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**Documents of the World Administrative Radio Conference (WARC-79)
(Geneva, 1979)**

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- This PDF includes Document No. 101-200
- The complete set of conference documents includes Document No. 1-984, Document DT No. 1-237

**WORLD ADMINISTRATIVE
RADIO CONFERENCE**

(Geneva, 1979)

Corrigendum No

kHz
150 - 285 (cont.)

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kHz
285 - 495 (cont.)

		Region 1
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kHz
285 - 495 (cont.)

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kHz
490 - 1 605 (cont.)

		Region 1
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kHz
1 605 - 2 000

		Region 1
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kHz
1 605 - 2 000 (cont.)

L

kHz
2 000 - 2 300 (cont.)

		Region 1
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kHz

2 300 - 2 850 (cont.)

kHz
3 900 - 4 000 (cont.)

LBR/101/40

kHz
6 200 - 6 525

		Region
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kHz
8 195 - 9 775 (cont.)

|--|--|

kHz
11 400 - 12 330

kHz
17 360 - 17 900 (cont.)

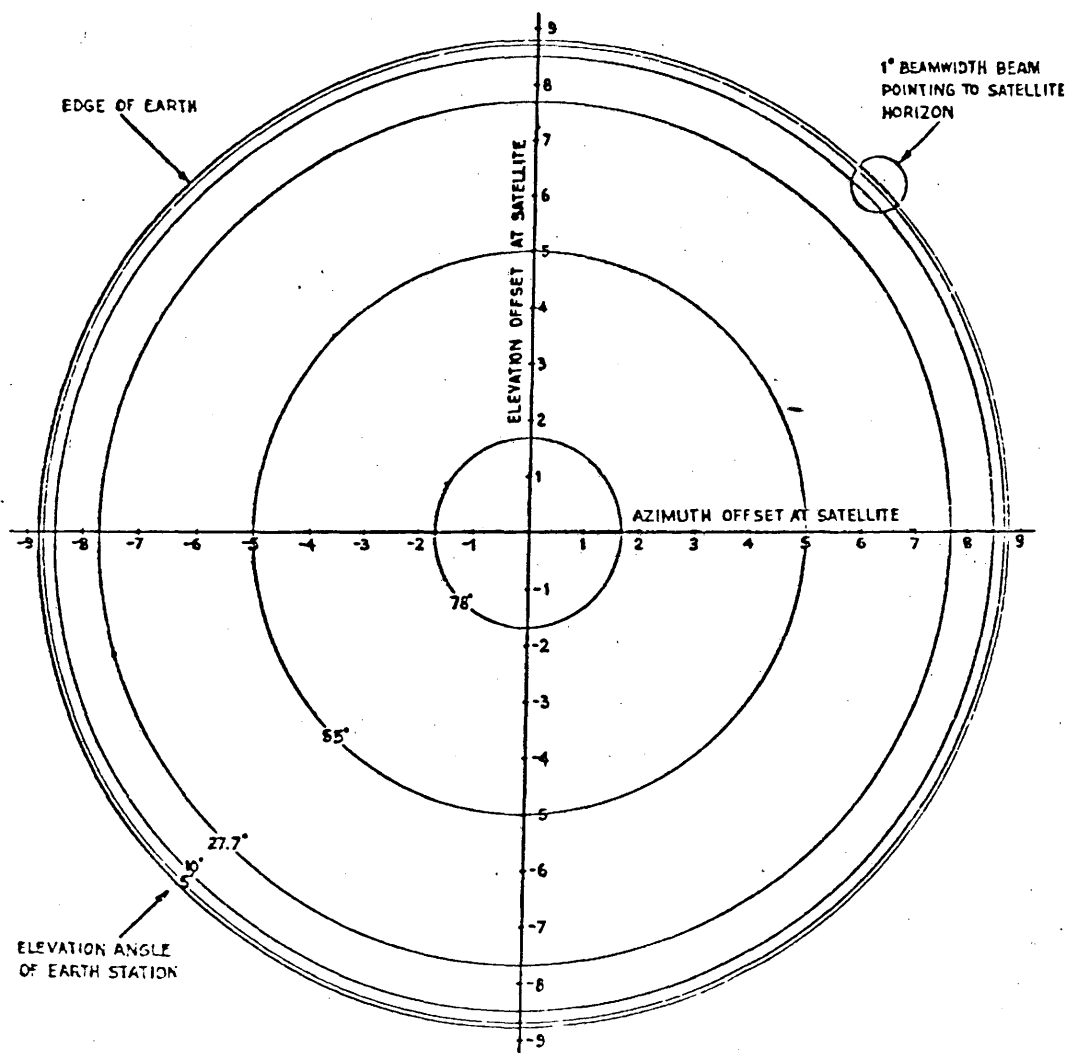
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kHz
23 350 - 24 990

		Region
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A N N E X

PROBABILITY OF DIRECT ENTRY INTERFERENCE TO A SATELLITE SPOT



WORLD ADMINISTRATIVE RADIO CONFERENCE

(Geneva, 1979)

Corrigendum No. 1 to

AUS/102/234 NOC 3279/115

Reason: Necessary and adequate in present form.

ARTICLE N21/17

Secrecy

- f) any other information such as flight altitude, radio frequency guarded, languages and secondary surveillance radar modes and codes.

Reason: To implement the

MHz
470 - 942

GHA/103/56 NOC

MHz
3 400 - 4 700

GHA/103/61 NOC</

kHz
130 - 160 (cont.)

G

kHz
405 - 510

GHA/103/10 NOC

kHz
510 - 2 000 (cont.)

GHA/103/16 MOD

|--|

kHz
3 200 - 3 400 (cont.)

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kHz
4 850 - 5 060 (cont.)

GHA/1

kHz
9 040 - 9 995

|--|--|

kHz
11 400 - 12 330 (cont.)

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kHz
15 100 - 17 900 (cont.)

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"It is with great pleasure that I send my greetings to the World Administrative Radio Conference of 1979.

The importance of telecommunications to industrialized economies is obvious but the vital role they can play in developing countries, particularly in such fields as education, weather forecasting, communications with remote areas and disaster relief is also being increasingly recognized. The building of indigenous telecommunications capacities in these countries is thus a necessary element in their development.

I congratulate the ITU on its continuing efforts to encourage and promote the application of telecommunications to the advantage of all nations and I send you my best wishes for a rewarding conference."

14.3 The delegate of Colombia made the statement reproduced in Annex 6.

14.4 The delegate of Costa Rica made the statement reproduced in Annex 7.

14.5 The delegate of Afghanistan made the statement reproduced in Annex 8.

The meeting rose at 1815 hours.

The Secretary-General :

M. MILI

The Chairman :

R.J.P. SEVERINI

A N N E X 1

ADDRESS BY MR. R.J.P. SEVERINI, CHAIRMAN OF THE CONFERENCE

Mr. Dean and former Acting Chairman,
Distinguished Delegates and Heads of Delegation,
Mr. Secretary-General,
Mr. Deputy Secretary-General,
The Directors of the CCIR and the CCITT,
The Chairman and Vice-Chairman of the IFRB,
Ladies and Gentlemen,

Owing to a combination of circumstances I find myself today presiding over this Conference which some people say will be the most important to date in the history of the ITU.

Clearly it is not on account of my personal merits that I now occupy this honourable post, but that does not detract from the importance of the task.

It took us four days to reach this solution which, while entailing a delay in starting the work of the Conference, cannot be regarded as wasted in the strict sense of the term.

Those days of feverish activity enabled us to display man's most admirable qualities, such as friendship and understanding, and to give expression to them by the gift of speech.

We are met here to frame an international agreement of world-wide scope which, since it will have been freely adopted and accepted, we shall be in duty bound to apply.

With the high sense of responsibility that we all share, we are aware that the task imposed on us is of the most delicate and difficult character and far-reaching in scope.

In the present situation, the various degrees of development, the differences in size, and in the geographical and geopolitical conditions of the countries we represent, result in different approaches to the exploitation and use of the radio spectrum which, by its very essence, is a limited natural resource, the common property of mankind - which knows no frontiers.

It is for this reason that the past four days of extreme tension have constituted, so to say, a school in the exercise of those qualities which we shall be called upon to display to the utmost in the near future when we have to coordinate, for the common good, the vast number of different proposals sent into this Conference, which cover some thousands of printed pages.

