ}\text{E}$, through the points $00^{\circ} 130^{\circ}\text{E}$, $00^{\circ} 135^{\circ}\text{E}$, $12^{\circ}\text{S } 145^{\circ}\text{E}$, $12^{\circ}\text{S } 160^{\circ}\text{E}$, $25^{\circ}\text{S } 155^{\circ}\text{E}$, $40^{\circ}\text{S } 150^{\circ}\text{E}$, $35^{\circ}\text{S } 115^{\circ}\text{E}$, $18^{\circ}\text{N } 62^{\circ}\text{E}$, $26^{\circ}\text{N } 65^{\circ}\text{E}$, to the point $26^{\circ}\text{N } 130^{\circ}\text{E}$.

MOD 27/103 Major World Air Route Area - SOUTH PACIFIC
(MWARA-SP)

From the South Pole through the points $38^{\circ}\text{S } 145^{\circ}\text{E}$, $00^{\circ} 167^{\circ}\text{E}$, $00^{\circ} 175^{\circ}\text{W}$, $22^{\circ}\text{N } 158^{\circ}\text{W}$, $22^{\circ}\text{N } 156^{\circ}\text{W}$, $00^{\circ} 120^{\circ}\text{W}$ to the South Pole.

ADD 27/103A Major World Air Route Area - EAST ASIA
(MWARA-EA)

From the point $55^{\circ}\text{N } 124^{\circ}\text{E}$ through the points $37^{\circ}\text{N } 145^{\circ}\text{E}$, $26^{\circ}\text{N } 130^{\circ}\text{E}$, $00^{\circ} 130^{\circ}\text{E}$, $00^{\circ} 80^{\circ}\text{E}$, $18^{\circ}\text{N } 62^{\circ}\text{E}$, $37^{\circ}\text{N } 67^{\circ}\text{E}$, $55^{\circ}\text{N } 80^{\circ}\text{E}$ to the point $55^{\circ}\text{N } 124^{\circ}\text{E}$.

ARTICLE 2

NOC

Description of the boundaries of the regional and domestic air route areas**(RDARAs)**

(MOD) 27/104

Regional and Domestic Air Route Area-1
(RDARA-1)

From the North Pole along the 15°W meridian to the point $72^{\circ}\text{N } 15^{\circ}\text{W}$, then through the points $40^{\circ}\text{N } 50^{\circ}\text{W}$, $30^{\circ}\text{N } 30^{\circ}\text{W}$, $30^{\circ}\text{N } 10^{\circ}\text{W}$, $31^{\circ}\text{N } 10^{\circ}\text{W}$, to the point $31^{\circ}\text{N } 10^{\circ}\text{E}$. Then along the Libya-Tunisia border to the Mediterranean, thence along the coast of Libya and the Arab Republic of Egypt to Alexandria. Thence to Cairo, eastward along the Cairo 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 Roumania and the U.S.S.R., thence along the border between the U.S.S.R. and the following countries: Roumania, Hungary, the Czechoslovak Socialist Republic and Poland. Thence along the U.S.S.R. Baltic Sea coast, to the border between Finland and the U.S.S.R. and between Norway and the U.S.S.R. to the point $70^{\circ}\text{N } 32^{\circ}\text{E}$, and along the 32°E meridian to the North Pole.

MOD 27/105 Sub-Area 1A

From the point $65^{\circ}\text{N } 26^{\circ}\text{W}$, and through the points $40^{\circ}\text{N } 50^{\circ}\text{W}$, $40^{\circ}\text{N } 20^{\circ}\text{W}$, $60^{\circ}\text{N } 20^{\circ}\text{W}$, $60^{\circ}\text{N } 26^{\circ}\text{W}$, to the point $65^{\circ}\text{N } 26^{\circ}\text{W}$.

MOD 27/106 Sub-Area 1B

From the North Pole along the 15°W meridian to the point $72^{\circ}\text{N } 15^{\circ}\text{W}$, then through the points $65^{\circ}\text{N } 26^{\circ}\text{W}$, $60^{\circ}\text{N } 26^{\circ}\text{W}$, $60^{\circ}\text{N } 20^{\circ}\text{W}$ to the points $50^{\circ}\text{N } 20^{\circ}\text{W}$ and $50^{\circ}\text{N } 10^{\circ}\text{W}$, thence east along the territorial waters between the Channel Islands and French coastline, reaching the latter at the meridian 03°W . Thence following the French coastline northeastward and the frontier of France with Belgium, Luxembourg and the Federal Republic of Germany. Thence along the border between Switzerland and the Federal Republic of Germany and along the border between the latter and Austria. Thence along the border between the Czechoslovak Socialist

Republic and the Federal Republic of Germany, then along the border between the Federal Republic of Germany and the German Democratic Republic towards the Baltic Sea. Then west along the coastline of the Federal Republic of Germany to the border between the latter and Denmark. Along this border to the North Sea. Thence along the 55°N parallel to a point $55^{\circ}\text{N } 04^{\circ}\text{E}$, then through the points $56^{\circ}\text{N } 03^{\circ}\text{E}$, $59^{\circ}\text{N } 02^{\circ}\text{E}$, $62^{\circ}\text{N } 01^{\circ}\text{E}$. Thence along the 01°E meridian to the North Pole.

MOD 27/107 Sub-Area 1C

From the North Pole along the meridian 01°E to the point $62^{\circ}\text{N } 01^{\circ}\text{E}$. Thence through the points $59^{\circ}\text{N } 02^{\circ}\text{E}$, $56^{\circ}\text{N } 03^{\circ}\text{E}$, $55^{\circ}\text{N } 04^{\circ}\text{E}$ and then east along the 55°N parallel and the border between Denmark and the Federal Republic of Germany to the Baltic Sea and along the Baltic Sea coast of the Federal Republic of Germany to the border between the Federal Republic of Germany and the German Democratic Republic. Along this border and continuing along the western borders of the Czechoslovak Socialist Republic and Austria to the borders between Austria and Switzerland, Austria and Liechtenstein and Austria and Switzerland. Thence eastward along the southern borders of Austria and Hungary, thence along the border between Hungary and Roumania. Thence, along the border between the U.S.S.R. and the following countries: Hungary, the Czechoslovak Socialist Republic and Poland. Thence to the Baltic Sea, along the U.S.S.R. Baltic Sea coast, along the borders between Finland and the U.S.S.R. and between Norway and the U.S.S.R. to the point $70^{\circ}\text{N } 32^{\circ}\text{E}$, then along the 32°E meridian to the North Pole.

(MOD) 27/108 Sub-Area 1D

From the junction of the borders of the U.S.S.R., 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 $43^{\circ}\text{N } 10^{\circ}\text{E}$ to $41^{\circ}\text{N } 10^{\circ}\text{E}$ to $41^{\circ}\text{N } 07^{\circ}\text{E}$, 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 the Arab Republic of 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 intersection

with the border between the Syrian Arab Republic and Iraq and along this border up to the Turkish border. Then along the border between Turkey and Iraq, Iran and the U.S.S.R. up to the Black Sea Coast. Thence 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 U.S.S.R., thence along this border to the junction of the borders of the U.S.S.R., Hungary and Roumania.

MOD 27/109 Sub-Area 1E

From the point $50^{\circ}\text{N } 20^{\circ}\text{W}$, through the points $40^{\circ}\text{N } 20^{\circ}\text{W}$, $40^{\circ}\text{N } 50^{\circ}\text{W}$, $30^{\circ}\text{N } 39^{\circ}\text{W}$, $30^{\circ}\text{N } 10^{\circ}\text{W}$, $31^{\circ}\text{N } 10^{\circ}\text{W}$, to the point $31^{\circ}\text{N } 10^{\circ}\text{E}$. Then along the border between Libya and Tunisia to the Mediterranean, thence along the Tunisian coast to intersect the 10°E meridian. Thence along this meridian to the point $43^{\circ}\text{N } 10^{\circ}\text{E}$; thence to the borders between Italy and France and between Italy and Switzerland, Austria and Switzerland, Austria and Liechtenstein, Austria and Switzerland, Switzerland and the Federal Republic of Germany, and between France and the Federal Republic of 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 points $50^{\circ}\text{N } 10^{\circ}\text{W}$ and $50^{\circ}\text{N } 20^{\circ}\text{W}$.

(MOD) 27/110

Regional and Domestic Air Route Area-2
(RDARA-2)

From the North Pole along the 32°E meridian to the 70°N parallel. Then along the border between Norway and the U.S.S.R. and 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 border between the U.S.S.R. and Poland. Thence along the border between the U.S.S.R. and the following countries: Poland, the Czechoslovak Socialist Republic, 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 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 $49^{\circ}\text{N } 88^{\circ}\text{E}$. 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.

(MOD) 27/111 Sub-Area 2A

From the North Pole along the 32°E meridian to 70°N . Then along the border between Norway and the U.S.S.R. and 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 point $55^{\circ}\text{N } 20^{\circ}\text{E}$, and thence to Moscow. Then to $55^{\circ}\text{N } 60^{\circ}\text{E}$, and along the 60°E meridian to the North Pole.

(MOD) 27/112 [Does not concern the English text]

(MOD) 27/113 Sub-Area 2C

From the point $55^{\circ}\text{N } 60^{\circ}\text{E}$, to Moscow, to $55^{\circ}\text{N } 20^{\circ}\text{E}$. Thence south along the border between the U.S.S.R. and Poland. Thence along the border between the U.S.S.R. and the following countries: Poland, the Czechoslovak Socialist Republic, 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 coastline to the junction of the border between 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 point $47^{\circ}\text{N } 53^{\circ}\text{E}$ to $55^{\circ}\text{N } 60^{\circ}\text{E}$.

(MOD) 27/114 [Does not concern the English text]

MOD 27/120 Sub-Area 4B

From the point $21^{\circ}\text{N } 31^{\circ}\text{W}$, through the points $10^{\circ}\text{N } 20^{\circ}\text{W}$, $05^{\circ}\text{S } 20^{\circ}\text{W}$ to $05^{\circ}\text{S } 12^{\circ}\text{E}$. Thence along the southern border of the People's Republic of the Congo and the Central African Empire to the junction between the Republic of Zaire, the Sudan and the Central African Empire. Along the western border of the Sudan to the point $12^{\circ}\text{N } 22^{\circ}\text{E}$. Thence along the N'Djamena parallel to the Nigerian border. Then westward along this border to the point $13^{\circ} 12' \text{N } 10^{\circ} 45' \text{E}$, through Zinder and Gao, to the point $21^{\circ}\text{N } 31^{\circ}\text{W}$.

(MOD) 27/121

Regional and Domestic Air Route Area-5
(RDARA-5)

From the point $41^{\circ}\text{N } 40^{\circ}\text{E}$ to the point $37^{\circ}\text{N } 40^{\circ}\text{E}$. Then along the border between Turkey and the Syrian Arab Republic to the Mediterranean coast. Thence to the common border of Libya and the Arab Republic of Egypt on the North African coast excluding Cyprus. Southward along the western border of the Arab Republic of Egypt, and the Sudan to the border of Kenya. Thence east along the northern border of Kenya, then south along the border between Kenya and Somalia and to the East African coast at $02^{\circ}\text{S } 41^{\circ}\text{E}$. Then through the point $02^{\circ}\text{S } 73^{\circ}\text{E}$ to $37^{\circ}\text{N } 73^{\circ}\text{E}$. Then east along the border between the Republic of Afghanistan and Pakistan, and west along the southern border of the U.S.S.R. to the Caspian Sea. Then along the northern border of Iran and Turkey to close the area at $41^{\circ}\text{N } 40^{\circ}\text{E}$.

MOD 27/122 Sub-Area 5A

From the point $37^{\circ}\text{N } 40^{\circ}\text{E}$, along the border between Turkey and the Syrian Arab Republic to the Mediterranean coast. Thence to the Libyan-Egyptian border on the North African coast, excluding Cyprus. Southward, along the western border of the Arab Republic of Egypt and east along the common border of the Arab Republic of Egypt and the Sudan to $24^{\circ}\text{N } 37^{\circ}\text{E}$. Then through the points $11^{\circ} 45' \text{N } 42^{\circ}\text{E}$, $11^{\circ} 45' \text{N } 55^{\circ}\text{E}$, $20^{\circ}\text{N } 52^{\circ}\text{E}$, to the point $26^{\circ}\text{N } 52^{\circ}\text{E}$. Thence along the border between Iran and Iraq, and the border between Iraq and Turkey, to the point $37^{\circ}\text{N } 40^{\circ}\text{E}$.

(MOD) 27/123 Sub-Area 5B

From the point $41^{\circ}\text{N } 40^{\circ}\text{E}$ to $37^{\circ}\text{N } 40^{\circ}\text{E}$. Thence east along the borders between Turkey and the Syrian Arab Republic, and Turkey and Iraq, and along the border between Iraq and Iran to the point $30^{\circ}\text{N } 49^{\circ}\text{E}$. Thence along the middle of the Persian Gulf through the points $26^{\circ}\text{N } 52^{\circ}\text{E}$ and $24^{\circ}\text{N } 60^{\circ}\text{E}$, to Bombay. Then to $37^{\circ}\text{N } 73^{\circ}\text{E}$. Then east along the border between the Republic of Afghanistan and Pakistan, then west along the southern border 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 $41^{\circ}\text{N } 40^{\circ}\text{E}$.

(MOD) 27/124 [Concerns the Spanish text only]

(MOD) 27/125 Sub-Area 5D

From the junction of the Arab Republic of Egypt, Libya and the Sudan southward along the western border of Sudan to the border of Kenya. Thence along the northern border of Kenya. Then south along the border between Kenya and Somalia to the east African coast, at the point $02^{\circ}\text{S } 42^{\circ}\text{E}$. Then through the points $02^{\circ}\text{S } 54^{\circ}\text{E}$, $13^{\circ}\text{N } 54^{\circ}\text{E}$, $13^{\circ}\text{N } 52^{\circ}\text{E}$ to the point $12^{\circ}\text{N } 44^{\circ}\text{E}$. Thence northwest along the middle of the Red Sea to $24^{\circ}\text{N } 37^{\circ}\text{E}$. Thence along the southern border of the Arab Republic of Egypt to close the sub-area.

