Government of Canada
Department of Communications

REPORT OF THE CANADIAN DELEGATION TO THE ITU WORLD ADMINISTRATIVE RADIO CONFERENCE (WARC 1979)

GENEVA SEPTEMBER 24 - DECEMBER 6, 1979

Government of Canada
Department of Communications

1. World Administrative Radio Conference (1979: Geneva, Switzerland)

2.

REPORT OF THE CANADIAN DELEGATION TO THE ITU WORLD ADMINISTRATIVE RADIO CONFERENCE (WARC 1979):

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FOREWORD

This delegation report summarizes the conclusions of the conference and is intended for the information of government and industry.

A brief summary of the important conference actions is given in the introduction, including an outline on future Administrative Radio Conferences that will be convened by the ITU. Thereafter the report follows in more detail listing the work of the conference by committee and concludes with a list of the Canadian Delegation, the agenda, a brief summary of recommendations and resolutions and finally with a list of the 83 Statements contained in the Final Protocol.

As a next step in Canada, public consultations will be held and a Canadian domestic frequency allocation table will be developed. Many bilateral and multilateral meetings will be required in Region 2 for the purpose of seeking mutual agreement on subjects such as coordination and equitable frequency sharing arrangements.

There is no doubt that the conference results will impact directly or indirectly on all Canadians, and, as we enter the 1980's, we believe they will be a suitable foundation on which to plan our future telecommunication needs.

PART 1

Executive Summary

Summary report of the Canadian
Delegation to the World Administrative Conference
Geneva September 24 - December 6, 1979

EXECUTIVE SUMMARY

Introduction

This summary presents an overview of the major conference decisions and proceedings; a detailed report on the work of the various committees which were formed to deal with the conference agenda is attached. The 1979 World Administrative Radio Conference was the first major conference since 1959 which was competent to deal with all telecommunication services. After seventy-four days of difficult negotiations, the final acts consisting of 1150 pages were signed. From a Canadian point of view almost all of our major objectives were achieved.

The final acts will come into force Jan 1, 1982, but, there are certain decisions concerning some frequency bands that will be phased-in over a longer period of time. For example newly allocated short wave broadcasting bands are subject to a transition plan which allows displaced fixed services to be re-assigned over a five to ten-year period.

The 40-member Canadian delegation was led by the Deputy Minister of Communications Bernard Ostry, and Senior Assistant Deputy Minister J.T. Fournier as alternate head of delegation, with representatives from the federal Department of Communications, Canadian Radio-television and Telecommunications Commission, National Defence, Transport Canada, External Affairs, National Research Council, Canadian Broadcasting Corp., Telesat Canada, Teleglobe Canada and, for the first time, technical advisors from the private sector. These advisors, chosen for their expertise in different fields of telecommunications, came from the Canadian Electrical Association, Canadian Association of Broadcasters, Canadian Telecommunications Carriers Association, Electrical and Electronic Manufacturers Association of Canada, Canadian Radio Technical Planning Board and the Radio Amateurs.

The conference agenda is shown in attachment 1 and a list of the Canadian delegation is contained in attachment 3,

The major frequency allocation decisions are listed below, however, more detail is given in the committee 5 section of the report, with other technical regulatory or administrative matters discussed in the sections related to committees 4, 6 and 7.

Aeronautical services

The existing frequency allocations for the aeronautical service were maintained and additional low frequency (LF) radionavigation spectrum was realized. At VHF, a one megahertz band was added and a rearrangement of the L band (1530-1600 MHz) aeronautical and maritime satellite services was adopted. Improvements were achieved in several frequency bands used by radar systems for radionavigation purposes.

Maritime services

Several new high frequency bands (HF) were provided to alleviate the world wide congestion of ship and coast stations; at VHF, a new ten megahertz band was allocated for maritime mobile purposes. Several new allocations have been selected for radionavigation purposes and will be used by radar systems both on board ships and at shore based stations.

Amateur

The majority of currently allocated bands was maintained and three new frequency bands at 10,18 and 24 MHz were added, and several new allocations were added in the SHF ranges above 30 gigahertz.

Broadcasting

Extension of several existing broadcasting bands were achieved. The band 1605-1705 KHz will be available for AM broadcasting by 1990. Short wave broadcasting bands have been expanded at 9, 11, 15, 17 and 21 MHz. New bands at 3950-4000 kHz for the CBC northern services and at 13 MHz for international broadcasting were obtained.

Radio Astronomy

The existing radio astronomy allocations were maintained and provision was made for increased protection from interference.

Broadcasting Satellite

A primary Canadian objective was to ensure that suitable frequency allocations would be made for future development and operation of Canadian communications satellites whether for direct-to-home broadcasting, fixed (point-to-point) telecommunications or hybrids combining both applications. With conflicting proposals from Canada, the U.S. and some Latin American countries for the allocation of the 12 GHz band, this issue had the potential to disrupt the conference. Canada played an important role in reconciling the different positions and developing a compromise that was accepted by all of the countries of Region 2 and which will accommodate the fixed and direct broadcasting satellite requirements foreseen for Canada.

The main features of the compromise are:

a) the frequency band 11.7 to 12.7 GHz will be divided between the fixed and broadcasting satellite services with some details of the division to be decided at the 1983 Region 2 Administrative Radio Conference for Planning the Broadcasting Satellite Service;

b) provisions were made for hybrid (multi-purpose) fixed and broadcasting satellites to operate in the entire 11.7 to 12.7 GHz band as envisaged by Canada prior to the Conference;

c) a commitment to plan only the broadcasting satellite service in 1983 and to have standard co-ordination procedures for the fixed satellite service.

Land mobile services

Several new allocations were provided for the Land Mobile Service in the UHF band between 806-942 MHz. Consistent with the recent domestic policy decision, the mobile service has been added to the band 806-890 MHz. In addition the mobile service has been added to the bands 890-902 MHz and 928-942 MHz.

Fixed and mobile satellite

Several new frequency bands were added for fixed-satellite service. For example, the bandwidth of the 6/4 GHz band was increased to 1100 MHz, including the band 3.4-3.7 GHz to be shared with radiolocation. As well, the width of the 14/11 GHz band was doubled to include 10.7-11.7 GHz, in the uplink earth-space direction. Several bands were designated in the fixed-satellite service as feeder links to broadcasting satellite, including the important 17.3-18.1 GHz band. (The radiolocation service in the band 17.3-17.7 GHz was downgraded to make this band use possible)

Significant additional spectrum was allocated to the mobile-satellite service at 406 MHz, 608 MHz, and the 806-890 MHz band. As well, spectrum in the 240-399 MHz band was retained. (This was the only band allocated to the mobile satellite service before the 1979 WARC) In the SHF portion of the spectrum 125 MHz was added for mobile-satellite use in the 8/7 GHz band, subject to agreement, and 1500 MHz was added at 30/20 GHz. In the L-band 19 MHz was allocated to the maritime mobile-satellite service, and 14 MHz to the aeronautical mobile-satellite service.

Non-Frequency allocation matters

The technical aspects of the radio regulations were actively discussed and several new provisions were added which will be to Canada's advantage. Particular examples are the provisions of "The Table of Transmitter Frequency Tolerance" (appendix 3) and the Table of maximum spurious Emission power levels (appendix 4).

Numerous new resolutions and recommendations have been developed which are intended to guide future conferences and to instruct international study groups to develop technical criteria or new frequency management guidelines. The question of future conferences was discussed in depth and recommendations were made for three Region 2 conferences and three world conferences covering satellite, mobile and HF broadcasting.

The administrative and frequency notification and coordination provisions of the radio regulations were totally reviewed and improvements made in several areas. The outcome does not impose restrictions to Canadian users but streamlines the regulations.

Although 83 Conference reservations were included in the Final Protocol by various administrations, Canada introduced only two which is an indication that we are satisfied with the conference outcome.

A limited number of copies of the Final Acts (prelimimary version) will be made available to government and private sector representatives, but the ITU will publish the official version and distribute it by late fall 1980.

Future Conferences. Nine specialized world and regional radio administrative conferences were proposed at WARC-79 but specific dates were not established, leaving this to the ITU Administrative Council. Following are listed the conferences that were recommended to the Administrative Council along with suggested dates:

1. World Administrative Radio Conference for Mobile Services; (1982)

2. Regional Administrative Radio Conference for planning the MF Broadcasting bands in Region 2 (first session March 1980; second session November 1981);

3. Regional Administrative Radio Conference for the detailed planning of the Broadcasting Satellite Service in the 12 GHz band and associated uplinks in Region 2 (second quarter, 1983);

4. Regional Administrative Radio Conference for planning Sound Broadcasting in the band 87.5-108 MHz in Region 1 (tentative: first session - third quarter, 1983);

5. Regional Administrative Radio Conference for planning uplinks to broadcasting satellites operating in the 12 GHz band in Region 1 and 3 (tentative recommendation: fourth quarter, 1983);

6. Regional (European Maritime Area) Conference to revise the 1948 Copenhagen Plan (tentative recommendation: second quarter, 1984);

7. Regional Administrative Radio Conference to prepare a plan for the initiation of broadcasting services in the band 1605-1705 kHz in Region 2 (tentative recommendation: second quarter, 1985);

8. World Administrative Radio Conference for the planning of the HF bands allocated to the broadcasting services (two sessions, first session first quarter 1983, second session second quarter 1984);

9. World Administrative Radio Conference on the Geostationary Satellite Orbit and the planning of space services (two sessions, first session not later than 1984, second session 1985).

PART 2

Outline of committee 1 (Steering)

(no report)

PART 3

Report of committee 2 (Credentials)

COMMITTEE 1 - Steering Committee

Chairman:
Mr. Roberto J.P. Severini (Argentina), Chairman of the Conference

Vice Chairmen:
Messrs. A.L. Badalov (USSR), J. Jipguep (Cameroon), H. Kieffer (Switzerland), Li Linchuan (China), A. Petti (Italy), G.O. Robinson (United States), Vice Chairmen of Conference

Terms of reference:
To co-ordinate the work of the Committees, fix the timetable of meetings, etc.

COMMITTEE 2 - Credentials Committee

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

Vice-Chairman:
Dr. Amer Jomard (Iraq)

Terms of reference:
To verify the credentials of delegations and to report on its conclusions to the plenary meeting within the time specified by the latter.

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 the introduction.

2. Meetings

Committee 2 held two meetings (on 29 September and on 15 November 1979).

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 and 15 October 1979 (1st meeting) and on 7 and 15 November 1979 (2nd and 3rd meetings).

The Chairman and Vice-Chairman of the Committee and the delegates of the Algerian Democratic and Popular Republic, the Federal Republic of Germany, the Republic of Colombia, the Hungarian People's Republic and Thailand participated in the meetings of the Working Group.

3. Conclusions

The Committee's conclusions, contained in annex A, were submitted to the Plenary Meeting for adoption.

A number of delegations have expressed different views on the validity of the credentials deposited by Democratic Kampuchea. The statements made by these delegations are attached to the summary record of the 2nd meeting of Committee 2.

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.

ANNEX A

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 (Democratic Republic of)
Albania (socialist People's Republic of)
Algeria (Algerian Democratic and Popular Republic)
Germany (Federal Republic of)
Angola (People's Republic of)
Saudi Arabia (Kingdom of)
Argentine Republic
Australia
Austria
Benin (People's Republic of)
Bangladesh (People's Republic of)
Belgium
Bahrain (State of)
Byelorussian Soviet Socialist Republic
Botswana (Republic of)
Brazil (Federative Republic of)
Bulgaria (People's Republic of)
Burundi (Republic of)
Cameroon (United Republic of)
Canada
Cape Verde (Republic of)
Chile
China (People's Republic of)
Cyprus (Republic of)
Vatican City State
Colombia (Republic of)
Congo (People's Republic of)
Korea (Republic of)
Costa Rica
Ivory Coast (Republic of the)
Cuba
Denmark
Egypt (Arab Republic of)
El Salvador (Republic of)

United Arab Emirates
Ecuador
Spain
United States of America
Ethiopia
Fiji
Finland
France
Gabon Republic
Gambia (Republic of the)
Greece
Guinea (People's Revolutionary Republic of)
Guinea-Bissau (Republic of)
Guyana
Haiti (Republic of)
Upper Volta (Republic of)
Honduras (Republic of)
Hungarian People's Republic
India (Republic of)
Indonesia (Republic of)
Iran (Islamic Republic of)
Iran (Republic of)
Iraq (Republic of)
Ireland
Iceland
Israel (State of)
Italy
Jamaica
Japan
Jordan (Hashemite Kingdom of)
Kenya (Republic of)
Kuwait (State of)
Lesotho (Kingdom of)
Lebanon
Libya (Socialist People's Libyan Arab Jamahiriya)
Liechtenstein (Principality of)
Luxembourg
Madagascar (Democratic Republic of)
Malaysia
Malawi
Mali (Republic of)
Malta (Republic of)
Morocco (Kingdom of)
Mexico
Monaco
Mongolian People's Republic
Mozambique (People's Republic of)
Nepal
Niger (Republic of the)

Nigeria (Federal Republic of)
Norway
New-Zealand
Oman (Sultanate of)
Uganda (Republic of)
Pakistan (Islamic Republic of)
Papua New Guinea
Paraguay (Republic of)
Netherlands (Kingdom of the)
Peru
Philippines (Republic of the)
Poland (People's Republic of)
Portugal
Qatar (State of)
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
Rwanda (Republic of)
San Marino (Republic of)
Senegal (Republic of the)
Singapore (Republic of)
Somali Democratic Republic
Sri Lanka (Democratic Socialist Republic of)
Sweden
Switzerland (Confederation of)
Swaziland (Kingdom of)
Tanzania (United Republic of)
Czechoslovak Socialist Republic
Thailand
Togolese Republic
Tonga (Kingdom of)
Tunisia
Turkey
Union of Soviet Socialist Republics
Uruguay (Oriental Republic of)
Venezuela (Republic of)
Yemen Arab Republic
Yemen (People's Democratic Republic of)
Yugoslavia (Socialist Federal Republic of)
Zambia (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. 145).

Guatemala (Republic of)
Democratic Kampuchea
Liberia (Republic of)
Mauritania (Islamic Republic of)
Nicaragua
Sierra Leone
Sudan (Democratic Republic of the)
Chad (Republic of)
Zaire (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.

These credentials are 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.

Bolivia (Republic of)
Panama (Republic of)

Conclusion: The delegations of these countries are entitled to vote; they are not entitled to sign the Final Acts.

3. Delegations which have not deposited credentials

Central African Republic
Comores (Federal and Islamic Republic of the)
Djibouti (Republic of)
Dominican Republic
Maldives (Republic of)
Mauritius
Nauru (Republic of)

Conclusion: The delegations of these countries are not entitled to vote; they are not entitled to sign the Final Acts.

PART 4

Report of committee 3 (Budget)

COMMITTEE 3 - Budget Control Committee

Chairman:
Mr. Z. Kupezyk (Poland)

Vice-Chairman:
Mr. K.P.R. Menon (Malaysia)

Terms of reference:
To determine the organization and the facilities available to the delegates and to examine and approve accounts for expenditure incurred throughout the duration of the conference. G.I. Warren as Vice-Chairman of committee 8 was Canada's representative on the Steering Committee. Canada did not participate directly in committees 2&3 but followed the reports and decisions of these groups.

COMMITTEE 3

FINAL REPORT OF THE BUDGET CONTROL COMMITTEE TO THE PLENARY MEETING

The Budget Control Committee held meetings during the Conference. Under the provisions of Chapter XI, Article 77, No. 442, of the International Telecommunication Convention, Malaga-Torremolinos, 1973, the Committee's terms of reference were:

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 facilities available to the delegates

No delegation having presented any criticisms or comments on this matter, the Committee found that the organization and facilities available to delegates gave full satisfaction.

2. Budget of the Conference

The Budget Control Committee took note of the Conference budget approved by the Administrative Council at its 33rd (1978) and 34th (1979) sessions, i.e.

5,145,000	Swiss francs for the preparatory work of the Conference itself and
240,000	Swiss francs for finalization work, or a total of
5,385,000	Swiss francs.

The Committee also noted that the Conference budget did not comprise expenditure relating to common services. Under a decision taken by the Administrative Council in 1976, such expenditure is now charged to a special section of the ordinary budget. The portion relating to the WARC in this section is estimated at 3,026,600 Swiss francs.

The Committee further noted that in accordance with the provisions of Administrative Council Resolution No. 647, the Conference budget (5,385,000 Swiss francs) had been adjusted to take into account the changes introduced in the common system of the United Nations and the specialized agencies in Geneva with regard to the salaries and allowances of short-term staff. These adjustments increased the total budget of the WARC to 5,474,000 Swiss francs, i.e. by 89,000 Swiss francs.

3. Position of Conference expenditure

In accordance with the provisions of the Convention, the Budget Control Committee has to submit to the Plenary Meeting a report indicating as exactly as possible the estimated amount of Conference expenditure.

Annex 1 accordingly contains a statement showing the budget of the Conference with the estimated breakdown by budget subheads and items, possible transfers of credits and actual expenditure up to November. The statement also shows commitments to expenditure up to that date and estimated expenditure until the close of the Conference.

It will be seen from the statement that the total expenditure is estimated at 5,471,000 Swiss francs, leaving virtually no margin compared with the budget allocation. It should, however, be emphasized that despite the large volume of documentation produced and the many additional interpretation days which had to be included, it will probably be possible not to exceed the budget allocation provided that the Conference ends by the date set by the Administrative Council.

Under the Union's Financial Regulations, the Secretary-General may transfer credits from one item to another within the same budget subhead. Moreover, the Budget Control Committee may authorize transfers of credits from one subhead to another. By virtue of these provisions and on the proposal of the Secretary-General, the Budget Control Committee authorized the transfer of a credit of 60,000 Swiss francs from subhead 2 (expenditure on premises and equipment) to subhead 1 (staff). The reason for this transfer is the Secretary-General's decision to recruit a third team for the reprography service so that the service could work 24 hours per day, thus increasing internal production and reducing the volume of documentation to be run off by printers outside the Union accordingly.

4. Final Acts of the Conference

Under the provisions of Administrative Council Resolution No. 83 (amended):

> "... if a conference ... prints, for its own use, documents of which typographical composition can subsequently be used, in whole or in part, for the printing of the Final Acts, it must bear 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 ...".

The texts constituting the Final Acts of the Conference submitted to delegations for signature are produced by the Union workshops. These texts will be used for the production of the Final Acts offered for sale and the

subsequent publication of the new Radio Regulations. The Plenary Meeting of the Conference will therefore have to determine the percentages of the composition cost to be borne by the Conference budget and by the Supplementary Publications Budget.

In light of the decisions adopted by previous conferences and by the Adminstrative Council on approving the budget of the Conference, the Budget Control Committee proposes the following allocation:

1/3 to be charged to the budget of the Conference and

2/3 to be charged to the Supplementary Publications Budget.

The estimate of expenditure in Annex 1 is based on the above 1/3 - 2/3 allocation.

5. Contributions by recognized private operating agencies and non-exempt international organizations

Under the provisions of Article 16 of the Union's 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 defrayal of the expenses of the Conference. To this list must be added a list of the international organizations which have been exempted from payment in accordance with No. 548 of the Convention.

The list in question will be found in Annex B to this document.

* * *

In accordance with the provisions of No. 445 of the Convention, this report, together with the observations of the Plenary Meeting, will be transmitted to the Secretary-General for submission to the Administrative Council at its next annual session.

ANNEX B

LIST OF RECOGNIZED PRIVATE OPERATING AGENCIES AND INTERNATIONAL ORGANIZATIONS PARTICIPATING IN THE WORK OF THE CONFERENCE

	Number of contributory units
A. Recognized private operating agencies	
The Marconi International Marine Co., Ltd.	½
B. International organizations	
1. United Nations and specialized agencies	
United Nations	*)
United Nations Educational, Scientific and Cultural Organization (UNESCO)	*)
International Civil Aviation Organization (ICAO)	*)
World Meteorological Organization (WMO)	*)
World Health Organization (WHO)	*)
Intergovernmental Maritime Consultative Organization (IMCO)	*)
2. Other internatioanl organizations	
Agency for the Safety of Air Navigation in Africa and Madagascar (ASECNA)	½
European Space Agency (ESA)	½
Association of State Telecommunication Undertakings of the Andean Sub-Regional Agreement (ASETA)	*)
International Air Transport Association (IATA)	*)
International Association of Lighthouse Authorities (IALA)	½
Inter-American Association for Broadcasters (IAAB)	*)
World Association for Christian Communication (WACC)	½
North American National Broadcasters' Association (NANBA)	½
Intergovernmental Bureau for Informatics (IBI)	½
International Chamber of Shipping (ICS)	½
International Committee of the Red Cross (ICRC)	*)
International Maritime Radio Association (CIRM)	*)
International Special Committee on Radio Interference (CISPR)	*)
Inter-Union Commission on Frequency Allocations for Radioastronomy and Space Science (IUCAF)	*)
International Electrotechnical Commission (IEC)	*)

International Astronautical Federation (IAF)	*)
International Transport Workers' Federation (ITF)	½
Arab Satellite Communications Organization (ARABSAT)	½
Ibero American Television Organization (OTI)	*)
Organization of African Unity (OAU)	*)
International Criminal Police Organization (INTERPOL)	*)
International Radio and Television Organization (OIRT)	*)
International Telecommunications Satellite Organization (INTELSAT)	1
International Space Telecommunication Organization (INTERSPUTNIK)	½
African Postal and Telecommunication Union (APTU)	*)
Arab Telecommunication Union (UAT)	*)
International Astronomical Union (IAU)	*)
Panafrican Telecommunication Union (UPAT)	*)
Asian-Pacific Broadcasting Union (ABU)	*)
Arab States Broadcasting Union (ASBU)	*)
Union of National Radio and Television Organizations of Africa (URTNA)	*)
European Broadcasting Union (EBU)	*)
International Amateur Radio Union (IARU)	*)
International Union of Radio Science (URSI)	*)

*) Exempted from all contributions under Administration Council Resolution No. 574.

PART 5

Report of committee 4 (Technical)

COMMITTEE 4 - Technical Regulations Committee

Chairman:
Mr. N. Morishima (Japan)

Vice-Chairman:
Mr. M. Cisse (Senegal)

Terms of reference:

To consider proposals concerning the following articles:
Article N1, Terms and definitions; Section 1, Space, orbits and types of objects in space; Section VI, Technical characteristics Article N2, Nomenclature of the frequency and wavelength bands used in radiocommunication Article N3, Designation of emissions; Article N4, Technical characteristics; Article N16, Interference; Article N17, Tests; and the related Appendices 3, 4, 5 and B.

To consider proposals concerning technical provisions included in the following articles:
Article N25, Terrestrial radiocommunication service sharing frequency bands with space radiocommunication services above 1 GHz;
Article N27, Special rules relating to space radiocommunication services;
Article N33, Radiodetermination service and radiodetermination-satellite service; Section IVB, Radiobeacon stations; and the related Appendices 28 and 29.

To consider as appropriate to the work of the Technical Regulations Committee the resolutions and recommendations adopted by previous administrative radio conferences and to take such action as may be considered necessary including the adoption of any new resolutions and recommendations and also to consider Appendix A.

The Canadian coordinator of the Technical Regulations was A.R. Bastikar and active participants included R.G. Amero, M.J. Hunt, S. Towaij, W. Longman, C.A. Siocos, A.J. Baillie, P. Hervieux, A. Piechota, G. Bedingham. Chairmen of working groups are shown in Annex C.

COMMITTEE 4 - Technical Regulations

Overview

Chairman - N. Morishima - Japan

At the WARC 79, Committee 4 was entrusted with the responsibility of examining the proposals on Technical Regulations in light of their application in frequency allocation, administrative and notification procedures, resolution and recommendations related to technical aspects and assistance to the developing countries. Even though the WARC 79 started its work on September 23, 1979, in reality the technical committee work had started a year earlier at the Special Preparatory Meeting (SPM) held under the aegis of the CCIR as requested in a resolution by the ITU Administrative Council. At the SPM, 89 Administrations and Organizations were present in preparing the Conference Report on technical matters and Canada participated very actively in developing the report. There were more than 45 Canadian delegates from the private and public sector who participated.

Canada's input to the SPM took into account the proposals to be made by Canada to the WARC 79. At the SPM, many Canadian proposals were received favourably. As a result of the decision of the SPM, some Canadian proposals were modified before our final proposals were sent to the WARC 79.

The SPM Report was an asset in completion of the work done by this Committee. The majority of the output of the SPM on many issues was accepted without any changes. In some of the technical issues where controversies arose due to the non-technical nature of the issue, the SPM Report served to polarize the discussions of the Committee. Generally, the Canadian technical proposals fared well as the majority of them were in agreement with the SPM Report. Of course, there were a number of other reasonable proposals made by Canada which were also successful on their own merit.

The Committee work was divided into three basic working groups or subcommittees; 4A, 4B, and 4C. 4A was entrusted with the technical definitions of Article N1 as well as Article N2, 4B was entrusted with technical regulations--space matters and 4C dealt with technical regulations--non-space matters.

Canada chaired one of the three working groups and chaired many of the sub-working groups and drafting groups. Annex C is a list of the various working groups and sub-working groups and the associated chairmen.

WORKING GROUP 4A

Chairman - A.R. Bastikar - (Canada)

In Working Group 4A, there were 11 sub-groups created (see Annex C) with Canada chairing some of the sub-working groups. To coordinate with other committees and align Article N1, a Coordination Committee was created consisting of Chairmen of 4A, 5A and 7A. The Committee was chaired by the Conference Vice-Chairman (Keiffer, Switzerland). One of the important issues discussed within the Coordination Committee was the introduction for Article N1 which essentially removed the ambiguity in applying these definitions universally. The definitions, it was stated, are basically to be used in the application of Radio Regulations and were so written, rather than for their scientific purity, with efforts made to ensure their application universally throughout the Radio Regulations.

In the Technical Regulations section, terms were added to accommodate various procedures of Committee 6.

Many of the proposals which did not receive sufficient support were deleted including Canada's proposal for the auxilliary-satellite service and the deletion of passive satellites. In the case of passive satellites proposal, Canada's position was modified to accept the US proposal for reflecting satellite definition.

General definitions of linear and circular polarization based on the Final Acts of WARC 77 on (Broadcasting Satellites) were also considered and accepted with some minor modifications to clarify the meaning.

In the case of radiation, emission, and symbols for power (i.e. peak envelope power, mean power, carrier power), which have traditionally been a source of conflict due to the difficulty of precisely aligning these terms in French, English and Spanish, the Chairman of the Working Group, after long and hard deliberations, had to come up with a novel approach to accommodate this problem. The novel approach incorporating an equivalence language table satisfied all factions and the solution was accepted unanimously.

Harmful, acceptable and permissible interference definitions were also defined in order to satisfy the concerns of the Conference.

In Working Group 4A the Canadian proposals for various definitions generally faired well.

Working Group 4A met for over seven weeks of the Conference to complete its work. It was estimated initially that the work should be finalized by the end of the third week of the Conference so that these defintions could be used by the other Committees. The work carried out at the SPM was useful in rejecting many of the proposals by various Administrations, and to rationalize inclusion of terms and definitions which were utilized in the text of the Radio Regulations.

WORKING GROUP 4B

Chairman - E. Craig - (Australia)

In Working Group 4B, eight sub-working groups were established and Canada played an important role in chairing two sub-working groups. The work of this group, was important to Canada from the point of view of domestic satellite systems and our involvement in international satellite networks in dealing with the problems of coordination procedures and interference between terrestrial and satellite systems, etc.

The ground work for this working group was prepared at the SPM but there were many issues which could be considered as extensions of the SPM work, covered as well were those issues which were not resolved at the SPM.

WORKING GROUP 4C

Chairman - E. George - (Federal Republic of Germany)

The SPM report was a tremendous asset in the completion of the work prepared by this Working Group. In general, the Canadian proposals fared well as most were in line with the SPM report. Of those proposals not in line with the SPM report, a reasonable number of these were also successful.

Two of the principal items of output of this area are (1) a new method of classifying and designating emissions and (2) the extension of the Table of Maximum Permitted Spurious Emissions of fundamental emissions above 235 MHz to 17.7 GHz.

A number of recommendations were modified or created requesting additional study by the CCIR in subjects related to classification and designation of emissions, calculations of necessary bandwidth, and the development of recommended values for spurious emissions.

DETAILED DISCUSSIONS - Technical Regulations: Space Matters

Article N 25

Title: Terrestrial radiocommunications services sharing frequency bands with space radiocommunications services above 1 GHz.

I Overview of Modified Art. N25

This Article was not extensively modified. When finally approved the only significant changes, aside from new lists of frequency bands and services consequential to the allocation decisions, were (1) a new footnote (6004.1) specifying, for frequency bands above 15 GHz, that CCIR should make a recommendation as to the need for pointing or power restrictions and any systems introduced after 1 January 1982 should as far as practicable meet the restrictions, and (2) a new footnote (6009.1) dealing with the case of inter-Regional interference in the context of Article N25.

II Canadian Proposals

The main Canadian proposal on this Article was the proposal (CAN/60A/123-134) to incorporate the concepts of CCIR Recommendation 406-3 regarding existing radio relay routes and a relaxation of the restrictions 6006-6007 to accommodate overbuilding new systems using different frequency bands. This proposal protected the geostationary satellite orbit without imposing undue hardship on the line-of-sight radio relay systems sharing the same frequency bands.

This proposal did not receive any open support and had to be withdrawn. The USA privately supported the proposal but would not give support in the Working Group. The UK, USSR, Japan and India spoke against the proposal claiming it "watered down" the existing RR 6006. Faced with such opposition, it was agreed to withdraw the proposal.

III Resultant Modifications to Article N25

1. The IFRB made a proposal to clarify that the orbit avoidance angles of Radio Regulations 6002, for example, applied to the visible arc of the orbit. This was rejected since it was felt that the radio horizon should be the controlling limit, not the visible horizon. This decision is consistent with CCIR Report 393.

2. Drafting Group 4B1, chaired by Canada (Amero) dealt with the proposals by Australia, USSR, and the Phillipines to have pointing angle restrictions on radio relay systems in the range 15-31 GHz consistent with those just below 15 GHz. Jamaica strongly supported these proposals. The USA, France, Japan, and FRG opposed the idea.

The compromise proposal which was supported by Canada resulted in a new footnote (6004.1) which requests the CCIR to study the matter and provides for systems introduced between the date of entry into force of WARC 79 Final Acts and the Plenary Assembly of the CCIR which approves such a recommendation must comply with any such restrictions (in shared bands). This was later modified by a proposal from Australia to say that systems should as far as practicable meet the new restrictions. This modification represents a considerable modification which really leaves the question to the CCIR and the option to the Administrations with respect to their applicability.

3. The FRG proposal to increase the permissible eirp of radio relay systems in the 6425-6725 MHz band by 5dB was rejected. Both Canada and France proposed a compromise involving increasing the off-orbit pointing angle requirements (per our position paper). This was opposed by India, Japan, USSR and the USA. FRG withdrew the proposal.

4. Brazil raised their concern regarding clauses within Articles N25 and N26 as to what constituted services "sharing with equal rights". Specifically there could be a terrestrial or space service of our Region which has the potential for causing interference to a space or terrestrial service of another Region. A clarifying footnote was added referencing RR3282/117 and CCIR Recommendations which "should, as far as practicable, be observed by Administrations".

Article N26

Title: Space radiocommunication services sharing frequency bands with terrestrial radiocommunications services above 1 GHz.

I Overview of Modified Article N26

Despite considerable discussion, this Article was not greatly modified, which is surprising considering the number of significant proposals. The following regulations were modified: (1) a 2dB increase in the pfd for FSS at 2500 MHz, (2) provisional pfd limits above 22 GHz, and (3) a new footnote on interregional interference. Additionally some of the newly-allocated, shared frequency bands were incorporated into the various eirp and pfd limits of this article.

II Canadian Proposals

Our proposals on this Article were almost entirely consequential to the frequency allocation proposals to Article N7/5. The Canadian omnibus proposal to delete the references to passive satellites was withdrawn as a result of the decision in W.G. 4A to retain the intent of the term but change "passive satellite" to "reflecting satellite."

III Resultant Modifications to Article N26

1. Power Flux Density Increase at 2500 MHz

The USA proposal to increase the pfd limits in this part of the spectrum presented an interesting situation. Their proposal increased the Broadcast satellite service pfd by roughly 10dB as well as the Fixed satellite service pfd to the same level resulting in a 17 dB increase (for low angles) over the existing FSS value. It was learned that this increase was proposed to facilitate their service to Alaska. In Canada/USA discussions we indicated we could agree to such an increase if it were subject to agreement between Administrations, because of our concern over interference into Instructional Television Fixed service systems operating in Canada.

The U.S.A. proposals were adamantly opposed by the USSR, UK, and India, with the latter arguing that the increase was not necessary for Lesser Developed Countries because INSAT was designed and will operate under existing limits. There was no vocal LDC support for this proposal although the USA did try to gain their support towards the end.

This pfd increase ran directly against the UK proposal to increase the protection for existing troposcatter systems (see forward, item 2). Despite several information documents being issued by the USA, there was a stand-off and it was agreed that the USA would not pursue their proposal if the UK/USSR would not press for the increased protection to troposcatter systems.

General opposition to the USA proposal during the meeting defeated any possible chance of success, and as was pointed out, existing regulation 6079/470NZB permits an administration to exceed the pfd limits subject to agreement.

The USA requested in Committee 4 that the FSS limits be aligned with the BSS limits. This meant a 2dB increase for high angles and 7dB for low angles, providing some of the increase the USA wanted, but more significantly, it aligned the pfds from the two services so as to simplify transponder design and operation when both services are used. This was agreed by majority including strong Canadian support but with USSR and UK still objecting.

2. Troposcatter Fixed Systems

The UK proposal to change the degree of protection for troposcatter systems under 6062/470NK was strongly supported by the USSR and India. The proposal would have given an extra 7dB isolation for established troposcatter systems. This was exactly counter to the USA proposal to increase the FSS and BSS eirp in this band (see item 1 above). The USA gave an information paper giving details of the CCIR/Special Joint Meeting studies which had served as the basis for the current regulation (WARC-ST '71).

The UK agreed to withdraw their proposal if the USA did likewise, much to the concern of the USSR.

3. PFD Limits Above 22 GHz

There was considerable discussion as to whether there should be pfd limits above 22 GHz. The UK had specific proposals largely in line with the SPM report but there was considerable resistance. A drafting group, chaired by the UK, developed a text for discussion. The draft proposed an option of either a conservative extension of the existing limits prior to CCIR study or a general warning of pending CCIR study and that pfd limits should be such as not to cause harmful interference (or greater than permissible interference) to terrestrial services. Delegations were generally unwilling to accept limits across the entire band to 40 GHz, even if the limits were conservative. However, to reach agreement, it was decided to create provisional limits based not on the SPM but on the existing values for the frequency range 17.7 - 19.7 GHz (see MOD 6076/470 NY). These limits, which apply only to certain portions of the band 31 - 40.5 Ghz, are applicable until such time new limits are recommended by the CCIR and are endorsed by a competent WARC. This last clause provided the basis for agreement but leaves unclear the question of usefulness of the regulation and the date of entry into force of the new limits.

A related issue was the sharing of the inter-satellite service (ISS) with the radionavigation service at 32 GHz. The USA did not want to use the pfd limits suggested by the SPM because they were based on short inter-satellite hops (5° - 10°) as opposed to widely spaced satellites

(130°). Such wide angular spacings puts in doubt the feasibility of sharing between the two services. The USA were successful in having Committee 4 send a note to Committee 5 expressing the opinion that ISS should not share with the radionavigation service due to the latter being a "safety-of-life" service on one hand and the possible expanded use of ISS links beyond that analyzed by the SPM on the other hand. Canada and others opposed the note since there was no technical basis for the conclusion. It was a majority decision that such a note should be sent. At that time Working Group 5D had already allocated the two services shared on an equal primary basis near 32 GHz largely based on a Canadian proposal. CCIR have been requested to study this matter further.

4. Inter-Regional Interference

As noted in Article N25, a footnote was added at several points, addressing the question of services sharing with equal rights between the Regions. The problem is one where services (e.g. space services) of one Region have the potential for causing interference to services (e.g. terrestrial services) of another Region, yet the space services in this case might be considered as exempt from meeting the pfd limits on all parts of the earth. A clarifying footnote was added referencing RR3282/117 and CCIR Recommendations which "should as far as practicable be observed by Adminstrations".

5. Earth Station Off-Axis EIRP

The proposal by France to add a new section limiting earth station off-axis eirp in the 6 GHz band is addressed under Article N27, since it deals more with the efficient use of the geostationary satellite orbit than space/terrestrial sharing.

