Report on research into mobile communications : a review of the International Telecommunication Union's regulations for the Mobile Telecommunications Services for the purpose of identifying concepts and determining their legal quality, and to provide advice to the Canadian delegation to WARC-83 with a view to establishing a sound basis for the task to be carried out at WARC-88

REPORT ON
RESEARCH INTO MOBILE COMMUNICATIONS

- A review of the International Telecommunication Union's regulations for the Mobile Telecommunications Services for the purpose of identifying concepts and determining their legal quality, and to provide advice to the Canadian Delegation to WARC-83 with a view to establishing a sound basis for the task to be carried out at WARC-88.

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27 September 1983
Revised and Corrected
8 May 1984

ABBREVIATIONS FOR JOURNALS AND TREATIES USED IN REPORT

Air L.R.	Air Law Review
A.B.A.J.	American Bar Association Journal
Am. Eco. Rev.	American Economic Review
Am. Eco. Rev: Pa. & Proc.	American Economic Review: Papers & Proceedings
A.J.I.C.	American Journal of International Law.
B.F.S.P.	British Foreign State Papers
Col: J. Trans. L.	Columbia Journal of Transnational Law
Duquesne L.R.	Duquesne Law Review
Fed. Com. B.J.	Federal Commercial Bar Journal
For. Pol.	Foreign Policy
Glendale L.R.	Glendale Law Review
G.B.T.S.	Great Britain Treaty Series
Ind. L.R.	Indiana Law Review
Int. L.	International Lawyer
Int. Org.	International Organization
Iowa L.R.	Iowa Law Review
J. Eco. Iss.	Journal of Economic Issues
J. Int. Aff.	Journal of International Affairs
J. Int. Org.	Journal of International Organization
J.L. & Eco.	Journal of Law and Economics
J. Legis.	Journal of Legislation
Jurid. Rev.	Juridical Review
L. & Cont. Prob.	Law and Contemporary Problems
L.N.T.S.	League of Nations Treaty Series
Mich. L.R.	Michigan Law Review
Minn. L.R.	Minnesota Law Review
Stan. L.R.	Stanford Law Review
Telecom. J.	Telecommunications Journal
U.K.T.S.	United Kingdom Treaty Series
U.S.T.S.	United States Treaty Series
Va. J. Int. L.	Virginia Journal of International Law
Wash. U.L.Q.	Washington University Law Quarterly

A. INTRODUCTION

TITLE OF PROJECT:

RESEARCH INTO MOBILE TELECOMMUNICATIONS

OBJECTIVES:

1. To assist in the preparation by Canada for the World Administrative Radio Converence for Mobile Services (1987) of the International Telecommunication Union by:

   (a) Continuing an analysis of the International Radio Regulations affecting Mobile Telecommunications, particularly any new Regulations for changes to them as a result of the World Administrative Radio Conference (1983);

   (b) To identify critical legal issues associated with recent changes and proposed changes to the International Radio Regulations;

   (c) To identify the relationship between pertinent legal issues respecting the International Radio Regulations and affecting Mobile Services and Telecommunications with technological advancements and other factors which have acted as a catalyst to initiate developments of, and changes to, the Regulations;

   (d) To assist in the development of a legal framework and rationale which can serve as a basis for representations by Canada at the World Administrative Radio Conference for Mobile Services (1987).

2. To analyze the legal developments in the field of Mobile Services Telecommunications resulting from WARC-83 and WARC-87, to identify, and comment upon the role of Canadian representations thereat, and to assist in the development of a legal framework and rationale which can serve as a basis for representations by Canada at future WARCs.

A small university research grant provided the impetus and opportunity to begin a study in the field of international telecommunications. Such grants have been best decribed as seed money intended to fertilize an interest in research in a particular area. To that extent, it has more than met its purpose; it has embedded in me an avid interest in the subject and it has fostered one of equal intensity in the research assistant whom I was fortunate enough to engage for this project. In addition, both of us have now acquired enough expertise to feel reasonably comfortable in that field of study.

The funding from the Federal Department of Communications, through the Federal Department of Supply and Services, permitted me to make three brief visits to Ottawa. During the first one, in late April of 1982, I had the opportunity of meeting for the first time a number of Department of Communications officers assigned to international telecommunications activities. They gave me some idea of where to begin the study and, at the same time, made me painfully aware of how little I knew of the subject. The second visit, in mid-August of 1982, coincided with the 1982 CITEL Conference hosted by Canada. I was honoured to be included as a member of the Canadian delegation for those meetings. Finally, in late October of 1982, I attended a series of meetings of Department of Communications officials who reviewed all the proposals (Canadian and others) for the WARC-83. It was at that marathon session of meetings that the final Canadian presentations and strategy were determined.

During the October meeting, an invitation was extended to me to attend the WARC-83, held in late February and early March of 1983. As a

result, plans were made at the Department of Communications to prepare for my attendance at the Geneva meetings of the WARC, and at the University of New Brunswick Faculty of Law to accommodate for my absence from campus during the academic term. Unfortunately, the invaluable first-hand experience which that opportunity would have afforded a novice in the field such as myself was not to be had. Instead, last minute financial restraints by government resulted in the cancellation of my place. As a result, the accommodations made for my planned absence at the Faculty dictated that I return the favour offered by accepting extra duties there which were not associated with telecommunications research. These and other commitments forced a temporary postponement of the project.

The report which follows reflects the intent of its research grant. It constitutes the commencement - a bare outline, if you will - of a larger and more detailed study which is presently being undertaken.

I wish to thank the officers of the Department of Communications, especially Mr. E.D. DuCharme and Mr. J.W. Egan for their patience, understanding and kind and helpful assistance. In addition the large majority of revisions and corrections made in this copy of the report were the result of their comments on the original one. Most importantly, I wish to offer my thanks for the invaluable work done by my research assistant, Miss Anne W. LaForest, a second (now third) year law student at the University of New Brunswick. Her work on every aspect of the project, from searching through periodical indexes to proofreading, was most helpful and very much appreciated.

Donald J. Fleming
8 May 1984

HISTORICAL PERSPECTIVE

General history of the International Telecommunication Union (ITU). Conventions and Regulations of the ITU as sources of international law. Emphasis on the history of the Mobile Services as outlined in the Conventions and Regulations.

In effect, the history of the International Telecommunication Union (ITU) begins with the invention and use of the telegraph and the subsequent recognition of its value as an international medium for communication. One can trace its legal origin to the International Telegraph Convention of Paris (1865)[1] and the creation by that treaty of an international organization called the International Telegraph Union. As communication by telegraphy depended upon a physical link (wire, in the case of a telegraph system) between receiver and communicator, it appears that the prime concern of that mid-19th century international agreement was to encourage the controlled development and expansion of communications between states[2] at a time when nations determined the benefits to be desirable ones. It is interesting to note that, after the development and implementation of wireless communications, the need for international co-operation in the field increased in importance but for reasons

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1. The International Telegraph Convention of Paris (1865), 56 B.F.S.P., 294.

2. This was necessary because the principle of sovereignty guaranteed that the government or ruler of a nation could control international telegraphic communications within its territories simply by limiting or extending the right to construct the necessary physical links into and beyond its physical boundaries. See C.M. Dalfen "Telecommunications" in McDonald, Morris, Johnston (eds.) Canadian Perspectives on International Law and Organization (1974); J. Evenson, "Aspects of International Law Relating to Modern Radio Communications", Academie De Droit International (La Hague) Recueil Des Cours II 477, (1965); Henry J. Glazer, "The Law-Making Treaties of the International Communications Union Through Time and Space" 60 Mich. L. Rev. 269, (1962).

which were antithetical to the original purpose.[3]

In 1875, the International Telegraph Convention was re-examined and revised by the St. Petersburg Convention.[4] Again, like the original agreement, this second one emphasized the development and expansion of international communication. For example, Article I of the Convention states that all persons have a right to correspond by international telegraph, Article II provides that the contracting parties are to make all necessary provisions to ensure the secrecy and quick dispatch of telegrams, and Article IX provides that telegrams sent on the "international service of the contracting states are [to be] transmitted free over all the lines of the said states".

The St. Petersburg Convention is also significant in that it demonstrates, even at the earliest stage of technological development in the field of telecommunications, that the role of governments would have to be a large one in order to regulate international communications and to ensure their effectiveness.

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3. As wireless communications require no physical link to effect a transmission, the control of a sovereign over transnational communications within its territory was eliminated. This factor, along with other technological advancements and an increasing need for telecommunications have resulted in new and different international concerns by states. As we shall see, the matters of harmful interference and more so, the allocation of frequency spectrum bands in the face of increasing demands for limited spectrum space have become the most crucial technical matters facing the ITU.

4. International Telegraph Convention, signed at St. Petersburg, July 10/22, 1875, 66 B.F.S.P. 19, translated in part (1913) 7 A.J.I.L. Supp. 276. The process begun at St. Petersberg of meeting to revise the main instruments of one's organization, continues to be a peculiar characteristic of the ITU. It is accomplished, in accordance with the Charter of the organization, by Plenipotentiary Conferences held at regular intervals.

Indeed, the fact remains that, although private enterprises have been invited to particpate in international radio conferences since 1912,[5] the overriding role of governments in the regulation of telecommunications dominates all aspects of them.

The invention of the telephone in 1876 did little to alter the emphasis on international telecommunications regulation, primarily because telephonic communication, like telegraphy,[6] was dependent upon a physical link between points and, could still be controlled by sovereign authority. The invention of wireless telegraphy by Marconi in 1895, however, created problems which sovereigns had not foreseen and, for the first time, created what has now become a perennial problem -that of developing regulations in a field characterized by rapid and constant technological advancement. Although the development of the wireless (radio) created the need for a different approach in regulating international telecommunications, the provisions of the St. Petersburg Convention did not become entirely redundant. In fact, most of them were adopted and integrated in the Radio-Telegraphic Convention in 1906.[7]

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5. See the Final Protocol of the International Radiotelegraph Convention, Final Protocol and Service Regulations signed at London, July 5, 1912 (1913) G.B.T.S. No. 10; Cd. 6783; 1 L.N.T.S. 136; (1913) 7 A.J.I.L. Supp. 229.

6. Glazer, supra footnote 2, 273.

7. Radio-Telegraphic Convention, Final Protocol and Service Regulations, signed at Berlin, Nov. 3, 1906 (1906) H.C. 368: (1909) G.B.T.S. No. 8: Cd. 4559; U.S.T.S., No. 568, Art. 17. The provisions of the 1875 Convention were also adopted in Art. 17 of the 1912 London Convention, supra footnote 5.

1. Radiotelegraph Conferences

Because wireless communication created different problems for regulation, the first international radiotelegraph conferences were independent of the International Telegraph Union.[8] The advent of wireless gave rise to three basic problems. Firstly, communication was no longer restricted to the political boundaries created by the notions of national sovereignty simply because radio waves could traverse them without permission of the receiving state. In addition, the affiliated problem of harmful interference became a prime consideration even at this early stage of development, for, without some form of control, transmitting stations in neighbouring states could, even unintentionally, ruin one anothers transmissions by choosing the same broadcast frequency. Finally, the invention of the wireless created the possibility of communication with mobile units (in the early twentieth century, as the value of such a possibility applied only to ships and coast stations, the first mobile service - and for long the most influential one - was the "maritime mobile service"). The use of radio telegraphy between ships and the coast and between ships themselves quickly became widespread primarily because of

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8. There continued to be telegraph regulations until the International Telegraph Union became part of the International Telecommunication Union in 1932. Administrative Conferences established by the 1875 Petersburg Convention were held in St. Petersburg (1875), Berlin (1885), Paris (1890), Budapest (1896), London (1903), Lisbon (1908), Paris (1925) and Brussels (1928). See J. Evenson, 483, footnote 1.

the great advantages of communication (e.g., assistance to ships in distress, the broadcasting of meteorological warnings).