We have before us many days of intensive effort, far from our friends and families, in which we must seek the best solutions to the problems which will inevitably arise.

Since there are no miracle workers, we have to try and practise the spirit of cooperation, understanding and tolerance and, above all, brotherhood as human beings living in a world which, thanks to the technological progress produced by human genius, enables all the inhabitants of the world to be placed in contact within the space of a few hours and to converse with one another within a few minutes or seconds by means of the marvellous network of telecommunications whose regulations it is our task to revise.

The successful conclusion of this task will be a success for every one of us : delegates, ITU Secretariat, auxiliary staff, interpreters, messengers and all those who, in one way or another, will be helping us - each in his specific field - to achieve a fruitful outcome satisfactory to all. I beg each of you for his fullest collaboration and it is my heartfelt desire that God shall guide our work.

Thank you, Ladies and Gentlemen, for the signal honour done to my country and to myself.

A N N E X 2

ADDRESS BY MR. M. MILI, SECRETARY-GENERAL OF THE ITU

Mr. Chairman,

On behalf of the ITU and myself, I am very glad to offer my sincere congratulations on your outstanding election as Chairman of the World Administrative Radio Conference.

Your numerous activities in the field of telecommunications, at the national level, where you have recently attained the high rank of Technical Under-Secretary, at the regional level, since you are the current Chairman of COM/CITEL and the Plan Committee for Latin America, and on the international plane, at which you have taken part in numerous ITU conferences and mainly the first Space Conference of 1963, made you a natural choice for the position of Chairman of this Conference.

Among your many qualities, both as outstanding engineer and skilled diplomat, I must emphasize your courage, and we all know that you have no lack of it. A great deal of it will be required to conduct a conference such as this. This difficult task will fortunately be considerably facilitated by the assistance that you will receive from the Vice-Chairman of the Conference and the Chairmen of the Committees, to whom I offer my advance congratulations on their election. You can also count on the aid and support of the staff of Union Headquarters at all levels, who will likewise be doing their utmost to ensure the success of the Conference.

Mr. Chairman,
Ladies and Gentlemen,

What words can we use to describe a conference as important as the one we are opening today ? With its 1,800 participants, its 14,000 proposals amounting to nearly 5,000 pages and coordinated documentation in several volumes totalling nearly 3,000 pages, no term seems to be adequate to designate the largest conference ever organized under the auspices of the ITU.

It is no exaggeration to assert that this Conference will establish the framework that will regulate radiocommunications up to the year 2000. Moreover, since its task is to seek an equitable balance between everyone's most immediate needs and the long-term requirements of all the services which will become operational during the next two decades, it will influence the planning and utilization of services well beyond the year 2000.

1979 will thus mark a turning-point in the history of telecommunications and consequently in the history of mankind.

Let us recall in this connection that the year 1879, exactly a century ago, saw the death of James Clark MAXWELL, whose principal achievement was to unify our knowledge of the phenomena of light and electromagnetics, and also the birth of Albert EINSTEIN, who took up Maxwell's famous equations and tried to combine them with the laws of gravity in a single formula.

Although this attempt was not completely successful, since the single equation covering all these physical phenomena is still being sought, it shows the great interest that the most eminent scientists have taken in the electromagnetic field.

In our times, radioelectricity still seems to be one of the happiest and most productive discoveries of all ages. As we approach the year 2000 and an era when telecommunications, closely linked with computer science, will occupy a preponderant place in society, it is brought home to us that, from the dawn of the 20th century, radiocommunications have constituted a decisive factor in the prodigious development of the world. Have they not from the outset put an end to the isolation of seamen and of the most distant regions and, through broadcasting, have they not proved to be the most powerful of mass communication media ?

Unfortunately, we are all aware that the marvellous opportunities they offer us are dependent upon a frequency spectrum which is still limited, although its upper limit is constantly expanding as the result of technological advances.

The first users soon realized this limitation, since serious problems arose from the beginning of the century for the maritime service and some 20 years later for broadcasting, making it necessary to convene world conferences, which were already apprehensive about the saturation of the radio spectrum. The first of these conferences was held in 1906 in Berlin.

It was very soon observed not only that radio waves knew no frontiers, but also that they were propagated over very long distances and could thus cause harmful interference. Radiocommunications therefore represented an area of activity in which the major problems could only be dealt with at the world level. There are, of course, specific requirements, regional and even national, and their disparity has led to the division of the world into three regions for the purposes of the Radio Regulations and particularly to a proliferation of footnotes in the Table of Frequency Allocations.

You are all aware of the difficulties caused by these famous footnotes. They result in a less satisfactory use of the spectrum and introduce additional complications for frequency planning and coordination and for the standardization of equipment. We therefore hope that your conference will make every effort to get rid of as many of them as possible.

So we see that as early as 1906 the plenipotentiaries convened in Berlin for a radiotelegraph conference of the Union were already drafting the first Radio Regulations. Much later, in 1947, after the upheavals brought about by the Second World War, and then in 1959, the Radio Regulations were twice revised in their entirety. Since 1959, technological advances and the expansion of radiocommunication systems have been such that specialized conferences have had to be convened for partial revisions of the Regulations which concerned only certain categories of users. We have thus had space, maritime and aeronautical conferences, but these revisions, being strictly limited to specific services, could not cover the provisions common to several services.

Yet the need for a complete revision was felt more and more, and the Plenipotentiary Conference of Malaga-Torremolinos decided by its Resolution No. 28 "that a World Administrative Radio Conference to revise, as necessary, the Radio Regulations and the Additional Radio Regulations shall be convened in 1979".

It will thus be twenty years since the Regulations were revised in their entirety and the mere fact that the Table of Frequency Allocations to the various services has not been reviewed as a whole since 1959 emphasizes the importance attached to this Conference.

A great deal has happened in the past twenty years. First of all, technology has made giant strides : in 1959 there was hardly any mention of large-scale integrated circuits and satellites were mainly for research. Moreover, for lack of suitable equipment, frequencies above a few GHz were scarcely used, and optical waves even less.

During those twenty years some far-reaching political events also occurred. In 1959, the Union had only 96 Members and 5 Associate Members, some of them not yet fully independent. Today the membership is 154, making an increase of over 60 %. The Union is thus faced with new obligations, especially since telecommunications are increasingly becoming the cornerstone of a country's infrastructure and consequently determine the success of national development as a whole. In many countries, radiocommunications of all kinds can be brought into operation more rapidly than any other methods of transmission and can be maintained more easily.

Ladies and Gentlemen,

The agenda of the Conference has been examined in great detail by the Administrative Council. This was done in successive stages to enable all administrations to make their views on the subject known.

First of all, in 1975, following the instructions of the 1973 Plenipotentiary Conference in Resolution No. 28, the Council requested the Members of the Union to communicate to it any suggestions they might wish to make concerning the agenda and the date and duration of the Conference (see Circular-letter No. 56 of 10 September 1975).

Among the suggestions made, we may single out the proposal for convening a special preparatory meeting of the CCIR and also the wish expressed by many administrations to limit the duration of the Conference to about ten weeks. Since the special preparatory meeting was to deal in detail with all the technical questions on which the work of the Conference would be based, a reasonable amount of time was allowed for it.

On the basis of the suggestions made by administrations, the Administrative Council, at its 1976 session, prepared a draft agenda for the Conference, which it at once submitted to the Members of the Union for approval, leaving open the possibility that it might take the subject up again at its 1977 session if necessary (see Circular-letter No. 145 of 31 December 1976).

In response to this consultation, 73 administrations approved the draft agenda and only a few of them proposed slight changes in the opening date or a different duration.

In 1977, therefore, the Council was able to finalize the agenda of the Conference and to fix its duration at ten weeks. For the last time, these proposals were submitted to the Members for approval. Apart from some comments on minor points, they were supported by 83 Members. The agenda thus approved appears in Council Resolution No. 801.

To complete the picture, I would remind you that the Re-Arrangement of the Radio Regulations and the Additional Radio Regulations was entrusted to a group of experts set up by the Council in 1975 and that the resulting document was given general approval in 1977 by the Broadcasting-Satellite Conference.

