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FINAL REPORT

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RESEARCH INTO THE HIGH FREQUENCY BROADCASTING SYSTEM

By

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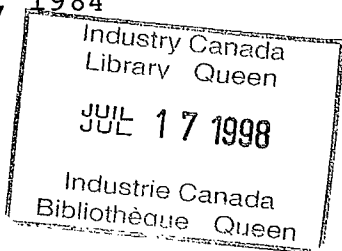
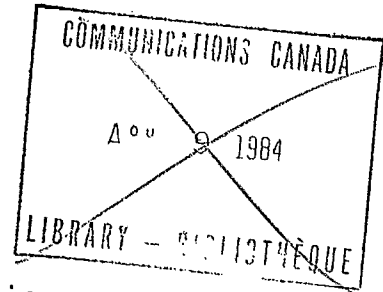
Department of Communications, Ottawa, Ontario

Under

Department of Supply and Services Contract

Contract 20SU. 31000-3-0048
Serial Number OSU83-00129

Contract in Force April 1, 1983, to March 31, 1984



Introduction

The January-February 1984 first session of the World Administrative Radio Conference for the Planning of the High Frequency Bands Allocated to the Broadcasting Service (1) represents the most recent step in the evolution of international telecommunications policy with respect to this particular use of the high frequency radio spectrum. World Administrative Radio Conferences provide a particularly visible and vital forum within the International Telecommunications Union structure and the WARC HFBC was convened to deal with a broadcasting service of special international importance. Established by Resolution 508 of the Final Acts of the 1979 general World Administrative Radio Conference, the WARC HFBC in its two sessions (1984 and 1986) and intersessional program of work faces the significant challenge of bringing order to an increasingly chaotic system when attempts in several previous decades failed.

Efforts to develop frequency assignment plans for high frequency broadcasting began in international conferences held before World War II, but the first conference convened by the International Telecommunications Union specifically to consider

this subject started in October 1948 in Mexico City. Almost two years of very intensive negotiations followed, but, in spite of some initial success in the first session, the meetings ended in failure in August 1950. In the decades to follow, a number of attempts were made to come to grips with the questions of high frequency broadcasting service planning --- an Extraordinary Administrative Radio Conference in 1951, consideration at the general World Administrative Radio Conference in 1959, establishment of an international panel of experts on the subject in the early 1960s and then the debates and decisions of the 1979 WARC. Throughout all of these discussions, the central problem remained the same, as it still does today: too many requirements for too few frequencies.

This report does not attempt to provide an analysis of the technical or political issues, debates, controversies or outcomes of the first session of the WARC HFBC, instead an effort is made to focus on some aspects of the participation of smaller delegations, particularly those from developing countries. To this end, members of a number of small delegations were interviewed during the WARC HFBC and the results of these interviews are reflected in the observations to follow. From this some assessment is also made of the implications of the participation of these delegations for Canadian preparations for the second session of this WARC and, by extrapolation, other similar future international negotiations.

It is useful, nonetheless, to highlight some of the main issues of the WARC HFBC in order to place comments on the first session in their full context. In general terms, the primary issues of the conference can be broken down into two broad groups: those of general concern across a wide range of past and future service conferences and those of specific interest in the context of high frequency broadcasting. Among the general issues one would include:

- * equitable/equal access to high frequency assignments
- * short term versus long term planning principles and methods
- * an excess of requirements compared to available frequencies.

Specific high frequency broadcasting issues included:

- * jamming (ie. intentional interference)
- * high power levels
- * redundant frequencies and unnecessary use of multiple frequencies by broadcasters
- * protection ratios
- * introduction of new technology -- particularly the question of single sideband (SSB) for high frequency broadcasting.

It was in the context of these issues that the first session of the WARC HFBC opened in Geneva, January 10, 1984.

Small Delegations at WARC HFBC

One hundred and fifteen International Telecommunications Union member states participated in the first session of the WARC HFBC. Included in this number were states with very large high frequency broadcasting operations (and hence requirements), those with moderate or even quite limited current operations and some making no use of this portion of the radio spectrum for broadcasting at this time. As indicated by Table 1, all the ITU Regions were represented at the Conference, but some geographic regions had quite sparse representation.(2) For example, the only participants from the Caribbean area were Cuba and Jamaica.

