



Documents of the Regional Administrative Radio Conference to establish a plan for the broadcasting service in the band 1605-1705 kHz in Region 2 (1st session) (RARC BC-R2(1))
(Geneva, 1986)

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(ITU) للاتصالات الدولي الاتحاد في والمحفوظات المكتبة قسم أجراه الضوئي بالمسح تصوير نتاج (PDF) الإلكترونية النسخة هذه والمحفوظات المكتبة قسم في المتوفرة الوثائق ضمن أصلية ورقية وثيقة من نقلاً

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AGENDA

OF THE

MEETING OF HEADS OF DELEGATIONS

Monday, 14 April 1986 at 10.30 hrs

(Room III)

Document No.

- | | |
|--|------|
| 1. Opening by the Secretary-General and designation of the Chairman of the meeting | - |
| 2. Approval of the agenda of the meeting | - |
| 3. Proposals for the election of the Chairman of the Conference | - |
| 4. Proposals for the election of the Vice-Chairmen of the Conference | - |
| 5. Conference structure | DT/1 |
| 6. Proposals for the election of the Chairmen and Vice-Chairmen of the Committees | - |
| 7. Draft agenda of the first Plenary Meeting | DT/2 |
| 8. Allocation of documents to Committees | DT/3 |
| 9. Other business | |

R.E. BUTLER
Secretary-General



STEERING COMMITTEE

DRAFT

GENERAL SCHEDULE OF THE WORK OF THE CONFERENCE

1st week (14 - 18 April)

Organization and commencement of work¹⁾

2nd week (21 - 25 April)

Continuation of the work in Working Groups and Committees¹⁾

Wednesday 23 - End of the work of Working Groups of Committee 4

Thursday 24 - End of the work of Working Groups of Committee 5

Friday 25 - End of the work of Committee 4

3rd week (28 April - 2 May)

Monday 28 - End of the work of Committee 5

Tuesday - End of the work of Working Group of the PL
- Report of Credentials Committee

Wednesday 30 - End of the first reading of the texts of the Report by PL

Thursday 1 - End of the second reading of the texts of the Report by PL
- Report of Budget Control

Friday 2 - Approval of the Report and closing

¹⁾ Plenary meetings if necessary.

Working Group 4-B

PROPOSALS FROM THE CHAIRMAN ON BROADCASTING STANDARDS AND PROTECTION RATIOS

Broadcasting Standards

4.1 *Channel spacing*

The Plan is based on a channel spacing of 10 kHz and carrier frequencies which are integral multiples of 10 kHz, beginning at 1 610 kHz.

4.2 *Class of emission*

The Plan is based upon double-sideband amplitude modulation with full carrier A3E.

Classes of emission other than A3E, for instance to accommodate stereophonic systems, could also be used on condition that the energy level outside the necessary bandwidth does not exceed that normally expected in A3E emission [and that the emission is receivable by receivers employing envelope detectors without increasing appreciably the level of distortion].

CAN/7/38 4.3 Bandwidth of emission

The Plan assumes a necessary bandwidth of 10 kHz for which only 5 kHz audio bandwidth can be obtained. While this might be an appropriate value within some administrations, others may wish to employ wider bandwidth systems with necessary bandwidths of the order of 20 kHz. However, the protection ratios selected allow operation with 20 kHz occupied bandwidth without an appreciable increase in interference.

CAN/7/39 4.4 Frequency tolerance

In accordance with Appendix 7 of the Radio Regulations.

USA/4/50 Frequency tolerances

As indicated in the Radio Regulations, the frequency tolerance should be 20 parts in 10^6 for powers of 10 kW or less, and 10 Hz for powers greater than 10 kW.

4.9 Protection ratios

4.9.1 *Co-channel protection ratio*

The co-channel protection ratio is 26 dB.

4.9.2 *Adjacent channel protection ratio*

- protection ratio for the first adjacent channel: 0 dB
- protection ratio for the second adjacent channel: -29.5 dB

4.9.3 *Synchronized networks*

In addition to the standards specified in the Agreement, the following additional standards apply to synchronized networks.

For the purpose of determining interference caused by synchronized networks, the following procedure shall be applied. If any two transmitters are less than 400 km apart, the network shall be treated as a single entity, the value of the composite signal being determined by the quadratic addition of the interfering signals from all the individual transmitters in the network. If the distances between all the transmitters are equal to or greater than 400 km, the network shall be treated as a set of individual transmitters.

For the purpose of determining skywave interference received by any one member of a network, the value of the interference caused by the other elements of the network shall be determined by the quadratic addition of the interfering signals from all of those elements. In any case, where groundwave interference is a factor it shall be taken into account.

The co-channel protection ratio between stations belonging to a synchronized network is 8 dB.

T.M. BEILER
Chairman of Working Group 4-B

STEERING COMMITTEE

Note by the Chairman of the Editorial Committee

CONTENTS OF THE REPORT

To enable the Editorial Committee to organize its work, it would be desirable for it to have, as soon as possible, a plan of the structure of the report to be prepared for the second session of the Conference.

A draft table of contents prepared on the basis of the Report of the Regional Administrative MF Broadcasting Conference (Region 2), first session, Buenos Aires, 1980, adapted to the specific requirements of the present Conference, is annexed hereto for reference purposes.

On this basis, it should be possible to agree on a plan for the contents of the report that the present Conference is to prepare, showing which Committees should supply the items to be included in it.