Article N27

Title: Special rules relating to space radiocommunication services

I Overview of Modified Art. N27

This Article was modified in several key areas although much less than some Administrations would have liked. Modifications will mean that the FSS are protected from all non-geostationary satellites. Both satellite station-keeping and antenna-pointing accuracy were tightened. In the case of satellite station-keeping, this tightening represents the successful culmination of 8 or 9 years of Canadian efforts in CCIR to improve this parameter and so the efficient use of the geostationary satellite orbit. Additional sections were added dealing with earth station off-axis eirp at 6 GHz and the protection of passive systems in the shielded zone of the moon.

In general, these modifications are beneficial to the efficient use of the geostationary satellite orbit without imposing a hardship.

II Canadian proposals

Canada had several significant proposals for modifying this Article. Our proposals (CAN/60A/145 - 148) to modify RR 6106/470VA on the control of interference between geostationary satellites and non-geostationary satellites was a complex package covering geostationary satellites in transit, the extension of this provision to cover all space systems not just the FSS, and the use of the term "permissible interference". The proposal was supported by Argentina, Indonesia and three others, but opposition spearheaded by the UK and the USSR resulted in a total rejection of the proposal despite a vigorous argument. The Chairman's insistence that the proposals be treated as a package probably contributed significantly to its demise. Later support by Iraq outside the meeting was fruitless. France proposed, during final approval in Committee 4, a modification which would have protected all geostationary satellites from all non-geostationary satellites, essentially our proposal. This was modified by the USA so that only geostationary FSS satellites are fully protected. Our proposal (CAN/60A/149 - 152) for satellite station keeping of +/-0.1 degree was agreed in principle, however, with a grandfather clause to permit the implementation of currently-designed satellites. (Drafting group 4B5 chaired by CAN-Amero). While there were different approaches proposed, there was reasonable concensus on the 0.1 degree value.

Our satellite beam pointing accuracy proposal (CAN/60A/153) was intended to improve the accuracy in a way quite different from other administrations in that the Canadian proposal had a maximum value of permissible variation as well as the normal 10% beamwidth rule. A decision was made to have the tightest pointing accuracy as +/-0.3° which reduced the impact of our proposal. Since the main objective was to tighten the accuracy from +/-0.5°, it was decided not to pursue it further. Most administrations considered the +/-0.1° proposal, in general, too severe despite it being adopted by WARC 77 for BSS, yet there was a general desire to tighten the beam pointing accuracy. In early

discussions, +/-0.2° was favoured, but still a couple of administrations, notably Japan, said that their current designs could not meet this value and pressed for +/-0.3°. Their wish prevailed and was agreed upon.

Canada had a proposal to add a new section (CAN/60A/155 - 156) dealing with the use of passive satellites, permitting their use only for scientific or experimental purposes and subject to agreement between administrations concerned. This was consequential to the general suppression of the use of passive satellites. This proposal was dropped once the general decision was made to retain concept of "passive satellites" with the term "reflecting satellites".

III Resultant Modifications to Art. N27

1. As noted above, RR 6106/470VA was significantly modified so that all geostationary FSS systems are protected from all other non-geostationary satellite systems, instead of from only other non-geostationary FSS satellites. This was one of the objectives of our proposal on this provision.

2. Earth station Off-Axis EIRP: The proposal of France to add a new section limiting earth station off-axis eirp in the 6 GHz band was widely opposed for various reasons. The principle question was the adequacy of the limits to permit the operation of SCPC carriers, especially FM SCPC. Canada supported this proposal since it was our original idea in CCIR and also due to its favourable impact on the efficient use of the orbit. There was early agreement by France to exclude both SCPC and digital transmissions from these restrictions but the result would have been a very weak, and perhaps useless, regulation. The USA argued that inclusion of preliminary recommendations of the CCIR into the Regulations undermined the whole purpose and effectiveness of the CCIR.

Canada, in supporting France, agreed to draft a compromise text which recognized the problem and referred to the CCIR recommendation. This text, which will form a new section to Art. N27, diffused the wide-spread opposition and was widely supported in the end.

3. Radioastronomy on the Shielded Zone of the Moon: This subject was a very sensitive matter between the USA and the USSR, with Dr. Dubinski (USSR) chairing a drafting group (4B6) on the matter. As a result of their discussions, a new section was added, which protects passive services from active services on the shielded side of the moon and the adjacent volume of space, by prohibiting all transmissions (except in certain bands).

4. Earth Exploration Satellite Service (EESS)

France had put forward a proposal to protect geostationary EESS satellites from non-geostationary EESS satellites by prohibiting the

latter from transmitting whenever their direction of transmission was within a certain angle of the geostationary satellite orbit, in line with CCIR studies. After discussions, principally with the USA, the provision was reworded to be in general terms similar to RR 6106, instead of the avoidance angle approach originally proposed. Also the provision applies to only a very small band 29.95-30.0 GHz.

5. Satellite Position Station-Keeping

This subject was handled by drafting group 4B5 chaired by Canada (Amero). According to the Canadian proposal, the station-keeping accuracy was tightened to +/-0.1 degree of longitude but there were qualifications to permit some flexibility. The FSS and BSS satellites (other than the WARC '77 BSS) must maintain +/-0.1 degree except for experimental systems (where +/-0.5 degree is required) and when such action does not cause unacceptable interference. For other geostationary space stations, the value is +/-0.5 degree with an exemption for those systems not causing unacceptable interference. To grandfather planned systems, the old provisions will apply for space stations notified before 1 Jan '82 and brought into service before 1 Jan '87. This complex arrangement was required to meet the concerns of several countries such as China, India, Japan, and some interested LDCs.

6. Satellite Antenna Pointing Accuracy:

As outlined above, the resulting value of +/-0.3 degree of pointing accuracy was a compromise and represents an improvement over the old value. However, in the case of narrow spot beams, such a value may not be acceptable from a systems point of view, so operators may have to do even better than this. Also note that the WARC '77 provisions for BSS still must be met. (see App. 29A).

7. Uplinks to BSS: France proposed that a new Art. N27A be created to cover technical questions of uplinks to the 12 GHz BSS plan. They proposed that a standard translation frequency be used to relate the Region 1&3 BSS plan to the appropriate uplink frequencies. This approach, they claimed, would obviate several problems in utilizing the allotted frequency channels at a given orbital position. Region 2 was to be omitted from the Article since planning of the uplinks would occur when the BSS downlinks were planned at the 83 RARC.

A drafting group 4B7 chaired by Willenberg (FRG) discussed these issues but there was substantial opposition to the proposal, not the least of which was lack of a single band designated for uplinks. The USSR insisted that a detailed technical list of parameters be developed since a simple frequency translation would not solve the problem. Furthermore in other Committees, the USSR were pushing for an uplink planning conference.

The result of all this difficult discussion was that a new technical article (N27A) was not developed instead new Resolution CS outlines how Administrations coordinate technical characteristics of feeder links to BSS (Region 1 and 3 plan) between WARC '79 and a future uplink planning conference. Of course, now there must be such a conference, whereas

with the proposal from France it was not necessarily required. The proposal from France did not necessitate a regional planning conference.

Appendix 28

Title: The method for determining the coordination area around an earth station in the bands 1 - 40 GHz shared between space and terrestrial services.

I Overview of Modified Appendix 28

Appendix 28 has been significantly improved, based largely on CCIR Report 382-3, as recommended by the SPM. The detailed work was handled in Drafting Group 4B2 chaired by H. Weiss (USA). The end product is a good, albeit somewhat complicated, procedure for determining which terrestrial radio relay stations (both troposcatter and line-of-sight) must coordinate with the earth station. The procedure is applicable to all earth stations of any space service. The analytical procedure is formulated so as to ease computerization.

The propagation parameters under dispute mainly between France and the UK, were resolved in a manner acceptable to the other Administrations. The acceptance of these compromise values was facilitated by the adoption of Resolution AJ which requests CCIR to make a report at each Plenary Assembly as to the acceptability of the Appendix 28 propagation values and if necessary recommend new values. The modifications to Appendix 28 would be undertaken at the next possible WARC, as an extraordinary agenda item.

Of particular importance to receive-only earth stations, is the provision for developing smaller coordination contours if an Administration believes that such would be sufficient to protect their operation. This does not apply to the transmitting portion of the earth station.

II Canadian Proposals

In general, Canada supported the use of CCIR Report 382-3 as the basis for the new Appendix 28. While this was the most significant element of our proposals, we did include some other items such as including the Auxilliary Satellite Service in Tables I and II and retaining the concept of auxilliary countours.

As a result of a controversy at the SPM over some propagation parameters used in the new procedure, we proposed this matter be resolved as quickly as possible in the Technical Committee and that Administrations ensure that propagation and operational experts be available. Such a dispute, largely between France and the UK, threatened the acceptance of any modifications to Appendix 28.

During the very early stages of the WARC there were several informal meetings between the Administrations concerned which in the end obviated the need for an extraordinary meeting. The agreement reached between France and the UK raised some concern in other Administrations such as the Netherlands, FRG, USA, USSR and Canada. This lead to the creation of a new Resolution AJ

which requests the CCIR to continue to study the propagation parameters used and for each CCIR Plenary Assembly to decide if a revision of the Appendix 28 propagation is warranted. If so, the subject is to be placed on the agenda of the next WARC as an extraordinary item. With this Resolution agreed, the propagation parameters of revised Appendix 28 could be accepted by all Administrations.

III Resultant Modifications to Appendix 28

New Appendix 28 in general is superior to the 1971 version both from the point of view of ease of application and the models used. Based extensively on CCIR Report 382-3, the procedure can be easily computerized or used graphically which represent a distinct advantage. Also some of the descriptive texts have been clarified making them easier to understand, especially if the Appendix is used infrequently.

A new provision has been added to permit an Administration to submit a coordination contour for the receive portion for earth station, which is smaller than that which would be calculated using the parameters of this Appendix. Thus the IFRB must accept the smaller contour since the Administration has determined that the smaller contour will adequately protect the transmissions received by that earth station. This provision has important implications for TVRO earth stations or earth stations which receive transmissions which are less susceptible to interference than those given in Table II. However, if subsequently an Administration later decides to protect its receiving earth station to the extent of this Appendix instead of the departure, it must reco-ordinate the earth station and the resulting greater protection shall be effective from the date of publication of the IFRB Weekly Circular.

There were improvements to the texts which explain the various parameters, notably the terms M, J and W. A new note was added to relate the noise temperature at the input to the receiver to that at the output of the antenna. A decision was made as a result of a Japanese proposal to change all noise reference points to the antenna flange. Thus modifications were necessary throughout the Regulations, e.g. Articles N1, N11, and N13 and Appendices 1A, 1B, 28 and 29. Also a set of standard equations are given for the gain of an antenna whether above or below 100 lambda in diameter. These patterns cover both main-beam as well as sidelobe radiation levels.

The most difficult discussions were those on propagation-related parameters. (See also Section II for further discussion). Significant modifications to Report 382-3 propagation information occurred in two areas: (1) the maximum ducting distances were reduced significantly, and (2) the attenuation due to site shielding was significantly increased by changing the model. In the case of the maximum ducting distances, the distances were reduced somewhat arbitrarily to agree with France/UK experience. These shorter distances were not agreeable to the Netherlands and FRG who have had sharing problems with high signal levels due to ducts and to the USA who felt they were too short. (The USA position was to retain Appendix 28 without change). Agreement was reached provided further work could be done through the

CCIR in line with Resolution AJ. With regard to site shielding, the model was adjusted to place the shielding object 500m from the antenna instead of 100m and changed the knife-edge refraction to a rounded refracting surface (50m). These changes produced significantly increased losses which, for higher frequencies and elevation angles, seemed unrealistic. Canada raised the concern about this in light of the information in CCIR Report 715 and requested that such losses be used with caution.

Tables I and II were modified to incorporate selected new frequency bands with parameters coming from various CCIR Recommendations which give sharing criteria. This work was done by Plen/Adhoc 1, a working group, requested by Canada, created to incorporate the results of Committee 5 into Appendix 28. In the case of Table I (transmitting earth stations), analogue radio relay system parameters were chosen in the 1-10 GHz range as the basis for coordination since they cause larger coordination areas than digital radio relay system parameters.

As had been proposed, the concept of using auxillary contours was retained permitting an administration to use less unfavourable assumptions in drawing the coordination area which may ease subsequent negotiations.

Appendix 29

Title: Method of calculation for determining of coordination is required between geostationary satellite networks sharing the same frequency bands

I Overview of Modified Appendix 29

Appendix 29 was handled by Drafting Group 4B3 chaired by M. Payet (Fr), which was an interesting situation since France had the most extensive and radical proposals. The SPM made a series of recommendations which were generally followed except that the recommended new value of permissible increase in equivalent satellite link noise temperature (ΔT) was 3% and the final value agreed was 4%. The new version of the Appendix also accommodates new bidirectional frequency allocations.

Two additional significant modifications were: (1) the possibility of using cross-polarization discrimination between space systems in determining the need for coordination. A safeguard was also provided so this feature could not be used indiscriminately. (2) A procedure identifies extraordinary steps which might be taken to protect narrowband carriers such as SCPC transmissions from FM-TV in particular.

II Canadian Proposals

The main feature of the Canadian proposals on Appendix 29 was the retention of the basic ΔT procedure of the current Appendix. The USA had proposed to the SPM several alternate procedures to calculate whether two space systems need to be coordinated, but there were problems associated with each of the possible new procedures. In general they require further study by the CCIR. The Canadian position in favour of the current ΔT procedure was favoured by most other administrations for its simplicity and ease of application.

Our proposal to increase the permissible ΔT from 2% was consistent with the agreement reached at the SPM. Other Administrations, especially France, pushed to have this value increased to as much as 5% to ease discussions on satellite system coordination with other Administrations in that the higher the percentage the fewer satellite networks would exceed the value and thus have to undergo coordination. Also experience by some Administrations showed that ΔT calculations could greatly exceed 5% and yet not exceed the maximum permissible interference levels if detailed system characteristics were used in the calculations. Tied to this was the attempt to protect SCPC and other narrowband carriers. Once this auxillary problem was resolved, the value of ΔT could then exceed the 3% figure of the SPM. The agreed value was 4%, with narrowband carriers being dealt with separately.

Canada also proposed that items from CCIR Report 454-2 be incorporated into this Appendix. Two items of interest in this Report which serve as the CCIR basis for Appendix 29 were (1) the decision to let $\Delta T=0$ for non-overlapping spectra, and (2) the use of tropocentric angles for determining antenna discrimination. Both of these were included in the revised text.

III Resultant Modifications to Appendix 29

Firstly, based on a USA proposal, a modification was made to the title which more correctly reflected the intent of the Appendix to calculate whether two space systems need coordination instead of calculating the level of interference.

The Appendix now clearly gives the procedures to be used for calculations where systems use the bands bidirectionally. This facility was lacking in the former version but with the allocation of several new bidirectional frequency bands, such a provision was necessary, especially for example in the case of sharing FSS downlinks and uplinks to BSS.

France proposed that advantage be taken of the fact that some space systems use only one sense of polarization of the two types of polarization (i.e. circular or linear) and thus the new sytem should take this additional discrimination into account when calculating ΔT. The objective was to reduce the number of space systems that a new system would have to coordinate with, which has the same effect as an increase in ΔT. Several Administrations adamantly opposed such practice in principle, notably USSR, USA, Canada and UK. Opposition was based on the increased complexity, the values of discrimination proposed, meeting such values in the antenna sidelobe region and the possible restriction on the upgrading of an existing system because some other system has moved in close using an opposite sense of polarization, for example, without coordination. France persistently pushed for the inclusion and in the end, it was agreed to include the concept only if the Administration, having the existing system, agreed to the use of this additional discrimination beforehand. This restriction provides some protection and control over its use and probably will mean that cross-polarization discrimination will never be used.

The protection of narrowband carriers such as SCPC from other wideband carriers, notably TV carriers, has been a concern for several years. There are differing views as to the degree of protection and the methodology to be used. To protect SCPC according to some arguments, ΔT should be set to 0.5% but by doing this, excessive protection would be given to other carriers in the satellite, thus increasing the number of systems that must be included in the coordinating process, exactly what Administrations did not want to do. Since neither the current 2% nor the SPM value of 3% would adequately cover this case, an extraordinary procedure was developed. Administrations whose SCPC assignments to space systems are either recorded in the Master International Frequency Register or under coordination may inform an Administration notifying the new assignment of the rf channels used in their system for SCPC transmissions, so that notifying Administrations may be able to avoid using these channels for FM-TV transmission. Conversely, administrations introducing new systems using SCPC transmissions may seek appropriate information from other Administrations on their FM-TV transmissions. This may obviate the long-discussed need for channelization/traffic plans.

In having dealt with the SCPC question, the value of ΔT was addressed. France had proposed a ΔT of 5% and they argued that the SCPC case was the prime reason why the SPM recommeded only 3%. Despite counter arguments made by Canada and others, it was decided to split the difference and adopt a new "trigger" value of 4%.

DETAILED DISCUSSION - Technical Regulations non-space matters

Article N3 - Classification and Designation of Emissions

The CCIR Recommendation 507 (reflected in the SPM report) was taken as the basis for the revision to the Article N3. This newly adopted method of classification and designation of emissions is an extensive revision to the previous three-symbol method which although familiar was quite inadequate in describing many types of emissions in current use. The method of specifying necessary bandwidth is modified from two to three significant figures. The newly adopted system again consists of three basic characteristics which are respectively: Type of Modulation, Nature of signals and Type of Information.

This method of classifying and designating will, of course, require some relearning by the many frequency-management people who have memorized the designators for the most common emissions. Nevertheless, this new system has been developed over more than ten years and has been tested in the field (including a DOC Central Region trial over a three-month period in 1977). Wherever possible, the old symbols have been chosen as components of the new system for the designation of the more common emissions.

Most of the proposals to the conference, including the Canadian, were for direct support for the CCIR Recommendation 507. Possible opposition from the Soviet Union did not materialize. Canada also presented a proposal for changes to the structure of the CCIR Recommendation in order to make it more appropriate for a regulatory document. These proposals were accepted. Canada participated fully in the sub-working group, drafting the new article.

Article N4 - Technical Characteristics

This article deals with the required technical characteristics of radio equipment in general terms. Modifications were largely concerned with specifying in more concrete language, the requirement of proper receiver characteristics to suppress interfering emissions. The provision dealing with the choice of modulation process and its relationship to efficient spectrum utilization, was updated with the advancement of technology. Canada's proposals were limited to two editorial improvements for the sake of clarity and to modernize the text. These proposals were accepted.

Article N16 - Interference

This article deals with the practices that administrations should follow to reduce instances of interference. Again, as with Article N4, the impact of suitable receiver characteristics was incorporated into this Article N16. The most extensive revision was made to Section II dealing with interference caused by radiation from Electrical Apparatus and Installations.

Canada's major proposal in this area, resulted in the inclusion of statements requiring administrations to take whatever steps are practicable to avoid interference caused by radiation from ISM or from cable distribution

systems. It was decided that the inclusion of the concept of permissible interference was not practical in view of the context in which this was viewed by many delegations. This proposal was withdrawn.

Article N17 - Tests

This Article deals with the practices to be followed to avoid interference in carrying out 'on-the-air' tests of radio systems. The Canadian proposal in this Article was accepted. This concerned the desired practice for carrying out tests on operational systems of the aeronautical radionavigation service.

Article N33 - Section IV B Radiobeacon Stations

Canada was successful in its proposal to increase the protection ratio from 10 to 15 dB for the assignment of radiobeacon stations but was unsuccessful in extending the provisions of this clause to require the same protection from the stations of other services allocated in the Table. Our concern is interference caused by the emissions of high power LF broadcasting stations operating in Region 1. Although some measurable support was obtained, Western European countries strongly opposed this provision due to their concern on the impact to their broadcasting operations. This subject was also pursued in the Committee 5 as a Frequency Allocation Matter.

APPENDIX 3 - TABLE OF FREQUENCY TOLERANCES

Canada had proposed an implementation date of 1983 for the introduction of the values of frequency tolerances and an amortization date of 1987, for the discontinuance of the use of systems conforming only to the existing values. These dates were generally consistent with others made to the conference. However, the concern developing countries and in particular China, caused the postponement of these dates until 1985 and 1990.

Most of the written proposals to the conference on the values of frequency tolerances including that of Canada, were in support of the SPM. The only departure from the SPM output was the acceptance of the Canadian proposal for less stringent value for the stations of the land mobile service in the 150 MHz band. Some minor changes were also made to footnotes.

APPENDIX 4 - TABLE OF MAXIMUM PERMITTED SPURIOUS EMISSION POWER LEVELS

Canada had proposed the same implementation and amortization dates as for the Appendix 3, namely 1983 and 1987 respectively. An implementation date of 1985 was chosen due to the general desire by many countries to delay implementation of change that they perceived may have caused additional expenditures. This same concern by these countries and extremely intensive argument and lobbying by the USA, resulted in a selection of an amortization date of 1994. We eventually chose to accept the latter date due to lack of support and concern of the possible implementation of values for spurious emissions above 960 MHz (see discussion below).

The decision of the conference followed that of the SPM report, in that slightly more stringent requirements below 235 MHz and values between 235 and 960 MHz were introduced. These values are consistent with or less stringent than current Canadian domestic requirements. The significant difference was the decision to include values for spurious emissions between 960 MHz and 17.7 GHz. Canada fought at length to prevent the inclusion of these requirements as little study has been carried out within the CCIR to determine what these values should be. Canada was successful in removing the requirements for space systems and digital radio relay systems (radiodetermination stations were already generally excluded). In addition, Canada applied an escape footnote to cover the case of multiple transmitters feeding a common antenna. In order to identify the need for proper study in this area, the existing Recommendation to the CCIR was revised accordingly.

APPENDIX 5 - EXAMPLES OF NECESSARY BANDWIDTH AND TWO ADDITIONAL DESIGNATORS

This Appendix 5 has been significantly modified as noted in the discussion on Article N3, by the inclusion of the two additional (optional) characteristics of the new system of classification and designation of emissions. These two additional characteristics, details of signal(s) and nature of multiplexing, are proposals whose origin is from the same CCIR Recommendation 507. Only one change was made to the content of this CCIR Recommendation in its inclusion within the body of the Radio Regulations, and that was the addition of a symbol for code-division multiplex originating from the Canadian proposal.

The treatment of these two additional characteristics proved to be controversial. One of the principal points was the exact location and manner of presentation of this material and the consequential implication (or lack) of a requirement to supply these two characteristics in designating emissions. The U.K. and the Soviet Union had the greatest concern about this matter and attempted to 'lose' these designators by leaving them outside the body of the Regulations. The compromise, supported by Canada, was the inclusion of this material in Appendix 5, with reference made to it within the Article N3 and the clear use of the word 'optional' in reference to these two additonal characteristics. The other item of concern was the manner and wisdom of inviting the CCIR in the future, to augment or amend the symbols of the two additional characteristics, to take account of new technology. This was finally left with a modified Recommendation 8 (ie. new Rec. K), inviting the CCIR to supplement the newly-created additional characteristics as may be required in the future and also to provide additional examples for the full designation of emissions.

The existing contents of Appendix 5 containing formulae for the calculation of necessary bandwidth of emissions were extensively revised, along the lines of the SPM report. A proposal from the Soviet Union to stipulate a

relationship of varying the value of K in the method of specifying the necessary bandwidth of broadband frequency modulated emissions was not accepted, although correct in principle, due to the lack of study within the CCIR forum. Appendix A was suppressed and the examples of designation of emissions and required necessary bandwdths were incorporated within the Appendix 5.

RESOLUTIONS AND RECOMMENDATIONS

A number of recommendations were made to the CCIR and others to continue study and to update material included in the technical regulation work. The principle ones deal with the following subjects:

1. Requests to the IFRB to prove information to administrations on the new system of classification and designation of emissions.

2. Invitation to the CCIR to update the symbols of the two additional characteristics.

3. Invitation to the CCIR to study further, the method of calculations necessary bandwidth (and provide examples of designation of emissions).

4. Invitation to the CCIR to study the requirements for maximum permissible levels of spurious emissions.

5. Invitation to the CCIR and Administrations to continue studies of radio propagation and radio noise (special emphasis on developing countries).

ANNEX C

COMMITTEE 4 STRUCTURE

4		Morishima	J	Technical Regulations
4A		Bastikar	CAN	Terms and Definitions
	4A1	West	UK	Passive Satellies
	4A2	Davies	AUS	
	4A3	Mojhar	USA	
	4A4	Railton	PNG	
	4A5	Dwyer	AUS	
	4A6	Tycz	USA	
	4A7	Mendien	Spain	
	4A8	Aka	Ivory Coast	
	4A9	Dwyer	AUS	
	4A10	Grolschel	FRG	Coverage area, service area
	4A11	Railton	PNG	Coordination area, distance and countour
4B		Craig	AUS	Space and Space/Terrestrial
	4B1	Amero	CAN	Sharing Terr. pointing angle restriction above 15 GHz
	4B2	Weiss	USA	Appendix 28
	4B3	Payet	F	Appendix 29
	4B4	Bolingbroke	UK	Need for pfd limits near 30 GHz
	4B5	Amero	CAN	Satellite station keeping
	4B6	Doubinski	URS	Shielded zone of moon
	4B7	Willenberg	FRG	Uplinks to BSS
	4B8	Brooks	IFRB	Overlapping spectra definition for App. 1B 29
4C		George	FRG	Non space sharing
	4C1	Bedingham	CAN	Art N4
	4C2	Voisin	I	Art N16
	4C3	Devereux	UK	Art N3
	4C4	Launner	FRG	App.5
	4C5			App.4

PART 6

Report of committee 5 (Frequency Allocations)

COMMITTEE 5

FREQUENCY ALLOCATIONS COMMITTEE

Chairman: Mr. M. Harbi (Algeria)

Vice-Chairman: Mr. J.J Hernandez (Mexico)

Terms of reference: To consider proposals concerning the following articles:

Article N1, Terms and definitions (Sections II-V);
Section II, Radio systems, services and stations;
Section III, Terrestrial radio systems, services and stations
Section V, Space radio systems, services and stations and radio astronomy

Article N5, General rules for the assignment and use of frequencies

Article N6, Special agreements

Article N7, Frequency allocations

Article N8, Special rules for the assignment and use of frequencies

Article N28, Section I, Broadcasting service

Article N29, Fixed service

Article N47, Special rules relating to the use of frequencies in the Aeronautical Mobile service and the related Appendix 24.

To consider as appropriate to the work of the Frequency Allocations Committee, resolutions and recommendations adopted by previous administrative radio conferences and to take such action as may be considered necessary including the adoption of any new resolutions and recommendations.

The Frequency Allocations committee was the most active at the Conference, considering 12,832 proposals out of the total number of conference submissions of over 15,000 proposals. The breakdown by working group is as follows:

Items	C.5	Working Groups							Total
		5A	5B*)	5BA	5BB	5C	5D	5E	
Number of Proposals	12832	829		2196	2634	2150	4392	631	12832
Number of Meetings	27	25	8	18	21	22	45	12	151

The overall Canadian frequency allocations coordinator was R.W. Jones and working group coordinators were as follows:

Working Group 5A	A. Carew
Working Group 5B, 5BA & 5BB	D. Fraser
Working Group 5C	R. Zeitoun
Working Group 5D	B. Bowen
Working Group 5E	R. Olsen

In addition to the above, active Canadian participants in the work of Committee 5 activities were:

L.K. Chau, W. Longman, R.O. Hewitt, G. Jackson,
B. Mitani, A. Baillie, L. Doherty, P. Hervieux,
A. Piechota, R. Eldridge, C. Kuspira, B. Punchard,
N. Alchuk, S. Day, R. Amero, M. Hunt. G. Bedingham.

Annex D outlines the Committee 5 working groups and ad hoc working groups. Canadian chairmanships of these included:

A.W. Adey	Chairman	Working Group 5E
R.O. Hewitt	Chairman	Ad Hoc Group 5BA6
L. Doherty	Chairman	Ad Hoc Group 5D11
R. Olsen	Chairman	Ad Hoc Group 5E3
L.K. Chau	Chairman	Ad Hoc Group 5BA7
W. Longman	Chairman	Ad Hoc Group 5B1

A detailed discussion of the work of Committee 5 follows.

Article N1 Sections I-V

Terms and Definitions

The Conference committees took a conservative approach to adopting new definitions or modifying existing definitions. While many proposals were made to modify this part of the regulations, generally speaking, about the same number of definitions were added (around a dozen) as were suppressed. The Canadian approach was basically in accordance with the mood of the conference. Administrations which had advanced proposals on the basis of a set or hierarchy of definitions encountered considerable difficulty because proposals concerning definitions were allocated to three separate committees.

On balance, the Canadian proposals concerning definitions fared quite well. Two proposals relating to the suppression of "passive" satellite information were withdrawn after the technical committee decided to retain reference to "reflecting" satellites for possible future applications. Housekeeping proposals by Canada to "clean-up" the set of definitions relating to the "Broadcasting service" were dropped in favour of the status quo when attention focused on more radical proposals. In the face of considerable opposition, Canada's proposed definition of an "Auxiliary-Satellite Service" was withdrawn since the majority of Administrations wanted to retain this type of operation within the Fixed-Satellite service and, as expected, not enough support was received in the relevant working groups for a definition for "Earth-Exploration Service" and "Transportable Earth Station". Definitions of note for this part of the regulations that were adopted are those for Industrial Scientific and Medical (ISM) "Applications", "Allocation", "Allotment", "Assignment", "Radiocommunication Service" and "Feeder Link". Other definitions were adopted from the Convention i.e. "Administration" and "Public Correspondence". Reference was made in the regulatory definitions to those taken from the Convention by the insertion of "CONV" at the end of the definition. Article I was restructured to include 1) An introduction 2) Section 1 - General Terms 3) Section II - Specific Terms Related to Frequency Management 4) Section III Radio Services 5) Section IV Radio Stations and Systems 6) Section V Operational Terms 7) Section VI Technical Terms (with appropriate sub-sections).

ARTICLE N5/3

General Rules for the Assignment and Use of the Frequencies

Only a few modifications were made by the Conference to this part of the regulations. Provision No. 130 of the Convention, relating to the use of the minimum essential number of frequencies and spectrum, was included in this Article. A regulation was added pertaining to the protection to be afforded "passive" applications, and two regulations were added exempting stations in distress as well as stations assisting

such stations from the provisions of the Radio Regulations. A Canadian proposal of interest to the Radio Astronomy service to place the onus on stations emitting energy into adjacent bands to avoid causing interference failed to gain the support of the Conference. Canadian proposals to introduce the term "permissible interference" in a number of places in the Radio Regulations were only accepted to a very limited degree.

ARTICLE N7/5

Frequency Allocations

Canadian proposals to add in this Article the contents of Resolution No. 6 (Frequency Terminology) and the Regional Map (Appendix 24) were adopted as was the proposed regulation on "parenthetical addition to an allocation in the Table". The "African Broadcasting Area" was defined and provisions concerning the "tropical zone" were modified while the three ITU Regions were unchanged in response to a proposal primarily from African nations to establish Africa as a fourth region. Under Resolution AE, the CCIR was requested to study the technical bases for the Regional division.

ARTICLE N8/6

Special Rules for the Assignment and Use of Frequencies

A Canadian proposal to modify this Article to give recognition to the "safety aspects of radionavigation and other safety services" was adopted. The Canadian proposal to add a new regulation to permit Land Mobile operations within the confines of national boundaries in bands allocated to the Fixed service between 1605-28000 kHz was not adopted. The existing provision relating to protection of distress, alarm, urgency and safety communications on international distress and emergency frequencies was modified for clarity and to more appropriately describe the status of "supplementary distress frequencies".

ARTICLE N28/7

Broadcasting Service and Broadcasting-Satellite Service

Most of the discussion concerning this Article related to the bands and powers to be used for broadcasting in the tropical zone. A new regulation was added to limit transmitter carrier power to 50 kW or less for the tropical zone broadcasting bands. As discussed in the

section on HF Broadcasting in this report, Canadian proposals concerning this Article were deferred to the future planning conference for HF Broadcasting as described in Resolution DI.

ARTICLE N29

Fixed Service

A regulation was adopted under this Article to discontinue DSB (A3) transmissions in the Fixed service. A Canadian proposal to discontinue use of DSB in "Land Mobile" bands below 30 MHz (modified to 25 MHz in consideration of GRS) by 1 January 1983 was received with considerable interest. The Conference could not agree, however, to modify the regulations and title of the Fixed service provisions to include "Land Mobile". When the proposal became "detached" from the Fixed service it became outside the competency of the WARC agenda (items dealing with a single service, e.g. Land Mobile not being included). This proposal should be reconsidered for resubmission to the future "Mobile Conference".

ARTICLE N47

Special Rules on the use of Frequencies in the Aeronautical Mobile Service

Efforts to exclude Public Correspondence from the Aeronautical Mobile (R) service were successful. Canada supported these efforts as well as proposals to keep a definition for Aeronautical (R) and Aeronautical (OR) services out of Article 1. Minor modifications were made to suppress reference to "Associate Members".

ARTICLE N7/5

Frequency Allocations

The Aeronautical Mobile Service

There was no change to the HF Aeronautical Mobile (R) bands except the inclusion in Appendix 27 Aer 2 of the 21 924 - 22 000 kHz exclusive band as recommended by the 1978 WARC. In Region 2, the exclusive HF Aeronautical Mobile (OR) allocations remain unchanged. Recommendation YF which was approved by the Conference calls for a review by the next competent WARC of Appendix 26 (which contains the

plan for the Aeronautical (OR) service) and related provisions of the Radio Regulations. Also, Resolution CB invites Administrations to change the Aeronautical (OR) use of 3023.5 kHz to 3023 kHz. The Aeronautical (R) service has already made plans to effect this change.

A new primary allocation to the Aeronautical (R) service was obtained in the band 136-137 MHz for utilization after 1990, shared with the Fixed and Mobile (except Aeronautical Mobile (R)) services on a secondary basis. A resolution was approved asking Administrations to make this band exclusive, so that unrestricted aeronautical use can be made in the future. Footnote 3573A/273A for the Aeronautical Mobile Satellite (R) service was maintained, with the service downgraded to a secondary status.

In the LF/MF aeronautical beacon bands, the Aeronautical Mobile service was maintained in Region 2.

As a result of a difficult compromise, the Aeronautical Mobile Satellite (R) service at L-band was retained with 14 MHz in each direction for the aircraft-satellite links. Feeder links are provided for by footnotes in the 5 and 15 GHz bands. Footnote 3687 also allocates the bands 1610-1626.5 MHz, 5000-5250 MHz, and 15.4-15.7 GHz to this service on a primary basis subject to agreement obtained under the procedure set forth in Article N13A.

Above 40 GHz, the existing allocations to this service were all combined into general Mobile allocations. Since there is no specific planned usage, this is not considered restrictive to any given application.

The Aeronautical Radionavigation Service

The allocations in the 190-525 kHz bands in Region 2 essentially reflected the Canadian proposals. However, strong efforts by Canada and other Region 2 and 3 countries were by and large unsuccessful in attempting to control Region 1 LF broadcasting interference in the 190-285 kHz range by additional provisions in the regulations. A resolution (Resolution BS) was, however, finally adopted providing for notification two years in advance of modifications of the characteristics of existing LF broadcasting stations or the bringing into service of any new stations.

The 75 MHz marker beacon receiver guardband allocation in Region 2 will be reduced to $\pm$ 200 kHz after 1989.

There was no change to the allocation to the Aeronautical Radionavigation service in the band 108-117.975 MHz, but a recommendation (Recommendation ZV) was approved which takes into account problems associated with the Broadcasting service in the lower adjacent band. Likewise, the allocations in the bands 328.6-335.4 MHz and 960-1215 MHz were unchanged.

The Radionavigation Satellite service was added in the 1215-1260 MHz and 1559-1610 MHz bands, but removed from footnotes in the 4000-4200 and 5000-5250 MHz bands.

The current allocation to the Aeronautical Radionavigation service in the band 4200-4400 MHz remains unchanged. The band is reserved exclusively for radio altimeter usage. However passive sensing in the Earth Exploration-Satellite and Space Research services will be permitted on a secondary basis. Airborne and ground-based radar bands above this frequency also remain essentially unchanged. Footnote 3807A and Recommendation YV draw attention to the need for further studies of sharing with the intersatellite service in the band 32-33 GHz.

In Canada and the USA allocation to the Aeronautical Radionavigation service in the band 1300-1350 MHz has been expanded to 1240-1370 MHz.

The Amateur Service

With the exception of a few critical areas, the allocations to the Amateur service that were approved are reasonably satisfactory. The adoption of Resolution BN and footnote 3499A permitting temporary use of certain amateur bands by non-amateur organizations in the event of natural disasters subject to the agreement of the Administration affected undoubtedly bought amateurs considerable goodwill and support. After its first introduction at the working group level, there was little opposition to proposals for amateur bands above 10 MHz, except for the requirement in some cases for sharing with the Fixed and Mobile services.