NOC 27/126

(MOD) 27/127 Sub-Area 6A

From the point $37^{\circ}\text{N } 75^{\circ}\text{E}$, along the border between Pakistan and the Republic of Afghanistan, and Iran and Pakistan to the point $23^{\circ}\text{N } 61^{\circ}\text{E}$. Thence to Bombay. From Bombay to $24^{\circ}\text{N } 80^{\circ}\text{E}$. Thence to Calcutta. Thence along the coast of

Bangladesh and Burma to reach the border between Burma and Thailand. North along this border and that between Burma and Lao People's Democratic Republic. Thence along the border between China and Burma. Thence westward along the southern border of China to the point $37^{\circ}\text{N } 75^{\circ}\text{E}$.

27/128 [Pending]

27/129 [Pending]

27/130 [Pending]

(MOD) 27/131 Sub-Area 6E

From the point $20^{\circ}\text{N } 73^{\circ}\text{E}$, and through the points $02^{\circ}\text{S } 73^{\circ}\text{E}$, $02^{\circ}\text{S } 92^{\circ}\text{E}$, through Weh Island (off the north coast of Sumatra) to $10^{\circ}\text{N } 97^{\circ}\text{E}$. Thence along the coasts of Burma, Bangladesh and India to Calcutta. Then through the points $24^{\circ}\text{N } 80^{\circ}\text{E}$ to $20^{\circ}\text{N } 73^{\circ}\text{E}$.

27/132 [Pending]

27/132A [Pending]

MOD 27/133 Regional and Domestic Air Route Area-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 border between People's Republic of Congo and People's Republic of Angola, then along the northern border of the Republic of Zaire, along the border between Uganda and Sudan, and the borders between Kenya and Sudan, Ethiopia and Somalia, to the point $02^{\circ}\text{S } 42^{\circ}\text{E}$. Then to $02^{\circ}\text{S } 60^{\circ}\text{E}$ and along the 60°E meridian to 11°S , then through the points $11^{\circ}\text{S } 65^{\circ}\text{E}$, $40^{\circ}\text{S } 65^{\circ}\text{E}$, $40^{\circ}\text{S } 60^{\circ}\text{E}$ to the South Pole.

(MOD) 27/134 [Concerns the Spanish text only]

MOD 27/135 Sub-Area 7B

From the point $05^{\circ}\text{S } 10^{\circ}\text{E}$ to $05^{\circ}\text{S } 12^{\circ}\text{E}$. Thence along the border between People's Republic of Congo and People's Republic of Angola, then along the northern border of the Republic of Zaire, to the junction of the borders of Uganda,

Republic of Zaire and Sudan. Thence along the eastern borders of the Republic of Zaire, the Republic of Rwanda, the Republic of Burundi, and the Republic of Zaire. Thence along the southern borders of the Republic of Zaire and the People's Republic of Angola to the coast of the South Atlantic. Thence to the point $17^{\circ}\text{S } 10^{\circ}\text{E}$, and then to the point $05^{\circ}\text{S } 10^{\circ}\text{E}$.

MOD 27/136 Sub-Area 7C

From the junction of the borders of Uganda, Republic of Zaire and Sudan along the western border of Uganda and Tanzania, and then along the southern border of Tanzania to the coast. Thence through the points $11^{\circ}\text{S } 41^{\circ}\text{E}$, $11^{\circ}\text{S } 60^{\circ}\text{E}$, $02^{\circ}\text{S } 60^{\circ}\text{E}$, to $02^{\circ}\text{S } 41^{\circ}\text{E}$ and thence to the east coast of Africa. Then north along the eastern border of Kenya, then west along the northern borders Kenya and Uganda to close the sub-area at the junction of the borders of the Republic of Zaire, Sudan and Uganda.

MOD 27/137 Sub-Area 7D

From the border between Tanzania and Mozambique on Lake Nyasa, south along the west border of Mozambique to the east coast of Africa, then through the points $27^{\circ}\text{S } 33^{\circ}\text{E}$, $40^{\circ}\text{S } 33^{\circ}\text{E}$, $40^{\circ}\text{S } 65^{\circ}\text{E}$, $11^{\circ}\text{S } 65^{\circ}\text{E}$, to $11^{\circ}\text{S } 41^{\circ}\text{E}$. Thence along the northern border of Mozambique to Lake Nyasa.

MOD 27/138 Sub-Area 7E

From the point $17^{\circ}\text{S } 10^{\circ}\text{E}$, and through the points $40^{\circ}\text{S } 10^{\circ}\text{E}$, $40^{\circ}\text{S } 33^{\circ}\text{E}$, to $27^{\circ}\text{S } 33^{\circ}\text{E}$. Thence along the west border of Mozambique and the part of the western border of Tanzania as far as the northern point of Lake Nyasa. Thence along the borders between Malawi and Tanzania and between Zambia and Tanzania and along the borders between the Republic of Zaire and Zambia, the People's Republic of Angola and Zambia, and the People's Republic of Angola and Namibia to the coast at the point $17^{\circ}\text{S } 10^{\circ}\text{E}$.

ADD 27/138A Sub-Area 7F

From the point $05^{\circ}\text{S } 10^{\circ}\text{E}$ to $05^{\circ}\text{S } 12^{\circ}\text{E}$, along the border between the People's Republic of the Congo and the People's Republic of Angola to the junction point of the borders of the People's Republic of the Congo, the People's Republic of Angola, and the Republic of Zaire. Thence along the border between the People's Republic of Angola and the Republic of Zaire until the coast of the Atlantic, along the coastline until the Zaire River and thence along the northern, eastern and southern border of the People's Republic of Angola to the coast of the South Atlantic. Thence to the point $17^{\circ}\text{S } 10^{\circ}\text{E}$ and then to the point $05^{\circ}\text{S } 10^{\circ}\text{E}$.

MOD 27/139 Regional and Domestic Air Route Area-8
(RDARA-8)

From the South Pole along the 60°E meridian to 40°S then through the points $40^{\circ}\text{S } 65^{\circ}\text{E}$, $11^{\circ}\text{S } 65^{\circ}\text{E}$, $11^{\circ}\text{S } 60^{\circ}\text{E}$, $02^{\circ}\text{S } 60^{\circ}\text{E}$, $02^{\circ}\text{S } 92^{\circ}\text{E}$, $10^{\circ}\text{S } 92^{\circ}\text{E}$, to $10^{\circ}\text{S } 110^{\circ}\text{E}$. Then along the 110°E meridian to the South Pole.

SUP 27/140

MOD 27/141 Regional and Domestic Air Route Area-9
(RDARA-9)

From the South Pole along the 160°E meridian to 27°S . Then through the points $19^{\circ}\text{S } 153^{\circ}\text{E}$, $10^{\circ}\text{S } 145^{\circ}\text{E}$, $10^{\circ}\text{S } 141^{\circ}\text{E}$, $00^{\circ} 141^{\circ}\text{E}$, $00^{\circ} 160^{\circ}\text{E}$, $03^{\circ}30'\text{N } 160^{\circ}\text{E}$, $03^{\circ}30'\text{N } 120^{\circ}\text{W}$. Then along the 120°W meridian to the South Pole.

SUP 27/142

MOD 27/143 Sub-Area-9B

From the point $00^{\circ} 141^{\circ}\text{E}$ through points $10^{\circ}\text{S } 141^{\circ}\text{E}$, $10^{\circ}\text{S } 145^{\circ}\text{E}$, $27^{\circ}\text{S } 160^{\circ}\text{E}$, $27^{\circ}\text{S } 157^{\circ}\text{W}$, $03^{\circ}30'\text{N } 157^{\circ}\text{W}$, $03^{\circ}30'\text{N } 160^{\circ}\text{E}$, $00^{\circ} 160^{\circ}\text{E}$ to the point $00^{\circ} 141^{\circ}\text{E}$.

(MOD) 27/144 [Concerns the Spanish text only]

MOD 27/145 Sub-Area 9D

From the South Pole along the 160°E meridian to 27°S . Then through the point $27^{\circ}\text{S } 170^{\circ}\text{W}$ and along the 170°W meridian to the South Pole.

ADD 27/145A Regional and Domestic Air Route Area-10
(RDARA-10)

From the point $50^{\circ}\text{N } 164^{\circ}\text{E}$ to $66^{\circ}\text{N } 169^{\circ}\text{W}$. Then along the 169°W meridian to the North Pole. Then through the points $82^{\circ}\text{N } 30^{\circ}\text{E}$, $82^{\circ}\text{N } 00^{\circ}$, $73^{\circ}\text{N } 00^{\circ}$, $73^{\circ}\text{N } 15^{\circ}\text{W}$. Then along the 15°W meridian to 72°N . Then through the points $40^{\circ}\text{N } 50^{\circ}\text{W}$, $40^{\circ}\text{N } 65^{\circ}\text{W}$ to $44^{\circ}30'\text{N } 73^{\circ}\text{W}$, $41^{\circ}\text{N } 81^{\circ}\text{W}$, $41^{\circ}\text{N } 88^{\circ}\text{W}$, $48^{\circ}\text{N } 91^{\circ}\text{W}$, $48^{\circ}\text{N } 127^{\circ}\text{W}$, $50^{\circ}\text{N } 130^{\circ}\text{W}$, then westward to the point $50^{\circ}\text{N } 164^{\circ}\text{E}$.

MOD 27/146 Sub-Area 10A

From the point $50^{\circ}\text{N } 164^{\circ}\text{E}$ to $66^{\circ}\text{N } 169^{\circ}\text{W}$, along the 169°W meridian to the North Pole, along the 130°W meridian to 50°N , then westward to the point $50^{\circ}\text{N } 164^{\circ}\text{E}$.

(MOD) 27/147 [Concerns the Spanish text only]

(MOD) 27/148 [Concerns the Spanish text only]

(MOD) 27/149 [Concerns the Spanish text only]

(MOD) 27/150 [Concerns the Spanish text only]

ADD 27/150A Sub-Area 10F

From the North Pole through the points $82^{\circ}\text{N } 30^{\circ}\text{E}$, $82^{\circ}\text{N } 00^{\circ}$, $73^{\circ}\text{N } 00^{\circ}$, $73^{\circ}\text{N } 20^{\circ}\text{W}$, $70^{\circ}\text{N } 20^{\circ}\text{W}$, $63^{\circ}30'\text{N } 39^{\circ}\text{W}$, $58^{\circ}30'\text{N } 43^{\circ}\text{W}$, $58^{\circ}30'\text{N } 50^{\circ}\text{W}$, $63^{\circ}30'\text{N } 55^{\circ}44'\text{W}$, $65^{\circ}30'\text{N } 58^{\circ}39'\text{W}$, $74^{\circ}\text{N } 68^{\circ}18'\text{W}$, $76^{\circ}\text{N } 76^{\circ}\text{W}$, $78^{\circ}\text{N } 75^{\circ}\text{W}$, $82^{\circ}\text{N } 60^{\circ}\text{W}$ to the North Pole.

ADD 27/150B Regional and Domestic Air Route Area-11
(RDARA-11)

From the point $29^{\circ}\text{N } 180^{\circ}$ through the points $50^{\circ}\text{N } 164^{\circ}\text{E}$, $50^{\circ}\text{N } 127^{\circ}\text{W}$. Then along the border between the United States of America and Canada to $46^{\circ}\text{N } 67^{\circ}\text{W}$, then to $40^{\circ}\text{N } 65^{\circ}\text{W}$, $40^{\circ}\text{N } 50^{\circ}\text{W}$, $25^{\circ}\text{N } 35^{\circ}\text{W}$, $25^{\circ}\text{N } 98^{\circ}\text{W}$, $33^{\circ}\text{N } 119^{\circ}\text{W}$, $33^{\circ}\text{N } 153^{\circ}\text{W}$, $29^{\circ}\text{N } 153^{\circ}\text{W}$ to the point $29^{\circ}\text{N } 180^{\circ}$.

MOD 27/151 Sub-Area 11A

From the point $29^{\circ}\text{N } 180^{\circ}$, through the points $50^{\circ}\text{N } 164^{\circ}\text{E}$, $50^{\circ}\text{N } 130^{\circ}\text{W}$, $33^{\circ}\text{N } 130^{\circ}\text{W}$, $33^{\circ}\text{N } 153^{\circ}\text{W}$, $29^{\circ}\text{N } 153^{\circ}\text{W}$, to the point $29^{\circ}\text{N } 180^{\circ}$.

MOD 27/152 Sub-Area 11B

From the point $50^{\circ}\text{N } 130^{\circ}\text{W}$ and through the points $33^{\circ}\text{N } 130^{\circ}\text{W}$, $33^{\circ}\text{N } 119^{\circ}\text{W}$, $25^{\circ}\text{N } 98^{\circ}\text{W}$, $25^{\circ}\text{N } 65^{\circ}\text{W}$, $40^{\circ}\text{N } 65^{\circ}\text{W}$, $46^{\circ}\text{N } 67^{\circ}\text{W}$. Then along the border between the United States of America and Canada through $50^{\circ}\text{N } 127^{\circ}\text{W}$, to the point $50^{\circ}\text{N } 130^{\circ}\text{W}$.

ADD 27/152A Sub-Area 11C

From the point $25^{\circ}\text{N } 65^{\circ}\text{W}$ and through the points $40^{\circ}\text{N } 65^{\circ}\text{W}$, $40^{\circ}\text{N } 50^{\circ}\text{W}$, $25^{\circ}\text{N } 35^{\circ}\text{W}$, to the point $25^{\circ}\text{N } 65^{\circ}\text{W}$.