These items should then be clearly identified at every stage of their consideration by an appropriate reference, e.g. "Draft text for inclusion in the Report - Chapter X - section X.1".

P. PERRICHON

Chairman of Committee 6

Annex: 1

ANNEX

Introduction

CHAPTER 1 - DEFINITIONS AND SYMBOLS

1.1 Definitions

1.2 Symbols

CHAPTER 2 - PROPAGATION

2.1 Ground conductivity

2.2 Ground-wave propagation

2.3 Sky-wave propagation

CHAPTER 3 - BROADCASTING STANDARDS AND
TRANSMISSION CHARACTERISTICS

3.1 Channel spacing and carrier frequencies

3.2 Class of emission

3.3 Bandwidth of emission

3.4 Station power

3.5 Nominal usable field strength

3.6 Definition of noise zones

3.7 Channel protection ratio

CHAPTER 4 - RADIATION CHARACTERISTICS OF
TRANSMITTING ANTENNAS

4.1 Omnidirectional antennas

4.2 Consideration of the radiation patterns of
directional antennas

4.3 Method to be used for calculating directional
antenna patterns

[CHAPTER 5 - ROOT SUM SQUARE (RSS) ADDITION OF WEIGHTED
INTERFERENCE CONTRIBUTIONS TO DETERMINE
USABLE FIELD STRENGTH]

CHAPTER 6 - PLANNING

6.1 Planning principles

6.2 Planning method

6.3 Planning criteria

COM 4	COM 5

CHAPTER 7 - PREPARATORY WORK WITH A VIEW TO
THE SECOND SESSION OF THE CONFERENCE

CHAPTER 8 - COMPATIBILITY WITH OTHER SERVICES

ANNEXES*

ATLAS OF GROUND CONDUCTIVITY
FIELD STRENGTH CURVES FOR GROUND-WAVE
PROPAGATION

RESOLUTIONS*

REPORT OF THE FIRST SESSION

RECOMMENDATIONS*

AGENDA AND DURATION OF THE SECOND SESSION
OF THE CONFERENCE

LIST OF MEMBERS WHICH PARTICIPATED IN THE FIRST SESSION

COM 4	COM 5

WG PLEN

* Non-exhaustive list.

WORKING GROUP 5A

Working Group 5-A

1.1 Definitions

An allotment is an entry of a designated frequency channel for use by one or more administrations for the broadcasting service in identified countries or geographical areas under the conditions specified in the [agreement]. Each allotment may be converted into one or more assignments using the criteria specified in []. The characteristics of an allotment are a designated channel and an allotment area.

An allotment area is a specifically defined geographical area to which one or more channels are allotted.

6.1 Planning principles

The following are the principles agreed for use in preparing an allotment plan for the broadcasting service in Region 2 in the band 1 605 - 1 705 kHz.

- a) Where there are two or more countries are within the standardized distance(s) specified in Table [] of a geographical area, the minimum number of allotments to that area is shown in Table [6.1]. Beyond this standardized distance from any neighbouring country, all ten channels are allotted.
- b) Standardized parameters for a station on [allotted/priority] channels will be specified, for day and night, in order to facilitate channel re-use. Such standardized parameters are essential to the establishment of the standardized distance(s).
- c) An administration may make assignments on channels not allotted to it in a particular allotment area provided that it protects the allotments and assignments of other countries in accordance with Annex [1]. Such assignments do not restrict standardized parameter use of allotments.

OR

- c) A country may make assignments on another country's priority channel allotment (i.e. use non-priority channels) provided such assignments protect the priority channel allotment. Such non-priority channel assignments do not restrict standardized parameter use of allotments.

- d) In cases where neighbouring countries have allotments on adjacent channels, decisions should be taken at the second session of the Conference to minimize the need for coordination. Detailed procedures for converting the allotments into assignments in the border areas are specified in Chapter [7].

OR

- d) In cases where neighbouring countries have priority channel allotments on adjacent channels, procedures to avoid mutual interference while minimizing the need for coordination are specified in Chapter [7].
- e) Assignments, or modifications thereto, may be made with parameters different from the standardized parameters, as long as the field strength at the standardized distance from the border of the allotment is not exceeded at night, and the [0.5 mV/m] daytime contour does not extend into the neighbouring country further than the [0.5 mV/m] contour of a standardized parameter station at the border of the same allotment area.

OR

- e) Assignments, or modifications thereto, may be made with parameters different from the standardized parameters, as long as the field strength at the standardized distances from the border of the allotment are not exceeded.