The allocation of the band 1800-1850 kHz to the Amateur service in Region 2 with 1850-2000 kHz shared with the Fixed and Mobile services is an even better situation for the Amateur service than that proposed by Canada particularly when LORAN A phases out by December 31, 1982.

There were many proposals for the band 3500-4000 kHz which is currently allocated to the Amateur, Fixed and Mobile (except Aeronautical Mobile (R)) services. The Region 2 Table adopted allocates the band 3500-3750 kHz exclusively to the Amateur service with the band 3750-4000 kHz remaining allocated as at present. Footnote 3502A makes provision for the Broadcasting service within Canada in the band 3950-4000 kHz.

The band 7000-7300 kHz caused the greatest debate concerning the Amateur, Fixed, Mobile and Broadcasting services. Canada's proposal to address Resolution 10 (adopted by the 1959 WARC) by establishing an exclusive amateur band from 6900-7100 kHz was rejected by developing countries and the Soviet bloc who are interested mainly in Fixed services below 7000 kHz. Proposals for the addition of the Broadcasting service in the band 7300-7400 kHz were similarly defeated. (See next section of this report dealing with HF Broadcasting.) This lead to maintaining the status quo (7000-7100 kHz Amateur worldwide, 7100-7300 kHz Amateur Region 2, and 7100-7300 kHz Broadcasting Regions 1 and 3).

During the Conference, the U.K. proposed a worldwide exclusive band for the Broadcasting service from 7100-7300 kHz on the basis that Amateurs in Region 2 impose constraints upon broadcasting operations in Regions 1 and 3. This proposal was voted upon and accepted and Amateurs in Region 2 appeared destined to lose 200 kHz of very useful daytime spectrum. The USA immediately proposed a footnote re-allocating 7100-7300 kHz to the Amateur service on a primary basis within given countries and 18 countries in Region 2, including Canada, added their names. Before this was addressed, however, the U.K., Brazil, the USA, Botswana, Tanzania and Mexico introduced another proposal to reinstate the Amateur service in the band 7100-7300 kHz in Region 2 in the Table with a footnote stating that the Amateur service would not impose constraints upon the Broadcasting service in Regions 1 and 3. This was adopted and so the Allocation Table remains essentially unchanged. Proposals for 100 to 400 kHz for the Amateur service at 10100 kHz (Canada had proposed 200 kHz) were narrowed down to 50 kHz (10100-10150 kHz) allocated to the Fixed service on a primary basis and to the Amateur service on a secondary basis (reflecting the reluctance of developing nations to agree to deletion of allocations to the Fixed service).

The existing 14000-14350 kHz worldwide amateur band was maintained although several additional countries were included in the present footnote for the USSR (FN 3514/218) providing for the Fixed and Mobile services in this band.

A new worldwide exclusive band from 18068-18168 kHz was approved subject to the application of transitional procedures. Here too, the footnote allocation for the Fixed service in the USSR was adopted.

The existing allocation to the Amateur service in the band 21000-21450 kHz was maintained. A new band, 24890-24990 kHz, for the Amateur and Amateur-Satellite services was accepted without difficulty, probably because of its variable long-range propagation characteristics.

The allocations in the band 28.0-29.7 MHz remain unchanged. The 144-146 MHz band was settled almost without change in Region 2 but with footnotes for adding the Fixed and Mobile and Aeronautical Mobile (OR) services in Singapore and China. The same is true for the band 146-148 MHz in Region 2 except that a footnote allowing Fixed and Mobile operations in a few countries was approved.

In Region 2, the 220-225 MHz amateur band now shared on a co-primary basis with the Radiolocation service has been retained but with the addition of the Fixed and Mobile services on a primary basis. The Radiolocation allocation will be on a secondary basis after January 1, 1990.

In the 420-450 MHz band, the Canadian proposal was for 430-450 MHz to be allocated to the Radiolocation service on a primary basis and to the Amateur service on a secondary basis (with Amateur Satellite from 435-438 MHz). In the band 430-440 MHz, the Conference adopted allocations to the Radiolocation service on a primary basis and to the Amateur service on a secondary basis with footnote 3644/320A maintained for the Amateur-Satellite service. A footnote was approved giving Amateurs secondary status in the band 440-450 MHz in Canada, New Zealand and Papua New Guinea.

A new band for Amateurs, 902-928 MHz, as proposed by Canada was approved and, although shared with the Fixed, Mobile and Radiolocation services and with ISM operations, it will be very useful.

The bands 1240-1300 MHz, 2300-2450 MHz, 3400-3500 MHz and 5650-5925 MHz have been rearranged as far as the Amateur and Amateur-Satellite services are concerned but are felt to be satisfactory for Canadian needs.

There was little change to the allocations to the Amateur service at 10 GHz and 24.05 GHz. A new band, 47.0-47.2 GHz was approved, but is really too narrow for present state-of-the-art frequency stability in Amateur satellites. Bands which were approved at 75.5, 76, 142, 241 and 248 GHz will give plenty of scope for amateur ingenuity in the future.

The HF Broadcasting Service

The amount of HF spectrum allocated to the Broadcasting service was increased by some 830 kHz or approximately 40%. Canada's proposals for this service had contained provision for some 850 kHz of additional spectrum along with technical restrictions on the use made by the Broadcasting service of the HF bands. The expansion along with the technical restrictions were proposed as a package in order that the service would be required to make more efficient use of the spectrum. In actual fact, however, it became evident early in the Conference that

the package would be split, as the allocations and the technical restrictions had to be handled in separate working groups of Committee 5. The reason for this split was a very strong movement among developing countries of Regions 1 and 3 and among the non-aligned nations for a conference to be held for the planning of the bands allocated to the HF Broadcasting service. If there were to be a preliminary conference, then, according to the wishes of the majority of delegations, there would be no reason for the 1979 WARC to impose technical restrictions on the service as the planning conference would do this. Hence the Canadian allocation proposals for the Broadcasting service became separated from the technical aspects which had been proposed for inclusion in Article N28 of the Radio Regulations. These latter aspects were sent to an ad hoc group which treated the matter of the future planning conference and were subsequently deferred to that conference.

The planning conference will be held in two sessions. The first will consider the method of planning to be used together with all technical aspects relating to planning and will last for 4-6 weeks. The second session will encompass the planning activity itself, lasting 6-8 weeks and following the first session by some 12-18 months.

The acceptance of the recommendations of the ad hoc group resulted in a reassessment of the Canadian position with regard to expansion of the HF Broadcasting bands. It was recognized that while the Canadian proposals were sufficient when coupled with the technical restrictions, the prospect of detailed planning posed special problems which could require that more spectrum be allocated to the Broadcasting service. It was decided that Canada would not change its allocation proposals but would support in a vote any proposal for expansion which was reasonable. The results of this procedure were gratifying above 9 MHz, but a strong non-aligned opposition to broadcast expansion below 9 MHz prevented any gains at 6 or 7 MHz. After proposals by Canada and some other Administrations to recognize the allocations to the Amateur and Broadcasting services in the vicinity of 7 MHz so as to provide adequate and appropriate spectrum for both services were rejected, Canada entered a final protocol on the lack of provision of spectrum for the Broadcasting service. The Canadian proposal for a 3900-4000 kHz allocation to the Broadcasting service was not accepted although a footnote allocation for the band 3950-4000 kHz for use in Canada was approved. It should be noted that all agreed expansions of the HF Broadcasting bands are subject to footnote 3510A which is quoted here in its entirety:

"The bands 9775-9900 kHz, 11650-11700 kHz, 11975-12050 kHz, 13600-13800 kHz, 15450-15600 kHz, 17550-17700 kHz, and 21750-21850 kHz are allocated to the Fixed service on a primary basis subject to the procedure described in Resolution CV. The use of these bands by the Broadcasting service shall be subject to provisions to be established

by the World Administrative Radio Conference for the planning of HF bands allocated to the Broadcasting service (see Resolution DI). Within these bands, the date of commencement of operations in the Broadcasting service on a planned channel shall not be earlier than the date of completion of satisfactory transfer according to the procedures described in Resolution CV, of all assignments to stations in the Fixed service operating in accordance with the Table and other provisions of the Radio Regulations, which are recorded in the Master Register and which may be affected by broadcasting operations on that channel."

This means that the new allocations to the Broadcasting service cannot be used in accordance with the Radio Regulations unless:

a) the planning conference succeeds and planned channels result; and

b) the transfer procedures worked out by the 1979 WARC are successful and replacement frequencies are found for displaced Fixed service assignments.

The AM, FM, TV Broadcasting Services

Overall, the Canadian delegation was successful in obtaining the adoption of Canadian proposals on broadcasting matters in the AM, FM and TV broadcasting bands.

AM Broadcasting

The Canadian proposal was to extend the existing 535-1605 kHz band up to 1705 kHz. Other countries in Region 2 had proposals for extending the band to different limits, mostly differing by only 5, 10 or 15 kHz. The USA had proposed expansion to 1860 kHz but on a shared basis in different parts of the expanded band.

After much discussion, a compromise was adopted which resulted in extending the AM band to 1705 kHz. However, several conditions were placed upon this expansion:

a) only 1605-1625 kHz will be exclusively allocated to the Broadcasting service;

b) in the range 1625-1705 kHz, the Broadcasting service will be on a primary basis shared with the Fixed and Mobile services and with the Radiolocation service on a secondary basis;

c) a Regional conference is recommended to be held in 1985 to plan the 1605-1705 kHz band; broadcasting in the band extensions shall only take place in accordance with this Plan;

d) the date by which broadcasting stations can operate in this band will be determined at the Regional conference, but this should not take place before 1987 for 1625-1665 kHz and not before 1990 for 1665-1705 kHz.

Given the above conditions, it is not anticipated that any broadcasting in this new band will take place before 1990 at the earliest.

At the lower limit of the AM band, it was agreed that 525-535 kHz will be allocated to the Broadcasting and Aeronautical Radionavigation services on a primary basis. (Currently these two services are on a permitted basis and the band is allocated to the Mobile service on a primary basis). A power limit on broadcasting stations was imposed (1 kW daytime, 250 W night-time) in order to underline the intention that the broadcasting use of this band should be for localized broadcasting applications.

FM Broadcasting

There were no proposals by Canada nor were there any changes at the Conference affecting Region 2.

VHF Television Broadcasting

While Canada had no proposals in bands used for VHF television, the Canadian position was to support several Region 2 Administrations which wanted to reduce the status of the current allocations to the Fixed and Mobile services in these bands from primary to secondary. These changes were approved by the Conference. However, the USA obtained a footnote stating that the Fixed and Mobile services will be primary in the United States in the band 76-88 MHz (TV channels 5 and 6).

Broadcasting allocations in two narrow bands between 72 and 76 MHz were deleted since they were not of any use to the Broadcasting service.

UHF Television Broadcasting

Essentially the Canadian proposals concerning the UHF television band were adopted by the Conference. This was a highly contested band in Region 2, especially with the USA proposing the sharing of the entire band with Fixed and Mobile services on a primary basis.

There was consensus in allocating the band 806-890 MHz to the Fixed and Mobile services shared with the Broadcasting service (all on a primary basis). Canada had proposed that this band be shared on a coprimary basis between the Mobile and Broadcasting services. There was also consensus on allocating TV channel 37 (608-614 MHz) to the Radio Astronomy service on a primary basis as also proposed by Canada. In addition, the Canadian proposal to add the Mobile Satellite (Earth-to-space) service in TV channel 37 on a secondary basis was accepted.

In the bands 470-512 MHz and 614-806 MHz, the Fixed and Mobile services were added on a secondary basis, which should pose no problems to the Broadcasting service; the band 512-608 MHz remained allocated exclusively to the Broadcasting service.

The USA, after their efforts to include the Fixed and Mobile services in the Table on a primary basis between 470 and 806 MHz failed, proposed to have these services on a primary basis in the United States by means of a footnote. This would be equivalent to having these services in the Table as far as their impact on broadcasting in neighbouring countries is concerned. Canada thus insisted that allocations be subject to agreement in accordance with Article N13A which provides for a procedure to be followed in obtaining the agreement of other Administrations before the Fixed and Mobile services could be implemented on a primary basis.

While the other Region 2 Administrations accepted this condition vis-a-vis their neighbouring countries, the USA insisted against the inclusion of the Article N13A procedure. The USA preferred bilateral coordination rather than official agreement through the ITU. However, they were not successful in convincing Administrations of this approach since most of the countries involved preferred the Article N13A procedures. In the end, the USA entered a final protocol indicating its intention to not comply with the regulation requiring agreement under Article N13A but rather to simply coordinate its usage of these UHF bands with affected neighbouring administrations.

The LF, MF & HF Fixed and Mobile Services

LF

In Regions 2 and 3, the band 190-200 kHz was reallocated from the Fixed to the Aeronautical Radionavigation service. The Canadian proposal was also to allocate this band to the Aeronautical Radionavigation service but it had not included the deletion of the Fixed service.

MF

As discussed earlier in this report, the band 1605-1705 kHz was reallocated in Region 2 to the Broadcasting service on a primary basis subject to Footnotes 3484B and 3484C. Consequently, subject to Footnote 3484C, the Fixed and Mobile services in the band 1625-1705 kHz will be reduced to permitted status with the Radiolocation service remaining as secondary. In Regions 1 and 3, the Fixed and Mobile services were similarly reduced in status or alternatively required to share with other services.

In the band 1800-1850 kHz in Region 2, the allocations to the Fixed and Mobile services were replaced by an allocation to the Amateur service in that 50 kHz of spectrum. Operation in this part of the spectrum is subject to Footnote 3492/198 respecting the operation of LORAN systems.

HF

The Maritime Mobile service was allocated worldwide on a primary shared basis with the Fixed service in the band 8100-8195 kHz. The band 9500-9775 kHz currently allocated to the Broadcasting service was extended to 9900 kHz on a worldwide basis with provision for the transfer of Fixed service operations. Similarly, the Broadcasting service was given additional spectrum on a worldwide basis by expanding the band 11700-11975 kHz to 11650-12050 kHz, subject to provisions governing the transfer of Fixed service stations operations as discussed earlier in this report.

The allocation to the Fixed service was removed from the band 12230-12330 kHz in favour of the Maritime Mobile service on a worldwide basis subject to the provisions providing for the transfer of Fixed service operations.

A new exclusive allocation to the Broadcasting service was made in the band 13600-13800 kHz on a worldwide basis subject to the transfer provisions. Also the Broadcasting allocation at 15100-15450 kHz was expanded to include the band 15450-15600 kHz, with the removal of Fixed service stations subject to the same transfer procedures.

The allocation to the Maritime Mobile service in the band 16460-17360 kHz was expanded to include the band 16360-16460 kHz on a worldwide basis subject to the transfer of affected Fixed service stations.

The band 18068-18168 kHz was allocated to the Amateur service on a worldwide basis subject to the above provisions regarding the transfer of Fixed service assignments. The bands 18780-18900 kHz and 19680-19800 kHz were reallocated to the Maritime Mobile service on an exclusive worldwide basis. The band 21750-21850 kHz was reallocated to the Broadcasting service on a worldwide exclusive basis subject to the transfer of Fixed services in the band. The band 22720-22855 kHz was reallocated to the Maritime Mobile service on a worldwide basis subject to the transfer provisions of Footnote 3511A and the provisions of Footnote 3517A (an additional allocation in Nigeria). The band 24890-24990 kHz was reallocated to the Amateur service subject to Footnote 3518B regarding the transfer of Fixed service assignments and to Footnote 3518A (an additional allocation in Kenya). The allocation to the Broadcasting Service in the band 25600-26100 kHz was reduced to 25670-26100 kHz with the resulting 70 kHz of spectrum being allocated to the Radio Astronomy service.

Reallocations to the Maritime Mobile service were made in the bands 25110-25210 kHz and 26100-26175 kHz subject to the usual transfer procedures concerning the Fixed service.

It should be noted that the transfer procedure (Resolution CV) allows a maximum period of 5 years for reassignment of frequencies affected in the Fixed service in the reallocated bands above 10 MHz and 10 years for affected frequencies below 10 MHz. The starting point for each of these time frames is July 1, 1984.

Despite the identified losses on the part of the Fixed service in this portion of the spectrum, strong opposition from developing nations prevented even greater reallocation involving Fixed service during the Conference.

Finally, Canada's proposal for a provision in Article N8 to permit land mobile operations in bands allocated to the Fixed service between 1605 and 28000 kHz on a non-interference basis within the confines of national boundaries was not accepted.

The VHF, UHF and SHF Fixed and Mobile Services

The Fixed and Mobile services are generally allocated together in the Frequency Allocation Table. The large number of developing countries at the conference were persistent in reflecting their general desire to include allocations to the Fixed and Mobile services in the Table rather than allocations to more technically-sophisticated services such as specialized space services. This was of particular concern to many developed countries such as Canada, which preferred exclusive bands for services such as the Meteorological Aids service or the Mobile-Satellite service.

In the band 54-68 MHz (TV channels 2 to 6), the allocations to the Fixed and Mobile services were downgraded to secondary. This should have no impact on Canadian operations. A small (200 kHz) band for the Fixed and Mobile services was added at 74.6 MHz with the suppression of the Aeronautical Radionavigation service.

Canada's proposal for the inclusion of the maritime mobile distress and calling channel with a guard band (156.7625-156.8375 MHz) as an exclusive Table entry was successful. A proposal for consequential amendment to the Footnote 3595/287 was accepted. Other proposals to modify the Footnote so as to permit only maritime mobile operations on Appendix 18 frequencies were defeated. Such modifications would have posed serious difficulties for countries such as Canada which use many of these frequencies for satisfying land mobile requirements.

The allocations to the Fixed and Mobile services were downgraded to secondary in the 174-216 MHz band (the upper section of the VHF TV band). Canada's proposal for an allocation to the Maritime Mobile service in the band 216-220 MHz was approved. While the U.S. proposal to allocate the band 216-225 MHz on a worldwide basis to the Maritime Mobile service was not successful, the Fixed and Mobile services were added in the band 220-225 MHz on a primary basis in Region 2 in spite of strong opposition by Canada.

After considerable debate, the Fixed and Mobile services were left on a secondary basis in the band 401-406 MHz. The concern here was the interference that would be caused to the Meteorological Aids service.

The Canadian proposal for the 420-430 MHz band was for the inclusion of an allocation to the Fixed and Mobile (except Aeronautical Mobile) services by means of a footnote. Due to the general desire of developing countries to increase the amount of spectrum available for Fixed and Mobile (except Aeronautical Mobile) services, both the 420-430 and 440-450 MHz bands were allocated to these services. The allocation to the Radiolocation service was reduced to secondary in both of these bands, although the United States and several other countries by means of a footnote have retained the primary status in their respective countries.

As mentioned earlier, despite repeated attempts, the USA was unsuccessful in obtaining primary allocations for the Fixed and Mobile services in the Table within the range from 470-806 MHz. The USA instead obtained footnote allocations that permit fixed and mobile operations on a primary basis subject to agreement obtained under the procedure set forth in Article N13A, although as noted earlier in this report, the USA entered a final protocol concerning the use of this procedure.

An allocation to the Mobile service was added to the band 806-890 MHz (TV channels 70-83) another major aspect of the recent Canadian domestic policy for the band 406-960 MHz and the Canadian proposals to the Conference. The band 806-890 MHz was also allocated by the Conference to the Fixed service.

In the band 890-960 MHz, the proposals of several countries including those of the USA were for the inclusion of allocations to the Mobile service. The band was broken into sub-bands corresponding to the frequency limits for ISM operations (902 and 928 MHz) and the existing limits of the allocation to the Radiolocation service (890 and 942 MHz). Primary status was given to the Mobile (except Aeronautical Mobile) service in the bands 890-902 MHz and 928-942 MHz. The Mobile (except Aeronautical Mobile) service was allocated on a secondary basis within the band 902-928 MHz and an allocation to the Mobile service on a secondary basis was added to the 942-960 MHz band. Radiolocation was downgraded to secondary throughout the 890-942 MHz band. The USA as in lower frequency bands, obtained footnotes to upgrade the allocation for the Radiolocation service to primary in the band 890-942 MHz and to upgrade the Mobile service allocation to primary in the 942-947 MHz and 952-960 MHz bands in the USA. A requirement for agreement under the procedure in Article 13A was added to these footnote allocations but the above-noted U.S. protocol also refers to these bands.

Several Administrations are considering the feasibility of allocating some spectrum in the vicinity of 900 MHz to the Maritime Mobile service. A recommendation (Recommendation ZY) to the CCIR and to Administrations was developed to study the provision for automated maritime public correspondence channels that might be integrated with a land mobile system.

Another concern of some Administrations such as Denmark and the Federal Republic of Germany was the selection of a band for low power (personal) mobile radio operations. A recommendation concerning this matter was, however, eventually defeated.

There were few Canadian proposals directly related to the Fixed service in the 1-40 GHz region. Much of the change to the Fixed service involved the addition of several small bands (shared with other services) as a result of proposals from other Administrations. The other significant point was the addition of allocations to other services in bands containing allocations to the Fixed service. The two most common additions were the Fixed-Satellite service and the Earth Exploration-Satellite service.

The Canadian proposal for upgrading the allocation to the Fixed service from secondary to primary in Region 2 in the 1435-1525 MHz band was successful. The more difficult problem was in dealing with proposals for a sound Broadcasting-Satellite service in the band 1435-1525 MHz. There was large support for this concept from many

developing countries. The report of the CCIR Special Preparatory Meeting (SPM) held in the fall of 1978 had considered the suitability of frequency bands for these types of systems and concluded that the 0.5-2.0 GHz frequency range should be considered. Discussion centered around a choice among the 800 MHz, 1500 MHz and 2500 MHz bands. Canada, along with many developed countries, was successful in opposing the entry of an allocation to the Broadcasting-Satellite service. A resolution (Resolution CM) was, however, adopted suggesting that Administrations should, subject to the agreement of Administrations concerned, experiment with sound broadcasting satellite systems in the 1500 MHz band to determine their feasibility.

The allocations to the Fixed and Mobile services were raised to primary in the 2300-2400 MHz band. This band is also allocated to the Radiolocation service. The Radio Astronomy service was added on a shared primary basis by means of a footnote in the 4825-4835 MHz and the 4950-4990 MHz bands. The allocation to the Fixed service from 4400-4990 MHz was extended to 5000 MHz. The Fixed service was added to the 5850-5925 MHz band while the allocation to the Radiolocation service was downgraded to secondary. This provides a 125 MHz extension of an already large, contiguous band allocated to the Fixed service.

An allocation to the Fixed service was added to the band 10.5-10.55 GHz and to the Earth Exploration-Satellite service in the band 10.6-10.68 GHz. The latter resulted in limitations to the Fixed service of 0.5 watt maximum transmitter power and 40 dBW maximum EIRP.

Another area of significant change to the Fixed service was in the vicinity of 12 GHz region. The allocation to the Fixed service was reduced to secondary in the 11.7-12.2 GHz band (Canada had proposed deletion of the terrestrial services in this band).

The Earth Exploration-Satellite service was added in the 18.6-18.8 GHz band in the centre of the 17.7-19.7 GHz band. There were no constraints placed upon the Fixed service and the Earth Exploration-Satellite service has been chosen at the guard band of a conventional Fixed service channelling arrangement.

No allocations to the Fixed service existed in the Table from 40-275 GHz prior to the conference. This was due to the fact that this section of the Table was first allocated at the 1971 WARC for space services. At the 1979 WARC, the Fixed service was added in many bands, both those with large absorption properties and also those containing "windows" in the absorption bands. Sharing between the Fixed and other services was introduced in many instances. Most of these sharing situations involve the Fixed-Satellite service or the Earth Exploration-Satellite service. Often in high absorption bands, sharing is with the Inter-Satellite service.

The Maritime Mobile Service

In the bands below the standard AM broadcast band (535-1605 kHz), Canada foresaw a need to give greater protection to Radionavigation services (Omega, LORAN C etc.) and in particular sought additional spectrum for the Aeronautical (and Maritime) Radionavigation service (Radiobeacons). In the case of Omega, the band 9-14 kHz (formerly 10-14 kHz) is now allocated exclusively to the Radionavigation service on a worldwide basis. By footnote, some countries of Europe will also use the band 14-17 kHz for radionavigation purposes, on a permitted basis. This outcome is satisfactory from a Canadian standpoint.

Canada's proposal for an allocation to the Radionavigation service on an exclusive, worldwide basis in the band 90-110 kHz was not accepted. The band remains allocated to the Radionavigation service on a primary basis with the allocation to the Fixed and Maritime Mobile service on a secondary basis. A new footnote requires coordination of technical and operational characteristics between Administrations establishing Radionavigation services in this band. A similar footnote applying to the 70-90 kHz and 110-130 kHz bands provides for coordination and protection of Radionavigation services from harmful interference. These footnotes are even better than provisions proposed by Canada.

The radiobeacon bands between 200 kHz and 405 kHz were extended by 10 kHz at each end. More flexibility was provided by including Maritime radiobeacons in Aeronautical radiobeacon bands, and vice versa on a permitted or secondary basis. As noted earlier in this report, a footnote proposed by Canada so as to limit the power of LF broadcasting stations in Region 1 in order to protect radiobeacons in Regions 2 and 3 was opposed by Region 1 countries and was ultimately defeated. However, a resolution (Resolution BS) was adopted providing for notification 2 years in advance of changes to existing LF Broadcasting stations or the bringing into service of new stations.

Canada's proposal for an allocation to the Radionavigation service in Region 2 in the 415-435 kHz band was rejected, although such an allocation was adopted in Region 1. However, the allocation to the Aeronautical Radionavigation service was raised to primary in the band 510-535 kHz as desired by Canada. Generally speaking, the radiobeacon situation has been improved, but careful planning will be necessary in order to avoid mutual interference.

At 500 kHz, the guard band was reduced to ± 5 kHz, with provision for a lengthy phasing in period. A recommendation (Recommendation YB) was adopted, requesting the 1982 Mobile Conference to provide a frequency from the maritime bands for the transmission of navigation and meteorological warnings using narrow-band, direct-printing telegraphy.

In the band 1605-4000 kHz, Canada's objective was to provide for low-power Radiolocation (position-fixing) systems, for Radionavigation (LORAN A until phased out), and for exclusive worldwide allocations for the Maritime Mobile ship/shore and intership services. Both the Radiolocation and Radionavigation needs were met in bands below 2000 kHz, with an additional footnote for the band 3230-3400 kHz to provide an allocation for harmonically-related Radiolocation systems.

Canada's proposals for exclusive worldwide ship/shore and intership channels (in response to Recommendation MAR 2-3) were soundly rejected. Frequencies in bands allocated to the Fixed and Mobile services must therefore be employed, as has been the case for many years.

The guard band around the Mobile distress and calling frequency, 2182 kHz, was reduced from ±12 kHz to ±8.5 kHz, and the two 3.5 kHz segments were then allocated to the Maritime Mobile service on an exclusive worldwide basis. A recommendation to the 1982 Mobile Conference (Recommendation YA) seeks replanning of the band 2170-2194 kHz with further reduction of the guard band as well as a timetable for implementation.

In the high frequency bands, Canada was seeking expanded allocations to the Maritime Mobile service at 4, 6, 8, 12 and 16 MHz. There was persistent opposition to this by developing countries who wished to maintain the status quo of the bands allocated to the Fixed service. After lengthy debate, it was decided to have shared status with the Fixed service in the expanded portions and, in fact, footnotes were adopted which allow Fixed usage of Maritime Mobile bands below 10 MHz (for use with limited power within the boundaries of a country). Above 10 MHz, the Conference adopted a transitional procedure to phase out Fixed service assignments over a 5-year period beginning in 1984 while guaranteeing replacement frequencies. Many delegations spoke against the general sharing pattern that evolved but were forced to accept it. The USA indicated its dissatisfaction with the amount of spectrum provided for the Maritime Mobile service, particularly below 12 MHz, by entering a final protocol stating its intention to satisfy maritime mobile requirements in the several HF bands below 10 MHz allocated to the Mobile service on a primary basis.

At VHF, Canada was successful in obtaining Table status for the VHF distress and calling channel, 156.8 MHz. A number of delegations tried to obtain priority for the Maritime Mobile service on Appendix 18 frequencies (by amendment of Footnote 287) but it remained unchanged except for editorial improvements. Canada, the USA and several other Administrations spoke against any significant changes to Footnote 3595/287.

The Canadian proposal for an allocation to the Maritime Mobile service in Region 2 in the band 216-220 MHz was accepted, while the U.S. proposal for the band 216-225 MHz (Maritime Mobile on a worldwide services basis) was defeated. However, the Fixed and Mobile services are now primary in the band 220-225 MHz (along with the Amateur service), so Maritime Mobile use is possible.

Above 1 GHz, Canada's main objective in the Maritime Mobile field was to obtain additional spectrum for Radionavigation, (shore-based and ship-borne radars) and, of course, at "L" band for the Maritime Mobile-Satellite service. The Maritime Mobile-Satellite allocations at "L" band are quite satisfactory. It was possible to obtain two 14 MHz bands for up and down links (currently there are two 7.5 MHz bands for the up and down links), plus an additional 5 MHz for earth-to-space transmission of high speed data from ships. Two 1 MHz bands were also provided, on a shared basis with the Aeronautical Mobile-Satellite service for distress and safety operations. The new allocations will maintain the existing translation frequency of 101.5 MHz, made possible through a small expansion of the overall band beyond its present limits.

Canada's proposal to allow shore-based radars in the band 2850-2900 MHz on a worldwide basis was rejected because of severe congestion in the Aeronautical Radionavigation service in the band 2700-2900 MHz. However, by footnote, this provision will apply in Canada. A similar footnote provides, in a number of countries including Canada, that the band 3100-3300 MHz is also allocated to the Radionavigation service on a primary basis. As such, the band could be available for ship-borne and shore-based radars thus relieving congestion in the existing 2900-3100 MHz Radionavigation band.

At 9 GHz, the Conference adopted allocations virtually identical to those proposed by Canada. The sub-bands 8850-9000 MHz and 9200-9300 MHz will be allocated to the Radionavigation service on a primary basis shared co-equally with the Radiolocation service to allow use by shore-based radars, except between 9225 and 9300 MHz where other (mobile) radars are permitted. In addition, the band 9500-9800 MHz was allocated to the Maritime Radionavigation service and to the Radiolocation service both on a primary basis. This will greatly help to relieve congestion in the existing 9300-9500 MHz radionavigation band.

In the band 10.55-10.60 GHz, attempts by some Administrations were unsuccessful in trying to obtain agreement on a footnote to allow the development of high-capacity, short-range data links between ship and shore and for other control/telemetry uses in the marine environment. European countries could not agree because this band is heavily used by fixed microwave systems in harbour and coastal areas.

In the bands above 10 GHz, Canada did not submit proposals relating to maritime services. Other sections of this report do, however, provide details of allocations in these higher frequency ranges.

The Radio Astronomy Service

The Radio Astronomy service fared extremely well at the conference. Although there were disappointments with a few specific proposals, the number of allocated bands for both continuum and spectral line observations was increased and for many of the existing bands, the level of protection was improved. It is significant that only one attempt was made to reduce the status of a Radio Astronomy allocation in the existing Radio Regulations. That attempt was made by the U.K. in the band 1660-1670 MHz and the final result was in fact a net improvement in the Radio Astronomy position.

Canadian proposals for Radio Astronomy were similar to those from most countries where Radio Astronomy is actively pursued. A large factor in the success of the service at the Conference was undoubtedly the basic agreement that existed between proposals from different countries. Radio Astronomy proposals had been coordinated internationally by IUCAF (Inter-Union Commission for the Allocation of Frequencies for Radio Astronomy and Space Research). Canada had input into this coordination procedure and as a result, the IUCAF and Canadian positions were generally quite similar. It should be noted that whereas all Canadian Radio Astronomy proposals above 40 GHz were accepted by the conference, a significant number of additional proposals were also accepted.

The decision to proceed with a special article for Radio Astronomy as described later and the decision to insert a rather wordy footnote every time Radio Astronomy appeared in the Allocation Table made the service very visible at the Conference. As a result, there was some evidence of a backlash developing in the last few weeks of the Conference but this did not upset earlier decisions taken.

The special article for Radio Astronomy (Article N33A) originated with a proposal from the Netherlands. Objections to some of the provisions of this Article raised by Canada and some other Administrations were finally satisfied. The resulting version should produce no difficulty in Canada and may aid the Radio Astronomy service on a worldwide basis. However, it will be some time before a true assessment of the value of the Article can be made.

Brief accounts of the various allocations to the Radio Astronomy service are given below. Standardized footnotes go along with every allocation. These footnotes urge Administrations to give all practicable protection to Radio Astronomy and also point out the difficulties associated with sharing with spaceborne or airborne transmitters. The following brief summary does not mention these footnotes except when there is no actual allocation in which case the footnote provides the only protection.

- 13360-13410 kHz; new primary allocation shared with the Fixed service. Canada had proposed an exclusive allocation of 100 kHz.

- 25550-25670 kHz; new exclusive allocation.

- 37.50-38.25 MHz; an additional 0.25 MHz allocation on a secondary basis has been added to share with Fixed and Mobile services. Canada had proposed a primary allocation.

- 73.0-74.6 MHz; no change in Region 2 from exclusive status (footnote for Fixed and Mobile operations on secondary basis in certain countries). Canada had proposed worldwide primary allocation but only standard footnote protection was accepted in Regions 2 and 3.

- 322-328.6 MHz; a new worldwide primary allocation with the Mobile-Satellite service excluded. Canada opposed the primary allocation because of Fixed and Mobile requirements.

- 406.1-410 MHz; no change in the Radio Astronomy allocation. A footnote allocation on a primary basis to the Mobile-Satellite, except Aeronautical Mobile-Satellite, (Earth-to-space) service was added in Canada only.

- 608-614 MHz; in Region 2, the Radio Astronomy service was added on a primary basis in the Table of Frequency Allocations.

- 606-614 MHz; new allocation on a permitted basis for the Radio Astronomy in the African Broadcasting area; new primary allocation in China; new secondary allocation in the remainder of Regions 1 and 3.

- 1330-1400 MHz; existing footnote strengthened and extended from the existing 1370-1400 MHz band.

- 1400-1427 MHz; no change in exclusive passive allocation. Canadian initiative to establish space operations in the band 1427-1429 MHz for uplinks only succeeded.

- 1610.6-1613.8 MHz; 1718.8-1722.2 MHz; protection of the Radio Astronomy service upgraded from a weak footnote to secondary status and both bandwidths widened.

- 1660-1660.5 MHz; Radio Astronomy primary shared with the Aeronautical Mobile-Satellite (space-to-Earth) service.

- 1660.5-1668.4 MHz; Radio Astronomy primary, Fixed and Mobile secondary.

- 1668.4-1670 MHz; Radio Astronomy primary sharing with the Meteorological Aids service. The existing regulations have Radio Astronomy primary sharing with the Meteorological Aids service throughout the band 1660-1670 MHz. Canada and a number of other countries had proposed the suppression of the Meteorological Aids service in the band 1664.4-1668.4 MHz. The U.K. led an attempt to remove Radio Astronomy from the band 1660-1664.4 MHz in favour of Aeronautical Mobile-Satellite; however, except for the narrow band 1660-1660.5 MHz, the final result was very favourable to Radio Astronomy with the removal of the Meteorological Aids service from a wider band than anticipated.

- 2655-2690 MHz; a new secondary allocation replaces a footnote covering just the band 2670-2690 MHz. However, among other services, this band includes the Broadcasting-Satellite and Fixed-Satellite (space-to-Earth) services. If systems in either of these space services are brought into service, the band will generally be of little value to the Radio Astronomy service.

- 2690-2700 MHz; this has been maintained as a passive band. A footnote giving the Fixed and Mobile (except Aeronautical) services a primary status in a large number of countries limits such use to equipment operating before January 1, 1985.

- 3260-3267 MHz, 3332-3339 MHz, 3345.8-3352.5 MHz; a new footnote urges protection of observations of the CH line.

- 4800-4990 MHz; a new secondary allocation.

- 4825-4835 MHz; a new primary allocation in Argentina, Australia, and Canada and a strengthened worldwide footnote. Another new footnote excludes the Aeronautical Mobile service in this band.

4950-4990 MHz; a new primary allocation in Argentina, Australia and Canada.

- 4990-5000 MHz; Radio Astronomy will be on a primary basis sharing with the Fixed and Mobile (except Aeronautical) services worldwide. This is an improvement in Regions 1 and 3 since Aeronautical Mobile was not excluded but in Region 2 this was already an exclusively passive band.

- 10.6-10.68 GHz; primary allocation retained with the allocation to the Aeronautical Mobile service suppressed.

- 10.68-10.7 GHz; maintained as a passive band.

- 14.47-14.5 GHz; new secondary allocation replaces existing footnote. In addition, the Aeronautical Mobile service has been suppressed and a footnote permitting space-to-Earth transmissions has been suppressed.

