Documents of the Regional Administrative Conference for FM Sound Broadcasting in the VHF band (Region 1 and certain countries concerned in Region 3) (1st session) (Geneva, 1982)

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- This PDF includes Document No. 101 - 169.
- The complete set of conference documents includes Document No. 1 - 169, DL No. 1 - 24, DT No. 1 - 41.

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INTERNATIONAL TELECOMMUNICATION UNION

REGIONAL BROADCASTING CONFERENCE

(FIRST SESSION) GENEVA, 1982

Document No. 101-E
8 September 1982
Original : English

COMMITTEE 4

SUMMARY RECORD

OF THE

SECOND MEETING OF COMMITTEE 4

(TECHNICAL CRITERIA)

Tuesday, 31 August 1982, at 1430 hrs

Chairman : Mr. H. GÖTZE (German Democratic Republic)

1. Approval of the minutes of the first meeting of Committee 4 (Document No. 49)

1.1 The Chairman said he had been asked by the Chairman of the Conference to convey her congratulations on the considerable progress made by the Committee to the Chairmen and members of Committee 4 Working Groups and Sub-Working Groups. Committee 4 had gained a reputation it would have to live up to and he was counting on the support and cooperation of all its members in that effort, especially in the settlement of complicated issues such as those where compatibility between the broadcasting and aeronautical services were involved.

The minutes of the first meeting of Committee 4 (Document No. 49) were approved.

2. Consideration of the report from Working Group 4A (Document No. 53)

2.1 The Chairman of Working Group 4A said that his Working Group had met twice since the first meeting of Committee 4 and had prepared the report given in Document No. 53. That document contained the draft text of the whole of Chapter 2 (VHF propagation) of the report to be submitted to the Second Session of the Conference. He indicated a number of typographical errors that required correction in the text and drew attention to the second paragraph of section 2.1.3, which had been placed in square brackets since its retention or otherwise depended on Committee 5's final decision on the curves required for planning purposes. He expressed his thanks to all members of Working Group 4A and its Sub-Working Groups for their efforts and especially to Mr. Guilbeau (France) - Chairman of Drafting Group 4A-1, Mr. Berthod (France) - Chairman of CCIR Interim Working Party 5/5, Mr. Byrne (United Kingdom), Mr. Tarantino (Italy), Mr. Jankovic (Yugoslavia), Mr. Boyle (CCIR) and Mr. Tsukada (IFRB).

2.2 The delegate of the United Kingdom pointed out an editorial correction to the English text only of the fourth paragraph of section 2.1.3, where on the last line the words "field strength" should be inserted after "free space".

2.3 In answer to a point raised by the delegate of Ireland, the Chairman of Working Group 4A explained that the correction referred to in section 2.3 had been required to take account of the lower receiving antenna height (3 m) in the land mobile service, since the original curves from which the figures were derived applied to the broadcasting service where receiving antenna height was 10 m. The relevant correction factor was given in section 2.1.3.3 of the document. In addition to making that correction, Figures 2.11, 2.12 and 2.13 gave propagation curves for transmitting antennas in the broadcasting service of 10 m and 20 m.

2.4 The delegate of the United Kingdom proposed that, for clarification, the text of section 2.3 should be amended to read :

> "Propagation curves for land mobile services operating in the VHF bands are given in Figures 2.11, 2.12 and 2.13. These have been derived from the broadcasting propagation curves in Figures 2.2 and 2.3 with appropriate corrections for a mobile station antenna height of 3 metres. A correction of 9 dB is applied for distances up to 50 km and 4.5 dB for distances greater than 100 km, with linear interpolation for intermediate distances."

It was so agreed.

2.5 The delegate of the United Kingdom noted that the propagation curves in Figures 2.11, 2.12 and 2.13 were related to a frequency of 150 MHz. He doubted whether curves established for that frequency were the most appropriate to use for planning purposes requiring a frequency of 100 MHz.

2.6 The Chairman of Committee 4A said that the curves in question had been derived from curves already in existence for the broadcasting service. Since they were valid for a frequency range of 30 - 250 MHz, he proposed that that frequency range should be inserted in the figures concerned instead of 150 MHz.

It was so agreed.

2.7 The delegate of the United Kingdom, supported by the delegate of Ireland, further noted that all the propagation curves given in Figures 2.11, 2.12 and 2.13 were for land paths. While that was perfectly appropriate for the land mobile service on its own, it took no account of the fact that in the case of interference with the broadcasting service frequently involving transmission across stretches of water, there was also a need for propagation curves for sea paths and mixed land and sea paths. Furthermore, the curves for the 50% and 1% time curves would not be required by the Second Session of the Conference and were out of place in the report.

Consequently, he proposed that Figures 2.11 and 2.13 should be deleted. Figure 2.12, which gave propagation curves appropriate for land and cold sea propagation paths, should be retained, and the CCIR should be asked to provide another Figure giving a comparable set of propagation curves for a warm sea path.

That amendment was approved, subject to a reservation about the deletion of Figure 2.11.

However, after discussion of the possible desirability of retaining that figure as a useful aid to bilateral coordination of VHF sound broadcasting and land mobile services, it was ultimately agreed that it should be deleted (and that reference to other CCIR documentary sources of the information it contained would suffice).

2.8 In reply to the delegate of Ireland, who noted that the upper figure (57) on the right hand side of the curves given in Figure 2.10 appeared to be incorrect, the representative of the CCIR said that the figure had been reproduced as it stood from a CCIR document and that the CCIR would look into the matter and make any correction required.

The report of Working Group 4A, as amended, was approved.

2.9 The Chairman said that the revised version of the document would be submitted to the next meeting of the Committee for approval.

2.10 The delegate of the United Kingdom noted that of the figures annexed at the end of the document, Figures 2.1 - 2.13 should belong to the main text of the report to be submitted to the Second Session of the Conference, whereas the remaining Figures (2.14 - 2.18) should appear in an Annex to that report.

It was agreed that the attention of the Editorial Committee should be drawn to that point.

3. Consideration of the first report from Working Group 4B (Document No. 54)

3.1 The Chairman of Working Group 4B said that four meetings had been held and three Drafting Groups and an Editorial Group established. Sub-Working Group 4B-1 under the chairmanship of Mr. Del Duce (Italy) had completed work on the topics of optimum channel spacing and distribution, modulation standards and receiver sensitivity and selectivity and the results were contained in the Group's first report (Document No. 54). Sub-Working Groups 4B-2 and 4B-3, under the chairmanship of Mr. Gröschel (Federal Republic of Germany) and Mr. Bell (United Kingdom) respectively, had completed work on radio-frequency protection ratios, maximum radiated power and the basic characteristics of transmitting and receiving antennas and the results would be available in documentary form for the next meeting of the Committee. More work remained to be done, however, on the method of assessing multiple interference when considering the protection of minimum wanted field strengths. After discussion of the problems involved he had drafted a report for his Sub-Working Group to approve before submission to the Committee.

So far as the conclusions contained in the report were concerned, there had been unanimous agreement that a uniform channel spacing of 100 kHz and nominal carrier frequencies which were integral multiples of 100 kHz should be adopted in line with CCIR Recommendations. With regard to modulation standards, the texts had been extracted from the CCIR Recommendations virtually as they stood.

3.2 The delegate of Italy suggested that the paragraph on modulation standards should be amended to indicate that it referred to the following three sub-paragraphs.

It was so agreed.

3.3 In reply to an enquiry by the delegate of Yugoslavia about the absence of any reference to emitting bandwidths, the Chairman of Working Group 4B said that the subject had been omitted because it had been considered unnecessary for the planning process.

3.4 The delegates of France and Spain indicated that they wished to correct apparent errors of translation in the French and Spanish versions of the document.

The first report of Working Group 4B, as amended, was approved.

4. Consideration of reports from Working Group 4C (Documents Nos. 47 and 48)

4.1 The Chairman of Working Group 4C said that a Sub-Working Group under the chairmanship of Mr. Bergman (Sweden) had been established to consider the problems which might be created for aeronautical services operating in the 108 - 136 MHz band if high power FM sound broadcasting transmitters were used in the 100 - 108 MHz band. Its purpose was to discover if possible restrictions on the planning of FM sound broadcasting could be deduced from the various contributions to Working Group 4C. A first report on the subject was expected to be produced soon. Meanwhile, the Committee would find for its consideration in Documents Nos. 47 and 48 the criteria for sharing between FM sound broadcasting services in the bands 87.5 - 108 MHz and television broadcasting and land mobile services in the same bands.

4.2 The Committee approved Document No. 47 without amendment.

4.3 Introducing Document No. 48, the Chairman of Working Group 4C pointed out that it concerned only the sharing criteria for specific frequency bands mentioned in the Radio Regulations, namely in bands 87.5 - 88, 104 - 108 and 97.6 - 102.1 MHz. As far as the last band was concerned, the sharing criteria were already the subject of an agreement amongst the administrations affected.

4.4 The delegate of Italy asked for some indication of the countries of Region 1 for which the Radio Regulations provided for use of the bands 87.5 - 100 and 100 - 108 MHz by the land mobile service on a primary basis, as stated in the first paragraph of the report.

4.5 The delegate of Czechoslovakia suggested that the reference to CCIR Recommendation 370-4 for the propagation data to be used for sharing calculations should be supplemented by a reference to CCIR Report 567-2, which also dealt with the subject.

4.6 The delegate of the United Kingdom proposed alternatively that reference should be made in that context to the paragraph on VHF propagation curves for the land mobile services in the report of Working Group 4A on propagation (Document No. 53).

4.7 In answer to a request by the delegate of Yugoslavia, it was agreed that clarification would be provided for the phrase "or immediately adjacent to" in the final paragraph of the report dealing with the sharing criteria to protect broadcasting services from interference from land mobile services in the vicinity of broadcasting transmitters.

4.8 The delegate of the Federal Republic of Germany proposed that a new final sentence should be added to the report to read :

"The relevant protection ratio figures are to be found in CCIR Report 659."

It was so agreed.

Document No. 48, as amended, was approved.

5. Note from Working Group 4B to Committee 4 (Document No. 43)

5.1 The Chairman suggested that the Committee approve Document No. 43 for referral to Committee 5.

5.2 Having examined Document No. 43 Committee 4 noted that Table 1, mentioned in Document No. 11 under item 1.2 of the agenda of the Conference, should also be examined during the discussion of item 1.10 of the agenda.

5.3 The Chairman of Working Group 4B confirmed, in reply to the delegate of the U.S.S.R., that he had queried the propriety of dealing with channel distribution in a Working Group of Committee 4, since the only proposal on the subject, set out in Table 1 of Document No. 11, related exclusively to planning unconnected with item 1.2 and should therefore be referred to Committee 5.

5.4 After a brief discussion, the representative of the CCIR suggested that the words "inappropriate" and "appropriate" in the second paragraph of Document No. 43 be replaced by "not pertinent" and "pertinent", respectively.

Document No. 43, as amended, was approved for referral to Committee 5.

6. Points referred to Committee 4 by Committee 5 (Document No. 46)

6.1 The Chairman drew attention to Document No. 46 containing a list, approved by Committee 5 with a slight amendment, of areas in which the decisions of Committee 4 had to be awaited before drawing up the final version of the form to be used in submitting requirements to the IFRB. He suggested that he should consult with the Chairmen of Working Groups 4A and 4B to find answers to questions a), b), c) and d) in that document and with the Chairman of Working Group 4C to reply to the new question e) concerning problems of incompatibility between the broadcasting and aeronautical services.

It was so decided.

7. Organization of work

7.1 The Chairman suggested that he and the Chairmen of the Working Groups should look through all the relevant documents to find the terms which would have to be defined in the report to the Second Session of the Conference, checking whether any of the necessary definitions already appeared in ITU documents.

It was so decided.

7.2 The Chairman noted that the report to the Second Session would not contain quotations from or references to CCIR documents and that administrations wishing to obtain more detailed information should refer to those documents themselves.

The meeting rose at 1650 hours.

The Secretary :
S. TSUKADA

The Chairman :
H. GÖTZE

INTERNATIONAL TELECOMMUNICATION UNION

REGIONAL BROADCASTING CONFERENCE

(FIRST SESSION) GENEVA, 1982

Document No. 102-E
8 September 1982
Original : English

COMMITTEE 5

SUMMARY RECORD

OF THE

THIRD MEETING OF COMMITTEE 5

(PLANNING METHODS)

Tuesday, 31 August 1982, at 0900 hrs

Chairman : Mr. K. ARASTEH (Iran)

1. Reports of Working Group 5A

1.1 The Chairman of Working Group 5A said that reports were being prepared for submission to Committee 5 on the following day; the Sub-Working Group on Planning Methods (5A-1) was expected to complete its work soon and a Drafting Group on Planning Constraints had already finished its work, the conclusion of which would be incorporated in the Working Group's report.

1.2 The Chairman asked what documents Working Group 5A would submit to the Committee and whether there were any areas of difficulty on which Committee 5 could provide consultation or directives.

1.3 The Chairman of Working Group 5A said it was intended to submit Documents Nos. 59 (First Report of Working Group 5A to Committee 5) and 60 (Second Report of Working Group 5A to Committee 5) to Committee 5. There were some reservations.

1.4 The Chairman said it was the general practice that Committees received documents without reservations and suggested discussion of the relevant points in order to eliminate differences.

2. Information required from Committee 4 (Document No. 46)

It was agreed that Document No. 46 should be passed to Committee 4 with a covering letter requesting answers to the questions contained in the document.

3. Structure of the Reports relevant to Committee 5 for inclusion in the report of the First Session

3.1 Establishment of an ad hoc Group to propose the structure of the report, Chapters 6 and 7

It was agreed to set up an ad hoc Group to propose the detailed structure of the report for Chapters 6 and 7. That Group would consist of Mr. Pettersson (Sweden) as Chairman, and the Chairmen of Working Groups 5A and 5B as members, with support from the Secretariat.

4. Dates by which the two Working Groups must complete their work

4.1 The Chairmen of Working Groups 5A and 5B said that their Groups expected to be able to complete their work by Friday, 3 September 1982.

5. Creation of the Drafting Group

5.1 The creation of a Drafting Group consisting of Mr. X. Nouaille (France), Mr. D.I. Court (United Kingdom) and Mr. L. Chamorro (Spain) was approved.

5.2 The Chairman said that the task of the Drafting Group was to align the three versions of documents for submission to the Committee and to present the results of its work in such a form that Committee 5 need not discuss questions of language, but only substantive matters. He asked the Drafting Group to establish its timetable in consultation with the Chairmen of the Working Groups.

6. Allocation of documents

6.1 The Chairman announced that he had received, and would take note of, Document No. 50 from Mali on low-power stations. After consultation with the Chairman of Working Group 5A, he would pass it on to that Working Group for consideration.

The meeting rose at 0920 hours.

The Secretary : The Chairman :

M. AHMAD K. ARASTEH

INTERNATIONAL TELECOMMUNICATION UNION

REGIONAL BROADCASTING CONFERENCE

(FIRST SESSION) GENEVA, 1982

Document No. 103-E
8 September 1982
Original : English/
French/
Spanish

ANNEE MONDIALE DES COMMUNICATIONS
WORLD COMMUNICATIONS YEAR
AÑO MUNDIAL DE LAS COMUNICACIONES
1983

PLENARY MEETING

Second Report of Committee 5

The second series of the texts adopted by Committee 5 has been submitted to the Editorial Committee for subsequent submission to the Plenary Meeting (see Document No. 104).

These texts were adopted unanimously.

K. ARASTEH
Chairman of Committee 5

INTERNATIONAL TELECOMMUNICATION UNION

REGIONAL BROADCASTING CONFERENCE

(FIRST SESSION) GENEVA, 1982

Document No. 104-E
8 September 1982
Original : English/
French/
Spanish

COMMITTEE 6

Second Series of texts from Committee 5 to the Editorial Committee

The texts mentioned in Document No. 103 are hereby submitted to the Editorial Committee.

K. ARASTEH
Chairman of Committee 5

Annexes : 2

ANNEX 1

1. Definitions

1.1 Coverage area

The area within which the field strength of the wanted transmitter is equal to or greater than the usable field strength.

In this area the protection against interference is provided for 99% of time.

Note 1 : The field strength of the wanted transmitter is derived from propagation curve relating to 50% of locations and for 50% of time.

Note 2 : The usable field strength is calculated by simplified multiplication method,[1)] the tropospheric interference being derived from the propagation curves relating to 50% of locations and for 1% of time, and steady interference being derived from propagation curves relating to 50% of locations and for 50% of the time.

/ 1) However, the power sum method will be used, upon request from administrations concerned, in the area from Shatt-al-Arab to the Gulf of Oman, for comparison purposes. /

1.2 Service area

The part of the coverage area in which the administration responsible for the service has the right to demand that the agreed protection conditions be provided.

ANNEX 2

RESOLUTION No. COM 5/1

IFRB ACTIVITIES BETWEEN THE FIRST AND SECOND SESSIONS OF THE CONFERENCE

The Regional Administrative Conference for FM Sound Broadcasting in the VHF Band (Region 1 and certain countries concerned in Region 3) (First Session, Geneva, 1982),

considering

a) that the current Session has adopted a programme of work making it the task of the IFRB to draw up the List of Requirements to carry out incompatibility calculations on the basis of this List;

b) that the IFRB will have to develop the computer programs needed to perform the tasks mentioned in Chapter ....;

c) that some Administrations have developed or will develop software relating to incompatibility calculations,

recognizing

a) that this activity represents an additional burden of work for the IFRB, which has limited means at its disposal to prepare for the Second Session of the Conference;

b) that the Administrative Council at its 37th session (1982) made limited provision in Resolution No. 870 for additional fixed-term staff for the preparation of administrative radio conferences,

resolves

1. to invite the Administrations which have prepared computer programs applicable to the relevant studies listed in Chapter ... to communicate these programs to the IFRB and, if necessary, to second computer specialists to the IFRB for short periods in order to adapt the programs to the ITU computer system;

2. to invite the IFRB to perform between the First and Second Sessions of the Conference the tasks mentioned in Chapter ... so far as possible, and to send the results to Administrations;

3. to invite the IFRB to provide Administrations with such assistance as may be requested of it with a view to the submission of requirements and the preparation of the Second Session of the Conference;

4. to draw the attention of the Administrative Council to the facilities deemed necessary to enable the IFRB to carry out the tasks mentioned above.

INTERNATIONAL TELECOMMUNICATION UNION

REGIONAL BROADCASTING CONFERENCE

(FIRST SESSION) GENEVA, 1982

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8 September 1982
Original : English

COMMITTEE 5

Report from ad hoc Group 5/3 to Committee 5

The conclusions of the ad hoc Group 5/3 is annexed to this document, in the form of a draft Resolution. Committee 5 is requested to consider it for adoption.

T. BOE
Chairman of ad hoc Group 5/3

Annex : 1

A N N E X

DRAFT

RESOLUTION

The Regional Administrative Conference for FM Sound Broadcasting in the VHF Band (Region 1 and certain countries concerned in Region 3) (First Session, Geneva, 1982),

considering

a) that Resolution No. 510 of WARC 1979 imposes on FM sound broadcasting stations in the band 87.5 - 100 MHz constraints intended to protect the TV stations which are in conformity with the Regional Agreement, Stockholm, 1961;

b) that, in order not to radically change the existing situation in the band 87.5 - 100 MHz, the Conference adopted different planning methods in Africa and the Middle East on one hand, and in the rest of the planning area on the other hand;

c) it is desirable that administrations communicate their requirements relative to the band 87.5 - 100 MHz by taking into account their existing stations which operate in accordance with the Radio Regulations and the Stockholm (1961) Agreement;

d) that some countries party to the Regional Agreement, Stockholm, 1961, may need to apply the procedure of Article 4 of the Agreement in the period between the two sessions of the Conference in order to modify the characteristics of their station or to add new stations;

e) that such modifications may effect the requirements to be submitted by the other countries party to the Regional Agreement, Stockholm, 1961,

resolves

1. that as from /15 October 1982/ the following provisions shall be applied for sound broadcasting stations in the band 87.5 - 100 MHz;

a) an administration applying the procedure of Article 4 of the Regional Agreement, Stockholm, 1961, with respect to the Asian and African countries which have assignments in the Regional Plan, shall communicate to the IFRB a copy of the request sent in application of paragraph 1.1.1 of the above Article;

b) the above administrations whose agreement has been sought, shall communicate to the IFRB a copy of their decision on the matter within the time limits prescribed in Article 4;

c) the IFRB shall publish in accordance with paragraph 1.4 the information received in application of paragraph 1.3 only when it receives a formal acceptance of the modification by those administrations affected among the countries referred to in sub-paragraph 1 above;

d) cases for which the IFRB could not proceed to the publication shall be reported to the Second Session of the Conference;

2. that the Second Session of the Conference be requested to consider the cases reported to it by the IFRB, on the basis of bilateral or multilateral negotiations among the countries concerned.

INTERNATIONAL TELECOMMUNICATION UNION

REGIONAL BROADCASTING CONFERENCE

(FIRST SESSION) GENEVA, 1982

Document No. 106-E
9 September 1982
Original : French

COMMITTEE 5

Report of Ad hoc Group 5/4 to Committee 5

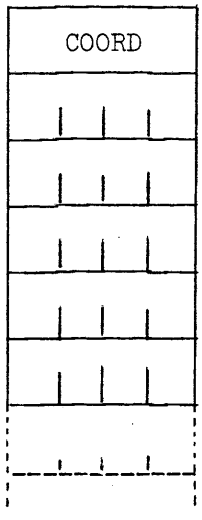
Ad hoc Group 5/4 met on 9 September to study and propose a solution in connection with box 15 of Document No. 69(Rev.2) in accordance with the terms of reference assigned to it by Committee 5.

After considering the various aspects of the question and in the light of the discussions held by the Group, it was unanimously decided to propose the following text :

15. Coordination of the requirement and status of the related assignment

When the requirement with the characteristics contained in the form has been successfully coordinated, with a view to submission, insert the country symbols in the "COORD" box. When the coordination concerns more than five countries, insert a symbol in the "COORD" box and indicate the list of countries in a separate annex.

When the requirement corresponds to an assignment which has been notified to the IFRB in accordance with the Radio Regulations or which is in conformity with the 1961 Stockholm Agreement, the status of this assignment will be inserted by the IFRB when publishing the inventory of requirements.



It is noted here that additional tasks have been assigned to the IFRB. This might therefore be mentioned under point 7.3 of Document No. 89(Rev.1) relating to the work to be carried out by the IFRB.

M. DERRAGUI
Chairman of Ad hoc Group 5/4

INTERNATIONAL TELECOMMUNICATION UNION

REGIONAL BROADCASTING CONFERENCE

(FIRST SESSION) GENEVA, 1982

Document No. 107-E
9 September 1982
Original : French

BUDGET CONTROL COMMITTEE

Note by the Secretary General

POSITION OF THE ACCOUNTS OF THE CONFERENCE

AT 10 SEPTEMBER 1982

I have the honour to attach hereto for consideration by the Budget Control Committee an estimate of the expenses of the Conference as at 10 September 1982.

This estimate shows, in relation to the budget approved by the Administrative Council and adjusted in accordance with the provisions of Resolution No. 647, a margin of 342,900 Swiss francs.

M. MILI

Secretary-General

Annex : 1

A N N E X

Item No.	Heading	Budget approved by AC	Budget adjusted 1)	Credit transfers		Available credits	Expenditure as at 25 August 1982				Differences +/-
				item to item	chapter to chapter 2)		actual	committed	estimated	total	
1	2	3	4	5	6	7	8	9	10	11	12
	I. Staff expenses										
14.101	Salaries and related expenses of the Conference Secretariat staff	1.017.000	1.127.900	-	-	1.127.900	9.000	884.000	60.000	953.000	-174.900
14.102	Salaries and related expenses of the translation, typing and reproduction services staff	493.000	546.000	-	-	546.000	134.000	317.000	50.000	501.000	-45.000
14.103	Travel (recruitment)	80.000	80.000	-	-	80.000	23.000	15.000	8.000	46.000	-34.000
14.104	Insurance	40.000	40.000	-	-	40.000	3.000	25.000	2.000	30.000	-10.000
		1.630.000	1.793.900	-	-	1.793.900	169.000	1.241.000	120.000	1.530.000	-263.900
	II. Travel expenses										
	None										
	III. Premises and equipment										
14.301	Premises, furniture, machines	55.000	55.000	-	-	55.000	3.000	52.000		55.000	-
14.302	Document production	72.000	72.000	-	-	72.000	26.000	8.000	24.000	58.000	-14.000
14.303	Office supplies and overheads	30.000	30.000	-	-	30.000	11.000	2.000	15.000	28.000	-2.000
14.304	Postage, telephone calls, telegrams	65.000	65.000	-	-	65.000	6.000	-	25.000	31.000	-34.000

1	2	3	4	5	6	7	8	9	10	11	12
14.305	Technical installations	5.000	5.000	-	-	5.000	1.000	-	-	1.000	- 4.000
14.306	Sundry and unforeseen	10.000	10.000	-	-	10.000	1.000	-	9.000	10.000	-
14.307	Use of outside computers	-	-	-	-	-	-	-	-	-	-
		237.000	237.000	-	-	237.000	48.000	62.000	73.000	183.000	-54.000
	IV. Other expenses										
14.401	IFRB preparatory work	90.000	90.000	-	-	90.000	34.000	46.000	—	80.000	-10.000
14.401	CCIR preparatory work	10.000	10.000	-	-	10.000	1.000	-	—	1.000	-9.000
14.402	Interest credited to the ordinary budget	38.000	38.000	-	-	38.000	-	-	32.000	32.000	-6.000
		138.000	138.000	-	-	138.000	35.000	46.000	32.000	113.000	-25.000
	V. Final Acts										
14.501	Report for the Second Session	30.000	30.000	-	-	30.000	-	-	30.000	30.000	-
		2.035.000	2.198.900	-	-	2.198.900	252.000	1.349.000	255.000	1.856.000	-342.900
	or in contributory units	8.125	8.780							7.410	

Notes

1) Budget approved by the Administrative Council and adjusted to take account of changes in the Common System of Staff Salaries and Allowances of the United Nations and the specialized agencies.

2) In accordance with Article 15, paragraph 3 of the Financial Regulations of the Union.

PINK PAGES

INTERNATIONAL TELECOMMUNICATION UNION

REGIONAL BROADCASTING CONFERENCE

(FIRST SESSION) GENEVA, 1982

Document No. 108-E
13 September 1982

R.1

PLENARY MEETING

First series of texts submitted by the Editorial Committee to the Plenary Meeting

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

Source	Document No.	Contents
B.4	118	Chapter 1 : Definitions
B.1	97	Chapter 2 : Propagation
		Chapter 3 : Technical standards and transmission characteristics
		Chapter 4 : Frequency sharing between sound broadcasting and television
		Annex A : Supplementary propagation data - Correction factors
		Recommendation No. COM 4/1

H. BERTHOD
Chairman of the Editorial Committee

Annex : 36 pages

CHAPTER 1

DEFINITIONS

The following definitions used in this Report supplement those contained in the Convention and in Chapter 1 of the Radio Regulations.

1.1 Coverage area

The area within which the field strength of the wanted transmitter is equal to or greater than the usable field strength.

In this area the protection against interference is provided for 99% of time.

Note 1 : The field strength of the wanted transmitter is derived from the propagation curve relating to 50% of locations and for 50% of time.

Note 2 : The usable field strength is calculated by the simplified multiplication method,[1)] tropospheric interference being derived from the propagation curves relating to 50% of locations and for 1% of time, and steady interference being derived from propagation curves relating to 50% of locations and for 50% of the time.

1.2 Service area

The part of the coverage area in which the administration has the right to demand that the agreed protection conditions be provided.

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1) However, for comparison purposes, the power sum method will be used, in the area from the Shatt-al-Arab to the Gulf of Oman, at the request of administrations concerned.

CHAPTER 2

PROPAGATION

2.1 Propagation curves for VHF broadcasting

2.1.1 General

The propagation curves represented in Figures 2.1 to 2.9 based on CCIR Recommendation 370-4 are intended for use in the planning of the broadcasting service. They relate field strength to path length with the equivalent transmitting antenna height as a parameter for various percentages of time from 50% to 1% in various climatic regions. They represent the field strength exceeded at 50% of locations, and apply to both horizontal and vertical polarization.

With respect to oversea paths the curves are presented in terms of cold sea and warm sea in order to allow for the different propagation characteristics encountered in these conditions. Over warm seas the phenomenon of ducting or extreme super-refractivity is more frequently encountered and hence trans-horizon interference is common, but propagation over both warm and cold seas shows considerably less attenuation than does propagation over land for time percentages less than median in most cases. This is evident from the Figures. It will be appreciated that the definition of warm sea and cold sea has to be based on statistical data and so is to a certain extent arbitrary, but experience indicates that the following definitions would be appropriate for the application of the curves set out in this Chapter :

Warm sea — Seas, oceans and other substantial bodies of water (i.e., one at least that can encompass a circle of 100 km diameter) at latitudes less than 23.5 degrees N or S, but also including the entirety of the Mediterranean, the Black Sea, the Red Sea, and the area extending from the Shatt-al-Arab to and including the Gulf of Oman (see also paragraph 2.1.2 below);

Cold sea — Seas, oceans, and other substantial bodies of water (i.e., one at least that can encompass a circle of 100 km diameter) at latitudes greater than 23.5 degrees N or S, but excluding the Mediterranean, the Black Sea, the Red Sea and the area extending from the Shatt-al-Arab to the Gulf of Oman.

2.1.2 Super-refractivity and ducting areas

Although the area from the Shatt-al-Arab to the Gulf of Oman is included in the general classification of warm sea as defined above in paragraph 2.1.1, experience indicates that extreme super-refractivity (ducting) conditions may be encountered there on an even greater scale than in other warm sea areas. This may also be the case for the Red Sea, the Eastern Mediterranean, and maritime areas of West Africa. The member organizations of Gulfvision are at present engaged in a systematic measurement programme with the participation of the ITU, investigating both atmospheric refractivity conditions and associated radio propagation over great distances, with a view to clearly defining the conditions prevailing in the area from the Shatt-al-Arab to the Gulf of Oman.

Although the measurement programme has been in progress since 1981, it is not yet concluded and so it has not been possible to propose modifications to the propagation data submitted to the First Session of the Conference. However, it is expected that definitive results will be available during 1983, and it is anticipated that Gulfvision will be in a position to contribute in this regard to the Second Session. It should therefore be understood that the above warm sea classification is tentative at this time, and certain curves may well need to be modified or added to when the measurement results have been analyzed.

2.1.3 Application of the curves

The values of field strengths given in curves, Figures 2.1 to 2.9, are those exceeded for 50%, 10%, 5% and 1% of the time. They are expressed in decibels relative to 1 μV/m and correspond to an effective radiated power of 1 kW.

[The 50% time Figure shall be used for determination of coverage areas and the 1% time Figures shall be used for interference calculations. In the case of steady interference the 50% time Figure should be used.]

The effective height of the transmitting antenna is defined as its height over the average level of the ground between distances of 3 km and 15 km from the transmitter in the direction of the receiver. The height of the receiving antenna is assumed to be 10 m above local terrain.

The curves given in Figures 2.1 to 2.9 correspond to effective transmitter antenna heights from 37.5 to 1,200 metres. Additional curves for effective antenna heights of 20 m and 10 m may be derived from the 37.5 m curve by applying correction factors of -10 dB and -19.5 dB for distances up to 50 km and -4.5 dB and -9.5 dB for distances in excess of 100 km with linear interpolation for intermediate distances. To obtain field strength values corresponding to effective transmitter antenna heights (h_1) of less than 10 m the values derived for 10 m shall be used. To obtain field strength values corresponding to effective transmitter antenna heights in excess of 1,200 m, the field strength at a distance of x km from the transmitter may be taken to be the same as the field strength given by the curve for a transmitting antenna height of 300 m at a distance of $(x + 70 - 4.1\sqrt{h_1})$km. This is subject to the condition that the free space field strength is not exceeded.

2.1.3.1 Location variability

The curves given are representative for 50% of locations, the percentage which shall be used for planning purposes. Corrections for other percentages of locations are given for further information in Annex A.

2.1.3.2 Terrain irregularity correction

The curves for propagation over land refer to the kind of irregular rolling terrain found in many parts of Region 1. For planning purposes and interference calculations, no terrain irregularity correction shall be made.

The application of this correction factor is however described in Annex A.

2.1.3.3 Receiving antenna height correction

The propagation curves are for a receiving antenna height of 10 m above the local terrain. If the receiving antenna height is reduced from 10 m to 3 m, a 9 dB reduction in the field strength shall be applied.

2.1.3.4 Mixed land/sea path calculations

When the propagation path is partially over land and partially over sea, the following method shall be used for interpolation between the appropriate land and sea curves.

Let

$E_{L,\,t}$: field strength for land path equal in length to the mixed path for t% of the time,

$E_{S,\,t}$: field strength for sea path equal in length to the mixed path for t% of the time,

$E_{M,\,t}$: field strength for mixed path for t% of the time,

d_S : length of sea path,

d_T : length of total path.

The field strength for the mixed path ($E_{M,\,t}$) is then determined by using the formula :

$$E_{M,\,t} = E_{L,\,t} + \frac{d_S}{d_T}\left[E_{S,\,t} - E_{L,\,t}\right]$$

2.2 VHF propagation curves for the aeronautical mobile service

The curves in Figures 2.10 represent basic transmission loss as a function of distance for 5%, 50% and 95% of the time for a range of antenna heights at a frequency of 125 MHz. The propagation model used is based on a considerable amount of experimental data and assumes horizontal polarization over a smooth earth with an effective earth-radius factor k of 4/3 with some compensation at high altitudes, and with fading characteristics representative of a temperate continental climate.

The following points are to be noted :

- the antenna heights shown vary from 15 m to 20,000 m covering both ground station and aircraft heights;

- for interpolation the following formula is proposed :

$$L_b = L_{b1} + \left[(L_{b2} - L_{b1}).\log(x/x_1) \right] / \log(x_2/x_1)$$

where L_b is the basic transmission loss to be calculated at the distance considered for height x and L_{b1}, L_{b2}, x_1 and x_2 are the corresponding losses and heights at the same distance on the curves between which interpolation is required;

- to conform with the propagation curves for the broadcasting service (Figures 2.1 to 2.9) an ordinate scale in terms of field strength for 1 kW radiated from a half-wave dipole has been added.

2.3 VHF propagation curves for the land mobile services

Propagation curves for the land mobile services operating in the VHF bands are given in Figures 2.11 and 2.12. These have been derived from the broadcasting propagation curves of Figures 2.2 and 2.3, with appropriate corrections for a mobile station antenna height of 3 m. A correction of 9 dB is applied for distances up to 50 km and of 4.5 dB for distances greater than 100 km, with linear interpolation for intermediate distances.

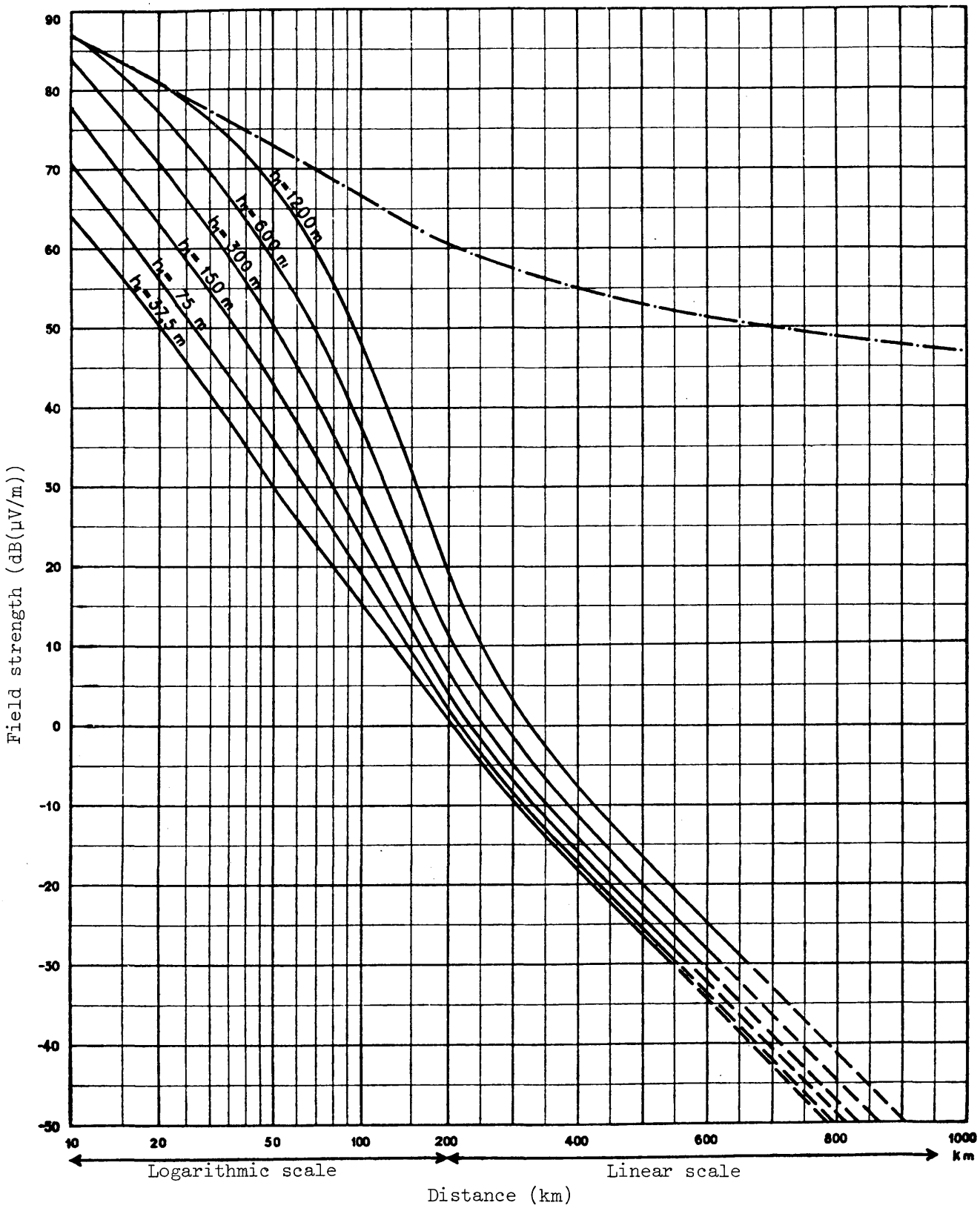

Figure 2.1 - Field strength (dB(μV/m)) for 1 kW e.r.p.

Frequency : 30 to 250 MHz; Land and sea;
50% of the time; 50% of the locations; h_2 = 10 m
·—·—·—· Free space

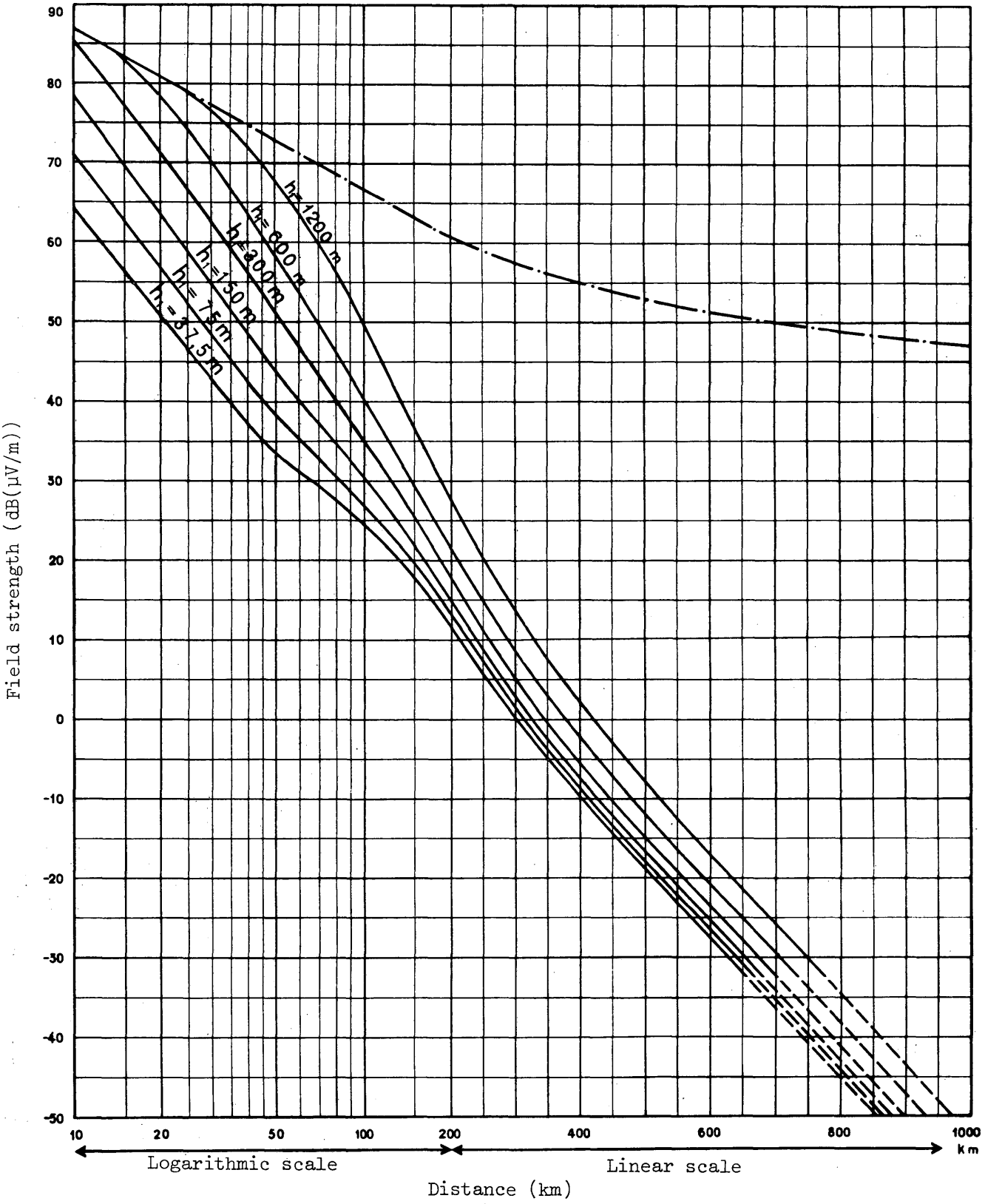

Figure 2.2 - Field strength (dB(μV/m)) for 1 kW e.r.p.

Frequency : 30 to 250 MHz : Land and cold sea;
10% of the time; 50% of the locations h_2 = 10 m
—·—·— Free space

PROPAGATION CURVES FOR THE BROADCASTING SERVICE

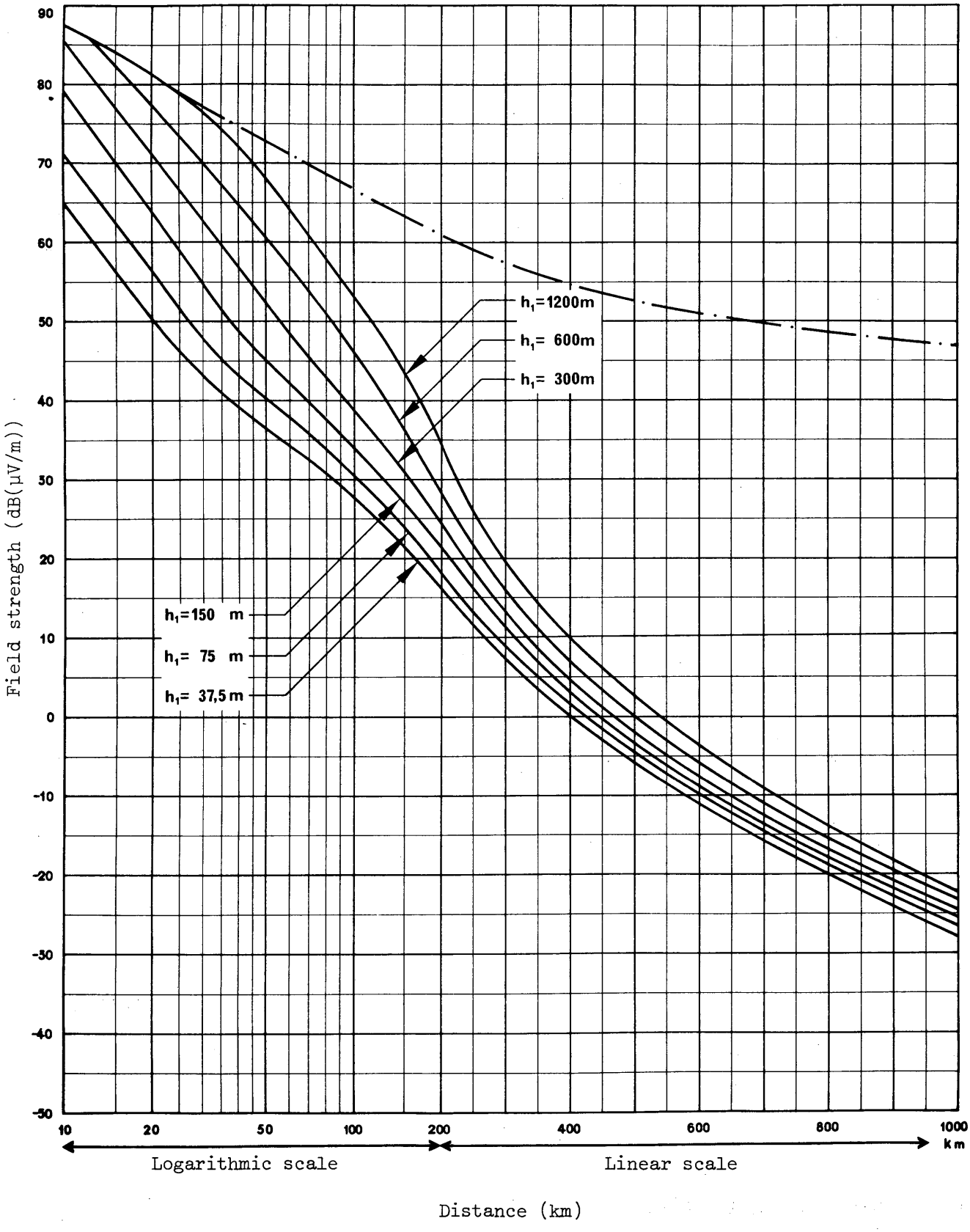

Figure 2.3 - Field strength (dB(μV/m)) for 1 kW e.r.p.

Frequency : 30 to 250 MHz; Warm sea;
10% of the time; 50% of the locations; h_2 = 10 m
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PROPAGATION CURVES FOR THE BROADCASTING SERVICE

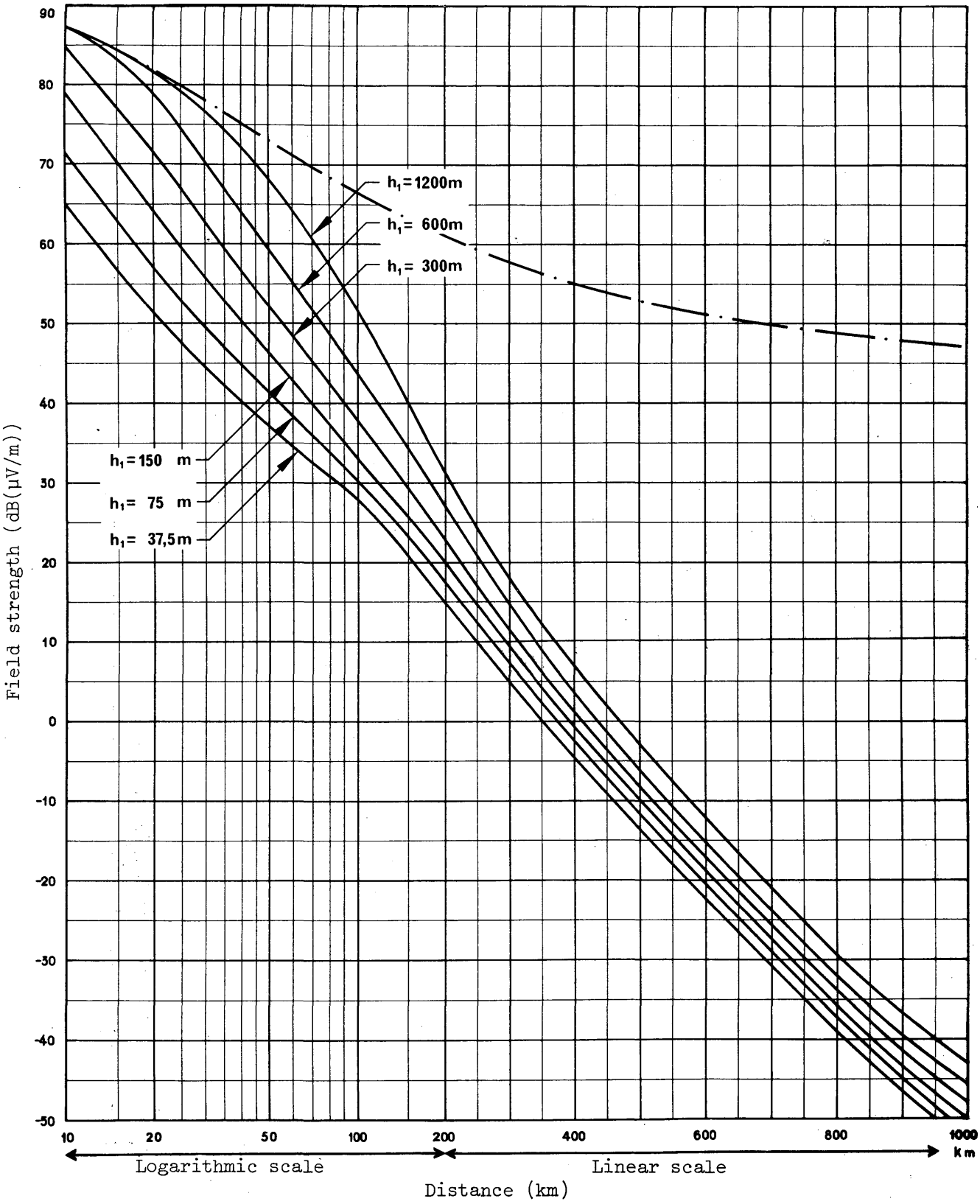

Figure 2.4 - Field strength (dB(μV/m)) for 1 kW e.r.p.

Frequency : 30 to 250 MHz; Cold sea;
5% of the time; 50% of the locations; h_2 = 10 m
·—·—·— Free space

PROPAGATION CURVES FOR THE BROADCASTING SERVICE

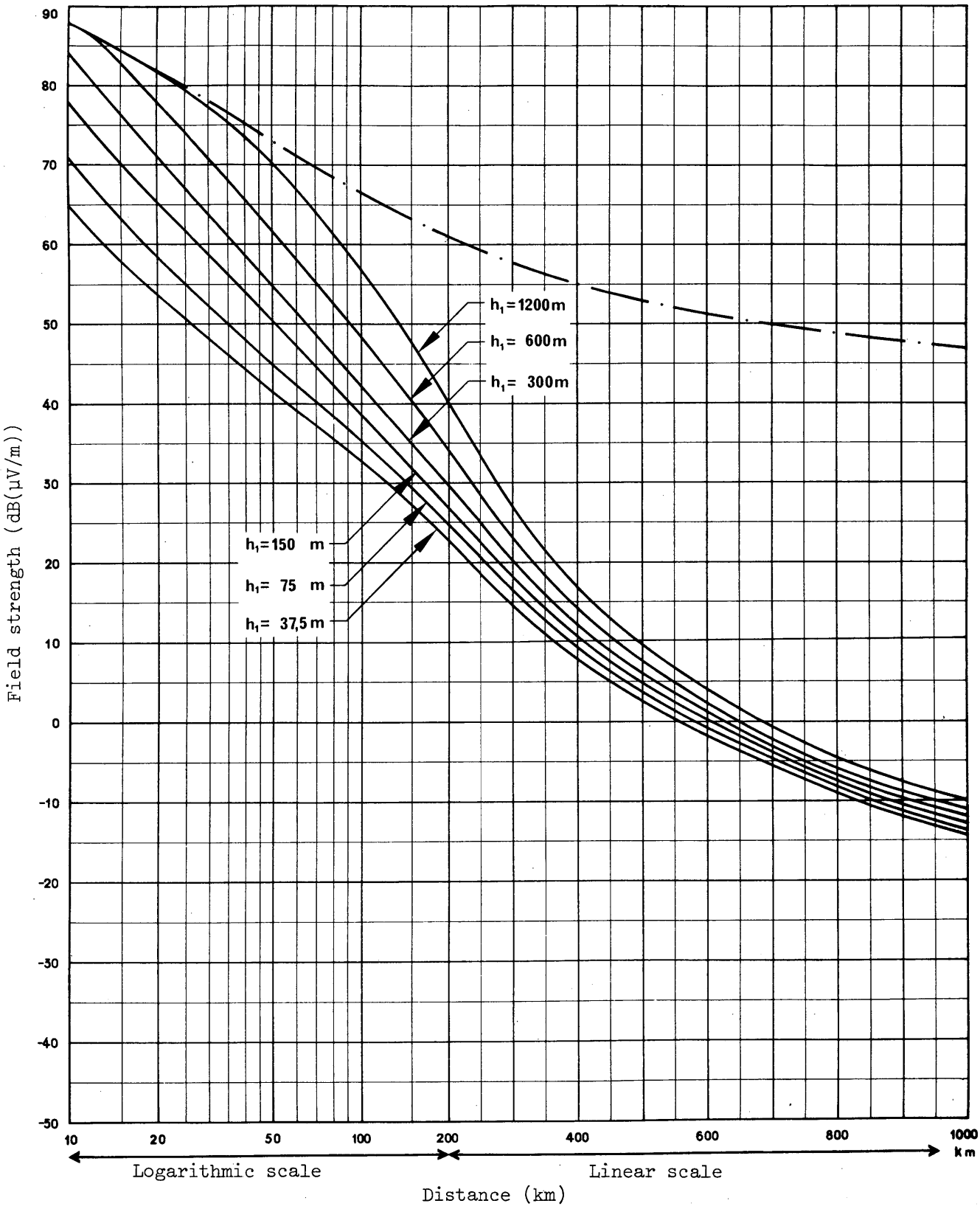

Figure 2.5 - Field strength (dB(μV/m)) for 1 kW e.r.p.

Frequency : 30 to 250 MHz; Warm sea;
5% of the time; 50% of the locations; h_2 = 10 m
·—·—·—· Free space

PROPAGATION CURVES FOR THE BROADCASTING SERVICE

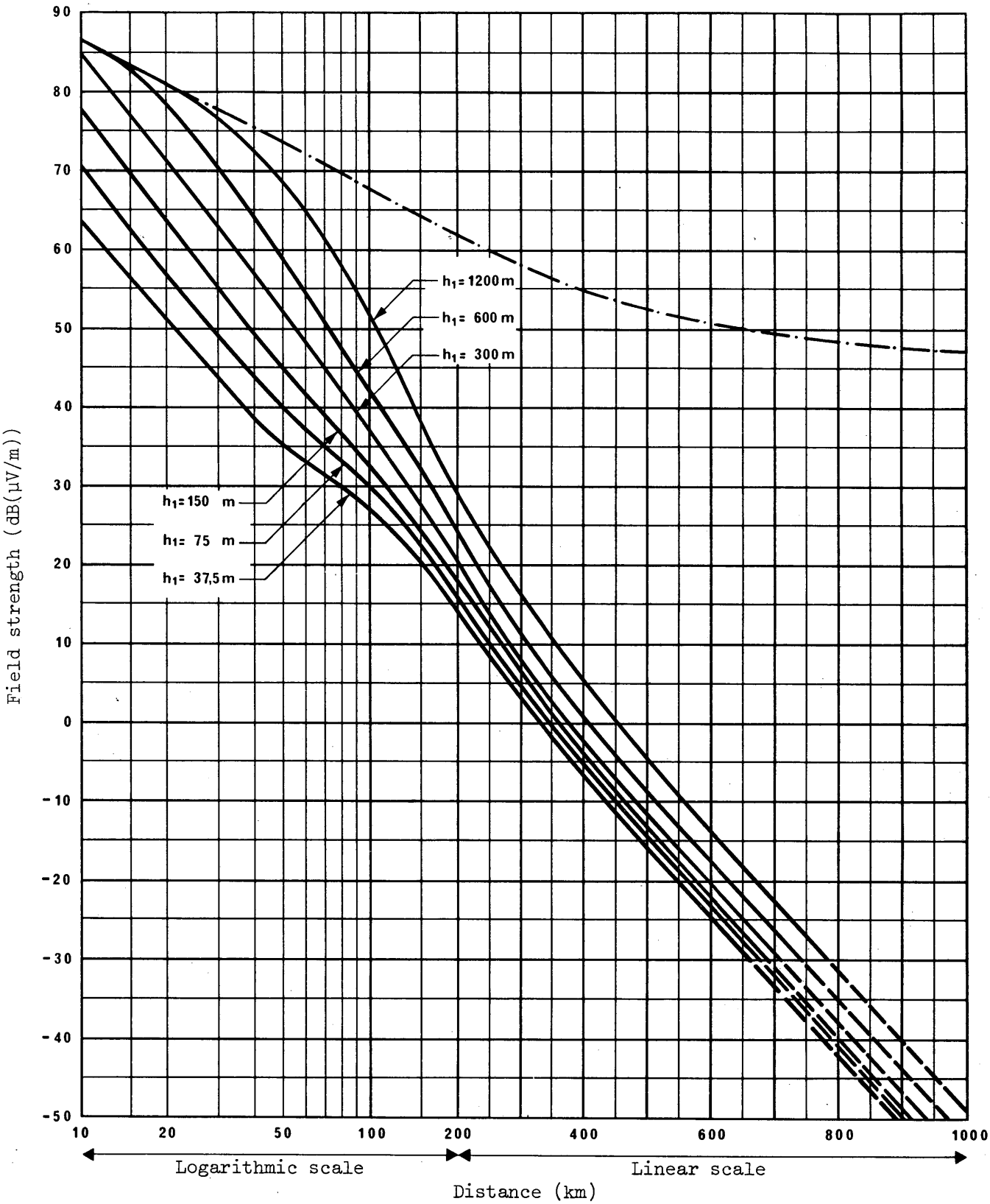

Figure 2.6 - Field strength (dB(μV/m)) for 1 kW e.r.p.

Frequency : 30 to 250 MHz; Land;
5% of the time; 50% of the locations; $\bar{h}_2$ = 10 m
—·—·— Free space

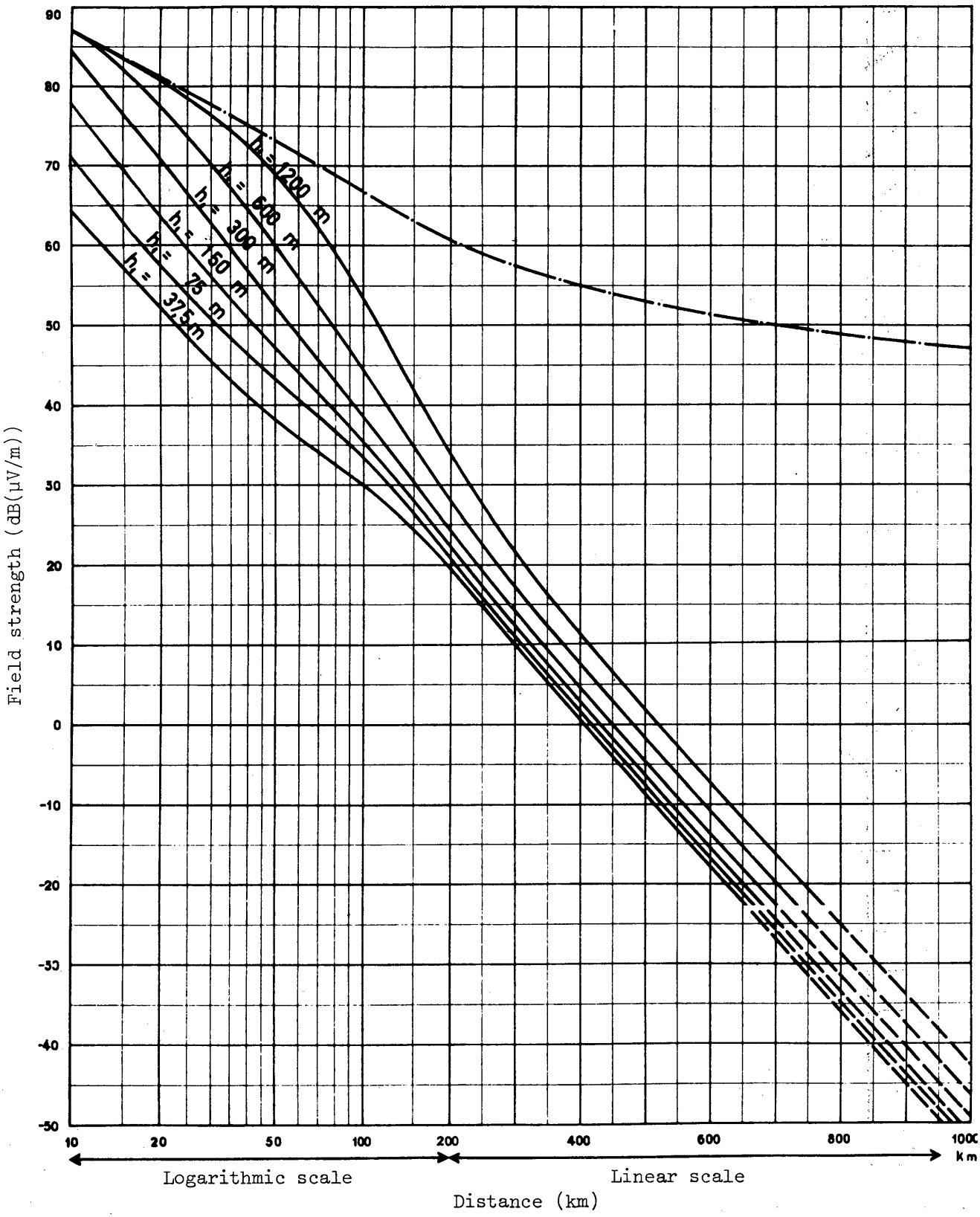

Figure 2.7 - Field strength (dB(μV/m)) for 1 kW e.r.p.

Frequency : 30 to 250 MHz; Land;
1% of the time; 50% of the locations; h_2 = 10 m
·——·——·——· Free space

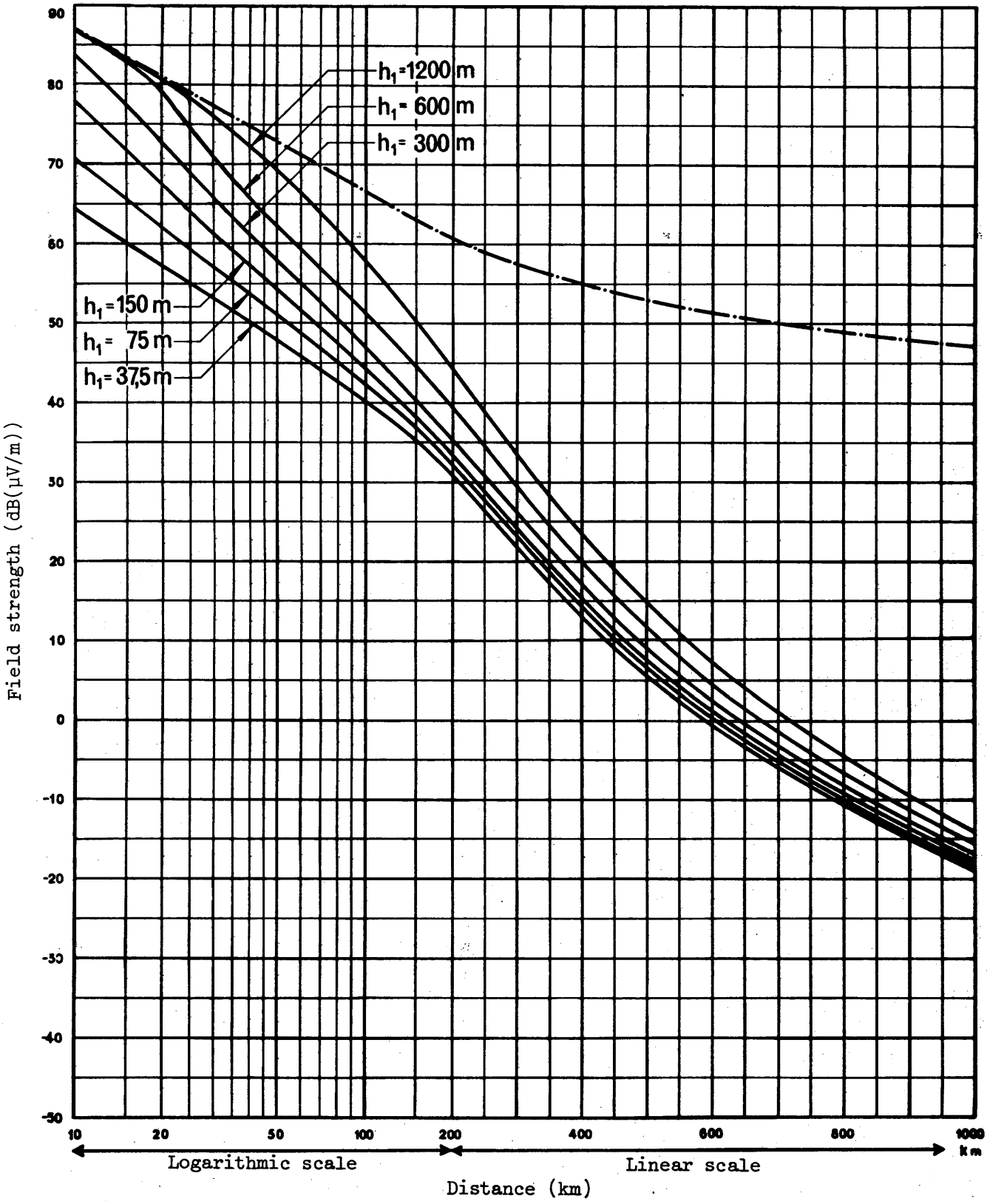

Figure 2.8 - Field strength (dB(μV/m)) for 1 kW e.r.p.

Frequency : 30 to 250 MHz; Cold sea;
1% of the time; 50% of the locations; h_2 = 10 m
·——·——·——· Free space

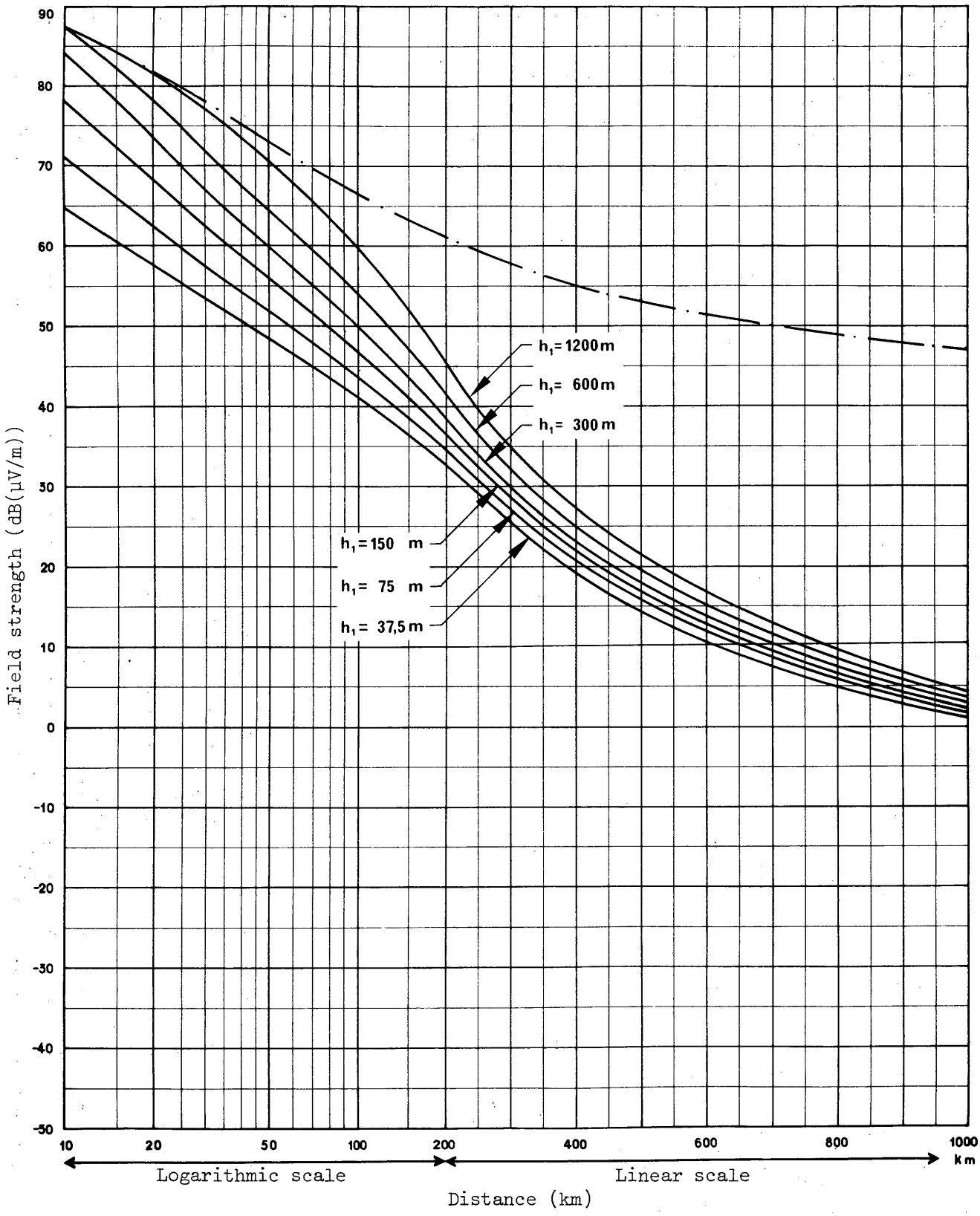

Figure 2.9 - Field strength (dB(μV/m)) for 1 kW e.r.p.

Frequency : 30 to 250 MHz; Warm sea;
1% of the time; 50% of the locations; h_2 = 10 m
— · — · — Free space

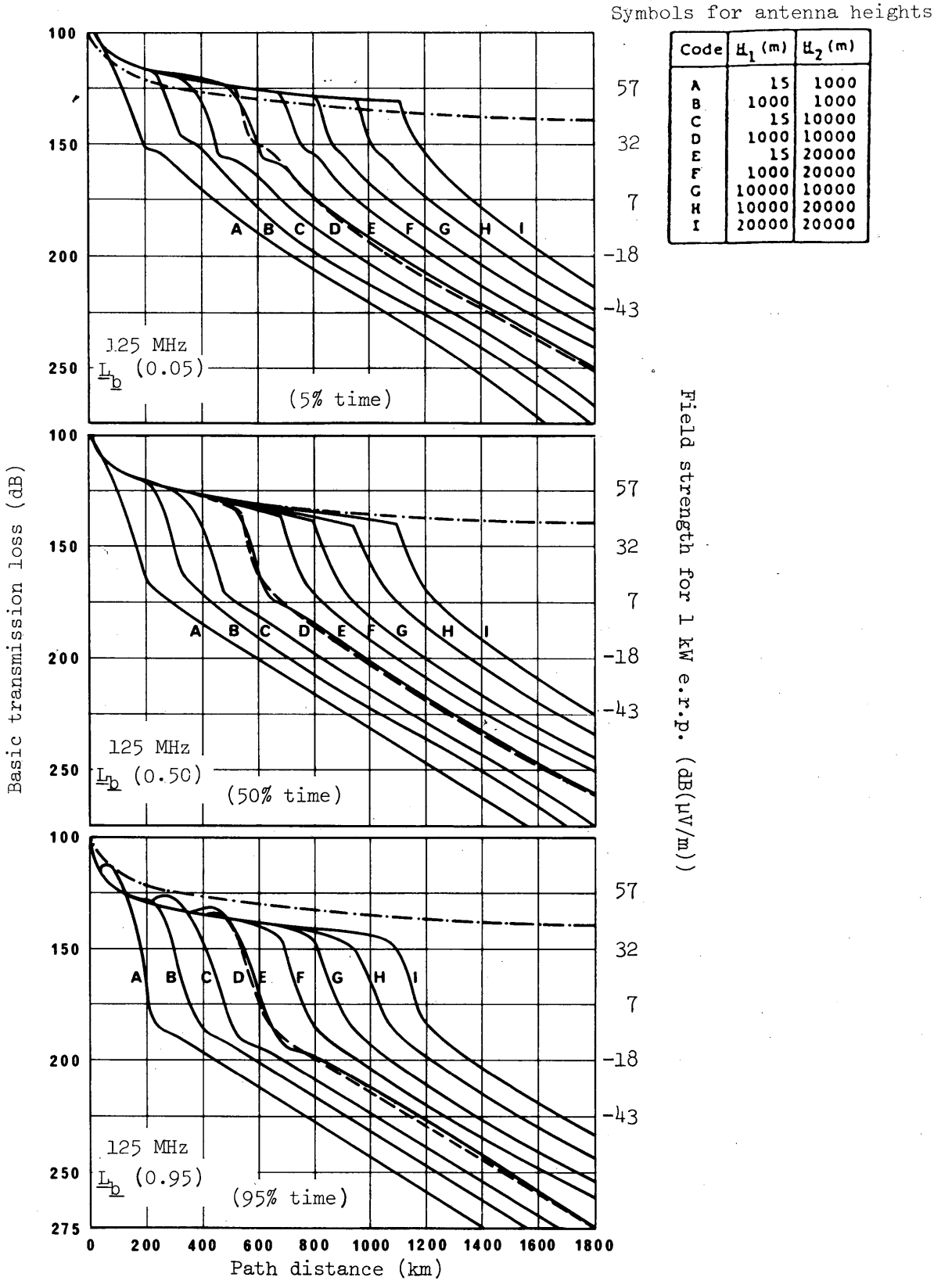

Figure 2.10 - Basic transmission loss at 125 MHz for 5%, 50% and 95% of the time

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PROPAGATION CURVES FOR THE AERONAUTICAL MOBILE SERVICE

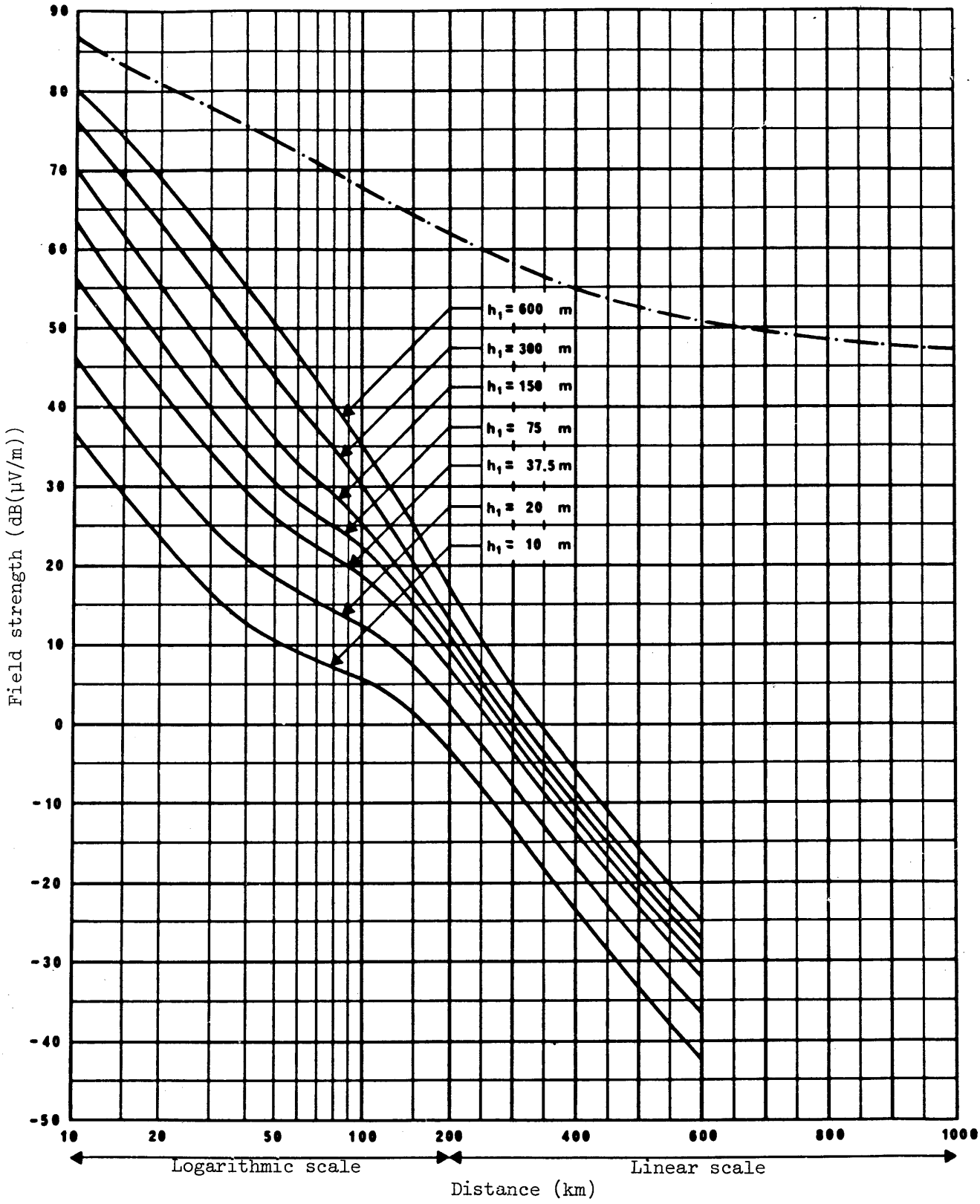

Figure 2.11 - Field strength (dB(μV/m)) for 1 kW e.r.p.

Frequency : 30 - 250 MHz, land, and cold sea;
10% of the time; 50% of the locations; h_2 = 3 m
·—·—·—· Free space

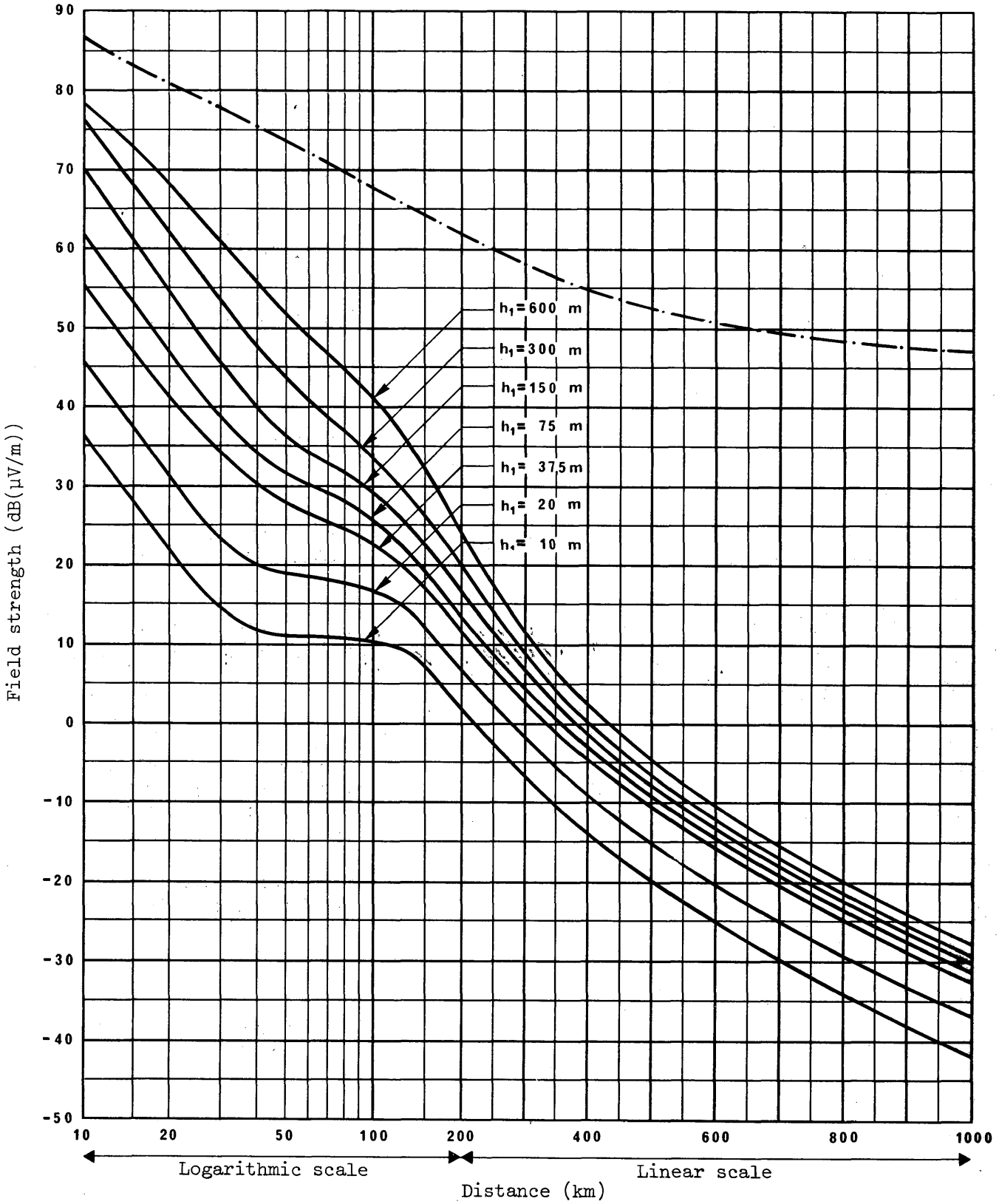

Figure 2.12 - Field strength (dB(μV/m)) for 1 kW e.r.p.

Frequency : 30 - 250 MHz; Warm sea;
10% of the time; 50% of the locations; h_2 = 3 m

· — · — · — Free space

PROPAGATION CURVES FOR THE LAND MOBILE SERVICE

CHAPTER 3

TECHNICAL STANDARDS AND TRANSMISSION CHARACTERISTICS

3.1 Channel spacing

A uniform channel spacing of 100 kHz shall be used in principle for both monophonic and stereophonic emissions.

The nominal carrier frequencies shall in principle be integral multiples of 100 kHz.

3.2 Modulation standards

Planning shall be based on the following transmission standards*) :

3.2.1 Monophonic transmissions

The radio-frequency signal consists of a carrier, frequency modulated by the sound signal to be transmitted, with a maximum frequency deviation of ±75 kHz or ±50 kHz after pre-emphasis.

The pre-emphasis characteristic of the sound signal is identical to the admittance-frequency curve of a parallel resistance-capacitance circuit having a time constant of 50 µs.

3.2.2 Stereophonic transmissions

The radio-frequency signal consists of a carrier, frequency modulated by a baseband signal according to the specifications of the polar-modulation system or of the pilot-tone system. The maximum frequency deviation is ±50 kHz for the polar-modulation system and ±75 KHz or ±50 kHz for the pilot-tone system.

The pre-emphasis characteristics of the sound signals M and S are identical to the admittance-frequency curve of a parallel resistance-capacitance circuit having a time constant of 50 µs.

3.2.3 Supplementary signal transmission

Supplementary signals may be added to both monophonic or stereophonic transmissions by means of sub-carriers, provided that the maximum carrier frequency deviation and protection ratio relevant to the corresponding monophonic or stereophonic transmission are not exceeded.

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*) For further information, see CCIR Recommendation 450-1.

3.3 Protection ratios

The radio-frequency protection ratios required to give satisfactory monophonic reception for 99% of the time, in systems using a maximum frequency deviation of ±75 kHz, are those given by the curve M2 in Figure 3.1. For steady interference, it is desirable to provide the higher degree of protection, shown by the curve M1 in Figure 3.1 The protection ratios at important frequency spacing values are also given in Table I.

The corresponding values for monophonic systems using a maximum frequency deviation of ±50 kHz are given in Figure 3.2.

The radio-frequency protection ratios required to give satisfactory stereophonic reception for 99% of the time, for transmissions using the pilot-tone system and a maximum frequency deviation of ±75 kHz, are given by curve S2 in Figure 3.1. For steady interference, it is desirable to provide a higher degree of protection, shown by curve S1 in Figure 3.1. The protection ratios at important frequency spacing values are also given in Table I.

The radio-frequency protection ratios for satisfactory reception in the case of tropospheric interference (99% of time), or for steady interference for monophonic transmissions and for stereophonic transmissions using the pilot-tone system, or the polar modulation system with a maximum frequency deviation of ±50 kHz are given by Table II.

The radio-frequency protection ratios for satisfactory stereophonic reception in the case of tropospheric interference (99% of time), or for steady interference where the wanted and interfering transmitters use different maximum frequency deviations, are given in Table III.

The protection ratios for stereophonic broadcasting assume the use of a low-pass filter following the frequency-modulation demodulator in the receiver designed to reduce interference and noise at frequencies greater than 53 kHz in the pilot-tone system and greater than 46.25 kHz in the polar-modulation system. Without such a filter or an equivalent arrangement in the receiver, the protection-ratio curves for stereophonic broadcasting cannot be met, and significant interference from transmissions in adjacent or nearby channels is possible.

Data systems or other systems providing supplementary information, if introduced, should not cause more interference to monophonic and stereophonic services than is indicated by the protection-ratio curves in Figure 3.1*). It is not considered practicable in the planning to provide additional protection to data systems or other systems providing supplementary information.

Note : The protection ratios for steady interference provide approximately 50 dB signal-to-noise ratio. (Weighted quasi-peak measurement according to Recommendation No. 468, with a reference signal at maximum frequency deviation.)**)

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*) For further information see CCIR Report 463.

**) For further information see CCIR Report 796.

To apply the protection-ratio curves of Fig. 3.1 it is necessary to determine whether, in the particular circumstances, the interference is to be regarded as steady or tropospheric *). A suitable criterion for this is provided by the concept of "nuisance field" which is the field strength of the interfering transmitter (at its pertinent e.r.p.) enlarged by the relevant protection ratio.

Thus, the nuisance field for steady interference:

$$E_s = P + E(50,50) + A_s$$

and the nuisance field for tropospheric interference

$$E_t = P + E(50,T) + A_t$$

where

P: e.r.p. (dB(1 kW)) of the interfering transmitter;

A: radio-frequency protection ratio (dB);

$E(50,T)$: field strength (dB(μV/m)) of the interfering transmitter, normalized to 1 kW, and exceeded during T% of the time,

and where indices s and t indicate steady or tropospheric interference respectively.

The protection-ratio curve for steady interference is applicable when the resulting nuisance field is stronger than that resulting from tropospheric interference,

i.e. $E_s \geq E_t$

This means that A_s should be used in all cases when:

$$E(50,50) + A_s \geq E(50,T) + A_t.$$

*) For further information see Doc. 10/241 (1978-1982) of the CCIR.

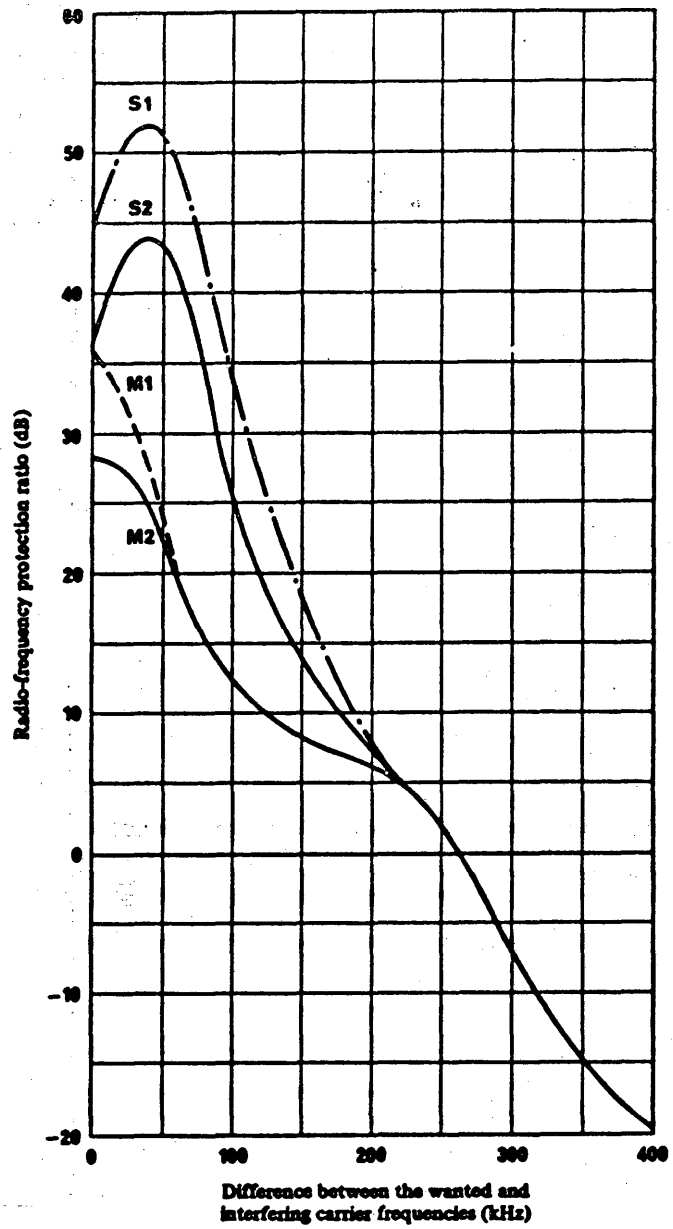

FIGURE 3.1 – *Radio-frequency protection ratio required by broadcasting services in band 8 (VHF) at frequencies between 87.5 MHz and 108 MHz using a maximum frequency deviation of ± 75 kHz*

Curve M1 : monophonic broadcasting; steady interference

Curve M2 : monophonic broadcasting; tropospheric interference (protection for 99% of the time)

Curve S1 : stereophonic broadcasting; steady interference

Curve S2 : stereophonic broadcasting; tropospheric interference (protection for 99% of the time)

TABLE I

Frequency spacing, (kHz)	Radio-frequency protection ratio (dB) using a maximum frequency deviation ± 75 kHz			
	Monophonic		Stereophonic	
	Steady interference	Tropospheric interference	Steady interference	Tropospheric interference
0	36	28	45	37
25	31	27	51	43
50	24	22	51	43
75	16	16	45	37
100	12	12	33	25
150	8	8	18	14
200	6	6	7	7
250	2	2	2	2
300	− 7	− 7	− 7	− 7
350	−15	−15	−15	−15
400	−20	−20	−20	−20

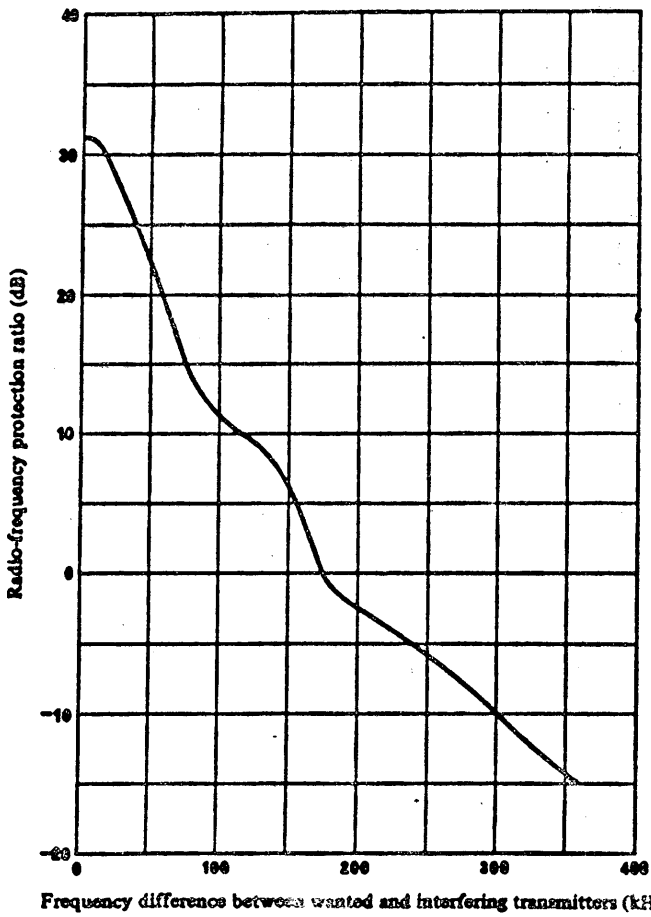

FIGURE 3.2 – *Radio-frequency protection ratios for monophonic sound broadcasting in band 8 (VHF) using a maximum frequency deviation of ± 50 kHz*

Tropospheric interference (protection for 99% of the time)

TABLE II

Frequency spacing (kHz)	Radio frequency protection ratio (dB) using a maximum frequency deviation ± 50 kHz			
	Monophonic		Stereophonic	
	Steady interference	Tropospheric interference	Steady interference	Tropospheric interference
0	-	32	-	41
100	-	12	-	25
200	-	-2.5	7	-
300	-	-10	-7	-
400	-	-	-	-

Note : Some of the figures and gaps in this table may be revised at the next Interim Meeting of the CCIR.

TABLE III

Frequency spacing (kHz)	Maximum frequency deviation Wanted transmitter ± 50 kHz Interfering transmitter ± 75 kHz		Maximum frequency deviation Wanted transmitter ± 75 kHz Interfering transmitter ± 50 kHz	
	Radio frequency protection ratio (dB) stereophonic		Radio frequency protection ratio (dB) stereophonic	
	Steady interference	Tropospheric interference	Steady interference	Tropospheric interference
0	-	41	45	37
100	-	25	33	25
200	7	-	7	7
300	-7	-	-7	-7
400	-	-	-20	-20

Note : Some of the figures and gaps for interference to systems using a maximum frequency deviation of ± 50 kHz may be revised at the next Interim Meeting of the CCIR.

3.4 Minimum usable field strength

The planning shall be based on the following median values of the minimum usable field strength (measured 10 m above ground level) :

for the monophonic service :

48 dB (μV/m) in rural areas

for the stereophonic service :

54 dB (μV/m) in rural areas.

These values shall be applied for systems with a maximum frequency deviation of ±50 KHz or ±75 KHz.

3.5 Maximum radiated power

There is no need to specify maximum power limits provided countries do not use powers in excess of those necessary to provide the required quality of national service (see No. 2666 of the Radio Regulations).

3.6 Characteristics of transmitting and receiving antennas - polarization

3.6.1 Transmitting antennas

The maximum effective radiated power and, in the case of directional antennas, the azimuth(s) relative to true north together with the azimuths of the -3 dB points anti-clockwise and clockwise respectively from the azimuth of the maximum, shall be indicated in accordance with Appendix 1 of the Radio Regulations (section D, column 9).

The attenuation (dB) with respect to the maximum value of the effective radiated power shall be specified at 10° intervals in a clockwise direction starting at true north. Where it is not possible to provide information in this detail, administrations should provide the values at 30° intervals in a clockwise direction starting at true north.

In the case of mixed polarized transmissions the effective radiated powers and radiation patterns of the horizontally and vertically polarized components are to be specified separately.

3.6.2 **Receiving antennas**

The directivity curve of Figure 3.3*) is to be used for the planning of stereophonic sound services, the antenna being assumed to be at a height of 10 m above ground. For monophonic services an omnidirectional antenna shall be assumed. Together with the use of the appropriate protection ratios this should ensure comparable coverages for both stereophonic and monophonic services.

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*) For further information see CCIR Recommendation 599.

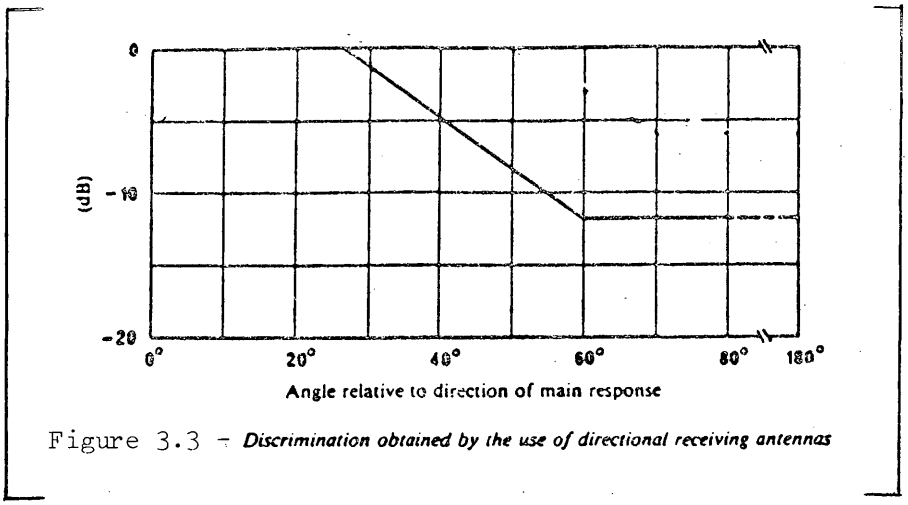

Figure 3.3 – *Discrimination obtained by the use of directional receiving antennas*

stereophonic-sound broadcasting

Note 1. – It is considered that the discrimination shown will be available at the majority of antenna locations in built-up areas. At clear sites in open country, slightly higher values will be obtained.

Note 2. – The curve in Figure 3.3 is valid for signals of vertical or horizontal polarization, when both the wanted and the unwanted signals have the same polarization.

3.6.3 Polarization

Administrations shall be free to choose which polarizations are to be used in their countries.*)

3.6.3.1 Polarization Discrimination

Polarization discrimination shall not be taken into account in the planning procedure except in specific cases with the agreement of affected administrations. In such cases a value of 10 dB for orthogonal polarization discrimination may be used.

3.7 Receiver sensitivity and selectivity

Receiver sensitivity and selectivity are taken into account by the values of the minimum usable field strength, (see item 3.4) and the radio frequency protection ratios, (see item 3.3).

*) For further information see CCIR Report 464.

CHAPTER 4

FREQUENCY SHARING BETWEEN SOUND BROADCASTING AND TELEVISION

4.1 Introduction

According to the Stockholm Plan, 1961, several countries are operating television transmitters using the D/SECAM system in the band 87.5 to 100 MHz.

4.2 Television broadcasting (D/SECAM) suffering interference from FM sound broadcasting

Protection ratios for the D/SECAM system suffering interference from FM sound broadcasting are given in Figure 4.1, which refers to tropospheric interference.*)

4.3 FM sound broadcasting suffering interference from television broadcasting (D/SECAM)

Protection ratios for FM sound broadcasting suffering interference from television broadcasting (D/SECAM) are given in Table 1 and Figure 4.2.**)

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*) For further information see CCIR Report 306-4.

**) For further information see CCIR Report 947.

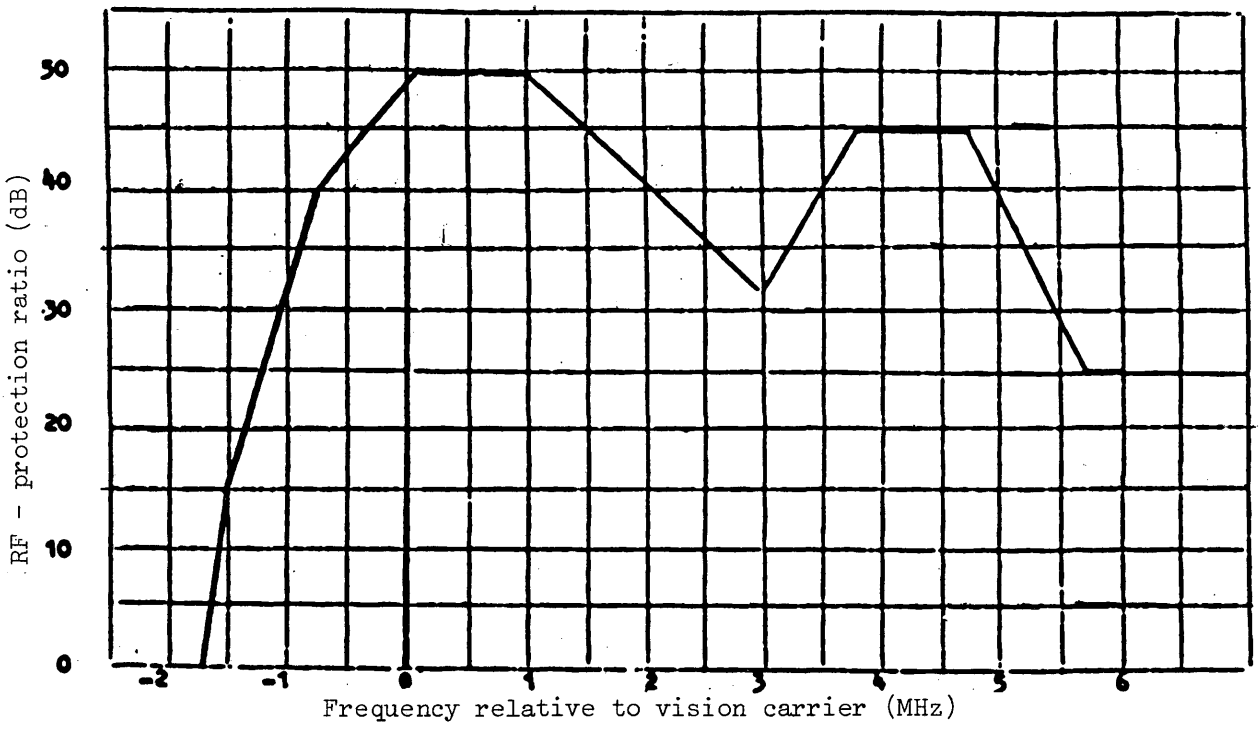


Figure 4.1 - 625-line television system D/SECAM
Protection ratio in the case of frequency-modulated sound broadcasting tropospheric interference

TABLE 1

Radio-frequency protection ratio required by FM sound broadcasting against interference from D/SECAM television transmissions in the band 87.5 to 100 MHz

(Steady interference)

Wanted signal frequency (MHz) relative to vision carrier	RF-protection ratio (dB)	
	mono	stereo
-2.0	-30	-12
-1.0	-2	18
-0.5	0	20
-0.15	19	25
-0.1	24	35
-0.05	30	50
0.0	35	45
0.05	30	50
0.1	24	35
0.15	19	31
0.25	10	25
0.5	0	20
1.0	-1	20
2.0	-3	18
3.0	-4	17
4.0	-5	15
4.18	8	25
4.25	10	26
4.41	10	26
4.48	8	25
4.7	-5	15
5.0	-15	0
6.0	-25	-5
6.25	-13	-6
6.3	-5	5
6.4	6	26
6.45	15	40
6.475	25	43
6.5	28	35
6.525	25	43
6.55	15	40
6.6	6	26
6.7	-3	0
7.0	-30	-13

Note 1.- For tropospheric interference (protection 99 % of the time) these values may be reduced by 8 dB.

Note 2.- Values for frequencies from 0.5 to 4 MHz are greatly affected by picture content. The figures given are for a test pattern and are representative of the on-the-air test picture transmissions.

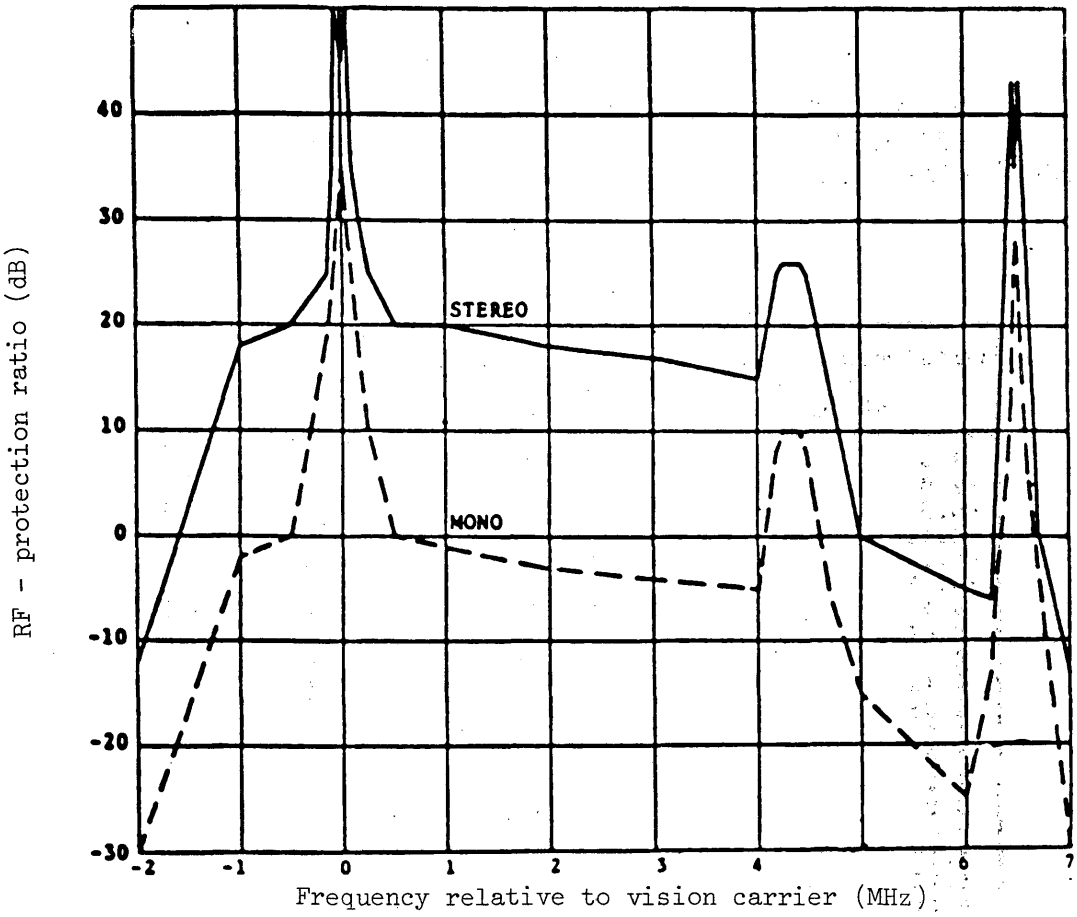


Figure 4.2 - Radio-frequency protection ratio required by FM sound broadcasting against interference from D/SECAM television transmissions in the band 87.5 to 100 MHz

(Steady interference)

ANNEX A

(see Chapter 2)

SUPPLEMENTARY PROPAGATION DATA

CORRECTION FACTORS

This Annex gives supplementary propagation data as well as the correction factors which can be applied to the basic curves to improve the accuracy of predictions.

For the planning conference these various factors should not be used, although some administrations may wish to take them into account in particular cases in order to facilitate bilateral negotiations with the aim of achieving mutually satisfactory solutions.

1. Correction for various location percentages

The curves in Figures 2.1 to 2.9 are representative of 50% of locations. Figure 2.13 shows the correction (in dB) to be applied for other percentages of receiving locations.

2. Terrain irregularity correction

A parameter Δh is used to define the degree of terrain irregularity. It represents the difference between the altitudes exceeded for 10% and 90% of the terrain over propagation paths at distances between 10 and 50 km from the transmitter (see Figure 2.15).

The curves for propagation over land refer to the kind of irregular rolling terrain found in Region 1 for which a value of Δh of 50 m is considered appropriate.

Figure 2.14 gives corrections for other values of Δh.

3. Receiver terrain correction (terrain clearance angle)

The location correction in section 1 above can be applied only on a statistical basis. If more precision is required for predicting the field strength in a specific small receiving area a correction may be based on a "terrain clearance angle". This angle θ is measured at a point chosen to be representative of the reception area; it is defined as the angle between the horizontal plane passing through the receiving antenna and the line from this antenna which clears all obstacles within 16 km in the direction of the transmitter. The example in Figure 2.16 indicates the sign convention, which is negative if the line to the obstacles is above the horizontal. Figure 2.17 indicates the correction, as a function of the angle θ, to be applied to the prediction for 50% of locations. If this correction is applied, the location correction of section 1 (Figure 2.13) may no longer be applicable.

Corrections for terrain clearance angles outside the range -5° to 0.5°, are not given in Figure 2.17, because of the smaller number of paths concerned in the study. However, they may be obtained tentatively by linear extrapolation of the curve in Figure 2.17 and limiting values of 30 dB at 1.5° and -40 dB at -15°, subject to the condition that the free-space field strength is not exceeded.