The first two problems raised by the advent of radio required agreement on a multinational level in order for regulation of the medium to exist. In addition, the regulation of maritime mobile services required international agreement primarily because the high seas were open to vessels of all nations. This dictated that matters relating to the broadcast and reception of distress signals and meteorological information be universal.

From the very beginning, the actions of the private sector also created problems which warranted international solution. For example, the Marconi Wireless Company attempted to acquire a monopoly over the production and installation of radio equipment.[9] It did so by agreeing to install patented Marconi radio sets and qualified operators on ships in exchange for profit and for the right to restrict its equipment to be used for communication only with other stations broadcasting or receiving with Marconi patented devices.[10]

The need to cope with the various problems raised by the development of radio communications technology led to a Preliminary Conference on Wireless Telegraphy (Berlin, 1903)

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9. F. Lyall, "Use of the Radio Spectrum: The Role of the IFRB". Jurid. Rev., 233 (1969).

10. Ibid.

and a subsequent conference in 1906 which resulted in the first Radio-Telegraphic Convention.[11] In addition to the Berlin Conference of 1906, nations met in London in 1912 and Washington in 1927 to mould the legal principles which have evolved to become the modern day international law of communications. As these three early conferences elucidate fairly clearly the historical development of the international regulation of mobile communications services, each one will be the subject of a brief examination.

(a) The 1906 Berlin Conference: The First Radio-Telegraphic Convention, Final Protocol and Regulations.

This was the first conference which considered questions relating directly to the mobile services. The treaty produced by the Conference purported to regulate mobile services communications. It defines "coastal stations" ("every wireless telegraph station established on shore or on board a permanently moored vessel used for exchange of correspondence with ships at sea" - Article 2) and "shipboard" stations (every wireless telegraph station established on board any vessel not permanently moored" - Article 2). The treaty defines its jurisdiction as follows:

The high contracting parties bind themselves

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11. Radio-Telegraphic Convention, Final Protocol and Regulations, signed at Berlin, Nov. 3, 1906. (1906) H.C. 368: G.B.T.S., No. 8; Cd. 4559. This Convention consists of a Convention, Service Regulations and Additional Regulations. See Hackworth, 4 Digest of International Law, 276 ff. There were 27 signatories to the Convention including a good number of Latin American and Central American states. (Argentina, Brazil, Chile, Mexico and Uruguay). Canada was not a party to this Convention, but the United Kingdom may well have obligated our nation to its provisions, as it was only with the Treaty of Versailles in 1919 that the Dominions in the Commonwealth were even able to assert claims to separate representation at international conferences. See Castel, International Law, 3rd ed. (1974), 80. However, see infra, footnote 19 (Canada was a signatory to the 1912 Convention).

> to apply the provisions of the present convention to all wireless telegraph stations open to the services of public correspondence between the coast and vessels at sea... (Article 1).

Except for the expansion of these definitions to include mobile units in the air and on land[12] and an expansion of jurisdiction from radio telegraphy into radio telephony, the historical definitions forming the basis of the international regulation of mobile services remain relatively unchanged.

A number of principles established in the 1906 Berlin Convention appear to have withstood the test of time and, like the definitions establishing the jurisdiction of that Convention remain a part of the present treaty. For example, the challenge presented by competing monopolies such as the Marconi Wireless Company (a major point of contention at the Conference) is met in Article 3:

> Coastal stations and shipboard stations are bound to exchange radio-telegrams reciprocally without distinction as to the radio-telegraphic system adopted by those stations.[13] (emphasis added)

Crushing monopoly interests was an attempt to establish freedom of intercommunication in order to achieve the full benefits of wireless telegraphy in the mobile service. This was one of the

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12. Radio Regulations 1 Edition of 1979. Revised in 1981. Published by the General Secretariat of the International Telecommunication Union.

13. The equivalent provision in the 1982 Convention is Article 34 - Intercommunication:

> 1. Stations performing radiocommunications in the mobile service shall be bound, within the limits of their normal employment, to exchange radiocommunications reciprocally without distinctions as to the radio station adopted by them.

most important principles to be accepted by the Conference[14] and it is of particular interest because it was not a technical issue (the type of concern with which, from the very beginning, conferences of this nature restricted themselves). It was a political and economic (hence diplomatic) one.[15] Interestingly,

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14. Clearly this provision was in favour of the universality of intercommunications in the mobile service. However, an important element took away from the absoluteness of this provision. Britain and Italy could not accept this Article without breaching their contracts with Marconi. As such, the final protocol provided an exemption to the principle:

> "Each contracting government may reserve the right to designate, according to circumstances, certain coastal stations to be exempted from the obligations imposed by Article 3 of the Convention provided that, as soon as this measure goes into effect, there shall be opened within its territory one or several stations subject to the obligations of Article 3 insuring, within the region where the exempted stations are located, such wireless telegraph service as will satisfy the needs of the public service."
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> (Italian reservations to the Final Protocol provide that its ratification of the Convention could not take place until the expiration of its contracts with Mr. Marconi.)

As well, the Final Protocol provides an exemption from Article 3 to allow for scientific development (thus establishing another principle):

> "It is understood that, in order not to impede scientific progress, the provisions of Article 3 of the Convention shall not prevent the eventual employment of a wireless telegraph system incapable of communication with other systems, provided, however, that such incapacity shall be due to the specific nature of such systems and that it shall not be the result of devices adopted for the sole purpose of preventing intercommunication."

This provision is also in Article 34, No. 156, of the 1983 ITU Convention in somewhat different form.

15. The problem was with respect to those countries which had made agreements with the Marconi Wireless Company because the acceptance of this article would leave them in breach of their contracts. It applied to Britain and Italy in particular. For an explanation of this, see the comments of Ambassador Tower (the delegate for U.S. at Berlin) to the Secretary of State (U.S.) in Foreign Relations of the United States Part 2 (1906).

a similar provision respecting intercommunications between ships met with considerably more opposition[16] and, as a result, the provision requiring intercommunication between ships was not included in the main Convention but was placed in a Supplementary Agreement which would only apply if agreed to independently by a state.

Article 8 of the Convention establishes the provision against harmful interference and provides a direction to the signatory states to organize their wireless telegraphy systems (so far as possible) in a manner not disruptive of the service of other wireless systems.[17] It was the first time such an issue had been addressed and agreed upon and, again, it is the basis upon which modern day law is formulated.

Article 9 of the Convention establishes another fundamental principle in telecommunications law; namely, that in receiving calls, priority is to be given to distress calls.[18]

The establishment of an administrative body (Article 13), the rights of freedom of the parties in other communications activities which do not interfere with matters governed by the Convention (Articles 14 and 21) and the provision for the estab-

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16. See the comments of Ambassador Tower to the Secretary of State, supra footnote 15.
17. See 1982 Convention Article 35 for a comparative provision.
18. See 1982 Convention Article 36 for a comparative provision.

lishment of a method of artibration (Article 18) are other matters provided for in that initial agreement which (in modified form) have continued as the basis of the legal relationships defining modern day international obligations respecting mobile service telecommunications matters.

(b) The London Conference of 1912: International Radio Telegraph Convention, Final Protocol and Service Regulations [19]

A recognition that events such as the sinking of the Titantic might have been prevented by the proper use of the telegraphy[20] and dramatic expansion of the field of radio communications since the 1906 Berlin Conference[21] resulted in renewed efforts at international cooperation in the field of telecommunications culminating in the 1912 London Conference.

Efforts were made at the Conference to formulate more specifically the obligatory nature of the more general provisions agreed to in 1906. In particular, the rule requiring intercommunication regardless of system became obligatory (Article 3, 1912

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19. International Radiotelegraph Convention, Final Protocol and Service Regulations signed at London, July 5, 1912 (1913) G.B.T.S. No. 10; Cd. 6783 1 L.N.T.S. 136; (1913) 7 A.J.I.L. Supp. 229 (thirty signatories to this Convention in total including Canada). See Hackworth, 4 Digest of International Law 276 (1942) for a general description of the Conference.

20. See J. Evenson "Aspects of International Law Relating to Modern Radio Communications" Academic De Droit International (La Hague) Recueil Des Cours II 447 (1965); H. Glazer "The Law Making Treaties of the International Telecommunications Union Through Time and Space" 60 Mich. L. Rev. 271 (1962); F. Lyall, "Use of the Radio Spectrum: The Role of the IFRB" Jurid. Rev. 233 (1969).

21. See Convention, supra footnote 19.

Convention). There was also a desire to make provision for the wider use of radio telecommunications at sea.[22]

Article 1 of the Radio Telegraph Convention of 1912 again restricted applicability to matters respecting the maritime mobile service, and the provisions respecting harmful interferences and priority of distress calls were also preserved (Articles 8, 9, and 15). Like its 1906 counterpart as well, states could retain liberty to engage, at will, in radio communications activities outside the provisions of the Convention (Article 21).

A respect for advances in technology and recognition of the need to make the most efficient use of the radio spectrum began to manifest themselves in the Service Regulations provided for by Article 11 of the Convention.[23] For example, the first article of those Regulations provides that the choice of equipment to be used by coastal and shipboard stations is to be unrestricted, provided that every installation "shall as far as possible keep pace with technical and scientific progress". Respect for efficient use of the radio spectrum is also reflected in

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22. See Convention, supra footnote 19.

23. It might be that such efficiency was necessary because the intensive and extensive development was still minimal at this stage. In fact, the total available spectrum at this point was between 150 - 1000 kHz. The present usable spectrum spans from 10 KHz to 275 GHz. Thus, it is quite possible that given the increase in the use of radio communications which Evenson suggests, some congestion and interference was felt. For a graph of available spectrum from 1906-1967 see H. Levin "Radio Spectrum Resource" 11 J.L. & Econ. 433, 442 (1968).

Articles 6 and 7, which provide that the exchange of superflous signals and words is prohibited to stations defined in Article 1 of the Convention and that all stations are to carry on service with a minimum amount of energy.

It is also worthy to note that the regulations provide for a considerable degree of government control of radio telegraphy even with respect to procedural matters. For example, shipboard stations must be licensed by the government (Article 9); service on stations is to be carried out by the operator authorized by the state to whom the station is subject (Article 11); and, whenever an infraction of the Convention or Regulations takes place, the management of the radio service of the state to whom the station is subject is the party responsible for ascertaining facts and fixing responsibility.

The Regulations also contain provisions governing the method of transmission of radiograms (e.g., the procedure to be followed in making a call by radio telegraphy).[24] Again, this would relate to the desire to achieve efficiency in the communication between radio stations by means of establishing a fixed protocol of standard operating procedures.

On the administrative level, the Regulations provide

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24. For example, headings under this chapter in the regulations include a) Signals of Transmissions; b) Order of Transmissions; c) Method of Calling Radio stations and Transmission of Radiograms; d) Acknowledgement of Receipts and Conclusion of Work; e) Directions to be Followed in Sending Radiograms.

for the responsibilities of the International Bureau (Article 5) which, in essence, was intended to be a clearing house for the distribution of statistical information collected from states and distributed to member states. The type of information collected, collated, published, distributed and revised from time to time included charts showing the position of coastal stations, a list of radio stations referred to in Article 1 of the Convention, and pertinent data on stations such as its nationality, hours of service, radio system used, and normal range. The contracting states were required to forward to the Bureau the information it required (Article XLV).