ADD 27/152B Regional and Domestic Air Route Area-12
(RDARA-12)

From the point $03^{\circ} 30' \text{N } 170^{\circ}\text{W}$ to the point $10^{\circ}\text{N } 170^{\circ}\text{W}$, then along the boundary between ITU Regions 2 and 3 to $29^{\circ}\text{N } 180^{\circ}$, and thence to $29^{\circ}\text{N } 153^{\circ}\text{W}$, $33^{\circ}\text{N } 153^{\circ}\text{W}$, through the points $33^{\circ}\text{N } 120^{\circ}\text{W}$, $35^{\circ}\text{N } 120^{\circ}\text{W}$, $32^{\circ}\text{N } 104^{\circ}\text{W}$, $25^{\circ}\text{N } 91^{\circ}\text{W}$, $26^{\circ}\text{N } 91^{\circ}\text{W}$, $26^{\circ}\text{N } 79^{\circ}\text{W}$, $27^{\circ}\text{N } 79^{\circ}\text{W}$, $27^{\circ}\text{N } 76^{\circ} 30' \text{W}$, $25^{\circ}\text{N } 70^{\circ}\text{W}$, $25^{\circ}\text{N } 35^{\circ}\text{W}$ and along the boundary between ITU Regions 1 and 2 to $00^{\circ} 20' \text{W}$. Thence through the points $00^{\circ} 44' \text{W}$, $04^{\circ} 24' \text{N } 50^{\circ} 39' \text{W}$. Then along the boundary between Brazil and the French Department of Guiana, Surinam, Guyana, Venezuela, Colombia to the junction of Brazil, Peru and Colombia then along the boundary between Peru and Colombia and Peru and Ecuador to the point $04^{\circ}\text{S } 93^{\circ}\text{W}$. Then to the point $05^{\circ}\text{S } 93^{\circ}\text{W}$ and through the points $05^{\circ}\text{S } 120^{\circ}\text{W}$, $03^{\circ} 30' \text{N } 120^{\circ}\text{W}$ to the point $03^{\circ} 30' \text{N } 170^{\circ}\text{W}$.

(MOD) 27/153 Sub-Area 12A

From the point $03^{\circ} 30' \text{N } 170^{\circ}\text{W}$ to the point $10^{\circ}\text{N } 170^{\circ}\text{W}$, then along the boundary between ITU Regions 2 and 3 to $29^{\circ}\text{N } 180^{\circ}$, and thence through the points $29^{\circ}\text{N } 153^{\circ}\text{W}$, $03^{\circ} 30' \text{N } 153^{\circ}\text{W}$ to the point $03^{\circ} 30' \text{N } 170^{\circ}\text{W}$.

(MOD) 27/154 Sub-Area 12B

From the point $03^{\circ}30'N$ $153^{\circ}W$ to $33^{\circ}N$ $153^{\circ}W$, through the points $33^{\circ}N$ $120^{\circ}W$, $17^{\circ}N$ $115^{\circ}W$, $14^{\circ}N$ $93^{\circ}W$, $02^{\circ}N$ $86^{\circ}W$, $02^{\circ}N$ $93^{\circ}W$, $05^{\circ}S$ $93^{\circ}W$, $05^{\circ}S$ $120^{\circ}W$, $03^{\circ}30'N$ $120^{\circ}W$, to the point $03^{\circ}30'N$ $153^{\circ}W$.

(MOD) 27/155 Sub-Area 12C

From the point $33^{\circ}N$ $120^{\circ}W$, through the points $35^{\circ}N$ $120^{\circ}W$, $32^{\circ}N$ $104^{\circ}W$, $25^{\circ}N$ $91^{\circ}W$, $23^{\circ}N$ $83^{\circ}W$, $22^{\circ}N$ $83^{\circ}W$, $13^{\circ}N$ $90^{\circ}W$, $16^{\circ}N$ $116^{\circ}W$, to the point $33^{\circ}N$ $120^{\circ}W$.

MOD 27/156 Sub-Area 12D

From the point $20^{\circ}N$ $91^{\circ}W$, through the points $26^{\circ}N$ $91^{\circ}W$, $26^{\circ}N$ $79^{\circ}W$, $27^{\circ}N$ $79^{\circ}W$, $27^{\circ}N$ $76^{\circ}30'W$, $26^{\circ}N$ $73^{\circ}W$, $17^{\circ}N$ $58^{\circ}W$, to $10^{\circ}N$ $58^{\circ}W$. Thence through Panama City, Colon, Swan Island, and Belize City to the point $20^{\circ}N$ $91^{\circ}W$.

(MOD) 27/157 [Concerns the French text only]MOD 27/158 Sub-Area 12F

From the point $02^{\circ}N$ $79^{\circ}W$ to the point $08^{\circ}N$ $83^{\circ}W$, then along the border between Panama and Costa Rica, through the points $10^{\circ}N$ $83^{\circ}W$, $13^{\circ}N$ $83^{\circ}W$, $13^{\circ}N$ $70^{\circ}W$, $08^{\circ}N$ $70^{\circ}W$, $06^{\circ}N$ $67^{\circ}W$ and $01^{\circ}N$ $66^{\circ}W$. Then along the border between Brazil and Colombia to $04^{\circ}S$ $70^{\circ}W$. Thence along the border between Colombia and Peru, continuing along the border between Colombia and Ecuador, to the point $02^{\circ}N$ $79^{\circ}W$.

MOD 27/159 Sub-Area 12G

From the point $07^{\circ}N$ $73^{\circ}W$, through the points $14^{\circ}N$ $73^{\circ}W$, $14^{\circ}N$ $58^{\circ}W$, $01^{\circ}31'N$ $58^{\circ}W$ and along the borders of Brazil with Guyana, Venezuela, Colombia through the points $01^{\circ}57'N$ $68^{\circ}W$, $05^{\circ}N$ $69^{\circ}W$, to the point $07^{\circ}N$ $73^{\circ}W$.

MOD 27/160 Sub-Area 12H

From the point $05^{\circ}N$ $70^{\circ}W$, through the points $08^{\circ}45'N$ $60^{\circ}W$, $08^{\circ}N$ $58^{\circ}W$, $08^{\circ}N$ $49^{\circ}W$, $04^{\circ}10'N$ $51^{\circ}36'W$, and along the borders of Brazil with the French Department of Guiana, Surinam, Guyana, Venezuela and Colombia to the junction of the borders of Brazil, Colombia and Peru, to the point $05^{\circ}N$ $70^{\circ}W$.

(MOD) 27/161 Sub-Area 12I

From the point $25^{\circ}\text{N } 70^{\circ}\text{W}$, through the point $25^{\circ}\text{N } 35^{\circ}\text{W}$ and along the boundary between ITU Regions 1 and 2, to $00^{\circ} 20^{\circ}\text{W}$. Thence through the points $00^{\circ} 44^{\circ}\text{W}$, $08^{\circ}\text{N } 54^{\circ}\text{W}$, $08^{\circ}\text{N } 58^{\circ}\text{W}$, $17^{\circ}\text{N } 58^{\circ}\text{W}$, to the point $25^{\circ}\text{N } 70^{\circ}\text{W}$.

ADD 27/161A Sub-Area 12J

From the point $04^{\circ}\text{S } 93^{\circ}\text{W}$, through the points $02^{\circ}\text{N } 93^{\circ}\text{W}$, $02^{\circ}\text{N } 79^{\circ}\text{W}$. Then along the border between Ecuador and Colombia to the junction with the borders of Colombia, Peru and Ecuador. Thence along the border between Peru and Ecuador to the point $04^{\circ}\text{S } 93^{\circ}\text{W}$.

ADD 27/161B Regional and Domestic Air Route Area-13
(RDARA-13)

From the South Pole along the 120°W meridian to 05°S . Then through the points $05^{\circ}\text{S } 93^{\circ}\text{W}$, $04^{\circ}\text{S } 82^{\circ}\text{W}$, and along the southern border of Ecuador, Colombia, Venezuela, Guyana, Surinam, the French Department of Guiana, to the point $04^{\circ}24' \text{N } 50^{\circ}39' \text{W}$. Then through the points $04^{\circ}24' \text{N } 47^{\circ}\text{W}$, $00^{\circ}32' \text{W}$ to the point $00^{\circ} 20^{\circ}\text{W}$, and along the 20°W meridian to the South Pole.

(MOD) 27/162 Sub-Area 13A

From the point $05^{\circ}\text{S } 120^{\circ}\text{W}$ through the points $05^{\circ}\text{S } 93^{\circ}\text{W}$, $04^{\circ}\text{S } 82^{\circ}\text{W}$, $19^{\circ}\text{S } 81^{\circ}\text{W}$, $57^{\circ}\text{S } 81^{\circ}\text{W}$, to $57^{\circ}\text{S } 90^{\circ}\text{W}$. Thence to the South Pole to the point $05^{\circ}\text{S } 120^{\circ}\text{W}$.

(MOD) 27/163 Sub-Area 13B

From the point $29^{\circ}\text{S } 111^{\circ}\text{W}$, through the points $24^{\circ}\text{S } 111^{\circ}\text{W}$, $24^{\circ}\text{S } 104^{\circ}\text{W}$, $29^{\circ}\text{S } 104^{\circ}\text{W}$, to the point $29^{\circ}\text{S } 111^{\circ}\text{W}$.

MOD 27/164 Sub-Area 13C

From the point $15^{\circ}\text{S } 47^{\circ}\text{W}$, through the points $20^{\circ}\text{S } 44^{\circ}\text{W}$, $23^{\circ}19' \text{S } 42^{\circ}\text{W}$, $25^{\circ}\text{S } 45^{\circ}\text{W}$, $22^{\circ}30' \text{S } 50^{\circ}39' \text{W}$, $19^{\circ}52' \text{S } 58^{\circ}\text{W}$, and along the borders of Brazil with Paraguay, Bolivia, Peru, Colombia, Venezuela, Guyana, Surinam and the French Department of Guiana to $04^{\circ}24' \text{N } 50^{\circ}39' \text{W}$, $04^{\circ}24' \text{N } 47^{\circ}\text{W}$, to the point $15^{\circ}\text{S } 47^{\circ}\text{W}$.

MOD 27/165 Sub-Area 13D

From $11^{\circ}\text{S } 69^{\circ}30'\text{W}$ along the border between Bolivia and Brazil and through the point $20^{\circ}10'\text{S } 58^{\circ}\text{W}$, along the border between Bolivia and Paraguay to $22^{\circ}30'\text{S } 62^{\circ}30'\text{W}$. Then along the border between Bolivia and Argentina and through the point $23^{\circ}\text{S } 67^{\circ}\text{W}$ along the border between Bolivia and Chile and through the point $16^{\circ}30'\text{S } 69^{\circ}30'\text{W}$ following the border between Bolivia and Peru to the point $11^{\circ}\text{S } 69^{\circ}30'\text{W}$.

ADD 27/165A Sub-Area 13M

From the point $19^{\circ}\text{S } 81^{\circ}\text{W}$, $04^{\circ}\text{S } 82^{\circ}\text{W}$, $03^{\circ}\text{S } 80^{\circ}\text{W}$, following the border between Peru and Ecuador and the border between Peru and Colombia to the point $11^{\circ}\text{S } 69^{\circ}30'\text{W}$, along the border of Peru with Bolivia to $17^{\circ}30'\text{S } 69^{\circ}30'\text{W}$, then along the border of Peru with Chile to the point $19^{\circ}\text{S } 81^{\circ}\text{W}$.

ADD 27/165B Sub-Area 13N

From the point $22^{\circ}30'\text{S } 62^{\circ}30'\text{W}$ along the border of Paraguay with Bolivia to $20^{\circ}10'\text{S } 58^{\circ}\text{W}$, along the border of Paraguay with Brazil to $25^{\circ}50'\text{S } 54^{\circ}30'\text{W}$ and thence along the border of Paraguay with Argentina to the point $22^{\circ}30'\text{S } 62^{\circ}30'\text{W}$.

(MOD) 27/166 Sub-Area 13E

From the point $32^{\circ}\text{S } 81^{\circ}\text{W}$ through the point $19^{\circ}\text{S } 81^{\circ}\text{W}$, up to the intersection of the coast with the border between Chile and Peru, Bolivia and Argentina, to the point of intersection with 32°S and then to the point $32^{\circ}\text{S } 81^{\circ}\text{W}$.

(MOD) 27/167 Sub-Area 13F

From the point $57^{\circ}\text{S } 81^{\circ}\text{W}$, through the point $32^{\circ}\text{S } 81^{\circ}\text{W}$ to the intersection of 32°S with the border between Chile and Argentina, through the points $52^{\circ}\text{S } 67^{\circ}\text{W}$, $57^{\circ}\text{S } 67^{\circ}\text{W}$, $57^{\circ}\text{S } 40^{\circ}\text{W}$ to the South Pole to the point $57^{\circ}\text{S } 81^{\circ}\text{W}$.

(MOD) 27/168 Sub-Area 13G

From the point $36^{\circ}\text{S } 55^{\circ}\text{W}$ to the intersection of 32°S with the border between Argentina and Chile, then north along the borders of Argentina with Bolivia, Paraguay, Brazil and Uruguay to the point $36^{\circ}\text{S } 55^{\circ}\text{W}$.

(MOD) 27/169 Sub-Area 13H

From the point $57^{\circ}\text{S } 90^{\circ}\text{W}$ and through the point $57^{\circ}\text{S } 70^{\circ}\text{W}$ to $52^{\circ}\text{S } 70^{\circ}\text{W}$. Then along the border between Chile and Argentina to its intersection by 32°S and through the points $36^{\circ}\text{S } 55^{\circ}\text{W}$, $57^{\circ}\text{S } 55^{\circ}\text{W}$, $57^{\circ}\text{S } 25^{\circ}\text{W}$ to the South Pole and then to the point $57^{\circ}\text{S } 90^{\circ}\text{W}$.