CCIR References (Volume V)

- Recommendation 370-4
- Report 239-5
- Recommendation 529
- Report 567-2
- Recommendation 528-1

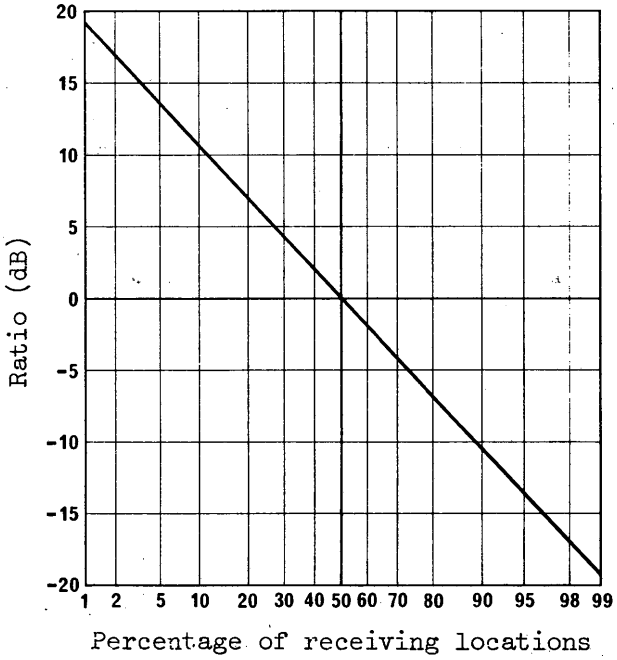


Figure 2.13 - Ratio (dB) of the field strength for a given percentage of the receiving locations to the field strength for 50% of the receiving locations

Frequency : 30 to 250 MHz

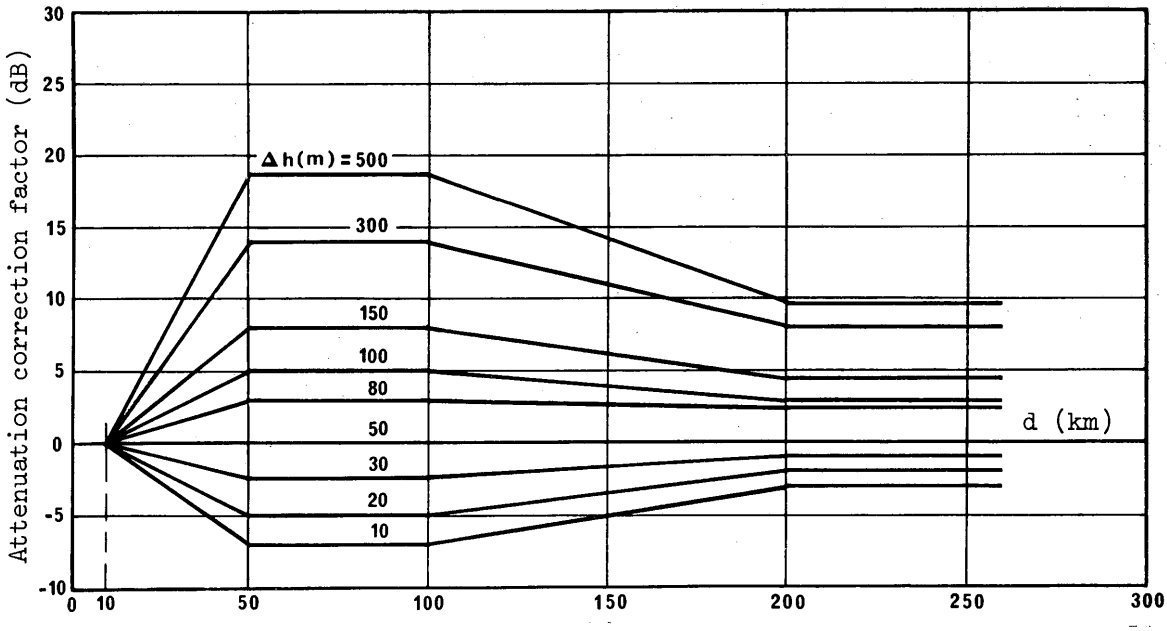


Figure 2.14 - Attenuation correction factor as a function of the distance from the transmitter for various values of Δh

Frequency : 80 to 250 MHz

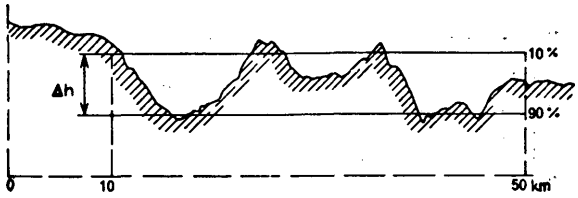
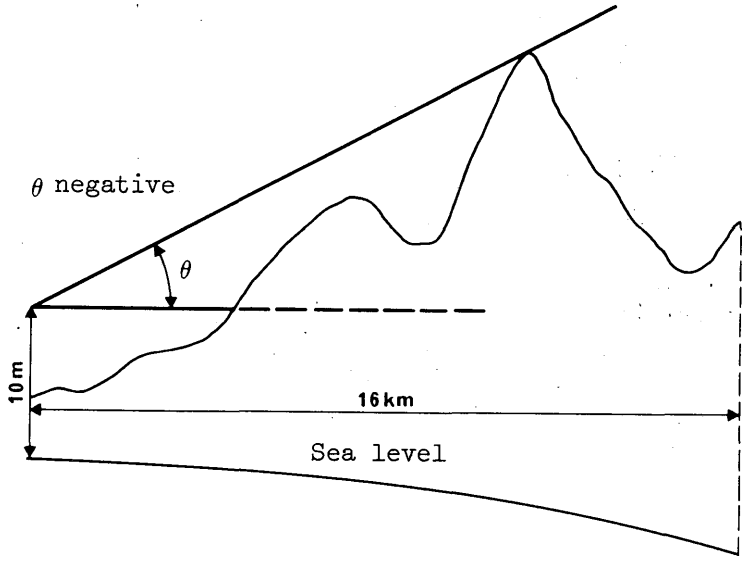


Figure 2.15 - Definition of the parameter Δh



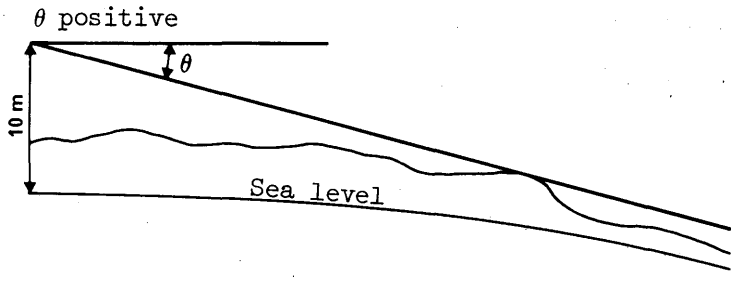


Figure 2.16 - Terrain clearance angle

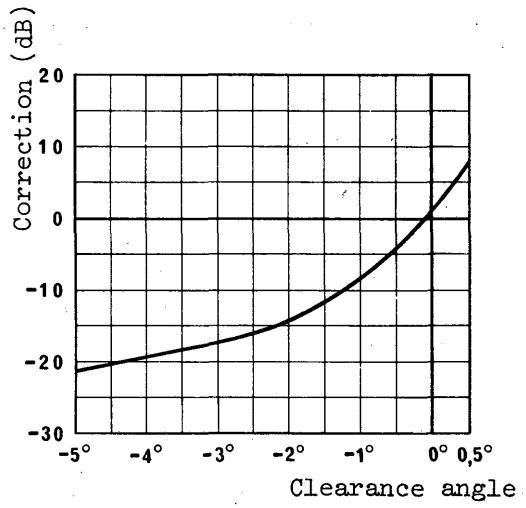


Figure 2.17 - Receiving terrain clearance angle correction (VHF)

RECOMMENDATION No. COM 4/1

Relating to the continuation of certain propagation studies relevant to the use of band 87.5 to 108 MHz in Region 1

The First Session of the Regional Administrative Conference for FM Sound Broadcasting in the VHF Band (Region 1 and certain countries concerned in Region 3)

considering

a) that the World Administrative Radio Conference, Geneva, 1979, in Resolution No. 510 requested the CCIR to study, as a matter of urgency, the necessary technical bases required for this Conference;

b) that the CCIR in response provided a report on technical bases that included, inter alia, a chapter on propagation, and that this chapter has been adopted subject to obtaining further information on the subjects referred to hereunder;

c) that further information on propagation, in particular relating to ducting propagation in certain areas, thought to be particularly subject to this phenomenon is considered necessary;

d) that the data indicating that radio propagation characterisitics over land and over sea are identical under certain circumstances also need to be verified,

requests the CCIR

1. to continue its collaboration, as a matter of urgency, in the propagation and radiometeorological measurement campaign at present being carried out in the area from the Shatt-al-Arab to the Gulf of Oman and any other such programmes being carried out in other relevant areas;

2. to continue studying the relationship between propagation over land and over sea for 50% and 10% of the time;

3. to prepare a further report, based on this collaboration and these studies, in good time for the Second Session of the Conference,

recommends that administrations collaborate with the CCIR, as a matter of urgency and within the limits of their capabilities, by sending it contributions relating to the aforementioned studies,

and requests the Second Session of the Conference to reconsider the relevant paragraphs of section 2.1.1, and also Figures 2.1, 2.2, 2.11 and 2.12, of the Report of the First Session in the light of the further report of the CCIR and also to consider, if it sees fit, the production, for planning purposes, of separate propagation curves for extreme super-refractivity conditions.

BLUE PAGES

INTERNATIONAL TELECOMMUNICATION UNION

REGIONAL BROADCASTING CONFERENCE

(FIRST SESSION) GENEVA, 1982

Document No. 109-E
9 September 1982

B.3 PLENARY MEETING

Third series of texts submitted by the Editorial Committee to the Plenary Meeting

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

Source	Document No.	Contents
C.4	100	Chapter 5 : Compatibility with other services Annexes /A, B and C/ Recommendations Nos. COM 4/2, COM 4/3, and COM 4/4

H. BERTHOD
Chairman of the Editorial Committee

Annex : 27 pages

CHAPTER 5

COMPATIBILITY WITH OTHER SERVICES

5.1 Sharing criteria between the FM sound broadcasting service and the land mobile service in the band 87.5 to 108 MHz

In the table of frequency allocations of the Radio Regulations the bands 87.5 to 100 and 100 to 108 MHz are allocated in Region 1 to Broadcasting on a primary basis and in some countries also to the mobile service on a permitted basis, namely :

a) in the band 87.5 to 88 MHz on a permitted basis and subject to agreement obtained under the procedures set forth in Article 14 of the Radio Regulations;

b) in the band 104 to 108 MHz, to the mobile, except aeronautical mobile (R) service, on a permitted basis until 31 December 1995;

c) in the band 97.6 to 102.1 MHz to the land mobile service on a permitted basis until 31 December 1989.

The sharing criteria for the protection of the land mobile service in the band 97.6 to 102.1 MHz is already the subject of an agreement amongst the administrations concerned and affected.

The sharing criteria for the protection of the land mobile service in the bands 87.5 to 88 MHz and 104 to 108 MHz shall be the following :

Field strength to be protected : 15 dB (µV/m) at a height of 3 m

Protection ratio :

Frequency separation between carriers of the two services (kHz)	Protection ratio for AM land mobile services (dB)	Protection ratio for FM land mobile services (dB)
0	18	8
25	16	6
50	4.5	- 5.5
75	- 7.5	-17.5
100	-17.5	-27.5

Propagation data to be used for sharing calculations : see item 2.3 of Chapter 2

Percentage of locations to be protected : 50%

Percentage of time to be protected : 90%

Polarization discrimination for horizontal polarized broadcasting emission : 18 dB Base Station
8 dB Mobile Station

The sharing criteria to protect the broadcasting service from interference from the land mobile service within or immediately adjacent to the coverage area of the broadcasting transmitter should be the following :

Minimum carrier frequency separation required in the same geographical area : 500 kHz

/ The relevant protection ratio figures are to be found in CCIR Report 659. /

5.2 Sharing criteria between the FM sound broadcasting service and the fixed service in the band 87.5 to 108 MHz

The basic criteria can be those as established for the land mobile service (see item 5.1 in this chapter). The field strength to be protected, the height gain factor and the effect of the directivity of the antenna in the fixed service are for consideration between the administrations concerned.

5.3 Compatibility between the broadcasting service in the band 87.5 to 108 MHz and the aeronautical services in the bands 108 to 137 MHz

5.3.1 Interference mechanisms

5.3.1.1 Type A interference - Due to radiation at frequencies in the aeronautical band

1) Variously described as "in-band" or "on-channel", caused by spurious emissions (including intermodulation products) at the transmitter station. This is generally a low-level effect and can be regarded as harmful interference, as defined in the Radio Regulations in cases where the level is sufficient to affect the performance of avionics receivers. No rejection can be provided at the airborne receiver and suppression at source (including the choice of broadcast assignment) and/or distance separation are the only practical cures.

2) Interference to ILS channels near to the 108 MHz band edge due to out-of-band emissions from broadcasting stations operating on carrier frequencies in the last 200 kHz (approximately) in the upper end of the broadcasting band.

5.3.1.2 Type B interference - Due to radiation at frequencies outside the aeronautical band

These comprise the following :

1) Intermodulation generated in the receiver.

2) Desensitization in the RF section of the receiver.

The two effects are caused by relatively high signals (80 dB µV/m and above) producing non-linear operation in the RF stages of the airborne receiver. Intermodulation products may be generated producing an interfering signal at the same frequency as, or near to, the wanted signal in addition to causing a desensitization of the receiver's gain response.

5.3.2 Protection of ILS localizer

5.3.2.1 Protected volume and field strength

The internationally agreed system characteristics for the ILS system are specified in ICAO Annex 10. The system standards for service volume and minimum field strength are reproduced below and define the protection limits for these parameters :

1) a service volume as indicated in Figure 5.1;

2) a minimum field strength of 40 µV/m (32 dB µV/m) over the whole of the service volume specified above (the special case of a broadcasting station inside the ILS service area is covered in paragraph 5.3.2.2.5);

3) where the operational constraints require the use of the ILS back beam, the volume to be protected indicated in Figure 5.1 is also defined. The maximum dimensions of this volume are normally 10 nautical miles (18.5 km) and 6250 ft. (1905 m).

5.3.2.2 Protection criteria

The following figures have been derived from the results of bench tests on a number of typical ILS localizer receivers in current use. They are considered to be suitable for the purpose of calculating the maximum values of broadcast signals which will be compatible with ILS systems.

5.3.2.2.1 Type A 1) Protection ratio

At frequency coincidence : 17 dB

±50 kHz from frequency coincidence : 10 dB

±100 kHz from frequency coincidence : 5 dB

±150 kHz from frequency coincidence : 2 dB

±200 kHz from frequency coincidence : -1 dB

A condition of frequency coincidence exists when the centre frequency of the intermodulation product is the same as that of an ILS localizer channel.

The figures above take into account multiple interference entries resulting from FM broadcast emissions.

A graph of the values above is given in Figure 5.2.

5.3.2.2.2 Type A 2)

The ratio of 17 dB for the frequency coincidence case of Type A 1) interference may be used as the basis for interference assessments of Type A 2). Insufficient data are available to define the typical energy levels of FM broadcasting transmissions between 200 and 500 kHz from the carrier. Further studies within national administrations are necessary to define the levels at frequencies spaced by 50 kHz over this range. The reference bandwidth for such studies should be that of a typical ILS receiver.

5.3.2.2.3 Type B 1)

Only third-order intermodulation products are considered below, because in practice no unacceptable degradation of receiver performance due to fifth or higher order intermodulation is likely to occur.

The intermodulation threshold criteria are derived for a single intermodulation product. In cases where two or more intermodulation products may be generated on the receiving frequency, linear addition of the powers of the intermodulation products may be assumed.

If none of the broadcasting signals exceeds a level of -25 dBm at the receiver input, it may, in general, be assumed that no unacceptable degradation of receiver performance will occur due to intermodulation on any ILS channel. For higher levels, a more detailed examination is required based on the following criteria, which apply when the third-order product has a frequency in the ILS channel concerned.

5.3.2.2.3.1 Third-order intermodulation involving two unwanted signals

Third-order intermodulation products of the form

$$2 f_1 - f_2 = fa \qquad (f_1 > f_2)$$

generated in ILS localizer receivers may cause unacceptable degradation of receiver performance if

$$1.71 N_1 + N_2 + 60 \geq 0$$

where N_1 and N_2 are the levels, in dBm, of the two broadcasting signals at the frequencies f_1 and f_2 respectively at the receiver input and fa is the receiving frequency.

A graphical presentation of this intermodulation threshold criterion is given in Figure 5.3.

This criterion is derived from measurements carried out on a number of receivers in current use.

Frequency separations between the wanted ILS localizer signal and the higher of the frequencies of the unwanted signals used in the measurements were of the order of 2 to 5 MHz.

The intermodulation response of some receivers has been reported to be substantially dependent also on the frequency separation (fa - f_1) and/or (108 MHz (band-edge) - f_1), whilst in some other cases only a small amount of frequency dependence has been observed. The intermodulation threshold criterion should therefore be applied with caution in cases where the frequency differences involved are very small.

5.3.2.2.3.2 Third-order intermodulation involving three unwanted signals

Third-order intermodulation products of the form

$$f_1 + f_2 - f_3 = fa \quad (f_1 > f_3;\ f_2 > f_3)$$

generated in ILS localizer receivers may cause unacceptable degradation of receiver performance if

$$N_1 + N_2 + N_3 + 73 \geq 0$$

where N_1, N_2 and N_3 are the levels, in dBm, of the three broadcasting signals at the frequencies f_1, f_2 and f_3, respectively, at the receiver input and fa is the receiving frequency.

This criterion is a theoretical extension for three unwanted signals and it assumes the same / maximum permitted / level of the intermodulation product as for the case of two unwanted signals.

Sufficient measurement results from which an empirical criterion could be derived for the three signal case, are not yet available.

5.3.2.2.4 Type B 2) (Desensitization of ILS localizer receivers)

An unacceptable degradation of ILS localizer receiver performance may be caused, due to desensitization, if the level of a broadcasting signal exceeds -20 dBm at the receiver input on a frequency near the band edge (108 MHz).

For broadcasting signal frequencies from 108 MHz to 106 MHz the threshold level increases linearly from -20 dBm to -5 dBm.

Sufficient measurement results are not available for frequencies below 106 MHz, where a constant threshold level of -5 dBm should therefore be assumed.

In order to determine a possible desensitization of ILS localizer receivers caused by more than one broadcasting signal, linear power summation of the signal levels may be used.

5.3.2.2.5 Inside ILS service area conflict

In situations where the broadcasting site is located within the ILS service area as specified at 5.3.2.1 above, no general rules can be stated since each situation will differ in respect of the interference threat, the point at which the interference is most serious and the pattern and density of air operations within the service area.

Study and assessment on a case-by-case basis by national aviation and broadcasting authorities concerned will be necessary to refine and evaluate the individual character of each conflict situation encountered. The material in Annex /_/ may be used as guidance in these studies.

In cases where an administration confirms that an assessment for a particular ILS made using the criteria in paragraph 5.3.2.2 is satisfactory to establish compatibility, the general rules may be applied in this case.

5.3.3 Protection of VOR

5.3.3.1 Protected volume and field strength

1) The protected volume of the VOR should be that volume promulgated in appropriate aeronautical documents as modified by radio horizon effects at the lower flight levels.

2) A minimum field strength of 90 μV/m (39 dB μV/m) as specified in ICAO Annex 10 over the volume in 1) above should be protected.

5.3.3.2 **Protection criteria**

Only a limited amount of bench test data is available to assess the protection criteria of VOR receivers from FM broadcasting signals. Present information suggests that the behaviour of VOR receivers is not dissimilar to that for ILS for the three interference modes studied, as in many cases the two systems have common antennas and common circuitry up to and including the second detector.

Further study is necessary to confirm and refine the present data. In the meantime first order estimates of compatibility may be made by the application of the criteria for ILS, including the treatment of conflicts inside the service area.

5.3.4 **Protection of VHF communications**

The following results have been derived from a limited series of bench testing on a few typical receivers and include information from CCIR Report 929.

5.3.4.1 Protected volume and field strength

1) **The protected volume for a VHF communication channel should be that volume promulgated in appropriate aeronautical documents as modified by radio horizon** effects at the lower flight levels.

2) The minimum specified field strength is 75 µV/m (37 dB µV/m) and this level should be protected throughout the service volume in 1) above. The protection criteria will, in most cases, ensure that inadvertent squelch operation will not take place.

5.3.4.2 Protection criteria

5.3.4.2.1 Type A 1)

For this interference mode a protection ratio of 17 dB at carrier coincidence has been derived from available test data. No data is available on the relaxation of this figure for frequency offsets.

5.3.4.2.2 Type A 2)

Due to the separation of 10 MHz between the lowest assignable VHF communications channel and the broadcasting band edge of 108 MHz, no account need be taken of this effect.

5.3.4.2.3 Type B 1)

Only third order intermodulation products of the form

$$2f_1 - f_2 = fa \quad (f_1 > f_2)$$

or

$$f_1 + f_2 - f_3 = fa$$

need to be considered, because no unacceptable degradation of receiver performance due to fifth and higher order intermodulation is likely to occur in practice. In the equations above f_1, f_2 and f_3 are the frequencies of the broadcasting signals and fa is the receiving frequency.

If none of the broadcasting signals exceeds at the receiver input a level of -10 dBm, it may be assumed that no unacceptable degradation of receiver performance will occur due to intermodulation on any VHF communications channel.

Using the conversion factor described in paragraph 5.3.5 and assuming free space propagation, this threshold level is reached at a distance of 2.8 km from a broadcasting station with an effective radiated power of 100 kW and a frequency between 100 MHz and 108 MHz.

[In cases where the threshold level of -10 dBm is exceeded, reference should be made to CCIR Report 929, where a method for assessing areas of interference is described.]

5.3.4.2.4 Type B 2) (Desensitization of VHF communications receivers)

An unacceptable degradation of VHF communications receiver performance may be caused, due to desensitization, if the level of a broadcasting signal exceeds -10 dBm at the receiver input.

In order to determine a possible desensitization caused by more than one broadcasting signal, linear power summation of the signal levels may be assumed.

Using the conversion factor described in paragraph 5.3.5 and assuming free space propagation, this threshold level is reached at a distance of 2.8 km from a broadcasting transmitter with an e.r.p. of 100 kW and a frequency between 100 MHz and 108 MHz. In the case of three co-sited broadcasting transmitters each with an e.r.p. of 100 kW and frequencies between 100 MHz and 108 MHz, the desensitization distance would be 4.8 km.

5.3.5 Conversion factors between signal levels at receiver input and corresponding field strength values

5.3.5.1 Unwanted signals between 87.5 MHz and 108 MHz

The levels of unwanted signals at the receiver's input may be converted to corresponding field strength values at the receiving antenna, or vice versa, by using the equations below.

5.3.5.1.1 ILS localizer and VOR receivers

$$E(dB\mu V/m) = N(dBm) + 121 + (108 - f(MHz))$$

for frequencies $f < 108$ MHz.

This equation is based on the assumption of an isotropic receiving antenna and a frequency dependent attenuation of 3 dB + 1 dB/MHz below 108 MHz, due mainly to antenna characteristics.

5.3.5.1.2 VHF communications receivers

$$E(dB\mu V/m) = N(dBm) + 128$$

for $100 \text{ MHz} \leq f \leq 108 \text{ MHz}$, or

$$E(dB\mu V/m) = N(dBm) + 128 + 2(100 - f(MHz))$$

for $87.5 \text{ MHz} \leq f < 100 \text{ MHz}$.

These equations are based on the assumption of an isotropic receiving antenna, a constant attenuation of 10 dB for frequencies between 100 MHz and 108 MHz and a frequency dependent attenuation of 10 dB + 2 dB/MHz for frequencies below 100 MHz, due mainly to antenna characteristics.

5.3.5.2 Unwanted signals between 108 MHz and 137 MHz

The level of a signal at the receiver input may be converted to the corresponding field strength value, or vice versa, by using the equation :

$$E(dB\mu V/m) = N(dBm) + 118$$

for $108 \text{ MHz} < f < 137 \text{ MHz}$.

Although the conversion factor would theoretically give an increase from about 118 dB at 108 MHz to about 120 dB at 137 MHz, a constant factor of 118 dB is considered sufficient for practical purposes.

This conversion factor assumes an isotropic receiving antenna and a lossless feeder.

5.3.6 Propagation conditions

Free space propagation conditions*) may be assumed for the study of compatibility with the aeronautical service. Calculations may be based on line-of-sight signals only. In certain situations Figure 2.10 in Chapter 2 may be applied.

In arriving at the above criteria the interfering signals are assumed to have the same polarization (veritcal or horizontal) as the navigation system. If, instead, the broadcasting station has a different polarization, there should in theory be some reduction of received interfering signal levels, but provisionally it is proposed that no allowance is made. If an equal power in the other polarization plane is added at the transmitter (e.g. circular polarization) an allowance should be made by adding 1 dB to the effective radiated power of the polarization component in the same plane as that used by the navigation system.

5.3.7 Implications to the broadcasting service of the need to provide sufficient compatibility with the aeronautical radionavigation service in the bands 108 to 118 MHz

5.3.7.1 General

In order to meet the protection criteria which are essential to protect the aeronautical radionavigation service from the mechanisms of interference identified in section 5.3.1 of this chapter, there are four principle means by which the broadcasting service could contribute towards a practical solution to the compatibility problem. These are elaborated upon in sections 5.3.7.2 to 5.3.7.5. There is also the possibility that the general aeronautical requirements can be relaxed in specific cases. Further improvements in the characteristics of airborne installations are desirable. These aspects are dealt with in section 5.3.8.

5.3.7.2 Limiting the effective radiated power of the broadcasting station

For all modes of interference a reduction in interfering power can be achieved by reducing the broadcasting station power. However, since the broadcasting power is set by the coverage requirement, such a reduction would directly reduce the coverage or the quality of reception within the same coverage area.

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*) For further information, see CCIR Recommendation 525.

5.3.7.3 Set minimum separation distance between the broadcasting transmitter site and the aeronautical service volume

This is the most effective way of gaining sufficient attenuation of the broadcasting signal to meet the aeronautical service protection criteria (see Annex [A].

In many instances there will be little or no choice in the location of the broadcasting transmitting station, e.g. airports located near major cities. For economic reasons the use of existing broadcasting transmitting station sites for new services may also be essential. Thus, in many cases, distance is not a variable which can simply be set to suit the compatibility criteria.

5.3.7.4 Improve filtering of broadcasting transmitters

Spurious emissions from broadcasting transmitters must meet the requirements of the Radio Regulations, i.e. Appendix 8. An important case is intermodulation interference generated at broadcasting transmitter sites which can be reduced by fitting improved combining filters and paying careful engineering attention to all possible sources of non-linearity following the output stages of the transmitters. Through such measures it is technically feasible to reduce the radiated power of the third order intermodulation products to -85 dB relative to the effective radiated power. It is also technically feasible to fit improved filters on the output of transmitters to improve suppression of other spurious emissions to the order of -90 dB. In view of the additional cost, these values should only be applied in those situations where problems of compatibility with the aeronautical service demand it. There may be a need in some cases for an even greater suppression of spurious emissions from the broadcasting stations than the values indicated above.

5.3.7.5 Arrange broadcasting service frequency plan to minimize interference to the aeronautical radionavigation service

There are two ways in which the placement of broadcasting assignments within the plan can add to, or reduce, the burden of solving compatibility problems with the aeronautical radionavigation service. The first is how far below 108 MHz the broadcasting assignment is placed. The second is the particular combination of carriers chosen. This latter factor is pertinent to the two interference mechanisms where the generation of intermodulation products is the cause of the interference.

5.3.7.5.1 Frequency separation between the broadcasting service assignment and the aeronautical radionavigation service assignment

The aeronautical radionavigation service airborne receiving equipment has some rejection of out-of-band signals due mainly to antenna characteristics, and may be assumed to provide 3 dB plus one dB for each MHz down from 108 MHz. This rejection characteristic may be applied to all the type B modes of interference.

The interference due to out-of-band emissions from a FM broadcasting station is reduced the further a broadcasting assignment is placed below 108 MHz.

5.3.7.5.2 Relationship between two or more broadcasting carriers in the same service area of the aeronautical radionavigation station

By programming the mathematical relationship for the intermodulation frequencies into a computer, it is possible to predict frequencies on which the most significant of these interference frequencies (i.e. third order products) will fall. This would apply to products radiated from the transmitter site or produced in the aeronautical receiver. Thus, in theory, it is feasible to choose the assignments at a particular multi-channel broadcasting transmitter site or combination of nearby sites such that all the intermodulation interference frequencies do not coincide with any assignments of nearby aeronautical radionavigation systems. However, this implies that spurious emissions from the broadcasting service will fall in the unused portions of the aeronautical band in that specific location. From a purely broadcasting viewpoint unless this is possible, it would impose severe constraints on broadcasting assignments and hence militate against the efficient use of the spectrum in the band 87.5 to 108 MHz.

5.3.7.5.3 Practical limitations in arranging the broadcasting service frequency plan to minimize interference to the aeronautical radionavigation service

On the broadcasting side, the task of arranging a set of compatible assignments within the broadcasting service will be very difficult. Imposing constraints in order to meet the aeronautical radionavigation service protection requirements will add to the complexity of the task and the time needed to make a plan. Indeed it would be a quite formidable task for information on all ILS and VOR systems to be submitted to the Conference and be taken comprehensively into account in the planning process. On the aeronautical radionavigation service side, there would naturally be a preference to preserve the efficiency of use of their spectrum, i.e. for the protection criteria to be applied across the whole band rather than the actual aeronautical assignment which may exist at present. In particular, if harmful interference resulting from implementing a broadcasting plan falls in the band 108 to 118 MHz between existing aeronautical channels, it will inhibit the possibility of replanning the aeronautical band and of being able to provide new assignments to meet future growth.

From the foregoing, it can be seen that it is highly desirable to limit to the absolute minimum the number of compatibility problems with the aeronautical radionavigation service for which the Regional Broadcasting Conference is asked to find special frequency planning solutions.

5.3.8 Factors within the aeronautical radionavigation and aeronautical mobile (R) services which may facilitate compatibility

There are no general measures in the immediate future within the aeronautical service which would ease the compatibility problem, although in the longer term it is in the interest of both the broadcasting and the aeronautical services for the aeronautical service airborne receivers to be significantly improved in respect of interference immunity.

Meanwhile, in each individual situation, factors may exist which could provide provide an easement of the situation. These factors include :

a) terrain effects, e.g. shielding,

b) higher signal levels in particular parts of the service volume,

c) typical operational heights in use,

d) acceptable constraints on a part of the aeronautical band which is not in use and need not be protected, in accordance with the full criteria, in a particular individual location,

e) change of aeronautical frequency assignments at a specific location. (This is unlikely to be possible in some countries due to the tight constraints within the aeronautical band.)

f) radiation pattern of the broadcasting station in the direction of the aeronautical service volume.

Where such easements do appear feasible, an acceptable assurance of aircraft safety may require ground and perhaps airborne measurements of signal levels under appropriate conditions. For all such situations a case by case examination by an administration or administrations is necessary. Consideration also needs to be given by administrations to the problem of blocking and desensitization of airborne receivers when aircraft fly close to broadcasting transmitting station sites. Within a limited volume around such a site it is impossible to meet the necessary protection criteria. One solution for the communications case might be for such zones to be published and for aircraft to avoid them or at least be made aware of the interference situation within such zones. However, again case by case treatment by administrations, taking the operational situation fully into account, is the only way to determine whether this approach is consistent with the very important air safety considerations.

5.3.9 Recommendations [5.3.9.1 to 5.3.9.9 are subject to confirmation by Committee 5]

5.3.9.1 Prior to the Second Session of the Regional Broadcasting Conference, administrations should calculate and draw on a suitable map an interference contour around each proposed VHF broadcasting station site according to the values set down in Table A.

TABLE A

Coordination zone around a broadcasting station

e.r.p. kW	≥ 100	50	10	1
Distance km	125	125	125	40

These values are based on the assumptions that the broadcasting station only just meets the limits of spurious emissions as set down in Appendix 8 of the Radio Regulations, a broadcasting antenna gain of 10 dB, a minimum field strength to be protected of 32 dB (μV/m) and a protection ratio of 17 dB.

Where this contour cuts an ILS or VOR service volume as promulgated in the appropriate aeronautical publications, a detailed compatibility analysis shall be undertaken. In many cases, this may be achieved through existing national coordination machinery but, in some cases, the joint analysis will need to take place between administrations of neighbouring countries. Where the interference contours from two or more broadcasting stations cut the same aeronautical service volume, then they will **need to be treated together for the mode of interference arising from intermodulation generated in the aeronautical receiver itself.**

5.3.9.2 The first stage in the analysis should be to determine whether, for each mode of interference set out in section 5.3.1 and by applying the measures set out in sections 5.3.7.2 to 5.3.7.4, a compatibility exists between the two services. For example by applying the values set out in section 5.3.7.4 the coordination zone is reduced to the values set down in Table B.

TABLE B

Coordination zone around a broadcasting station
with 85 dB rejection of spurious emissions

e.r.p. kw	200	150	100	50	10	1
distance km	31	27	22	15.5	7.0	2.2

Where such compatibility exists, planning of the broadcast frequency assignments can proceed without constraints imposed by the need to protect the aeronautical services.

5.3.9.3 **For those countries having a large number of both broadcasting stations and aeronautical radionavigation stations, the application of the methods set out in** 5.3.9.1 and 5.3.9.2 by manual means will constitute a huge workload. Computer methods can **contribute significantly to reducing the task and rapidly identifying the conflict situations. Where such computer methods are used it would be of greatest value if the results could identify :**

1) **those broadcasting stations which do not affect the aeronautical service in any way;**

2) **those which require additional filtering and identifying the necessary degree of suppression of spurious emissions;**

3) **those requiring frequency planning solutions.**

5.3.9.4 **In cases where incompatibility** still can not be resolved, a more detailed **case by case study should be undertaken applying the factors set out in section** 5.3.8. **By this means, it may be possible to further eliminate problem cases.**

5.3.9.5 **For each individual case still without a solution, the administrations should determine, taking account of future expansion of the aeronautical service** over the **intended life of the broadcasting plan, whether protection in the service volume is required over a limited number of channels or for the entire band 108** to 118 MHz. In **the first case the administration should then calculate whether the particular measures set out in section** 5.3.7.5 could provide a solution.

5.3.9.6 **Where compatibility is clearly only feasible through broadcasting frequency planning solutions, the administration, when submitting its requirements, shall indicate in a supplementary note to the IFRB what particular frequency planning constraints are needed in order to ensure compatibility with the aeronautical service for each individual case. These supplementary constraints shall be deemed as requirements** to be satisfied in planning during the Conference to the extent feasible.

5.3.9.7 **During the broadcasting service planning there will be a need for a computer analysis facility specifically intended to identify any broadcasting assignments which do not meet the compatibility requirements for the aeronautical radionavigation stations** indicated by administrations to the IFRB under 5.3.9.6.

5.3.9.8 If, after following the procedures set out in 5.3.9.1 to 5.3.9.6 above, a solution is still not arrived at, then the only other possible solution may be to choose another site for the broadcasting station. It is conceivable in some situations that this may not be feasible; / in which case such a broadcasting station assignment will be non-implementable. // in this case such an assignment may only appear in the Plan if it is subject to appropriate reservations. /

5.3.9.9 The Second Session of the Regional Broadcasting Conference, when establishing the regulatory procedures whereby the broadcasting plan can be subsequently modified, will need to include steps to ensure that the necessary degree of protection is afforded to the aeronautical service in the band 108 to 137 MHz.

5.3.9.10 The values for the compatibility criteria established at this Conference are the least stringent possible for planning purposes with present equipment in use in the broadcasting and aeronautical services. Even so, in some areas they are likely to unduly inhibit the development of both services and improvements in certain characteristics of equipment in these services would ease the planning constraints. The various interference modes lead broadly to equal constraints (see Annex [B]). Therefore in order to progressively ease the compatibility problems, improvement generally of the same order are needed for both services. But where interference arises from two broadcasting transmitter sites (type B interference), then improvements in the performance of the aeronautical service airborne equipment alone would ease the compatibility constraints. (For additional information see Annex [C]).

In order to examine this prospect, urgent studies are requested of the CCIR. These studies are set out in Recommendations Nos. COM 4/3 and COM 4/4. If the CCIR can quantify the improvements possible in the equipment of both services, then, subject to study by administrations on the economic and operational implications, the second part of the Conference should take these into account in planning. The Conference will also need to take into account a suitable time period for these improvements in equipment performance to be brought about also taking into account the practical issues involved and the important safety considerations in respect of the aeronautical services. A concept would then arise that certain broadcasting assignments having compatibility constraints could be planned but not implemented until a date set by the second part of the Conference for the new compatibility criteria to come into force.

5.3.9.11 The attention of ICAO should be drawn to the pressing need to promote a programme of improving the out-of-band rejection of airborne receivers, in particular, rejection of signals in the broadcasting service band below 108 MHz.

5.3.10 Conclusion

A difficult and complex problem arises in attempting to plan the introduction of the broadcasting service, which in general employs high radiated power, in a band adjacent in the radio frequency spectrum to a band used by a service which uses much lower powers and features sensitive receiving systems for important safety of life purposes. The problem is exacerbated by the fact that, in order to meet the coverage requirements, the broadcasting transmitting stations are often near and in some cases within the service volume of the aeronautical service systems. The full severity of the problem will not become clear until administrations have undertaken the case by case studies that have been recommended in section 9. At this stage it may be tentatively concluded that full exploitation of the new spectrum allocated by WARC 1979 to the broadcasting service may be constrained in some areas by the need to provide the essential protection to the aeronautical safety services. Significant alleviation of these constraints may be expected only when improvements in the relevant characteristics of the equipment of the aeronautical and broadcasting services can be effected.

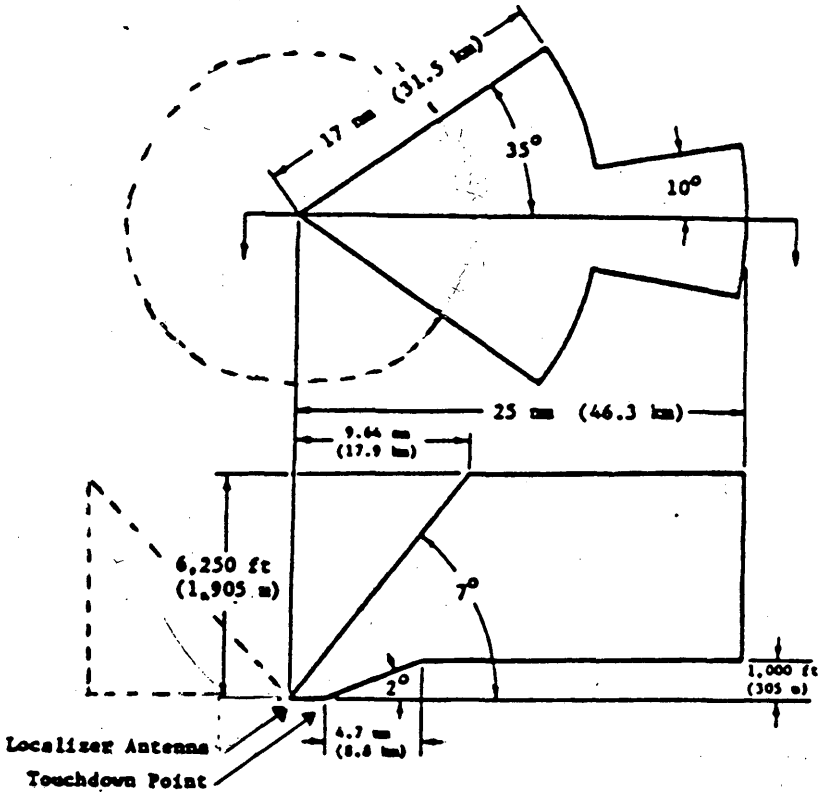


Figure 5.1 - ILS localizer protection volume

Note : Limits of ILS back beam protection volume which may have to be considered; in this case, the range and height are indicated.

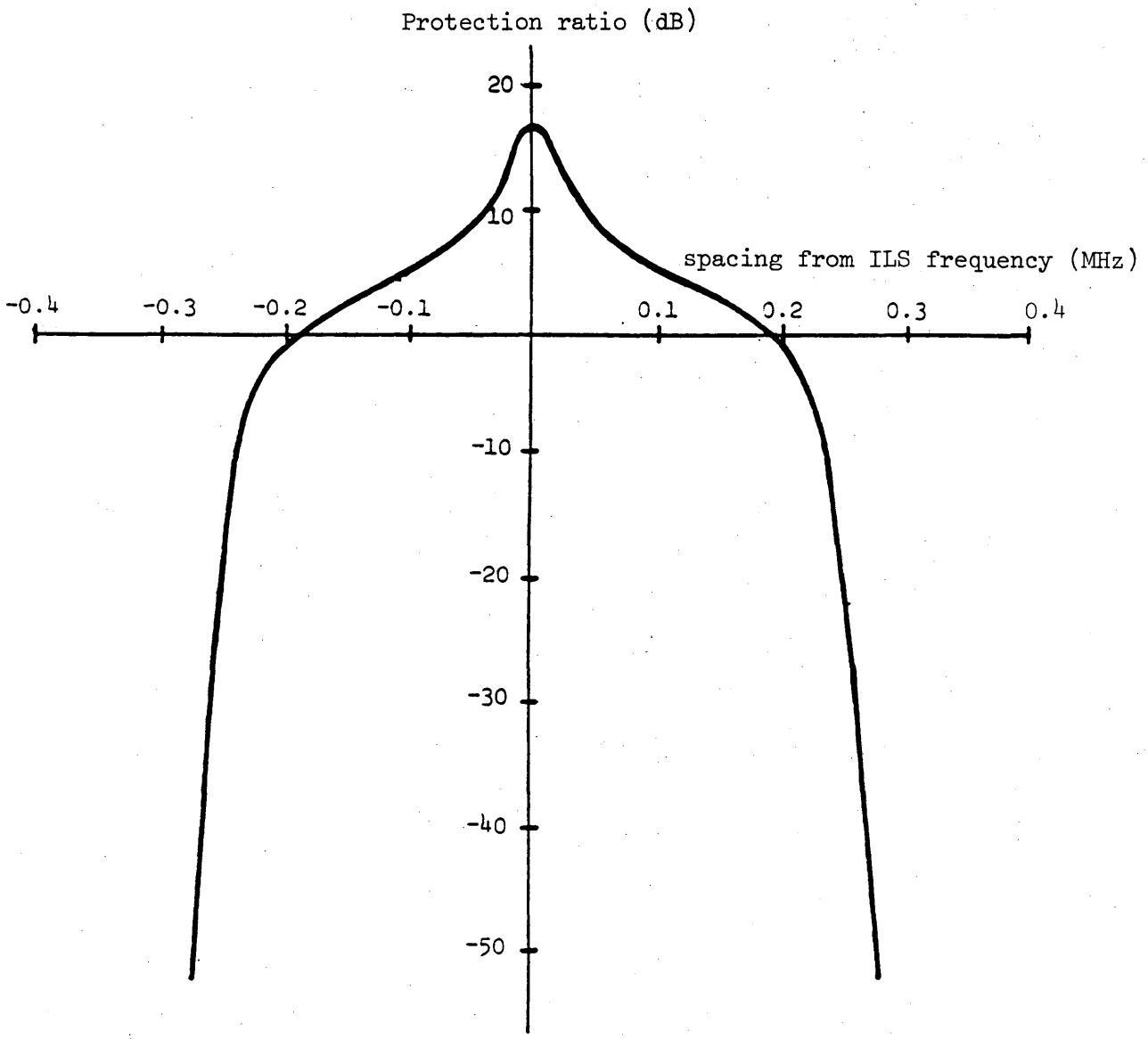


Figure 5.2 - Protection ratio for Type A 1) interference

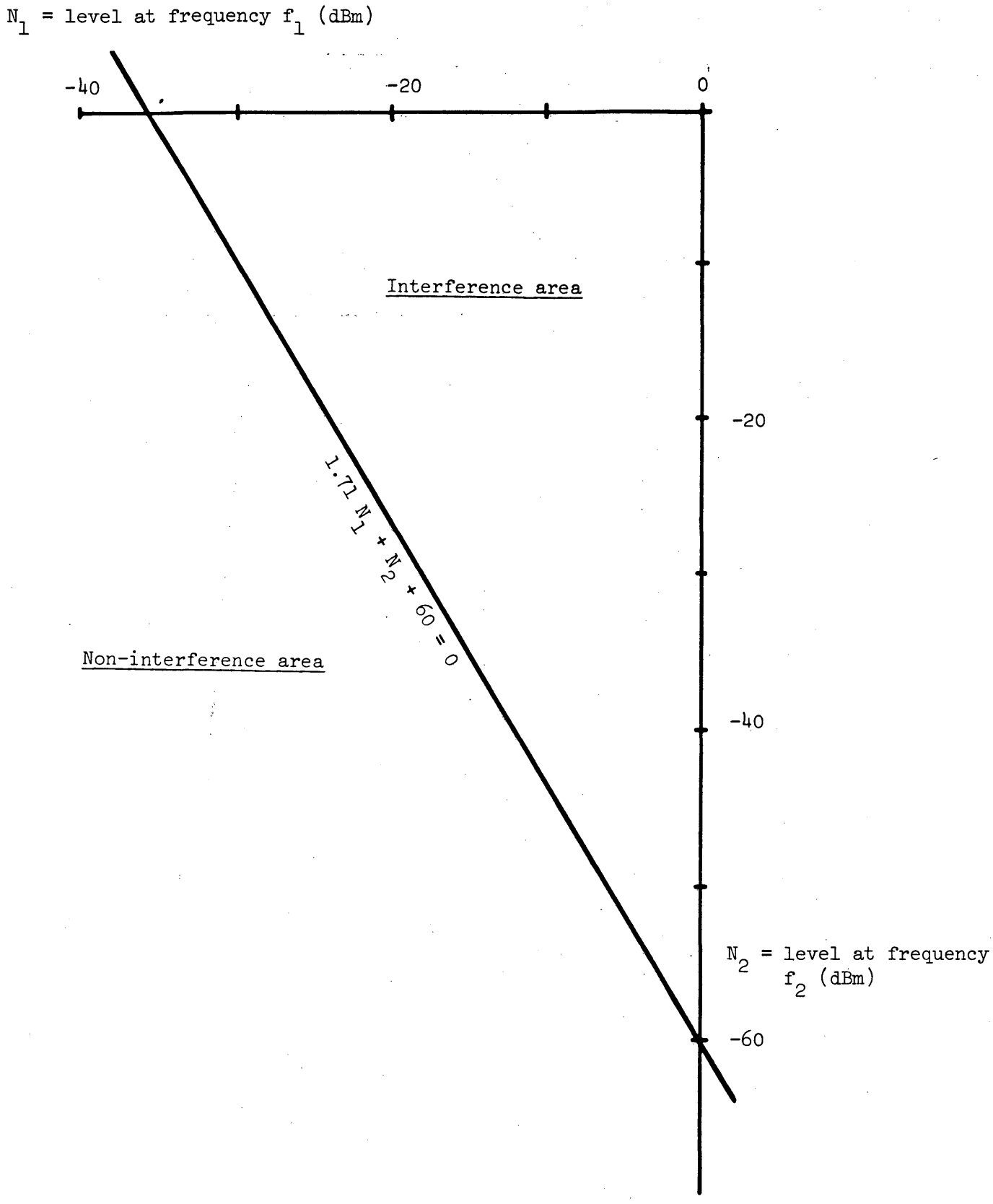


Figure 5.3 - Intermodulation threshold criterion
$f_1 > f_2$

Annex A / Chapter 5, 5.3.2.2.5 /

Guidelines for examination of conflict situations for the case of broadcast stations within the service area of ILS

For these situations (paragraph 5.3.2.2.5) it appears possible to state basic guidelines which may be used and added to as necessary in particular cases where the conflict contains features with a more significant potential to interfere with air operations.

These basic guidelines are :

1) a minimum protection figure as defined in paragraph 5.3.2.2 enhanced where necessary by a further margin to take account of the broadcast station proximity to the ILS course sector;

2) special measures may be necessary where the worst effect of the predicted interference is experienced in the sector from 6 nautical miles to the touch-down point and along the runway, and in the case of back beam operation out to a similar point in the reverse direction. The category, or expected future category of ILS operation is an important factor in deciding whether the broadcast station is acceptable. Further protection will be necessary in most instances particularly in the case of interference due to Mode A 1);

3) the higher figure of 100 microvolts per metre for the wanted field strength as specified in ICAO Annex 10 may be used as the basis where it has been established and confirmed under all operational conditions;

4) in respect of air operations particular points to be considered are :

   a) the intersection of interference areas with the ILS course sector and their effect on aircraft within this sector,

   b) mandatory approach procedures, radar vectoring paths and areas of higher density of use,

   [c) the volume within which a harmful interference may be experienced in relation to the effect of the interference on automatically coupled systems;]

5) where it can assist resolution, and to refine the assessment, account may be taken of secondary technical features of which the following are some :

a) vertical radiation diagram of the broadcasting antenna,

b) terrain effects,

c) higher nominal ILS signals in particular parts of the service volume as confirmed by measurement.

Annex B /Chapter 5, 5.3.7.3 and 5.3.9.10/

Minimum distances for principal modes of interference based on criteria set out in sections 5.3.2 to 5.3.7 and with 85 dB rejection of spurious emissions at the broadcasting stations

a) Third-order intermodulation products radiated by transmitter assuming 85 dB rejection of spurious emisssions

Transmitter e.r.p. (kW)	Distance (km) for :	
	ILS	VOR
100	22	10
50	15.5	7
10	7.0	3.2
1	2.2	1
Protected field strength, dB(μV/m)	32	39
Protection ratio, dB	17	17

b) Intermodulation in receiver : equal field strengths
(applies to $2f_1 - f_2$ or $f_1 + f_2 - f_3$ for examples given)

MHz, f_1, f_2, f_3	108, 105, 102		102, 98, 90	
System	ILS	VOR	ILS	VOR
Permitted field strength dB(μV/m)	100	102	108	110
e.r.p. (kW)	Distance (km)			
100	22	18	9	7.0
50	15.5	13	6.2	5.0
10	7.0	5.6	2.8	2.2
1	2.2	1.8	0.9	0.7

c) Desensitization for ILS or VOR

Frequency, MHz	108	107	106	100
Permitted power at receiver input (dBm)	-20	-12.5	-5	-5
Permitted field strength dB(μV/m)	101	109.5	118	124
e.r.p (kW)	Distance			
100	20	7.4	2.8	1.4
50	14	5.2	2.0	1.0
10	6	2.2	0.9	0.45
1	2	0.7	0.3	0.14

Annex C /Chapter 5, 5.3.9.10_7

Improvements in equipment

Interference to airborne equipment from Type "A" mechanisms cannot practically be reduced by improvements in aeronautical receivers. No benefit can therefore be assumed in planning.

Interference effects due to Type "B" mechanisms could be reduced by improvement in the airborne antenna and receiver design particularly in respect of front end rejection characteristics. Factors such as overall cost of replacement, the performance environment within the aircraft and implementation time scale must be taken into account in any improvement programme. Extended time scales for a sufficient re-equipment to assure new parameters in planning are likely because of economic and operational factors.

CCIR Report 929 (paragraphs 5.3.4.2.1 to 5.3.4.2.3) discusses current equipment, expected improvements and future system characteristics; studies are continuing within the CCIR on this subject.

The broadcasting authorities should make efforts to reduce the level of spurious emissions in the band 108 to 137 MHz (particularly third-order intermodulation products) from broadcasting transmitters. A level significantly lower than that required in Appendix 8 of the Radio Regulations would considerably reduce the problem of interference.

Aeronautical authorities should make efforts to improve the out-of-band rejection characteristics of airborne receiving equipment in the band 87.5 to 108 MHz. National and international organizations concerned with avionics equipment should cooperate in promoting a programme to achieve this with a view to the earliest practical implementation. However this could take considerable time.

RECOMMENDATION No. COM 4/2

Relating to the need for certain propagation studies
relevant to the use of band 87.5 to 108 MHz
in the African continent

The Regional Administrative Conference for FM Sound Broadcasting in the VHF Band (Region 1 and certain countries concerned in Region 3) (First Session, Geneva, 1982),

considering

a) that the World Administrative Radio Conference, Geneva, 1979, in Resolution No. 510 requested the CCIR to study, as a matter of urgency, the necessary technical bases required for this present Conference;

b) that the CCIR in response provided a report on such necessary technical bases that included, inter alia, a chapter on propagation, and that this chapter has been adopted subject to the necessity for obtaining further information on the subjects referred to hereunder;

c) that the World Administrative Radio Conference, Geneva, 1979, likewise adopted Resolution 5 and Recommendation 68 which deal respectively with technical cooperation with the developing countries in the study of propagation in tropical areas, and with studies and prediction of radio propagation and radio noise;

d) that the XVth Plenary Assembly of the CCIR, Geneva, 1982, adopted Resolution 79 dealing with the need, inter alia, for scientists and engineers from developing countries to be encouraged to carry out studies at first hand on propagation topics;

e) that further information on propagation in Africa, in particular relating to ducting propagation in all areas thought to be particularly subject to this phenomenon is considered to be necessary;

f) that verification is likewise necessary, relative to Africa, of the data indicating that radio propagation characteristics over land and over sea are identical under certain circumstances,

requests the CCIR

1. to undertake, as a matter of urgency, all possible propagation and radiometeorological measurements that can be made in the time available in and around the African continent;

2. to continue studying the relationship between propagation over land and over sea for 50%, 10% and 1% of the time;

3. to prepare a further report, based on such measurements and on these studies, in good time for the Second Session of the Conference,

recommends that African Administrations collaborate with the CCIR, as a matter of urgency and within the limits of their possibilities, by sending it contributions relating to the aforementioned activities,

requests the Second Session of the Conference to reconsider the relevant paragraphs and figures of the Report of the present First Session in the light of this further report of the CCIR and also to consider, if it sees fit, the production, for planning purposes, of separate propagation curves for African conditions,

and invites the regional telecommunication and broadcasting organizations in Africa, as a matter or urgency, within the limit of possibilities to participate in the above-mentioned studies.

RECOMMENDATION No. COM 4/3

Relating to the immunity to interference of airborne receiving equipment used by the aeronautical radionavigation service operating in the frequency band 108 to 118 MHz from the FM broadcasting service operating in the frequency band 87.5 to 108 MHz

The First Session of the Regional Administrative Conference for FM Sound Broadcasting in the VHF Band (Region 1 and certain countries concerned in Region 3) (First Session, Geneva, 1982),

considering

a) Resolution No. 510, Recommendations Nos. 66 and 704 of the WARC-79 and provisions of Nos. 300 and 311 of the Radio Regulations;

b) that this Conference has established some criteria for the protection of the aeronautical services but these would appear to constrain in some areas of Region 1 the full exploitation of the frequency band 100 to 108 MHz;

c) that in the other ITU Regions the potential danger of interference due to the lack of adequate immunity standards for the aeronautical services has been reported,

noting the practical equipment design problems and operational constraints within the aeronautical services,

recommends that the CCIR

1. studies as a matter of urgency :

1.1 with the retention of existing airborne receiving equipment, by how much can the value of immunity to FM sound broadcasting interference of that equipment be improved over those values established at this Conference;

1.2 by the replacement of existing airborne equipment by new better performance airborne equipment, by how much the value of immunity to FM sound broadcasting interference of that equipment can be improved over those values established at this Conference;

2. finalizes these studies;

2.1 contained in paragraph 1.1 by /April 1983/;

2.2 contained in paragraph 1.2 at the earliest practical date;

3. report at short intervals to administrations the progress of their studies,

invites

1. the Secretary-General of the ITU to bring this Recommendation to the attention of ICAO, and to invite their collaboration in the studies;

2. administrations to participate actively in these studies as a matter of priority and to provide the CCIR with expert guidance on this matter.

RECOMMENDATION No. COM 4/4

Relating to the level of spurious emissions falling in the frequency bands allocated to the aeronautical services between 108 and 137 MHz from FM broadcasting stations operating in the frequency band 87.5 to 108 MHz

The Regional Administrative Conference for FM Sound Broadcasting in the VHF Band (Region 1 and certain countries concerned in Region 3) (First Session, Geneva, 1982),

considering

a) Resolution No. 510, Recommendation No. 66, Recommendation No. 704 of the WARC 1979 and provision No. 301 of the Radio Regulations;

b) that spurious emissions in accordance with the limits in the Radio Regulations (Appendix 8) will give considerable compatibility problems between the FM broadcasting service (87.5 to 108 MHz) and the aeronautical services (108 to 137 MHz);

c) that no practicable equipment measures can be taken by the aeronautical services involved (which are safety services) to reduce these compatibility problems;

d) that this Conference has established some criteria for the protection of the aeronautical services involved but these would appear to constrain in some areas in Region 1 full exploitation of the frequency band 100 to 108 MHz by the broadcasting service,

recommends that the CCIR

1. carries out studies in order to determine the maximum suppression of spurious emissions, particularly intermodulation products, from the broadcasting transmitting stations into the aeronautical frequency bands between 108 and 137 MHz which can be maintained continuously in all operational conditions of the broadcasting service;

2. finalizes these studies by [April 1983],

invites

administrations in Region 1 and certain administrations in Region 3 to participate actively in these studies and to provide the CCIR with expert guidance on this matter.

INTERNATIONAL TELECOMMUNICATION UNION

REGIONAL BROADCASTING CONFERENCE

(FIRST SESSION) GENEVA, 1982

Document No. 110-E
9 September 1982
Original : English/
French/
Spanish

PLENARY MEETING

Third Report of Committee 5

The third series of the texts adopted by Committee 5 has been submitted to the Editorial Comittee for subsequent submission to the Plenary Meeting (see Document No. 111).

These texts were adopted unanimously.

K. ARASTEH
Chairman of Committee 5

UNION INTERNATIONALE DES TELECOMMUNICATIONS

CONFERENCE REGIONALE DE RADIODIFFUSION

(PREMIERE SESSION) GENEVE, 1982

Corrigendum 1 to
Document No. 111-E/F/S

COMMITTEE 6

Third series of texts from Committee 5
to the Editorial Committee

Replace page 10, Appendix 2 by the attached new page.

Ce corrigendum concerne seulement le texte anglais

El corrigendum solo concierne al texto inglés

Annex : 1

INTERNATIONAL TELECOMMUNICATION UNION

REGIONAL BROADCASTING CONFERENCE

(FIRST SESSION) GENEVA, 1982

Document No. 111-E
9 September 1982
Original : English/
French/
Spanish

COMMITTEE 6

Third series of texts from Committee 5 to the Editorial Committee

The texts mentioned in Document No. 110 are hereby submitted to the Editorial Committee.

K. ARASTEH
Chairman of Committee 5

Annex : 1

A N N E X

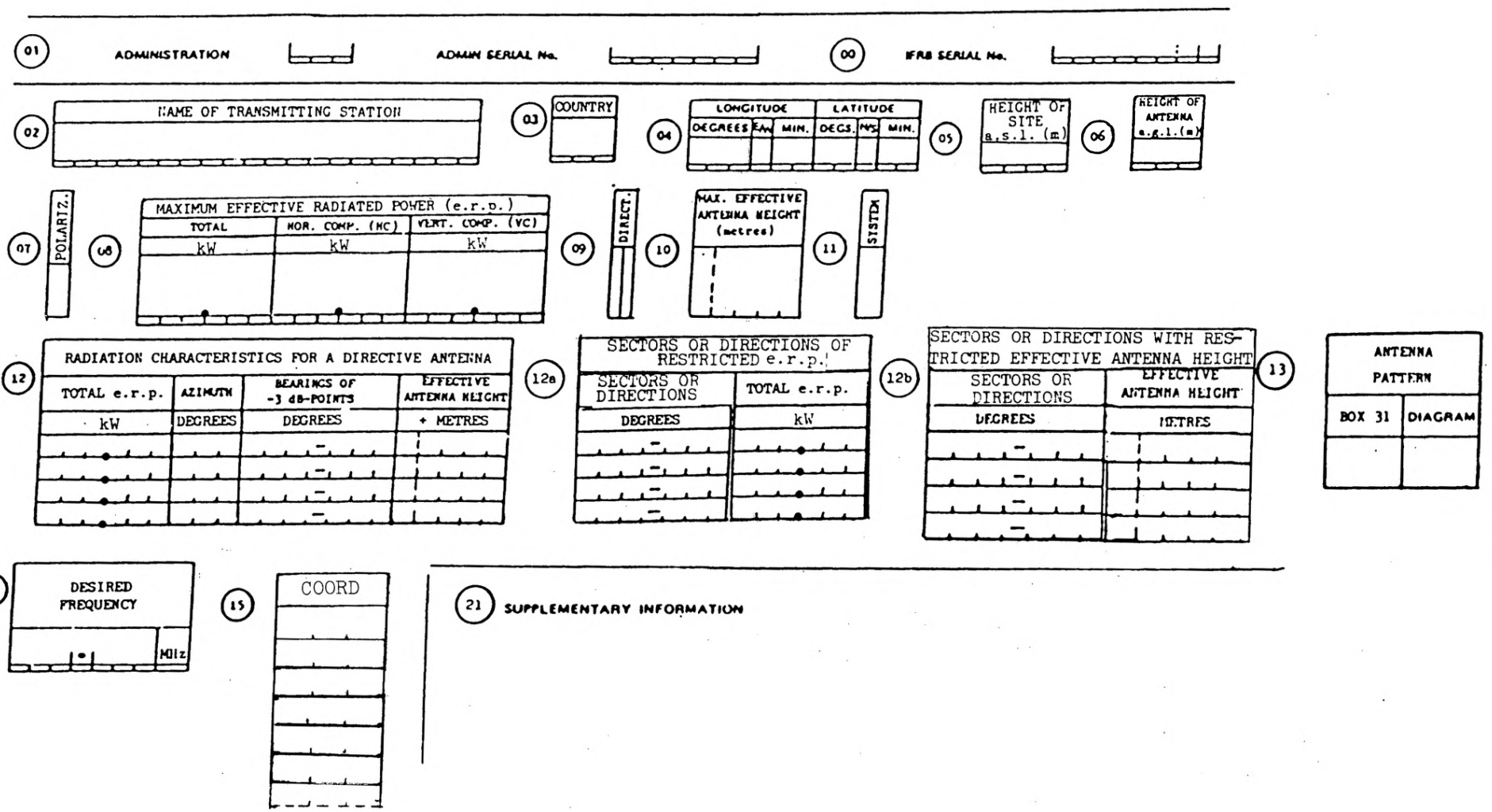
FORM FOR USE IN SUBMITTING REQUIREMENTS TO THE IFRB

Form in which administrations should submit their requirements for frequency assignments in the band 87.5 - 108 MHz

REGIONAL ADMINISTRATIVE RADIO CONFERENCE FOR VHF SOUND BROADCASTING IN THE BAND 87.5 - 108 MHz

SECOND SESSION (31 OCTOBER - 12 DECEMBER 1984)

FORM FOR SUBMISSION OF A FREQUENCY ASSIGNMENT REQUIREMENT TO THE IFRB



INSTRUCTIONS FOR FILLING OUT THE FORM

The instructions for filling out the form refer to boxes 01 to 15, box 21, box 31 and box 31a (if required). Box 00 is for the use of the IFRB and should be left blank. Provision has been made on the form for an administration to enter its reference number in the box entitled ADMIN SERIAL No.

Leading zeroes should be given when appropriate in boxes 04, 05, 06, 08, 10, 12 and 14.

Box No.

00 IFRB SERIAL No.

For IFRB use only.

01 Administration

Indicate the country symbol designating the administration submitting the requirement of the frequency assignment. Use a symbol from Table No. 1 of the Preface to the International Frequency List.

02 Name of transmitting station

Give the name by which the station is (or will be) known.

Limit the number of letters and numerals to a total of 20.

Insert each letter or number in a separate space, starting from the first space on the left. In the case of compound names, one space should be left blank between each part of the name.

03 Country

Indicate, by symbol, the country or geographical area in which the station is (or will be) located. Use a symbol from Table No. 1 of the Preface to the International Frequency List.

04 Longitude and latitude of the antenna site

Give the geographical coordinates, in degrees and minutes of the site of the transmitting antenna; seconds should be rounded to the nearest minute. From the symbols E or W, N or S, indicate those which apply.

Box No.

05 Height of site above sea level (a.s.l.)

Indicate the height (in metres) above sea level of the site of the transmitting antenna.

06 Height of the antenna above ground level (a.g.l.)

Indicate the height (in metres) of the geometrical centre of the antenna above ground level.

07 Polarization

Indicate the polarization of radiation by using the following symbols :

H Horizontal

V Vertical

M Mixed

If different linear polarizations are used in different azimuthal directions, Appendix 2 (box 31a) may be used.

08 Maximum effective radiated power (e.r.p.)

- Sub-box "total" :

  In the case of horizontal or vertical polarization indicate the maximum effective radiated power, in kW.

  In the case of mixed polarization this value is the sum of the horizontally and vertically polarized components.

- Sub-box "horizontal component (HC)"

  In the case of mixed polarization indicate the maximum effective radiated power of the horizontally polarized component, in kW.

- Sub-box "vertical component (VC)"

  In the case of mixed polarization indicate the maximum effective radiated power of the vertically polarized component, in kW.

09 Directivity of radiation

Indicate ND in the case of omnidirectional radiation and D in the case of directional radiation.

Box No.

10 Maximum effective antenna height

Indicate the maximum value of effective height of the transmitting antenna, in metres, irrespective of angle in azimuth. This height is defined as the maximum height of the centre of the antenna over the average level of the ground between distances of 3 and 15 km from the transmitter. The minus sign should be indicated when the value of the effective antenna height arrived at in the above manner is negative.

11 System

Indicate the system of transmission by using the following symbols :

1 Monophonic (maximum frequency deviation ±75 kHz)

2 Monophonic (maximum frequency deviation ±50 kHz)

3 Stereophonic, polar modulation system (maximum frequency deviation ±50 kHz)

4 Stereophonic, pilot-tone system (maximum frequency deviation ±75 kHz)

5 Stereophonic, pilot-tone system (maximum frequency deviation ±50 kHz)

12 Radiation characteristics for a directive antenna

For each of the maxima of radiation, indicate :

- total effective radiated power, in kW;
- azimuth in degrees, clockwise from True North;
- the azimuths of the -3 dB-points anticlockwise and clockwise respectively from the azimuth of the maximum;
- effective antenna height in metres in the indicated azimuth.

12a Sectors or directions of restricted e.r.p.

If there exists restriction of e.r.p. in certain sectors, indicate the maximum total e.r.p. in these sectors in kW. If the restrictions relate to one direction only, use the left part of the first column.

12b Sectors with restricted effective antenna height

If there exist restrictions of the effective antenna height in certain sectors, indicate the directions concerned and the maximum values within these sectors.

If the restriction relates to one direction only, use the left part of the first column.

Box No.

13 Antenna pattern

Indicate by an X in the appropriate box when either :

- the information required in box 31 has been provided;

- the antenna radiation diagram, in the horizontal plane, has been furnished.

14 Desired frequency

Indicate, if appropriate, the frequency desired for assignment. If there is no preference for a specified frequency, boxes 14 and 15 should be left blank, refer to Chapter 6 (Planning methods) of the Report of the First Session of the Conference.

15 Coordination of the requirement and status of the related assignment

When the requirement with the characteristics contained in the form has been successfully coordinated, with a view to submission, insert the country symbols in the "COORD" box. When the coordination concerns more than five countries, insert a symbol in the "COORD" box and indicate the list of countries in a separate annex.

When the requirement corresponds to an assignment which has been notified to the IFRB in accordance with the Radio Regulations or which is in conformity with the 1961 Stockholm Agreement, the status of this assignment will be inserted by the IFRB when publishing the inventory of requirements.

21 Supplementary information

Indicate, when the requirement is intended to replace an assignment in one of the Plans (Stockholm, 1961 and Geneva, 1963) and/or in the Master Register.

Furthermore, indicate any additional, pertinent information, regarding this requirement which may be of use in planning (for instance, the preferred part of 87.5 - 108 MHz). If necessary, attach additional sheet.

31 Appendix 1 : Azimuthal variation of radiation of Total Power (TP) in the horizontal plane and of effective antenna height

Indicate, for each azimuth shown or at least every 30 degrees, starting at 0 degrees :

- for a directive antenna, the attenuation in dB with respect to the maximum value of the total effective radiated power,

- for directive antenna and non-directional antenna, the effective antenna height in metres.

  The minus sign should be indicated when the value of the effective antenna height arrived at is negative.

  Administrations should endeavour to provide the information required in this box for existing antennas.

31a Appendix 2 : Azimuthal variation of radiation of Horizontal Component (HC) and Vertical Component (VC) in the horizontal plane

Indicate, for each azimuth shown or at least every 30 degrees, starting at 0 degrees.

In case of mixed polarization, the attenuation in dB with respect to the maximum value of effective radiated power of the Horizontal Component (HC) or Vertical Component (VC) respectively (dB).

- AZIMUTHAL VARIATION OF RADIATION OF TOTAL POWER (TP) IN THE HORIZONTAL PLANE AND OF EFFECTIVE ANTENNA HEIGHT

(31)

AZIMUTH (degrees)	0	10	20	30	40	50	60	70	80	90	100	110
Attenuation with respect to maximum value of total ERP (dB)												
Effective antenna height (meters)												
AZIMUTH (degrees)	120	130	140	150	160	170	180	190	200	210	220	230
Attenuation with respect to maximum value of total ERP (dB)												
Effective antenna height (meters)												
AZIMUTH (degrees)	240	250	260	270	280	290	300	310	320	330	340	350
Attenuation with respect to maximum value of total ERP (dB)												
Effective antenna height (meters)												

AZIMUTHAL VARIATION OF RADIATION OF HORIZONTAL COMPONENT (HC)
AND VERTICAL COMPONENT (VC) IN THE HORIZONTAL PLANE

(31a)

AZIMUTH (degrees)		0	10	20	30	40	50	60	70	80	90	100	110
Attenuation with respect to maximum value of ERP (dB)	HC												
Effective antenna height (meters)	VC												
AZIMUTH (degrees)		120	130	140	150	160	170	180	190	200	210	220	230
Attenuation with respect to maximum value of ERP (dB)	HC												
Effective antenna height (meters)	VC												
AZIMUTH (degrees)		240	250	260	270	280	290	300	310	320	330	340	350
Attenuation with respect to maximum value of ERP (dB)	HC												
Effective antenna height (meters)	VC												

AZIMUTHAL VARIATION OF RADIATION OF HORIZONTAL COMPONENT (HC)
AND VERTICAL COMPONENT (VC) IN THE HORIZONTAL PLANE

(31a)

AZIMUTH (degrees)		0	10	20	30	40	50	60	70	80	90	100	110
Attenuation with respect to maximum value of ERP (dB)	HC												
Attenuation with respect to maximum value of ERP (dB)	VC												
AZIMUTH (degrees)		120	130	140	150	160	170	180	190	200	210	220	230
Attenuation with respect to maximum value of ERP (dB)	HC												
Attenuation with respect to maximum value of ERP (dB)	VC												
AZIMUTH (degrees)		240	250	260	270	280	290	300	310	320	330	340	350
Attenuation with respect to maximum value of ERP (dB)	HC												
Attenuation with respect to maximum value of ERP (dB)	VC												

INTERNATIONAL TELECOMMUNICATION UNION

REGIONAL BROADCASTING CONFERENCE

(FIRST SESSION) GENEVA, 1982

Document No. 112-E
9 September 1982
Original : English/
French/
Spanish

PLENARY MEETING

Fourth Report of Committee 5

The fourth series of the texts adopted by Committee 5 has been submitted to the Editorial Committee for subsequent submission to the Plenary Meeting (see Document No. 113).

These texts were adopted unanimously.

K. ARASTEH
Chairman of Committee 5

INTERNATIONAL TELECOMMUNICATION UNION

REGIONAL BROADCASTING CONFERENCE

(FIRST SESSION) GENEVA, 1982

Document No. 113-E
9 September 1982
Original : English/French

COMMITTEE 6

Fourth series of texts from Committee 5 to the Editorial Committee

The texts mentioned in Document No. 112 are hereby submitted to the Editorial Committee.

K. ARASTEH
Chairman of Committee 5

Annexes : 2

ANNEX 1

6.1 Planning principles

6.1.1 The Second Session of the Conference will be required to establish a frequency assignment plan in the band 87.5 - 108 MHz for the countries of Region 1 and for parts of Afghanistan and Iran which are contiguous with Region 1. The planning process shall use the inventory of requirements communicated by the administrations to the IFRB in accordance with the decisions of the First Session of the Conference.

Note : Considering the particular geographical situation of Iran, taking into account the complexity of the areas adjacent to Region 1, and due to the extent of interference calculations, the Administration of the Islamic Republic of Iran may communicate its requirements based on a country-wide planning scheme.

6.1.2 The processing of a requirement should use the concept of providing broadcasting services to the required service area, while recognizing equal rights for all countries with regard to the use of the band 87.5 - 108 MHz for broadcasting. The planning should be carried out in such a way as to respect the rights of each country to arrange its broadcasting service in the most appropriate way in conformity with its specific needs (such as the peculiarities of its geography, its socio-political systems - multinational and multilingual composition of its population, federalism, local information systems etc. - and any other) and to choose the characteristics of its stations in order to attain an appropriate coverage of all its territory. In this case, planning may, according to the country, lead to either a system of national coverage or a system of multiple regional or local coverages, or a combination of these systems. Some countries may base their national planning on co-siting of television stations and FM sound broadcasting stations. For the application of the principle of equal rights among countries and in order to take into account the diversity of systems of national, regional or local coverage, that each country may prefer, the concept of "equivalent national coverage"*) will be introduced. Every country will have assured right to the same number of equivalent national coverages. Joint planning of low power and high power stations near border areas will give rise to specific problems which will probably not be covered by general planning methods. Especially, the use on the two sides of a border of networks made up of low power stations and networks made up of high power stations may lead to less efficient use of the spectrum.

6.1.3 During the planning process all requirements shall be processed in the same manner according to the technical evaluation procedure adopted by the Conference. In accordance with Resolution No. 510 of WARC 1979, the planning of the band 87.5 - 108 MHz in Region 1 and parts of Afghanistan and Iran which are contiguous to Region 1 shall observe the following conditions :

- this new plan should in no way affect existing or planned assignments to television stations in the band 87.5 - 100 MHz made in accordance with the Regional Agreement, Stockholm, 1961; and

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*) Due to the variety of requirements (several national coverages in some countries, multiple regional or local coverages in other countries), it is necessary to express an equivalent national coverage which should correspond approximately to a number of total coverages obtained taking account of the coverages of all stations in a given country. The total number of coverages so obtained would be in the range of 6 to 7.

- that this new plan in the band 87.5 - 100 MHz should not result in the deterioration of the service areas of those existing sound broadcasting stations operating in accordance with the Regional Agreement, Stockholm, 1961, which are situated in the coordination area with countries using this band for television in accordance with the Regional Agreement, Stockholm, 1961.

The radio equipment used by aircraft for landing and navigation purposes, which operates in the adjacent band 108 - 118 MHz, may be subject to harmful interference from nearby broadcasting stations operating in the band 87.5 - 108 MHz if the frequencies of the respective stations are not selected with care and that such interference can put human life at risk.

6.1.4 During the planning process, all proposed assignments shall be open to discussion for bilateral or multilateral negotiation among the administrations concerned, which may be conducted either directly or through the IFRB, with the understanding that those administrations may be requested to modify the characteristics of their stations.

6.1.5 In Africa, taking into account the modifications introduced in the planning criteria (such as the channel spacing and the degree of implementation of the Geneva 63 Plan), the systematic planning will cover the entire band 87.5 - 108 MHz. This planning will be based on the theoretical network method. To this end, a lattice using a nominal station separation will be established and will be used as a guide for the choice of appropriate channels. It is recommended that the Agreement include in an appropriate manner the channels which may be selected by the countries which were not present at the Second Session and which had not submitted their requirements in order to facilitate later the coordination among the countries concerned.

6.1.6 In Europe, a radical change in the existing situation would gradually lead to modifications which would affect the area to be protected and make it difficult or even impossible to observe the constraints imposed by Resolution No. 510 of WARC 1979.

It is desirable that administrations communicate their requirements relative to the band 87.5 - 100 MHz by taking into account their existing stations which operate in accordance with the Radio Regulations and the Stockholm (1961) Agreement. During the Second Session every appropriate effort shall therefore be made to incorporate in the Plan :

a) sound broadcasting stations in accordance with the Stockholm Agreement (1961) which have been notified to the IFRB by 1 December 1983; the incorporation of such stations shall start with the sound broadcasting stations which are situated in the coordination area with countries using this band for TV in accordance with the Stockholm Regional Agreement, 1961, in order to permit countries in Africa and the Middle East to take them into account in accordance with Resolution No. 510 of WARC 1979;

b) other stations appearing in the Plan and other planned stations for which the procedures of the Stockholm Agreement, 1961, have been successfully applied by 1 December 1983; and

c) requirements from administrations not party to the Stockholm Agreement, 1961, having notified to the IFRB by 1 December 1983.

Countries signatories of the Stockholm Agreement, 1961, which, in the Plan annexed to this Agreement, in the band 87.5 - 100 MHz, have entries for television stations only, can submit requirements for assignments to FM sound broadcasting stations in this band, as provided in Resolution No. 510 of WARC 1979.

During the planning process, modifications to the existing assignments shall be carried out as far as possible, where necessary, without conflicting with Resolution No. 510 to ensure the equal rights of countries and remedy existing inequalities and incompatibilities. In the band 100 - 108 MHz, planning will be initially based on the theoretical lattice network method. To this end, a lattice using a nominal station separation will be established and used as a help for the choice of appropriate channels in preliminary planning.

6.1.7 Different planning methods in Africa and the Middle East on the one hand and Europe on the other hand, will require adaptation and resolution of incompatibilities on the basis of equal rights among all countries concerned. In resolving these incompatibilities between FM sound broadcasting stations, the status of such stations resulting from the application of the Regional Agreements (Stockholm, 1961, and Geneva, 1963) should not be taken into account unless there is an agreement amongst all the administrations concerned in the interval between the two sessions of the Conference, or during the Second Session. See Resolution No. COM 5/2.

ANNEX 2

RESOLUTION No. COM 5/2

The Regional Administrative Conference for FM Sound Broadcasting in the VHF Band (Region 1 and certain countries concerned in Region 3) (First Session, Geneva, 1982),

considering

a) that Resolution No. 510 of WARC 1979 imposes on FM sound broadcasting stations in the band 87.5 - 100 MHz constraints intended to protect the TV stations which are in conformity with the Regional Agreement, Stockholm, 1961;

b) that, in order not to radically change the existing situation in the band 87.5 - 100 MHz, the Conference adopted different planning methods in Africa and the Middle East on one hand, and in the rest of the planning area on the other hand;

c) it is desirable that administrations communicate their requirements relative to the band 87.5 - 100 MHz by taking into account their existing stations which operate in accordance with the Radio Regulations and the Stockholm (1961) Agreement;

d) that some countries party to the Regional Agreement, Stockholm, 1961, may need to apply the procedure of Article 4 of the Agreement in the period between the two sessions of the Conference in order to modify the characteristics of their station or to add new stations;

e) that such modifications may affect the requirements to be submitted by the other countries party to the Regional Agreement, Stockholm, 1961,

resolves

1. that as from 15 October 1982, in order to apply the planning principles adopted by the Conference, the following provisions shall be applied for sound broadcasting stations in the band 87.5 - 100 MHz;

   a) an administration applying the procedure of Article 4 of the Regional Agreement, Stockholm, 1961, with respect to the Asian and African countries which have assignments in the Regional Plan, shall communicate to the IFRB a copy of the request sent in application of paragraph 1.1.1 of the above Article;

   b) the above administrations whose agreement has been sought, shall communicate to the IFRB a copy of their decision on the matter within the time limits prescribed in Article 4;

c) the IFRB shall publish in accordance with paragraph 1.4 the information received in application of paragraph 1.3 only when it receives a formal acceptance of the modification by those administrations affected among the countries referred to in sub-paragraph 1 a) above;

d) cases for which the IFRB could not proceed to the publication shall be reported to the Second Session of the Conference;

2. that the Second Session of the Conference be requested to consider the cases reported to it by the IFRB, on the basis of bilateral or multilateral negotiations among the countries concerned.

recommends to the administrations referred to in resolves 1 a) and administrations of the other countries party to the Stockholm Agreement, 1961, to initiate coordination of their present and planned requirements prior to the Second Session of the Conference.

INTERNATIONAL TELECOMMUNICATION UNION

REGIONAL BROADCASTING CONFERENCE

(FIRST SESSION) GENEVA, 1982

Document No. 114-E
10 September 1982
Original : English

PLENARY MEETING

Fifth Report of Committee 5

1. The fifth series of the texts adopted by Committee 5 has been submitted to the Editorial Committee for subsequent submission to the Plenary Meeting (see Document No. 115).

These texts were adopted unanimously.

2. After adopting the Note which is to follow section 6.2.3 of the Annex to Document No. 98, the Committee 5 examined the text of section 6.2.3 in the light of the discussion that took place at the third Plenary Meeting. As a result of this examination, the Committee agreed that the square brackets around the word "shall" be removed.

K. ARASTEH
Chairman of Committee 5

INTERNATIONAL TELECOMMUNICATION UNION

REGIONAL BROADCASTING CONFERENCE

(FIRST SESSION) GENEVA, 1982

Document No. 115-E
10 September 1982
Original : English

COMMITTEE 6

Fifth series of texts from Committee 5 to the Editorial Committee

The first series of the texts from Committee 5 was communicated to the Editorial Committee in Document No. 82. In the related texts it was mentioned that the Note to follow section 6.2.3 was to be provided later.

Committee 5 has adopted the text of this Note which is enclosed as an annex to the present Document for submission to the Plenary meeting.

K. ARASTEH
Chairman of Committee 5

Annex : 1

A N N E X

Note : Some countries in the Middle East may wish to consider the possibility of setting aside a small part of the band 87.5 - 108 MHz to be used by low-power networks or low-power stations, subject to the agreement among the administrations concerned and without having an impact on planning in other areas.

INTERNATIONAL TELECOMMUNICATION UNION

REGIONAL BROADCASTING CONFERENCE

(FIRST SESSION) GENEVA, 1982

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PLENARY MEETING

Report of Committee 2 to the Plenary Meeting

CREDENTIALS

1. Terms of reference of the Committee

The terms of reference of the Committee are set out in Document No. 41.

2. Meetings

The Committee met twice, on 24 August and 10 September 1982.

The Working Group set up by the Committee to examine the credentials to the Conference, taking account of the provisions of the International Telecommunication Convention, met on 2 and 10 September 1982.

The Chairman and Vice-Chairman of the Committee and the delegates of Algeria, the Federal Republic of Germany and Czechoslovakia took part in these meetings.

3. Conclusions

The conclusions reached by the Committee are reproduced in the Annex attached hereto and submitted to the Plenary Meeting for approval.

4. Final remark

The Committee recommends that the Plenary Meeting authorize the Chairman and Vice-Chairman of Committee 2 to examine the credentials received after the date indicated in the present report and to report to the Plenary Meeting on the matter.

J.G. DE MATOS
Chairman of Committee 2

Annex : 1

A N N E X

1. Credentials submitted

1.1 Credentials found to be in order

1.1.1 Credentials presented by countries which have ratified the Convention (or acceded thereto) and to which the provisions of No. 97 of the Convention do not apply.

AFGHANISTAN (Democratic Republic of)
ALBANIA (Socialist People's Republic of)
ALGERIA (Algerian Democratic and Popular Republic)
GERMANY (Federal Republic of)
ANGOLA (People's Republic of)
SAUDI ARABIA (Kingdom of)
AUSTRIA
BAHRAIN (State of)
BELGIUM
BULGARIA (People's Republic of)
CYPRUS (Republic of)
VATICAN CITY STATE
DENMARK
UNITED ARAB EMIRATES
SPAIN
FINLAND
FRANCE
GREECE
GUINEA (Revolutionary People's Republic of)
HUNGARIAN PEOPLE'S REPUBLIC
IRAN (Islamic Republic of)
IRELAND
ISRAEL (State of)
ITALY
LESOTHO (Kingdom of)
LIBYA (Socialist People's Libyan Arab Jamahiriya)
LUXEMBOURG
MALI (Republic of)
MONACO
MONGOLIAN PEOPLE'S REPUBLIC
NIGER (Republic of the)
NORWAY
OMAN (Sultanate of)
NETHERLANDS (Kingdom of)
POLAND (People's Republic of)
PORTUGAL
QATAR (State of)
GERMAN DEMOCRATIC REPUBLIC
ROMANIA (Socialist Republic of)
UNITED KINGDOM OF GREAT BRITAIN AND NOTHERN IRELAND

RWANDA (Republic of)
SWEDEN
SWITZERLAND (Confederation of)
SWAZILAND (Kingdom of)
CZECHOSLOVAK SOCIALIST REPUBLIC
TOGOLESE REPUBLIC
TUNISIA
TURKEY
UNION OF SOVIET SOCIALIST REPUBLICS
YEMEN ARAB REPUBLIC
YUGOSLAVIA (Socialist Federal Republic of)

Conclusion : The delegations of the above-mentioned countries are entitled to vote.

1.1.2 Countries to which the provisions of No. 97 of the Convention apply.

- Does not apply -

2. Credentials provisionally deposited (Convention No. 362)

CAMEROON (United Republic of)
IVORY COAST (Republic of the)
JORDAN (Hashemite Kingdom of)
MOROCCO (Kingdom of)

Conclusion : The delegations of these countries are entitled to vote.

3. Delegations which have not deposited their credentials

BOTSWANA (Republic of)
CONGO (People's Republic of the)
EGYPT (Arab Republic of)
UPPER VOLTA (Republic of)
KENYA (Republic of)
KUWAIT (State of)
MADAGASCAR (Democratic Republic of)
SYRIAN ARAB REPUBLIC
SENEGAL (Republic of the)
ZAIRE (Republic of)

Conclusion : The delegations of these countries are not entitled to vote.

INTERNATIONAL TELECOMMUNICATION UNION

REGIONAL BROADCASTING CONFERENCE

(FIRST SESSION) GENEVA, 1982

Document No. 117-E
10 September 1982
Original : English

COMMITTEE 4

SUMMARY RECORD

OF THE

THIRD MEETING OF COMMITTEE 4

Friday, 3 September 1982, at 1430 hrs

Chairman : Mr. H. GÖTZE (German Democratic Republic)

Vice-Chairman : Mr. R. BOUNAB (Algerian Democratic and Popular Republic)

Subjects discussed		Document No.
1.	Revised texts for Chapter 2 - Propagation	53(Rev.1)
2.	Note from the Chairman of Working Group 4A	77
3.	Reports from the Chairman of Working Group 4B	64, 68 + Add., 78

1. Revised texts for Chapter 2 - Propagation
(Document No. 53(Rev.1))

1.1 The Chairman drew attention to the changes that had been made to Document No. 53, relating to paragraph 2.3 and Figures 2.10, 2.11 and 2.12.

1.2 The delegate of the United Kingdom pointed out that the frequency for Figures 2.11 and 2.12 was still entered at 150 MHz, whereas Working Group 4A had agreed to change it to 30 to 250 MHz. In Figure 2.11, the word "rural" should be deleted from the reference to the frequency. Finally, he thought it had been agreed in Working Group 4A to insert Figures 2.1 to 2.12 after the main text of the document, not in the Annex thereto.

1.3 The delegate of Poland proposed that, in the case of field strength values corresponding to negative effective transmitter antenna heights, the values derived from the 37.5 m curve should be used for calculations.

1.4 The delegate of Czechoslovakia supported that proposal.

1.5 After a brief discussion, the delegate of the United Kingdom suggested that 10 m should be used as a basis for calculating such negative values.

It was so agreed.

Document No. 53(Rev.1) was approved, on the understanding that a further revision would be published.

2. Note from the Chairman of Working Group 4A
(Document No. 77)

2.1 The Chairman of Working Group 4A introduced the document, pointing out that "Band I" in the title of the draft Recommendation should read "Band II".

2.2 The delegate of Romania proposed that the term "Band II" should be replaced by "the band 87.5 to 108 MHz" in the title.

2.3 The delegate of the U.S.S.R. proposed that the word "Planning" be replaced by "Broadcasting" in the opening paragraph of the draft Recommendation, in "requests the CCIR" paragraph 3 and in the phrase "and requests the Second Session of the Regional Administrative Radio Planning Conference".

2.4 The delegate of Mali said that a propagation and radiometeorological measurement campaign should also be carried out in the African Region.

2.5 The representative of the CCIR observed that the CCIR Plenary Assembly had already adopted a Resolution on conducting such a campaign in Africa. It was for delegations to the current Conference to take the initiative of drafting a Recommendation on the subject; he thought that a separate Recommendation would be preferable to an extention of the draft in Document No. 77, since the campaign in the area concerned was already far advanced.

Document No. 77 was approved as amended.

2.6 The Chairman announced that Working Group 4A had completed its work and congratulated the Chairman and members of the Group on the efficient and expeditious way in which they had carried out their task.

3. Reports from the Chairman of Working Group 4B

3.1 Second Report (Document No. 64)

3.1.1 The Chairman of Working Group 4B, introducing the document, said that a footnote should be inserted after Table II on page 5, reading "Some of the figures and gaps in this Table may be subject to revision at the next Interim Meeting of the CCIR Study Groups." A similar footnote, reading "Some of the figures and gaps for interference to systems using a maximum frequency deviation of ±50 kHz may be subject to revision at the next Interim Meeting of the CCIR Study Groups." Finally, the words "the total width(s) of the main lobe(s) to -3 dB points" in the first paragraph under "1) Transmitting antennas" on page 7 should be replaced by "the azimuth(s) of the -3 dB points anti-clockwise and clockwise, respectively, from the azimuth of the maximum".

3.1.2 The delegate of Iran said he could see no reason for adding footnotes to Tables II and III, since all the contents of the report to the Second Session were subject to change at the Interim Meetings of the CCIR.

3.1.3 The Chairman of Working Group 4B explained that some delegations in the Working Group had expressed doubts about the figures in the Tables, so that several gaps had been left. If the Interim Meetings were to produce values to fill those gaps or to replace other figures, it would be for an administration to propose them to the Second Session of the Conference.

3.1.4 The representative of the CCIR said that the situation might be made clearer by preparing a draft Recommendation on the subject.

3.1.5 The delegate of Qatar proposed that the word "national" be inserted before "service" in the paragraph under the heading "Maximum radiated power" on page 7.

3.1.6 The representative of the CCIR said that the document under discussion exemplified the need for coordination between the documents of Committees 4 and 5, for which purpose an ad hoc Working Group had been established by Committee 5. For instance, the form for submission of requirements now under consideration in that Committee referred only to 10° intervals for specification of values of effective radiated power of transmitting antennas, without mentioning the possibility of providing that information at 30° intervals.

3.1.7 The delegate of Romania, referring to the characteristics of receiving antennas, observed that only CCIR Recommendation 599 had been used as a basis for the directivity curve in Figure 1, whereas another Recommendation advocated the application of a mean protection ratio other than 12 dB. His Administration considered that a mean ratio of 9 dB would be best for planning purposes.

3.1.8 The Chairman of Working Group 4B said that the Group had decided unanimously to take Recommendation 599 of CCIR Study Group 10 as a basis for the directivity curve in question, which was the same as that in Recommendation 419 of Study Group 11. There had been no question of adopting a mean protection ratio other than 12 dB.

Document No. 64 was approved as amended.

3.2 Third report (Document No. 68 and Addendum No. 1)

3.2.1 The Chairman of Working Group 4B introduced Document No. 68 and Addendum No. 1 and said that the phrase "a positive correlation with location coefficient" in the third line of paragraph 3.3 of Document No. 68 should read : "a positive correlation coefficient with location" and that the footnote in the Addendum should not refer to Document No. 65(Rev.1) but to Document No. 77. He also proposed some editorial changes.

3.2.2 The Working Group had been asked to compare the power sum and simplified multiplication methods for the assessment of multiple interference so that Committee 5 could decide which to use in planning. He recommended that Committee 5 should use his report in association with the Annex to Document No. 14 if it wished to decide on one method or the other.

3.2.3 The Chairman of Committee 6 pointed out that there was an apparent contradiction in comparing steady nuisance fields with night-time interfering skywave field strengths in LF/MF bands as was done in the Addendum.

3.2.4 On the proposal of the representative of the CCIR, it was agreed to delete the phrase "resembling night-time interfering skywave field strength in LF/MF bands".

3.2.5 The Chairman of Committee 5 stated that difficulties would be created for his Committee if Committee 4 made no firm recommendation to use either the power sum or the simplified multiplication method for part of the planning area. He asked what calculation method should be adopted between the First and Second Sessions.

3.2.6 The delegate of Saudi Arabia said he did not support the use of the power sum for the area from the Shatt-al-Arab to the Gulf of Oman, because it would give over-optimistic results. Furthermore, a propagation and radiometeorological campaign was still being carried out in that area, so that emphasis should not be placed on any one method.

3.2.7 After a discussion in which the delegate of Qatar and the representative of the CCIR and the IFRB also took part, it was agreed on the proposal of the Chairman of Working Group 4B that the paragraph to be added to section 4 should end with the words " ... the Second Session of the Conference*)", and that a new paragraph be inserted at that point to read :

"In the meantime and for preliminary calculations the simplified multiplication method could be used for the whole of the planning area. It would also be necessary for comparison to repeat the calculations for the area from the Shatt-al-Arab to the Gulf of Oman by the power sum method."

Document No. 68 and Addendum No. 1, as amended, were approved.

3.3 Final report (Document No. 78)

3.3.1 The Chairman of Working Group 4B introduced Document No. 78 containing a summary of the work performed by his Group together with certain comments which he had considered to be worthy of the Committee's attention.

Document No. 78 was approved.

3.4 The Chairman thanked the Chairmen and members of Working Group 4B and its sub-groups for the efficiency and dispatch with which they had performed the tasks entrusted to them.

The meeting rose at 1645 hours.

The Secretary :
S. TSUKADA

The Chairman :
H. GÖTZE

REGIONAL BROADCASTING CONFERENCE

(FIRST SESSION) GENEVA, 1982

BLUE PAGES

Document No. 118-E
10 September 1982

B.4

PLENARY MEETING

Fourth series of texts submitted by the Editorial Committee to the Plenary Meeting

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

Source	Document No.	Contents
C5	104	Chapter 1 : Definitions :
		Coverage area
		Service area
		Resolution No. COM 5/1
C5	111	7.1 Form for use in submitting requirements to the IFRB
C5	115	6.2.3 and Note
C5	113	6.1 Planning principles
		Resolution No. COM 5/2

H. BERTHOD
Chairman of the
Editorial Committee

Annex : 17 pages

CHAPTER 1

DEFINITIONS

1. Coverage area

The area within which the field strength of the wanted transmitter is equal to or greater than the usable field strength.

In this area the protection against interference is provided for 99% of time.

Note 1 : The field strength of the wanted transmitter is derived from propagation curve relating to 50% of locations and for 50% of time.

Note 2 : The usable field strength is calculated by the simplified multiplication method,[1)] tropospheric interference being derived from the propagation curves relating to 50% of locations and for 1% of time, and steady interference being derived from propagation curves relating to 50% of locations and for 50% of the time.

/ 1) However, for comparison purposes, the power sum method will be used, in the area from Shatt-al-Arab to the Gulf of Oman, at the request of administrations concerned. /

2. Service area

The part of the coverage area in which the administration responsible for the service has the right to demand that the agreed protection conditions be provided.

RESOLUTION No. COM 5/1

Additional IFRB activities between the First and Second Sessions of the Conference

The Regional Administrative Conference for FM Sound Broadcasting in the VHF Band (Region 1 and certain countries concerned in Region 3) (First Session, Geneva, 1982),

considering

a) that the current Session has adopted a programme of instructing the IFRB to draw up the List of Requirements and to carry out incompatibility calculations on the basis of this List;

b) that the IFRB will have to develop the computer programs needed to perform the tasks mentioned in Chapter 7 of the Report of the current Session;

c) that some Administrations have developed or will develop software relating to incompatibility calculations,

recognizing

a) that this activity represents an additional burden of work for the IFRB, which has limited means at its disposal to prepare for the Second Session of the Conference;

b) that the Administrative Council at its 37th session (1982) made limited provision in Resolution No. 870 for fixed-term staff for the preparation of administrative radio conferences,

resolves

1. to invite the administrations which have prepared computer programs applicable to the relevant studies listed in the Report of the current Session to communicate these programs to the IFRB and, if necessary, to second computer specialists to the IFRB for short periods in order to adapt the programs to the ITU computer;

2. to invite the IFRB to perform between the First and Second Sessions of the Conference the tasks mentioned in the Report of the current Session as far as possible, and to send the results to administrations;

3. to invite the IFRB to provide administrations with such assistance as may be requested of it for the submission of requirements and the preparation of the Second Session of the Conference;

4. to draw the attention of the Administrative Council to the facilities deemed necessary to enable the IFRB to carry out the tasks mentioned above.

7.1 FORM TO BE USED BY ADMINISTRATIONS IN SUBMITTING THEIR REQUIREMENTS FOR FREQUENCY ASSIGNMENTS IN THE BAND 87.5 - 108 MHz

REGIONAL ADMINISTRATIVE CONFERENCE FOR FM SOUND BROADCASTING IN THE BAND 87.5 - 108 MHz

SECOND SESSION (31 OCTOBER - 12 DECEMBER 1984)

FORM FOR SUBMISSION OF A FREQUENCY ASSIGNMENT REQUIREMENT TO THE IFRB

BLUE PAGES

(01) ADMINISTRATION _____ ADMIN SERIAL No. _____ (00) IFRB SERIAL No. _____

(02) NAME OF TRANSMITTING STATION	(03) COUNTRY	(04) LONGITUDE			LATITUDE			(05) HEIGHT OF SITE a.s.l. (m)	(06) HEIGHT OF ANTENNA a.g.l. (m)
		DEGREES	E/W	MIN.	DEGS.	N/S	MIN.		

(07) POLARIZ.	(08) MAXIMUM EFFECTIVE RADIATED POWER (e.r.p.)			(09) DIRECT.	(10) MAXIMUM EFFECTIVE ANTENNA HEIGHT (metres)	(11) SYSTEM
	TOTAL	HOR. COMP. (HC)	VERT. COMP. (VC)			
	kW	kW	kW			

(12) RADIATION CHARACTERISTICS FOR A DIRECTIVE ANTENNA

Total e.r.p.	AZIMUTH	BEARINGS OF -3 dB POINTS	EFFECTIVE ANTENNA HEIGHT
kW	DEGREES	DEGREES	+ METRES

(12a) SECTORS OR DIRECTIONS OF RESTRICTED e.r.p.

SECTORS OR DIRECTIONS	TOTAL e.r.p.
DEGREES	kW

(12b) SECTORS OR DIRECTIONS WITH RESTRICTED EFFECTIVE ANTENNA HEIGHT

SECTORS OR DIRECTIONS	EFFECTIVE ANTENNA HEIGHT
DEGREES	METRES

(13) ANTENNA PATTERN

BOX 31	DIAGRAM

(14) DESIRED FREQUENCY _____ MHz

(15) COORD

(21) SUPPLEMENTARY INFORMATION

INSTRUCTIONS FOR FILLING OUT THE FORM

The instructions for filling out the form refer to boxes 01 to 15, box 21, box 31 and box 31a (if required). Box 00 is for the use of the IFRB and should be left blank. Provision has been made on the form for an administration to enter its reference number in the box entitled ADMIN SERIAL No.

Leading zeros should be given when appropriate in boxes 04, 05, 06, 08, 10, 12 and 14.

Box No.

00 IFRB SERIAL No.

For IFRB use only.

01 Administration

Indicate the country symbol designating the administration submitting the requirement for the frequency assignment. Use a symbol from Table No. 1 of the Preface to the International Frequency List.

02 Name of transmitting station

Give the name by which the station is, or will be, known.

Limit the number of letters and numerals to a total of 20.

Insert each letter or number in a separate space, starting from the first space on the left. In the case of compound names, one space should be left blank between each part of the name.

03 Country

Indicate, by symbol, the country or geographical area in which the station is, or will be, located. Use a symbol from Table No. 1 of the Preface to the International Frequency List.

04 Longitude and latitude of the transmitting antenna site

Give the geographical coordinates, in degrees and minutes of the site of the transmitting antenna; seconds should be rounded to the nearest minute. Use the symbols E or W, N or S, as appropriate.

05 Height of site above sea level (a.s.l.)

Indicate the height (in metres) above sea level of the site of the transmitting antenna.

Box No.

06 Height of the antenna above ground level (a.g.l.)

Indicate the height (in metres) of the geometrical centre of the antenna above ground level.

07 Polarization

Indicate the polarization of radiation by using the following symbols :

H Horizontal

V Vertical

M Mixed

If different linear polarizations are used in different azimuthal directions, Appendix 2 (box 31a) may be used.

08 Maximum effective radiated power (e.r.p.)

- Sub-box "total" :

  In the case of horizontal or vertical polarization, indicate the maximum effective radiated power, in kW.

  In the case of mixed polarization, this value is the sum of the horizontally and vertically polarized components.

- Sub-box "horizontal component (HC)"

  In the case of mixed polarization, indicate the maximum effective radiated power of the horizontally polarized component, in kW.

- Sub-box "vertical component (VC)"

  In the case of mixed polarization, indicate the maximum effective radiated power of the vertically polarized component, in kW.

09 Directivity of radiation

Indicate ND in the case of omnidirectional radiation and D in the case of directional radiation.

10 Maximum effective antenna height

Indicate the maximum value of effective height of the transmitting antenna, in metres, irrespective of azimuth. This height is defined as the maximum height of the centre of the antenna above the average level of the ground between distances of 3 and 15 km from the transmitter. The minus sign should be indicated when the value of the effective antenna height arrived at in the above manner is negative.

Box No.

11 System

Indicate the system of transmission by using the following symbols :

1 Monophonic (maximum frequency deviation ±75 kHz)

2 Monophonic (maximum frequency deviation ±50 kHz)

3 Stereophonic, polar modulation system (maximum frequency deviation ±50 kHz)

4 Stereophonic, pilot-tone system (maximum frequency deviation ±75 kHz)

5 Stereophonic, pilot-tone system (maximum frequency deviation ±50 kHz)

12 Radiation characteristics for a directive antenna

For each of the maxima of radiation, indicate :

- total effective radiated power, in kW;
- azimuth in degrees, clockwise from True North;
- the azimuths of the -3 dB points successively anticlockwise and clockwise from the azimuth of maximum radiation;
- effective antenna height in metres in the indicated azimuth.

12a Sectors or directions of restricted e.r.p.

If there exists a restriction on the e.r.p. in certain sectors, indicate in the first column the azimuth limits of these sectors and in the second column the maximum total e.r.p. in these sectors in kW. If the restrictions relate to one direction only, use the left part of the first column.

12b Sectors or directions with restricted effective antenna height

If there exist restrictions of the effective antenna height in certain sectors, indicate as above the directions concerned and the maximum values within these sectors.

If the restriction relates to one direction only, use the left part of the first column.

Box No.

13 Antenna pattern

Indicate by an X in the appropriate box when either :

- the information required in box 31 has been provided;

- the antenna radiation diagram, in the horizontal plane, has been furnished.

14 Desired frequency

Indicate, if appropriate, the frequency desired for assignment. If there is no preference for a specified frequency, boxes 14 and 15 should be left blank, refer to Chapter 6 (Planning methods) of the Report of the First Session of the Conference.

15 Coordination of the requirement and status of the related assignment

When the requirement with the characteristics contained in the form has been successfully coordinated, with a view to submission, insert the relevant country symbols in the "COORD" box. When the coordination concerns more than five countries, insert / a symbol / on the first line of the "COORD" box and list the countries in a separate annex.

When the requirement corresponds to an assignment which has been notified to the IFRB in accordance with the Radio Regulations or which is in conformity with the 1961 Stockholm Agreement, the status of this assignment will be inserted by the IFRB when publishing the inventory of requirements.

21 Supplementary information

Indicate when the requirement is intended to replace an assignment in one of the Plans (Stockholm, 1961 and Geneva, 1963) and/or in the Master Register.

Furthermore, indicate any additional, pertinent information regarding this requirement which may be of use in planning (for instance, the preferred part of 87.5 - 108 MHz). If necessary, attach additional sheet.

Box No.

31 Appendix 1 : Azimuthal variation of the total effective radiated power in the horizontal plane and of the effective antenna height

Indicate, for each azimuth shown or at least every 30 degrees, starting at 0 degrees :

- for a directive antenna, the attenuation in dB with respect to the maximum value of the total effective radiated power,

- for directive antenna and non-directional antenna, the effective antenna height in metres.

  The minus sign is used to indicate when the value of the effective antenna height is negative.

  Administrations should endeavour to provide the information required in this box for existing antennas.

31a Appendix 2 : Azimuthal variation in the effective radiated power of the Horizontal Component (HC) and the Vertical Component (VC) in the horizontal plane

In the case of mixed polarization, indicate, for each azimuth shown or at least every 30 degrees, starting at 0 degrees, the attenuation in dB with respect to the maximum value of effective radiated power of the Horizontal Component (HC) or Vertical Component (VC) respectively.

- AZIMUTHAL VARIATION OF THE TOTAL EFFECTIVE RADIATED POWER IN THE HORIZONTAL PLANE AND THE EFFECTIVE ANTENNA HEIGHT

(31)

AZIMUTH (degrees)	0	10	20	30	40	50	60	70	80	90	100	110
Attenuation with respect to maximum value of total ERP (dB)												
Effective antenna height (meters)												
AZIMUTH (degrees)	120	130	140	150	160	170	180	190	200	210	220	230
Attenuation with respect to maximum value of total ERP (dB)												
Effective antenna height (meters)												
AZIMUTH (degrees)	240	250	260	270	280	290	300	310	320	330	340	350
Attenuation with respect to maximum value of total ERP (dB)												
Effective antenna height (meters)												

AZIMUTHAL VARIATION IN THE EFFECTIVE RADIATED POWER OF THE HORIZONTAL COMPONENT (HC) AND THE VERTICAL COMPONENT (VC) IN THE HORIZONTAL PLANE

(31a)

AZIMUTH (degrees)		0	10	20	30	40	50	60	70	80	90	100	110
Attenuation with respect to maximum value of ERP (dB)	HC												
	VC												
AZIMUTH (degrees)		120	130	140	150	160	170	180	190	200	210	220	230
Attenuation with respect to maximum value of ERP (dB)	HC												
	VC												
AZIMUTH (degrees)		240	250	260	270	280	290	300	310	320	330	340	350
Attenuation with respect to maximum value of ERP (dB)	HC												
	VC												

/ CHAPTER 6 /

6.2.3 No segment of the frequency band 87.5 - 108 MHz / shall / be set aside for low power channels.

Note : However, some countries in the Middle East may wish to consider the possibility of setting aside a small part of the band 87.5 - 108 MHz to be used by low-power networks or low-power stations, subject to agreement among the administrations concerned and without this having an impact on planning in other areas.

6.1 Planning principles

6.1.1 The Second Session of the Conference will be required to establish a frequency assignment plan in the band 87.5 - 108 MHz for the countries of Region 1 and for parts of Afghanistan and Iran which are contiguous with Region 1. The planning process shall use the inventory of requirements communicated by administrations to the IFRB in accordance with the decisions of the First Session of the Conference.

Note : Considering the particular geographical situation of Iran, and taking into account the complexity of the areas adjacent to Region 1 and the extent of interference calculations, the Administration of the Islamic Republic of Iran may communicate its requirements based on a country-wide planning scheme.

6.1.2 In processing a requirement, the concept of providing broadcasting services to the required service area should be applied, while recognizing equal rights for all countries with regard to the use of the band 87.5 - 108 MHz for broadcasting. The planning should be carried out in such a manner as to respect the rights of each country to organize its broadcasting service in the most appropriate way in conformity with its specific needs (such as the peculiarities of its geography, its socio-political systems - multinational and multilingual composition of its population, federalism, local information systems, etc.) and to choose the characteristics of its stations in order to attain an appropriate coverage of all its territory. In this case, planning may, according to the country, be based on either a system of national coverage or a system of multiple regional or local coverages, or a combination of these systems. Some countries may base their national planning on co-siting of television stations and FM sound broadcasting stations. For the application of the principle of equal rights among countries and in order to take into account the diversity of systems of national, regional or local coverage, that each country may prefer, the concept of "equivalent national coverage"*) will be introduced. Every country will have assured rights to the same number of equivalent national coverages. Joint planning of low-power and high-power stations near border areas will give rise to specific problems which will probably not be covered by general planning methods. Especially, the use on either side of a border of networks made up of low-power stations and networks made up of high-power stations may lead to less efficient use of the spectrum.

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*) Due to the variety of requirements (several national coverages in some countries, multiple regional or local coverages in other countries), it is necessary to express an equivalent national coverage which should correspond approximately to a number of total coverages obtained taking account of the coverages of all stations in a given country. The total number of coverages so obtained would be of the order of 6 to 7.

6.1.3 During the planning process, all requirements shall be processed in the same manner according to the technical evaluation procedure adopted by the Conference. In accordance with Resolution No. 510 of WARC 1979, in the planning of the band 87.5 - 108 MHz in Region 1 and parts of Afghanistan and Iran which are contiguous to Region 1, the following conditions shall be observed :

- this new plan should in no way affect existing or planned assignments to television stations in the band 87.5 - 100 MHz made in accordance with the Regional Agreement, Stockholm, 1961; and

- this new plan in the band 87.5 - 100 MHz should not result in the deterioration of the service areas of those existing sound broadcasting stations operating in accordance with the Regional Agreement, Stockholm, 1961, which are situated in the coordination area with countries using this band for television in accordance with the Regional Agreement, Stockholm, 1961.

The radio equipment used by aircraft for landing and navigation purposes, which operates in the adjacent band 108 - 118 MHz, may be subject to harmful interference from nearby broadcasting stations operating in the band 87.5 - 108 MHz if the frequencies of these stations are not selected with care; such interference can put human life at risk.

6.1.4 During the planning process, all proposed assignments shall be open to discussion for bilateral or multilateral negotiation among the administrations concerned, which may be conducted either directly or through the IFRB, on the understanding that those administrations may be requested to modify the characteristics of their stations.

6.1.5 In Africa, taking into account the modifications introduced in the planning criteria (such as the channel spacing and the degree of implementation of the Geneva 1963 Plan), the systematic planning will cover the entire band 87.5 - 108 MHz. This planning will be based on the theoretical network method. To this end, a lattice using a nominal station separation will be established and used as a guide for the choice of appropriate channels. It is recommended, in order to facilitate subsequent coordination among the countries concerned, that the Agreement should include in an appropriate manner the channels which may be selected by the countries which may not be present at the Second Session and which had not submitted their requirements.

6.1.6 In Europe, a radical change in the existing situation would gradually lead to modifications which would affect the area to be protected and make it difficult or even impossible to observe the constraints imposed by Resolution No. 510 of WARC 1979.

It is desirable that administrations communicate their requirements in the band 87.5 - 100 MHz by taking into account their existing stations which operate in accordance with the Radio Regulations and the Stockholm (1961) Agreement. During the Second Session every appropriate effort shall therefore be made to incorporate in the Plan :

a) sound broadcasting stations in accordance with the Stockholm Agreement (1961) which have been notified to the IFRB by 1 December 1983; the incorporation of such stations shall start with the sound broadcasting stations which are situated in the coordination area with countries using this band for TV in accordance with the Stockholm Regional Agreement, 1961, in order to permit countries in Africa and the Middle East to take them into account in accordance with Resolution No. 510 of WARC 1979;

b) other stations appearing in the Plan and other planned stations for which the procedures of the Stockholm Agreement, 1961, have been successfully applied by 1 December 1983; and

c) requirements from administrations not party to the Stockholm Agreement, 1961, notified to the IFRB by 1 December 1983.

Countries signatories of the Stockholm Agreement, 1961, which, in the Plan annexed to this Agreement, in the band 87.5 - 100 MHz, have entries for television stations only, can submit requirements for assignments to FM sound broadcasting stations in this band, as provided in Resolution No. 510 of WARC 1979.

During the planning process, modifications to the existing assignments shall be carried out as far as possible, where necessary, without conflicting with Resolution No. 510 to ensure the equal rights of countries and remedy existing inequalities and incompatibilities. In the band 100 - 108 MHz, planning will be initially based on the theoretical lattice network method. To this end, a lattice using a nominal station separation will be established and used to assist in the choice of appropriate channels in preliminary planning.

6.1.7 Different planning methods in Africa and the Middle East on the one hand and Europe on the other hand, will require adaptation and resolution of incompatibilities on the basis of equal rights among all countries concerned. In resolving these incompatibilities between FM sound broadcasting stations, the status of such stations resulting from the application of the Regional Agreements (Stockholm, 1961, and Geneva, 1963) should not be taken into account unless there is an agreement amongst all the administrations concerned in the interval between the two sessions of the Conference, or during the Second Session. See Resolution No. COM 5/2.

RESOLUTION No. COM 5/2

The Regional Administrative Conference for FM Sound Broadcasting in the VHF Band (Region 1 and certain countries concerned in Region 3) (First Session, Geneva, 1982),

considering

a) that Resolution No. 510 of WARC 1979 imposes on FM sound broadcasting stations in the band 87.5 - 100 MHz constraints intended to protect the TV stations which are in conformity with the Regional Agreement, Stockholm, 1961;

b) that, in order not to change radically the existing situation in the band 87.5 - 100 MHz, the Conference adopted different planning methods in Africa and the Middle East on one hand, and in the rest of the planning area on the other hand;

c) it is desirable that administrations communicate their requirements in the band 87.5 - 100 MHz by taking into account their existing stations operating in accordance with the Radio Regulations and the Regional Agreement, Stockholm, 1961;

d) that some countries parties to the Regional Agreement, Stockholm, 1961, may need to apply the procedure of Article 4 of the Agreement in the period between the two sessions of the Conference in order to modify the characteristics of their station or to add new stations;

e) that such modifications may affect the requirements to be submitted by the other countries parties to the Regional Agreement, Stockholm, 1961,

resolves

1. that as from 15 October 1982, in order to comply with the planning principles adopted by the Conference, the following provisions shall be applied for sound broadcasting stations in the band 87.5 - 100 MHz;

a) an administration applying the procedure of Article 4 of the Regional Agreement, Stockholm, 1961, with respect to the Asian and African countries which have assignments in the Regional Plan, shall communicate to the IFRB a copy of the request sent in application of paragraph 1.1.1 of the above Article;

b) the above administrations whose agreement has been sought shall communicate to the IFRB a copy of their decision on the matter within the time limits prescribed in Article 4;

c) the IFRB shall publish in accordance with paragraph 1.4 the information received in application of paragraph 1.3 only when it receives a formal acceptance of the modification by those administrations affected among the countries referred to in sub-paragraph 1 a) above;

d) cases for which the IFRB cannot proceed with the publication shall be reported to the Second Session of the Conference;

2. that the Second Session of the Conference be requested to consider the cases reported to it by the IFRB, on the basis of bilateral or multilateral negotiations among the countries concerned.

recommends

to the administrations referred to in resolves 1 a) and administrations of the other countries parties to the Regional Agreement, Stockholm, 1961, to initiate coordination of their present and planned requirements prior to the Second Session of the Conference.

PINK PAGES

INTERNATIONAL TELECOMMUNICATION UNION

REGIONAL BROADCASTING CONFERENCE

(FIRST SESSION) GENEVA, 1982

Document No. 119-E
14 September 1982

R.2

PLENARY MEETING

Second Series of texts submitted by the Editorial Committee to the Plenary Meeting

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

Source	Document No.	Contents
B.4	118	Resolution No. COM 5/1 Resolution No. COM 5/2
B.3	109	Recommendation No. COM 4/2 Recommendation No. COM 4/3 Recommendation No. COM 4/4

H. BERTHOD
Chairman of the Editorial Committee

Annex : 8 pages

RESOLUTION No. COM 5/1

IFRB activities between the First and Second Sessions of the Conference

The Regional Administrative Conference for FM Sound Broadcasting in the VHF Band (Region 1 and certain countries concerned in Region 3) (First Session, Geneva, 1982),

considering

a) that the current Session has adopted a programme of instructing the IFRB to draw up the List of Requirements and to carry out incompatibility calculations on the basis of this List;

b) that the IFRB will have to develop the computer programs needed to perform the tasks mentioned in Chapter 7 of the Report of the current Session;

c) that some Administrations have developed or will develop software relating to incompatibility calculations,

recognizing

a) that this activity represents an additional burden of work for the IFRB, which has limited means at its disposal to prepare for the Second Session of the Conference;

b) that the Administrative Council at its 37th session (1982) made limited provision in Resolution No. 870 for fixed-term staff for the preparation of administrative radio conferences,

resolves

1. to invite the administrations which have prepared computer programs applicable to the relevant studies listed in the Report of the current Session to communicate these programs to the IFRB and, if necessary, to second computer specialists to the IFRB for short periods in order to adapt the programs to the ITU computer;

2. to invite the IFRB to perform between the First and Second Sessions of the Conference the tasks mentioned in the Report of the current Session as far as possible, and to send the results to administrations;

3. to invite the IFRB to provide administrations with such assistance as may be requested of it for the submission of requirements and the preparation of the Second Session of the Conference;

4. to draw the attention of the Administrative Council to the facilities deemed necessary to enable the IFRB to carry out the tasks mentioned above.