Table 1

Participating States

Region 1

Albania	Algeria	Cyprus
Austria	Angola	Israel
Belgium	Benin	Iraq
Bulgaria	Botswana	Jordan
Byelorussian S.S.R.	Burundi	Kuwait
Czechoslovakia	Cameroon	Oman
Denmark	Cent. African Rep.	Qatar
Finland	Comoros	Saudi Arabia
France	Congo	United Arab Emirates
Germany DR	Egypt	Yemen
Germany FR	Ethiopia	
Greece	Gabon	
Hungary	Ghana	
Ireland	Ivory Coast	
Italy	Kenya	
Luxembourg	Liberia	
Madagascar	Libya	
Monaco	Malawi	
Netherlands	Mali	
Norway	Mauritania	
Poland	Morocco	
Portugal	Nigeria	
Romania	Rwanda	
Spain	Senegal	
Switzerland	Somalia	
Syria	Swaziland	
Turkey	Tanzania	
Ukrainian S.S.R.	Tunisia	
U.S.S.R.	Zaire	
Vatican City State	Zambia	
Yugoslavia	Zimbabwe	

Region 2

Argentina
Bolivia
Brazil
Canada
Chile
Colombia
Costa Rica
Cuba
El Salvador
Ecuador
Guatemala
Guyana
Honduras
Jamaica
Mexico
Paraguay
Peru
Surinam
U.S.A.
Venezuela

Region 3

Afghanistan
Australia
Bangladesh
China
India
Indonesia
Iran
Japan
Malaysia
New Zealand
North Korea
Pakistan
Papua New Guinea
Philippines
Republic of Singapore
South Korea
Sri Lanka
Thailand
Viet Nam

While most of the participating states have some high frequency broadcasting operations (be they national or international), some nations, particularly lesser developed countries, attended even though at the present time they are not using high frequencies for broadcasting. Some in this situation are planning future projects using these frequencies and want to protect their operating options as much as possible. Others saw the WARC as a learning experience in preparation for other "campaigns" or wanted to maintain their stake in the development of international telecommunications policy. The link to other service conferences was frequently evident, particularly in informal discussions. Four states with no current high frequency broadcasting activity participated in the WARC HFBC: Cyprus, Gambia, Jamaica, and the Syrian Arab Republic. (3)

Delegation size ranged from one to more than thirty. Most states were represented by from three to five delegates, but as can be seen from Table 3, a number of nations made the commitment of a significant number of people.

Table 2

Delegation Size

One Delegate	16
Two Delegates	20
Three - five Delegates	46
Six - ten Delegates	21
Eleven - Fifteen Delegates	6
Sixteen and more	4

The makeup of the delegations, in terms of background and areas of expertise varied considerably with the largest group being "technical" experts (engineers, propagation specialists, frequency management specialists). There were also a significant number of people with legal, regulatory, political or broadcasting expertise. Many delegations included some members of the staff of their nation's permanent mission in Geneva and eight states were represented only by Geneva based delegates.

As generally seems to be the case in this type of international setting, there were relatively few women delegates. Of the 560 delegates appearing on the published lists only 34 (6 per cent of the total) were women. Two delegations included three women members, six had two women delegates and sixteen included a single woman delegate.

All small delegations, at this WARC or any other such session, face a number of common problems regardless of whether they represent a "developing country" or an advanced, highly developed state. The difficulties faced by the former may also be complicated by a number of other factors, as indicated below, but there are, nonetheless, a number of basic problems all small delegations must face.

Several of the delegates interviewed stressed the simple, basic difficulty of being in two (or more) places at one time as being one of the greatest problems they faced. How to keep track of a multitude of issues, being discussed in several concurrent sessions, when you only have one or two people available at the conference becomes a major logistical problem. This then tends to lead to a feeling of "isolation" or "being left out of the action" when the discussions get down to the often critical working group level. Some of the alienation voiced regarding the work of group 5A-2 during the middle weeks of the WARC HFBC were indicative of this feeling.

Another major limitation faced by many small delegations in a meeting such as the WARC HFBC is the limited range of expertise available to them in the delegation. They have to try to cover, or at least comprehend, all the areas under discussion, regardless of the field of specialization that may be required. This becomes the double edged sword of having to comprehend the

totality of the conference issues and discussion while being able to function within small working groups minutely examining very specialized technical, legal or political topics.