(c) The Washington Conference of 1927: Radiotelegraph Convention and General Regulations[25]

Although the title of the Convention again refers to radiotelegraphy, an attempt was made to account for the technological advances of the last fifteen years. For example, it no longer restricted itself only to matters concerning coastal and shipboard stations. Glazer refers to some

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25. Radio Telegraph Convention and General Regulations signed at Washington November 25, 1927. 126 B.F.J.P. 330; 84 L.N.T.S. 97; III Hudson International Legislation 2197; (1929) 23 A.J.I.L. Supp. 40 (Conv. Only). Includes a general Radiotelegraph Convention, General Regulations annexed to the Radiotelegraph Convention and Supplementary Regulation annexed to the Radiotelegraph Convention. Canada is again a party to this Convention (also ratified the Convention) 78 signatories - 40 ratifications including most of the North American, Central American and Latin American (Region 2).

of these developments and to the desire of the Conference to regulate all forms of radiocommunications.[26] As a result, consideration had to be made for the developments in radio broadcasting, communications in air navigation and international communication by shortwave while complex problems respecting increased interference resulting from the more crowded radio spectrum had to be addressed.[27]

The application section of the new Convention (Article 2) does not refer to ships or coastal stations:

> (s.1) The contracting Governments undertake to apply the provisions of the present Convention to all radio communications established, or operated from the contracting Governments, and open to the international service of public correspondence. They undertake likewise, to apply these provisions to the special services covered by the Regulations annexed to the present Convention (emphasis added).

The definition of the terms underlined are to be found in Article zero and they require some explanation. "International Service" means:

> radio communications service between a in one country and a station in another country or between a land station and a mobile station located outside the limits of the country in which the land station is situated or between two or more mobile stations on or over the high seas...

The "International Service" refers primarily to communications

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26. H. Glazer "The Law-Making Treaties of the International Telecommunications Unions through Time and Space", 60 Mich. L. Rev. 271 (1962).

27. Ibid.

across national borders, but its definition also includes national services for some purposes (Article 1):

> ... An internal or national radio communication service which is likely to cause interference with other services outside the limits of the country in which it operates is considered as an International Service from the viewpoint of interference.
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> . . . . . .
>
> "Public correspondence" means all radio communications which a station, by reason of being open to public service, must accept from the public for transmission.

Thus, to fall within the scope of the Convention (Article 2), a station must be one providing International Service within the given definition and also be a station open to the public service.

The term "Special Service" is not defined in the main Convention but it appears in the regulations (Article 1):

> "Special Services" means the services of radio beacons, radio compasses, transmission of time signals, notices to navigators, standard waves, transmissions having a scientific object.

From an historical point of view, other references in the definition section (Article 1) of the Convention are of interest. For example, the term "mobile services" is defined for the first time in the 1927 Convention and, significantly, it does not refer specifically to its maritime origins:

> "Mobile services" means the radio communication services carried on between mobile stations and

> land stations, and by mobile stations communicating among themselves.

A "mobile station" is therein defined as a station capable of moving and which ordinarily does move, while "land station" is defined as a station other than a mobile station used for radio communications with mobile stations. It is likely that the development of air navigation and the possibility of communicating between air and land, air and sea, and air to air encouraged the broadening of the concept of a "mobile service" and, therefore, the need to define it in this context.

In view of the observations made above, the General Regulations (Article 1) to the Convention define "aircraft station" (a station on board an aircraft) and "aeronautical station" (a land station - or fixed station - used for communication with aircraft stations). It also defined "broadcasting service" for the first time:

> A service effecting the dissemination of radio telephonic communications intended to be received by the public.

Article 3 of the Convention continues to attack monopoly interests in the way it had done so before and, as with the 1912 Convention, made provision allowing for technological developments. Indeed, the provisions referring to the need to keep abreast of scientific and technological progress were transferred from the Regulations of the old Convention into the body of the new one (see Article 10). Perhaps the transfer was made because, in 1927, such a provision was deemed

to be more of a general principle than in the past.[28]

The 1927 Convention again provided that harmful interference be avoided (Article 10, s.2), that priority be given to distress calls (Article 11), and that governments be free to engage in radio communications in any manner they saw fit provided that such communications did not fall within the scope of the Convention (Article 22). - The latter provision appears to have a decreased significance as each new convention expands its area of jurisdiction in the field of telecommunications, but the liberty of governments respecting their military and naval operations remained relatively unhindered and, as in previous conventions, was jealously preserved by the sovereign states.

The administrative provisions of the Convention charged the International Bureau of the Telegraph Union with new duties

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28. Article 10 is still part of the ITU Convetnion. Article 23 of the 1982 Convention reads as follows:

    1. Members shall take such steps as may be necessary to ensure the establishment under the best technical conditions of the Channels and installations necessary to carry on the rapid and uninterrupted exchange of international telecommunications.

    2. So far as possible, those channels and installations must be operated by the methods and procedures which practical operating experience has shown to be the best. They must be maintained in proper operating conditions and kept abreast of scientific and technical progress.

    (That this principle can only be directive is obvious given the divergence between countries in technical capacity. For example, what are "the best" technical conditions? Who is to make this decision? A developed country might suggest that a particular system is "the best" but such a system may be totally inapplicable to another country in terms of its level of technical development of communications and economic capacity.)

(Article 16) and its old responsibility for collecting, publishing and disseminating information was preserved.[29] In addition, the International Technical Consultative Committee for Radioelectric Communications (C.C.I.R.) was established (Article 17) for the purpose of studying technical and related questions.[30] It was the first body of such a nature to be established in the field of radio communications and similar bodies have been preserved in the ITU in order to study technical questions and make recommendations to members of the Union.[31]

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29. As Lyall points out, the Bureau was given new duties (besides routine and technical matters) designed to minimize interference and help rational exploration of the radio spectrum. As before, frequency assignments were to be made by the states having jurisdiction for all stations capable of causing serious international interference. These were to be made however in accordance with the international table of allocations provided for in the Regulations.

    See also Article 13 of the Regulations providing that the International Bureau was to prepare and issue service documents relating to the various services.

30. Article 33 of the annexed General Regulations provides for particulars regarding this Consultative Committee:

    > s.1 The International Technical Consultive Committee on Radio Communication, established by Article 17 of the Convention, shall be charged with the study of technical and allied questions which relate to international radio communications and which shall have been submitted to it by the participating Administrations or private enterprises. Its functions shall be limited to giving advice on questions which it will have studied. It shall transmit this advice to the International Bureau, with a view to its being communicated to the Administrations and private enterprises concerned."

31. Article 58 of the present Convention provides for the International Consultative Committees.

Another major addition is the Table of Frequency Allocation seen in the Radio Regulations. The table represented an important advance in the efficient regulation of the radio spectrum because it allocated radio waves to particular services and not to particular countries. It survives in form in the present Radio Regulations,[32] although the amount of the frequency spectrum allocated is now substantially increased, as are the number of services using that resource.[33]

The Regulations also provided for general procedures to be followed in the mobile service (Article 9), including procedures to avoid harmful interferences, procedures for calling coastal stations and procedures relating to periods of calls. In addition, regulations were established for conditions to be observed by the mobile service; mobile stations were required to conform to the Frequency Allocation Table, they

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32. Article 5 of the 1979 Radio Regulations (Revised 1981).

33. The frequency spectrum extends from 10 kHz to 275 GHz and the number of services are listed in the Frequency Allocation Table (Article 5 of the 1979 Radio Regulations).

were required to send or receive on certain wave lengths (Article 16) and the working hours of stations in the mobile service were defined (Article 20) as were the order of priority in establishing communications in the mobile service (Article).

2. The First International Telecommunication Conventions: Final Steps in the Evolution of the ITU.

(a) The Madrid Conference of 1932[34]

The Conference was a decisive step forward in the organization of modern international telecommunications law.[35] Its main achievement was to unite the existing treaties (the Radio Telegraph Convention of 1927 and the International Telegraph Convention of 1875) and organizations in one convention, resulting in the creation of the International Telecommunication Union. Annexed to the new Convention were three sets of regulations: The Telegraph Regulations, The Telephone Regulations and The Radio Regulations.

Chapter 1 of the 1932 Convention outlines the organization and operation of the Union. The application section of the Convention is set out in Article 9 of Chapter 1:

> The contracting governments undertake to apply the provisions of the present Convention and the sets of Regulations accepted by them in

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34. Signed at Madrid, 9/12/1932. 151 U.N.T.S. 4; VI Hudson Int. Leg. 109; (1934) U.S.T.S. No. 867.

35. Evenson, supra footnote 2, at 31.

> all the offices and all the telecommunications established or worked by them, which are open to the international service of public correspondence to the broadcasting service and to the special services governed by the Regulations.

The intention of the Convention was to establish principles governing all electronic communications media (telegraph, telephone and radio services). They were, for the first time in a treaty, referred to as "telecommunication".[36] It is defined as:

> Any telegraphic or telephonic communication of signs, signals, writing, facsimilies and sounds of any kind, by wire, wireless or other systems of processes of electric signaling or visual signaling (semaphores).[38]

Article 16 of the 1932 Convention establishes three international consultative committees: one for telegraph (CCIT), telephone (CCIF) and radio (CCIR). Their function was to study questions relevant to communications services. The specifics relating to each committee are set out in the respective telegraph, telephone and radio regulations.

Article 17 provides for the establishment of the Bureau of the ITU, which was given the mandate to serve as the administrative

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36. Glazer, supra footnote 2, at 279.

37. Supra, footnote 34. The Annex containing the definition of "telecommunications" also defines "radiotelegram" in a manner which, interestingly, expands the telecommunications jurisdiction of the Union. "Radiotelegram" is "a telegram originating in or intended for a mobile station, transmitted on all or part of its route over the radio-communications channels of the mobile service".

body for the organization.

The second chapter of the 1932 Convention outlines the organization's conferences, or non-administrative bodies. The most important of these is the Plenipotentiary Conference (Article 18) which was given the power to revise the Convention itself. Other "Administrative Conferences", dealing with regulatory matters were also established (Article 18).

Chapter 3 of the Convention was intended to outline the general provisions applicable to international telecommunications matters. Again, the fundamental principles of telecommunications law as developed in previous Conventions are repeated in these "provisions": recognition of the public's right to correspond by means of the international service of public correspondence (Article 22); agreement by the contracting parties to guarantee all possible measures to ensure secrecy in communications (Article 24); concurrence by the member states to utilize the best technical conditions to establish the channels and installations necessary to carry on rapid intercommunication (Article 25); agreement to attempt, so far as possible, to keep abreast of scientific and technological developments (Article 25); and a reservation of the right to stop telegrams that appear to be dangerous to the safety of the stations (Article 26).

Chapter 4, entitled "Special Provisions for Radio", again reflects the developments made by previous Conventions. The mobile service stations are bound to exchange radio communications

irrespective of the radio system adopted (Article 34); all stations must be established and operated so as not to interfere with the radio services or communications of the other contracting states or private operations recognized by their governments (Article 35); priority is given to distress calls (Article 36); and preservation of the liberty of member states to engage at will in telecommunications matters falling outside the scope of the Convention is preserved (Article 39).

As far as the Regulations are concerned, there are no substantial additions to note. Once again, a Table of Frequency Allocations appears (Article 7);[38] the amount of available spectrum is increased from 10-23000 kHz to 10-60000 kHz (evidence of the incorporation of scientific and technological advances); and the allocation of the spectrum to the various services was largely unchanged (the exception being the broadcast service, which was extended to include both telegraph and visual broadcasting).

Mobile service concerns were dealt with in the Radio Regulations, where a number of articles appear that are devoted to procedures. For example, Article 9 of the Radio Regulations defines the conditions to be observed by mobile stations; in particular they are required to conform to the provisions of Article 7 (the

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38. Note how the principle of freedom of states to act is incorporated into the use of the Frequency Allocations Table. According to the treaty and its provisions, governments are free to allocate at will, except where that freedom might create an interference problem. In such a case, the frequency allocations must be adjusted by states to comply with the Frequency Allocations Table.

Frequency Allocation Table) and must use certain wavelengths in communications. That Article also contains special provisions applicable to ship and aircraft stations. Article 10 allows for inspection of mobile stations by land stations to ensure that they are properly licensed. Article 16 provides for the General Radio Telegraph Procedure in the Mobile Service (this provides for rules governing the calling of a station and signals preparatory to traffic, reply to calls and signals preparatory to traffic, routing of traffic, end of traffic, and duration of work). The procedural format in the Radio Regulations of the 1932 Convention is similar to that found in the present Regulations.[39]

The Regulations in the 1932 Convention contain other noteworthy rules respecting the mobile service. For example, the calling provisions (Article 18) dictate that mobile stations must establish communications with land stations; provisions concerning the use of waves in the mobile services (Article 19) provide for the general calling waves to be used by ship stations and aircraft stations; and the distress traffic and distress signals provision (Article 22) allows a mobile service to resort to any means available to draw attention to itself in times of distress.