- 15.35-15.4 GHz; no change in this exclusively passive band. A Canadian proposal to broaden the band was not accepted.

- 22.01-22.21 GHz; new standard footnote applied.

- 22.21-22.5 GHz; existing primary allocation broadened from 22.21-22.26 GHz.

- 22.81-22.86 GHz, 23.07-23.12 GHz; new standard footnote for spectral line observations approved.

- 23.6-24 GHz; exclusively passive band retained.

- 31.2-31.3 GHz; new footnote protection.

- 31.3-31.5 GHz; exclusive passive band maintained.

- 31.5-31.8 GHz; new allocation, exclusively passive in Region 2, Fixed and Mobile secondary in Regions 1 and 3.

- 36.43-36.5 GHz; existing footnote broadened.

- 42.5-43.5 GHz; new primary allocation shared with the Fixed, Mobile (except Aeronautical) and Fixed-Satellite (Earth-to-space) services.

- 42.77-42.87 GHz, 43.07-43.17 GHz, 43.37-43.47 GHz; new footnote protection for spectral line observations.

- 48.94-49.04 GHz; new primary allocation for spectral line observations to share with the Fixed, Mobile and Fixed Satellite (Earth-to-space) services. An additional footnote prohibits all airborne emissions.

- 51.4-54.25 GHz, 58.2-59 GHz, 64-65 GHz, 72.77-72.91 GHz; new footnote protection for Radio Astronomy but first three bands will be exclusively for passive sensors.

- 86-92 GHz; exclusive passive band retained.

- 93.07-93.27 GHz; new footnote protection for spectral line observations.

- 97.88-98.08 GHz; new primary allocation.

- 105-116 GHz; new exclusive passive band. The allocation to the Radio Astronomy service in the 130-140 GHz band was suppressed in favour of this much more important band.

- 140.69-140.98 GHz, 144.68-144.98 GHz, 145.45-145.75 GHz, 146.82-147.12 GHz; new primary allocations for spectral line observations adopted. In the first of these bands, all airborne and spaceborne emissions are prohibited.

- 150-151 GHz, 174.42-175.02 GHz, 177-177.4 GHz, 178.2-178.6 GHz, 181-181.46 GHz, 186.2-186.6 GHz; new secondary allocations for spectral line observations adopted.

- 164-168 GHz; new exclusively passive band obtained.

- 182-185 GHz; new exclusively passive band obtained.

- 217-231 GHz; new exclusively passive band obtained. The allocation to the Radio Astronomy service in the band 230-240 GHz was suppressed in return for this more important band.

- 250-251 GHz, 262.24-262.76 GHz; new primary allocations for spectral line observations approved.

- 257.5-258 GHz; new secondary allocation for spectral line observations approved.

- 261-265 GHz; a new footnote providing a primary allocation to the Radio Astronomy service in 7 European countries plus Argentina and India was adopted.

- 265-275 GHz; a new primary allocation was approved with a footnote urging special protection for the bands 265.64-266.16 GHz, 267.34-267.86 GHz and 271.74-272.26 GHz.

The Standard Frequency and Time Signal (SFTS) Service and Related Space Services

Canada made no proposals for these services but supported proposals for the extension of the SFTS-Satellite service into bands above 10 GHz. Definition changes were made at the conference which resulted in the previously separate Standard Frequency service and Time Signal service being combined into one service. This change had been included in the Canadian First Draft Proposals but it had not been considered of sufficient concern to Canada to include in the Final Canadian Proposals.

- Footnote 3453/159: This footnote which permits SFTS signals in the band 14-70 kHz in Regions 2 and 3 was not changed in those Regions. In Region 1, however, the band was extended up to 90 kHz. This may present problems to Radionavigation operations above 90 kHz.

- 2.5 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz and 25 MHz: These Standard Frequency and Time Signal bands were maintained by the Conference.

- 7335 kHz: As part of the Canadian proposal to allocate the band 7100-7400 kHz to the Broadcasting service, a footnote was proposed to protect CHU operating on 7335 kHz. Since the Canadian proposal for the 7100-7400 kHz band was unsuccesful, the footnote concerning CHU was not necessary and was withdrawn.

- 3995-4005 kHz, 7995-8005 kHz, 15995-16005 kHz: In these three bands a new footnote for Region 3 was adopted permitting existing services to transmit Standard Frequency and Time Signals. The original Japanese proposal also called for similar provisions at 12 MHz but that band was allocated to the Broadcasting service.

- 400.05-400.15 MHz: The allocation to the SFTS-Satellite service was maintained.

- 4202±2 MHz, 6427±2 MHz: The use of these bands by the SFTS-Satellite service was maintained with the addition of the new Article N13A procedure.

- 13.4-14 GHz, 20.2-21.2 GHz: New companion bands permitting Earth-to-space and space-to-Earth transmissions in the SFTS-Satellite service on a secondary basis were approved.

- 25.25-27 GHz, 30-31.3 GHz: New companion bands permitting Earth-to-space and space-to-Earth transmissions in the SFTS-Satellite Service on a secondary basis were approved.

The Earth Exploration and Meteorological Services

The main objectives of the Canadian proposals concerning earth exploration operations were to gain recognition for a terrestrial service, to obtain allocations for the operation of both active and passive sensors in both the space and terrestrial services, and to obtain allocation of links for data, interrogation, etc., in the space service. It was considered that such links for the terrestrial operations could be accommodated in existing services, such as Fixed and Aeronautical Mobile. A modification proposed for Footnote 3815/412J was intended to ensure extra protection for passive sensors in exclusive passive bands.

With respect to the Meteorological Service, the objective was to maintain the allocations generally in accordance with the existing Table of Frequency Allocations, but with some downgrading of emphasis on allocations to the Meteorological Aids service (e.g., at 28 MHz and 1665 MHz).

It is to be noted that, since the Meteorological-Satellite service is a subset of the Earth Exploration-Satellite service, any allocations in the latter area would include the former, unless they were specifically excluded.

In general, Canadian objectives with respect to the space service were met. Canada was not, however, successful in having a definition for a terrestrial Earth Exploration service approved, and it was therefore impossible to obtain allocations for such a service.

Definitions for active and passive sensors were adopted late in the Conference. In the final analysis, the benefits to be gained from this action may not be too significant. The "passive" concept in Earth Exploration and Space Research has had long acceptance, even though the concept had not been formally defined in the International Radio Regulations. Allocations for radar on spacecraft for operation in the Earth Exploration-Satellite and Space Research services had already been approved at the Conference for most of the bands of interest before the definition of active sensors was adopted.

Canada was also reasonably successful in satisfying its objectives in both the Meteorological Aids and the Meteorological-Satellite services. In the latter case, allocations to the Earth Exploration-Satellite service would apply, except for any case specifically cited, e.g., in the band 460-470 MHz.

For bands above 960 MHz, other delegations set the pace in terms of the number of allocations proposed. The number finally approved thus tended to be greater than what Canada had proposed.

Turning now to specific results obtained, Canada had proposed suppressing the Meteorological Aids service in the band 27.5-28 MHz in Regions 2 and 3 since it is currently unused in Canada and many other countries in favour of the Fixed and Mobile services. However, this proposal was not accepted.

In the band 137-138 MHz, Canada had proposed suppressing the primary allocations to the Meteorological-Satellite service after 1990, with stations operating on that date being reduced to secondary status. The service would be replaced by the Aeronautical Mobile (R) service. However, the Meteorological-Satellite (space-to-Earth) service was permitted to continue in the band. In addition, it was added to the band 136-137 MHz on a primary basis until 1990; after that date, it would be reduced to a secondary status.

There is a secondary allocation to the Meteorological Aids service in the band 151-154 MHz in Region 1. Canada had proposed upgrading this service to permitted status. However, the secondary status was maintained and the band reduced to 153-154 MHz. The primary allocations to the Meteorological Aids and Meteorological-Satellite (space-to-Earth) services in the band 400.15-401 MHz were retained as proposed by Canada.

Canada was also successful with proposals for allocations to the Meteorological Aids and Earth Exploration-Satellite (Earth-to-space) services in the band 401-403 MHz, to the Meteorological Aids service in the band 403-406 MHz, and to the Meteorological-Satellite (space-to-Earth) service in the band 460-470 MHz. In the latter case, operations other than Meteorological-Satellite in the Earth Exploration-Satellite service would be permitted on a non-interference basis.

Canada had proposed a footnote allocation for radar operations in support of Earth Exploration for a number of bands in the range 1215 MHz-14.0 GHz, on a non-interference, non-protected basis. The footnote approved was for two additional bands in this frequency range, for both the Earth-Exploration Satellite and the Space Research services, and on a secondary basis.

The Canadian proposal for an allocation to the Earth Exploration-Satellite (passive) service in the band 1400-1427 MHz was successful. Furthermore, the band will be restricted to passive operations, as proposed by Canada. In addition, the band 1370-1400 MHz will be allocated to the Earth Exploration-Satellite (passive) and Space Research (passive) services on a secondary basis.
The secondary allocation to the Earth Exploration-Satellite service in the band 1525-1535 MHz was retained.

Canada had proposed retention of the allocations to the Meteorological Aids and Meteorological-Satellite (space-to-Earth) services in the frequency range 1660-1700 MHz, except for the suppression of the former in the band 1664.4-1668.4 MHz in favour of Radio Astronomy. At the Conference, the Meteorological Aids service was retained in the frequency range 1668.4-1770 MHz on the same primary basis; and on a secondary basis in certain non-Region 2 countries by a footnote in the band 1660.5-1668.4 MHz. The allocation to the Meteorological Satellite (space-to-Earth) service was extended to 1710 MHz and the restrictive Footnote 3649/324A was suppressed.

The secondary allocation to the Meteorological-Satellite service in the band 1770-1790 MHz was suppressed. A primary allocation was made for Cuba and certain non-Region 2 countries by footnote, but subject to agreement obtained under the procedure set forth in Article N13A. Canada had made no proposal in this case. Some extension was made to footnote allocations to the Earth Exploration-Satellite service, in the frequency range 2025-2290 MHz. These allocations are all subject to agreement obtained under the procedure set forth in Article N13A.

The Canadian proposal for an allocation to the Earth Exploration-Satellite (passive) service on a secondary basis in the band 2655-2690 MHz was adopted as was that for a primary allocation in the band 2690-2700 MHz. The secondary allocation was also extended downward to 2640 MHz by footnote. Footnote 3727/366 covering the operation of meteorological radars in the band 2700-2900 MHz was retained. A secondary allocation to the Earth Exploration-Satellite (passive) service in the band 4950-4990 MHz was made by footnote. A footnote drawing the attention of Administrations to the operation of passive sensors in the Earth Exploration-Satellite service in the band 6425-7250 MHz was adopted. Canada had proposed a similar footnote for the band 6625-7250 MHz. The allocation to the Meteorological-Satellite (space-to-Earth) service on a primary basis in the band 7450-7550 MHz was retained as Canada had proposed. The same was true for the Earth Exploration-Satellite (space-to-Earth) service in the band 8025-8400 MHz and the Meteorological-Satellite (space-to-Earth) service in the band 8175-8215 MHz. A footnote for the band 9300-9500 MHz puts emphasis on the use of radars for meteorological purposes.

The footnote allocation referring to the operation of weather radars in the Meteorological-Satellite service in the band 9975-10025 MHz was changed from a "may-be-used" to a secondary status.

The Earth Exploration-Satellite (passive) service was added to the band 10.6-10.7 GHz on a primary basis, as Canada had proposed. A footnote was approved putting power restrictions on the Fixed and Mobile services in the band 10.6-10.68 GHz where these services have a primary status; a number of non-Region 2 countries are exempted from the restriction. A second footnote makes an allocation to the Fixed

and Mobile (except Aeronautical Mobile) services in the band 10.68-10.7 GHz on a primary basis in a number of countries, including some in Region 2. Such use is limited to equipment operating before January 1, 1985. The footnote proposed by Canada for the band 10.7-10.95 GHz which aimed at protecting the passive services in the band 10.6-10.7 GHz was not approved.

The Canadian proposal to add the Earth Exploration-Satellite (passive) service to the band 15.35-15.4 GHz was successful; however, the proposal to extend the passive band to 15.45 GHz by suppressing the Aeronautical Radionavigation service was not approved. The allocation was extended downward to 15.20 GHz on a secondary basis by means of a footnote. An allocation to the Earth Exploration-Satellite (active) service was added to the band 17.2-17.3 GHz on a secondary basis. A Canadian proposal to add an allocation to the bands 17.7-17.9 GHz and 19.7-19.9 GHz for the Earth Exploration-Satellite (passive) service on a secondary basis was not successful.

A footnote allocation to the Meteorological-Satellite (space-to-Earth) service on a primary basis was added to the band 18.1-18.3 GHz. The use will be limited to geostationary satellites operating in accordance with Radio Regulation No. 6076/470NY.

The Earth Exploration-Satellite (passive) service was added in the band 18.6-18.8 GHz; the allocation is on a secondary basis in Regions 1 and 3, and on a primary basis in Region 2. Footnotes request all Administrations to take account of this and other passive services in the band when making assignments to stations in the Fixed, Mobile, and Fixed-Satellite services.

The allocation to the Earth Exploration-Satellite (space-to-Earth) service in the band 21.2-22.0 GHz on a primary basis was deleted. A replacement allocation to the Earth Exploration-Satellite (passive) service on a primary basis was made in the band 21.2-21.4 GHz. A similar allocation was added in the band 22.21-22.5 GHz, as Canada had proposed, but a footnote protecting the Fixed and Mobile services was also adopted. Canada has proposed one further allocation to this service in this region of the spectrum - a primary allocation in the band 23.6-24.0 GHz with the standard footnote ensuring that the band would only be utilized by passive services. These proposals were successful.

Canada had made no further proposals for Earth Exploration in the spectrum range 24-30 GHz. However, three allocations were approved by the conference: to the Earth Exploration-Satellite (active) service on a secondary basis in the band 24.05-24.75 GHz and for a Space-to-Space link on a secondary basis in the ranges 25.25-27.5 GHz and 29.95-30 GHz. (The existing footnote allocation to the Meteorological Aids service in Japan in the bands 24.25-25.25 GHz and 33.4-36.0 GHz was deleted.)

Canada's proposal to add the Earth Exploration-Satellite (passive) service on a primary basis in the band 31.3-31.8 GHz with the standard protective footnotes for passive sensors was approved.

Canada proposed an allocation, on a primary basis, to the Earth Exploration-Satellite service in the band 34.2-35.2 GHz. However, instead a footnote was adopted enabling radars on a spacecraft to operate on a primary basis, but in the band 35.5-35.6 GHz. The Meteorological Aids service was given a new allocation in the band 35.2-36.0 GHz, on a co-primary shared basis with Radiolocation. The footnote permitting the use of the band 34.4-34.5 GHz by weather radar devices on meteorological satellites for the detection of cloud was suppressed. One final allocation was made to the Earth Exploration-Satellite (passive) service, namely a new allocation in the band 36-37 GHz, on a co-primary basis shared with the Fixed and Mobile services.

Canada's proposals for allocations for the Earth Exploration-Satellite (passive) service in the range 50-59 GHz were fairly well received. For the higher frequencies, the allocations far exceeded what Canada had proposed, but included bands proposed by Canada. The additional allocations made would not appear to impose significant sharing restrictions on other services.

Canada's proposal for a band for active sensors above 40 GHz was also reasonably successful - the band approved (78-79 GHz) is in the same general location but is somewhat narrower than proposed.

Above 40 GHz, Canada had no proposals for the Meteorological-Satellite service and no allocations were made. As noted earlier, the needs for this service are automatically taken care of by means of allocations to the Earth Exploration-Satellite service.

For frequencies between 275 and 400 GHz, the new footnote (Footnote 3816M) will give visibility to the need to protect certain bands for passive operations, since development work is underway on active systems.

The Radiolocation Service

Canada submitted a relatively small number of proposals to the conference concerning the Radiolocation service. Except for minor variations, all of the Canadian proposals were adopted. In general, the current allocations to the Radiolocation service throughout the frequency spectrum experienced only minor changes - with one important exception. The one exception concerns allocations in the 3.4 to 3.6 GHz band. The Radiolocation service is currently allocated on a primary basis in Regions 2 and 3 in the band 3.4-3.6 GHz, together with

the Fixed-Satellite service (space-to-Earth) in the band 3.4-3.5 GHz and the Fixed-Satellite (space-to-Earth), Fixed and Mobile services in the band 3.5-3.7 GHz (the Fixed and Mobile services are secondary in Region 3). In order to protect existing and future Fixed service operations and to provide for feeder links mainly to satellites in the Mobile-Satellite service, Canada had proposed to reduce the status of the allocation to the Radiolocation service to secondary in Regions 2 and 3 in the band 3.5-3.7 GHz but to maintain Radiolocation service on a primary basis in the band 3.4-3.5 GHz. After much discussion and compromise concerning this band (and related bands), the Conference decided to reduce Radiolocation to a secondary status in the Allocation Table in the band 3.4-3.6 GHz and to suppress the Radiolocation service in the band 3.6-3.7 GHz. As a compromise, a footnote (Footnote 3736A) was added which allows the Radiolocation service to operate on a primary basis in the band 3.4-3.6 GHz in Regions 2 and 3, but urges Administrations to cease such operations by 1985 and to take all practicable steps to protect the Fixed-Satellite service after that date.

A brief review of how other Canadian proposals concerning the Radiolocation service fared is as follows:

- The proposed suppression of the Radiolocation service worldwide in the 10-14 kHz band was adopted.

- Canada's proposal to suppress Radiolocation in the 1605-1705 kHz band (to preclude interference with the Broadcasting service) was only partially achieved. Radiolocation was suppressed from 1605-1625 kHz but remains on a secondary basis between 1625 and 1705 kHz for an interim period to be specified by a Regional Administrative Radio Conference.

- Canada had proposed an allocation to the Radiodetermination service on a primary basis in the bands 1705-1800 kHz and 1900-2000 kHz in Region 2. At the Conference, an allocation on a primary basis to the Radiolocation service in the bands 1705-1800 kHz and 1850-2000 kHz was approved. These allocations are acceptable from a Canadian standpoint.

- Whereas the band 420-450 MHz is currently allocated to the Radiolocation service on a primary basis, the conference decided to maintain the Radiolocation service on a primary basis in only the middle 10 MHz (430-440 MHz) and to reduce the allocation to a secondary status in the bands 420-430 MHz and 440-450 MHz on a worldwide basis. Primary allocations to the Fixed and Mobile (except Aeronautical Mobile) services

were added in the latter two bands. (Canada had proposed a footnote allocating the band 420-430 MHz to only the Fixed and Mobile services on a primary basis in Canada.) These allocations will satisfy Canadian requirements as outlined in the recent Canadian domestic spectrum policy concerning the 406-960 MHz band.

- Canada's proposal to reduce the status of the allocation to the Radiolocation service from primary to secondary in the band 890-942 MHz was adopted.

- Canadian proposals to reduce the status of the allocation to the Radiolocation service from primary to secondary in the band 17.2-17.7 GHz and to suppress the allocation to the Radiolocation service in the band 15.7-15.75 GHz in order to accommodate the requirements of the Aeronautical Radionavigation and Fixed-Satellite (Earth-to-space) services were partially adopted. Radiolocation on a primary basis was maintained in the band 15.7-15.75 GHz but was reduced to secondary in the band 17.3-17.7 (to accommodate uplink requirements for the Broadcasting-Satellite service).

- All existing Radiolocation bands in the range 1-40 GHz were maintained.

- Canada made no proposals for Radiolocation allocations above 40 GHz. Radiolocation allocations that were adopted, however, are acceptable from a Canadian viewpoint.

The Communication Satellite Services

This section of the report discusses the major frequency allocation decisions in the frequency range 200 MHz to 40 GHz for the Mobile-Satellite service, the Broadcasting-Satellite service, the Inter-Satellite service, and the Fixed-Satellite service.

The Broadcasting-Satellite Service

The most significant changes concerning this service are in the 12 GHz band in Region 2. The Region 2 allocations to the Broadcasting-Satellite service have three elements: (1) the band 11.7-12.1 GHz is allocated to the Fixed-Satellite service but may also be used for Broadcasting-Satellite operations if the effective isotropic radiated powers of transmission is no greater than 53 dBW,

(2) the 12.3-12.7 GHz band is allocated to the Broadcasting-Satellite service and will be planned at the 1983 Regional Administrative Radio Conference (RARC) (assignments made in accordance with the plan may be used for Fixed-Satellite operation provided that such operations do not cause more interference nor require more protection than the Broadcasting-Satellite operations in accordance with the plan), and (3) the 12.1-12.3 GHz band will be split in some way between (1) and (2) above at the 1983 RARC. Resolutions CI, CJ, CK and CL provide for implementing this decision particularly where changes were required to decisions contained in the Final Acts of the 1977 Broadcasting Satellite Conference. Once a satisfactory Region 2 compromise was adopted at the Conference, attention turned to the inter-regional aspects of the allocations. Region 1 plans for Fixed-Satellite downlink in the 12.5-12.75 GHz band were a major factor in these discussions. Inter-regional coordination between Region 2 broadcasting-satellites and Region 1 fixed-satellite and terrestrial fixed operations in the 12.5-12.7 GHz band will have to be resolved before the 1983 RARC.

In Region 3, in the band 12.5-12.75 GHz, a new allocation to the Broadcasting-Satellite service was approved for community reception only, i.e. reduced satellite power. This allocation was actively supported by Canada but was strongly opposed by the USSR.

For the longer term, a new Region 2 allocation was approved for the Broadcasting-Satellite service in the 22.5 to 23.0 GHz band.

The Mobile-Satellite Service

With respect to UHF Mobile-Satellite except Aeronautical Mobile-Satellite allocations, Canada achieved most of its objectives, namely a primary footnote allocation in the 405.5-406 and 406.1-410 MHz bands in Canada, a Region 2 secondary allocation in the 608-614 MHz band, and a Region 2 primary footnote allocation in the 806-890 MHz band. There are similar new allocations in Region 3 and in Norway and Sweden in the 800 MHz band, and in Region 3 in the 2.5 GHz band.

A major set-back was the fact that the Mobile-Satellite allocation in the bands 235-322 MHz and 335.4-399.9 MHz, through Footnote 3618/308A, is now essentially a secondary allocation. Canada entered a final protocol concerning this matter.

Canada's L-band Mobile-Satellite proposal was not accepted. A major factor in the allocation decisions at L-band was the preservation of a 101.5 MHz translation frequency. As a result, the Maritime Mobile-Satellite service was allocated 14 MHz for downlink operations and 19 MHz for uplink operations and the Aeronautical Mobile-Satellite service was allocated 14 MHz in each direction. A one megahertz band was reserved in both uplink and downlink directions for safety-and-distress use. In this regard, the feeder link for the proposed SARSAT search and rescue satellite system could be in the band 1544 to 1545 MHz.

In the 7/8 GHz bands, mobile-satellites may use the band 7250-7375 MHz (downlink) and 7900-8025 MHz (uplink) subject to agreement of Administrations obtained under the procedure set forth in Article N13A. A related factor is that the Fixed and Mobile services are now allocated on a primary basis in the bands 7250-7300 MHz and 7975-8025 MHz. Mobile-Satellite allocations were also made over a 1500 MHz bandwidth (1000 MHz on a primary basis and 500 MHz on a secondary basis) in both uplink and downlink directions at 20 and 30 GHz. Such an allocation may cause coordination problems and reduce the effectiveness of the band for Fixed-Satellite applications. Canada opposed such a large allocation.

The Inter-Satellite Service

Canada's proposals for the Inter-Satellite service in the bands 22.55-23.55 GHz and 31.8-32.8 GHz were accepted with a minor shift in the latter (to 32.0-33.0 GHz) despite a strong move by some Administrations to place the allocation to this service in the vicinity of 25 GHz instead of at 32 GHz. Canada's proposed footnote to protect the Radionavigation service was also accepted as was a resolution (Resolution BN) asking the CCIR to study the matter of inter-service sharing at 32 GHz.

Although not proposed by Canada, new allocations above 40 GHz to the Inter-Satellite service were approved which should have longer term benefits.

The Fixed-Satellite Service

Canada's proposal to define an Auxiliary Satellite service was defeated due in large measure to the reluctance of having new service definitions. Canada's proposals for allocations at 2.5 GHz for the Fixed-Satellite service were however accepted. These allocations will accomplish essentially the same results as the Canadian Auxiliary-Satellite proposals in this band and, in addition, will ensure the accommodation of services such as tele-education, tele-medicine, etc, which are often difficult to categorize as to whether they are in the Fixed-Satellite or Broadcasting-Satellite service.

Fixed-Satellite allocations below 10 GHz include a downlink allocation from 3.4 GHz to 4.2 GHz and 4.5 GHz to 4.8 GHz, and an uplink allocation from 5.85 GHz to 7.075 GHz. (This is very similar to the Canadian proposals.) There was a very extensive debate concerning sharing between the Fixed-Satellite service and the Radiolocation service in the 3.4-3.6 GHz band. As discusssed in the section concerning Radiolocation, the final result represented a very delicate compromise.

In the 10 to 20 GHz range of the spectrum, downlink allocations in the band 10.7-11.7 GHz with corresponding uplink allocations in the bands 12.75-13.25 GHz and 14.0-14.5 GHz were approved, as expected. Feeder links to 12 GHz broadcasting-satellites were approved in the bands 10.7-11.7 GHz, 14.5-14.8 GHz, and 17.3-18.1 GHz in Region 1, 14.5-14.8 GHz and 17.3-18.1 GHz in all Regions, with feeder links in the band 17.3-18.1 GHz to be planned in Region 2 at the 1983 RARC.

In Region 2, a Fixed-Satellite service downlink allocation was approved in the band 11.7-12.1 GHz and in a portion of the band 12.1-12.3 GHz. There will also be the ability for Fixed-Satellite operations to use the Broadcasting-Satellite allotments in the plan for the Broadcasting-Satellite service to be drawn up at the 1983 RARC.

In Region 3, a Fixed-Satellite service downlink allocation from 12.2 GHz to 12.75 GHz (by means of a footnote for the band 12.2-12.5 GHz and a Table entry for the band 12.5-12.75 GHz) was obtained with strong Canadian support in the midst of strong objections from the USSR.

Allocations Above 40 GHz

A. General

Three points of a general nature concerning allocations above 40 GHz might be made:

1. Account had to be taken of the propagation effects on allocations of the absorption bands related to the atmospheric constituents - oxygen and water vapour. While these would result in restrictions on the use of spectrum for certain types of service (e.g. Earth-space links) in the bands concerned, they could also be used to advantage in other cases (e.g., isolation between space and surface or near-surface systems, and frequency re-use for the latter class of systems).

2. The Canadian approach to the allocation of the bands above 40 GHz was to take a middle-of-the-road position between the two extremes of:

   (a) avoiding sharing restrictions by allocating spectrum on either an exclusive basis or to a very limited number of services, on the grounds that there is a great deal of spectrum available;

(b) allocating a band to so many services that a considerable sharing restriction would result and thus potential users would be discouraged from investing in the development or the purchase of equipment.

3. It was recognized that the time frames before which the various services would be making use of the spectrum well above 40 GHz would vary considerably. On the one hand, there are already Radio Astronomy and Earth Exploration operations; on the other hand, it might be some time before operational space systems evolve in areas such as Broadcasting and Radionavigation. However, it was felt that allocations to services are required to act as guidance for research and development.

B. Specific Subjects

The need for spectrum for feeder links to Broadcasting Satellites was taken into account in allocations to the Fixed-Satellite service. Administrations were urged to take all practicable steps to reserve the band 47.2.49.2 GHz for feeder links to Broadcasting satellites operating in the band 40.5-42.5 GHz. In the same way, an excess of uplink as opposed to downlink spectrum was allocated to the Fixed-Satellite service near 100 GHz, keeping in mind the potential requirement for uplinks to the Broadcasting-Satellite service in the band 84-86 GHz.

As noted earlier in this report, allocations of additional spectrum were made to the Radio Astronomy service. These recognized, in each case, the nature of the observations (i.e., of spectral lines or of continuum observations).

While allocations above 40 GHz were confined previously to the space services and to the Radio Astronomy service, allocations were made at the Conference to a variety of terrestrial services. In the case of certain combinations of space and terrestrial services, it was concluded that there was inadequate information on sharing. Footnotes were therefore added to reflect this uncertainty, and the issues were referred to the CCIR for further study.

A number of bands in the frequency range 275-400 GHz were identified as being of special importance for the passive services (i.e., Radio Astronomy, Earth Exploration-Satellite (passive) and Space Research (passive), and a footnote to that effect was added (Footnote 3816M). Significant increases were made to the spectrum allocation to the Earth Exploration-Satellite and the Space Research services for the operation of passive sensors. In addition, provision was made for the operation of radars on space stations in the above two services.

Extensive allocations were made to the combination of the Amateur-Satellite and the Amateur services, both on an exclusive basis and on the basis of sharing with other services. Three new bands were designated for ISM applications. Two significant relevant factors are that the bands are in harmonic relationship and that the use of the bands is subject to special authorization by the Administration concerned in agreement with other Administrations whose Radiocommunication services might be affected.

The pattern of allocations to the Inter-Satellite and Fixed-Satellite services follow, in general, that laid down by the 1971 Space WARC, i.e., with the former concentrated in the absorption bands so as to take advantage of the atmospheric attenuation to provide shielding between the space and the surface (or low-altitude) systems, and the latter located in spectrum between the absorption bands.

Radiolocation allocations were made in two distinct groups - in the absorption bands for shorter systems with a high potential for frequency re-use and in the "windows" between those bands for longer-range systems. Terrestrial counterparts to many of the allocations to space services were adopted by the Conference.

ANNEX D

PART I - STRUCTURE AND TERMS OF REFERENCE OF WORKING GROUPS OF COMMITTEE 5

COMMITTEE 5

Chairman:	Mr. M Harbi (Algeria)
Vice-Chairman:	Mr. J.J. Hernandez-G. (Mexico)
Technical Secretary:	Mr. M. Sant
Assistant:	Miss M.L. Arocena

The terms of reference of Committee 5 are given in the introduction to the section of this report dealing with Committee 5.

WORKING GROUP 5A

Terms of reference

Review and if necessary revise all provisions associated with the Table of Frequency Allocations (Articles N1, N5, N6, N8, N28 (Sec. I), N29, N33A, N47).

Chairman:	Mr. V. Quintas Castans (Spain)
Technical Secretary:	Mr. K. Khabiri
assisted by:	Mr G. Serlooten

WORKING GROUP 5BA

Terms of reference

Review and if necessary revise the Table of Frequency Allocations in the bands below 4000 kHz and consider any Resolutions and Recommendations concerning the use of frequencies in these bands.

Chairman:	Mr. L. Cook (Venezuela)
Technical Secretary:	Mr. J. Balfroid
assisted by:	Mr. M. Frachet

WORKING GROUP 5BB

Terms of reference

Review and if necessary revise the Table of Frequency Allocations in the bands between 4 and 27.5 MHz and consider any Resolutions and Recommendations concerning the use of frequencies in these bands.

Chairman:	Mr. P.D. Barnes (Australia)
Technical Secretary:	Mr. J. Balfroid
assisted by:	Mr. M. Frachet

WORKING GROUP 5C

Terms of reference

Review and if necessary revise the Table of Frequency Allocations in the bands between 27.5 MHz and 960 MHz and consider any Resolutions and Recommendations concerning the use of frequencies in these bands.

Chairman:	Mr. K. Olms (Federal Republic of Germany)
Technical Secretary:	Mr. L. Sonesson
assisted by:	Mr. L.S. Huang

WORKING GROUP 5D

Terms of reference

Review and if necessary revise the Table of Frequency Allocations in the band between 960 MHz and 40 GHz and consider any Resolutions and Recommendations concerning the use of frequencies in these bands:

Chairman:	Dr. B.S. Rao (India)
Technical Secretary:	Mr. O. Villanyi
assisted by:	Mr. A. Reinhard

WORKING GROUP 5E

Terms of reference

Review and if necessary revise the Table of Frequency Allocations in the bands above 40 GHz and consider any Resolutions and Recommendations concerning the use of frequencies in these bands.

Chairman:	Dr. A.W. Adey (Canada)
Technical Secretary:	Mr. D Roussey
assisted by:	Mr. J. Bacaly

EDITORIAL GROUP

Terms of reference

To perfect the form of the texts to be considered by Committee 5 without altering the sense.