Thanks to this document, your Conference will be able to concentrate on the revision of the Regulations without first having to consider a new structure for them.

We should also bear in mind that the need for such a re-arrangement became evident very soon after the 1959 Conference, since the Administrative Council had already raised the problem in 1962 by its Resolution No. 494.

In concluding these general remarks, I must draw attention to the fact that, unlike the earlier conferences, which were held concurrently with the Plenipotentiary Conferences of 1947 and 1959, your Conference has been convened three years before the next Plenipotentiary Conference. Accordingly, any decision affecting the Convention that you may adopt should take the form of a proposal by your Conference to the forthcoming Plenipotentiary Conference.

Ladies and Gentlemen,

I should now like to make some comments on the agenda with which you are to deal.

First of all, I must refer to the International Telecommunication Convention, which is our guide, drawing special attention to Article 33. This Article consists of two basic provisions, Nos. 130 and 131, which directly concern your work.

No. 130 "Members shall endeavour to limit the number of frequencies and the spectrum space used to the minimum essential to provide in a satisfactory manner the necessary services. To that end they shall endeavour to apply the latest technical advances as soon as possible."

No. 131 "In using frequency bands for space radio services Members shall bear in mind that radio frequencies and the geostationary satellite orbit are limited natural resources, that they must be used efficiently and economically so that countries or groups of countries may have equitable access to both in conformity with the provisions of the Radio Regulations according to their needs and the technical facilities at their disposal."

During the negotiations that are sure to take place between delegations and during the debates in Committees and at plenary meetings, these institutional obligations must be duly taken into account in order to conform with the directives of the Convention,

Particular attention will naturally be paid to such services as the mobile and broadcasting services, for which there is no economically viable solution other than the use of one or more frequency bands.

But it is also important to take longer-term interests into consideration, by ensuring the allocation of adequate frequency bands to the various services and by adopting provisions whereby countries which are not in a position to do so today may, in the more or less distant future and at a time they consider appropriate, introduce new services to meet their national or international requirements. In such cases, they should be able to do so without giving rise to congestion or causing interference for the users of other services.

The agenda proper thus covers all the subjects that cannot be dealt with by a specialized conference. Accordingly, you will have to consider questions relating to several services at a time, leaving it to the specialized administrative conferences which will be convened during the next decade to deal in detail with matters concerning specific services.

In particular, the Conference will not be able to assign frequencies to countries; its task will be to extend and revise the international framework within which such assignments can be made at the proper time, in accordance with the provisions that will be drawn up, with a view to meeting the requirements and protecting the interests of all users.

WARC-79 will also examine the recommendations adopted by all the administrative radio conferences held since 1959 so that they may be taken into account in the preparation of the new Regulations.

I have no intention, of course, of reviewing all the items of the agenda one by one. I shall, however, make an exception for items 2.10 and 2.11, because they introduce an innovation.

Item 2.10 implies that the Conference will be in a position to draw up a calendar of conferences dealing with specific services and provide guidelines for the technical preparation for such conferences.

The Plenipotentiary Conference and the Administrative Council will of course retain their prerogatives in these matters as stated in the Convention, but under this item of the agenda the WARC can take decisions which will obviously have repercussions on the development of radiocommunications and on the work of our Union until the end of the 20th century.

Item 2.11 emphasizes the importance of technical studies in the preparations for administrative conferences. It is thanks to these studies that radiocommunications have been able to expand their potential in quality and quantity since the beginning of the century. This perpetual race between demands on the spectrum and its capacity calls for increasingly elaborate technical measures. For many years, progress was made only with regard to a few specific technical points, such as propagation and modulation, and to equipment, particularly antennae. But now all the characteristics have to be considered with a view to reaching the optimal solution, that is to say, maximum utilization of every band in the spectrum.

In point of fact, this procedure is not a new one for the ITU. At the 1977 Broadcasting-Satellite Conference, for example, the various technical characteristics were studied systematically with a view to optimizing the use of the allocated band - an optimization which, in the final stages, could not have been completed without using the computer. The problems of course vary greatly according to the frequency bands used and the service concerned, but there can be no doubt that the optimization of the spectrum has become a vital necessity.

Mr. Chairman,
Ladies and Gentlemen,

I hope you will excuse me for dwelling on these aspects of an agenda which has been the subject of very detailed study. I thought it would be useful to do so in order to stress the very strict framework that the Administrative Council meant to establish for this Conference, with the agreement of the Members of the Union, in order to fix the right duration, which must be scrupulously observed, since it would be practically impossible for us to prolong it.

I should like to make one more very important point, reminding you that under Article 42 of the Convention, ratification of that instrument or accession to it "involves acceptance of the Administrative Regulations in force at the time of ratification of accession". This means that the agreement of every one, on all the provisions of the Regulations you will adopt, is essential. To this end, great understanding and a spirit of full cooperation must be shown, as has always been the case at earlier conferences. I am sure that all the delegations present here will be most anxious to ensure that WARC-79 is an outstanding success.

With the expression of this hope, which I believe to be a certainty, I shall conclude by wishing you all the fortitude you will need to accomplish in ten weeks a task which one and all consider to be extremely difficult.

A N N E X 3

ADDRESS BY MR. S. FUJIKI, CHAIRMAN OF THE IFRB

First of all, Mr. Chairman, on behalf of the International Frequency Registration Board, I congratulate you on your election as Chairman of the Conference. I should also like to thank you for having allowed me to extend a welcome to all the delegations.

My speech will be brief.

A number of complex and difficult problems are in front of us and they have to be solved by you all within the ten weeks ahead.

To carry out this task, and in accordance with the Radio Regulations, the IFRB has been making technical preparations for the last four years, and the outcome of the preparation can be found in some Circular-letters of the Board and the WARC documents entitled "Report of the International Frequency Registration Board". These documents describe the activity of the Board, as provided for in the Radio Regulations, including the additional duties as prescribed by radio conferences. They also contain the IFRB's comments on the anomalies, discrepancies and difficulties encountered in the course of its activities, and the daily applications of the Radio Regulations, as well as comments on the action taken by the Board on Resolutions and Recommendations of Administrative Radio Conferences. I trust that these comments may have been helpful to all Administrations in their preparation for the WARC-79 and will prove useful for discussions throughout the Conference.

As in past conferences, the IFRB is providing the Technical Secretary of the Conference and the Technical Secretaries of certain committees. These will no doubt be essential for the work of the WARC-79. Needless to say that the Members of the Board will participate in each committee, where necessary, and always be ready to assist.

As you are well aware, and as Mr. Mili said, radiocommunications have to utilize two limited natural resources, namely, the radio frequency spectrum and the geostationary satellite orbit. As laid down in the International Telecommunication Convention, every effort should be made to distribute those resources amongst all nations as efficiently, economically and equitably as possible.

This Conference should carry out its work and solve difficulties, taking account of that principle above all.

Finally, I should like to express my most sincere wishes that the Conference be crowned with great success.

Thank you Mr. Chairman.

A N N E X 4

ADDRESS BY MR. R.C. KIRBY, DIRECTOR OF THE CCIR

Mr. Chairman,
Mr. Secretary-General,
Distinguished Delegates, Ladies and Gentlemen :

First of all, congratulations on your election as Chairman of this Conference and my best wishes for every success.

CCIR preparation of the technical bases for this great World Administrative Radio Conference has been a continuing process over several years. Studies have been carried out in response to Resolutions of the last general radio conference held in 1959, and in response to subsequent conferences which have requested CCIR Recommendations on a variety of topics ranging from classification and designation of emissions to coordination of geostationary satellite networks.

An all out effort began from 1976, and in response to Resolution No. 804 of the ITU Administrative Council, the Special Preparatory Meeting of the CCIR Study Groups was held in November 1978. The report of that meeting was transmitted to Administrations in February 1979 and is a document of this Conference. Some 750 delegates, representing the technical resources of 85 countries participated in that Special Preparatory Meeting held eleven months ago in this hall.

Prior to the Special Preparatory Meeting, the Plenary Assembly itself adopted two Recommendations which are submitted as formal proposals to this Conference. One of these modernizes the system for classification and designation of emissions. The other concerns standard time and proposes the use of Coordinated Universal Time (UTC) in all international telecommunications and in radio regulation. This step, in line with modern legal time basis adopted by many countries, permits unambiguous timing of events in remote parts of the world to within 1 microsecond, a capability essential for many space applications and digital networks.