(MOD) 27/170 Sub-Area 13I

From the point $40^{\circ}\text{S } 50^{\circ}\text{W}$ through the point $36^{\circ}\text{S } 55^{\circ}\text{W}$ and along the borders between Uruguay, Argentina and Brazil, then through the point $35^{\circ}\text{S } 45^{\circ}\text{W}$ to the point $40^{\circ}\text{S } 50^{\circ}\text{W}$.

MOD 27/171 Sub-Area 13J

From the point $15^{\circ}\text{S } 47^{\circ}\text{W}$ through the points $20^{\circ}\text{S } 44^{\circ}\text{W}$, $23^{\circ}19'\text{S } 42^{\circ}\text{W}$, $29^{\circ}\text{S } 40^{\circ}\text{W}$, $35^{\circ}\text{S } 45^{\circ}\text{W}$, and thence along the borders of Brazil with Uruguay, Argentina, Paraguay and Bolivia to the point $19^{\circ}52'\text{S } 58^{\circ}\text{W}$, then through the point $18^{\circ}\text{S } 57^{\circ}37'\text{W}$ to the point $15^{\circ}\text{S } 47^{\circ}\text{W}$.

MOD 27/172 Sub-Area 13K

From the point $22^{\circ}30'\text{S } 50^{\circ}39'\text{W}$ and through the points $25^{\circ}\text{S } 45^{\circ}\text{W}$, $29^{\circ}\text{S } 40^{\circ}\text{W}$, $20^{\circ}\text{S } 32^{\circ}\text{W}$, $00^{\circ}32'\text{W}$, $04^{\circ}24'\text{N } 47^{\circ}\text{W}$, $04^{\circ}24'\text{N } 50^{\circ}39'\text{W}$ to the point $22^{\circ}30'\text{S } 50^{\circ}39'\text{W}$.

(MOD) 27/173 Sub-Area 13L

From the point $00^{\circ}32'\text{W}$ through the points $00^{\circ}20'\text{W}$, the South Pole, $57^{\circ}\text{S } 55^{\circ}\text{W}$, $36^{\circ}\text{S } 55^{\circ}\text{W}$, $40^{\circ}\text{S } 50^{\circ}\text{W}$, $20^{\circ}\text{S } 32^{\circ}\text{W}$, to the point $00^{\circ}32'\text{W}$.

ADD 27/173A Regional and Domestic Air Route Area-14
(RDARA-14)

From the South Pole along the 110°E meridian to 10°S . Then through the points $10^{\circ}\text{S } 145^{\circ}\text{E}$, $19^{\circ}\text{S } 153^{\circ}\text{E}$, $27^{\circ}\text{S } 160^{\circ}\text{E}$. Then along the 160°E meridian to the South Pole.

ADD 27/173B Sub-Area 14A

From the South Pole along the 110°E meridian to 19°S . Then through the points $19^{\circ}\text{S } 118^{\circ}\text{E}$, $24^{\circ}\text{S } 120^{\circ}\text{E}$, $24^{\circ}\text{S } 131^{\circ}\text{E}$. Then along the 131°E meridian to the South Pole.

ADD 27/173C Sub-Area 14B

From the point $19^{\circ}\text{S } 110^{\circ}\text{E}$ to the point $10^{\circ}\text{S } 110^{\circ}\text{E}$,
thence through $10^{\circ}\text{S } 131^{\circ}\text{E}$, $24^{\circ}\text{S } 131^{\circ}\text{E}$, $24^{\circ}\text{S } 120^{\circ}\text{E}$,
 $19^{\circ}\text{S } 118^{\circ}\text{E}$ to the point $19^{\circ}\text{S } 110^{\circ}\text{E}$.

ADD 27/173D Sub-Area 14C

From the point $24^{\circ}\text{S } 131^{\circ}\text{E}$ to the point $10^{\circ}\text{S } 131^{\circ}\text{E}$,
thence through $10^{\circ}\text{S } 139^{\circ}\text{E}$, $24^{\circ}\text{S } 139^{\circ}\text{E}$ to the point
 $24^{\circ}\text{S } 131^{\circ}\text{E}$.

ADD 27/173E Sub-Area 14D

From the South Pole along the 131°E meridian to
 24°S , then through the points $24^{\circ}\text{S } 139^{\circ}\text{E}$, $27^{\circ}\text{S } 139^{\circ}\text{E}$,
 $27^{\circ}\text{S } 142^{\circ}\text{E}$, $34^{\circ}\text{S } 142^{\circ}\text{E}$, $34^{\circ}\text{S } 139^{\circ}\text{E}$. Then along
the 139°E meridian to the South Pole.

ADD 27/173F Sub-Area 14E

From the point $24^{\circ}\text{S } 139^{\circ}\text{E}$ along the 139°E meridian
to 10°S , then through the points $10^{\circ}\text{S } 145^{\circ}\text{E}$, $19^{\circ}\text{S } 153^{\circ}\text{E}$
to the point $24^{\circ}\text{S } 139^{\circ}\text{E}$.

ADD 27/173G Sub-Area 14F

From the point $27^{\circ}\text{S } 139^{\circ}\text{E}$ along the 139°E meridian
to 24°S , then through the points $19^{\circ}\text{S } 153^{\circ}\text{E}$, $27^{\circ}\text{S } 160^{\circ}\text{E}$
to the point $27^{\circ}\text{S } 139^{\circ}\text{E}$.

ADD 27/173H Sub-Area 14G

From the South Pole along the 139°E meridian to
 34°S , then through the points $34^{\circ}\text{S } 142^{\circ}\text{E}$, $27^{\circ}\text{S } 142^{\circ}\text{E}$, $27^{\circ}\text{S } 160^{\circ}\text{E}$. Then along the 160°E meridian
to the South Pole.

ARTICLE 3

NOC **Description of the boundaries of the VOLMET
allotment areas and VOLMET reception areas**

NOC VOLMET Area - AFRICA-INDIAN OCEAN

(AFI-MET)

MOD 27/174 The AFI-MET allotment area is defined by a line
drawn from the point $29^{\circ}\text{N } 20^{\circ}\text{W}$, through the points $37^{\circ}\text{N } 03^{\circ}\text{W}$,
 $37^{\circ}\text{N } 36^{\circ}\text{E}$, $30^{\circ}\text{N } 35^{\circ}\text{E}$, $10^{\circ}\text{N } 52^{\circ}\text{E}$, $22^{\circ}\text{S } 60^{\circ}\text{E}$, $35^{\circ}\text{S } 35^{\circ}\text{E}$, $35^{\circ}\text{S } 15^{\circ}\text{E}$, $08^{\circ}\text{S } 15^{\circ}\text{W}$, $12^{\circ}\text{N } 20^{\circ}\text{W}$, to the point $29^{\circ}\text{N } 20^{\circ}\text{W}$.

(MOD) 27/175 The AFI-MET reception area is defined by a line
drawn from the point $37^{\circ}\text{N } 03^{\circ}\text{W}$, through the points $37^{\circ}\text{N } 36^{\circ}\text{E}$,
 $30^{\circ}\text{N } 35^{\circ}\text{E}$, $10^{\circ}\text{N } 52^{\circ}\text{E}$, $10^{\circ}\text{N } 100^{\circ}\text{E}$, the South Pole, the
points $29^{\circ}\text{N } 40^{\circ}\text{W}$, $29^{\circ}\text{N } 20^{\circ}\text{W}$, to the point $37^{\circ}\text{N } 03^{\circ}\text{W}$.

MOD VOLMET Area - NORTH ATLANTIC
(NAT-MET)

MOD 27/176 The NAT-MET allotment area is defined by a line
drawn from the point $41^{\circ}\text{N } 78^{\circ}\text{W}$, through the points $51^{\circ}\text{N } 55^{\circ}\text{W}$,
 $24^{\circ}\text{N } 50^{\circ}\text{W}$, $24^{\circ}\text{N } 74^{\circ}\text{W}$, to the point $41^{\circ}\text{N } 78^{\circ}\text{W}$.

MOD 27/177 The NAT-MET reception area is defined by a line
drawn from the point $24^{\circ}\text{N } 97^{\circ}\text{W}$, through the points $24^{\circ}\text{N } 85^{\circ}\text{W}$, $75^{\circ}\text{N } 85^{\circ}\text{W}$, $75^{\circ}\text{N } 20^{\circ}\text{W}$, $00^{\circ} 20^{\circ}\text{W}$, $00^{\circ} 95^{\circ}\text{W}$, to the
point $24^{\circ}\text{N } 97^{\circ}\text{W}$.

MOD VOLMET Area - EUROPE
(EUR-MET)

MOD 27/178 The EUR-MET allotment area is defined by a line
drawn from the point $33^{\circ}\text{N } 12^{\circ}\text{W}$, through the points $54^{\circ}\text{N } 12^{\circ}\text{W}$,
 $70^{\circ}\text{N } 00^{\circ}$, $74^{\circ}\text{N } 40^{\circ}\text{E}$, $40^{\circ}\text{N } 36^{\circ}\text{E}$, $29^{\circ}\text{N } 35^{\circ}30^{\circ}\text{E}$, $32^{\circ}\text{N } 13^{\circ}\text{E}$, to
the point $33^{\circ}\text{N } 12^{\circ}\text{W}$.

MOD 27/179 The EUR-MET reception area is defined by a line
drawn from the point $15^{\circ}\text{N } 20^{\circ}\text{W}$, through the points $40^{\circ}\text{N } 50^{\circ}\text{W}$,
 $75^{\circ}\text{N } 50^{\circ}\text{W}$, $75^{\circ}\text{N } 45^{\circ}\text{E}$, $15^{\circ}\text{N } 45^{\circ}\text{E}$, to the point $15^{\circ}\text{N } 20^{\circ}\text{W}$.

MOD VOLMET Area - MIDDLE EAST
(MID-MET)

MOD 27/180 The MID-MET allotment area is defined by a line drawn from the point $50^{\circ}\text{N } 80^{\circ}\text{E}$, through the points $29^{\circ}\text{N } 80^{\circ}\text{E}$, $27^{\circ}\text{N } 85^{\circ}\text{E}$, $16^{\circ}\text{N } 78^{\circ}\text{E}$, $22^{\circ}\text{N } 56^{\circ}\text{E}$, $16^{\circ}\text{N } 42^{\circ}\text{E}$, $30^{\circ}\text{N } 30^{\circ}\text{E}$, $51^{\circ}\text{N } 30^{\circ}\text{E}$, $57^{\circ}\text{N } 37^{\circ}\text{E}$, to the point $50^{\circ}\text{N } 80^{\circ}\text{E}$.

MOD 27/181 The MID-MET reception area is defined by a line drawn from the point $50^{\circ}\text{N } 80^{\circ}\text{E}$, through the points $50^{\circ}\text{N } 90^{\circ}\text{E}$, $35^{\circ}\text{N } 90^{\circ}\text{E}$, $27^{\circ}\text{N } 85^{\circ}\text{E}$, $16^{\circ}\text{N } 78^{\circ}\text{E}$, $22^{\circ}\text{N } 56^{\circ}\text{E}$, $16^{\circ}\text{N } 42^{\circ}\text{E}$, $30^{\circ}\text{N } 30^{\circ}\text{E}$, $51^{\circ}\text{N } 30^{\circ}\text{E}$, $57^{\circ}\text{N } 37^{\circ}\text{E}$, to the point $50^{\circ}\text{N } 80^{\circ}\text{E}$.

ADD VOLMET Area - NORTH CENTRAL ASIA
(NCA-MET)

ADD 27/181A The NCA-MET allotment area is defined by a line drawn from the point $76^{\circ}\text{N } 32^{\circ}\text{E}$, through the points $80^{\circ}\text{N } 90^{\circ}\text{E}$, $75^{\circ}\text{N } 168^{\circ}\text{W}$, $66^{\circ}\text{N } 168^{\circ}\text{W}$, $48^{\circ}\text{N } 160^{\circ}\text{E}$, $42^{\circ}\text{N } 135^{\circ}\text{E}$, $50^{\circ}\text{N } 130^{\circ}\text{E}$, $50^{\circ}\text{N } 90^{\circ}\text{E}$, $35^{\circ}\text{N } 70^{\circ}\text{E}$, $45^{\circ}\text{N } 30^{\circ}\text{E}$, $60^{\circ}\text{N } 20^{\circ}\text{E}$, to the point $76^{\circ}\text{N } 32^{\circ}\text{E}$.

ADD 27/181B The NCA-MET reception area is defined by a line drawn from the North Pole, through the points $40^{\circ}\text{N } 168^{\circ}\text{W}$, $30^{\circ}\text{N } 140^{\circ}\text{E}$, $35^{\circ}\text{N } 70^{\circ}\text{E}$, $30^{\circ}\text{N } 20^{\circ}\text{E}$, to the North Pole.

NOC VOLMET Area - PACIFIC
(PAC-MET)

MOD 27/182 The PAC-MET allotment area is defined by a line drawn from the point $52^{\circ}\text{N } 132^{\circ}\text{E}$, through the points $63^{\circ}\text{N } 149^{\circ}\text{W}$, $38^{\circ}\text{N } 120^{\circ}\text{W}$, $50^{\circ}\text{S } 120^{\circ}\text{W}$, $50^{\circ}\text{S } 145^{\circ}\text{E}$, $28^{\circ}\text{S } 145^{\circ}\text{E}$, $03^{\circ}\text{S } 129^{\circ}\text{E}$, $22^{\circ}\text{N } 112^{\circ}\text{E}$ to the point $52^{\circ}\text{N } 132^{\circ}\text{E}$.