Chairman:	Mr. Piponnier	(France)
Members:	Mr. Verove	(France)
	Mr. G. Stemp	(United Kingdom)
	Mr. M. Allegue	(Spain)
	Mr. A.A. Matthey	(IFRB)
assisted by:	Mr. M. Sant Technical Secretary of Committee 5	

PART II - AD HOC GROUPS OF COMMITTEE 5

Group	Terms of reference	Chairman
5/ad hoc 1	Study of Regions	Mr. I.O. Lediju (Nigeria)
5/ad hoc 2	Study of the organization of Working Group 5B	Mr. M. Harbi (Algeria)
5/ad hoc 3	ISM applications	Mr. H. Berthod (France)
5/ad hoc 4	High frequency broadcasting	Miss M. Huet (France)
5/ad hoc 5	Consideration of proposals relating to the terms "active sensor" and "passive sensor"	Mr. V. Quintas (Spain)
5/ad hoc 6	Earth Exploration-Satellite service (space-to-Earth) in the band 8025-8400 MHz; sharing between the Inter-Satellite service and the Radionavigation service in the band 32-33 GHz	Mr. H.G. Kimball (USA)
5/ad hoc 7	Draft Resolution concerning tropospheric scatter	Miss M.N. Tapiador (Spain)
5/ad hoc 8	Problems of frequency sharing in the 12 GHz region between the Fixed-Satellite and the Broadcasting-Satellite services (between Region 1 and 2 and Regions 1 and 3 and possible solutions)	Mr. R.O. Phillips (United Kingdom)
5/ad hoc 9	Frequency sharing between active and passive services in 10-6-10.8 GHz and 18.6-18.8 GHz bands	Mr. M. Cisse (Senegal)
5/ad hoc 10	Choice of the frequency bands to be used by the feeder links for the Broadcasting-Satellite service	Dr. I.Y. Ahmed (Sudan)
5/ad hoc 11	Use of the 3.4-3.6 GHz and 4.6-4.8 GHz bands by the Fixed-Satellite service (space-to-Earth) for national and sub-regional coverage	Dr. F. Subaran (Jamaica)

PART III - AD HOC GROUPS OF THE WORKING GROUPS OF COMMITTEE 5

Group	Terms of reference	Chairman
5A1	Standard texts of footnotes on Radio Astronomy	Dr. F. Horner (United Kingdom)
5A2	Aeronautical Mobile service	Mr. H.J. Mueller (Federal Republic of Germany)
5A3	Consideration of proposals submitted in relation to the terms assignment, allotment and allocation	Mr. M.R. Bletterie (France)
5B1	Allocations 130-160 kHz	Mr. W.G. Longman (Canada)
5BA1	Allocations in bands 130-490 kHz in Region 1	Mr. O. Lundberg (Sweden)
5BA2	Resolution 500 kHz guardband	Mr. M Bencheman (Algeria)
5BA3	Allocations in bands 525-2000 kHz in Region 2	Mr. V. Fernandez (Cuba)
5BA4	Allocation of frequency band 1800-2000 kHz in Region 3	Mr. A.T. Zamanian (Iran)
5BA5	Designation of a frequency in the band 415-490 kHz or 510-525 kHz for transmission of distress, urgency and safety information to ships	Mr. G. Vedder (Netherlands)
5BA6	Guardband frequency 2170-2194 kHz	Mr. R.O. Hewitt (Canada)
5BA7	Recommendation relating to the preparation of a broadcasting plan in the band 1605-1705 kHz in Region 2	Mr. L.K. Chau (Canada)
5BA8	Allocation of Radiolocation service in the bands 3200-3700 kHz	Mr. P. Laurent (France)
5BA9	Frequency bands for natural disaster	Mr. H. Kieffer (Switzerland)

Group	Terms of reference	Chairman
5BA10	Sharing of the band 2160-2170 kHz for the Radiolocation service in Region 1 and drafting of a Resolution relating to the reassignments of stations in the Fixed and Mobile services in the bands allocated to the Radiolocation service	F.V.V. Watson (Malawi)
5BA11	Modification of the Recommendation given in Document No. 513 for coordination among Regions	R.C. Davies (Australia)
5BA12	Recommendation relating to the planning of the use of frequencies by the Maritime Mobile service in the band (415-526.5) kHz	B. Erikson (Sweden)
5BA13	Preparation of a Resolution based on Document No. 623 and Resolution No. 7 and Recommendation No. 2 of the Regional Administrative LF/MF Broadcasting Conference in Regions 1 and 3	W.G. Longman (Canada)
5BA14	Resolution relating to the modification of carrier frequencies of LF broadcasting stations in Region 1	Miss M. Huet (France)
Joint ad hoc 5BA, 5BB	Remaining Resolutions and and Recommendations	Mr. Railton (Papua New Guinea)
5C ad hoc	Consideration of proposals concerning bands between 47 and 68 MHz (Region 1) and between 87.5 and 108 MHz (Regions 1 and 3)	Mr. E. Schwarz (Switzerland)

Group	Terms of reference	Chairman
5D1	Fixed-Satellite service and Broadcasting-Satellite feeder links	Mr. D.J. Withers (United Kingdom)
5D2	Drafting of Footnote MOD 3713/361	Federal Republic of Germany, France and Switzerland
5D3	Draft Resolution on study by the CCIR of choice of suitable frequency effect on other radio services and on the ionosphere of the transmission of power by wireless (Proposal USA/45/145)	Mr. A.O. Carter (United Kingdom)
5D4	Combined proposals on Footnote 3730/367B	Mr. E.J. Holliman (USA)
5D5	Preparation of possible footnotes applicable to allocations in the frequency band 960 MHz - 40 GHz for Radio Astronomy service and ISM applications	Dr. J.B. Whiteoak (Australia)
5D6	Proposals relating to the bands between 1535 and 1660 MHz	Mr. C. Dorian (USA)
5D7	Satellite sound broadcasting in the band 960 MHz - 2 GHz	Mr. J.C. Dito (Netherlands)
5D8	Summarized proposal for Fixed-Satellite service (space-to-Earth) allocations in the bands 3.4-3.7 GHz and 4.5-4.8 GHz and footnotes and Resolution	Mr. J.E. Ogle (USA)
5D9	Summarized proposal for Fixed-Satellite service (Earth-to-space) allocations in the band 10-20 GHz	Mr. I.Y. Ahmed (Sudan)
5D10	Drafting of Footnote ADD 3782A	Mr. E.J. Holliman (USA)

Group	Terms of reference	Chairman
5D11	Earth exploration and space research services in the bands 10.6-10.7 GHz	Dr. L. Doherty (Canada)
5D12	Summarized proposals of delegations of Australia and USA and proposals contained in Document No. DL/146	Mr. J.P. Houssin (France)
5D13	Summarized proposals relating to Footnotes 3705/356AB, 3706/356ABA and 3707/356AC and drafting of modified texts	Mr. E. Menchen Alumbreros (Spain)
5D14	To formulate the text of a footnote which is applicable in the exclusive passive bands	Mr. A. Greco (Italy)
5D15	To formulate the text of a footnote in connection with the allocation of the band 12.2-12.5 GHz to the Broadcasting-Satellite service and Fixed-Satellite service in Region 3	Mr. C.W. Pike (Australia)
5D16	Proposals concerning allocations in the 12 GHz band	Mr. C.W. Pike (Australia)
Region 2 ad hoc	Preparation of texts relating to the allocation of the 11.7-12.7 GHz band in Region 2 as well as the relevant Resolutions	Mr. C.J. Martinez (Venezuela)
5E1	Consideration of proposals concerning passive services at frequencies above 275 GHz	Dr. J.B. Whiteoak (Australia)
5E2	Consideration of allocations to space services in the bands 40-52 GHz and of recommendations to be made to Working Group 5B for bands 36-40 GHz	Mr. R.P. Moore (USA)

Group	Terms of reference	Chairman
5E3	Consideration of proposals concerning allocations of frequencies in the band 52-84 GHz	Dr. R.L. Olsen (Canada)
5E4	Consideration of proposals relating to allocations of frequencies in the bands 84-105 GHz	Mr. H.W. Schult (Federal Republic of Germany)
5E5	Consideration of proposals relating to allocations of frequencies in the bands 105-152 GHz	Mr. G.C. Stemp (United Kingdom)
5E6	Consideration of proposals relating to allocations of frequencies between 152-230 GHz	Dr. T. Muratani (Japan)
5E7	Consideration of proposals relating to allocations of frequencies between 217-275 GHz	Mr. S. Das (USA)
5E8	Consideration of proposals relating to allocations in the bands above 275 GHz	Mr. L. Bourgeat (France)

PART 7

Report of committee 6 (Regulatory)

COMMITTEE 6 - Regulatory Procedure Committee Chairman:
Mr. M. Joachim (Czechoslavakia)

Vice-Chairman:
Mr. E.J. Wilkinson (Australia)

Terms of reference:

To consider proposals concerning the coordination, notification and registration of frequency assignments, and the activities of the II RB and, in particular, proposals concerning the following articles:

Article N9, Coordination, notification and registration of frequencies International Frequency Registration Board, general provisions

Article N10, Coordination of frequency assignments to stations in a space radiocommunication service except stations in the broadcasting-satellite and to appropriate terrestrial stations

Article N12, Notification and recording in the Master International Frequency Register of frequency assignments to terrestrial radiocommunication stations

Article N13, Notification and recording in the Master International Frequency Register of frequency assignments to radio astronomy and space radiocommunications stations except stations in the broadcasting-satellite service and the related Appendices 1, 1A and 1B. To consider proposals concerning regulatory measures against harmful interference covered by the following articles:

Article N18, International monitoring

Article N19, Reports of infringments

Article N20, Procedure in the case of harmful interference and the related Appendices 6, 7, 8 and 9.

To consider as appropriate to the work of the Regulatory Procedures Committee the resolutions and recommendations adopted by previous administrative radio conferences and to take such action as may be considered necessary including the adoption of any new resolutions and recommendations.

The Canadian coordinator for the Regulatory Procedure Committee was V. Decloux and active participants included A. Heavenor, H. Salisbury, G. Gaston, Annex A indicates ad hoc, working groups and sub-groups.

ARTICLE N9/8 - International Frequency Registration Board

As a result of the amalgamation of previous Articles N9/8 and N10/11 the present Article has been reconstructed into two Sections. The first comprises the functions of the IFRB of former Article N9/8 and the second, the internal regulations of the Board, of previous Article N10/11.

Additional functions and methods of work of the Board which are now included in this Article are as follows:

Section I: a) the processing of information received in application of the procedures of the regulations governing the use of space radiocommunication services;

b) the provision of assistance to administrations in these and other matters (Resolutions AD, BW, BX, BZ and Recommendations YG, XH refer);

c) the development of technical standards and rules of procedures for internal use by the Board in processing information received (Resolution AA and Recommendation Q refer).

Section II Internal arrangements that the Board can make for its own guidance and the efficient performance of its functions.

ARTICLE N11 Coordination of Frequency Assignments to Stations in a Space Radiocommunication Service except Stations in the Broadcasting Satellite Serive and to Appropriate Terrestrial Stations

The IFRB must now be kept more fully and frequently informed of the progress made between administrations in resolving any difficulties at the Advance Publication of Information on planned satellite networks and frequency assignment coordination stages of the procedures.

More detailed information must now be provided to facilitate the assessment of the level of potential interference between a planned and existing stations where space radiocommunications are involved (Appendices 1A and 1B refer).

In general the time frames by which comments must be made in response to notified planned space systems, frequency assignment coordination requests and in certain cases the waiting periods prior to proceeding with subsequent action, are in most cases extended by one month. (These extensions will have to be reflected in the relevant RSPs and other national policy).
under No. 4114/639AJ is no longer required for a new earth station located within the service area of an existing satellite network provided that the new earth station would not cause interference of a level greater than that which would be caused by an earth station pertaining to the same network which has previously been successfully coordinated.

As of July 1980, the period of validity of frequency assignments to space stations on the geostationary satellite orbit must be stipulated in all notifications to the IFRB. This new requirement is to take into account

replacement satellites and is part of procedures to be used experimentally until the matter is resolved at the next space planning conference to be held in 1984. (Resolutions BY and BP refer).

ARTICLE N12/9 Notification and Recording in the Master International Frequency Register of Frequency Assignments to Terrestrial Radiocommunication Stations

While the provisions of this Article have been modified and improved upon the most noticeable changes concern those that provide developing countries easier access to the HF Fixed Service bands between 3 and 27.5 MHz and affords their operations a much greater measure of protection from interference.

The IFRB is to play a major role in the application of these provisions by providing assistance to developing countries in attaining this goal.

It is important to note that administrations may, under the new provision of No. 4280A of the Notification Procedures, request the assistance of the IFRB in selecting frequencies for this purpose. Should the Board encounter difficulties in selecting a suitable frequency, it can under the provisions of No. 4326BC, consider the possibility of suppressing or downgrading an existing recorded assignment of another country. Also, under No. 4294, notices of such requests received by the Board shall be given priority over all other notices and treated immediately on receipt. In addition, No. 4439 gives such assignments selected by the Board the right to international protection from harmful interference. More importantly, Resolution BZ resolves that developing countries should make the maximum possible use of these provisions and the developed countries the minimum possible use. Fortunately, because of geographical separation, existing and future Canadian HF operations should not suffer unduly.

Another aspect concerning the HF Fixed Service bands between 3 and 27.5 MHz involves the replacement of "displaced" assignments as a consequence of changes in the Table of Frequency Allocations. Here again the IFRB is to play a dominant role and in order to provide a firm foundation for the transitional arrangements required, it shall as soon as possible after 1 January 1980 commence a Review Procedure of all entries recorded in the Master Register allocated to the Fixed Service between 3 and 27.5 MHz. Administrations will be asked to signify those of their assignments that can be deleted and to classify all others as to their requirement for regular operational use, standby to some other means of telecommunication or for occasional use not requiring international recognized protection from harmful interference. (Resolution CT and CU refer).

From this reconstructed list of entries in the Master Register as a result of the Review Procedure, the Board will then apply the Transitional Procedure to accommodate HF displaced assignments in the bands between 4-27.5 MHz. (Resolution CV refers).

In order to facilitate the Board's task during the Transitional period the Article N12/9 provisions concerning the examination and recording of assignments in the Master Register with regard to assignments in the Fixed Service in the bands 4 - 27.5 MHz will be suspended between 1 January 1982 and

30 June 1984. The Board will, however, accept and process assignments of urgent requirement received during this period.

In applying the Transitional Procedure the Board shall select replacement assignments for those displaced and send national lists to each administration for their acceptance and shall between 1 July 1983 and 1 July 1984 endeavour to satisfy all requirements and resolve any difficulties.

Administrations shall effect the change-over from the old to the new assignments not later than 1 July 1989 for frequency bands above 10 MHz and 1 July 1994 for frequency bands below 10 MHz.

ARTICLE N13/9A Notification and Recording in the Master International Frequency Register of Frequency Assignments to Radio Astronomy and Space Radiocommunication Stations Except Stations in the Broadcasting-Satellite Service

Generally, changes in the procedures for the notification of frequency assignments by administrations and the examination thereof by the IFRB are editorial in nature; that is, reworded and rearranged for clarity of meaning but with little change in substance. Two significant additions to this article are as follows:

- Under No. 4621A the projected date of bringing a frequency assignment into use may now be extended by 4 months on request. Moreover, where due to exceptional circumstances a further extension is necessary, such an extension may be provided up to a period of 18 months from the original projected date. The maximum extension under 4625/639CY of the present Radio Regulations is 150 days which was considered far too short to take into account unavoidable delays in satellite launchings.

- Under No.4636A the Board, in its review of entries in the Master Register shall, at intervals not exceeding 2 years, request confirmation from an administration that its assignments have been and will continue to be in regular use in accordance with their recorded characteristics.

  This latter provision is another means at the Board's disposal of improving upon the accuracy and reliability of entries in the Master Register. However, because of the relatively short interval between enquiries it may prove that due to the lack of adequate staff the Board and some administrations may not be able to comply with it.

ARTICLE N13A Supplementary Procedure to be applied in Cases where a Footnote in the Table of Frequency Allocations requires and Agreement with an Administration

In the present Table of Frequency Allocations there are some 50 odd footnotes which permit anomalous use of particular frequency bands subject to prior or special agreement, arrangement, consultation or coordination. A large number of these footnotes relate to space services and because of their

world-wide impact an administration, planning to introduce a new system, could in theory find itself obliged to obtain agreement of every one of the 153 other countries of the ITU. Also, on occasion, the IFRB has been faced with the problem of interpretation in the application of some of the footnotes and has had disagreements with administrations as to what other administrations' coordination is required.

In order to avoid placing the Board in this untenable position and unnecessary delays in the extensive dealings between administrations this new Supplementary Procedure has been introduced. Simply speaking its basic thrust is to provide a mechanism whereby an administration can, on a one-time-basis, identify all administrations with which it is obliged to effect coordination of a proposed frequency assignment where the conditions of a footnote apply.

ARTICLE 13B — Coordination, Notification and Recording of Frequency Assignments to Stations of the Broadcasting-Satellite Service in the Frequency Bands 11.7 - 12.2 GHz (in Regions 2 and 3) and 11.7 - 12.5 GHz (in Region 1) and to the other Services to which these Bands are Allocated, so far as their Relationship to the Broadcasting-Satellite Service in these Bands is Concerned

This is a one-paragraph new Article referring the reader to new Appendix 29A wherein is contained the provisions and associated Plan for the Broadcasting-Satellite Service in the frequency bands 11.7 - 12.2 GHz (in Regions 2 and 3) and 11.7 - 12.5 GHz (in Region 1) adopted by the World Broadcasting-Satellite Adminstrative Radio Conference, Geneva, 1977.

ARTICLE N18 — International Monitoring

ARTICLE N19/16 — Reports of Infringements

ARTICEL N20/15 — Procedure in a Case of Harmful Interference

Changes are mainly editorial for clarification of text.

Points of interest are that:

- subject to agreement administrations may permit their specially-designated monitoring stations to deal directly with cases of harmful interference and may also allow the direct exchange of information between such stations of other administrations (Nos. 5129 and 5136 of Article N20/15 refer).

- an administration may need the assistance of the IFRB in identifying the source of harmful interference when it involves a case effecting an assignment that was selected by the Board under No. 4280A. (Nos. 5143 to 5146 refer).

ASSOCIATED APPENDICES

In general, modifications to Appendices 1, 1A and 1B pertain to the various items of information that must be supplied in more detail in order to satisfactorily assess the compatibility of systems during coordination and the subsequent examination of frequency assignments by the IFRB during the notification process.

The significant changes are as follows:

APPENDIX 1 Basic Characteristics of Frequency Assignments Relating to Terrestrial Radiocommunication Stations

- Class of operation, must now be stipulated for an assignment in the Fixed Service in the bands between 3 and 27.5 MHz.

- Power, must now be expressed in dBW.

- Azimuth of maximum radiation of transmitting antenna, for frequencies above 1 GHz in bands shared between terrestrial and space radiocommunication services must be given to an accuracy of one-tenth of a degree if the terrestrial station is within the coordination area of an earth station or if the direction of the maximum radiation is within 3 degrees of the geostationary satellite orbit. An alternative is to express the geographical coordinates of the transmitter site in degrees, minutes and seconds with an accuracy of one-tenth of a minute.

- Regular hours (UTC) of operation of the frequency assignment, must be indicated.

- Section D, is new and lists the information that must be provided when the IFRB is requested to select a frequency under No. 4280A of Article N12/9.

- Section F Item 2, is new and specifies frequencies prescribed for common use which should not be notified.

APPENDIX 1A Basic Characteristics of Frequency Assignments Relating to Space Radiocommunications and Radio Astronomy Stations

- For coordination and notification purposes any number of frequencies may now be indicated on the same notice form providing that all of the frequencies have the same basic characteristics.

- To assist administrations there is now a Table annexed to this Appendix which identifies those items of information that must be supplied for coordination purposes.

- The geographical coordinates of an earth station must now be expressed in seconds with an accuracy of one-tenth of a minute if the coordination contour of that earth station overlaps the territory of another country.

- The class of emissions, necessary bandwidth and description of the emission must be indicated for the carrier having the smallest bandwidth of assignments in the system.

- For calculating the maximum power density per Hz the most recent version of the CCIR Report 792 should be used.

- When specifying the type of polarization of the transmissions of a space system it must also be indicated if consent is given to the general use of this information in the determination of the need for co-ordination with other satellite networks according to Appendix 29.

- The more detailed requirements under noise temperature, link noise temperature and transmission gain of a receiving earth station makes it possible to determine the maximum sensitivity of the system more accurately.

- For evaluating the transmission gain or a change in noise temperature, the reference point has been changed from the input of the receiver to the output of the receiving antenna.

- As of July 1980, when indicating the date of bringing into use of an assignment to a space station the period of validity for which the satellite network was designed must also be indicated.

- The method of plotting a space station's antenna radiation beam is now standardized using a radial projection from the space station and whenever possible the gain contours should also be provided in the form of a numerical equation or in tabular form.

- In the case of a space station operating in a bi-directional band the antenna pattern must also be given in the direction of the geostationary satellite orbit that is visible from that orbital position.

APPENDIX 1B — Advance Publication Information to be Furnished for a Satellite Network

- All of the significant changes to Appendix 1A listed above (with the exception of the first three) are similarly reflected in the applicable Sections of this Appendix.

- The only other change is the addition of Section F which lists the supplementary information that may be provided to be used for interference calculations at the Advance Publication Stage.

APPENDIX 6 — Reports of Inernational Monitoring Emissions

APPENDIX 7 — Reports of an Irregularity or of an Infringement of the Convention or the Radio Regulations

- These Appendices are basically unchanged with the exception of a new Section II to Appendix 6 which lists the items of information that must be provided in monitoring reports concerning stations in the space radiocommunication services. All other changes are editorial for clarification of text or to specify in more detail the items of information that must be provided.

ASSOCIATED RECOMMENDATIONS

Rec. D — Relating to International Monitoring

- Replaces Rec. No. 5 of the ARC 1959 with minor editorial changes only.

Rec. YG — Relating to a Handbook for Computer-Aided Techniques in Radio Frequency Management

- Recommends that the CCIR, with the participation of the General Secretariat and the IFRB, to prepare a handbook by 1982 describing the various aspects involved in applying computer-aided techniques to radio frequency management.

Rec. YH — Relating to the Definitions of "Service Area" and "Coverage Area"

- Invites the CCIR to specify a general definition for "coverage area" and to specify the technical basis for a general definition of "service area" taking into account the present usage of the term throughout all official ITU text.

ASSOCIATED RESOLUTIONS

Res. AA — Relating to a Procedure for Resolving a Disagreement over the Technical Standards or Rules of Procedure of the International Frequency Registration Board

- A new procedure for resolving such disagreement in accordance with No. 3960A.1 of Article N9/8.

Res. AD — Relating to the Development of National Radio Frequency Management

- To provide assistance to developing countries in the establishment and operation of radio frequency management units and to draw attention to the next Plenipotentiary Conference to the need to take all practical measures to ensure that resources are made available for this purpose.

Res. AH — Relating to the Circulation of Current Information on CCIR Recommendations Referred to in the Radio Regulations

- The Secretary-General is to communicate to all administrations a list of CCIR Recommendations as well as any subsequent updating thereof.

Res. AI — Relating to the Use of Frequency Assignments to Terrestrial and Space Radiocommunication Stations in the Band 11.7 - 12.2 GHz in Region 3 and in the Band 11.7 - 12.5 GHz in Region 1

- Replace Resolution No. SAT-2 of the WARC-BS 1977.

Res. AK — Relating to the Preparation of Explanatory Information by the International Frequency Registration Board on the Application

of the New Method for Designating Emissions in Notification Procedures and the Consequential Revision of the Master International Frequency Register

- The IFRB to prepare explanatory information on the application of the new method of designating emissions as early as possible and not later than 1 October 1980 and shall proceed with the conversion of the relevant data in the MIFR in consultation with the administrations concerned.

Res. BO — Relating to the Bringing into Use of Space Stations in the Broadcasting Satellite Service, Prior to the Entry into Force of Agreements and Associated Plans for the Broadcasting-Satellite Service

- Replaces Resolution SPA2-3 of WARC-ST 1971. (Editorial changes only).

Res. BP — Relating to the Use of the Geostationary-Satellite Orbit and to the Planning of Space Services Utilizing It

- To convene a two-session WARC no later than 1984 to decide which space services and frequency bands should be planned and to establish the principles, technical parameters and criteria for such planning.

- This Resolution is as a consequence of the insistence of many administrations to plan the Fixed-Satellite Service and various other space services. Great effort was made to write the text in such a way as to ensure a balance between those administrations wanting priority planning and those assured that such planning would not be necessary in the foreseeable future. It was the contention of the latter that the geostationary satellite resource should really be managed on a continuing basis so as to ensure that the service requirements of all countries would be met.

Res. BQ — Concerning the Drawing Up of Agreements and of the Associated Plans for Feeder Links to Broadcasting-Satellites operating in the 12 GHz Band under the Plan Adopted by the World Broadcasting-Satellite Administrative Radio Confernece (Geneva, 1977) for Regions 1 and 3

- Invites the administrative Council to study the question of convening an Administrative Radio Conference for this purpose and that until the Final Acts of the proposed Conference come into force the procedures prescribed in Articles N11/9A and N13/9A and Resolution CS and the sharing criteria given in Article N25 shall apply.

Res. BU — Relating to Examination by the IFRB of the Notices referring to Stations in the Broadcasting Service in Region 2 in the Band 535 - 1 605 kHz during the Period Preceding the Entry into Force of the Final Acts of the Regional Administrative MF Broadcasting Conference (Region 2)

- Required to provide the IFRB with a procedure for the examination of notices of "Region 2 broadcasting assignments in the band 535 - 1 605 kHz" as a consequence of the deletion of this reference from No. 4299/504 and the suppression of Nos. 4410/576 and 5142/718 of the Radio Regulations.

Res. BV — Relating to the Bringing into Use of Earth Stations in the Amateur-Satellite Service

- A provision whereby an administration intending to establish a satellite system in the amateur-satellite service may also have information published with respect to earth stations of that system.

Res. BW — Relating to the Preparation of a Handbook to Explain and Illustrate the Procedures of the Radio Regulations

- The IFRB is to prepare a handbook incorporating appropriate graphical material, including flow charts, to aid the staff of administrations in the understanding and application of the procedures for coordination, notification and registration of frequency assignments as contained in Chapter NIV of the Radio Regulations.

Res. BX — Relating to the Introduction and Development of Computer Assistance in Radio Frequency Management within Administrations

- For further assistance to administrations, particularly of developing countries, in introducing and developing computer facilities as aids to radio frequency management. The Secretary General is to ensure that all the educational resources of the Union are made available to provide further training in this field and to aid administrations in the identification and resolution of special problems encountered.

Res. BY — Relating to the Period of Validity of Frequency Assignments to Space Stations using the Geostationary-Satellite Orbit

- This is an attempt to come to grips with the "replacement space station" controversy by limiting the period for which an administration is entitled to the right to the continued use of a particular geostationary orbital position and associated radio frequency spectrum. However, because of the definition given to the term "space station", as used in the context of this resolution, the period of operation of an assignment to a space station may, in effect, be extended indefinitely.

- As written, this procedure changes little the provisions of the existing Article N11 procedures except for the following:

  - As of 1 July 1980, an administration, when notifying the particulars of a frequency assignment to a space station, must also indicate the period of operation of the assignment;

- Should an administration wish to extend the period of validity of a space station assignment it must inform the IFRB accordingly more than 3 years in advance of the expiry date of the period in question;

- Should the basic characteristics of frequency assignments to a replacement space station change (other than frequency and orbital position) then the 4114/639AJ coordination procedures must be initiated at least 3 years prior to the expiry date and must be successfully coordinated prior to notification.

The procedures of this resolution are experimental in nature and will be reviewed at the next World Space Administrative Radio Conference as to the practicality of such a concept and for the possibility of its inclusion into the regulatory procedures for the planning of space services of that Conference.

Res. BZ — Relating to Improvements in Assistance to Developing Countries to Securing Access to the HF Bands for their Fixed Services and in Ensuring Protection of their Assignments from Harmful Interference

- This resolution gives priority to developing countries to make use, to the maximum extent possible, of the provisions of the Radio Regulations where special assistance is available from the IFRB.

Res. CA — Relating to Notification of Frequency Assignments

- Replaces Resolution No. 5 of the ARC 1959 appropriately modified to update.

Res. CT — Relating to the Revision of Entries in the Master International Frequency Register in the Bands Allocated to the Fixed Service Between 3 000 kHz and 27 500 kHz.

Res. CU — Relating to the Review of Entries in the Master International Frequency Register at the Request of Previous Conferences

Res. CV — Relating to Implementation of the changes in Frequency Allocations in the Bands Between 4 000 kHz and 27 500 kHz

- These three resolutions, as their titles imply, refer to action to be taken by the IFRB to review entries in the Master International Frequency Register, in the bands allocated to the Fixed Service between 3 and 27.5 MHz, in order to improve its accuracy and reliability. This is to provide a firm foundation for subsequent action by the Board in selecting replacement assignments for those displaced in the bands between 4 and 27.5 MHz as a result of changes in the Frequency Allocation Table by WARC 79. The points of interest concerning this operation have been explained in greater detail under Article N12/9.

Res. CW — Relating to the Calculation Methods and Interference Criteria Recommeded by the CCIR for Sharing Frequency Bands Between

Space Radiocommunication and Terrestrial Radiocommunication Services or between Space Radiocommunication Services

- Editorial, for clarification of the process by which administrations will be assured of being in receipt of the latest drafts of revised and new CCIR Recommendations effecting the calculation methods and interference criteria to be employed in application of the pertinent provisions of the Radio Regulations.
A list of the present Recommendations and Resolutions reviewed by Committee 6 indicating the subsequency action taken together with the new Resolutions generated are annexed hereto.

ANNEX

Recommendations and Resolutions Actioned by Committee 6

RECOMMENDATIONS

OLD NO.	NEW NO.	NOC	MOD	SUP
5	D		X	
16	ZG	X		
21	ZH	X		
SPA2-1	ZI	X		
AER2-3	ZJ	X		
AER2-4	ZK	X		

RESOLUTIONS

OLD NO.	NEW NO.	NOC	MOD	SUP
1				X
2				X
4				X
5	CA		X	
15	AV	X		
MAR 4	AQ	X		
MAR 5	AW	X		
MAR 11				X
MAR 15				X
MAR 19	AX	X		
MAR 20	AR	X		
SPA2-1	AY	X		
SPA2-2	AU	X		
SPA2-3	BO		X	
SPA2-6	CW		X	
MAR2-2				X
MAR2-3				X
MAR2-4	AS	X		
MAR2-6				X
MAR2-7	AZ	X		
MAR2-8	BA	X		
MAR2-9				X
MAR2-10				X
MAR2-11				X
MAR2-12				X
MAR2-13				X
MAR2-14	BB	X		
MAR2-15	AT	X		
SAT 1				X
SAT 2	AI		X	
SAT 3				X
SAT 5	BC	X		
SAT 9	BE	X		
AER2-2	BF	X		
AER2-3	BG	X		
AER2-4	BH	X		
AER2-5	BI	X		
	BT	X		

New Resolutions generated by Committee 6 are:
AA, AD, AE, AH, AK, BP, BT, BU, BV, BW, BY, BZ, CT, CU and CV.

ANNEX A

ESTABLISHMENT OF WORKING GROUPS, AD HOC GROUPS AND SUB-GROUPS

COMMITTEE 6 - Chairman: Mr. M. JOACHIM, Vice-Chairman: Mr. E.J. WILKINSON

Committee 6/ad hoc 1 - Mr. P.V. LARSEN	- Resolution on the publication of CCIR Recommendations
Committee 6/ad hoc 2 - Mr. E.J. WILKINSON	- Resolution on use of the geostationary satellite orbit
WORKING GROUP 6A - Mr. J.K. Björnsjö	- Articles N11, N12, N13 and Resolutions
Working Group 6A/ad hoc 2 - Mr. Y. KABA	Resolution on assistance to the developing countries in frequency management
Drafting Group 6A1 - Mr. J.K. Björnsjö	
Sub-Working Group 6A2 - Mr. J.A. LEWIS	- Existing Resolutions and Recommendations Resolutions on assistance in the use of computers
Sub-Working Group 6A3 - Mr. A.M. CORRADO	- Appendices 1, 1A and 1B
Sub-Working Group 6A4 - Mr. N. BOUHIRED	- General principles for the revision of Article N12
WORKING GROUP 6B - Mrs. L. GARCIA de DAVIS	- Articles N9, N10, N18, N19, N20 Resolutions and Recommendations
Drafting Group - Mr. J.A. LEWIS	
Sub-Working Group 6B1 - Mr. R. BINZ	- Consideration of Nos. 3953, 3953A, 3960A and 3960A.1
Sub-Working Group 6B2 - Mr. A.M. CORRADO	- Appendices 6, 7 and 8
DRAFTING GROUP 6R - Mr. D. GARIDOU Mr. R.J. DUNN Mr. R. FERNANDEZ CABRERA	

PART 8

Report of committee 7 (Administrative)

COMMITTEE 7 - General Administrative Committee

Chairman:
Mr. P.O. Okundi (Kenya)

Vice-Chairman:
Mr. H.I. Venhaus (Federal Republic of Germany)

Terms of reference:

To deal with proposals on general administrative matters not covered by other Committees and, in particular, to consider proposals concerning the following articles:

Article N1, Terms and definitions; Section I, General terms

Article N21, Secrecy

Article N22, Licences

Article N23, Identification of stations

Article N24, Service documents

Article N30, Amateur service and amateur-satellite service

Article N31, Standard frequency service and time signals service

Article N32, Experimental stations

Article N33, Radiodetermination service and radiodetermination-satellite service Sections I, II, III and IVA

Article N39, Special services relating to safety

Article N73, Effective date of the Radio Regulations
and the related Appendices C, 9, 10 and 23

To consider proposals on the technical aspects for the use of radiocommunications for making, identifying, locating and communicating with the means of medical transport protected under the 1949 Geneva Conventions and any additional instruments of these Conventions.

To suggest to the plenary meeting, taking account also of the advice of other Committees, a programme of future adminstrative radio conferences to deal with specific services with a view to presenting advice on such a programme to the ITU Administrative Council for subsequent submission to the Plenipotentiary Conference.

To consider Resolution No. Sat-4 of the World Broadcasting-Satellite Administrative Radio conference (Geneva 1977), and to take such action as may be considered necessary.

To consider as appropriate to the work of the General Administrative Committee the resolutions and recommendations adopted by previous administrative radio conferences and to take such action as may be considered necessary including the adoption of any new resolutions and recommendations.

The Canadian coordinator for the Administrative Committee was V. Decloux and active participant included H. Salisbury.

ADMINISTRATIVE PROVISIONS FOR STATIONS

Note: Many modifications to the regulations concerned with the administration of radio stations were adopted by the Conference for the purpose of simplification or clarification. Only those changes to the regulations that introduce new provisions, change the intent of existing provisions or require action on the part of administrations are reported here.

ARTICLE N21/17 SECRECY

This article remains basically the same, requiring administrations, in the application of the Convention, to preserve the secrecy of radiocommunication not intended for the general use of the public.

ARTICLE N22/18 LICENCES

Changes to this article which are incorporated in modifications or added to previous provisions are:

a) Administrations are required where necessary for verification purposes, to provide a translation of the text on a radio licence in one of the working languages of the Union. The former requirement was for a translation of the text in a language used in international relations.

b) The provision requiring administrations to include a clause, on a land mobile licence to the effect that the station's operation is forbidden in countries other than that in which it has been licensed, except under special agreement, has been expanded to include stations equipped with receiving equipment only.

c) A new provision provides for the issuing of a radio licence to an aeronautical mobile station as a temporary substitute for a licence issued by the administration of the country where the aircraft is registered, by another administration where the aircraft is leased, hired or otherwise exchanged for operation in that country.

ARTICLE N23 IDENTIFICATION OF STATIONS

This article has been extensively modified by making appropriate changes and/or adding to existing provisions. Of significance are the following:

a) Modified procedures for the formation of call signs using the Table of Allocation of International Call Signs (App. C). The new procedures permit administrations to continue the allocation of call signs in accordance with present procedures until available combinations have been exhausted and then initiate new formation of c/s procedures while retaining the existing table of allocations.

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b) Recognition that the absence of identification on radiobeacon or certain other radionavigation services is an agreed means of warning users that transmissions cannot safely be used for navigation purposes.

c) That, where practical in appropriate services, identification should be effected in accordance with CCIR Recommendations.

d) The introduction in the regulations of the Maritime Mobile Service Identities and Procedures for the formation of such selective call numbers for ships and coast stations (App. CA and Resolution DD refer).

ARTICLE N24/20 SERVICE DOCUMENTS

In listing the documents which will be published by the Secretary General provision has now been made, that as circumstances warrant and based on requests by administrations, the information will be made available in computer printed or machine readable form, film, microfiche or other appropriate means.

Many changes have been made to the publication schedule of the various lists of stations available from the Union. For further information reference should be made to this article.

Lists IIIA and IIIB List of broadcasting stations operating in the bands below 26,100 kHz (two volumes) have been discontinued.

Lists VIIA has been expanded to include the Maritime Mobile and Maritime Mobile Satellite Numerical Table of Identities.

Provisions have been made for the publication of a manual for use by the Maritime Mobile and Maritime Mobile Satellite Service which would be reviewed as needed after administrative conference and plenary assemblies of the CCITT and CCIR.

ARTICLE N30/41 AMATEUR SERVICE AND AMATEUR SATELLITE SERVICE

This article remains basically unchanged except for the provision providing for administrations to waive the requirement for Morse code proficiency for Amateur operators. Operators of stations operating above 30 MHz (previously 144 MHz) may now be waived from this requirement.

ARTICLE N31 STANDARD FREQUENCY AND TIME SERVICE

Only regulation 6389/1623 has been modified to emphasize the need for administrations to coordinate on a world-wide basis, in accordance with the provisions of this Article, the implementation of their standard frequency and time services.

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ARTICLE N32/42 EXPERIMENTAL STATIONS

Except for minor editorial changes this Article remains unchanged.

ARTICLE N33 RADIODETERMINATION SERVICE AND RADIODETERMINATION SATELLITE SERVICE

The assignment of frequencies to aeronautical radiobeacons in the 160-435 MHz band are now to be made on the basis of a protection ratio against interference of at least 15db (formerly 10 db) throughout its service area.

In Section C regulations dealing with protection ratios for maritime radiobeacons have been changed to reflect the new expanded allocation for this service as 283.5 to 335 kHz (formerly 285 to 325 kHz).

ARTICLE N39 SERVICES RELATED TO SAFETY

Only two modifications have been made to this Article. The first encourages the use of international meteorological codes in the transmission of meteorological observations for forecast or protection of aircraft purposes. The second encourages the use of frequencies dedicated to meteorological services for the transmission of observations intended for official meteorological services.

ARTICLE N73 EFFECTIVE DATE OF THE RADIO REGULATIONS

The new regulations, annexed to the Convention, enter into force January 1, 1982, with the exception of Article N23, Appendix CA and Article N62A which come into effect on January 1, 1981. Also excluded is the frequency allotment plan for the aeronautical (R) service and its directly-related provisions which come into effect on February 1, 1983.

TECHNICAL ASPECTS FOR THE USE OF RADIOCOMMUNICATIONS FOR MARKING, IDENTIFYING, LOCATING AND COMMUNICATING WITH MEDICAL TRANSPORTS

A new section 1A Medical Transports, has been incorporated into Article N37 to address the requirement for the marking, identification, location and communication with Medical Transports. Significant aspects of this new section are:

a) the adoption of the definition from the 1949 Geneva Convention for the term "Medical Transport";

b) a procedure for the announcing and identifying of medical transports protected under the 1949 Geneva Convention;

c) the use of international distress frequencies for identification and establishing communications;

.../4

d) a message format for the purpose of establishing identification. position, route, estimated time en route including time of arrival or departure as appropriate;

e) other pertinent information.

A PROGRAM OF FUTURE ADMINISTRATIVE RADIO CONFERENCES FOR SUBMISSION TO THE PLENIPOTENTIARY CONFERENCE

See recommendation XM.

ASSOCIATED RECOMMENDATIONS

Rec. E — Relating to Studies and Prediction of Radio Propagation and Radio Noise

This Recommendation replaces Recommendation No. 4 of the ARC 1959 and has been modified to emphasize the requirement for propagation studies in some areas of the world requesting the CCIR to assist and encourage such studies, giving particular attention to those that will assist the IFRB in refining their technical standards. Administrations are urged to initiate such studies in those parts of the world where adequate observation systems have not yet been established and to take note of relevant CCIR texts on the subject in so doing.

Rec. ZO — Relating to the Use of Rationalized "Système International d'Unités" (SI)

Replaces Recommendation No. 9 of the ARC 1959 and has been modified to recommend the use of SI units as approved and recommended by the ISO for general adoption by all members of the Union in its dealings with the Union and its organs.

Rec. XD — Relating to Maritime Radiobeacons

This Recommendation is concerned with maritime radiobeacons in the European Maritime area governed by the Paris Arrangement 1951 which deals for the most part with aural direction finding techniques and recommends that administrations and the CCIR study the technical characteristics of maritime radiobeacons for submission of proposals to the next competent WARC. The administrative council is asked to take the necessary steps to include this question on the agenda for the next WARC and the Secretary General is asked to communicate this Recommendation to IMCO and IALA.