RESOLUTION No. COM 5/2

Relating to certain conditions governing the application of the procedure provided for in Article 4 of the Regional Agreement, Stockholm, 1961

The Regional Administrative Conference for FM Sound Broadcasting in the VHF Band (Region 1 and certain countries concerned in Region 3) (First Session, Geneva, 1982),

considering

a) that Resolution No. 510 of WARC 1979 imposes on FM sound broadcasting stations in the band 87.5 to 100 MHz constraints intended to protect the TV stations which are in conformity with the Regional Agreement, Stockholm, 1961;

b) that, in order not to change radically the existing situation in the band 87.5 to 100 MHz, the Conference adopted different planning methods in Africa and the Middle East on one hand, and in the rest of the planning area on the other hand;

c) it is desirable that administrations communicate their requirements in the band 87.5 to 100 MHz by taking into account their existing stations operating in accordance with the Radio Regulations and the Regional Agreement, Stockholm, 1961;

d) that some countries parties to the Regional Agreement, Stockholm, 1961, may need to apply the procedure of Article 4 of the Agreement in the period between the two sessions of the Conference in order to modify the characteristics of their station or to add new stations;

e) that such modifications may affect the requirements to be submitted by the other countries parties to the Regional Agreement, Stockholm, 1961,

resolves

1. that as from 15 October 1982, in order to comply with the planning principles adopted by the Conference, the following provisions shall be applied for sound broadcasting stations in the band 87.5 to 100 MHz;

a) an administration applying the procedure of Article 4 of the Regional Agreement, Stockholm, 1961, with respect to the Asian and African countries which have assignments in the Regional Plan, shall communicate to the IFRB a copy of the request sent in application of paragraph 1.1.1 of the above Article;

b) the above administrations whose agreement has been sought shall communicate to the IFRB a copy of their decision on the matter within the time limits prescribed in Article 4 of the Agreement;

c) the IFRB shall publish in accordance with paragraph 1.4 of Article 4 of the Agreement the information received in application of paragraph 1.3 only when it receives a formal acceptance of the modification by those administrations affected among the countries referred to in sub-paragraph 1 a) above;

d) cases for which the IFRB cannot proceed with the publication shall be reported to the Second Session of the Conference;

2. that the Second Session of the Conference be requested to consider the cases reported to it by the IFRB, on the basis of bilateral or multilateral negotiations among the countries concerned.

recommends

to the administrations referred to in resolves 1 a) and administrations of the other countries parties to the Regional Agreement, Stockholm, 1961, to initiate coordination of their present and planned requirements prior to the Second Session of the Conference.

RECOMMENDATION No. COM 4/2

Relating to the need for certain propagation studies
relevant to the use of band 87.5 to 108 MHz
in the African continent

The Regional Administrative Conference for FM Sound Broadcasting in the VHF Band (Region 1 and certain countries concerned in Region 3) (First Session, Geneva, 1982),

considering

a) that the World Administrative Radio Conference, Geneva, 1979, in Resolution No. 510 requested the CCIR to study, as a matter of urgency, the necessary technical bases required for this present Conference;

b) that the CCIR in response provided a report on such necessary technical bases that included, inter alia, a chapter on propagation, and that this chapter has been adopted subject to the necessity for obtaining further information on the subjects referred to hereunder;

c) that the World Administrative Radio Conference, Geneva, 1979, likewise adopted Resolution 5 and Recommendation 68 which deal respectively with technical cooperation with the developing countries in the study of propagation in tropical areas, and with studies and prediction of radio propagation and radio noise;

d) that the XVth Plenary Assembly of the CCIR, Geneva, 1982, adopted Resolution 79 dealing with the need, inter alia, for scientists and engineers from developing countries to be encouraged to carry out studies at first hand on propagation topics;

e) that further information on propagation in Africa, in particular relating to ducting propagation in all areas thought to be particularly subject to this phenomenon is considered to be necessary;

f) that verification is likewise necessary, relative to Africa, of the data indicating that radio propagation characteristics over land and over sea are identical under certain circumstances,

requests the CCIR

1. to undertake, as a matter of urgency, all propagation and radiometeorological measurements that can be made in and around the African continent;

2. to continue studying the relationship between propagation over land and over sea for 50%, 10% and 1% of the time;

3. to prepare a further report, based on such measurements and on these studies, in good time for the Second Session of the Conference,

recommends that African Administrations collaborate with the CCIR, as a matter of urgency and within the limits of their possibilities, by sending it contributions relating to the aforementioned activities,

requests the Second Session of the Conference to reconsider the relevant paragraphs and figures of the Report of the present First Session in the light of this further report of the CCIR and also to consider, if it sees fit, the production, for planning purposes, of separate propagation curves for African conditions,

and invites the regional telecommunication and broadcasting organizations in Africa, as a matter or urgency, within the limit of possibilities to participate in the above-mentioned studies.

RECOMMENDATION No. COM 4/3

Relating to the immunity to interference of airborne receiving equipment used by the aeronautical radionavigation service operating in the frequency band 108 to 118 MHz from the FM broadcasting service operating in the frequency band 87.5 to 108 MHz

The First Session of the Regional Administrative Conference for FM Sound Broadcasting in the VHF Band (Region 1 and certain countries concerned in Region 3) (First Session, Geneva, 1982),

considering

a) Resolution No. 510, Recommendations Nos. 66 and 704 of the WARC-79 and provisions of Nos. 300, 301 and 311 of the Radio Regulations;

b) that this Conference has established some criteria for the protection of the aeronautical services but these would appear to constrain in some areas of Region 1 the full exploitation of the frequency band 100 to 108 MHz;

c) that in the other ITU Regions the potential danger of interference due to the lack of adequate immunity standards for the aeronautical services has been reported,

noting the practical equipment design problems and operational constraints within the aeronautical services,

recommends that the CCIR

1. studies as a matter of urgency :

1.1 with the retention of existing airborne receiving equipment, by how much can the value of immunity to FM sound broadcasting interference of that equipment be improved over those values established at this Conference?

1.2 by the replacement of existing airborne equipment by new better performance airborne equipment, by how much the value of immunity to FM sound broadcasting interference of that equipment can be improved over those values established at this Conference ?

2. finalizes these studies;

2.1 contained in paragraph 1.1 preferably by 31 January 1983 and not later than April 1983;

2.2 contained in paragraph 1.2 at the earliest practical date;

3. report at short intervals to administrations the progress of their studies,

invites

1. the Secretary-General of the ITU to bring this Recommendation to the attention of ICAO, and to invite their collaboration in the studies;

2. administrations to participate actively in these studies as a matter of priority and to provide the CCIR with expert guidance on this matter.

RECOMMENDATION No. COM 4/4

Relating to the level of spurious emissions falling in the frequency bands allocated to the aeronautical services between 108 and 137 MHz from FM broadcasting stations operating in the frequency band 87.5 to 108 MHz

The Regional Administrative Conference for FM Sound Broadcasting in the VHF Band (Region 1 and certain countries concerned in Region 3) (First Session, Geneva, 1982),

considering

a) Resolution No. 510, Recommendation No. 66, Recommendation No. 704 of the WARC 1979 and provision No. 301 of the Radio Regulations;

b) that spurious emissions in accordance with the limits in the Radio Regulations (Appendix 8) will give considerable compatibility problems between the FM broadcasting service (87.5 to 108 MHz) and the aeronautical services (108 to 137 MHz);

c) that no practicable equipment measures can be taken by the aeronautical services involved (which are safety services) to reduce these compatibility problems;

d) that this Conference has established some criteria for the protection of the aeronautical services involved but these would appear to constrain in some areas in Region 1 full exploitation of the frequency band 100 to 108 MHz by the broadcasting service,

recommends that the CCIR

1. carries out studies in order to determine the maximum suppression of spurious emissions, particularly intermodulation products, from the broadcasting transmitting stations into the aeronautical frequency bands between 108 and 137 MHz which can be maintained continuously in all operational conditions of the broadcasting service;

2. finalizes these studies by [April 1983],

invites

administrations in Region 1 and certain administrations in Region 3 to participate actively in these studies and to provide the CCIR with expert guidance on this matter.

INTERNATIONAL TELECOMMUNICATION UNION

REGIONAL BROADCASTING CONFERENCE

(FIRST SESSION) GENEVA, 1982

Document No. 120-E
13 September 1982
Original : English

COMMITTEE 5

Report of the ad hoc Group 5/5 to the Chairman of Committee 5

After a brief presentation together with the necessary explanations of the material prepared for the needs of the ad hoc Group on Friday, 10 September 1982, the ad hoc Group met again on Saturday, 11 September 1982, to fulfill its task.

The maps which were used for this purpose were equal-area maps produced by a computer. The planning area (without most of the Asian part of the U.S.S.R. and Mongolia) is presented in eight parts : two maps for Europe (E and W), three maps for Africa (NE, NW and S), one map for the Arabian Peninsula, one map for Iran and Afghanistan and one map for Madagascar. The scale of the maps is approximately 1 : 11,700,000.

During the meeting it was agreed that :

1. The lattices shall subdivide the planning area into area elements which are rhombic in shape.

2. The lattices shall not be distorted so as to adapt the area elements to the different densities of the transmitters in the various parts of the planning area, except for the northern part of Algeria.

3. The side length of a rhombic area element shall correspond to a distance between transmitters sharing the same channel of :

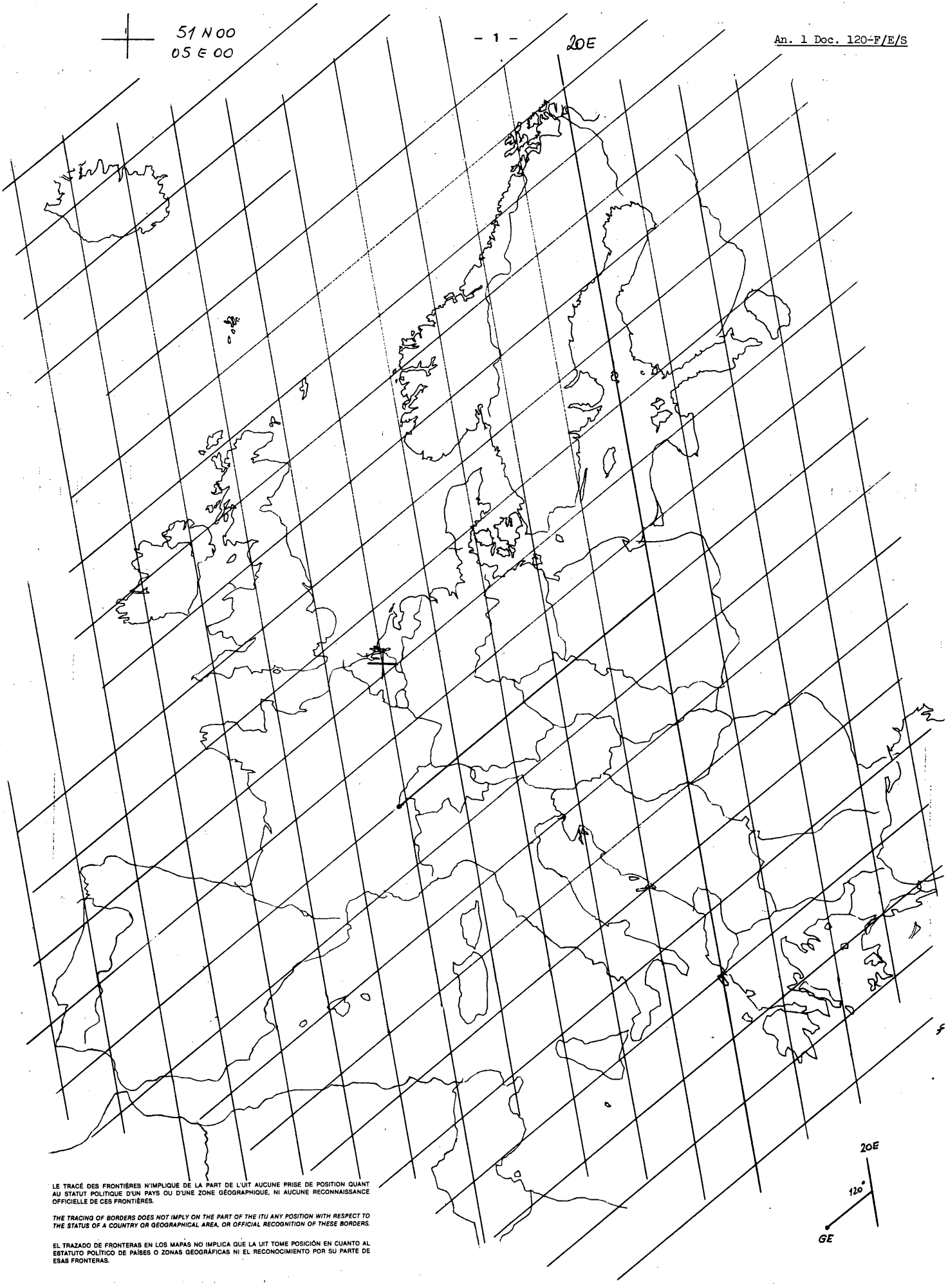
3.1 480 km in Africa and Middle East;

3.2 240 km in Europe.

On this basis the lattices were entered in the eight parts of the map in such a way that there is no discontinuity in those parts where the maps overlap. The result of the work is annexed to this report.

H. EDEN
Chairman of ad hoc Group 5/5

Annex : 1 (see maps)

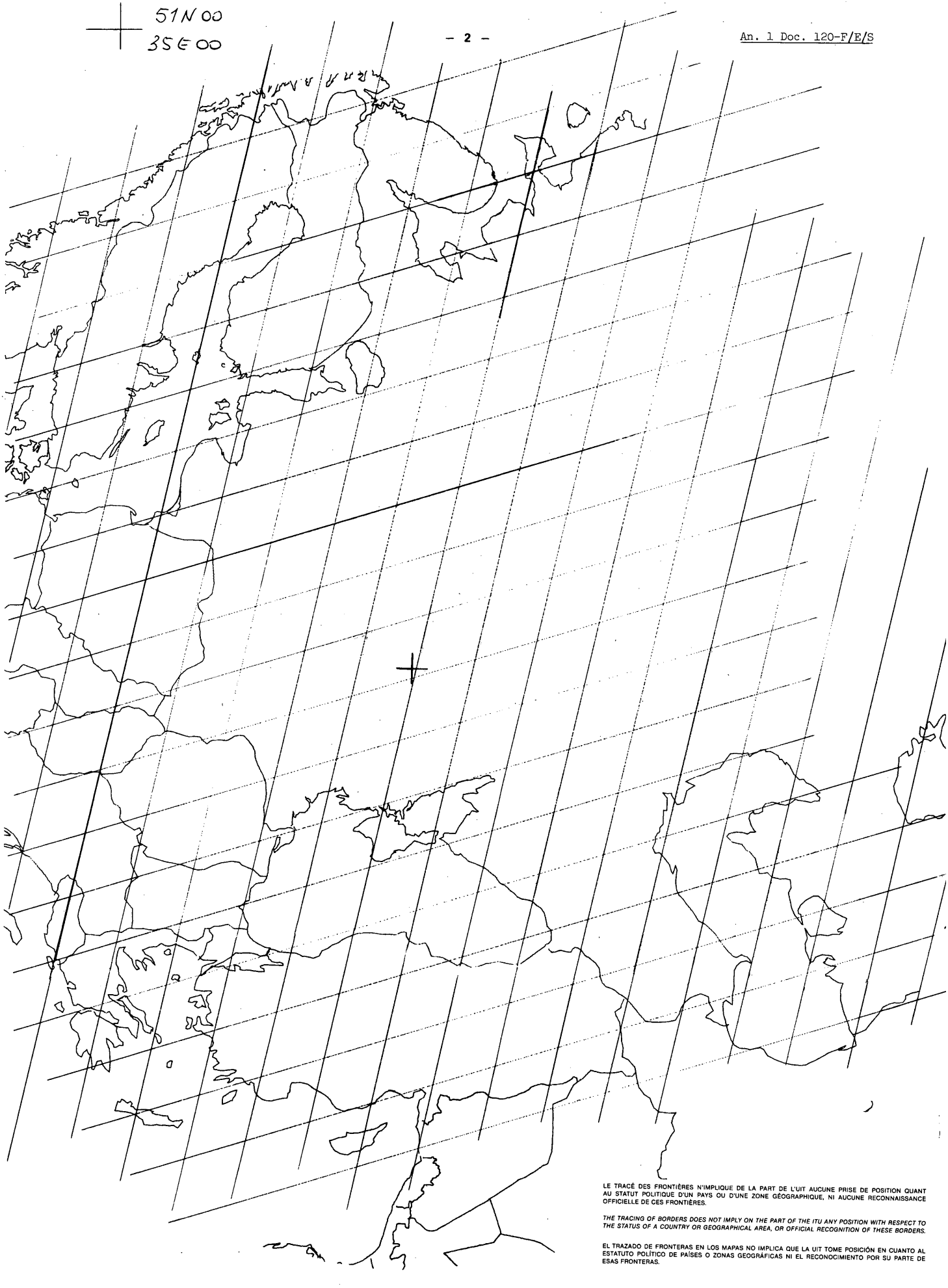


LE TRACÉ DES FRONTIÈRES N'IMPLIQUE DE LA PART DE L'UIT AUCUNE PRISE DE POSITION QUANT AU STATUT POLITIQUE D'UN PAYS OU D'UNE ZONE GÉOGRAPHIQUE, NI AUCUNE RECONNAISSANCE OFFICIELLE DE CES FRONTIÈRES.

THE TRACING OF BORDERS DOES NOT IMPLY ON THE PART OF THE ITU ANY POSITION WITH RESPECT TO THE STATUS OF A COUNTRY OR GEOGRAPHICAL AREA, OR OFFICIAL RECOGNITION OF THESE BORDERS.

EL TRAZADO DE FRONTERAS EN LOS MAPAS NO IMPLICA QUE LA UIT TOME POSICIÓN EN CUANTO AL ESTATUTO POLÍTICO DE PAÍSES O ZONAS GEOGRÁFICAS NI EL RECONOCIMIENTO POR SU PARTE DE ESAS FRONTERAS.

51N 00
35E 00



LE TRACÉ DES FRONTIÈRES N'IMPLIQUE DE LA PART DE L'UIT AUCUNE PRISE DE POSITION QUANT AU STATUT POLITIQUE D'UN PAYS OU D'UNE ZONE GÉOGRAPHIQUE, NI AUCUNE RECONNAISSANCE OFFICIELLE DE CES FRONTIÈRES.

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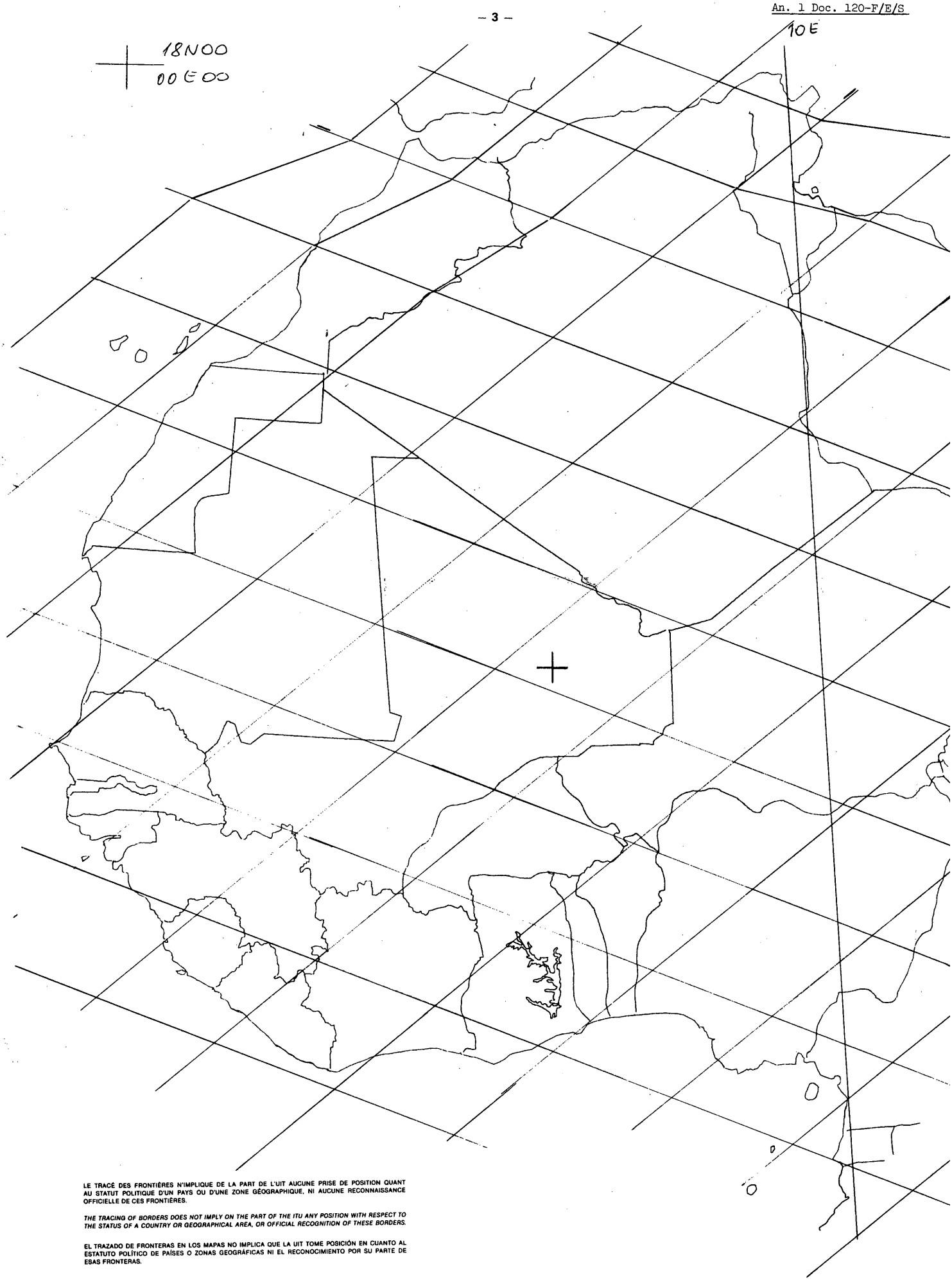

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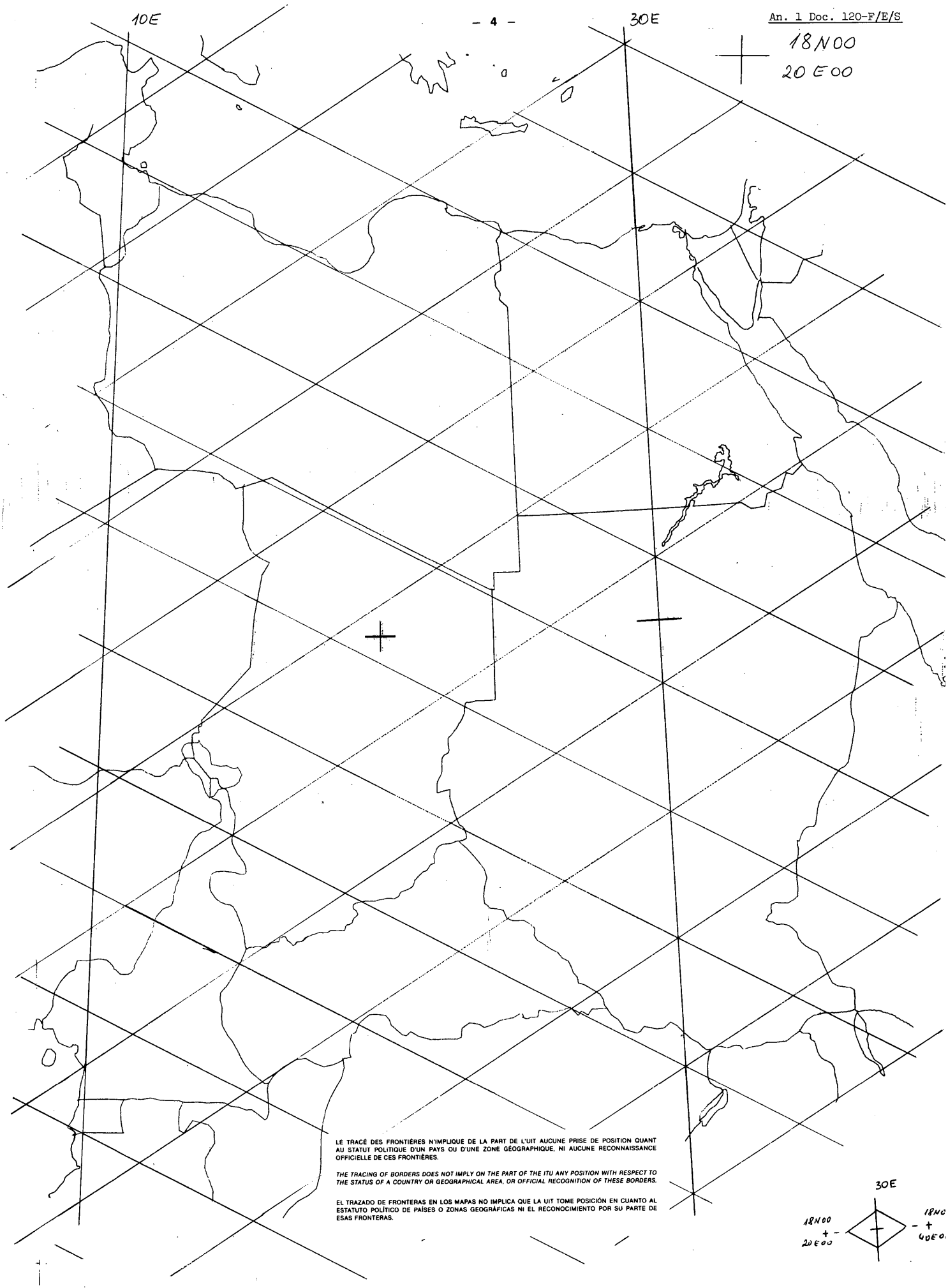

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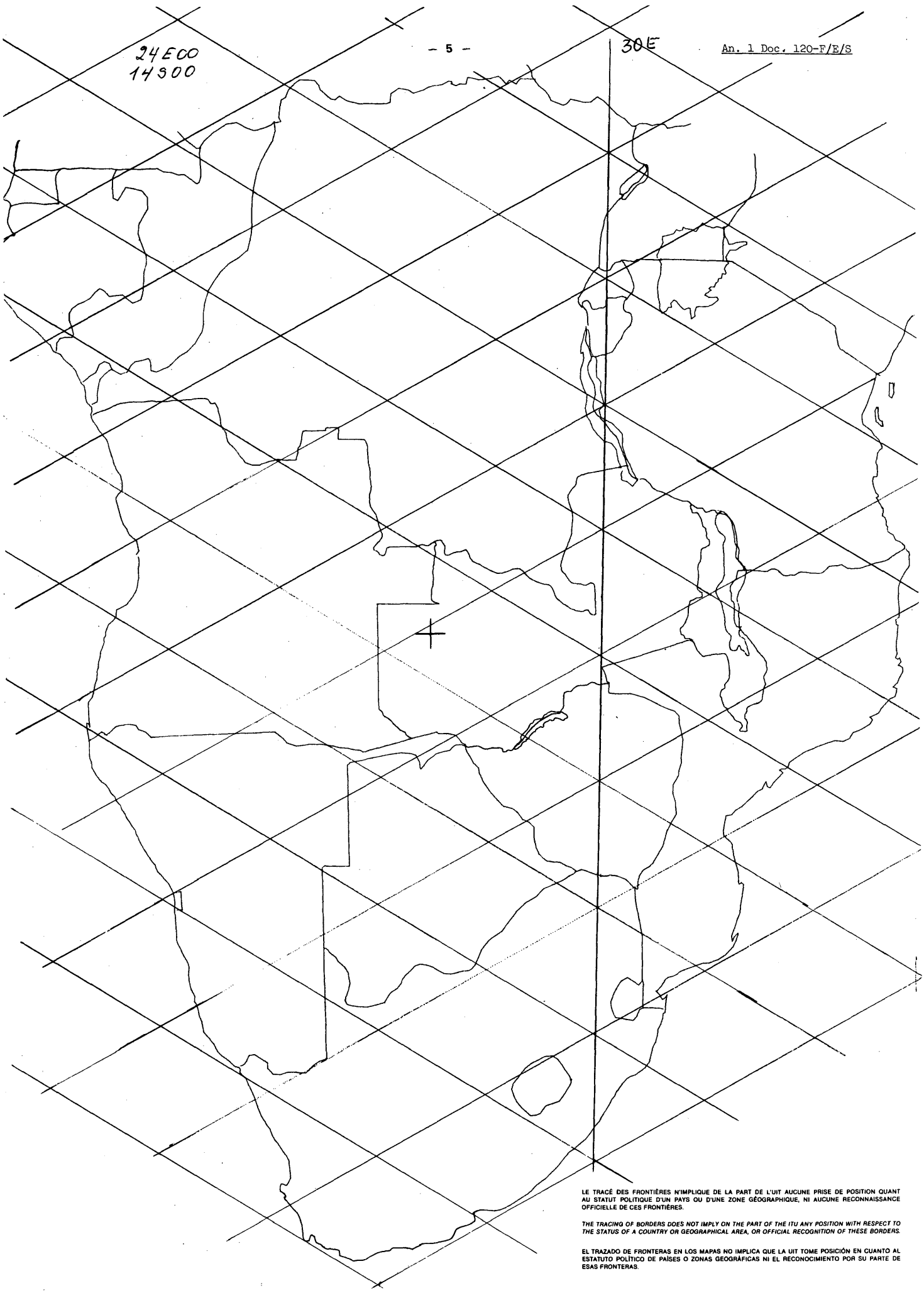

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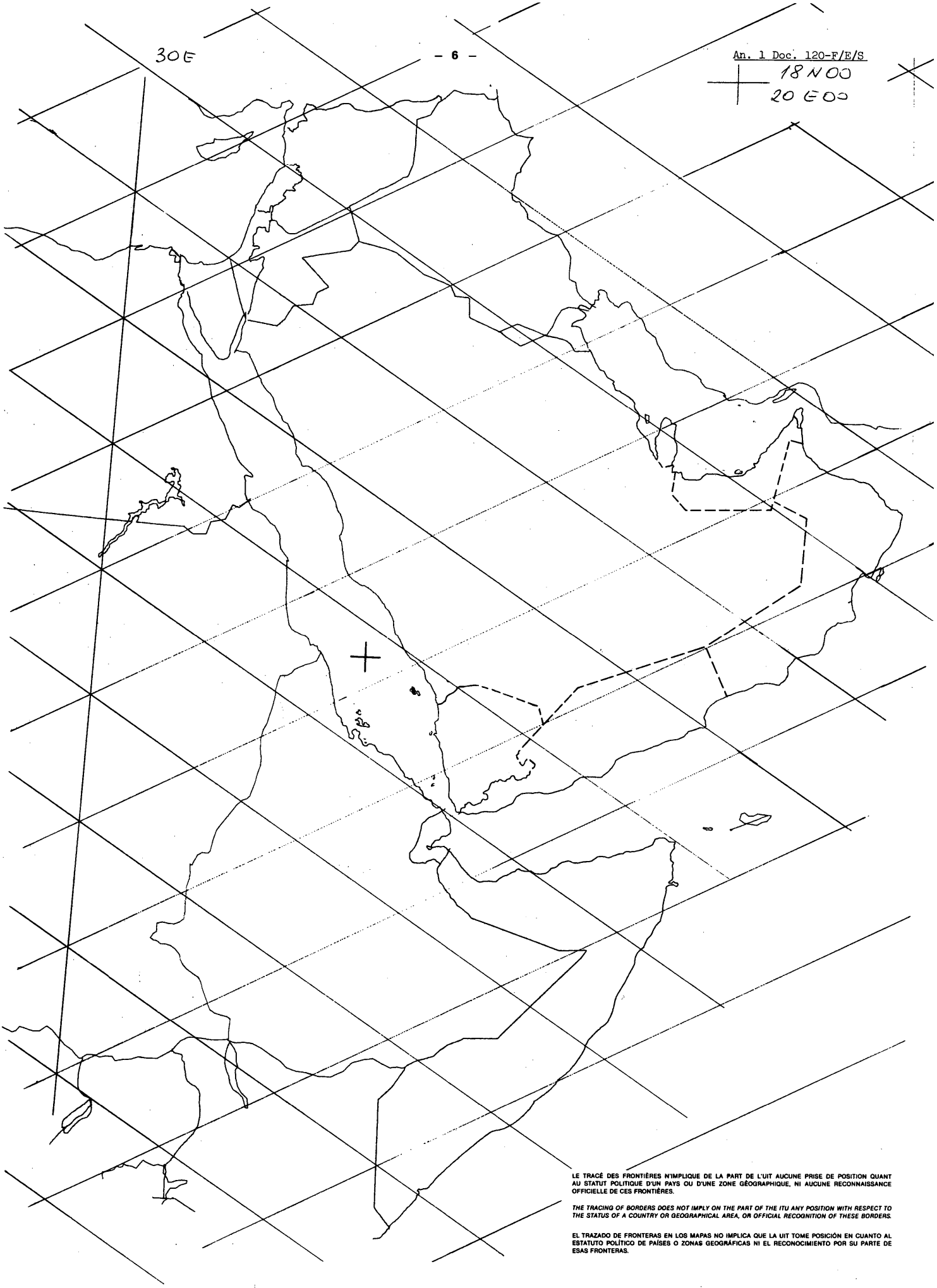

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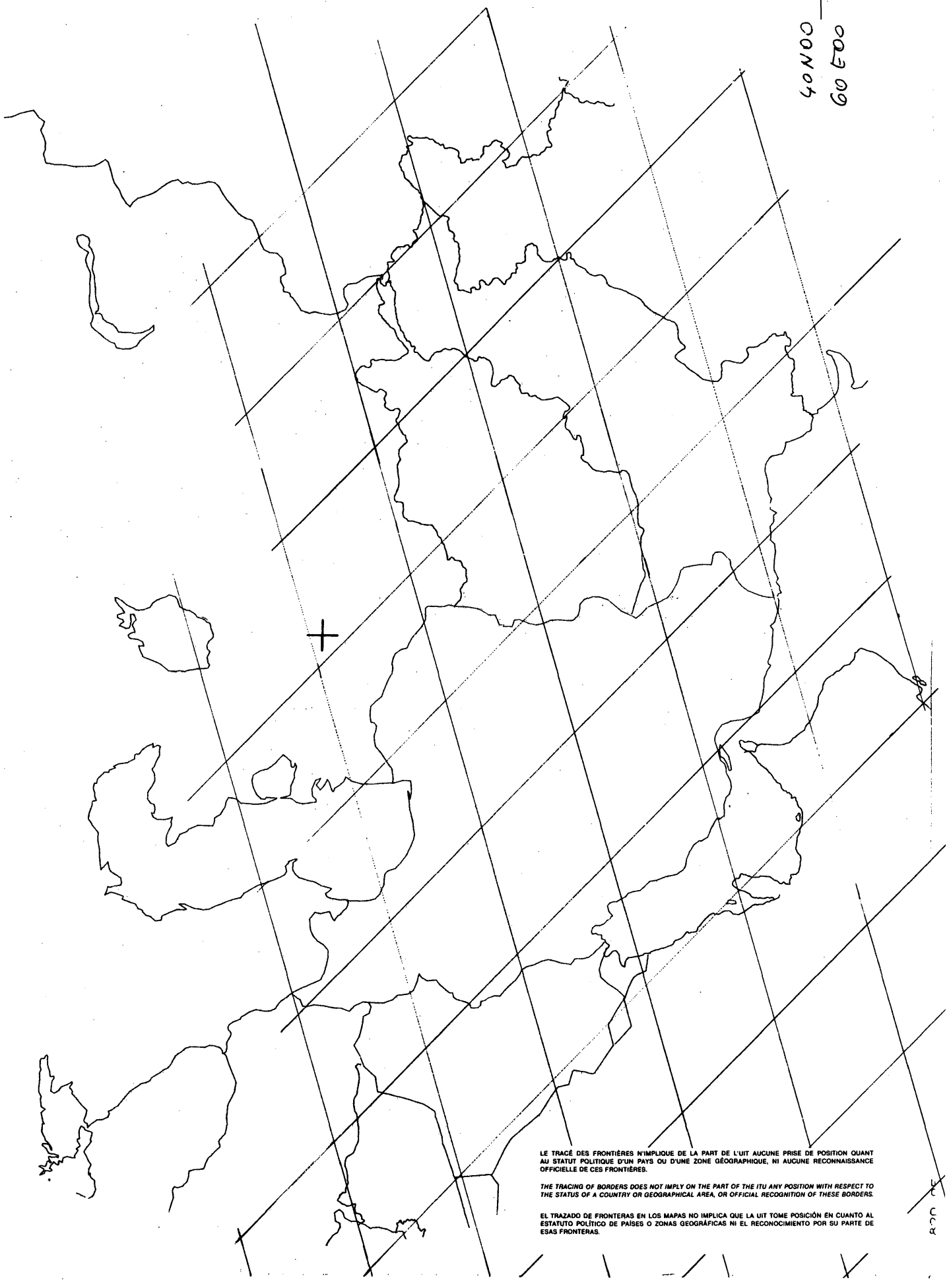

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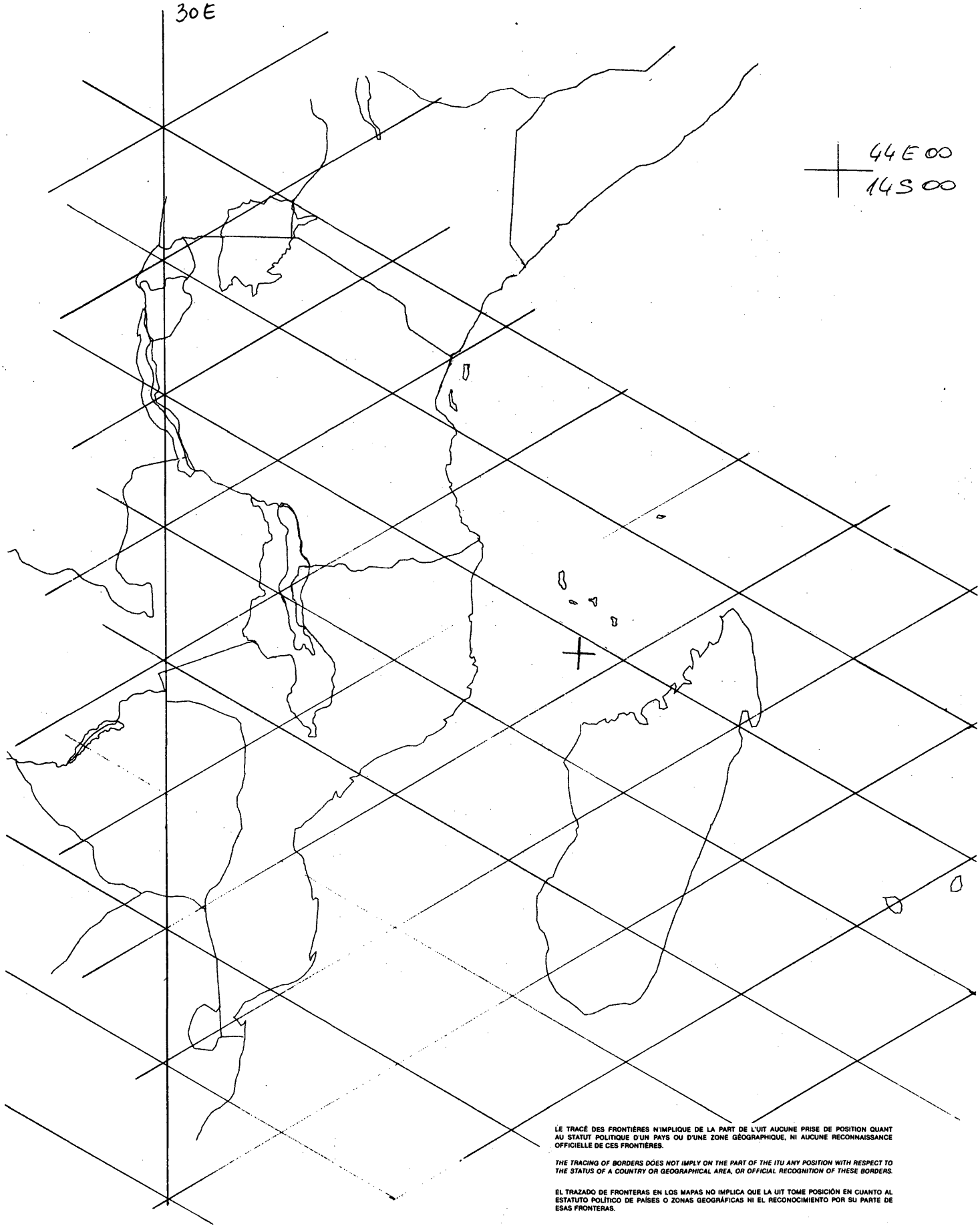


INTERNATIONAL TELECOMMUNICATION UNION

REGIONAL BROADCASTING CONFERENCE

(FIRST SESSION) GENEVA, 1982

Document No. 121-E
13 September 1982
Original: English

PLENARY MEETING

Report of the Ad Hoc Group PLEN/1

The Ad Hoc Group proposes in annex, the text, unanimously adopted by it for addition as a new paragraph 6.1.8, in the document 118, for the approval of the Plenary Meeting.

R. BOUNAB

Chairman of Ad Hoc Group PLEN/1

Annex: 1

ANNEX 1

When selecting the frequencies and characteristics for their stations in the region bordering countries having selected different lattices, administrations shall takes account of the incompatibilities that are likely to result from the use of different lattices.

Every effort shall be developed in order to reduce these incompatibilities and where they exist to resolve them by bilateral or multilateral discussions, preferably the Second Session of the Conference.

INTERNATIONAL TELECOMMUNICATION UNION

REGIONAL BROADCASTING CONFERENCE

(FIRST SESSION) GENEVA, 1982

Document No. 122-E
13 September 1982
Original : English

COMMITTEE 5

Report of the Chairman of ad hoc Group 5/5 to the Chairman of Committee 5

Ad hoc Group 5/5 submits the following proposals for amendments to Document No. 92 for consideration and approval by Committee 5.

1. Add on page 5 of Document No. 92 a new paragraph 4 as follows and renumber existing paragraph 4 to become 5 :

For the purpose of applying the regular channel distribution schemes of Figure 1 in Europe or Figure 2 in Africa and the Middle East, the two tables of Annex 7 shall convey the necessary information between channel numbers and frequencies in the two pertinent areas. For the purpose of the filling-in of the requirement forms and in bilateral or multilateral negotiations only frequencies should be used in order to avoid any ambiguity.

It should be noted that in Europe channel 0 (100.0 MHz) shall primarily be used, where wanted, in the same parts of the area as channel 79. Adaptation to frequency assignments below 100.0 MHz (for which no channel numbers are specified in Europe) may, however, require some special arrangements to be made, particularly as regards channels 0 to 3.

2. Add Annex 7 to Document No. 92.

TABLE 1

Correspondence between channel numbers and frequencies
for use in Europe

Channel/ Canal E No.	Frequency Fréquence Frecuencia MHz	Channel/ Canal E No.	Frequency Fréquence Frecuencia MHz	Channel/ Canal E No.	Frequency Fréquence Frecuencia MHz	Channel/ Canal E No.	Frequency Fréquence Frecuencia MHz	Channel/ Canal E No.	Frequency Fréquence Frecuencia MHz
0	100.0	16	101.6	32	103.2	48	104.8	64	106.4
1	100.1	17	101.7	33	103.3	49	104.9	65	106.5
2	100.2	18	101.8	34	103.4	50	105.0	66	106.6
3	100.3	19	101.9	35	103.5	51	105.1	67	106.7
4	100.4	20	102.0	36	103.6	52	105.2	68	106.8
5	100.5	21	102.1	37	103.7	53	105.3	69	106.9
6	100.6	22	102.2	38	103.8	54	105.4	70	107.0
7	100.7	23	102.3	39	103.9	55	105.5	71	107.1
8	100.8	24	102.4	40	104.0	56	105.6	72	107.2
9	100.9	25	102.5	41	104.1	57	105.7	73	107.3
10	101.0	26	102.6	42	104.2	58	105.8	74	107.4
11	101.1	27	102.7	43	104.3	59	105.9	75	107.5
12	101.2	28	102.8	44	104.4	60	106.0	76	107.6
13	101.3	29	102.9	45	104.5	61	106.1	77	107.7
14	101.4	30	103.0	46	104.6	62	106.2	78	107.8
15	101.5	31	103.1	47	104.7	63	106.3	79	107.9

TABLE 2

Correspondence between channel numbers and frequencies
for use in Africa and Middle East

	A	B	C	D	E	F	G
1	87.6	90.7	93.8	96.9	100.0	103.1	106.2
2	87.7	90.8	93.9	97.0	100.1	103.2	106.3
3	87.8	90.9	94.0	97.1	100.2	103.3	106.4
4	87.9	91.0	94.1	97.2	100.3	103.4	106.5
5	88.0	91.1	94.2	97.3	100.4	103.5	106.6
6	88.1	91.2	94.3	97.4	100.5	103.6	106.7
7	88.2	91.3	94.4	97.5	100.6	103.7	106.8
8	88.3	91.4	94.5	97.6	100.7	103.8	106.9
9	88.4	91.5	94.6	97.7	100.8	103.9	107.0
10	88.5	91.6	94.7	97.8	100.9	104.0	107.1
11	88.6	91.7	94.8	97.9	101.0	104.1	107.2
12	88.7	91.8	94.9	98.0	101.1	104.2	107.3
13	88.8	91.9	95.0	98.1	101.2	104.3	107.4
14	88.9	92.0	95.1	98.2	101.3	104.4	107.5
15	89.0	92.1	95.2	98.3	101.4	104.5	107.6
16	89.1	92.2	95.3	98.4	101.5	104.6	107.7
17	89.2	92.3	95.4	98.5	101.6	104.7	107.8
18	89.3	92.4	95.5	98.6	101.7	104.8	107.9
19	89.4	92.5	95.6	98.7	101.8	104.9	
20	89.5	92.6	95.7	98.8	101.9	105.0	
21	89.6	92.7	95.8	98.9	102.0	105.1	
22	89.7	92.8	95.9	99.0	102.1	105.2	
23	89.8	92.9	96.0	99.1	102.2	105.3	
24	89.9	93.0	96.1	99.2	102.3	105.4	
25	90.0	93.1	96.2	99.3	102.4	105.5	
26	90.1	93.2	96.3	99.4	102.5	105.6	
27	90.2	93.3	96.4	99.5	102.6	105.7	
28	90.3	93.4	96.5	99.6	102.7	105.8	
29	90.4	93.5	96.6	99.7	102.8	105.9	
30	90.5	93.6	96.7	99.8	102.9	106.0	
31	90.6	93.7	96.8	99.9	103.0	106.1	

INTERNATIONAL TELECOMMUNICATION UNION

REGIONAL BROADCASTING CONFERENCE

(FIRST SESSION) GENEVA, 1982

Document No. 123-E
10 September 1982
Original : English

COMMITTEE 5

First Report of the Chairman of ad hoc Group 5/2 to the Chairman of Committee 5

1. Introduction

The ad hoc Group 5/2 discussed the impact of decisions taken in Committee 4, relative to compatibility between services on planning principles and planning methods developed in Committee 5, according to its terms of reference.

There is a possibility of incompatibility between sound broadcasting service in the band 87.5 - 108 MHz and the following services :

- land mobile and fixed service (87.5 - 108 MHz);
- television broadcasting service (87.5 - 100 MHz);
- aeronautical radionavigation service (108 - 118 MHz);
- aeronautical mobile (R) service (118 - 137 MHz).

2. Compatibility assessment

2.1 Land mobile and fixed services

Provisions in footnotes RR 581, 582 and 587 to 589 allocate some parts of the band 87.5 - 108 MHz in some countries in Region 1 to the land mobile, fixed and mobile except aeronautical mobile (R) services on a permitted basis. Provisions of RR 419 state that in the preparation of frequency plans the primary service (i.e. the sound broadcasting service) has prior choice of frequencies.

The frequency assignments to broadcasting stations to be included in the Plan can be selected without regard to existing or planned stations of the permitted services in Region 1.

In Region 3, the band 87 - 100 MHz is allocated to the fixed, mobile and broadcasting services on a primary basis. The sharing certeria which are to be taken into account when assigning frequencies to broadcasting stations near to Region 3 are to be found in items 5.1 and 5.2 of the Report of the First Session.

An appropriate text for inclusion in item 6.3 is given in Annex 6 (Document No. 92).

2.2 Television broadcasting service

The new Plan should in no way affect existing or planned assignments to television stations in the band 87.5 - 100 MHz made in accordance with the Regional Agreement (Stockholm, 1961).

In order to determine the compatibility the sharing criteria to be applied are indicated in item 6.3 of the Report of the First Session.

For the calculation of the interference, it is necessary to determine the percentage of time and the propagation curves (Figures 2.1 to 2.9 of Document No. 97) which have to be applied. It is suggested that the interference should be calculated for 1% of the time in calculations of the compatibility between sound broadcasting and television broadcasting services.

2.3 Aeronautical radionavigation

The ad hoc Group examined the documents from Committees 4 and 5 and prepared Annex 5 containing a method of calculation to be used for analyzing the plan before and during the Second Session of the Conference. This annex will be Annex 5 to Document No. 92. If the broadcasting and aeronautical stations belong to one and the same country, administrations may use this method or any other method they consider useful. Annex 5 will make it possible to determine whether there is likely to be any incompatibility between stations belonging to different countries. The resolution of such incompatibilities through bilateral or multilateral negotiations will be based on criteria and methods accepted by the administrations concerned.

If Annex 5 is adopted, items 5.3.9.1 to 5.3.9.8 could be deleted from Chapter 5 (Document No. 109).

Consequential changes to paragraph 7.3 of Document No. 89(Rev.1) are given in Annex 1.

2.4 Aeronautical mobile (R) service

The protection criteria for the aeronautical mobile (R) service are given in item 5.3.4 of the Report of the First Session / Document No. 100 /.

It is felt necessary to protect the aeronautical mobile (R) service, taking into account the safety aspects involved.

The administrations would consider the incompatibilities between the aeronautical mobile (R) service and the sound broadcasting service in preparation of their requirements.

The interim planning process will continue on the assumption that there will be no serious problems of incompatibility. However, as the extent of the problems is still unknown the Second Session may wish to determine the more precise application of the protection necessary.

3. Additional remark

The results of analyses of draft plans by the IFRB at various stages up to and including the Second Session will include an indication of incompatibilities with the aeronautical radionavigation service. It should be emphasized that the purpose is to inform administrations of those cases where they should undertake further detailed examination, after which they should indicate to the IFRB whether or not the related broadcasting assignments can be accepted.

4. The need of a draft Resolution relative to the assistance of the IFRB and ICAO to some administrations was discussed and a provisional text is annexed to this Report (Annex 7). The text of the Resolution was not discussed in the ad hoc Group 5/2, it is forwarded for consideration to Committee 5.

5. Conclusions

In the course of the international planning procedure between the First and Second Sessions of this Conference, the calculations concerning incompatibilities between the sound broadcasting service and other services should take into consideration :

1) the mobile and the fixed services in countries of Region 3;

2) the existing or planned assignments to television stations in the band 87.5 - 100 MHz made in accordance with the Regional Agreement (Stockholm, 1961);

3) the planning constraints needed to ensure compatibility with the aeronautical radionavigation service which are submitted to the IFRB in a supplementary note for each individual case together with the requirements of the administration concerned.

K. OLMS
Chairman of ad hoc Group 5/2

Annexes : 4

A N N E X 1

7.3 Processing of requirements by the IFRB

After validating them, the IFRB shall enter all the requests in a register with a view to establishing an inventory of requirements, on the basis of which the interference calculations and incompatibility checks will be made.

The IFRB shall send to each administration in duplicate, as soon as possible and not later than 30 April 1984, a separate printed list of the requirements of the administration concerned.

Administrations shall check the data on their stations and shall communicate to the IFRB not later than 30 June 1984 any material errors they have detected and the information relating to aeronautical stations which are likely to be affected.

The IFRB shall check this information and carry it into the inventory of requirements.

* * * * * *

(Annexes 2, 3 and 4 do not exist)

* * * * * *

ANNEX 5

COMPATIBILITY BETWEEN VHF BROADCASTING STATIONS AND STATIONS OF THE AERONAUTICAL RADIONAVIGATION AND AERONAUTICAL MOBILE (R) SERVICES

1. The calculation method and criteria contained in this Annex must be used for analyzing the plan before and during the Second Session of the Conference. If the broadcasting and aeronautical stations belong to one and the same country, administrations may use this method or any other method they consider useful. This Annex will make it possible to determine whether there is likely to be any incompatibility between stations belonging to different countries. The resolution of such incompatibilities through bilateral or multilateral negotiations will be based on criteria and methods accepted by the administrations concerned.

2. To ensure compatibility between broadcasting stations in the band 87.5 to 108 MHz and aeronautical radionavigation stations in the band 108 to 118 MHz and stations of the aeronautical mobile (R) service in the band 118 to 137 MHz the following procedure must be applied :

2.1 When an administration defines its requirements with a view to communicating them to the IFRB, it may apply the coordination contour concept referred to in point 3 to identify and to indicate in an additional note the specific frequency planning constraints which are essential to ensure compatibility in each case with the aeronautical radionavigation service. These additional constraints shall be met as far as possible during the Second Session of the Conference when the plan is drawn up.

For the submission of the above-mentioned constraints, the form given in Appendix 1 to this Annex is recommended.

2.2 At a later stage, when an administration receives the inventory of requirements established by the IFRB (not later than 30 April 1984), it should use the coordination contour mentioned in point 3 to identify the broadcasting stations of other countries which are likely to affect the operation of any ILS or VOR station. The administration should determine the test points for its ILS and VOR stations in accordance with paragraph 4 of this Annex and it should communicate to the IFRB by /30 June 1984/ the geographical coordinates of the station sites together with the azimuth, distance and height of each test point using the form given in Appendix 2 to this Annex.

2.3 The IFRB shall apply the software to be supplied to it by the French Administration to determine whether the protection criteria defined in point 5 have been met, and it shall include the results in the general analysis of the plan.

2.4 Administrations shall endeavour through bilateral and multilateral negotiations to resolve incompatibilities using the criteria and methods they consider most appropriate.

3. Coordination contour around an aeronautical radionavigation station

3.1 For type A interference, administrations should calculate and draw on a suitable map interference contours with a radius of 125 km around every test point of each radionavigation station to be protected. Broadcasting stations outside the outer resulting contour are considered as not being likely to affect the aeronautical radionavigation station under consideration.

The calculations of the interfering field strength at the test points will permit the identification of those broadcasting stations that need a detailed consideration by administrations.

3.2 For type B interference if any broadcasting station within the above contour is causing at the nearest test point of the aeronautical radionavigation station an interference greater than -25 dBm receiver input power, an intermodulation computer program shall be used to identify those broadcasting stations that need detailed consideration by administrations.

4. Test points

While applying paragraph 6 for the resolution of incompatibilities administrations shall, in a second step, carry out interference calculations at test points.

In view of the large number of calculations necessary to assess compatibility, in practice these calculations can be limited to a small number of test points on national territory at which the conditions are considered to be the most difficult. In order to be able to apply data processing methods, the following procedure for the choice of test points is recommended.

The test points chosen by the administration shall be communicated to the IFRB where required using the form contained in Appendix 2 to this Annex.

4.1 ILS

4.1.1 If the broadcasting station is not in the area below the service volume defined in item 5.3.2.1 the points A, B, C defined in Figure 1 of this Annex shall be used together with point D as indicated by the responsible administration.

4.1.2 If the broadcasting station is within the area below the ILS service volume, a case-by-case assessment is necessary (see 5.3.2.2.5). Unless otherwise specified the field strength shall be calculated at a distance of 100 m from the broadcasting antenna using the direction of maximum e.r.p. if not otherwise specified.

4.2 VOR

4.2.1 If the broadcasting station is not in the VOR service area, the 4 cardinal points (N, E, S and W) of the circle forming the boundary of the service areas at a height of 1,000 m above the beacon shall be chosen.

4.2.2 If the broadcasting station is in the VOR service area, a case-by-case assessment is necessary (see 5.3.3.2). Unless otherwise specified the field strength shall be calculated at a distance of 300 m from the antenna of the broadcasting station using the direction of maximum e.r.p. if not otherwise specified.

4.3 VHF communications

Service volumes vary widely. Initially, for the sake of simplicity, the 4 cardinal points 30 km from the land station in the aeronautical mobile (R) service at a height of 1,000 m above the height of the land station shall be considered unless alternative test points are indicated by the responsible administration.

VHF communication for on route purposes may be treated on a case-by-case basis depending on the operational significance.

5. Analysis of incompatibilities

The IFRB shall use the information relating to test points together with the inventory of requirements in order to assess the incompatibilities using the following criteria.

5.1 Propagation

Calculations shall be limited to the test points in line-of-sight from the broadcasting station, it being assumed that the terrain is at the same height as the aeronautical radionavigation station and the effective earth's radius is 4/3 of the actual radius. Calculations shall be made using free space propagation conditions and e.r.p. in the horizontal plan. No account should be taken of polarization differences, except in special cases (e.g. circular polarization) as indicated in item 5.3.6 of the Report of the First Session.

5.2 Protection criteria for aeronautical radionavigation service

The field strength of every broadcasting station in the band 87.5 - 108 MHz within the outer resulting coordination contour of an aeronautical radionavigation station at the test points shall be calculated as an interfering signal and compared with the following minimum field strengths :

- ILS : 40 μV/m (32 dB(μV/m))
- VOR : 90 μV/m (39 dB(μV/m))

The calculations shall indicate :

- those cases for which the ratio of the minimum field strength to the calculated interfering signal reduced by 85 dB is lower than 17 dB,
- those broadcasting transmitters which cause at the test point an interference exceeding -25 dBm corresponding to an interfering field strength derived from the following formula :

$$E\ dB(\mu V/m) = N(dBm) + 121 + (108 - f(MHz))$$

where f is the frequency of the broadcasting station.

5.3 Publication of the results

The publication of the results of the calculations shall indicate for each incompatibility :

a) the identification of the aeronautical radionavigation station affected;

b) the identification of the broadcasting stations giving rise to the incompatibilities;

c) the value in decibels by which the required protection ratio is not met at the nearest test point to the broadcasting station;

d) the value of interferences exceeding -25 dBm at the nearest test point to the broadcasting station;

e) the frequencies of those broadcasting stations which are likely to contribute to intermodulation interference.

6. Resolution of incompatibilities

6.1 When the broadcasting station is within the coordination contour referred to in paragraph 3 of this Annex a detailed compatibility analysis shall be undertaken by the administrations. In many cases, this may be achieved through existing national coordination machinery but, in some cases, the joint analysis will need to take place between administrations of neighbouring countries.

The first stage in the analysis should be to determine whether, for each mode of interference set out in section 5.3.1 and by applying the measures set out in sections 5.3.7.2 to 5.3.7.4, a compatibility exists between the two services. For example by applying the values set out in section 5.3.7.4 the coordination zone around the broadcasting station reduces to the values set down in Table B.

TABLE B

Coordination zone with -85 dB filtering at the broadcasting station

e.r.p. kW	200	150	100	50	10	1
distance km	31	27	22	15.5	7.0	2.2

Where such compatibility exists for all broadcasting transmitters in relation to a particular radionavigation service, planning of the broadcasting frequency assignments can proceed without constraints imposed by the need to protect that service.

6.2 For those countries having a large number of both broadcasting stations and aeronautical radionavigation stations, the application of the methods set out in paragraphs 3 and 6.1 by manual means will constitute a huge workload. Computer methods can contribute significantly to reducing the task and rapidly identifying the conflict situations. Where the administrations use computer methods it would be of greatest value if the results could identify :

i) those broadcasting stations which do not affect the aeronautical service in any way;

ii) those which require additional filtering and identifying the necessary degree of suppression of spurious emissions;

iii) those requiring frequency planning solutions.

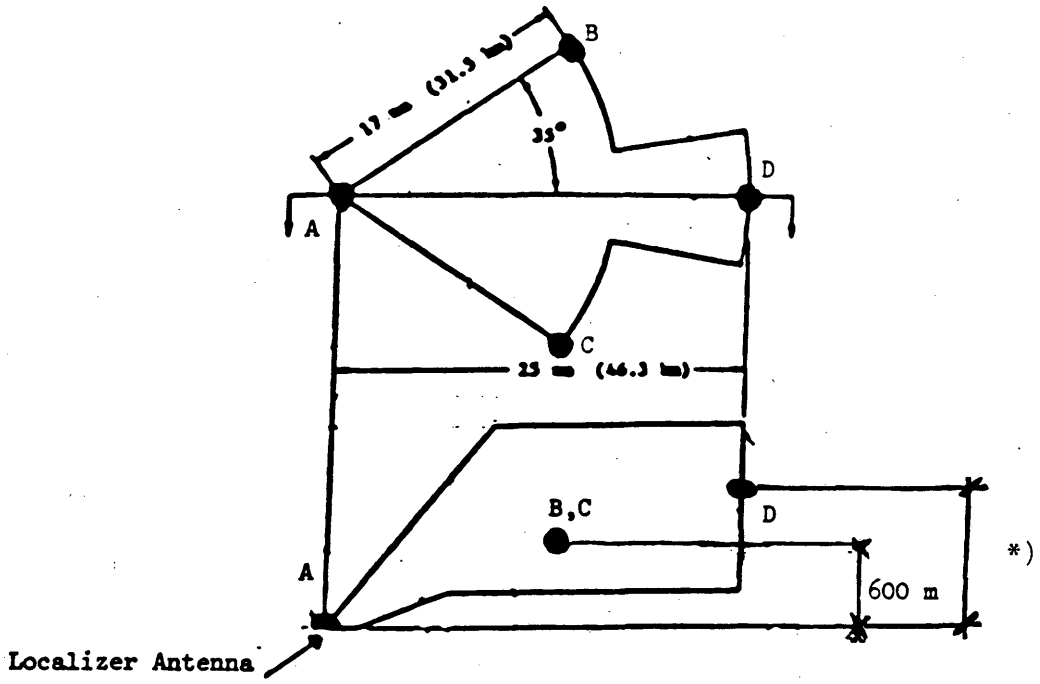
6.3 In cases where incompatibility still cannot be resolved, a more detailed case by case study should be undertaken applying the factors set out in section 5.3.8. By this means, it may be possible to further eliminate problem cases.

6.4 For each individual case still without a solution, the administrations should determine, taking account of future expansion of the aeronautical service whether protection in the service volume is required over a limited number of channels or for the entire band 108 to 118 MHz. In the first case the administration should then calculate whether the particular measures set out in section 5.3.7.5 could provide a solution.

6.5 Where compatibility is clearly only feasible through broadcasting frequency planning solutions, the administration, when submitting its requirements, shall indicate in a supplementary note to the IFRB what particular frequency planning constraints are needed in order to ensure compatibility with the aeronautical service for each individual case. These supplementary constraints shall be satisfied in planning during the Conference to the extent feasible.

6.6 During the broadcasting service planning there will be a need for a computer analysis facility specifically intended to identify any broadcasting assignments which do not meet the compatibility requirements for the aeronautical radionavigation stations indicated by administrations to the IFRB under 6.5.

6.7 If, after following the procedures set out in 6.1 to 6.5 above, a solution is still not arrived at, then the only other possible solution may be to choose another site for the broadcasting station. It is conceivable in some situations that this may not be feasible; in this case such an assignment may appear in the Plan but cannot be implemented due to an unresolvable incompatibility with the aeronautical radionavigation service.



*) Height to be indicated by the administration.

Figure 1 - Test points for ILS localizer

Appendix 1

(to Annex 5)

Regional Administrative Radio Conference
for VHF sound broadcasting in the band 87.5 - 108 MHz
Second Session (31 October - 12 December 1984)

ADDITIONAL NOTE

FORM FOR SUBMISSION OF FREQUENCY PLANNING CONSTRAINTS
WHICH ARE NEEDED TO ENSURE COMPATIBILITY BETWEEN
SOUND BROADCASTING AND AERONAUTICAL RADIONAVIGATION SERVICES
(Annex 5, item 2.1)

(01) ADMINISTRATION	ADM. SERIAL No.	(00) IFRB SERIAL No.
----------	----------	----------

(41) IDENTIFICATION of the aeronautical radionavigation station which may be affected by broadcasting stations.

AERONAUTICAL RADIONAVIGATION STATION

Frequency	Name	Country	Longitude Degree E/W min	Latitude Degree N/S min
___·___ MHz	----------	----------	----------	----------

Appendix 2

(to Annex 5)

FORM FOR SUBMISSION OF DATA FOR CALCULATION OF INCOMPATIBILITIES BETWEEN SOUND BROADCASTING AND AERONAUTICAL RADIONAVIGATION SERVICES

(Annex 5, item 2.2)

(01) ADMINISTRATION	ADM. SERIAL No.	(00) IFRB SERIAL No.
----------	----------	----------

(51) AERONAUTICAL RADIONAVIGATION STATION which is likely to be affected :

Frequency	Name	Country
___.___ MHz	----------	----------

Longitude Degree E/W min	Latitude Degree N/S min	Type	Height of antenna above sea level in metres
----------	----------	☐ ILS ☐ VOR	---------

(52) TEST POINTS

	AZIMUTH FROM THE AERONAUTICAL RADIONAVIGATION STATION TO THE TEST POINT	DISTANCE BETWEEN THE AERONAUTICAL RADIONAVIGATION STATION AND THE TEST POINT IN Km	HEIGHT ABOVE SEA LEVEL IN METRES
1.	----------	----------	----------
2.	----------	----------	----------
3.	----------	----------	----------
4.	----------	----------	----------

(53) BROADCASTING STATIONS which are likely to affect the aeronautical radionavigation station :

	Country	Name	IFRB Serial No.	Frequency
1.	---	----------	----------	---.--- MHz
2.	---	----------	----------	---.--- MHz
3.	---	----------	----------	---.--- MHz
4.	---	----------	----------	---.--- MHz
5.	---	----------	----------	---.--- MHz
6.	---	----------	----------	---.--- MHz

ANNEX 6

The assessment of incompatibilities with the fixed and mobile services in Region 3, shall be made at the border between Regions 1 and 3 applying the sharing criteria contained in items 5.1 and 5.2.

The Administrations of Afghanistan and Iran will use the form given in Appendix 1 to the Radio Regulations to inform the IFRB of those stations of the fixed and mobile services in their countries that have to be taken into account during the planning procedure.

ANNEX 7

RESOLUTION / _ _ /

The First Session of the Regional Administrative Conference for FM Sound Broadcasting in the VHF Band (Region 1 and certain countries concerned in Region 3),

considering

a) that it has decided that some protection should be ensured for aeronautical radionavigation stations in the band / 108 to 118 MHz / and for stations of the aeronautical mobile (R) service in the band / 118 to 137 MHz /;

b) that the calculation procedures and methods adopted by the First Session are based principally on the efforts which administrations must make to estimate and resolve interference levels and that the publication of information on aeronautical stations is confined to the indication of a small number of test points;

c) that the developing countries may have difficulty in determining interference levels and that some of these countries may not be represented at the Second Session of the Conference;

d) that ICAO has detailed information on the aeronautical radionavigation stations operating in these countries,

resolves

1) that the countries of Africa and the Middle East may request the IFRB to assist them in calculating the levels of interference that broadcasting stations might cause to aeronautical radionavigation and aeronautical mobile stations;

2) that the IFRB should be invited to assist the above-mentioned countries in assessing interference and, for that purpose, to seek the cooperation of ICAO, particularly with a view to obtaining detailed information on stations of the aeronautical radionavigation service.

INTERNATIONAL TELECOMMUNICATION UNION

REGIONAL BROADCASTING CONFERENCE

(FIRST SESSION) GENEVA, 1982

Document No. 124-E
13 September 1982
Original : French

COMMITTEE 5

Second Report of the Chairman of ad hoc Group 5/2 to the Chairman of Committee 5

Chapter 5 of the report of the Conference

It is proposed that the following figure (Figure 5.1) should be inserted at the end of paragraph 5.1 of the report of the Conference (Document No. 109).

The figure is taken from the original proposal annexed to Document No. DT/35, with the addition of the stereophonic protection ratio curve from CCIR Report 659 (Figure 1). That curve is also reproduced in the report of the CCIR to the First Session of the Conference (Figure 6.1).

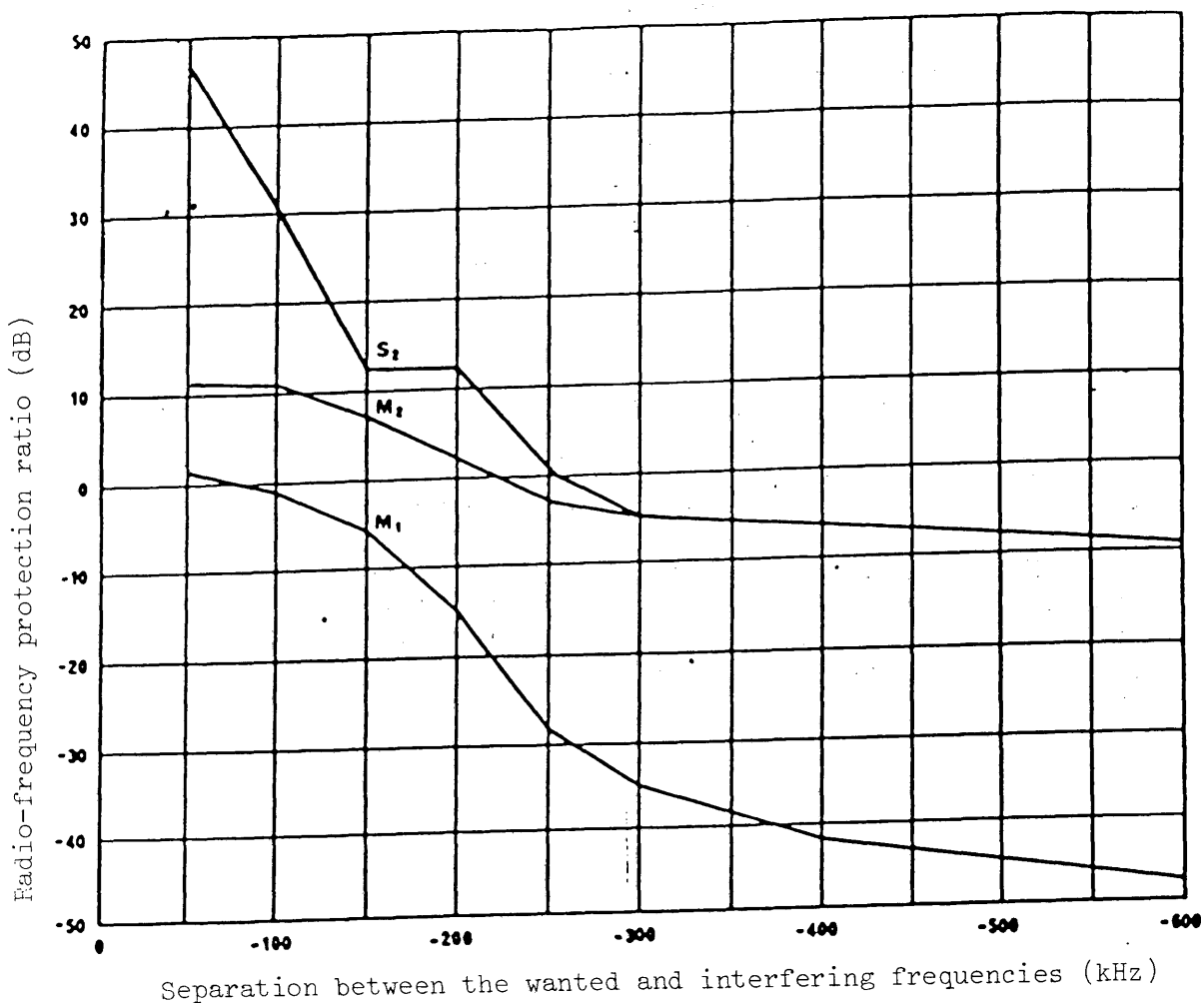


FIGURE 5.1

RF protection ratio curves for a monophonic or stereophonic FM emission with interference by an FM or AM narrow-band emission. Steady interference. (Average curves for the ratios measured on domestic receivers)

Curve M_1 : monophonic reception (unwanted signal: FM, modulation index m = 1)

M_2 : monophonic reception (unwanted signal: AM, modulation depth m = 95%, receiver input voltage 1 mV)

S_2 : stereophonic reception (unwanted signal AM, modulation depth m = 95%, receiver input voltage 1 mV)

K. OLMS
Chairman of ad hoc Group 5/2

INTERNATIONAL TELECOMMUNICATION UNION

REGIONAL BROADCASTING CONFERENCE

(FIRST SESSION) GENEVA, 1982

Document No. 125-E
14 September 1982
Original : English

COMMITTEE 5

SUMMARY RECORD

OF THE

FOURTH MEETING OF COMMITTEE 5

(PLANNING METHODS)

Friday, 3 September 1982, at 0900 hrs

Chairman : Mr. K. ARASTEH (Islamic Republic of Iran)

Subjects discussed :		Document No.
1.	Approval of the Summary Records of the First and Second Meetings of Committee 5	51, 52
2.	Consideration of the Report of ad hoc Group 5/1	70
3.	Report by the Chairman of Working Group 5A	-
3.1	First Report	59
3.2	Second Report	60
3.3	Third Report	72
3.4	Progress of work	-
4.	Report by the Chairman of Working Group 5B	69
5.	Note from the Chairman of Committee 4 to the Chairman of Committee 5	67
6.	Establishment of ad hoc Group 5/2	-
7.	Low power stations	-

1. Approval of the summary records of the first and second meetings of Committee 5 (Documents Nos. 51 and 52)

1.1 The Chairman proposed that the words "It was so agreed" be inserted at the end of paragraph 2.1 of Document No. 52.

The summary records of the first and second meetings of Committee 5 were approved, subject to that amendment.

2. Consideration of the Report of ad hoc Group 5/1 (Document No. 70)

2.1 The Chairman of ad hoc Group 5/1 presented the proposed structure for Chapters 6 and 7 of the Conference Report, which had been drafted in close collaboration with the Chairmen of the Working Groups. It was understood that heading 6.3 would also cover the analysis of the Plan. The remainder of the Committee's work, on definitions, would come under Chapter 1 of the Conference Report.

2.2 The Chairman of Working Group 5A pointed out that items 6.1 to 6.4 would be further divided into various sub-items when the final texts became available.

2.3 Following a request for clarification from the Chairman of Working Group 5B, the Chairman said that at that stage the two Chapters 6 and 7 corresponded more or less to the two areas covered by Working Groups 5A and 5B respectively, but the distinction would not be strictly applied and there would probably be some overlap.

The Report of ad hoc Group 5/1 contained in Document No. 70 was approved.

2.4 The Chairman requested the drafting group to ensure that the text of the Report followed the approved format.

3. Report by the Chairman of Working Group 5A (Documents Nos. 59, 60 and 72)

3.1 First Report (Document No. 59)

3.1.1 The Chairman of Working Group 5A introduced Document No. 59, page 1 of which contained unanimous conclusions on stereophonic reception, the decision not to adopt a lower power limit and Document No. 26 (IFRB). A final decision on the figures in square brackets in paragraph 1.1 could not be taken until the conclusions of Committee 4 were published.

3.1.2 The representative of the CCIR wondered whether it would be sufficient to give only the front-to-back ratio in paragraph 1.1. The receiving antenna diagram in CCIR Recommendation 599 had been taken into account in Committee 4 documents.

3.1.3 The delegate of the Federal Republic of Germany explained that planning could be based on mono or stereo reception; if the latter was used as a basis for planning, a 12 dB front-to-back ratio should be mentioned.

3.1.4 Mr. Berrada (IFRB) said that in discussions held in small drafting and preparatory groups it had been agreed that receiving antenna discrimination would be taken into account for values between 0 and 12 dB. A cross-reference to a diagram to be published in a Committee 4 Report might usefully be inserted in brackets after the figure of 12 dB.

3.1.5 The delegate of the United Kingdom, although not objecting to the suggestion in principle, did not think it appropriate for the Secretariat to introduce changes at that stage in the proceedings, after the matter had already been discussed and the document unanimously adopted by delegations.

Paragraph 1 of the document was approved without amendment.

3.1.6 The Chairman of Working Group 5A referred to paragraph 2 concerning the reserved position of Syria, and the problem of how to draw the attention of the Second Session of the Conference to the questions dealt with in Document No. 26. After discussions with the Syrian delegation, he thought the issue could be resolved if the IFRB could prepare an appropriate document on the subject for submission to the Second Session. Paragraph 2 might then read : "The First Session requests the IFRB to draw the attention of the Second Session to this matter".

3.1.7 The delegate of Syria supported the proposal, in the light of which his delegation's reservation could be withdrawn.

3.1.8 The delegate of the United Kingdom thought that if the IFRB was going to revise Document No. 26 and submit it to the Second Session, there was no need for the above wording and paragraph 2 could be deleted.

3.1.9 Mr. Berrada (IFRB) said that the IFRB should be in a position to redraft and submit the document.

It was therefore decided to delete paragraph 2, on the understanding that the IFRB would be submitting a revised version of Document No. 26 to the Second Session of the Conference.

3.2 Second Report (Document No. 60)

3.2.1 The Chairman of Working Group 5A introduced the Second Report to Committee 5 dealing with frequency planning constraints. The frequency spacing figures in square brackets in paragraphs 1 and 2 would depend on the outcome of discussions in Committee 4. The sentence in square brackets in paragraph 3.2, which merely repeated the content of the first sentence in paragraph 3, was to be deleted.

He pointed out that paragraph 1 of the document had not been approved unanimously, as Yugoslavia reserved its position on the matter.

3.2.2 The delegate of Yugoslavia, explaining his delegation's reservation with regard to paragraph 1, said that the third sentence effectively undermined the frequency constraint laid down in the first sentence and which had been adopted by CCIR Study Group 10, as it resulted in lower spacings below the accepted minimum frequency spacing. Whilst he sympathized with those administrations which approved of lower frequency spacings, he felt that the number of such cases should be limited as far as possible, and they should not be given the status of a general principle. He therefore proposed that the third sentence be amended to read : "However, in particular cases where no frequencies can be assigned which fulfil the above constraint, administrations may adopt a lower spacing, but not less than [0.8] MHz."

3.2.3 For clarification, the representative of the CCIR read out paragraph 3.1.2 of CCIR Report 946 to which the delegation of Yugoslavia was referring and which laid down that : "For planning purposes ... the minimum frequency spacings should not be in general less than 2 MHz, with a reduction down to 1.5 MHz accepted in special cases."

3.2.4 The delegate of the United Kingdom supported the proposal by Yugoslavia. The aim was to preserve planning flexibility whilst pointing out the practical consequences, i.e. that for a spacing of less than 1.8 MHz separate antennas might have to be used.

The amendment proposed by Yugoslavia was approved and the note to the paragraph deleted.

3.2.5 The delegate of France said it was the role of the First Session to warn the delegations at the Second Session of the technical and economic implications of their decisions. To bring out the fact that at higher powers separate antennas might be necessary for frequency spacings approaching 0.8 MHz, he proposed that the final sentence in the paragraph be replaced by a more explicit sentence, such as : "For high antenna powers, this smaller spacing will only be acceptable if separate antennas are used."

3.2.6 The delegate of the United Kingdom preferred to leave the last sentence in its original form, since it conveyed more positively the idea that use of a common transmitting antenna was still possible provided that a low power was used.

3.2.7 The Chairman of Working Group 5A said that the paragraph was not intended to explain the various possibilities for the use of antennas at various sites, but was designed to set out the constraints. He therefore agreed with the delegate of the United Kingdom, since the last sentence in its original form was adequate in that regard, and since he felt it would be inappropriate to modify to such a large extent a text already discussed at length and approved in the Working Group.

3.2.8 The delegate of the German Democratic Republic proposed a compromise solution covering all points of view. A new sentence would be inserted at the end of the paragraph, as amended by Yugoslavia, to the effect that : "When high power is used this may lead to the use of separate antennas."

It was so agreed, and Document No. 60 was approved, as amended.

3.3 Third Report of Working Group 5A (Document No. 72)

3.3.1 Introducing his Group's Third Report (Document No. 72), the Chairman of Working Group 5A said there had been unanimous agreement that no separate segment of the frequency band 87.5 - 108 MHz should be set aside for low-power channels. With regard to the proposals on the organizational approach to planning contained in Document No. DT/9, there had been similar agreement that, since decisions on the matter fell within the competence of the Second Session of the Conference, no separate material on it would be submitted for inclusion in the Report of the present Session. The Group's views, if any, would be included in the Planning Principles under preparation.

The Third Report of Working Group 5A was approved.

3.4 Progress of work

3.4.1 The Chairman enquired about the progress of work in the Group and in which areas, if any, it required guidance from the Committee.

3.4.2 The Chairman of Working Group 5A wished to mention a problem which had arisen in his Group's Fourth Report to the Committee (Document No. 76), namely, the definition of the weighted sum of coverage areas required to represent equivalent national coverage. It had now been confirmed that the weighted sum of coverage areas could not be defined during the present Session. The choice was either to redraft the document or to accept the concept of the weighted sum and leave its definition for the Second Session of the Conference. In the latter case the Group's document could be sumbitted for approval, but a decision was required as time was short.

3.4.3 The Chairman said that, while he understood the Group's concern, he would prefer not to discuss the substance of the problem in Committee before further discussion in the Working Group and presentation of the document concerned.

3.4.4 The Chairman of Working Group 5A said that, apart from the problem mentioned, the latest version of his Group's document on Planning Principles still remained to be considered, but it was now hoped to complete the Working Group's Final Report to the Committee by noon on 7 September.

3.4.5 The Chairman proposed, and the Committee agreed, that the time-limit for completion of the work of the Group should be extended until midday on 7 September.

In response to the Chairman of the Committee's expression of hope that the Working Group would be able to reach unanimous agreement on Planning Principles and minimize the need for discussion of them in Committee, the Chairman of Working Group 5A said that there were some difficulties on which long discussions had already been held. The latest revision of his Group's draft document on Planning Principles had now been issued as the Annex to its draft Fifth Report to the Committee (Document No. DT/25) and its paragraphs had been numbered to meet the requirements of the Report of the First Session of the Conference. It was hoped to complete discussion of the subject on the morning of 6 September. Planning Methods, on the other hand, presented no serious problems and those which remained could be covered in the time available.

3.4.6 The Chairman expressed his appreciation for the efforts of Working Group 5A and his hope for a satisfactory conclusion of its work.

4. Second Report of Working Group 5B (Document No. 69)

4.1 The Chairman of Working Group 5B, introducing Document No. 69, indicated a number of drafting corrections to the annexed Draft Form for use by administrations in submitting frequency assignment requirements to the IFRB. He also observed that the delegation, referred to in the final sentence of the Report, as having entered a reservation against box 15 of the Draft Form dealing with station status was not that of Ireland, as stated, but of Morocco.

4.2 Mr. Berrada (IFRB) said that he wished to have recorded in the summary record certain comments which had already been communicated to Working Group 5B. As the result of a decision by its Administrative Council, the ITU had spent some 10 million Swiss francs on a project to enable the IFRB to utilize a computerized integrated data base in processing the information it received on frequency assignments. The IFRB had therefore acted through Working Group 5B to ensure that the information it

requested should conform with the structure integrated data base of the interim computer system which had already been created. The system could then be used to process the requirements received, which were expected to number between 50,000 and 100,000. If that were not the case, the IFRB would be obliged to develop new computer software to process separately the requirements notified to the Conference. The Working Group had kindly followed the suggestions made but there remained a few points on which he wished to make further suggestions.

The first referred to the request by some administrations, referred in the penultimate paragraph of the Report, to be allowed to send data in the form of a computer tape. The IFRB would have no objection to that and would accept a tape provided that it was accompanied by a computer print-out indicating its contents, and on the understanding that the administration concerned would be required to provide assistance if there were difficulties in interpreting it. The print-out of the tape provided by the administration would be regarded by the Board as the official list of requirements.

A second point was the need for the Committee to recognize that the IFRB should be allowed to make minor amendments to the Form for use in submitting requirements if difficulties were encountered and the need arose.

4.3 The Chairman of Working Group 5B said his Group agreed that the IFRB should have all the latitude it required to make the Form more readily usable. He added that the answers from Committee 4 to questions asked in preparation of the Form (Document No. 61) had now been received, and that the resultant modifications to the Form anticipated in the second paragraph of his Group's Second Report would be minimal. He was unable to give a view on the representative of the IFRB's other remarks until his Group had had an opportunity to discuss them.

4.4 The Chairman said that possible further amendments to the Form should appear as an addendum for the Committee's consideration at a later date. Meanwhile, he wished to know if the Committee had any comments on the Draft Form as corrected by the Chairman of Working Group 5B.

4.5 Mr. Berrada (IFRB) said that the IFRB's interim computer system provided storage space for one antenna height only and for maximum effective radiated power only, whereas the draft Form requested two further heights (boxes 05 and 06) and two other measurements indicating the horizontal and vertical components of maximum e.r.p. (box 08, columns 2 and 3). He understood from Committee 4 that the additional information on antenna heights was not required for planning purposes but only in case of need to resolve problems of conflicting requirements between different administrations. He therefore suggested that the boxes for which the interim computer system had no space should be placed with box 31 on a separate page and the information which they requested should likewise be stored separately.

4.6 The Chairman of Working Group 5B said the problem was that, whereas box 31 was only for existing antennas, the information requested in boxes 05, 06 and 08 was required for all assignments. Those boxes should therefore be kept on the same form, if necessary at the bottom of the page, to avoid complicating the task of administrations.

4.7 Mr. Berrada (IFRB) said that a way to solve the problem could probably be found if the IFRB was authorized to rearrange the form.

4.8 The delegate of the Federal Republic of Germany said that Working Group 5A-1 had agreed that it was in fact necessary to establish the exact location of transmitter sites, since coordinates alone were not sufficiently accurate.

4.9 Mr. Berrada (IFRB) said that, given the amount of information to be handled, the addition of new factors and new constraints might lead to problems. He would however like time to examine the matter in detail before taking a position on the matter.

4.10 Following a proposal by the delegate of Italy, the Chairman suggested that the IFRB should be given an opportunity to find a possible solution to the problem by changing the layout of the boxes and that the Committee should revert to the subject at a later date.

It was so agreed.

4.11 The delegate of Morocco said that his reservation about the request for station status data in box 15 was due to the fact that the IFRB already had that information. Even if it was included on the form, the IFRB would still have to check it and it was always liable to change in the light of subsequent negotiations. He therefore wondered what the point of box 15 was.

4.12 The Chairman of Working Group 5B replied that the IFRB could not be expected to check all the data included in the 50,000 to 100,000 requirements for frequency assignments which it expected to receive. Administrations should provide data which the IFRB could use without verification. It was extremely important for the data, including that on station status, to be readily available for other administrations.

4.13 Mr. Berrada (IFRB) found it more useful to have information as to whether a frequency requirement had been coordinated with another administration or not before being submitted to the IFRB, and would prefer to modify box 15 to show that information. Whether or not a requirement corresponded to an assignment in the Stockholm 1961 or Geneva 1963 Plans could be determined by computer by the IFRB, if the Committee so wished.

4.14 The Chairman of Working Group 5B explained further that the purpose of box 15 was to indicate whether the station concerned was in service or not. However, as there was no agreed definition of the term "station in service" it had been thought that use of that term might lead to some confusion. For that reason it had been decided to use the unambiguous terms "coordinated" and "notified" to indicate the precise status of stations. Any changes in the notified status of stations in the Plan would be detailed in box 21.

4.15 Mr. Berrada (IFRB) said that since all information on stations already in service was in the IFRB records, the data requested in box 15 could be provided automatically by the IFRB and was not needed on the form.

It was agreed that a decision on box 15 and its related instructions should be held in abeyance pending its further discussion in Working Group 5B.

4.16 Mr. Berrada (IFRB) said that his final comment on the Form in its present shape concerned the units selected for designating e.r.p. in boxes 08, 12 and 12a, which included both kW and W. As Working Group 5B had been informed, the Radio Regulations prescribed dBW and there was a need for uniformity in the units used to avoid the possibility of a large number of errors either within administrations or at the data-capture stage.

4.17 The delegates of Qatar and Morocco endorsed the use of the unit dBW.

4.18 The Chairman of Working Group 5B confirmed that the IFRB had proposed the use of dBW, but his Group had thought that less errors would occur if administrations submitted their figures in kW or W for conversion by the IFRB.

It was agreed, on a proposal by the delegate of Yugoslavia, to delete any reference to watts (W) on the Form and its related instructions.

4.19 The delegate of the United Kingdom, supported by the delegate of Austria, drew attention to a further editorial correction to be made to the first paragraph of the Annex to the Report.

4.20 In reply to the delegate of Botswana, the Chairman of Working Group 5B said that the final size of the form would be such that it could be completed on current typewriters or printers.

To meet an objection by the delegate of Romania, who said that the instructions for filling in box 06 ought to be expanded to take account of the fact that the type of site would affect the parameter concerned, the Chairman of Working Group 5B proposed that the word "geometric" be added before the word "centre" in the first line of those instructions.

That amendment was approved.

4.21 Mr. Berrada (IFRB) noted that the instructions for filling in box 07 did not provide for an indication of the azimuthal directions for different polarizations. It would, however, be possible to draft a sentence for addition to those instructions that would provide that information.

It was agreed that box 07 and its related instructions should be held pending until a suitable sentence had been drafted and submitted to Committee 5 for approval.

4.22 With regard to box 09 and its related instructions, Mr. Berrada (IFRB) proposed that the symbol "ND" should be used instead of "N" to indicate omnidirectional radiation, for the sake of consistency with the terminology of the Radio Regulations.

It was so agreed.

4.23 In reply to the representative of the CCIR, who considered that the determination of maximum effective antenna height as defined in the instructions for filling in box 10 would involve administrations in a considerable amount of work, the Chairman of Working Group 5B said that a knowledge of that value was essential for planning and coordination purposes. Difficulties would arise only in the case of stations not yet in existence, where the exact site was not known, since the parameters of existing stations were already known and made it a routine matter to carry out the relevant calculations.

It was agreed that no change should be made in the instructions for box 10.

4.24 In reply to the delegate of Kenya, who asked what would happen if there was a need for more than the four bearings of -3 dB points allowed for in box 12, the Chairman of Working Group 5B said that such an occurrence would be rare but that if information had to be supplied for more than four bearings it should be entered in box 21 (supplementary information).

4.25 At the suggestion of the delegate of Finland, it was agreed to replace the first part of the instructions for box 12a by "if there exist restrictions of e.r.p. in certain sectors,".

4.26 The delegate of Romania drew attention to an editorial change required in the French text only of the instructions for box 12b.

4.27 Mr. Berrada (IFRB), noting that it was physically impossible to restrict radiation to a single azimuth value, said that the calculations by the IFRB would be based on azimuth sectors of 10°.

It was so agreed.

4.28 Mr. Berrada (IFRB) proposed that the instructions for filling in box 14 should be amended to take account of the proposal by Working Group 5A-1 that stations below a certain power should not be asked to indicate their preferred frequency on the form since it would facilitate planning if the needs of such low power stations were not considered until a later stage of the planning process.

4.29 After a discussion between the Chairman of Working Group 5B, Mr. Berrada, the delegate of Denmark and the Chairman of Working Group 5A-1, it was decided that the instructions for box 14 should be left pending until the Chairman of Working Group 5A-1 and the IFRB had prepared a suitable amended text reflecting the points raised in the discussion for submission to Committee 5 for approval.

4.3 The Chairman indicated an editorial amendment to the English text only of the instructions for box 21.

4.3.1 It was agreed to consider the instructions for box 31 at a subsequent meeting of Committee 5.

Document No. 69, with the exception of the instructions for filling in boxes 07, 14, 15 and 31, which were to be held in abeyance pending further discussion, was approved as amended.

5. Note from the Chairman of Committee 4 to the Chairman of Committee 5 (Document No. 67)

5.1 The Committee took note of the fact that the Chairman of Working Group 5B would take Document No. 67 into account insofar as it affected the work of his group.

6. Establishment of ad hoc Group 5/2

6.1 The Chairman said that after consultation with many delegations the consensus was that the problem of compatibility between the broadcasting service and other services was so important that it justified the establishment of an ad hoc Group to consider how the results of Committee 4's deliberations on the matter would affect planning principles and methods.

The proposal for establishment of an ad hoc Group 5/2 with the general terms of reference mentioned was approved.

The proposal of Mr. K. Olms (Federal Republic of Germany) as Chairman of ad hoc Group 5/2 was approved.

7. Low-power channels

7.1 The delegate of Saudi Arabia, supported by the delegate of Kuwait, said that the seven countries in the area extending from the Shatt-al-Arab as far as and including the Gulf of Oman had agreed it might be desirable to set aside some segments of the frequency band 87.5 - 108 MHz for low power channels in their area owing to the peculiar propagation conditions encountered there. They had understood that such a decision would not affect planning in any other area and need only be notified to the IFRB when it had been taken. They had therefore refrained from comment on the issue in Working Group 5A and had not impeded the unanimous decision embodied in paragraph 1 of Document No. 72. It had since become plain that the IFRB's workload with regard to preparations for planning would require their decision to be made as soon as possible. The seven countries concerned therefore wished the Committee to note their desire that 18 of the 204 channels being planned in the 87.5 - 108 MHz band should be set aside in their area for low power channels with an upper limit of 1 kW e.r.p., preferably in the upper part of the band.

7.2 The Chairman of Working Group 5A said that on a point of principle it would be inadvisable to reverse a decision taken in the Committee by referring the document back to the Working Group.

7.3 The delegate of the United Kingdom, while endorsing that view, said that since the impact of the proposal was confined to one restricted area the problem might be met by a statement referring specifically to that area added as a supplementary note to Document No. 72, with the decision in paragraph 1 left unchanged.

It was decided to ask the seven countries concerned to prepare such a supplementary note for submission to Committee 5 for approval.

The meeting rose at 1240 hours.

The Secretary :
M. AHMAD

The Chairman :
K. ARASTEH

INTERNATIONAL TELECOMMUNICATION UNION

REGIONAL BROADCASTING CONFERENCE

(FIRST SESSION) GENEVA, 1982

Document No. 126-E
14 September 1982
Original : English

COMMITTEE 5

SUMMARY RECORD

OF THE

FIFTH MEETING OF COMMITTEE 5

(PLANNING METHODS)

Wednesday, 8 September 1982, at 0900 hrs

Chairman : Mr. K. ARASTEH (Islamic Republic of Iran)

Subjects discussed		Document No.
1.	Reports from Working Group 5A	
1.1	Fifth Report	90
1.2	Sixth Report	91
2.	Reports from Working Group 5B	
2.1	Draft Resolution No. COM 5/1	96
2.2	Second Report	69(Rev.2)

1. Reports from Working Group 5A

1.1 Fifth Report (Document No. 90)

1.1.1 The Chairman of Working Group 5A, introducing the Report, explained that the delegation of Libya had expressed reservations on paragraphs 6.1.6 and 6.1.7, but that in other respects the document had been approved by the Working Group. The footnote on page 2 of the English text contained a definition of equivalent national coverage that had been unanimously adopted; a final decision on the dates quoted in square brackets in paragraph 6.1.6 would depend on the deliberations in Working Group 5B.

1.1.2 The delegate of the U.S.S.R thought that the second paragraph under 6.1.3 should cover non-automatic as well as automatic landing systems for aircraft and therefore proposed that the word "automatic" be deleted.

1.1.3 The delegate of Sweden supported that amendment and proposed the addition of the word "navigation".

1.1.4 The delegate of the United Kingdom pointed out that the adjacent band would in that case extend to 118 MHz.

After a discussion in which the Chairman of Working Group 5A, also speaking as the delegate of Norway, the Chairman of Committee 6, also speaking as the delegate of France and the delegates of the United Kingdom and the U.S.S.R participated, it was agreed, on the proposal of the Chairman, that the second paragraph under 6.1.3 should begin as follows :

"The radio equipment used by aircraft for landing and navigation purposes, which operates in the adjacent band 108 - 118 MHz, ..."

1.1.5 On the proposal of the delegate of Algeria, it was further agreed that the French version of paragraph 6.1.4 should be aligned with the English text.

1.1.6 The delegate of Libya made the following statement :

"Mr. Chairman :

During the meetings of Working Group 5A many alterations and many modifications were carried out on paragraph 6.1.6. Having read carefully this latest text in Document No. 90, we find ourselves still not in agreement with such wording, except for the part relating to TV stations operating in the band 87.5 - 100 MHz, with which we agree.

Our Administration see no reason to disagree with this text if it applies to the northern part of Europe, but as it is clear that it covers also the southern part of Europe, our Administration is concerned, in this case, for technical reasons.

The Libyan Administration does not agree to the wording in paragraph 6.1.6 for the following reasons :

1) During the Second Session, some European countries will attend with plans already coordinated among the countries in Europe and even notified to the IFRB. As a practical result, in the case of incompatibilities, the concerned administrations outside Europe will find difficulty in modifying these plans of the concerned administrations in Europe by negotiation because they are already coordinated among the concerned European countries and notified to the IFRB.

2) In applying this text in paragraph 6.1.6, the bilateral negotiations among the countries concerned in Europe on the one hand and Africa and the Middle East on the other may in some cases become multilateral negotiations during the Second Session of the Conference. This would lead to lengthy negotiations among all the countries concerned which may not be allowed by the limited time of the Second Session.

3) In this text, it is clearly stated that joint appropriate efforts shall be made between the countries in Europe to incorporate, as it is stated in paragraph as a, b, c, before the date 1 December 1983. In this case the concerned administrations outside Europe will have difficulty in processing their proper plans, noting the submission date which is to be adopted by this session, which is projected to be 31 December 1984.

The work of the Second Session of the Conference will be handicapped by this wording of paragraph 6.1.6, which all of us wish to avoid.

The Libyan Administration places great hope in the Second Session to process a nationwide plan meeting our national requirements, particularly because we were unable to establish this plan in the Stockholm Agreement 1961 due to our absence at that time due to historical reasons like other non-signatories in the planning area.

I wish to summarize my comments as follows :

If this text is applied the following difficulties will arise and will retard the work of the Second Session :

1) increased difficulties in the negotiations among the countries concerned in Africa and the Middle East on the one hand and Europe on the other hand;

2) the concerned countries in Africa and the Middle East will face difficulties in processing their plans with the presence of the joint European efforts to incorporate the a, b, c before 1 December 1983, as stated in the text of paragraph 6.1.6.

The Libyan Administration proposes the following :

Deletion of the sentence in paragraph 6.1.6 which reads "During the Second Session every appropriate effort shall, therefore, be made to incorporate in the plan :"

Also deletion of the following paragraphs a, b, c."

The delegate of Syria supported that statement.

1.1.7 The Chairman of Working Group 5A said that the Libyan delegation had already expressed its reservations several times in Working Group 5A, which as a result had made a number of alterations to the original text. The text appearing in Document No. 90, when taken in its entirety (section 6.1.6 should not be regarded in isolation), was considered to provide adequate safeguards for the rights of the countries of Africa and the Middle East bordering the Mediterranean.

1.1.8 That view was supported by the delegate of France, who added that it was not only possible but highly desirable that all countries, and not just those of Europe, should take an active part in coordination, and by the delegate of the United Kingdom, who said that any distortion of the text on the scale demanded by Libya would have dramatic repercussions and that his delegation regarded the text in Document No. 90 as a package, not entirely satisfactory, but which it was prepared to accept as a whole provided no further changes were made. The delegate of the Federal Republic of Germany pointed out that in any case the status quo would have to remain relatively untouched, since even one minor change affected neighbouring countries and would lead to a chain reaction of other changes, and that the removal of the deadline by the Libyan amendment would make it difficult for the IFRB to complete its work on time. The delegate of Spain drew attention to paragraph 6.1.7 which specifically safeguarded the rights of the countries of Africa and the Middle East, and the delegate of Norway further considered that the Committee should uphold the majority view for retention of the text as it stood and that the normal procedure on reservations, as laid down in Articles 512 and 513 of the Convention should be followed.

1.1.9 The reservations expressed by Libya were supported by the delegate of Algeria, who, considering the proposals in sub-paragraphs (b) and (c) to be very vague in any case, said that the reference in the proposed Libyan amendment to the Radio Regulations, the Stockholm Agreement and the relevant provisions of Resolution No. 510 of WARC-79 covered all needs and would not have a dramatic effect on the Conference, and by the delegate of Tunisia, who felt that the difficulties might perhaps be resolved by leaving paragraph 6.1.6 as it was and adding a further sentence at the end to the effect that notifications under sub-paragraphs (b) and (c) should not be taken into consideration by the IFRB without the agreement of the countries of Africa and the Middle East bordering the Mediterranean.

1.1.10 The Chairman proposed that an ad hoc Group (5/3) consisting of the delegates of Algeria, France, the Federal Republic of Germany, Libya, Morocco, Norway, Spain, Tunisia and the United Kingdom should be established to find a suitable text for paragraphs 6.1.6 and 6.1.7 for consideration by Committee 5 at a subsequent meeting.

It was so agreed.

1.2 Sixth Report (Document No. 91)

1.2.1 Introducing the document, the Chairman of Working Group 5A said that as a result of decisions made by Committee 4 and contained in its output documents (to which interested delegations were referred), the square brackets in Note 2 to section 1.1 could be removed and the words "/power-sum" deleted.

With that amendment, Document No. 91 was approved.

2. Reports from Working Group 5B

2.1 Draft Resolution No. COM 5/1 (Document No. 96)

2.1.1 The Chairman of Working Group 5B introduced the document, which had been approved unanimously in the Working Group.

2.1.2 The delegate of Algeria asked for an explanation of the phrase "so far as possible" in "resolves" paragraph 2.

2.1.3 The Chairman of Working Group 5B said that, since there could as yet be no precise delimitation of the tasks to be carried out by the IFRB between the two Sessions and those to be performed at the Second Session, it had been agreed to leave decisions on that delimitation to the discretion of the IFRB.

2.1.4 Mr. Berrada (IFRB) added that the tasks already assigned to the IFRB and those which might be assigned to it by the end of the current Session involved a great deal of software of ever-increasing complexity. Further, he noted the problems that might arise in relation with ILS, etc. At that stage, the IFRB could only assure the delegates that it would do everything in its power to perform the tasks concerned between the First and Second Sessions.

Document No. 96 was approved.

2.2 Second Report (Document No. 69(Rev.2))

2.2.1 The Chairman of Working Group 5B introduced the document, pointing out that the second paragraph on the first page should be deleted and drawing attention to the box numbers to which changes had been made. The only point on which Working Group 5B had been unable to reach agreement was Box No. 15 (Station status); he suggested that a small ad hoc Working Group be formed to deal with that important text and to report back directly to Committee 5.

It was agreed to set up an ad hoc Group (5/4) composed of delegates of Morocco, the United Kingdom, Afghanistan, Algeria, Qatar and the Federal Republic of Germany, assisted by a Member of the IFRB and by the Chairman of Working Group 5B and convened by a delegate of Algeria.

2.2.2 The Chairman suggested that approval of the Report should be deferred until the next meeting of Committee 5, to which the results of the deliberations of the ad hoc Working Group would be submitted.

It was so agreed.

The meeting rose at 1140 hours.

The Secretary : The Chairman :

M. AHMAD K. ARASTEH

INTERNATIONAL TELECOMMUNICATION UNION

REGIONAL BROADCASTING CONFERENCE

(FIRST SESSION) GENEVA, 1982

Document No. 127-E
14 September 1982
Original : French

PLENARY MEETING

Report of the Budget Control Committee to the Plenary Meeting

The Budget Control Committee held three meetings during the Conference and examined the points arising from its terms of reference.

Under the provisions of Nos. 442 and 445 of the International Telecommunication Convention, Malaga-Torremolinos, 1973, its terms of reference were :

a) to determine the organization and the facilities available to delegates, and

b) to examine and approve the accounts for expenditure incurred throughout the duration of the Conference.

Having completed its work, the Committee hereby submits this report to the Plenary for consideration under Chapter XI, Article 77, No. 444 of the Convention.

1. Determination of the organization and facilities available to delegates

As there were no comments by delegations on the subject, Committee 3 concluded that the organization and the working facilities available to delegates were entirely satisfactory.

2. Conference budget

The Budget Control Committee took note of the Conference budget as approved by the Administrative Council as its 36th Session, 1981, and adjusted, under the provisions of Administrative Council Resolution No. 647, to take account of changes in the United Nations common system concerning staff salaries and allowances. The budget is shown in Annex 1 below.

It is pointed out that the expenses incurred for this Regional Conference do not form part of the ordinary budget. In conformity with Article 15, No. 95, of the Convention, the expenses must be borne in accordance with their unit of classification by all the Members concerned, namely those in Region 1 as well as Afghanistan and Iran.

3. Position as regards Conference expenditure

Under the Convention, the Budget Control Committee is required to submit to the Plenary Meeting a report showing as accurately as possible the estimated amount of expenditure incurred by the Conference.

Annex 2 hereto gives a statement of the Conference budget with a breakdown of credits by budget subhead and item, along with actual expenditure to 10 September 1982. It also indicates the expenditure committed until that date and estimated expenditure up to the closing date of the Conference.

The statement reveals that total expenditure is estimated at 1,856,000 Swiss francs, thus leaving a surplus of 342,900 Swiss francs over the budget approved by the Administrative Council and adjusted by virtue of Resolution No. 647.

4. Contributions from recognized private operating agencies and non-exempt international organizations

Article 116 of the Financial Regulations of the Union provides that the report by the Budget Control Committee to the Plenary Meeting must include a statement of recognized private operating agencies and international organizations required to contribute to the defrayal of Conference expenditure, together with a list of international organizations that are exempted from contributions under No. 548 of the Convention.

This statement constitutes Annex 3 hereto.

5. Sharing of Conference expenditure

Since the present Conference is a Regional Conference within the meaning of No. 42 in Article 7 of the Convention (Malaga-Torremolinos, 1973) the expenditure arising from it must be borne by all the Members of the Regions concerned according to the class of contribution they have chosen. Annex 4 hereto gives a list of the Members which must bear the costs of the Conference.

According to the statement of account in Annex 2, the total expenditure is estimated at 1,856,000 Swiss francs. On the basis of the number of contributory units of the Members required to bear the Conference expenditure (see Annex 4), the amount of the contributory unit may be estimated at 7,410 Swiss francs.

Under Article 28 of the Financial Regulations of the Union, interest is payable on regional conference accounts after a period of 60 days from the date of dispatch. Since invoices can probably be sent to participants on 30 November 1982, they should be settled not later than 31 January 1983. From 1 February 1983 they will be subject to interest at 3 percent for the first 180 days and at 6 percent thereafter.

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

The Plenary Meeting is requested to approve this report.

K. OLMS
Chairman of Committee 3

Annexes : 4

ANNEX 1

BUDGET OF THE REGIONAL BROADCASTING CONFERENCE

Section 14 Regional Administrative Conference, Regions 1 and 3 Items		Budget 1982 - Swiss francs -	Adjusted budget 1) - Swiss francs -
		Geneva	
I.	Staff expenses		
14.101	Salaries and related expenses of the Conference Secretariat staff	1,017,000	1,127,900
14.102	Salaries and related expenses of the translation, typing and reproduction services staff	493,000	546,000
14.103	Travel (recruitment)	80,000	80,000
14.104	Insurance	40,000	40,000
		1,630,000	1,793,900
II.	Travel expenses		
14.201	Subsistence costs at Conference venue	-	-
14.202	Travel to Conference venue and back	-	-
14.203	Transport of material to Conference venue and back	-	-
III.	Premises and equipment		
14.301	Premises, furniture, machines	55,000	55,000
14.302	Document production	72,000	72,000
14.303	Office supplies and overheads	30,000	30,000
14.304	Postage, telephone calls, telegrams	65,000	65,000
14.305	Technical installations	5,000	5,000
14.306	Sundry and unforeseen	10,000	10,000
14.307	Use of outside computers	-	-
		237,000	237,000
IV.	Other expenses		
14.401.01	IFRB preparatory work	90,000	90,000
14.401.02	CCIR preparatory work	10,000	10,000
14.402	Interest credited to the ordinary budget	38,000	38,000
		138,000	138,000
V.	Final Acts		
14.501	Report for the second session	30,000	30,000
	Total, I to V	2,035,000	2,198,900

Note :

1) Budget approved by the Administrative Council and adjusted to take account of changes introduced in the UN common system of salaries and allowances.

ANNEX 2

Item No.	Heading	Budget approved by AC	Budget adjusted 1)	Credit transfers		Available credits	Expenditure as at 25 August 1982				Differences +/-
				item to item	chapter to chapter 2)		actual	committed	estimated	total	
1	2	3	4	5	6	7	8	9	10	11	12
	I. Staff expenses										
14.101	Salaries and related expenses of the Conference Secretariat staff	1.017.000	1.127.900	-	-	1.127.900	9.000	884.000	60.000	953.000	-174.900
14.102	Salaries and related expenses of the translation, typing and reproduction services staff	493.000	546.000	-	-	546.000	134.000	317.000	50.000	501.000	-45.000
14.103	Travel (recruitment)	80.000	80.000	-	-	80.000	23.000	15.000	8.000	46.000	-34.000
14.104	Insurance	40.000	40.000	-	-	40.000	3.000	25.000	2.000	30.000	-10.000
		1.630.000	1.793.900	-	-	1.793.900	169.000	1.241.000	120.000	1.530.000	-263.900
	II. Travel expenses										
	None										
	III. Premises and equipment										
14.301	Premises, furniture, machines	55.000	55.000	-	-	55.000	3.000	52.000		55.000	-
14.302	Document production	72.000	72.000	-	-	72.000	26.000	8.000	24.000	58.000	-14.000
14.303	Office supplies and overheads	30.000	30.000	-	-	30.000	11.000	2.000	15.000	28.000	-2.000
14.304	Postage, telephone calls, telegrams	65.000	65.000	-	-	65.000	6.000	-	25.000	31.000	-34.000

1	2	3	4	5	6	7	8	9	10	11	12
14.305	Technical installations	5.000	5.000	-	-	5.000	1.000	-	-	1.000	- 4.000
14.306	Sundry and unforeseen	10.000	10.000	-	-	10.000	1.000	-	9.000	10.000	-
14.307	Use of outside computers	-	-	-	-	-	-	-	-	-	-
		237.000	237.000	-	-	237.000	48.000	62.000	73.000	183.000	-54.000
	IV. Other expenses										
14.401	IFRB preparatory work	90.000	90.000	-	-	90.000	34.000	46.000	—	80.000	-10.000
14.401	CCIR preparatory work	10.000	10.000	-	-	10.000	1.000	-	—	1.000	-9.000
14.402	Interest credited to the ordinary budget	38.000	38.000	-	-	38.000	-	-	32.000	32.000	-6.000
		138.000	138.000	-	-	138.000	35.000	46.000	32.000	113.000	-25.000
	V. Final Acts										
14.501	Report for the Second Session	30.000	30.000	-	-	30.000	-	-	30.000	30.000	-
		2.035.000	2.198.900	-	-	2.198.900	252.000	1.349.000	255.000	1.856.000	-342.900
	or in contributory units	8.125	8.780							7.410	

Notes

1) Budget approved by the Administrative Council and adjusted to take account of changes in the Common System of Staff Salaries and Allowances of the United Nations and the specialized agencies.

2) In accordance with Article 15, paragraph 3 of the Financial Regulations of the Union.