D. JOHNSON
Chairman of Working Group 5A

INTERNATIONAL TELECOMMUNICATION UNION

BC-R2(1)RARC TO ESTABLISH A PLAN FOR
THE BROADCASTING SERVICE IN THE
BAND 1605-1705 kHz IN REGION 2

FIRST SESSION GENEVA, APRIL/MAY 1986

Document DL/6-E

18 April 1986

Original: English

SUB-WORKING GROUP 4B-4

	<u>Nominal usable field strength</u> (Agenda 2.1.5)		
USA/Doc. 4	Noise Zone 1	Noise Zone 2	RSS
	<u>Class B station</u> Ground wave Day 0.5 mV/m Night 2.5 mV/m	<u>Class B station</u> Ground wave Day 1.25 mV/m Night 6.5 mV/m	
	<u>Class C station</u> Ground wave Day 0.5 mV/m Night 4 mV/m	<u>Class C station</u> Ground wave Day 1.25 mV/m Night 10 mV/m	
CAN/Doc. 7	$E_{nom} = 0.5$ mV/m for daytime		E_1
	Geomagnetic Latitudes	0° 15°N 30°N 45°N 60°N 15°S 30°S 45°S 60°S	
	E_{nom} (mV/m)	Priority channels Non-priority channels	
B/Doc. 8	Noise Zone 1	Noise Zone 2	RSS
	Day 1.6 mV/m Night 5 mV/m	Day 2.5 mV/m Night 9 mV/m	
CHL/Doc. 14	Noise Zone 1	Noise Zone 2	RSS
	<u>Groundwave</u> Day 0.5 mV/m Night 4 mV/m	<u>Groundwave</u> Day 1.25 mV/m Night 10 mV/m or 4 mV/m if allotment Plan method is adopted	
PRG/Doc.16	Noise Zone 1	Noise Zone 2	RSS
	Day 0.5 mV/m Night 2.5 mV/m	Day 1.25 mV/m Night 6.5 mV/m	
CUB/Doc. 21	Noise Zone 1	Noise Zone 2	
	<u>Class B station</u> Day 0.9 mV/m Night 2.9 mV/m	<u>Class B station</u> Day 0.9 mV/m Night 6.3 mV/m	
	<u>Class C station</u> Day 1.25 mV/m Night 4.1 mV/m	<u>Class C station</u> Day 1.250 mV/m Night 8.9 mV/m	

T.M. BEILER
Chairman of Sub-Working Group 4B-4

DRAFT CHAPTER [8] ON COMPATIBILITY WITH
OTHER SERVICES

[8.] Inter-service criteria for the sharing of the band 1 625 - 1 705 kHz
between the broadcasting service and other services in Region 2
(Agenda 2.2)

In accordance with Article 8, the fixed and mobile services become permitted services at a time to be established by the Conference. The intention was to facilitate the preparation of the broadcasting Plan without restrictions from other services. Thus in drawing up the Plan, broadcasting will have prior choice of frequency and does not have to protect the other services. The sharing criteria developed in this section are designed to apply to the permitted services in order to protect broadcasting services in the Plan and give protection to these permitted services. According to the specific cases the value is given for co-channel interference (CO) or for off-channel interference (OC).

[8.1] Protection of the broadcasting service

The broadcasting service in Region 2 may be subject to potential inter-service interference from services sharing the sub-band 1 625 - 1 705 kHz such as the fixed, mobile and radiolocation services.

Protection in accordance with the criteria in § [8.1.1] is to be given within the national boundary and/or sub-national zone for priority channels and within the service contours for non-priority channels.

A value of 26 dB has been indicated in [4.4.1] for co-channel protection ratio between broadcasting emissions hence allowing a given quality of service and the same quality criteria has been applied to derive the figures given in the case where interfering services other than broadcasting are considered.

[8.1.1] Protection ratio criteria

The proposed co-channel (zero frequency carrier spacing) radio-frequency protection from a J3E emission is 28 dB. With respect to an F1B type of emission, the off-channel (1 kHz) radio-frequency protection ratio required to protect the broadcasting service is 45 dB. The radio-frequency protection ratio curves (median values) appearing in Figures [9.1] and [9.2] are used to determine protection for various carrier spacings.

The protection ratio values for other types of modulations that can be used by the services sharing this band are given in Figure [8.] hereafter.

Wanted (Note 1).....	A3E (Broadcasting)
Unwanted.....	J3E (Radiotelephony)
LPF at Rx.....	10 kHz
Grade of impairment.....	4 (as per CCIR Rec. 562-1)