Rec. XE — Relating to the Use of Space Radiocommunication Systems in the Event of Natural Disasters, Epedemics, Famine and Similar Emergencies

Replaces Recommendation No. SPA 2-13 of the WARC 1971 and remains basically the same with the exception that reference is made to CCIR studies that are now available (Report 554-1) on the use of transportable earth stations for relief operations. CCIR are invited to continue studies of standard specifications and preferred frequencies for transportable earth stations and for compatible mobile and transportable fixed radiocommunications equipment for relief operations.

Rec. XF — Relating to the Presentation of Draft Amendments to the Radio Regulations

Replaces Recommendation No. MAR 2-20 of the WARC 1974 and with minor modifications remains basically unchanged.

Rec. XH — Relating to the Practical Needs of Countries in Need of Special Assistance

Replaces Recommendation No. 35 of the ARC 1959. This Recommendation has been modified to emphasize the need for all countries to make special effort to co-operate with those in need of special assistance by the provision of monitoring data and technical assistance with a view to assisting them to obtain proper frequency assignments.

Rec. XI — Relating to the Future Use and Characteristics of Emergency Position Indicating Radiobeacons

Replaces Recommendation No. MAR 2-12 of the WARC 1974 and has been adopted without change.

Rec. XJ — Relating to the Use of the Carrier Frequencies 4125 kHz and 6215.5 kHz to Supplement the Carrier Frequency 2182 kHz for Distress and Safety and for Call and Reply Purposes in the Zone of Regions 1 and 2 South of Latitude 15° North but including Mexico, and in the Zone of Region 3 South of Latitude 25° North

Replaces Recommendation No. MAR 2-4 of the WARC 1974 and has been adopted without change except to take account of the change of frequencies 4136.3 and 6204 kHz to those specified effective January 1, 1978.

Rec. XK — Relating to the Adoption of Standard Forms for Ship Station Sciences and Aircraft Station Licences

Replaces Recommendation No. 17 of the ARC 1959, and has been adopted without change.

Rec. XL — Relating to the Introduction of an Additional Tone After the Radiotelephone Alarm Signal Transmitted by Coast Stations

Replaces Recommendation No. MAR 2-5 of the WARC 1974 and has been adopted with minor editorial changes.

Rec. XM — Relating to the Convening of Future Administrative Radio Conferences to Deal with Specific Services

Agenda Item 2.10 of the terms of reference for WARC 1979 called on the Conference to propose to the Administrative Council and the Plenipotentiary Conference a programme for the convening of future ARC to deal with specific services. WARC 1979, in this Recommendation has identified a need for three WARC's and eight RARC's to the Administrative Council and as appropriate to the Plenipotentiary Conference asking that in scheduling the Conferences they take their timing into account to allow for preparatory work and allocation of resources etc. etc.

Rec. XN — Relating to Automatic Identification of Stations

Article N23 allows for the automatic identification of stations where it is not practical or convenient to identify by manual means. Because of the desirability of effecting automatic identification in a standard manner this Recommendation tasks the CCIR to study the matter with a view to recommending technical characteristics and methods of implementing common universal techniques with due regard for the needs of diversified systems and stations.

Rec. XP — Relating to a World Administrative Radio Conference to Carry Out a General or Partial Revision of the Radio Regulations

This recommendation takes account of the many WARC's and RARC's scheduled for the coming decade and recommends that the Administrative Council consider the need, after 1990 for a World Administrative Radio Conference to undertake a general or partial revision of the radio regulations.

ASSOCIATED RESOLUTIONS

Res. AD — Relating to the Development of National Radio Frequency Management

This Resolution takes into account the fact that many countries do not have effective radio frequency management units to apply the provisions of the regulations concerned with the coordination, notification and registration of frequencies. As such units do much to safeguard the rights of countries and are of interest to the international community as a whole this Resolution provides for assistance by the Union and its organs in developing effective radio frequency management units in these countries.

Res. BK — Relating to the Division of the World into Climatic Zones for the Purpose of Calculation of Propagation Parameters

This Resolution deals with the lack of information available in certain areas of the world, on propagation characteristics as a result of rain, sand and dust storms and requests that the CCIR expedite studies on these phenomena and urge administrations who have not already done so to participate in such studies, and to communicate results to the CCIR.

Res. CF — Relating to CCIR Study of Lightning Protection of Radio Equipment

This Resolution calls for a study by CCIR in conjunction with CCITT on the phenomena of lightning and its effects on radio equipment.

Res. CG — Relating to Technical Co-operation with Developing Countries in the Study of Propagation in Tropical Countries

Resolves to invite the Secretary General to offer assistance of the Union to developing countries in tropical areas who endeavour to carry out propagation studies in order to improve their national radiocommunications and to arrange for funds and resources for this purpose from UNDP or other sources to assist the Union in providing appropriate technical assistance.

Res. CX — Relating to the Role of Telecommunications in Integrated Rural Development

Recognize the importance of telecommunications in the development of rural areas particularly relating to education, health, social services and economic growth and urges member countries to strengthen technical co-operation to accelerate telecommunications development. Requests assistance of Secretary General to provide assistance in the detailed planning, operation and maintenance of rural telecommunication infrastructure and application of appropriate technology.

Res. CY — Relating to the Use of Radiocommunications for Ensuring the Safety of Ships and Aircraft of States not Parties to an Armed Conflict

Replaces Rec. No MAR 2-17 of WARC 1974 and invites administrations to consider the need for an acceptable procedure to assist in ensuring the safety of ships and aircraft of neutral states in times of armed conflict and refers to the procedure given in the Annex to this Resolution as a possible solution. Administrations are urged to consider placing the matter on the agenda of the next competent conference.

Res. CZ — Relating to International Co-operation and Technical Assistance in the Field of Space Radiocommunications

Replaces Res. No. SPA 4 of the EARC 1963 and has been adopted in its original format.

Res. DA — Relating to the Introduction of New Calling Procedures for HF AIA Morse Telegraphy

Replaces Res. MAR 2-5 of the WARC 1974 which dealt with the introduction of new calling procedures for HF AIA Morse telegraphy and the designation of frequencies to be used by groups of administrations to better apportion the frequencies to be used in conjunction with the new calling procedures. The Resolution has been extensively amended to address the possible requirements for additions and modifications to the distribution plan for coast stations to take into account regional and traffic variations.

Res. DB — Relating to the Introduction of a Digital Selective Calling System to meet the Requirements of the Maritime Mobile Service

Replaces Res. No. MAR 2-19 of the WARC 1974 and has been adopted without change.

Res. DC — Relating to the New Rules for the Formation of Call Signs

Article N23 has been amended to provide new procedures for the formation of call signs. Administrations are urged to make use of the new provisions as soon as required, if necessary prior to the effective date of January 1, 1981.

Res. DD — Relating to the Introduction of a New System for Identifying Stations in the Maritime Mobile and Maritime Mobile Satellite Service (Maritime Mobile Service Identities)

Urges administrations that use the new numerical identities in their maritime mobile and maritime mobile satellite service to do so in accordance with the provisions of Appendix CA pending the decision of the next competent WARC and to assist the CCIR and CCITT in the studies in this matter. The Secretary General is requested to prepare a table of national identity digits in close collaboration with CCIR/CCITT for inclusion in Appendix CA subject to the approval of the next competent WARC.

Res. DE — Relating to the Formation of Call Signs and the Allocation of New International Series

Replaces Res. No. 8 of ARC 1959, has been extensively modified to address the possible shortage of call sign series which may be exhausted prior to the next WARC, resolves that the Secretary General urge administrations to make maximum use of the presently-allocated series, to review their present use with a view to releasing non-used series and to give consideration to proposals that might alleviate the situation.

Res. DF — Relating to the Determination, on the basis of the Agenda of the Possible Committee Structure to be Set Up at an Administrative Radio Conference

Concerns the problem of administrations who are not able to send large delegations to conferences who would be better able to cope if the committee structure for the dealing with Articles, Appendices, Resolutions and Recommendations were published in advance.

Res. DG — Relating to the Transfer of Technology

Takes into account United National General Assembly Resolutions relating to international development and co-operation emphasizing the role of science and technology in development, the General Assembly Resolution proclaiming a transport and communication decade in Africa in the period 1978-1987 and the decisions of the General Assembly relating to the preparation of an international development strategy during the Third United Nations Development decade in the 1980's. Instructs the Secretary General to strengthen technical co-operation activities geared to the planning, setting up, maintenance and operation of telecommunication systems and the training of staff for such purposes, to seek resources at the international level and to bring this Resolution to the attention of the Union's member and competent bodies of the United Nations.

ESTABLISHMENT OF WORKING GROUPS, AD HOC GROUPS AND SUB-GROUPS

7 ad hoc 2	Resolution SAT-4	Y. Utsumi (J)
7 ad hoc 3	Medical Transport	J. Foggon (AUST)
7 ad hoc 4	Sovereignty Issues in Notification	P.R.A. Fulton (UK)
7 ad hoc 5	Future WARC's	E. Ducharme (CAN)
7 ad hoc 6	Consideration of Service Documents N24	R. Schenke (FRG)
7 ad hoc 7	Call Signs	H. Railton (PNG)
7 ad hoc 8	TV Bandwidth Saving Study	D.E. Zwart (NETH)

ASSOCIATED APPENDICES

Appendix C Table of Allocation of International Call Sign Series

This Appendix has been modified to 1) incorporate changes, additions and deletions to the Table of Allocation of International Call Sign Series and 2) to provide for a change to the existing use of the call sign series HLA-HLZ and HMA-HMZ by the Republic of Korea and the Democratic People's Republic of Korea.

Appendix CA(New) Maritime Mobile Service Identities

This is a new Appendix providing for procedures relative to the formation of Maritime Mobile Service Identities for ship and coast stations as well as for group calls. Details of national identity digits to be used for Maritime Mobile Service Identities have yet to be worked out by the Secretary General in co-operation with CCIR and CCIT (see Resolution DD) and will be subject to review by the next competent conference. Pending a decision by this Conference the Secretary General will issue provisional national identity digits.

Appendix CB(New) Ship Station Selective Call Numbers and Coast Station Identification Numbers

This is a new Appendix which provides a table of blocks of selective call numbers for ship stations and selective call numbers for groups of ship stations supplied to administrations. This Appendix replaces interim procedures for the issuing of such numbers as specified Nos. 749A Mar and 783H Mar of the regulations.

Appendix 9 Service Documents

Appendix 9 has been modified extensively and reflects the following changes.
1) Suppression of lists 111A and 111B.
2) Use of UTC where service documents deal with time or hours of service.
3) Incorporation of Maritime Mobile Service Identity where applicable.
4) Reflects amalgamation of the time and standard frequency services.
5) List of International Monitoring Service Stations now provides for stations capable of monitoring emissions from stations of space radiocommunication services.
6) Suppression of "Radiocommunication Statistics" document.

Appendix 10 Service Document Symbols

Appendix 10 has been slightly modified to take into account the adoption of the term universal coordinated time and the suppression of symbols no longer in use.

Appendix 11 — Documents with Which Ship and Aircraft Stations will be Provided

Adopted essentially without change.

Appendix 29A — Provisions for All Services and Associated Plan for the Broadcasting Satellite Service in Frequency Bands 11.7 - 12.2 GHz (in Regions 2 and 3) and 11.7 - 12.5 GHz (in Region 1) (see Article N13B)

Resolution No. SAT-4 specified that WARC 79 be requested to annex the provisions and associated plan of the World Broadcasting Satellite Administrative Radio Conference Geneva, 1977 to the final Acts of WARC 79. This was considered at the 1979 Conference and has been effected by Appendix 29A in these final Acts. Resolution No. SAT-4 has now been suppressed.

RESOLUTIONS AND RECOMMENDATIONS OF THE PRESENT RADIO REGULATIONS, AND THE ACTION TAKEN IN THEIR RESPECT

RESOLUTIONS		DOCUMENT NUMBER			
Res.	Comm.	SUP	NOC	MOD	Replaced by
1	6	B.6			
2	6	B.6			
3	5	B.36 + 829			
4	6	B.6			
5	6 + 7		Add.1 to 842	B.44	Res. CA
6	5	B.19			
7	4	B.20			
8	7			B.48	Res. DE
9	7	842			
10*	5			B.40	Res. CR
11	5	B.31			
12	7	842			
13	5			B.44	Rec. YF
15	6		B.25		Res. AV
Spa 4	7			B.46	Res. CZ
Mar 1	7	842			
" 2	7	842			
" 4	6		B.25		Res. AQ
" 5	6		B.25		Res. AW
" 7	4		B.23		Res. AL
" 11	6 + 5	B.6 + 829			
" 15	6 + 5	B.6 + 829			

RESOLUTIONS		DOCUMENT NUMBER			
Res.	Comm.	SUP	NOC	MOD	Replaced by
Mar 17	7	842			
" 19	6		B.25		Res. AX
" 20	6		B.25		Res. AR
Spa2 - 1	6		B.25		Res. AY
" 2	6		B.25		Res. AU
" 3	6			B.30	Res. BO
" 4	4			B.24	Res. AM
" 6	6			B.44	Res. CW
" 7	7	842			
" 8	7	842			
Mar2 - 1	7	842			
" 2	6 + 5	B.6 + 829			
" 3	6 + 5	B.6 + 829			
" 4	6		B.25		Res. AS
" 5	7			B.46	Res. DA
" 6	6 + 5	B.6 + 829			
" 7	6		B.25		Res. AZ
" 8	5 + 6	838	B.25		Res. BA
" 9	6 + 5	B.6 + 829			
" 10	6 + 5	B.6 + 829			
" 11	6 + 5	B.6 + 829			
" 12	6 + 5	B.6 + 829			
" 13	6	B.36-829			
" 14	6		B.25		Res. BB
" 15	6		B.25		Res. AT
" 16	8	B.5			
" 17	7	826			

RESOLUTIONS		DOCUMENT NUMBER			
Res.	Comm.	SUP	NOC	MOD	Replaced by
Mar2 - 18	7		B.44		Res. CE
" 19	7			B.46	Res. DB
" 20	4			B.24(Corr.1)	Res. AN
" 21	4			B.24(Corr.1)	Res. AO
" 22	8	B.5			
" 23	8	B.5			
Sat 1	6	B.11			
" 2	6			B.11	Res. AI
" 3	6	858			
" 4	7	842			
" 5	6		B.25		Res. BC
" 6	6		B.25		Res. BD
" 7	4			B.24	Res. AP
" 8	5			B.40	Res. CH
" 9	6		B.25		Res. BE
" 10	8	B.5			
Aer2 - 1	5		B.36		Res. CB
" 2	6		B.25		Res. BF
" 3	6		B.25		Res. BG
" 4	6		B.25		Res. BH
" 5	6 + 5		B.25 + B.44		Res. BI + BT
" 6	5		B.31		Res. BL
" 7	5		B.36		Res. CC
" 8	7	842			

RECOMMENDATIONS		DOCUMENT NUMBER			
Rec.	Comm.	SUP	NOC	MOD	Replaced by
1	4		B.23		Rec. P
2	4		B.23		Rec. Q
3	4		B.23		Rec. R
4	4			B.10	Rec. E
5	6			B.6	Rec. D
6	4		B.23		Rec. S
7	4	B.20			
8	4			B.12	Rec. K
9	4			B.27	Rec. ZO
10	5		B.36		Rec. YI
11	5		B.36		Rec. YJ
12	5			B.44	Rec. YZ
13	4	B.20			
14	5	B.31			
15	4			B.24	Rec. W
16	6		B.25		Rec. ZG
17	7		B.46		Rec. XK
18	7	842			
19	5	B.46			
20	5		B.36		Rec. YK
21	6		B.25		Rec. ZH
29	7	842			
31	5	B.36 - 829			
32	5	B.31			
33	5		B.31		Rec. ZT
34	5 + 7			B.7	Res. AF
35	7			B.46	Res. XH
37	5	B.36 + 829			

RECOMMENDATIONS		DOCUMENT NUMBER			
Rec.	Comm.	SUP	NOC	MOD	Replaced by
Spa 4	4			B.24	Rec. X
" 5	4	B.20			
" 7	5			B.31	Rec. ZX
" 8	5		B.31		Rec. ZU
" 9	7	842			
" 10	5			B.44	Rec. XC
" 11	5	B.36			
Aer 2	4			B.24	Rec. Y
Mar 2	8	B.5			
" 3	4	B.20			
" 5	5		B.36		Rec. YO
" 6	5	B.36			
Spa2 - 1	6		B.25		Rec. ZI
" 2	5				
" 3	5	B.22			
" 4	5	B.22			
" 5	5	B.22			
" 6	5	B.31			
" 7	5	B.36 + 829			
" 8	4	B.20			
" 9	4			B.24	Rec. Z
" 10	4		B.23		Rec. T
" 11	4			B.24	Rec. ZA
" 12	4			B.24	Rec. ZB
" 13	7			B.46	Rec. XE
" 14	8	B.5			
" 15	4			B.27	Rec. ZQ

RECOMMENDATIONS		DOCUMENT NUMBER			
Rec.	Comm.	SUP	NOC	MOD	Replaced by
Mar2 - 1	5	B.36 - 829			
" 2	5		B.36		Rec. YL
" 3	5	B.36 - 829			
" 4	7			B.46	Rec. XJ
" 5	7		B.46		Rec. XL
" 6	7			B.44	Rec. YP
" 7	7 + 5			872; B.36	Rec. YM
" 8	5	789			
" 9	5	B.36			
" 10	7		B.44		Rec. YQ
" 11	5			B.31	Rec. ZW
" 12	7			B.46	Rec. XI
" 13	4	B.20			
" 14	5			B.44	Rec. XA
" 15	7		B.44		Rec. YR
" 16	7		B.44		Rec. YS
" 17	7			B.46	Res. CY
" 18	8	B.5			
" 19	7		B.44		Rec. YT
" 20	7			B.46	Rec. XF
" 21	8	B.5			
Sat 1	5	838			
" 2	4			B.24	Rec. ZC
" 3	4			B.27	Rec. ZL
" 4	4			B.24	Rec. ZD
" 5	4			B.24	Rec. ZE
" 6	4			B.24	Rec. ZF
" 7	4		B.23		Rec. U
" 8	5	838			

RECOMMENDATIONS		DOCUMENT NUMBER			
Rec.	Comm.	SUP	NOC	MOD	Replaced by
Aer2 - 1	4		B.23		Rec. V
" 2	7		B.36		Rec. YN
" 3	6		B.25		Rec. ZJ
" 4	6		B.25		Rec. ZK
" 5	5	829		B.44	Res. BT
" 6	5	B.19			
" 7	5			B.44	Rec. XB
" 8	5			B.44	Rec. YF
" 9	5	B.19			

PART 9

Report of committee 8 (Additional Regulations)

COMMITTEE 8 - Restructure of the Radio Regulations and the Additional Radio Regulations

Chairman:
Mr. O. Lundberg (Sweden)

Vice-Chairman:
Mr. G.I. Warren (Canada)

Terms of Reference:

To consider the specific proposals concerning the basic re-arrangement of the Radio Regulations and the Additional Radio Regulations as well as the further refinement and deletion of superfluous or redundant provisions in Articles N34-N38. N40-N16 and N48-N72 as well as any consequential amendments concerning those articles related appendices, resolutions and recommendations including the adoption of any new resolutions and recommendations.

To consider proposals based on the CCIT studies carried out in accordance with Resolutions Nos Marc-2-22 and Mar-2-23 and to take such action as may be considered necessary.

The Vice-Chairman of the Committee 8 was G.I. Warren, D. Gilvary participated in sessions and H. Salisbury attended this committee on a part-time basis.

The Committee 8 Mandate covered world restructuring of a general nature for the most part. It did, however, also deal with detail in work on the harmonization of the accounting and operating provisions of the mobile Radio Regulations and the Additional Radio Regulations with CCITT Recommendations. This work is described as follows:

Committee 8 agreed to the CCITT proposals to suppress Articles N69-N72 and the entire Additional Radio Regulations as well as Appendices 21, 21A and 22 and it was agreed to follow the CCITT proposal to replace them with an umbrella regulation introduced as APT N62A that would give force to new CCITT Recommendations on accounting and operating in the Maritime Mobile Service. The new CCITT Recommendations were formally accepted by listing them as a "considering" in one of the Resolutions which also suppressed WMARC 74 Resolutions Mar. 2-22/23 and Recommendation Mar. 2-18. The Committee agreed to retain the order of priority articles for maritime and aeronautical mobile services, the latter to be the subject of further study, possibly in a mobile WARC suggested in another Resolution. The land mobile priority Article was suppressed. On the subject of revision of mobile, it was agreed that all three mobile chapters of the Radio Regulations be retained and reviewed. Finally, it was agreed that mobile station charges would be abolished.

ATTACHMENTS

ATTACHMENT 1

Canadian Delegation to the 1979 WARC

Head of Delegation	- B. Ostry (DM), or in his absence and when present, J.T. Fournier (SADM)
Deputy Head of Delegation	- G.I. Warren (DGTI)
Deputy Head of Delegation	- John de Mercado (DGTR)
General Coordinator	- E.D. DuCharme (DGTI)
Delegation Administrative Officer	- E.L. Dugger (DGTI)
Delegation Secretaries	- S.H. Dubois - L. O'Meara
External Affairs Advisor	- Officer from Permanent Mission in Geneva
Coordinator for the Frequency Allocations Committee	- R.W. Jones (DGTN)
Frequency Allocation Working Groups	
Working Group 0-50 MHz	- D. Fraser (DGTI)
Working Group 50-960 MHz	- R. Zeitoun (CRTC)
Working Group 960-275 GHz	- Dr. A.W. Adey (DGTN)
Working Group on Space Services	- Dr. R.R. Bowen (DGSPA)
Coordinator for the Technical Regulations Committee	- A.R. Bastikar (DGTI)
Technical Regulations Working Groups	
Space Technical Regulations Working Group	- R.G. Amero (DGTI)
Non-Space Technical Regulations Working Group	- M. Hunt (DGTR)
Additional Regulations Working Group	- D. Gilvary (DGTN)

Coordinator for the Administrative Regulations Committee, Coordination, Notification and Registration	- V. Decloux (DGTR)
Coordination, Notification and Registration Working Groups	- A. Heavenor (DGTR) - G. Gaston (DGTR)
Rearrangement Working Group	- A. Carew (DGTR)
Resolutions and Recommendations Working Group	- H.F. Salisbury (DGTI)

Frequency Allocations and Technical Regulations Support

Broadcasting	- L.K. Chau (DGTR)
Technical Standards	- S. Towaij (DGTR)
Propagation Advisor	- R. Olsen (DGRR)
Aeronautical	- W. Longman (DOT) - R.D. Hewitt (DOT)
Maritime Systems	- Major C. Kuspira (DND)
Broadcasting	- Dr. C. Siocos (CBC)
HF Broadcasting, Radio Canada International	- G. Jackson (CBC)
Broadcasting	- R. Zeitoun (CRTC)
Radioastronomy	- Dr. L. Doherty (NRC)
Satellite Services	- B. Mitani (Teleglobe)
Satellite Services	- A. Baillie (Telesat)

Technical Advisors from the Private Sector

Canadian Telecommunications Carriers Association (each will spend half time)	- P. Hervieux - A. Piechota
Canadian Radio Technical Planning Board	- R. Eldridge
Radio Amateurs	- B. Punchard
Canadian Electrical Association	- N. Alchuck

Technical Advisors cont'd

Canadian Association of Broadcasters	- S. Day
Electrical and Electronics Manufacturers Association of Canada	- G. Bedingham

ATTACHMENT 2

R. No. 801 WORLD ADMINISTRATIVE RADIO CONFERENCE, 1979

The Administrative Council

in view of the result of the consultations following Circular-telegrams Nos. A 72 dated 18 June 1976 and A 125 dated 27 May 1977,

resolves

1. that the Conference shall be convened in Geneva on 24 September 1979 for a duration of ten weeks;

2. that the agenda of the Conference shall be as follows:

2.1 to review and, where necessary, revise the provisions of the Radio Regulations relating to terminology, the allocation of frequency bands and the directly associated regulations (Articles of the Re-arrangement of the RR: N1, N2, N3, N5, N6, N7, N8 N25, N26, N27, N28 (Section I). N29, N33 (Section IV.B) and N47 and related Appendices not applying to a single service);

(Articles of the 1976 edition of the RR: 1 to 6 and Sections I, II, III,
VI, VII, VIII and IX of Article 7)

2.2 to review and, where necessary, revise the provisions applicable to the coordination notification and recording of frequency assignments except those Articles relating to a single service (Articles of the Re-arrangement of the RR: N11, N12 and N13 and related appendices, but not Articles N14 and N15);

(Article of the 1976 edition of the RR: 9 and 9A but not 9B and 10)

2.3 to review and, where necessary, revise the other Articles applicable to more than one service (Articles of the Re-arrangement of the RR: N4, N16 to N24 and related Appendices not applying to a single service) and provisions applicable to miscellaneous stations and services (Articles of the Re-arrangement of the RR: N30, N31, N32, N33 (Sections I, II, III and IVA) and N39 and related Appendices);

(Articles of the 1976 edition of the RR: 12 to 20, 41 to 44)

2.4 to make any necessary consequential editorial amendments to other provisions of the Radio Regulations and the Additional Radio Regulations resulting from the action taken under agenda items 2.1, 2.2 and 2.3;

2.5 to review the report on the activity of the IFRB and revise, where necessary, the provisions relating to its methods of work and regulations (Articles of the Re-arrangment of the RR: N9 and N10);

(Articles of the 1976 edition of the RR: 8 and 11)

2.6 to study the technical aspects for the use of radiocommunications for marking, identifying, locating and communicating with the means of medical transport protected under the 1949 Geneva Conventions and any additonal instruments of these Conventions;

2.7 to take account of Resolution No. Sat-10 of the World Broadcasting-Satellite Administrative Radio Conference, Geneva, 1977, on the possible Re-arrangement of the Radio Regulations and Additional Radio Regulations, to make such consequential changes as may be necessary to harmonize the Radio Regulations as well as the Additional Radio Regulations and to undertake any further necessary refinement and deletion of superfluous or redundant provisions;

2.8 to consider the proposals based on the CCITT studies out in accordance with solutions Nos. Mar2-22 and 23 and to take appropriate decisions;

2.9 to consider the resolutions and the recommendations adopted by administrative radio conferences, to take such action as may be considered necessary and to adopt such new resolutions and recommendations as may be necessary;

2.10 to propose to the Adminstrative Council and to the next Plenipotentiary Conference a programme for convening future Administrative Radio Conferences to deal with specific services;

2.11 to provide, for the benefit of future Adminstrative Radio Conferences, such guidelines as may be found necessary for optimum use of the frequency spectrum.

This Resolution replaces Resolution No. 783.

Resolutions

AA Relating to a Procedure for Resolving a Disagreement over the Technical Standards or Rules of Procedure of the International Frequency Registration Board

AB Relating to Operational Provisions, Charging and Accounting for Public Correspondence in the Mobile Services

AC Relating to the Eventual Abolition of Mobile Station Charges for Public Correspondence in the Maritime Mobile Service

AD Relating to the Development of National Radio Frequency Management

AE Relating to the Division of the World into Regions for the Purposes of Allocating Frequency Bands

AF Relating to the Use of Radiotelegraph and Radiotelephone Links by Red Cross, Red Crescent, and Red Lion and Sun Organizations

AG Relating to the Protection of Radiocommunication Services against Interference Caused by Radiation from Industrial, Scientific and Medical (ISM) Equipment

AH Relating to the Circulation of Current Information on CCIR Recommendations Referred to in the Radio Regulations

AI Relating to the Use of Frequency Assignments to Terrestrial and Space Radiocommunication Stations in the Band 11.7 - 12.2 GHz in Region 3 and in the Band 11.7 - 12.2 GHz in Region 1

AJ Relating to Information on the Propagation of Radio Waves Used in the Determination of the Coordination Area (see Appendix 28)

AK Relating to the Preparation of Explanatory Information by the International Frequency Registration Board on the Application of the New Method for Designating Emissions in Notification Procedures and the Consequential Revision of the Master International Frequency Register.

AL Relating to the Recommendations and Standards for Emergency Position-Indicating Radiobeacons Operating on the Frequencies 121.5 MHz and 243 MHz

AM Relating to the Experimental Use of Radio Waves by Ionospheric Research Satellites

Resolutions cont'd

AN Relating to the Use of Class R3E and J3E Emissions for Distress and Safety Purposes on the Carrier Frequency 2 182 kHz

AO Relating to the Use of Class R3E and J3E Emissions on the Carrier Frequencies 4 125 kHz and 6 215.5 kHz Used to Supplement the Carrier Frequency 2 182 kHz for Distress and Safety Purposes

AP Relating to the Use, by Space Stations Operating in the 12 GHz Frequency Bands Allocated to the Broadcasting-Satellite Service, of the Geostationary Satellite Orbit and No Other

AQ Relating to the Conversion to Single-Sideband Technique of Stations of the Radiotelephone Maritime Mobile Service Operating in the Bands between 1 605 and 4 000 kHz

AR Concerning the Establishment of a Coordinated Worldwide System for the Collection of Data relating to Oceanography

AS Relating to the Implementation of the New Channelling Arrangement for A1A Morse Radiotelegraphy in the Bands Allocated to the Maritime Mobile Service between 4 000 and 27 500 kHz

AT Relating to the Unauthorized Use of Frequencies in the Bands allocated to the Maritime Mobile Service

AU Relating to the Estalbishment of Agreements and Associated Plans for the Broadcasing-Satellite Service

AV Relating to Inter-ship Frequencies in the Bands between 1 605 and 3 600 kHz in Region 1

AW Relating to the Use of Single-Sideband Technique in the Radiotelephone Maritime Mobile Service Bands between 1 605 and 4 000 kHz

AX Relating to the Manner in which the IFRB Shall Treat Notifications Dealing with Frequency Assignments to Oceanographic Stations

AY Relating to the Equitable Use, by all Countries, with Equal Rights, of the Geostationary Satellite Orbit and of Frequency Bands for Space Radiocommunication Services

AZ Relating to the Use and Notification of Paired Frequencies Reserved for Narrow-Band Direct-Printing Telegraph and Data Transmission Systems in the HF Bands Allocated to the Maritime Mobile Service (see Appendix 15A)

BA Relating to the Notification of Non-Paired Ship Stations Frequencies used for Narrow-Band Direct-Printing Telegraph and Data Transmission Systems (see Appendix 15B)

Resolutions cont'd

BB Relating to the Channel Spacing of Frequencies allocated to the Maritime Mobile Service in the Band 156 - 174 MHz (see Appendix 18 and Article N57)

BC Relating to the Coordination, Notification and Recording in the Master International Frequency Register of Frequency Assignments to Stations in the Broadcasting-Satellite Service in Region 2

BD Relating to the Coordination, Notification and Recording in the Master International Frequency Register of Assignments to Stations in the Fixed-Satellite Service with Respect to Stations in the Broadcasting-Satellite Service in Region 2

BE Letter Not Used

BF Relating to the Unauthorized Use of Frequencies in the Bands Allocated to the Aeronautical Mobile (R) Service

BG Relating to the Implementation of the New Arrangement Applicable to Bands Allocated Exclusively to the Aeronautical Mobile (R) Service between 2 850 and 22 000 kHz

BH Relating to the Treatment of Notices Concerning Frequency Assignments to Aeronautical Stations in the Bands Allocated Exclusively to the Aeronautical Mobile (R) Service Between 2 850 and 22 000 kHz

BI Relating to the Implementation of the Frequency Allotment Plan in the Bands Allocated Exclusively to the Aeronautical Mobile (R) Service Between 2 850 and 22 000 kHz

BJ Relating to Improvements in the Design and Use of Radio Equipment

BK Relating to the Division of the World into Climatic Zones for the Purposes of Calculation of Propagation Parameters

BL Relating to the Use of Frequency Bands, Higher than the HF bands, in the Aeronautical Mobile (R) Service and the Aeronautical Mobile-Satellite (R) Service for Communication and for Meteorological Broadcasts

BM Relating to the Convening of a Planning Conference for Sound Broadcasting in the Band 87.5 - 108 MHz for Region 1 and Certain Countries Concerned in Region 3

BN Relating to the International Use of Radiocommunications, in the Event of Natural Disasters, in Frequency Bands Allocated to the Amateur Service

Resolutions cont'd

BO Relating to the Bringing into Use of Space Stations in the Broadcasting Satellite Service, Prior to the Entry into Force of Agreements and Associated Plans for the Broadcasting-Satellite Service

BP Relating to the Use of the Geostationary-Satellite Orbit and to the Planning of Space Services Utilizing It

BQ Concerning the Drawing up of Agreements and of the Associated Plans for Feeder Links to Broadcasting-Satellites operating in the 12 GHz Band under the Plan Adopted by the World Broadcasting-Satellite Administrative Radio Conference (Geneva, 1977) for Regions 1 and 3

BR Relating to the Reassignment of Frequencies of Stations in the Fixed and Mobile Services in the Bands Allocated to Radiolocation and Amateur Services in Region 1

BS Relating to the Modification of Carrier Frequencies of LF Broadcasting Stations in Region 1

BT Relating to the Implementation of the New Arrangement of Bands Allocated Exclusively to the Aeronautical Mobile (R) Service Between 21 924 and 22 000 kHz

Annex to BT Outline of Changes to be Made to Appendix 27 Aer 2 to the Radio Regulations

BU Relating to Examination by the IFRB of the Notices referring to Stations in the Broadcasting Service in Region 2 in the Band 535 - 1 605 kHz during the Period Preceding the Entry into Force of the Final Acts of the Regional Administrative MF Broadcasting Conference (Region 2)

BV Relating to the Bringing into Use of Earth Stations in the Amateur-Satellite Service

BW Relating to the Preparation of a Handbook to Explain and Illustrate the Procedures of the Radio Regulations

BX Relating to the Introduction and Development of Computer Assistance in Radio Frequency Management within Administrations

BY Relating to the Period of Validity of Frequency Assignments to Space Stations using the Geostationary-Satellite Orbit

Resolutions cont'd

BZ	Relating to Improvements in Assistance to Developing Countries to Securing Access to the HF Bands for their Fixed Services and in Ensuring Protection of their Assignments from harmful Interference
CA	Relating to Notification of Frequency Assignments
CB	Relating to the Use of Frequencies 3 023 kHz and 5 680 kHz Common to the Aeronautical Mobile (R) and (OR) Services
CC	Relating to the Use of Frequencies of the Aeronautical Mobile (R) Service
CD	Relating to the Redefinition of Certain Terms Contained in Annex 2 to the International Telecommunication Convention (Malaga-Torremolinos, 1973) and Applicable to the Radio Regulations
CE	Relating to Technical Cooperation with the Developing Countries in Maritime Telecommunications
CF	Relating to CCIR Study of Lightning Protection of Radio Equipment
CG	Relating to Technical Cooperation with the Developing Countries in the Study of Propagation in Tropical Areas
CH	Relating to the Convening of a Regional Administrative Radio Conference for the Detailed Planning of the Broadcasting-Satellite Service in the 12 GHz Band and Associated Feeder Links in Region 2
CI	Relating to the Application of Certain Provisions of the Final Acts of the World Broadcasting-Satellite Administrative Radio Conference, Geneva, 1977 to take into Account Changes made by the 1979 World Administrative Radio Conference to the Table of Frequency Allocations for Region 2 in the Band 11.7 - 12.7 GHz
CJ	Relating to the Sharing between the Fixed-Satellite Service in Regions 1 and 3 and the Broadcasting-Satellite Service in Region 2 in the Band 12.2 - 12.7 GHz
CK	Relating to the Final Acts of the 1977 World Broadcasting-Satellite Administrative Radio Conference with Respect to Region 2