ANNEX 3

PARTICIPATION BY RECOGNIZED PRIVATE OPERATING AGENCIES AND INTERNATIONAL ORGANIZATIONS IN THE WORK OF THE CONFERENCE

	Number of contributory units
1. Recognized private operating agencies	
None	
2. International organizations	
International Civil Aviation Organization (ICAO)	*)
Inter-American Association of Broadcasters (IAAB)	*)
International Air Transport Association (IATA)	*)
International Radio and Television Organization (OIRT)	*)
Arab States Broadcasting Union (ASBU)	*)
European Broadcasting Union (EBU)	*)
Union of National Radio and Television Organizations of Africa (URTNA)	*)

*) International organizations exempt from any contribution under Administrative Council Resolution No. 574.

A N N E X 4

CONTRIBUTION BY MEMBERS OF THE UNION TO THE DEFRAYAL OF THE EXPENSES OF THE REGIONAL CONFERENCE

No. 95 of the International Telecommunication Convention, Malaga-Torremolinos, 1973, provides that the expenses incurred by regional administrative conferences shall be borne by all the Members of the Regions concerned. These Members are the following :

Members of Region 1

		Contributory units
1.	ALBANIA (People's Socialist Republic of)	½
2.	ALGERIA (Algerian Democratic and Popular Republic)	1
3.	GERMANY (Federal Republic of)	25
4.	ANGOLA (People's Republic of)	½
5.	SAUDI ARABIA (Kingdom of)	1
6.	AUSTRIA	1
7.	BAHRAIN (State of)	½
8.	BELGIUM	5
9.	BENIN (People's Republic of)	½
10.	BYELORUSSIAN SOVIET SOCIALIST REPUBLIC	1
11.	BOTSWANA (Republic of)	½
12.	BULGARIA (People's Republic of)	1
13.	BURUNDI (Republic of)	½
14.	CAMEROON (United Republic of)	½
15.	CAPE VERDE (Republic of)	½
16.	CENTRAL AFRICAN REPUBLIC	½
17.	CYPRUS (Republic of)	½
18.	VATICAN CITY STATE	½
19.	COMOROS (Federal and Islamic Republic of the)	½
20.	CONGO (People's Republic of the)	½
21.	IVORY COAST (Republic of the)	1
22.	DENMARK	5
23.	DJIBOUTI (Republic of)	½
24.	EGYPT (Arab Republic of)	2
25.	UNITED ARAB EMIRATES	1
26.	SPAIN	3
27.	ETHIOPIA	1
28.	FINLAND	3
29.	FRANCE	30

		Contributory units
30.	GABON REPUBLIC	½
31.	GAMBIA (Republic of the)	½
32.	GHANA	1
33.	GREECE	1
34.	GUINEA (People's Revolutionary Republic of)	½
35.	GUINEA-BISSAU (Republic of)	½
36.	EQUATORIAL GUINEA (Republic of)	½
37.	UPPER VOLTA (Republic of)	½
38.	HUNGARIAN PEOPLE'S REPUBLIC	1
39.	IRAQ (Republic of)	½
40.	IRELAND	2
41.	ICELAND	½
42.	ISRAEL (State of)	1
43.	ITALY	10
44.	JORDAN (Hashemite Kingdom of)	½
45.	KENYA (Republic of)	½
46.	KUWAIT (State of)	1
47.	LESOTHO (Kingdom of)	½
48.	LEBANON	1
49.	LIBERIA (Republic of)	1
50.	LIBYA (Socialist People's Libyan Arab Jamahiriya)	1½
51.	LIECHTENSTEIN (Principality of)	½
52.	LUXEMBOURG	½
53.	MADAGASCAR (Democratic Republic of)	1
54.	MALAWI	½
55.	MALI (Republic of)	½
56.	MALTA (Republic of)	½
57.	MOROCCO (Kingdom of)	1
58.	MAURITIUS	½
59.	MAURITANIA (Islamic Republic of)	½
60.	MONACO	½
61.	MONGOLIAN PEOPLE'S REPUBLIC	½
62.	MOZAMBIQUE (People's Republic of)	½
63.	NIGER (Republic of the)	½
64.	NIGERIA (Federal Republic of)	2
65.	NORWAY	5
66.	OMAN (Sultanate of)	½
67.	UGANDA (Republic of)	½
68.	NETHERLANDS (Kingdom of the)	10
69.	POLAND (People's Republic of)	3
70.	PORTUGAL	½
71.	QATAR (State of)	½
72.	SYRIAN ARAB REPUBLIC	½
73.	GERMAN DEMOCRATIC REPUBLIC	3
74.	UKRAINIAN SOVIET SOCIALIST REPUBLIC	3

		Contributory units
75.	ROMANIA (Socialist Republic of)	1
76.	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	30
77.	RWANDA (Republic of)	½
78.	SAN MARINO (Republic of)	½
79.	SAO TOME AND PRINCIPE (Democratic Republic of)	½
80.	SENEGAL (Republic of the)	1
81.	SIERRA LEONE	½
82.	SOMALI DEMOCRATIC REPUBLIC	½
83.	SUDAN (Democratic Republic of the)	1
84.	SWEDEN	10
85.	SWITZERLAND (Confederation of)	10
86.	SWAZILAND (Kingdom of)	½
87.	TANZANIA (United Republic of)	½
88.	CHAD (Republic of the)	½
89.	CZECHOSLOVAK SOCIALIST REPUBLIC	3
90.	TOGOLESE REPUBLIC	½
91.	TUNISIA	2
92.	TURKEY	2
93.	UNION OF SOVIET SOCIALIST REPUBLICS	30
94.	YEMEN ARAB REPUBLIC	½
95.	YEMEN (People's Democratic Republic of)	½
96.	YUGOSLAVIA (Socialist Federal Republic of)	1
97.	ZAIRE (Republic of)	1
98.	ZAMBIA (Republic of)	½
99.	ZIMBABWE (Republic of)	1
		249

Members of Region 3 :

100.	AFGHANISTAN (Democratic Republic of)	½
101.	IRAN (Islamic Republic of)	1
	TOTAL for 101 countries of Regions 1 and 3	250 ½

INTERNATIONAL TELECOMMUNICATION UNION

REGIONAL BROADCASTING CONFERENCE

(FIRST SESSION) GENEVA, 1982

Document No. 128-E
14 September 1982
Original : English

PLENARY MEETING

Sixth Report of Committee 5

The sixth series of the texts adopted by Committee 5 has been submitted to the Editorial Committee for subsequent submission to the Plenary Meeting (see Document No. 129).

These texts were adopted unanimously.

K. ARASTEH
Chairman of Committee 5

INTERNATIONAL TELECOMMUNICATION UNION

REGIONAL BROADCASTING CONFERENCE

(FIRST SESSION) GENEVA, 1982

Document No. 129-E
14 September 1982
Original : English

COMMITTEE 6

Sixth series of texts from Committee 5 to the Editorial Committee

The texts mentioned in Document No. 128 are hereby submitted to the Editorial Committee for submission to the Plenary Meeting.

These texts concern Chapter 7 of the Report. Texts relating to section 7.1 (Form of requirements and its description) were communicated to Committee 6 in Document No. 111. The annexed texts concern sections 7.2 to 7.5.

K. ARASTEH
Chairman of Committee 5

Annex : 1

A N N E X

7.2 Date for submission of requirements

The inventory of requirements will consist of data communicated to the IFRB before 1 February 1984 in response to a circular letter which the Board shall send to administrations after the First Session of the Conference and not later than 31 December 1982.

Requirements shall be submitted in one of the following forms :

- on the form for submission mentioned in item 7.1 of this Report;
- or in the form of a computer magnetic tape as specified in an annex to the IFRB Circular-letter. Such magnetic tapes must be accompanied by a printed text which the Board shall regard as a reference document. On 1 October 1983 the Board shall send a letter indicating that administrations may communicate their requirements. The time limit for submission shall be 31 January 1984.

At the beginning of January 1984, the Board shall send a telegram to remind administrations which have not yet submitted their requirements.

In the case of administrations which have not replied, the IFRB shall consider the data given 1) in the Master International Frequency Register (MIFR), 2) in a Plan or 3) resulting from the application of the theoretical network.

See Figure 1.

7.3 Processing of requirements by the IFRB

After validating them, the IFRB shall enter all the requirements in a register with a view to establishing an inventory of requirements, on the basis of which the interference calculations and incompatibility checks will be made.

When the requirement corresponds to an assignment which has been notified in accordance with the Radio Regulations to the IFRB, or which is in conformity with the Regional Agreement, Stockholm 1961, the status of this assignment will be inserted by the IFRB when publishing the inventory of requirements. Different symbols will indicate the recording in the Master Register and the conformity with the Regional Agreement, Stockholm 1961.

The IFRB shall send to each administration in duplicate, as soon as possible and not later than 30 April 1984, a separate printed list of the requirements of the administration concerned.

Administrations shall check the data on their stations and shall communicate to the IFRB not later than 30 June 1984 any material errors they have detected.

The IFRB shall check these corrections and carry them into the inventory of requirements.

See Figure 1.

7.4 Despatch of inventory of requirements and notification of calculation results to administrations

In view of the foreseeable volume of requirements, the IFRB shall publish the complete and corrected inventory of requirements in the form of microfiches and shall send it in duplicate to administrations respectively by 30 April 1984 and 31 July 1984.

On the basis of the corrected inventory of requirements, the IFRB shall effect the calculations described in Chapter 6 and shall send to administrations in duplicate the results of its calculations in the form of microfiches by 31 July 1984 at the latest.

The inventory of requirements and the results of calculations can be sent by the IFRB on magnetic tape to the administration having so requested, in the format determined by the ITU computing system. The description of the format will be brought to the notice of the administration concerned.

See Figure 1.

7.5 Assistance to administrations by the IFRB

See Resolution No. COM 5/1.

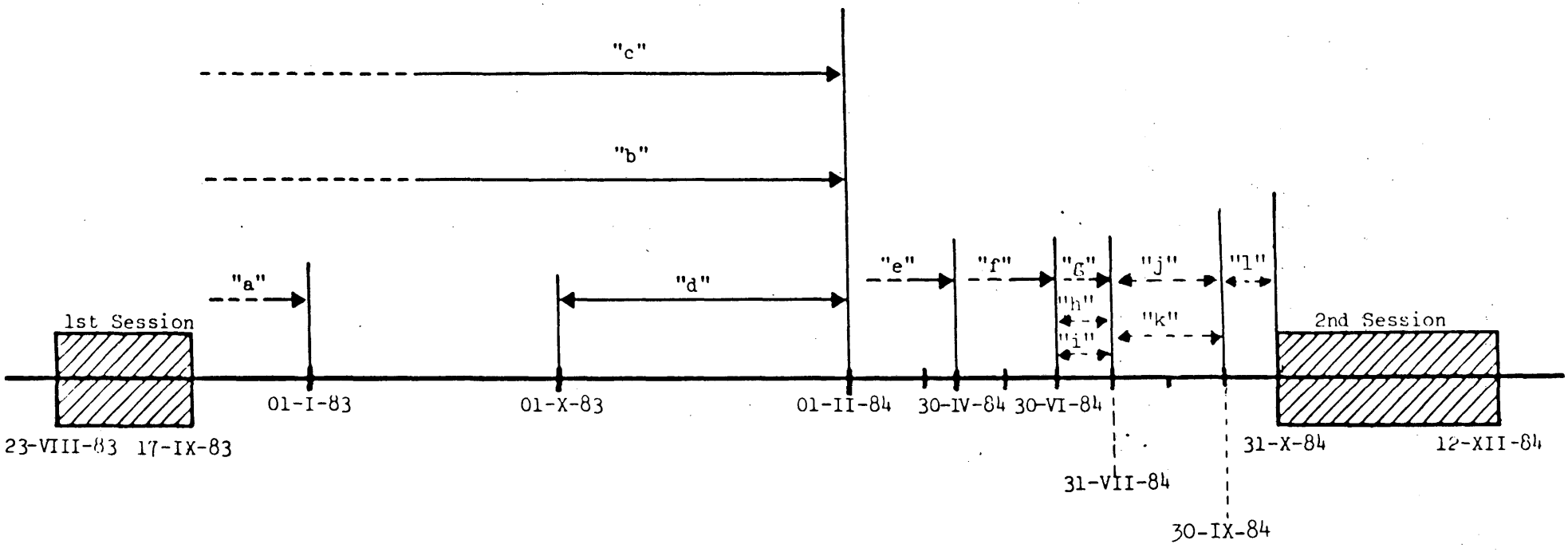

"c"
"b"
"a"
"d"
"e"
"f"
"G"
"j"
"l"
"h"
"k"
"i"
1st Session
2nd Session
01-I-83
01-X-83
01-II-84
30-IV-84
30-VI-84
23-VIII-83
17-IX-83
31-X-84
12-XII-84
31-VII-84
30-IX-84

Figure 1

Explanation of Figure 1

a) The IFRB, by circular-letter, invites the administrations concerned to notify their requirements within the time limits and in the ways approved by the Conference at its First Session, and sends a model form.

b) In planning, and in checking and preparing their requirements, administrations observe the planning methods and principles approved by the Conference, wherever possible establishing contacts and carrying out preliminary coordination with neighbouring countries with a view to preparing coordinated requirements to facilitate the task of the Second Session of the Conference.

c) The IFRB prepares and finalizes the computer programs it considers necessary to perform the tasks entrusted to it by the Conference and to facilitate the work of the Second Session of the Conference. The following tasks have been identified :

- C.1 storage of requirements;
- C.2 arrangement and classification of the inventory of requirements by frequency, sub-band and/or country;
- C.3 publication of the complete inventory, or parts of it, according to countries, groups of countries and/or sub-bands;
- C.4 provisional choice of suitable frequencies, in accordance with the planning methods and principles, in cases where the desired frequency is not entered on the request form;
- C.5 calculations of interference and incompatibility and publication of the results;
- C.6 compilation of statistics.

d) Administrations submit their requirements to the IFRB.

e) The IFRB sends in duplicate to each administration the part of the basic inventory containing the list of its requirements in printed form and the complete basic inventory on microfiche.

f) Each administration notifies the IFRB of any errors detected.

g) The IFRB sends in duplicate to administrations the corrected basic inventory of requirements with appropriate observations.

h) The IFRB executes the corresponding programs in the order indicated in point c) above.

i) The IFRB sends in duplicate to administrations the results of its calculations, referred to in paragraphs 3.1, 3.2 and 3.3 of Annex 2 and / paragraphs 5 and 6 of of Annex 4 / of / Document No. 92 /, as they become available. The corrected basic inventory and the results of the calculations form a document for the Second Session.

j) Administrations study this information and prepare proposed modifications[1] to their requirements which are designed to resolve incompatibilities and will be submitted to the Second Session or to the IFRB, as appropriate, and, when they consider it necessary, undertake bilateral or multilateral coordination beforehand.

k) The IFRB receives the proposed modifications designed to resolve incompatibilities and includes them in an "addendum" which it submits, if possible accompanied by a report, to the Second Session.

l) The IFRB shall use the modified[1] inventory of requirements in order to carry out the remaining calculations, referred to in paragraphs 4, 7, 8 and 9 of Annex 2 to / Document No. 92 /, and present the results during the first days of the Second Session. Modifications communicated after 1 October 1984 shall be dealt with by the Second Session.

The schedule is as follows :

Period		Activity
Up to 31 December 1982	:	"a"
Up to 1 February 1984	:	"b" and "c"
1 October 1983 - 1 February 1984	:	"d"
By 30 April 1984	:	"e"
By 30 June 1984	:	"f"
By 31 July 1984	:	"g", "h" and "i"
1 August 1984 - 30 September 1984	:	"j" and "k"
1 October 1984 - 31 October 1984	:	"l"

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1) Modifications are limited to changes in the characteristics of the requirements initially communicated, and intended to improve the Plan.

INTERNATIONAL TELECOMMUNICATION UNION

REGIONAL BROADCASTING CONFERENCE

(FIRST SESSION) GENEVA, 1982

Document No. 130-E
14 September 1982
Original : English

PLENARY MEETING

MINUTES

OF THE

THIRD PLENARY MEETING

Wednesday, 8 September 1982, at 1430 hrs

Chairman : Miss Marie HUET (France)

Subjects discussed		Document No.
1.	Consideration of the First Report of Committee 4	86
2.	Consideration of the First Report of Committee 5	83
3.	Consideration of texts submitted by Committee 6	
	3.1 Series B.1	97
	3.2 Series B.2	98
4.	Review of progress of work of Committees	-
5.	Approval of the Minutes of the First and Second Plenary Meetings	58, 88

1. Consideration of the First Report of Committee 4
(Document No. 86)

1.1 The Chairman of Committee 4 introduced the document, which was noted.

2. Consideration of the First Report of Committee 5
(Document No. 83)

2.1 The Chairman of Committee 5 introduced the document, which was noted.

3. Consideration of texts submitted by Committee 6

The Chairman of Committee 6, introducing the texts in Series B.1 and B.2 (Documents Nos. 97 and 98), said that in a number of those texts discrepancies had been noted with regard to the use of the word "shall" or "should" in the English version and of the corresponding verb tenses in the French. Committee 6 had considered that the decision on which tenses to use rested with the Plenary Meeting and had therefore placed square brackets round some of the words in question.

3.1 Series B.1 (Document No. 97)

Page B.1/1

3.1.1 The delegate of the Netherlands pointed out that, in the English text of the definitions of "Warm sea" and "Cold sea" at the bottom of the page, the words "at least" had been omitted before the words "100 km diameter" in the second line of each definition.

Page B.1/1 was approved with that amendment.

Page B.1/2

3.1.2 The delegate of Israel said that the early results of a measurement study recently undertaken in his country showed that the area was one of super-refractivity and ducting. He therefore proposed that the words "East Mediterranean" be inserted after "Red Sea" in the fifth line of the first paragraph of section 2.1.2.

3.1.3 The Chairman of Committee 6 said that the second paragraph of section 2.1.3, which appeared in square brackets in the English version but not in the French and Spanish, had been left outstanding by Committee 4 pending firm decisions in Committee 5.

3.1.4 The Chairman of Committee 5 said that his Committee had not yet reached all the necessary decisions and asked that the paragraph be left in abeyance.

3.1.5 The delegate of the United Kingdom pointed out that the words "figure" and "figures" in that paragraph should begin with capital letters.

3.1.6 In reply to a query by the Chairman of Committee 6, the Chairman of Committee 4 said that the word "should" in the third sentence of the fourth paragraph of section 2.1.3 should be replaced by "shall".

Page B.1/2 was approved as amended, subject to later consideration of the paragraph left in abeyance.

Page B.1/3

3.1.7 In response to queries by the Chairman of Committee 6, the Chairman of Committee 4 said that the word "should" ought to be changed to "shall" in sections 2.1.3.1, 2.1.3.2 and 2.1.3.4.

Page B.1/3 was approved as amended.

Pages B.1/4 to B.1/21

Approved.

Page B.1/22

3.1.8 The Chairman of Committee 6 asked whether the square brackets round the word "shall" in the two paragraphs of section 3.1 should be deleted.

3.1.9 The delegate of the United Kingdom said that the use of the word "shall" in that text would cause some difficulties for his Administration. Under the Stockholm Plan, the United Kingdom network contained a number of offset stations; the United Kingdom would do its utmost to move those stations on to frequencies multiples of 100 kHz, but was not certain to be able to do so in all cases.

3.1.10 The Chairman of Committee 6 suggested that the words "in principle" should be added after "shall" in both paragraphs.

Page B.1/22 was approved as amended.

Pages B.1/23 to B.1/28

Approved.

Page B.1/29

3.1.11 In reply to a question by the delegate of Botswana, the Chairman of Committee 4 said that Committee 4 had not considered the possibility of lowering the figure of 48 dB minimum usable field strength for the monophonic service in rural areas.

Page B.1/29 was approved.

Page B.1/30

3.1.12 The delegate of Romania, referring to Figure 3.3, pointed out that Document No. 92 contained another curve relating to protection against interference between television transmitters and FM sound broadcasting transmitters in the band 87.5 - 100 MHz. Perhaps a final decision on the whole band should be awaited before Figure 3.3 was approved.

3.1.13 The representative of the CCIR said that two quite different situations were covered by the two curves in question, the one in Figure 3.3 being derived from CCIR Recommendation 599 of Study Group 10 and the one mentioned by the Romanian delegate, from Recommendation 419 of Study Group 11.

3.1.14 The Chairman of Committee 4 confirmed that statement. The case referred to by the Romanian delegate had not been considered in Committee 4.

After a brief discussion, it was decided to leave the matter in abeyance pending informal consultations.

Page B.1/30 was approved on that understanding.

Pages B.1/31 and B.1/32

3.1.15 The Chairman of Committee 6 drew attention to a discrepancy between the text of section 4.2 on page B.1/31 and the title of Figure 4.1 on page B.1/32.

After a brief discussion, it was agreed to delete the words "the unmodulated case with" from section 4.2 and to remove the square brackets from the word "sound" in the title of Figure 4.1.

Pages B.1/31 and B.1/32 were approved as amended.

Page B.1/33

Approved.

Page B.1/34

3.1.16 The delegate of Yugoslavia wondered whether the frequency range in the caption to Figure 4.2 should not be 87.5 - 100 MHz rather than 87.5 - 108 MHz.

3.1.17 The Chairman of Committee 4 said that such a correction would be in order.

3.1.18 The delegate of the U.S.S.R. whilst not disagreeing with the proposal, pointed out that the caption was taken from a CCIR Report.

3.1.19 The representative of the CCIR said that the image carrier might operate below 100 MHz while the interfering sound carrier was above 100 MHz, in which case the curve in Figure 4.2 would still be valid. The upper limit of 108 MHz should thus be retained.

3.1.20 Mr. Berrada (IFRB) expressed concern regarding the explanation given which implied that the compatibility between sound broadcasting stations in the 100 - 108 MHz band and television stations in the 87.5 - 100 MHz band would be examined. As he understood it, television stations operated in accordance with the Radio Regulations, and so their necessary band limit could not exceed 100 MHz; the same was true of sound broadcasting stations. It should therefore be made quite clear that for preparatory work account would not be taken of compatibility between television stations below 100 MHz and sound broadcasting stations above 100 MHz. The report under discussion would subsequently appear in an international agreement relating to an extremely specific case : sharing of the 87.5 - 100 MHz band between television and sound broadcasting stations. For all other uses of the curve in Figure 4.2 above 100 MHz, details could be found in the relevant CCIR Reports. But in the specific case at hand the band quoted should be 87.5 - 100 MHz.

3.1.21 The delegate of Greece pointed out that if the amendment was adopted the title of Table 1 on page 33 would also have to be modified accordingly.

3.1.22 The delegate of France wondered whether any change was really necessary. Table 1 and Figure 4.2 were part of Chapter 4, and it was clearly stated in the introduction to that chapter that it related to transmitters in the 87.5 - 100 MHz band.

3.1.23 The Chairman, noting that there was general agreement in the meeting that the captions to Figure 4.2 and Table 1 should refer to the 87.5 - 100 MHz rather than the 87.5 - 108 MHz band, proposed that it be left to the Editorial Committee to find appropriate wording in the light of the above discussions.

It was so agreed.

Pages B.1/35 and B.1/36

3.1.24 The Chairman invited the Meeting to consider Recommendation No. COM 4/1.

3.1.25 The delegate of Israel proposed, in connection with the propagation study in his country already mentioned by his delegation, that a phrase be added at the end of "requests the CCIR" paragraph 1, reading "and any other such measurement programmes being carried out in other relevant areas".

Pages B.1/35 and B.1/36 were approved as amended.

3.2 Series B.2 (Document No. 98)

Paragraph 6.2

Approved.

Paragraph 6.2.1

3.2.1 The Chairman of Committee 4 said that the figures in square brackets were consistent with the decisions of Committee 4, and the square brackets could thus be deleted. Secondly, a reference to paragraph 3.6.2 of Document No. 97 (Receiving antennas) should be added at the end of the paragraph.

It was so agreed, and the paragraph was approved, as amended.

Paragraph 6.2.2

3.2.2 The delegate of Botswana wondered whether a cross reference to the definition of "adequate protection" which would appear elsewhere in the Conference documents should not be included in the last sentence.

3.2.3 Mr. Berrada (IFRB) said that neither the French nor the English text was totally accurate in referring to "adequate protection". The intention was not to define a specific value, which was impossible, and a more correct term would be "appropriate protection".

It was so agreed, and the paragraph was approved, as amended.

Paragraphs 6.2.3 and 6.2.3.1

3.2.4 The Chairman of Committee 5 thought that his Committee had not approved the word "shall" in square brackets in 6.2.3 but the word "should". There was a significant difference, and the Editorial Committee should beware of making such alterations which affected the meaning.

3.2.5 The delegates of Saudi Arabia and the United Kingdom said that the tense of the verb in paragraph 6.2.3 would depend upon the content of the note in paragraph 6.2.3.1 still to be drafted. Hence approval of both paragraphs should be deferred until the text of that note became available.

It was so agreed.

Paragraph 6.2.4

It was decided to delete the square brackets around the word "shall".

3.2.6 Mr. Berrada (IFRB) pointed out that there were no permitted services in the 87.5 - 108 MHz band, only services to which the band was allocated on a permitted basis. The text should therefore be redrafted to read :

"The existing or planned stations of services to which the 87.5 - 108 MHz band is allocated on a permitted basis shall not be ..."

It was so agreed, and paragraph 6.2.4 was approved, as amended.

Paragraph 6.4

3.2.7 The Chairman of Committee 6 said that the square brackets had been inserted because the word "frequency" had not appeared in the French text submitted to his Committee. In his opinion, "Technical planning constraints" might be a more appropriate title, thus making a clear distinction between the purely technical constraints discussed in Committee 5 and the legal and administrative constraints not covered in paragraph 6.4.

3.2.8 The delegate of Sweden said that the heading given in the structure of the Report (Document No. 70) approved in Committee 5 was "Planning constraints", which should thus be retained.

3.2.9 The delegate of Yugoslavia said that the heading "Frequency planning constraints" had been taken from an existing CCIR Report. Moreover, paragraph 6.4 only related to those constraints imposed by frequencies which could not be used for technical reasons, and the most accurate description would be "Frequency planning constraints".

3.2.10 The delegate of France said the words "frequency" and "technical" were not mutually exclusive. Some frequency planning constraints imposed in the coordination area where both broadcasting and television transmitters operated in the 87.5 - 100 MHz band were derived from Resolution No. 510. Some were due to purely technical restrictions, and those would be accurately described as "Technical frequency planning constraints", which he proposed as the most appropriate heading.

The proposal was approved, and paragraph 6.4 amended accordingly.

Paragraph 6.4.1

Approved, subject to deletion of the square brackets and a small amendment proposed by the delegate of Sweden.

Paragraph 6.4.2

3.2.11 The delegate of the United Kingdom, supported by the delegates of the Federal Republic of Germany and Norway, felt that whilst the figure of 10.7 MHz should be mandatory, the tolerance of $\pm$ 0.2 MHz should not. He proposed new wording to the effect that :

"The use of VHF/FM transmissions separated in frequency from 10.6 - 10.8 MHz shall be avoided in common coverage areas. Other separations from 10.5 - 10.9 MHz should also be avoided."

It was so agreed, and the paragraph was approved, as amended.

Paragraphs 6.4.3 to 6.4.3.4

Approved, subject to two editorial changes proposed by the delegate of Sweden.

4. Review of progress of work of Committees

4.1 The Chairman of Committee 2 said that its Working Group had met on 2 September and examined the credentials of the 49 delegations listed in Document No. 80, which were found to be in accordance with the rules of the Convention. A second meeting of the Working Group was scheduled for 10 September to examine credentials which had been presented later, followed by a full meeting of the Committee to prepare a report for the Plenary Meeting on 13 September. There were some delegations which had still not presented their credentials and he would ask them to contact the Secretary of the Committee in order to do so as soon as possible.

4.2 The Chairman of Committee 3 said that no problems had been encountered at its second meeting on 2 September. The Committee would hold a third meeting in the final week of the First Session of the Conference to examine the finances as at 10 September and it seemed possible that savings would be made.

4.3 The Chairman of Committee 4 said that it had now completed its work. The Committee had held five meetings and adopted Chapters 2 to 5 of the Report of the First Session. The Plenary Meeting had considered the first three and Chapter 5 was on its way to the Editorial Committee. He wished to thank the three Chairmen of the Working Groups and all the members who had worked so hard in Committee 4 for their great cooperation.

4.4 The Chairman of Committee 5 said that it had held four meetings so far and more were scheduled for the current and final weeks of the First Session. The Committee's Working Groups 5A and 5B had already completed their work.

4.5 The Chairman of Committee 6 said that, apart from the work already done, more documents were expected to become available overnight and the Editorial Committee would therefore meet again on the following day to begin consideration of them.

The oral reports by Committee Chairmen were noted.

4.6 The Chairman said that she would like to thank Mr. Götze, the Chairman of Committee 4, and all those who had assisted him for completing the Committee's work so quickly.

5. Approval of the Minutes of the First and Second Plenary Meetings (Documents Nos. 58 and 88)

The minutes of the First and Second Plenary Meetings were approved.

The meeting rose at 1700 hours.

The Secretary-General : M. MILI

The Chairman : Marie HUET

INTERNATIONAL TELECOMMUNICATION UNION

REGIONAL BROADCASTING CONFERENCE

(FIRST SESSION) GENEVA, 1982

Document No. 131-E
15 September 1982
Original : English

PLENARY MEETING

Seventh Report of Committee 5

The seventh series of the texts adopted by Committee 5 has been submitted to the Editorial Committee for subsequent submission to the Plenary Meeting (see Document No. 132).

These texts were adopted unanimously.

K. ARASTEH
Chairman of Committee 5

INTERNATIONAL TELECOMMUNICATION UNION

REGIONAL BROADCASTING CONFERENCE

(FIRST SESSION) GENEVA, 1982

Document No. 132-E
15 September 1982
Original : English

COMMITTEE 6

Seventh series of texts from Committee 5 to the Editorial Committee

The texts mentioned in Document No. 131 are hereby submitted to the Editorial Committee for submission to the Plenary Meeting.

These texts relate to section 7.1 of the Report, the first of which was communicated to Committee 6 in Document No. 111.

K. ARASTEH
Chairman of Committee 5

Annex : 1

A N N E X

Regional Administrative Radio Conference
for VHF sound broadcasting in the band 87.5 - 108 MHz
Second Session (31 October - 12 December 1984)

ADDITIONAL NOTE

FORM FOR SUBMISSION OF FREQUENCY PLANNING CONSTRAINTS WHICH ARE NEEDED TO ENSURE COMPATIBILITY BETWEEN SOUND BROADCASTING AND AERONAUTICAL RADIONAVIGATION SERVICES

(Annex 5, item 2.1)

(01) ADMINISTRATION	ADM. SERIAL No.	(00) IFRB SERIAL No.
----------	----------	----------

(41) IDENTIFICATION of the aeronautical radionavigation station which may be affected by broadcasting stations.

AERONAUTICAL RADIONAVIGATION STATION

Frequency	Name	Country	Longitude Degree E/W min	Latitude Degree N/S min
___·___ MHz	----------	----------	----------	----------

FORM FOR SUBMISSION OF DATA FOR CALCULATION OF INCOMPATIBILITIES
BETWEEN SOUND BROADCASTING AND AERONAUTICAL RADIONAVIGATION SERVICES
(Annex 5, item 2.2)

(01) ADMINISTRATION	ADM. SERIAL No.	(00) IFRB SERIAL No.
----------	----------	----------

(51) AERONAUTICAL RADIONAVIGATION STATION which is likely to be affected :

Frequency	Name	Country
___.___ MHz	----------	----------

Longitude Degree E/W min	Latitude Degree N/S min	Type	Height of antenna above sea level in metres
----------	----------	☐ ILS ☐ VOR	---------

(52) TEST POINTS

	AZIMUTH FROM THE AERONAUTICAL RADIONAVIGATION STATION TO THE TEST POINT	DISTANCE BETWEEN THE AERONAUTICAL RADIONAVIGATION STATION AND THE TEST POINT IN Km	HEIGHT ABOVE SEA LEVEL IN METRES
1.	----------	----------	----------
2.	----------	----------	----------
3.	----------	----------	----------
4.	----------	----------	----------

(53) BROADCASTING STATIONS which are likely to affect the aeronautical radionavigation station :

	Country	Name	IFRB Serial No.	Frequency
1.	---	----------	----------	---.--- MHz
2.	---	----------	----------	---.--- MHz
3.	---	----------	----------	---.--- MHz
4.	---	----------	----------	---.--- MHz
5.	---	----------	----------	---.--- MHz
6.	---	----------	----------	---.--- MHz

INTERNATIONAL TELECOMMUNICATION UNION

REGIONAL BROADCASTING CONFERENCE

(FIRST SESSION) GENEVA, 1982

Document No. 133-E
15 September 1982
Original : English

PLENARY MEETING

Eighth Report of Committee 5

The eighth series of the texts adopted by Committee 5 has been submitted to the Editorial Committee for subsequent submission to the Plenary Meeting (see Document No. 134).

These texts were adopted unanimously.

K. ARASTEH
Chairman of Committee 5

INTERNATIONAL TELECOMMUNICATION UNION

REGIONAL BROADCASTING CONFERENCE

(FIRST SESSION) GENEVA, 1982

Corrigendum No. 1 to
Document No. 134-E
16 September 1982
Original : English

COMMITTEE 6

Eight series of texts from Committee 5 to the Editorial Committee

1. Page 4[1], top of the page add the following paragraphs :

6.3.7.1 The lattice method will be used as soon as possible after the First Session of the Conference with the view to help administrations in formulating their requirements in an orderly manner. It will assist mainly the developing countries which are not able to attend the present Session.

6.3.7.2 In Africa and the Middle East, a lattice with a channel distribution of 31 channels (see Figure 1) will be used to permit between six and seven coverages in the band 87.5 to 108 MHz.

6.3.7.3 In the rest of the planning area, it is foreseen that[1] :

- administrations may communicate their requirements in the band 87.5 to 100 MHz as they result from the application of the Regional Agreement (Stockholm, 1961); and

- a lattice with a channel distribution of 79 channels (see Figure 2) will be used for preliminary planning of the band 100 to 108 MHz.

6.3.7.4 When using a channel distribution scheme, countries pertaining to a given zone may decide not to include low-power stations in the lattice scheme. These low-power stations will be treated at a later stage before or during the Second Session of the Conference, so that, at the end of the Second Session, all frequency assignments will have been made whatever the power of the transmitter.

2. Renumber paragraph 6.3.7.1 to read 6.3.7.5.

---

1) The lattice with channel distribution of 79 channels shall be used in the band 100 to 108 MHz in the whole territory of Turkey. The selection of channels in the band 87.5 to 100 MHz for the part of Turkey not covered by the Stockholm Agreement (1961) will be made by the Administration without necessarily using any lattice method.

INTERNATIONAL TELECOMMUNICATION UNION

REGIONAL BROADCASTING CONFERENCE

(FIRST SESSION) GENEVA, 1982

Document No. 134-E
15 September 1982
Original : English

COMMITTEE 6

Eighth series of texts from Committee 5 to the Editorial Committee

The texts mentioned in Document No. 133 are hereby submitted to the Editorial Committee for submission to the Plenary Meeting.

These texts concern :

- section 6.3 of the Report and Annexes 1, 3 to 7 and
- Resolution No. COM 5/3.

The maps mentioned in Annex 1, and Annex 2 to section 6.3 will be submitted separately.

K. ARASTEH
Chairman of Committee 5

Enclosures : 1 Appendix
Figures 1 and 2
Annexes 1, 3 to 7
Resolution No. COM 5/3

APPENDIX

6.3 Planning methods

6.3.1 Planning is a complex procedure involving a number of steps. Among these the following four steps are essential :

1) the use of the lattice planning method by the administrations to select appropriate frequencies for assignment to given stations (Annex 1);

2) the preliminary analysis of the draft plan obtained so far by means of a simplified computation method (Annex 2) together with the examination of incompatibilities with the television service in the band 87.5 - 100 MHz (Annex 4), interference to radio equipment used by aircraft for landing and navigation purposes in the band 108 to 118 MHz (Annex 5) and incompatibilities with the fixed or mobile services in Region 3 (Annex 6);

3) the inclusion of low-power networks and low-power stations in, and the refinement of, the plan by the method of foremost priority (Annex 3) followed by negotiations among administrations concerned;

4) analysis of the plan using a more complex computation method in the case of critical assignments (Annex 2) together with the examination of incompatibilities with other services, as in step 2 (Annexes 4, 5 and 6).

In the course of the planning procedure some of the above steps may have to be repeated, as appropriate. In particular, step 4 will need to be repeated after introduction of modifications, resulting from bilateral and multilateral consultations during the Second Session of the Conference.

6.3.2 After establishment of the plan a full evaluation of the interference and protection conditions may be considered necessary by the Second Session in order to provide reference values to be used for modifications of or additions to the plan in the time subsequent to the Second Session of the Conference.

6.3.3 In the preparation of a frequency plan in the band 87.5 to 108 MHz for the countries of Region 1 and for parts of Afghanistan and Iran the two following planning methods shall broadly be used :

1) regular lattice planning with linear channel distribution scheme;

2) method of foremost priority (planning by trial and error).

The efficiency of the two methods will depend on circumstances which may vary considerably from one part of the planning area to the other. For instance, in Europe it is likely that frequency assignments in the band 87.5 to 100 MHz to VHF/FM transmitters will only be subject to slight modifications in a restricted number of cases in most of the countries, whereas in the remaining part of the planning area an assignment plan for the entirety of sound-broadcasting transmitters will have to be established.

6.3.4 The lattice planning method, the use of which is described in Annex 1, would be a powerful tool in the latter case, but it would be of little use in the former case.

Although it is desirable that, when use is made of lattice planning, the same channel distribution scheme is applied throughout the planning area, on account of the variation of conditions in different parts of the area it is thought appropriate to use two different channel distribution schemes.

The main advantage of this method is that the whole planning area can be sub-divided at the beginning into sub-areas of adequate size and shape. This will permit planning to start simultaneously in various parts of the planning area. A further advantage is that the method permits the quick assignment of large numbers of frequencies to non-constrained transmitters. This is due to the fact that within a theoretical channel distribution scheme mutual interference is brought down to the minimum practicable and that by its adaptation to a practical situation interference will be increased only slightly.

However, the applicability of the method is restricted to networks with transmitters of comparable interference potential (power, effective antenna height). The method should, therefore, not be used for the assignment of frequencies to low-power transmitters in an environment of numerous high-power transmitters. It may also fail to be applicable if a large number of constraints has to be respected as for instance, the protection against the origination of annoying intermodulation frequencies.

6.3.5 The method of foremost priority is described in Annex 3.

The advantage of this method is that all the constraints to be respected in every individual case can be taken into account. However, the method is time-consuming and its reliability is only warranted when a computer is used. Nevertheless, there can be no doubt that in parts of the planning area and in parts of the band conditions will be found in which the use of this method will be the only resort.

6.3.6 Because of the limited time that will be available for planning purposes during the Second Session of the Conference it is felt that both methods should go together. The lattice planning method shall be used in the first instance as a help in the preliminary planning, in the whole band 87.5 - 108 MHz in Africa and the Middle East, and in the band 100 - 108 MHz in the rest of the planning area. However, further planning may require the use of the method of foremost priority, especially in the planning of "desperate" cases and in the refinement procedure. In this respect it may well happen that planning in Europe while providing protection to the aeronautical radionavigation service will have to be considered as a desperate case.

6.3.7 Considering the size of the area to be planned, the expected large number of requirements to be included in the plan and the complexity of the planning task, some preparatory work is required to be carried out by IFRB in the period between the two sessions. This would permit to provide administrations preliminary results of calculations before the opening of the second session of the Conference. For the reasons mentioned above the following procedure is suggested.

6.3.7.1 For the purpose of applying the regular channel distribution schemes of Figure 1 in Africa and the Middle East or Figure 2 in the remaining part of the planning area[1], the two tables of Annex 7 shall convey the necessary information between channel numbers and frequencies in the two pertinent areas. For the purpose of the filling-in of the requirement forms and in bilateral or multilateral negotiations only frequencies should be used in order to avoid any ambiguity.

It should be noted that in Europe channel 0 (100.0 MHz) shall primarily be used, where wanted, in the same parts of the area as channel 79. Adaptation to frequency assignments below 100.0 MHz (for which no channel numbers are specified in Europe) may, however, require some special arrangements to be made, particularly as regards channels 0 to 3.

6.3.8 Taking into account that there may be incompatibilities between VHF/FM sound broadcasting stations in the band 87.5 - 100 MHz in Afghanistan, Iran and a part of Turkey on one hand and TV stations of U.S.S.R. located in the border areas of these countries on the other hand Administrations of the U.S.S.R., Afghanistan, Iran and Turkey should coordinate their VHF/FM sound broadcasting and TV stations by bilateral or multilateral negotiations preferably before submitting their requirements to the IFRB on the basis of equal rights without a priority to any of the above uses. The protection referred to in considering f) of Resolution No. 510 being limited to TV stations which are in conformity with the Stockholm Agreement 1961.

Incompatibilities between VHF/FM broadcasting stations and TV stations in conformity with the Stockholm 1961 Agreement in the band 87.5 - 100 MHz are treated in Annex 4.

Incompatibilities between VHF/FM broadcasting and other TV stations shall use the criteria given in Chapter 4 of this report.

Note 1 : In Mongolia, the band 87.5 - 100 MHz will be used exclusively for television stations.

Figures 1 and 2.

Annexes : 7

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1) The channel distribution schemes of Figures 1 and 2 shall be applied in such a way that the lower left hand apex is adjusted to the western most apex in Africa and the Middle East in the remainder of the planning area.

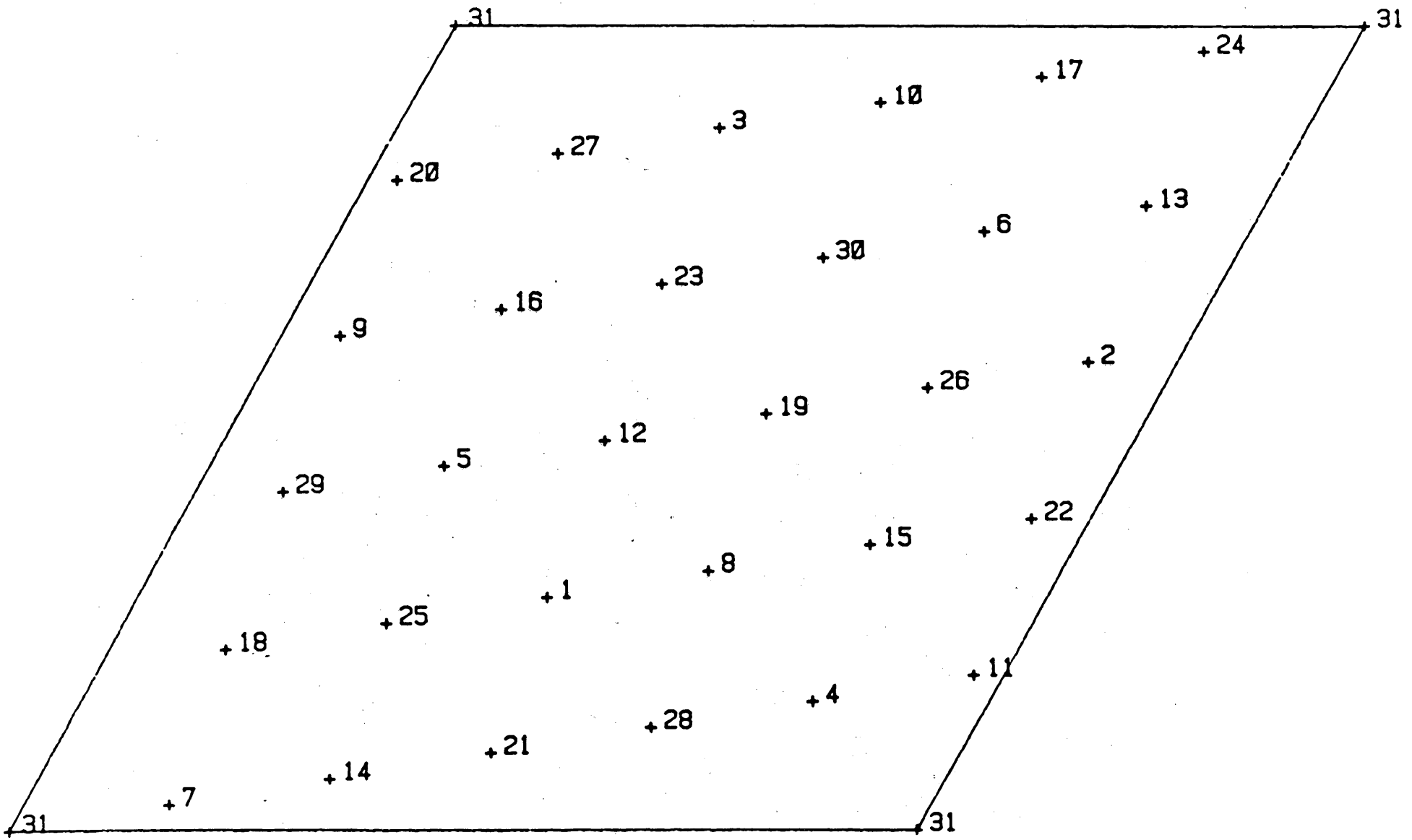
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Figure 1

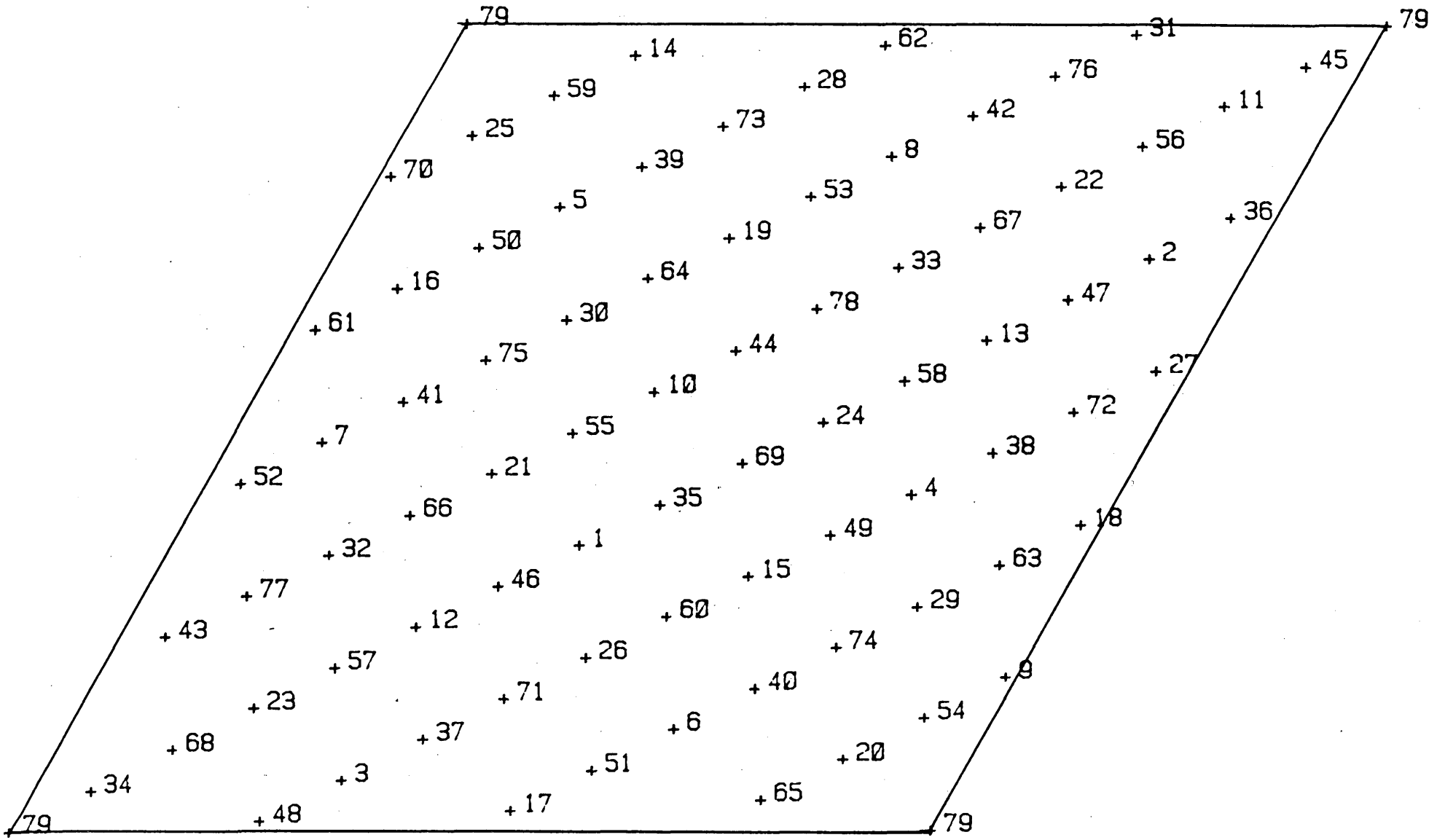
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Figure 2

ANNEX 1

LATTICE PLANNING METHOD

1. In this Annex the use of the lattice planning method will be explained, whereas its theory is described in CCIR Report 944. The basic idea of this planning method is the repeated use of a geometrically regular channel distribution scheme over a vast area. As only channel distribution schemes are selected, which are optimized in terms of coverage by reducing interference within the network to the achievable minimum, it can be assumed that their repeated use would result in a plan which, after some further refinement, might be acceptable to everyone. However, no compatibility aspects with other services, can automatically be taken into account when using the lattice planning method.

2. Although the use of one single channel distribution scheme would permit a high degree of spectrum utilization efficiency, conditions may prevail in the area to be planned which suggest the use of different schemes in different parts of the area. Actually the situation in Africa and the countries of the Middle East is considerably different from that in the remaining part of the planning area. Whilst in the countries of the first mentioned area of planning may start from scratch, in Europe the plan for the television service in the band 87.5 to 100 MHz in Eastern European countries will have to be retained and be respected when assigning frequencies to VHF/FM sound broadcasting transmitters. It is for this reason that two different channel distribution schemes will be used, one for Africa and the Middle East in the band 87.5 to 108 MHz and the other for the remaining part of the planning area in the band 100 to 108 MHz.

3. The lattices will have to be carefully adapted to one another in order to limit any reduction in spectrum utilization efficiency to the minimum practicable. Geographical separation of the two areas over a wide distance range will be provided by the Mediterranean Sea. Nevertheless, some difficulties will persist and become particularly important in areas where there is no, or nearly no, geographical separation.

4. To enable the application of the lattice planning method, in practice, it is useful to subdivide the planning area into sub-areas in such a way that the resulting sub-areas are similar in shape to the lattice selected, i.e. rhombic, in principle, and that the numoer of transmitter or transmitter sites within each sub-area does not exceed the number (31 or 79 respectively) of available channels. In preparation of the planning procedure the two different lattices selected for Africa and the Middle East and for the remainder of the planning area were drawn on to a map. This map is reporduced in 12 parts in Figures 1 to 12.

The lattices in maps 1 to 6 are to be applied in Africa and the Middle East. The side-length of each rhombic area element is 480 km. The lattices in maps 7 to 12 are to be applied in the remainder of the planning area; the side-length of each area element is 240 km.

These lattices are intended for use at the initial stage of the planning procedure.

5. The lattices selected for Africa and the Middle East and for the remainder of the planning area contain 31 or 79 channels, respectively. In Africa and the Middle East there will be a possibility to provide between 6 and 7 coverages throughout the area, which seems to satisfy the needs of the vast majority of the countries situated in this part of the planning area. In the remaining part of the planning area this scheme would permit assignments to be made to transmitters for providing 2 or 3 coverages in accordance with the requirements that will be specified.

6. In this respect it is assumed that in Africa and the Middle East the average distance between neighbouring transmitter sites is of the order of 80 - 100 km which, with 31 channels available per coverage, would correspond to a distance between transmitter sites using the same channel of approximately 445-555 km (co-channel distance). In the preparation of planning it is, thus, appropriate to apply the channel distribution scheme by entering it in a geographical map which is covered by a rhombic coordinate system having 480 km unit distances which correspond to the assumed co-channel distance. From this map administrations will be able to select appropriate frequencies for assignment to the transmitters at the nearest site. It should be noted that the assignment of one frequency from the theoretical scheme corresponds in reality to the assignment of a group of six channels which are separated from one another by 31 channels each. Needless to say that each frequency channel taken from the scheme can only be assigned once in that particular sub-area. It is worth mentioning that departures from the assignment procedure described would be admissible, e.g. in order to assign two groups of three frequencies each to two neighbouring transmitter sites although, in the theoretical lattice these six frequencies are derived from one and the same lattice point. Moreover, it needs to be stated that after assignment of a group of six frequencies to six transmitters at the same site, the major planning constraints will automatically be respected : the separation between channels used at the same site is 31; this would permit the use of an appropriate multiplexing equipment; and a separation in the range of 10.7 $\pm$ 0.2 MHz (receiver intermediate frequency) is avoided (see section 6.4.2 of the report).

7. In the remaining part of the planning area, the average distance between co-channel transmitters is of the order of 240 km. In this area, where a 79 channel distribution scheme will be applied in the band 100 to 108 MHz, it is more difficult to respect the planning constraints : as two or more frequencies are, after adequate distortion of the theoretical lattice, to be assigned to transmitters sharing the same site, it has to be made sure in every individual case that the separations between frequencies would permit the use of multiplexers if this is desired. Moreover, there will be absolutely no means to automatically avoid, at the same site, the use of frequencies having a separation in the range of 10.7 $\pm$ 0.2 MHz, with respect to VHF/FM BC transmitters in the frequency band 87.5 - 100 MHz. Consequently, this particular constraint will need extensive checking.

Maps : Figures 1 to 12

(Maps to be sent later)

ANNEX 2

Will be provided later.

ANNEX 3

METHOD OF FOREMOST PRIORITY

The method of foremost priority consists in assigning to the transmitter for which the number of appropriate frequencies is smallest the most favourable among these frequencies (worst transmitter - best frequency). This means that frequencies are successively assigned to every transmitter following the order of decreasing difficulty in terms of interference. For every transmitter in sequence a frequency is selected which suffers least interference and produces the smallest amount practicable of additional interference. This procedure is repeated until all transmitters have obtained a frequency. It goes without saying that in this procedure account has to be taken of all constraints implied.

Obviously, this method can be time consuming and its reliability may only be warranted when a computer is used. The use of a high-speed computer may, however, provide important assistance in this procedure and may, in fact, be the only resort in some cases.

It will at first be necessary to discover, by way of an appropriate analysis (see Annex 2), the deficiencies of an assignment plan by computing the usable field strength, checking the constraints to be respected or applying the compatibility procedures. Unsatisfactory frequency assignments, that are those whose usable field strength exceeds the average value in that country by more than 10 dB or assignments which are incompatible with other services will be identified in this way and the transmitters will be included in the list to which the method of foremost priority will have to be applied. Also in the following step assistance can be provided, e.g. by computing and plotting, for the sites of such transmitters, the usable field strength as a function of frequency (see Figure 1). Graphical presentations of this type are particularly useful when more than one frequency is to be found for the same site. In general, those frequencies may be considered most appropriate for which the lowest values of usable field strength are shown. This implies, however, that their use is compatible with other services and that the planning constraints are respected.

It may be clear from the above explanations that the graphical presentation of the usable field strength as a function of frequency might also successfully be used to find frequencies for assignment to transmitters for which no frequency was assigned in the first step of the planning procedure (i.e. during the use of the lattice planning method), e.g. for low-power transmitters.

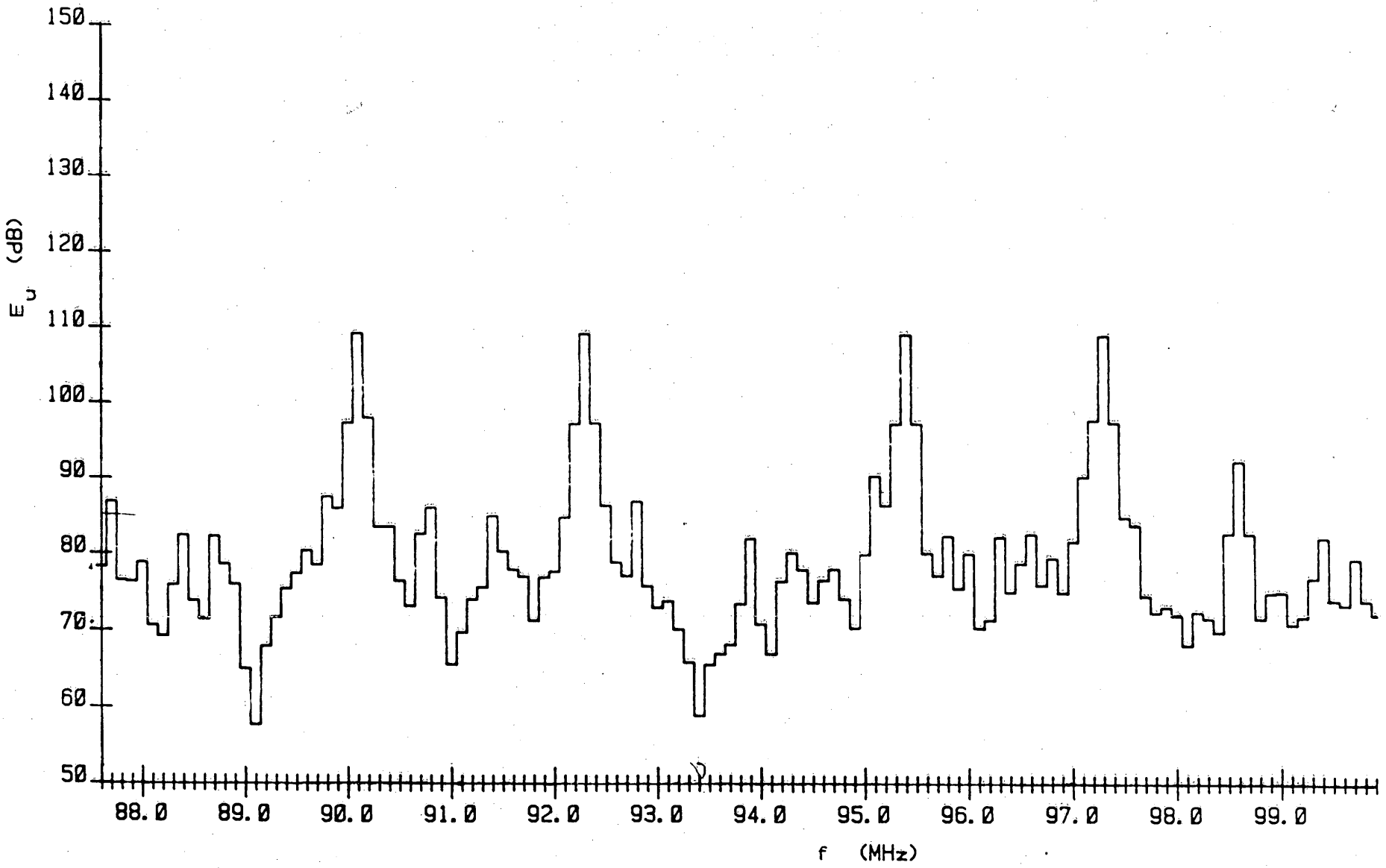

150
140
130
120
110
100
90
80
70
60
50
E_u (dB)
88.0
89.0
90.0
91.0
92.0
93.0
94.0
95.0
96.0
97.0
98.0
99.0
f (MHz)

Figure 1

ANNEX 4

COMPATIBILITY WITH THE TELEVISION SERVICE AND PROTECTION TO SOUND BROADCASTING STATIONS WITHIN THE COORDINATION AREA IN THE BAND 87.5 - 100 MHz

1. Introduction

Requirements will be processed in accordance with the data bank to be set up by IFRB from information supplied by administrations, or entered by the IFRB for those administrations which did not supply information.

2. Compatibility assessment

All VHF/FM requirements, which are situated in the coordination area with countries using this band for television in accordance with the Regional Agreement, Stockholm 1961, will be assessed for compatibility with the television service.

3. Protection to sound broadcasting stations within the coordination area

Calculations will have to be carried out which would permit to verify that the service areas of those existing sound broadcasting stations operating in accordance with the Regional Agreement, Stockholm 1961, as notified to IFRB before 1 December 1983, which are situated in the coordination area with countries using this band for television in accordance with the Regional Agreement, Stockholm 1961 are not deteriorated. For comparison purposes the reference situation (as in item 6 below) is to be used as a basis.

4. Coordination area

A VHF/FM station is considered to be situated in the coordination area, when, its distance from the nearest point of the border of the country, using this band for television, in accordance with the Regional Agreement, Stockholm 1961, is less than the distance given in Table B of Annex 1 of that Agreement.

5. Comparison

For the purpose of assessing of compatibility with television service (see 2.) or protection to service areas of existing VHF/FM transmitters (see 3.), the existing situation shall be used as a reference situation and be compared with the new plan in the course of its development. To permit these comparisons it will be necessary to calculate (as in 8.) the usable field strength (E_u) for all television transmitters and all existing sound broadcasting stations (as in 2. and 3.) at a number of test locations (not more than 12), within the existing service area, to be specified by administrations concerned.

6. Reference situation

All existing or planned assignments to television, or VHF/FM stations, in the band 87.5 - 100 MHz appearing in the Regional Plan, Stockholm 1961, and those for which the procedure of the Regional Agreement, Stockholm 1961, have been successfully applied

before 1 December 1983 shall be taken into account. The VHF/FM broadcasting stations in Region 3 and in the part of Turkey not covered by the Regional Agreement, Stockholm 1961, which are operating in accordance with the Radio Regulations and notified before 1 December 1983 to the IFRB, shall be included in the reference situation. The calculation for the reference situation need only be made once.

7. Situation resulting from planning

All existing or planned assignments to television stations (as in 6.) and all VHF/FM transmitters in the draft Plan, shall be taken into account.

8. Usable field strength for a transmitter at the specified test location

8.1 The nuisance field from each interfering transmitter shall be calculated as in /3.4/ of Chapter 3 using, in principle, propagation curves for 1% of the time and the appropriate protection ratio taken :

8.1.1 for the wanted television transmitter from :

8.1.1.1 Table 1 for interference from a television transmitter, or

8.1.1.2 Figure 4.1 of Chapter 4 for interference from a VHF/FM transmitter;

8.1.2 for a wanted VHF/FM transmitter from :

8.1.2.1 Table 1 and Figure 4.2 of Chapter 4 for interference from television transmitter, protection ratio values for tropical interference shall be used; or

8.1.2.2 /3.4/ of Chapter 3 for interference from VHF/FM transmitter.

8.2 Receiving antenna discrimination shall be taken :

8.2.1 for a wanted television transmitter from Figure 1;

8.2.2 for a wanted VHF/FM transmitter from Figure 3.3 of Chapter 3.

8.3 In the case of orthogonal polarization a discrimination value of 10 dB shall be applied for a wanted television transmitter. No discrimination shall be applied for a wanted VHF/FM transmitter.

8.4 The interference contribution of each interfering transmitter is the value of the nuisance field derived in 8.1, together with any discrimination value derived in 8.2 and 8.3.

8.5 E_u shall be calculated from the individual interference contributions using the simplified multiplication method, taking into account the 20 largest (either TV or VHF/FM) contributions and specified to one decimal place.

9. Result of examination

An incompatibility with a television service or a deterioration of the service area of a VHF/FM station only exists if any value of E_u obtained (as in item 6) using the data of paragraph 7 above exceeds the corresponding value of E_u in the reference situation by more than 0.5 dB.

TABLE 1

Protection ratio, in dB, for colour television (CCIR Report 306-4)

Offset (multiples of 1/12 line-frequency)	0	1	2	3	4	5	6	7	8	9	10	11	12
Co-channel	45	44	40	34	30	28	27	28	30	34	40	44	45
Transmitter stability = 500 Hz (non-precision offset)													
Lower adjacent channel	-6												
Upper adjacent channel	+4												

RECEIVING ANTENNA DISCRIMINATION - CCIR RECOMMENDATION 419

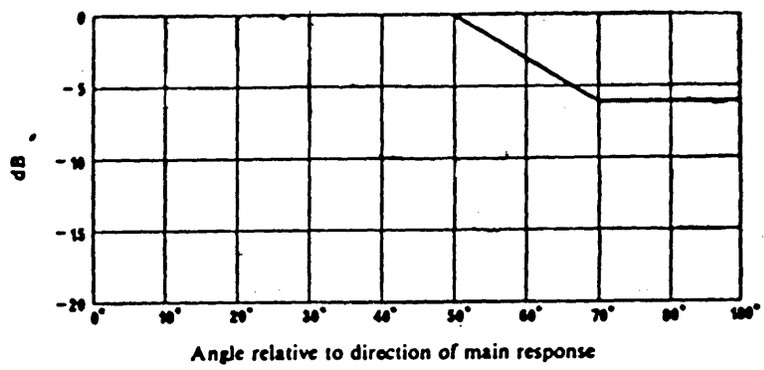


Figure 1 - Discrimination obtained by the use of a directional receiving antenna for the television service in the band 87.5 - 100 MHz

ANNEX 5

COMPATIBILITY BETWEEN VHF BROADCASTING STATIONS AND STATIONS OF THE AERONAUTICAL RADIONAVIGATION AND AERONAUTICAL MOBILE (R) SERVICES

1. The calculation method and criteria contained in this Annex shall be used for analyzing the plan before and during the Second Session of the Conference. If the broadcasting and aeronautical stations belong to one and the same country, administrations may use this method or any other method they consider useful. This Annex will make it possible to determine whether there is likely to be any incompatibility between stations belonging to different countries. The resolution of such incompatibilities through bilateral or multilateral negotiations will be based on criteria and methods accepted by the administrations concerned.

2. To ensure compatibility between broadcasting stations in the band 87.5 to 108 MHz and aeronautical radionavigation stations in the band 108 to 118 MHz and stations of the aeronautical mobile (R) service in the band 118 to 137 MHz the following procedure shall be applied :

2.1 When an administration defines its requirements with a view to communicating them to the IFRB, it may apply the coordination contour concept referred to in point 3 to identify and to indicate in an additional note the specific frequency planning constraints which are essential to ensure compatibility in each case with the aeronautical radionavigation service. These additional constraints shall be met as far as possible during the Second Session of the Conference when the plan is drawn up.

For the submission of the above-mentioned constraints, the form given in Appendix 1 to this Annex is recommended.

2.2 At a later stage, when an administration receives the inventory of requirements established by the IFRB (not later than 30 April 1984), it should use the coordination contour mentioned in point 3 to identify the broadcasting stations of other countries which are likely to affect the operation of any ILS or VOR station. The administration should determine the test points for its ILS and VOR stations in accordance with paragraph 4 of this Annex and it should communicate to the IFRB by 30 June 1984 the geographical coordinates of the station sites together with the azimuth, distance and height of each test point using the form given in Appendix 2 to this Annex.

2.3 The IFRB shall apply the software to be supplied to it by an administration to determine whether the protection criteria defined in point 5 have been met, and it shall include the results in the general analysis of the plan.

2.4 Administrations shall endeavour through bilateral and multilateral negotiations to resolve incompatibilities using the criteria and methods they consider most appropriate.

3. Coordination contour around an aeronautical radionavigation station

3.1 For type A interference, administrations should calculate and draw on a suitable map interference contours with a radius of 125 km around every test point of each radionavigation station to be protected. Broadcasting stations outside the outer resulting contour are considered as not being likely to affect the aeronautical radionavigation station under consideration.

The calculations of the interfering field strength at the test points will permit the identification of those broadcasting stations that need a detailed consideration by administrations.

3.2 For type B interference if any broadcasting station within the above contour is causing at the nearest test point of the aeronautical radionavigation station an interference greater than -25 dBm receiver input power, an intermodulation computer program shall be used to identify those broadcasting stations that need detailed consideration by administrations.

4. Test points

While applying paragraph 6 for the resolution of incompatibilities administrations shall, in a second step, carry out interference calculations at test points.

In view of the large number of calculations necessary to assess compatibility, in practice these calculations can be limited to a small number of test points on national territory at which the conditions are considered to be the most difficult. In order to be able to apply data processing methods, the following procedure for the choice of test points is recommended.

The test points chosen by the administration shall be communicated to the IFRB where required using the form contained in Appendix 2 to this Annex.

4.1 ILS

4.1.1 If the broadcasting station is not in the area below the service volume defined in item 5.3.2.1 the points A, B, C defined in Figure 1 of this Annex shall be used together with point D as indicated by the responsible administration.

4.1.2 If the broadcasting station is within the area below the ILS service volume, a case-by-case assessment is necessary (see 5.3.2.2.5). Unless otherwise specified the field strength shall be calculated at a distance of 100 m from the broadcasting antenna using the direction of maximum e.r.p. if not otherwise specified.

4.2 VOR

4.2.1 If the broadcasting station is not in the VOR service area, the 4 cardinal points (N, E, S and W) of the circle forming the boundary of the service areas at a height of 1,000 m above the beacon shall be chosen.

4.2.2 If the broadcasting station is in the VOR service area, a case-by-case assessment is necessary (see 5.3.3.2). Unless otherwise specified the field strength shall be calculated at a distance of 300 m from the antenna of the broadcasting station using the direction of maximum e.r.p. if not otherwise specified.

4.3 VHF communications

Service volumes vary widely. Initially, for the sake of simplicity, the 4 cardinal points 30 km from the land station in the aeronautical mobile (R) service at a height of 1,000 m above the height of the land station shall be considered unless alternative test points are indicated by the responsible administration.

VHF communication for on route purposes may be treated on a case-by-case basis depending on the operational significance.

5. Analysis of incompatibilities

The IFRB shall use the information relating to test points together with the inventory of requirements in order to assess the incompatibilities using the following criteria.

5.1 Propagation

Calculations shall be limited to the test points in line-of-sight from the broadcasting station, it being assumed that the terrain is at the same height as the aeronautical radionavigation station and the effective earth's radius is 4/3 of the actual radius. Calculations shall be made using free space propagation conditions and e.r.p. in the horizontal plan. No account should be taken of polarization differences, except in special cases (e.g. circular polarization) as indicated in item 5.3.6 of the Report of the First Session.

5.2 Protection criteria for aeronautical radionavigation service

The field strength of every broadcasting station in the band 87.5 - 108 MHz within the outer resulting coordination contour of an aeronautical radionavigation station at the test points shall be calculated as an interfering signal and compared with the following minimum field strengths :

- ILS : 40 μV/m (32 dB(μV/m))
- VOR : 90 μV/m (39 dB(μV/m))

The calculations shall indicate :

- those cases for which the ratio of the minimum field strength to the calculated interfering signal reduced by 85 dB is lower than 17 dB,
- those broadcasting transmitters which cause at the test point an interference exceeding -25 dBm corresponding to an interfering field strength derived from the following formula :

$$E\ dB(\mu V/m) = N(dBm) + 121 + (108 - f(MHz))$$

where f is the frequency of the broadcasting station.

5.3 Publication of the results

The publication of the results of the calculations shall indicate for each incompatibility :

a) the identification of the aeronautical radionavigation station affected;

b) the identification of the broadcasting stations giving rise to the incompatibilities;

c) the value in decibels by which the required protection ratio is not met at the nearest test point to the broadcasting station;

d) the value of interferences exceeding -25 dBm at the nearest test point to the broadcasting station;

e) the frequencies of those broadcasting stations which are likely to contribute to intermodulation interference.

6. Resolution of incompatibilities

6.1 When the broadcasting station is within the coordination contour referred to in paragraph 3 of this Annex a detailed compatibility analysis shall be undertaken by the administrations. In many cases, this may be achieved through existing national coordination machinery but, in some cases, the joint analysis will need to take place between administrations of neighbouring countries.

The first stage in the analysis should be to determine whether, for each mode of interference set out in section 5.3.1 and by applying the measures set out in sections 5.3.7.2 to 5.3.7.4, a compatibility exists between the two services. For example by applying the values set out in section 5.3.7.4 the coordination zone around the broadcasting station reduces to the values set down in Table A.

TABLE A

Coordination zone with -85 dB filtering at the broadcasting station

e.r.p. kW	200	150	100	50	10	1
distance km	31	27	22	15.5	7.0	2.2

Where such compatibility exists for all broadcasting transmitters in relation to a particular radionavigation service, planning of the broadcasting frequency assignments can proceed without constraints imposed by the need to protect that service.

6.2 For those countries having a large number of both broadcasting stations and aeronautical radionavigation stations, the application of the methods set out in paragraphs 3 and 6.1 by manual means will constitute a huge workload. Computer methods can contribute significantly to reducing the task and rapidly identifying the conflict situations. Where the administrations use computer methods it would be of greatest value if the results could identify :

i) those broadcasting stations which do not affect the aeronautical service in any way;

ii) those which require additional filtering and identifying the necessary degree of suppression of spurious emissions;

iii) those requiring frequency planning solutions.

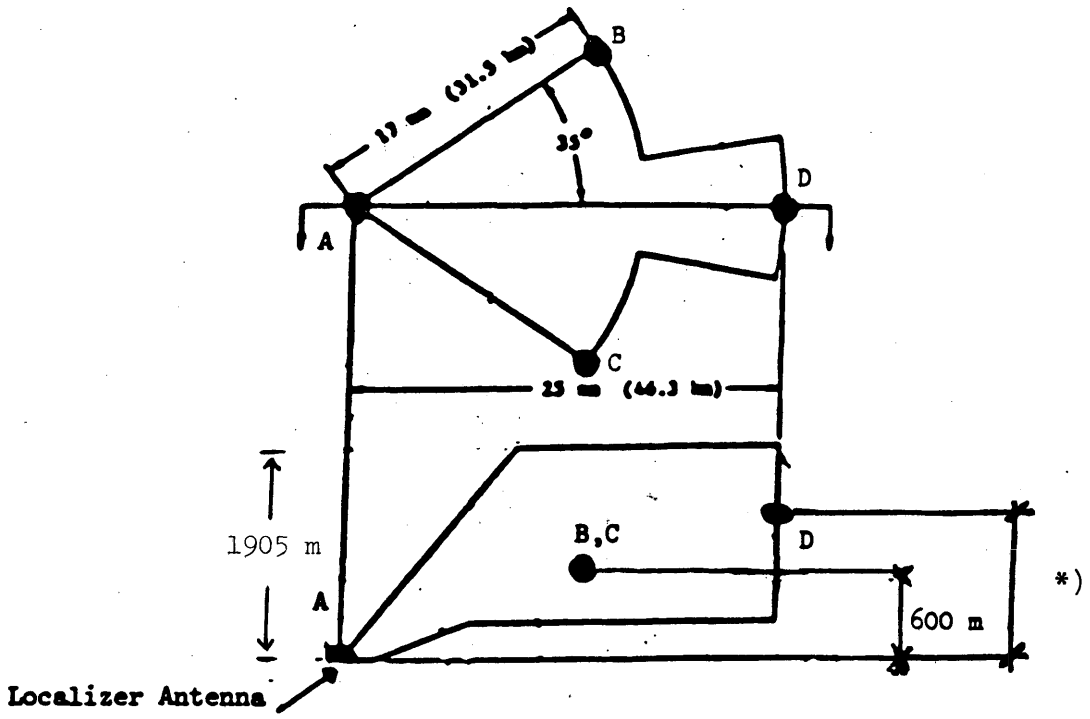
6.3 In cases where incompatibility still cannot be resolved, a more detailed case by case study should be undertaken applying the factors set out in section 5.3.8. By this means, it may be possible to further eliminate problem cases.

6.4 For each individual case still without a solution, the administrations should determine, taking account of future expansion of the aeronautical service whether protection in the service volume is required over a limited number of channels or for the entire band 108 to 118 MHz. In the first case the administration should then calculate whether the particular measures set out in section 5.3.7.5 could provide a solution.

6.5 Where compatibility is clearly only feasible through broadcasting frequency planning solutions, the administration, when submitting its requirements, shall indicate in a supplementary note to the IFRB what particular frequency planning constraints are needed in order to ensure compatibility with the aeronautical service for each individual case. These supplementary constraints shall be satisfied in planning during the Conference to the extent feasible.

6.6 During the broadcasting service planning there will be a need for a computer analysis facility specifically intended to identify any broadcasting assignments which do not meet the compatibility requirements for the aeronautical radionavigation stations indicated by administrations to the IFRB under 6.5.

6.7 If, after following the procedures set out in 6.1 to 6.5 above, a solution is still not arrived at, then the only other possible solution may be to choose another site for the broadcasting station. It is conceivable in some situations that this may not be feasible; in this case such an assignment may appear in the Plan but cannot be implemented due to an unresolvable incompatibility with the aeronautical radionavigation service.



*) Height to be indicated by the administration.

Figure 1 - Test points for ILS localizer

ANNEX 6

The assessment of incompatibilities with the fixed and mobile services in Region 3, shall be made at the border between Regions 1 and 3 applying the sharing criteria contained in items 5.1 and 5.2.

The Administrations of Afghanistan and Iran will use the form given in Appendix 1 to the Radio Regulations to inform the IFRB of those stations of the fixed and mobile services in their countries that have to be taken into account during the planning procedure.

ANNEX 7

TABLE 1

Correspondence between channel numbers and frequencies for use in Africa and Middle East

	A	B	C	D	E	F	G
1	87.6	90.7	93.8	96.9	100.0	103.1	106.2
2	87.7	90.8	93.9	97.0	100.1	103.2	106.3
3	87.8	90.9	94.0	97.1	100.2	103.3	106.4
4	87.9	91.0	94.1	97.2	100.3	103.4	106.5
5	88.0	91.1	94.2	97.3	100.4	103.5	106.6
6	88.1	91.2	94.3	97.4	100.5	103.6	106.7
7	88.2	91.3	94.4	97.5	100.6	103.7	106.8
8	88.3	91.4	94.5	97.6	100.7	103.8	106.9
9	88.4	91.5	94.6	97.7	100.8	103.9	107.0
10	88.5	91.6	94.7	97.8	100.9	104.0	107.1
11	88.6	91.7	94.8	97.9	101.0	104.1	107.2
12	88.7	91.8	94.9	98.0	101.1	104.2	107.3
13	88.8	91.9	95.0	98.1	101.2	104.3	107.4
14	88.9	92.0	95.1	98.2	101.3	104.4	107.5
15	89.0	92.1	95.2	98.3	101.4	104.5	107.6
16	89.1	92.2	95.3	98.4	101.5	104.6	107.7
17	89.2	92.3	95.4	98.5	101.6	104.7	107.8
18	89.3	92.4	95.5	98.6	101.7	104.8	107.9
19	89.4	92.5	95.6	98.7	101.8	104.9	
20	89.5	92.6	95.7	98.8	101.9	105.0	
21	89.6	92.7	95.8	98.9	102.0	105.1	
22	89.7	92.8	95.9	99.0	102.1	105.2	
23	89.8	92.9	96.0	99.1	102.2	105.3	
24	89.9	93.0	96.1	99.2	102.3	105.4	
25	90.0	93.1	96.2	99.3	102.4	105.5	
26	90.1	93.2	96.3	99.4	102.5	105.6	
27	90.2	93.3	96.4	99.5	102.6	105.7	
28	90.3	93.4	96.5	99.6	102.7	105.8	
29	90.4	93.5	96.6	99.7	102.8	105.9	
30	90.5	93.6	96.7	99.8	102.9	106.0	
31	90.6	93.7	96.8	99.9	103.0	106.1	

TABLE 2

Correspondence between channel numbers and frequencies
for use in the planning area other than Africa and the Middle East

Channel/ Canal	Frequency Fréquence Frecuencia	Channel/ Canal	Frequency Fréquence Frecuencia	Channel/ Canal	Frequency Fréquence Frecuencia	Channel/ Canal	Frequency Fréquence Frecuencia	Channel/ Canal	Frequency Fréquence Frecuencia
No.	MHz	No.	MHz	No.	MHz	No.	MHz	No.	MHz
0	100.0	16	101.6	32	103.2	48	104.8	64	106.4
1	100.1	17	101.7	33	103.3	49	104.9	65	106.5
2	100.2	18	101.8	34	103.4	50	105.0	66	106.6
3	100.3	19	101.9	35	103.5	51	105.1	67	106.7
4	100.4	20	102.0	36	103.6	52	105.2	68	106.8
5	100.5	21	102.1	37	103.7	53	105.3	69	106.9
6	100.6	22	102.2	38	103.8	54	105.4	70	107.0
7	100.7	23	102.3	39	103.9	55	105.5	71	107.1
8	100.8	24	102.4	40	104.0	56	105.6	72	107.2
9	100.9	25	102.5	41	104.1	57	105.7	73	107.3
10	101.0	26	102.6	42	104.2	58	105.8	74	107.4
11	101.1	27	102.7	43	104.3	59	105.9	75	107.5
12	101.2	28	102.8	44	104.4	60	106.0	76	107.6
13	101.3	29	102.9	45	104.5	61	106.1	77	107.7
14	101.4	30	103.0	46	104.6	62	106.2	78	107.8
15	101.5	31	103.1	47	104.7	63	106.3	79	107.9

RESOLUTION No. COM 5/3

The First Session of the Regional Administrative Conference for FM Sound Broadcasting in the VHF Band (Region 1 and certain countries concerned in Region 3),

considering

a) that it has decided that protection should be ensured for aeronautical radionavigation stations in the band 108 to 118 MHz and for stations of the aeronautical mobile (R) service in the band 118 to 137 MHz;

b) that the calculation procedures and methods adopted by the First Session are based principally on the efforts which administrations must make to estimate and resolve interference levels and that the publication of information on aeronautical stations is confined to the indication of a small number of test points;

c) that the developing countries may have difficulty in determining interference levels and that some of these countries may not be represented at the Second Session of the Conference;

d) that ICAO has detailed information on the aeronautical radionavigation stations operating in these countries,

resolves

1) that the countries of Africa and the Middle East may request the IFRB to assist them in calculating the levels of interference that broadcasting stations might cause to aeronautical radionavigation and aeronautical mobile stations;

2) that the IFRB should be invited to assist the above-mentioned countries in assessing interference and, for that purpose, to seek the cooperation of ICAO, particularly with a view to obtaining detailed information on stations of the aeronautical radionavigation service.

INTERNATIONAL TELECOMMUNICATION UNION

REGIONAL BROADCASTING CONFERENCE

(FIRST SESSION) GENEVA, 1982

Document No. 135-E
15 September 1982
Original : English

PLENARY MEETING

Ninth Report of Committee 5

The ninth series of the texts adopted by Committee 5 has been submitted to the Editorial Committee for subsequent submission to the Plenary Meeting (see Document No. 136).

Greece and Yugoslavia reserved their positions concerning the amendment proposed to section 4.1 of Chapter 4 of the Report (Document No. 108). The remaining texts were adopted unanimously.

K. ARASTEH
Chairman of Committee 5

INTERNATIONAL TELECOMMUNICATION UNION

REGIONAL BROADCASTING CONFERENCE

(FIRST SESSION) GENEVA, 1982

Document No. 136-E
15 September 1982
Original : English

COMMITTEE 6

Ninth series of texts from Committee 5 to the Editorial Committee

1. The texts mentioned in Document No. 135 are hereby submitted to the Editorial Committee for submission to the Plenary Meeting.

2. Additionally, your attention is invited to the following :

2.1 - the definition of the term "Middle East" is intended only for Chapter 6 of the Report;

2.2 - the Figure 5.1 is intended to be inserted at the end of section 5.1 of the Report (Document No. 109);

2.3 - paragraphs 5.3.9.1 to 5.3.9.8 of section 5.3.9 (Document No. 109) are to be deleted; they have been replaced by Annex 5 to section 6.3 of the Report;

2.4 - in Document No. 108, the paragraph beginning on page 20 shall be numbered as 3.4; consequent numbering corrections for subsequent paragraphs shall be made;

2.5 - section 4.1 of the Report (Document No. 108) has been amended by deleting the first part of the sentence; and

2.6 - the note concerning channel distribution schemes to be used by Cyprus is to be included in Annex 1 to section 6.3 (see Document No. 134).

3. The maps referred to in Annex 1 to section 6.3 will be submitted separately.

K. ARASTEH
Chairman of Committee 5

Enclosures : Annex 2 to section 6.3 (see Document No. 134)
Figure 5.1
Note on the Middle East and
Amended text for section 4.1 } 1 page

ANNEX 2

ANALYSIS OF THE PLAN

1. Introduction

Requirements will be analyzed on the basis of the databank to be set up by the IFRB from information supplied by administrations, or entered by IFRB for those administrations, which did not supply information.

2. Method of analysis

In each analysis the nuisance field from each potentially interfering transmitter shall be calculated at the site of the wanted transmitter according to the method given in /3.4/ of Chapter 3.

The usable field strength, E_u, shall then be calculated by the simplified multiplication method taking into account the 20 largest values of nuisance field, specified to one decimal place. For preliminary calculations, the simplified multiplication method will be used for the whole of the planning area; however the power sum method will be used, upon request from administrations concerned, in the area from Shatt-al-Arab to the Gulf of Oman, for comparison purposes.

2.1 Preliminary analysis

In the preliminary analysis the above calculations shall be carried out. However, no account shall be taken of the receiving antenna discrimination.

2.2 Final analysis

In the final analysis the coverage area of a transmitter shall be evaluated by an additional calculation. This calculation, in which account is taken of the receiving antenna discrimination, determines on each of 36 radials at 10^{o} intervals the distance at which the field strength from that transmitter is equal to E_u. In the case of low power stations, the number of intervals may be reduced.

In the light of experience gained so far it is to be expected that E_u values on the coverage contour (obtained in the final analysis) will, on average, be approximately 8 dB lower than the corresponding E_u at the transmitter site (determined in the preliminary analysis).

3. First analysis for each administration

3.1 During the first (preliminary) analysis of requirements, only those transmitters shall be considered which have a maximum e.r.p. of not less than 100 W/20 dBW and for which a frequency has been specified by the administration as part of its requirement.

3.2 E_u will be calculated in a preliminary analysis for those requirements mentioned in 3.1 as submitted by the administration. Moreover, the arithmetic mean of all E_u (dB (μV/m)) shall be calculated together with the standard deviation.

3.3 For all those transmitters having unsatisfactory assignments, that is those, for which E_u exceeds the mean by more than 10 dB and for requirements corresponding to transmitters exceeding 100 W e.r.p. without the indication of a preferred frequency a further study shall be carried out as a preliminary analysis. E_u shall be calculated on each channel as if the transmitter were assigned each channel in turn in the frequency band 87.5 - 108 MHz.

4. Examination of incompatibilities and frequency planning constraints

Together with the third and the final analysis and, as regards incompatibilities with TV service, also together with the first analysis the following will be examined for each transmitter :

- incompatibility with the television service in the band 87.5 - 100 MHz (Annex 4);
- interference to radio equipment used by aircraft for landing and navigation purposes, which operates in the band 108 - 118 MHz (Annex 5);
- incompatibility with the fixed or mobile services in Region 3 (Annex 6);
- frequency spacing between 10.5 and 10.9 MHz for transmitters separated by no more than D (km) = 10 $\log_{10}$ (e.r.p.$_{max}$/1000). E.r.p.$_{max}$ is the higher power of the two transmitters involved and is expressed in watts. If e.r.p.$_{max}$ is 1000 W or less, D = 0;
- for transmitters having identical site coordinates and identical antenna height above ground level, a frequency spacing of less than 1.8 MHz or, if they have only identical site coordinates, a frequency spacing of less than 0.8 MHz.[1)]

5. Presentation of results

The following information will be presented to each administration for its transmitters.

5.1 For each transmitter :

- E_u at the transmitter site;
- a list of the 6 largest sources of interference together with their nuisance fields and the bearings from the wanted transmitter site;
- a list of transmitters for which this transmitter appears as one of the 6 largest sources of interference, together with the corresponding nuisance field and the bearing (azimuth) from the site of the transmitter causing interference.

---

1) The preparatory work to be carried out, in this respect, between the two sessions of this Conference will be limited to the identification of transmitters having identical site coordinates.

5.2 For all of its transmitters :

- the mean value and standard deviation of all E_u;
- a graphical presentation (see Figure 1 of Annex 3) of E_u on each channel in the band 87.5 to 108 MHz for each transmitter having an unsatisfactory assignment (see 3.3);
- lists of transmitters which have incompatibilities with other services or which contravene the frequency planning constraints (see paragraph 4).

6. Proposed modifications to the requirements

Administrations will study the results of the calculations, select where appropriate the preferred frequency and prepare and propose appropriate modifications to the frequencies of their requirements for submission to the Second Session of the Conference in order to resolve the incompatibilities and, when they consider it necessary, undertake bilateral or multilateral coordination beforehand. In this respect, administrations may request the IFRB to provide them with calculated E_u in each channel for their stations having an E_u exceeding the mean value by more than 5 dB, or for stations being identified as incompatible with other services or which contravene the frequency planning constraint.

Administrations shall bring these proposed modifications to the notice of the IFRB by 30 September 1984. If no change is desired, the IFRB shall be informed by the same date.

7. Second (preliminary) analysis

The requirements including the proposed modifications will be analyzed (as in paragraph 2.1) and administrations will be presented with results for all stations which have been affected in any way, excluding the graphical presentations.

8. Inclusion of low power transmitters

If no frequency is included in the requirement for a low power transmitter, E_u for all channels will be calculated (see paragraph 3.3) at the site of the low power transmitter, in order that the IFRB may tentatively select an appropriate frequency.

9. Third (preliminary) analysis

The draft Plan will be analyzed (as in paragraph 2.1) and results will be presented to administrations having low power transmitters or having transmitters affected by the inclusion of low power transmitters.

10. Second Session of the Conference

During the Conference, administrations may wish to make changes to requirements resulting from bilateral or multilateral negotiations. The effect of such changes will be analyzed from time to time and the results will be published.

It should be possible that a coverage analysis (see paragraph 2.2) be provided in the case of difficult problems, at the request of an administration.

11. Determination and publication of coverage areas resulting from the Plan

Subsequent to the Conference the coverage areas of all transmitters in the Plan shall be determined in a final analysis (see paragraph 2) and the results shall be published. For each transmitter this information shall consist of 36 radial distances, together with the corresponding E_u values.

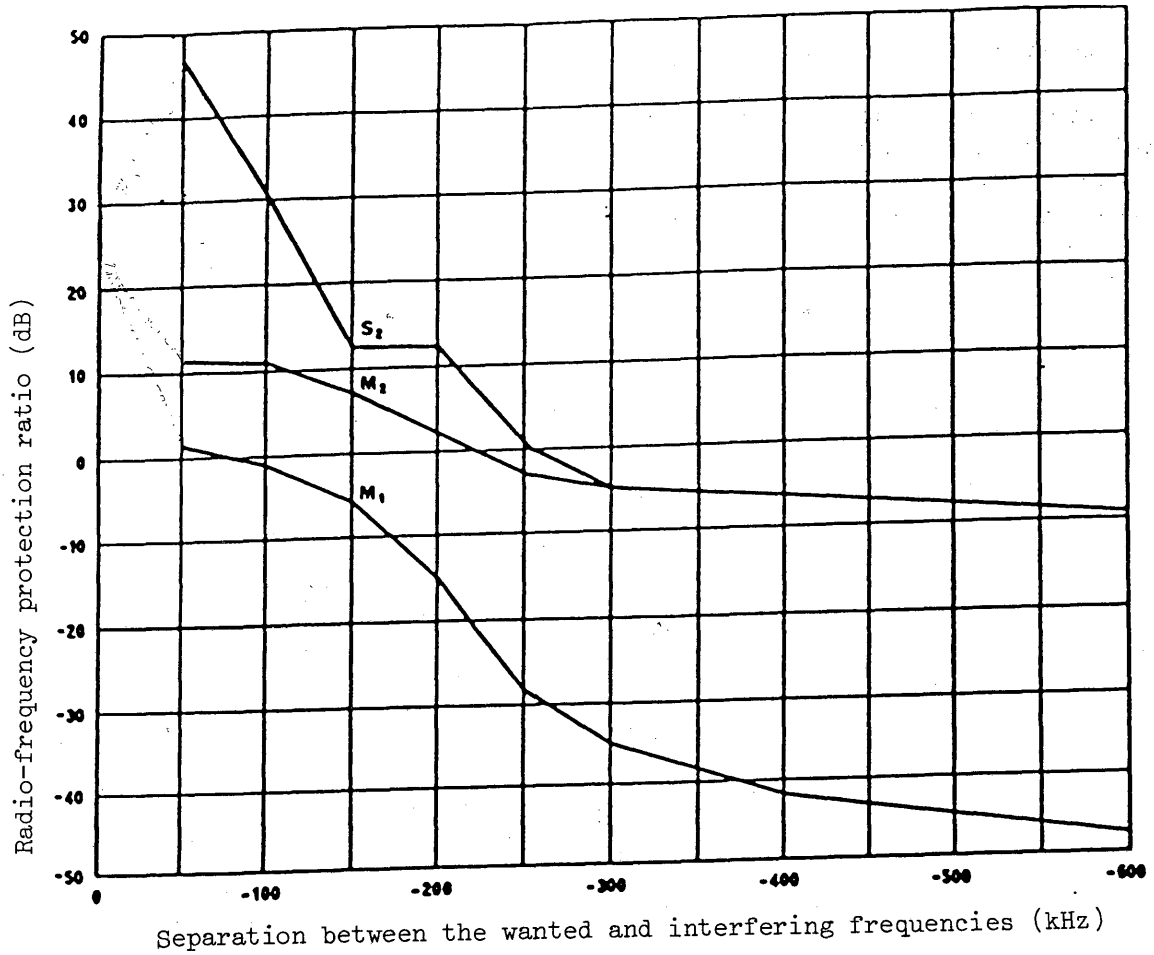


FIGURE 5.1

RF protection ratio curves for a monophonic or stereophonic FM emission with interference by an FM or AM narrow-band emission. Steady interference. (Average curves for the ratios measured on domestic receivers)

Curve M_1 : monophonic reception (unwanted signal: FM, modulation index m = 1)

M_2 : monophonic reception (unwanted signal: AM, modulation depth m = 95%, receiver input voltage 1 mV)

S_2 : stereophonic reception (unwanted signal AM, modulation depth m = 95%, receiver input voltage 1 mV)

Definition of the "Middle East" for the purpose of Chapter 6

Note : For the purpose of this Chapter, the "Middle East" is intended to cover the countries of the Arabian Peninsula, Afghanistan, Iran and the Asian part of the European Broadcasting Area excluding Turkey.

Modify the sentence following "Introduction", section 4.1 of Chapter 4 (Document No. 108) to read as follows :

"Several countries are operating television transmitters using the D/SECAM system in the band 87.5 to 100 MHz."

Note : The Administration of Cyprus indicated that 31 channel distribution schemes will be used in that country.

INTERNATIONAL TELECOMMUNICATION UNION

REGIONAL BROADCASTING CONFERENCE

(FIRST SESSION) GENEVA, 1982

Document No. 137-E
15 September 1982
Original : French

PLENARY MEETING

RESOLUTION No. PLEN./1

REPORT OF THE FIRST SESSION

The Regional Administrative Conference for FM Sound Broadcasting in the VHF band (Region 1 and certain countries concerned in Region 3) (First Session, Geneva, 1982),

considering

that in accordance with Resolution No. 852 of the Administrative Council the First Session of the Conference was entrusted with :

- preparation of the technical bases for the frequency assignment plan to be established in the Second Session, and

- determination of the form in which the requirements of the Union's Members for frequency assignments in Region 1 and in the parts of Afghanistan and Iran adjacent to that Region should be notified and fixing of the final date by which the requirements should be sent to the ITU;

resolves

to approve the Report of the First Session of the Conference;

instructs

1. the Chairman of the Conference to transmit under his signature the Report of the First Session to the Second Session of the Conference;

2. the Secretary-General to transmit the Report of the First Session to all administrations in Region 1, to the Administrations of Afghanistan and Iran and to the international organizations which have participated in the First Session of the Conference.

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INTERNATIONAL TELECOMMUNICATION UNION

REGIONAL BROADCASTING CONFERENCE

(FIRST SESSION) GENEVA, 1982

Document No. 138-E
15 September 1982

B.5

PLENARY MEETING

Fifth series of texts submitted by the Editorial Committee to the Plenary Meeting

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

Source	Document No.	Contents
C.5	129	7.2 Date for submission of requirements
		7.3 Processing of requirements by the IFRB
		7.4 Despatch of inventory of requirements and notification of calculation results to administrations
		7.5 Assistance to administrations by the IFRB
C.5	132	Appendix 3 : Form
		Appendix 4 : Form

H. BERTHOD
Chairman of the Editorial Committee

Annex : 7 pages

7.2 Date for submission of requirements

The inventory of requirements will consist of data communicated to the IFRB before 1 February 1984 in response to a circular letter which the Board shall send to administrations after the First Session of the Conference and not later than 31 December 1982.

Requirements shall be submitted in one of the following forms :

- on the form for submission mentioned in item 7.1 of this Report;
- in the form of a computer magnetic tape as specified in an annex to the IFRB Circular-letter. Such magnetic tapes must be accompanied by a printed text which the Board shall regard as a reference document.

On 1 October 1983, the Board shall send a letter indicating that administrations may communicate their requirements. The time limit for submission shall be 31 January 1984.

At the beginning of January 1984, the Board shall send a telegram to remind administrations which have not yet submitted their requirements.

In the case of administrations which have not replied, the IFRB shall consider the data :

1) in the Master International Frequency Register (MIFR),

2) in a Plan, or

3) resulting from the application of the theoretical network.

If necessary, administrations shall also use the form set out in Appendix 3 to convey the constraints relating to aeronautical radionavigation stations.

See Figure 7.1.

7.3 Processing of requirements by the IFRB

After validating them, the IFRB shall enter all the requirements in a file with a view to establishing an inventory of requirements, on the basis of which the interference calculations and incompatibility checks will be made.

When the requirement corresponds to an assignment which has been notified in accordance with the Radio Regulations to the IFRB, or which is in conformity with the Regional Agreement, Stockholm 1961, the status of this assignment will be inserted by the IFRB when publishing the inventory of requirements. Different symbols will indicate the recording in the Master Register and the conformity with the Regional Agreement, Stockholm 1961.

The IFRB shall send to each administration in duplicate, as soon as possible and not later than 30 April 1984, a separate printed list of the requirements of the administration concerned.

Administrations shall check the data on their stations and shall communicate to the IFRB not later than 30 June 1984 any material errors they may have detected (see Appendix 4 below).

The IFRB shall check these corrections and carry them into the inventory of requirements.

See Figure 7.1.

7.4 Despatch of inventory of requirements and notification of calculation results to administrations

In view of the foreseeable volume of requirements, the IFRB shall publish the complete and the corrected inventories of requirements in the form of microfiches and shall send them in duplicate to administrations, the former by 30 April 1984 and the latter by 31 July 1984.

On the basis of the corrected inventory of requirements, the IFRB shall effect the calculations described in Chapter 6 and shall send to administrations in duplicate the results of its calculations in the form of microfiches by 31 July 1984 at the latest.

The inventory of requirements and the results of calculations can be sent by the IFRB on magnetic tape to the administration having so requested, in the format of the ITU computer system. This format will be notified to the administration concerned.

See Figure 7.1.

7.5 Assistance to administrations by the IFRB

See Resolution No. COM 5/1.

APPENDIX 3

REGIONAL ADMINISTRATIVE CONFERENCE
FOR FM SOUND BROADCASTING IN THE VHF BAND
SECOND SESSION (31 OCTOBER - 12 DECEMBER 1984)

FORM FOR SUBMISSION OF FREQUENCY PLANNING CONSTRAINTS
RELATING TO COMPATIBILITY BETWEEN
SOUND BROADCASTING AND AERONAUTICAL RADIONAVIGATION SERVICES[1)]

(01) ADMINISTRATION	ADM. SERIAL No.	(00) IFRB SERIAL No.
----------	----------	----------

(41) IDENTIFICATION of the aeronautical radionavigation station which may be affected by broadcasting stations.

AERONAUTICAL RADIONAVIGATION STATION

Frequency	Name	Country	Longitude Degree E/W min	Latitude Degree N/S min
---.--- MHz	----------	----------	... .	... . ..

1) See Annex /- -/ to Chapter 6.3 of the Report by the First Session.

APPENDIX 4

FORM FOR SUBMISSION OF DATA FOR CALCULATION OF INCOMPATIBILITIES BETWEEN SOUND BROADCASTING AND AERONAUTICAL RADIONAVIGATION SERVICES[1)]

(01) ADMINISTRATION	ADM. SERIAL No.	(00) IFRB SERIAL No.
----------	----------	----------

(51) AERONAUTICAL RADIONAVIGATION STATION which is likely to be affected :

Frequency	Name	Country
___.___ MHz	----------	----------

Longitude Degree E/W min	Latitude Degree N/S min	Type	Altitude of antenna above sea level in metres
----------	----------	☐ ILS ☐ VOR	---------

(52) TEST POINTS

	AZIMUTH from the aeronautical radionavigation station to the test point in degrees	DISTANCE between the aeronautical radionavigation station and the test point in km	ALTITUDE above sea level in metres
1.	----------	----------	----------
2.	----------	----------	----------
3.	----------	----------	----------
4.	----------	----------	----------

(53) BROADCASTING STATIONS which are likely to affect the aeronautical radionavigation station :

	Country	Name	IFRB Serial No.	Frequency
1.	---	----------	----------	---.--- MHz
2.	---	----------	----------	---.--- MHz
3.	---	----------	----------	---.--- MHz
4.	---	----------	----------	---.--- MHz
5.	---	----------	----------	---.--- MHz
6.	---	----------	----------	---.--- MHz
etc.				

1) See Annex /- -/ to Chapter 6 of the Report by the First Session.

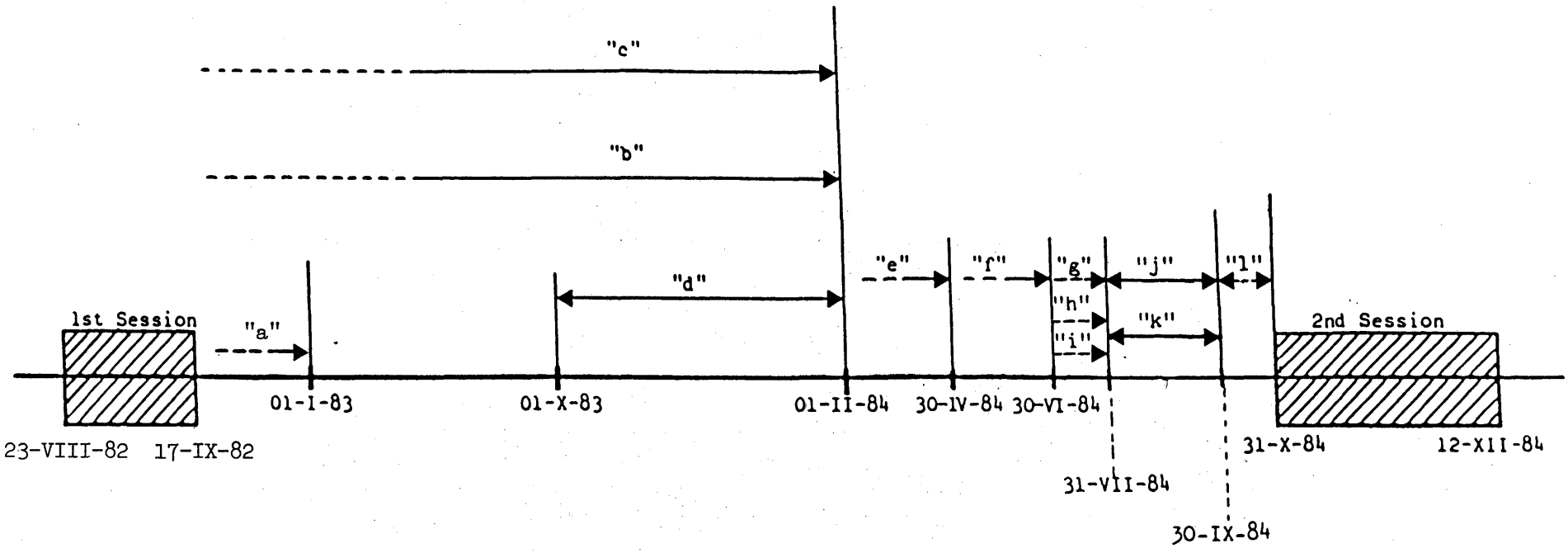


Figure 7.1 - Schedule of operations to be carried out in the interval between the First and Second Sessions

Explanation of Figure 7.1

a) The IFRB, by circular-letter, invites the administrations concerned to notify their requirements within the time limits and in the manner approved by the Conference at its First Session, and sends a model form.

b) In planning their requirements, administrations shall observe the planning principles and methods approved by the First Session of the Conference. Wherever possible they shall establish contacts with neighbouring countries with a view to preparing coordinated requirements which will facilitate the task of the Second Session of the Conference.

c) The IFRB prepares and finalizes the computer programs it considers necessary to perform the tasks entrusted to it by the Conference and to facilitate the work of the Second Session of the Conference. The following tasks have been identified :

- C.1 storage of requirements;
- C.2 establishment of the inventory and classification of requirements by frequency, sub-band and country;
- C.3 publication of the complete inventory, or parts of it, according to countries, groups of countries and sub-bands;
- C.4 provisional choice of suitable frequencies, in accordance with the planning principles and methods, in cases where the desired frequency is not entered on the form;
- C.5 calculations of interference and incompatibility and publication of the results;
- C.6 compilation of statistics.

d) Administrations submit their requirements to the IFRB on the form mentioned in paragraph 7.1 and if necessary they attach the forms set out in Appendix 3.

e) The IFRB sends in duplicate to each administration the part of the basic inventory containing the list of its requirements in printed form and the complete basic inventory on microfiche.

f) Each administration notifies the IFRB of any material errors detected, and if necessary sends the form set out in Appendix 4.

g) The IFRB sends in duplicate to administrations the corrected basic inventory of requirements with appropriate observations.

h) The IFRB executes the corresponding programs in the order indicated in point c) above.

i) The IFRB sends in duplicate to administrations the results of its calculations (see / paragraphs 3.1, 3.2 and 3.3 of Annex 2 and paragraphs 5 and 6 of Annex 4 of Document No. 92 /) as they become available. The corrected basic inventory and the results of the calculations form a document for the Second Session.

j) Administrations study this information and, with a view to resolving incompatibilities, propose modifications[1] to their requirements for submission to the Second Session or to the IFRB, as appropriate; if necessary, administrations enter into bilateral or multilateral coordination beforehand.

k) The IFRB receives the proposed modifications[1] designed to resolve incompatibilities and includes them in an "addendum" which it submits, if possible accompanied by a report, to the Second Session.

l) The IFRB shall use the modified[1] inventory of requirements in order to carry out the remaining calculations, referred to in / paragraphs 4, 7, 8 and 9 of Annex 2 to Document No. 92 /, and present the results during the first days of the Second Session. Modifications communicated after 1 October 1984 shall be dealt with by the Second Session.

The schedule is as follows :

Period		Activity
Up to 31 December 1982	:	"a"
Up to 1 February 1984	:	"b" and "c"
1 October 1983 - 1 February 1984	:	"d"
By 30 April 1984	:	"e"
By 30 June 1984	:	"f"
By 31 July 1984	:	"g", "h" and "i"
1 August 1984 - 30 September 1984	:	"j" and "k"
1 October 1984 - 31 October 1984	:	"l"

1) Modifications are limited to changes in the characteristics of the requirements initially communicated and are intended to improve the Plan.

PINK PAGES

INTERNATIONAL TELECOMMUNICATION UNION

REGIONAL BROADCASTING CONFERENCE

(FIRST SESSION) GENEVA, 1982

Document No. 139-E
15 September 1982

R.3

PLENARY MEETING

Third series of texts submitted by the Editorial Committee to the Plenary Meeting

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

Source	Document No.	Contents
B.4	118	Chapter 7 : Frequency requirements from administrations
		7.1 - Form to be used in submitting the requirements

H. BERTHOD
Chairman of the Editorial Committee

Annex : 9 pages

CHAPTER 7

FREQUENCY REQUIREMENTS FROM ADMINISTRATIONS

7.1 Form to be used by administrations in submitting their requirements for frequency assignments in the band 87.5 to 108 MHz

PINK PAGES

REGIONAL ADMINISTRATIVE CONFERENCE FOR FM SOUND BROADCASTING IN THE BAND 87.5 TO 108 MHz

SECOND SESSION (31 OCTOBER - 12 DECEMBER 1984)

FORM FOR SUBMISSION OF A FREQUENCY ASSIGNMENT REQUIREMENT TO THE IFRB

01 ADMINISTRATION _____ ADMIN SERIAL No. _____ 00 IFRB SERIAL No. _____

02 NAME OF TRANSMITTING STATION	03 COUNTRY	04 LONGITUDE			LATITUDE			05 HEIGHT OF SITE a.s.l. (m)	06 HEIGHT OF ANTENNA a.g.l. (m)
		DEGREES	E/W	MIN.	DEG.	N/S	MIN.		

07 POLARIZ.	08 MAXIMUM EFFECTIVE RADIATED POWER (e.r.p.)			09 DIRECT.	10 MAXIMUM EFFECTIVE ANTENNA HEIGHT (metres)	11 SYSTEM
	TOTAL	HOR. COMP. (HC)	VERT. COMP. (VC)			
	kW	kW	kW			

12 RADIATION CHARACTERISTICS FOR A DIRECTIVE ANTENNA

Total e.r.p.	AZIMUTH	BEARINGS OF -3 dB POINTS	EFFECTIVE ANTENNA HEIGHT
kW	DEGREES	DEGREES	METRES

12a SECTORS OR DIRECTIONS OF RESTRICTED e.r.p.

SECTORS OR DIRECTIONS	TOTAL e.r.p.
DEGREES	kW

12b SECTORS OR DIRECTIONS WITH RESTRICTED EFFECTIVE ANTENNA HEIGHT

SECTORS OR DIRECTIONS	EFFECTIVE ANTENNA HEIGHT
DEGREES	METRES

13 ANTENNA PATTERN

BOX 31	DIAGRAM

14 DESIRED FREQUENCY _____ MHz

15 COORD

21 SUPPLEMENTARY INFORMATION

INSTRUCTIONS FOR FILLING OUT THE FORM

The instructions for filling out the form refer to boxes 01 to 15, box 21, box 31 and box 31a (if required). Box 00 is for the use of the IFRB and should be left blank. Provision has been made on the form for an administration to enter its reference number in the box entitled ADMIN SERIAL No.

Leading zeros should be given when appropriate in boxes 04, 05, 06, 08, 10, 12 and 14.

Box No.

00 IFRB SERIAL No.

For IFRB use only.

01 Administration

Indicate the country symbol designating the administration submitting the requirement for the frequency assignment. Use a symbol from Table No. 1 of the Preface to the International Frequency List.

02 Name of transmitting station

Give the name by which the station is, or will be, known.

Limit the number of letters and numerals to a total of 20.

Insert each letter or number in a separate space, starting from the first space on the left. In the case of compound names, one space should be left blank between each part of the name.

03 Country

Indicate, by symbol, the country or geographical area in which the station is, or will be, located. Use a symbol from Table No. 1 of the Preface to the International Frequency List.

04 Longitude and latitude of the transmitting antenna site

Give the geographical coordinates, in degrees and minutes of the site of the transmitting antenna; seconds should be rounded to the nearest minute. Use the symbols E or W, N or S, as appropriate.

05 Height of site above sea level (a.s.l.)

Indicate the height (in metres) above sea level of the site of the transmitting antenna.

Box No.

06 Height of the antenna above ground level (a.g.l.)

Indicate the height (in metres) of the geometrical centre of the antenna above ground level.

07 Polarization

Indicate the polarization of radiation by using the following symbols :

H Horizontal

V Vertical

M Mixed

If different linear polarizations are used in different azimuthal directions, printed sheet 31a (Appendix 2 to this chapter) shall be used and the letter M shall be inserted in box 07.

08 Maximum effective radiated power (e.r.p.)

- Sub-box "total" :

  In the case of horizontal or vertical polarization, indicate the maximum effective radiated power, in kW.

  In the case of mixed polarization, this value is the sum of the maximum effective radiated power of the horizontally and vertically polarized components, in kW.

- Sub-box "horizontal component (HC)"

  In the case of mixed polarization, indicate the maximum effective radiated power of the horizontally polarized component, in kW.

- Sub-box "vertical component (VC)"

  In the case of mixed polarization, indicate the maximum effective radiated power of the vertically polarized component, in kW.

09 Directivity of radiation

Indicate ND in the case of omnidirectional radiation or, in the case of directional radiation, indicate D in the right-hand box.

10 Maximum effective antenna height

Indicate the maximum value of effective height of the transmitting antenna, in metres, irrespective of azimuth. This height is defined as the maximum height of the centre of the antenna above the average level of the ground between distances of 3 and 15 km from the transmitter. The minus sign should be indicated when the value of the effective antenna height arrived at in the above manner is negative.