The SPM Report itself brings to the Conference in a single volume a concise but comprehensive summary of the conclusions of the CCIR on technical topics of concern to the WARC-79. It was prepared, in accordance with the Administrative Council Resolution, both to assist Administrations in their preparatory work and to provide the technical bases for this Conference. It is therefore a conference document. The report is presented in a form consistent with the conference agenda and is designed to be self-contained, requiring reference to the CCIR Volumes only in special cases. It is based not only on the texts approved by the CCIR XIVth Plenary Assembly but also on more than 300 contributions of Administrations participating in the SPM.

Introduction of the SPM Report of course awaits the appropriate sessions of the Conference. Broadly, the report covers technical terminology, the technical bases for frequency allocation and regulation for space and terrestrial radio services, technical characteristics of equipment, a look at the existing and scientifically possible new uses of the spectrum above 40 GHz, some technical guidance for future optimum use of the frequency spectrum, and a survey of current knowledge of radio wave propagation as it relates to the tasks of the Conference.

This Conference can have full confidence that the report represents the best effort of the experts, laboratories and Administrations of the ITU working through the CCIR to provide a careful, objective and up-to-date technical basis for the tasks of this Conference.

A word on technical bases for radio regulation

A sound technical foundation is one of the vital elements of international radio regulation, because the ultimate purpose of radio regulation is to assure the greatest benefits of radiocommunication to the greatest community of users. From the earliest days of radio the usable spectrum has always been considered very limited in comparison to need. But by really deep studies of the technical possibilities - emission, reception, and the propagation of radio waves - and by maintaining the greatest possible flexibilities for development - it has been possible for ITU to foster continually more intensive use of the radio spectrum by an ever

increasing number of users. The technical possibilities have become more and more complex, and when one reviews 13 volumes, 5,000 pages of CCIR material, it may be tempting to wish for a simpler life. But the reward of continuing careful understanding of this complex technology is clearly greater access to the spectrum by more users. To oversimplify the technical basis is to limit flexibilities in radio regulation and to deny much of the potential for spectrum utilization.

A final point concerns the increasing thrust of CCIR work in support of the technical needs of future administrative radio conferences. As the vehicle through which the ITU member countries themselves, with their technical resources, contribute and develop the technical basis for radiocommunication, CCIR will surely place high priority on this task in the next few years. The series of planning conferences which may be foreseen by this WARC, would pose substantial technical questions for CCIR study. Careful Resolutions by this Conference could assist the CCIR to produce rapid, practical and unequivocal technical advice for these future conferences.

Mr. Chairman, besides this large written report, there are participating in this Conference hundreds of delegates, radio engineers who have already contributed to the CCIR technical preparatory work. Also, the counsellors and engineers of the CCIR Secretariat are placed at the disposal of this Conference as members of the Conference Secretariat.

Thus CCIR, body and soul, is present to assist the Conference in its objectives to foster radiocommunication development over the next two decades.

Mr. Chairman, I thank you and all the distinguished delegates for this opportunity to bring these words on behalf of CCIR. I wish you every success in the coming weeks.

A N N E X 5

MESSAGE FROM THE PRESIDENT OF THE UNITED STATES

THE WHITE HOUSE

Washington

August 28, 1979

Dear Mr. Secretary-General :

On the occasion of the convening of the 1979 World Administrative Radio Conference, I send my warmest greetings on behalf of the people of the United States of America.

For one hundred and fourteen years the International Telecommunication Union has promoted the efficient use of telecommunications in all nations of the world. The Union's administrative radio conferences, in establishing an efficient framework of rules and guidelines, are a model of international cooperation.

I wish the delegates to this year's Conference every success in continuing your important work. It is my hope that this meeting will further improve the international structure for radiocommunications in ways that strengthen the prospects for social harmony and economic development throughout the world.

Congratulations to you and your colleagues in the International Telecommunication Union for your work in helping to bring about a world community in which all people can share in the benefits of modern communications technology.

Sincerely,

(Signed) Jimmy Carter

A N N E X 6

STATEMENT BY THE DELEGATION OF COLOMBIA

I desire to convey to you the message of the Government of Colombia and more specifically that of the Minister of Communications.

I take this opportunity to congratulate the Chairman and the other officers elected by the Conference. The Colombian delegation also welcomes the election of a Latin American Chairman.

The Conference opening today is undoubtedly the most important event in telecommunications for the international community in many decades, during which far-reaching social changes have occurred, very largely owing to the effects of communications. Telecommunications have indeed ceased to be a purely technical matter; they have acquired an unmistakable political content, having become, with as yet unforeseeable consequences, the most effective instrument for the training and cultivation of human consciousness and hence for guiding societies in the fulfilment of their destiny. Communications constitute a vehicle which acknowledges no frontiers of any kind - political, geographical, racial or administrative.

In the past few years, communications have surpassed, at a headlong pace and within a range previously inconceivable to man, the purely inter-personal aspects of human relations and have acquired a universal character. At the same time, they have become a decisive factor in development and hence in changing the quality of life.

A great truth was expressed by a writer who said : "It was the pressure of communications which led to the downfall of the traditional societies and in the future the creation of new channels of communication will be a decisive factor opening up new vistas for the nations of the world."

Every day new and more sophisticated forms of telecommunications emerge, giving man a new dimension of the universe and of his environment. The range of his knowledge is thus widened and new perspectives are opened to both material and spiritual values.

Thus, human beings of all latitudes, whatever the colour of their skin, their political creed or their philosophy are no longer content to be mere pawns in this historical process. They no longer accept the condition of passive observers of the changes affecting humanity but ask to be active participants.

In this age of informatics, man cannot accept the idea that sophisticated technologies might belong exclusively to a few groups which have achieved a high level of development more rapidly than others.

Communications, I should say, have created a universal human condition and those who lead the field in science and technology cannot disregard this profound and radical change which brings about new attitudes stemming from this unmistakable and momentous phenomenon : the need for free access by all peoples to the benefits of civilization, without vexatious discrimination, without the restrictions which in practice negate postulates that are theoretically unexceptionable. These are the realities which should guide those bearing the important charge of managing, for the great majority of the world's nations, the magnificent tool of telecommunications.

We know the concern of some Members of the ITU at the possibility that this Conference, which should be technical, might assume a highly political character. We share these fears inasmuch as it is not aroused by the developing countries' decision to uphold their interests and express their concerns, in vital matters which affect their present and future, and which are submitted for consideration and decision by this Conference.

I do not know exactly whether, for example, the obvious identity of views regarding many of these disquieting matters and the solidarity displayed in expressing them can be considered a political attitude. If this is so, such a level of politicization will be inescapable and it would not be dictated to philosophical or ideological considerations but by the repeated effort of the economically marginal countries to ensure that their requirements are reasonably met in a spirit of understanding and with an awareness of the profound responsibilities borne by the wealthy economies in the international community.

I could not specify in purely theoretical terms whether the initiative leading to the commercial limitation of the HF band and the clear opposition of several developing countries to that initiative has a political content or not. But I know for certain that if such a proposal were to be adopted by the Union, it would entail a great social cost for a large number of countries, which would clearly be at variance with the objectives and domestic policies followed by some of them to overcome economic difficulties.

In my country in particular, a vast infrastructure has been established for long- and medium-distance communications in this band, a situation which would be very difficult to change in the short, medium and even long term, since the nature of the terrain precludes a rapid changeover to other systems in higher bands. I also know the legitimate anxiety felt by the developing countries at the unrestrained ideological, commercial and cultural penetration effected by the developed countries by means of the radio, pervading each individual listener's environment; this of course has a clear political implication, even if such is not the intention.

We deem it equally political to use reconnaissance satellites, which enable countries possessing advanced technologies to open a large window onto the developing countries, carrying out, without any legal sanction and any restriction safeguarding the dignity of those observed, a permanent inspection of their physical and geographical conditions and even of purely personal activities.