Resolutions cont'd

CL	Relating to the Establishment of the Broadcasting-Satellite Service in Region 3 in the 12.5 - 12.75 GHz Frequency Band and to Sharing with Space and Terrestrial Services in Regions 1, 2 and 3
CM	Relating to the Broadcasting-Satellite Service (Sound) in the Frequency Range 0.5 GHz to 2 GHz
CN	Relating to Frequency Provisions for Development and Future Implementation of Ship Movement Telemetry, Telecommand and Data Exchange Systems
CO	Relating to the Use for the Radionavigation Service of the Frequency Bands 2 900 - 3 100 MHz, 5 470 - 5 650 MHz, 9 200 - 9 300 MHz, 9 300 - 9 500 MHz, and 9 500 - 9 800 MHz
CP	Letter Not Used
CQ	Relating to the Convening of a Regional Broadcasting Conference to Review and Revise the Provisions of the Final Acts of the African VHF/UHF Broadcasting Conference (Geneva, 1963)
CR	Relating to the Use of the Frequency Band 7 000 - 7 100 kHz
CS	Relating to Coordination among Administrations of the Technical Characteristics of Feeder Links to Space Stations of the Broadcasting-Satellite Service in the Band 11.7 - 12.5 GHz (Region 1 and 11.7 - 12.2 GHz (Region 3) during the Period between the Entry into Force of the Final Acts of the World Administrative Radio Conference, Geneva, 1979, and the Entry into Force of the Final Acts of a Future Conference on the Planning of Feeder Links to such Space Stations
Annex A to CT	Procedure for reviewing Entries in the Master Register in Frequency Bands allocated to the Fixed Service between 3 000 kHz and 27 500 kHz
CT	Relating to the Revision of Entries in the Master International Frequency Register in the Bands Allocated to the Fixed Service between 3 000 kHz and 27 500 kHz
CU	Relating to the Review of Entries in the Master International Frequency Register at the Request of Previous Conferences
CV	Relating to Implementation of the changes in Frequency Allocations in the bands between 4 000 kHz and 27 500 kHz

Resolutions cont'd

Annex A to CV	Transitional Procedure for the Selection and Approval of Replacement Assignments
Annex B to CV	Interim Procedure Concerning Notices Relating to Assignments in the Bands between 4 000 kHz and 27 500 kHz allocated on an Exclusive or Shared Basis to the Fixed Service
Annex C to CV	Review Procedure Concerning Notices Relating to Assignments for Stations of the Fixed Service in the Bands between 4 000 and 27 500 kHz
CW	Relating to the Calculation Methods and Interference Criteria Recommended by the CCIR for Sharing Frequency Bands between Space Radiocommunication and Terrestrial Radiocommunication Services or between Space Radiocommunication Services
CX	Relating to the Role of Telecommunications in Integrated Rural Development
CY	Relating to the Use of Radiocommunications for Ensuring the Safety of Ships and Aircraft of States not Parties to an Armed Conflict
Annex to CY	Possible Procedure for the Identification and Location of Ships and Aircraft of Neutral States
CZ	Relating to International Cooperation and Technical Assistance in the Field of Space Radiocommunications
DA	Relating to the Introduction of New Calling Procedures for HF AlA Morse Telegraphy
DA	Distribution Plan for Group Channels HF AlA Morse Coast Stations by Countries and Areas
DB	Relating to the Introduction of a Digital Selective Calling System to Meet the Requirements of the Maritime Mobile Service
DC	Relating to the New Rules for the Formation of Call Signs
DD	Relating to the Introduction of New System for Identifying Stations in the Maritime Mobile and Maritime Mobile-Satellite Services (Maritime Mobile Service Identities)
DE	Relating to the Formation of Call Signs and the Allocation of New International Series

Resolutions cont'd

DF	Relating to the Determination, on the Basis of the Agenda, of the Possible Committee Structure to be Set Up at an Administrative Radio Conference
DG	Relating to the Transfer of Technology
DH	Relating to the Convening of a World Administrative Radio Conference for the Mobile Services
DI	Relating to the Convening of a World Administrative Radio Conference for the Planning of the HF Bands Allocated to the Broadcasting Service
DJ	Relating to the Period between the Entry into Force of the Final Acts of the World Broadcasting-Satellite Administrative Radio Conference (Geneva, 1977) and the date on which the Provisions and Associated Plan, Adopted by that Conference, are Annexed to the Radio Regulations
DK	Relating to the Convening of a Regional Administrative Radio Conference to Establish Criteria for the Shared Use of the VHF and UHF Bands Allocated to Fixed, Broadcasting and Mobile Services in Region 3

Recommendations

A	Letter Not Used
B	Relating to the Marginal Numbering of the Radio Regulations
C	Relating to the Application of Chapters NX, NXI and NXII of the Re-arranged Radio Regulations
D	Relating to International Monitoring
E	Relating to Studies and Prediction of Radio Propagation and Radio Noise
F	Relating to the Improvement of Protection of Distress and Safety Frequencies, and those Related to Distress and Safety, against Harmful Interference
G	Letter Not Used
H	Relating to the Preparation of the Technical Information Necessary for the World Administrative Radio Conference on HF Broadcasting
I	Relating to Studies for the Introduction of Single-Sideband (SSB) Techniques in the HF Bands Allocated to the Broadcasting Service, in Preparation for the World Administrative Radio Conference on HF Broadcasting
J	Relating to the Use of the Term "Channel" in the Radio Regulations
K	Supplementing the Additional Characteristics for Classifying Emissions and Providing Additional Examples for the Full Designation of Emmissions, Both as Given in Appendix 5
L	Relating to Studies of the Maximum Permitted Levels of Spurious Emissions
M	Relating to the Provision of Formulae and Examples for the Calculation of Necessary Bandwidths
N	Relating to the Use of Airborne Radars in the Frequency Bands Shared Between the Inter-Satellite Service and the Radiolocation Service
O	Relating to Sharing Frequency Bands between the Aeronautical Mobile Service and the Inter-Satellite Service
P	Relating to the Frequency Tolerances of Transmitters
Q	Relating to the Technical Standards of the IFRB
R	Relating to Protection Radios and Minimum Field Strengths Required

Recommendations cont'd

S	Relating to Studies of the Technical Characteristics of Equipment
T	Relating to the Criteria to be Applied for Frequency Sharing between the Broadcasting-Satellite Service and the Terrestrial Broadcasting Service in the Band 620 - 790 MHz
U	Relating to the Interdependence of Receiver Design, Channel Grouping and Sharing Criteria in the Broadcasting-Satellite Service
V	Relating to the Development of Techniques which would Help to Reduce Congestion in the High Frequency Bands Allocated to the Aeronautical Mobile (R) Service
W	Letter Not Used
X	Relating to the Study of Modulation Methods for Radio-Relay Systems in Relation to Sharing with Fixed-Satellite Service Systems
Y	Relating to a Study of the Utilization of the Aeronautical Mobile-Satellite (R) Service
Z	Relating to the Coordination of Earth Stations
ZA	Relating to Carrier Energy Dispersal in Systems in the Fixed-Satellite Service
ZB	Relating to Technical Standards for the Assessment of Harmful Interference in the Frequency Bands above 28 MHz
ZC	Relating to the Harmonics of the Fundanmental Frequency of Broadcasting-Satellite Stations
ZD	Relating to Transmitting Antennae for the Broadcasting-Satellite Service
ZE	Relating to Feeder Links for the Broadcasting-Satellite Service
ZF	Relating to Spurious Emissions in the Broadcasting-Satellite Service
ZG	Relating to the Measures to be Taken to Prevent the Operation of Broadcasting Stations on Board Ships or Aircraft Outside National Territories
ZH	Relating to Technical Provisions for Maritime Radiobeacons in the African Area
ZI	Relating to the Examination by World Administrative Radio Conferences of the Situation with Regard to Occupation of the Frequency Spectrum in Space Radiocommunications

Recommendations cont'd

ZJ	Relating to Cooperation in the Efficient Use of Worldwide Frequencies in the Aeronautical Mobile (R) Service
ZK	Relating to the Transition from the Present to the New Frequency Allotment Plan in the Bands Allocated Exclusively to the Aeronautical Mobile (R) Service between 2 850 and 22 000 kHz
ZL	Relating to Studies of Propagation at 12 GHz for the Broadcasting-Satellite Service
ZM	Relating to the Technology for New Spectrum Sharing and Band Utilization Schemes
ZN	Relating to the Standardization of the Technical and Operational Characteristics of Radio Equipment
ZO	Relating to the Use of the Rationalized "Système International d'Unités" (SI)
ZP	Relating to Specifications of Low-Cost Television Receivers
ZQ	Relating to Frequency BAnds Shared Between Space Radiocommunication Services and Between Space and Terrestrial Radiocommunication Services
ZR	Relating to Terminology
ZS	Relating to HF Broadcasting
ZT	Relating to the Meteorological Aids Service in the Band 27.5 - 28 MHz
ZU	Relating to the Need to Cease Operations of the Fixed and Mobile Services in the Bands 149.9 - 150.05 MHz and 399.9-400.05 MHz Allocated to the Radionavigation-Satellite Service
ZV	Relating to the Compatibility Between the Broadcasting Service in the Band 100 - 108 MHz and the Aeronautical Radionavigation Service in the Band 108 - 117.975
ZW	Relating to the Use of Channels 15 and 17 of Appendix 18 by On-board Communication Stations
ZX	Relating to the Use of the Band 136 - 137 MHz by the Aeronautical Mobile (R) Service
ZY	Relating to an Automated UHF Maritime Mobile Radiocommunication System

Recommendations cont'd

ZZ	Relating to the Date of Entry into Force of the 10 kHz Guard-band for the Frequency 500 kHz in the Mobile Service (Distress and Calling)
YA	Relating to the Future Use of the Band 2 170 - 2 194 kHz
YB	Relating to the Designation of a Frequency in the Bands 435 - 495 or 505 - 526.5 kHz (525 kHz in Region 2) on a Worldwide Basis for the Transmission by Coast Stations of Navigational and Meteorological Warnings to Ships, using Narrow-Band, Direct-Printing Telegraphy
YC	Relating to the Preparation of a Broadcasting Plan in the Band 1 605 - 1 705 kHz in Region 2
YD	Relating to Planning the Use of Frequencies by the Maritime Mobile Service in the Band 435 - 526.5 kHz in Region 1
YE	Relating to Planning for the Use of Frequencies in the Bands between 1 606.5 and 3 400 kHz Allocated to the Maritime Mobile Service in Region 1
YF	Relating to the Revision of the Frequency Allotment Plan for the Aeronautical Mobile (OR) Service
YG	Relating to a Handbook for Computer-aided Techniques in Radio Frequency Management
YH	Relating to the Definitions of "Service Area" and "Coverage Area"
YI	Relating to the Means of Reducing the Congestion in Band 7 (3 - 30 MHz)
YJ	Relating to the More Efficient Consolidation of National and International Radiocommunication Circuits Operating in the Bands between 4 000 and 27 500 kHz
YK	Concerning the Matter of Providing a Suitable Frequency Allocation for a Collision Avoidance System in the Aeronautical Radionavigation Service
YL	On the Choice of a Frequency in the Mobile Maritime Bands between 1 605 and 3 800 kHz to be Reserved for Safety Requirements
YM	Relating to the Improved Use of the HF Radiotelephone Channels for Coast Stations in the Bands Allocated Exclusively to the Maritime Mobile Service

Recommendations cont'd

YN	Relating to the Efficient Use of Aeronautical Mobile (R) Worldwide Frequencies
YO	Relating to the Designation of Common Frequencies in the Medium Frequency Bands for Use by Coast Radiotelephone Stations for Communicating with Ships of Other Nationalities
YP	Relating to the Frequencies in Appendix 17 Rev., Section B, of the Radio Regulations, Provided for Worldwide Use by Ships of all Categories and by Coast Stations
YQ	Relating to the Establishment of a Watch by Coast Stations for Distress Purposes on the Frequency 156.8 MHz
YR	Relating to Temporary Provisions Covering the Technical and Operational Aspects of the Maritime Mobile-Satellite Service
YS	Relating to Distress, Urgency and Safety Traffic
YT	Relating to Studies of the Interconnection of Maritime Mobile Radiocommunication Systems with the International Telephone and Telegraph Networks
YU	Relating to the Use of the Frequency Bands 1 400 - 1 727 MHz, 101 - 120 and 197 - 220 GHz for Search for Intentional Emissions of Extraterrestrial Origin
YV	Relating to the Use of the Frequency Band 32 -33 GHz Shared Between the Inter-Satellite and the Radionavigation Service
YW	Relating to Frequency Sharing by the Earth Exploration-Satellite Service (Passive Sensors) and the Space Research Service (Passive Sensors) with the Fixed, Mobile (except Aeronautical Mobile) and Fixed-Satellite Services in the Band 18.6 - 18.8 GHz
YX	Relating to Preferred Frequency Bands for Systems using Troposheric Scatter
YY	Relating to the Use of the Frequency Band 1 330 - 1 400 MHz by the Radio Astronomy Service
YZ	Relating to the Use of the Frequency Band 9 300 - 9 500 MHz
XA	Relating to Technical Characteristics and Frequencies for Shipborne Transponders
XB	Relating to No. 27/123 of Appendix 27 Aer2 - Sub-Area 5B

Recommendations cont'd

XC	Relating to the Utilization and Sharing of Frequency Bands Allocated to Space Radiocommunications
XD	Relating to Maritime Radiobeacons
XE	Relating to the Use of Space Radiocommunication Systems in the Event of Natural Disasters, Epidemics, Famines and Similar Emergencies
XF	Relating to the Presentation of Draft Amendments to the Radio Regulations
XG	Letter Not Used
XH	Relating to the Practical Needs of Countries in Need of Special Assistance
XI	Relating to the Future Use and Characteristics of Emergency Position-Indicating Radiobeacons
XJ	Relating to the Use of the Carrier Frequencies 4 125 kHz and 6 215.5 kHz to supplement the Carrier Frequency 2 182 kHz for Distress and Safety and for Call and Reply Purposes in the Zone of Regions 1 and 2 South of Latitude 15° North, but Including Mexico, and in the Zone of Region 3 South of Latitude 25° North
XK	Relating to the Adoption of Standard Forms for Ship Station Licences and Aircraft Station Licences
ANNEX 1 TO XK	Principles for the Formulation of Standard Ship and Aircraft Station Licences
ANNEX 2 TO XK	Ship Station Licence
ANNEX 3 TO XK	Aircraft Station Licence
XL	Relating to the Introduction of an Additional Tone After the Radiotelephone Alarm Signal Transmitted by Coast Stations
XM	Relating to the Convening of Future Administrative Radio Conferences to Deal with Specific Services
XN	Relating to Automatic Identification of Stations
XO	Relating to the Transmission of Electric Power by Radio Frequencies from a Spacecraft

INTERNATIONAL TELECOMMUNICATION UNION

WORLD ADMINISTRATIVE RADIO CONFERENCE

(Geneva, 1979)

PLENARY MEETING

FINAL PROTOCOL

No. 1 Original : Spanish

For the Republic of Honduras :

The Republic of Honduras, through its delegation at the World Administrative Radio Conference, Geneva, 1979, wishes to make the following reservations :

1. Its Government reserves the right to take such steps as it may deem necessary to protect its interests in the event of other Members failing to comply with the provisions of these Radio Regulations, their Annexes or appended Protocols.

2. It further declares that its Government maintains the right to formulate any reservation whatever until such time as the Final Acts of the present World Administrative Radio Conference, Geneva, 1979, are ratified.

No. 2 Original : Spanish

For the Republic of Guatemala :

The delegation of the Republic of Guatemala :

a) reserves its Government's rights with regard to the acceptance and total or partial ratification of the Final Acts and their application within the territorial limits recognized by the Constitution of the Republic;

b) does not accept the reservations made by other countries if they prove detrimental to the national interests as a result of a final appraisal which the Government of the Republic of Guatemala will formulate at the time of acceptance and ratification of the Final Acts of the Conference.

No. 3 Original : French

For the Republic of the Chad :

In signing the Final Acts of the World Administrative Radio Conference, Geneva, 1979, the delegation of the Republic of the Chad declares that, with reference to the protection of its telecommunication interests, the sovereignty of its State may in no way be affected by the provisions adopted by this Conference or by the reservations made by other countries Members of the Union.

It therefore reserves its Government's right to take such steps as it may consider necessary to protect its telecommunication services.

No. 4 Original : English

For the Algerian Democratic and Popular Republic, Kingdom of Saudi Arabia, State of Bahrain, People's Republic of Bangladesh, United Arab Emirates, Islamic Republic of Iran, Republic of Iraq, Hashemite Kingdom of Jordan, State of Kuwait, Lebanon, Socialist People's Libyan Arab Jamahiriya, Kingdom of Morocco, Sultanate of Oman, Islamic Republic of Pakistan, State of Qatar, Syrian Arab Republic, Somali Democratic Republic, Democratic Republic of the Sudan, Tunisia, People's Democratic Republic of Yemen :

The above-mentioned delegations declare that the signature and possible subsequent approval by their respective Governments of the Final Acts of the World Administrative Radio Conference, Geneva, 1979, do not, in any way, imply the recognition of Israel.

No. 5 Original : French

For Belgium :

The Belgian administration plans to bring into service shortly a network of broadcasting stations in the band 100 - 104 MHz.

It strongly urges the administrations concerned to consider immediately the action required to render this project possible.

No. 6 Original : French

For the People's Republic of Benin :

The delegation of the People's Republic of Benin reserves the right of its Government to take all the necessary steps to safeguard its interests should reservations entered by other delegations compromise the proper functioning of its telecommunication services.

No. 7 Original : Spanish

For Chile :

The delegation of Chile, bearing in mind the agreements of the World Administrative Radio Conference, Geneva, 1979, concerning the frequency assignments in the Master International Frequency Register, the provisions of Article 4, paragraph 2 of the Antarctic Treaty signed at Washington on 1 December 1959, and the contents of No. VIII of the Final Protocol of the International Telecommunication Convention, Malaga-Torremolinos, 1973, states that its Government reserves the right to assign and recognize the frequencies which it considers necessary for present and future radiocommunication services operating within the Chilean Antarctic territory, over which it exercises sovereignty.

No. 8 Original : Spanish

For Cuba :

The delegation of Cuba, acting as the representative on behalf of its Government, states that it does not recognize the legal or moral worth of the signature of the Final Acts by the representation of the Pol Pot regime at the World Administrative Radio Conference, Geneva, 1979, for the following reasons :

The genocidal Pol Pot regime does not represent the legitimate interests of the people of Kampuchea, nor does it exercise any authority over that country.

Registration of the Pol Pot regime at this Conference is a mere formality representing purely political interests, as witnessed by its failure to participate in the activities and discussions of the Conference. Exercising no authority or jurisdiction over the territory of the country, it is unable to regulate telecommunication operations there.

The delegation of Cuba considers that, in the absence of the legitimate representation of the people of Kampuchea, the People's Revolutionary Council, no signature representing Kampuchea should appear in the Final Acts of the Conference.

No. 9 Original : Spanish

For Cuba :

Signature and acceptance of the Final Acts of the World Administrative Radio Conference, Geneva, 1979, by the Government of the Republic of Cuba does not in any way signify recognition of notification, registration and use of frequencies by the Government of the United States of America in the Cuban territory of the Province of Guantánamo which is being occupied illegally and against the wishes of the Cuban people.

The use of radio frequencies by the Government of the United States in the territory which it has usurped in Guantánamo, Cuba, constitutes an impediment to the communication services of Cuba and to the exercise of our country's sovereignty over the radio frequency spectrum, which is a limited resource.

The Government of Cuba reserves the right to take all the necessary steps to safeguard its legitimate interests.

No. 10 Original : English

For the Islamic Republic of Iran :

Considering that this Conference has been unable to make adequate provision for the needs of the HF broadcasting service in the revised allocations, particularly in the 6 and 7 MHz bands. Unless authority is given to the proposed HF Broadcasting Conference, by its agenda, for it to make use of some parts of the spectrum allocated to the fixed service, that Conference will not be able to plan all frequency bands to enable countries to sustain their broadcasting services in the case of varying propagation conditions throughout the solar cycle. In the absence of an adequate plan, this administration reserves its right to take the necessary steps to use the portions of the bands 5 850 - 5 950 kHz and 7 300 - 7 400 kHz also for broadcasting services in accordance with the needs of this administration.

No. 11 Original : English

For the Democratic Republic of Agghanistan :

The delegation of the Democratic Republic of Afghanistan reserves the right for its Government to continue the use of fixed and mobile services in the exclusive maritime mobile bands below 10 MHz. These bands will be utilized for domestic requirements in a manner which will not cause harmful interference to the maritime mobile service.

No. 12 Original : French

For the Islamic Republic of Mauritania :

The delegation of the Islamic Republic of Mauritania states that the signing of the Final Acts of the World Administrative Radio Conference, Geneva, 1979, or any subsequent ratification of these Final Acts by its Government in no way implies any recognition of the State of Israel.

No. 13 Original : English

For the Islamic Republic of Pakistan :

considering that :

a) a High Frequency Broadcasting Plan is considered to be a pre-requisite to law and order in the HF spectrum;

b) all past efforts to prepare a plan have failed repeatedly due to inadequate allocations to the broadcasting service in the HF spectrum, particularly the lower bands;

c) no expansions of the important broadcasting bands of 6 and 7 MHz have been approved by this Conference;

d) the footnote No. "3510A" attached with the expanded portions of the broadcasting bands is too rigid, and does not allow flexibility to the next World Administrative Radio Conference;

e) the period of transfer of the displaced assignments in the expanded portions of the broadcasting bands is too long;

f) a total power of 12.5 megawatts of broadcasting by only a few countries has already spilled over from the 6 and 7 MHz broadcasting bands into the adjacent fixed services bands;

g) such out of band broadcasting will multiply, for reasons of equity; if the proposed World Administrative Radio Conference fails to produce an acceptable HF Broadcasting Plan, due to inadequacy of the allocations;

h) there will be no further opportunity to correct this shortcoming in the allocations for a very long time;

the delegation of the Government of Pakistan to this World Administrative Radio Conference of the International Telecommunication Union is unable to accept the allocations made in the table of frequencies from 5 830 kHz to 5 950 kHz and 7 300 kHz to 7 500 kHz, as well as the footnote No. "3510A" along with its associated implications. It, therefore, reserves the right of its government to take all appropriate action to protect its interests.

The delegation, however, assures full cooperation and participation of its administration in the preparation of the High Frequency Broadcasting Plan, as per decision of this Conference. It also assures further that the above reservation will cease to be effective, as soon as an acceptable High Frequency Broadcasting Plan has been prepared and brought into effect.

This delegation further reserves the right on accepting the implications that might arise through the non-adherence by any other Member of the Union to the provisions of these Final Acts and the Radio Regulations. In such a situation, Pakistan reserves the right to take all appropriate action to protect its interests.

No. 14 Original : English

For Greece and the Socialist Federal Republic of Yugoslavia :

The present Conference has adopted for Region 1 different allocations than those for Regions 2 and 3 in the band 415 - 495 kHz. The two services to which this band is allocated, namely aeronautical radionavigation and maritime mobile, are both extremely important safety services. The above delegations consider therefore that this decision will lead to serious problems hazarding the safeguard of human life.

In order to avoid any future impact, the above delegations proposed in all the stages of this Conference such solutions as to guarantee the absolute protection of these services and especially the aeronautical radionavigation service. Since these solutions have not been adopted by this Conference, these delegations declare that their Administrations cannot undertake any responsibility for possible implications from the use of this band as it has been decided due to the international character of both services.

Moreover, the above delegations declare that they reserve the right to their Administrations for changing of frequency assignments to their coast stations in the band 415 - 435 kHz until the date of coming into force of a revised Copenhagen Plan, which will provide for replacement frequencies within the band 435 - 495 kHz, whichever this date will be.

No. 15 Original : Spanish

From the Oriental Republic of Uruguay :

The delegation of the Oriental Republic of Uruguay declares that, in view of the reduction in the widths of the frequency bands allocated to the fixed service between 4 and 27.5 MHz and the fact that no procedure for the re-assignment of frequencies has been laid down which would guarantee continued operation of its radio stations as a result of the use by the broadcasting and maritime mobile services of the portions of the band withdrawn from the fixed service, its Government reserves the right to adopt the necessary measures to continue making appropriate use of its fixed service frequencies entered in the Master International Frequency Register - which render services of fundamental importance to the country - until such time as new alternative frequencies are provided enabling its radiocommunication services to operate properly.

The delegation of the Oriental Republic of Uruguay doubts whether it will be possible to re-assign the channels to be transferred in the reduced fixed service bands, and in particular in certain areas or sub-regions in which the spectrum is already congested, despite the reduction in the technical characteristics of its circuits.

It also reserves its Government's right to adopt any measures it sees fit to protect its interests in the event of the alternative frequencies of another administration causing harm to its radiocommunication system.

Gustavo A. Ferrand
Head of Delegation

No. 16 Original : English

For Japan :

The interference caused by certain broadcasting stations in Region 1 operating in the LF band are endangering the operation of the aeronautical radiobeacon stations in Japan. This interference will considerably increase when new LF broadcasting transmitters are brought into use or changes to the characteristics of existing assignments to LF broadcasting stations are made.

As mentioned explicitly in the noting of the Resolution No. 7 of the Regional Administrative LF/MF Broadcasting Conference, Geneva, 1975, and in the paragraph 4.4.4.1 of the Report of the Special Preparatory Meeting of CCIR, Geneva, 1978, the use of the LF band by broadcasting stations in Region 1 could adversely affect the stations of other radiocommunication services to which this band is allocated in other regions and particularly stations in the aeronautical radionavigation service involving the safety of human life.

However, this Conference has not solved the above-mentioned problem concerning the use of the LF band. Moreover, this Conference has adopted the Resolution relating to the modification of carrier frequencies of LF broadcasting stations in Region 1, without giving due consideration to the possibility of additional interference to the aeronautical radiobeacon stations in Region 3.

The delegation of Japan therefore reserves the right of its government to take any necessary measures, including the rearrangement of its frequency assignments in the band between 130 kHz and 526.5 kHz in disregard of the allocation in the Radio Regulations in the event that broadcasting stations in Region 1 cause grave hindrance to LF aeronautical radiobeacon stations in Japan in the frequency band between 190 kHz and 285 kHz.

No. 17 Original : English

For the Federal Republic of Nigeria :

In signing the Final Acts of the World Administrative Radio Conference, Geneva, 1979, the delegation of the Federal Republic of Nigeria reserves for its Government the right to take such actions as it may consider necessary to safeguard its interests should reservations or wrongful interpretations of the Final Acts by other countries or organizations threaten or endanger the telecommunication services of the Federal Republic of Nigeria.

In particular the decision taken by this Conference in relation to the feeder links for BSS in the band 14.0 - 14.8 GHz is not acceptable to us for the following reasons :

a) The World Broadcasting-Satellite Administrative Radio Conference, Geneva, 1977, produced a plan for down-links in the band 11.7 - 12.5 GHz of 800 MHz bandwidth.

b) The bandwidth which has been allocated exclusively to BSS feeder links in our preferred frequency band (14.5 - 15.3 GHz) is only 300 MHz from 14.5 - 14.8 GHz which is accepted by the Conference. This will not be enough because of the large number of administrations per orbital position.

No. 18 Original : French

For the Republic of Zaire :

In signing the Final Acts of the World Administrative Radio Conference, Geneva, 1979, the delegation of the Republic of Zaire reserves its Government's right to take such steps as it may consider necessary to protect its radiocommunication services should Members of the Union fail to observe the provisions of the Radio Regulations or the Additional Radio Regulations, or should the reservations made by the delegations of other countries be detrimental to the satisfactory operation of Zaire's radio services.

No. 19 Original : English

For Canada :

a) Re : Mobile satellites operating in the UHF band

In developing its mobile-satellite systems under Radio Regulation 3618/308A, Canada agrees that such systems should be coordinated and notified according to Articles N11, N13 and N13A. However, once such satellites are placed in operation, Canada considers that these systems operate with a primary status for the duration of their operational life.

b) Re : HF broadcasting

Canada considers that the problem of severe congestion of the bands allocated to the broadcasting service at HF below 9 MHz was not resolved by this Conference. A proposal by Canada for the addition of 100 kHz of spectrum between 7 300 and 7 400 kHz for this service on a world-wide basis, which would have helped to solve the problem, was rejected at the Conference by a narrow margin. For this reason, Canada reserves its right, in signing these Final Acts, to satisfy certain of its broadcasting requirements in the band segment 7 300 - 7 400 kHz. Insofar as possible, Canada, of course, will respect the rights of administrations operating in accordance with the Final Acts of this Conference.

No. 20 Original : English

For the People's Republic of China :

At the time of signing the Final Acts of the World Administrative Radio Conference, Geneva, 1979, the delegation of the People's Republic of China, on behalf of the Chinese Government, states the following :

The Chinese delegation takes note of the decision taken by the present Conference on the convening of a World Administrative Radio Conference for the planning of the HF bands allocated to the broadcasting service and believes that it is an effective measure to solve the problem of congestion in the HF broadcasting bands and out-of-band transmissions. However, owing to historical reasons, the Chinese administration reserves the right to continue to use those frequencies which it uses for broadcasting at present in the band 5 060 - 27 500 kHz until the establishment and implementation of the proposed HF broadcasting plan.

No. 21 Original : Spanish

For the Republic of Chile :

The delegation of Chile to the World Administrative Radio Conference, Geneva, 1979, hereby declares, concerning such obligations as may arise out of the revised Radio Regulations, particularly with regard to the transfer of the existing allocations from the fixed service to other services in the HF band, that it take all the steps necessary to ensure the application of the new Regulations.

Notwithstanding the above, it reserves its Government's right to take such measures as it may consider necessary to keep in service within its national territory fixed links which it may be impossible, on technical, economic or other grounds, to transfer within the time limits established at this Conference.

No. 22 Original : English

For the Republic of India :

Upon signing the Final Acts of the World Administrative Radio Conference, Geneva, 1979, the delegation of the Republic of India does not accept any implications resulting from any reservations that might be made by any other administration in respect of the provisions in the Final Acts. The delegation of the Republic of India reserves the right of its Government to take such action as might be necessary to safeguard its interests should any administration fail to observe any of the provisions of the Radio Regulations as revised by this Conference.

No. 23 Original : Spanish

For Mexico :

In signing the Final Acts of the World Administrative Radio Conference, Geneva, 1979, the delegation of Mexico expresses the intention of its administration to comply with the provisions of the Radio Regulations adopted by this Conference; nevertheless, it declares that its Government reserves the right to take such steps as it may consider appropriate to safeguard its interests should any Member of the Union fail to fulfil the provisions of those Regulations.

The delegation of Mexico further declares that its administration will do all in its power to transfer its stations in the fixed and land mobile services at present registered according to the current Table of Frequency Allocations, to adapt their operation to the new Table within the prescribed time limits. However, if as a result of the Conference's decisions to reduce the bands for these services or to limit their operation in the HF bands, the said stations are unable to continue operating efficiently on their assigned frequencies or on their replacement frequencies, if any, the Government of Mexico reserves the right to take such steps as it may consider appropriate to ensure the satisfactory operation of such stations.

No. 24 Original : French

For the Republic of the Ivory Coast :

The delegation of the Republic of the Ivory Coast reserves its Government's right to take such steps as it may consider necessary to ensure the protection and satisfactory operation of its telecommunciation services should other Members of the Union fail to observe the rules laid down in the Radio Regulations (World Administrative Radio Conference, Geneva, 1979).

No. 25 Original : English

For the Islamic Republic of Iran :

The delegation of Iran declares that with respect to allocations in the band 150 - 285 kHz of the Table of Frequency Allocations approved by the World Administrative Radio Conference, Geneva, 1979 :

1. Existing LF high power radio broadcasting stations in Region 1 already cause harmful interference to aeronautical radionavigation.

2. Changes in the power, frequency of LF broadcasting transmitters or bringing into use new assignments in LF band (150 - 285 kHz) will increase this interference and consequently make the present utilization of aeronautical radionavigation much more difficult in Iran.

3. The administration of the Islamic Republic of Iran therefore reserves for its country the right to take necessary measures to ensure the protection of the aeronautical radionavigation service.

4. It also reserves its right to use the portion 160 - 190 kHz of the band 150 - 285 kHz also for the LF broadcasting service in accordance with the needs of the country.

No. 26 Original : Spanish

For the Republic of Venezuela :

In signing the Final Acts of the World Administrative Radio Conference, Geneva, 1979, the delegation of Venezuela states the intention of its administration to comply with the provisions of the revised Radio Regulations. However, the Government of Venezuela reserves the right to take any measures it may consider necessary to safeguard its interests, particularly with respect to the fixed and mobile services below 9 975 kHz, and also in the event that any Member of the Union should fail to comply with the provisions of the Radio Regulations, Geneva, 1979, or that the reservations made by other countries should jeopardize its planned or existing telecommunication services.

No. 27 Original : English

For Vatican City State, Italy, Portugal, Turkey :

In the view of the above-mentioned administrations, this Conference has not made adequate provisions for the needs of the HF broadcasting service, particularly in the bands of 6 and 7 MHz. This fact will not permit to the Conference foreseen in Resolution DI to plan all frequency bands allocated to HF broadcasting and will not enable countries to sustain their HF broadcasting services in the phase of varying propagation conditions throughout the solar cycle.

Therefore the above-mentioned administrations reserve their right to take the necessary steps to meet the needs of their HF broadcasting services.

No. 28 Original : French

For France, the Principality of Liechtenstein and the Confederation of Switzerland :

On signing the Final Acts of the World Administrative Radio Conference, Geneva, 1979, the delegations of the above-mentioned countries declare that they reserve their right to take any steps they may consider appropriate to safeguard their interests if the reservations entered or any other measures adopted should have the effect of compromising the satisfactory operation of their radiocommunication services or if any Members should fail to comply with the current provisions of the Radio Regulations, and particularly if they should establish or operate, or allow to be established or operated, on their territory, without prior coordination, stations of the broadcasting service which are not in conformity with the provisions of No. 6215/423 of the Radio Regulations.

No. 29 Original : English

For the Federative Republic of Brazil :

This Conference has adopted Resolution /COM6A - 2/, on the period of validity of frequency assignments to space stations using the geostationary-satellite orbit. In this connection, the delegation of the Federative Republic of Brazil wishes to make the following comments :

- the adoption of the experimental procedures set forth in that Resolution is not necessary at this Conference, in view of the existing regulatory provisions of Article N13;

- the period designated for its experimental application, namely from 1 July 1980 until the next World Space Radiocommunication Conference, is inconsistent with the much longer period which would be required for its full application, in order to have significant data produced to allow for the evaluation of its usefulness;

- the procedures adopted by that Resolution very easily allow for a permanent priority and appropriation of frequency assignments and orbital positions by any individual country or groups of countries, which is against the principles set forth by Article 33 of the International Telecommunication Convention of the ITU, Malaga-Torremolinos, 1973, and by the Resolutions AY and BP that were adopted by the World Administrative Radio Conference, Geneva, 1979.

Therefore, in signing the Final Acts of this Conference, the delegation of the Federative Republic of Brazil reserves the rights for its Government with regard to the application of Resolution BY by any individual country or groups of countries, whenever such application is considered to be in contradiction with the provisions of Articles N11 and N13, as adopted by the World Administrative Radio Conference, Geneva, 1979.

No. 30 Original : English

For the State of Israel :

The delegation of Israel declares that its signature to this Agreement and its eventual approval by its administration shall only be valid and binding in relation to administrations which apply the provisions of the Convention in their relations with Israel.

Israel considers itself, for all intents and purposes, included also in footnotes 3601A (174 - 223 MHz) and 3794F (15.7 - 17.3 GHz) - despite the baseless objections of only a very few delegates.

While supporting the idea of planning of the broadcasting service HF bands, as embodied in Resolution G of this Conference, the delegation of Israel notes :

a) that the HF bands allocated by this Conference to the broadcasting service are insufficient for providing an adequate basis for such planning;

b) that no steps have been taken by this Conference against "jamming" - while it is a well known fact that certain Members of the Union deliberately cause such harmful interference to the broadcasting services;

c) that this practice of jamming renders unusable over 50 % of the spectrum allocated to the broadcasting service, is totally incompatible with the very concept of planning, and is a flagrant violation of the letter and spirit of both the ITU Convention and Radio Regulations.

In these circumstances, Israel reserves the right to take any action necessary to adequately maintain and protect its broadcasting services. In so doing however, Israel will endeavour, as far as practicable, to respect the rights of administrations which operate in conformity with the Convention and the Final Acts of this Conference.

No. 31 Original : English

For Turkey :

The delegation of Turkey to the World Administrative Radio Conference, Geneva, 1979, formally declares that the Government of Turkey does not, by signature of these Final Acts on its behalf, accept any obligations in respect of the additional allocation (footnote 3659/331) of the frequency band 645 - 862 MHz to the aeronautical radionavigation service on a permitted basis to ensure protection of the aeronautical radionavigation service from its existing or planned broadcasting stations operating in accordance with the Table of Frequency Allocations in the area east of 40° East.

No. 32 Original : English

For the Federal Republic of Germany, Belgium, Denmark, the United States of America, Greece, Iceland, Italy, Luxembourg, Norway, the Kingdom of the Netherlands, Portugal, the United Kingdom of Great Britain and Northern Ireland, Turkey :

The above-mentioned administrations reserve their right to operate systems in the mobile-satellite service in the frequency range 235 - 399.9 MHz under the provisions of the relevant footnote to the Table of Frequency Allocations, subject only to coordination as prescribed in Article N13A. The additional provision of this footnote imposes a condition of non-interference which could lead to a request to cease operation of a previously coordinated satellite system in the case where an administration, despite having agreed to such a satellite system, puts into service or merely plans a system that might receive harmful interference. Such a condition is unacceptable to the above administrations.