Bearing in mind that much of the "consensus building" and "confidence generation" which forms an essential part of a successful conference must take place outside the formal conference sessions, small delegations are again restricted in their ability to participate simply because of their limited numbers. They often do not have the time or people available to "work the corridors" as a means of participating in this vital informal part of the conference decision making process. A conference schedule which has formal meetings running from early morning to late at night puts a tremendous load on all delegations, particularly small ones.

As the head and sole member of one of the "one person" delegations put it, "I have to come to the conference with the expectation that I will get to know the major issues and positions within the first week, follow the trends of discussion in the major committees (and their working groups) and when necessary debate the issues in plenary". Thus, although many delegates may feel that "the job is done" in the working groups and then hammered again at the full committee stage, small delegations may have to resort to raising points of detail in

plenary meetings simply because they have not been able to "cover" all the preceding meetings where they might have more directly raised issues.

All small delegations face these problems to varying degrees. As will be illustrated in the section below, for those delegations from developing countries the problems are compounded.

Problems Faced by Developing Country Delegations

Since most developing countries were represented at the WARC HFBC by relatively small delegations, during the conference itself they faced all the small delegation problems identified above as well as a number of additional complications. Some examples stand out from the interviews:

(1) lack of funds: many of these delegations were functioning on very severely restricted budgets and under conditions of tight currency controls (or unconvertable currencies). Coping with day-to-day life in Geneva thus sometimes became a problem for them, even in terms of such simple things as getting to and from the conference.

(2) lack of infrastructure support in Geneva or from home: even simple logistical support was sometimes a problem, but a more serious difficulty arose when there was a need for urgent expert technical advice. In many cases the people at the conference were the nation's "experts" and they had limited or no support to call on for further advice. They were thus frequently very dependant on developed countries for information, technical expertise and advice during the conference itself.

(3) the limited manpower and infrastructure at home also meant that many of the developing country delegates had to continue the essential tasks of their position at home by "remote control" from Geneva. As one delegate phrased the situation, "I'm it when it comes to frequency planning and management in my country. With the help of two technical secretaries, I am responsible for frequency management for all services". As a result he had to spend significant portions of his time each day "sorting out" problems at home.

(4) considerable variations in the amount of experience in such conferences on the part of delegates. Some were "old hands" with many ITU conferences to their credit, but many were at their first WARC (or even their first international meeting) without the benefit of a number of experienced fellow delegation members to provide assistance and guidance.

For many developing countries the problem of coping with complex negotiations such as any WARC begins during the preparatory process. For most, the preparatory process was the exclusive preserve of the telecommunications administration (a situation shared by many/most developed states) with limited "consultation" with affected user groups. In some cases there appears to have been considerable high-level political interest in this particular conference while in others any preparatory activity seems to have been at the working level within the

telecommunications administration. A number of common limitations seem to have faced most developing countries during this process:

- * time
- * available manpower
- * expertise
- * supporting resources
- * technical information sources

These common limiting forces very much affected the degree to which developing country delegations came to the WARC HFBC (or any other such conference) with an understanding of the technical issues and their legal/political/social context.

For many of these delegates the time had simply not been available for anything more than a cursory preparation for the conference. If they had a few weeks or a month to study the preparatory documents they were lucky and, in some cases, those interviewed admitted that they had begun preparations "on the plane". This lack of full scale preparation did not seem to be due to a lack of interest (by either the individual delegates or their administrations) but rather based on the fact that they were having to cope with too many other things at the same time and that they often did not have the available expertise or information resources to do anything else.

Four sources of information stand out as being of critical importance for developing country delegates as they prepared for the WARC HFBC and other similiar conferences: CCIR, IRFB, national papers and proposals and personal contacts.

(1) all of those interviewed agreed that CCIR materials are particularly useful to developing country preparations and conference participation and that they seem to form a basic source of information for many of these delegations. One delegate described the CCIR material as "the Bible" and another said they he felt it was "straight down the line with honest answers to technical questions". One experienced delegate cautioned, however, that "too often there is no indication of where they [the CCIR documents] have come from or how authoritative they are". Nonetheless, there was general agreement that these materials do provide a "format, "focus" and technical basis for discussion, that they are usually technically sound and reasonably clear and since they have been hammered out in advance in an international forum they do provide something of a pre-existing compromise. Unless there was some very good reason to disagree with the CCIR recommendations or papers (or they have the necessary research facilities to do something else) then the CCIR material is viewed as providing a good technical basis for subsequent discussion.