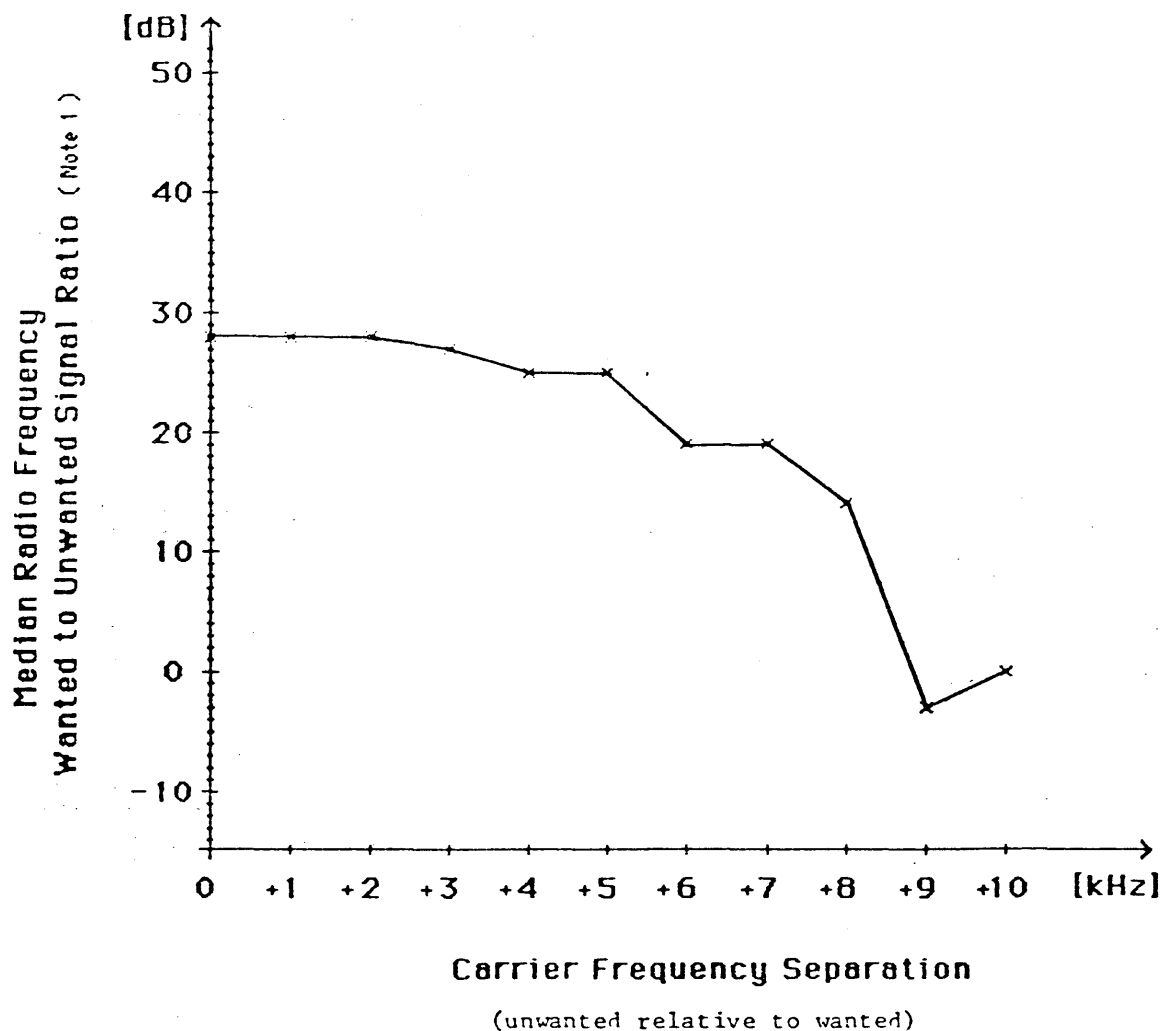


Figure 9.1- Median value of the radio frequency wanted (A3E)
to unwanted (J3E) signal ratio as a function of the
carrier frequency separation.

Note 1 - The signal ratio is defined as the ratio of the peak envelope
power of the wanted signal to the peak envelope power of the unwanted
signal.

Wanted (Note 1).....	A3E	(Broadcasting)
Unwanted.....	F1B	(Narrow-band direct printing telegraphy or selective digital calling)
LPF at Rx.....	10 kHz	
Grade of impairment.....	4	(as per CCIR Rec. 562-1)