In conclusion, one can observe that the provisions of the

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39. Article 29 ("General Radiotelegraph Procedure in the Maritime Mobile and Aeronautical Mobile Service"); Article 30 ("Calls by Radiotelegraph"); Article 31 ("Radiotelegraphic Calls to Several Stations"); Article 32 ("Use of Frequencies for Radiotelegraphs in the Maritime Mobile and Aeronautical Mobile Services").

1932 Convention and its Regulations tend to reflect, and therefore confirm, the traditions established by the earlier Conventions. The most important developments contained in the 1932 Convention and its Regulations are primarily concerned with administrative issues.

(b) The Atlantic City Conference of 1947[40]

The Atlantic City Conference of 1947 represented the final step leading to the present day general structure of the ITU. The effects of World War II on the orderly development of telecommunications were disastrous, particularly in the European countries directly involved in the war, where telecommunications facilities had been destroyed and deliberate harmful interference was common. Three telecommunications conferences convened in Atlantic City in 1947: The Telecommunication Conference Proper (aimed at revising the 1932 Madrid Convention); The Administrative Radio Conference (intended to revise the 1938 Cairo Radio Regulations, which have been omitted from the present discussion); and The Administrative High-frequency Radio Conference (which was concerned with problems relating to high-frequency broadcasting services). The Atlantic City Conferences resulted in a number of important additions and elaborations to the ITU Convention and its various Annexes. Indeed, for the first time, the goals of the ITU are set out in concrete form in its Convention:

While fully recognizing the sovereign right of

40. Signed at Atlantic City (2/10/47), 193 U.N.T.S. 188. Radio Regulations, Appendices and Additional Radio Regulations, 194 U.N.T.S. 3 and 195 U.N.T.S. 4. U.N./ITU agreements can be found at 30 U.N.T.S. 315.

> each country to regulate its telecommunications, the plenipotentiaries of the contracting governments have agreed to conclude the following Convention with a view to ensuring the effectiveness of telecommunications. [Preamble to the Convention].

This Preamble combines two contradictory propositions existing in the previous conventions; recognition of the right of each member state to regulate, at will, its own telecommunications activities and a realization by those same states that effective telecommunications capabilities can only exist if that right is regulated in some way. Naturally, for the latter proposition to exist, an external authority must dictate how sovereign states are to limit the conduct of their telecommunications activities. The old regulation governing adherence to the Frequency Allocation Table (that states can allocate frequencies according to their own desire, but once interference exists they must accord with the dictates of the table's allocations) reflects the dichotomy between freedom of use and the need for control. The method accommodating the two goals, therefore, is to operate on the principle that states shall maintain their sovereignty and the regulation of telecommunications and only relinquish it to the extent necessary to ensure its effectiveness.[41]

Chapter 1 of the 1947 Convention provides for the composition, function and structure of the ITU. It deals with the purpose of the Union (Article 3) and provides that, in general,

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41. This view is supported by the provisions of Article 47, which provides that the freedom of each member state is preserved except in so far as that freedom contravenes the dictates of the Convention.

the Union must maintain and extend international cooperation for the improvement and rational use of the spectrum. In addition, various articles in that Chapter dictate that the Union promote the development of technical facilities so as to improve the efficiency of telecommunications and harmonize the actions of nations. In particular, the Union must consider how to allocate the radio frequency spectrum and the registration of assignments to avoid harmful interference. Article 4 provides for the structures of the Union (the Plenipotentiary Conferences, Administrative Conferences and permanent organs). Also, the establishment of the International Frequency Registration Board (IFRB) constitutes a new body in the organization (it was created to provide for the orderly organization and registration of frequency allocations made by the administrations). Earlier Conventions (in 1927 and 1932) provided a Table of Frequency Allocations, but this was no longer sufficient. An administrative body designed to organize and register the use of those assignments in accordance with the Table was needed.

The creation of the IFRB is perhaps the most important development of the 1947 Atlantic Convention. It personified the need for greater international registration of telecommunications.

Article 6 of the Convention provides for the essential duties of the IFRB. The IFRB is to effect an orderly recording of frequency assignments made by different countries in accordance with procedures provided by the Radio Regulations: the date,

purpose and technical characteristics of each of these assignments is to be recorded with a view to ensuring formal international recognition. The IFRB is also charged with the duty of furnishing advice to members of the Union. An interesting aspect of the IFRB is that it is to be an independent body. Members of the Board are to serve, not as representatives of their respective countries or of the region, but as custodians of an international public trust.

The Secretary General was also created by the 1947 Convention and was charged with general administrative duties (Articles 4, 9).

Chapter 2, entitled "Application of the Conventions and Regulations", is similar to Chapter 1 of the 1932 Convention. It deals with ratification, accession and execution of the Convention. As in earlier Conventions, reference is made to the establishment of diplomatic channels and arbitration as a means of dispute settlement (Article 25).

Chapter 3 establishes for the first time the relationship between the ITU and other international organizations. The ITU had not been related to the League of Nations, and had always remained independent of other organizations. The United Nations, however, pursuant to its charter provisions[42] attempted to bring

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42. Article 57 of the U.N. Charter:

> "The various specialized agencies, established by intergovernmental agreements and having wide international responsibilities, as defined in their basic instruments, in economics, social, cultural, educational, health and related fields, shall be brought into relationship with the United Nations in accordance with Article 63 [powers of The Economic and Social Council to enter into agreements with any specialized agencies].

all special international organizations into its sphere of influence. As the prevailing international political climate of the time supported such an amalgamation, the ITU acceded to the will of the United Nations and, in the 1947 Convention, it became a specialized agency affiliated with the U.N. Economic and Social Council.

Chapter 4 of the Convention provides for general telecommunications provisions: the right to use of the international service; guarantee of secrecy of telecommunications; provisions concerned with defining technical standards of telecommunications apparati. Chapter 5, entitled "Special Provisions for Radio" is similar in form and substance to the equivalent chapter in the Madrid Convention.(Issues dealt with include the traditional provisions respecting harmful interference, distress, and freedom to act of member states.) Chapter 6 of the 1947 Convention constitutes a definition section and refers to Annex 2 of the treaty (none of these definitions appear to be significantly different than in previous Conventions).

The "General Radio Regulations" are contained in Annex 4 of the Convention. Article 1 provides definitions, several of which are new.[43] Article 3 establishes that

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43. e.g. telephone: "a system of telecommunications set up for the transmission of speech of other sounds";
television: "a system of telecommunications set up for the transmission of transient images";
land mobile: "a mobile service between base stations and land mobile stations, or between land mobile stations";
base station: "a land station in the land mobile service carrying on a service with land mobile stations";
land mobile stations: "a mobile station in the land mobile service within the geographical limits of a country or continent".

when stations, by their very nature, are likely to cause harmful interference to the services of other countries, Administrations will make such assignments to them in accordance with the Table of Frequency Allocations. The Frequency Table itself was expanded considerably from its 1932 counterpart and the allocated spectrum in the 1947 Convention extended from 10 kHz - 10,500 MHz (the 1932 Conference had an allocated spectrum extending only to 200 MHz). As well, the number of services had increased from 9 to 15. Apart from changes already outlined, the provisions in the new Convention remained essentially the same as in the older one. - This was particularly true of the provisions regarding the mobile service, notwithstanding the fact that they appear to be more technical in nature in the 1947 Convention.

The Atlantic City Conference was responsible for establishing the present day structure of the ITU. The subsequent conferences were primarily concerned with the allocation of the frequency spectrum and with ensuring that international telecommunications became more efficient. Satellite technology and outer space exploration had a technological impact which added considerably to the bulk of materials presented, examined and decided upon in later conferences, but they do not appear to have an important function from an historical perspective.

C. EVOLUTION OF INTERNATIONAL TELECOMMUNICATIONS LAW: SOME TECHNICAL AND SOCIO-POLITICAL FACTORS

Canadian Perspective on WARC-83 Proposals; distress and safety telecommunications services, channelling plans, miscellaneous matters. Technological developments and their effects upon present radio spectrum resources and unused portions of the spectrum. Other technological developments. Ability of states to incorporate technological developments. Expanding jurisdiction of the ITU.

1. Summary of WARC-83 Proposals: Major Issues from the Canadian Perspective[1]

(a) Distress and Safety Telecommunication Services

WARC-79 determined that another WARC should be dedicated to the mobile services. Originally scheduled for 1982 but held in February and March, 1983, the latest WARC was intended to consider general matters and all relative aspects of mobile services. Limited time for planning and preparation modified this goal and restricted the issues considered at the 1983 Conference to those of the most pressing importance.[2]

One of the most important issues of immediate concern

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1. Most of the information from this section is taken from two sources: (1) files at the DOC as to preparation for WARC-83 on Mobile Telecommunications and (2) the Canadian proposals to WARC-83 (ITU Doc. No. 9) and various other WARC-83 documents.

2. Other matters were reserved for a later WARC, now scheduled for 1987.

was the need to reach an agreement on an improved system of distress and safety telecommunications. WARC-79 directed the Secretary-General of the ITU to invite the International Maritime Organization (IMO) - originally called the Inter-Govermental Maritime Consultative Organization (IMCO) - to study and make recommendations concerning the implementation of a system entitled Future Global Maritime Distress and Safety System (FGMDSS). The IMO mandate was twofold; its study was to determine whether the new distress and safety system would be more efficient and it was required to make recommendations outlining the necessary changes in international conventions and in the Radio Regulations which would be necessary to implement it.

Canada has supported the development of the proposed system from the very early stages and much of the substance of its proposals were directed towards the implementation of the FGMDSS. A general outline of the concept of that distress and safety system and its requirements as determined by the IMO[3] follow:

> The International Maritime Organization (IMO) intends to introduce in about 1990 a comprehensive system to improve distress and safety radio communications and procedures which, in conjunction with the co-ordinated search and rescue infra-structure, will incorporate recent technical developments and significantly improve the safety of life at sea.[4]

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3. Most of this explanation is taken from WARC-83 Document No. 31 to WARC-83 entitled International Maritime Organization (IMO): Provisional Description of the Future Global Maritime Distress and Safety System. Reference should be made to this document as it fully explains the system and what it is capable of doing. See also WARC-83 Docs. Nos. 3, 5, 7, 8, 30.

4. Ibid. From the preamble of WARC-83 Doc. 31.

The development of the FGMDSS is the result of recent advances in communications systems which would allow for long range communications lines using satellite technology (the INMARSAT System) and the telecommunications capacity associated with it. The system will provide for: (1) the alerting of both coastal stations and ships in the vicinity of a distress call; (2) the communication of matters of urgency or distress; and (3) the dissemination of navigational and meteorlogical information to ships. The system will use both satellite and terrestrial communications. Alerting will be by satellite emergency position-indicating radiobeacons (EPIRBs). Terrestrial communications will use frequencies in the MF, HF, and VHF bands which will employ DSC (digital selective calling) in place of radio telegraphy. Radiotelephony will be replaced by narrow-band direct-printing (NBDP) telegraphy.[5] It is necessary to reserve a wide range of frequencies for use by the FGMDSS in the bands at MF, HF, VHF and in satellite bands of 406 MHz and 1.5/1.6 GHz.[6] In addition, a frequency band will have to be established for the purposes of coastal navigational and meteorological messages in the bands 435-495 or 505-526.5 (525 kHz in Region 2).[7]

Implementation of the system requires a number of additions and modifications to the Radio Regulations and, in

5. WARC-83 Doc. 31. For more specific information concerning the particular functions that can be performed by this system, refer to WARC-83 Doc's 3, 31 and 30 .