MOD 27/183 The PAC-MET reception area is defined by a line drawn from the point $60^{\circ}\text{N } 100^{\circ}\text{E}$ through the points $75^{\circ}\text{N } 160^{\circ}\text{W}$, $75^{\circ}\text{N } 110^{\circ}\text{W}$, $65^{\circ}\text{S } 110^{\circ}\text{W}$, $65^{\circ}\text{S } 145^{\circ}\text{E}$, $28^{\circ}\text{S } 145^{\circ}\text{E}$, $03^{\circ}\text{S } 129^{\circ}\text{E}$, $05^{\circ}\text{N } 80^{\circ}\text{E}$, $40^{\circ}\text{N } 80^{\circ}\text{E}$, to the point $60^{\circ}\text{N } 100^{\circ}\text{E}$.

NOC VOLMET Area - SOUTH EAST ASIA
(SEA-MET)

MOD 27/184 The SEA-MET allotment area is defined by a line drawn from the point $55^{\circ}\text{N } 75^{\circ}\text{E}$, through the points $55^{\circ}\text{N } 135^{\circ}\text{E}$, $45^{\circ}\text{N } 135^{\circ}\text{E}$, $35^{\circ}\text{N } 130^{\circ}\text{E}$, $10^{\circ}\text{N } 130^{\circ}\text{E}$, $10^{\circ}\text{S } 155^{\circ}\text{E}$, $35^{\circ}\text{S } 155^{\circ}\text{E}$, $35^{\circ}\text{S } 116^{\circ}\text{E}$, $08^{\circ}\text{N } 75^{\circ}\text{E}$, $26^{\circ}\text{N } 65^{\circ}\text{E}$, to the point $55^{\circ}\text{N } 75^{\circ}\text{E}$.

MOD 27/185 The SEA-MET reception area is defined by a line drawn from the point $55^{\circ}\text{N } 50^{\circ}\text{E}$, through the points $55^{\circ}\text{N } 180^{\circ}$, $50^{\circ}\text{S } 180^{\circ}$, $50^{\circ}\text{S } 70^{\circ}\text{E}$, $08^{\circ}\text{N } 70^{\circ}\text{E}$, $08^{\circ}\text{N } 50^{\circ}\text{E}$, to the point $55^{\circ}\text{N } 50^{\circ}\text{E}$.

ADD VOLMET Area — CARIBBEAN
(CAR-MET)

ADD 27/185A The CAR-MET allotment area is defined by a line drawn from the point $30^{\circ}\text{N } 110^{\circ}\text{W}$, through the points $30^{\circ}\text{N } 75^{\circ}\text{W}$, $00^{\circ} 50^{\circ}\text{W}$, following the equator to $00^{\circ} 80^{\circ}\text{W}$ to the point $30^{\circ}\text{N } 110^{\circ}\text{W}$.

ADD 27/185B The CAR-MET reception area is defined by a line drawn from the point $40^{\circ}\text{N } 120^{\circ}\text{W}$, through the points $40^{\circ}\text{N } 20^{\circ}\text{W}$, $25^{\circ}\text{S } 20^{\circ}\text{W}$, $25^{\circ}\text{S } 120^{\circ}\text{W}$, to the point $40^{\circ}\text{N } 120^{\circ}\text{W}$.

ADD VOLMET Area — SOUTH AMERICA
(SAM-MET)

ADD 27/185C The SAM-MET allotment area is defined by a line drawn from the point $15^{\circ}\text{N } 83^{\circ}\text{W}$, through the points $15^{\circ}\text{N } 60^{\circ}\text{W}$, $05^{\circ}\text{S } 35^{\circ}\text{W}$, $55^{\circ}\text{S } 60^{\circ}\text{W}$, $55^{\circ}\text{S } 83^{\circ}\text{W}$, to the point $15^{\circ}\text{N } 83^{\circ}\text{W}$.

ADD 27/185D The SAM-MET reception area is defined by a line drawn from the point $30^{\circ}\text{N } 120^{\circ}\text{W}$ through the point $30^{\circ}\text{N } 00^{\circ}$, the South Pole, to the point $30^{\circ}\text{N } 120^{\circ}\text{W}$.

RESOLUTION No. Aer2 - A

**Relating to the unauthorized use of frequencies
in the bands allocated to the aeronautical mobile
(R) service**

The World Administrative Radio Conference on the Aeronautical Mobile (R) Service, Geneva, 1978,

considering

a) that monitoring observations of the use of the frequencies in the bands between 2850 and 17 970 kHz allocated exclusively to the aeronautical mobile (R) service show that a number of frequencies in these bands are still being used by stations of services other than the aeronautical mobile (R) service, notably by high-powered broadcasting stations, some of which are operating in contravention of No. 422 of the Radio Regulations;

b) that these stations are causing harmful interference to the aeronautical mobile (R) service and that a considerable number of emissions, the sources of which could not be positively identified, have been observed in these bands;

c) that radio is the sole means of communication available to the aeronautical mobile (R) service and that this service is a safety service;

considering, in particular

d) that it is of paramount importance that channels directly concerned with the safe and regular conduct of aircraft operations be kept free from harmful interference, since they are essential for the protection of the safety of life and property:

resolves to urge administrations

1. to ensure that stations of services other than the aeronautical mobile (R) service refrain from using frequencies allocated to this service other than under the conditions specified in Nos. 115 and 415 of the Radio Regulations;

2. a) to make every effort to identify and locate the source of any unauthorized emission capable of causing harmful interference to the aeronautical mobile (R) service, thereby endangering this safety service;

b) and to communicate their findings to the IFRB;

3. to participate in the monitoring programmes that the IFRB may organize pursuant to this Resolution;
4. to request their governments to enact such legislation as is necessary to prevent stations located on board aircraft operating in contravention of No. 422 of the Radio Regulations;

requests the IFRB

1. to continue to organize monitoring programmes in the bands exclusively allocated to the aeronautical mobile (R) service with a view to eliminating the emissions of out-of-band stations which cause, or are likely to cause, harmful interference to the aeronautical mobile (R) service;
2. to take steps to eliminate the emissions of out-of-band stations which cause, or are likely to cause, harmful interference to the aeronautical mobile (R) service;
3. to seek, as appropriate, the co-operation of administrations in identifying the sources of out-of-band emissions by all available means, and in securing the cessation of these emissions.

RESOLUTION No. Aer2 - B

Relating to the use of frequencies of the aeronautical mobile (R) service

The World Administrative Radio Conference on the Aeronautical Mobile (R) Service, Geneva, 1978,

considering

- a) that the Frequency Allotment Plan adopted in 1966 and developed for the use of high frequency channels for the aeronautical mobile (R) service (Appendix 27 to the Radio Regulations) has been substantially revised by this Conference;
- b) that air operations are subject to continuous changes;
- c) that these changes require attention by the administrations concerned, but,
- d) that, in seeking to satisfy new communication requirements, no decision should be taken that will prevent or handicap the coordinated utilization of those high frequency aeronautical mobile (R) band allotments as prescribed in the Plan;
- e) that the families of frequencies allotted to the Major World Air Route Areas (MWARAs), Regional and Domestic Air Route Areas (RDARAs) and Sub-Areas and VOLMET areas have been chosen considering propagation conditions which allow for the selection of the most suitable frequencies for the distance involved;
- f) that specific steps should be taken to ensure that the correct order of frequency is used;
- g) that it is essential to distribute the communication traffic load as uniformly as possible over the frequencies available;
- h) that frequencies have been allotted for world-wide use;

resolves

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

1. to make as great a use as possible of higher frequencies in order to lessen the load on the high frequency aeronautical mobile (R) bands;

2. to make as great a use as possible of antennae of appropriate directivity and efficiency in order to minimize the possibilities of mutual interference within an area or between areas;
3. to coordinate the use of families of frequencies necessary for a given route segment in accordance with the technical principles in Appendix 27 Aer2 and in the light of the propagation data available, to ensure that the most appropriate frequencies are used with an aircraft at a given distance from the aeronautical station providing service over the route segment concerned;
4. to improve operating techniques and procedures and to use equipment which will make it possible to attain the highest possible efficiency in handling air-ground high frequency communications;
5. to collect precise data on the operation of their high frequency communication systems, particularly data having a bearing on technical and operating standards, so as to facilitate re-examination of the Plan;
6. to establish, through regional arrangements, the best method of providing the communications required for any new long-distance international or regional air operation which is not or cannot be accommodated within the system of MWARA and RDARA, in such a manner as not to cause harmful interference to the utilization of frequencies as prescribed in the Plan.

RESOLUTION No. Aer2 - C

**Relating to the use of higher frequency bands in the
aeronautical mobile (R) service and the aeronautical
mobile-satellite (R) service for communication
and for meteorological broadcasts**

The World Administrative Radio Conference on the Aeronautical
Mobile (R) Service, Geneva, 1978,

considering

- a) that from an aeronautical viewpoint, higher frequency bands can provide a more reliable and more interference-free communication system than HF;
- b) that from a technical and operational viewpoint, the use of VHF by aviation has progressed significantly;
- c) that the future possibility of communications utilizing satellite technology is now recognized;
- d) that, owing to the ever increasing development of aeronautical telecommunications in all areas of the world, there is an increasing demand for frequencies for communication with and for meteorological broadcasts to aircraft in flight;

resolves

that administrations, taking into account the relevant economic and technical factors, consider to the maximum extent possible meeting their requirements for communication and for meteorological broadcasts by frequencies in frequency bands, higher than the HF bands, which are allocated to the aeronautical mobile (R) service and the aeronautical mobile-satellite (R) service.

RESOLUTION No. Aer2 - D

**Relating to the use of frequencies 3023 and 5680 kHz
common to the aeronautical mobile (R) and (OR) services**

The World Administrative Radio Conference on the Aeronautical
Mobile (R) Service, Geneva, 1978,

having noted

that some anomalies appeared to exist in the conditions prescribed
in Appendix 26 to the Radio Regulations, Geneva, 1959, for the use
of the frequencies [3023.5] and 5680 kHz, as contained in Article 2
of the Frequency Allotment Plan, Column 3, clauses 2 a) and 2 b)
and having taken steps to remove these anomalies;

considering

1. that the coordination of search and rescue operations at the
scene of a disaster would be improved if the use of the
frequencies 3023 [(previously 3023.5)] and 5680 kHz, in such
operations, was extended to include communication between mobile
stations and participating land stations;
2. that it would be in the general interests of the aeronautical
mobile service if the same provisions relating to the use of the
frequencies 3023 [(previously 3023.5)] and 5680 kHz were applied
to operations both in the aeronautical mobile (R) service and the
aeronautical mobile (OR) service;

resolves

to invite administrations to apply in the aeronautical mobile (OR)
service, as from the date of coming into force of the Final Acts
of the Conference, the provisions governing the use of the
frequencies 3023 and 5680 kHz specified in Appendix 27 Aer2
(Part II - Section 2 - Article 3).

RECOMMENDATION No. Aer2 - AA

Relating to the development of techniques which would help to reduce congestion in the high frequency bands allocated to the aeronautical mobile (R) service

The World Administrative Radio Conference on the Aeronautical Mobile (R) Service, Geneva, 1978,

considering

a) that several administrations are actively engaged in the development of communication techniques the wider use of which, in the aeronautical mobile (R) service, would help to reduce congestion in the high frequency bands allocated to that service; such developments include the use of higher frequencies with remotely controlled stations, directional antennae, space radiocommunication techniques and automatic data transmission;

b) that knowledge of these developments would be useful to other administrations in considering the application of these techniques to their aeronautical mobile (R) communication services;

c) that the International Civil Aviation Organization (ICAO) is actively engaged in coordinating the operational development of such techniques;

recommends

administrations engaged in the development of techniques which would help to reduce congestion in the HF bands to inform the IFRB periodically of the progress achieved;

instructs

the IFRB to circulate periodically the information so obtained to administrations and to ICAO.

RECOMMENDATION No. Aer2 - BB

**To the World Administrative Radio Conference, 1979, relating to
the inapplicability of Resolution No. 13
to the aeronautical mobile (R) service**

The World Administrative Radio Conference on the Aeronautical Mobile (R) Service, Geneva, 1978,

considering

a) that Resolution No. 13, Geneva, 1959, expressed the opinion that the aeronautical mobile service plans contained in the then Appendix 26 of the Radio Regulations would have to be reviewed;

b) that Resolution No. 13 also stated that an Extraordinary Administrative Radio Conference should be convened to review Appendix 26 and the associated Radio Regulations and to complete its work before the next Ordinary Administrative Radio Conference;

c) that administrative radio conferences of the aeronautical mobile service were held in 1964, 1966 and 1978 and the Plans were reviewed;

d) that no further Administrative Radio Conferences are to be convened before the World Administration Radio Conference, 1979;

recommends

that, in so far as the aeronautical mobile (R) service is concerned, the World Administration Radio Conference, 1979, should abrogate Resolution No. 13;

invites Administrations

to consider whether Resolution No. 13 could be abrogated and to submit proposals to this effect to the World Administration Radio Conference, 1979.

INTERNATIONAL TELECOMMUNICATION UNION

AERONAUTICAL (R) CONFERENCE

(Geneva, 1978)

Document No. 294-E

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PLENARY MEETING

COMMITTEE 7

FIFTH REPORT OF COMMITTEE 6

The texts of No. 27/8A and a Recommendation concerning World-wide frequencies, unanimously adopted by Committee 6, are annexed herewith.

R.J. BUNDLE

Chairman of Committee 6

Annex: 1



ANNEX

ADD 27/8A

A world-wide allotment area is one in which frequencies are allotted to provide long distance communications from an aeronautical station within that allotment area to aircraft operating anywhere in the world.

ADD

RECOMMENDATION AER...