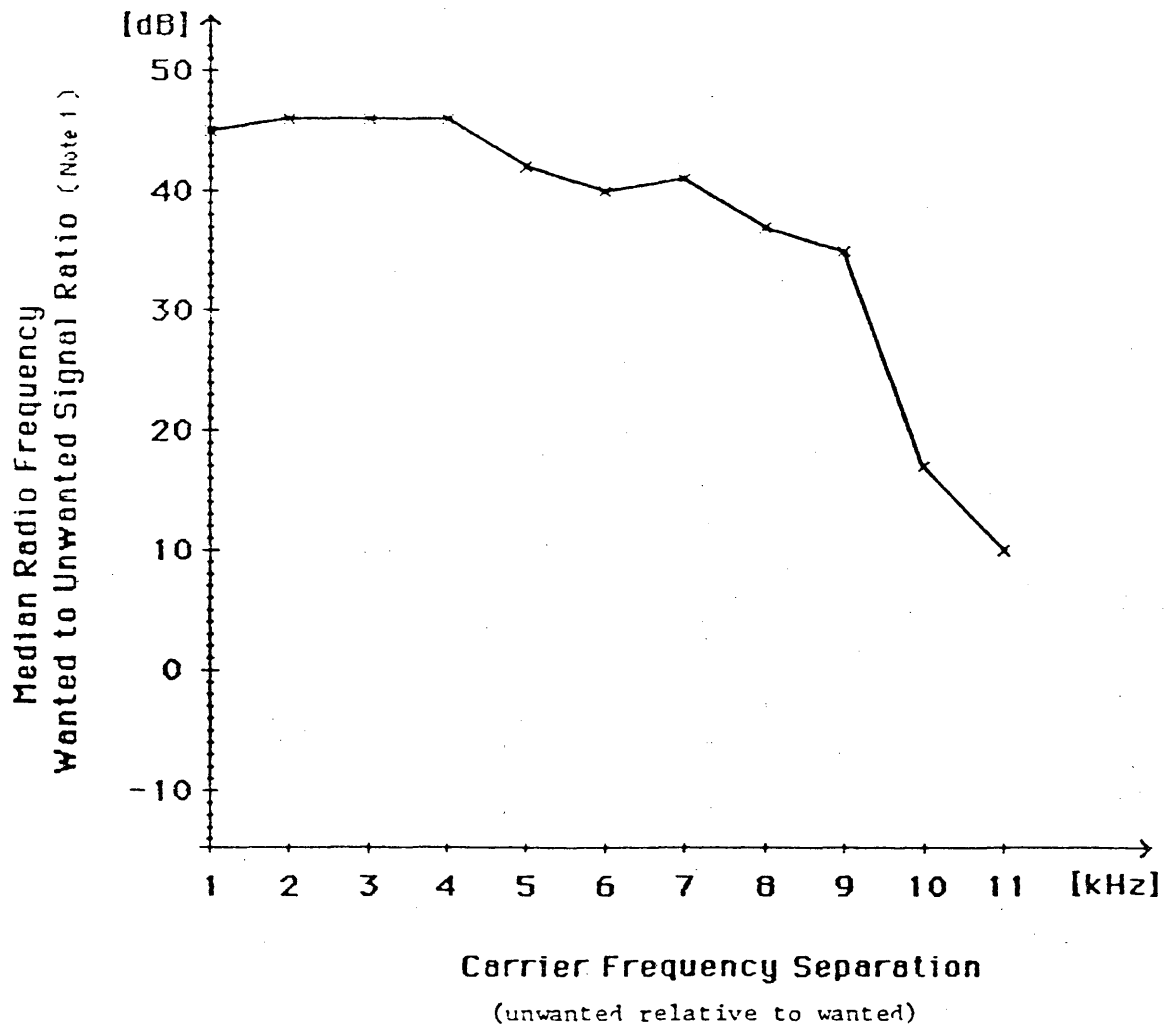


Figure 9.2 Median value of the radio frequency wanted (A3E) to unwanted (F1B) signal ratio as a function of the carrier frequency separation.

Note 1 - The signal ratio is defined as the ratio of the peak envelope power of the wanted signal to the mean power of the unwanted signal.

Steady-state protection ratios (dB)*

Interfering signal \ Wanted signal		A3E (BC)		A3E (fixed)		A2A/A2B		F1B		J2B		J3E		H2A/H2B		Class of emission
		CO	OC	CO	OC	CO	OC	CO	OC	CO	OC	CO	OC	CO	OC	Interfering condition ¹⁾
A3E (BC)		26		26		31		47		43		38		37		
A3E (fixed)	JU MC GC	-7 5 26		<p>* Ratio of wanted-to-interfering signals whose powers are expressed in terms of p.e.p. (PX) (see Recommendation 240-3 (MOD I)).</p>												
A2A/A2B	$P_E < 10^{-6}$	5														
F1B	$P_E < 10^{-6}$	-3														
J2B	$P_E < 10^{-6}$		5													
J3E	JU MC GC		-19 -7 14													
H2A/H2B	$P_E < 10^{-6}$		-1	<p>1) CO (co-channel interference) and OC (off-channel interference) are the cases when the frequency separation between the assigned frequency of the wanted signal and that of the interfering signal is approximately zero and about 1.4 kHz respectively.</p>												
Class of emission	Service grade															

In the wanted HF fixed service case, values are indicated for just usable (JU), marginally commercial (MC) and good commercial (GC) quality and in the telegraph communication case they should be specified for a character error ratio, P_E of 10^{-2} , 10^{-3} and 10^{-4} (see Recommendation 339-5), but since the protection ratios do not significantly vary for P_E values up to 10^{-6} , a single figure is given (see Report 525-2).

The values reported in the column could be modified when interregional sharing is to be considered, in fact as adopted by the Regional Administrative Radio Conference for the Maritime Mobile Service and the Aeronautical Radionavigation Service in certain parts of the MF band in Region 1 (RARC MM-R1), the co-channel radio-frequency protection ratio necessary to protect the maritime mobile service from like interference is 20 dB for single-sideband telephony (J3E modulation) and 8 dB for narrow-band direct-printing telegraphy (F1B modulation).

[9.2] Interregional sharing in the 1 605 - 1 705 kHz band between broadcasting in Region 2 and other services in Regions 1 and 3

[9.2.1] Protection of the broadcasting service

Protection in accordance with the criteria in § [9.1.1] is to be given within the national boundary and/or sub-national zone, for priority channels, and within the service contours, for non-priority channels.

[9.2.2] Protection of non-broadcast services outside Region 2

Services sharing the frequency band 1 605 - 1 705 kHz such as the fixed, land mobile, maritime mobile, radiolocation and radionavigation services, may be subject to potential interference from the broadcasting service. The maritime mobile service is the most difficult to protect.

[9.2.2.1] Protection ratio criteria

As adopted by the Regional Administrative Radio Conference for the planning of the MF Maritime Mobile and Aeronautical Radionavigation Services (Region 1), the co-channel radio-frequency protection ratio necessary to protect the maritime mobile service from like-interference is 20 dB for single-sideband telegraphy (J3E modulation) and 8 dB for narrow-band direct-printing telegraphy (F1B modulation). However, the protection ratios given in the CCIR Report derived from the conclusions from Joint Interim Working Party 10-3-8/1 of 14 dB (J3E) and -3 dB (F1B) for interference from broadcasting (A3E modulation) may be considered (in the absence of directly applicable measurement results).

[] Principles used for the application of interregional sharing criteria

[X.1] Application of RR 346

In the application of the interregional sharing criteria the basic principle is the equality of rights between the Regions, as contained in RR 346.

[X.2] Application of the IFRB technical standards

The relevant IFRB technical standards govern the matter concerning the interregional sharing.