6. WARC-83 Doc. 3 lists the most important changes in the frequency spectrum allocation to meet the needs of the FGDSS proposals.

7. Ibid.

particular, to Chapter 9 (Article 38 - "Frequencies for Distress and Safety" and Article 39 - "Distress Communications").

Generally, the Canadian proposals supported the implementation of the FGMDSS. For example, in Agenda 1.5 (Chapter 9 "Distress and Safety Communications") one finds the following statement:

> With regard to the FGMDSS, Canada has sought to support the decisions of the IMCO Sub-Committee on Radio Communications (SCR) and, as a result, distress and safety (D & S) channels are proposed in each of the 4, 6, 8, 12 and 16 MHZ bands. Each D & S Channel is to be centered on a single side band channel and is to have space for a narrow-band direct-printing (NBDP) channel on one side and a digital selective calling (DSC) channel on the other.[8]

Other changes proposed by Canada respecting the distress and safety communications concerns of the Conference are supportive of the proposal for the FGMDSS.[9]

(b) Channelling Plans

Another major change which can be seen in the Canadian proposals (other states such as the U.S.A. made similar proposals) relates to channelling plans:

> Agenda 1.4 - The parts of Appendix 16 related to the channelling of the existing maritime mobile radio telephone services in the bands between 4000 and 23000 kHz and to add new channelling plans for the maritime mobile radio telephone service in the new shared bands at 4000 - 4063 and 8100 - 8195 kHz.[10]

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8. WARC-83 Doc. 9. Also, refer to the Coordinated Proposals for the Work of the WARC for Mobile Services (Geneva, 1983), WARC-83 Doc. DT/1 States formulate their proposals by first making general comments with respect to each agenda item thereby outlin ing their goals and objectives. The second half of the proposals demonstrates the specific changes necessary to the Radio Regulations in order to achieve the goals stated earlier. The comments in the text are from the general statements in the first part of the Canadian proposals.

9. Ibid. E.g., refer to Canadian proposals CAN/9/3, CAN/9/6, CAN/9/32 and CAN/9/32A.

10. Ibid.

WARC-79 included a proposal that allowed for the sharing of these two bands by the maritime mobile radio telephone service with the fixed service, which previously had them reserved for its exclusive allocation. Although the HF bands are in great demand by the fixed services in developing countries, technological developments, even in 1979, were recognized as being able to permit those bands to be utilized by other services without causing intereference with the fixed services.

Canada and other developed countries (particularly the USA) made proposals to use these bands for ship and coast stations using radio telephony.[11] The Canadian proposals were hotly contested by a number of countries who preferred to continue to have the bands reserved exclusively for the fixed services.[12] Canada noted in its second draft of proposals that, while the use of the bands as proposed might present insurmountable difficulties in many areas of the world, it would not do so in the Canadian region, and Canada, therefore, should be able to operate coastal stations in some of the channels in those bands.

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11. Ibid.

12. Ibid. ii. Unfortunately, the WARC documentation does not include the proposals of very many countries who disagreed with the change. Argentina (Doc. No. 51) and Chile (Doc. No. 34) are quite clear in stating that coastal stations should not partake of the shared bands as yet. Chile expresses its interests as follows:

> "In view of the widespread use of the HF bands and other countries with similar geographical and development characteristics, we have been particularly interested in the moves to have the maritime mobile use the bands 4000-4063 and 8100-8195, allocated on an equal basis to the fixed service and the maritime mobile service. However, no results have been achieved which guarantee problem-free, rational and efficient sharing of these bands and Chile therefore proposes that the adoption of any measures on this question be deferred until the next WARC for mobile services in 1987..."

Canada presented another proposal with respect to channelling:

> ... that the maritime mobile radio telephone service in the HF bands be rechannelled from 3.1 kHz to 3.0 kHz. In each band, one channel should be set aside for distress and safety, and increased in band width to also permit the use of digital selective calling and of narrow-band direct-printing for this purpose.[13]

The second portion of the Canadian proposal outlined above demonstrates its support for the allocation of space for distress and safety channels in accordance with the FGMDSS. That system can now be implemented quite easily because the development of new equipment allows for a closer spacing of channels, thus permitting a greater number of new channels in the already highly congested HF bands.

In the second draft of the Canadian proposals one notes that this question was considered by the CCIR Study Group 8 which determined that 3.0 kHz spacing should be adopted and that further reduction of the spacing would require a change in equipment, thereby necessitating a greater cost to implement technological development. Canadian findings were that it was feasible to change from the existing 3.1 channelling to 3.0 kHz without excessive cost. The reduction to 3.0 kHz was proposed to permit a more efficient use of the radio frequency spectrum, to make a portion of that spectrum available for the new distress and safety channel, and to defer the need for extensive replacement of equipment until such time as there was a significant cost reduction.[14] In addition, the draft argued that the change would have a further benefit; aeronautical and maritime mobile services would become

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13. Supra, footnote 9.

14. Ibid.

compatible in their channel band widths and tuning capabilities[15] and this would be a positive contribution to interservice communications in distress situations.

The channelling changes proposed by Canada are representative of the fact that technological development in the field of telecommunications which can improve the utilization of the frequency spectrum is the prime motivating factor for initiating changes in international telecommunications regulations.

(c) Miscellaneous Matters

Aside from a resolution supported primarily by Sweden and Switzerland which related to radio communications matters concerning neutral ships and aircraft in areas of armed conflict, a number of the proposals for change are noteworthy, again, primarily because they are the result of technological development and its effect upon telecommunications (e.g., expansion of the definition of EPIRB to accommodate satellites, reduction of the guardbands for 500 kHz).

2. TECHNOLOGICAL DEVELOPMENTS AND THEIR EFFECTS UPON THE USE AND REGULATION OF THE RADIO FREQUENCY SPECTRUM[16]

Developments which are purely technological in nature

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15. Ibid.

16. There are a number of articles and texts on the subject of technological development and although I found none dealing specifically with the question of how a technological development may act as a catalyst in changing international law, the proposition seems to be self-evident. After all, in most cases, a new law is developed to deal with new circumstances that need to be regulated. In any case, I would refer the reader to the following texts and articles: Amitai Etzioni, Tecchnological Developments to Social Development (1973); Josef Kates, Towards International Technological Interdependence (1980); H. Levin, The Invisible Resource: Use and Regulation of the Radio Spectrum (1971); L.L. Johnston "New Technology: Its Effect on Use and Management of the Radio Spectrum" Wash. U.L.Q., 521 (1967); H. Levin "New Technology and the Old Regulation in Radio Spectrum Management" 56 Am. Econ. Rev., 339 (1966); R. Solo "The Capacity to Assimilate an Advanced Technology" 56 Am. Econ. Rev. (1966).

can affect the use and regulation frequency spectrum in a number of ways. They may: (1) make demands upon the present radio spectrum resource; (2) make use of previously unused portion of the spectrum (this is sometimes referred to as an "extensive development"); and (3) increase the use of an existing portion of the spectrum (often times referred to as an "intensive development").

(a) Technological Developments Making Demands Upon the Present Radio Frequency Spectrum Resource

Technological developments which depend upon the present radio frequency spectrum resource add considerable congestion to whatever section of it must be used and, if demand is deemed to be necessary, a rearrangement of the services already making use of the spectrum becomes necessary. The strain on international relations and co-operation which results when one attempts to incorporate such developments into international telecommunications law is exacerbated by another factor; other elements are frequently placing increased demands upon that area of the spectrum as well. For example, there is usually a steadily increasing number of users - particularly in the developing countries, which are expanding their use of traditional technology, and who add to the congestion in an area by relying upon the existing frequency allocation created by international Radio Regulations.

This type of technological development, therefore, appears to create the greatest strain upon international telecommunications law and international relations in that field. The

debate at the mobile WARC-83 surrounding the FGMDSS system exemplifies the problems created by this type of technological development. As noted earlier in this report, the implementation of the FGMDSS will require a number of bands in the MF, HF and VHF frequencies to be set aside for distress and safety communications purposes. As such frequencies are already highly congested - particularly the HF band - states who are currentlymaking use of them are, quite naturally, hesitant to permit them to be used for a further purpose.

(b) Technological Developments Making Use, or Developing Previously Unused Portions, of the Spectrum[17]

Writers such as L.L. Johnson have noted that only a relatively small portion of the spectrum is devoted to use for communications purposes. At the time he wrote his article (1967), spectrum use was confined to the space below 15 GHz.[18] Technological developments had expanded that use to 275 GHz by the time of the 1981 revision of the Radio Regulations.[19] Much of the spectrum, however, is still not exploited-merely because technology is currently unable to use portions of the resource in a satisfactory manner.[20]

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17. Johnson, supra, footnote 16. See also J. Martin, Future Developments in Telecommunications (1977).

18. Johnson, ibid.

19. General Secretariat of the International Telecommunications Union. Radio Regulations, (Edition of 1976). Revised in 1981, Geneva. Article 5: Table of Frequency Allocations - 10 Khz to 275 Ghz.

20. Johnson, Levin "New Technology and Old Regulation in Radio Sepctrum Management", supra footnote 16, and Martin, supra footnote 17.

Technology that is able to exploit a previously unused portion of the spectrum can benefit all users, including those who do not rely upon the new development, if it is able to alleviate the congestion in the lower frequencies by transferring from them one or more services. These "extensive developments"[21] refer to improved capabilities at higher frequencies[22] such as the microwave technology which opened up broad expanses of the frequency spectrum that had not previously been capable of exploitation.[23] At times, an extensive development in the field of telecommunications may be the byproduct of scientific breakthroughs in other areas (e.g., the field of satellite technology).[24]

Whenever an extensive devleopment in technology opens up a new area of the spectrum for exploitation, it presents a challenge for those engaged in the organization of international telecommunications law. In the present day, whenever proposals are made to utilize a previously unexploited portion of the spectrum, member states of the ITU must still determine what the most appropriate method of using the new development might be. Without appropriate regulation, utilization of the resource might well be inefficient[25] and counter-productive.

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21. Levin "New Technology", supra footnote 16. The phrase appears to have been coined by Levin.

22. Ibid.

23. Ibid.

24. Ibid.

25. Martin, supra footnote 17. See also Levin "New Technology" and Johnson, supra footnote 16.

(c) An Intensive Technological Development in Relation to the Spectrum Itself

Intensive developments, like extensive ones, can serve to alleviate the congestion in other portions of the radio spectrum. An intensive development is one which permits the transmission of the same volume and quality of information in either a reduced frequency space or at a higher rate in the same band widths.[26] For example, spectrum-saving techniques have virtually doubled the potentially usuable space in the HF band (e.g., moving from double-sideband use to single-sideband use). The WARC-83 resolutions concerning the rechannelling from 3.1 kHz. to 3.0 Khz in the radiotelephone service in the HF bands is an exemplification of an intensive development and of the international concern and debate to which it gives rise.[27] In addition, the use of shared bands by the fixed service and the maritime mobile service, as well as the reduction of guard bands, can be considered "intensive developments".

The technological developments relating to the spectrum itself and other technological advancements have prevented congestion in the spectrum from becoming unmanageable. They have been accommodated into the present system of regulation and, as such, have likely been responsible for maintaining the international

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26. Levin, supra footnote 16. Again, Levin appears to have coined the phrase "intensive development".
27. Supra, footnote 9.

regulation of telecommunications. Technological developments have met the needs created by demands for equal access to use of the spectrum and, in effect, the ability to adapt to technological advancements and, more importantly, the ability to incorporate them into the international law of telecommunications have been the prime factors which have preserved that aspect of world order.