Box No.

11 System

Indicate the system of transmission by using the following symbols :

1 Monophonic (maximum frequency deviation ±75 kHz)

2 Monophonic (maximum frequency deviation ±50 kHz)

3 Stereophonic, polar modulation system (maximum frequency deviation ±50 kHz)

4 Stereophonic, pilot-tone system (maximum frequency deviation ±75 kHz)

5 Stereophonic, pilot-tone system (maximum frequency deviation ±50 kHz)

12 Radiation characteristics for a directive antenna

For each of the maxima of radiation, indicate :

- total effective radiated power, in kW;
- azimuth in degrees, clockwise from True North;
- the azimuths of the -3 dB points anticlockwise and then clockwise from the azimuth of maximum radiation;
- effective antenna height, positive or negative, in metres in the indicated azimuth.

12a Sectors or directions of restricted e.r.p.

If there exists a restriction on the e.r.p. in certain sectors, indicate in the first column the azimuth limits of these sectors and in the second column the maximum total e.r.p. in these sectors in kW. If the restrictions relate to one direction only, use the left part of the first column.

12b Sectors or directions with restricted effective antenna height

If there exist restrictions of the effective antenna height, positive or negative, in certain sectors, indicate as above the directions concerned and the maximum values within these sectors.

If the restriction relates to one direction only, use the left part of the first column.

Box No.

13 Antenna pattern

Indicate by an X in the appropriate box when either :

- the information required in box 31 has been provided;

- the antenna radiation diagram, in the horizontal plane, has been furnished.

14 Desired frequency

Indicate, if appropriate, the frequency desired for assignment. If there is no preference for a specified frequency, boxes 14 and 15 should be left blank, refer to Chapter 6 (Planning methods) of the present Report.

15 Coordination of the requirement and status of the related assignment

When the requirement with the characteristics contained in the form has been successfully coordinated, with a view to submission, insert the relevant country symbols in the "COORD" box. When the coordination concerns more than five countries, insert a symbol[1)] on the first line of the "COORD" box and list the countries in a separate annex.

When the requirement corresponds to an assignment which has been notified to the IFRB in accordance with the Radio Regulations or which is in conformity with the 1961 Stockholm Agreement, the status of this assignment will be inserted by the IFRB when publishing the inventory of requirements.

21 Supplementary information

Indicate when the requirement is intended to replace an assignment in one of the Plans (Stockholm, 1961 and Geneva, 1963) and/or in the Master Register.

Furthermore, indicate any additional, pertinent information regarding this requirement which may be of use in planning (for instance, the preferred part of the band 87.5 to 108 MHz). If necessary, attach additional sheet.

---

1) Note : This symbol will be determined later by the IFRB.

Box No.

31 Appendix 1 : Azimuthal variation of the total effective radiated power in the horizontal plane and of the effective antenna height

Indicate, for each azimuth shown or at least every 30 degrees, starting at 0 degrees :

- for a directive antenna, the attenuation in dB with respect to the maximum value of the total effective radiated power,
- for directive antenna and non-directional antenna, the effective antenna height in metres.

  The minus sign is used to indicate when the value of the effective antenna height is negative.

  Administrations should endeavour to provide the information required in this box for existing antennas.

31a Appendix 2 : Azimuthal variation in the effective radiated power of the Horizontal Component (HC) and the Vertical Component (VC) in the horizontal plane

In the case of mixed polarization, indicate, for each azimuth shown or at least every 30 degrees, starting at 0 degrees, the attenuation in dB with respect to the maximum value of effective radiated power of the Horizontal Component (HC) or Vertical Component (VC) respectively.

- AZIMUTHAL VARIATION OF THE TOTAL EFFECTIVE RADIATED POWER IN THE HORIZONTAL PLANE AND THE EFFECTIVE ANTENNA HEIGHT

(31)

AZIMUTH (degrees)	0	10	20	30	40	50	60	70	80	90	100	110
Attenuation with respect to maximum value of total ERP (dB)												
Effective antenna height (metres)												
AZIMUTH (degrees)	120	130	140	150	160	170	180	190	200	210	220	230
Attenuation with respect to maximum value of total ERP (dB)												
Effective antenna height (metres)												
AZIMUTH (degrees)	240	250	260	270	280	290	300	310	320	330	340	350
Attenuation with respect to maximum value of total ERP (dB)												
Effective antenna height (metres)												

AZIMUTHAL VARIATION IN THE EFFECTIVE RADIATED POWER OF THE HORIZONTAL COMPONENT (HC)

AND THE VERTICAL COMPONENT (VC) IN THE HORIZONTAL PLANE

(31a)

AZIMUTH (degrees)		0	10	20	30	40	50	60	70	80	90	100	110
Attenuation with respect to maximum value of ERP (dB)	HC												
	VC												
AZIMUTH (degrees)		120	130	140	150	160	170	180	190	200	210	220	230
Attenuation with respect to maximum value of ERP (dB)	HC												
	VC												
AZIMUTH (degrees)		240	250	260	270	280	290	300	310	320	330	340	350
Attenuation with respect to maximum value of ERP (dB)	HC												
	VC												

INTERNATIONAL TELECOMMUNICATION UNION

REGIONAL BROADCASTING CONFERENCE

(FIRST SESSION) GENEVA, 1982

Document No. 140-E
15 September 1982
Original : English

PLENARY MEETING

Tenth Report of Committee 5

1. The tenth and last series of the texts adopted by Committee 5 has been submitted to the Editorial Committee for subsequent submission to the Plenary Meeting (see Document No. 141).

2. This series consists of 12 maps, intended to form Figures 1 to 12 of Annex 1 to section 6.3 of the Report of the Conference.

3. Some concern was expressed in Committee 5 on the accuracy of the maps and it was decided that more accurate maps with appropriate reference points shall be provided to the administrations as soon as possible.

K. ARASTEH
Chairman of Committee 5

INTERNATIONAL TELECOMMUNICATION UNION

REGIONAL BROADCASTING CONFERENCE

(FIRST SESSION) GENEVA, 1982

Document No. 141-E
15 September 1982
Original : English

COMMITTEE 6

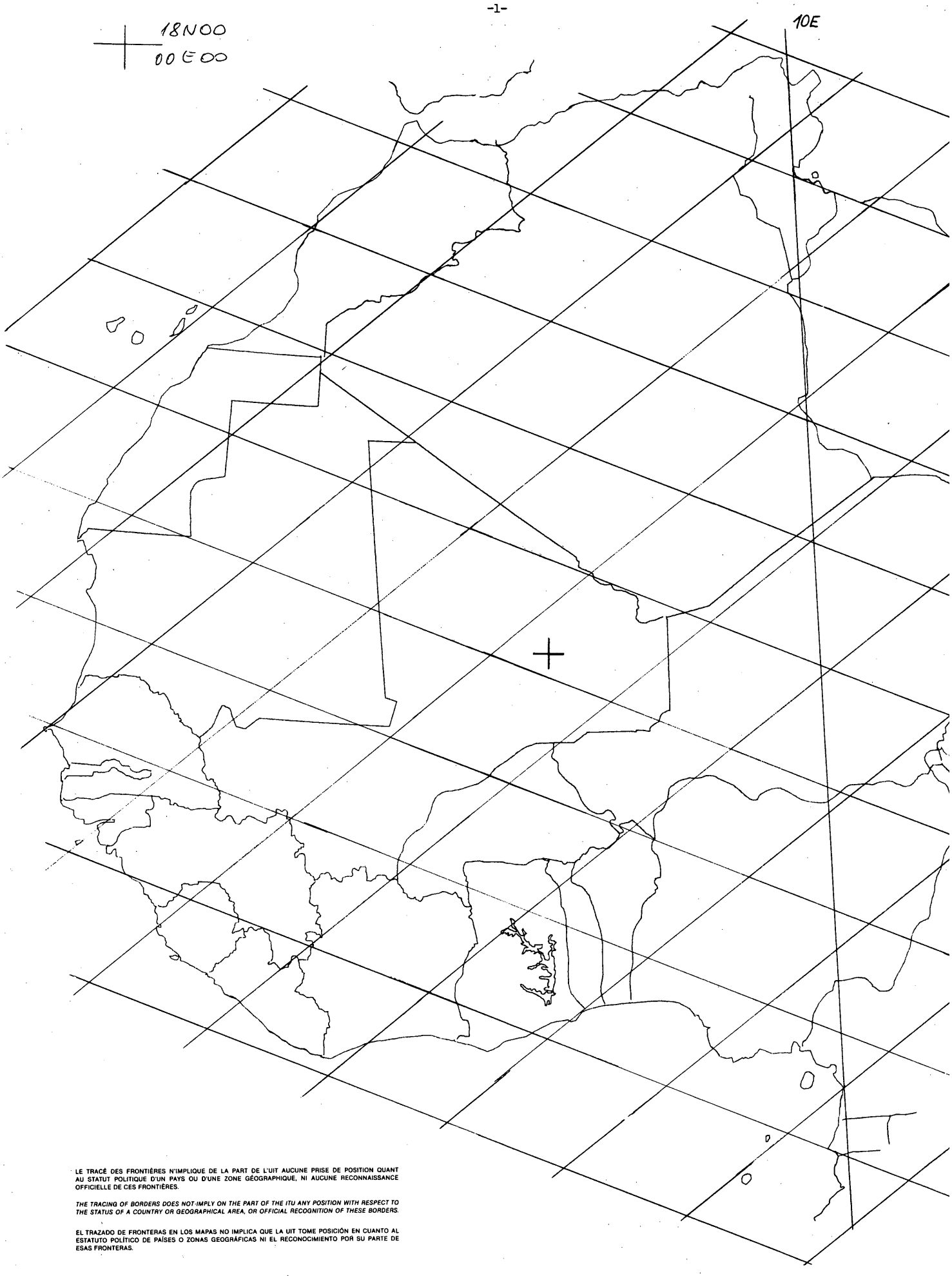
Tenth and last series of texts from Committee 5 to the Editorial Committee

The twelve maps, mentioned in Document No. 140, are enclosed herewith for submission to the Plenary Meeting.

These maps form Figures 1 to 12 of Annex 1 to section 6.3 of the Report (see Document No. 134).

K. ARASTEH
Chairman of Committee 5

Enclosures : 12 maps



LE TRACÉ DES FRONTIÈRES N'IMPLIQUE DE LA PART DE L'UIT AUCUNE PRISE DE POSITION QUANT AU STATUT POLITIQUE D'UN PAYS OU D'UNE ZONE GÉOGRAPHIQUE, NI AUCUNE RECONNAISSANCE OFFICIELLE DE CES FRONTIÈRES.

THE TRACING OF BORDERS DOES NOT IMPLY ON THE PART OF THE ITU ANY POSITION WITH RESPECT TO THE STATUS OF A COUNTRY OR GEOGRAPHICAL AREA, OR OFFICIAL RECOGNITION OF THESE BORDERS.

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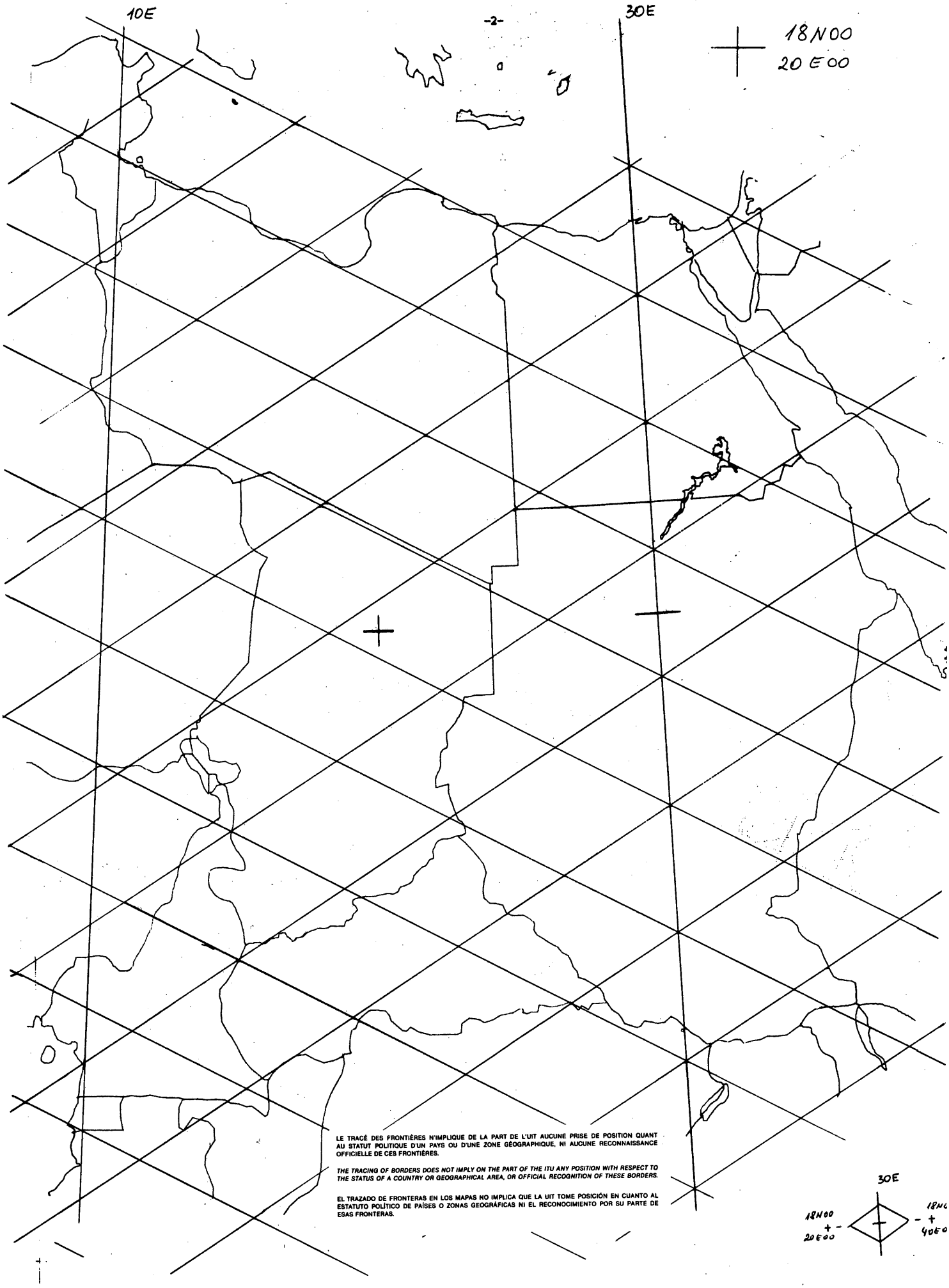

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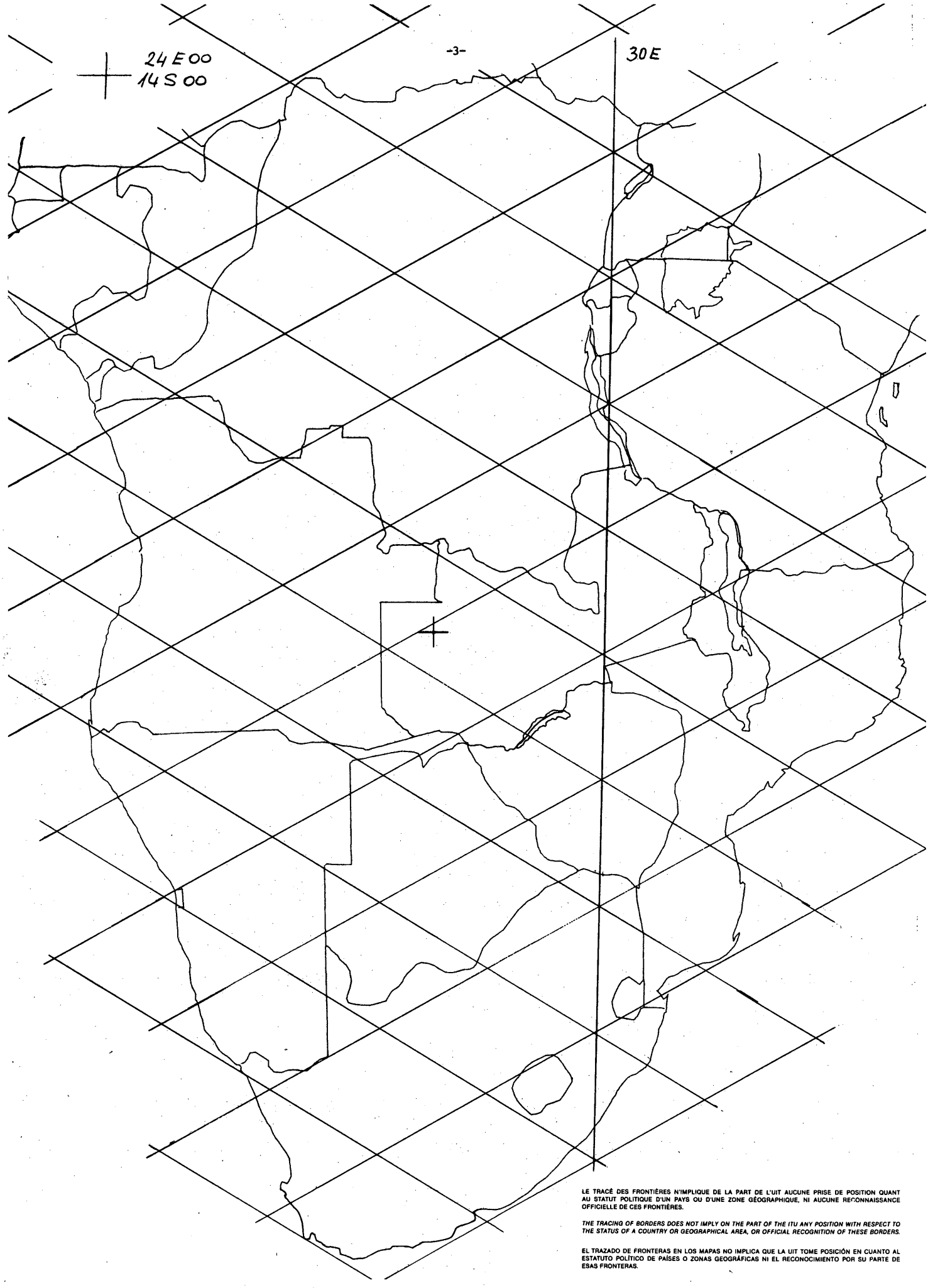

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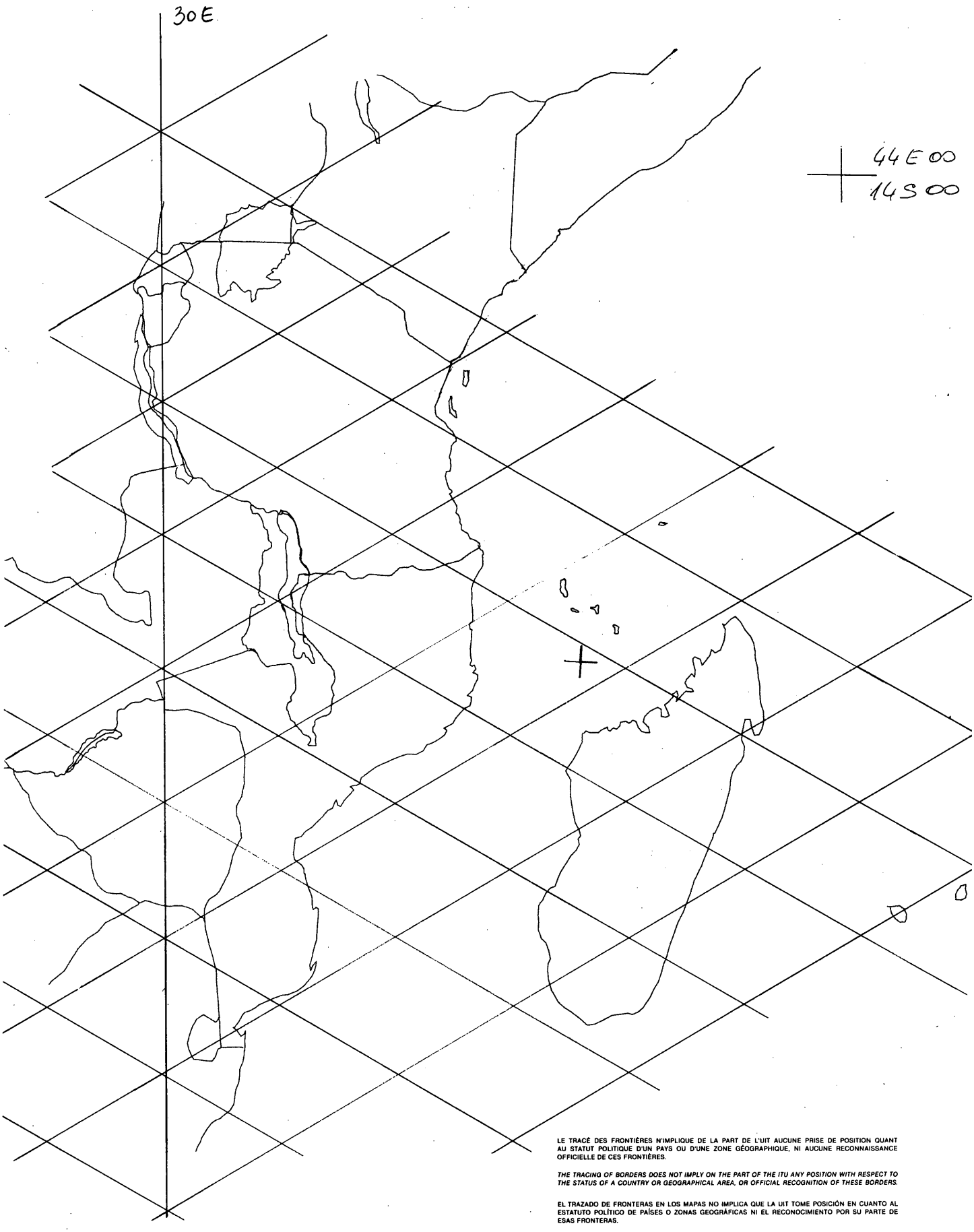

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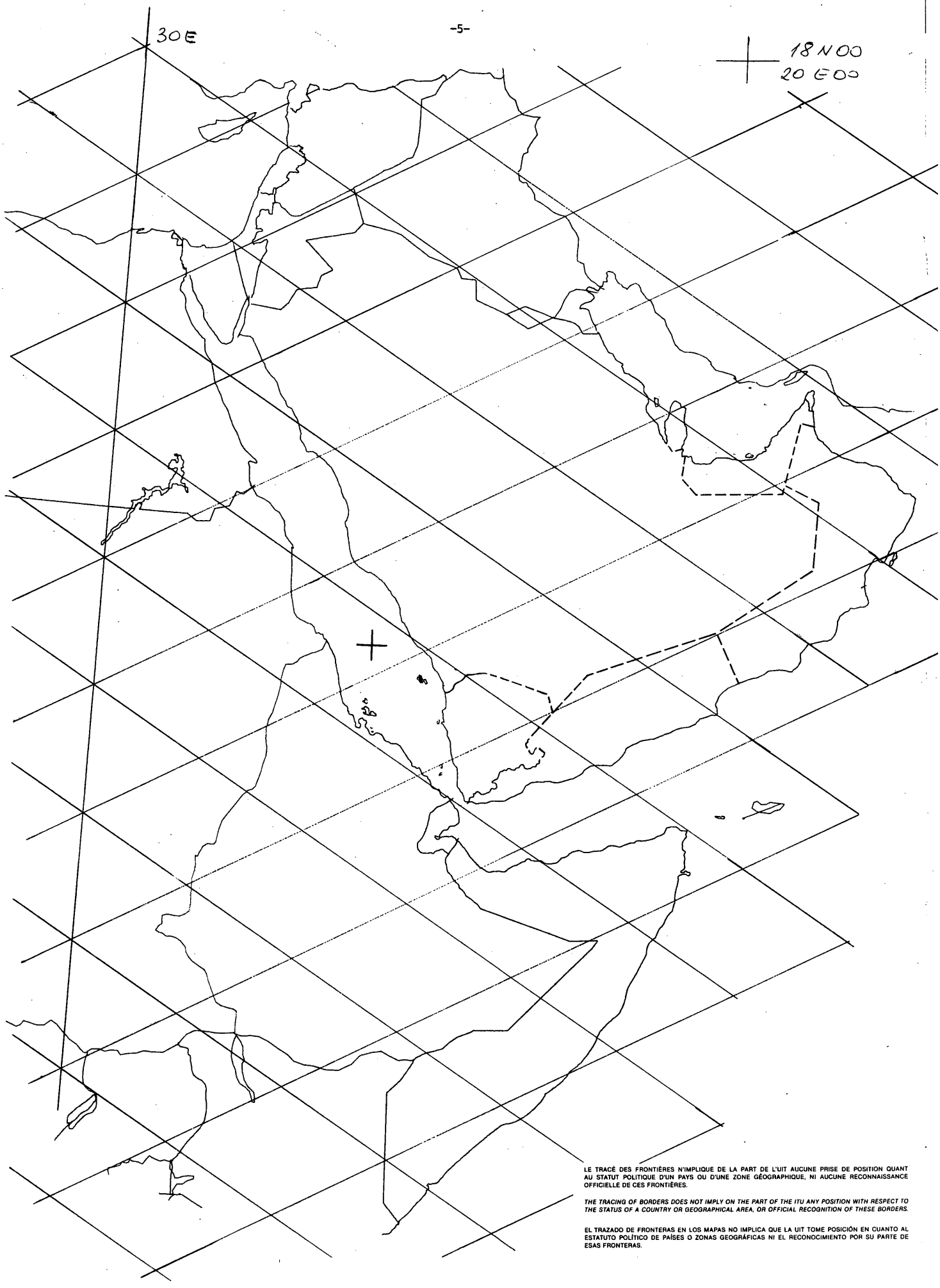

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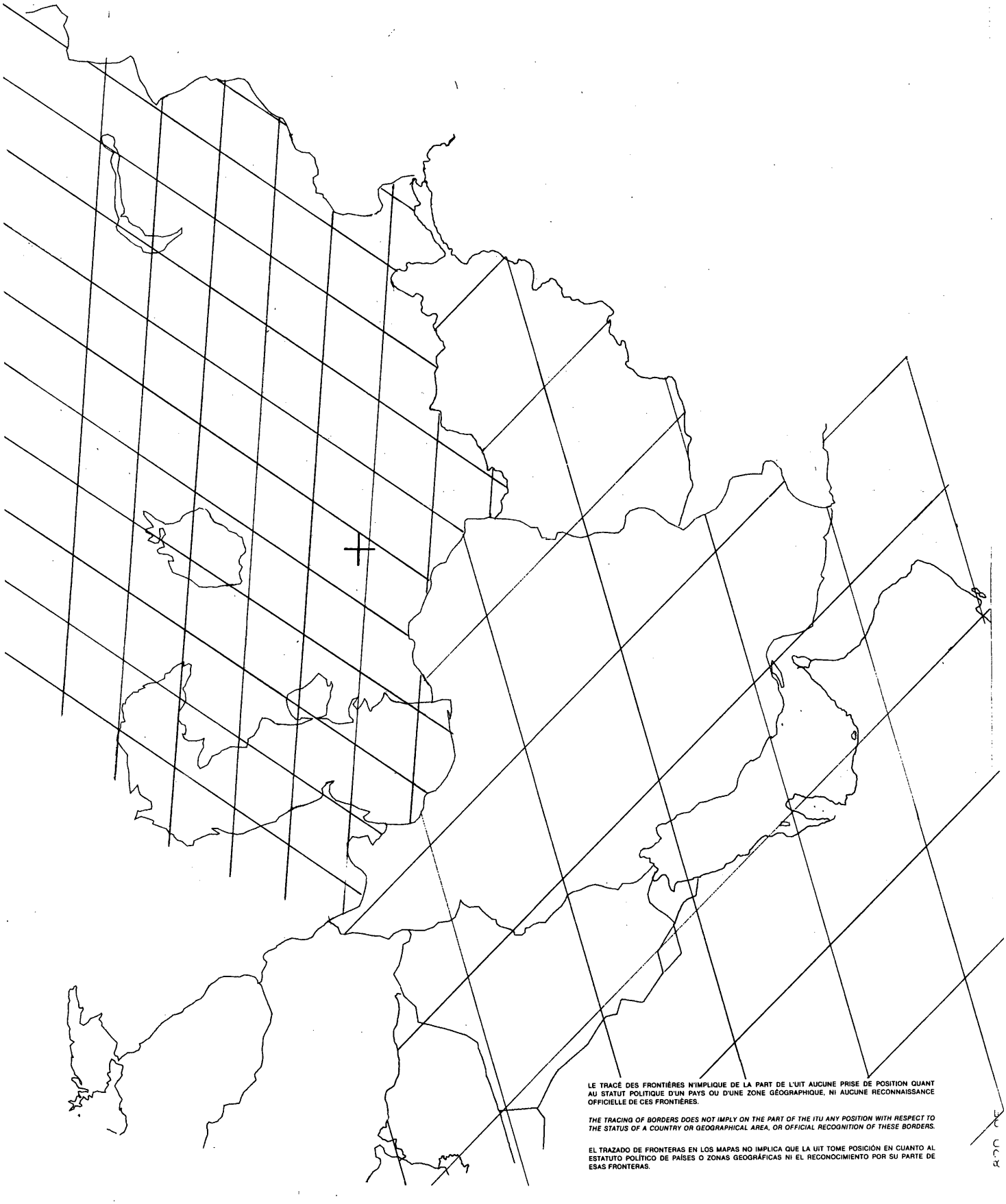

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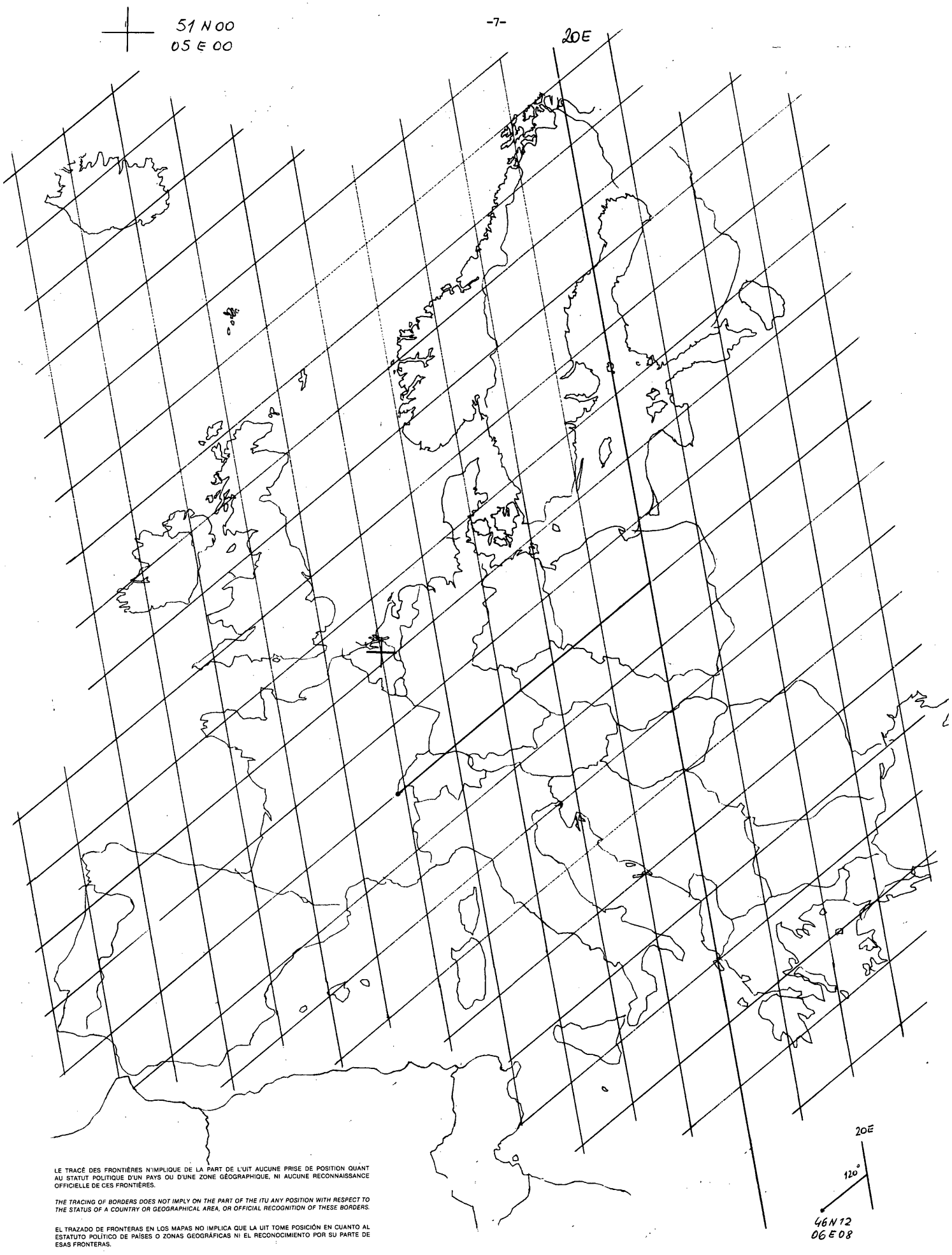

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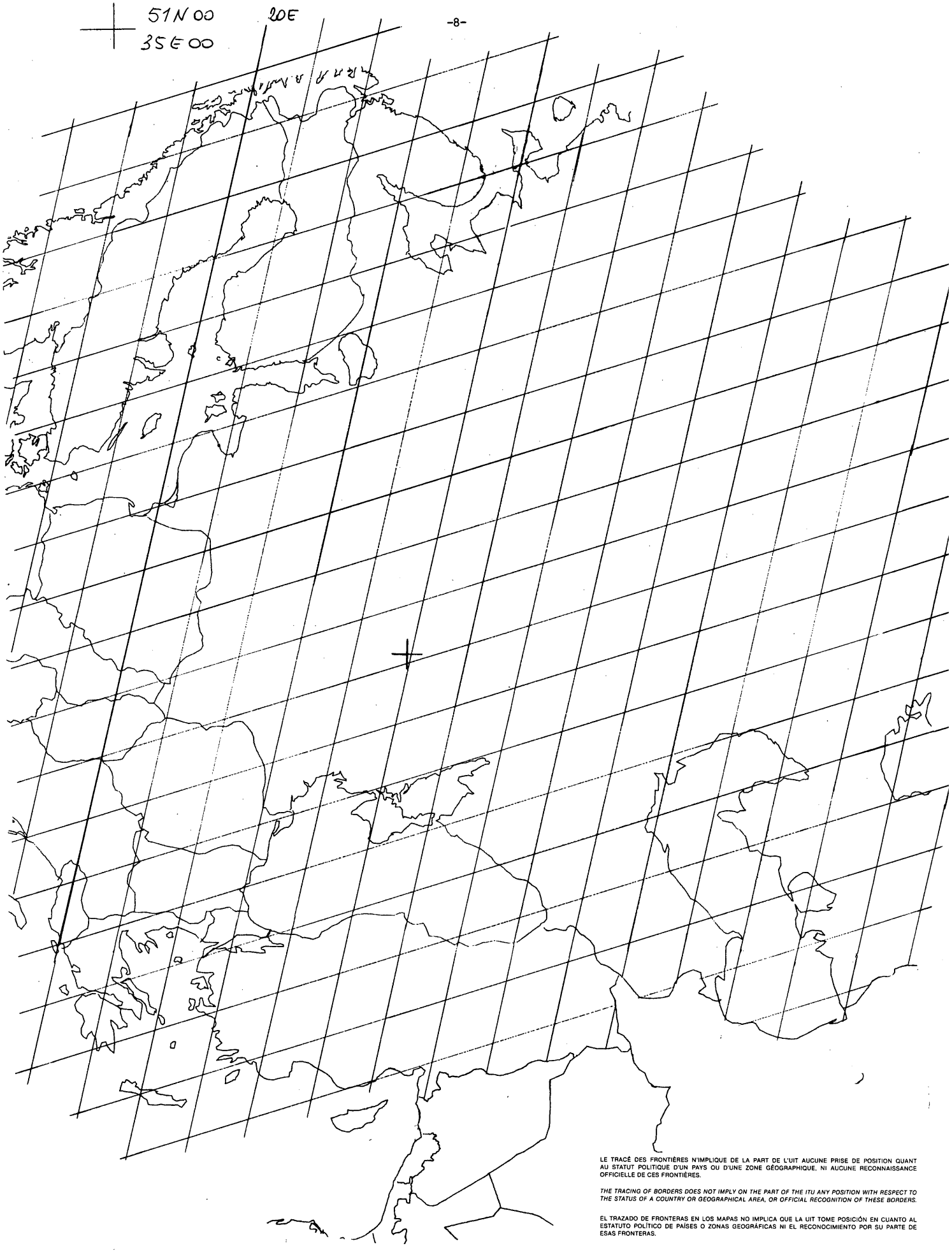

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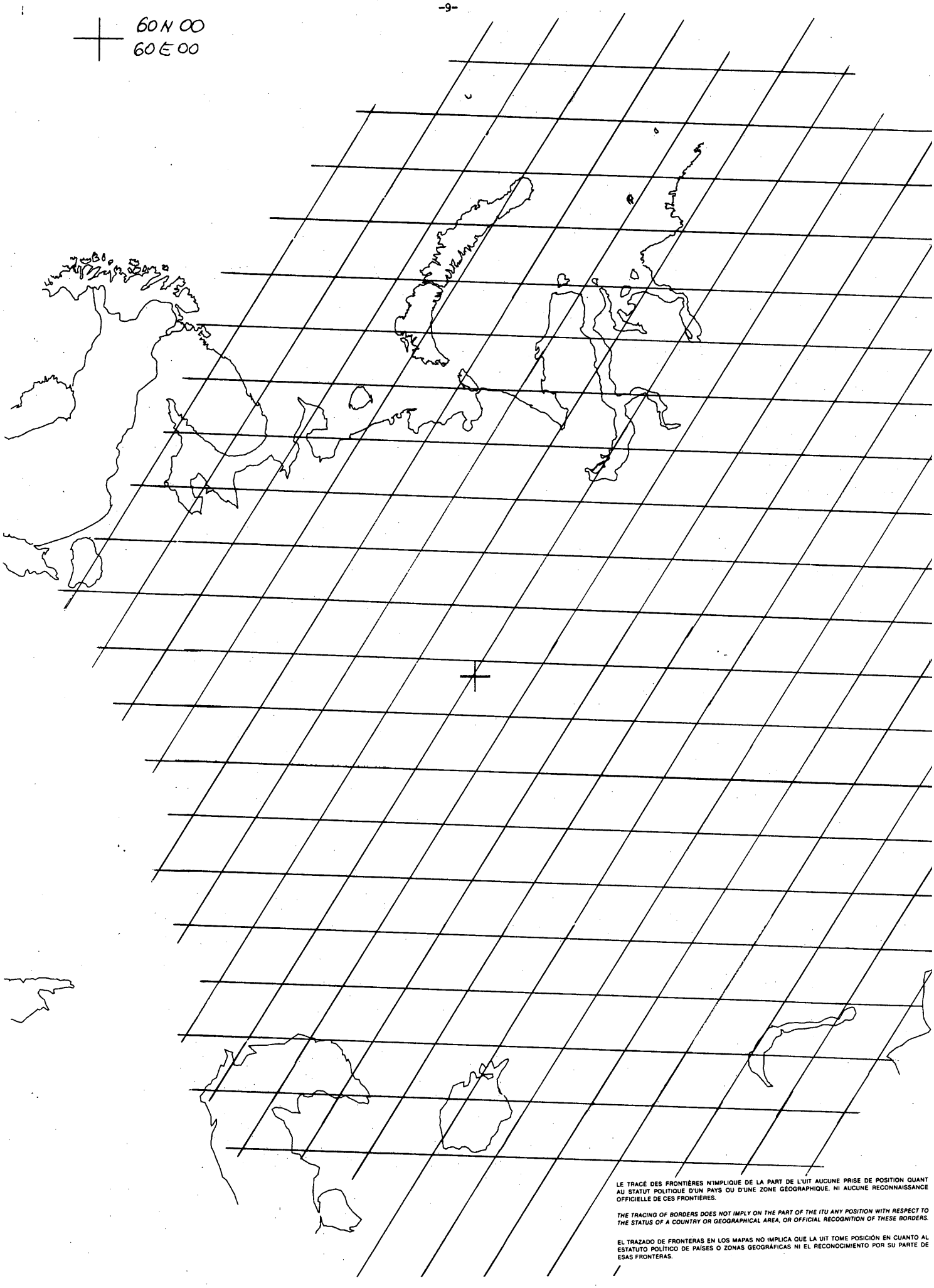

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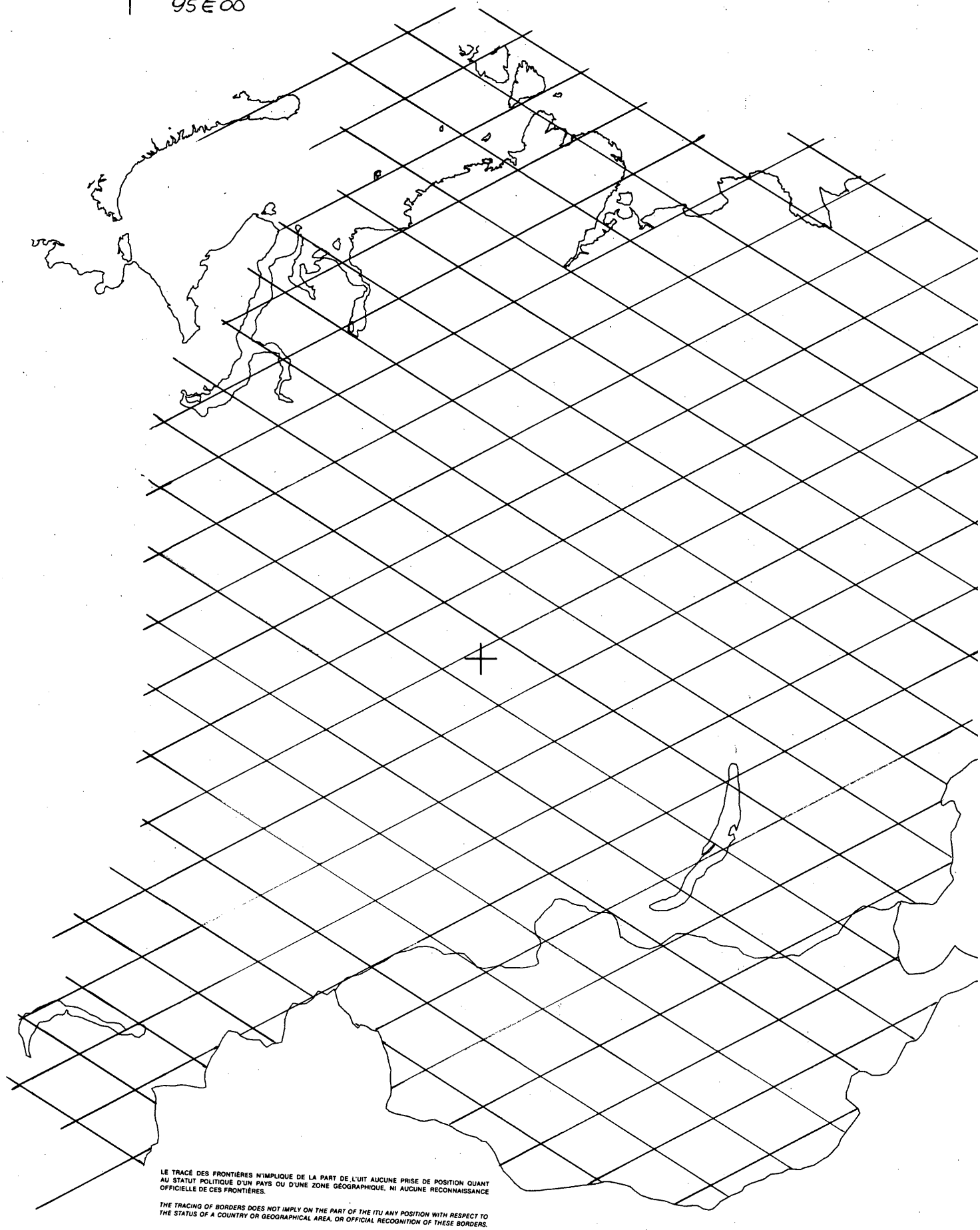

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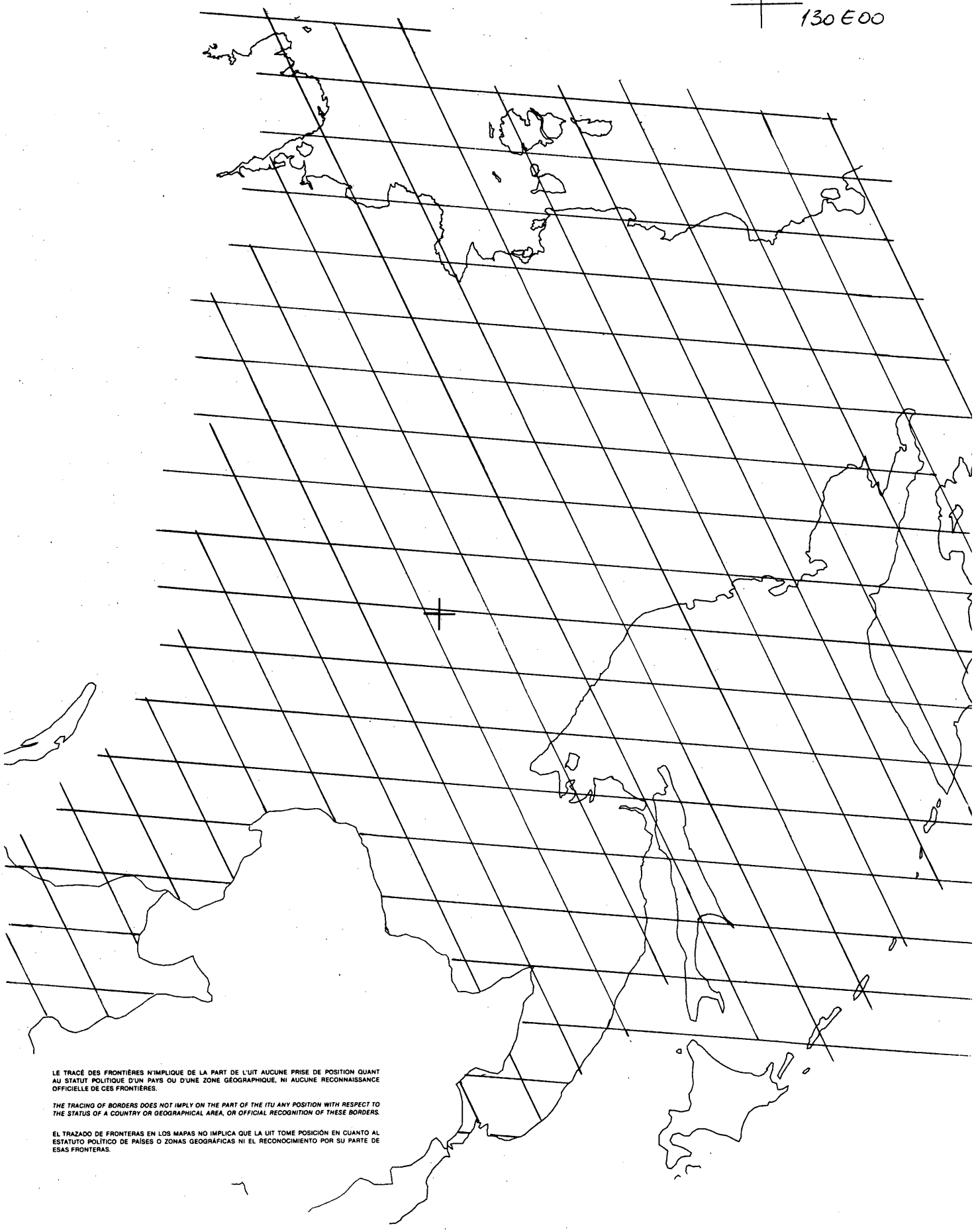

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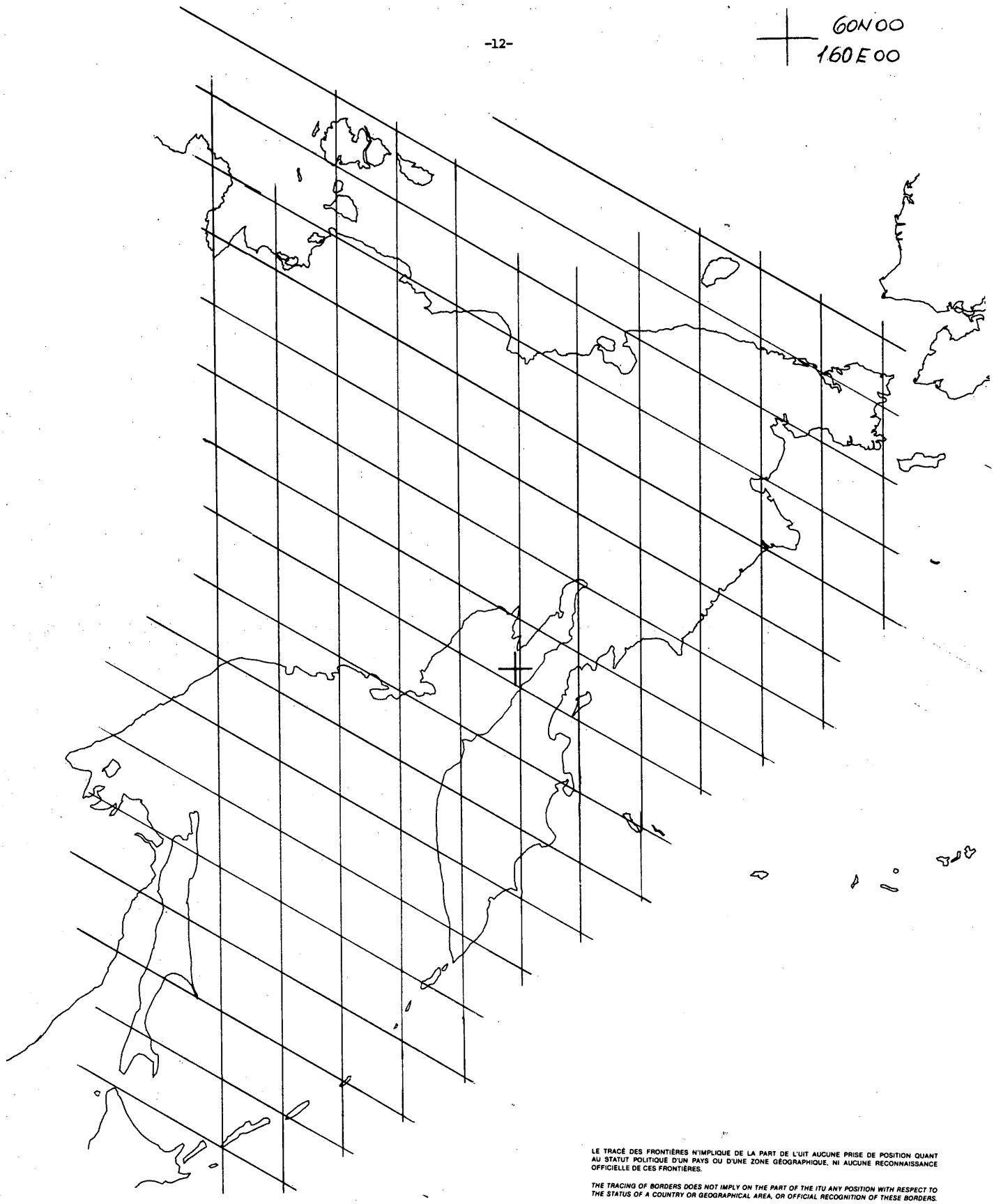

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INTERNATIONAL TELECOMMUNICATION UNION

REGIONAL BROADCASTING CONFERENCE

(FIRST SESSION) GENEVA, 1982

PINK PAGES

Corrigendum No. 1 to
Document No. 142-E
16 September 1982

PLENARY MEETING

Corrigendum to Document No. 142 (R.4)

1. Replace the paragraph 6.1.7 (page 3) by the following :

6.1.7 Different planning methods in Africa and the Middle East, on the one hand, and in the rest of the planning area, on the other hand, will require adaptation and resolution of incompatibilities on the basis of equal rights among all countries concerned. In resolving these incompatibilities between FM sound broadcasting stations, the status of such stations resulting from the application of the Regional Agreements (Stockholm, 1961, and Geneva, 1963) should not be taken into account unless there is an agreement amongst all the administrations concerned in the interval between the two Sessions of the Conference, or during the Second Session. See Resolution No. COM 5/2.

2. After 6.1.7, add the following new paragraphs :

6.1.8 When selecting the frequencies and characteristics for their stations in regions bordering countries having selected different lattices, administrations sha take account of the incompatibilities that are likely to result from the use of different lattices.

Every effort shall be developed in order to reduce these incompatibilities and where they exist to resolve them by bilateral or multilateral discussions, preferably before the Second Session of the Conference.

H. BERTHOD
Chairman of the Editorial Committee

INTERNATIONAL TELECOMMUNICATION UNION

REGIONAL BROADCASTING CONFERENCE

(FIRST SESSION) GENEVA, 1982

Document No. 142-E
15 September 1982

R.4

PLENARY MEETING

Fourth series of texts submitted by the Editorial Committee to the Plenary Meeting

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

Source	Document No.	Contents
		Chapter 6 : Planning method
B.4	118	6.1 Planning principles
B.2 + B.4	98 + 118	6.2 Planning criteria
B.2	98	6.4 Technical constraints on frequency planning

H. BERTHOD
Chairman of the Editorial Committee

Annex : 5 pages

CHAPTER 6

PLANNING METHOD

6.1 Planning principles

6.1.1 The Second Session of the Conference will be required to establish a frequency assignment plan in the band 87.5 to 108 MHz for the countries of Region 1 and for parts of Afghanistan and Iran which are contiguous with Region 1. The planning process shall use the inventory of requirements communicated by administrations to the IFRB in accordance with the decisions of the First Session of the Conference.

Note : Considering the particular geographical situation of Iran, and taking into account the complexity of the areas adjacent to Region 1 and the extent of interference calculations, the Administration of the Islamic Republic of Iran may communicate its requirements based on a country-wide planning scheme.

6.1.2 In processing a requirement, the concept of providing broadcasting services to the required service area should be applied, while recognizing equal rights for all countries with regard to the use of the band 87.5 to 108 MHz for broadcasting. The planning should be carried out in such a manner as to respect the rights of each country to organize its broadcasting service in the most appropriate way in conformity with its specific needs (such as the peculiarities of its geography, its socio-political systems - multinational and multilingual composition of its population, federalism, local information systems, etc.) and to choose the characteristics of its stations in order to attain an appropriate coverage of all its territory. In this case, planning may, according to the country, be based on either a system of national coverage or a system of multiple regional or local coverages, or a combination of these systems. Some countries may base their national planning on co-siting of television stations and FM sound broadcasting stations. For the application of the principle of equal rights among countries and in order to take into account the diversity of systems of national, regional or local coverage, that each country may prefer, the concept of "equivalent national coverage"*) will be introduced. Every country will have assured rights to the same number of equivalent national coverages. Joint planning of low-power and high-power stations near border areas will give rise to specific problems which will probably not be covered by general planning methods. Especially, the use on either side of a border of networks made up of low-power stations and networks made up of high-power stations may lead to less efficient use of the spectrum.

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*) Due to the variety of requirements (several national coverages in some countries, multiple regional or local coverages in other countries), it is necessary to express an equivalent national coverage which should correspond approximately to a number of total coverages obtained taking account of the coverages of all stations in a given country. The total number of coverages so obtained would be of the order of 6 to 7.

6.1.3 During the planning process, all requirements shall be processed in the same manner according to the technical evaluation procedure adopted by the Conference. In accordance with Resolution No. 510 of WARC 1979, in the planning of the band 87.5 to 108 MHz in Region 1 and parts of Afghanistan and Iran which are contiguous to Region 1, the following conditions shall be observed :

- this new plan should in no way affect existing or planned assignments to television stations in the band 87.5 to 100 MHz made in accordance with the Regional Agreement, Stockholm, 1961; and

- this new plan in the band 87.5 to 100 MHz should not result in the deterioration of the service areas of those existing sound broadcasting stations operating in accordance with the Regional Agreement, Stockholm, 1961, which are situated in the coordination area with countries using this band for television in accordance with the Regional Agreement, Stockholm, 1961.

The radio equipment used by aircraft for landing and navigation purposes, which operates in the adjacent band 108 to 118 MHz, may be subject to harmful interference from nearby broadcasting stations operating in the band 87.5 to 108 MHz if the frequencies of these stations are not selected with care; such interference can put human life at risk.

6.1.4 During the planning process, all proposed assignments shall be open to discussion for bilateral or multilateral negotiation among the administrations concerned, which may be conducted either directly or through the IFRB, on the understanding that those administrations may be requested to modify the characteristics of their stations.

6.1.5 In Africa, taking into account the modifications introduced in the planning criteria (such as the channel spacing and the degree of implementation of the Geneva 1963 Plan), the systematic planning will cover the entire band 87.5 to 108 MHz. This planning will be based on the theoretical network method. To this end, a lattice using a nominal station separation will be established and used as a guide for the choice of appropriate channels. It is recommended, in order to facilitate subsequent coordination among the countries concerned, that the Agreement should include in an appropriate manner the channels which may be selected by the countries which may not be present at the Second Session and which had not submitted their requirements.

6.1.6 In Europe, a radical change in the existing situation would gradually lead to modifications which would affect the area to be protected and make it difficult or even impossible to observe the constraints imposed by Resolution No. 510 of WARC 1979.

It is desirable that administrations communicate their requirements in the band 87.5 to 100 MHz by taking into account their existing stations which operate in accordance with the Radio Regulations and the Stockholm (1961) Agreement. During the Second Session every appropriate effort shall therefore be made to incorporate in the Plan :

a) sound broadcasting stations in accordance with the Stockholm Agreement (1961) which have been notified to the IFRB by 1 December 1983; the incorporation of such stations shall start with the sound broadcasting stations which are situated in the coordination area with countries using this band for TV in accordance with the Stockholm Regional Agreement, 1961, in order to permit countries in Africa and the Middle East to take them into account in accordance with Resolution No. 510 of WARC 1979;

b) other stations appearing in the Plan and other planned stations for which the procedures of the Stockholm Agreement, 1961, have been successfully applied by 1 December 1983; and

c) requirements from administrations not party to the Stockholm Agreement, 1961, notified to the IFRB by 1 December 1983.

Countries parties to the Stockholm Agreement, 1961, which, in the Plan annexed to this Agreement, in the band 87.5 - 100 MHz, have entries for television stations only, can submit requirements for assignments to FM sound broadcasting stations in this band, as provided in Resolution No. 510 of WARC 1979.

Modifications to the existing assignments shall be carried out, where necessary, as far as possible, during the planning process without conflicting with Resolution No. 510 to ensure the equal rights of countries and remedy existing inequalities and incompatibilities. In the band 100 to 108 MHz, planning will be initially based on the theoretical lattice network method. To this end, a lattice using a nominal station separation will be established and used to assist in the choice of appropriate channels in preliminary planning.

6.1.7 Different planning methods in Africa and /the Middle East/ on the one hand and Europe on the other hand, will require adaptation and resolution of incompatibilities on the basis of equal rights among all countries concerned. In resolving these incompatibilities between FM sound broadcasting stations, the status of such stations resulting from the application of the Regional Agreements (Stockholm, 1961, and Geneva, 1963) should not be taken into account unless there is an agreement amongst all the administrations concerned in the interval between the two sessions of the Conference, or during the Second Session. See Resolution No. COM 5/2.

6.1.8 /To be provided later/.

6.2 Planning criteria

6.2.1 The planning at the Second Session shall be based on stereophonic reception with fixed receiving installations having a directional antenna at a height of 10 metres above ground with a front-to-back ratio of 12 dB. Suitable provisions shall be made for the inclusion of additional sub-carriers (see point 3.6.2).

6.2.2 There shall be no lower power limit for the stations to be included in the Plan. However, consideration will be given to an appropriate planning step for inclusion of low power stations in the Plan. Adequate protection, nevertheless, must be assured to every station included in the Plan irrespective of its power.

6.2.3 No segment of the frequency band 87.5 to 108 MHz shall be set aside for low power channels.

Note : However, some countries in the Middle East may wish to consider the possibility of setting aside a small part of the band 87.5 to 108 MHz to be used by low power networks or low power stations, subject to agreement among the administrations concerned and without this having an impact on planning in other areas.

6.2.4 The existing or planned stations of the permitted services in the band 87.5 to 108 MHz shall not be taken into account during planning of the broadcasting service at the Second Session of the Conference.

6.4 Technical constraints on frequency planning

6.4.1 When for economic reasons, use is made of a common antenna for several VHF/FM broadcast transmissions, the minimum frequency spacing should not be less than /1.8/ MHz. However, in particular cases where no frequencies can be assigned which satisfy the above constraint, administrations may adopt lower spacing but not less than /0.8/ MHz. This would be more acceptable when using low power so that the use of a common transmitting antenna is still possible. When high power is used, separate transmitting antennas may become necessary.

6.4.2 The use of VHF/FM broadcast transmissions separated in frequency by from 10.6 to 10.8 MHz shall be avoided in common coverage areas. Other separations from 10.5 to 10.9 MHz should also be avoided.

This constraint is necessary because :

- local oscillator radiation from a receiver tuned to the lower frequency transmission may interfere with a nearby receiver tuned to the higher frequency transmission;
- intermodulation products at the receiver intermediate frequency may be generated within a receiver.

6.4.3 It is recommended to administrations that, when preparing their requirements for VHF/FM stations, they consider the following interference problems.

6.4.3.1 Difficulties could arise if the frequency spacings of co-sited VHF transmissions are equal to the duplex separation of the land mobile service, operating outside the band 87.5 to 108 MHz, in the area concerned.

6.4.3.2 Local oscillator radiation from television receivers operating in the band 47 to 68 MHz may cause interference to VHF receivers; and harmonic radiation from VHF receiver local oscillators may cause interference to television receivers operating in the band 174 to 230 MHz.

6.4.3.3 It may be advantageous, in certain cases, to minimize the number of intermodulation frequencies generated by co-sited VHF/FM transmitters. This can be achieved if equal frequency spacings are adopted. However, to avoid intermodulation in receivers and Cable Antenna Television Systems, it may be desirable to avoid using equal frequency spacings for high power transmitters sited close to areas of high population density.

6.4.3.4 A potential problem may be that of local oscillator radiation from domestic receivers tuned to a frequency in the band 87.5 to 108 MHz falling in the adjacent aeronautical radionavigation band.

INTERNATIONAL TELECOMMUNICATION UNION

REGIONAL BROADCASTING CONFERENCE

(FIRST SESSION) GENEVA, 1982

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COMMITTEE 4

SUMMARY RECORD

OF THE

FOURTH MEETING OF COMMITTEE 4

(TECHNICAL CRITERIA)

Monday, 6 September 1982, at 1430 hrs

Chairman : Mr. H. GÖTZE (German Democratic Republic)

Subjects discussed	Document No.
1. Report by the Chairman of Working Group 4C on compatibility between the broadcasting service in the band 87.5 to 108 MHz and the aeronautical services in the bands 108 to 137 MHz	81
2. Report by the Chairman of Working Group 4C on sharing criteria between the FM sound broadcasting service and the fixed service in the bands 87.5 to 108 MHz	74
3. Establishment of an ad hoc Group to draft a Recommendation for a propagation and radiometeorological measurement campaign in the African Region	-

1. Report by the Chairman of Working Group 4C on compatibility between the broadcasting service in the band 87.5 to 108 MHz and the aeronautical services in the bands 108 to 137 MHz (Document No. 81)

1.1 The Chairman of Working Group 4C introduced Document No. 81, which contained the draft of Chapter 5 of the Report to the Second Session of the Conference and constituted the outcome of the Working Group's deliberations. Reservations had been expressed in respect of paragraph 2.2.1 by the delegates of Bulgaria, the German Democratic Republic and the U.S.S.R., who considered that all the protection ratios listed in the paragraph should be increased by 3 dB. The values for spurious emissions appearing between square brackets in sub-section 7.4 were higher than those given in Appendix 8 to the Radio Regulations. The recommendations in section 9 perhaps exceeded the Working Group's terms of reference to some extent, but it had been considered desirable to provide Committee 5 with guidance on certain specific issues.

1.2 The Chairman invited the Committee to consider draft Chapter 5 section by section.

1.3 Chapter heading

Approved subject to replacement of "136 MHz" by "137 MHz".

1.4 Section 1 - Interference mechanisms

Approved.

1.5 Section 2 - Protection of ILS localizer

1.5.1 The delegates of the U.S.S.R., the German Democratic Republic and Bulgaria said that they maintained the reservations they had expressed in Working Group 4C with regard to the protection ratio values in paragraph 2.2.1.

1.5.2 The delegate of the Netherlands proposed that the word "figure" should be replaced by "ratio" in the first line of paragraph 2.2.2.

It was so agreed.

Section 2, as amended, was approved.

1.6 Section 3 - Protection of VOR

Approved.

1.7 Section 4 - Protection of VHF communications

Approved subject to replacement of the reference "paragraph 3" by "paragraph 5" in the third and last sub-paragraphs of paragraphs 4.2.3 and 4.2.4 respectively.

1.8 Section 5 - Conversion factors between signal levels at receiver input and corresponding field strength values

1.8.1 On a proposal by the delegate of the United Kingdom, it was agreed to replace "88 MHz" by "87.5 MHz" in the heading of sub-section 5.1.

1.8.2 Following a short exchange of views, it was agreed to replace the square brackets in the formulae in paragraphs 5.1.1 and 5.1.2 by round brackets. With regard to the formula in paragraph 5.1.2, it was further agreed to amend the second and fourth lines to read, respectively, "for 100 MHz $\leq f \leq$ 108 MHz, or" and "for 87.5 MHz $\leq f <$ 100 MHz".

1.8.3 At the suggestion of the delegate of the Federal Republic of Germany, it was decided to replace "136 MHz" by "137 MHz" in the heading of sub-section 5.2.

Section 5, as amended, was approved.

1.9 Section 6 - Propagation conditions

1.9.1 The delegate of Qatar proposed that the words "direct signal" in the first paragraph should be replaced by "line-of-sight signals".

It was so agreed.

1.9.2 The delegate of France considered that if calculations were to be based on free-space propagation only, the propagation curves given in Figure 2.10 of Document No. 53(Rev.2) were irrelevant and need not appear in the Report of the First Session.

1.9.3 The delegate of the Netherlands said that he would prefer the curves to which the previous speaker had referred to be retained, since they might well be useful in certain specific cases. Turning to the first paragraph of section 6, he proposed that a reference to CCIR Recommendation 525 should be inserted after the word "conditions" in the first sentence.

It was so agreed.

1.9.4 The Chairman said that a sentence could perhaps be added at the end of the first paragraph in order to meet the concern expressed by the delegate of the Netherlands with regard to Figure 2.10 of Document No. 53(Rev.2). Approval of section 6 would be deferred until the Committee's next meeting, when a suitably amended text would be available.

1.10 Section 7 - Implications to the broadcasting service of the need to provide compatibility with the aeronautical radionavigation service in the bands 108 to 118 MHz

1.10.1 It was agreed to insert the word "sufficient" before "compatibility" in the heading of the section.

1.10.2 The delegate of the Netherlands proposed that the words "of this chapter" should be substituted for "(Document No. 66)" in the third line of sub-section 7.1.

1.10.3 The delegate of Italy proposed the deletion of the words "in the longer term" from the penultimate sentence of sub-section 7.1.

1.10.4 The delegate of Finland proposed that the word "sharing" be replaced by "compatibility" in the last sentence of sub-section 7.3.

1.10.5 The delegate of the Netherlands, referring to sub-section 7.4, proposed that the words "carrier power" at the end of the third sentence should be replaced by "effective radiated power".

1.10.6 The delegate of the Federal Republic of Germany suggested, in the light of the amendment proposed by the previous speaker, that the heading of sub-section 7.2 be altered to read : "Limiting the e.r.p. of the broadcasting station".

Those amendments were approved.

1.10.7 The delegate of the Federal Republic of Germany proposed that the value "-90 dB" in the fourth sentence of sub-section 7.4 should be changed to "-95 dB".

1.10.8 The delegate of Switzerland said that the value proposed by the previous speaker would not be practicable.

1.10.9 The delegate of the Federal Republic of Germany said he would not press his proposal.

1.10.10 Following some further discussion, it was agreed to delete both sets of square brackets as well as the words "(see Annex 3)" from sub-section 7.4.

1.10.11 Following an exchange of views, it was agreed to modify the heading of paragraph 7.5.2 to read : "... in the same service area of the aeronautical radionavigation station".

Section 7, as amended, was approved.

1.11 Section 8 - Factors within the aeronautical radionavigation and aeronautical mobile (R) services which may facilitate compatibility

Approved subject to deletion of the words "(see Annex 3)" from the end of the first paragraph.

1.12 Section 9 - Recommendations

1.12.1 The delegate of Finland proposed the insertion of "/ subject to confirmation by Committee 5 /" immediately after the heading "Recommendations".

It was so agreed.

1.12.2 The delegate of Algeria, referring to Tables A and B in sub-section 9.1, requested that calculations be made also for e.r.p. values of 150 and 200 kW.

1.12.3 The Chairman said that Tables A and B would be expanded in accordance with the request by the delegate of Algeria. Final approval of section 9 would be deferred until the new text was available.

1.12.4 The delegate of France proposed that the phrase "For the remaining cases" at the beginning of sub-section 9.4 be replaced by "In cases where incompatibility cannot easily be resolved".

It was so agreed.

1.12.5 The delegate of the Netherlands said he took it that sub-sections 9.10 and 9.11 would not be subject to confirmation by Committee 5.

1.12.6 The Chairman said that that interpretation was correct.

1.13 Section 10 - Conclusions

1.13.1 Following a discussion in which the delegates of the Federal Republic of Germany, the Netherlands, the United Kingdom and Switzerland took part, and after informal consultations had been held, the delegate of the United Kingdom proposed that the following text be added at the end of the section :

"Significant alleviation of these constraints may be expected only when improvements in the relevant characteristics of the equipment of the aeronautical and broadcasting services can be effected."

The amendment was approved.

1.14 Figures 1 and 2

Approved.

1.15 Figure 3

Approved subject to a correction affecting the French language version only.

1.16 Annex 1

Approved.

1.17 Annex 2

1.17.1 The delegate of Belgium, referring to Tables a) and b) asked what distance would be applicable in the case of transmitter e.r.p. values which were different from those listed.

1.17.2 The Chairman of Working Group 4C said that Annex 2 merely contained some examples based on the values set out in the body of the document. The same formulae could be used to calculate distances for intermediate levels of e.r.p.

Annex 2 was approved.

Document No. 81 as a whole, as amended, was approved with the exception of the points left in abeyance until the next meeting.

2. Report by the Chairman of Working Group 4C on sharing criteria between the FM sound broadcasting service and the fixed service in the bands 87.5 to 108 MHz (Document No. 74)

2.1 The delegate of Sweden pointed out that the document under consideration referred to Document No. 48 for the basic sharing criteria to be applied. In the revised version of that document, the table headings only referred to protection ratios for land mobile services, which implied that not all the services included in the footnotes to the Radio Regulations concerning the VHF band enjoyed protection criteria.

2.2 The Chairman of Working Group 4C agreed that the tables in Document No. 48(Rev.1) only gave sharing criteria for land mobile services, but those for aeronautical mobile services were dealt with at some length in Document No. 81.

The service which had by implication been omitted, the maritime mobile service, could be dealt with in the same way as the land mobile service if the Committee so desired. The table headings in Document No. 48 had been amended to refer only to land mobile services because that was the title and subject of the paper.

2.3 The representative of the CCIR pointed out that the final version of Document No. 74 should refer not to Document No. 48(Rev.1) but to the appropriate section of the Report of the First Session of the Conference.

2.4 The Chairman said that point would be noted.

Subject to that amendment, Document No. 74 was approved, as presented.

3. Establishment of an ad hoc Group to draft a Recommendation for a propagation and radiometeorological measurement campaign in the African Region

3.1 The Chairman recalled that, at the Committee's third meeting, the delegate of Mali had proposed that a propagation and radiometeorological measurement campaign should be carried out in the African Region and it had been agreed that a Recommendation to the CCIR should be prepared to that effect. He therefore proposed that an ad hoc Group should be established to perform the necessary drafting work and hoped that members of the French and Malian delegations and Mr. Rutkowski representing the CCIR would take part in it.

It was so agreed.

The meeting rose at 1645 hours.

The Secretary :
S. TSUKADA

The Chairman :
H. GÖTZE

INTERNATIONAL TELECOMMUNICATION UNION

REGIONAL BROADCASTING CONFERENCE

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COMMITTEE 4

SUMMARY RECORD

OF THE

FIFTH AND LAST MEETING OF COMMITTEE 4

(TECHNICAL CRITERIA)

Tuesday, 7 September 1982, at 1430 hrs

Chairman : Mr. H. GÖTZE (German Democratic Republic)

1. Examination of the Report of the Chairman of Drafting Group 4C-7 and the Chairman of Working Group 4C (Document No. DT/28)

1.1 Section 9.10

1.1.1 The Chairman of Working Group 4C, introducing Document No. DT/28, said that a small drafting group had drawn up the proposed text for inclusion as section 9.10 and a note had been prepared on improvements in equipment to be included as Annex 3 of the Group's Report on compatibility between the broadcasting service in the band 87.5 to 108 MHz and the aeronautical services in the bands 108 to 137 MHz (Document No. 81(Rev.1)).

1.1.2 The delegate of the United Kingdom proposed that the second and third sentences of the first paragraph of section 9.10 should be combined to read :

> "Even so, in some areas they are likely to unduly inhibit the development of both services and improvements in certain characteristics of equipment in these services would ease the planning constraints."

since it was not only the broadcasting services whose development was likely to be unduly inhibited by the values for the compatibility criteria established by the Conference, as the draft text implied.

1.1.3 The delegate of Ireland suggested that the reference to Table A in the same paragraph should be corrected to read "(see Annex 2)".

1.1.4 The delegate of Sweden said that the meaning of the last sentence of the paragraph was not clear. It appeared to imply that where interference arose from two broadcasting transmitting sites, intermodulation products were generated in the airborne receiver alone, but that was not so if the distance between the transmitters were not large.

1.1.5 The delegate of the United Kingdom explained that the sentence referred to Type B interference only and perhaps those words should be inserted to make that clear.

The first paragraph of the proposed text for inclusion as section 9.10 of Document No. 81 was approved with the amendments suggested.

1.1.6 The delegate of the United Kingdom said that the second paragraph of the proposed text omitted to refer to the role to be played by administrations. He proposed that its third sentence should be amended to read :

> "If CCIR can quantify the improvements possible in the equipment of both services, then, subject to study by administrations on the economic and operational implications, the second part of the Conference should take these criteria into account in planning."

Following a brief discussion, the amendment was agreed.

1.1.7 The delegate of the Federal Republic of Germany proposed that the following sentence of the paragraph should be amended to read :

"The Conference will also need to establish, in cooperation with ICAO and other competent authorities, a suitable time period for these improvements in equipment performance to be brought about taking into account the practical issues involved and the important safety considerations in respect of the aeronautical services."

to make it clear that the Conference alone could not perform such a function.

Following a lengthy discussion in which the delegates of the U.S.S.R., the United Kingdom, Bulgaria and the Federal Republic of Germany and the representative of the CCIR took part, it was agreed that the amendment should be limited to replacing the word "establish" by the phrase "take into account", without adding the words "in cooperation with ICAO and other competent authorities".

1.1.8 The delegate of Finland said it had been stated previously that section 9.10 would not be subject to confirmation by Committee 4. In view of the contents of the section, however, that now needed to be reconsidered.

1.1.9 The Chairman of Working Group 4C agreed that section 9.10 should now be subject to confirmation by Committee 4.

1.2 Annex 3 to Document No. 81

1.2.1 The delegate of the U.S.S.R. said the first sentence of the second paragraph was too categoric and should be weakened by replacing the word "can" by the word "might".

After a discussion in which the delegates of Switzerland, the United Kingdom, the U.S.S.R., France and Algeria took part, it was agreed that the word "can" should be replaced by the words "could possibly".

1.2.2 The delegate of Finland said that in paragraph 3 the reference to Conference Document No. 14 should be deleted for editorial reasons.

1.2.3 The delegate of the U.S.S.R. proposed that the same paragraph should contain a reference not only to paragraphs 4.2.2 and 4.2.3 but also to paragraph 4.2.1 of Document No. 81(Rev.1) and that all three should be placed in brackets immediately following the opening words "CCIR Report 929".

The third paragraph was approved as amended.

1.2.4 Following a proposal by the delegate of the United Kingdom, the final sentence of the draft Annex 3 was amended to read :

"However, this could take considerable time."

Document No. DT/28 as a whole was approved as amended.

2. Further amendments to Document No. 81(Rev.1)

2.1 The delegate of the United Kingdom said that before work on Document No. 81(Rev.1) was completed, he thought that the word "still" should be

added after the word "incompatibility" in the first line of section 9.4 so as to indicate that a sequence of actions was being followed.

2.2 The Chairman of Working Group 4C said that similarly table b) in Annex 2 to Document No. 81(Rev.1) needed to be amended. The intermodulation products of the frequency combinations indicated in the third box of that table did not fall within the aeronautical band and that box should therefore be deleted. For the same reason, the second box of the table, the frequencies shown as 100, 97 and 94 MHz should be changed to read 102, 98 and 90 MHz.

Document No. 81(Rev.1) as a whole was approved with the amendments proposed.

3. Examination of draft Recommendation /A/ (Document No. 84)

3.1 The Chairman of Working Group 4C submitted draft Recommendation /A/ as set out in Document No. 84 to Committee 4 for approval.

3.2 The delegate of the United Kingdom called attention to the square brackets in paragraph 2.1 of the document. Whilst recognizing that it might not be easy to meet such a deadline, he still preferred an earlier date such as January 1983, because administrations would have a substantial amount of work to carry out after completion of the study concerned. Discussions could possibly be held with the Director of the CCIR to ascertain whether the study could in fact be finalized by an earlier date.

3.3 The representative of the CCIR pointed out that the date by which the study could be completed depended largely on how quickly administrations themselves could produce and submit their contributions.

3.4 The delegate of Finland reminded the Committee that the timetable under discussion was also of concern to Committee 5, which had to decide on the action to be taken by administrations and the IFRB between the First and Second Sessions of the Conference. He proposed that the date and square brackets be left unchanged in the document in order to give Committee 5 the opportunity to see whether the date given fitted in with the work to be carried out between the two Sessions.

It was so agreed, and Document No. 84 was approved, without amendment.

4. Examination of draft Recommendation /B/ (Document No. 85)

4.1 The delegate of Switzerland, supported by the delegate of the Federal Republic of Germany, proposed an amendment to the title of the draft Recommendation as set out in the first paragraph of Document No. 85. The words "Aeronautical Radionavigation Service and the Aeronautical Mobile (R) Service" should be replaced by "Aeronautical Services". The original wording gave the impression that both services had a full allocation in the 108 to 137 MHz band, which was not the case, and moreover the new version was much more concise. A similar amendment was also required in paragraph b) to bring it into line with the new title.

It was so agreed and draft Recommendation /B/ in Document No. 85 was approved, as amended.

5. Draft Recommendation No. COM 4/2 (Document No. 94)

5.1 The Chairman, introducing draft Recommendation No. COM 4/2, proposed that the square brackets around the name of the Conference which appeared in three different paragraphs of the document be deleted.

It was so agreed.

5.2 The representative of the CCIR pointed out that paragraph d) of the English text had been omitted from the French text, and should be inserted, with the subsequent paragraphs re-numbered accordingly. In the same paragraph, the word "and" should be replaced by "on".

It was so agreed.

5.3 The delegate of Mali proposed three amendments. In paragraph e) of the document "certain areas" should be changed to "all areas"; in the first paragraph under requests the CCIR the word "encourage" should be replaced by the word "undertake"; and the penultimate paragraph should be reworded to involve African telecommunication organizations such as PATU and URTNA.

5.4 The delegate of the United Kingdom requested clarification as to the role of the CCIR implied by the new word "undertake". As he saw it, it was not the CCIR which took measurements but the members of Study Group 5 from administrations.

5.5 The representative of the CCIR confirmed the statement by the delegate of the United Kingdom. He could however accept the proposal by the delegate of Mali, on the understanding that it was indeed administrations which made the measurements and submitted them to Study Group 5 or the IWPs in which they participated.

Where the role of African telecommunication organizations was concerned, Mali's third proposal would be adequately covered by the addition of a new penultimate paragraph which might read :

"Invites regional telecommunication and broadcasting organizations in Africa, as a matter of urgency and within the limits of their possibilities, to participate in the above-mentioned studies."

It was so agreed, and Document No. 94 was approved, as amended.

6. Completion of the Committee's work

6.1 The Chairman announced that the Committee had completed its work for the First Session of the Conference, and thanked all those involved for their collaboration and hard work which had made it possible to bring such a difficult task to a successful conclusion.

The meeting rose at 1655 hours.

The Secretary : The Chairman :

S. TSUKADA H. GÖTZE

INTERNATIONAL TELECOMMUNICATION UNION

REGIONAL BROADCASTING CONFERENCE

(FIRST SESSION) GENEVA, 1982

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PLENARY MEETING

Report of the Chairman of Committee 5

In accordance with its terms of reference, Committee 5 was required :

- to establish the planning principles and methods for the basis for the preparation, by the Second Session of the Conference, of the frequency assignment plan for FM sound broadcasting in the VHF band (87.5 to 108 MHz) in Region 1 and in the parts of Afghanistan and Iran adjacent to that Region (item 1.10 of the agenda);

- to specify the form in which requirements for inclusion in the frequency assignment plan should be submitted to the IFRB, and to fix a date by which they should be submitted (item 2 of the agenda);

- to adopt any Recommendation which the First Session of the Conference may consider useful for the Second Session of the Conference.

The Committee examined all the documents referred to it by the Plenary, as well as those received from Committee 4.

The Committee established two Working Groups 5A and 5B and six ad hoc Groups.

The Working Group 5A was entrusted with the following tasks :

1) to examine proposals concerning the planning principles and methods for the basis for the preparation of the plan;

2) to prepare and propose to Committee 5 the related parts of the Report to be presented to the Second Session of the Conference; and

3) to draft and propose to Committee 5 Resolutions and Recommendations relating to the items mentioned in 1) above.

This Group was chaired by Mr. T. Boe of Norway, and it created a further Sub-Group chaired by Mr. Eden of the Federal Republic of Germany.

The Working Group 5B was entrusted with the following tasks :

1) to examine proposals relating to establishment of a form in which requirements for inclusion in the frequency assignment plan should be submitted to the IFRB;

2) to identify the areas in which the decisions of Committee 4 are expected before the form could be finalized;

3) to develop the form along with the instructions for filling it and any appropriate explanatory texts;

4) to propose to Committee 5 the schedule for the preparation and submission of requirements to the IFRB; and

5) to draft and propose to Committee 5 Resolutions and Recommendations relating to the item mentioned in 1) above.

This Working Group was chaired by Mr. C. Terzani of Italy, and it created further Sub-Groups chaired by Mr. Biermann (Federal Republic of Germany) and Mr. E. Martinez de Aragon (Spain).

In order to deal with specific problems, the Committee also created six ad hoc Groups, as follows :

ad hoc Group 5/1	Chaired by Mr. P. Petterson
ad hoc Group 5/2	Chaired by Mr. K. Olms
ad hoc Group 5/3	Chaired by Mr. T. Boe
ad hoc Group 5/4	Chaired by Mr. M. Derragui
ad hoc Group 5/5	Chaired by Mr. H. Eden
ad hoc Group 5/6	Chaired by Mr. P. Petterson

The Committee met in eight sessions, some of them extending more than six hours. The Committee has already submitted ten Reports to the Plenary and its output, basically, constitutes Chapters 6 and 7 of the Report, besides three Resolutions adopted by it.

The complexity of the tasks entrusted to the Committee 5 became evident only gradually, as the work advanced. In the completion of some of its tasks, the Committee had to wait for the completion of the work of Committee 4. The adaptation of the decisions of Committee 4, for incorporation in the Planning Methods (Chapter 6 of the Report) and resolution of potential inter-administration problems required considerable skill and high competance on the part of the Chairmen of the Working Groups, the Sub-Working Groups and ad hoc Groups. I want to take this opportunity to thank them all, and the Vice-Chairman of the Committee Mr. P. Petterson (Sweden), for support provided to me. Among those, special thanks are due to Mr. Eden and Mr. Olms. I would like to thank all delegations for their constructive participation in the work of Committee 5; without their contributions and collaborations Committee 5 would not have been able to complete its tasks.

The advice provided by the IFRB, especially Mr. A. Berrada, and the assistance of the Secretariat are duly recognized.

K. ARASTEH
Chairman of Committee 5

INTERNATIONAL TELECOMMUNICATION UNION

REGIONAL BROADCASTING CONFERENCE

(FIRST SESSION) GENEVA, 1982

Addendum 1 au
Document No. 146-E
16 September 1982

PLENARY MEETING

ANNEX [....]

PRACTICAL APPLICATION OF THE SIMPLIFIED MULTIPLICATION METHOD

The usable field strength is determined for a specified coverage probability (with respect to time and location) and depends on the values of the nuisance fields.

$$E_{si} = P_i + E_{ni}\,(50, T) + A_i + B_i \qquad (2)$$

where : P_i : the e.r.p. in dB(kW), of the i-th unwanted transmitter;

$E_{ni}\,(50, T)$: the field strength, in dB(μV/m), normalized to an e.r.p. of 1 kW, of the i-th unwanted transmitter. The field strength is exceeded at 50 % of the locations during at least T % (e.g. 1 %) of the time;

A_i : the radio-frequency protection ratio associated with the i-th unwanted transmitter, expressed in dB;

B_i : the receiving antenna discrimination, expressed in dB.

Appropriate account of the effect of multiple interference can be taken by the use of statistical computation methods among which the simplified multiplication method is the least complex. With this method the usable field-strength E_u can be calculated by way of iteration from :

$$p_c = \prod_{i=1}^{n} L(E_u - E_{si}) \qquad (3)$$

where : p_c : the coverage probability (e.g. 50 % of locations, (100 - T) % of time);

$L(x)$: the probability integral for a normal distribution.

1. Calculation by computer

The calculation of the usable field strength with the simplified multiplication method is based on the probability integral for a normal distribution :

$$L(x) = \frac{1}{\sqrt{2\pi}} \int_{-\infty}^{x} e^{-\frac{t^2}{2}}\, dt$$

This integration however can be avoided in the practical calculation in replacing it by a polynomial approximation as follows :

$$L(x) = 1 - \tfrac{1}{2}(1 + a_1 x + a_2 x^2 + a_3 x^3 + a_4 x^4)^{-4} + \varepsilon(x)$$

with $a_1 = 0.196854$

$a_2 = 0.115194$

$a_3 = 0.000344$

$a_4 = 0.019527$

$\varepsilon(x)$ represents the error between the approximation and the exact value, received by the probability integral. Since $|\varepsilon(x)|$ is less than $2.5 \cdot 10^{-4}$ this error can be neglected.

The above approximation may also be used to calculate the multiple interference with the simplified multiplication method.

2. Manual calculation

In the following the basic material for the manual calculation of the usable field strength in applying the simplified multiplication method is given.*

The manual calculation needs only additions, subtractions, multiplications, divisions and the reading of a value from Table I.

An example with five interfering transmitters is given in Table II.

Experience has shown that it is expedient to begin with a value for E_u, which is 6 dB larger than the largest of the E_{si} values. If the difference between 0.5** and the result (product of the 5 values of $L(x_i)$ equals Δ, it is appropriate to modify the value of E_u by $\frac{\Delta}{0.05}$ to obtain a better approximation. The whole process can be repeated to receive better accuracy.

Table II shows, that even after the first step the difference to the precise value is in the order of 0.2 dB.

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* For further details see CCIR Report 945.

** 0.5 represents the coverage probability for 50% of locations.

TABLE I – *Probability integral* $\varphi(x) = \frac{2}{\sqrt{2\pi}} \int_0^x [\exp(-t^2/2)]\, dt$

x	$\varphi(x)$	x	$\varphi(x)$	x	$\varphi(x)$	x	$\varphi(x)$
0.00	0.0000	0.60	0.4515	1.20	0.7699	1.80	0.9281
01	0.0080	61	0.4581	21	0.7737	81	0.9297
02	0.0160	62	0.4647	22	0.7775	82	0.9312
03	0.0239	63	0.4713	23	0.7813	83	0.9328
04	0.0319	64	0.4778	24	0.7850	84	0.9342
0.05	0.0399	0.65	0.4843	1.25	0.7887	1.85	0.9357
06	0.0478	66	0.4907	26	0.7923	86	0.9371
07	0.0558	67	0.4971	27	0.7959	87	0.9385
08	0.0638	68	0.5035	28	0.7995	88	0.9399
09	0.0717	69	0.5098	29	0.8029	89	0.9412
0.10	0.0797	0.70	0.5161	1.30	0.8064	1.90	0.9426
11	0.0876	71	0.5223	31	0.8098	91	0.9439
12	0.0955	72	0.5285	32	0.8132	92	0.9451
13	0.1034	73	0.5346	33	0.8165	93	0.9464
14	0.1113	74	0.5407	34	0.8198	94	0.9476
0.15	0.1192	0.75	0.5467	1.35	0.8230	1.95	0.9488
16	0.1271	76	0.5527	36	0.8262	96	0.9500
17	0.1350	77	0.5587	37	0.8293	97	0.9512
18	0.1428	78	0.5646	38	0.8324	98	0.9523
19	0.1507	79	0.5705	39	0.8355	99	0.9534
0.20	0.1585	0.80	0.5763	1.40	0.8385	2.00	0.9545
21	0.1663	81	0.5821	41	0.8415	05	0.9596
22	0.1741	82	0.5878	42	0.8444	10	0.9643
23	0.1819	83	0.5935	43	0.8473	15	0.9684
24	0.1897	84	0.5991	44	0.8501	20	0.9722
0.25	0.1974	0.85	0.6047	1.45	0.8529	2.25	0.9756
26	0.2041	86	0.6102	46	0.8557	30	0.9786
27	0.2128	87	0.6157	47	0.8584	35	0.9812
28	0.2205	88	0.6211	48	0.8611	40	0.9836
29	0.2282	89	0.6265	49	0.8638	45	0.9857
0.30	0.2358	0.90	0.6319	1.50	0.8664	2.50	0.9876
31	0.2434	91	0.6372	51	0.8690	55	0.9892
32	0.2510	92	0.6424	52	0.8715	60	0.9907
33	0.2586	93	0.6476	53	0.8740	65	0.9920
34	0.2661	94	0.6528	54	0.8764	70	0.9931
0.35	0.2737	0.95	0.6579	1.55	0.8789	2.75	0.9940
36	0.2812	96	0.6629	56	0.8812	80	0.9949
37	0.2886	97	0.6680	57	0.8836	85	0.9956
38	0.2961	98	0.6729	58	0.8859	90	0.9963
39	0.3035	99	0.6778	59	0.8882	95	0.9968
0.40	0.3108	1.00	0.6827	1.60	0.8904	3.00	0.99730
41	0.3182	01	0.6875	61	0.8926	10	0.99806
42	0.3255	02	0.6923	62	0.8948	20	0.99863
43	0.3328	03	0.6970	63	0.8969	30	0.99903
44	0.3401	04	0.7017	64	0.8990	40	0.99933
0.45	0.3473	1.05	0.7063	1.65	0.9011	3.50	0.99953
46	0.3545	06	0.7109	66	0.9031	60	0.99968
47	0.3616	07	0.7154	67	0.9051	70	0.99978
48	0.3688	08	0.7199	68	0.9070	80	0.99986
49	0.3759	09	0.7243	69	0.9090	90	0.99990
0.50	0.3829	1.10	0.7287	1.70	0.9109	4.00	0.99994
51	0.3899	11	0.7330	71	0.9127		
52	0.3969	12	0.7373	72	0.9146	4.417	$1-10^{-5}$
53	0.4039	13	0.7415	73	0.9164		
54	0.4108	14	0.7457	74	0.9181	4.892	$1-10^{-6}$
0.55	0.4177	1.15	0.7499	1.75	0.9199	5.327	$1-10^{-7}$
56	0.4245	16	0.7540	76	0.9216		
57	0.4313	17	0.7580	77	0.9233		
58	0.4381	18	0.7620	78	0.9249		
59	0.4448	19	0.7660	79	0.9265		
0.60	0.4515	1.20	0.7699	1.80	0.9281		

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TABLE II

1. Approximation E_u = 78 dB					σ_n = 8.3 dB
i	E_{si} (dB)	$z_i = E_u - E_{si}$ (dB)	$x_i = \frac{z_i}{\sigma_n \sqrt{2}}$	$\varphi_{(x_i)}$ (from Table 1)	$L(x_i) = \frac{\varphi(x_i)}{2} + \frac{1}{2}$
1	64	14	1.19	0.7660	0.8830
2	72	6	0.51	0.3899	0.6950
3	60	18	1.53	0.8740	0.9370
4	50	28	2.39	0.9831	0.9916
5	45	33	2.81	0.9950	0.9975
					$\prod_{i=1}^{5} L(x_i) = 0.5688$
					$\frac{\Delta}{0.05} = \frac{0.5 - 0.5688}{0.05} = -1.38$ dB
2. Approximation E_u = 76.62 dB					
1	64	12.62	1.08	0.7199	0.8600
2	72	4.62	0.39	0.3035	0.6518
3	60	16.62	1.42	0.8444	0.9222
4	50	26.62	2.26	0.9762	0.9881
5	45	31.62	2.69	0.9929	0.9965
					$\prod_{i=1}^{5} L(x_i) = 0.5090$
					$\frac{\Delta}{0.05} = \frac{0.5 - 0.5090}{0.05} = -0.18$ dB
3. Approximation E_u = 76.44 dB					
1	64	12.44	1.06	0.7109	0.8555
2	72	4.44	0.38	0.2961	0.6481
3	60	16.44	1.40	0.8385	0.9193
4	50	26.44	2.25	0.9756	0.9878
5	45	31.44	2.68	0.9927	0.9964
					$\prod_{i=1}^{5} L(x_i) = 0.5016$
					$\frac{\Delta}{0.05} = \frac{0.5 - 0.5016}{0.05} = -0.03$ dB

The 4th approximation yields $E_u = 76.44 - 0.03 = 76.41$ dB.
This value can be considered as sufficiently exact.

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INTERNATIONAL TELECOMMUNICATION UNION

REGIONAL BROADCASTING CONFERENCE

(FIRST SESSION) GENEVA, 1982

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15 September 1982

B.6

PLENARY MEETING

Sixth series of texts submitted by the Editorial Committee to the Plenary Meeting

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

Source	Document No.	Contents
C.4	-	Annex C / Chapter 5 /
C.5	134	6.3 Planning methods
C.5	134/141	Annex F (+ 12 maps)
C.5	136	Annex G
C.5	135	Annex H
C.5	134	Annex I
C.5	134	Annex J
C.5	134	Annex K
C.5	134	Annex L
C.5	134	Resolution No. COM 5/3
C.5	136	Figure 5.0
C.5	-	Figure 5.1
C.5	136	Definition the Middle East and Note

H. BERTHOD
Chairman of the Editorial Committee

Annex : 44 pages

ANNEX C

METHOD FOR ASSESSING AREAS OF INTERFERENCE

By assuming a lossless isotropic receiver antenna, no line loss and free space propagation loss*, contour distances corresponding to received power levels of -10, -20, and -30 dBm can be calculated using the following formula :

$$d = \frac{\log^{-1} (e.i.r.p. - P - C - L_R)/20}{f} \qquad (1)$$

where :

d : contour radius in nautical miles.

C : 37.8 for d in nautical miles, or 32.4 for d in kilometers.

e.i.r.p. : equivalent isotropic radiated power of the FM station in dBm (e.i.r.p. = e.r.p. + 2.15 dB).

f : FM centre frequency in MHz.

P : contour power level desired, either -10, -20, or -30 dBm.

L_R : avionics antenna out-of-band rejection.

Out-of-band avionic antenna rejection (L_R) can be found as follows :

For a navigation antenna :

L_R = 3 dB plus 1 dB/MHz below 108 MHz

For a communication antenna :

L_R = 10 dB for FM signals from 100 - 108 MHz

or :

L_R = 10 dB plus 2 dB/MHz below 100 MHz for FM signals from 88 - 100 MHz

The out-of-band antenna rejection value (L_R) is subject to wide variations which are a function of airborne antennas and installation differences.

Graphical examples for the application of this method are given in CCIR Report 929 (Figures 1 and 2).

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* Free space loss closely approximates median transmission loss curves when transmitter and receiver are within line-of-sight (LOS). LOS for an aircraft about 1500 m (5000 feet) would be a minimum of 87 nautical miles regardless of FM station antenna height.

6.3 Planning methods

6.3.1 Planning will be a complex procedure involving a number of steps. Among these the following four steps are essential :

1) the use of the lattice planning method by the administrations to select appropriate frequencies for assignment to given stations (Annex F);

2) the preliminary analysis of the draft plan obtained so far by means of a simplified computation method (Annex G) together with the examination of incompatibilities with the television service in the band 87.5 to 100 MHz (Annex I), interference to radio equipment used by aircraft for landing and navigation purposes in the band 108 to 118 MHz (Annex J) and incompatibilities with the fixed or mobile service in Region 3 (Annex K);

3) the inclusion of low-power networks and low-power stations in, and the refinement of, the /draft/ plan by the method of foremost priority (Annex H) followed by negotiations among administrations concerned;

4) analysis of the /draft/ plan using a more complex computation method in the case of critical assignments (Annex G) together with the examination of incompatibilities with other services, as in step 2 (Annexes I, J and K).

In the course of the planning procedure some of the above steps may have to be repeated, as appropriate. In particular, step 4 will need to be repeated after introduction of modifications resulting from bilateral and multilateral consultations during the Second Session of the Conference.

6.3.2 After establishment of the plan a full evaluation of the interference and protection conditions may be considered necessary by the Second Session in order to provide reference values to be used for subsequent modifications of or additions to the plan.

6.3.3 In the preparation of a frequency plan in the band 87.5 to 108 MHz for the countries of Region 1 and for parts of Afghanistan and Iran, the two following planning methods shall broadly be used :

1) regular lattice planning with linear channel distribution scheme;

2) method of foremost priority (planning by trial and error).

The efficiency of the two methods will depend on circumstances which may vary considerably from one part of the planning area to the other. For instance, in Europe it is likely that frequency assignments in the band 87.5 to 100 MHz to VHF/FM transmitters will only be subject to slight modifications in a restricted number of cases in most of the countries, whereas in the remaining part of the planning area an assignment plan for the entirety of sound-broadcasting transmitters will have to be established.

6.3.4 The lattice planning method, the use of which is described in Annex F, would be a powerful tool in the latter case, but it would be of little use in the former case.

When use is made of lattice planning, it is desirable to apply the same channel distribution scheme throughout the planning area; nevertheless, on account of the variation of conditions within the area, it is considered appropriate to use two different channel distribution schemes.

The main advantage of this method is that the whole planning area can be subdivided at the beginning into sub-areas of adequate size and shape. This will permit planning to start simultaneously in various parts of the planning area. A further advantage is that the method permits the quick assignment of large numbers of frequencies to non-constrained transmitters. This is due to the fact that within a theoretical channel distribution scheme mutual interference is reduced to the minimum practicable and that in its adaptation to a practical situation interference will be increased only slightly.

However, the applicability of the method is restricted to networks with transmitters of similar power and effective antenna height and hence a comparable interference potential. The method should, therefore, not be used for the assignment of frequencies to low-power transmitters in an environment of numerous high-power transmitters. It may also fail to be applicable if a large number of constraints has to be respected, such as the protection against the origination of annoying intermodulation frequencies.

6.3.5 The method of foremost priority is described in Annex H.

The advantage of this method is that all the constraints to be respected in every individual case can be taken into account. However, the method is time-consuming and its reliability is only guaranteed when a computer is used. Nevertheless, there can be no doubt that in parts of the planning area, and in parts of the band, conditions will be found in which the use of this method will be the only resort.

6.3.6 Because of the limited time that will be available for planning purposes during the Second Session of the Conference, it is felt that both methods should go together. The lattice planning method shall be used in the first instance to help in preliminary planning, for the whole band 87.5 to 108 MHz in Africa and the Middle East, and for the band 100 to 108 MHz in the rest of the planning area. However, further planning may require the use of the method of foremost priority, especially in the planning of "desperate" cases and in the refinement procedure. In this respect it may well happen that planning in Europe, while providing protection to the aeronautical radionavigation service, will have to be considered as a desperate case.

It is however necessary to protect the aeronautical mobile (R) service, taking into account the safety aspects involved.

It is up to administrations to consider the incompatibilities between the aeronautical mobile (R) service and the sound broadcasting service in preparation of their requirements.

The interim planning process will be based on the assumption that there will be no serious problems of incompatibility. However, as the extent of the problems is still unknown the Second Session may wish to determine the more precise application of the protection necessary.

6.3.7 Considering the size of the area to be planned, the expected large number of requirements to be included in the plan and the complexity of the planning task, some preparatory work must be carried out by the IFRB in the period between the two sessions. This would make it possible to provide administrations with preliminary results of calculations before the opening of the Second Session of the Conference. For the reasons mentioned above the following procedure is suggested.

6.3.7.1 For the purpose of applying the regular channel distribution schemes detailed in Figure 6.1 in Africa and the Middle East or in Figure 2 in the remaining part of the planning area[1)], the two tables of Annex L shall provide the information necessary to relate channel numbers and frequencies in the two areas. For the purpose of completing the requirement forms, and in bilateral or multilateral negotiations, frequencies only should be used in order to avoid any ambiguity.

/ It should be noted that in Europe channel 0 (100.0 MHz) will primarily be used, where wanted, at the same points of the area as channel 79. / Adaptation to frequency assignments below 100.0 MHz (for which no channel numbers are specified in Europe) may, however, require some special arrangements to be made, particularly as regards channels 0 to 3.

---

1) The channel distribution schemes of Figures 6.1 and 6.2 shall be applied in such a way that for Africa and the Middle East the lower lefthand apex of Figure 6.1 is adjusted to the westernmost apex of each lattice unit; for the remainder of the planning area the lower lefthand apex of Figure 6.2 is adjusted to the southernmost apex of each lattice unit.

6.3.8 There may be incompatibilities between FM sound broadcasting stations in the band 87.5 to 100 MHz in Afghanistan, Iran and a part of Turkey on the one hand, and TV stations of the U.S.S.R. located in the border areas of these countries on the other hand. These Administrations should therefore coordinate their relevant stations by bilateral or multilateral negotiations, preferably before submitting their requirements to the IFRB; and they shall do so on the basis of equal rights without a priority to either of the above uses. The protection referred to in considering f) of Resolution No. 510 applies only to TV stations which are in conformity with the Stockholm Agreement 1961.

Incompatibilities between VHF/FM broadcasting stations and TV stations in conformity with the Stockholm 1961 Agreement in the band 87.5 to 100 MHz are treated in Annex I.

Incompatibilities between VHF/FM broadcasting and other TV stations shall use the criteria given in Chapter 4 of this Report.

Note 1 : In Mongolia, the band 87.5 to 100 MHz will be used exclusively for television stations.

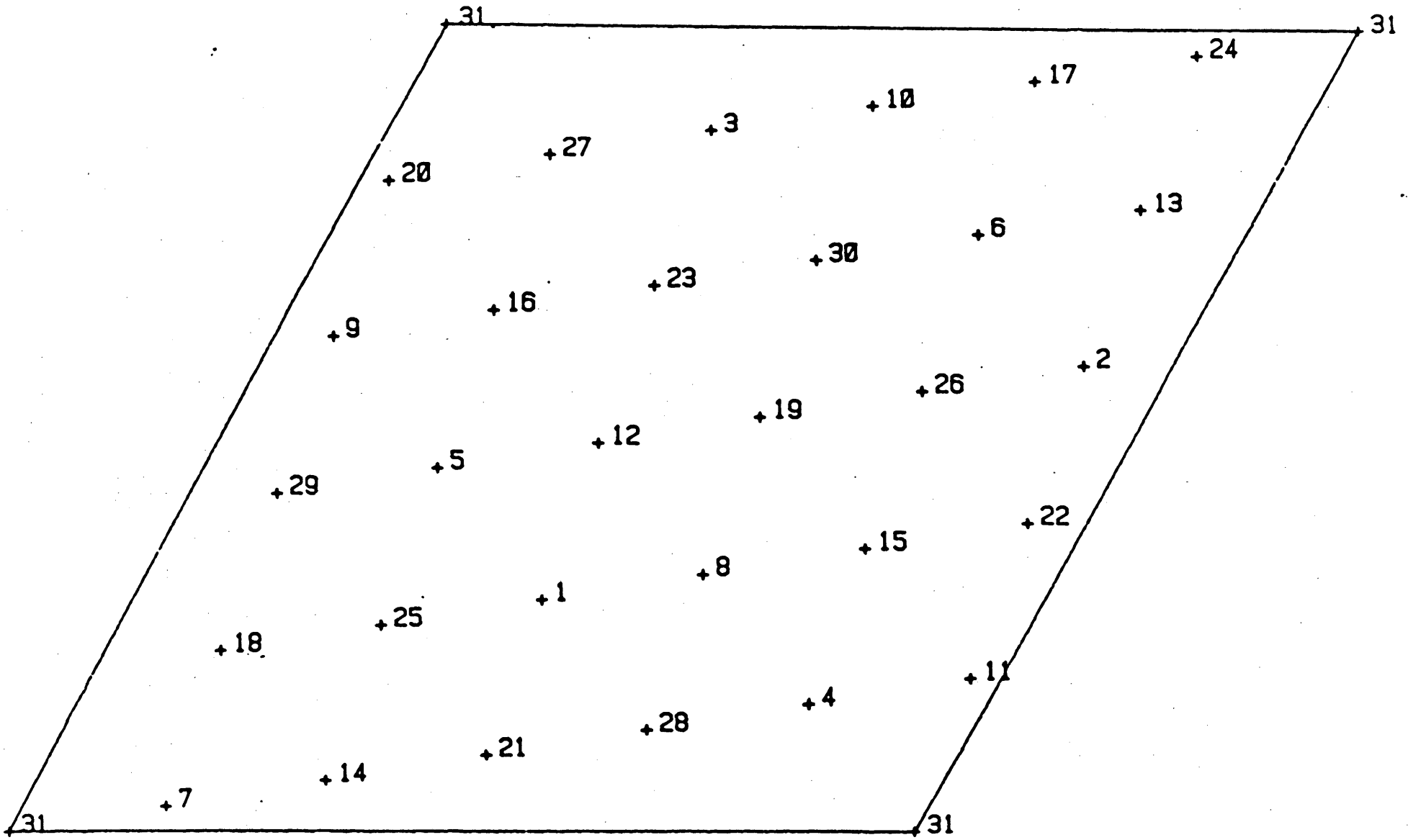


Figure 6.1 - Channel distribution scheme in the Africa-Middle East area between 87.5 and 108 MHz

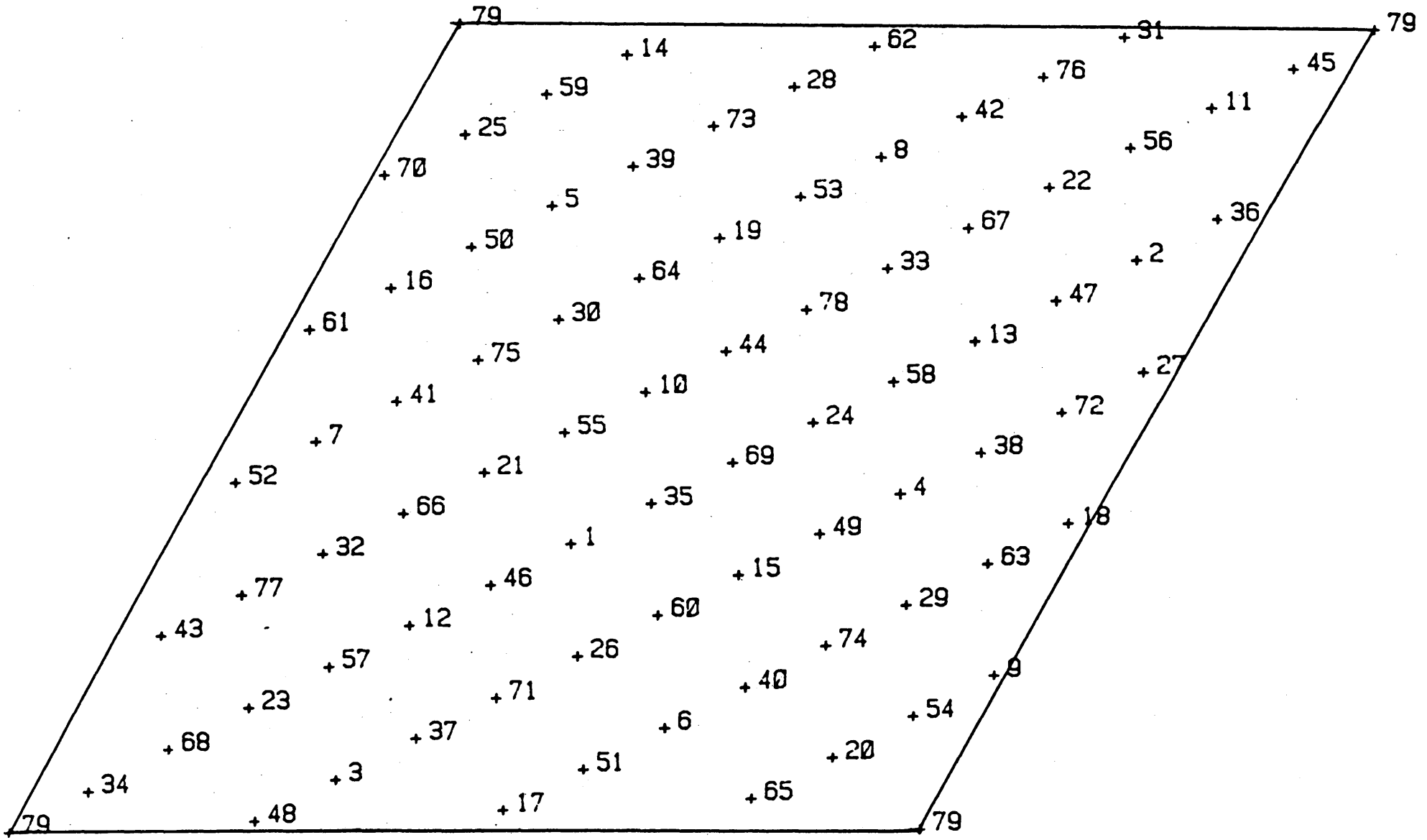


Figure 6.2 - Channel distribution schemes in the remainder of the planning area between 100 and 108 MHz

A N N E X F

LATTICE PLANNING METHOD

1. In this Annex the use of the lattice planning method is explained, whereas its theory is described in CCIR Report 944. The basic idea of this planning method is the repeated use of a geometrically regular channel distribution scheme over a vast area. As only channel distribution schemes are selected, which are optimized in terms of coverage by reducing interference within the network to the minimum, it can be assumed that their repeated use would result in a plan which, after some further refinement, might be acceptable to everyone. However, compatibility problems with other services cannot automatically be taken into account when using the lattice planning method.

2. Although the use of one single channel distribution scheme would permit a high degree of efficient spectrum utilization, conditions may prevail in the area to be planned which suggest the use of different schemes in different parts of the area. Actually the situation in Africa and the countries of the Middle East is considerably different from that in the remaining part of the planning area. Whilst in the countries of the former area, planning may start from scratch, in Europe the plan for the television service in the band 87.5 to 100 MHz for Eastern European countries will have to be retained and be respected when assigning frequencies to VHF/FM sound broadcasting transmitters. It is for this reason that two different channel distribution schemes will be used, one for Africa and the Middle East in the band 87.5 to 108 MHz and the other for the remaining part of the planning area in the band 100 to 108 MHz.

3. The lattices will have to be carefully adapted to one another in order to limit any reduction in spectrum utilization efficiency to the minimum. Geographical separation of the two areas over a wide distance range will be provided by the Mediterranean Sea. Nevertheless, some difficulties will persist and become particularly important in areas where there is no, or nearly no, geographical separation.