[9.2.3] Calculation of field strengths in the case of interregional interference

In calculating interregional interference, the field strengths shall be determined by taking the arithmetic mean of the signal strengths, expressed in dBu for a specified e.m.r.p., calculated both by the method described in Annex 1 to CCIR Recommendation 435-3 and by the method used within Region 2. Signal strengths calculated by the Region 2 method should be increased by 2.5 dB to allow for the different reference hours of the two methods. The value determined in accordance with the above shall be applied when it is midnight at the mid-point of the interregional path, provided that the entire path is in darkness. Signal strengths at other times are unlikely to exceed this value.

J.M. BOILARD
Chairman of Working Group 4-C

WORKING GROUP 4-B

Draft

RESOLUTION No. COM4/1

The Regional Administrative Conference for the Broadcasting Service in the Band 1 605 - 1 705 kHz in Region 2 (Geneva, 1986),

considering that information relating to the correspondance between physical antenna height and electrical antenna height of a tower would be useful to every administration when establishing assignments in the MF band;

requests the CCIR to study the question and report to the second session of the Conference;

invites the administrations in Region 2 to make measurements relating to this correspondance and submit proposals at the second session of the Conference.

T.M. BEILER

Chairman of Working Group 4-B

WORKING GROUP
OF THE PLENARY

PROPOSAL OF THE CHAIRMAN

In the absence of detailed proposals for the agenda of the second session, I have drafted this agenda with the intention that it will facilitate the discussions.

The Regional Administrative Planning Conference for the Broadcasting Service in the Band 1 605 - 1 705 kHz in Region 2 (Geneva, 1986),

considering,

- a) Resolution No. 1 of the Plenipotentiary Conference, Nairobi, 1982;
- b) Recommendation No. 504 of the WARC 79;
- c) that Resolution No. 913 of the Administrative Council 1984 includes in the agenda of the first session of the Conference the proposal of a draft agenda for the second session for consideration by the Administrative Council;
- d) the Report of the first session;
- e) that the second session will need to consider the report of the IFRB on the work carried out during the intersessional period;
- f) submissions from administrations, preparatory work carried out as part of the intersessional work identified by the first session, and the relevant reports of the CCIR;

recognizing that the frequency band 1 605 - 1 705 kHz is shared with other services;

recommends to the Administrative Council

- 1. the following draft agenda for the second session on the basis of the Report of the first session and taking account of the material identified in considerations e) and f):
 - 1.1 to draw up an agreement and an associated frequency plan for the use of the band 1 605 - 1 705 kHz by the broadcasting service in Region 2;
 - 1.2 establish the procedures to govern the use of this band;
 - 1.3 to adopt appropriate technical standards, parameters and criteria;
 - 1.4 to establish a date in accordance with FN 481;

1.5 to adopt a procedure to be applied by administrations wishing to implement their allotments with respect to non-broadcasting stations of other administrations;

2. to consider with a view to its reduction, the time allocation of four weeks for the second session of the Conference.

E.D. DuCHARME
Chairman of the Working Group of the Plenary

Note from the Chairman of Working Group 5A

PLANNING METHOD

The planning method consists of the following steps:

1 Development of The Allotment Areas

- 1.1 Starting at any land location in Region 2, determine the number of other administrations which are within the appropriate standardized distance of that location.
- 1.2 Now move in any direction from that location and continue to move until the number of other administrations which are within the appropriate standardized distance changes.
- 1.3 The point of change in step 1.2 is one point on the boundary of an allotment area.
- 1.4 Repeat Step 1.2 until there are sufficient destination points to define that allotment area.
- 1.5 Repeat Step 1.2 moving throughout the entire region until all allotment areas have been defined.
- 1.6 The border of an administration is also the boundary of an allotment area.
- 1.7 Describe each allotment area using borders between countries and/or geographical coordinates.
- 1.8 Identify each allotment area with a unique code based on the geographical area symbols contained in Table [] of the Preface to the IFL.

2. Determine the Channels to be Allotted to Each Area

- 2.1 The minimum number of allotments in each allotment area (basic allotments) is determined from Table [].
- 2.2 At the second session administrations will evaluate alternative ways to allot the channels and will allot them. If agreement cannot be reached on how to obtain more allotments than are provided in Table [] only that number of allotments will be provided.

3. Assignments to be entered in the Plan

- 3.1 For those administrations so wishing they will use the allotments resulting from step 2 above and specify the locations and parameters which are to be included in the Plan;
- 3.2 The assignments resulting from 3.1 above will be examined using the criteria of [] to ensure that the allotments of other administrations are not affected.

D. JOHNSON
Chairman of Working Group 5A

ADDITIONAL DEFINITIONS AND SYMBOLS

Priority channel

Any channel designated in the Plan for the use of an administration within its boundaries or within a specified sub-national zone(s).

Non-priority channel

Any channel which is not designated in the Plan for the use of an administration but which may be used by it after successful coordination.

Sub-national zones

An area(s) shown in the Plan within the national boundaries of an administration where a specific priority channel(s) has been designated for use by that administration.

Sky-wave field strength, 50% of the time

The sky-wave field strength during the reference hour which is exceeded for 50% of the nights of the year. The reference hour is the period of one hour beginning one and a half hours after sunset and ending two and a half hours after sunset at the midpoint of the short great-circle path.

Characteristic field strength (E_c)

The field strength, at a reference distance of 1 km in a horizontal direction, of the ground-wave signal propagated along perfectly conducting ground for 1 kW station power, taking into account losses in a real antenna.