(d) Other Comments in Regard to Technological Developments

While advances in technology permit greater use of the spectrum, at the same time they create greater demands upon it.[28] For example, satellite technology, which has opened up the 1215 MHz to 10 GHz area of the frequency spectrum, has created increasing demands for utilization of that spectrum which, in turn, has resulted in the congestion of it.[29]

Considerable differences in technological capacities frequently create divisions between the developed and the developing countries, and this is reflected in the management of the spectrum. For example, many developing countries do not possess the technological expertise to make use of the higher ranges of the spectrum. As a result, they are making greater demands on the already congested frequencies in the lower ranges. At the same

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28. Intensive developments can make a larger number of channels available in the congested bands, thereby permitting new services to become operative (e.g., the new channels that can be made available in the HF band could meet the needs of the FGMDSS, thereby allowing that service to come into existence. However, those services create more demands for use.

29. Heather Hudson, "Implications for Development Communications" 28 J. Commun, (1979).

time, the developed countries, who possess the ability to exploit the higher ranges, do not wish to give up their allocations in the lower frequencies because they can be used for alternative purposes. A good illustration of this type of problem occurred at the WARC-79.[30] At that Conference, it was noted that, since 1959, allocations in the HF band were used for the fixed service (49%). However, technological developments in the industrial nations (microwave and satellite communications) had transferred much of that service onto the higher frequencies. By 1979, the developed nations, therefore, wished to reallocate the HF band to permit a larger share of it to be used for international shortwave broadcasting services. The developing countries, however, took an opposing view because the HF band represented the most economical, technically feasible means to reach large audiences. In fact, their proposal was the antithesis of the one which incorporated technological advances; they proposed that the fixed service be extended to meet the increasing demands which they were placing upon it.[31]

The same conflict of interest was present at WARC-83 and is exemplified by the Canadian proposals relating to the use which they advocated should be made of the new shared bands (e.g., fixed and maritime mobile). The Canadian views represent those of the developed countries and, for reasons similar to

30. Ibid.

31. See Atwood "WARCS, Waves and World Orders - The Politics of the ITU in the Search for New World Information Order" 35 J. Int. Aff. 267-272 (1982) and G. O. Robinson "The U.S. Faces WARC: The U.S. Position" 29 J. Commun. (1979).

those cited in the example above, the developing countries - are wary of accepting such proposals.

The principle of first-come, first-served is also directly related to technological development. In the past, the allocation of frequencies has been based upon that principle and, as a result, the developing countries claim they have not been able to share the advantages in telecommunications that the developed countries have managed to exploit.[32] The increasing wariness of the developing countries is beginning to call this principle into question.

The possibility of further technological developments and the time lag between WARC's makes it necessary for states to attempt to plan for future needs. They must, in effect, make proposals in terms of long-range planning. Otherwise, states might become trapped in regulations - even of their own making - which are too restrictive. To combat this, some states have adopted a general policy of advocating the principle of flexibility

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32. This can be seen particularly in the proposals of Argentina (WARC-83 51-E) and Chile (Doc. 34 to WARC-83, supra footnote 12.

Note that, in a strict sense, use and registration of frequencies, rather than their allocation, has been on a first-come, first-served basis. In all likelihood, new alteration decisions were based upon the ability and readiness of the developed countries to use them. Any other country could also make use of them, provided that it acquired the necessary technology.

for telecommunications law (e.g., the USA).[33] Needless to say, such a principle is not necessarily acceptable to all nations.

An example of the need to account for future technological developments was exemplified in the WARC-83 discussions respecting the definition of Emergency Position-Indicating Radiobeacon Stations (EPIRBs). A Canadian recommendation recognized that the present definition of EPIRBs was inadequate because it limited them to mobile services at a time when developments were such that they might become affiliated with space systems. This example provides an interesting illustration of the fact that the flexibility of international telecommunications law is such that it is not only able, in many instances, to adapt to new technology, but it is also willing to consider future technological developments.

3. CAPACITY OF MEMBER STATES TO ACCEPT TECHNOLOGICAL DEVELOPMENT AND THE EXPANDING ROLE OF THE ITU: THE TECHNOLOGICAL DIVERGENCE

One could argue that some elements of international telecommunications law are considered to be general principles, primarily because their origins extend back to the earliest

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33. Robinson, supra footnote 31.

treaties dealing with the subject.[34] The principle that all members should, as far as possible, adopt the latest technological advances into their communications facilities is one such principle.[35] Unfortunately, many states are in fact incapable of accepting and applying that rule. This observation is particularly applicable to the developing countries, although many developed countries are also wayward in this respect. Some of the problems encountered by states in attempting to adopt technological developments, and the response of the ITU to these difficulties are the subjects of this section.

(a) Problems of Member States in Applying Advanced Technology

The gap in technology between the developed and developing countries is common knowledge.[36] Nevertheless, it is

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34. An example (see the section on historical perspective) is the principle that coastal stations and shipboard stations are bound to exchange communications and the principle against harmful interference. As they have been part of the Convention from its earliest beginnings, one tends to think of them as being more fundamental than others; e.g., the recent additions re: technical assistance. The principle requiring members to apply the latest technical advances has been part of international telecommunications law since the 1927 Washington Convention. The relevant provision in Article 10 of that Convention follows:

> 1. The stations contemplated in Article 2 must so far as possible, be established and operated under the best conditions known in the practice of the service and must be kept abreast of scientific and technical progress.

35. Ibid. This principle was confirmed in the 1982 Nairobi Convention. ITU General Secretariat. International Telecommunications Convention: Final Acts of the Plenipotentiary Conference signed at Nairobi, 1982, Article 23 & 33.

36. Incidentially, it should be noted that this technological divergence applies to all types of technology from agricultural equipment to computers. This is important to note, for expenditures for technology in the telecommunications field may - of necessity - rank as a relatively low priority in many states.

of value to examine some of the factors that constrain states from reaching a level of technological development that is equal to many developed countries.[37]

The most significant constraint that prevents the developing countries ments is a financial one. In the case of WARC-83, for example, the implementation of the FGDMSS will require a considerable expenditure in equipment for the maritime mobile service (e.g., receivers will have to be purchased or modified so as to pick up a number of frequencies that have been accorded to the system).[38]

Financial restraints, however, are not the only difficulties encountered by the developing countries. Geographical problems (widely scattered settlements of low population) oftentimes[39] make the development of telecommunications facilities economically unfeasible. Similarly, physical features (mountain ranges, heavy rain seasons, jungles) may pose insurmountable problems for the installation and development of certain communications facilities.[40] In addition to environmental problems, there are

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37. Most of the information used in this section is adapted from a report, Special Aspects of Telecommunications Development in Isolated and/or Underprivileged Areas of Isolated Countries, completed in January of 1980, CCITT Gas 5, Sub-Group No. 1. Although the report is not specifically directed at the developing countries but rather at underprivileged parts of all countries, the problems or "constraints" discussed therein are still applicable to them. It provides an idea of some of the problems faced by such countries in trying to assimilate a new technology.

38. Ibid.

39. Ibid.

40. Ibid.

also certain "human" constraints barring the way for the implementation of technological development.[41] Nations with a low literacy rate, for example, oftentimes lack the necessary manpower possessing the proper expertise to construct and maintain communications and other facilities. In essence, while some societies are able to adapt to certain developments, others are simply unable to do so because of the lack of background in education and experience.[42]

Finally, the report by the CCITT considers institutional restraints.[43] In many developing countries in particular, telecommunications may not be a priority because of limited funds available for development programs in other areas of concern.

The factors creating technological incapacity as outlined above, are not restricted to the developing countries. They are merely more obvious in those countries. Many developed countries, including Canada, suffer from a similar incapacity, particularly in undeveloped and sparsely populated areas of their territory.

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41. Ibid.

42. Robert Solo "The Capacity to Assimilate an Advanced Technology" (1966) 56 Am. Econ. Rev. . The Solo article is useful in acquiring a general knowledge of the question of technological divergence. It does not deal with any particular type of technology but rather refers to the general difficulties of developing countries in adapting it to their own systems; i.e., the primary difficulty being that these nations cannot assimilate new technology into their systems as easily as it can be done in developed countries. With developing countries, the technology must first be acquired and then adapted to their particular needs.

43. Supra, footnote 37.

(b) Response of the ITU and its Expanding Role

The ITU has become an important forum for developing countries who are demanding a "new world information order". It provides a forum for serious consideration of the principle that less developed countries are entitled to a fair portion of a world natural resource - the radio spectrum.[44] The ITU, which, until the last twenty years, has been relatively free of politicization[45] has begun to consider the demand of the developing countries for a new world information order and, indeed, some developments have been initiated in an attempt to close the technological gap and in order to accede to these demands.

For example, the ITU has, for a number of years, co-operated with UNESCO and UNDP (United Nations Development Program) to make funds available to assist countries in purchasing the technology necessary to comply with Articles 23 and 33 of the 1982 Convention. Between 1970 and 1978, the number of world bank

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44. Atwood, "WARCS, Waves & World Orders" (1982), 35 J. Int. Aff. 267. This useful article considers the increasing politicization of the ITU in the past 20 years. Another article looking at the developing country perspective and request for a New World Information Order is Heather Hudson "Implications for Development Communications" (1979), 29 J. Commun.

45. One need only look at the Conventions to determine the validity of this propositon. For example, before 1965 the Conventions were solely concerned with the technical issues of organization of the radio spectrum. After that, however, LDC concerns became major issues primarily because their number increased in the world community. See Ashley "International Telecommunications: What Shape to Come?" 34 L & Contemp.Prob. 417 (1969), By 1973, the political issues had become major questions in the ITU forum. This is reflected both by ITU documents (see 1983 Convention and especially the preamble) and by the articles being written at this time. See in particular Chayes; Global Communications in the Space Age: Towards a New ITU, (1972). See also the American Society of International Law, Panel on the International Telecommunications Union (1973), The Future of the ITU (D. Leive).

telecommunications loans to the LDC's grew five fold to a total of $750,000,000 and, in addition, the ITU channelled up to $108,000,000 in telecommunications assistance to them from the various international agencies.[46] Loans have been a major source for allowing technological development in these countries.

The issue of loans and other forms of assistance raise some ethical questions for an organization such as the ITU, primarily because involvement by it in such matters constitutes a radical departure from its original functions and purposes. Nevertheless, the growth in the last ten years within the developing countries of the use of telecommunications facilities[47] indicates that there has been at least some small success in attempting to alleviate the problems created by the technological divergencies between various states.

As well as attempting to assist developing states in overcoming financial constraints, the ITU has also attempted to provide assistance to overcome educational constraints. For example, the transfer of technology is often times considerably aided by the inclusion of training programs for members of developing states. In addition, the International Frequency Registration Board (IFRB) has played a significant role in educational matters and in finding space in the spectrum for the

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46. Atwood, supra, footnote 44.
47. Ibid.

increasing demands of developing countries[48].

The assistance given by the ITU to the developing countries has had an effect upon its role in international telecommunications law. That organization, for example, is no longer one which is merely a forum for the allocation of the radio spectrum. Its function as a technological advisor is now a recognized one and this is reflected in recent developments in the international law of telecommunications. For example, one need only examine the resolutions and recommendations of the 1979 WARC and the 1983 WARC as well as the 1982 Convention passed at Nairobi. In effect, the recent changes reflected in the regulations and conventions stemming from them have dictated that the ITU assume a more political role in at least one aspect of the North/South dialogue.

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48. There have been a number of articles dealing specifically with IFRB. Among them are Allan Ickowitz, "Role of the International Telecommunications Union in the Settlement of Harmful Interference Disputes" 13 Col. J. Trans. L., 82-97 (1974); F. Lyall "Use of the Radio Spectrum: The Role of the IFRB" Jurid.Rev. 233 (1969); and M. Khabiri "International Frequency Registration Board (IFRB) Assistance to Member Countries of the ITU in Matters Relating to Frequency Management" IEEE Transactions on Electromagnetic Compatability Vol. CMC-19, No.3, August 1977. As for playing a role in the LDC's increasing demands, the IFRB has been important in two respects; (1) advisory and (2) acquiring spectrum.