A few years ago the developing countries lacked the information and training required to envisage a future with such advanced technologies as satellite communication. It was not easy for any of our peoples to draw a distinction between the fantastic and what was real or even possible in such areas. Today, the broad highway opening up with the use of satellites is not only viewed with optimism, but direct access to satellite technology is desired. This is why, with the prospects of our distant future in mind, we are zealous in the defence of the physical factors and the natural resources which are ours by virtue of our geographical situation, aware of the far-reaching implications which these powerful conquests of civilization have for our societies.

This new dimension of the awareness of the developing nations is aptly expressed in the document known as the "Declaration of Bogotá", signed by the Equatorial countries, with Brazil as an observer, which says : "The 1967 Treaty on the principles governing the activities of States in the exploitation and utilization of outer space, including the moon and other heavenly bodies, signed on 27 January of that year, cannot be regarded as a conclusive answer to the problem, particularly when the international community establishes as criteria all those rules of international law which were fixed at a time when the developing countries lacked adequate scientific advice and were unable to detect and evaluate the drawbacks, incongruities and inconsistencies of the texts drafted very skilfully by the industrial powers for their own benefit."

This is the reason why the countries situated on the Equator, hence known as the Equatorial countries, view with some disquiet any attempts to allocate the 12 GHz band, which would constitute an infringement of their sovereignty, in addition to running counter to basic principles of justice and international law.

We are convinced however that a spirit of equity will prevail and that the fact that the United Nations Committee on the Peaceful Uses of Outer Space is at present examining the question of the geostationary orbit will be borne in mind by the present Conference, which is therefore not competent to assign fixed orbital positions situated over States crossed by the Equator.

The following points should be noted in connection with the geostationary orbit.

In the first place, the right to sovereignty affirmed by the Equatorial countries does not preclude free orbital transit or communications between spacecraft scheduled and authorized under the International Telecommunication Convention whenever such spacecraft transit in gravitational flight through the segment of space situated above their respective territories, from any altitude practically to infinity. However, it distinctly excludes the case of spacecraft scheduled to be located at a fixed point in that segment of the geostationary orbit, which is considered by the Equatorial countries as constituting one of their natural resources and as such has always been regarded as a third dimension of their territory, over which they exercise full sovereignty.

The above position was unequivocally and consistently upheld by the Colombian Government at the 30th General Assembly of the United Nations and was approved without reservation by almost all the Equatorial countries.

In the second place, it is recorded in the Declaration of Bogotá that the sovereign rights affirmed by the Equatorial countries are intended to benefit their respective peoples and mankind as a whole, as distinct from the present situation in which the orbit is used primarily to the advantage of the most developed countries. It is further stated that the segments of the orbit corresponding to areas of the high seas outside national territorial waters will be considered as a common heritage of humanity, the use and operation of which is to be regulated by the competent international organizations.

From 10 January to 12 February 1977, a world administrative conference was convened by the ITU in Geneva in order to establish a frequency plan for the broadcasting satellite service in the frequency bands 11.7 to 12.2 GHz in Regions 2 and 3, and from 11.7 to 12.6 GHz in Region 1. On that occasion, Colombia outlined its position in several documents, of which I shall quote Document No. 223 :

"All the various concepts of geostationary orbit planning put forward at this Conference entail the assignment of frequencies and orbital positions to Administrations and Regions in perpetuity.

The introduction of the concept of frequency-orbit in the footnote on page 3 of Document No. 187 confirms that the Conference is not only seeking to allocate frequencies, but also to assign geographically fixed points in space.

The task of apportioning the geostationary orbit cannot have been assigned to the World Administrative Radio Conference for the Planning of the Broadcasting-Satellite Service in frequency bands 11.7 - 12.2 GHz (in Regions 2 and 3) and 11.7 - 12.5 GHz (in Region 1) either by Resolution No. 27 of the Plenipotentiary Conference of Malaga-Torremolinos, 1973, or by Resolution No. Spa2 - 2 of the World Administrative Radio Conference for Space Telecommunications, Geneva, 1971, or by ITU Administrative Council Resolution No. 762. There is no provision in the Convention or in its associated Regulations empowering the Union, its organs or its administrative conferences to dispose of physical space in any sense whatever. The purposes of the Union and its organs are fully set out in Article 4 of the Convention. This Conference, therefore, has no legal power to assign segments or locations in perpetuity for fixed communications stations.

We take the view, therefore, that this matter must be clearly settled before giving final form to the work of the Conference."

In the protocol of the Final Acts of the World Broadcasting-Satellite Administrative Radio Conference, the delegations of Colombia, Congo, Ecuador, Gabon, Kenya, Uganda and Zaire entered Reservation No. 51 which reads as follows :

"For the Republic of Colombia, People's Republic of the Congo, Ecuador, Gabon Republic, Republic of Kenya, Republic of Uganda, Republic of Zaire :

The delegations of the above-mentioned countries declare that their Governments are not claiming sovereignty in space, in accordance with the letter and spirit of the Treaty on the Peaceful Uses of Outer Space, since there can be no doubt that these countries have always exercised sovereignty over their internationally recognized territories and within their projections."

Consequently, the Equatorial countries made the following reservations :

First reservation :

The delegations of the above-mentioned countries officially declare that they do not accept and accordingly are under no circumstances bound, through the signature of the Final Acts, by the resolutions, agreements and decisions of this Conference regarding the location of geostationary satellites on the segments of the orbit over which these States exercise sovereign rights.

Second reservation :

The positioning of such geostationary satellites will require the prior authorization of the Equatorial country concerned and their functioning and operation shall be subject to the provisions of the national laws of the Equatorial States concerned.

Third reservation :

The Equatorial countries reserve the right to take whatever steps they may deem fit to preserve and secure the observance of their sovereign rights which include the segments of the geostationary orbit corresponding to their respective national territories, in accordance with the constitutional and legal rules in force in each country.

At a meeting preparatory to the present Conference held recently in Bogotá, Colombia drew attention to the allocation of the 12 GHz band in the following terms : The Colombian delegation urges the countries of Region 2 to study the relevant proposals in depth in order to obtain a detailed picture of all the implications of the allocations proposed in the 12 GHz band.

In addition to reaffirming the rights of the Equatorial countries over the geostationary orbit, the position of Colombia is that of the developing countries which are determined to defend the instruments of change. It is therefore essential in my opinion that the Conference should take account of their demands and that the technical nature of the Conference should not obscure the incontrovertible reality which underlies any discussion of the interests of the industrialized and developing countries, particularly where natural resources are involved.

A N N E X 7

STATEMENT BY THE DELEGATION OF COSTA RICA

The delegation of Costa Rica wishes to join the other delegations in congratulating you, Mr. Chairman, on your well-deserved election to the highest office of this Conference, an election which is a tribute not only to your own merit and experience at other international gatherings but also to the acknowledged importance of your country in the field of telecommunications.

On the threshold of the XXist century there is already an incipient awareness of the wide-ranging significance of the era of communications. It is the task of the World Administrative Radio Conference met here today to produce a technical design of the legal framework required for the development of this new era. We are participating in a technical conference whose decisions will have a marked impact on the culture, development and security of all peoples throughout the world. Political realities, both explicit and implicit, will preside over our debates and our decisions. The very task of apportioning a resource and regulating its use on the basis of scientific and technical criteria is an eminently political matter. We are meeting here in fact to apportion and regulate authority in the field of communications, an endeavour which affects the sovereignty of every nation. The world of communications is at present characterized by inequity and injustice. In the name of the efficient utilization of a limited natural resource, the radio spectrum, a minority of countries controls and operates the majority of frequencies and slots on the geostationary orbit. The present system of domination, based on a few principles which are the expression of an old order embodied in conventions and regulations, condemns the developing nations to perpetual underdevelopment in telecommunications. What is more, this unjust order has paradoxically been imposed by an apparent consensus.

The questions we shall have to resolve at this 1979 Conference are very different from those considered in 1947 and 1959. At these earlier conferences it was possible to satisfy by consensus all needs and requirements for the use of the electromagnetic spectrum on the basis of planning, regulatory and coordination procedures based essentially if not always exclusively on technical criteria. In 1979 social, economic and political factors have to be considered together with technical factors in fixing priorities. We must not lose sight of the need for equity between developed and developing countries as also between services, users and individuals. In one of his numerous statements about the present world conference, the President of the Republic of Costa Rica, don Rodrigo Carazo, said : "It is no longer possible to confine ourselves to technical aspects. If the object of technology is man, then all our decisions must be imbued with a sense of justice".