4. To enable the lattice planning method, to be applied in practice, it is useful to subdivide the planning area into sub-areas in such a way that they are similar in shape to the lattice selected, i.e. in principle, rhombic, and that the number of transmitter or transmitter sites within each sub-area does not exceed the number (31 or 79 respectively) of available channels. In preparation of the planning procedure the two different lattices selected for Africa and the Middle East and for the remainder of the planning area were drawn on to a map. This map is reproduced below in 12 parts.

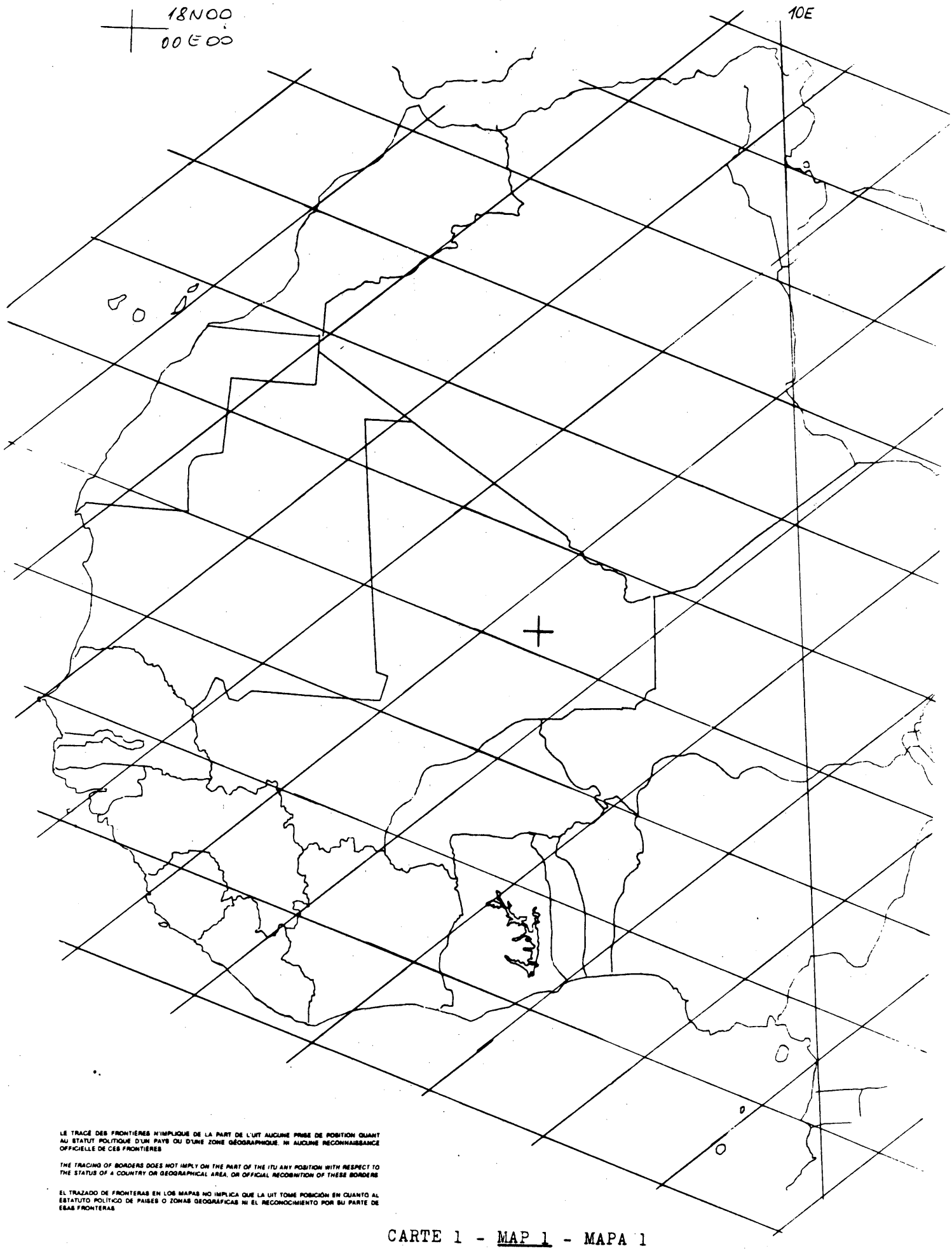
The lattices in maps 1 to 6 are to be applied in Africa and the Middle East. The side length of each rhombic area element is 480 km. The lattices in maps 7 to 12 are to be applied in the remainder of the planning area; the side length of each area element is 240 km.

These lattices are intended for use at the initial stage of the planning procedure.

5. The lattices selected for Africa and the Middle East and for the remainder of the planning area contain 31 or 79 channels, respectively. In Africa and the Middle East it will be possible to provide between 6 and 7 coverages; this would seem to satisfy the needs of the vast majority of the countries in the area. In the remaining part of the planning area this scheme would permit assignments to be made to transmitters in order to provide 2 or 3 coverages between 100 and 108 MHz in accordance with the requirements that will be specified.

6. In this respect it is assumed that in Africa and the Middle East the average distance between neighbouring transmitter sites is of the order of 80 to 100 km which, with 31 channels available per coverage, would correspond to a distance between transmitter sites using the same channel of approximately 445 to 555 km (co-channel distance). In preparatory planning it is, thus, appropriate to apply the channel distribution scheme by entering it in a geographical map which is covered by a rhombic coordinate system having 480 km unit distances which correspond to the assumed co-channel distance. From this map administrations will be able to select appropriate frequencies for assignment to the transmitters at the nearest site. It should be noted that the assignment of one frequency from the theoretical scheme corresponds in reality to the assignment of a group of six channels which are separated from one another by 31 channels. Needless to say, each frequency channel taken from the scheme can only be assigned once in that particular sub-area. It is worth mentioning that departures from the assignment procedure described would be admissible, e.g. in order to assign two groups of three frequencies each to two neighbouring transmitter sites although, in the theoretical lattice these six frequencies are derived from one and the same lattice point. Moreover, it needs to be stated that after assignment of a group of six frequencies to six transmitters at the same site, the major planning constraints will automatically be respected : the separation between channels used at the same site is 31. This would make it possible to use standardized multiplexing equipment and to avoid a separation in the range of 10.7 $\pm$ 0.2 MHz (receiver intermediate frequency) (see section 6.4.2 of the Report).

7. In the remaining part of the planning area, the average distance between co-channel transmitters is of the order of 240 km. In this area, where a 79 channel distribution scheme will be applied in the band 100 to 108 MHz, it is more difficult to respect the planning constraints : as two or more frequencies are, after adequate distortion of the theoretical lattice, to be assigned to transmitters sharing the same site, it has to be verified that in every case the separations between frequencies would permit the use of multiplexers if this is desired. Moreover, there will be absolutely no means of systematically avoiding frequencies having a separation in the range of 10.7 $\pm$ 0.2 MHz, with respect to VHF/FM broadcast transmitters in the frequency band 87.5 to 100 MHz at the same site. Consequently, this particular constraint will need extensive checking.

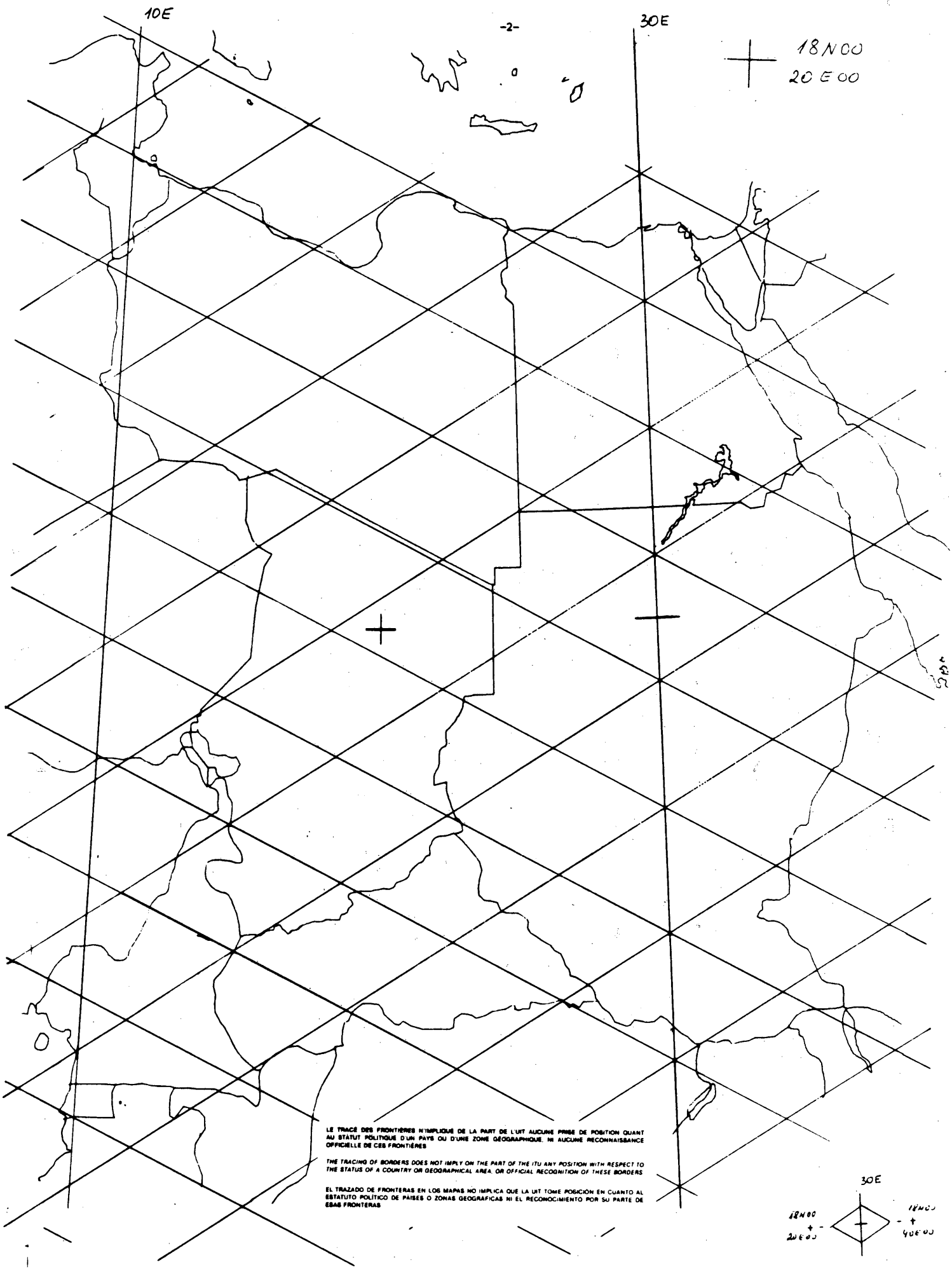


LE TRACÉ DES FRONTIÈRES N'IMPLIQUE DE LA PART DE L'UIT AUCUNE PRISE DE POSITION QUANT AU STATUT POLITIQUE D'UN PAYS OU D'UNE ZONE GÉOGRAPHIQUE, NI AUCUNE RECONNAISSANCE OFFICIELLE DE CES FRONTIÈRES

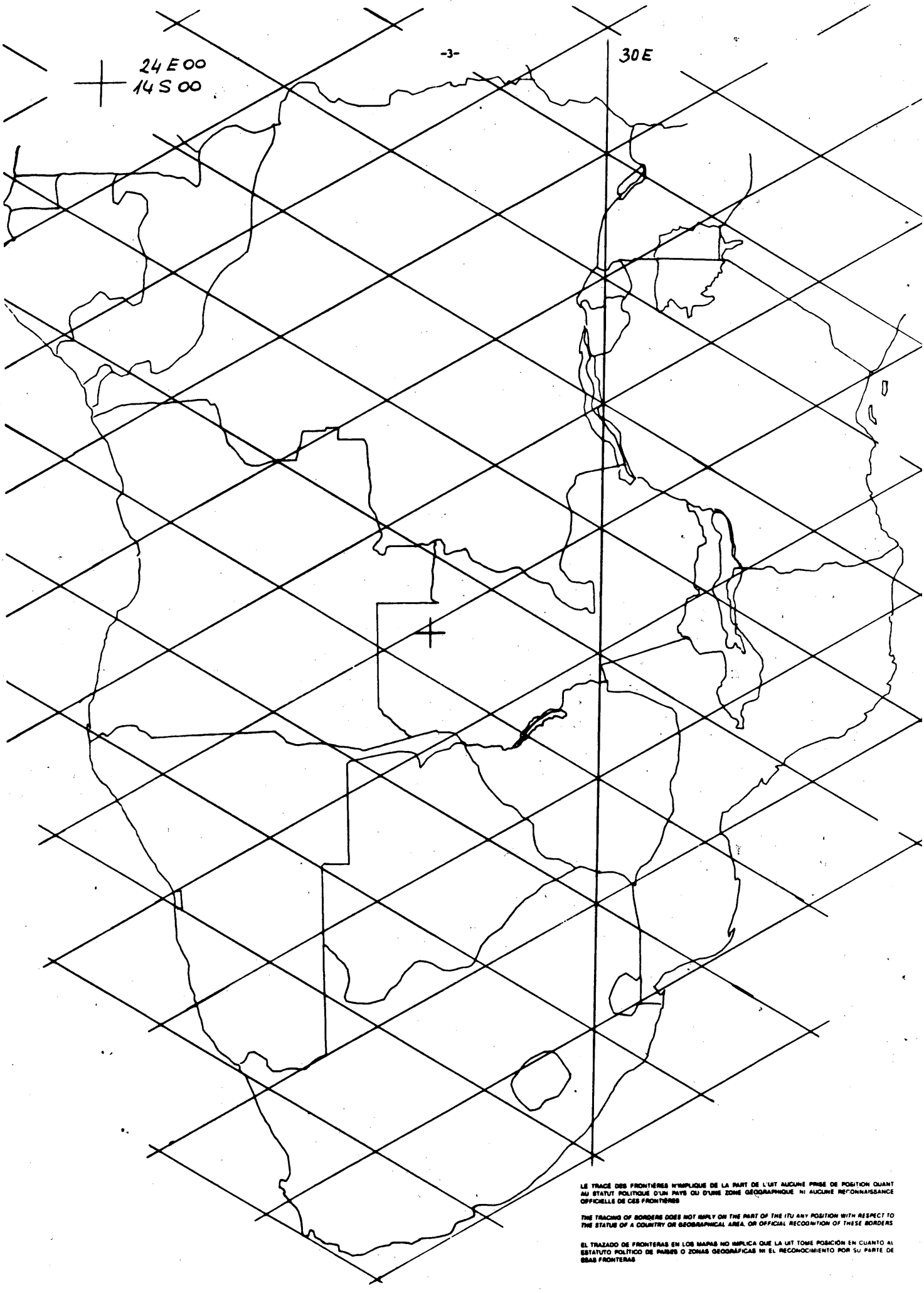
THE TRACING OF BORDERS DOES NOT IMPLY ON THE PART OF THE ITU ANY POSITION WITH RESPECT TO THE STATUS OF A COUNTRY OR GEOGRAPHICAL AREA, OR OFFICIAL RECOGNITION OF THESE BORDERS

EL TRAZADO DE FRONTERAS EN LOS MAPAS NO IMPLICA QUE LA UIT TOME POSICIÓN EN CUANTO AL ESTATUTO POLÍTICO DE PAISES O ZONAS GEOGRÁFICAS NI EL RECONOCIMIENTO POR SU PARTE DE ESAS FRONTERAS

CARTE 1 - MAP 1 - MAPA 1



CARTE 2 - MAP 2 - MAPA 2



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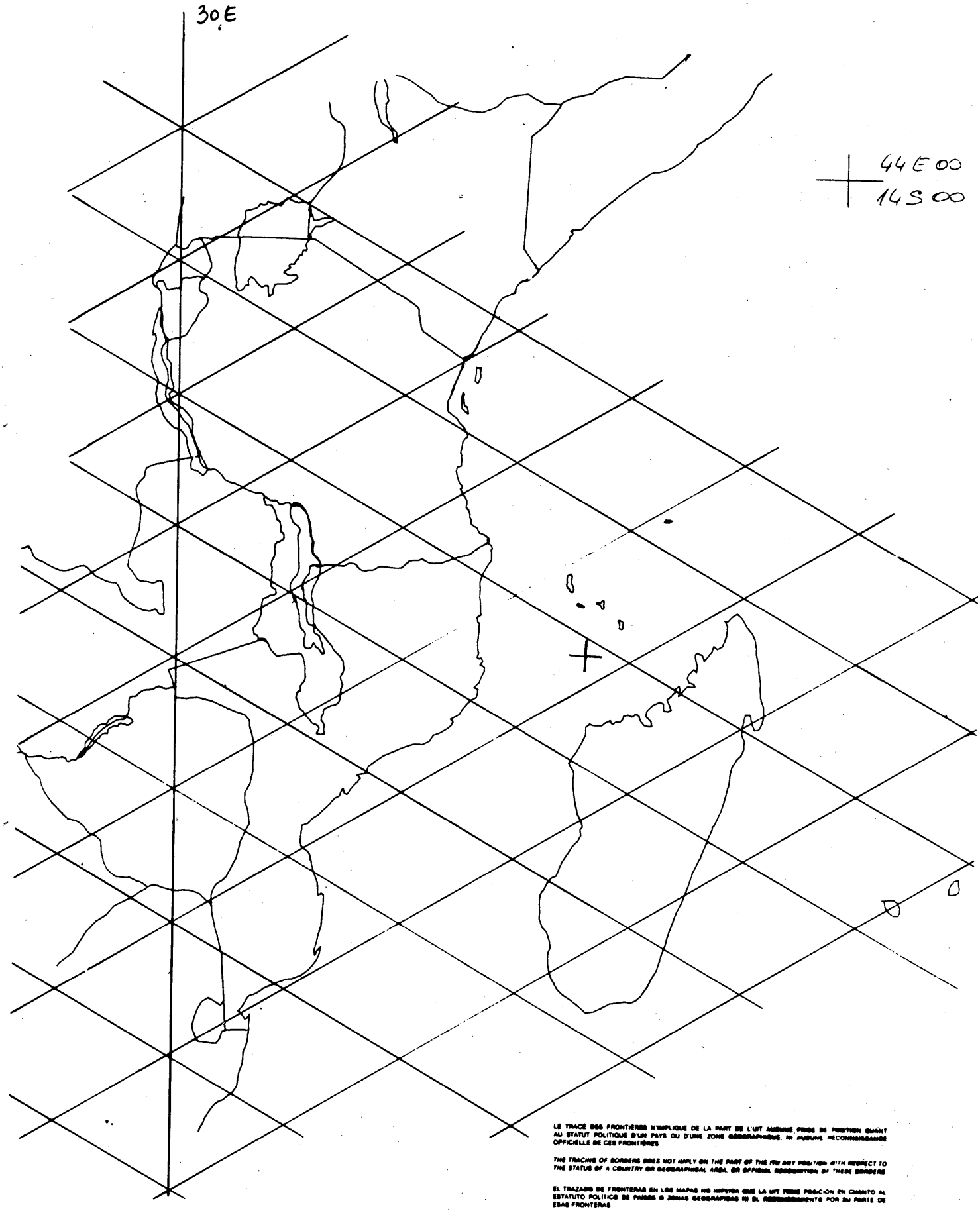
CARTE 3 - MAP 3 - MAPA 3



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CARTE 4 - MAP 4 - MAPA 4

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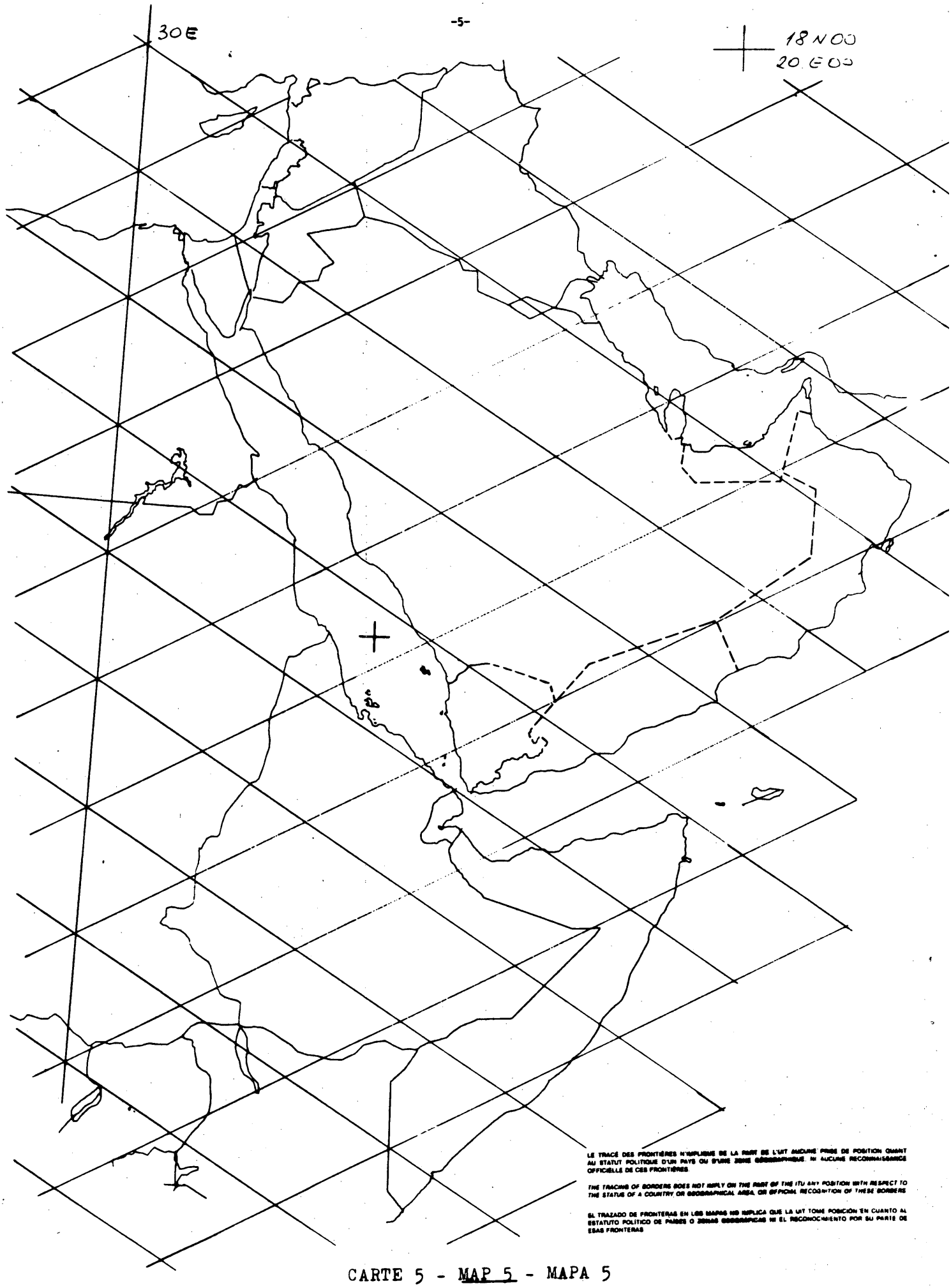

LE TRACÉ DES FRONTIÈRES N'IMPLIQUE DE LA PART DE L'UIT AUCUNE PRISE DE POSITION QUANT AU STATUT POLITIQUE D'UN PAYS OU D'UNE ZONE GÉOGRAPHIQUE NI AUCUNE RECONNAISSANCE OFFICIELLE DE CES FRONTIÈRES.

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CARTE 5 - MAP 5 - MAPA 5

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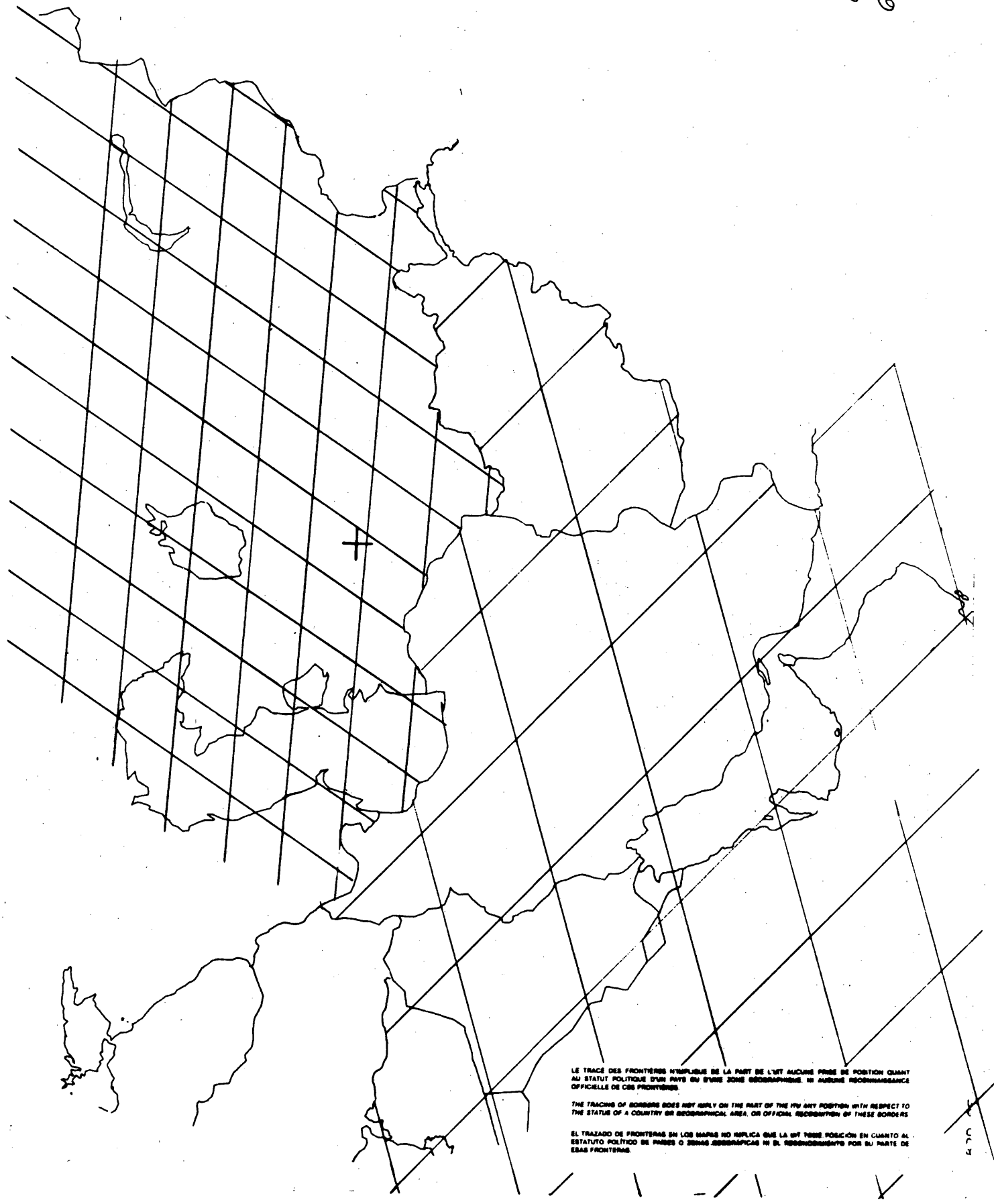
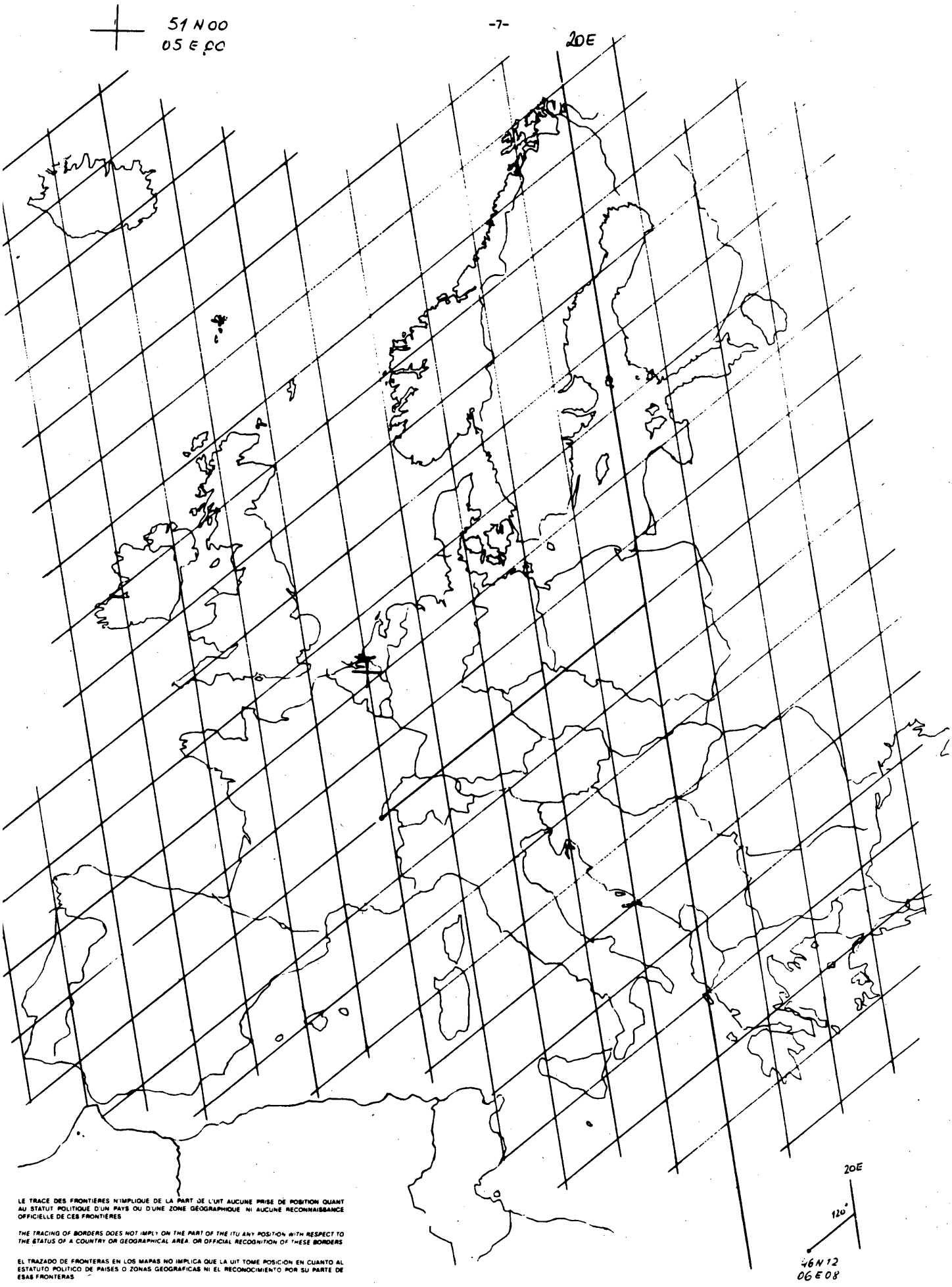


CARTE 6 - MAP 6 - MAPA 6

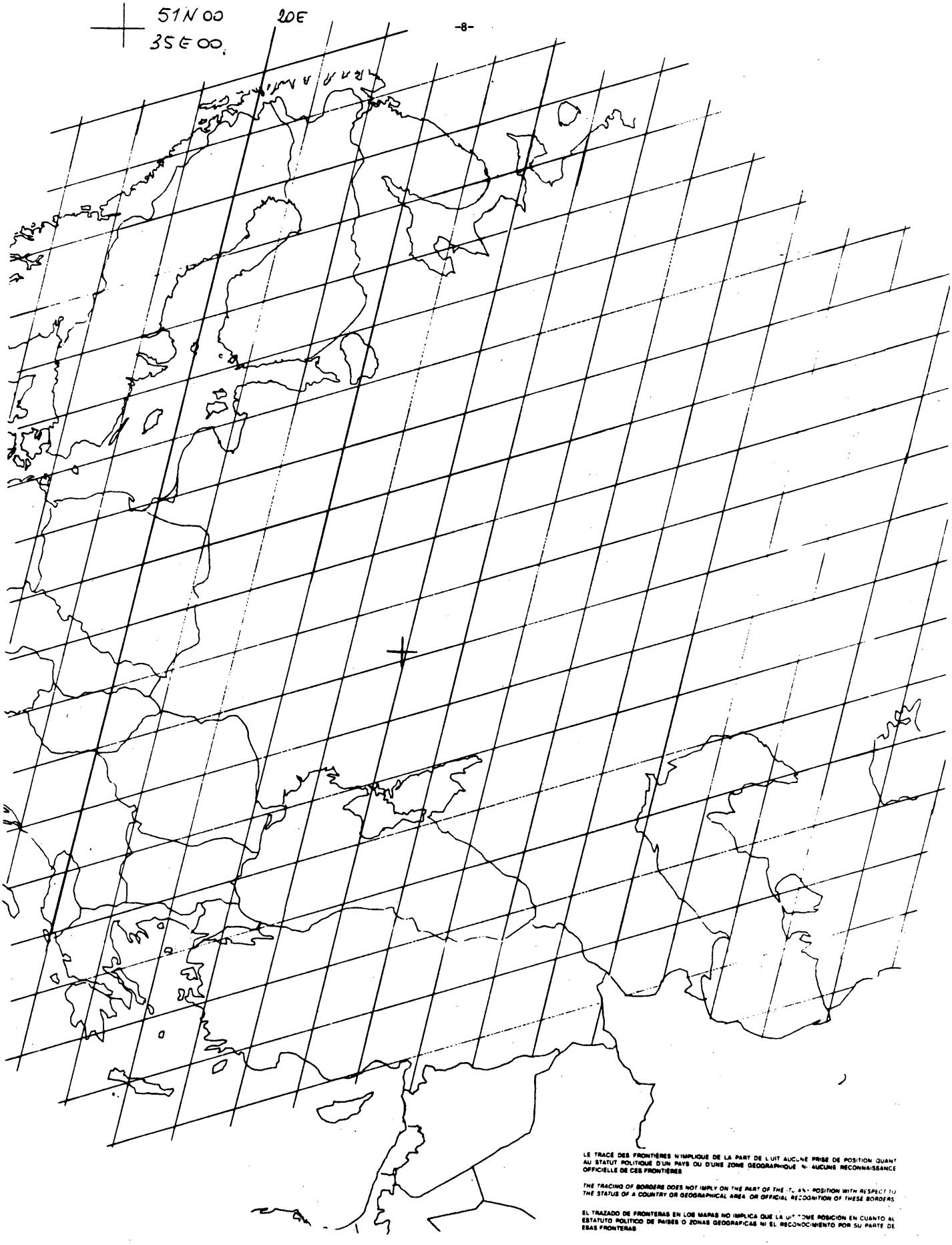


LE TRACE DES FRONTIERES N'IMPLIQUE DE LA PART DE L'UIT AUCUNE PRISE DE POSITION QUANT AU STATUT POLITIQUE D'UN PAYS OU D'UNE ZONE GÉOGRAPHIQUE NI AUCUNE RECONNAISSANCE OFFICIELLE DE CES FRONTIÈRES

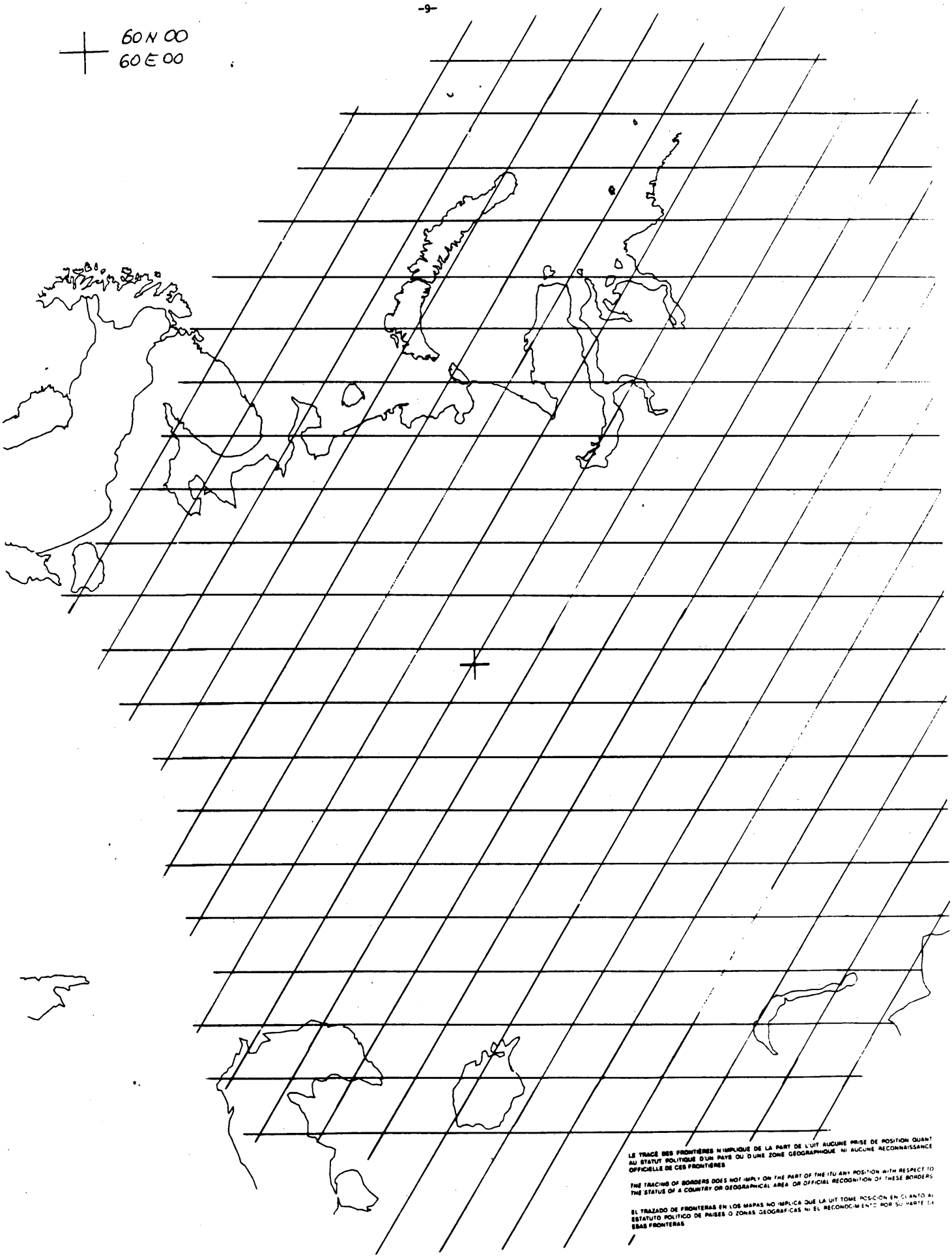
THE TRACING OF BORDERS DOES NOT IMPLY ON THE PART OF THE ITU ANY POSITION WITH RESPECT TO THE STATUS OF A COUNTRY OR GEOGRAPHICAL AREA, OR OFFICIAL RECOGNITION OF THESE BORDERS

EL TRAZADO DE FRONTERAS EN LOS MAPAS NO IMPLICA QUE LA UIT TOME POSICION EN CUANTO AL ESTATUTO POLITICO DE PAISES O ZONAS GEOGRAFICAS NI EL RECONOCIMIENTO POR SU PARTE DE ESAS FRONTERAS

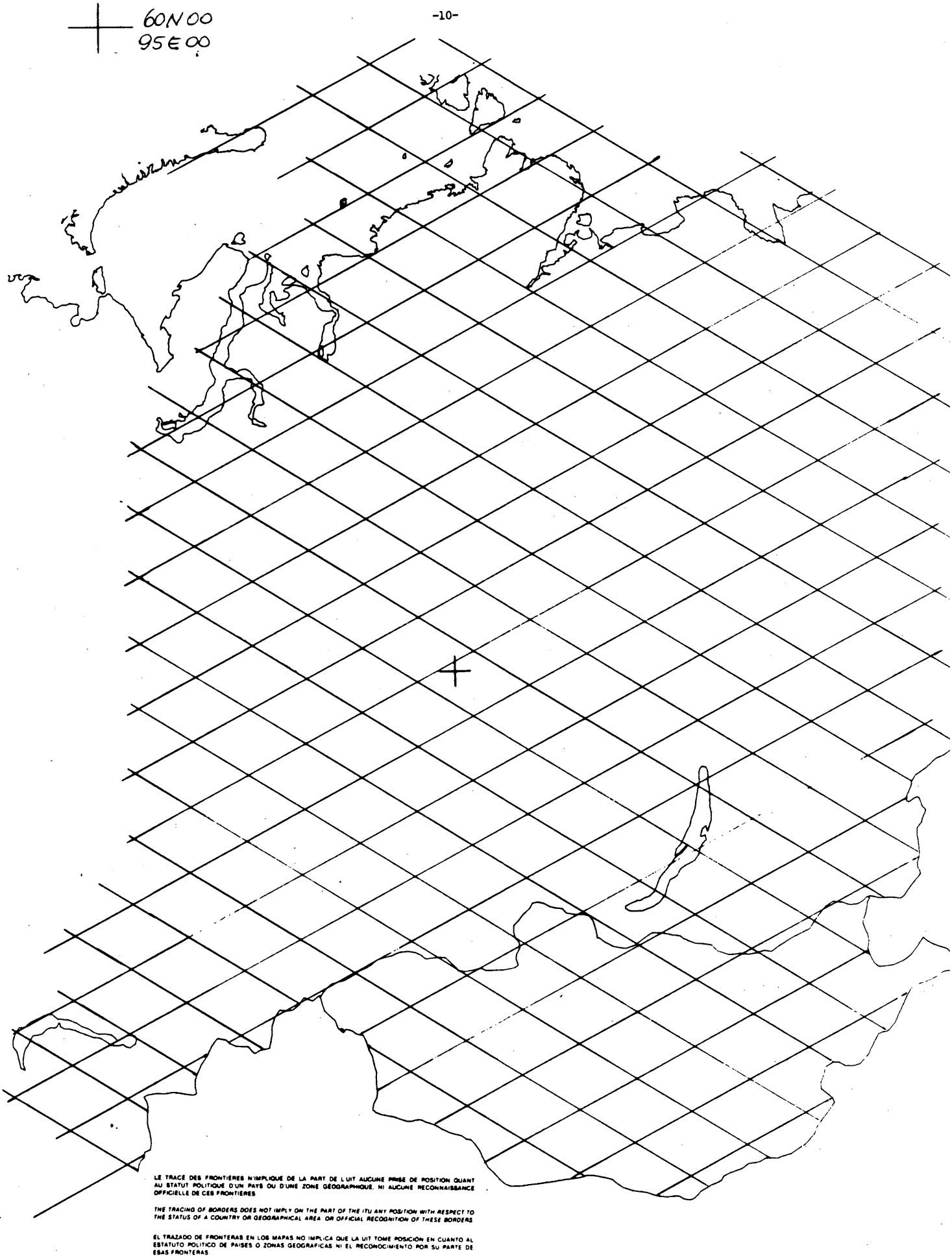
CARTE 7 - MAP 7 - MAPA 7



CARTE 8 - MAP 8 - MAPA 8

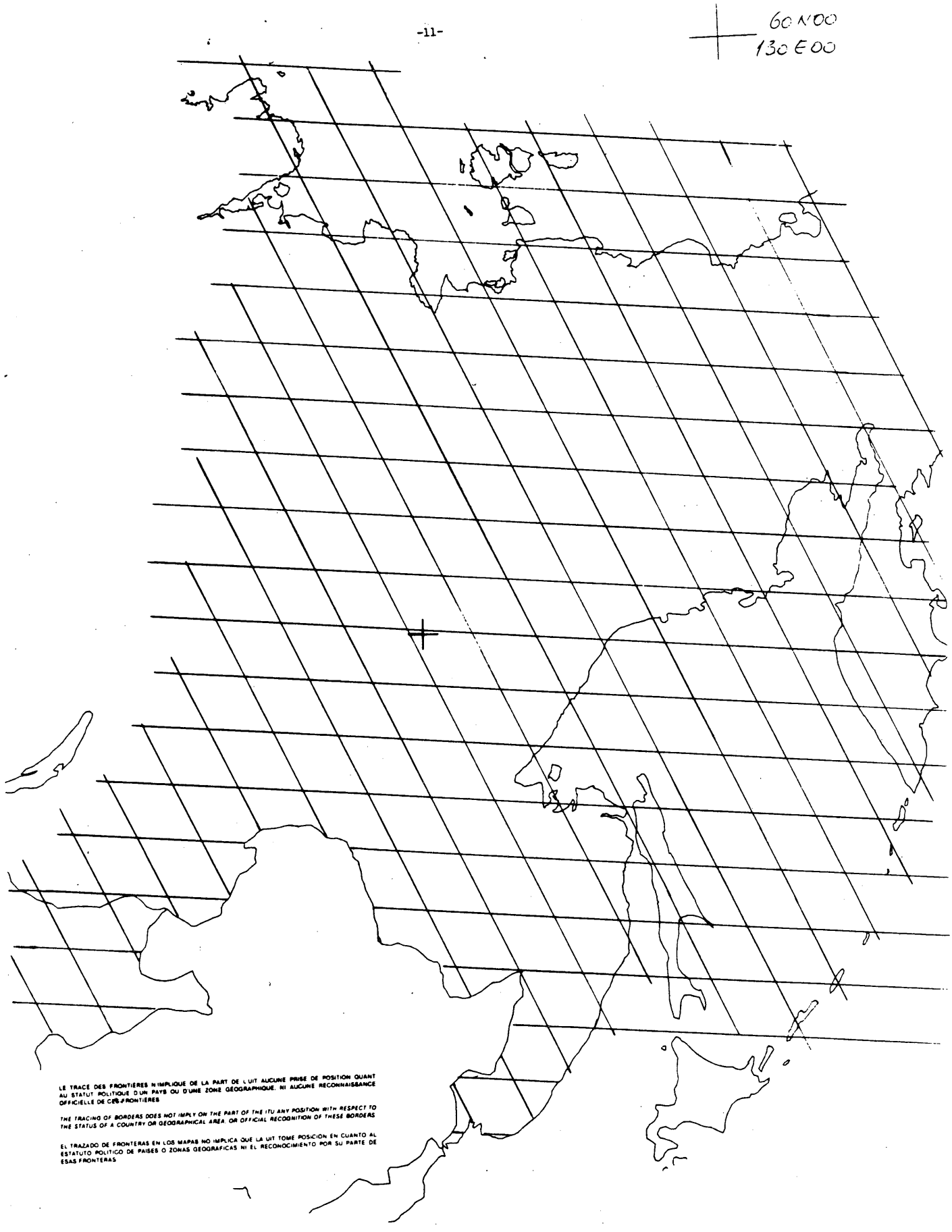


CARTE 9 - MAP 9 - MAPA 9



CARTE 10 - MAP 10 - MAPA 10

-11-



CARTE 11 - MAP 11 - MAPA 11

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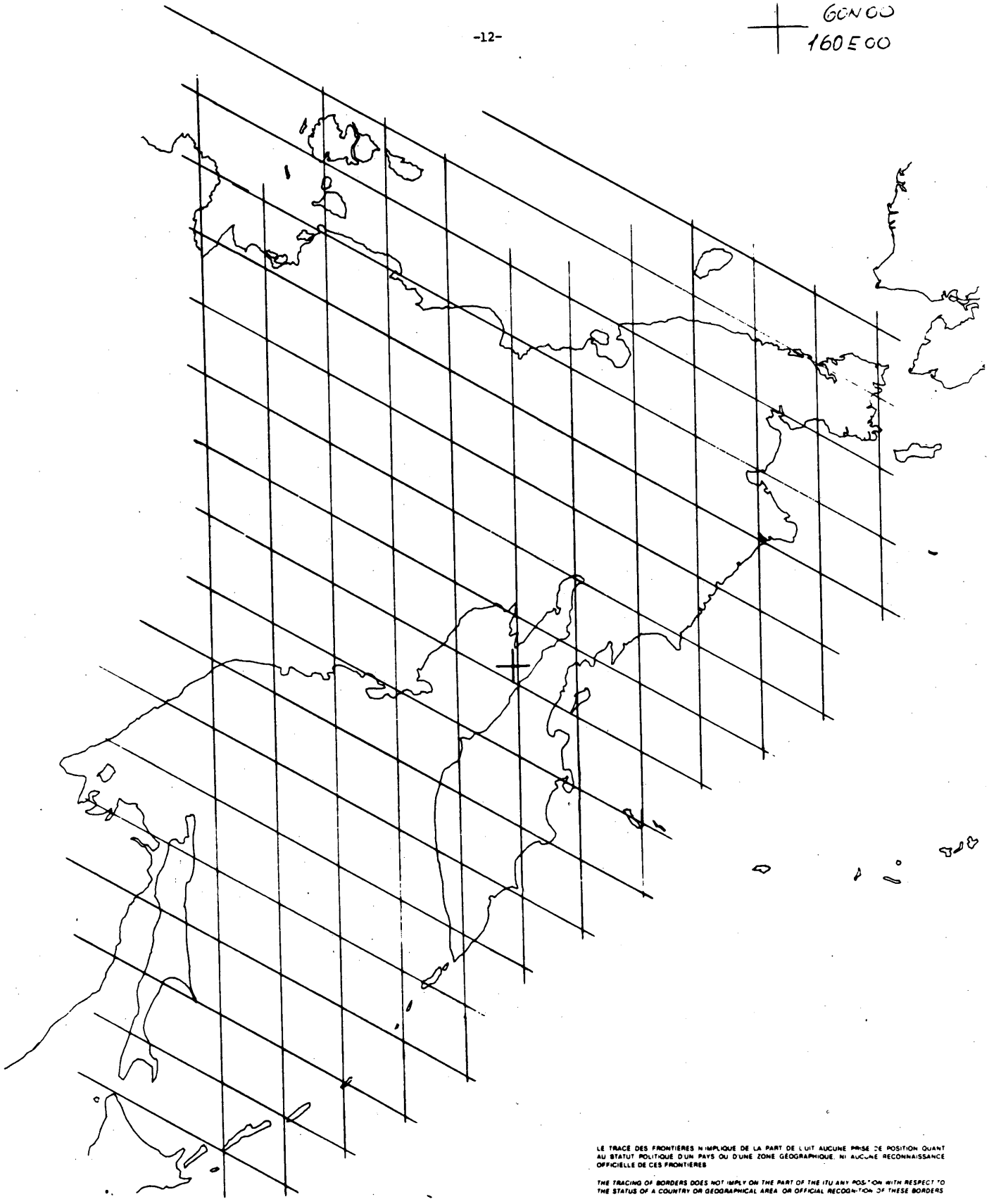


LE TRACÉ DES FRONTIÈRES N'IMPLIQUE DE LA PART DE L'UIT AUCUNE PRISE DE POSITION QUANT AU STATUT POLITIQUE D'UN PAYS OU D'UNE ZONE GÉOGRAPHIQUE, NI AUCUNE RECONNAISSANCE OFFICIELLE DE CES FRONTIÈRES

THE TRACING OF BORDERS DOES NOT IMPLY ON THE PART OF THE ITU ANY POSITION WITH RESPECT TO THE STATUS OF A COUNTRY OR GEOGRAPHICAL AREA OR OFFICIAL RECOGNITION OF THESE BORDERS

EL TRAZADO DE FRONTERAS EN LOS MAPAS NO IMPLICA QUE LA UIT TOME POSICIÓN EN CUANTO AL ESTATUTO POLÍTICO DE PAÍSES O ZONAS GEOGRÁFICAS NI EL RECONOCIMIENTO POR SU PARTE DE ESAS FRONTERAS

CARTE 12 - MAP 12 - MAPA 12

A N N E X G

ANALYSIS OF THE PLAN

1. Introduction

The plan will be analysed on the basis of the data bank to be set up by the IFRB from information supplied by administrations, or entered by the IFRB for those administrations which did not supply information.

2. Method of analysis

In each analysis the nuisance field from each potentially interfering transmitter shall be calculated at the site of the wanted transmitter according to the method given in / 3.4 /.

The usable field strength, E_u, shall then be calculated by the simplified multiplication method taking into account the 20 largest values of nuisance field, specified to one decimal place. For preliminary calculations, the simplified multiplication method will be used for the whole of the planning area; however the power sum method will be used, at the request of the administrations concerned, in the area from Shatt-al-Arab to the Gulf of Oman, for comparison purposes.

2.1 Preliminary analysis

The above calculations shall be carried out in a preliminary analysis, in which no account shall be taken of the receiving antenna discrimination.

2.2 Final analysis

In the final analysis the coverage area of a transmitter shall be evaluated by additional calculations. These calculations, in which account is taken of the receiving antenna discrimination, determine on each of 36 radials at 10° intervals the distance at which the field strength from that transmitter is equal to E_u. In the case of low power stations, the number of intervals may be reduced.

From experience gained so far, it is to be expected that E_u values on the coverage contour, obtained in the final analysis, will, on average, be approximately 8 dB lower than the corresponding E_u at the transmitter site (determined in the preliminary analysis).

3. First preliminary analysis / for each administration /

3.1 During the first preliminary analysis of requirements, only those transmitters shall be considered which have a maximum e.r.p. of / not less than / 100 W (20 dBW) and for which a frequency has been specified by the administration as part of its requirement.

3.2 The values of E_u will be calculated in a preliminary analysis for those requirements mentioned in 3.1 as submitted by the administration. Moreover, the arithmetic mean of all values of E_u (dB (μV/m)) shall be calculated together with their standard deviation.

3.3 For all transmitters having unsatisfactory assignments, that is those for which the value of E_u exceeds the mean by more than 10 dB, and for transmitters exceeding 100 W e.r.p. without the indication of a preferred frequency, a further study shall be carried out as a preliminary analysis. E_u shall be calculated for each channel as if the transmitter were assigned each channel in turn in the frequency band 87.5 to 108 MHz.

4. Examination of incompatibilities and frequency planning constraints

At the time of the third preliminary and the final analysis and, as regards incompatibilities with TV stations, at the time of the first preliminary analysis, the following will be examined for each transmitter :

- incompatibility with television stations in the band 87.5 to 100 MHz (Annex I);
- interference to radio equipment used by aircraft for landing and navigation purposes which operates in the band 108 to 118 MHz (Annex J);
- **incompatibility with the fixed or mobile services in Region** 3 (Annex K);
- **frequency spacing between 10.5 and 10.9 MHz for transmitters separated by no more than** $D\,(km) = 10 \log_{10} (e.r.p._{max}/1000)$. **E.r.p.max is the higher power of the two transmitters involved and is expressed in watts. If** $e.r.p._{max}$ **is 1000 W or less, D = 0;**
- **for transmitters having identical site coordinates and identical antenna height above ground level, a frequency spacing of less than 1.8 MHz or, if they have only identical site coordinates, a frequency spacing of less than 0.8 MHz.**[1)]

5. Presentation of results

The following information will be presented to each administration for its transmitters.

---

1) The preparatory work to be carried out in this respect between the two sessions of the Conference will be limited to the identification of transmitters having identical site coordinates.

5.1 For each transmitter :

- the value of E_u at the transmitter site;
- a list of the six largest sources of interference together with their nuisance fields and bearings from the wanted transmitter site;
- a list of transmitters for which this transmitter appears as one of the six largest sources of interference, together with the corresponding nuisance fields and the bearings (azimuth) from the interfering transmitter.

5.2 For all of its transmitters :

- the mean value and standard deviation of all values of E_u;
- a graphical presentation (see Figure 1 of Annex 3) of the values of E_u for each channel in the band 87.5 to 108 MHz for each transmitter having an unsatisfactory assignment (see 3.3 above);
- lists of transmitters which have incompatibilities with other services or which contravene the frequency planning constraints (see paragraph 4 above).

6. Proposed modifications to the requirements

After studying the results of the calculations, administrations will propose appropriate modifications to their requirements with a view to resolving incompatibilities. These modifications, which will be submitted to the Second Session, will, if the administrations consider it necessary, be the subject of bilateral or multilateral coordination.

Administrations may request the IFRB to provide them will E_u calculated for each channel in respect of their stations with an E_u exceeding the mean value by more than 5 dB or in respect of stations identified as incompatible with other services or which contravene the frequency planning constraints.

Administrations shall bring these proposed modifications to the notice of the IFRB by 30 September 1984. If no change is desired, the IFRB shall be informed by the same date.

7. Second preliminary analysis

The requirements including the proposed modifications will be analysed (as in paragraph 2.1 above) and administrations will be presented with results excluding the graphical presentations for all stations which have been affected in any way.

8. Inclusion of low power transmitters

If no frequency is included in the requirement form for a low power transmitter, the value of E_u for all channels will be calculated (see paragraph 3.3 above) at the site of the low power transmitter, in order that the IFRB may tentatively select an appropriate frequency.

9. Third preliminary analysis

The draft plan will be analysed (as in paragraph 2.1 above) and results will be presented to administrations having low power transmitters or having transmitters affected by the inclusion of low power transmitters.

10. Second Session of the Conference

During the Second Session of the Conference, administrations may wish to make changes to requirements resulting from bilateral or multilateral negotiations. The effect of such changes will be analysed from time to time and the results will be published.

It should be possible to provide a coverage analysis (see paragraph 2.2) in the case of difficult problems, at the request of an administration.

11. Determination and publication of coverage areas resulting from the plan

Subsequent to the Conference the coverage areas of all transmitters in the plan shall be determined in a final analysis (see paragraph 2 above) and the results shall be published. For each transmitter this information shall consist of 36 radial distances, together with the corresponding E_u values.

A N N E X H

METHOD OF FOREMOST PRIORITY

The method of foremost priority consists in assigning to the transmitter for which the number of appropriate frequencies is smallest the most favourable among these frequencies (worst transmitter - best frequency). This means that frequencies are successively assigned to every transmitter following the order of decreasing difficulty in terms of interference. For every transmitter in sequence a frequency is selected which suffers least interference and produces the smallest amount practicable of additional interference. This procedure is repeated until all transmitters have obtained a frequency. It goes without saying that in this procedure account has to be taken of all constraints.

Obviously, this method can be time consuming and its reliability may only be guaranteed when a computer is used. The use of a high-speed computer can provide important assistance in this procedure and may, in fact, be the only resort in some cases.

It will at first be necessary to discover, by way of an appropriate analysis (see Annex 2), the deficiencies of an assignment plan by computing the usable field strength, checking the constraints to be respected and applying the compatibility procedures. Unsatisfactory frequency assignments, i.e. those whose usable field strength exceeds the average value in that country by more than 10 dB, or assignments which are incompatible with other services, will be identified in this way and the transmitters will be included in the list to which the method of foremost priority will have to be applied. In the following step, computing and plotting of the usable field strength as a function of frequency for the sites of such transmitters (see Figure 1 of this Annex) may be useful. Graphical presentations of this type are particularly useful when more than one frequency is to be found for the same site. In general, those frequencies may be considered most appropriate for which the lowest values of usable field strength are shown. This implies, however, that their use is compatible with other services and that the planning constraints are respected.

It may be clear from the above explanations that the graphical presentation of the usable field strength as a function of frequency might also successfully be used to find frequencies for assignment to transmitters for which no frequency was assigned in the first step of the planning procedure (i.e. during the use of the lattice planning method), e.g. for low-power transmitters.

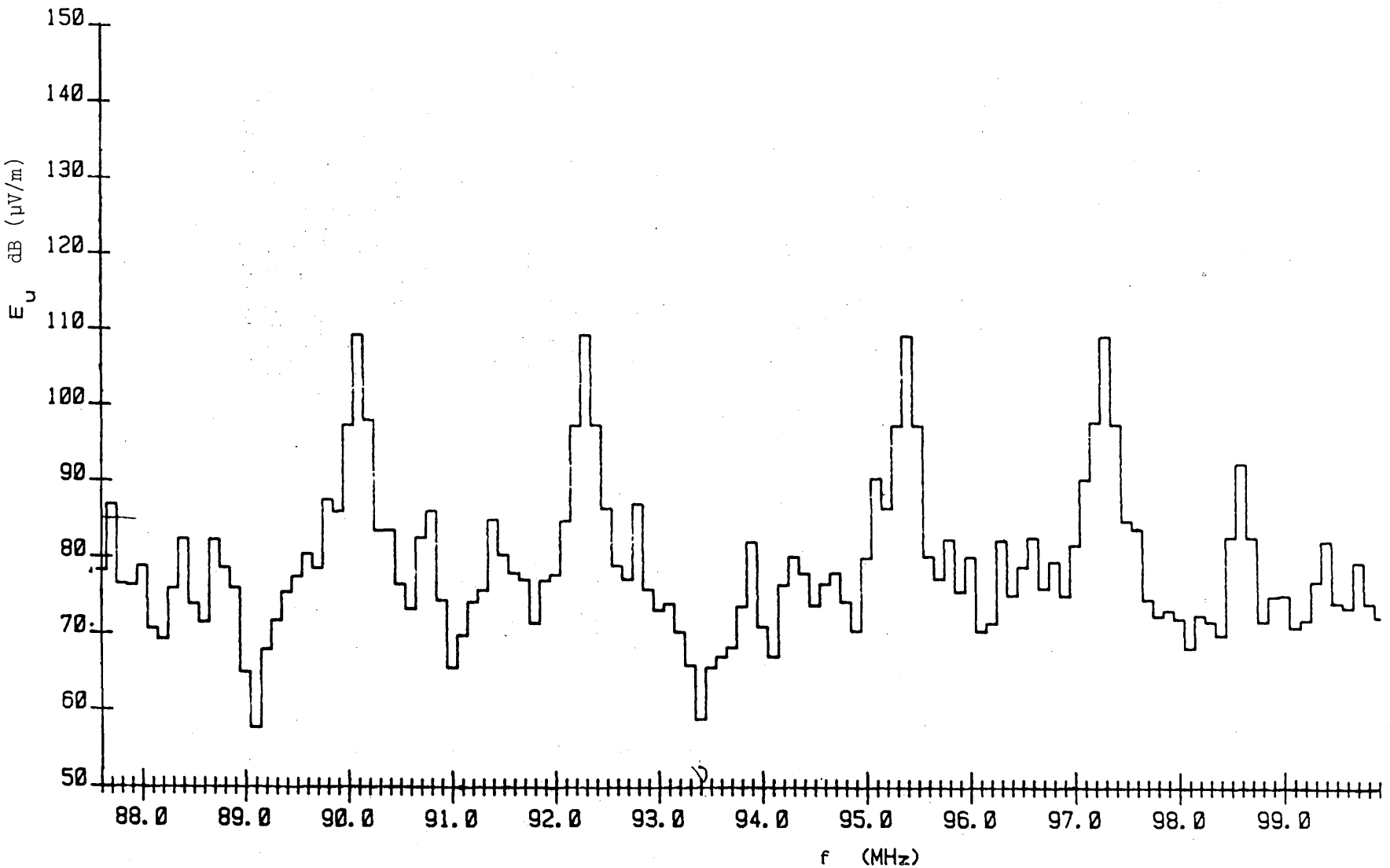


Figure 1 (Annex H) - Example of chart indicating values of usable field strength for each channel in the band 87.5 to 100 MHz

A N N E X I

COMPATIBILITY WITH TELEVISION STATIONS AND PROTECTION TO SOUND BROADCASTING STATIONS WITHIN THE COORDINATION AREA IN THE BAND 87.5 to 100 MHz

1. Introduction

Requirements will be processed in accordance with the data bank to be set up by the IFRB from information supplied by administrations, or entered by the IFRB for those administrations which did not supply information.

2. Compatibility assessment

All sound broadcasting requirements in the coordination area with countries using this band for television in accordance with the Regional Agreement, Stockholm, 1961, will be assessed for compatibility with television stations.

3. Protection to sound broadcasting stations within the coordination area

Calculations will have to be carried out to verify that there is no deterioration in the service areas of existing sound broadcasting stations which are operating in accordance with the Regional Agreement, Stockholm, 1961 (notified to IFRB before 1 December 1983) and which are situated in the coordination area with countries using this band for television in accordance with the Regional Agreement, Stockholm, 1961. For comparison purposes, the reference situation (as described in point 6 below) is to be used as a basis.

4. Coordination area

A sound broadcasting station is considered to be situated in the coordination area when its distance from the nearest point of the border of the country using this band for television in accordance with the Regional Agreement, Stockholm, 1961, is less than the distance given in Table B of Annex 1 of the Agreement.

5. Comparison

For the purpose of assessing compatibility with television stations (see 2) or protection to service areas of existing sound broadcasting transmitters (see 3), the existing situation shall be used as a reference situation and be compared with the new plan in the course of its development. To permit these comparisons it will be necessary to calculate (as in 8) the usable field strength (E_u) for all television transmitters and all existing sound broadcasting stations (as in 2 and 3) at a number of test locations (not more than 12) within the existing service area, to be specified by the administrations concerned.

6. Reference situation

All existing or planned assignments to television, or sound broadcasting, stations in the band 87.5 to 100 MHz appearing in the Regional Plan, Stockholm, 1961 and those for which the procedure of the Regional Agreement, Stockholm , 1961, has been successfully applied before 1 December 1983 shall be taken into account. The sound broadcasting stations in Region 3 and in the part of Turkey not covered by the Regional Agreement, Stockholm, 1961 which are operating in accordance with the Radio Regulations and notified before 1 December 1983 to the IFRB shall be included in the reference situation. The calculation for the reference situation need only be made once.

7. Situation resulting from planning

All existing or planned assignments to television stations (as in 6) and all sound broadcasting transmitters in the draft Plan shall be taken into account.

8. Usable field strength for a transmitter at the specified test location

8.1 The nuisance field from each interfering transmitter shall be calculated as in /3.3.2/ of Chapter 3 using, in principle, propagation curves for 1% of the time and the appropriate protection ratio taken :

8.1.1 for the wanted television transmitter, from Table 1 for interference from a television transmitter, or from Figure 4.1 for interference from a sound broadcasting transmitter;

8.1.2 for a wanted sound broadcasting transmitter, from Table 1 and Figure /4.3/ of Chapter 4 for interference from a television transmitter, using protection ratio values for tropospheric interference, or from /3.3.2/ of Chapter 3 for interference from a sound broadcasting transmitter.

8.2 Receiving antenna discrimination shall be taken

- from Figure /4.2/ for a wanted television transmitter;
- from Figure 3.3 for a wanted sound broadcasting transmitter.

8.3 In the case of orthogonal polarization a discrimination value of 10 dB shall be applied for a wanted television transmitter. No polarization discrimination shall be applied for a wanted sound broadcasting transmitter.

8.4 The interference contribution of each interfering transmitter is the value of the nuisance field derived in 8.1 above, including any discrimination value derived in 8.2 and 8.3.

8.5 The usable field strength E_u shall be calculated from the individual interference contributions using the simplified multiplication method, taking into account the 20 largest (either TV or sound broadcasting) contributions and specified to one decimal place.

9. Result of examination

An incompatibility with a television station or a deterioration of the service area of a sound broadcasting station only exists if any value of E_u obtained (as in 8), in accordance with 7 above, exceeds the corresponding value of E_u in the reference situation defined in 6 by more than 0.5 dB.

TABLE 1

Protection ratios, in dB, for colour television*)

Offset (multiples of 1/12 line-frequency)	0	1	2	3	4	5	6	7	8	9	10	11	12
Co-channel	45	44	40	34	30	28	27	28	30	34	40	44	45
Transmitter stability = 500 Hz (non-precision offset)													
Lower adjacent channel	-6												
Upper adjacent channel	+4												

*) For further information, see CCIR Report 306-4.

RECEIVING ANTENNA DISCRIMINATION - CCIR RECOMMENDATION 419

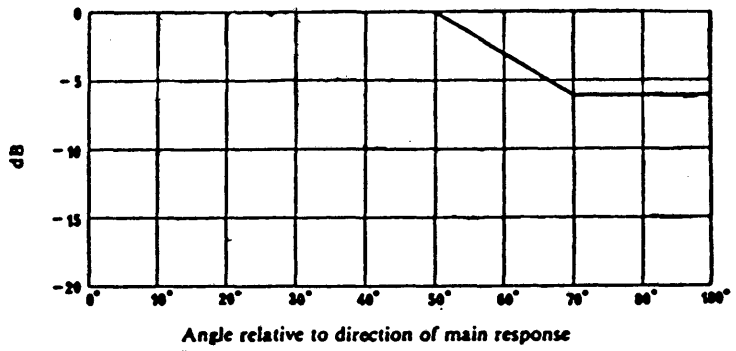


Figure 4.2 - Discrimination obtained by the use of a directional receiving antenna for the television stations in the band 87.5 to 100 MHz

A N N E X J

COMPATIBILITY BETWEEN VHF BROADCASTING STATIONS AND STATIONS OF THE AERONAUTICAL RADIONAVIGATION AND AERONAUTICAL MOBILE (R) SERVICES

1. The calculation method and criteria contained in this Annex shall be used for analyzing the plan before and during the Second Session of the Conference. If the broadcasting and aeronautical stations belong to one and the same country, administrations may use this method or any other method they consider useful. This Annex will make it possible to determine whether there is likely to be any incompatibility between stations belonging to different countries. The resolution of such incompatibilities through bilateral or multilateral negotiations will be based on criteria and methods accepted by the administrations concerned.

2. To ensure compatibility between broadcasting stations in the band 87.5 to 108 MHz and aeronautical radionavigation stations in the band 108 to 118 MHz and stations of the aeronautical mobile (R) service in the band 118 to 137 MHz the following procedure shall be applied :

2.1 When an administration defines its requirements with a view to communicating them to the IFRB, it may apply the coordination contour concept referred to in paragraph 3 to identify and to indicate in an additional note the specific frequency planning constraints which are essential to ensure compatibility in each case with the aeronautical radionavigation service. These additional constraints shall be met as far as possible during the Second Session of the Conference when the plan is drawn up.

For the submission of the above-mentioned constraints, the form given as Appendix 3 to Chapter 7 is recommended.

2.2 At a later stage, when an administration receives the inventory of requirements established by the IFRB (not later than 30 April 1984), it should use the coordination contour mentioned in paragraph 3 to identify the broadcasting stations of other countries which are likely to affect the operation of any ILS or VOR station. The administration should determine the test points for its ILS and VOR stations in accordance with paragraph 4 of this Annex and it should communicate to the IFRB by 30 June 1984 the geographical coordinates of the station sites together with the azimuth, distance and height of each test point using the form given as Appendix 4 to Chapter 7.

2.3 The IFRB shall apply the software to be supplied to it by an administration to determine whether the protection criteria defined in paragraph 5 have been met, and it shall include the results in the general analysis of the plan.

2.4 Administrations shall endeavour through bilateral and multilateral negotiations to resolve incompatibilities using the criteria and methods they consider most appropriate.

3. Coordination contour around an aeronautical radionavigation station

3.1 For type A interference, administrations should calculate and draw on a suitable map the coordination contour; to obtain this contour, a circle of 125 km radius is drawn around all the test points of each radionavigation station to be protected. Broadcasting stations outside the outer resulting contour are considered as not being likely to affect the aeronautical radionavigation station under consideration.

The calculations of the interfering field strength at the test points will permit the identification of those broadcasting stations that need a detailed consideration by administrations.

3.2 For type B interference, if any broadcasting station within the above contour is causing at the nearest test point an interference greater than -25 dBm receiver input power, an intermodulation computer program shall be used to identify those broadcasting stations that need detailed consideration by administrations.

4. Test points

While applying paragraph 6 for the resolution of incompatibilities administrations shall, in a second step, carry out interference calculations at test points.

In view of the large number of calculations necessary to assess compatibility, in practice these calculations can be limited to a small number of test points on national territory at which the conditions are considered to be the most difficult. In order to be able to apply data processing methods, the following procedure for the choice of test points is recommended.

The test points chosen by the administration shall be communicated to the IFRB where required using the form given as Appendix 4 to Chapter 7.

4.1 ILS (Instrument landing system)

4.1.1 If the broadcasting station is not in the area below the service volume defined in paragraph 5.3.2.1 the points A, B, C defined in Figure 5.1 shall be used together with point D as indicated by the responsible administration.

4.1.2 If the broadcasting station is within the area below the ILS service volume, a case-by-case assessment is necessary (see paragraph 5.3.2.2.5). Unless otherwise specified the field strength shall be calculated at a distance of 100 m from the broadcasting antenna, and using the direction of maximum e.r.p. if not otherwise specified.

4.2 VOR (VHF Omnidirectional radio range)

4.2.1 If the broadcasting station is not in the VOR service area, the 4 cardinal points (N, E, S and W) of the circle forming the boundary of the service areas at a height of 1,000 m above the VOR shall be chosen.

4.2.2 If the broadcasting station is in the VOR service area, a case-by-case assessment is necessary (see paragraph 5.3.3.2). Unless otherwise specified the field strength shall be calculated at a distance of 300 m from the antenna of the broadcasting station, and using the direction of maximum e.r.p. if not otherwise specified.

4.3 VHF communications

Service volumes vary widely. Initially, for the sake of simplicity, the 4 cardinal points 30 km from the land station in the aeronautical mobile (R) service at a height of 1,000 m above the land station shall be considered unless alternative test points are indicated by the responsible administration.

VHF communication for route purposes may be treated on a case-by-case basis depending on the operational significance.

5. Analysis of incompatibilities

The IFRB shall use the information relating to test points together with the inventory of requirements in order to assess the incompatibilities using the following criteria.

5.1 Propagation

Calculations shall be limited to the test points in line-of-sight from the broadcasting station, it being assumed that the terrain is at the same height as the aeronautical radionavigation station and the effective earth's radius is 4/3 of the actual radius. Calculations shall be made using free space propagation conditions and e.r.p. in the horizontal plane. No account should be taken of polarization differences, except in special cases (e.g. circular polarization) as indicated in paragraph 5.3.6 of the Report of the First Session.

5.2 Protection cirteria for the aeronautical radionavigation service

The field strength of every broadcasting station in the band 87.5 to 108 MHz within the outer resulting coordination contour of an aeronautical radionavigation station shall be calculated at the test points as an interfering signal and compared with the following minimum field strengths :

- ILS : 40 µV/m (32 dB(µV/m))
- VOR : 90 µV/m (39 dB(µV/m))

The calculations shall indicate :

- those cases for which the ratio of the minimum field strength to the calculated interfering signal reduced by 85 dB is lower than 17 dB,
- those broadcasting transmitters which cause at the test point an interference exceeding -25 dBm corresponding to an interfering field strength derived from the following formula :

$$E\ dB(\mu V/m) = N(dBm) + 121 + (108 - f(MHz))$$

where f is the frequency of the broadcasting station.

5.3 Publication of the results

The publication of the results of the calculations shall indicate for each incompatibility :

a) the identification of the aeronautical radionavigation station affected;

b) the identification of the broadcasting stations giving rise to the incompatibilities;

c) the value in decibels by which the required protection ratio is not met at the nearest test point to the broadcasting station;

d) the value of interferences exceeding -25 dBm at the nearest test point to the broadcasting station;

e) the frequencies of those broadcasting stations which are likely to contribute to intermodulation interference.

6. Resolution of incompatibilities

6.1 When the broadcasting station is within the coordination contour referred to in paragraph 3 a detailed compatibility analysis shall be undertaken by the administrations. In many cases, this may be achieved within national coordination machinery, but in some cases a joint analysis will need to take place between administrations of neighbouring countries.

The first stage in the analysis should be to determine whether, for each mode of interference set out in paragraph 5.3.1 of this Report and by applying the measures set out in paragraphs 5.3.7.2 to 5.3.7.4, a compatibility exists between the two services. For example by applying the values set out in paragraph 5.3.7.4. the coordination zone around the broadcasting station reduces to the values set down in the following Table.

Coordination zone around a broadcasting station with 85 dB rejection of spurious emmissions

e.r.p. (kW)	200	150	100	50	10	1
distance (km)	31	27	22	15.5	7.0	2.2

Where such compatibility exists, planning of the broadcasting frequency assignments can proceed without constraints imposed by the need to protect the aeronautical radionavigation service.

6.2 For those countries having a large number of both broadcasting stations and aeronautical radionavigation stations, the application of the methods set out in paragraphs 3 and 6.1 by manual means will constitute a huge workload. Computer methods can contribute significantly to reducing the task and rapidly identifying the conflict situations. Where such computer methods are used it would be of greatest value if the results could identify :

1) those broadcasting stations which do not affect the aeronautical service in any way;

2) those which require additional filtering and identifying the necessary degree of suppression of spurious emissions;

3) those requiring frequency planning solutions.

6.3 In cases where incompatibility still cannot be resolved, a more detailed case-by-case study should be undertaken applying the factors set out in paragraph 5.3.8 of this Report. By this means, it may be possible further to eliminate problem cases.

6.4 For each individual case still without a solution, the administrations should determine, taking account of future expansion of the aeronautical radionavigation service, whether protection in the service volume is required for a limited number of channels or over the entire band 108 to 118 MHz. In the first case the administration should then calculate whether the particular measures set out in section 5.3.7.5 of this Report could provide a solution.

6.5 Where compatibility is clearly only feasible through broadcasting frequency planning solutions, the administration, when submitting its requirements, shall indicate in a supplementary note to the IFRB what particular frequency planning constraints are needed in order to ensure compatibility with the aeronautical radionavigation service for each individual case. These supplementary constraints shall be deemed as requirements to be satisfied in planning during the Conference to the extent feasible.

6.6 During the broadcasting service planning there will be a need for a computer analysis facility specifically intended to identify any broadcasting assignments which do not meet the compatibility requirements for the aeronautical radionavigation stations indicated by administrations to the IFRB under paragraph 6.5.

6.7 If, after following the procedures set out in 6.1 to 6.5 above, a solution is still not arrived at, then the only other possible solution may be to choose another site for the broadcasting station. It is conceivable in some situations that this may not be feasible; in this case such an assignment may appear in the Plan but cannot be implemented due to an unresolvable incompatibility with the aeronautical radionavigation service.

A N N E X K

COMPATIBILITY BETWEEN VHF BROADCASTING STATIONS AND STATIONS OF FIXED AND MOBILE SERVICES

The assessment of incompatibilities with the fixed and mobile services in Region 3, shall be made at the boundary between Regions 1 and 3 applying the sharing criteria contained in paragraphs 5.1 and 5.2.

The Administrations of Afghanistan and Iran will use the form given in Appendix 1 to the Radio Regulations to inform the IFRB of those stations of the fixed and mobile services in their countries that have to be taken into account during the planning procedure.

A N N E X L

TABLE 1

Correspondence between channel numbers and frequencies for use in Africa and Middle East

	A	B	C	D	E	F	G
1	87.6	90.7	93.8	96.9	100.0	103.1	106.2
2	87.7	90.8	93.9	97.0	100.1	103.2	106.3
3	87.8	90.9	94.0	97.1	100.2	103.3	106.4
4	87.9	91.0	94.1	97.2	100.3	103.4	106.5
5	88.0	91.1	94.2	97.3	100.4	103.5	106.6
6	88.1	91.2	94.3	97.4	100.5	103.6	106.7
7	88.2	91.3	94.4	97.5	100.6	103.7	106.8
8	88.3	91.4	94.5	97.6	100.7	103.8	106.9
9	88.4	91.5	94.6	97.7	100.8	103.9	107.0
10	88.5	91.6	94.7	97.8	100.9	104.0	107.1
11	88.6	91.7	94.8	97.9	101.0	104.1	107.2
12	88.7	91.8	94.9	98.0	101.1	104.2	107.3
13	88.8	91.9	95.0	98.1	101.2	104.3	107.4
14	88.9	92.0	95.1	98.2	101.3	104.4	107.5
15	89.0	92.1	95.2	98.3	101.4	104.5	107.6
16	89.1	92.2	95.3	98.4	101.5	104.6	107.7
17	89.2	92.3	95.4	98.5	101.6	104.7	107.8
18	89.3	92.4	95.5	98.6	101.7	104.8	107.9
19	89.4	92.5	95.6	98.7	101.8	104.9	
20	89.5	92.6	95.7	98.8	101.9	105.0	
21	89.6	92.7	95.8	98.9	102.0	105.1	
22	89.7	92.8	95.9	99.0	102.1	105.2	
23	89.8	92.9	96.0	99.1	102.2	105.3	
24	89.9	93.0	96.1	99.2	102.3	105.4	
25	90.0	93.1	96.2	99.3	102.4	105.5	
26	90.1	93.2	96.3	99.4	102.5	105.6	
27	90.2	93.3	96.4	99.5	102.6	105.7	
28	90.3	93.4	96.5	99.6	102.7	105.8	
29	90.4	93.5	96.6	99.7	102.8	105.9	
30	90.5	93.6	96.7	99.8	102.9	106.0	
31	90.6	93.7	96.8	99.9	103.0	106.1	

TABLE 2

Correspondence between channel numbers and frequencies
for use in the planning area other than Africa and the Middle East

Channel/ Canal	Frequency Fréquence Frecuencia	Channel/ Canal	Frequency Fréquence Frecuencia	Channel/ Canal	Frequency Fréquence Frecuencia	Channel/ Canal	Frequency Fréquence Frecuencia	Channel/ Canal	Frequency Fréquence Frecuencia
No.	MHz	No.	MHz	No.	MHz	No.	MHz	No.	MHz
0	100.0	16	101.6	32	103.2	48	104.8	64	106.4
1	100.1	17	101.7	33	103.3	49	104.9	65	106.5
2	100.2	18	101.8	34	103.4	50	105.0	66	106.6
3	100.3	19	101.9	35	103.5	51	105.1	67	106.7
4	100.4	20	102.0	36	103.6	52	105.2	68	106.8
5	100.5	21	102.1	37	103.7	53	105.3	69	106.9
6	100.6	22	102.2	38	103.8	54	105.4	70	107.0
7	100.7	23	102.3	39	103.9	55	105.5	71	107.1
8	100.8	24	102.4	40	104.0	56	105.6	72	107.2
9	100.9	25	102.5	41	104.1	57	105.7	73	107.3
10	101.0	26	102.6	42	104.2	58	105.8	74	107.4
11	101.1	27	102.7	43	104.3	59	105.9	75	107.5
12	101.2	28	102.8	44	104.4	60	106.0	76	107.6
13	101.3	29	102.9	45	104.5	61	106.1	77	107.7
14	101.4	30	103.0	46	104.6	62	106.2	78	107.8
15	101.5	31	103.1	47	104.7	63	106.3	79	107.9

RESOLUTION No. COM 5/3

relative to the assistance of the IFRB
to countries of Africa and the Middle East

The Regional Administrative Conference for FM Sound Broadcasting in the VHF Band (Region 1 and certain countries concerned in Region 3) (First Session, Geneva, 1982),

considering

a) that it has decided that protection should be ensured for aeronautical radionavigation stations in the band 108 to 118 MHz and for stations of the aeronautical mobile (R) service in the band 118 to 137 MHz;

b) that the calculation procedures and methods adopted by the First Session are based principally on the efforts which administrations must make to estimate and resolve interference levels and that the publication of information on aeronautical stations is confined to the indication of a small number of test points;

c) that the developing countries may have difficulty in determining interference levels and that some of these countries may not be represented at the Second Session of the Conference;

d) that ICAO has detailed information on the aeronautical radionavigation stations operating in these countries,

resolves

1. that the countries of Africa and the Middle East may request the IFRB to assist them in calculating the levels of interference that broadcasting stations might cause to aeronautical radionavigation and aeronautical mobile stations;

2. that the IFRB should be invited to assist the above-mentioned countries in assessing interference and, for that purpose, to seek the cooperation of ICAO, particularly with a view to obtaining detailed information on stations of the aeronautical radionavigation service.

/ See R.5, Document No. 148, page 2 /

Protection ratio : see Figure 5.0 below*)

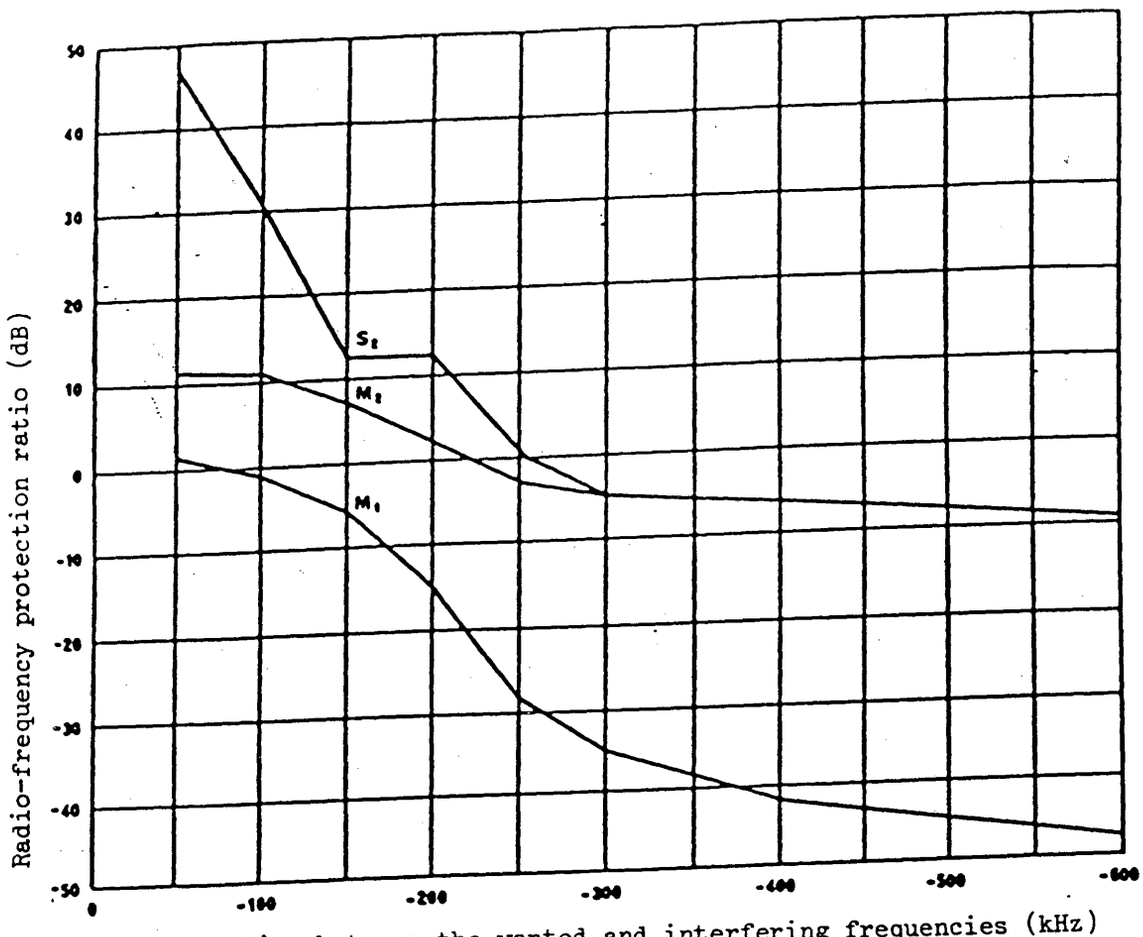


FIGURE 5.0

RF protection ratios for a monophonic or stereophonic FM emission with interference by an FM or AM narrow-band emission. Steady interference. (Average curves for the ratios measured on domestic receivers)

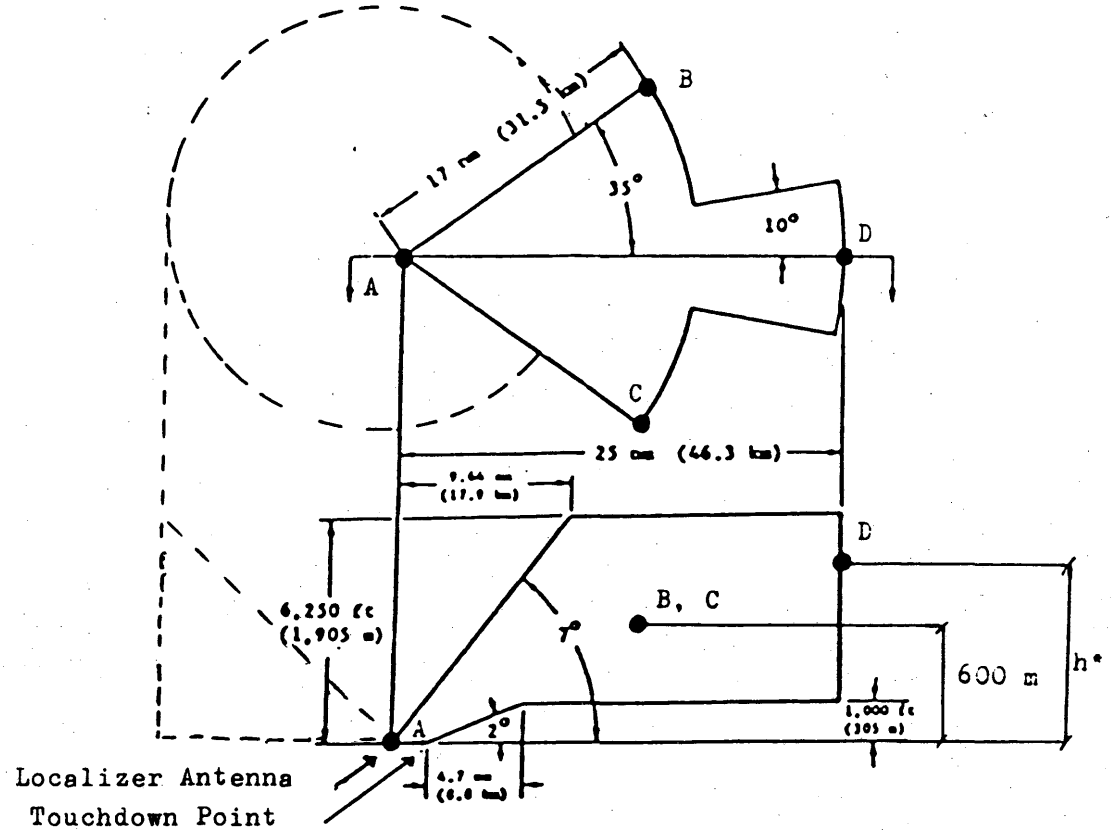
Curve M_1 : monophonic reception (unwanted signal: FM, modulation index m = 1)

M_2 : monophonic reception (unwanted signal: AM, modulation depth m = 95%, receiver input voltage 1 mV)

S_2 : stereophonic reception (unwanted signal AM, modulation depth m = 95%, receiver input voltage 1 mV)

*) For further information, see CCIR Report 659.

/ See R.5, Document No. 148, page 15 /



Note : The dash line shows the limits of ILS back beam protection volume which may have to be considered ; in this case, the range and height are indicated.

● (A,B,C,D) test points for the ILS localizer

* (h) : altitude to be indicated by the Administration (see paragraph 6.3, Annex J)

Figure 5.1 - ILS localizer protection volume

/ See R.4, Document No. 142, page 3 /

Definition of the "Middle East" for the purpose of Chapter 6

Note : For the purpose of this Chapter, the "Middle East" is intended to cover the countries of the Arabian Peninsula, Afghanistan, Iran and the Asian part of the European Broadcasting Area excluding Turkey.

/ Note to be included in Annex F /

(see page 9)

Note : The Administration of Cyprus indicated that a 31 channel distribution scheme will be used in that country.

INTERNATIONAL TELECOMMUNICATION UNION

REGIONAL BROADCASTING CONFERENCE

(FIRST SESSION) GENEVA, 1982

Document No. 147-E
15 September 1982
Original : French

PLENARY MEETING

Introduction to the Report of the First Session

In its Resolution No. 510, the World Administrative Radio Conference (Geneva, 1979), considering the extension of the primary allocation to the broadcasting service in Region 1 from 87.5 to 100 MHz to 87.5 to 108 MHz and that in some countries the band 100 to 108 MHz is allocated on a permitted basis to the mobile, except aeronautical mobile (R), service and also to the fixed service, decided that a Regional Administrative Conference, to be held in two sessions, should be convened to draw up an agreement for Region 1 and the countries concerned in Region 3 and an associated plan for sound broadcasting in the band 87.5 to 108 MHz for Region 1 and for parts of Afghanistan and Iran which are contiguous with Region 1. The WARC-79 instructed the Administrative Council to take the necessary measures for the convening of this Conference.

At its 35th session, the Administrative Council decided, in its Resolution No. 852 (amended at the 36th session) that the First Session would be convened in Geneva on 23 August 1982 for a period of four weeks to prepare :

- the technical bases for the frequency assignment plan to be established in the Second Session and the mutual sharing criteria for the sound broadcasting service and the other services;

- the form in which the requirements for frequency assignments should be notified and the fixing of the final date by which the requirements should be notified to the IFRB.

The First Session of the Regional Administrative Conference for FM sound broadcasting in the VHF band (Region 1 and certain countries concerned in Region 3) was thereupon convened and in accordance with its agenda prepared the present Report to the Second Session of the Conference.

The technical criteria and the planning methods were largely founded upon the work of the CCIR presented in its Report to the First Session.

Apart from the technical criteria peculiar to the broadcasting service (propagation curves, channel spacing, protection ratios, etc.), the Conference at its First Session examined the question of compatibility with the other services in the same frequency band or in adjacent bands, in accordance with item 1.9 of its agenda. It gave particular attention to the problem of protecting the aeronautical radionavigation services and took steps to ensure that account would be taken of this need in the planning activities at the Second Session.

This Report contains a number of Resolutions and Recommendations. The general Resolutions are concerned, on the one hand, with the assistance that administrations might give to the IFRB during the period between the two sessions and, on the other hand, the assistance which the IFRB might give to developing countries in dealing with problems of compatibility with the aeronautical radionavigation services. Recommendations to the CCIR are concerned with two areas where it would be useful to have additional information for the Second Session : firstly, propagation in the Middle East

and in Africa; secondly, technical parameters of the equipment of aeronautical services and of FM sound broadcasting transmitters.

With a view to the efficient preparation of the Second Session and, in the light of the different tasks assigned to the administrations and the IFRB, a detailed work programme and a schedule of the tasks to be performed were drawn up. In view of the fact that a large number of assignment requests to be planned by the Second Session are expected, a method for helping the administrations to formulate their requests has been established and it has been decided that the IFRB will be responsible for the preliminary calculations.

All the planning principles and methods, technical criteria and guidelines necessary to enable the administrations and the IFRB to perform their work are clearly defined in the present Report so that the Second Session will be able to commence the planning process as soon as its work begins and to fulfil its mandate within the period stipulated by the Administrative Council.

Marie HUET
Chairman

INTERNATIONAL TELECOMMUNICATION UNION

REGIONAL BROADCASTING CONFERENCE

(FIRST SESSION) GENEVA, 1982

Document No. 148-E
15 September 1982

R.5

PLENARY MEETING

Fifth series of texts submitted by the Editorial Committee to the Plenary Meeting

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

Source	Document No.	Contents
B.3	109	Chapter 5 : Compatibility with other services
B.3	109	Annex B (Annex A in B.3)
B.3	109	Annex D (Annex B in B.3)
B.3	109	Annex E (Annex C in B.3)

H. BERTHOD
Chairman of the Editorial Committee

Annex : 21 pages

CHAPTER 5

COMPATIBILITY WITH OTHER SERVICES

5.1 Sharing criteria between the FM sound broadcasting service and the land mobile service in the band 87.5 to 108 MHz

In the table of frequency allocations of the Radio Regulations the bands 87.5 to 100 and 100 to 108 MHz are allocated in Region 1 to Broadcasting on a primary basis and in some countries also to the mobile service on a permitted basis, namely :

a) in the band 87.5 to 88 MHz on a permitted basis and subject to agreement obtained under the procedures set forth in Article 14 of the Radio Regulations;

b) in the band 104 to 108 MHz, to the mobile, except aeronautical mobile (R) service, on a permitted basis until 31 December 1995;

c) in the band 97.6 to 102.1 MHz to the land mobile service on a permitted basis until 31 December 1989.

The sharing criteria for the protection of the land mobile service in the band 97.6 to 102.1 MHz is already the subject of an agreement amongst the administrations concerned and affected.

The sharing criteria for the protection of the land mobile service in the bands 87.5 to 88 MHz and 104 to 108 MHz shall be the following :

Field strength to be protected : 15 dB (μV/m) at a height of 3 m

Protection ratio : See Table below

Frequency separation between carriers of the two services (kHz)	Protection ratio for AM land mobile services (dB)	Protection ratio for FM land mobile services (dB)
0	18	8
25	16	6
50	4.5	- 5.5
75	- 7.5	-17.5
100	-17.5	-27.5

Propagation data to be used for sharing calculations : see item 2.3 of Chapter 2

Percentage of locations to be protected : 50%

Percentage of time to be protected : 90%

Polarization discrimination for horizontal polarized broadcasting emission : 18 dB Base Station
8 dB Mobile Station

The sharing criteria to protect the broadcasting service from interference from the land mobile service within or immediately adjacent to the coverage area of the broadcasting transmitter should be the following :

Minimum carrier frequency separation required in the same geographical area : 500 kHz

/- Figure 5.0, see Document B.6, No. 146 -/

5.2 Sharing criteria between the FM sound broadcasting service and the fixed service in the band 87.5 to 108 MHz

The basic criteria can be those as established for the land mobile service (see item 5.1 in this chapter). The field strength to be protected, the height gain factor and the effect of the directivity of the antenna in the fixed service are for consideration between the administrations concerned.

5.3 Compatibility between the broadcasting service in the band 87.5 to 108 MHz and the aeronautical services in the bands 108 to 137 MHz

5.3.1 Interference mechanisms

5.3.1.1 Type A interference - Due to radiation at frequencies in the aeronautical band

1) Variously described as "in-band" or "on-channel", caused by spurious emissions (including intermodulation products) at the transmitter station. This is generally a low-level effect and can be regarded as harmful interference, as defined in the Radio Regulations in cases where the level is sufficient to affect the performance of avionics receivers. No rejection can be provided at the airborne receiver and suppression at source (including the choice of broadcast assignment) and/or distance separation are the only practical solutions.

2) Interference to ILS channels near to the 108 MHz band edge due to out-of-band emissions from broadcasting stations operating on carrier frequencies in the last 200 kHz (approximately) in the upper end of the broadcasting band.

5.3.1.2 Type B interference - Due to radiation at frequencies outside the aeronautical band

These comprise the following :

1) Intermodulation generated in the receiver.

2) Desensitization in the RF section of the receiver.

The two effects are caused by relatively high signals (80 dB µV/m and above) producing non-linear operation in the RF stages of the airborne receiver. Intermodulation products may be generated producing an interfering signal at the same frequency as, or near to, the wanted signal in addition to causing a desensitization of the receiver's gain response.

5.3.2 Protection of ILS localizer

5.3.2.1 Protected volume and field strength

The internationally agreed system characteristics for the ILS system are specified in ICAO Annex 10. The system standards for service volume and minimum field strength are reproduced below and define the protection limits for these parameters :

1) a service volume as indicated in Figure 5.1;

2) a minimum field strength of 40 µV/m (32 dB µV/m) over the whole of the service volume specified above (the special case of a broadcasting station inside the ILS service area is covered in paragraph 5.3.2.2.5);

3) where the operational conditions require the use of the ILS back beam, the volume to be protected indicated in Figure 5.1 is also defined. The maximum dimensions of this volume are normally 10 nautical miles (18.5 km) and 6250 ft. (1905 m).

5.3.2.2 Protection criteria

The following figures have been derived from the results of bench tests on a number of typical ILS localizer receivers in current use. They are considered to be suitable for the purpose of calculating the maximum values of broadcast signals which will be compatible with ILS systems.

5.3.2.2.1 Type A 1 Protection ratio

At frequency coincidence	: 17 dB
±50 kHz from frequency coincidence	: 10 dB
±100 kHz from frequency coincidence	: 5 dB
±150 kHz from frequency coincidence	: 2 dB
±200 kHz from frequency coincidence	: -1 dB

A condition of frequency coincidence exists when the centre frequency of the intermodulation product is the same as that of an ILS localizer channel.

The figures above take into account multiple interference entries resulting from FM broadcast emissions.

A graph of the values above is given in Figure 5.2.

5.3.2.2.2 Type A 2

The ratio of 17 dB for the frequency coincidence case of Type A 1) interference may be used as the basis for interference assessments of Type A 2). Insufficient data are available to define the typical energy levels of FM broadcasting transmissions between 200 and 500 kHz from the carrier. Further studies within national administrations are necessary to define the levels at frequencies spaced by 50 kHz over this range. The reference bandwidth for such studies should be that of a typical ILS receiver.

5.3.2.2.3 Type B 1

Only third-order intermodulation products are considered below, because in practice no unacceptable degradation of receiver performance due to fifth or higher order intermodulation is likely to occur.

The intermodulation threshold criteria are derived for a single intermodulation product. In cases where two or more intermodulation products may be generated on the receiving frequency, linear addition of the powers of the intermodulation products may be assumed.

If none of the broadcasting signals exceeds a level of -25 dBm at the receiver input, it may, in general, be assumed that no unacceptable degradation of receiver performance will occur due to intermodulation on any ILS channel. For higher levels, a more detailed examination is required based on the following criteria, which apply when the third-order product has a frequency in the ILS channel concerned.

5.3.2.2.3.1 Third-order intermodulation involving two unwanted signals

Third-order intermodulation products of the form

$$2 f_1 - f_2 = f_a \qquad (f_1 > f_2)$$

generated in ILS localizer receivers may cause unacceptable degradation of receiver performance if

$$1.71 N_1 + N_2 + 60 \geq 0$$

where N_1 and N_2 are the levels, in dBm, of the two broadcasting signals at the frequencies f_1 and f_2 respectively at the receiver input and f_a is the receiving frequency.

A graphical presentation of this intermodulation threshold criterion is given in Figure 5.3.

This criterion is derived from measurements carried out on a number of receivers in current use.

Frequency separations between the wanted ILS localizer signal and the higher of the frequencies of the unwanted signals used in the measurements were of the order of 2 to 5 MHz.

The intermodulation response of some receivers has been reported to be substantially dependent also on the frequency separation ($f_a - f_1$) and/or (108 MHz (band-edge) - f_1), whilst in some other cases only a small amount of frequency dependence has been observed. The intermodulation threshold criterion should therefore be applied with caution in cases where the frequency differences involved are very small.

5.3.2.2.3.2 Third-order intermodulation involving three unwanted signals

Third-order intermodulation products of the form

$$f_1 + f_2 - f_3 = f_a \quad (f_1 > f_3;\ f_2 > f_3)$$

generated in ILS localizer receivers may cause unacceptable degradation of receiver performance if

$$N_1 + N_2 + N_3 + 73 \geq 0$$

where N_1, N_2 and N_3 are the levels, in dBm, of the three broadcasting signals at the frequencies f_1, f_2 and f_3, respectively, at the receiver input and f_a is the receiving frequency.

This criterion is a theoretical extension for three unwanted signals and it assumes the same level of the intermodulation product as for the case of two unwanted signals.

Sufficient measurement results from which an empirical criterion could be derived for the three signal case, are not yet available.

5.3.2.2.4 Type B 2 (Desensitization of ILS localizer receivers)

An unacceptable degradation of ILS localizer receiver performance may be caused, due to desensitization, if the level of a broadcasting signal exceeds -20 dBm at the receiver input on a frequency near the band edge (108 MHz).

For broadcasting signal frequencies from 108 MHz to 106 MHz the threshold level increases linearly from -20 dBm to -5 dBm.

Sufficient measurement results are not available for frequencies below 106 MHz, where a constant threshold level of -5 dBm should therefore be assumed.

In order to determine a possible desensitization of ILS localizer receivers caused by more than one broadcasting signal, linear power summation of the signal levels may be used.

5.3.2.2.5 Inside ILS service area conflict

In situations where the broadcasting site is located within an area below the protected volume as specified at 5.3.2.1 above, no general rules can be stated since each situation will differ in respect of the interference threat, the point at which the interference is most serious and the pattern and density of air operations within the service area.

Study and assessment on a case-by-case basis by national aviation and broadcasting authorities concerned will be necessary to refine and evaluate the individual character of each conflict situation encountered. The material in Annex **B** may be used as guidance in these studies.

In cases where an administration confirms that an assessment for a particular ILS made using the criteria in paragraph 5.3.2.2 is satisfactory to establish compatibility, the general rules may be applied in this case.

5.3.3 Protection of VOR

5.3.3.1 Protected volume and field strength

1) The protected volume of the VOR should be that volume promulgated in appropriate aeronautical documents as modified by radio horizon effects at the lower flight levels.

2) A minimum field strength of 90 μV/m (39 dB μV/m), as specified in paragraph 3.3.4.2 of Volume I of Annex 10 of the ICAO Convention, over the volume in 1) above should be protected.

5.3.3.2 **Protection criteria**

Only a limited amount of bench test data is available to assess the protection criteria of VOR receivers from FM broadcasting signals. Present information suggests that the behaviour of VOR receivers is not dissimilar to that for ILS for the four interference modes studied, as in many cases the two systems have common antennas and common circuitry up to and including the second detector.

Further study is necessary to confirm and refine the present data (see Recommendation No. COM 4/3). In the meantime first order estimates of compatibility may be made by the application of the criteria for ILS, including the treatment of conflicts inside the service area.

5.3.4 **Protection of VHF communications**

The following results have been derived from a limited series of bench testing on a few typical receivers and include information from CCIR Report 929.

5.3.4.1 Protected volume and field strength

1) **The protected volume for a VHF communication channel should be that volume promulgated in appropriate aeronautical documents as modified by radio horizon** effects at the lower flight levels.

2) **The minimum specified field strength is 75 µV/m (37 dB µV/m) and this level should be protected throughout the service volume** in 1) above. The protection **criteria will, in most cases, ensure that inadvertent squelch operation will not take place.**

5.3.4.2 Protection criteria

5.3.4.2.1 Type A 1

For this interference mode a protection ratio of 17 dB at carrier coincidence has been derived from available test data. No data are available on the relaxation of this figure for frequency offsets.

5.3.4.2.2 Type A 2

Due to the separation of 10 MHz between the lowest assignable VHF communications channel and the broadcasting band edge of 108 MHz, no account need be taken of this effect.

5.3.4.2.3 Type B 1

Only third order intermodulation products of the form

$$2f_1 - f_2 = f_a \quad (f_1 > f_2)$$

or

$$f_1 + f_2 - f_3 = f_a$$

need to be considered, because no unacceptable degradation of receiver performance due to fifth and higher order intermodulation is likely to occur in practice. In the equations above f_1, f_2 and f_3 are the frequencies of the broadcasting signals and f_a is the receiving frequency.

If none of the broadcasting signals exceeds at the receiver input a level of **-10 dBm, it may be assumed that no unacceptable degradation of receiver performance will occur due to intermodulation on any VHF communications channel.**

Using the conversion factor described in paragraph 5.3.5 and assuming free space propagation, this threshold level is reached at a distance of 2.8 km from a broadcasting station with an effective radiated power of 100 kW and a frequency between 100 MHz and 108 MHz.

In cases where the threshold level of -10 dBm is exceeded, reference should be made to Annex **C**, where a method for assessing areas of interference is described.

5.3.4.2.4 Type B 2 (Desensitization of VHF communications receivers)

An unacceptable degradation of VHF communications receiver performance may be caused, due to desensitization, if the level of a broadcasting signal exceeds -10 dBm at the receiver input.

In order to determine a possible desensitization caused by more than one broadcasting signal, linear power summation of the signal levels may be assumed.

Using the conversion factor described in paragraph 5.3.5 and assuming free space propagation, this threshold level is reached at a distance of 2.8 km from a broadcasting transmitter with an e.r.p. of 100 kW and a frequency between 100 MHz and 108 MHz. In the case of three co-sited broadcasting transmitters each with an e.r.p. of 100 kW and frequencies between 100 MHz and 108 MHz, the desensitization distance would be 4.8 km.

5.3.5 Conversion factors between signal levels at receiver input and corresponding field strength values

5.3.5.1 Unwanted signals between 87.5 MHz and 108 MHz

The levels of unwanted signals at the receiver's input may be converted to corresponding field strength values at the receiving antenna, or vice versa, by using the equations below.

5.3.5.1.1 **ILS localizer and VOR receivers**

$$E(dB\mu V/m) = N(dBm) + 121 + (108 - f(MHz))$$

for frequencies $f < 108$ MHz.

This equation is based on the assumption of an isotropic receiving antenna and a frequency dependent attenuation of 3 dB + 1 dB/MHz below 108 MHz, due mainly to antenna characteristics.

5.3.5.1.2 VHF communications receivers

$$E(dB\mu V/m) = N(dBm) + 128$$

for $100 \text{ MHz} \leq f \leq 108 \text{ MHz}$, or

$$E(dB\mu V/m) = N(dBm) + 128 + 2(100 - f(MHz))$$

for $87.5 \text{ MHz} \leq f < 100 \text{ MHz}$.

These equations are based on the assumption of an isotropic receiving antenna, a constant attenuation of 10 dB for frequencies between 100 MHz and 108 MHz and a frequency dependent attenuation of 10 dB + 2 dB/MHz for frequencies below 100 MHz, due mainly to antenna characteristics.

5.3.5.2 Signals between 108 MHz and 137 MHz

The level of a signal at the receiver input may be converted to the corresponding field strength value, or vice versa, by using the equation :

$$E(dB\mu V/m) = N(dBm) + 118$$

for $108 \text{ MHz} < f < 137 \text{ MHz}$.

Although the conversion factor would theoretically give an increase from about 118 dB at 108 MHz to about 120 dB at 137 MHz, a constant factor of 118 dB is considered sufficient for practical purposes.

This conversion factor assumes an isotropic receiving antenna and a lossless feeder.

5.3.6 Propagation conditions

Free space propagation conditions*) may be assumed for the study of compatibility with the aeronautical service. Calculations may be based on line-of-sight signals only. In certain situations Figure 2.10 in Chapter 2 may be applied.

In arriving at the above criteria the interfering signals are assumed to have the same polarization (vertical or horizontal) as the navigation system. If, instead, the broadcasting station has a different polarization, there should in theory be some reduction of received interfering signal levels, but provisionally it is proposed that no allowance is made. If an equal power in the other plane of polarization is added at the transmitter (e.g. circular polarization) an allowance should be made by adding 1 dB to the effective radiated power of the polarization component in the same plane as that used by the navigation system.

5.3.7 Implications to the broadcasting service of the need to provide sufficient compatibility with the aeronautical radionavigation service in the bands 108 to 118 MHz

5.3.7.1 General

In order to meet the protection criteria which are essential to protect the aeronautical radionavigation service from the mechanisms of interference identified in section 5.3.1 of this chapter, there are four principle means by which the broadcasting service could contribute towards a practical solution to the compatibility problem. These are elaborated upon in sections 5.3.7.2 to 5.3.7.5. There is also the possibility that the general aeronautical requirements can be relaxed in specific cases. Further improvements in the characteristics of airborne installations are desirable. These aspects are dealt with in section 5.3.8.

5.3.7.2 Limiting the effective radiated power of the broadcasting station

For all modes of interference a reduction in interfering power can be achieved by reducing the broadcasting station power. However, since the broadcasting power is set by the coverage requirement, such a reduction would directly reduce the coverage or the quality of reception within the same coverage area.

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*) For further information, see CCIR Recommendation 525.

5.3.7.3 Set minimum separation distance between the broadcasting transmitter site and the aeronautical service volume

This is the most effective way of gaining sufficient attenuation of the broadcasting signal to meet the aeronautical service protection criteria (see **Annex D**).

In many instances there will be little or no choice in the location of the broadcasting transmitting station, e.g. airports located near major cities. For economic reasons the use of existing broadcasting transmitting station sites for new services may also be essential. Thus, in many cases, distance is not a variable which can simply be set to suit the compatibility criteria.

5.3.7.4 Improve filtering of broadcasting transmitters

Spurious emissions from broadcasting transmitters must meet the requirements of the Radio Regulations, i.e. Appendix 8. An important case is intermodulation interference generated at broadcasting transmitter sites which can be reduced by fitting improved combining filters and paying careful engineering attention to all possible sources of non-linearity following the output stages of the transmitters. **Through such measures it is technically feasible to reduce** the radiated power of the third order intermodulation products to -85 dB relative to the effective radiated power. It is also technically feasible to fit improved filters on the output of transmitters to improve suppression of other spurious emissions to the order of -90 dB. In view of the additional cost, these values should only be applied in those situations where problems of compatibility with the aeronautical service demand it. There may be a need in some cases for an even greater suppression of spurious emissions from the broadcasting stations than the values indicated above.