(2) as a source of information for delegations or preparatory work, the IFRB came off "second best" in the eyes of most of the delegates interviewed. It seemed to be agreed that the IFRB

preparatory seminars were useful, but there was concern that many administrations could not afford the cost of sending people to attend (either in terms of travel cost or simply releasing the manpower for that period of time). Other IFRB materials did not seem to get very "high marks" in this context.

(3) analysis of other national proposals and papers was viewed as a particularly important aspect of conference preparations. In the words of one delegate, "they are a guide and a tool". "We don't try to be the first but to see what others have done before we get too far into our planning", commented another delegate. It was generally agreed that national proposals (and other papers, documents, texts) distributed in advance provide a means for many developing countries to highlight potential conference issues and identify possible solutions. Those who had seen the Canadian proposals (and the papers presented at CITELE, CCIR, etc.) were particularly positive about the usefulness of these materials to their own preparatory process. One problem that was identified, however, was the fact that they (ie. the developing country delegates or technical experts) may not have the time or expertise to examine these materials adequately even if they do receive them in advance of the conference.

(4) probably a greater proportion of delegates from lesser developed countries have been to other WARC's (or similar international conferences) than is the case for many delegations from developed countries. Some of them are "old hands" who know the ITU, the "culture" of the conference, and many of the

probable participants (from all types of states). Several of those delegates interviewed stressed the extent to which their personal contacts, built up over the years, served to provide them with access to technical information they would otherwise not have been able to obtain. There does seem to be a willingness to share expertise, but this can be a fragile support mechanism in situations of potential conflict.

General Observations and Recommendations

As a result of having observed the Canadian preparations for the WARC HFBC, participated in several weeks of the WARC itself and conducted the interviews mentioned above there are a few other general observations to be made, particularly with reference to developing countries in the context of this WARC and other similar situations.

(1) there is a tremendous temptation to "lump" all developing countries together in one "category" and assume that their interests, needs, perspectives and approaches to international decision making will be similar (if not the same). Observing the WARC (before, during and after) clearly reminds one of the danger of this trap. The levels of expertise, experience in ITU and other international meetings, telecommunications needs and priorities, all vary greatly. In reality this variation is probably even greater than the differences among "developed" countries.

(2) the "equality" principle is very important in the minds of many of the delegates from developing countries, even if they are far from clear as to what the principle means to them or to anyone else. Basically they are trying to get as much protection

for what they have now as possible, while at the same time trying to ensure as much future access as they can. "We want to make certain we get our just rewards in accordance with our expectations", so summed up one delegate from a developing country. Even if the nature of this principle is unclear, the principle itself is held strongly.

(3) the "politicization" of the ITU (and the WARC's in particular) is a fact of life in the 1980s and it must be recognized that telecommunications can not be isolated from political realities. Instead there must be means of accommodating this political aspect without unduly disturbing the essential technical aspects of the ITU's activities. In the words of one "third world" delegate, "developed countries had their own way for a long time, but at WARC 1979 the LDCs started to realize their strength, the fact that they could control votes and that those votes could control the resolution of issues". This same delegate also observed that, "if the LDCs get together on a technical point it is seen as politicization, but, if the NATO countries (for example) do the same then it is 'coordination of a technical position'". In this context, it should be noted that, unlike the 1979 general WARC, in the case of the WARC HFBC no attempt was made to generate a concerted "developing country" or "third world" position in advance of the conference.

(4) many delegates observed that there are very strong links between ITU conferences: in terms of people, style, issues, principles, feuds and competence. The substance of the

discussion and the principles/methodology adopted to solve particular problems are seen as being carried forward from one conference to another. Elements of a developing "common law" of international telecommunications policy are seen as emerging as delegates refer from one conference to another for points of principle and practice. Thus states with little stake in HF broadcasting still viewed participation in this WARC as vital to their national interest both in terms of the development of international telecommunications policy and as a means of developing their own national expertise for future conferences. As one delegate phrased it when interviewed, "I'm here to learn, about HF broadcasting, about WARCs and RARCs, about the ITU and to meet the people I will have to deal with in the future". Another observed that the Region 2 Medium Frequency and Broadcast Satellite conferences showed the developing countries that it was possible to gain something through the use of the equality principle and now they want to apply the same thing to HF.