The developing nations must not be over-hasty in taking decisions which could undermine the interests of our peoples, international cooperation and justice and which could even jeopardize peace. The delegation of Costa Rica considers that if no definitive results are arrived at in the next ten weeks we should not hesitate to convene further sessions of the Conference in line with what was done at other conferences such as the Conference on the Law of the Sea. In view of the rapid evolution of telecommunications and the animated discussions going on in various forums on a new world communications order, it would be unwise for us to take decisions which would apply over-rigidly for the rest of this century.

The delegation of Costa Rica hopes that we will have the will and the time to formulate, analyze, debate and define new principles which will guarantee all nations equitable and just access to the radio spectrum and the geostationary orbit. The following three factors at least must be borne in mind :

1. The membership of the International Telecommunication Union has increased over 60 % since the 1959 Conference;
2. Extraordinary progress has been made in the science and technology of communications in the past two decades; and
3. The vital function of communications in contemporary society has acquired crucial importance for the destinies of our peoples. Mankind demands that new principles of civilised co-existence replace the principle of domination implicit in the present unjust state of affairs.

The new principles governing the just and equitable distribution of the radio spectrum and the geostationary orbit must faithfully reflect the bright and promising political reality of the accession of the new nations to independence. The delegation of Costa Rica believes that in this process the century-old International Telecommunication Union must be radically transformed to be able to continue serving all nations on an equal basis.

The delegation of Costa Rica supports the demands of other developing countries for the International Frequency Registration Board to promote the progress of communications in our countries; for a reform of Article 9 and 9A of the Radio Regulations with a view to establishing a just order among countries; for the convening of an Administrative Conference to distribute HF frequencies equitably among all countries; for limiting the power of HF transmissions; and for setting up research and training centres in telecommunications in the developing countries.

The major political challenge facing us all in the field of communications is to discover a common focus to give coherence and meaning to the scattered discussions now being held concurrently at a variety of forums. Such a common political focus would be particularly beneficial to the developing countries. With this in mind, the President of Costa Rica has decided to submit to the 34th United Nations General Assembly a proposal to convene a World Communications Conference around 1985.

This Conference should aim at being much more than a display of technology or a mere competition for power. Communications only have sense if they are used for the liberation, dignity and salvation of mankind. The technology which forms the groundwork of this Conference must therefore be at the service of humanity as a whole. The just apportionment of the radio spectrum and the geostationary orbit is only a means for the attainment of this human objective.

A N N E X 8

STATEMENT BY THE DELEGATION OF AFGHANISTAN

Allow me, Mr. Chairman, to extend to you my delegation's heartfelt congratulations on your unanimous and deserved election as the Chairman of this important Conference. My delegation is confident that under your wise guidance and with the cooperation of the member delegates, the Conference will be successfully concluded in an atmosphere of goodwill and understanding. My delegation also extends its heartfelt congratulations to the Vice-Chairman of the Conference.

On this very auspicious occasion, Mr. Chairman, allow me to give the session a brief account of Our Great April Revolution, when members of the People's Democratic Party of Afghanistan, including our valiant patriotic officers and soldiers of the armed forces under the direct leadership of the Party and with the staunch and unreserved support of our noble people, triumphantly toppled the towers of tyranny and despotism and crushed the last remnants of a decayed monarchy which vainly endeavoured to perpetuate its own selfish interests under the guise of a republican order. Before the day had ended, the banner of the new democratic order appeared on the horizon of Afghanistan, triumphantly proclaiming an end to an anachronistic system of feudalism and aristocracy and heralding a new era dedicated to the principles of social and economic progress and to building a society free of poverty, corruption and exploitation of man by man.

Barely eighteen months have elapsed since our victorious Revolution and during this short span of time the DRA - the only true representative of our working and industrious people - has striven unrelentingly to create conditions favourable to the attainment of their social, economic and political aspirations and to consolidate the gains of the Revolution by eliminating all reactionary and imperialistic plots and elements that vainly endeavour to thwart or impede this historic trend. We shoulder a heavy responsibility but derive sustenance and courage from the knowledge that forces of history which have undeniably proved that the oppressed will triumph over the oppressor and the exploited over the exploiter are with us and that the will of the Afghan people is not to be taken for granted.

We are confident that our efforts will not be in vain, and that in fulfilling our historic mission and overcoming the underdevelopment bequeathed to us by former regimes, we shall receive the unconditional assistance and support of all peace-loving nations free of any political or exploitation purposes.

I would now like very briefly to express the view of the Afghan delegation regarding the subject matter of this Conference. This delegation believes that some concessions in the MF and HF bands must be given to less developed countries such as Afghanistan. Broadcasting is one of the most popular means of mass communication and education but at present, due to economic reasons, we in Afghanistan unfortunately have very limited equipment and facilities. The Government of the DRA has ambitious programmes within its first Five-Year Development Plan to extend its broadcasting services in the HF, MF and VHF bands so that all the peoples of Afghanistan can benefit from them. In this context, we would propose that some frequencies be reserved for Afghanistan. Of course this delegation is ready to discuss the matter with the IFRB.

It is an undeniable fact that telecommunications have a significant impact on the education, economy and social life of the people in developing countries. Therefore, we again ask that concessions be given to developing countries, especially Afghanistan.

WORLD ADMINISTRATIVE RADIO CONFERENCE

(Geneva, 1979)

Document No. 197-E

5 October 1979

Original : English

COMMITTEE 5

SUMMARY RECORD

OF THE

FIRST MEETING OF COMMITTEE 5

(FREQUENCY ALLOCATIONS)

Friday, 28 September 1979, at 1400 hrs

Chairman : Mr. M. HARBI (Algeria)

Subjects discussed

1. Opening of the meeting
2. Terms of reference of the Committee
3. Organization of the work

Document No.

-

159

DL/3



1. Opening of the meeting

1.1 The Chairman welcomed the participants in Committee 5 and introduced the Committee's officers : Mr. Hernandez-G. (Mexico), Vice-Chairman, an eminent personality in the field of radiocommunications with an extensive experience of international and ITU conferences, and Mr. Sant (IFRB) who was specialized in the Table of Frequency Allocations, and who would be assisted by other IFRB engineers. He also welcomed the Chairman of the IFRB and other Members present at the meeting.

The Chairman expressed appreciation for the honour done to him personally and to his country and the Arab/African group by his election as Chairman of the Committee, especially considering the presence of so many experts who would have been fully competent to direct its work. He assured the meeting that he would do his utmost to carry out successfully the task assigned to him, counting on the collaboration of all delegations which was vital if the objectives of the Committee were to be met.

2. Terms of reference of the Committee (Document No. 159)

2.1 The Chairman referred to the terms of reference in Document No. 159 which had been adopted in Plenary meeting.

2.2 The Chairman of Committee 4 said that Section I of Article N28 (Broadcasting Service) might present technical aspects which ought to be considered by Committee 4; his Committee had expressed its willingness to study such questions if so requested by Committee 5.

Committee 5 took note of that point.

3. Organization of the work

3.1 The Chairman informed the Committee of the results of the analysis of documents received by the ITU (up to Document No. 156), from which it could be seen that more than 80 % of the proposals were within the competence of Committee 5. Of the total of over 13,000 proposals, more than 10,000 were for Committee 5. Nearly 600 proposals concerned Sections II, III, IV of Article 1, Articles N6, N7, N8, N28, N29, N47 and Appendix 24; about 4,500 concerned the bands below 27.5 MHz; 2,300 the bands between 27.5 MHz and 1 350 MHz; 2,600 the bands 1 350 MHz to 40 GHz; and 630 the bands above 40 GHz.

3.2 The Chairman thought it useful, in view of the importance of Article N7/5, to give a brief review of the history of the Frequency Allocation Table. The Table had first been drawn up at Washington in 1927; it was revised by the Madrid Conference of 1932 and revised again and expanded by the Cairo Conference of 1938. It became known as the Table of Frequency Allocations at the Atlantic City Conference in 1947, at which time the use of frequencies in conformity with the Table was made compulsory.