Relating to the efficient use of
Aeronautical Mobile (R) world-wide frequencies

The World Administrative Radio Conference for the Aeronautical Mobile (R) Service, Geneva, 1978,

considering

a) that the Conference has allotted a limited number of world-wide frequencies for exercising control over regularity of flight and for safety of aircraft;

recommends to Administrations

1. that the number of HF aeronautical stations on the world-wide channels should be kept to a minimum consistent with the economic and efficient use of frequencies;

2. that, if possible and practicable, one such station should serve aircraft operating agencies in adjacent countries and there should not normally be more than one station per country.

AERONAUTICAL (R) CONFERENCE

(Geneva, 1978)

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PLENARY MEETING

NOTE BY THE CHAIRMAN OF COMMITTEE 5

With reference to the types of maps mentioned in No. 27/33 the Secretariat has prepared the annexed maps showing the northern and southern polar areas in Lamberts's azimuthal equal area projection with the borders delimiting the MWARA, VOLMET and RDARA areas. Also is annexed specimen of the interference range countours as defined in No. 27/39 to 27/48. At it is seen, these contours are simpler impresentation and easier to use. As a consequence, the provision of No. 27/38 seems to become redundant.

The layout and detailed presentation of the maps should be considered as provisional and subject to further refinements before their inclusion in the Final Acts.

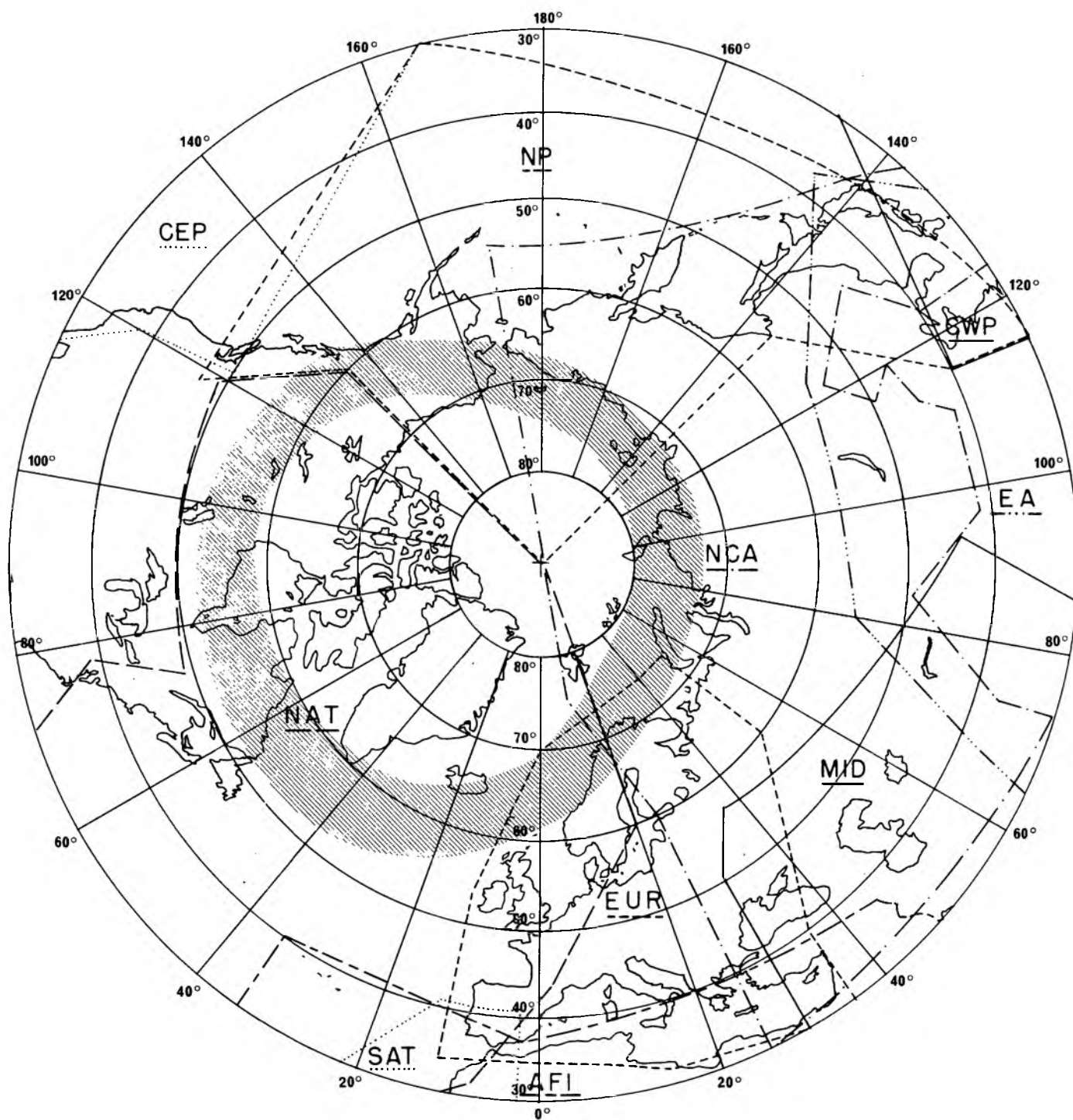
M. CHEF

Chairman of Committee 5

Annexes: 8

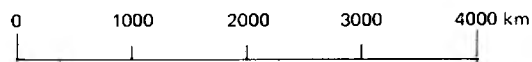


POLE NORD – NORTH POLE – POLO NORTE



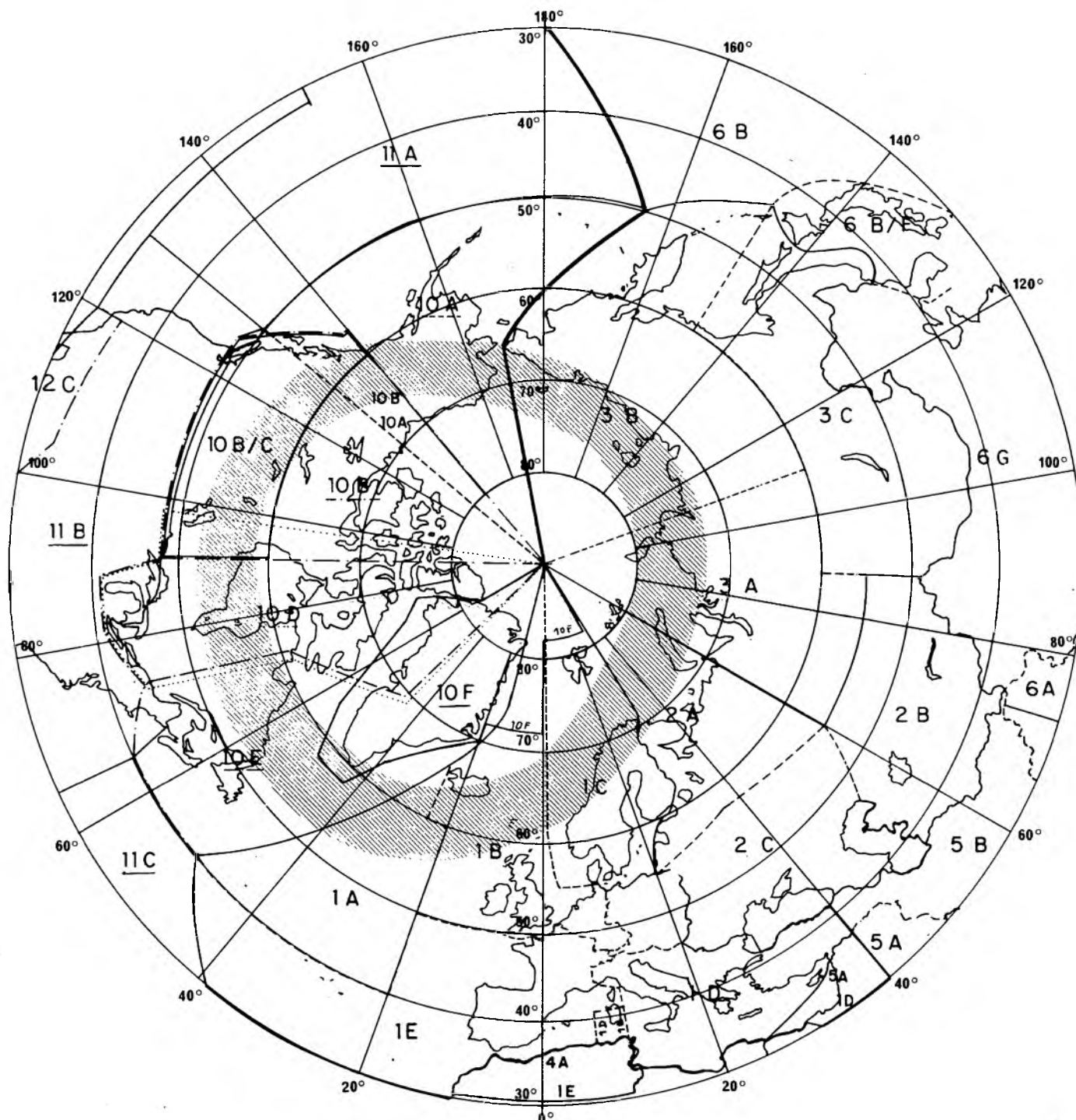
CARTE IV ZONES DE PASSAGE DES LIGNES AÉRIENNES
MONDIALES PRINCIPALES
MAP IV MAJOR WORLD AIR ROUTE AREAS
MAPA IV ZONAS DE PASO DE RUTAS AÉREAS
MUNDIALES PRINCIPALES

Echelle valable pour les latitudes > 60°
Scale valid for latitudes > 60°
Escala válida para latitudes > 60°



PROJECTION AZIMUTALE EQUIVALENTE DE LAMBERT
LAMBERT AZIMUTHAL EQUAL AREA PROJECTION
PROYECCIÓN ACIMUTAL EQUIVALENTE DE LAMBERT

POLE NORD – NORTH POLE – POLO NORTE



CARTE V ZONES DES LIGNES AÉRIENNES RÉGIONALES
ET NATIONALES

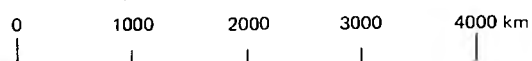
MAP V REGIONAL AND DOMESTIC AIR ROUTE AREAS