(5) many small delegations (particularly from developing countries but also from advanced nations) seemed to feel frustrated and left out of the conference process. They came to the WARC with great expectations of involvement and instead find themselves left out of the "nitty gritty" discussions. This situation often seems to happen unless, as one delegate commented, "you open your mouth early and often in the conference and find yourself placed on one of the small working groups". If, however, you are a member of a very small delegation, this may be

a mixed blessing. Structuring the conference in such a way as to maximize the participation of such delegates (or at least their access to the decision making process) is obviously a major challenge for future conference organizers. Failure to accommodate this need will only increase the "frustration factor" in the years ahead.

(6) in all the interviews and in informal discussions throughout the WARC HFBC delegates from developing countries were routinely and regularly vocal in their comments on the positive role that Canada had played in the preparatory process and in the conference itself. The perception of Canada as being cooperative, helpful, willing to share expertise and data, technically advanced, and, although very much in the "developed camp", still consistently sympathetic to the needs and aspirations of lesser developed countries was evident and very widespread. Individual members of the Canadian delegation were obviously well known, but, more important, well respected and trusted both as technical experts and as people. There is a legacy of goodwill present that will be of great value to Canada in future conferences.

Flowing out of the observations above are a number of general recommendations for consideration as Canada undertakes the intersessional activities arising from the first session and begins preparations for the second session scheduled for late 1986.

(1) "keep up the good work" on preparations for the second session was a comment frequently heard. The Canadian preparatory process was the envy of many delegates and resulted in a very knowledgeable Canadian delegation that was able to function as an effective team and whose members were all able to interact with other delegations on the wide range of substantive issues which arose during the course of the WARC.

(2) the flow of information from the Canadian preparatory process was of keen interest to many countries, developed and developing. For the latter, the Canadian papers and proposals were regarded with particular interest and similar future efforts will no doubt also be well received. While there are a variety of costs involved in preparing such documents and some risks associated with exposing positions too early, the overall view of those interviewed was, "please keep them coming". The impact of the early Canadian work for the first session on the technical discussions, "agenda setting" and final decisions of WARC HFBC 1984 is evident.

(3) methods of increasing or at least facilitating the flow of technical information to the developing countries need to be examined and fostered. Obviously this goes far beyond the context of the WARC HFBC, but some of the problems can be highlighted in this context. It is evident that many of the developing countries simply do not have many of the basic technical documents and support materials which are taken for granted in a nation such as ours. Helping them to build their

information base, and hence their expertise and technical infrastructure, has significant long term implications for their ability to cope with the realities of increasingly complex technical situations.

(4) the informal work of the delegation at the WARC was highly valued by many other delegations and certainly helped build Canadian credibility and broad support. Such efforts, however, are not possible without sufficient knowledgeable manpower being available during the conference itself, thus strengthening the requirement for a effective preparatory process (as mentioned in section 1, above) and for a delegation strength that allows the devotion of some time to these activities.

(5) in the context of the WARC HFBC, participation of the major Canadian user, Radio Canada International, in the delegation activities has been particularly effective, not only on the technical aspects, but more importantly by having the Director of RCI involved as an active, visible member of the preparatory process and the conference delegation. This was a dimension that was missing from most other national delegations and every effort should be made to maintain this involvement during the intersessional activity and at the second session in 1986.

NOTES

1. Hereinafter referred to as WARC HFBC or WARC 1984.
2. World Administrative Radio Conference for the Planning of the HF Bands Allocated to the Broadcasting Service, First Session, Geneva, 1984, Report to the Second Session of the Conference, pp. 99-101.

ibid., List of Participants, Jan. 10, 1984 and supplements No. 1, Jan 16, 1984, Supplement No. 2, Jan 23, 1984 and Supplement No. 3, Jan. 30, 1984.
3. Based on information in the World Radio-Tv Handbook, volume 38, 1984.