3.3 With regard to the limits of the bands dealt with at various times, he explained that the Washington Conference covered the bands between 10 kHz and 60 MHz, the Cairo Conference raised the limit to 200 MHz, the Atlantic City Conference to 10.5 GHz and the 1959 Geneva Conference to 40 GHz. The World Administrative Radio Conference for Space Telecommunications of 1971 increased the upper limit to 275 GHz and allocated certain bands above 40 GHz to the space services only. The present Conference would thus have the possibility for the first time of making allocations to the terrestrial services in the 40 GHz - 275 GHz band.

3.4 The Table had originally been drawn up on a regional basis, defined in Nos. 126, 127 and 128 of the Radio Regulations. Study of the archives showed that the regions had been defined after the requirements of various groups of countries had been identified, in other words

the basis for establishing the definitions would appear not to have been technical but rather in the nature of an arrangement; the arrangement adopted at Atlantic City had not been modified in substance by the 1959 Conference in Geneva. The current situation was that 99 members of the Union belonged to Region 1, 28 to Region 2 and 27 to Region 3.

3.5 The Chairman suggested that the Committee work by frequency band and not by service, a procedure which appeared to have received almost unanimous support among the delegations he had consulted. Document No. DL/3 proposed a breakdown of the Committee's work among five Working Groups, a general debate on questions of principle and discussions on the Frequency Allocation Table itself, and he asked whether such a method of working was acceptable to the Committee.

3.6 The delegate of the Ivory Coast asked for explanations on why certain band limits had been chosen in preference to others.

The Chairman said that the separation had been made by frequency band to avoid proliferation of Working Groups, and to take account of requests from the Preparatory Seminars held prior to the Conference. The bands below 27.5 MHz covered services using frequencies with similar propagation characteristics and the same applied to the second group; the upper bands had been divided more arbitrarily.

3.7 The delegate of the United States proposed that the upper limit for Working Group 5C be 960 MHz rather than 1 350 MHz, so that many related proposals could be considered by a single group.

3.8 That suggestion was supported by the delegates of Italy and India as it appeared to be a more logical sub-division considering the existing services.

3.9 The delegate of France wondered whether a change of the proposed sub-division might be adversely affected by the arrangement of Document No. DT/1, which presumably had been drawn up on the basis of the earlier proposal. The delegate of the United Kingdom thought it would be relatively simple to transfer a few pages of the working document from one section to another, and in any case the documentation aspect should not dictate the working method.

3.10 In reply to a question from the delegate of India, the representative of the IFRB said there had been several reasons for suggesting 1 350 MHz as the cut-off between Working Groups C and D, including the workload and the fact that aeronautical radionavigation services would fall into a single group if the separation had been 1 350 MHz, but he did not consider the point very important and was sure that the Working Groups would ensure the appropriate coordination.

3.11 The Chairman said that as he saw no objection to the USA proposal, the frequency bands to be covered by Working Groups 5C and 5D would be modified accordingly.

3.12 The delegate of India asked if the terms of reference of Working Group 5A could be amplified to include specific references to the Articles and Sections to be dealt with, as well as the Resolutions and Recommendations. An indication of the members of the Technical Secretariat would also be very useful.

3.13 The delegate of Papua New Guinea remarked that the definition of services was particularly necessary in view of the tremendous changes which had taken place since 1959. He felt it would be advantageous if those definitions were considered in the initial stages and asked whether they would be dealt with in Working Group 5A or in the full Committee.

3.14 The Chairman said that he thought Working Group 5A would deal with that aspect and would no doubt give it due priority.

3.15 The Working Group structure having been adopted, the Chairman read out the following list of proposed Chairmen, reached by consensus after consultation with a maximum of delegations, and based on several criteria, first among which was that of competence :

Working Group 5A - Mr. V. Quintas Castaños (Spain)

Working Group 5B - Mr. L. Cook (Venezuela)

Working Group 5C - Mr. K. Olms (Federal Republic of Germany)

Working Group 5D - Dr. B.S. Rao (India)

Working Group 5E - Dr. A.W. Adey (Canada)

The above nominations were adopted by acclamation.

3.16 The delegate of the Congo requested that Working Groups 5C and 5D not work in parallel.

That was supported by the delegates of the Ivory Coast and Iran. The delegate of Tanzania added that parallel meetings of all Working Groups should be avoided as far as possible, with a maximum of two simultaneous meetings.

3.17 The Chairman said that that request would be borne in mind when the timetable of the Committee's work was drawn up. He reassured delegations that a revised and amplified document taking account of the decisions taken at the current meeting would be issued before the following meeting of Committee 5, at which time the general debate would be opened on questions of principle.

The meeting rose at 1615 hours.

The Secretary :

M. SANT

The Chairman :

M. HARBI

WORLD ADMINISTRATIVE RADIO CONFERENCE

(Geneva, 1979)

Document No. 198-E

5 October 1979

Original : English

COMMITTEE 5

Note by the International Electrotechnical Commission (IEC)

FREQUENCIES FOR BIOTELEMETRY AND THERAPY

In order to assist its National Committees in co-operating at national level with their relevant Administrations responsible for the preparation of the World Administrative Radio Conference (WARC-79) and to facilitate subsequent preparation of IEC standards for the operational safety of biotelemetry and therapy equipment, the IEC conducted an international inquiry amongst its member countries.

This inquiry resulted in a report prepared by biotelemetry experts in IEC Technical Committee No. 62 : Electrical Equipment in Medical Practice, in co-operation with experts active in the International Society on Biotelemetry.

The essential conclusions of the report are reproduced below for information purposes :

1. Frequencies for biotelemetry (diagnostic)

1.1 A frequency band, ranging from 36.6 to 37.9 MHz, power 10 mW ERP, should be allocated for biotelemetry.*)

1.2 Two frequency bands, between 70 MHz and 200 MHz, each of 1 MHz width, power 50 mW ERP, should be allocated for biotelemetry.*)

2. Frequencies for therapy

2.1 The frequency 433.92 MHz \pm 0.2 % should be allocated worldwide for use in physical medicine (ISM frequency for all three regions).

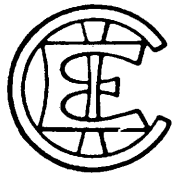
2.2 No modification should be made to the already allocated ISM frequencies.

Annex : 1

*) Documentation in support of these conclusions is available on request from IEC Observers, Box 1869 (order form overleaf).



A N N E X



**COMMISSION ÉLECTROTECHNIQUE INTERNATIONALE
INTERNATIONAL ELECTROTECHNICAL COMMISSION
МЕЖДУНАРОДНАЯ ЭЛЕКТРОТЕХНИЧЕСКАЯ КОМИССИЯ**

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TO THE DELEGATES TO THE WARC 79

Delegates to the WARC interested either in the allocation of frequencies for biotelemetry and therapy, or in problems of radio-interference may obtain on request the following documents:

- ☐ IEC report regarding frequencies for biotelemetry and therapy.
- ☐ "Body-Mounted Antennas" - Summary of a dissertation by Dr. P.A. Neukomm.
- ☐ Biotelemetry antennas - A note by Dr. P.A. Neukomm.
- ☐ List of Publications of the International Special Committee on Radio Interference (C.I.S.P.R.).
- ☐ List of IEC standards for the telecommunication field.

Please mark the appropriate box above and return this form to either:

Box No. 1869
(IEC observers to WARC)

or

IEC Central Office
3, rue de Varembé
1211 GENEVA 20
Tel.: 34 01 50

Name :

Delegation :

or complete address:

Box No. :



WORLD ADMINISTRATIVE RADIO CONFERENCE

(Geneva, 1979)

Document No. 199-E

5 October 1979

Original : English

COMMITTEE 4

Denmark

INFORMATION NOTE IN RELATION TO APPENDIX 28

COMPARISON BETWEEN MEASURED PROPAGATION DATA AND DATA PREDICTED BY PROPAGATION MODELS

1. Introduction

The Special Preparatory Meeting in paragraph 5.4.3 concluded that the procedure for determination of the coordination area of an earth station in the fixed-satellite service using frequency bands shared with equal rights with the fixed services be based on propagation models given in CCIR Reports 724 and 569-1.

During the CCIR Special Preparatory Meeting some concern with respect to the use of the propagation models contained in the above-mentioned Reports was indicated.