MAPA V ZONAS DE RUTAS AÉREAS REGIONALES
Y NACIONALES

Echelle valable pour les latitudes $> 60^\circ$

Scale valid for latitudes $> 60^\circ$

Escala valida para latitudes $> 60^\circ$

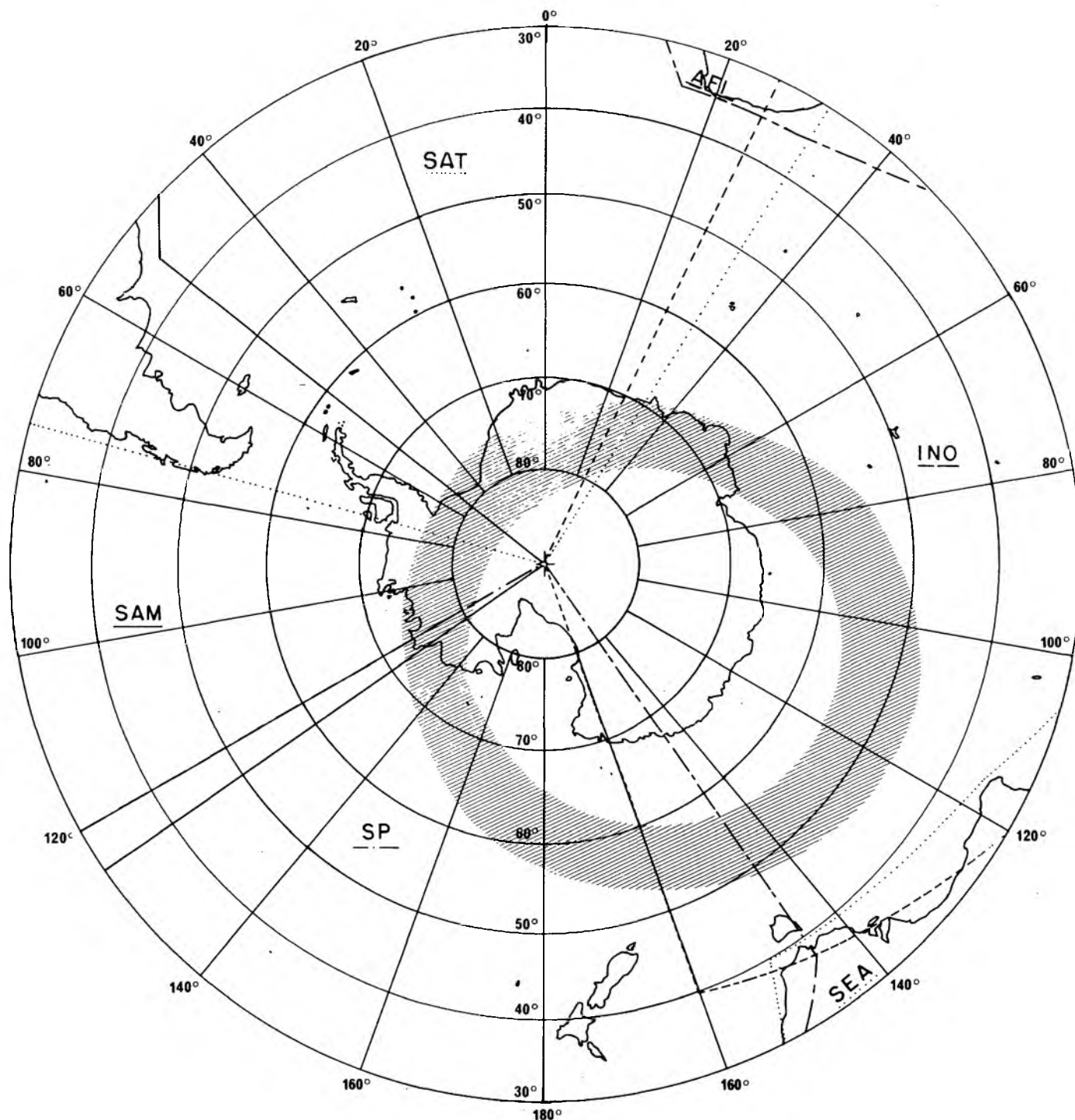


PROJECTION AZIMUTALE EQUIVALENTE DE LAMBERT

LAMBERT AZIMUTHAL EQUAL AREA PROJECTION

PROYECCIÓN ACIMUTAL EQUIVALENTE DE LAMBERT

POLE SUD – SOUTH POLE – POLO SUR



CARTE VI ZONES DE PASSAGE DES LIGNES AÉRIENNES
MONDIALES PRINCIPALES

MAP VI MAJOR WORLD AIR ROUTE AREAS

MAPA VI ZONAS DE PASO DE RUTAS AÉREAS
MUNDIALES PRINCIPALES

Echelle valable pour les latitudes > 60°

Scale valid for latitudes > 60°

Escala válida para latitudes > 60°

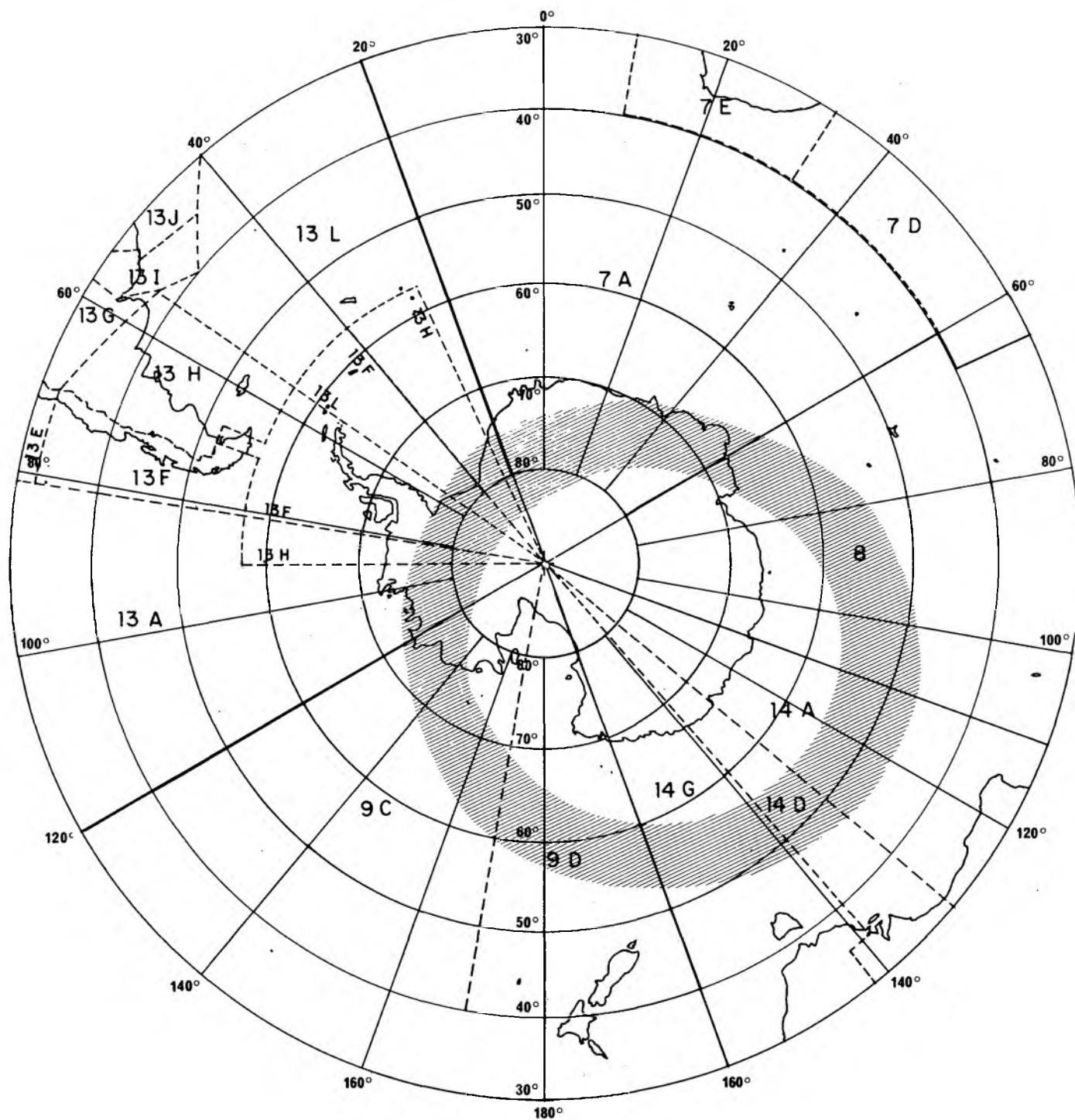
0 1000 2000 3000 4000 km

PROJECTION AZIMUTALE EQUIVALENTE DE LAMBERT

LAMBERT AZIMUTHAL EQUAL AREA PROJECTION

PROYECCIÓN ACIMUTAL EQUIVALENTE DE LAMBERT

POLE SUD – SOUTH POLE – POLO SUR



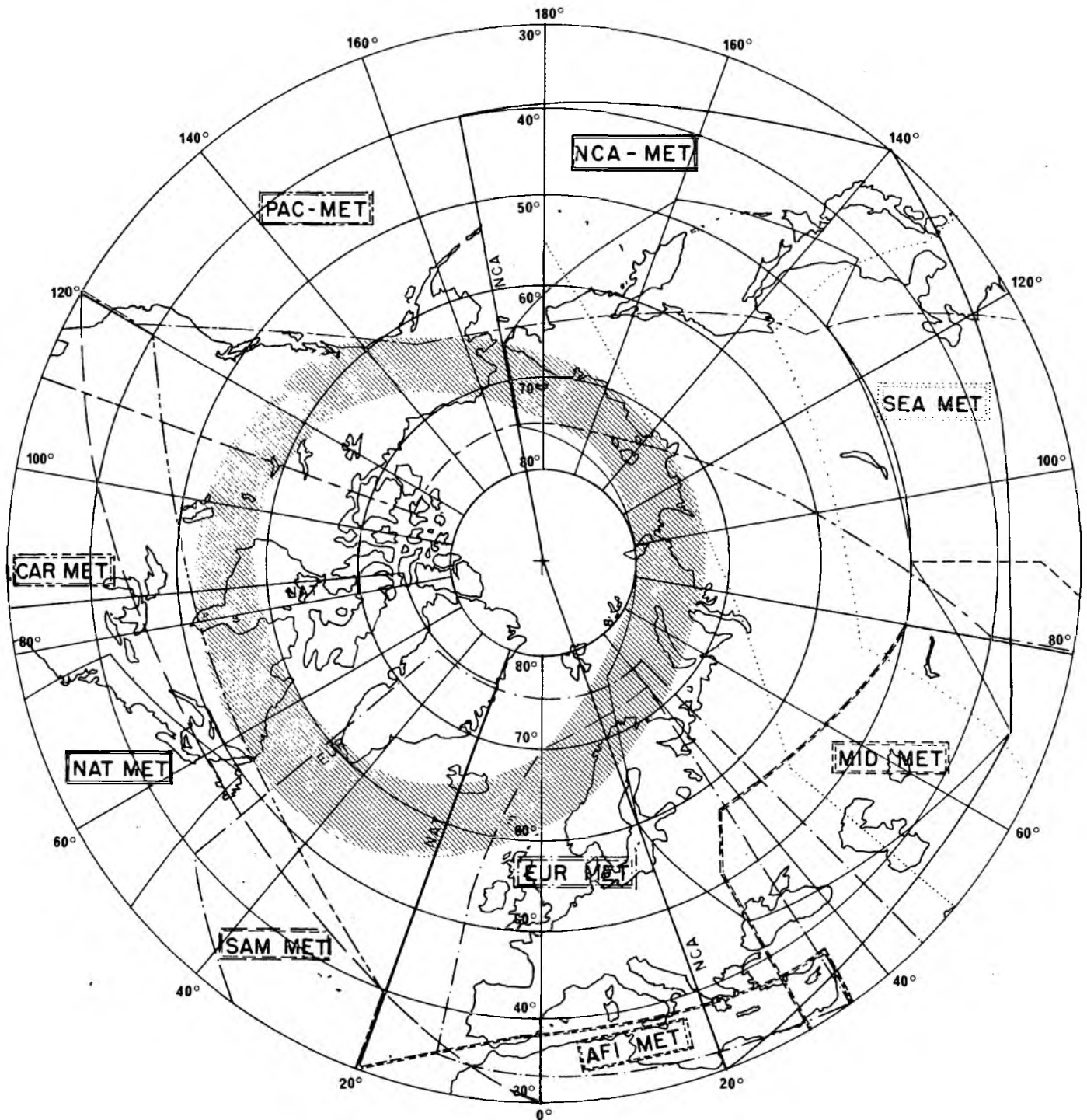
CARTE VII ZONES DES LIGNES AÉRIENNES RÉGIONALES
ET NATIONALES
MAP VII REGIONAL AND DOMESTIC AIR ROUTE AREAS
MAPA VII ZONAS DE RUTAS AÉREAS REGIONALES
Y NACIONALES

Echelle valable pour les latitudes > 60°
Scale valid for latitudes > 60°
Escala válida para latitudes > 60°

0 1000 2000 3000 4000 km

PROJECTION AZIMUTALE EQUIVALENTE DE LAMBERT
LAMBERT AZIMUTHAL EQUAL AREA PROJECTION
PROYECCIÓN ACIMUTAL EQUIVALENTE DE LAMBERT

POLE NORD – NORTH POLE – POLO NORTE

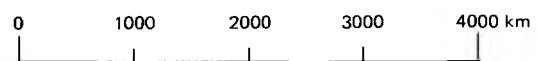


CARTE VIII ZONES DE RÉCEPTION VOLMET
MAP VIII VOLMET RECEPTION AREAS
MAPA VIII ZONAS DE RECEPCIÓN VOLMET

Echelle valable pour les latitudes > 60°

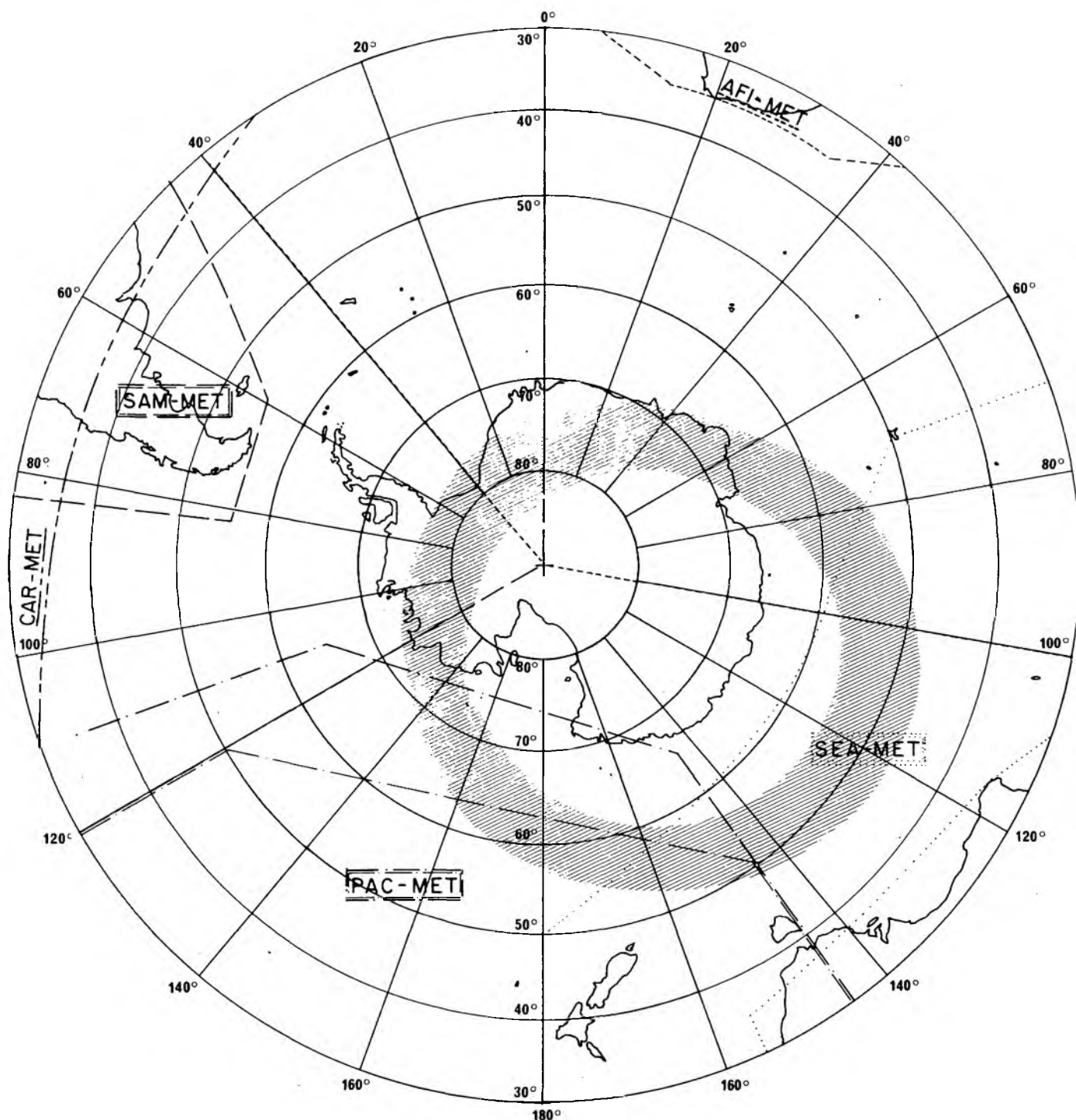
Scale valid for latitudes > 60°

Escala valida para latitudes > 60°



PROJECTION AZIMUTALE EQUIVALENTE DE LAMBERT
LAMBERT AZIMUTHAL EQUAL AREA PROJECTION
PROYECCIÓN ACIMUTAL EQUIVALENTE DE LAMBERT