5.3.7.5 **Arrange broadcasting service frequency plan to minimize interference to the aeronautical radionavigation service**

There are two ways in which the placement of broadcasting assignments within the plan can add to, or reduce, the burden of solving compatibility problems with the **aeronautical radionavigation service. The first is how far below 108 MHz the broadcasting assignment is placed. The second is the particular combination of carriers chosen. This latter factor is pertinent to the two interference mechanisms where the generation of intermodulation products is the cause of the interference.**

5.3.7.5.1 **Frequency separation between the broadcasting service assignment and the aeronautical radionavigation service assignment**

The aeronautical radionavigation service airborne receiving equipment has some rejection of out-of-band signals due mainly to antenna characteristics, and may be assumed to provide 3 dB plus one dB for each MHz down from 108 MHz. This rejection characteristic may be applied to all the type B modes of interference.

The interference due to out-of-band emissions from a FM broadcasting station is reduced the further a broadcasting assignment is placed below 108 MHz.

5.3.7.5.2 Relationship between two or more broadcasting carriers in the same service area of the aeronautical radionavigation station

By programming the mathematical relationship for the intermodulation frequencies into a computer, it is possible to predict frequencies on which the most significant of these interference frequencies (i.e. third order products) will fall. This would apply to products radiated from the transmitter site or produced in the aeronautical receiver. Thus, in theory, it is feasible to choose the assignments at a particular multi-channel broadcasting transmitter site or combination of nearby sites such that all the intermodulation interference frequencies do not coincide with any assignments of nearby aeronautical radionavigation systems. However, this implies that spurious emissions from the broadcasting service will fall in the unused portions of the aeronautical band in that specific location. From a purely broadcasting viewpoint unless this is possible, it would impose severe constraints on broadcasting assignments and hence militate against the efficient use of the spectrum in the band 87.5 to 108 MHz.

5.3.7.5.3 Practical limitations in arranging the broadcasting service frequency plan to minimize interference to the aeronautical radionavigation service

On the broadcasting side, the task of arranging a set of compatible assignments within the broadcasting service will be very difficult. Imposing constraints in order to meet the aeronautical radionavigation service protection requirements will add to the complexity of the task and the time needed to make a plan. Indeed it would be a quite formidable task for information on all ILS and VOR systems to be submitted to the Conference and be taken comprehensively into account in the planning process. On the aeronautical radionavigation service side, there would naturally be a preference to preserve the efficiency of use of their spectrum, i.e. for the protection criteria to be applied across the whole band rather than the actual aeronautical assignment which may exist at present. In particular, if harmful interference resulting from implementing a broadcasting plan falls in the band 108 to 118 MHz between existing aeronautical channels, it will inhibit the possibility of replanning the aeronautical band and of being able to provide new assignments to meet future growth.

From the foregoing, it can be seen that it is highly desirable to limit to the absolute minimum the number of compatibility problems with the aeronautical radionavigation service for which the Regional Broadcasting Conference is asked to find special frequency planning solutions.

5.3.8 Factors within the aeronautical radionavigation and aeronautical mobile (R) services which may facilitate compatibility

There are no general measures in the immediate future within the aeronautical service which would ease the compatibility problem, although in the longer term it is in the interest of both the broadcasting and the aeronautical services for the aeronautical service airborne receivers to be significantly improved in respect of interference immunity.

Meanwhile, in each individual situation, factors may exist which could provide an easement of the situation. These factors include :

a) terrain effects, e.g. shielding,

b) higher signal levels in particular parts of the service volume,

c) typical operational heights in use,

d) acceptable constraints on a part of the aeronautical band which is not in use and need not be protected, in accordance with the full criteria, in a particular individual location,

e) change of aeronautical frequency assignments at a specific location. (This is unlikely to be possible in some countries due to the tight constraints within the aeronautical band.)

f) radiation pattern of the broadcasting station in the direction of the aeronautical service volume.

Where such easements do appear feasible, an acceptable assurance of aircraft safety may require ground and perhaps airborne measurements of signal levels under appropriate conditions. For all such situations a case by case examination by an administration or administrations is necessary. Consideration also needs to be given by administrations to the problem of blocking and desensitization of airborne receivers when aircraft fly close to broadcasting transmitting station sites. Within a limited volume around such a site it is impossible to meet the necessary protection criteria. One solution for the communications case might be for such zones to be published and for aircraft to avoid them or at least be made aware of the interference situation within such zones. However, again case by case treatment by administrations, taking the operational situation fully into account, is the only way to determine whether this approach is consistent with the very important air safety considerations.

5.3.9 **Studies to be undertaken**

5.3.9.1 The Second Session of the Regional Broadcasting Conference, when establishing the regulatory procedures whereby the broadcasting plan can be subsequently modified, will need to include steps to ensure that the necessary degree of protection is afforded to the aeronautical service in the band 108 to 137 MHz.

5.3.9.2 The values for the compatibility criteria established at this Conference are the least stringent possible for planning purposes with present equipment in use in the broadcasting and aeronautical services. Even so, in some areas they are likely to unduly inhibit the development of both services and improvements in certain characteristics of equipment in these services would ease the planning constraints. The various interference modes lead broadly to equal constraints (see Annex D). Therefore in order to progressively ease the compatibility problems, improvement generally of the same order are needed for both services. But where interference arises from two broadcasting transmitter sites (type B interference), then improvements in the performance of the aeronautical service airborne equipment alone would ease the compatibility constraints. (For additional information see Annex E).

In order to examine this prospect, urgent studies are requested of the CCIR. These studies are set out in Recommendations Nos. COM 4/3 and COM 4/4. If the CCIR can quantify the improvements possible in the equipment of both services, then, subject to study by administrations on the economic and operational implications, the second part of the Conference should take these into account in planning. The Conference will also need to take into account a suitable time period for these improvements in equipment performance to be brought about also taking into account the practical issues involved and the important safety considerations in respect of the aeronautical services. A concept would then arise that certain broadcasting assignments having compatibility constraints could be planned but not implemented until a date set by the second part of the Conference for the new compatibility criteria to come into force.

5.3.9.3 The attention of ICAO should be drawn to the pressing need to promote a programme of improving the out-of-band rejection of airborne receivers, in particular, rejection of signals in the broadcasting service band below 108 MHz.

5.3.10 Conclusion

A difficult and complex problem arises in attempting to plan the introduction of the broadcasting service, which in general employs high radiated power, in a band adjacent in the radio frequency spectrum to a band used by a service which uses much lower powers and features sensitive receiving systems for important safety of life purposes. The problem is made worse by the fact that, in order to meet the coverage requirements, the broadcasting transmitting stations are often near and in some cases within the service volume of the aeronautical service systems. The full severity of the problem will not become clear until administrations have undertaken the case by case studies that have been recommended in section 5.3.9. At this stage it may be tentatively concluded that full exploitation of the new spectrum allocated by WARC 1979 to the broadcasting service may be constrained in some areas by the need to provide the essential protection to the aeronautical safety services. Significant alleviation of these constraints may be expected only when improvements in the relevant characteristics of the equipment of the aeronautical and broadcasting services can be effected.

[See B.6, Doc. No. 146]

Figure 5.1 - ILS localizer protection volume

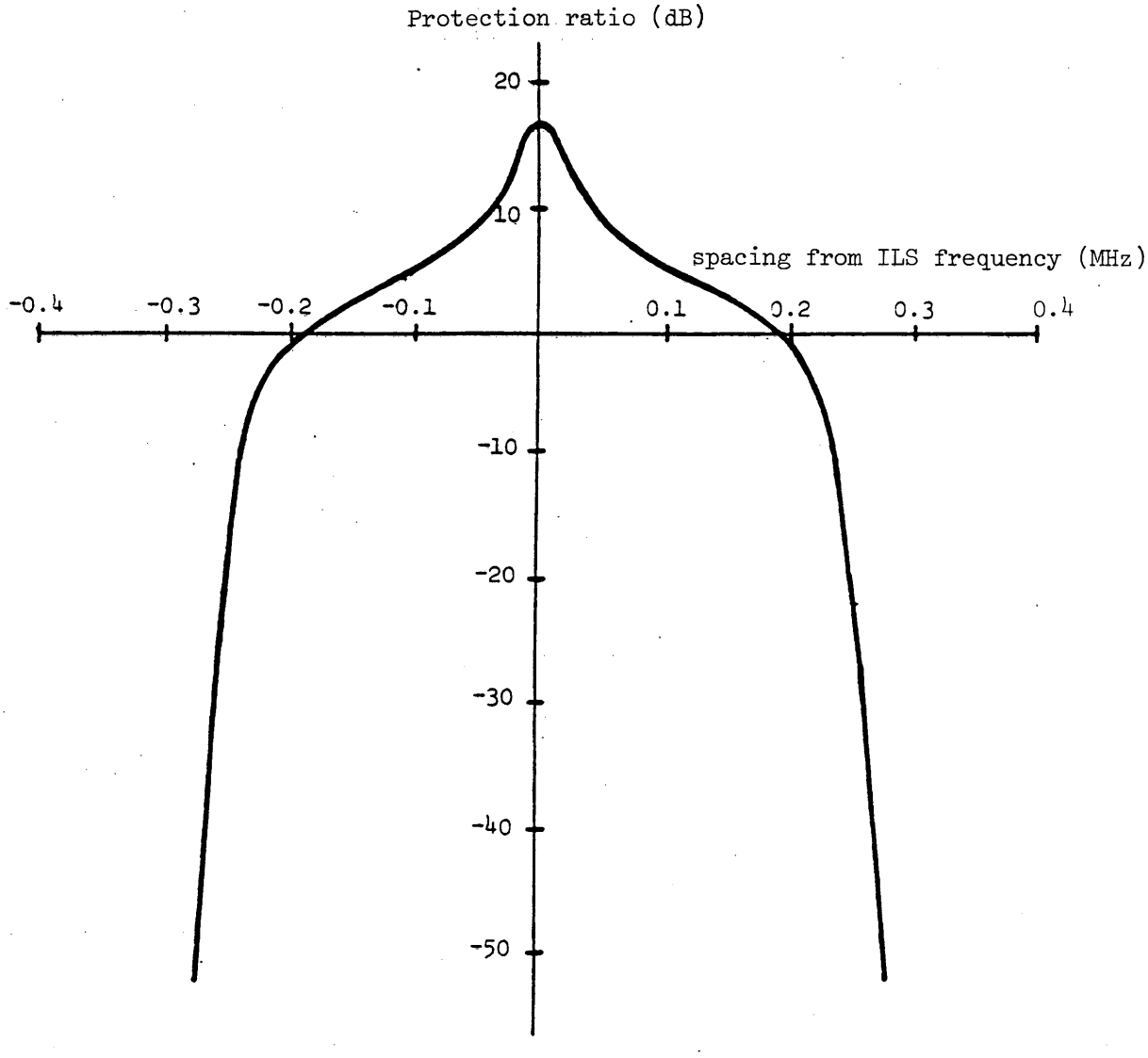

Figure 5.2 - Protection ratio for Type A 1) interference

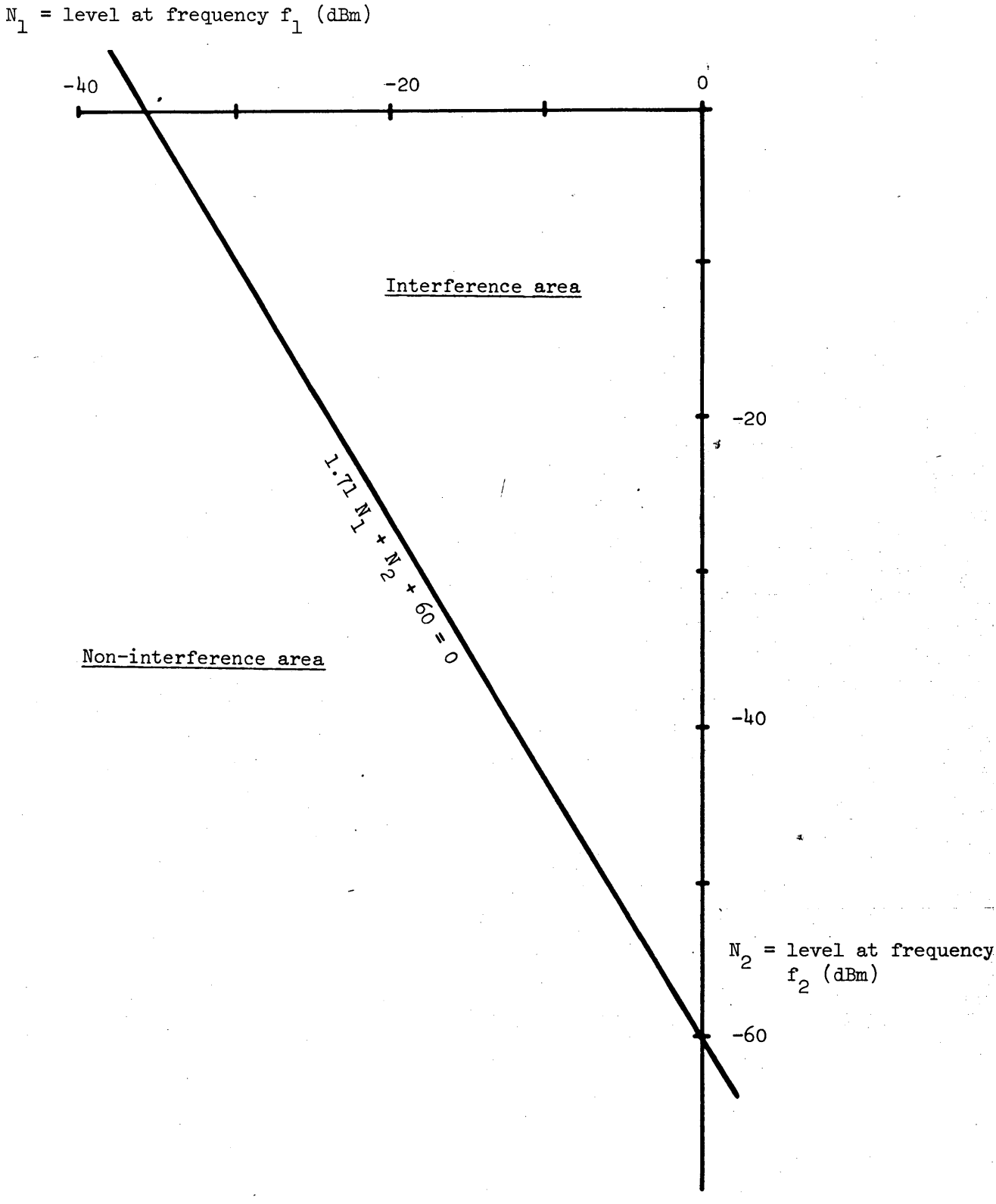

Figure 5.3 - Intermodulation threshold criterion
$f_1 > f_2$

ANNEX B

(see Chapter 5, 5.3.2.2.5)

Guidelines for examination of conflict situations for the case of broadcast stations within an area below the protected volume

For these situations (paragraph 5.3.2.2.5) it appears possible to state basic guidelines which may be used and added to as necessary in particular cases where the conflict contains features with a more significant potential to interfere with air operations.

These basic guidelines are :

1) a minimum protection figure as defined in paragraph 5.3.2.2 enhanced where necessary by a further margin to take account of the proximity of broadcast stations to the ILS course sector;

2) special measures may be necessary where the worst effect of the predicted interference is experienced in the sector from 6 nautical miles to the touch-down point and along the runway, and in the case of back beam operation out to a similar point in the reverse direction. The category, or expected future category of ILS operation is an important factor in deciding whether the broadcast station is acceptable. Further protection will be necessary in most instances particularly in the case of interference due to Type A 1;

3) the higher figure of 100 microvolts per metre for the wanted field strength as specified in ICAO Annex 10 may be used as the basis where it has been established and confirmed under all operational conditions;

4) in respect of air operations particular points to be considered are :

   a) the intersection of interference areas with the ILS course sector and their effect on aircraft within this sector,

   b) mandatory approach procedures, radar vectoring paths and areas of higher density of use,

   c) the volume within which a harmful interference may be experienced in relation to the effect of the interference on automatically coupled systems;

5) where it can assist resolution, and to refine the assessment, account may be taken of secondary technical features including the following :

a) vertical radiation diagram of the broadcasting antenna,

b) terrain effects,

c) higher nominal ILS signals in particular parts of the service volume as confirmed by measurement.

[**ANNEX C**

(See Document B.6 No. 146)]

ANNEX D

(see Chapter 5, 5.3.7.3 and 5.3.9.10)

Minimum distances for principal modes of interference based on criteria set out in sections 5.3.2 to 5.3.7 and with 85 dB rejection of spurious emissions at the broadcasting stations

a) Third-order intermodulation products radiated by transmitter assuming 85 dB rejection of spurious emisssions

Transmitter e.r.p. (kW)	Distance (km) for :	
	ILS	VOR
100	22	10
50	15.5	7
10	7.0	3.2
1	2.2	1
Protected field strength, dB(μV/m)	32	39
Protection ratio, dB	17	17

b) Intermodulation in receiver : equal field strengths
(applies to $2f_1 - f_2$ or $f_1 + f_2 - f_3$ for examples given)

MHz, f_1, f_2, f_3	108, 105, 102		102, 98, 90	
System	ILS	VOR	ILS	VOR
Permitted field strength dB(μV/m)	100	102	108	110
e.r.p. (kW)	Distance (km)			
100	22	18	9	7.0
50	15.5	13	6.2	5.0
10	7.0	5.6	2.8	2.2
1	2.2	1.8	0.9	0.7

c) Desensitization for ILS or VOR

Frequency, MHz	108	107	106	100
Permitted power at receiver input (dBm)	-20	-12.5	-5	-5
Permitted field strength dB(μV/m)	101	109.5	118	124
e.r.p (kW)	Distance (km)			
100	20	7.4	2.8	1.4
50	14	5.2	2.0	1.0
10	6	2.2	0.9	0.45
1	2	0.7	0.3	0.14

ANNEX E

(see Chapter 5, 5.3.9.10)

Improvements in equipment

Interference to airborne equipment from Type "A" mechanisms cannot practically be reduced by improvements in aeronautical receivers. No benefit can therefore be assumed in planning.

Interference effects due to Type "B" mechanisms could be reduced by improvement in the airborne antenna and receiver design particularly in respect of front end rejection characteristics. Factors such as overall cost of replacement, the performance environment within the aircraft and implementation time scale must be taken into account in any improvement programme. Extended time scales for a sufficient re-equipment to assure new parameters in planning are likely because of economic and operational factors.

CCIR Report 929 (paragraphs 4.2.1 to 4.2.3) discusses current equipment, expected improvements and future system characteristics; studies are continuing within the CCIR on this subject.

The broadcasting authorities should make efforts to reduce the level of spurious emissions in the band 108 to 137 MHz (particularly third-order intermodulation products) from broadcasting transmitters. A level significantly lower than that required in Appendix 8 of the Radio Regulations would considerably reduce the problem of interference.

Aeronautical authorities should make efforts to improve the out-of-band rejection characteristics of airborne receiving equipment in the band 87.5 to 108 MHz. National and international organizations concerned with avionics equipment should cooperate in promoting a programme to achieve this with a view to the earliest practical implementation. However, full implementation could take considerable time.

INTERNATIONAL TELECOMMUNICATION UNION

REGIONAL BROADCASTING CONFERENCE

(FIRST SESSION) GENEVA, 1982

Document No. 149-E
16 September 1982
Original : French

Note by the Chairman of the Conference

I hereby transmit to the Conference the attached letter from the Head of the Delegation of the Union of Soviet Socialist Republics.

Marie HUET
Chairman of the Conference

Annex : 1

ANNEX

Постоянное Представительство СССР
при Отделении ООН и других
международных организациях в Женеве

Mission permanente de l'URSS
auprès de l'Office des Nations Unies
et des autres organisations internationales
ayant leur siège à Genève

15, avenue de la Paix
Téléphone: 33 18 70
GENÈVE

"15" September, 1982

Dear Madam ,

1. Referring to the list of participants of the Regional Broadcasting Conference (document supplement No. 1 of 30 August 1982) and in connection with the indication of Mr.Klaus-Peter Stuckert, in the delegation list of the Federal Republic of Germany, I feel obliged to reaffirm the standpoint that under the Quadripartite Agreement of 3 September 1971 Berlin (West) is not a constituent part of the Federal Republic of Germany and is not to be governed by it. In view of this fact, the person in question is not entitled to take part in this capacity at this session.

2. Referring to the document 118 the delegation of the USSR assumes that registrations for Berlin (West) should be in accordance with the Quadripartite Agreement of 3 September 1971.

I request you, Madam, to see to it that this letter will be circulated as an official document of the Regional Broadcasting Conference.

Please accept, Madam, the assurances of my highest consideration.

President of the
Regional Broadcasting Conference
G e n e v a

A.BADALOV
Head of the USSR Delegation

INTERNATIONAL TELECOMMUNICATION UNION

REGIONAL BROADCASTING CONFERENCE

(FIRST SESSION) GENEVA, 1982

Document No. 150-E
16 September 1982
Original : French

Note by the Chairman of the Conference

I hereby transmit to the Conference the attached letter from the Head of the Delegation of the German Democratic Republic.

Marie HUET
Chairman of the Conference

Annex : 1

ANNEX

Delegation of the
German Democratic Republic
to the Session of the
Regional Broadcasting Conference
- Head of delegation -

Geneva, 16 September 1982

Mlle HUET Marie
President of the
Regional Broadcasting Conference
Geneva

Madam,

1. Referring to the list of participants of the Regional Broadcasting Conference (document supplement No. 1 of 30 August 1982) and in connection with the indication of Mr. Klaus-Peter STUCKERT, in the delegation list of the Federal Republic of Germany, I feel obliged to reaffirm the standpoint that under the Quadripartite Agreement of 3 September 1971 Berlin (West) is not a constituent part of the Federal Republic of Germany and is not to be governed by it. In view of this fact, the above-mentioned person is not entitled to take part in this capacity at this session.

2. With reference to the document 118 of 10 September 1982 the delegation of the German Democratic Republic assumes that registrations for Berlin (West) should be in accordance with the Quadripartite Agreement of 3 September 1971.

I request you, Madam, to see to it that this letter will be circulated as an official document of the Regional Broadcasting Conference.

Please accept, Madam, the assurances of my highest consideration.

Hans-Jürgen HAMMER
Deputy Minister of
Posts and Telecommunications

INTERNATIONAL TELECOMMUNICATION UNION

REGIONAL BROADCASTING CONFERENCE

(FIRST SESSION) GENEVA, 1982

Document No. 151-E
16 September 1982
Original : English

COMMITTEE 2

SUMMARY RECORD

OF THE

SECOND AND LAST MEETING OF COMMITTEE 2

(CREDENTIALS)

Friday, 10 September 1982, at 0910 hrs

Chairman : Mr. J.G. DE MATOS (People's Republic of Angola)

Subjects discussed :		Document No.
1.	First Report by Working Group 2A	80
2.	Second (oral) Report by Working Group 2A	-
3.	Draft report to the Plenary Meeting	DT/33
4.	Completion of the work of the Committee	-

1. First Report by Working Group 2A (Document No. 80)

1.1 The Chairman introduced the Working Group's Report, containing a list of countries whose credentials had been examined and found to be in order, and a remark to the effect that 13 delegations had not deposited credentials at the time of issue of the Report.

1.2 The delegate of Syria asked if the Working Group had made any distinction between delegations which had not presented any credentials and those which had presented credentials which did not conform to the rules from the legal point of view.

1.3 The Secretary of the Committee said that, among the delegations which had not presented credentials, there were a certain number which had announced the arrival of delegations in the course of the final week of the Conference. However, it was likely that even at the end of the Conference a number of delegations would still not have presented credentials and would therefore be unable to vote; the question of signature did not arise at the current Session.

In the case of credentials considered provisional under No. 362 of the Convention, the Secretariat would hold them in abeyance and urge the delegations concerned to have them finalized as rapidly as possible.

1.4 In reply to a further question by the delegation of Syria, the Chairman referred to No. 373 of the Convention which stated that credentials sent by telegram were not accepted but that replies sent by telegram to requests for clarification were accepted.

The First Report of the Working Group was approved.

2. Second (oral) Report by Working Group 2A

2.1 The Chairman informed the Committee that the Working Group had held a further meeting immediately prior to the Committee meeting to examine credentials deposited after 2 September. As a result, Document No. 80 was to be updated by the addition of six countries whose credentials had been examined and found to be in order : People's Republic of Bulgaria, Republic of the Ivory Coast, State of Israel, Kingdom of Morocco, Republic of Niger, Socialist Republic of Romania.

The Second Report of the Working Group was approved.

3. Draft report to the Plenary Meeting (Document No. DT/33)

3.1 The Chairman introduced the draft report in Document No. DT/33, drawing attention to the distinction drawn between the countries which had acceded or adhered to the Convention and to which No. 97 of the Convention did not apply, and those to which No. 97 did apply, i.e. loss of the right to vote.

He also mentioned the final remark to the effect that the Chairman and Vice-Chairman of the Committee should be authorized to examine any credentials received after 10 September 1982.

The draft report was approved for submission to the Plenary Meeting.

4. Completion of the Committee's work

4.1 The Chairman thanked all delegates who had taken part in the work of the Committee, and particularly those delegations who had provided members of the Working Group.

The meeting rose at 0930 hours.

The Secretary :

A. WINTER-JENSEN

The Chairman :

J.G. DE MATOS

INTERNATIONAL TELECOMMUNICATION UNION

REGIONAL BROADCASTING CONFERENCE

(FIRST SESSION) GENEVA, 1982

Document No. 152-E
16 September 1982
Original : English

COMMITTEE 3

SUMMARY RECORD

OF THE

THIRD AND LAST MEETING OF COMMITTEE 3

(BUDGET CONTROL)

Tuesday, 14 September 1982, at 1030 hrs

Chairman : Mr. K. OLMS (Federal Republic of Germany)

Subjects discussed		Document No.
1.	Approval of the Summary Record of the Second Meeting	95
2.	Terms of reference and facilities available to delegates	41
3.	Position of Conference accounts at 10 September 1982	107
4.	Draft report to the Plenary Meeting	DT/36
5.	Completion of the work of Committee 3	

1. Approval of the Summary Record of the Second Meeting (Document No. 95)

The Summary Record of the Second Meeting of Committee 3 contained in Document No. 95 was approved.

2. Terms of reference and facilities available to delegates (Document No. 41)

There were no comments concerning the facilities available to delegates.

3. Position of Conference accounts at 10 September 1982 (Document No. 107)

3.1 The Chairman introduced the document, drawing attention to the fact that a saving of 342,900 Swiss francs over the adjusted Conference budget was shown in column 12 on page 3.

The Committee took note of Document No. 107.

4. Draft report to the Plenary Meeting (Document No. DT/36)

4.1 The Chairman introduced the document, pointing out that Annex 2 would comprise the contents of the Annex to Document No. 107 just noted by the Committee, that the figures 1,856,000 and 342,900 should be entered in the spaces in the second paragraph on page 2 and that the figures of 1,856,000 and 7,410 should be inserted in the spaces in the second paragraph of section 5. The report thus amended would be submitted to one of the last Plenary Meetings.

The Committee approved Document No. DT/36 with those additions.

5. Completion of the work of Committee 3

5.1 The Chairman announced that the Committee had completed its work and thanked all concerned for their cooperation.

The meeting rose at 1040 hours.

The Secretary : The Chairman :

R. PRELAZ K. OLMS

INTERNATIONAL TELECOMMUNICATION UNION

REGIONAL BROADCASTING CONFERENCE

(FIRST SESSION) GENEVA, 1982

PINK PAGES

Document No. 153-E
September 1982

R.6

PLENARY MEETING

Sixth series of texts submitted by the Editorial Committee to the Plenary Meeting

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

Source	Document No.	Contents
B.5	138	7.2 Date for submission of requirements
		7.3 Processing of requirements by the IFRB
		7.4 Despatch of inventory of requirements and notification of calculation results to administrations
		7.5 Assistance to administrations by the IFRB
		Appendix 3 : Form
		Appendix 4 : Form

H. BERTHOD
Chairman of the Editorial Committee

Annex : 7 pages

7.2 Date for submission of requirements

The inventory of requirements will consist of data communicated to the IFRB before 1 February 1984 in response to a circular letter which the Board shall send to administrations after the First Session of the Conference and not later than 31 December 1982.

Requirements shall be submitted in one of the following forms :

- on the form for submission mentioned in item 7.1 of this Report;
- in the form of a computer magnetic tape as specified in an annex to the IFRB Circular-letter. Such magnetic tapes must be accompanied by a printed text which the Board shall regard as the reference document.

On 1 October 1983, the Board shall send a letter indicating that administrations may communicate their requirements. The time limit for submission shall be 31 January 1984.

At the beginning of January 1984, the Board shall send a telegram to remind administrations which have not yet submitted their requirements.

In the case of administrations which have not replied, the IFRB shall consider the data :

1. in the Master International Frequency Register (MIFR),
2. in a Plan, or
3. resulting from the application of the theoretical network.

If necessary, administrations shall also use the form set out in Appendix 3 to convey the constraints relating to aeronautical radionavigation stations.

See Figure 7.1.

7.3 Processing of requirements by the IFRB

After validating them, the IFRB shall enter all the requirements in a file with a view to establishing an inventory of requirements, on the basis of which the interference calculations and incompatibility checks will be made.

When the requirement corresponds to an assignment which has been notified in accordance with the Radio Regulations to the IFRB, or which is in conformity with the Regional Agreement, Stockholm 1961, the status of this assignment will be inserted by the IFRB when publishing the inventory of requirements. Different symbols will indicate the recording in the Master Register and the conformity with the Regional Agreement, Stockholm 1961.

The IFRB shall send to each administration in duplicate, as soon as possible and not later than 30 April 1984, a separate printed list of the requirements of the administration concerned.

Administrations shall check the data on their stations and shall communicate to the IFRB not later than 30 June 1984 any material errors they may have detected and the information relative to aeronautical stations that may be adversely affected (see Appendix 4 below).

The IFRB shall check these corrections and carry them into the inventory of requirements.

See Figure 7.1.

7.4 Despatch of inventory of requirements and notification of calculation results to administrations

In view of the foreseeable volume of requirements, the IFRB shall publish the complete and the corrected inventories of requirements in the form of microfiches and shall send them in duplicate to administrations, the former by 30 April 1984 and the latter by 31 July 1984.

On the basis of the corrected inventory of requirements, the IFRB shall effect the calculations described in Chapter 6 and shall send to administrations in duplicate the results of its calculations in the form of microfiches by 31 July 1984 at the latest.

The inventory of requirements and the results of calculations can be sent by the IFRB on magnetic tape to the administration having so requested, in the format of the ITU computer system. This format will be notified to the administration concerned.

See Figure 7.1.

7.5 Assistance to administrations by the IFRB

See Resolution No. COM 5/1.

APPENDIX 3

REGIONAL ADMINISTRATIVE CONFERENCE
FOR FM SOUND BROADCASTING IN THE VHF BAND
SECOND SESSION (31 OCTOBER - 12 DECEMBER 1984)

FORM FOR SUBMISSION OF FREQUENCY PLANNING CONSTRAINTS
RELATING TO COMPATIBILITY BETWEEN
SOUND BROADCASTING AND AERONAUTICAL RADIONAVIGATION SERVICES[1)]

(01) ADMINISTRATION	ADM. SERIAL No.	(00) IFRB SERIAL No.
----------	----------	----------

(41) IDENTIFICATION of the aeronautical radionavigation station which may be affected by broadcasting stations.

AERONAUTICAL RADIONAVIGATION STATION

Frequency	Name	Country	Longitude Degree E/W min	Latitude Degree N/S min
___.___ MHz	----------	----------	... . ..	... . ..

1) See Annex J of the Report by the First Session.

APPENDIX 4

FORM FOR SUBMISSION OF DATA FOR CALCULATION OF INCOMPATIBILITIES BETWEEN SOUND BROADCASTING AND AERONAUTICAL RADIONAVIGATION SERVICES[1)]

(01) ADMINISTRATION	ADM. SERIAL No.	(00) IFRB SERIAL No.
----------	----------	----------

(51) AERONAUTICAL RADIONAVIGATION STATION which is likely to be affected :

Frequency	Name	Country
---.--- MHz	----------	----------

Longitude Degree E/W min	Latitude Degree N/S min	Type	Altitude of antenna above sea level in metres
----------	----------	☐ ILS ☐ VOR	---------

(52) TEST POINTS

	AZIMUTH from the aeronautical radionavigation station to the test point in degrees	DISTANCE between the aeronautical radionavigation station and the test point in km	ALTITUDE above sea level in metres
1.	----------	----------	----------
2.	----------	----------	----------
3.	----------	----------	----------
4.	----------	----------	----------

(53) BROADCASTING STATIONS which are likely to affect the aeronautical radionavigation station :

	Country	Name	IFRB Serial No.	Frequency
1.	---	----------	----------	---.--- MHz
2.	---	----------	----------	---.--- MHz
3.	---	----------	----------	---.--- MHz
4.	---	----------	----------	---.--- MHz
5.	---	----------	----------	---.--- MHz
6.	---	----------	----------	---.--- MHz
etc.				

1) See Annex J of the Report by the First Session.

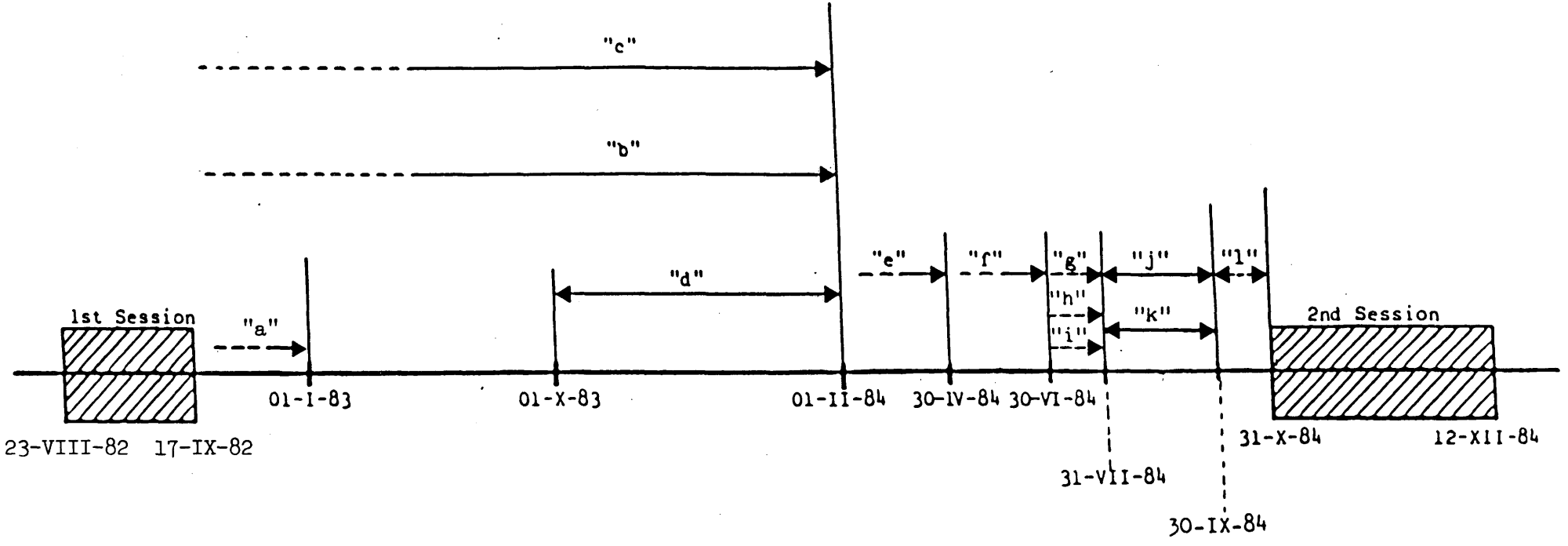

Figure 7.1 - Schedule of operations to be carried out in the interval between the First and Second Sessions

Explanation of Figure 7.1

a) The IFRB, by circular-letter, invites the administrations concerned to notify their requirements within the time limits and in the manner approved by the Conference at its First Session, and sends a model form.

b) In planning their requirements, administrations shall observe the planning principles and methods approved by the First Session of the Conference. Wherever possible they shall establish contacts with neighbouring countries with a view to preparing coordinated requirements which will facilitate the task of the Second Session of the Conference.

c) The IFRB prepares and finalizes the computer programs it considers necessary to perform the tasks entrusted to it by the Conference and to facilitate the work of the Second Session of the Conference. The following tasks have been identified :

- C.1 storage of requirements;
- C.2 establishment of the inventory and classification of requirements by frequency, sub-band and country;
- C.3 publication of the complete inventory, or parts of it, according to countries, groups of countries and sub-bands;
- C.4 provisional choice of suitable frequencies, in accordance with the planning principles and methods, in cases where the desired frequency is not entered on the form;
- C.5 calculations of interference and incompatibility and publication of the results;
- C.6 compilation of statistics.

d) Administrations submit their requirements to the IFRB on the forms mentioned in paragraph 7.1 and if necessary they attach the forms regarding constraints, as set out in Appendix 3.

e) The IFRB sends in duplicate to each administration the part of the basic inventory containing the list of its requirements in printed form and the complete basic inventory on microfiche.

f) Each administration notifies the IFRB of any material errors detected, and if necessary sends the form set out in Appendix 4.

g) The IFRB sends in duplicate to administrations the corrected basic inventory of requirements with appropriate observations.

h) The IFRB executes the corresponding programs in the order indicated in point c) above.

i) The IFRB sends in duplicate to administrations the results of its calculations (see paragraphs 3.1, 3.2 and 3.3 of Annex G and paragraphs 5 and 6 of Annex 1 to this Report) as they become available. The corrected basic inventory and the results of the calculations form a document for the Second Session.

j) Administrations study this information and, with a view to resolving incompatibilities, propose modifications[1)] to their requirements for submission to the Second Session or to the IFRB, as appropriate; if necessary, administrations enter into bilateral or multilateral coordination beforehand.

k) The IFRB receives the proposed modifications[1)] designed to resolve incompatibilities and includes them in an "addendum" which it submits, if possible accompanied by a report, to the Second Session.

l) The IFRB shall use the modified[1)] inventory of requirements in order to carry out the remaining calculations, referred to in paragraphs 4, 7, 8 and 9 of Annex G to this Report, and present the results during the first days of the Second Session. Modifications communicated after 1 October 1984 shall be dealt with by the Second Session.

The schedule is as follows :

Period		Activity
Up to 31 December 1982	:	"a"
Up to 1 February 1984	:	"b" and "c"
1 October 1983 - 1 February 1984	:	"d"
By 30 April 1984	:	"e"
By 30 June 1984	:	"f"
By 31 July 1984	:	"g", "h" and "i"
1 August 1984 - 30 September 1984	:	"j" and "k"
1 October 1984 - 31 October 1984	:	"l"

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1) Modifications are limited to changes in the characteristics of the requirements initially communicated and are intended to improve the Plan.

PINK PAGES

INTERNATIONAL TELECOMMUNICATION UNION

REGIONAL BROADCASTING CONFERENCE

(FIRST SESSION) GENEVA, 1982

Document No. 154-E
15 September 1982

R.7

PLENARY MEETING

Seventh series of texts submitted by the Editorial Committee to the Plenary Meeting

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

Source	Document No.	Contents
B.6	146	Annex C

H. BERTHOD
Chairman of the Editorial Committee

Annex : 7 pages

A N N E X C

METHOD FOR ASSESSING AREAS OF INTERFERENCE

By assuming a lossless isotropic receiver antenna, no line loss and free space propagation loss*, contour distances corresponding to received power levels of -10, -20, and -30 dBm can be calculated using the following formula :

$$d = \frac{\log^{-1}\left(\frac{e.i.r.p. - p - C - L_R}{20}\right)}{f} \qquad (1)$$

where :

d : contour radius in nautical miles or in kilometres.

C : 37.8 for d in nautical miles, or 32.4 for d in kilometres.

e.i.r.p. : equivalent isotropic radiated power of the FM station in dBm (e.i.r.p. = e.r.p. + 2.15 dB).

f : FM centre frequency in MHz.

P : contour power level desired, either -10, -20, or -30 dBm.

L_R : avionics antenna out-of-band rejection in dB

Out-of-band avionic antenna rejection (L_R) can be found as follows :

For a navigation antenna :

L_R = 3 dB plus 1 dB/MHz below 108 MHz

For a communication antenna :

L_R = 10 dB for FM signals from 100 to 108 MHz

or :

L_R = 10 dB plus 2 dB/MHz below 100 MHz for FM signals from 88 to 100 MHz

The out-of-band antenna rejection value (L_R) is subject to wide variations which are a function of airborne antennas and installation differences.

Graphical examples for the application of this method are given in CCIR Report 929 (Figures 1 and 2).

---

* Free space loss closely approximates median transmission loss curves when transmitter and receiver are within line-of-sight (LOS). LOS for an aircraft about 1500 m (5000 feet) would be a minimum of 87 nautical miles regardless of FM station antenna height.

6.3 Planning methods

6.3.1 Planning will be a complex procedure involving a number of steps. Among these the following four steps are essential :

1) the use of the lattice planning method by the administrations to select appropriate frequencies for assignment to given stations (Annex F);

2) the preliminary analysis of the draft plan obtained so far by means of a simplified computation method (Annex G) together with the examination of incompatibilities with the television service in the band 87.5 to 100 MHz (Annex I), interference to radio equipment used by aircraft for landing and navigation purposes in the band 108 to 118 MHz (Annex J) and incompatibilities with the fixed or mobile service in Region 3 (Annex K);

3) the inclusion of low-power networks and low-power stations in, and the refinement of, the draft plan by the method of foremost priority (Annex H) followed by negotiations among administrations concerned;

4) analysis of the draft plan using a more complex computation method in the case of critical assignments (Annex G) together with the examination of incompatibilities with other services, as in step 2 (Annexes I, J and K).

In the course of the planning procedure some of the above steps may have to be repeated, as appropriate. In particular, step 4 will need to be repeated after introduction of modifications resulting from bilateral and multilateral consultations during the Second Session of the Conference.

6.3.2 After establishment of the plan a full evaluation of the interference and protection conditions may be considered necessary by the Second Session in order to provide reference values to be used for subsequent modifications of or additions to the plan.

6.3.3 In the preparation of a frequency plan in the band 87.5 to 108 MHz for the countries of Region 1 and for parts of Afghanistan and Iran, the two following planning methods shall broadly be used :

1) regular lattice planning with linear channel distribution scheme;

2) method of foremost priority (planning by trial and error).

The efficiency of the two methods will depend on circumstances which may vary considerably from one part of the planning area to the other. For instance, in Europe it is likely that frequency assignments in the band 87.5 to 100 MHz to VHF/FM transmitters will only be subject to slight modifications in a restricted number of cases in most of the countries, whereas in the remaining part of the planning area an assignment plan for the entirety of sound-broadcasting transmitters will have to be established.

6.3.4 The lattice planning method, the use of which is described in Annex F, would be a powerful tool in the latter case, but it would be of little use in the former case.

When use is made of lattice planning, it is desirable to apply the same channel distribution scheme throughout the planning area; nevertheless, on account of the variation of conditions within the area, it is considered appropriate to use two different channel distribution schemes.

The main advantage of this method is that the whole planning area can be subdivided at the beginning into sub-areas of adequate size and shape. This will permit planning to start simultaneously in various parts of the planning area. A further advantage is that the method permits the quick assignment of large numbers of frequencies to non-constrained transmitters. This is due to the fact that within a theoretical channel distribution scheme mutual interference is reduced to the minimum practicable and that in its adaptation to a practical situation interference will be increased only slightly.

However, the applicability of the method is restricted to networks with transmitters of similar power and effective antenna height and hence a comparable interference potential. The method should, therefore, not be used for the assignment of frequencies to low-power transmitters in an environment of numerous high-power transmitters. It may also fail to be applicable if a large number of constraints has to be respected, such as the protection against the origination of annoying intermodulation frequencies.

6.3.5 The method of foremost priority is described in Annex H.

The advantage of this method is that all the constraints to be respected in every individual case can be taken into account. However, the method is time-consuming and its reliability is only guaranteed when a computer is used. Nevertheless, there can be no doubt that in parts of the planning area, and in parts of the band, conditions will be found in which the use of this method will be the only resort.

6.3.6 Because of the limited time that will be available for planning purposes during the Second Session of the Conference, it is felt that both methods should go together. The lattice planning method shall be used in the first instance to help in preliminary planning, for the whole band 87.5 to 108 MHz in Africa and the Middle East, and for the band 100 to 108 MHz in the rest of the planning area. However, further planning may require the use of the method of foremost priority, especially in the planning of the most difficult cases and in the refinement procedure. In this respect it may well happen that planning in Europe, while providing protection to the aeronautical radionavigation service, will have to be considered as a difficult case.

It is however necessary to protect the aeronautical mobile (R) service, taking into account the safety aspects involved.

It is up to administrations to consider the incompatibilities between the aeronautical mobile (R) service and the sound broadcasting service in preparation of their requirements. The interim planning process will be based on the assumption that there will be no serious problems of incompatibility. However, as the extent of the problems is still unknown the Second Session may wish to determine the more precise application of the protection necessary.

6.3.7 Considering the size of the area to be planned, the expected large number of requirements to be included in the plan and the complexity of the planning task, some preparatory work must be carried out by the IFRB in the period between the two sessions. This would make it possible to provide administrations with preliminary results of calculations before the opening of the Second Session of the Conference. For the reasons mentioned above the following procedure is suggested.

6.3.7.1 The lattice method will be used as soon as possible after the First Session of the Conference with a view to helping administrations in formulating their requirements in an orderly manner. It will assist mainly the developing countries which are not able to attend the present Session.

6.3.7.2 In Africa and the Middle East, a lattice with a channel distribution of 31 channels (see Figure 6.1) will be used to permit between six and seven coverages in the band 87.5 to 108 MHz.

6.3.7.3 In the rest of the planning area, it is foreseen that[1] :

- administrations may communicate their requirements in the band 87.5 to 100 MHz as they result from the application of the Regional Agreement (Stockholm, 1961); and

- a lattice with a channel distribution of 79 channels (see Figure 6.2) will be used for preliminary planning of the band 100 to 108 MHz.

6.3.7.4 When using a channel distribution scheme, countries in a given area may decide not to include low-power stations in the lattice scheme. These low-power stations will be treated at a later stage before or during the Second Session of the Conference, so that, at the end of the Second Session, all frequency assignments will have been made whatever the power of the transmitter.

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1) The channel distribution schemes of Figures 6.1 and 6.2 shall be applied in such a way that for Africa and the Middle East the lower lefthand apex of Figure 6.1 is adjusted to the westernmost apex of each lattice unit; for the remainder of the planning area the lower lefthand apex of Figure 6.2 is adjusted to the southernmost apex of each lattice unit.

6.3.7.5 **The channel distribution schemes detailed in Figure 6.1 shall in due course be communicated by the IFRB to the Administrations in Africa and the Middle East. Figure 6.2 gives the channel distribution schemes in the remainder of the planning area, and the correspondence between channel numbers and frequencies is given in** Table 2 of Annex L. For the purpose of completing the requirement forms, and in bilateral or multilateral negotiations, frequencies only should be used in order to avoid any ambiguity.

It should be noted that in Europe channel 0 (100.0 MHz) will primarily be used, where wanted, at the same parts of the area as channel 79. Adaptation to **frequency assignments below 100.0 MHz (for which no channel numbers are specified in** Europe) may, however, require some special arrangements to be made, particularly as regards channels 0 to 3.

6.3.8 There may be incompatibilities between FM sound broadcasting stations in the band 87.5 to 100 MHz in Afghanistan, Iran and a part of Turkey on the one hand, and TV stations of the U.S.S.R. located in the border areas of these countries on the other hand. These Administrations should therefore coordinate their relevant stations by bilateral or multilateral negotiations, preferably before submitting their requirements to the IFRB; and they shall do so on the basis of equal rights without a priority to either of the above uses. The protection referred to in considering f) of Resolution No. 510 applies only to TV stations which are in conformity with the Stockholm Agreement 1961.

Incompatibilities between VHF/FM broadcasting stations and TV stations in conformity with the Stockholm 1961 Agreement in the band 87.5 to 100 MHz are treated in Annex I.

With respect to the countries mentioned above, incompatibilities between VHF/FM broadcasting and other TV stations shall be treated by using the criteria given in Chapter 4 of this Report.

Note 1 : In Mongolia, the band 87.5 to 100 MHz will be used for television stations.

Note 2 : The lattice with a channel distribution of 79 channels shall be used in the band 100 to 108 MHz throughout the territory of Turkey. The selection of channels in the band 87.5 to 100 MHz for the part of Turkey not covered by the Stockholm Agreement (1961) will be made by the Administration without necessarily using any lattice method.

/ The IFRB will provide this Figure later. /

Figure 6.1 - Channel distribution scheme in the Africa-Middle East area between 87.5 and 108 MHz

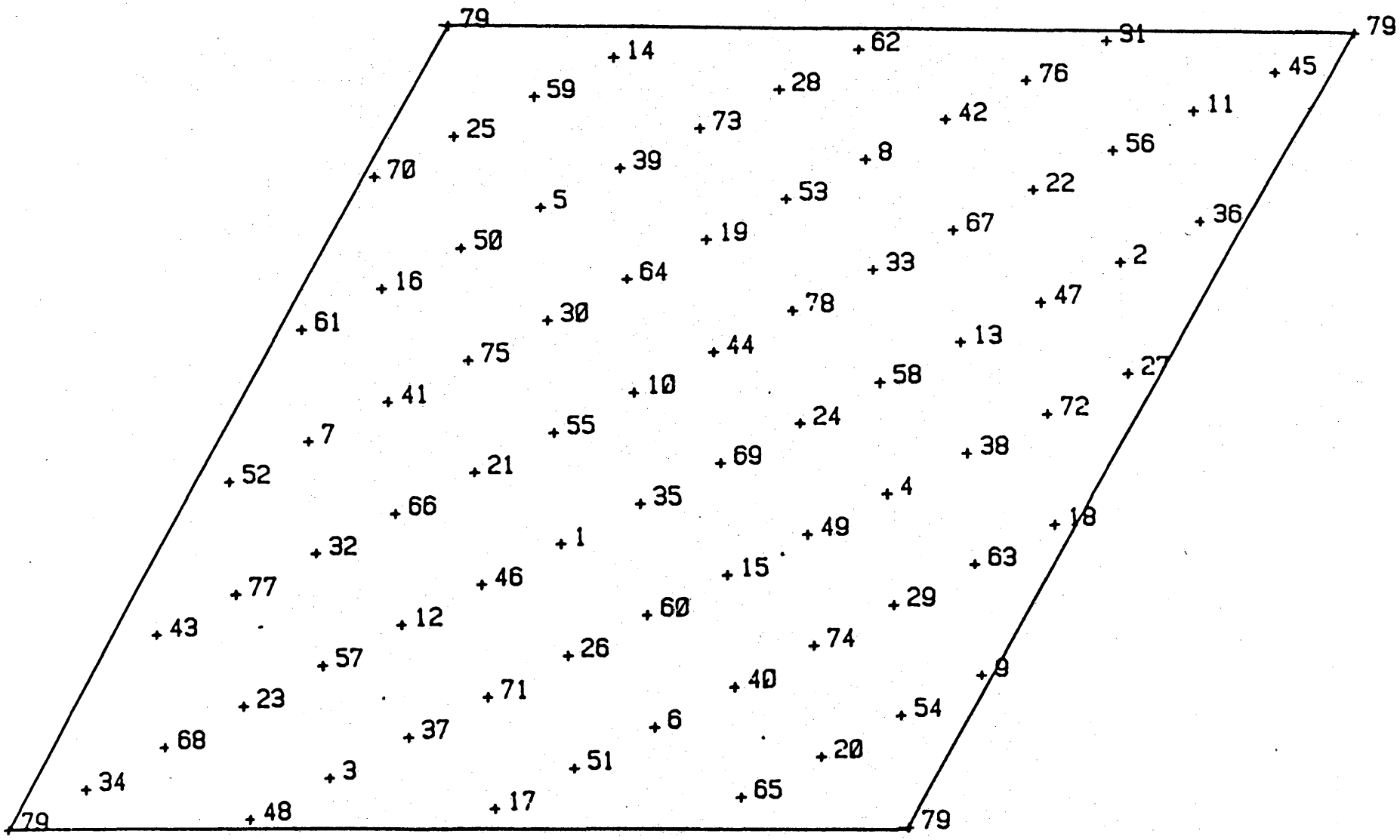

Figure 6.2 - Channel distribution schemes in the remainder of the planning area between 100 and 108 MHz

PINK PAGES

INTERNATIONAL TELECOMMUNICATION UNION

REGIONAL BROADCASTING CONFERENCE

(FIRST SESSION) GENEVA, 1982

Document No. 155-E
16 September 1982

R.8

PLENARY MEETING

Eighth series of texts submitted by the Editorial Committee to the Plenary Meeting

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

Source	Document No.	Contents
B.6	146	Annex F
		Annex G
		Annex H

H. BERTHOD
Chairman of the Editorial Committee

Annex : 9 pages

A N N E X F

LATTICE PLANNING METHOD

1. In this Annex the use of the lattice planning method is explained, whereas its theory is described in CCIR Report 944. The basic idea of this planning method is the repeated use of a geometrically regular channel distribution scheme over a vast area. As only channel distribution schemes are selected, which are optimized in terms of coverage by reducing interference within the network to the minimum, it can be assumed that their repeated use would result in a plan which, after some further refinement, might be acceptable to everyone. However, compatibility problems with other services cannot automatically be taken into account when using the lattice planning method.

2. Although the use of one single channel distribution scheme would permit a high degree of efficient spectrum utilization, conditions may prevail in the area to be planned which suggest the use of different schemes in different parts of the area. Actually the situation in Africa and the countries of the Middle East is considerably different from that in the remaining part of the planning area. Whilst in the countries of the former area, planning may start from scratch, in Europe the plan for the television service in the band 87.5 to 100 MHz for Eastern European countries will have to be retained and be respected when assigning frequencies to VHF/FM sound broadcasting transmitters. It is for this reason that two different channel distribution schemes will be used, one for Africa and the Middle East in the band 87.5 to 108 MHz and the other for the remaining part of the planning area in the band 100 to 108 MHz.

3. The lattices will have to be carefully adapted to one another in order to limit any reduction in spectrum utilization efficiency to the minimum. Geographical separation of the two areas over a given sector will be provided by part of the Mediterranean Sea. Nevertheless, some difficulties will persist and become particularly important in areas where there is no, or nearly no, geographical separation.

4. To enable the lattice planning method, to be applied in practice, it is useful to subdivide the planning area into sub-areas in such a way that they are similar in shape to the lattice selected, i.e. in principle, rhombic, and that the number of transmitter or transmitter sites within each sub-area does not exceed the number (31 or 79 respectively) of available channels. In preparation of the planning procedure the two different lattices selected for Africa and the Middle East and for the remainder of the planning area were drawn on to a map. This map is reproduced below in 12 parts*).

The lattices in maps 1 to 6 are to be applied in Africa and the Middle East. The side length of each rhombic area element is 480 km. The lattices in maps 7 to 12 are to be applied in the remainder of the planning area; the side length of each area element is 240 km.

These lattices are intended for use at the initial stage of the planning procedure.

---

*) The Acores Madeiva, which cannot be shown on the small-scale maps below, will be included in the same planning area as Portugal, i.e. the 79-channel area.

5. The lattices selected for Africa and the Middle East and for the remainder of the planning area contain 31 or 79 channels, respectively. In Africa and the Middle East it will be possible to provide between 6 and 7 coverages; this would seem to satisfy the needs of the vast majority of the countries in the area. In the remaining part of the planning area this scheme would permit assignments to be made to transmitters in order to provide 2 or 3 coverages between 100 and 108 MHz in accordance with the requirements that will be specified.

6. In this respect it is assumed that in Africa and the Middle East the average distance between neighbouring transmitter sites is of the order of 80 to 100 km which, with 31 channels available per coverage, would correspond to a distance between transmitter sites using the same channel of approximately 445 to 555 km (co-channel distance). In preparatory planning it is, thus, appropriate to apply the channel distribution scheme by entering it in a geographical map which is covered by a rhombic coordinate system having 480 km unit distances which correspond to the assumed co-channel distance. From this map administrations will be able to select appropriate frequencies for assignment to the transmitters at the nearest site. Needless to say, each frequency channel taken from the scheme can only be assigned once in that particular sub-area. It is worth mentioning that departures from the assignment procedure described would be admissible, e.g. in order to assign two groups of three frequencies each to two neighbouring transmitter sites although, in the theoretical lattice these six frequencies are derived from one and the same lattice point. Moreover, it needs to be stated that after assignment of a group of six frequencies to six transmitters at the same site, the major planning constraints will automatically be respected.

The groups of six channels that may thus be obtained at the same site must respect the following constraints :

a) a separation of 10.7 ± 0.2 MHz (receiver intermediate frequency between channels is to be avoided;

b) spacing is to be arranged so as to avoid intermodulation products falling in channels used at the same side;

c) any channels still available are to be placed at the upper end of the band.

The IFRB shall aim at the most appropriate distribution and, if necessary, shall make changes in the channel distribution indicated in Figure 6.1.

The results thus obtained shall subsequently be communicated to the Administrations of the countries in Region 1 and to those of Afghanistan and Iran.

7. In the remaining part of the planning area, the average distance between co-channel transmitters is of the order of 240 km. In this area, where a 79 channel distribution scheme will be applied in the band 100 to 108 MHz, it is more difficult to respect the planning constraints : as two or more frequencies are, after adequate distortion of the theoretical lattice, to be assigned to transmitters sharing the same site, it has to be verified that in every case the separations between frequencies would permit the use of multiplexers if this is desired. Moreover, there will be absolutely no means of systematically avoiding frequencies having a separation in the range of 10.7 $\pm$ 0.2 MHz, with respect to VHF/FM broadcast transmitters in the frequency band 87.5 to 100 MHz at the same site. Consequently, this particular constraint will need extensive checking.

Note 1 : The Administration of Cyprus indicated that a 31 channel distribution scheme will be used in that country.

Note 2 : The figures in Annex F are intended to show the size and orientation of the rhomboids, and reference points which will enable the IFRB to prepare more accurate maps to an appropriate scale. These will be sent to administrations by 31 December 1982 with the circular-letter refered to in paragraph 7.2

Maps Nos. 1 to 12 will not be reproduced in this document.

However, on map No. 5, the geographical coordinates shown at the top must be changed to read :

18 N 00

40 E 00

ANNEX G

ANALYSIS OF THE PLAN

1. Introduction

The plan will be analysed on the basis of the data bank to be set up by the IFRB from information supplied by administrations or entered by the IFRB for those administrations which did not supply information.

2. Method of analysis

In each analysis the nuisance field from each potentially interfering transmitter shall be calculated at the site of the wanted transmitter according to the method given in paragraph 3.3.2 of this Report*.

The usable field strength, E_u, shall then be calculated by the simplified multiplication method taking into account the 20 largest values of nuisance field, specified to one decimal place. For preliminary calculations, the simplified multiplication method will be used for the whole of the planning area; however, for comparison purposes, power sum method will be used in the area from the Shatt-al-Arab to the Gulf of Oman, at the request of administrations concerned.

2.1 Preliminary analysis

The above calculations shall be carried out in a preliminary analysis, in which no account shall be taken of the receiving antenna discrimination.

2.2 Final analysis

In the final analysis the coverage area of a transmitter shall be evaluated by additional calculations. These calculations, in which account is taken of the receiving antenna discrimination, determine on each of 36 radials at 10° intervals the distance at which the field strength from that transmitter is equal to E_u. In the case of low power stations, the number of intervals may be reduced.

From experience gained so far, it is to be expected that E_u values on the coverage contour, obtained in the final analysis, will, on average, be approximately 8 dB lower than the corresponding E_u at the transmitter site (determined in the preliminary analysis).

3. First preliminary analysis for each administration

3.1 During the first preliminary analysis of requirements, only those transmitters shall be considered which have a maximum e.r.p. of not less than 100 W (20 dBW) and for which a frequency has been specified by the administration as part of its requirement.

---

* An example of the simplified power sum method is given in Annex M.

3.2 The values of E_u will be calculated in a preliminary analysis for those requirements mentioned in 3.1 as submitted by the administration. Moreover, the arithmetic mean of all values of E_u (dB (μV/m)) shall be calculated together with their standard deviation.

3.3 For all transmitters having unsatisfactory assignments, that is those for which the value of E_u exceeds the mean by more than 10 dB, and for transmitters exceeding 100 W e.r.p. without the indication of a preferred frequency, a further study shall be carried out as a preliminary analysis. E_u shall be calculated for each channel as if the transmitter were assigned each channel in turn in the frequency band 87.5 to 108 MHz.

4. Examination of incompatibilities and frequency planning constraints

At the time of the third preliminary and the final analysis and, as regards incompatibilities with TV stations, at the time of the first preliminary analysis, the following will be examined for each transmitter :

- incompatibility with television stations in the band 87.5 to 100 MHz (Annex I);
- interference to radio equipment used by aircraft for landing and navigation purposes which operates in the band 108 to 118 MHz (Annex J);
- **incompatibility with the fixed or mobile services in Region 3** (Annex K);
- **frequency spacing between 10.5 and 10.9 MHz for transmitters separated by no more than D (km) = 10 $\log_{10}$ (e.r.p.$_{max}$/1000). E.r.p.$_{max}$ is the higher power of the two transmitters involved and is expressed in watts. If e.r.p.$_{max}$ is 1000 W or less, D = 0;**
- **for transmitters having identical site coordinates and identical antenna height above ground level, a frequency spacing of less than 1.8 MHz or, if they have only identical site coordinates, a frequency spacing of less than 0.8 MHz.**[1)]

5. Presentation of results

The following information will be presented to each administration for its transmitters.

---

1) The preparatory work to be carried out in this respect between the two sessions of the Conference will be limited to the identification of transmitters having identical site coordinates.

5.1 For each transmitter :

- the value of E_u at the transmitter site;
- a list of the six largest sources of interference together with their nuisance fields and bearings from the wanted transmitter site;
- a list of transmitters for which this transmitter appears as one of the six largest sources of interference, together with the corresponding nuisance fields and the bearings (azimuth) from the interfering transmitter.

5.2 For all of its transmitters :

- the mean value and standard deviation of all values of E_u;
- a graphical presentation (see Figure 1 of Annex 3) of the values of E_u for each channel in the band 87.5 to 108 MHz for each transmitter having an unsatisfactory assignment (see 3.3 above);
- lists of transmitters which have incompatibilities with other services or which contravene the frequency planning constraints (see paragraph 4 above).

6. Proposed modifications to the requirements

After studying the results of the calculations, administrations will propose appropriate modifications to their requirements with a view to resolving incompatibilities. These modifications, which will be submitted to the Second Session, will, if the administrations consider it necessary, be the subject of bilateral or multilateral coordination.

Administrations may request the IFRB to provide them with values of E_u calculated for each channel in respect of their stations with an E_u exceeding the mean value by more than 5 dB or in respect of stations identified as incompatible with other services or which contravene the frequency planning constraints.

Administrations shall bring these proposed modifications to the notice of the IFRB by 30 September 1984. If no change is desired, the IFRB shall be informed by the same date.

7. Second preliminary analysis

The requirements including the proposed modifications will be analysed (as in paragraph 2.1 above) and administrations will be presented with results excluding the graphical presentations for all stations which have been affected in any way.

8. Inclusion of low power transmitters

If no frequency is included in the requirement form for a low power transmitter, the value of E_u for all channels will be calculated (see paragraph 3.3 above) at the site of the low power transmitter, in order that the IFRB may tentatively select an appropriate frequency.

9. Third preliminary analysis

The draft plan will be analysed (as in paragraph 2.1 above) and results will be presented to administrations having low power transmitters or having transmitters affected by the inclusion of low power transmitters.

10. Second Session of the Conference

During the Second Session of the Conference, administrations may wish to make changes to requirements resulting from bilateral or multilateral negotiations. The effect of such changes will be analysed from time to time and the results will be published.

It should be possible to provide a coverage analysis (see paragraph 2.2) in the case of difficult problems, at the request of an administration.

11. Determination and publication of coverage areas resulting from the plan

Subsequent to the Conference the coverage areas of all transmitters in the plan shall be determined in a final analysis (see paragraph 2 above) and the results shall be published. For each transmitter this information shall consist of 36 radial distances, together with the corresponding E_u values.

ANNEX H

METHOD OF FOREMOST PRIORITY

The method of foremost priority consists in assigning to the transmitter for which the number of appropriate frequencies is smallest the most favourable among these frequencies (worst transmitter - best frequency). This means that frequencies are successively assigned to every transmitter following the order of decreasing difficulty in terms of interference. For every transmitter in sequence a frequency is selected which suffers least interference and produces the smallest amount practicable of additional interference. This procedure is repeated until all transmitters have obtained a frequency. It goes without saying that in this procedure account has to be taken of all constraints.

Obviously, this method can be time consuming and its reliability may only be guaranteed when a computer is used. The use of a high-speed computer can provide important assistance in this procedure and may, in fact, be the only resort in some cases.

It will at first be necessary to discover, by way of an appropriate analysis (see Annex 2), the deficiencies of an assignment plan by computing the usable field strength, checking the constraints to be respected and applying the compatibility procedures. Unsatisfactory frequency assignments, i.e. those whose usable field strength exceeds the average value in that country by more than 10 dB, or assignments which are incompatible with other services, will be identified in this way and the transmitters will be included in the list to which the method of foremost priority will have to be applied. In the following step, computing and plotting of the usable field strength as a function of frequency for the sites of such transmitters (see Figure 1 of this Annex) may be useful. Graphical presentations of this type are particularly useful when more than one frequency is to be found for the same site. In general, those frequencies may be considered most appropriate for which the lowest values of usable field strength are shown. This implies, however, that their use is compatible with other services and that the planning constraints are respected.

It may be clear from the above explanations that the graphical presentation of the usable field strength as a function of frequency might also successfully be used to find frequencies for assignment to transmitters for which no frequency was assigned in the first step of the planning procedure (i.e. during the use of the lattice planning method), e.g. for low-power transmitters.

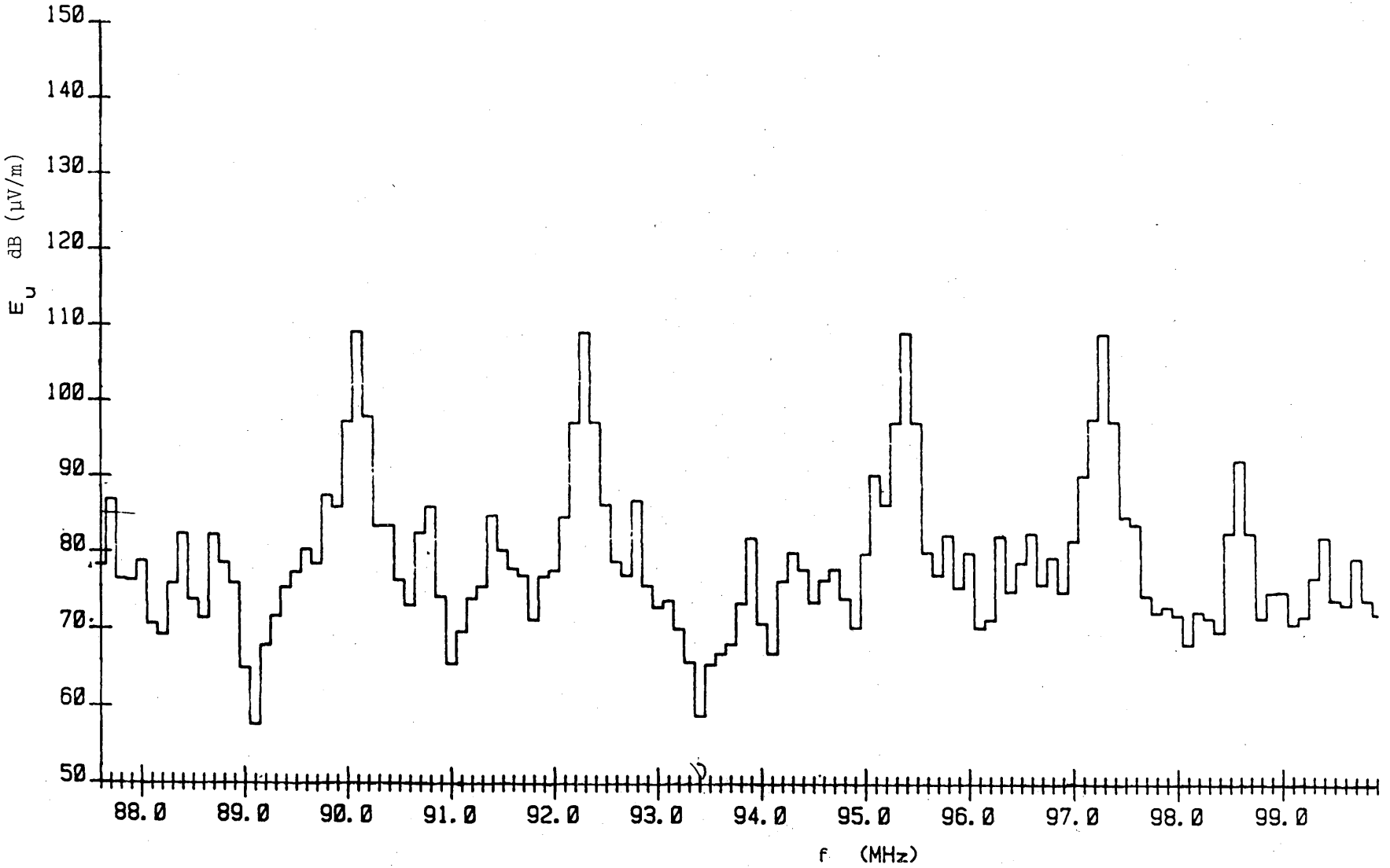

Figure 1 - Example of chart indicating values of usable field strength for each channel in the band 87.5 to 100 MHz

PINK PAGES

INTERNATIONAL TELECOMMUNICATION UNION

REGIONAL BROADCASTING CONFERENCE

(FIRST SESSION) GENEVA, 1982

Document No. 156-E
16 September 1982

PLENARY MEETING

Ninth series of texts submitted by the Editorial Committee to the Plenary Meeting

Please find attached hereto :

- the amendments to Document No. 146 (B.6);
- Resolution No. PLEN./1;
- Introduction to the Report.

H. BERTHOD
Chairman of the Editorial Committee

Annex : 5 pages

Annex I

B.6/28 No change.

B.6/29 Delete all /¯ _/.

8.1.2 - replace Figure 4.3 by Figure 4.2.

8.2 - replace Figure 4.2 by Figure 1 of this Annex.

B.6/30 No change.

B.6/31 Replace Figure /¯42_/ by Figure 1.

Annex J

B.6/32 Paragraph 1, second sentence - read :

If the stations of the broadcasting service and of the aeronautical services belong to one ...

B.6/33 3.1, second line, after 125 km - add *).

At the bottom of the page - add :

*) This value is based on the assumptions that the broadcasting station only just meets the limits for spurious emissions as set down in Appendix 8 of the Radio Regulations, and that there is a broadcasting antenna gain of 10 dB, a minimum field strength to be protected of 32 dB (μV/m) and a protection ratio of 17 dB.

B.6/32 5.1, first sentence - delete the words :

... the terrain is at the same height as the aeronautical radionavigation station and ...

B.6/35 No change.

B.6/36 No change.

B.6/37 6.7 Read

6.7 If, after following the procedures set out in 6.1 to 6.5 above, a solution is still not arrived at, then the only other possible solution may be to choose another site for the broadcasting station. It is conceivable in some situations that this may not be feasible; in this case such an assignment can be included in the Plan only with appropriate reservations due to an unresolved incompatibility with the aeronautical radionavigation service.

Annex K

B.6/38 No change.

B.6/39 Replace the Table by the following note :

/ This Table will be provided later by the IFRB /.

B.6/40 No change.

B.6/41 No change in English text.

B.6/42 No change.

B.6/43 No change.

B.6/44 No change.

RESOLUTION No. PLEN./1

REPORT OF THE FIRST SESSION

The Regional Administrative Conference for FM Sound Broadcasting in the VHF band (Region 1 and certain countries concerned in Region 3) (First Session, Geneva, 1982),

considering

that in accordance with Resolution No. 852 of the Administrative Council the First Session of the Conference was entrusted with :

- preparation of the technical bases for the frequency assignment plan to be established in the Second Session, and

- determination of the form in which the requirements of the Union's Members for frequency assignments in Region 1 and in the parts of Afghanistan and Iran adjacent to that Region should be notified and fixing of the final date by which the requirements should be sent to the ITU;

resolves

to approve the Report of the First Session of the Conference;

instructs

1. the Chairman of the First Session of Conference to transmit under her signature the Report of the First Session to the Second Session of the Conference;

2. the Secretary-General to transmit the Report of the First Session to all administrations in Region 1, to the Administrations of Afghanistan and Iran and to the international organizations which have participated in the First Session of the Conference.

Introduction to the Report of the First Session

In its Resolution No. 510, the World Administrative Radio Conference (Geneva, 1979), considering the extension of the primary allocation to the broadcasting service in Region 1 from 87.5 to 100 MHz to 87.5 to 108 MHz and that in some countries the band 100 to 108 MHz is allocated on a permitted basis to the mobile, except aeronautical mobile (R), service and also to the fixed service, decided that a Regional Administrative Conference, to be held in two sessions, should be convened to draw up an agreement for Region 1 and the countries concerned in Region 3 and an associated plan for sound broadcasting in the band 87.5 to 108 MHz for Region 1 and for parts of Afghanistan and Iran which are contiguous with Region 1. The WARC-79 instructed the Administrative Council to take the necessary measures for the convening of this Conference.

At its 35th session, the Administrative Council decided, in its Resolution No. 852 (amended at the 36th session) that the First Session would be convened in Geneva on 23 August 1982 for a period of four weeks to prepare :

- the technical bases for the frequency assignment plan to be established in the Second Session and the mutual sharing criteria for the sound broadcasting service and the other services;

- the form in which the requirements for frequency assignments should be notified and the fixing of the final date by which the requirements should be notified to the IFRB.

The First Session of the Regional Administrative Conference for FM sound broadcasting in the VHF band (Region 1 and certain countries concerned in Region 3) was thereupon convened and in accordance with its agenda prepared the present Report to the Second Session of the Conference.

The technical criteria and the planning methods were largely founded upon the work of the CCIR presented in its Report to the First Session.

Apart from the technical criteria peculiar to the broadcasting service (propagation curves, channel spacing, protection ratios, etc.), the Conference at its First Session examined the question of compatibility with the other services in the same frequency band or in adjacent bands, in accordance with item 1.9 of its agenda. It gave particular attention to the problem of protecting the aeronautical radionavigation services and took steps to ensure that account would be taken of this need in the planning activities at the Second Session.

This Report contains a number of Resolutions and Recommendations. The general Resolutions are concerned, on the one hand, with the assistance that administrations might give to the IFRB during the period between the two sessions and, on the other hand, the assistance which the IFRB might give to developing countries in dealing with problems of compatibility with the aeronautical radionavigation service. Recommendations to the CCIR are concerned with two areas where it would be necessary to have additional information for the Second Session : firstly, propagation in the Middle East

and in Africa; secondly, technical parameters of the equipment of aeronautical services and of FM sound broadcasting transmitters.

With a view to the efficient preparation of the Second Session and, in the light of the different tasks assigned to the administrations and the IFRB, a detailed work programme and a schedule of the tasks to be performed were drawn up. In view of the fact that a large number of requirements to be planned by the Second Session are expected, a method for helping the administrations to formulate their requirements has been established and it has been decided that the IFRB will be responsible for the preliminary calculations.

All the planning principles and methods, technical criteria and guidelines necessary to enable the administrations and the IFRB to perform their work are clearly defined in the present Report so that the Second Session will be able to commence the planning process as soon as its work begins and to fulfil its mandate within the period stipulated by the Administrative Council.

INTERNATIONAL TELECOMMUNICATION UNION

REGIONAL BROADCASTING CONFERENCE

(FIRST SESSION) GENEVA, 1982

Document No. 157-E
16 September 1982
Original : English

Note by the Chairman of the Conference

I hereby transmit to the Conference the attached letter from the Head of the Delegation of the United Kingdom of Great Britain and Northern Ireland .

Marie HUET
Chairman of the Conference

Annex : 1

ANNEX

UNITED KINGDOM MISSION
37-39 rue de Vermont, 1202 GENEVA
Telex: 22956
Telegrams: Prodrome, Geneva
Telephone: 34.38.00, 33.23.85

President of the Regional
Broadcasting Conference
Geneva

16 September 1982

Dear Madam

Referring to Document 149 which contains a letter from the head of the Soviet delegation I wish to make the following statement on behalf of France, the United Kingdom of Great Britain and the United States of America.

The statement by the Soviet delegate contains an incomplete and consequently misleading reference to the Quadripartite Agreement. The relevant passage of that Agreement to which the Soviet representative referred provides that the ties between the Western Sectors of Berlin and the Federal Republic of Germany will be maintained and developed; taking into account that these Sectors continue not to be a constituent part of the Federal Republic of Germany and not to be governed by it. Furthermore, there is nothing in the Quadripartite Agreement which supports the contention that residents of the Western Sectors of Berlin may not be included in Federal Republic of Germany delegations to international conferences; in fact Annex IV of the Quadripartite Agreement stipulates that, provided matters of security and status are not affected, the Federal Republic of Germany may represent the interests of the Western Sectors of Berlin in international conferences and that Western Sectors of Berlin residents may participate jointly with participants from the Federal Republic of Germany in international exchanges. Furthermore, as a matter of principle, it is for the Federal Republic of Germany alone to decide on the composition of its delegation.

Regarding the letter from the German Democratic Republic delegation on this subject contained in Document 150 I would like to point out that States which are not parties to the Quadripartite Agreement are not competent to comment authoritatively on its provisions.

I request that this letter be circulated as an official document of the Regional Broadcasting Conference.

Please accept, Madam, the assurances of my highest consideration.

W H Bellchambers

W H BELLCHAMBERS
Head of the delegation of the United Kingdom
of Great Britain and Northern Ireland

INTERNATIONAL TELECOMMUNICATION UNION

REGIONAL BROADCASTING CONFERENCE

(FIRST SESSION) GENEVA, 1982

Document No. 158-E
16 September 1982
Original : French

Note by the Chairman of the Conference

I have the honour to transmit to the Conference the attached letter from the Head of the delegation of the Federal Republic of Germany.

Marie HUET
Chairman of the Conference

Annex : 1

ANNEX

Ständige Vertretung
der Bundesrepublik Deutschland
Mission permanente
de la République Fédérale d'Allemagne
Permanent Mission
of the Federal Republic of Germany

Genf,
28 D, chemin du Petit-Saconnex
Case postale 191
1211 Genève 19
Tel.: 335000
Telex: 22211

Geneva, 16 September 1982

Dear Madam,

Referring to the letters from the delegations of the Soviet Union and the German Democratic Republic contained in document no. 149 and no. 150 concerning the inclusion of Mr. Klaus-Peter Stuckert in the delegation of the Federal Republic of Germany, I wish to state that my government shares the position set out in the letter of the delegation of the United Kingdom on behalf of the Three Powers dated 16 September 1982.

It regrets the attempts of the delegations of the Soviet Union and the German Democratic Republic to interfere with the appointment of Mr. K.-P. Stuckert as a member of the delegation of the Federal Republic of Germany to this conference.

It is, as a matter of principle, for every member country alone to decide which institutions or persons it wishes to involve in its contribution to the work of this conference.

Moreover, the Federal Government is of the view that it is the task of this Conference to promote international co-operation in the field of broadcasting and not to discuss political matters which are beyond the scope of this organization. My government, therefore, regrets that the co-operation within the framework of this Conference and moreover within this organization is hampered by such politically motivated declarations.

To the
President of the
Regional Broadcasting Conference
Miss Marie HUET
G e n e v a

I request that this letter be circulated as an official document of the Regional Broadcasting Conference.

Please accept, Madam, the assurances of my highest consideration.

K. R. BINZ

Head of the Delegation of the
Federal Republic of Germany

INTERNATIONAL TELECOMMUNICATION UNION

REGIONAL BROADCASTING CONFERENCE

(FIRST SESSION) GENEVA, 1982

Document No. 159-E
16 September 1982
Original : English

PLENARY MEETING

MINUTES

OF THE

FOURTH PLENARY MEETING

Friday, 10 September 1982, at 1435 hrs

Chairman : Miss Marie HUET (France)

Subjects discussed		Document No.
1.	Consideration of the Second Report of Committee 4	99
2.	Consideration of the Second Report of Committee 5	103
3.	Consideration of texts submitted by Committee 6 : Series B.3	109

1. Consideration of the Second Report of Committee 4 (Document No. 99)

1.1 The Chairman of Committee 4, introducing the document, announced that the delegations of Bulgaria, the German Democratic Republic and the U.S.S.R. had withdrawn the reservations they had made to point 5.3.2.2.1 of Chapter 5. The second paragraph of the document could therefore be deleted.

Document No. 99 as amended was noted.

2. Consideration of the Second Report of Committee 5 (Document No. 103)

2.1 The Chairman of Committee 5 introduced the document, which was noted.

3. Consideration of texts submitted by Committee 6 : Series B.3 (Document No. 109)

3.1 The Chairman of Committee 6 introduced the document, observing that the Committee had proceeded on the understanding that non-substantive errors would be corrected without submission to the Plenary Meeting.

Page B.3/1

Approved.

Page B.3/2

3.2 The Chairman of Committee 6 said that the last sentence of point 5.1 had been placed in square brackets because it had been understood that information from CCIR texts that were to be used at the Second Session should be reproduced in full, not merely indicated by a reference.

3.3 The Chairman of Committee 4 endorsed that statement and said that the paragraph in question should be replaced by the contents of the Annex to Document No. DT/35.

Page B.3/2 was approved as amended.

Page B.3/3

3.4 The delegate of Finland proposed that the word "constraints" in paragraph 3) of point 5.3.2.1 be replaced by "conditions".

Page B.3/3 was approved as amended.

Page B.3/4

Approved.

Page B.3/5

3.5 In response to a query by the delegate of Finland, the Chairman of Committee 6 said that the words "maximum permitted" should be deleted from the second paragraph of point 5.3.2.2.3.2.

Page B.3/5 was approved as amended.

Page B.3/6

3.6 The Chairman of Committee 4 said that the letter "A" should be inserted in the square brackets after "Annex" in the second paragraph of point 5.3.2.2.5.

3.7 The delegate of the United Kingdom said that the reference to ICAO Annex 10 in paragraph 2) of point 5.3.3.1 should be amplified and that he would hand in the appropriate wording to the Secretariat.

3.8 The delegate of France, supported by the Chairman of Committee 4, observed that only three interference modes were mentioned in the first paragraph of point 5.3.3.2, whereas four had in fact been studied.

3.9 Mr. Berrada (IFRB) said it was not clear how the results of the "further study" referred to in the second paragraph of that section would be used.

3.10 After a brief discussion, the Chairman of Committee 4 suggested that a reference to Recommendation No. COM 4/3 be made in that paragraph.

Page B.3/6 was approved as amended.

Page B.3/7

3.11 The Chairman of Committee 6 said that the last paragraph of point 5.3.4.2.3 had been placed in square brackets because Committee 6 had not been sure whether CCIR Report 929 should be mentioned in a footnote or whether the information concerned should be reproduced.

3.12 The Chairman of Committee 4 said that the paragraph should be replaced by a reference to an Annex to Chapter 5 containing the formula and explanation thereof appearing in section 3.1.2 of draft Report BA/8, as furnished in Annex 6.2 to the CCIR Report to the current session.

Page B.3/7 was approved as amended.

Page B.3/8

3.13 The delegate of Finland observed that the word "unwanted" at the beginning of the title of point 5.3.5.2. should be deleted, since the formula in question was applicable to both wanted and unwanted signals.

Page B.3/8 was approved as amended.

Page B.3/9

Approved.

Page B.3/10

3.14 The Chairman of Committee 4 said that the Annex referred to in the first paragraph of point 5.3.7.3 should be "B", not "A".

Page B.3/10 was approved as amended.

Page B.3/11

Approved.

Page B.3/12

3.15 The Chairman of Committee 6 suggested that the words "an administration or" be deleted from the second sentence of the last paragraph of point 5.3.8.

3.16 The Chairman of Committee 4 pointed out that points 5.3.9.1 to 5.3.9.9 would have to be left in abeyance pending their discussion in Committee 5. At its last meeting, Committee 4 had decided that point 5.3.9.10 should also be forwarded to Committee 5. In his opinion, that whole passage should be placed in the chapter of the report on planning methods.

3.17 The delegate of the United Kingdom said that in his view the sections concerned should merely be confirmed by Committee 5 and should appear in Chapter 5 of the report.

3.18 The Chairman of Committee 5 said he had no objection to incorporating the texts in the chapter on planning methods.

Page B.3/12 was approved as amended.

Pages B.3/13 to B.3/15

Points 5.3.9.1 to 5.3.9.10 were referred to Committee 5.

3.19 Following a request for clarification by the delegate of Sweden, it was decided to change "exacerbated" in point 5.3.10 to "made worse".

3.20 The delegate of Iran said that the words "in Region 1" should be inserted after the word "allocated" in the penultimate sentence of point 5.3.10.

It was so agreed, and points 5.3.9.11 and 5.3.10 were approved, as amended.

Page B.3/16

3.21 The Chairman of Committee 6 said that the note to Figure 5.1 should read :

"The dotted line shows the limits ..."

It was so agreed, and the page was approved, as amended.

Pages B.3/17 and B.3/18

Approved.

Pages B.3/19 and B.3/20 (Annex A)

3.22 The delegate of Belgium, supported by the Chairman of ad hoc Group 5/2, said that ad hoc Group 5/2 had agreed to replace the term "service area" with the words "area below the protection volume as defined in point 5.3.2.1", and the title to Annex A should be amended accordingly, subject to confirmation of the new term by Committee 5.

3.23 The Chairman of Committee 6 said it would be useful if members of ad hoc Group 5/2 could re-read the text and indicate to the Editorial Committee 6 where the new term should be used, before the document was presented for second reading.

It was so agreed.

3.24 The Chairman of Committee 4 said the square brackets could be deleted from paragraph 4 c).

It was so agreed, and pages B.3/19 and B.3/20 were approved, as amended.

Page B.3/21 (Annex B)

Approved.

Page B.3/22 (Annex C)

3.25 The representative of the CCIR said that the reference in brackets in the third paragraph should read "(paragraphs 4.2.1 to 4.2.3)".

3.26 After an exchange of views concerning the last sentence on the page between the Chairman of Committee 6 and the Chairman of Committee 4, the delegate of Switzerland proposed replacement of the word "this" by the more specific phrase "the full implementation".

It was so agreed, and the page was approved, as amended.

Pages B.3/23 and B.3/24 (Recommendation No. COM 4/2)

3.27 The delegate of Rwanda, supported by the delegate of Mali, proposed that paragraph 1 of requests the CCIR be amended to read :

"To undertake, as soon as possible, propagation and radiometeorological measurements in and around the African continent;"

It was so agreed, and the two pages were approved, as amended.

3.28 The Director of the CCIR said that the adoption of Recommendation No. COM 4/2 would be welcomed as a starting point for a real and effective propagation study programme in Africa. There was already one CCIR Interim Working Party studying propagation for broadcasting, IWP 5/5. However, it would be extremely useful if a meeting of all administrations concerned could be arranged before the end of the First Session of the Conference to discuss in detail what measurements would be required and how best to carry them out.

3.29 The Chairman said it would indeed be possible to allocate one half-day to such a meeting, although the actual date and time would depend on the Conference timetable.

Pages B.3/25 and B.3/26 (Recommendation No. COM 4/3)

3.30 The Chairman of Committee 4 said that the date in square brackets in paragraph 2.1 had been discussed at great length in Committee 4. Some delegations had favoured an earlier deadline, but it had felt that April 1983 was probably the earliest practical date.

3.31 The Director of the CCIR said that the CCIR fully appreciated the urgency of the problem. He had discussed the matter with the Chairman of Study Group 8, and could assure the Conference that every effort would be made to produce the information as soon as possible. However, time was short and although the CCIR had noted the Conference's wish to have the information available by January 1983 if possible, it would be unrealistic to adopt that date as a firm deadline.

3.32 The delegate of Italy, speaking in his capacity as Chairman of Study Group 10, said that the study in question would be an extremely long process. Moreover, there was a procedural constraint : only the relevant Study Group, and not the IWP, was authorized to supply administrations with the results of its work.

3.33 The delegate of the United Kingdom, supported by the delegate of Norway, drew attention to paragraph 1 of recommends that the CCIR which highlighted the urgency of the problem. If administrations did not receive the information early in 1983, serious problems might result which would affect the planning of broadcasting services in years to come. Despite the procedural problem raised by the Chairman of Study Group 10, he thought that the Secretary-General or the Director of the CCIR could inform administrations of the results of the IWP's work on a provisional basis as had been done in the past.

He therefore proposed that paragraph 2.1 be amended to read :

"contained in paragraph 1.1, preferably by 31 January 1983, and at the latest by April 1983."

3.34 The Director of the CCIR said that that proposal was both practical and acceptable to the CCIR, and that in view of the urgency of the matter the output of the IWP could be made available to administrations.

Pages B.3/25 and B.3/26 were approved, subject to the above amendment.

Page B.3/27 (Recommendation No. COM 4/4)

3.35 After lengthy discussion involving the Chairman of CCIR Study Group 10, the Director of the CCIR, and the delegates of the United Kingdom and the Netherlands, it was decided to defer a decision on the date in square brackets in paragraph 2 of recommends that the CCIR pending discussions between the Director of the CCIR and those involved in the work of Study Group 10.

3.36 The Chairman said that since Mr. Götze was leaving Geneva the following day, she would like to thank him once more for his hard work in helping to complete the work of Committee 4 so quickly and successfully. (Applause)

The meeting rose at 1610 hours.

The Secretary-General : The Chairman :

M. MILI Marie HUET

INTERNATIONAL TELECOMMUNICATION UNION

REGIONAL BROADCASTING CONFERENCE

(FIRST SESSION) GENEVA, 1982

Document No. 160-E
16 September 1982
Original : French

PLENARY MEETING

MINUTES

OF THE

FIFTH PLENARY MEETING

Monday, 13 September 1982, at 1435 hrs

Chairman : Miss Marie HUET (France)

Subjects discussed	Document No.
1. Consideration of the Report of Committee 2	116
2. Consideration of the Third, Fourth and Fifth Reports of Committee 5	110, 112, 114
3. Consideration of texts submitted by Committee 6 : Series B.4	118
4. Consideration of texts submitted by Committee 6 : Series B.3 (continued)	109

1. Consideration of the Report of Committee 2 (Document No. 116)

1.1 The Chairman of Committee 2, introducing the document, drew special attention to section 4 and said that since the final meeting of his Committee three countries, the People's Republic of the Congo, the Republic of Upper Volta and the State of Kuwait, had presented credentials which had been found to be in good and due form. The names of those countries should therefore be deleted from section 3 of the Annex and inserted in the appropriate places in section 1.1.1.

The conclusions and recommendations contained in Document No. 116 were approved as amended.

1.2 The Chairman said that if other credentials were received they would be inserted in a revised version of Document No. 116 to be circulated at the end of the Session.

2. Consideration of the Third, Fourth and Fifth Reports of Committee 5 (Documents Nos. 110, 112, 114)

2.1 The Chairman of Committee 5 introduced Documents Nos. 110, 112 and 114, which were noted.

3. Consideration of texts submitted by Committee 6 : Series B.4 (Document No. 118)

3.1 The Chairman of Committee 6 introduced the document, drawing attention to some errors of presentation in boxes 12 and 12b on page B.4/4. On page B.4/12, the square brackets round the word "shall" should be deleted; in the French text of the first paragraph of section 6.1.6 on page B.4/14, the words "peu à peu" should be replaced by "de proche en proche"; in the fifth paragraph of the English text of page B.4/15, the words "signatories of" should be replaced by "parties to"; and in the French text of that paragraph, the words "aux noms de qui" should be replaced by "aux noms desquels".

Page B.4/1

3.2 The Chairman of Committee 5 said that the footnote to Note 2 had been placed in square brackets because the text appeared again in the Report in connection with planning methods. Personally, he would prefer to retain the footnote, but that was for the Plenary Meeting to decide.

3.3 The delegate of Qatar, supported by the delegates of the United Arab Emirates and Oman, proposed that the footnote be retained and that the square brackets be deleted.

3.4 The delegate of Italy, supported by the delegate of France, proposed that the words "responsible for the service" be deleted from the definition of "Service area".

Page B.4/1 was approved as amended.

Page B.4/2

3.5 The Chairman of Committee 5 observed that his Committee had not decided to insert the word "Additional" at the beginning of the title of draft Resolution No. COM 5/1 and suggested that it be deleted.

Page B.4/2 was approved with that amendment.

Pages B.4/3 and B.4/4

3.6 The Chairman of Committee 5 said that one or two further boxes might be added to page B.4/4 as the result of the deliberations of ad hoc Working Group 5/2 and that such further information would be published in an Addendum to Document No. 118.

On that understanding pages B.4/3 and B.4/4 were approved as amended.

Page B.4/5

Approved.

Page B.4/6

3.7 The delegate of the Federal Republic of Germany, referring to Box No. 07, pointed out that it had been agreed in Committee 5 to use the letter "M" in the case referred to in the last two lines.

3.8 The delegate of Italy confirmed that statement.

3.9 The Chairman said that Committee 6 should insert an appropriate reference.

3.10 In response to a question by the delegate of Bulgaria and a comment by the delegate of the Federal Republic of Germany, the Chairman said that the words after "omnidirectional radiation" under Box No. 09 should read "or D in the second box in the case of directional radiation".

Page B.4/6 was approved as amended.

Page B.4/7

Approved.

Page B.4/8

3.11 The Chairman of Committee 5 suggested that the square brackets round the words "a symbol" under Box No. 15 should be removed and a footnote added stating that the symbol would be indicated later by the IFRB.

Page B.4/8 was approved as amended.

Pages B.4/9 to B.4/12

3.12 The delegate of Spain said that the presentation of Box No. 31a could be improved, as could that of Boxes Nos. 12 and 12a.

3.13 The Chairman said that there was clearly no time to go into details of layout at the current Session. Suggested improvements should be submitted to the IFRB.

On that understanding pages B.4/9 to B.4/12 were approved.

Pages B.4/13 and B.4/14

3.14 The Chairman of Committee 5 said that section 6.1 on planning principles as submitted to the Plenary Meeting was the result of extensive debates and was based on a series of delicate compromises. He was aware that the text contained a certain number of redundancies, but appealed to the meeting not to propose amendments to the passages in question, since that might upset the balance which had been achieved with such difficulty.

Pages B.4/13 and B.4/14 were approved.

Page B.4/15

3.15 The delegate of the U.S.S.R proposed that section 6.1.7 should be placed in square brackets and its approval be deferred since there was no definition of which countries were covered in the reference to different planning methods in the Middle East. The Middle Eastern and Region 3 countries taking part in the Conference as neighbours of Region 1 should, in his view, use the planning methods and lattices adopted for the European Broadcasting Area. Section 6.1.7 could therefore seriously complicate the work of the Second Session unless it made clear which countries of the Middle East might have different planning methods, preferably by listing them.

3.16 After a discussion in which the delegates of Norway, Libya, Italy, Botswana and the U.S.S.R and the Chairman of Committee 5 took part, the Chairman proposed and it was agreed that an ad hoc Group (PLEN./1) should be set up, consisting of delegates of interested countries under the chairmanship of Mr. R. Bounab (Algerian Democratic and Popular Republic), to resolve the issue as soon as possible and report to the next plenary meeting.

Page B.4/15 was approved, subject to clarification of the phrase "and the Middle East" which would be held pending in square brackets.

Pages B.4/16 and B.4/17 (Resolution No. COM 5/2)

Approved.

4. Consideration of texts submitted by Committee 6 : Series B.3 (continued) (Document No. 109)

4.1 The Vice-Chairman of Committee 4, referring to the last paragraph of section 5.1 appearing on page B.3/2 of the document, drew attention to the decision at the Fourth Plenary Meeting to substitute the figure in the Annex to Document No. DT/35 for that text. It had subsequently been considered, however, that since the AM and FM curves in that figure related to monophony whereas all planning was based on the use of stereophony, it would be useful to include three curves, those in Figure 6.1 on page 134 of the CCIR Report to the current Session. That course had been agreed upon in ad hoc Working Group 5/2 and the amendment, after approval by Committee 5, could be made in the pink version of Series B.3.

It was so agreed.

The meeting rose at 1540 hours.

The Secretary-General
M. MILI

The Chairman :
Marie HUET

INTERNATIONAL TELECOMMUNICATION UNION

REGIONAL BROADCASTING CONFERENCE

(FIRST SESSION) GENEVA, 1982

Document No. 161-E
22 September 1982
Original : English

COMMITTEE 5

SUMMARY RECORD

OF THE

SIXTH MEETING OF COMMITTEE 5

(PLANNING METHODS)

Thursday, 9 September 1982, at 1430 hrs

Chairman : Mr. K. ARASTEH (Islamic Republic of Iran)

Subjects discussed :		Document No.
1.	Approval of the summary record of the third meeting	102
2.	First series of texts submitted to the Editorial Committee	82
3.	Fifth report from Working Group 5A	90, 105
4.	Second report from Working Group 5B	69(Rev.2), 106

1. Approval of the summary record of the third meeting (Document No. 102)

1.1 The summary record of the third meeting (Document No. 102) was approved.

1.2 The delegate of the United Kingdom considered that the summary records of meetings were not being issued sufficiently rapidly. He requested the Secretariat to take steps to remedy the situation.

2. First series of texts submitted to the Editorial Committee (Document No. 82)

2.1 The Chairman drew attention to paragraph 6.2.3 of the Annex to Document No. 82 and the related note, the text of which had not been available when the document had been taken up at an earlier meeting.

2.2 The delegate of Saudi Arabia said that agreement had been reached among the countries concerned on the text of the note, which would read as follows :

"Some countries in the Middle East may wish to consider the possibility of setting aside a small portion of the band 87.5 to 108 MHz to be used for low-power networks or low-power stations, subject to agreement among the administrations concerned."

2.3 The delegate of Qatar expressed support for the text read out by the previous speaker.

2.4 The delegate of the United Kingdom said that he too could support the text, providing the phrase "without having any impact on the planning in other areas" was inserted after the words "administrations concerned".

2.5 The delegate of Saudi Arabia said he could accept that amendment.

2.6 The delegate of Oman supported the proposed note together with the United Kingdom amendment. With regard to the text of paragraph 6.2.3 itself, he asked whether, in the light of the previous discussion, the verb should not be in the imperative mood, i.e. "shall be set aside".

2.7 Following a discussion in which the delegate of the United Kingdom, the Chairman of the Editorial Committee and the delegate of Oman took part, it was agreed to use the word "shall" rather than "should".

3. Fifth report from Working Group 5A (Documents Nos. 90, 105)

3.1 The Chairman drew attention to paragraphs 6.1.6 and 6.1.7 of the Annex to Document No. 90, which had been left in abeyance pending the outcome of discussions in the ad hoc Group set up to resolve the problems which had arisen in that connection.

3.2 The Chairman of ad hoc Group 5/3 introduced the draft Resolution in the Annex to Document No. 105, which had been prepared by the ad hoc Group in an attempt to meet the concern expressed by the delegate of Libya in respect of paragraphs 6.1.6 and 6.1.7 of the Annex to Document No. 90. The text of the draft Resolution had been approved unanimously by the ad hoc Group on two conditions, namely, that paragraphs 6.1.6 and 6.1.7 remained unchanged and that a reference to the Resolution was inserted at the end of paragraph 6.1.7.

Turning to the text itself, he said that the square brackets should be removed from around the date in resolves 1. In the case of divergencies between the different language versions of the draft Resolution, the English text should be regarded as authentic since that was the version which the ad hoc Group had approved.

3.3 The delegate of Greece wondered whether the First Session of a Conference was authorized to adopt Resolutions and what the status of such texts would be in relation to the 1961 Stockholm Agreement. As he saw it, a report to the Second Session could not be binding upon administrations.

3.4 Mr. Berrada (IFRB) having confirmed that Resolutions had been adopted by similar First Sessions of Conferences, the Chairman suggested that the Committee should proceed to consider the substance of the draft Resolution and discuss the form later if difficulties were to arise.

It was so agreed.

3.5 Considering a) - e)

Approved.

3.6 Resolves 1

3.6.1 The delegate of Yugoslavia proposed a number of amendments designed to ensure that the Resolution covered all eventualities, including cases where no reply was received from an administration whose agreement was sought within the time-limits set in the Stockholm Agreement.

3.6.2 Those amendments were supported by the delegates of Greece and Italy.

3.6.3 The delegates of Algeria, Libya and Tunisia urged retention of the text as it stood, as any modification would endanger the compromise worked out in the ad hoc Group.

3.6.4 Following discussion and informal consultations, the Chairman announced the following amendments :

- removal of the square brackets in the first line;
- insertion of the phrase ".... in order to apply the planning principles adopted by the Conference ...." after "15 October 1982".

It was agreed to align the French version of sub-paragraph c) to the English text.

Resolves 1 was approved, as amended.

3.6.5 Resolves 2

Approved.

3.7 The Chairman announced that, after informal consultations, it was proposed to add a new paragraph, reading as follows :

"Recommends to the administrations referred to in Resolves 1 a) and administrations of the other countries party to the Stockholm Agreement to initiate coordination of their present and planned requirements prior to the Second Session of the Conference."

3.7.1 The delegate of Cameroon thought that a Resolution should not include a Recommendation, since the former was mandatory and the latter advisory.

3.7.2 The Chairman suggested that that point should be left to the Editorial Committee.

Document No. 105, as amended, was approved.

3.8 Annex to Document No. 90, paragraph 6.1.6

Paragraph 6.1.6 of the Annex to Document No. 90 was approved, subject to deletion of the square brackets in a), b) and c).

3.9 Annex to Document No. 90, paragraph 6.1.7

3.9.1 The Chairman of Working Group 5A proposed that the following text be added at the end of the paragraph :

", or during the Second Session, (see Resolution [ ])", the Editorial Committee replacing the square brackets by the appropriate Resolution number when it was known.

It was agreed to align the last line of the French text with the English version.

Document No. 90, as amended, was approved.

4. Second report of Working Group 5B to Committee 5
(Documents Nos. 69(Rev.2) and 106)

4.1 The Chairman of Working Group 5B, introducing Document No. 69(Rev.2), said that the text, most of which had already been approved by the Committee, was resubmitted for consideration of the amendments made necessary by discussions in Committees 5 and 4. He pointed out a certain number of editorial corrections and additions or amendments designed to make the Form clearer.

Box 15

4.2 The Chairman of ad hoc Group 5/4 said that his Group had been convened to consider box 15 and its related instructions in the light of the discussion on the subject in Committee 5, and the proposals were contained in Document No. 106.

Following explanations by the Chairman of Working Group 5B, Document No. 106 was approved on the understanding that it would be the responsibility of the IFRB to determine the number of lines in the box.

Box 21

4.3 In order to make clear the distinction between the information sought in box 15 and that in box 21, Mr. Berrada (IFRB) proposed addition of the words "if the requirement is intended to replace an assignment in one of the Plans (Stockholm 1961 and Geneva 1963) and/or in the Master Register". In reply to the delegate of Belgium who recommended an additional box 14a to indicate the limits of the band within which the administration concerned would wish to see its assignment, Mr. Berrada suggested that such an indication be given in box 21 by adding the words "e.g. the preferred part of the 87.5 to 108 MHz band".

Those amendments were approved.

Box 31

4.4 It was agreed, for the sake of clarity, to replace the first indent in paragraph 31 by the following :

"- for a directive antenna, the attenuation in dB with respect to the maximum value of the total effective radiated power;"

Document No. 69(Rev.2) was approved, as amended.

The meeting rose at 1735 hours.

The Secretary :
M. AHMAD

The Chairman :
K. ARASTEH

INTERNATIONAL TELECOMMUNICATION UNION

REGIONAL BROADCASTING CONFERENCE

(FIRST SESSION) GENEVA, 1982

Document No. 162-E
23 September 1982
Original : English

COMMITTEE 5

SUMMARY RECORD

OF THE

SEVENTH MEETING OF COMMITTEE 5

(PLANNING METHODS)

Friday, 10 September 1982 at 1630 and 2000 hrs

Chairman : Mr. K. ARASTEH (Islamic Republic of Iran)

Subjects discussed :	Document No.
1. Third Report from Working Group 5B on the schedule for the preparation and submission of requirements to the IFRB	89(Rev.1)
2. Seventh Report from Working Group 5A on planning methods (excluding Annex 4)	92
3. Planning aids (map and lattices)	-

1. Third Report from Working Group 5B on the schedule for the preparation and submission of requirements to the IFRB (Document No. 89(Rev.1))

1.1 The Chairman of Working Group 5B thanked the Chairman of Sub-Working Group 5B-1 for the work reported earlier to the Committee. Introducing Document No. 89(Rev.1), indicated a number of drafting corrections and said that it was proposed to add a paragraph to section 7.3 dealing with the Processing of requirements by the IFRB. The three parts of the document comprised an introduction, which was the Report proper, a schedule for the activities to be undertaken between the First and Second Sessions of the Conference and draft texts for Chapter 7 of the Report of the First Session.

1.2 Part 1 of the Report, detailing the activities to be undertaken between the First and Second Sessions of the Conference, was approved with the deletion of the words "In a Conference Resolution" at the beginning of paragraph a).

1.3 The Chairman of Working Group 5B pointed out that in Part 2 of the Report, where the Group proposed a timetable for the various activities to be undertaken, the letters identifying each activity referred to the lettered sub-paragraphs of Part 1. An illustration of the schedule was presented on page 3 of the Report.

1.3.1 Mr. Berrada (IFRB) said it seemed that administrations would be involved in deciding problems of incompatibility between the VHF sound broadcasting and aeronautical mobile and radionavigational services in their areas and it would be too late if the IFRB sent them the complete inventory of requirements only by the end of July 1984 as shown in the proposed schedule. The IFRB therefore intended to send administrations microfiches of the complete inventory by 30 April 1984, so that they could study all the requirements in their area and propose modifications designed to resolve any incompatibilities to the Second Session or to the IFRB as appropriate. The IFRB would then distribute a second set of microfiches incorporating any corrections made by 31 July 1984 if necessary.

1.3.2 The Chairman of Working Group 5B insofar as despatch of the complete inventory by 30 April 1984 was concerned, welcomed Mr. Berrada's statement and the Chairman said that all would wish to congratulate the IFRB on its efforts to aid administrations.

1.3.3 In reply to questions from the Chairman of ad hoc Group 5/2 and the delegate of the Netherlands, Mr. Berrada (IFRB) said that the IFRB would have no problem in supplying the information on magnetic tape and administrations would be asked to indicate if that was their preference. But there was nothing to be gained by attempting to distribute the material selectively; it would be more economical to send all the information relating to the inventory to every administration.

The proposed schedule contained in Part 2 of the Report, as amended, was approved.

1.4 Part 3

1.4.1 Mr. Berrada (IFRB) said that the Form for submission of frequency requirements and instructions which it was proposed to include as section 7.1 of the Report of the First Session would probably contain an additional box 32 for data on aeronautical mobile service control points to be inserted.

1.4.2 Section 7.2 of the draft texts for inclusion in Chapter 7 of the Report of the First Session (Date for submission of requirements) was approved without comment.

1.4.3 The Chairman of Working Group 5B said that the additional paragraph which Sub-Working Group 5/4 proposed for insertion between the first and second paragraphs of section 7.3 (Processing of requirements by the IFRB) would read :

"When the requirement corresponds to an assignment which has been notified in accordance with the Radio Regulations to the IFRB or which is in conformance with the Stockholm 1961 Agreement, the status of this assignment will be inserted by the IFRB when publishing the inventory of requirements. Different symbols will indicate the recording in the Master International Frequency Register and the conformance with the Stockholm 1961 Agreement."

1.4.4 The Chairman of ad hoc Group 5/2 suggested that until his Group had completed its work and was able to propose any necessary amendments, sections 7.3, 7.4 and 7.5 of the Report should remain in square brackets.

It was so agreed.

Section 7.3 of the Report was approved with the addition of the paragraph proposed, subject to possible amendments resulting from the work of ad hoc Group 5/2.

1.4.5 Mr. Berrada (IFRB) said that the first paragraph of section 7.4 should be amended to indicate that the IFRB :

"shall publish the complete inventory of requirements in the form of microfiches and shall send it in duplicate to administrations by 30 April 1984 and again by 31 July 1984 if the nature and number of corrections justifies this."

1.4.6 The Chairman of Working Group 5B said the section should also contain a reference to the IFRB's readiness to send information in the form of magnetic tape and proposed the addition of a final sentence to read :

"The inventory of requirements and the results of the calculations may be sent in the form of magnetic tape to administrations which have requested this."

At the request of Mr. Berrada (IFRB) the words "in a form compatible with the ITU computer system which will be notified to the administrations concerned" were added to the proposed amendment.

1.4.7 The delegate of Spain said that the words "in duplicate" should be added to the second paragraph to bring it into line with what had been decided and with paragraph 1 i) of the Report.

1.4.8 Mr. Berrada (IFRB) said that it would be useful for budgetary reasons to know if administrations wished to acquire microfiche readers for themselves and, if not, how many they would require. During preparations for the Region 2 Conference on medium-wave sound broadcasting the IFRB had provided each administration with two portable readers which delegations had been asked to bring to the Conference itself. The cost to the IFRB of supplying microfiches and readers (currently about 600 Swiss francs per reader) was estimated to be about 20% of the cost of printing and distributing the same volume of information on paper.

After a discussion in which the delegates of the Federal Republic of Germany, Botswana, Kenya and Norway took part, the Chairman proposed and it was agreed that the IFRB should provide administrations with two microfiche readers each as necessary.

Sections 7.4 and 7.5 of the Report were approved as amended, and subject to possible changes in the light of the conclusions of ad hoc Group 5/2.

The meeting was suspended at 1725 hours and resumed at 2000 hours.

2. Seventh Report from Working Group 5A on planning methods (excluding Annex 4) (Document No. 92)

2.1 Introductory section (pages 1 and 2)

2.1.1 The Chairman of Working Group 5A, introducing the document, invited attention to the square brackets surrounding the section referring to Annex 4. An ad hoc Group had been set up to report on the matter directly to Committee 5 but its conclusions had not been discussed in Working Group 5A, that Group had left it to the Committee to consider Annex 4.

He suggested the establishment of an ad hoc Group to prepare Annexes 5 and 6, which Working Group 5A had not been able to prepare because the results of Committee 4's work had not been available.

Working Group 5A had been unable to complete a channel distribution scheme for African and European lattices because delegates had not decided which lattices to accept. Committee 5 should reach a decision on the subject when those choices had been made and it would be useful to set up an ad hoc Group to deal with the question.

He understood that Working Group 5B had now taken decisions relating to paragraphs 7, 8 and 9 of Annex 2 in the Appendix, so that Committee 5 could amend those paragraphs accordingly.

He had discussed with the delegate of the German Democratic Republic the reservation mentioned in paragraph 4 and believed that the underlying problem could easily be solved.

A note regarding television transmission in the 87.5 to 100 MHz band in Mongolia and the U.S.S.R had been omitted, but the Committee might wish to include information on the subject in the Report from the First to the Second Session.

The distances mentioned in square brackets in Annex 1, paragraph 6, would have to be reconsidered when decisions had been made regarding the relevant lattices. Since the channel lattices had to be superimposed on maps before the end of the Conference and Working Group 5A had been unable to do the work, he had informally set up an ad hoc Group to report to Committee 5.

2.1.2 The delegate of Iran thought that the square brackets around the definition of "the Middle East" should be retained, because the question of the lattices used by some countries for planning had not been clarified.

2.1.3 The delegate of Syria said that the proposed definition was inadequate, since a large area between Iran and the Mediterranean was left out. It would be better to base planning on a precise definition than on an imprecise one.

2.1.4 Mr. Berrada (IFRB) pointed out that the proposed definition implied that the countries of the Eastern Mediterranean would have to apply an 80-channel scheme. He therefore suggested the addition of the words : "and the Asian part of the European broadcasting area, excluding Turkey", after the word : "Iran". However, if that suggestion were adopted, it should be understood that those countries would adopt a 34 or 31 channel scheme. Any country adopting another scheme should be clearly identified in the document.

On the proposal of the Chairman, it was agreed to delete the square brackets and insert the amendment proposed by Mr. Berrada.

The introductory section, as amended, was approved.

2.2 Appendix (6.3 Planning methods)

2.2.1 Paragraph 2) (top of page 3)

It was agreed to replace "automatic landing purposes" by "landing and navigational purposes", and replace "108 to 112 MHz" by "108 to 118 MHz", retaining the square brackets until Annexes 5 and 6 were completed.