In order to evaluate the applicability of the models for the southern Scandinavian area results of predictions are compared with data from five years' measurements on a 222 km mixed land-sea path in Denmark.

2. Propagation path and equipment

The measurements were performed from 1973 to 1977 over a path from Copenhagen to Alborg crossing the Kattegat Sea. According to the definitions in CCIR Report 724 this is a mixed land-sea path. The overland distances are 52 km and 36 km, interrupted by a 134 km sea path. The heights of the antennae were 83 m o.s.l. and 108 m o.s.l. respectively. The difference ΔH between the heights exceeded by 10 % and 90 % of the land path has been estimated to 40 m.

The measuring equipment had the following characteristics :

Transmit frequency : 6.12 GHz.

Transmit e.i.r.p. : 42.0 dBW.

Antenna gain, transmit/receive : 37.2 dB.

Antenna polarization : Horizontal.

Receiver threshold (antenna output port) : -105 dBm.

3. Results of measurements

The measured distribution of path loss is shown in Figure 1. The cumulative distributions of hourly median values of path loss are presented as average year and average worst month distributions.



The distribution for the average year is the average of five yearly distributions.

The distribution for the average worst month is the average of five worst month distributions, one from each year. The worst month in a year was selected as the month with the highest signal level in 0.1 % of the time.

The ratio of the time percentage for the worst-month distribution to that of the yearly distribution at the same attenuation level varies between 3 and 4, as seen in Figure 1.

The year-to-year variation in the measured distributions is illustrated by Table 1 which shows the variation in time percentage at the average 0.1 % level and the yearly variation in level at 0.1 % of the time.

TABLE 1

Year to year variation

	Time percentage for 161.5 dB path loss	Path loss at 0.1% of the year
1973	0.20 %	159 dB
1974	0.057 %	168 dB
1975	0.15 %	160 dB
1976	0.09 %	162 dB
1977	0.02 %	169 dB

4. Predicted path loss

Figure 1 also shows the predicted distributions of path loss based on the methods described in CCIR Reports 569-1 and 724 for a great circle path. The two predicted distributions differ slightly due to the fact that the method in CCIR Report 724 is based on a simplification and condensation of the information in Report 569-1.

Although not explicitly stated in the CCIR text it is assumed that the time base for the predictions is one year.

5. Comparison between measured and predicted path loss

The calculated distributions of path loss are found to be in good agreement with the measured yearly distribution for time percentages less than about 0.2 %.

The predicted 1 % values differ 8 and 13 dB respectively from the measured path loss. The CCIR propagation models predict too small attenuation values at 1 % of the year.



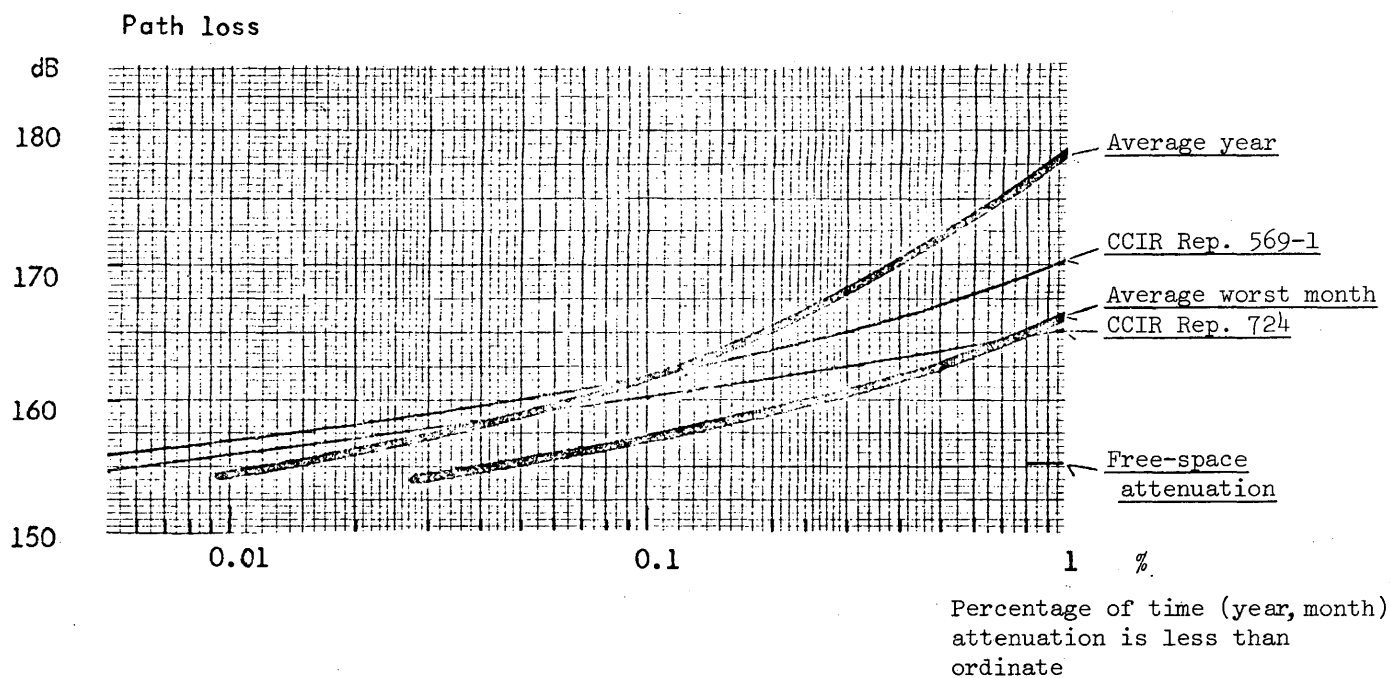


FIGURE 1

Comparison between path loss predicted by CCIR Reports 569-1 and 724 and five years measurements on a 222 km mixed land-sea path in Denmark

**WORLD ADMINISTRATIVE
RADIO CONFERENCE**

(Geneva, 1979)

Document No. 200(Rev.1)-E

8 October 1979

Original : EnglishCOMMITTEE 5Democratic Republic of Afghanistan

PROPOSALS FOR THE WORK OF THE CONFERENCE

kHz
4 000—4 850
(Mar2)

Allocation to Services		
Region 1	Region 2	Region 3
4 000 — 4 063	FIXED	
4 063 — 4 438	MARITIME MOBILE 208 209 209A	
4 438 — 4 650 FIXED MOBILE except aeronautical mobile (R)	4 438 — 4 650 FIXED MOBILE except aeronautical mobile	
4 650 — 4 700	AERONAUTICAL MOBILE (R)	
4 700 — 4 750	AERONAUTICAL MOBILE (OR)	
4 750 — 4 850 FIXED AERONAUTICAL MOBILE (OR) LAND MOBILE BROADCASTING 202	4 750 — 4 850 FIXED BROADCASTING 202	

AFG/200/11 MOD

3503/208 In the USSR and Afghanistan, in the bands 4 063 - 4 133 kHz and 4 408 - 4 438 kHz, fixed stations of limited power may operate provided that, in order to minimize the possibility of causing harmful interference to the maritime mobile service, they are situated at least 600 km from the coast. A limited power station is one whose power and antenna characteristics are so adjusted that the field strength established at any point in any direction does not exceed that obtainable with a non-directive antenna and a peak envelope power of 1 kW.

Reasons : Afghanistan is a land-locked country and very far from the sea; therefore we would like the Democratic Republic of Afghanistan to be mentioned in 3503/208.



**WORLD ADMINISTRATIVE
RADIO CONFERENCE**

(Geneva, 1979)

Document No. 200-E

5 October 1979

Original : EnglishCOMMITTEE 5Democratic Republic of Afghanistan

PROPOSALS FOR THE WORK OF THE CONFERENCE

MHz

4 063 - 4 650

Allocation to Services		
Region 1	Region 2	Region 3
AFG/200/4 <u>NOC</u>	4 063 - 4 438 MARITIME MOBILE	
AFG/200/5 <u>NOC</u>		4 438 - 4 650 FIXED MOBILE except aeronautical mobile

Afghanistan is a land-locked country and very far from the sea; therefore, we would like the Democratic Republic of Afghanistan to be mentioned in 3503/208.