Note 1 - The gain (G) of the transmitting antenna relative to an ideal short vertical antenna is given by the following equation:

$$G = 20 \log \frac{E_c}{300} \text{ dB} \quad (1)$$

where:

E_c : units of mV/m.

Note 2 - The effective monopole radiated power (e.m.r.p.) is given by the following equation:

$$\text{e.m.r.p.} = 10 \log P_t + G \text{ dB(kW)} \quad (2)$$

where:

P_t : station power (kW).

Symbols

Hz: hertz
kHz: kilohertz
W: watt
kW: kilowatt
mV/m: millivolt/metre
 μ V/m: microvolt/metre
dB: decibel
dB(μ V/m): decibels with respect to 1 μ V/m
dB(kW): decibels with respect to 1 kW
mS/m: millisiemens/metre

T.M. BEILER
Chairman of Working Group 4-B

CALCULATION OF THE COORDINATION DISTANCE

The coordination distance has been calculated as the distance at which the sky-wave field strength is equal to $\frac{E_{nom}}{20}$.

Assumptions are:

- station power: 1 kW
- simple vertical antenna, electrical height 90°
- 1 Ohm losses (radiation in the horizontal plane: 309.6 mV/m at 1 km

$$E_{nom} = 3.3 \text{ mV/m}$$

$$D = 330 \text{ km}$$

$$E_{nom} = 6 \text{ mV/m}$$

$$D < 100 \text{ km}^*$$

* The sky-wave field strength cannot reach the value of 300 $\mu\text{V/m}$.

T.M. BEILER
Chairman of Working Group 4-B

APPLICATION OF PROTECTION CRITERIA

4.4.4

4.4.4.1 Value of protected contours

Within the national boundaries, the protected contour should be determined by using the nominal usable field strength or the usable field strength determined at the site of the protected station.

4.4.4.2 Protection outside national boundaries

No station should have the right to be protected beyond its national boundary which should be deemed to encompass only its land area, including islands.

No broadcasting station should be assigned a frequency separated by 10, 20 or 30 kHz from that of a station in another country if the 25 mV/m contours overlap over land.

4.4.4.3 Application of protection ratios

The interfering signal should not exceed the field-strength value of the protected contour, which should be the greatest of the following, divided by the protection ratio:

- the nominal usable field strength;
- the usable field strength; or
- the field strength at the national boundary.

USA/4/55

4.5

Skywave interference calculations

B/8/25 (item VI.3.3)

CHL/14/11(item 4.5)

PRG/16/24(item 7.3)

The field strength of skywave interfering signals shall be calculated on the basis of 50% of the time.

USA/4/46

4.10.1

Value of protected contours

Within the national boundary of a country, the protected contour shall be determined by using the appropriate value of nominal usable field strength, or as otherwise determined in Note 5 to paragraph 4.6 for class B and C stations.

USA/4/66 4.10.2 Co-channel protection

4.10.2.1 Daytime protection of all classes of stations

During the daytime the groundwave contour of class B and C stations shall be protected against groundwave interference. The protected contour is the groundwave contour corresponding to the value of the nominal usable field strength. The maximum permissible interfering field strength at the protected contour is the value of the nominal usable field strength divided by the protection ratio. The effect of each interfering signal shall be evaluated separately, and the presence of interference from other stations in excess of this permissible level shall not reduce the necessity to limit interference which would result from proposed modifications or assignments. Where the protected contour would extend beyond the boundary of the country in which the station is located, the maximum permissible interfering field strength at the boundary is the calculated field strength of the protected station along the boundary divided by the protection ratio.

[4.10.2.2 This provision regarding protection to Class A stations is not needed, as protection to secondary service is not proposed by the United States.]

USA/4/67 4.10.2.3 Nighttime protection of class B and C stations

During the nighttime, the groundwave contour of class B and C stations shall be protected against skywave interference. The protected contour is the groundwave contour corresponding to the value of the greater of the nominal usable field strength or the usable field strength resulting from the Plan as determined at the site of the protected station in accordance with 4.7. The maximum permissible interfering field strength calculated at the site of the protected station in accordance with 4.7 shall not be exceeded at the protected contour. Where the protected contour would extend beyond the boundary of the country in which the station is located, the protected contour shall follow that part of the boundary.

USA/4/68 4.10.2.4 Modification of assignments

If a station of an administration causes interference to a station of the another administration and such interference is permitted in accordance with the terms of this Agreement, then in the event of a modification being proposed to the assignment corresponding to the former station, it will not be necessary to protect the assignment corresponding to the latter station beyond the level provided before the proposed modification.

USA/4/69 4.10.3 Adjacent channel protection

During the daytime and night-time, the groundwave contour of class B and C stations shall be protected against groundwave interference.

The protected contour during daytime is the groundwave contour corresponding to the value of the nominal usable field strength. The maximum permissible interfering field strength at the protected contour is the value of the nominal usable field divided by the protection ratio. The effect of each interfering signal shall be evaluated separately, and the presence of

interference from other stations in excess of this permissible level shall not reduce the necessity to limit interference which would result from the proposed modifications or assignments.

The protected contour during night-time is the groundwave contour corresponding to the value of the nominal usable field strength or the usable field strength, whichever is stronger. The maximum permissible interfering field strength at the protected contour is the value of the protected contour divided by the protection ratio.