2.2.2 Paragraph 2 (page 5)

It was agreed after discussion among the delegates of the Federal Republic of Germany, Algeria, Iran, Qatar and Botswana to amend the paragraph as follows :

"In Africa and the Middle East, a lattice with a channel distribution of 31 channels will be used to permit between six and seven coverages in the band 87.5 to 108 MHz.[1)]"

with a consequential amendment to footnote 1).

2.2.3 Paragraph 3 (page 5)

It was agreed on the proposal of the delegate of the Federal Republic of Germany, to replace "[80] channels" by "79 channels".

The delegate of the Federal Republic of Germany explained that the statement in paragraph 7 of Annex 1 was also valid for 79 channels. The separation of 10.7 ± 0.2 MHz was a planning constraint which had to be taken into account separately in each individual case.

Figures 1A and 1B

2.2.4 After a discussion in which the delegates of the Federal Republic of Germany, the German Democratic Republic and the United Kingdom took part, Figure 1A was approved and renamed Figure 1, and Figure 1B was deleted. Consequantly, the reference in square brackets to Figures 1A and 1B on page 5 was amended to read : "Figures 1 and 2".

2.2.5 The delegate of Algeria said that the channel distribution scheme for 31 channels selected by the African countries was contained in a document without a symbol but he hoped the relevant diagram would be included in a later document.

2.2.6 In reply to questions from the Chairman, the delegates of all the Middle East countries represented agreed to adopt the same channel distribution scheme as the African countries.

It was agreed that the channel distribution scheme accepted by the African and the Middle East countries be incorporated in a diagram to be named Figure 2.

2.2.7 The delegate of the Federal Republic of Germany pointed out that it was necessary to include in the document a table showing the correspondence between channel numbers and frequencies.

At the suggestion of the Chairman of Working Group 5A, it was agreed to set up an ad hoc Group, to be chaired by Mr. Eden (Federal Republic of Germany) and to be named ad hoc Group 5/5, to report on the superimposition of channel lattices on maps and also on the correspondence between channel numbers and frequencies.

The Appendix, as amended, was approved.

2.3 Annex 1 (Lattice planning method)

In accordance with decisions taken earlier, it was decided that the figures / 80 / and / 34 / should be replaced by 79 and 31 respectively wherever they occurred in paragraphs 4, 5, 6 and 7, and that the words "between 6 and 7 coverages" should replace "6 coverages" in paragraph 5.

2.3.1 Paragraphs 1, 2 and 3

Approved.

2.3.2 Paragraph 4

The delegate of the German Democratic Republic said that his delegation's reservation with regard to that paragraph was principally concerned with the theoretical background of the lattice planning method. Since he was sure that an acceptable compromise could be reached in ad hoc Group 5/5, which was to discuss the matter at a forthcoming meeting, his delegation withdrew its reservation.

The Chairman of ad hoc Group 5/5 noted that the square brackets at the end of the paragraph should be retained as the figures, which would consist of maps of the areas concerned with the relevant lattices superimposed upon them, had not yet been prepared.

Paragraph 4 was approved with retention of the final square brackets.

2.3.3 Paragraph 5

Approved.

2.3.4 Paragraph 6

2.3.4.1 The Chairman of ad hoc Group 5/5 said that as a direct mathematical consequence of the decision to have a channel distribution of 31 channels in Africa and the Middle East, the figures in square brackets on the fourth line should be changed to 445 to 555 km and the square brackets removed.

That amendment was approved.

2.3.4.2 The Chairman of ad hoc Group 5/5 drew attention to the fact that the figure "/ 480 /" for unit distance would have to be changed to one nearer the lower limit of the new co-channel distance; that new figure could be discussed in the ad hoc Group when the lattices were being drawn onto the maps.

It was agreed that the average co-channel distance to be used when drawing lattices on the maps for Africa and the Middle East should be referred to the ad hoc Group for consideration and that, as proposed by the delegate of the United Kingdom, any reference to a specific distance should be removed from paragraph 6 by deleting the words ", say, / 480 / km".

2.3.4.3 The delegate of the United Kingdom proposed that the sentence "It should be noted ... channels each" should be placed in square brackets and held in abeyance until ad hoc Group 5/5 had decided on the positioning of the 18 extra channels created by the decision to have 31 channels per coverage in Africa and the Middle East.

That suggestion was adopted.

2.3.4.4 In response to the delegate of the United Kingdom, who wished it made clear that the frequency spacing to be avoided was in fact a range of frequencies, and to the delegate of the U.S.S.R., who wished the central frequency of 10.7 MHz to continue to be highlighted, it was agreed to replace the words "a separation of 10.7 $\pm$ / 0.2 / MHz" at the end of the paragraph by "a separation in the range 10.7 $\pm$ 0.2 MHz".

2.3.4.5 Following a discussion between the representative of the CCIR, the Chairman of ad hoc Group 5/5 and the delegate of the United Kingdom it was agreed to replace the term "local oscillator frequency" by "receiver intermediate frequency", in order to cover the two possible sources of interference.

2.3.4.6 The representative of the CCIR proposed that a footnote should be added after "receiver intermediate frequency", referring the reader to paragraph 6.4.2 of the Report.

It was so agreed.

Paragraph 6 was approved as amended.

2.3.5 Paragraph 7

2.3.5.1 The Chairman of ad hoc Group 5/5 said that, since transmitter densities were not the same in different areas, it would be adivsable to mention a range of distances between neighbouring transmitters rather than a single average distance. He proposed that the whole of the first sentence should be placed in square brackets and held in abeyance until the matter had been discussed in the ad hoc Group.

It was so agreed.

It was decided that, as in paragraph 6, the words "of 10.7 $\pm$ / 0.2 / MHz" should be replaced by "in the range 10.7 $\pm$ 0.2 MHz" and a reference added to the footnote drawing attention to paragraph 6.4.2 of the Report.

2.3.5.2 The delegate of the German Democratic Republic said that as the European channel distribution scheme applied only to the frequency range 100 to 108 MHz, which precluded a frequency separation of 10.7 MHz, the reference to that separation should make clear that it applied only to frequencies below 100 MHz. He therefore proposed, supported by the delegate of the United Kingdom, that the words "with respect to VHF/FM transmitters in the frequency range 87.5 to 100 MHz" should be added at the end of the second last sentance.

It was so agreed.

Paragraph 7 was approved as amended.

2.4 Annex 2 (Analysis of the Plan)

2.4.1 Introduction - Section 1

Approved.

2.4.2 Method of analysis - Section 2

2.4.2.1 The Chairman of ad hoc Group 5/5 said that the reference in square brackets should be deleted and replaced by the words "Annex A to Chapter 3 of the Report".

Following a discussion on the desirability of broadening the reference to include Chapters 2 and 3 of the Report, during which the Chairman of ad hoc Group 5/5 pointed out that any such broader reference ought rather to be included in Annex A itself, that amendment was approved.

Section 2 was approved, as amended.

2.4.3 First analysis for each administration - Section 3

2.4.3.1 The Chairman of Working Group 5B said that the statement in paragraph 3.1 was not consistent with paragraph 7.2 of Document No. 89(Rev.1), which had already been approved by the Committee. The results of the first analysis, calculations would be more reliable and realistic if the IFRB, using the theoretical network, selected a frequency for each transmitter in respect of which none had been specified by the administration concerned.

2.4.3.2 Mr. Berrada (IFRB) observed that the IFRB could not select frequencies on behalf of administrations. Furthermore, only in the case of low-power stations it was being recommended that frequencies should not be specified by administrations before the planning exercise. Assignments involving stations with e.r.p. greater than 100 W for which no frequency had been specified could not be taken into account at the Second Session. However, to meet the concern expressed by the Chairman of Working Group 5B, he said that in such cases - which he hoped would be rare - the IFRB could draw up a diagram showing what the situation was in each channel, in order to enable the administration concerned to choose the frequency it considered most appropriate. If that solution was acceptable, paragraph 3.3 might be amended by inserting the words "and for requirements corresponding to transmitters exceeding 100 W e.r.p. without the indication of a preferred frequency" after "10 dB" in the first sentence.

2.4.3.3 The Chairman of Working Group 5B said he could agree to the proposal by the previous speaker.

With that amendment, section 3 was approved.

2.4.4 Examination of incompatibilities and frequency planning constraints - Section 4

2.4.4.1 The delegate of the Federal Republic of Germany proposed that the words "together with the first analysis described in section 3" should be added after "transmitter" in the first line.

2.4.4.2 Mr. Berrada (IFRB) and the delegate of the German Democratic Republic having pointed out that certain difficulties would arise if that amendment were adopted, the Chairman suggested that the first line of section 4 should be placed between square brackets pending the submission of an improved text by those administrations concerned.

It was so agreed.

2.4.4.3 At the suggestion of the Chairman, it was agreed to defer consideration of the first indent until Annex 4 was taken up. It was also agreed to replace "automatic landing purposes" in the second indent by "landing and navigation purposes", in accordance with the decision taken earlier with regard to section 6.3 of the Appendix, further consideration of the indent being deferred until Annex 5 was taken up.

2.4.4.4 The delegate of Yugoslavia, referring to the fourth indent, considered that the mathematical formula in the second line was based on unsatisfactory criteria and would not cover all cases of overlapping between coverage areas.

2.4.4.5 Following a discussion in which the Chairman of Working Group 5A observed that no reservations had previously been expressed concerning the formula and the delegates of the Federal Republic of Germany and the German Democratic Republic said that they considered it to be adequate, the delegate of Yugoslavia stated that he maintained his reservation, in view of the difficulties which the formula would entail for implementing the Plan.

The third, fourth and fifth indents, together with footnote 1), were approved subject to deletion of all the sets of square brackets which appeared in them.

2.4.5 Presentation of results

2.4.5.1 Following an exchange of views in which Mr. Berrada (IFRB), the Chairman of ad hoc Group 5/2 and the delegate of Finland took part, section 5 was approved provisionally, on the understanding that it might be necessary to make certain additions to the text once Annexes 4 and 5 had been discussed.

2.4.6 Proposed modifications to the requirements - Section 6
Second (preliminary) analysis - Section 7
Inclusion of low-power transmitters - Section 8
Third (preliminary) analysis - Section 9
Second Session of the Conference - Section 10

2.4.6.1 Mr. Berrada (IFRB) suggested that the first sentence of section 6 should be amended to read : "Administrations will study the results of the calculations, select where appropriate the preferred frequency, and prepare and propose ...".

It was so agreed.

2.4.6.2 The Chairman of Working Group 5A observed that sections 7, 8 and 9 had been approved provisionally by Working Group 5A pending the outcome of Working Group 5B's deliberations. Accordingly, the text of the three sections should be brought into line with Document No. 89(Rev.1) which had been submitted by Working Group 5B and approved earlier in the meeting.

It was so agreed.

2.4.6.3 The delegate of the German Democratic Republic proposed that the words "at each location of a low-power transmitter" in section 8 should be replaced by "at the site of the low-power transmitter".

It was so agreed.

2.4.6.4 The Chairman of Working Group 5B proposed that the date 30 October 1984, which appeared in the approved schedule in Document No. 89(Rev.1), should be inserted in the second paragraph of section 6. Furthermore, he considered that section 10 should be removed from its present position and inserted between sections 6 and 7.

2.4.6.5 Mr. Berrada (IFRB), referring to that proposal, said that it would not be possible to perform the tasks described in sections 7, 8 and 9 during the Second Session of the Conference. If the date of 30 October 1984 was retained, the Conference would have to await the results of the calculations before it could proceed with its work.

2.4.6.6 Following further discussion, the delegate of the United Kingdom, supported by the delegate of Algeria, observed that there seemed to be some discrepancy between Document No. 89(Rev.1) and Document No. 92, and suggested that a final decision on the matter be deferred until the Committee's next meeting.

It was so agreed.

2.5 Annex 3 (Method of foremost priority)

Approved subject to deletion of the word "STEREO" from beneath Figure 1.

2.6 Annex 4 (Compatibility with the television service and protection to sound broadcasting stations within the coordination area in the band 87.5 to 100 MHz)

Deferred.

3. Planning aids (maps and lattices)

3.1 The Chairman of ad hoc Group 5/5 presented the material prepared for the ad hoc Group, which was to meet the following day for the purpose of drawing onto geographical maps the lattices required for preliminary planning in Africa, the Middle East and the remaining planning area. He drew attention to the fact that most of the Asian part of the U.S.S.R. and Mongolia was missing from the maps, and suggested that those two delegations should be consulted with a view to ascertaining whether they would be willing to take on the task of extending the lattices beyond the limits of the map.

3.2 The delegate of the U.S.S.R. said he could agree to that procedure, which would no doubt facilitate the work of the ad hoc Group.

The meeting rose at 2350 hours.

The Secretary :
M. AHMAD

The Chairman :
K. ARASTEH

INTERNATIONAL TELECOMMUNICATION UNION

REGIONAL BROADCASTING CONFERENCE

(FIRST SESSION) GENEVA, 1982

Document No. 163-E
24 September 1982
Original : English

COMMITTEE 5

SUMMARY RECORD

OF THE

EIGHTH AND LAST MEETING OF COMMITTEE 5

(PLANNING METHODS)

Tuesday, 14 September 1982, at 0900, 1430 and 1915 hrs

Chairman : Mr. K. ARASTEH (Islamic Republic of Iran)

Subjects discussed :		Document No.
1.	Processing of requirements	89(Rev.1), DT/35(Rev.1)
2.	Report of ad hoc Group 5/5 (Maps)	120
3.	Report of ad hoc Group 5/5 (Channel distribution) and unresolved items in the Seventh Report of Working Group 5A	122 92
4.	Reports of ad hoc Group 5/2	123, 124
5.	Note from the Chairman of Committee 4	93(Rev.1)
6.	Compatibility with aeronautical services	109
7.	Completion of the work of the Committee	-

1. Processing of requirements (Documents Nos. 89(Rev.1) and Annex 1 to DT/35(Rev.1))

1.1 The Chairman of ad hoc Group 5/2 said that as a result of the decisions of ad hoc Group 5/2 relating to compatibility between VHF broadcasting stations and stations of the aeronautical radionavigation and aeronautical mobile (R) services, an amendment to section 7.3 of Document No. 89(Rev.1) had been drafted, which was submitted for approval in Annex 1 to Document No. DT/35(Rev.1).

1.2 The Chairman of Working Group 5B recalled that a new paragraph had been approved and inserted in section 7.3, and should be retained in the new version also.

It was so agreed, and the new section 7.3 was approved.

1.3 The delegate of the United Kingdom was concerned at the discrepancy between Documents Nos. 92 and 89(Rev.1), particularly as regards items 7 and 9 in Document No. 92. Whereas his delegation had understood that low power transmitters would be examined before the start of the Second Session of the Conference, Document No. 89(Rev.1) seemed to imply the opposite. At an earlier meeting, Mr. Berrada had mentioned that the processing of low power assignments would take the IFRB two weeks or more. If low power stations were not included until the beginning of the Second Session, therefore, no data would be available for two or three weeks and work would be held up.

1.4 The Chairman of Working Group 5B said that the implications of the schedule presented in Document No. 89(Rev.1) had been discussed in great detail in Working Group 5B and the IFRB had been continually consulted. First, there were likely to be very few low power transmitters, and so their inclusion would not require much time. Secondly, since all data on stations had to be sent to the IFRB by 1 February 1984, the Board could prepare the inclusion of such stations in the first week of the Second Session, when the Conference would be occupied with administrative and logistic matters. No time would therefore be lost. Finally, if low power stations were inserted during the Conference when all delegates were present they could be examined on a case-by-case basis and the delegations concerned could discuss the problems which arose in each specific case and come to an agreement on usable field strengths.

1.5 The delegate of the United Kingdom said that the discrepancy had arisen probably because Working Group 5B had not been fully aware of the details of the discussions in meetings held to prepare Document No. 92. For a better understanding of the problem, it would be useful if Mr. Berrada could confirm how long the processing of low power stations would take at the beginning of the Second Session.

1.6 Mr. Berrada (IFRB) gave a detailed explanation of the two sets of calculations to be made by the IFRB as outlined in Annex 2 to Document No. 92. As he had explained at an earlier meeting, channels for low power stations could be selected using a computer program design along the lines of one it had already developed for the selection of frequencies in connection with the implementation of WARC-79 decisions. That might lead to a program which, whilst producing extremely satisfactory results, required a considerable amount of computer time. If the inclusion of low power stations was left until the start of the Second Session, and the program run on the first day of that Session, it would be a minimum of 2 to 3 weeks before the results could be provided, and possibly even much longer.

1.7 The Chairman of Sub-Working Group 5A-1 and the Chairman of Working Group 5B explained the reasoning behind the separate examination of low power stations in the procedure outlined in Annex 2. It was clear that at the first attempt to assign frequencies a large number of assignments would have to be revised because of the need to adapt frequency assignments in the two main parts of the planning area (Africa and the Middle East and Europe) and due to incompatibilities with other services. If low power transmitters were included at that stage, they would have to undergo changes along with high power transmitters. It had been thought preferable more or less to settle the situation as regards higher power stations before assigning the appropriate frequencies to low power transmitters.

1.8 The delegate of the United Kingdom, supported by the delegate of Algeria, proposed that on page 3 of Document No. 89(Rev.1) the date of 1 February 1984 and all subsequent dates up to the beginning of the Second Session of the Conference be set back by one month in order to leave a month for additional processing immediately prior to the Second Session.

1.9 The delegate of Italy, supported by the delegate of Switzerland and the delegate of the Federal Republic of Germany, opposed that proposal and urged retention of the deadline of 1 February 1984. There was much preparatory work to be done before that date, including national coordination with other services in the various countries, coordination among countries in Europe and coordination between countries where lattices were different.

After lengthy discussions among the delegates concerned, it was agreed that in the Figure on page 3 of Document No. 89(Rev.1) items "g", "h" and "i" would be grouped together in the column corresponding to the period from 30 June 1984 to 30 July 1984, and that items "j" and "k" would both be brought forward one month, thus making available the month immediately preceding the Second Session for the processing of low power transmitters. Section 2 of Document No. 92 would also be amended accordingly.

1.10 With regard to sub-paragraph i), Mr. Berrada (IFRB) proposed that for greater precision the words "referred to in paragraphs 3.1, 3.2 and 3.3 of Annex 2 to section 6.3 of the Report" should be added after the word "calculations" on the second line.

1.11 In reply to the Chairman of ad hoc Group 5/5, who considered that the reference should also mention Annex 4 to that section, he said that only the calculations relating to television stations were involved.

1.12 The delegate of Finland said that in that case it would be preferable to refer only to the relevant parts of Annex 4. Mr. Berrada's amendment as so modified would then read :

"referred to in paragraphs 3.1, 3.2 and 3.3 of Annex 2 and paragraphs 5 and 6 of Annex 4 of section 6.3 of the Report."

That amendment was approved, subject to Committee 5's approval of Annex 4, which was still before it for consideration.

1.13 As a result of the changes that had been made to the schedule, Mr. Berrada (IFRB) proposed that a further sub-paragraph "l" should be added to section 1 of the document as follows :

"l) On 1 October 1984 the IFRB shall use the modified inventory of requirements in order to carry out the remaining calculations and to present results during the first days of the Second Session; modifications communicated after 1 October 1984 shall be dealt with during the Second Session."

1.14 The Chairman of ad hoc Group 5/5 proposed that to give the new sub-paragraph the same degree of precision as sub-paragraph i) the words "referred to in sections 4, 7, 8 and 9 of Annex 2 to section 6.3 of the Report" should be added after the words "remaining calculations".

With that amendment, Mr. Berrada's proposal was approved.

1.15 The Chairman of Working Group 5B said that the words "if justified by the kind and number of the corrections", which had been added to the end of the first paragraph in section 7.4 by an earlier meeting of Committee 5, should be deleted as they might lead to a misunderstanding as to what action was covered by the word "justified".

That deletion was approved.

1.16 Following a request by Mr. Berrada (IFRB), who felt that a precise definition of the word "modifications" as used in the schedule in Document 89(Rev.1) would serve to avoid any misunderstanding between the IFRB and administrations, the following definition was adopted :

"Modifications are limited to changes in the characteristics of the requirements initially communicated and intended to improve the plan."

Document No. 89(Rev.1) was approved, as amended.

2. Report of ad hoc Group 5/5 (Maps) (Document No. 120)

2.1 Introducing Document No. 120, the Chairman of ad hoc Group 5/5 said that the Group had agreed that a co-channel distance of 240 km should apply everywhere in Europe and a co-channel distance of 480 km everywhere in the Middle East and Africa (except for the northern part of Algeria). Lattices based on those distances had been applied to maps of the areas concerned and appeared as annexes to the document. Those maps, if approved, would become the Figures mentioned at the end of paragraph 4 of Annex 2 to section 6.3 of the Report (see Document No. 92).

2.2 The delegate of Algeria said that the maps took account of his administration's request for the application of a lattice with a side length of 400 km to the northern part of Algeria to allow for the mountainous nature of the terrain. However, the resultant distortion of the lattice affected bordering areas of Tunisia, which was reluctant to accept the change of lattice. Algeria had therefore withdrawn its request and would conform to the 480 km length applicable to the rest of Africa. Consequently, the last part of paragraph 2 reading "except for the northern part of Algeria" should be deleted and the appropriate maps amended.

That amendment was noted.

2.3 The delegate of Tunisia said that his delegation's decision did not rule out use of the former map (with a 400 km lattice for the northern part of Algeria) as a basis for negotiation among the countries of the Mahgreb.

2.4 The delegate of the U.S.S.R. noted that, in accordance with an earlier decision of the Committee, the word "Europe" in sub-paragraph 3.2 should be replaced by "the rest of the planning area" to acknowledge the fact that the Asian part of the U.S.S.R. and Mongolia formed part of that area.

That amendment was approved.

2.5 The delegate of Romania, supported by the delegates of Czechoslovakia and Poland, noting that it would not be possible to work with maps on the small scale given and that in a number of countries the position of the lattice differed by a significant amount when shown on different maps, asked whether it would be possible to provide exact geographical coordinates for the rhombi.

2.6 The Chairman of ad hoc Group 5/5 said that giving geographical coordinates at the present stage would create difficulties without increasing the precision of the lattice. The maps represented a compromise and were the best that could be produced in the time available. It had not been possible to avoid distortions entering parts of the maps that were distant from the reference points. However, the present intention in submitting the maps was to agree on the size, shape and general position of the lattices. Once that point of principle had been accepted, the lattices would be transferred by the IFRB after the first session of the Conference to maps of a more appropriate scale and those parts of the map relative to a particular country would be made available to it together with the coordinates of the rhombi in that area.

2.7 Mr. Berrada (IFRB) said that it would nevertheless assist the IFRB in its task if the Chairman of ad hoc Group 5/5 could provide him before the end of the Conference with a limited number of additional reference points for each map.

2.8 The delegate of Libya said that it would be useful if those reference points were to be situated in border areas.

2.9 The delegate of the German Democratic Republic said that as Geneva was a reference point for Map 1, an indication of its exact coordinates on that map would be useful.

It was decided that a small group consisting of the Chairman of ad hoc Group 5/5, Mr. Berrada (IFRB) and any other delegation that wished to attend should be convened later to determine the position of those reference points.

2.10 The delegate of the United Kingdom said that the United Kingdom had accepted the lattice plan in a spirit of compromise. However, his delegation drew the Committee's attention to the fact that they might be obliged to make changes in some areas and, if so, would be making requests to coordinate those changes with their immediate neighbours.

2.11 The delegate of Syria noted in addition that there might in future be a need to make changes in some areas of the lattice in Map 6 to take account of the needs of countries who were not present at the Conference.

It was noted that there was no objection to such discussions if they led to improvements.

2.12 The delegate of the U.S.S.R. said that on Map 7 the territory of the U.S.S.R. was incorrectly shown to be covered by a lattice with a side length of 480 km.

2.13 The Chairman of ad hoc Group 5/5 said that Map 7 had been drawn for the benefit of the countries on it that formed part of the Middle East area. The extension of the lattice to the area forming part of the U.S.S.R. had been inadvertent and would be removed when the revised version of the map was issued. A similar consideration applied to other maps on which parts of the two different areas appeared. It should be noted, however, that along the edges of the areas where two lattices met, border stations on one side might find it more appropriate to use the lattice of the other and vice versa.

2.14 The delegate of Cyprus noted, in that connection, that although Cyprus was technically in Europe it would be better able to coordinate its stations with its neighbours if it were to form part of the Middle East for the purpose of the channel distribution to be used in planning. His administration accepted that that would imply that planning for Cyprus would cover the complete band 87.5 to 108 MHz.

The inclusion of Cyprus in the Middle East area was approved, with the proviso that a note to that effect would be added in an appropriate place in the report.

2.15 The delegate of Portugal drew attention to the fact that the maps did not indicate which lattice was to cover the Azores and Madeira, which were part of the national territory of Portugal.

It was agreed that as the Azores and Madeira were distant enough from Africa for the choice of lattice to be immaterial to African countries, the choice of the lattice to be used in planning for the Azores and Madeira was an internal matter to be decided by Portugal without reference to other countries.

Document No. 120 as amended was approved.

The meeting was suspended at 1220 hours and resumed at 1430 hours.

3. Report of ad hoc Group 5/5 (Channel distribution) (Document No. 122) and Unresolved items of Seventh Report of Working Group 5A to Committee 5 (resumed) (Document No. 92)

3.1 The Chairman of ad hoc Group 5/5 said that it was proposed to add two new paragraphs to page 5 of Document No. 92. The heading of Table 1 in Document No. 122 should also be amended to include the Asian part of the Soviet Union and Mongolia. A footnote should be inserted in the first of the new paragraphs referring to Figures 1 and 2 of Document No. 92, in order to make clear the general direction of the rhombi in those figures, and reading :

"The channel distribution schemes of Figures 1 and 2 should be applied in such a way that the lower left-hand apex is adjusted to the westernmost apex in Africa and the Middle East and to the southernmost apex in the remainder of the planning area."

Furthermore, the term "Europe" should be replaced by "the remainder of the planning area" in other references to planning principles and methods.

3.2 The delegate of the German Democratic Republic proposed the replacement of the word "should" by "shall" in the footnote.

3.3 The delegate of the U.S.S.R. proposed that, in view of the proposal on the designation of the planning areas, Table 1 in Document No. 122 should be renamed Table 2, and vice versa.

It was agreed to make those amendments and consequential changes in all references to planning principles and methods.

3.4 The Chairman of ad hoc Group 5/5 pointed out that the word "Europe" should nevertheless be retained in the second new paragraph to be added on page 5 of Document No. 92.

It was so agreed.

3.5 Mr. Berrada (IFRB) said that there might have to be planning in the 87.5 to 100 MHz band, at least for Albania and Romania, since those countries wished to have sound broadcasting stations in that range. He asked whether they would need channel numbers or would be satisfied with designation by carrier frequency.

Following an explanation by the Chairman of ad hoc Group 5/5, it was agreed that it was sufficient to mention the carrier frequency in the cases of Albania and Romania.

3.6 The delegate of Italy said that a great deal of coordination work had to be done for Northern Africa and the Mediterranean so that it would be useful if the numbering of channels between those two parts of the planning area could be aligned.

3.7 The Chairman of ad hoc Group 5/5 said that the Group had decided to have different channel distribution schemes for the two parts of the area and it had not been possible to find a numbering system to align the two. The question had also been discussed whether different channel numbers could be included in one and the same table but the Group had finally decided to propose two different tables.

3.8 The delegate of Switzerland asked for the reasons for choosing the numbering scheme in the table referring to the remainder of the planning area rather than an alternative scheme which would have helped planning where required below 100 MHz.

3.9 The Chairman of ad hoc Group 5/5 said that the Group believed there was no real necessity to specify channel numbers in the band below 100 MHz, since all the work on the international plane would be done on the basis of frequencies. Every administration was of course free to adopt the numbering system that it felt most appropriate within its own area.

3.10 The delegate of the United Kingdom suggested that the letter "E" in the heading of the table referring to the remainder of the planning area should be changed to "R", in order to distinguish it from the column heading "E" in the table covering Africa and the Middle East.

The Chairman of ad hoc Group 5/5 having proposed that the letter "E" be deleted, it was so agreed.

3.11 In reply to a question by the delegate of Botswana, Mr. Berrada (IFRB) said that maps with a detailed lattice would be sent out.

Document No. 122 was approved, as amended.

Annex 1 (Lattice planning method) (Document No. 92)

3.12 The Chairman of ad hoc Group 5/5 proposed an amendment to section 4 of Annex 1 that would include some of the information from Document No. 120. The last sentence of the paragraph should be replaced by the following :

> "In preparation of the planning procedure the two different lattices selected for Africa and the Middle East and for the remainder of the planning area were drawn on to a map; this map is reproduced in eight parts in Figures 1-8. Most of the Asian part of the Soviet Union and Mongolia does not appear in any of these maps, because planning is considered to be mainly a national problem in this part of the planning area.
>
> The lattices in maps 3-8 are to be applied in Africa and the Middle East. The side length of each rhombic area element is 480 km. The lattices in maps 1 and 2 are to be applied in the remainder of the planning area; the side length of each area element is 240 km.
>
> These lattices are intended for use at the initial stage of the planning procedures."

3.13 The delegate of Finland thought that there would be discrepancies between two overlapping maps if the rhombic area elements had different side lengths.

3.14 The Chairman of ad hoc Group 5/5 pointed out that the maps referred to had been reproduced on "equal area" projection. There would be distortion of distances in some directions at least but the maps should be fairly precise with regard to the area of the rhombi. Though the maps did overlap to some extent, the lines separating one area from another were known to the IFRB and could be taken into account when transferring the lattices to larger scale maps.

3.15 In reply to further remarks by the delegate of Finland, Mr. Berrada (IFRB) said that the maps were intended to indicate the size and orientation of the lattices and that, with a limited number of reference points, the IFRB would be able to draw up more correct maps for distribution to administrations later. It would be valuable to point that out in the introductory section to the figures.

3.16 The delegate of Mongolia having pointed out that the Asian part of the U.S.S.R. and Mongolia should also be covered by maps, the Chairman of ad hoc Group 5/5 referred to the amendment to section 4 that he had mentioned earlier. It had been his impression that the U.S.S.R. and Mongolia had no objection to the fact that no map for the area mentioned would be included.

3.17 The delegate of Mongolia observed that the question affected not only Mongolia and the U.S.S.R. but also coordination with China.

3.18 In reply to a suggestion by the delegate of the U.S.S.R. that a new Map No. 9 should be prepared for the area, the Chairman of ad hoc Group 5/5 said that three or four would be needed.

3.19 Mr. Berrada (IFRB) suggested that a sentence should be added to the effect that the maps were included in order to indicate the size and orientation of the lattices but that, because of distortions due to the projection used, it would not be significant to extend them to the eastern part of the area. However, the lattices for that part would be drawn up in a precise way later and communicated to the administrations concerned.

3.20 Following an intervention by the delegate of the U.S.S.R. to the effect that a map should not be difficult to prepare it was agreed to include the maps requested by the delegates of the U.S.S.R. and Mongolia on the understanding that more precise maps would be prepared later.

3.21 The delegate of Italy proposed the addition of a sentence pointing out that the lattices shown on the maps were uniform and did not allow for distortions which might be necessary to take account of the sea areas and different transmitter densities in various parts of the planning area.

3.22 The delegate of Algeria, supported by the delegate of Libya, opposed addition of the sentence on the grounds that it was redundant.

3.23 Section 4 was approved, as amended.

3.24 Section 5 was approved.

3.25 Section 6

3.25.1 The delegate of Syria, said that the 31-channel spacing method agreed upon earlier did not necessarily entail the channel separation described in the paragraph. He therefore suggested that the word "are" in the eleventh line and the word "is" in the third line from the bottom of the paragraph be replaced by "could be".

3.25.2 The Chairman of ad hoc Group 5/5 said he had some difficulty with that amendment because, in view of the approval of Document No. 122, in which the channel numbering was given, the words "are" and "is" were factually correct.

It was agreed that the question would be discussed informally outside Committee 5. It was also agreed that the square brackets around the fourth sentence would be removed.

3.26 Section 7 was approved, following amendment of the first sentence to read : "In the remainder of the planning area, the average distance between neighbouring co-channel transmitters is of the order of 240 km."

Annex 2 (Analysis of the plan)

3.27 Sections 1, 2 and 3 of Annex 2 were approved.

3.28 Section 4 (Examination of incompatibilities and frequency planning constraints)

3.28.1 The Chairman of ad hoc Group 5/5, said that the examination of incompatibilities and frequency planning constraints was associated with the three analyses described elsewhere in the document. He therefore proposed that the introductory sentence to the section be amplified to read "Together with the third and final analysis and, as regards incompatibilities with the television broadcasting service, also together with the first analysis, the following will be examined for each transmitter".

That text was approved.

3.29 Section 6 (Proposed modifications to the requirements)

The Chairman of ad hoc Group 5/5 said that the date in square brackets in the last line of section 6 should be 30 September 1984 not 30 October 1984.

Annex 4 (Compatibility with the television service and protection to sound broadcasting stations within the coordination area in the band 87.5 to 100 MHz)

3.30 The title and first five sections of Annex 4 were approved with minor editing amendments to section 3.

3.31 Section 6 (Reference situation)

3.31.1 The delegate of the U.S.S.R. proposed that a sentence be added at the end of section 6 to take account of the possibility that inclusion in the plan of VHF/FM sound broadcasting stations operating in Afghanistan, Iran and part of Turkey could create incompatibilities with television stations in border areas of the U.S.S.R. It would state that the administrations of the U.S.S.R., Afghanistan, Iran and Turkey should coordinate their VHF/FM sound broadcasting and television stations through bilateral or multilateral negotiations before submitting their requirements to the IFRB.

3.31.2 The delegates of Afghanistan and Mongolia supported the idea of protecting existing and planned assignments from interference from neighbouring countries, and hence the U.S.S.R. proposal.

3.31.3 The delegate of Iran, supported by the delegate of Turkey, pointed out that Resolution No. 510 of WARC-79, which was being used as a basis for the establishment of planning principles, did not provide any guarantees for the service areas of television stations outside the area covered by the Regional Agreement, Stockholm 1961. No priority could therefore be given to U.S.S.R. television stations outside the Stockholm Plan when planning the broadcasting service in the band 87.5 to 108 MHz in the border areas of Afghanistan, Iran and part of Turkey.

Nevertheless, his Administration was aware that the U.S.S.R. might have a number of television stations in the 87.5 to 108 MHz band liable to affect the planning of sound broadcasting services in those areas, and was therefore willing to consider them and to negotiate with the U.S.S.R. before and during the Second Session to eliminate any incompatibilities which might exist. Since all assignments must be submitted to the Second Session, such incompatibilities could be resolved in the spirit of cooperation by negotiation, as provided for in the Radio Regulations. No note of the kind proposed by the U.S.S.R. could be included at the current Session, otherwise all of the planning principles and methods would have to be re-examined.

3.31.4 The delegate of the U.S.S.R. thought that the conflicting views expressed stemmed from the countries' differing interpretations of Resolution No. 510. In the view of the U.S.S.R., "resolves" 2 of the Resolution covered sound broadcasting and all other stations, including television stations, in the band 87.5 to 108 MHz in Region 1. Therefore, since the whole of the Soviet Union was situated in Region 1, its television stations were protected under that Resolution. It would be useful if the representative of the IFRB could indicate whether such an interpretation was correct.

3.31.5 Mr. Berrada (IFRB) said that Resolution No. 510 of WARC-79 and the Resolution of the Administrative Council made a distinction between television stations covered by the Stockholm Agreement and those outside it. The stations covered by the Agreement were guaranteed protection, as indicated in detail in Annex 4 to Document No. 92. Those outside the Agreement, however, were not subject to any such guarantee, and all problems of incompatibility between such television stations and sound broadcasting stations should be dealt with by negotiation between the countries concerned, pursuant to the Radio Regulations, with all the assignments treated on an equal footing.

Without expressing an opinion on the content of the U.S.S.R. proposal, he did think that if such a text were adopted, it would have to appear elsewhere in the document. If included in Annex 4, it might give the impression that television stations outside the Stockholm Plan had a right to protection under Resolution 510, which was not the case.

3.31.6 The delegate of Libya, supported by the delegates of Algeria, and the United Kingdom. proposed that the problem, which concerned only certain countries, be resolved in an ad hoc Group.

It was so agreed, and it was decided to establish an ad hoc Group comprising the delegates of Afghanistan, Iran, Mongolia, Qatar, Turkey, U.S.S.R. and Mr. Berrada (IFRB), under the chairmanship of Mr. Pettersson (Sweden).

The meeting was suspended at 1645 hours and resumed at 1915 hours.

3.31.7 The Vice-Chairman, speaking as Chairman of the ad hoc Group set up prior to the suspension of the meeting, said that the Group had agreed on a compromise solution to the problem raised by the delegate of the U.S.S.R. in connection with section 6 of Annex 4. The Group's proposal did not affect Annex 4 in any way and would be put before the Committee when section 6.3 of the Appendix to Document No. 92 was taken up (see 3.38 below).

Section 6 was approved subject to deletion of the square brackets in the first and second sentences.

3.32 Section 7 (Situation resulting from planning)

Approved.

3.33 Section 8 (Usable field strength for a transmitter at the specified test location)

3.33.1 The Chairman of ad hoc Group 5/5 proposed that paragraph 8.1 should be amended to read : "... shall be calculated as in Annex A to Chapter 3 using propagation curves for 1% of the time and the appropriate ...".

3.33.2 The delegate of Yugoslavia observed that Annex A to Chapter 3 no longer existed, having been incorporated in section 3.3 of Chapter 3 (Document No. 108, page 20). Furthermore, the amendment proposed by the previous speaker mentioned only the curves relating to tropospheric interferences whereas, in his view, those for 50% of the time relating to steady interference would also be relevant in some cases. He proposed that paragraph 8.1 be redrafted in the light of both those considerations.

3.33.3 Following a discussion in which the delegates of Finland and Yugoslavia, the Chairman of ad hoc Group 5/5, the Chairman of Committee 6 and Mr. Berrada (IFRB) took part, it was agreed that the contents of page 20 of Document No. 108 should be numbered "3.4" and that paragraph 8.1 of Annex 4 should be amended to read : "... shall be calculated as in section 3.4 of Chapter 3 using, in principle, propagation curves for 1% of the time and the appropriate ...".

3.33.4 The Chairman of ad hoc Group 5/5 drew attention to Figure 4.2 of Chapter 4 (Document No. 108, page 30), which was one of the references to be inserted in sub-paragraph 8.1.2.1 and which mentioned steady interference. In order to avoid confusion, he suggested that a sentence along the following lines should be introduced, between square brackets, at an appropriate place in the text : "Protection ratio values for tropospheric interference shall be used".

It was so agreed.

3.33.5 Mr. Berrada (IFRB) asked whether the IFRB's understanding that steady interference related to 50% of the time was correct.

The Chairman of ad hoc Group 5/5 confirmed that interpretation.

3.33.6 The delegate of Qatar, referring to sub-paragraph 8.2.1, said that the curve in Figure 2 of Document No. 92, which was taken from CCIR Recommendation 419, had certain disadvantages and that its use would make planning and negotiation more arduous in certain areas. His delegation would prefer the curve (in Figure 3.3 on page 26 of Document No. 108) taken from CCIR Recommendation 599 to be used for the calculations referred to in sub-paragraph 8.2.1.

Following a discussion during which the delegate of Romania pointed out that Figure 2 could not be altered, since it served as the basis for provisions of the Stockholm Agreement, the delegate of Qatar said that his delegation, although not directly concerned with the problem, maintained its views with regard to the validity of the curve in that figure.

Section 8, as amended, was approved subject to the insertion of the correct references to chapters, annexes, figures and tables.

3.34 Section 9

Approved subject to the addition of a title "Result of examination" and the substitution of the word "or" for "and" in the first line.

3.35 Table 1

Approved subject to alignment of the French to the English language version and rearrangement of the layout.

3.36 Figure 1

Deleted subject to the insertion in sub-paragraph 8.1.1.2 of a reference to Figure 4.1 of Chapter 4.

3.37 Figure 2

Approved.

Annex 4 as a whole, as amended, was approved.

3.38 Appendix : Section 6.3 (Planning methods)

3.38.1 The Vice-Chairman said that the ad hoc Group set up under his chairmanship to examine the problem which had arisen in connection with section 6 of Annex 4 had agreed to propose, as a compromise solution, the addition of the following text at the end of section 6.3 of the Appendix to Document No. 92 :

"Taking into account that there may be incompatibilities between VHF/FM sound broadcasting stations in the band 87.5 to 100 MHz in Afghanistan, Iran and a part of Turkey on the one hand, and TV stations of the U.S.S.R. located in the border areas of these countries on the other hand, the Administrations of the U.S.S.R., Afghanistan, Iran and Turkey should coordinate their VHF/FM sound broadcasting and TV stations by bilateral or multilateral negotiations, preferably before submitting their requirements to the IFRB, on the basis of equal rights and without priority to any of the above uses, the /special/ protection referred to in considering f) of Resolution 510 being limited to TV stations which are in conformity with the Stockholm Agreement, 1961, in the band 87.5 to 100 MHz are treated in Annex 4. Incompatibilities between VHF/FM broadcasting and other TV stations shall use the criteria given in Chapter 4 of this Report."

3.38.2 The delegates of the U.S.S.R. and Iran said that they would have no objection to the deletion of the word "special" which appeared between square brackets in the text read out by the Chairman.

With that amendment, the text was approved.

3.38.3 The Vice-Chairman said that, consequential upon the decision which the Committee had just taken, the ad hoc Group considered that it would be necessary to amend the introduction to Chapter 4 (Document No. 108, page 27) by deleting the phrase "According to the Stockholm Plan, 1961," at the beginning of section 4.1.

3.38.4 The delegates of Yugoslavia and Greece opposed the deletion of the phrase in question.

3.38.5 Following some further discussion, the Chairman said that if he heard no objection he would report to the Plenary Meeting that, with the exception of the delegates of Yugoslavia and Greece, the Committee supported the proposal to delete the opening phrase of section 4.1 of Chapter 4.

It was so agreed.

3.39 Introductory part of the Seventh Report

3.39.1 The Chairman of Working Group 5A said that section 6 had been erroneously deleted from page 2 of the document. That section should be have comprised two notes, 6A reading :

"The delegate of Mongolia informed that the band 87.5 to 100 MHz will be used in his country exclusively for television stations"

and 6B reading :

"The delegate of the U.S.S.R. informed that the band 87.5 to 100 MHz in the part of the U.S.S.R. not covered by the Stockholm Agreement, 1961, will be used exclusively for television stations".

It was for Committee 5 to decide whether those notes should be submitted to the Second Session; in his opinion, that was unnecessary and the two delegations concerned might be satisfied by having the notes mentioned in the summary record of the meeting.

3.39.2 The delegate of the U.S.S.R. said that, so far as his delegation was concerned, reference to the Stockholm Agreement was irrelevant, since the band in question was used for television stations throughout the territory of the U.S.S.R. Moreover, his delegation had not mentioned the exclusive use of the band for television. Finally, he did not think that the communication, which had been made at the request of the IFRB, was pertinent to the Second Session and considered that a mention in the summary record would be adequate.

3.39.3 Mr. Berrada (IFRB) agreed that the information concerned did not relate to planning and could well appear in the summary record.

3.39.4 The delegate of Mongolia said that the note entailed a special problem for his country, which was not a party to the Stockholm Agreement, so that its use of the band concerned was not stated in any other instrument. He would therefore prefer the note to appear in the report of the First Session.

It was agreed that the notes would appear in section 6 of Document No. 92.

The Seventh Report of Working Group 5A was approved, as amended, subject to the resolution of the outstanding problems during re-reading of the texts in the form of blue documents.

4. Reports of ad hoc Group 5/2

4.1 First Report (Document No. 123)

4.1.1 The Chairman of ad hoc Group 5/2 introduced the document, observing that it had been discussed very extensively before final approval by the ad hoc Group. The delegation of Switzerland had reserved its position on the Report, however, because of the many changes made to the original draft.

4.1.2 The Chairman invited the Committee to examine the Report section by section, in association with the relevant Annexes.

4.1.3 Section 1, section 2.1 and Annex 6 and section 2.2

Approved.

4.1.4 Section 2.3 and Annex 5

4.1.4.1 The Chairman invited the Committee to consider Annex 5, on the approval of which the course set out in the second paragraph of section 2.3 depended.

4.1.4.2 The delegate of Yugoslavia, referring to the first line of section 1 of Annex 5, said that the word "must" should be replaced by "shall" throughout the Annex.

4.1.4.3 The delegate of France said that the reference to the French Administration in section 2.3 was inappropriate in the Report of the First Session and proposed that the words "the French" be replaced by "an". On the other hand, his delegation had no objection to the French Administration's intention to supply software being mentioned in the summary record of the current meeting.

4.1.4.4 The delegate of Yugoslavia observed that Table B in section 6.1 of Annex 5 should be designated as Table A.

4.1.4.5 The delegate of Italy, referring to the paragraph preceding that table, observed that it had been decided to substitute the term "coordination contour" for "coordination zone".

4.1.4.6 The Chairman of ad hoc Group 5/2 replied that the term "coordination zone" in section 6.1 was used in a different sense from "coordination contour" in section 3 of the Annex. He would consult with the delegate of Italy with a view to finding the proper wording.

4.1.4.7 In reply to comments by the delegate of Finland, the Chairman of ad hoc Group 5/2 said that Figure 1 at the end of Annex 5 appeared in a slightly different form in another part of the Report. He would consult with Committee 6 on whether the two figures could be combined.

4.1.4.8 Mr. Berrada (IFRB) said that Appendices 1 and 2 to Annex 5 contained additional boxes to be included in the form for submission of requirements to the IFRB in Chapter 7 of the Report. The IFRB had unfortunately not had time to prepare explanatory texts on the boxes, as it had done in the case of the main form; he suggested that the IFRB should communicate those texts directly to administrations.

Annex 5 was approved as amended.

Section 2.3 was approved with the necessary consequential amendments.

4.1.5 Section 2.4

4.1.5.1 The Chairman said that the words "/ Document No. 100 /" should be deleted from the first paragraph.

Section 2.4 was approved as amended.

4.1.6 Section 3

Approved.

4.1.7 Section 4 and Annex 7

4.1.7.1 The Chairman said that the square brackets could be removed from the figures in "considering" paragraph a) of the draft Resolution in Annex 7.

4.1.7.2 The delegate of the United Kingdom proposed that the word "some" be deleted from the first line of "considering" paragraph a).

Section 4 and Annex 7 were approved as amended.

4.1.8 Section 5

Approved.

4.1.9 Annex 1

4.1.9.1 The Chairman of ad hoc Group 5/2 said that the point covered by that Annex had been dealt with earlier in connection with Document No. DT/35(Rev.1).

Document No. 123 was approved as amended.

4.2 Second Report (Document No. 124)

4.2.1 The Chairman of ad hoc Group 5/2 introduced the document, pointing out that the dotted lines in the French version of Figure 5.1 on page 2 should be deleted.

Document No. 124 was approved with that change.

5. Note from the Chairman of Committee 4 (Document No. 93(Rev.1))

5.1 The Chairman observed that matters raised in the document had been covered by the consideration of the preceding item of the agenda.

The Committee took note of Document No. 93(Rev.1).

6. Compatibility with aeronautical services (Document No. 109, paragraph 5.3.9)

6.1 The Chairman observed that the subject at issue had also been covered by the consideration of the documents of ad hoc Group 5/2.

7. Completion of the work of Committee 5

7.1 The Chairman announced that the Committee had completed consideration of the items allocated to it.

7.2 The Chairmen of Working Groups 5A and 5B and ad hoc Groups 5/2 and 5/5 thanked all the participating delegations, the IFRB and the Secretariat for the valuable assistance that had made it possible for their Groups to carry out the tasks assigned to them.

7.3 The delegate of the United Kingdom said he thought he was speaking on behalf of the whole Committee in congratulating the Chairman on the great skill with which he had brought an extremely difficult task to such a successful conclusion.

7.4 The Chairman expressed his thanks to the Chairmen of the Working Groups and the ad hoc Group for their very hard and successful work. His thanks were also due to the Vice-Chairman, the IFRB, the Secretary and all those who had contributed to the success of the Committee's deliberations.

The meeting rose at 2250 hours.

The Secretary :
M. AHMAD

The Chairman :
K. ARASTEH

INTERNATIONAL TELECOMMUNICATION UNION

REGIONAL BROADCASTING CONFERENCE

(FIRST SESSION) GENEVA, 1982

Document No. 164-E
16 September 1982
Original : English

PLENARY MEETING

MINUTES

OF THE

SIXTH PLENARY MEETING

Thursday, 16 September 1982, at 0900 hrs

Chairman : Miss Marie HUET (France)

Subjects discussed :		Document No.
1.	Amendments to the Report of Committee 2	116
2.	Consideration of the Report of Committee 3	127
3.	Consideration of the Sixth, Seventh, Eighth, Ninth and Tenth Reports of Committee 5	128, 131, 133, 135, 140
4.	Consideration of the Report of ad hoc Group PLEN./1	121, 118 (page B.4/15)
5.	Consideration of texts submitted by Committee 6 for first reading (Series B.5)	138
6.	Consideration of texts submitted by Committee 6 for first reading (Series B.6)	146

1. Amendments to the Report of Committee 2 (Document No. 116)

1.1 The Vice-Chairman of Committee 2 said that credentials had been received from Egypt and the Syrian Arab Republic, whose names should therefore be removed from section 3 of the Annex of Document No. 116 and inserted in section 2. There remained five countries, Botswana, Kenya, Madagascar, Senegal and Zaire, that had not deposited their credentials.

Those amendments were approved.

2. Consideration of the Report of Committee 3 (Document No. 127)

2.1 The Chairman of Committee 3 introduced the Report of the Budget Control Committee.

The Report of Committee 3 was approved.

2.2 The Chairman thanked the Chairman and members of Committee 3 for their work.

3. Consideration of the Sixth, Seventh, Eighth, Ninth and Tenth Reports of Committee 5 (Documents Nos. 128, 131, 133, 135 and 140)

The Sixth, Seventh, Eighth, Ninth and Tenth Reports of Committee 5 were noted.

4. Consideration of the Report of ad hoc Gioup PLEN./1 (Documents Nos. 121 and 118 (page B.4/15))

4.1 The Chairman of ad hoc Group PLEN./1 said that his Group had met to discuss the problems faced by neighbouring countries that were using different lattices. A text offering a solution to those problems had been agreed on and appeared as the Annex to Document No. 121. An editorial correction to the English and Spanish versions only of the second paragraph should be noted. It was proposed that the text, as amended, should appear in Document No. 118, page B.4/15, as a new section 6.1.8.

That proposal was approved.

4.2 The Chairman of ad hoc Group PLEN./1 noted further that, as a result of an earlier decision by the Plenary, the text of section 6.1.7 as it appeared in Dcoument No. 118, page B.4/15, should be amended by replacing the word "Europe" on the second line by "the rest of the planning area".

That amendment was approved.

5. Consideration of texts submitted by Committee 6 for first reading (Series B.5) (Document No. 138)

5.1 The Chairman of Committee 6 drew the attention of the meeting to the fact that in a number of places in the texts submitted for first reading cross-references to other sections or annexes of the Report had been left in square brackets. Those brackets would have to remain for the present as the Editorial Committee could not guarantee the correctness of the references until the Report was in its final stages.

5.2 Section 7.2

Approved, with a minor editorial correction to the English and Spanish texts.

5.3 Section 7.3

Approved, subject to alignment of the fourth paragraph of the English and Spanish texts with the French text.

5.4 Section 7.4

In reply to a question from the delegate of Mali, Mr. Berrada (IFRB) said that microfiche readers would be sent to administrations at the same time as the microfiches.

Section 7.4 was approved.

5.5 Section 7.5, Appendices 3 and 4, Figure 7.1 and the explanation of Figure 7.1

Approved.

6. Consideration of texts submitted by Committee 6 for first reading (Series B.6) (Document No. 146)

6.1 Annex C (Method for assessing areas of interference)

6.1.1 The delegate of the United Kingdom said that to make quite clear in the formula for "d" that "$\log^{-1}$" applied to the whole of the expression "(e.i.r.p. - P - C - L_R)/20", that expression should be enclosed in a set of brackets.

It was agreed that the details of what brackets were needed to make the formula clear should be left to the Editorial Committee.

6.1.2 The delegate of Switzerland, supported by the representative of the CCIR, proposed that the words "or in km" should be added after "nautical miles" in the legend for "d".

With that amendment, Annex C was approved.

6.2 Section 6.3 (Planning methods)

6.2.1 The Chairman of Committee 6 said that the square brackets round the word "draft" where it appeared in sub-paragraphs (3) and (4) of 6.3.1 should be deleted.

With that amendment, section 6.3.1 was approved.

6.2.2 Sections 6.3.2 to 6.3.5

Approved.

6.2.3 Section 6.3.6

6.2.3.1 The delegate of France, supported by the delegates of the Federal Republic of Germany, the United Kingdom, Italy and Norway, said that the word "desperate" in the last sentence of the first paragraph was over-exaggerated and should be replaced by "difficult".

6.2.3.2 After the delegates of Romania, the United Kingdom and Norway had pointed out that the word "desperate" in the penultimate sentence of the same paragraph would in that case also have to be changed, the delegate of Italy, supported by the delegate of France, proposed that it should be replaced by "more difficult".

6.2.3.3 The Chairman of Committee 6 said that the square brackets round the last three paragraphs had been placed there to indicate that they were still before Committee 5 for consideration. Committee 5 had since approved the text and the square brackets should therefore be removed.

6.2.3.4 The delegate of the United Kingdom proposed that as the last paragraph was a direct consequence of the penultimate paragraph, the two should be combined.

Section 6.3.6 was approved, as amended.

6.2.4 Section 6.3.7

Approved.

6.2.4.1 Section 6.3.7.1

The delegate of Algeria requested that the text of the first paragraph be held in abeyance as he had proposals for a later part of the document that would affect it.

It was so agreed.

The Chairman of Committee 5 said that the square brackets round the first sentence in the second paragraph should be removed.

The second paragraph of section 6.3.7.1, as amended, was approved.

6.2.5 Section 6.3.8

6.2.5.1 The delegate of Yugoslavia proposed that for increased clarity the third paragraph should be amended to read :

"With respect to the above-mentioned countries, incompatibilities between VHF/FM broadcasting and other TV stations shall be treated by using the criteria given in Chapter 4 of this Report".

That amendment was approved, subject to revision if necessary by the Editorial Committee.

6.2.5.2 The delegate of Mongolia said that in Note 1 the word "exclusively" should be deleted.

6.2.5.3 In reply to the delegate of Turkey, who said that footnote (1) on page 5 of Document No. 92 had been approved by Committee 5 and should be included somewhere in the section, the Chairman of Committee 5 said the omission had been inadvertent and that he would request the Chairman of Committee 6 to insert it in an appropriate part of the text.

Section 6.3.8, as amended, was approved.

6.2.6 Figures 6.1 and 6.2

The delegate of Algeria requested that Figure 6.1 also be held in abeyance until his proposals for a later part of the document had been considered.

It was so agreed.

Figure 6.2 was approved.

6.3 Annex F (Lattice planning method)

6.3.1 Sections 1 and 2

Approved, with a minor editorial correction to the French text of section 1.

6.3.2 Section 3

6.3.2.1 The delegate of Spain, supported by the delegate of Italy, said that in the second sentence the words "over a wide distance range" did not properly take account of the propagation conditions in the area concerned.

Section 3 was approved, with the proviso that the Editorial Committee would provide a more appropriate wording for the second sentence.

6.3.3 Section 4

6.3.3.1 The Chairman of Committee 6 indicated an editorial amendment to the French text only of the first paragraph.

6.3.3.2 In reply to the delegate of Finland who, supported by the delegates of Romania and Niger, noted that in view of the discrepancies between adjoining maps it was necessary to ensure that accurate maps reached administrations in sufficient time, Mr. Berrada (IFRB) proposed the addition of a paragraph to section 4 as follows :

"The maps appearing in this Report are intended to indicate scale, orientation and a limited number of reference points to allow the IFRB to prepare more accurate maps that will be sent to administrations at the same time as the circular letter to be sent not later than 31 December 1982".

6.3.3.3 The delegate of Portugal asked that a note, which he would submit later to Committee 6, reflecting the decision in Committee 5 that the choice of lattice for the Azores and Madeira would be made by Portugal, could be added as a footnote to section 4.

With those amendments, section 4 was approved.

6.3.4 Section 5

6.3.4.1 The Chairman of Committee 6 pointed out that the wish of the Administration of Cyprus to use the 31-channel lattice selected for Africa and the Middle East would be indicated by the inclusion in Annex F of the footnote which appeared at the end of Document No. 146.

Section 5 was approved.

6.3.5 Section 6

6.3.5.1 The delegate of Algeria proposed that the fourth sentence and the last two sentences be deleted and that a new passage be added dealing with the planning constraints to be respected by groups of six channels at the same site and the responsibility of the IFRB for making the necessary changes to the arrangements specified in Figure 6.1 and Annex L, Table 1, of the draft Report.

6.3.5.2 The delegates of Tunisia and Saudi Arabia expressed their support for that proposal.

It was agreed that section 6 would be held in abeyance pending the preparation of a document to enable proper consideration of the proposed amendments.

6.3.6 Section 7

Approved.

6.3.7 Maps 1 to 12 were approved, on the understanding that the more detailed maps to be provided by the IFRB to administrations would indicate clearly the position of the Cape Verde islands with respect to the lattice in their area (Map 1), that the longitude of the reference point in Map 5 would be corrected to read 40° E, and that the continuation of the 240 km lattice over Iranian waters in the southern Caspian Sea would be deleted from Maps 6 and 8.

6.4 Annex G (Analysis of the plan)

6.4.1 Section 1

The Introduction was approved.

6.4.2 Section 2

6.4.2.1 The representative of the CCIR asked where the method for calculating the nuisance field from each potentially interfering transmitter at the site of the wanted transmitter, to which the first paragraph of section 2 referred, would be found in the final Report of the First Session.

6.4.2.2 After a brief discussion, the Chairman of Committee 6 proposed that the passage intended to serve that purpose, which was to be found at the end of section 3.3 of the Report (Document No. 108, page R.1/20), should be numbered separately as section 3.3.2 and that that reference be entered in the paragraph under consideration.

6.4.2.3 The representative of the CCIR, supported by the delegate of Italy, pointed out that the passage cited omitted the explanation of the practical application of the method chosen which had been included in the Annex to Document No. 68.

6.4.2.4 After a further discussion, in which the delegates of the Federal Republic of Germany, the United Kingdom, France, Norway and Yugoslavia, the representative of the CCIR and Mr. Berrada (IFRB) took part, it was agreed that the omission should be remedied and that an ad hoc drafting Group should be formed, consisting of the representative of the CCIR and the delegates of the Federal Republic of Germany and the United Kingdom, to draw up a document for inclusion as an additional Annex to the Report.

6.4.3 Section 3

6.4.3.1 The Chairman of Committee 6 said that the square brackets in the title and in paragraph 3.1, line 2, indicated points which required clarification. In the first case, did the enclosed words "for each administration" need to be retained and, if so, did they need to be inserted elsewhere as well? In the second case, it was important for the IFRB to know whether transmitters having a maximum e.r.p equal to 100 W (20 dBW) were to be included in the first preliminary analysis for each administration or not.

6.4.3.2 Mr. Berrada (IFRB) said that 100 W transmitters were relatively weak and their inclusion would greatly increase the volume of calculations to be performed by the IFRB. It would therefore be better to leave them to be dealt with at later stages of the analysis.

It was agreed however, that the square brackets should be deleted in both cases, without further amendment, leaving transmitters having a maximum e.r.p equal to 100 W (20 dBW) to be included in the first preliminary analysis for each administration.

With those amendments, section 3 was approved.

6.4.4 Sections 4 and 5 were approved.

6.4.5 Section 6

Approved with deletion of the brackets and the correction of "will" to "with" in the first line of the second paragraph of the English text.

6.4.6 Sections 7 to 11

Approved without amendment.

6.5 Annex H (Method of foremost priority)

Annex H and its accompanying Figure 1 were approved.

The meeting rose at 1200 hours.

The Secretary-General : The Chairman :

M. MILI Marie HUET

INTERNATIONAL TELECOMMUNICATION UNION

REGIONAL BROADCASTING CONFERENCE

(FIRST SESSION) GENEVA, 1982

Document No. 165-E
16 September 1982
Original : English

PLENARY MEETING

MINUTES

OF THE

SEVENTH PLENARY MEETING

Thursday, 16 September 1982, at 1430 hrs

Chairman : Miss Marie HUET (France)

Subjects discussed :		Document No.
1.	Introduction to the Report of the First Session	147
2.	Resolution No. PLEN./1 - Report of the First Session	137
3.	Consideration of texts submitted by Committee 6 for first reading (Series B.6) (continued)	146, 134(Corr.1), DT/41
4.	Consideration of texts submitted by Committee 6 for second reading (Series R.1)	108
5.	Consideration of texts submitted by Committee 6 for second reading (Series R.2)	119
6.	Consideration of texts submitted by Committee 6 for second reading (Series R.3)	139
7.	Consideration of texts submitted by Committee 6 for second reading (Series R.4)	142
8.	Consideration of texts submitted by Committee 6 for second reading (Series R.5)	148
9.	Report of Chairman of Committee 5	145
10.	Approval of the minutes of the Third Plenary Meeting	130

1. Introduction to the Report of the First Session (Document No. 147)

1.1 The delegate of the Federal Republic of Germany proposed that the word "useful" in the last sentence of the second last paragraph should be replaced by "necessary".

It was so agreed.

1.2 After a discussion in which the delegate of Finland and Mr Berrada (IFRB) participated, it was agreed that, in the English text only, the words "assignment requests" in the fourth line of the penultimate paragraph should be replaced by "requirements" and the word "requests" in the following line by "requirements".

Document No. 147, as amended, was approved.

2. Resolution No. PLEN./1 - Report of the First Session (Document No. 137)

2.1 The Chairman announced that the words "First Session of the Conference" should be added in the first line of instructs 1, and the Chairman of Committee 6 proposed that, in the English text the word "his" in the same line should be replaced by "her".

It was so agreed.

Document No. 137, as amended, was approved.

3. Consideration of texts submitted by Committee 6 for the first reading (Series B.6) (continued) (Documents Nos. 146, 134(Corr.1) DT/41)

Document No. 146

3.1 Annex 1 (Compatibility with television stations and protection to sound broadcasting stations within the coordination area in the band 87.5 to 100 MHz)

Section 8

3.1.1 The Chairman of Committee 6 proposed that the square brackets appearing in 8.1, 8.1.2 and 8.2 be deleted and that "4.3" be amended to read "4.2" in the first line of 8.1.2 and that "Figure [4.2]" in the first indent of 8.2 be replaced by "Figure 1 of this Annex".

It was so agreed.

3.1.2 Table 1 and Figure 4.2

After a discussion on the advisability of transferring Table 1 and Figure 4.2 to Chapter 4, and on the text accompanying Figure 4.2, in which the Chairman of Committee 6, the delegate of the Federal Republic of Germany, Mr. Rutkowski (CCIR) and Mr. Berrada (IFRB) participated, it was agreed that the Table and Figure should not be transferred and that the accompanying text should be retained. It was further agreed that Figure 4.2 should be re-named Figure 1.

Annex 1, as amended was approved.

3.2 Annex J (Compatibility between VHF broadcasting stations and stations of the aeronautical radionavigation and aeronautical mobile (R) services)

Section 1

3.2.1 The Chairman of Committee 6 proposed that, as requested by the delegate of the U.S.S.R., the second sentence should be amended to begin :

"If the stations of the broadcasting service and of the aeronautical services belong to one ...".

It was so agreed.

3.2.2 Section 3.1

The delegate of the United Kingdom proposed that a footnote should be added referring to "125 km" in the second line of section 3.1 and reading :

"This value is based on the assumptions that the broadcasting station only just meets the limits for spurious emissions as set down in Appendix 8 of the Radio Regulations, and that there is a broadcasting antenna gain of 10 dB, a minimum field strength to be protected of 32 dB (μV/m) and a protection ratio of 17 dB."

It was so agreed.

3.2.3 Section 5.1

After a discussion in which the delegate of Italy, the delegate of France and Mr. Berrada (IFRB) participated, it was agreed to delete the words :

"... the terrain is at the same height as the aeronautical radionavigation station and ...".

3.2.4 Section 6.7

The delegate of France thought that it was contradictory to speak of an assignment that appeared in the Plan but could not be implemented.

After a discussion in which Mr. Berrada (IFRB) and the delegates of France, the United Kingdom and Italy particupated, it was agreed, on the proposal of the Chairman, to amend the last part of the sentence to read :

"... in this case such an assignment can be included in the plan only with appropriate reservations due to an unresolved imcompatibility with the aeronautical radionavigation service".

Annex J, as amended, was approved.

3.3 Annex K (Compability between VHF broadcasting stations and stations of fixed and mobile services)

Approved.

3.4 Annex L (Correspondence between channel numbers and frequencies for use in Africa and the Middle East)

It was agreed to consider Annex L at a later stage, in relation with Document No. DT/41.

3.5 Resolution No. COM5/3

The delegate of Italy pointed out that "Region 1" in the third line of the French text should read : "Region 3".

Resolution No. COM5/3, as amended, was approved.

3.6 Figures 5 and 5.1, relating to Document No. 148, were approved.

3.7 The definition of the "Middle East" for the purpose of Chapter 6 and the note to be included in Annex F was approved.

3.8 Document No. 134(Corr.1)

The Chairman of Committee 5 introduced the document, which contained matter omitted from section 6 of Document No. 146 considered at the first reading.

Document No. 134(Corr.1) was approved.

3.9 Document No. DT/41

3.9.1 The Chairman invited the Conference to consider the document, which incorporated amendments presented verbally by the delegate of Algeria at the Sixth Plenary Meeting.

3.9.2 The delegate of Rwanda proposed that the word "irrégulier" in indent b) be deleted.

On the proposal of the Chairman of Committee 6, it was agreed to amend indent b) to read : "spacing is to be arranged so as to avoid intermodulation products falling in channels used at the same site."

It was so agreed.

3.9.3 The delegate of France thought that Table 1 in Annex L, giving the correspondence between channel numbers and frequencies, should be amended rather than Figure 6.1 of Annex C.

It was agreed to delete the body of Table 1 (Annex L) and Figure 6.1 (Annex C) and to insert notes to the effect that the IFRB would provide the material later.

3.9.4 The delegate of the Federal Republic of Germany thought that it was necessary to discuss the whole substance of the Algerian proposal.

After a discussion in which the delegates of Saudi Arabia, Algeria, Italy, Finland and the Chairman of Committee 5 participated, discussion of the item was suspended.

4. Consideration of texts submitted by Committee 6 for second reading (Series R.1) (Document No. 108)

4.1 Chapter 1 (Definitions) (page R.1/1)

Approved.

4.2 Chapter 2 (Propagation) (pages R.1/2 to R.1/17)

Approved, subject to the deletion of the square brackets in section 2.1.3 and amendment of the word "services" in the title of section 2.3 and in the first sentence of the section to "service".

4.3 Chapter 3 (Technical standards and transmission characteristics) (pages R.1/18 to R.1/26)

4.3.1 The delegate of the Federal Republic of Germany pointed out that it had previously been agreed that section 3.3 on protection ratios should be divided into two parts. He proposed that a new sub-heading 3.3.1 be inserted after the main heading on page 19, and that the text on page 20 be numbered 3.3.2.

4.3.2 The delegate of the United Kingdom proposed a title for the new section 3.3.2 : "Calculation of the nuisance field".

Chapter 3 was approved, subject to the above amendments, deletion of the square brackets around Figure 3.3 and a number of small editorial changes proposed by the Chairman of Committee 6.

4.4 Chapter 4 (Frequency sharing between sound broadcasting and television) (pages R.1/27 to R.1/30)

4.4.1 The Chairman of Committee 5 said that Committee 5 had agreed to delete the first part of section 4.1, as indicated in paragraph 2.5 of Document No. 136. Yugoslavia had reserved its position on the matter.

4.4.2 The delegate of Yugoslavia emphasized that Chapter 4, which was a Committee 4 document, had been drafted in direct response to Resolution No. 510 of WARC-79, and in particular "considering" f) and "resolves" 2. The treatment of existing assignments made in accordance with the Stockholm Agreement had been confirmed by Committee 5 in section 2.2 of Document No. 123, and cases not covered by the Stockholm Agreement were dealt with in section 6.3.8 of Document No. 146. The main purpose of the Report of the First Session was to answer the questions put to the Conference and outline the sharing criteria between sound broadcasting and television stations in the 87.5 to 100 MHz band with respect to the use of that band as laid down in the Stockholm Plan. He was therefore opposed to the deletion of the first part of section 4.1.

4.4.3 The Chairman of Committee 6 pointed out that whilst it stipulated that account must be taken of television assignments made in accordance with the Stockholm Plan, Resolution No. 510 in no way precluded protection of television stations in other areas. It was not up to Committee 4 to impose restrictions, but merely to outline the technical and compatibility criteria for sharing between television and sound broadcasting stations. The Second Session would then decide to which stations those criteria would or would not be applied. Moreover, Chapter 4 was intended to deal with the technical constraints and not legal and administrative restrictions such

as those imposed by Resolution No. 510. The phrase "According to the Stockholm Plan, 1961" should therefore be deleted.

4.4.4 The delegate of Yugoslavia, although still believing that the First Session should follow the decisions of WARC-79 and establish sharing criteria with respect to the Stockholm Plan, said he would not press the point.

4.4.5 Following a comment by the representative of the CCIR, who pointed out certain discrepancies in the headings in the Report, the Chairman of Committee 6, supported by the delegate of Italy, proposed that the title of Chapter 4 be amended to "Compatibility between sound broadcasting and television".

It was so agreed.

4.4.6 The delegate of Yugoslavia said that Note 1 to Table 1 should also appear under Figure 4.2.

It was so agreed, and Chapter 4 was approved, as amended.

4.5 Annex A of Chapter 2 (Supplementary propagation data - correction factors) (pages R.1/31 to R.1/35)

Approved.

4.6 Recommendation No. COM4/1 (page R.1/36)

Approved.

Document No. 108 as a whole was approved, as amended.

5. Consideration of texts submitted by Committee 6 for second reading (Series R.2) (Document No. 119)

5.1 Resolutions Nos. COM5/1 and 5/2 and Recommendations Nos. COM4/2 and 4/3

Approved.

5.2 Recommendation No. COM4/4

5.2.1 The Chairman of Committee 6 drew attention to the square brackets which had been retained pending discussions between the CCIR and the Chairman of the Study Group involved.

5.2.2 The representative of the CCIR said that following discussions with the Chairman of Study Group 10, a Circular-letter was already being drafted to convene a meeting of the relevant Interim Working Party. However, it would be extremely difficult to provide any valid results on such a complex subject before 1 September 1983 and in the light of the problems involved he proposed that the deadline be : "preferably by 1 April 1983, and not later than 1 September 1983."

5.2.3 The delegate of the United Kingdom, whilst understanding the difficulties facing Study Group 10, felt that the studies proposed in Recommendation No. COM4/4 were just as urgent as those provided for in Recommendation No. COM4/3, and the date should thus be the same as that approved in the earlier Recommendation.

5.2.4 The delegate of the Federal Republic of Germany said that the suppression of spurious emissions to reduce interference to equipment on board aircraft was a relatively new field, and it would thus be extremely difficult to produce sufficient contributions in the short time up to April 1983. Moreover, it had already been pointed out that the next meeting of Study Group 10 was planned for August 1983.

5.2.5 The delegate of Iran said that adoption of April 1983 as a deadline would imply that the work would be done through the IWP only, which would cause difficulties for those administrations which were able to attend regular Study Group 10 meetings but did not have the facilities to contribute to the IWPs. For those administrations, September 1983 would be more appropriate.

5.2.6 The delegate of the United Kingdom said that it would be a great pity if the First Session did not ensure that the information required by administrations was made available well before September 1983. However, he could reluctantly accept the proposal of the CCIR.

Recommendation No. COM4/4 was approved, as amended.

6. Consideration of texts submitted by Committee 6 for second reading (Series R.3) (Document No. 139)

Chapter 7 and 7.1

6.1 The Chairman of Committee 6 said that a more accurate title for the Chapter would be "Inventory of frequency assignment requirements from administrations", which took in all the requirements not directly related to frequency, such as location, antenna heights, power, etc.

6.2 Mr Berrada (IFRB) agreed. The inclusion of a reference to the inventory would be useful as the term had been used frequently elsewhere in the Report, particularly in Chapter 6.

6.3 The Deputy Secretary-General said that it would be desirable to delete the dates from the heading to the form in 7.1.

Document No. 139 was approved, subject to the above two amendments.

7. Consideration of texts submitted by Committee 6 for second reading (Series R.4) (Document No. 142)

Sections 6.1, 6.2 and 6.4

7.1 The Chairman said that the text of sections 6.1.7 and 6.1.8 would be submitted for second reading at the following Plenary Meeting.

It was agreed to delete the square brackets in 6.4.1.

Document No. 142 was approved, as amended, except for sections 6.1.7 and 6.1.8.

8. Consideration of texts submitted by Committee 6 for second reading (Series R.5) (Document No. 148)

8.1 Chapter 5 (pages R.5/1 to R.5/17)

8.1.1 The Chairman of Committee 6 said that the square brackets around 5.3.9, 5.3.9.1 and 5.3.9.2 should be deleted. Figures 5 and 5.1 had been approved earlier in Document No. 146.

On that understanding, Chapter 5 was approved.

8.2 Annexes B, D and E

Approved.

8.3 The Chairman said that Annex C would also be submitted for second reading at the following Plenary Meeting.

Document No. 148 was approved, subject to the above comments.

9. Report of the Chairman of Committee 5 (Document No. 145)

9.1 The Chairman of Committee 5 submitted the final report of his Committee for approval by the Plenary Meeting. Now that Committee 5 had completed its work, he wished to thank everyone involved for their constructive participation and spirit of compromise, without which Committee 5 would not have been able to complete its tasks.

9.2 The Chairman congratulated Committee 5 on the successful completion of its work, and thanked everyone involved, particularly Mr. Arasteh, whose hard work had enabled Committee 5 to fulfill the extremely complex tasks entrusted to it. (Applause.)

10. Approval of the minutes of the Third Plenary Meeting (Document No. 130)

The minutes of the Third Plenary Meeting, as contained in Document No. 130, were approved.

The meeting rose at 1800 hours.

The Secretary-General : The Chairman :

M. MILI Marie HUET

INTERNATIONAL TELECOMMUNICATION UNION

REGIONAL BROADCASTING CONFERENCE

(FIRST SESSION) GENEVA, 1982

Document No. 166-E
16 September 1982
Original : English

PLENARY MEETING

MINUTES

OF THE

EIGHTH PLENARY MEETING

Thursday, 16 September 1982, at 2135 hrs

Chairman : Miss Marie HUET (France)

Subjects discussed :	Document No.
1. Consideration of texts submitted by Committee 6 for first reading (Series B.6) (continued)	Add.1 to 146
2. Consideration of texts submitted by Committee 6 for second reading (Series B.6)	Add.1 to 146
3. Consideration of texts submitted by Committee 6 for second reading (Series R.4) (continued)	Corr.1 to 142
4. Consideration of texts submitted by Committee 6 for second reading (Series R.6)	153
5. Consideration of texts submitted by Committee 6 for second reading (Series R.7)	154, DL/26
6. Consideration of texts submitted by Committee 6 for second reading (Series R.8)	155
7. Consideration of texts submitted by Committee 6 for second reading (Series R.9)	156
8. Telegram from the Administration of the Republic of South Africa	-

1. Consideration of texts submitted by Committee 6 for first reading (Series B.6) (continued) (Addendum No. 1 to Document No. 146)

1.1 Following an exchange of views between the delegates of Finland and the Federal Republic of Germany, Mr. Berrada (IFRB) and the representative of the CCIR, it was decided to include the following definition of "E_{si}" in the explanation under the first equation : "E_{si} = the nuisance field of the i-th transmitter corrected by the discrimination factor of the receiving antenna". It was further agreed to renumber the first two equations on page 1 "(1)" and "(2)" respectively, to replace the word "brouilleurs" in the second line of the French text by "perturbateurs", to insert a closing bracket in the proper place on the third line of the fourth paragraph of section 2 and to include an appropriate reference to the text in section 2 of Annex G (Document No. 146, page 22).

Addendum No. 1 to Document No. 146, as amended, was approved.

2. Consideration of texts submitted by Committee 6 for second reading (Series B.6) (Addendum No. 1 to Document No. 146)

2.1 The Chairman invited the meeting to proceed to the second reading of Addendum No. 1 to Document No. 146, which had just been approved at first reading.

Addendum No. 1 to Document No. 146, as corrected at first reading, was approved subject to deletion of the numbers appearing against the first two equations on page 1.

3. Consideration of texts submitted by Committee 6 for second reading (Series R.4) (continued) (Corrigendum No. 1 to Document No. 142)

3.1 The Chairman of Committee 6, referring to the French language version only, said that the word "Proche-Orient" should be replaced by "Moyen-Orient" in the first line of paragraph 6.1.7.

3.2 Mr. Berrada (IFRB) having drawn attention to discrepancies between the French and English language versions of the first sub-paragraph of paragraph 6.1.8, it was agreed to align the French text to the English as follows :

"Lorsqu'elles choisiront les fréquences et les caractéristiques de leurs stations situées dans des zones contiguës appartenant à des pays ayant choisi des réseaux différents, les administrations devront tenir compte des incompatibilités qui sont susceptibles de résulter de l'utilisation de réseaux différents.".

3.3 The delegate of the United Kingdom, referring to the English text of paragraph 6.1.8, proposed that the word "having" be replaced by "which have" in the second line of the first sub-paragraph and that, in the second sub-paragraph, the words "developed in order" be replaced by "made" and the word "exist" by "occur".

It was so agreed.

Corrigendum No. 1 to Document No. 142, as amended, was approved.

4. Consideration of texts submitted by Committee 6 for second reading (Series R.6) (Document No. 153)

4.1 With regard to the fourth paragraph of section 7.3, it was agreed to replace the words "aeronautical stations" by "stations of the aeronautical radionavigation service" in the fourth line.

4.2 The delegate of Yugoslavia, referring to the first paragraph of section 7.4, observed that there was no mention in the text of what he understood to have been a formal decision by Committee 5 that each administration should be provided with two microfiche readers.

4.3 Mr. Berrada (IFRB) said that such a decision had indeed been taken. It would be reflected in the summary record of the Committee 5 meeting in question and, certainly, taken into account by the General Secretariat when the related budgetary arrangements were made.

4.4 The Deputy Secretary-General confirmed that statement, adding that the use of microfiches had proved in the past to be economically advantageous.

4.5 The delegate of Yugoslavia said that, in accordance with a decision taken earlier in the proceedings, the dates "31 October-12 December 1984" given for the Second Session should be deleted from the title of Appendix 3, Figure 7.1 in Appendix 4 and the schedule at the end of the latter Appendix.

4.6 Following a discussion in which the delegates of the United Kingdom, the U.S.S.R. and Italy and the Deputy Secretary-General took part, it was decided to delete the dates to which the delegate of Yugoslavia had referred in Appendix 3 and replace these dates in Appendix 4 by a reference to the end of October as the starting date of the Second Session, without any indication of a closing date.

Document No. 153, as amended, was approved.

5. Consideration of texts submitted by Committee 6 for second reading (Series R.7) (Documents Nos. 154, DL/26)

5.1 The delegate of the United Kingdom, referring to equation (1) on page 1, said that the brackets should include the denominator as well as the numerator.

5.2 The Chairman said that the equation was incorrect in the French text, which would need to be aligned to the English.

5.3 Following a comment by the Chairman of Committee 5 concerning the translation of "shall" and "should" into French, the Chairman said that the verb "doit" in the French language version of the second sentence of the fourth paragraph of section 6.3.4 would be changed to "devrait".

5.4 Following a short discussion in which the delegates of Czechoslovakia and the Federal Republic of Germany, the Chairman of Committee 6 and the Chairman took part, it was agreed to replace the words "in Europe" in the last sentence of the first paragraph of section 6.3.6 by "in the rest of the planning area".

5.5 The delegate of Finland proposed that the word "some" be deleted from the first sentence of section 6.3.7.

It was so agreed.

5.6 The delegate of Algeria, referring to paragraph 6.3.7.5, said that a small group of delegates, IFRB officials and other experts had met prior to the current meeting to discuss the problem which had arisen in connection with Figure 6.1. As a result, a new grid had been produced. If it were approved, the text of paragraph 6.3.7.5 would need to be modified, preferably by substituting for it the text of paragraph 6.3.7.1 in Document No. 146.

5.7 The Chairman drew attention to Document No. DL/26, which contained the new channel distribution scheme (Figure 6.1) and related table of correspondence between channel numbers and frequencies (Annex L, Table 1) worked out for Africa and the Middle East by the group to which the delegate of Algeria had referred. She invited the delegate of the Federal Republic of Germany to introduce the document.

5.8 The delegate of the Federal Republic of Germany explained in detail the relative advantages and disadvantages of the original scheme (Document No. 146, page 6) and the one which was now being proposed in Document No. DL/26. In brief, he pointed out that application of the original grid would have resulted in a fairly small number of intermodulation products which might however have caused interference to reception from transmitters at the same site; with the new grid there would be more intermodulation products but as a general rule they would not coincide with the frequencies used at the same site. At the present stage, it was difficult to say what the implications of either scheme would be in terms of compatibility with the aeronautical radionavigation service.

5.9 The delegate of Qatar having sought the opinion of the IFRB on the matter, Mr. Berrada (IFRB) provided additional information. He stressed that, in both cases, the effect of the intermodulation products would be an unknown factor until such time as the calculations relating to compatibility with the aeronautical radionavigation service had been made. He suggested that the scheme in Document No. DL/26 should be accepted as it stood for the time being, pending clarification of the compatibility situation at the Second Session. If the number of unresolvable incompatibilities proved to be too high, the possibility would have to be explored of drawing up another scheme for Africa and the Middle East.

5.10 The Chairman said that if she heard no objection she would take it that the solution proposed by Mr. Berrada was acceptable to all the countries concerned. If that were the case, the text of paragraph 6.3.7.1 on page 4 of Document No. 146 would be substituted for that of paragraph 6.3.7.5, the figure in Document No. DL/26 would be inserted on page 6, and the necessary corrections would be made to Table 1 of Annex L.

It was so agreed.

5.11 Following a discussion relating to the text of the first paragraph of section 6.3.8, in which the Chairman of Committee 5, the Chairman of Committee 6, the delegate of the U.S.S.R. and the Vice-Chairman of Committee 5 took part, it was agreed to replace "doivent" by "devraient" in the fifth line of the French language version and to delete the words "and they shall do so" from the sixth line of the English language version.

Document No. 154, as amended, was approved.

6. Consideration of texts submitted by Committee 6 for second reading (Series R.8) (Document No. 155)

Annex F

6.1 The delegate of Algeria proposed that the following text be inserted after the third sentence of the first paragraph of section 6 : "It should be noted that the assignment of one frequency from the theoretical scheme corresponds in reality to the assignment of a group of six channels which are separated from one another by 31 channels".

6.2 The delegate of Italy pointed out that the passage in square brackets at the bottom of page R.8/3 was merely a note to Committee 6 and should be deleted.

Annex F was approved as amended.

Annex G

6.3 The delegate of the Federal Republic of Germany observed that the asterisk at the end of the first paragraph of section 2 should be transposed to follow the words "multiplication method" in the second line of the second paragraph of that section and that the words "power sum" in the footnote should be replaced by "multiplication".

6.4 The representative of the CCIR said that the number "10" before "log" in the fourth indent of section 4 should be deleted.

Annex G was approved as amended.

Annex H

Approved.

Document No. 155 as a whole was approved as amended.

7. Consideration of texts submitted by Committee 6 for second reading (Series R.9) (Document No. 156)

7.1 The Chairman explained that there had not been time to reproduce Annexes I, J and K as amended on first reading and that reference should therefore be made to pages B.6/28 to B.6/38 of Document No. 146 and to the corresponding corrections in Document No. 156.

Annex I

7.2 The Chairman of Committee 6 said that the square brackets round the reference numbers in section 8 could be removed.

7.3 The delegate of the United Kingdom, supported by the delegate of the Federal Republic of Germany, said that the number "3.3.2" in paragraph 8.1.2 should be replaced by "3.3.1".

7.4 The delegates of Finland and Yugoslavia considered that the number "3.3.2" should be retained.

7.5 The Chairman said that the problem could be solved simply by referring to the number "3.3".

Annex I was approved as amended.

Annexes J and K

Approved.

Annex L

7.6 The Chairman pointed out that Table 1 of that Annex should be replaced by the Table in Document No. DL/26.

Annex L was approved with that amendment.

Resolution No. PLEN./1

Approved.

Introduction to the Report of the First Session

Approved.

Document No. 156 as a whole was approved as amended.

The Chairman announced that the Meeting had completed its second reading of the texts submitted by Committee 6.

8. Telegram from the Administration of the Republic of South Africa

8.1 The Chairman read out the following telegram received from the Administration of South Africa :

"Proposal by the Administration of South Africa for the work of the Conference concerning the Report of the First Session. South Africa has indicated that it has about 110 FM transmitting stations in operation containing more than 500 transmitters. The frequencies of all these transmitters would have to be changed to conform to 100 kHz channel spacing. It will clearly not be possible to change these frequencies to the new values which might be assigned by the Second Session of the Conference on a date which might be decided as the date of coming into force of the agreements reached at the Second Session. Furthermore all countries bordering on South Africa already have at least some FM transmitters in operation. Similar conditions no doubt apply in many other African countries.

It seems evident that not only the assignment of frequencies needs to be coordinated at the Second Session but also that a suitable timetable for the implementation of the changes needs to be coordinated at that Session between the countries concerned.

The First Session may consider it appropriate to bring this situation to the attention of all countries affected perhaps by means of a Resolution forming part of its Report to the Second Session.".

8.2 After consideration of the telegram, the Steering Committee reached the conclusion that the principal matter did not concern the First Session. It was therefore her intention to despatch a reply to the South African Administration as follows :

"Reference your telex of 6 September 1982 I wish to state the following : A suitable timetable for implementation of changes needed to operational assignments clearly should be a matter for the Second Session of the Conference to decide in the light of the proposals received from the countries concerned. Regards M. Huet.

The meeting took note of the two telegrams.

The meeting rose at 0050 hours on Friday, 17 September 1982.

The Secretary-General :

M. MILI

The Chairman :

Marie HUET

INTERNATIONAL TELECOMMUNICATION UNION

REGIONAL BROADCASTING CONFERENCE

(FIRST SESSION) GENEVA, 1982

Document No. 167-E
17 September 1982
Original : English

PLENARY MEETING

MINUTES

OF THE

NINTH AND LAST PLENARY MEETING

Friday, 17 September 1982, at 1440 hrs

Chairman : Miss Marie HUET (France)

Subjects discussed :		Document No.
1.	Oral report by the Vice-Chairman of Committee 2	116
2.	Adoption of the Report of the First Session	-
3.	Closure of the First Session of the Conference	-

1. Oral report by the Vice-Chairman of Committee 2
(Document No. 116)

1.1 The Vice-Chairman of Committee 2 said that since her Committee's last report the delegation of the Republic of Botswana had deposited credentials which had been found to be in good and due form. Accordingly, the name of that country should be inserted in the proper place in section 1.1.1 of the conclusions of Committee 2 (Annex to Document No. 116) and should be deleted from section 3 of those conclusions. As a result of that development, there remained four countries that had not deposited their credentials.

Those amendments were approved.

2. Adoption of the Report of the First Session

2.1 The Chairman invited the Meeting to adopt its Report, pointing out that any minor editorial errors which might still remain would be corrected in the final text.

On that undetstanding, the Meeting adopted the Report of the First Session of the Conference.

3. Closure of the First Session of the Conference

3.1 The Chairman made the following statement :

"The Report of the First Session that you have just adopted translates into tangible form the work you have carried on for four weeks. It also bears witness to the spirit of compromise which was shown by all delegations and without which we would not have obtained such satisfactory results. This spirit of compromise will need to be maintained during the Second Session. The results we have achieved are due to your labours and those of the Vice-Chairmen of the Conference and the Chairmen of the Committees and Working Groups. They often had difficult problems to solve and spared neither their time nor their efforts to reach solutions. I wish to express my gratitude to them all. My thanks also go to all the officials of the General Secretariat, the IFRB and the CCIR who placed their skills at our disposal and whose advice we sought on many occasions. The results we have achieved are also due to all the members of the ITU staff who, especially during this last week, worked night and day to provide us with documents in good time. Finally, I should like to thank the interpreters, without whom our deliberations would not have been possible.

You are now returning to your countries, but there you will have to set to work without delay to prepare for the Second Session of the Conference. For that Session to be successful, certain technical data will have to be completed, particularly those relating to criteria for sharing with the aeronautical radio-navigation service, and preparations will have to be started for requests for frequency assignments to broadcasting stations. I therefore wish you "Bon courage"."

3.2 The delegate of the United Kingdom pointed out that, at the outset of the Conference, he had expressed the delight of all delegations at Miss Huet's appointment as Chairman. The general certainty that she would be an ideal Chairman had now been amply confirmed : the Conference could have been very difficult, owing to problems of compatibility with the aeronautical radionavigation service and to differences of approach to planning among the countries concerned, but Miss Huet had overcome all those difficulties and had created a climate of understanding that augured well for

the Second Session. The Conference had been outstanding, not only because of the results achieved, but also because of the happy atmosphere of international goodwill that had been largely engendered by the Chairman, with her charm, competence and readiness to help at all times. He was sure that every one present would join him in saying "Madam Chairman, we all love you - please, come again!".

3.3 The delegate of Libya, speaking on behalf of all the Arab delegations attending the Conference, paid a tribute to the Chairman's outstanding efforts, which had brought the First Session to such a successful conclusion. Congratulations were also due to the Chairmen of the Committees, Working Groups and Sub-Groups, to the Secretary-General and all the ITU staff who had contributed to that success, to the interpreters and to the participating delegations whose spirit of cooperation had made it possible to terminate the Conference within the allotted time.

3.4 The delegate of Algeria said it had been an honour for his delegation to nominate Miss Huet as Chairman, in the belief that her presence in that post would be a guarantee of the success of the First Session of the Conference. During the past four weeks, the Chairman had shown exemplary skill, good humour and competence, not only in conducting the debates, but also in providing dynamic advice and help whenever it was needed. His delegation sincerely congratulated Miss Huet on having brought the Session to a satisfactory conclusion within the time allocated to it by the Administrative Council.

3.5 The delegate of the U.S.S.R. said that the success achieved at the First Session was largely due to the outstanding qualities of its Chairman. He had known Miss Huet personally for over 20 years, and at all the conferences they had both attended she had demonstrated wisdom, skill and tact in solving the most difficult problems; now, as the presiding officer of the Conference, she had provided admirable leadership, showing a most pleasing combination of feminine charm and great competence, demanding the highest standards, but always with a smile. He expressed his delegation's thanks and best wishes to the Chairman.

3.6 The Chairman thanked all the speakers for their kind words and declared the First Session of the Conference closed.

The meeting rose at 1455 hours.

The Secretary-General : The Chairman :

M. MILI Marie HUET

UNION INTERNATIONALE DES TELECOMMUNICATIONS

CONFERENCE REGIONALE DE RADIODIFFUSION

(PREMIERE SESSION) GENEVE, 1982

Document N° 168-F-E-S

LISTE DES PARTICIPANTS

LIST OF PARTICIPANTS

LISTA DE PARTICIPANTES

Cette liste comprend les sections suivantes - This list includes the following sections - Esta lista comprende las secciones siguientes

I Membres de la Région 1 et Membres concernés de la Région 3 - Members of Region 1 and Members concerned of Region 3 - Miembros de la Región 1 y Miembros interesados de la Región 3

II Autres Membres - Other Members - Otros Miembros

III Exploitations privées reconnues - Recognized private operating agencies - Empresas privadas de explotación reconocidas

IV Organisations internationales - International Organizations - Organizaciones Internacionales

IV.1 Nations Unies - United Nations - Naciones Unidas

IV.2 Institutions spécialisées - Specialized Agencies - Instituciones especializadas

IV.3 Organisations régionales (Art. 32 de la Convention) - Regional Organizations (Art. 32 of the Convention) - Organizaciones regionales (Art. 32 del Convenio)

IV.4 Autres Organisations - Other Organizations - Otras Organizaciones

V Siège de l'Union - Union Headquarters - Sede de la Unión

VI Secrétariat de la Conférence - Secretariat of the Conference - Secretaría de la Conferencia

***

Symboles utilisés - Symbols used - Símbolos utilizados

C : Chef de délégation - Head of delegation - Jefe de delegación
CA : Chef adjoint - Deputy Head - Subjefe
D : Délégué - Delegate - Delegado
A : Conseiller - Adviser - Asesor

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CYP **Chypre (République de) -**
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COG **Congo (République Populaire du) -**
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CTI **Côte d'Ivoire (République de) -**
Ivory Coast (Republic of the) -
Costa de Marfil (República de la)

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E **Espagne - Spain - España**

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GUI **Guinée (République Populaire Révolutionnaire de) - Guinea (Revolutionary People's Republic of) - Guinea (República Popular Revolucionaria de)**

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HVO **Haute-Volta (République de) - Upper Volta (Republic of) - Alto Volta (República del)**

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IRN **Iran (République Islamique d') - Iran (Islamic Republic of) - Irán (República Islámica del)** (suite)

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IRL **Irlande - Ireland - Irlanda** (suite)

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ISR **Israël (Etat d') - Israel (State of) - Israel (Estado de)**

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JOR Jordanie (Royaume Hachémite de) - Jordan (Hashemite Kingdom of) - Jordania (Reino Hachemita de)

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KEN Kenya (République du) - Kenya (Republic of) - Kenya (República de)

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KWT Koweït (Etat de) - Kuwait (State of) - Kuwait (Estado de)

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LSO Lesotho (Royaume de) - Lesotho (Kingdom of) - Lesotho (Reino de)

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LBY **Libye (Jamahiriya Arabe Libyenne Populaire Socialiste) - Libya (Socialist People's Libyan Arab Jamahiriya) - Libia (Jamahiriya Árabe Libia Popular Socialista)**

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LUX **Luxembourg - Luxembourg - Luxemburgo**

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MDG **Madagascar (République Démocratique de) - Madagascar (Democratic Republic of) - Madagascar (República Democrática de)**

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MLI **Mali (République du) - Mali (Republic of) - Malí (República del)**

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MRC **Maroc (Royaume du) - Morocco (Kingdom of) - Marruecos (Reino de)**

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MCO **Monaco - Monaco - Mónaco**

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MNG **Mongolie (République Populaire de) - Mongolian People's Republic - Mongolia (República Popular de)**

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NGR **Niger (République du) - Niger (Republic of the) - Níger (República del)**

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OMA **Oman (Sultanat d') - Oman (Sultanate of) - Omán (Sultanía de)**

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POL **Pologne (République Populaire de) - Poland (People's Republic of) - Polonia (República Popular de)**

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SYR **République Arabe Syrienne - Syrian Arab Republic - República Árabe Siria**

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ROU **Roumanie (République Socialiste de) - Roumania (Socialist Republic of) - Rumania (República Socialista de)**

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G **Royaume-Uni de Grande-Bretagne et d'Irlande du Nord - United Kingdom of Great Britain and Northern Ireland - Reino Unido de Gran Bretaña e Irlanda del Norte**

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TCH **Tchécoslovaque (République Socialiste) - Czechoslovak Socialist Republic - Checoslovaca (República Socialista)**

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Praha

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Radiodiffusion du Togo
Lomé

CA M. GNASSOUNOU-AKPA Kouassi Ele
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TUN Tunisie - Tunisia - Túnez

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Sanaa

D M. MOQBEL Houssain
R.T.V.O. Yemen Arab Republic
Sanaa

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C Citoyen OSIL Gnok
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Mission permanente du Zaïre
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II. AUTRES MEMBRES — OTHER MEMBERS — OTROS MIEMBROS

III. EXPLOITATIONS PRIVÉES RECONNUES — RECOGNIZED PRIVATE OPERATING AGENCIES — EMPRESAS PRIVADAS DE EXPLOTACIÓN RECONOCIDAS

IV. ORGANISATIONS INTERNATIONALES — INTERNATIONAL ORGANIZATIONS — ORGANIZACIONES INTERNACIONALES

IV.1 NATIONS UNIES — UNITED NATIONS — NACIONES UNIDAS

IV.2 INSTITUTIONS SPECIALISEES — SPECIALIZED AGENCIES — INSTITUCIONES ESPECIALIZADAS

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269 M. SUBAN A.L.
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IV.3 ORGANISATIONS REGIONALES (ART. 32 DE LA CONVENTION) — REGIONAL ORGANIZATIONS (ART. 32 OF THE CONVENTION) — ORGANIZACIONES REGIONALES (ART. 32 DEL CONVENIO)

IV.4 AUTRES ORGANISATIONS — OTHER ORGANIZATIONS — OTRAS ORGANIZACIONES

Association du transport aérien international — International Air Transport Association — Asociación de Transporte Aéreo Internacional (IATA)

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Manager Telecomms International Affairs
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M. KHLEBNIKOV V.
(voir sous URS)

M. KNOPF W.
(voir sous DDR)

M. KRÁLÍK Frantisek
(voir sous TCH)

Union de radiodiffusion des Etats arabes — Arab States Broadcasting Union — Unión de Radiodifusión de los Estados Arabes (ASBU)

M. SULIEMAN A. Rahim
ASBU General Secretariat

Union des radiodiffusions et télévisions nationales d'Afrique — Union of National Radio and Television Organizations of Africa — Unión de las Radiodifusiones y Televisiones Nacionales de África (URTNA)

M. SAÏD Mohamed
(voir sous ALG)

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M. O'LEARY Terence
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V. SIEGE DE L'UNION — HEADQUARTERS OF THE UNION — SEDE DE LA UNIÓN

V.1 Secrétariat général

M. M. Mili, Secrétaire général

Assistante: Mlle M. Knight

M. R.E. Butler, Vice-Secrétaire général

Assistante: Mlle P. Taillefer

M. M. Bardoux, Département du personnel

M. U. Petignat, Département des conférences et services communs

M. I. Uygur, Département de l'ordinateur

M. J. Francis, Département des relations extérieures

M. N. Komplita, Département de la coopération technique

M. R. Prélaz, Département des finances

V.2 IFRB

M. F.G. Perrin, Président

Assistante: Mme J. Fox

M. C.W. Sowton, Vice-Président

Assistante: Mlle M. Iglesias

M. A. Berrada, Membre

Assistante: Mme D. Phéné

M. P. Kurakov, Membre

Assistante: Mme M. Zinovieff

M. Y. Kurihara, Membre

Assistante: Mme J. Simic

V.3 CCIR

M. R.C. Kirby, Directeur

Assistante: Mme M. Sage

M. J. Rutkowski, Conseiller supérieur

M. A. Boyle, Conseiller

M. C. Stettler, Conseiller

V.4 CCITT

M. L. Burtz, Directeur

Assistante: Mme C. Vigneulle

VI. SECRETARIAT DE LA CONFERENCE — SECRETARIAT OF THE CONFERENCE — SECRETARÍA DE LA CONFERENCIA

VI.1 Secrétaire de la Conférence : M. M. Mili, Secrétaire général

Secrétaire exécutif	: M. A. Winter-Jensen
assisté de	: Mme R.A. Chantre
Secrétaire technique	: M. M. Harbi
assisté de	: Mme R. Reinhard
Conseiller juridique	: M. A. Noll

VI.2 Séances plénières et de commission

Séance plénière	: M. J. Francis
assisté de	: Mlle D. Service
Commission 1	: M. J. Francis
Commission 2	: M. A. Winter-Jensen
Commission 3	: M. R. Prélaz
Commission 4	: M. S. Tsukada
assisté de	: M. D. Schuster
	: M. O. Villanyi
Commission 5	: M. M. Ahmad
assisté de	: M. D. Schuster
	: Mlle J. Lechaire
Assistante au secrétariat des Commissions 4 et 5	: Mlle C. Chiriboga
Commission 6	: M. R. Macheret

VI.3 Secrétariat technique

M. E. Cabral de Mello, Chef de section

M. J. Fonteyne, Ingénieur

M. H. Pouliquen, Conseiller

M. R. Smith, Conseiller

VI.4 Division "Services de la Conférence"

Secrétaire administratif	: M. U. Petignat
assisté de	: M. J. Escudero
	: Mlle F. Peysson
Relations avec la presse/ information publique	: M. R. Fontaine
assisté de	: Mme D. Silvestro
Division linguistique	: M. G. Byrne-Sutton
- Traduction française	: M. M. Brodsky
- Traduction anglaise	: M. T. Jones
- Traduction espagnole	: Mlle M.A. Delgado
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Service des procès-verbalistes	: Mlle J. Barley
Recherches documentaires	: Mme G. Pérotin
Inscription des délégués	: Mme H. Di Rosa
Salles	: Mme M. Grand
Contrôle des documents	: Mme L. Jeanmonod
Sténodactylographie, composition de textes	: M. P. Favre
Reprographie	: M. P. Constantin
	: M. A. Schaffner
Renseignements	: Mme M.M. de Rejod
Secrétaire du Président de la Conférence	: Mlle Ch. Clin
Economat	: M. C. Boccard
Distribution des documents	: M. G. Delaye
Messagers	: M. C. Glappey
Huissiers	: M. A. Laverrière

INTERNATIONAL TELECOMMUNICATION UNION

REGIONAL BROADCASTING CONFERENCE

(FIRST SESSION) GENEVA, 1982

Document No. 169-E
22 September 1982

FINAL LIST OF DOCUMENTS

A. Basic documents of the Conference

B. Complete List of Documents in numerical order

LIST OF DOCUMENTS

(No. 1 to 169)

PL = Plenary
C = Committee
WG = Working Group

No.	Origin	Title	Destination
1 + Corr.1	SG	Agenda of the Conference	PL
2	SG	Credentials of delegations	C.2
3	SG	Budget of the Conference	C.3
4	G	Proposals for the work of the Conference	C.4,C.5
5	NOR	Interference caused by the oscillators in FM Broadcasting receivers	C.5
6	NOR	Circular or elliptical polarization for FM Broadcasting	C.4
7	D	Proposals for the work of the Conference - Technical bases	C.4
8	D	Proposals for the work of the Conference - Planning methods	C.5
9	D	Proposals for the work of the Conference - Planning principles	C.5
10	D	Proposals for the work of the Conference	C.4,C.5
11	URS	Proposals for the work of the Conference	C.4,C.5
12	BEL	Study of compatibility between the Broadcasting Service in the band 100-108 MHz and the Aeronautical Radiocommunication Services in the band 108-136 MHz	C.4
13	F	Compatibility between the Broadcasting Service in the band 87.5-108 MHz and the Aeronautical Radionavigation and Aeronautical Mobile (R) Services in the band 108-136 MHz	C.4
14	SG	Report of the CCIR	C.4,C.5
15	SG	Contributions of non-exempt Recognized Private Operating Agencies and International Organizations	C.3

No.	Origin	Title	Destination
16	DDR	Proposals and remarks concerning the work of the Conference	C.4,C.5
17	AUT	Proposals for the work of the Conference - Requirement form (Agenda item 2)	C.4,C.5
18	AUT	Proposals for the work of the Confernece - Planning principles (Agenda item 1.10)	C.5
19	HOL	Compatibility between the Broadcasting Service in the band 87.5-108 MHz and the Aeronautical Services in the bands 108-136 MHz	C.4
20	S	Low power stations	C.5
21	GRC	Item 1.9 of the Agenda - Compatibility of the FM Broadcasting Service with the Aeronautical Radionavigation Service	C.4
22	YUG	Proposals for the work of the Conference	C.4,C.5
23	SG	Convening of the Conference	PL
24(Rev.)	SG	Invitations	PL
25	SG	Notification of International Organizations	PL
26	SG	Primary and permitting Services in the band 87.5-108 MHz in Region 1	C.4,C.5
27	HOL	Characteristics of portable and mobile receivers	C.4,C.5
28	SG	Loss of the right to vote	PL
29 +Add.1	AFS	Proposal for the work of the conference - Optimum channel spacing and channel distribution	C.5
30	D	Compatibility between the broadcasting service in the band 87.5 - 108 MHz and the Aeronautical Services in the bands 108 - 136 MHz	C.4
31	E	Proposals for the work of the conference - Radio frequency protection ratios	C.4
32	E	Proposals for the work of the conference - Modulation standards, emitting bandwiths (including stereophony and other systems having additional sub-carriers)	C.4

No.	Origin	Title	Destination
33	E	Proposals for the work of the conference - Propagation characteristics and methods used to forecast field strength values in the VHF band and to calculate the service areas of sound broadcasting stations	C.4
34	E	Proposals for the work of the conference - Optimum channel spacing, channel distribution	C.4
35	E	Proposals for the work of the conference - Planning principles	C.4
36	G	Sharing criteria between the FM sound broadcasting service with land mobile services in the bands 87.5 - 108 MHz	C.4
37(Rev.1)	SG	Allocation of documents	-
38(Rev.1)	SG	Conference Chairmen and Vice-Chairmen	-
39	SG	Secretariat of the conference	-
40	D	RF-Protection ratios between the broadcasting service and the aeronautical radionavigation service	C.4
41	SG	Conference structure	-
42	Chairman	Proposed structure of the report to be submitted to the second session of RABC reg 1 +	PL
43	4B	Note from the Chairman	C.4
44	G	Addition of interference contributions : proposed modification to simplified multiplication method	C.5
45	HOL	Classification of emissions	-
46	5B	First report of working group 5B to Committee 5	C.5
47	4C	Report of the Chairman Sharing criteria between FM sound broadcasting service and TV broadcasting service in the bands 87.5 - 108 MHz	C.4
48(Rev.1)	4C	Sharing criteria between the FM broadcasting service with land mobile services in the bands 87.5 - 108 MHz	C.4
49	C.4	Summary record of the first meeting	C.4
50	MLI	Low-power stations	C.4,C.5

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51	C.5	Summary Record of the first meeting	C.5
52	C.5	Summary Record of the Second meeting	C.5
53(Rev.2)	WG 4A	Report - Chapter 2 - Propagation	C.4
54	WG 4B	First Report	C.4
55	C.6	Summary Record of the first meeting	C.6
56	SWG 5B-1	Report - Draft form for use in submitting requirements to the IFRB	WG 5B
57	C.2	Summary Record of the first meeting	C.2
58	PL	Minutes of the first plenary meeting	PL
59	WG 5A	First Report	C.5
60	WG 5A	Second Report	C.5
61(Rev.1)	C.5	Note from the Chairman - Information required in preparation of the form for submission of requirements to the IFRB	C.4
62	S.G.	Position of the accounts of the Conference as at 25 August 1982	C.3
63	C.3	Summary Record of the first meeting	C.3
64(Rev.1)	WG 4B	Second Report	C.4
65	WG 4A	Note from the Chairman	C.4
66	SWG 4C-1	Report - Compatibility between the Broadcasting Service in the band 87.5-108 MHz and the Aeronautical Services in the bands 108-136 MHz	WG 4C
67	C.4	Note from the Chairman	C.5
68(Rev.1)	WG 4B	Third Report - The methods for the assessment of multiple interference	C.4
69(Rev.2)	WG 5B	Second Report - Draft form for use in submitting requirements to the IFRB	C.5
70	ad hoc G 5/1	Proposed structure of chapters 6 and 7 of the Conference Report	C.5

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71	WG 4C	Report- Chapter 5 - Compatibility between the Broadcasting Service in the band 87.5-108 MHz and the Aeronautical Services in the bands 108-136 MHz	C.4
72	WG 5A	Third Report	C.5
73 +Corr.1	SWG 5B-2	Report	WG 5B
74	WG 4C	Report - Sharing criteria between the FM Sound Broadcasting Service with the Fixed Service in the bands 87.5-108 MHz	C.4
75	SWG 4C-1	Report - Compatibility between the Broadcasting Service in the bands 87.5-108 MHz and the Aeronautical Services in the band 108-136 MHz	WG 4C
76(Rev.1)	WG 5A	Fourth Report	C.5
77	WG 4A	Note from the Chairman submitting Draft Recommendation	C.4
78	WG 4B	Final Report	C.4
79	C.4	Note from the Chairman	C.5
80	WG 2A	Report	C.2
81(Rev.2)	WG 4C	Report - Chapter 5 - Compatibility between the Broadcasting Service in the band 87.5-108 MHz and the Aeronautical Services in the bands 108-137 MHz	C.4
82	C.5	First series of texts to the Editorial Committee	C.6
83	C.5	First Report	PL
84	WG 4C	Report - Draft Recommendation /A/	C.4
85	WG 4C	Report - Draft Recommendation /B/	C.4
86	C.4	First Report	PL
87	C.4	First series of texts	C.6

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88	PL	Minutes of the second plenary meeting	PL
89(Rev.1)	WG 5B	Third Report	C.5
90	WG 5A	Fifth Report	C.5
91	WG 5A	Sixth Report	C.5
92	WG 5A	Seventh Report	C.5
93(Rev.1)	C.4	Note from the Chairman	C.5
94	C.4	Draft Recommendation No. COM.4/2	C.4
95	C.3	Summary Record of the second meeting	C.3
96	WG 5B	Resolution No. COM 5/1 - IFRB Activities between the first and second sessions of the Conference	C.5
97	C.6	B.1	PL
98	C.6	B.2	PL
99	C.4	Second Report	PL
100	C.4	Second series of texts to the Editorial Committee	C.6
101	C.4	Summary record of the second meeting	C.4
102	C.5	Summary record of the third meeting	C.5
103	C.5	Second Report	PL
104	C.5	Second Series of texts	C.6
105	ad hoc 5/3	Report	C.5
106	ad hoc 5/4	Report	C.5
107	SG	Position of the accounts of the Conference at 10 September 1982	C.3
108	C.6	R.1	PL
109	C.6	B.3	PL

No.	Origin	Title	Destination
110	C.5	Third Report	PL
111 +Corr.1	C.5	Third series of texts	C.6
112	C.5	Fourth Report	PL
113	C.5	Fourth series of texts	C.6
114	C.5	Fifth Report	PL
115	C.5	Fifth series of texts	C.6
116	C.2	Report - Credentials	PL
117	C.4	Summary record of the third meeting	C.4
118	C.6	B.4	PL
119	C.6	R.2	PL
120	ad hoc 5/5	Report	C.5
121	ad hoc PLEN/1	Report	PL
122	ad hoc 5/5	Report	C.5
123	ad hoc 5/2	First Report	C.5
124	ad hoc 5/2	Second Report	C.5
125	C.5	Summary record of the fourth meeting	C.5
126	C.5	Summary record of the fifth meeting	C.5
127	C.3	Report of the Budget Control Committee	PL
128	C.5	Sixth Report	PL
129	C.5	Sixth series of texts	C.6
130	PL	Minutes of the third Plenary meeting	PL
131	C.5	Seventh Report	PL
132	C.5	Seventh series of texts	C.6

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133	C.5	Eighth Report	PL
134 +Corr.1	C.5	Eight series of texts	C.6
135	C.5	Ninth Report	PL
136	C.5	Ninth series of texts	C.6
137	PL	Resolution No. Plen./1	PL
138	C.6	Fifth series of texts	PL
139	C.6	Third series of texts	PL
140	C.5	Tenth Report	PL
141	C.5	Tenth and last series of texts	C.6
142 +Corr.1	C.6	Fourth series of texts	PL
143	C.4	Summary record of the fourth meeting	C.4
144	C.4	Summary record of the fifth and last meeting	C.4
145	C.5	Report	PL
146 +Add.1	C.6	Sixth series of texts	PL
147	PL	Introduction to the Report of the First Session	-
148	C.6	Fifth series of texts	PL
149	Chairman	Submission of a letter from USSR	PL
150	Chairman	Submission of a letter from DDR	PL
151	C.2	Summary record of the second and last meeting	C.2
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155	C.6	R.8	PL
156	C.6	R.9	PL
157	Chairman	Submission of a letter from G	PL
158	Chairman	Submission of a letter from D	PL
159	PL	Minutes of the fourth meeting	PL
160	PL	Minutes of the fifth meeting	PL
161	C.5	Summary record of the sixth meeting	C.5
162	C.5	Summary record of the seventh meeting	C.5
163	C.5	Summary record of the eighth and last meeting	C.5
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165	PL	Minutes of the seventh meeting	PL
166	PL	Minutes of the eighth meeting	PL
167	PL	Minutes of the ninth and last meeting	PL
168	SG	List of participants	-
169	SG	List of documents	-