4. Expanding Jurisdiction of the ITU[49]

(A) What Constitutes the Jurisdiction of the ITU

(i) The ITU Convention: Nairobi 1982

The preamble contained in the 1947 Atlantic City Convention provides that:

> While fully recognizing the sovereign rights of each country to regulate its telecommunications the plenipotentiaries of the Contracting Governments have agreed to conclude the following Convention, with a view to ensuring the effectiveness of telecommunications.[50]

The jurisdiction of that Convention (and hence, the ITU) is clear; subject to the sovereign rights of each member state to regulate its own telecommunications activities, the organization created by the Convention is required to guarantee effective telecommunications activities on an international (transnational)

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49. No writing specifically related to this issue could be found. The following analysis is in brief a study of the various ITU conventions and regulations and, more particularly, of how changes in theory have, in essence, expanded the jurisdiction of the ITU in recent years. One is advised to review the section on historical perspective to note how the evolution of the ITU's jurisdiction and power has come about. Some of the Conventions, Regulations, Recommendations and Resolutions considered here are:

ITU General Secretariat. The International Telecommunication Convention, Nairobi, 1982 (ITU, Geneva).

The Charter of the United Nations; The Statute of the International Court of Justice;

Convention on International Civil Aviation; Convention on the International Maritime Organization.

50. International Convention of Telecommunications signed at Atlantic City, Oct. 2, 1947, with Annexes, etc. (1950) GBTS No. 76; Cond. 8124; 193 UNTS 188. Radio Regulations, Appendices and Additional Radio Regulations, 194 U.N.T.S. 3; 195 U.N.T.S. 4.

basis. As noted in that same section of the Convention, this jurisdiction on the international plane will take effect only when the absence of regulation by an international body will result in non-effective telecommunication activities. The preamble contained in the more recent 1982 Nairobi Convention provides an interesting comparison:

> While fully recognizing the sovereign right of each country to regulate its telecommunications and having regard to the growing importance of telecommunications for the preservation of peace and the social and economic development of all countries the plenipotentiaries of the Contracting Governments, with the object of facilitating peaceful relations, international co-operation and economic development among peoples by means of efficient telecommunications services, have agreed to establish this Convention which is the basic instrument of the International Telecommunication Union.[51]

The increased political and social orientation is quite apparent.

The first chapter of the 1982 Nairobi Convention (entitled "Composition, Purposes and Structure of the Union") further elaborates the present jurisdiction of the ITU. The purposes of the Union are outlined in Article 4. Some of them are:

> 1(b) To promote the development of technical facilities and their most efficient operation with a view to improving the efficiency of telecommunication services, increasing their usefulness

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51. International Telecommunication Convention signed at Nairobi 1982. As yet unpublished except as the Final Acts of the Plenipotentiary Conference. Should be available quite soon as the Convention comes into force January 1, 1984.

and making them, so far as possible generally available to the public; The second part of the articles states that, "to this end the union shall in particular:

2(b) coordinate efforts to eliminate harmful interference between radio stations of different countries and to improve the use made of the radio frequency spectrum;

(f) promote the adoption of measures for ensuring the safety of life through the co-operation of telecommunication services;

(g) undertake studies, make regualtions, adopt resolutions, formulate recommendations and opinions and collect and publish information concerning telecommunication matters.

The duties and functions of the ITU are enhanced considerably by the provisions referred to above. When compared to earlier Conventions, one cannot help but note that the intended mandate of that body is enlarged considerably.

(ii) The Relationship of the ITU With Other International Organizations

As the ITU has been a specialized agency of the United Nations since 1947, the scope of its jurisdiction cannot be determined solely by examining a single Convention. Its relationship with other international bodies also has a significant effect upon the scope of its function and powers. The relationship of the ITU with the United Nations is defined in Chapter 4, of the Convention entitled Relations with the United Nations and With International Organizations.[52] Article 39(1) of that Chapter states:

52. There has been an agreement between the United Nations and the ITU since 1947. The first agreement was approved on September 4, 1947 by ITU and Nov. 15, 1947 by the General Assembly of the U.N. It can be found in 20 U.N.T.S. The most recent agreement appears in Annex 3 of the Nairobi Convention, 1982. Annex 3 states that the text is the same as that of the Convention of Malaga - Torremolinot (1973) and may be found in Vol. 28 TIAS. 1976-1976 (Part 3).

> The relationship between the United Nations and the International Telecommunication Union is defined in the Agreement concluded between the two organizations, the text of which appears in Annex 3 to this Convention.

The agreement referred to above is important from the viewpoint of jurisdiction because through it, the United Nations (pursuant to Article 57 of the United Nations Charter) has recognized that the ITU is the exclusive specialized agency having the jurisdiction to deal with matters referred to in the most recent International Telecommunication Union Convention.

It is also interesting to note that the agreement between the ITU and the United Nations, which confers the status of a "specialized agency" of the United Nations upon it provides that the ITU must act on all formal recommendations submitted to it by the United Nations in accordance with the obligations of the United Nations pursuant to Articles 55, 62, 58 and 63 of the United Nations Charter.

The relationship of the ITU with another United Nations body - the International Court of Justice - is also a reflection of its international recognition and, hence, the scope of its jurisdiction. While only states can be parties in cases before the Court (Article 34(1) of the Statute of the International Court of Justice), the Court can request information relevant to cases before it from international organizations, and those bodies may - as of right - provide information to the Court when cases are before it (Article 32(2) of the Statute of the International

Court of Justice). In addition, pursuant to Article 65 of the Statute of the Court, and pursuant to Article 96(2) of the United Nations Charter, the ITU, as a recognized specialized agency of the United Nations, has a derivative right to request an advisory opinion of the International Court of Justice.

The ITU Convention permits the organization to engage in relationships with other international organizations to further "international co-ordination on matters affecting telecommunications" (Article 40). This gives the ITU the right to co-operate with organizations such as UNESCO and UNDP to provide technical assistance to nations and it also permits the ITU to engage in negotiations with international organizations such as IMO (the International Maritime Organization) and ICAO (the International Civil Aviation Organization). In recent years, the concerns of the ITU and the other two organizations (which deal with maritime and aeronautical matters respectively) have created a conflict of jurisdiction. Issues relating to mobile safety and distress relate to an area where such jurisdictional overlaps have occurred, particularly with the ITU and ICAO. The potential conflict of jurisdiction relates to the telecommunications aspects of these issues and presumably, it should - by definition - rest squarely within that of the defined and internationally recognized scope of powers of the ITU.

On examining the ICAO Convention, it appears that the scope of its jurisdiction is not wide enough to dictate regulations

governing communications matters in the aeronautical services. For example, as is evident in the operative provision (Article 3) of the ICAO Convention,[53] the organization's jurisdiction is limited to civil aircraft only. Aircraft used by states for military, customs and police services are exempt from ICAO provisions. In addition, the membership of ICAO is not as large as that of the ITU and, as a result, telecommunications regulations established by the former organization would not necessarily have as wide an acceptance as they would under the auspices of the later one. (Note that, a few years ago, there was only a difference of one in the membership of the two organizations. However, since then, 6 or 7 new members have joined the ITU).

Similar observations and conclusions can be drawn for the IMO.

Conflicts of jurisdiction between the ITU, which has a broadly defined jurisdiction, and other specialized agencies, which reflect more specialized group interests, are often in conflict because the particular interests of more specialized groups cannot always be in accord with broader international issues. For example, telecommunications requirements for aeronautical activities may well be antithetical to those in the maritime sector or even to satellite communication activities. Thus, without the guidance and control of a single international organization which, so far as possible, attempts to meet the needs of every interest group, international telecommunication activities could never be co-ordinateed. On the other hand, when

53. Convention on International Civil Aviation (6th edition 1980).

a broader based organization such as the ITU is required to make decisions respecting telecommunications matters, the smaller and more specialized interests might very well suffer when compromises have to be made. In the ITU, attempts are made to avoid this problem in two different ways:

(1) representatives from organizations such as the IMO and ICAO are accorded a status which permits their representatives to voice their interests and concerns; and

(2) within each state, preparations for ITU meetings and conferences necessitate a formulation of state policy which is usually determined in each state by meetings of the various specific interest groups.

(b) Technological Developments

Technological developments and their implications in the field of telecommunications have given the ITU an expanded authority in that they have required that organization to regulate telecommunications in an area of the radio frequency spectrum or over communications activities which had not originally been foreseen when the international law of telecommunications first came into being. Whether the so-called "expanded authority" which has resulted from technological developments should be referred to as an expansion of jurisdiction is a largely academic question. The fact is, that matters arising from technological developments which increase the usable portion of the spectrum and technological developments which create new telecommunications needs (e.g., the exploration and exploitation of outer

space) have resulted in telecommunications activities which traverse international border lines and, therefore, require international regulation in order to guarantee usefulness. That the members of the ITU have brought before it the problems of regulation posed by such technological developments, and the fact that the ITU has used its existing jurisdiction to establish international regulations governing the use of new advancements in the field of telecommunications is evidence of the fact that it is the international organization deemed by states to be the most worthy body to address such affairs.

Like the constitution of a state, the charter of any international organization merely provides a basis or foundation upon which its actual jurisdiction will be determined. At international law, the activities of the organization and the acceptance of those activities by the brotherhood of nations determine and define what the actual scope of the jurisdiction of the organization might be. In the case of the ITU, it appears that the international acceptance of that organization's activities, as evidenced by the acceptance by states of its mandate and regulations to carry it out have made any question of the expanding scope of its jurisdiction a purely moot one. In short, provided that the ITU does not engage in activities which extend beyond the jurisdictional competence defined in its charter, and provided that it continues to have a large membership of states who continue to abide by its regulatory provisions, there is little

to worry about challenges to its jurisdiction. Again, as mentioned above, the prime concern of an agency with a mandate as broad as that of the ITU should be to ensure that the proper compromise is always reached between the ideal solution to any problem and the individual needs of its member states and other international organizations.

(c) Socio-political Changes

While the jurisdictional problem arising from technological developments is a moot one in the case of the ITU, the politicization of that body resulting from the most recent alterations to its Convention is another matter. There appears to be no question that the member states, over the years, have agreed to expand the jurisdiction of that body beyond the confines of international telecommunications law. However, the politicization of the ITU is not peculiar to that organization alone; the increased number of developing countries in the world and their expanded participation in international activities have had a similar effect on most international organizations and specialized agencies of the United Nations.[54] It appears that, by and large

54. E.g., Refer to Atwood ,"WARCS, Waves and World Orders - the Politics of the ITU in the Search for a New World Information Order" 35 J. Int. Aff. 267-272 (1982); J. Clippings "The U.S. Faces WARC: The Hidden Agenda" 29 Journal of Communications (1979); I. de Sola Pool "The Problems of WARC" 29 Journal of Communications and Rutwok; "The 1979 World Administrative Radio Conference: The ITU in a Changing World" 13 Int. Law. 289 (1979). Refer, as well, to Articles relating specifically to the New World Information Order - such as M. Masmoudi "The New World Information Order" 29 J. of Telecom. 172 (1979) and "Symposium on the New World Information Order" in 35 J. Int. Aff., 155-278 (1981).

the ITU has been able to adapt to the challenges presented by the developing states in as admirable a manner as it has been able to adapt to the challenges presented by technological developments. The demands of the developing nations for assistance in redressing the technological divergencies which exist between various groups of states could have led to the destruction of international co-operation in the field of telecommunications if they had been ignored. As a result, the prime function of the ITU (ensuring effective international telecommunications) would have been jeopardized. Although many additions to the jurisdiction of the ITU which were incorporated into the International Telecommunication Convention of Nairobi in 1982[55] refer more to activities relating to technical assistance than to international telecommunications, developed nations should not over-react in their condemnation of these provisions. One must recognize that, as telecommunications activities are expanded by technological developments, so do those activities have an increasing effect upon both international and domestic relations. It is inevitable therefore that the politics of international telecommunications law will become more complex and will, from necessity, involve factors which have heretofore been divorced from that branch of international relations of which the ITU is a part.