POLE SUD – SOUTH POLE – POLO SUR



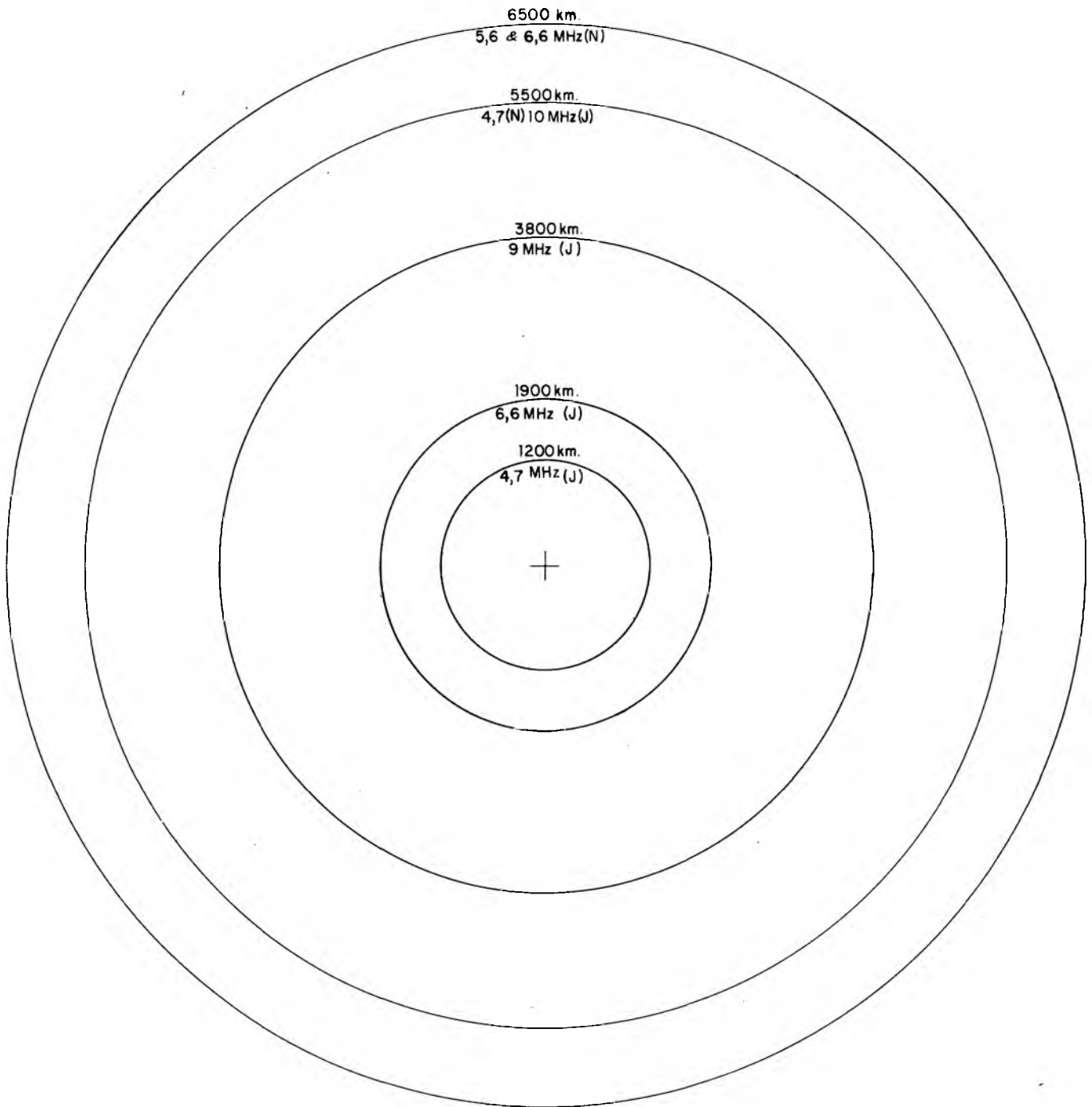
CARTE IX ZONES DE RÉCEPTION VOLMET
MAP IX VOLMET RECEPTION AREAS
MAPA IX ZONAS DE RECEPCIÓN VOLMET

Echelle valable pour les latitudes $> 60^\circ$
Scale valid for latitudes $> 60^\circ$
Escala valida para latitudes $> 60^\circ$

0 1000 2000 3000 4000 km

PROJECTION AZIMUTALE EQUIVALENTE DE LAMBERT
LAMBERT AZIMUTHAL EQUAL AREA PROJECTION
PROYECCIÓN ACIMUTAL EQUIVALENTE DE LAMBERT

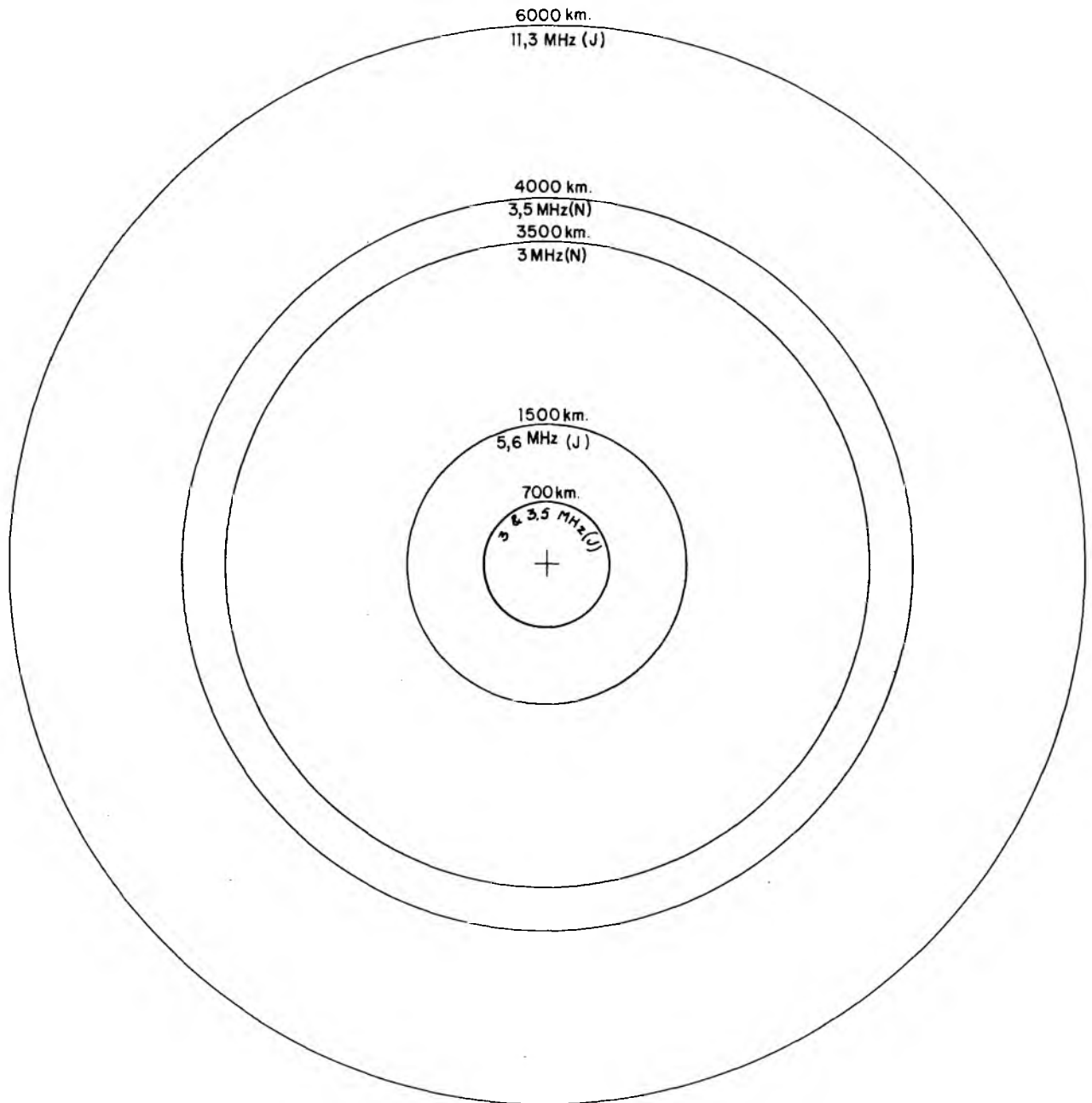
PROJECTION AZIMUTALE EQUIVALENTE DE LAMBERT – COURBES INDIQUANT LES PORTEES DE BROUILLAGE
 LAMBERT AZIMUTHAL EQUAL AREA PROJECTION – INTERFERENCE RANGE CONTOURS
 PROYECCIÓN ACIMUTAL EQUIVALENTE DE LAMBERT – CURVAS DE ALCANCES DE INTERFERENCIA



4.7 MHz	JOUR DAY DIA	1200 km
6.6 MHz	JOUR DAY DIA	1900 km
9.0 MHz	JOUR DAY DIA	3800 km

10 MHz	JOUR DAY DIA	5500 km
5.6 & 6.6 MHz	NUIT NIGHT NOCHE	6500 km
4.7 MHz	NUIT NIGHT NOCHE	5500 km

PROJECTION AZIMUTALE EQUIVALENTE DE LAMBERT – COURBES INDIQUANT LES PORTEES DE BROUILLAGE
LAMBERT AZIMUTHAL EQUAL AREA PROJECTION – INTERFERENCE RANGE CONTOURS
PROYECCIÓN ACIMUTAL EQUIVALENTE DE LAMBERT – CURVAS DE ALCANCES DE INTERFERENCIA



3 & 3.5 MHz JOUR
DAY
DIA 700 km

3.5 MHz NUIT
NIGHT
NOCHE 4000 km

5.6 MHz JOUR
DAY
DIA 1500 km

11.3 MHz JOUR
DAY
DIA 6000 km

3 MHz NUIT
NIGHT
NOCHE 3500 km

AERONAUTICAL (R) CONFERENCE

(Geneva, 1978)

Document No. 296-E

1 March 1978

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PLENARY MEETING

FINAL PROTOCOL

For the Republic of Upper Volta :

The Delegation of the Republic of Upper Volta to the World Administrative Radio Conference on the Aeronautical Mobile (R) Service (Geneva, 1978) reserves its Government's right to take any action it may consider necessary to safeguard its interests should the normal operation of its telecommunication services be affected by the behaviour or reservations of certain Administrations in applying the Final Acts of the present Conference.



INTERNATIONAL TELECOMMUNICATION UNION

AERONAUTICAL (R) CONFERENCE

(Geneva, 1978)

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PLENARY MEETING

FINAL PROTOCOL

Republic of Liberia :

Upon signing the Final Acts of the World Administrative Conference for the Aeronautical (R) Service (Geneva, 1978), the Delegation of the Republic of Liberia reserves the right of its Government to take any action it may consider necessary to safeguard the interests of its telecommunications services, should the reservations made or the measures taken by another Member or Members jeopardize the efficient operation of these services.



AERONAUTICAL (R) CONFERENCE

(Geneva, 1978)

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1 March 1978

Original : English

PLENARY MEETING

FINAL PROTOCOL

For the Republic of Indonesia :

The Delegation of the Republic of Indonesia to the World Administrative Radio Conference for the Aeronautical Mobile (R) Service, 1978, reserves the right of its Government to take :

1. any action it deems necessary to safeguard its interests should Members in any way fail to comply with the requirements in the Final Acts of the Conference or should reservations by other Members jeopardize its Aeronautical Mobile Telecommunication Services;
2. further action in accordance with the Constitution and Laws of the Republic of Indonesia.



AERONAUTICAL (R) CONFERENCE

(Geneva, 1978)

Document No. 299-E

1 March 1978

Original : Spanish

PLENARY MEETING

FINAL PROTOCOL

For the Republic of Colombia :

In signing the Final Acts of the World Administrative Radio Conference on the Aeronautical Mobile (R) Service, Geneva, 1978, the Delegation of the Republic of Colombia states that, with a view to safeguarding its country's telecommunication services, the sovereignty of Colombia may not be infringed under any circumstances by any of the provisions adopted by the Conference or by any of the reservations entered by other Members of the Union.

Moreover, it reserves the right to take any action it may consider necessary to safeguard and enforce its sovereign rights in accordance with the constitution and law of the country.

It also reserves its Government's right to authorize the operation of stations of aircraft landed at the airports of the Republic of Colombia in accordance with Appendix 27 (No. 27/9) to the Radio Regulations (Rev. 1978).



AERONAUTICAL (R) CONFERENCE

(Geneva, 1978)

Document No. 300-E

1 March 1978

Original : Spanish

PLENARY MEETING

FINAL PROTOCOL

For Spain :

I

In signing the Final Acts of the present Conference (Geneva, 1978), the Delegation of Spain reserves its Government's right to take any action it may consider necessary to safeguard its telecommunication services should they be affected by the reservations entered by other Members.

II

In signing the Final Acts of the present Conference, the Delegation of Spain reserves its Government's rights with regard to the application of No. MOD 27/9 of Appendix 27, Aer 2 (1978).