No. 33 Original : English

For Austria, Denmark, Spain, Finland, France, the Principality of Liechtenstein, Norway, Portugal, Sweden, the Confederation of Switzerland :

In signing the Final Acts of the Conference, the delegations of Austria, Denmark, Spain, Finland, France, Liechtenstein, Norway, Portugal, Sweden and Switzerland wish to make the following statement :

The World Administrative Radio Conference, Geneva, 1979, has denied the insertion of a provision into the Radio Regulations which would have allocated in some countries of Region 1 and Region 2 the frequency band 862 - 960 MHz also to the aeronautical mobile service. The proposed provision clearly restricted this service to the operation of a few channels within this band in a public radio-telephone system and subject to agreement under procedure set forth in Article N13A.

The proposed provision was intended to make way for the possible integration of some aircraft stations in a ground-based integrated public radio-telephone network and to protect at the same time the other services operating in accordance with the Frequency Allocation Table.

There are urgent requirements for public mobile telephone facilities in many countries and these requirements are expected to grow even more rapidly with the improvement of the conventional public telephone networks.

The above-mentioned delegations, noting with great concern that international recognition has been denied to such an allocation, reserve the right of their administrations to use a limited number of frequencies within the frequency band 862 - 960 MHz for communication with aircraft in a public mobile telephone network under the conditions described.

Steps will be taken to ensure that services operating according to the Frequency Allocation Table in other countries shall suffer no harmful interference from the services mentioned above.

No. 34 Original : English

For the Byelorussian Soviet Socialist Republic, the Ukrainian Soviet Socialist Republic, the Union of Soviet Socialist Republics :

In the Table of Frequency Allocations, revised by the World Administration Radio Conference, Geneva, 1979, additional frequency bands are allocated for the broadcasting service in the HF band at the expense of the bands used by the fixed service.

Taking into account that in the U.S.S.R. the stations of the fixed service have been operating in these frequency bands for a long period of time, the delegations of the Byelorussian Soviet Socialist Republic, the Ukrainian Soviet Socialist Republic and the Union of Soviet Socialist Republics are authorized to declare, that in the U.S.S.R. frequency bands additionally allocated in the HF band to the broadcasting service on the exclusive basis will be also used by the fixed service.

No. 35 Original : English

For the Federal Republic of Germany :

The delegation of the Federal Republic of Germany, in signing the Final Acts of this Conference, declares that the revised allocation of HF frequency spectrum to the fixed, broadcasting and maritime services has not adequately met the requirements of the respective services of the Federal Republic of Germany, as contained in the relevant documents submitted to the World Administrative Radio Conference, Geneva, 1979.

A successful transfer of those services as well as an internationally agreed HF Broadcasting Plan enabling, in the bands allocated to the broadcasting service, the necessary inclusion of all out-of-band transmissions and meeting the requirements of the HF broadcasting service of the Federal Republic of Germany are the preconditions for solving existing problems.

The Federal Republic of Germany therefore reserves the right, with regard to the HF frequency spectrum, to take the necessary measures to meet the minimum requirements of the country's respective services.

No. 36 Original : English

For the Kingdom of Saudi Arabia, the Republic of Cyprus, Spain, the United States of America, Greece, the United Kingdom of Great Britain and Northern Ireland, the Democratic Socialist Republic of Sri Lanka, the Republic of Zambia :

In the view of the above-mentioned administrations this Conference has failed to make adequate provision for the needs of the HF broadcasting service in the revised allocations, particularly at 6 and 7 MHz. Unless authority is given to the proposed HF Broadcasting Conference, by its agenda, for it to make use of some parts of the spectrum allocated to the fixed service, that Conference will not be able to plan all frequency bands to enable countries to sustain their broadcasting services in the face of varying propagation conditions throughout the solar cycle. In the absence of an adequate plan, the above-mentioned administrations reserve their right to take the necessary steps to meet the needs of their HF broadcasting services.

No. 37 Original : English

For the Republic of Korea :

The delegation of the Republic of Korea, on behalf of its Government reserves the right of its Government to take such action as it may consider necessary to safeguard its interests should any Members fail to comply with the requirements of the Radio Regulations (Geneva, 1979) or its Annexes attached thereto, or should reservations by other countries jeopardize its telecommunication services.

No. 38 Original : English

For the United States of America :

The delegation of the United States of America formally declares that the United States of America does not, by signature of these Final Acts on its behalf, accept certain decisions taken by this Conference in regard to the Table of Frequency Allocations and the associated footnotes, and therefore, the United States of America :

1. In view of the fact that this Conference has failed to provide adequate allocations for the HF broadcasting service, particularly at 6 and 7 MHz, reserves on this matter as indicated in a separate statement made jointly with the delegations of Saudi Arabia, Cyprus, Spain, Greece, the United Kingdom, Sri Lanka and Zambia;

2. Reserves the right to operate stations in the mobile satellite service in the frequency range 235 to 399.9 MHz as indicated in a separate statement made jointly with the delegations of the Federal Republic of Germany, Belgium, Denmark, Greece, Iceland, Italy, Luxembourg, Norway, the Netherlands, Portugal, the United Kingdom and Turkey;

3. In the operation of stations in the radiolocation service on a primary basis in the bands 430 - 440 MHz, 5 650 - 5 850 MHz, 8 500 - 8 750 MHz, 8 850 - 9 000 MHz, 9 200 - 9 300 MHz, 9 500 - 9 800 MHz, 10 000 - 10 500 MHz, 13.4 - 14 GHz, 15.7 - 17.3 GHz and 33.4 - 36 GHz, cannot guarantee protection to or coordination with other services;

4. Reserves the right to operate stations of the fixed, mobile and radiolocation services on a primary basis in bands as specified in the footnotes pertinent to frequency bands 470 - 806 MHz and 890 - 960 MHz, without the condition specified in these footnotes that make such operations subject to agreement under Article N13A. The United States will coordinate its usage of such services with neighbouring administrations which are affected;

5. In view of the fact that the Conference failed to provide adequate allocations for the HF maritime mobile service, particularly below 12 MHz, states its intention to satisfy maritime mobile requirements in the several HF bands below 10 MHz allocated to the mobile service on a primary basis.

No. 39 Original : English

For the United States of America :

The administration of the United States of America, calling attention to the fact that some of its broadcasting in the high frequency bands allocated to the broadcasting service are subject to willful harmful interference by administrations that are signatory to these Final Acts, and that such interference is incompatible with the rational and equitable use of these bands, declares that for as long as this interference exists, it reserves the right with respect to such interference to take necessary and appropriate actions to protect its broadcasting interests. In so doing, however, it intends to respect the rights, to the extent practicable, of administrations operating in accordance with these Final Acts.

No. 40 Original : Spanish

For the Republic of Colombia, the People's Republic of the Congo, the Republic of Ecuador, the Gabon Republic, the Republic of Kenya, the Republic of Uganda, the Somali Democratic Republic and the Republic of Zaire :

The delegations of the above-mentioned countries confirm in its entirety Reservation No. 51 made at the World Broadcasting-Satellite Administrative Radio Conference, Geneva, 1977, and uphold its content with respect to the World Administrative Radio Conference, Geneva, 1979.

These delegations likewise affirm that the World Administrative Radio Conference, Geneva, 1979, is not competent to discuss or decide territorial questions or matters relating to the sovereignty of States.

Moreover, the above-mentioned delegations, affirming once more that, in the view of the equatorial countries, the segments of geostationary orbit which are located above their respective territories are intended to bring genuine benefits to their peoples, to the international community and particularly to the developing countries, at the same time state their opposition to the continued application of the first-come-first-served principle which serves the interests of a handful of countries which are the sole beneficiaries of this limited natural resource, to the detriment of the other members of the international community and especially the developing countries.

Lastly, the delegations of the above-mentioned countries officially declare that they do not accept and accordingly are under no circumstances bound, through the signature of the Final Acts of the World Administrative Radio Conference, 1979, by the Resolutions, Recommendations, agreements or decisions of this Conference regarding the positioning of geostationary satellites in the segments of the geostationary orbit which correspond to the territories over which these countries exercise sovereign rights.

No. 41 Original : Spanish

For the Republic of Colombia :

The delegation of Columbia to the World Administrative Radio Conference, Geneva, 1979, reserves the right of its Government to take any measures it may consider necessary in connection with its obligations under the Radio Regulations as revised by this Conference, in particular with respect to the transfer of frequency assignments to stations of the fixed service in those parts of the HF bands which have been allocated to other services.

It also reserves the right to continue using within its national territory those fixed links which are operating in accordance with the existing Radio Regulations and which, for reasons of technical and economic feasibility and others, cannot be transferred within the periods established by this Conference.

No. 42 Original : English

For the Republic of Indonesia :

"The delegation of the Republic of Indonesia to the World Administrative Radio Conference at Geneva, 1979 :

1. reserves the right of its Government to take any action and preservation measures to safeguard its interests should the Final Acts drawn up in this Conference be in contravention with the Constitution, Laws and Rights of the Republic of Indonesia which exist or may result from any principles on international law and those laid down in the Bogota Declaration of 3 December 1976 by Equatorial countries. In this regard the Government of the Republic of Indonesia will recognize the legitimate interests of other countries with a view to enhancing international cooperation in the peaceful uses of space for the benefit of mankind.

2. further reserves the right of its Government to take any action and preservation measures to safeguard its interests should Member or Members of the Union fail to comply with the requirements in the Final Acts of the Conference or should reservations by other Members jeopardize its rights under the Final Acts".

No. 43 Original : English

For Austria :

In signing the Final Acts of the Conference, the delegation of Austria wishes to make the following statement :

Austria does not agree with the allocations of the HF bands 5 850 kHz - 5 950 kHz and 7 300 kHz - 7 400 kHz to the fixed and mobile services, because there are no additional allocations to the broadcasting service in the 6 MHz and 7 MHz bands.

As a consequence, in the view of the Austrian administration the proposed HF Broadcasting Conference will not be in a position to plan all frequency bands to enable countries to sustain their broadcasting services in the face of varying propagation conditions throughout the Solar cycle.

The Austrian delegation therefore reserves the right of its administration to take necessary action to safeguard the interests of its HF broadcasting services. In doing so, the Austrian administration will take into account the interests of the services of other countries to the greatest extent possible.

No. 44 Original : French

For the People's Republic of Angola :

The delegation of the People's Republic of Angola reserves its Government's right to take any steps it may consider necessary to safeguard the interests of its telecommunications should any Members fail to comply with the provisions of the Radio Regulations or should the reservations made by other countries jeopardize the satisfactory operation of its telecommunication services.

No. 45 Original : Spanish

For the Republic of Argentina :

A. The delegation of the Republic of Argentina hereby reserves its Government's right to take such steps as it may consider appropriate to ensure the proper operation of its telecommunication services should its interests be affected by the decisions of this Conference, particularly as a result of the application of the procedure for releasing parts of the HF band in the fixed service between 4 000 and 27 500 kHz and the transfer of stations of that service from those parts to other bands.

It further states that should the reservations made by other countries prove detrimental to its telecommunication services, the Republic of Argentina reserves the right to take such measures as may be necessary to protect its own services.

B. The delegation of the Republic of Argentina hereby declares its Government does not recognize the frequency assignments which might be made directly or indirectly for any services, in any part of the radio spectrum, for the Falkland, South Georgia and South Sandwich Islands and Argentinian Antarctica between longitudes 25° and 74°W and south of latitude 60°S, over which territories the Republic of Argentina exercises sovereign rights, if such assignments are made on behalf of another State or of other States. Moreover, the Republic of Argentina reserves the right to use as its own any radio frequencies assigned in the circumstances described.

C. The delegation of the Republic of Argentina hereby declares on behalf of its Government that the illegality of the United Kingdom occupation of the Falkland, South Georgia and South Sandwich Islands has been recognized by the United Nations which, in Resolutions 2065(XX), 3160(XXVIII) and 31/49, called for the acceleration of negotiations between both Governments in order to terminate the colonial situation.

No. 46 Original : English

For the People's Democratic Republic of Yemen :

In signing the Final Acts of the World Administrative Radio Conference, Geneva, 1979, the delegation of the People's Democratic Republic of Yemen, while reaffirming its support for the international cooperation in the field of telecommunications, reserves the right of its Government to take any action that it deems necessary to safeguard its interests should any country fail in any way to comply with the provisions of the Final Acts of the aforesaid Conference, or should reservations by other countries jeopardize its telecommunication services.

No. 47 Original : English

For the Republic of Iraq, the Syrian Arab Republic :

The administrations of the above-mentioned countries confirm that according to Resolution CA the IFRB should not accept any notification of a frequency assignment for stations located in an occupied territory which are submitted by the administration of the occupier.

No. 48 Original : English

For Ireland and the United Kingdom :

As it was not possible to obtain the inclusion of Ireland in the footnote /3601A/ at this Conference, the above-named delegations state that their administrations will comply with the Radio Regulations as though Ireland had been included in that footnote.

No. 49 Original : English

For the United Republic of Tanzania :

The Government of the United Republic of Tanzania reserves the right to take any action that it deems necessary to safeguard its interests in the event of Members failing in any way to comply with the provisions of the Radio Regulations, World Administrative Radio Conference, Geneva, 1979, or should reservations by other countries jeopardize the operation of its radiocommunication services.

No. 50 Original : English

For the People's Republic of Mozambique :

The delegation of the People's Republic of Mozambique reserves the right of its Government to take all necessary measures to safeguard its interests, should any country fail to comply with the provisions of the Radio Regulations drawn up by the World Administrative Radio Conference, Geneva, 1979, or should the reservations made by any country tend to jeopardize the efficient operation of its telecommunication services.

No. 51 Original : English

For the Republic of Zambia :

In signing the Final Acts of the World Administrative Radio Conference, Geneva, 1979, the delegation of the Republic of Zambia, reserves the right of its Government to take any action it considers necessary to safeguard its telecommunications interests should any Member of ITU fail in any way to comply with the provisions of the Radio Regulations.

Annex : 1

A N N E X

RECAPITULATORY LIST OF RESERVATIONS

(IN FRENCH ALPHABETICAL ORDER)

(Figures between parentheses indicate the order in which the statements appear in the Final Protocol)

Afghanistan (Democratic Republic of) (11)

Algeria (Algerian Democratic and Popular Republic) (4)

Germany (Federal Republic of) (32) (35)

Angola (People's Republic of) (44)

Saudi Arabia (Kingdom of) (4) (36)

Argentine Republic (45)

Austria (33) (43)

Bahrain (State of) (4)

Bangladesh (People's Republic of) (4)

Belgium (5) (32)

Benin (People's Republic of) (6)

Byelorussian Soviet Socialist Republic (34)

Brazil (Federative Republic of) (29)

Canada (19)

Chile (7) (21)

China (People's Republic of) (20)

Cyprus (Republic of) (36)

Vatican City State (27)

Colombia (Republic of) (40) (41)

Congo (People's Republic of the) (40)

Korea (Republic of) (37)

Ivory Coast (Republic of the) (24)

Cuba (8) (9)

Denmark (32) (33)

United Arab Emirates (4)

Ecuador (40)

Spain (33) (36)

United States of America (32) (36) (38) (39)

Finland (33)

France (28) (33)

Gabon Republic (40)

Greece (14) (32) (36)

Guatemala (Republic of) (2)

Honduras (Republic of) (1)

India (Republic of) (22)

Indonesia (Republic of) (42)

Iran (Islamic Republic of) (4) (10) (25)

Iraq (Republic of) (4) (47)

Ireland (48)

Iceland (32)

Israel (State of) (30)

Italy (27) (32)

Japan (16)

Jordan (Hashemite Kingdom of) (4)

Kenya (Republic of) (40)

Kuwait (State of) (4)

Lebanon (4)

Libya (Socialist People's Libyan Arab Jamahiriya) (4)

Liechtenstein (Principality of) (28) (33)

Luxembourg (32)

Morocco (Kingdom of) (4)

Mauritania (Islamic Republic of) (12)

Mexico (23)

Mozambique (People's Republic of) (50)

Nigeria (Federal Republic of) (17)

Norway (32) (33)

Oman (Sultanate of) (4)

Uganda (Republic of) (40)

Pakistan (Islamic Republic of) (4) (13)

Netherlands (Kingdom of the) (32)

Portugal (27) (32) (33)

Qatar (State of) (4)

Syrian Arab Republic (4) (47)

Ukrainian Soviet Socialist Republic (34)

United Kingdom of Great Britain and Northern Ireland (32) (36) (48)

Somali Democratic Republic (4) (40)

Sudan (Democratic Republic of the) (4)

Sri Lanka (Democratic Socialist Republic of) (36)

Sweden (33)

Switzerland (Confederation of) (28) (33)

Tanzania (United Republic of) (49)

Chad (Republic of the) (3)

Tunisia (4)

Turkey (27) (31) (32)

Union of Soviet Socialist Republics (34)

Uruguay (Oriental Republic of) (15)

Venezuela (Republic of) (26)

Yemen (People's Democratic Republic of) (4) (40)

Yugoslavia (Socialist Federal Republic of) (14)

Zaire (Republic of) (18) (40)

Zambia (Republic of) (36) (51)

INTERNATIONAL TELECOMMUNICATION UNION

WORLD ADMINISTRATIVE RADIO CONFERENCE

(Geneva, 1979)

PLENARY MEETING

FINAL PROTOCOL

No. 52 Original : French

For the Republic of Niger :

In the light of the reservations already made, the delegation of Niger to the World Administrative Radio Conference, Geneva, 1979, reserves the right of its Government to take any necessary measures to safeguard its radiocommunication interests in the event of failure to comply with the provisions of the Final Acts of the World Administrative Radio Conference, Geneva, 1979, and the Radio Regulations resulting from this Conference.

No. 53 Original : French

For the People's Republic of the Congo :

In signing the Final Acts of the World Administrative Radio Conference, Geneva, 1979, the delegation of the Congo notes with misgivings the reservations made by other delegations in connection with the use and application of the Radio Regulations.

The delegation of the People's Republic of the Congo therefore reserves the right of its Government to take any necessary measures to safeguard its interests should the signatory countries of the Final Acts fail to comply with the provisions of the Radio Regulations or should the reservations made by the delegations of other countries jeopardize the satisfactory operation of its radiocommunication services.

No. 54 Original : French

For the People's Revolutionary Republic of Guinea :

In signing the Final Acts of the World Administrative Radio Conference, Geneva, 1979, the delegation of the People's Revolutionary Republic of Guinea notes with misgivings the reservations made by certain Members, particularly with respect to the Table of Frequency Allocations and to compliance with the Provisions of the Radio Regulations.

It therefore reserves the right of its Government to take any measures it may consider necessary to safeguard its telecommunication interests.

No. 55 Original : English

For the Democratic Socialist Republic of Sri Lanka :

In signing the Final Acts of the World Administrative Radio Conference, Geneva, 1979, the delegation of the Democratic Socialist Republic of Sri Lanka has noted that several administrations have made reservations regarding various provisions of the Final Acts of the Conference for the revision of the Radio Regulations.

The delegation of the Democratic Socialist Republic of Sri Lanka therefore reserves the right of its Government as may be deemed necessary to safeguard its interests should these reservations seriously affect the telecommunication services of the Democratic Socialist Republic of Sri Lanka.

No. 56 Original : French

For the Central African Republic :

The delegation of the Central African Republic to the World Administrative Radio Conference, Geneva, 1979, notes with misgivings certain of the reservations already made with respect to the application of the provisions of the Radio Regulations, particularly the Table of Frequency Allocations. It therefore reserves the right of its Government to take any measures it may consider necessary to protect its telecommunication services and to approve the new Radio Regulations.

No. 57 Original : English

For Ghana :

In signing the Final Acts of the World Administrative Radio Conference, Geneva, 1979, the Ghana delegation has noted various reservations submitted by other countries and has great concern with the frequency allocations and the new footnotes.

The Ghana delegation reserves, on behalf of its Government, the right to protect its telecommunication interests and it accepts no consequences of any reservations made by the other Government which might lead to an increase in its share in defraying the expenses of the Union.

No. 58 Original : English

For the Socialist Republic of Roumania :

In signing the Final Acts of the World Administrative Radio Conference, Geneva, 1979, the delegation of the Socialist Republic of Roumania has noted with concern the reservations made by other countries, with particular reference to the allocations made in the Table of frequencies, and also with respect to the application of the Radio Regulations.

The delegation of Socialist Republic of Roumania therefore reserves the right of its Government to take such steps as may be deemed necessary to safeguard its interests, should these reservations jeopardize its telecommunication services.

No. 59 Original : English

For the Republic of Liberia :

In signing the Final Acts of the World Administrative Radio Conference, Geneva, 1979, the delegation of the Republic of Liberia has noted with concern the reservations made by other countries, with particular reference to the allocations made in the Table of Frequencies, and also with respect to the application of the Radio Regulations.

The delegation of the Republic of Liberia therefore reserves the right of its Government to take such steps as may be deemed necessary to safeguard its interests, should these reservations jeopardize its telecommunications services.

No. 60 Original : English

For Thailand :

In signing the Final Acts of the World Administrative Radio Conference, Geneva, 1979, the delegation of Thailand, on behalf of its Government declares that :

1) by observing there are many countries reserve their right to use the portions of the band 5 850 - 5 950 kHz and 7 300 - 7 400 kHz for broadcasting services;

2) does not accept the reservations made by other countries regarding the utilization of the portions of the band 5 850 - 5 950 kHz and 7 300 - 7 400 kHz for broadcasting services and reserves the right to take any strong measures as it may consider necessary to protect its telecommunication services;

3) reserves the right to operate stations in the mobile except aeronautical mobile on a primary basis in the band 435 - 438 MHz and shall take necessary steps to ensure that services operating according to the Frequency Allocation Table in other countries shall suffer no harmful interference from the service mentioned.

No. 61 Original : French

For the United Republic of Cameroon :

In signing the Final Acts of the World Administrative Radio Conference, Geneva, 1979, the delegation of the United Republic of Cameroon notes with considerable concern the reservations made by other countries with respect to the Table of Frequency Allocations and to the application of the Radio Regulations.

The delegation of the United Republic of Cameroon therefore reserves the right of its Government to take any measures it may consider necessary to safeguard its interests should any of the above-mentioned reservations jeopardize its telecommunication services.

No. 62 Original : English

For Mauritius :

In signing the Final Acts of the World Administrative Radio Conference, Geneva, 1979, the delegation of Mauritius has noted with concern the reservations made by other delegations, with particular reference to the allocations made in the Table of frequencies and also with respect to the application of the Radio Regulations.

In consequence, the delegation of Mauritius reserves the right of its Government to take any action it considers necessary to safeguard its broadcasting and other telecommunications services interests should these reservations jeopardize in any way these services.

No. 63 Original : English

For the Republic of Singapore :

In signing the Final Acts of the World Administrative Radio Conference, Geneva, 1979, and after having noted the reservations deposited by other delegations, in particular with respect to the Frequency Allocation Table, the delegation of the Republic of Singapore reserves for its Government, the right to take any action it deems necessary to safeguard its interests should any Member fail in any way to comply with the provisions of the Radio Regulations drawn up by the aforesaid Conference, or should the above-mentioned reservations jeopardize the operation of its telecommunication services.

No. 64 Original : English

For the Republic of the Philippines :

The delegation of the Republic of the Philippines after noting the reservations made by certain delegations, particularly, on the utilization of the frequency spectrum, reserves for its Government the right to take such action as may be necessary to safeguard its interests should certain Members fail to comply with the provisions of the Final Acts of this Conference or its Annexes or the Protocol attached thereto or against any consequences of reservations made by other countries which might have adverse effect to the interest of the Philippines.

No. 65 Original : Spanish

For Costa Rica :

In signing the Final Acts of the World Administrative Radio Conference, Geneva, 1979, the delegation of Costa Rica declares that its administration will endeavour to comply with the provisions of the Radio Regulations approved at this Conference; nevertheless, in view of the reservations made by some countries, it reserves its Government's right :

1) To take the necessary steps to protect the radiocommunication services in Costa Rica, should they be affected by the failure of other countries Members of the Union to comply with the Regulations or the Annexes and Protocols thereto.

2) Not to accept those reservations made by various countries which leave the fixed and mobile services unprotected, since these services are of great importance in Costa Rica, particularly in the UHF bands, and must be protected against all manner of interference.

No. 66 Original : Spanish

For Ecuador :

In signing the Final Acts of the World Administrative Radio Conference, Geneva, 1979, the delegation of Ecuador declares that its administration will endeavour to comply with all the provisions of the Regulations approved at this Conference; nevertheless, in view of the reservations made by other countries, it reserves its Government's right :

1. To take such steps as it considers necessary to protect the telecommunication services of Ecuador should they be affected through the failure of other countries Members of the Union to comply with the provisions of the Regulations and the Annexes thereto;

2. Not to accept the reservations made by other countries if they prove detrimental to the national interests of Ecuador;

3. To continue to use some of the existing assignments of the fixed and mobile service in the HF bands whenever it proves impossible, for technical, economic or other reasons, to transfer them within the time limits allowed by this Conference.

No. 67 Original : French

For the Republic of Upper Volta :

In signing the Final Acts of the World Administrative Radio Conference, Geneva, 1979, the delegation of the Republic of Upper Volta notes with misgivings the reservations made by some countries concerning certain provisions of the Radio Regulations.

It therefore reserves its Government's right to take such steps as it considers necessary to safeguard its interests should they be jeopardized.

No. 68 Original ; English

For the Hashemite Kingdom of Jordan, Lebanon, Syrian Arab Republic

The above-mentioned delegations to the World Administrative Radio Conference, Geneva, 1979, solemnly declare themselves bound by the provisions adopted by this Conference in conformity with the provisions of the International Telecommunications Convention.

Accordingly they reject any statements or actions which are not in conformity with the decisions taken by this Conference.

In particular, they declare the statement appearing in reservation No. 30, referring to footnotes concerning 174 - 223 MHz and 15.7 - 17.3 GHz bands as unacceptable because it is contrary to the decisions taken by the Conference in full recognition of technical bases of the objections made by the delegation of the Hashemite Kingdom of Jordan against the inclusion of Israel in the concerned footnotes.

No. 69 Original : English

For the Republic of Kenya

In view of reservations entered by certain countries to operate some services in contravention of the provisions of the Radio Regulations drawn up by the World Administrative Radio Conference, Geneva, 1979, the delegation of the Republic of Kenya reserves the right of its Government to take necessary steps as it may deem fit to protect her telecommunication services in the event of other Members failing to comply with the provisions of the Radio Regulations, as revised by this Conference, in particular reservations Nos. 38, 32, 13, 33, 36 and 43 as contained in the Final Protocol,

No. 70 Original : English

For the Islamic Republic of Iran :

The delegation of the Islamic Republic of Iran declares that its administration does not accept any implication resulting from any reservation that has been made by any other administration, or group of administrations, in respect of or relating to the provisions in the Final Acts. The delegation of the Islamic Republic of Iran reserves for its country the right of its Government to take such action as it might deem necessary to safeguard its interests in case any other administration, particularly in consequence of any of the statements numbered 11, 32, 34 and 38 under the Final Protocol, disregards or contravenes any of the provisions of the Radio Regulations as revised by this Conference, and especially if such action proves prejudicial to the needs or interests of the Islamic Republic of Iran.

No. 71 Original : French

For the Republic of Mali :

After noting the reservations made by other delegations, particularly those relating to the Table of Frequency Allocations, the delegation of the Republic of Mali reserves its Government's right to take such steps as it may consider necessary to safeguard its interests should those reservations or failure to comply with the provisions of the Radio Regulations prove detrimental to the satisfactory operation of its radio services.

No. 72 Original : English

For the United States of America :

With reference to statement No. 9 by the Government of the Republic of Cuba, the Government of the United States of America notes that the United States presence in Guantanamo is by virtue of a treaty in force; the United States reserves the right to meet its radiocommunication requirements there as heretofore.

No. 73 Original : French

For Belgium, France, Luxembourg, the Kingdom of the Netherlands and the Confederation of Switzerland :

The delegations of the above-mentioned countries, taking note of the reservations made by several delegations in connection with the insufficient allocations made to the broadcasting service in the lower part of the HF band and the steps which the corresponding administrations accordingly propose to take, declare that their administrations reserve the right to take any necessary measures both to ensure the satisfactory operation of the services to which this part of the spectrum is allocated and to allow an equitable use of the HF band by their broadcasting services.

No. 74 Original : English

For the Algerian Democratic and Popular Republic, the Kingdom of Saudi Arabia, the State of Bahrain, the United Arab Emirates, the Republic of Iraq, the Hashemite Kingdom of Jordan, the State of Kuwait, Lebanon, the Socialist People's Libyan Arab Jamahiriya, the Kingdom of Morocco, the Sultanate of Oman, the State of Qatar, the Syrian Arab Republic, the Somali Democratic Republic, the Democratic Republic of the Sudan, the People's Democratic Republic of Yemen :

After having noted the reservations already deposited, the delegations of the above-mentioned countries reserve their Governments' rights to take such action as they may deem necessary to protect their interests, should any Member fail in any way to observe the provisions of the Final Acts of the World Administrative Radio Conference, Geneva, 1979, or should the reservations made by such Member jeopardize their telecommunications interests.

No. 75 Original : English

For the Federal Republic of Germany, Australia, Austria, Belgium, Canada, Denmark, the United States of America, Finland, France, Greece, Ireland, Italy, Japan, the Principality of Liechtenstein, Luxembourg, Norway, New Zealand, Papua New Guinea, the Kingdom of the Netherlands, Portugal, the United Kingdom of Great Britain and Northern Ireland, Sweden, the Confederation of Switzerland :

The above-mentioned delegations, referring to the reservations made by the Republic of Colombia, the People's Republic of the Congo, the Republic of Ecuador, the Gabon Republic, the Republic of Kenya, the Republic of Uganda, the Somali Democratic Republic and the Republic of Zaire in statement No. 40 and by the Republic of Indonesia in statement No. 42, consider that, in as much as these statements refer to the Bogota Declaration of 3 December 1976 by equatorial countries and to the claims of those countries to exercise sovereign rights over segments of the geostationary-satellite orbit, the claims in question cannot be recognized by this Conference, and that the decisions of this Conference regarding the assignment and use of frequencies and orbital positions in the geostationary orbit are fully in accordance with the International Telecommunication Convention (Malaga-Torremolinos, 1973) by which this Conference is bound.

No. 76 Original : English

For the United Kingdom of Great Britain and Northern Ireland :

With reference to the reservation in statement No. 45 by the Republic of Argentina, the Government of the United Kingdom of Great Britain and Northern Ireland have no doubt as to United Kingdom sovereignty over the Falkland Islands, the Falkland Island Dependencies, and the British Antarctic Territory. In this context attention is drawn to Article IV of the Antarctic Treaty, to which both the United Kingdom and Argentina are parties, which freezes territorial claims in Antarctica.

The United Kingdom Government therefore do not accept the declaration of the Argentine Republic claiming to contest United Kingdom sovereignty over the above-mentioned territories. Furthermore the United Kingdom is entitled to have frequencies assigned to it for radio services to be operated from these territories and would regard any use by the Argentine Republic of such frequencies which caused harmful interference to these assignments as a breach of the Convention and the Radio Regulations. The United Kingdom does not accept the assertion in the last paragraph of the Argentine declaration that the "Illegality of the occupation of the Falkland, South Georgia and South Sandwich Islands by the United Kingdom has been recognized by the United Nations Organization". United Nations Resolutions have simply called for the settlement of the dispute by negotiation between the two Governments.

No. 77 Original : English

For the United Kingdom of Great Britain and Northern Ireland :

With reference to the reservation in statement No. 2 by the Republic of Guatemala, the Government of the United Kingdom of Great Britain and Northern Ireland have no doubt as to the sovereignty of the United Kingdom over Belize and wish formally to reserve their rights on this question.

No. 78 Original : English

For the United Kingdom of Great Britain and Northern Ireland :

The delegation of the United Kingdom of Great Britain and Northern Ireland does not accept reservation No. 7 by Chile in so far as it disputes the sovereignty of Her Majesty's Government in the United Kingdom over the British Antarctic Territory. The delegation note the reference to Article 4 of the Antarctic Treaty which freezes territorial claims in Antarctica.

No. 79 Original : Spanish

From the Republic of Colombia, the People's Republic of the Congo, the Republic of Ecuador, the Gabon Republic, the Republic of Kenya, the Republic of Uganda, the Somali Democratic Republic and the Republic of Zaire :

The delegations of the above-mentioned countries wish to state that preambular paragraph e) and operative paragraph 3.2, 2a of Resolution BP adopted by the World Administrative Radio Conference, Geneva, 1979, refer also to the special geographical situation of the equatorial countries in relation to the geostationary orbit, as emerged from the discussions of the ad hoc Working Group and the Committee concerned.

On this understanding, the above-mentioned delegations accepted the terms of that Resolution, which deals with the use of the geostationary orbit, bearing in mind, as was inevitable, the implications of the special geographical situation of the countries located on the Earth's equator.

Hence any planning or regulation aimed at achieving the rational use of the geostationary orbit through equitable access to it by all countries must take into consideration the position adopted in that connection by the equatorial countries.

No. 80 Original : English

For Papua New Guinea :

In signing the Final Acts of the World Administrative Radio Conference, Geneva, 1979, and in the light of reservations already deposited the delegation of Papua New Guinea reserves for its Government, the right to take such measures as it sees fit, to safeguard its radiocommunications interests, if other countries fail to observe the provisions adopted by the Conference and in so doing cause harmful interference to radiocommunications systems under the jurisdiction of the Government of Papua New Guinea.

No. 81 Original : English

For Japan :

With regard to the reservations made by the Chilean delegation and the Argentine delegation concerning the frequency assignments in Antarctica, the delegation of Japan wishes to reaffirm the position of the Japanese Government concerning Article 4 of the Antarctic Treaty.

No. 82 Original : English

For the Somali Democratic Republic :

The delegation of the Somali Democratic Republic at the World Administrative Radio Conference, Geneva, 1979, hereby declares that its Government will never accept any measures or circumstances resulting from reservations already deposited by other administrations and which may henceforth, jeopardize the interests of the telecommunications services of Somalia.

No. 83 Original : Spanish

For the Republic of Cuba :

If, as a result of Reservations Nos. 36 and 38 of the Final Protocol to the World Administrative Radio Conference, Geneva, 1979, relating to the use of the broadcasting service in bands allocated to services other than the broadcasting service in the region of 6 and 7 MHz, these new bands cannot be properly used by the services to which they are allocated, the administration of the Republic of Cuba reserves the right to use them in the manner best suited to its interests.

ANNEX

Recapitulatory list of reservations

(in French alphabetical order)

(Figures between parentheses indicate the order in which the statements appear in the Final Protocol)

Algeria (Algerian Democratic and Popular Republic) (74)

Germany (Federal Republic of) (75)

Saudi Arabia (Kingdom of) (74)

Australia (75)

Austria (75)

Bahrain (State of) (74)

Belgium (73) (75)

Cameroon (United Republic of) (61)

Canada (75)

Central African Republic (56)

Colombia (Republic of) (79)

Congo (People's Republic of the) (53) (79)

Costa Rica (65)

Cuba (83)

Denmark (75)

United Arab Emirates (74)

Ecuador (66) (79)

United States of America (72) (75)

Finland (75)

France (73) (75)

Gabon Republic (79)

Ghana (57)

Greece (75)

Guinea (People's Revolutionary Republic of) (54)

Upper Volta (Republic of) (67)

Iran (Islamic Republic of) (70)

Iraq (Republic of) (74)

Ireland (75)

Italy (75)

Japan (75) (81)

Jordan (Hashemite Kingdom of) (68) (74)

Kenya (Republic of) (69) (79)

Kuwait (State of) (74)

Lebanon (68) (74)

Liberia (Republic of) (59)

Libya (Socialist People's Libyan Arab Jamahiriya) (74)

Liechtenstein (Principality of) (75)

Luxembourg (73) (75)

Mali (Republic of) (71)

Morocco (Kingdom of) (74)

Mauritius (62)

Niger (Republic of the) (52)

Norway (75)

New Zealand (75)

Oman (Sultanate of) (74)

Uganda (Republic of) (79)

Papua New Guinea (75) (80)

Netherlands (Kingdom of the) (73) (75)

Philippines (Republic of the) (64)

Portugal (75)

Qatar (State of) (74)

Syrian Arab Republic (68) (74)

Roumania (Socialist Republic of) (58)

United Kingdom of Great Britain and Northern Ireland (75) (76) (77) (78)

Singapore (Republic of) (63)

Somali Democratic Republic (74) (79) (82)

Sudan (Democratic Republic of the) (74)

Sri Lanka (Democratic Socialist Republic of) (55)

Sweden (75)

Switzerland (Confederation of) (73) (75)

Thailand (60)

Yemen (People's Democratic Republic of) (74)

Zaire (Republic of) (79)