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55. E.g., Article 4 ("Purposes of the Union), 8 (re: the Administrative Council, and 10 (re: the duties of the IFRB).

D. RECENT ACTIVITIES: THE ROLE OF CANADA

Canada's interest in the international law of telecommunications is a major one and there are likely two reasons for it:

(1) a scattered population over a large land mass (a great deal of which is inhospitable during much of the year) necessitates the development of a strong internal communications network; and

(2) the nation - perhaps as a result of its inherent communications needs - has become a world leader in the field of scientific developments in communications technology.

As a result, the state has a vested interest in global telecommunications policies which might well effect its national programs. In addition, its technological advances have influenced the expansion of international telecommunication law which, in turn, has emphasized the need for developing and maintaining a considerable amount of expertise in that field of international relations. An examination of federal Department of Communications activities over the last few years would indicate that Canada's role in the ITU has kept pace with its national telecommunication concerns and that its representatives in the international political arena have made contributions which have, at least, equaled those of the nation's scientific community. The Canadian role in the WARC-83 exemplifies its profile in matters related to international telecommunication law, and a brief examination of the considerable amount of work

and diplomacy necessary to carry out its role records the degree of emphasis which the federal government places upon this vital element of international relations.

The Canadian activities relating to WARC-83 may be classified into two major divisions: preparatory activities and negotiations during the conference itself. In addition, there are two elements in the former category; preparation at the national level and international preparatory activities. Indeed, one might well observe that the conference activities, by themselves, are not of overriding importance when compared to the prepatory activities which precede them. Indeed, one can observe that the success or failure of a national goal is frequently determined by the many meetings, discussions and the diplomacy which takes place during the preparatory stages.

(1) Preparatory Stages

(a) Preparations at the National Level

Within the Department of Communications a Canadian Inter-departmental Committee (CIC) was created to draft initial proposals for WARC-83. The Committee was composed of representatives from the Department of Transport (from both the Canadian Air Transportation Administration and the Canadian Coast Guard), the Department of National Defence and the Department of External Affairs. The individuals representing these groups reflected the various telecommunications interests of their departments.

A second group, the Government and Industry Working Group

(G/IWG) was also formed in order to obtain opinions from other sources. That body, which contained representation from provincial governments and concerned members of the industrial sector, examined the proposals of the CIC and responded to them. The responses of this group were of value, primarily for two reasons:

(1) interested provinces were accorded some input in order to determine whether or not international proposals made by Canada might inadvertently conflict with provincial interests which might fall within the constitutional competence of the provinces for purposes of implementation; and

(2) representatives of the industrial sector who might be engaged in telecommunications activities and technological developments would have the opportunity of commenting upon how their activities might be affected by, or might create an effect upon, international telecommunications regulations.

Finally, a third group - the public - was made aware of the national preparations for the international telecommunications conference by notice given in the Canada Gazette. So far as is possible, they were allowed to examine any draft proposals which might exist at that time and their comments were invited for consideration.

(b) Preparations at the International Level

In order to finalize its proposals for the WARC-83, Canada participated in a number of meetings and conferences. They can be classified under three very general headings; conferences of international organizations other than the ITU,

bilateral and multilateral meetings with other states, and meetings of regional international telecommunications organizations.

The meetings with organizations such as IMO and ICAO are crucial for Canada because of its interest in the implementation of the FGMDSS system and because of the importance of ensuring that maritime and aeronautical telecommunications interests are coordinated in the final Canadian proposals to the WARC-83.

The importance of bilateral and multinational meetings between Canada and other states is also important. In according respect to the interests and desires of developed nations such as the United Kingdom and the United States of America, Canadian proposals can be made more palatable to the conference when they are finally presented. In addition, the directions of both developed states and developing states can be accounted for well beforehand when they have been examined and considered in such discussions.

Regional meetings can play a significant role in preparations leading to a WARC. The 1982 CITEL (PTC 3)(Inter-American Telecommunications Conference - Permanent Technical Committee) was one such meeting predating the WARC-83. CITEL is a specialized agency of the Organization of American States (OAS), and it represented Canada's first participation in CITEL as a full member.

Canadian membership in CITEL followed a ten year period during which it had merely held observer status with that organization. The advantages created by Canadian membership in that body derived from the fact that increased contact with Latin American countries prior to a WARC permit Canada to sound out its proposals with its regional neighbours and to modify them, if necessary, in order to obtain the support of at least one group of developing countries. In addition, CITEL participation by Canada allows it to place its proposals beside those of the United States of America in an international forum. This can serve as a good testing ground to determine the degree of difference which separates American and Canadian goals, and the reaction of other members of the organization can serve as a valuable indicator to determine which of the two developed countries in the region will be able to provide the most convincing arguments whenever there are major divergencies amongst them. Finally, the decision of Canada to become a full member of CITEL may be of value to every state in the region, for the membership of another developed country in that organization might well serve as a control factor on the American influence in the development of telecommunications policy in the area.

2. The WARC-83

Like many other nations, Canada sent advance copies of its proposals to a number of other administrations and requested of them, in return, their proposals. This permitted Canada to

review and assess its proposals in light of a number of proposals by other member states. A conference strategy could then be determined whereby the strength of each Canadian proposal could be compared with those of other nations. This allowed the Canadian delegates to priorize Canadian proposals, determine whether alternate proposals by other states could be accepted in lieu of Canadian ones, and it permitted them to determine - well in advance of the actual conference - the most effective methods of presenting the Canadian proposals. This final preparation permitted the Canadian delegation to present the best arguments possible to support its proposals.

Canadian preparation for the WARC-83 involved not only the formulation of proposals but also the preparation involved in accommodating to the demands presented by the bureaucratic structure of the conference. The contribution of delegations to previous WARC's and the many prepatory meetings and conferences in which Canada participated, increased considerably the credibility and respect accorded to its delegation. As a result, Canada was given the chairmanship of the Operational/Frequency Regulations Committee (refer to flow chart of the conference structure appended to the end of this section) and it was given the responsibility of chairing the drafting group which examined the "Distress and Safety Communications" section of the Radio Regulations. In effect, the respect accorded to Canada's expertise in telecommunications matters, which was reflected by the two above mentioned positions awarded to members of the Canadian delegation, allowed

the nation to play a significant role in one of the focal points of the conference - the implementation of the FGMDSS.

If one can measure the degree of influence and respect accorded to a nation by examining the number of proposals supported by it which were accepted by the WARC, the position of Canada is very high indeed. The measure of its considerable success is very much tied to the active role it has taken in international telecommunications regulatory activities. The Canadian role in the ITU has been accurately summarized by Brian Segal:

> ... its influence in mulitlateral telecommunications bargaining forums far transcends its modest military/economic and political power in the world. It behaves aggressively and pursues the policy process with great intensity because of its greater dependence on telecommunications and because of its need to protect its sovereignty.[1]

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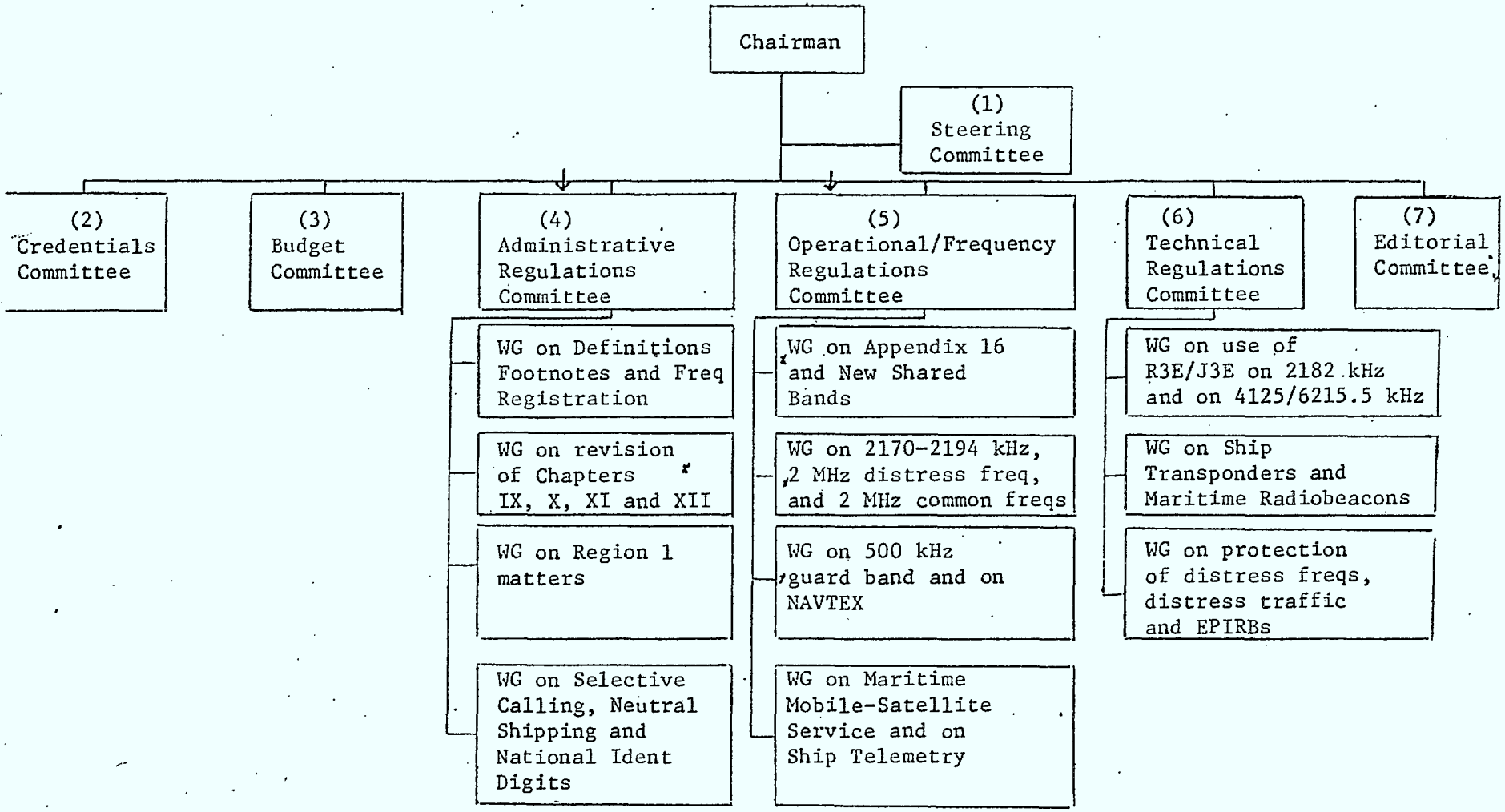
1. Segal, Brian "Geopolitics of Broadcasting" (Politics of of A.M. Broadcasting). Submitted to Wash. U.L.Q.

FLOW CHART OF THE

World Administrative Radio Conference
for Mobile Services *

Geneva, 1983

Conference Structure



* From Federal Department of Communications Files.

E. CONCLUSIONS

This report constitutes a metaphorical testing of the waters. It is (to continue the analogy) the preparatory stage leading to a plunge into the depths. The research and learning involved in preparing this report have provided the writer with a general background in the field of international telecommunications from which more detailed studies will emerge. Indeed, a more comprehensive examination of the proposals to, and resolutions from, WARC-83 is presently under way and a research draft outlining the domestic implementation in Canada of the rules and regulations of the ITU has already been completed.

The item of greatest interest at the present time is the evaluation of Canada's role in the 1983 World Administrative Radio Conference. A cursory examination of this topic can be found in sections C.1. and D. of the present study, and the preparatory work leading to the production of those sections is the foundation upon which a more extensive report will be fashioned. In addition, other portions of this study can provide a basis for interesting and valuable research in the field of mobile services and telecommunications. For example, more detailed studies in the following areas would likely yield beneficial results: the evolution of the ITU and an evaluation of its expanded jurisdiction; the relationship between the ITU and other international organizations; and potential solutions to the problems created by the technological divergences between states.

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