Where the protected contour, either daytime or night-time, would extend beyond the boundary of the country in which the station is located, the maximum permissible interfering field strength at the boundary is the calculated field strength of the protected assignment along the boundary divided by the protection ratio.

USA/4/70 4.10.4 Protection outside national boundaries

USA/4/71 4.10.4.1 No station has the right to be protected beyond the boundary of
B/8/25(item VI.3.1) the country in which the station is established, except when otherwise
PRG/16/24(item 7.2) specified in a bilateral or multilateral arrangement.

USA/4/72 4.10.4.2 No broadcasting station shall be assigned a nominal frequency with a separation of 10 kHz from that of a station in another country if the 2500 uV/m contours overlap.

No broadcasting station shall be assigned a nominal frequency with a separation of 20 kHz from that of a station in another country if the 10,000 uV/m contours overlap.

No broadcasting station shall be assigned a nominal frequency with a separation of 30 kHz from that of a station in another country if the 25,000 uV/m contours overlap.

USA/4/73 4.10.4.3 In addition to the conditions described in 4.10.4.2, when the protected contour would extend beyond the boundary of the country in which the station is located, its assignment shall be protected in accordance with 4.10.2 and 4.10.3.

USA/4/74 4.10.4.4 For protection purposes, the boundary of a country shall be deemed to encompass only its land area, including islands.

CAN/ 7 /43 6.3.1 Priority channel protection (see Section 8)

The signal strengths to be protected are the appropriate values of nominal usable field strength as shown in paragraph 6.4. The area to be protected is the border of a country and/or the sub-national zone(s).

The maximum permitted interfering field strength within the area is the value of the nominal usable field strength divided by the appropriate protection ratio. The interfering signal is considered to be the groundwave signal except for the co-channel night-time interference protection when it is the

skywave signal. The effect of each interfering signal should be evaluated separately, and the presence of interference from other stations in excess of this permissible level should not reduce the necessity to limit interference which would result from proposed modifications or assignments.

CAN/ 7 /44 6.3.2 Non-priority channel protection

Assignments on non-priority channels are not specifically provided protection from assignments on priority channels. The amount of interference from priority channels is limited by restricting priority channel assignments to standard parameters as defined in section 7.1 or the equivalent. However, assignments on non-priority channels are protected from subsequent non-priority assignments. The protected contour encompasses the area where the actual field strength is equal to or greater than the appropriate value of E_{nom} found in paragraph 6.4.

The maximum permitted interfering field strength within the area is the value of the nominal usable field strength divided by the appropriate protection ratio. The interfering signal is considered to be the groundwave signal except for co-channel night-time interference protection when it is the skywave signal. The effect of each interfering signal should be evaluated separately and the presence of interference from other stations in excess of this permissible level should not reduce the necessity to limit interference which would result from proposed modifications or assignments.

B/8/25 Only the groundwave service area should be protected from interference.
(item VI.3.2)
PRG/16/24
(item 7.1)

T.M. BEILER
Chairman of Working Group 4-B

WORKING GROUP
OF THE PLENARY

PROPOSAL OF THE CHAIRMAN

At the last meeting of the Working Group, it was requested that a draft Recommendation related to the venue of the Second Session be prepared. In consultation with some delegates, I have prepared the following for your consideration:

Draft

RECOMMENDATION [PLEN/B]

Related to the Venue for the Second Session

The Regional Administrative Radio Conference to Establish a Plan for the Broadcasting Service in the Band 1 605 - 1 705 kHz in Region 2 (First Session, Geneva, 1986),

considering

- a) Resolution No. 3 of the Convention related to Invitations to Hold Conferences or Meetings Away From Geneva;
- b) that there are considerable advantages to holding the Second Session in the Region;

recommends to the Administrations

that an Administration in the Region extend an invitation to hold the Second Session in its country;

requests the Secretary-General

to distribute this Recommendation to the Administrations in Region 2.

E. DuCharme
Chairman of the Working Group of the Plenary

WORKING GROUP
OF THE PLENARY

PROPOSAL OF THE CHAIRMAN

As a result of the discussions in Working Group 5B, I have been urged to draft the following additions to DT/21(Rev.1), draft Recommendation [PLEN/A]:

considering

that the effective implementation of the Plan in the Region will be facilitated by the incorporation of the Regional Agreement into the Radio Regulations;

recommends to the Administrative Council

3. when deciding on the date of the Second Session of this Conference, select a date at least [4] months before WARC ORB-2.

E. DuCharme
Chairman of the Working Group of the Plenary

NOTE FROM THE CHAIRMAN OF WORKING GROUP 5-A

7.3.4.1 An administration proposing to bring into use an assignment on an allotted channel does not need to coordinate with another administration having an allotment area with adjacent channel allotments:

- a) if the proposed assignment is further from that area than the following:
 - for land path in noise zone 1: 53 km,
 - for sea path in noise zone 1: 310 km,
 - for land path in noise zone 2: 35 km,
 - for sea path in noise zone 2: 160 km; or
- b) if the field strength produced in the allotment area containing the adjacent channel does not exceed the E_{nom} .

In all other cases coordination is required.

7.4. Protection considerations

7.4.1 Protecting allotments from assignments on allotted channels

Allotments are considered to be protected when assignments on allotted channels are brought into use in accordance with 7.3.

7.4.2 Protecting allotments from assignments on non-allotted channels

The criteria set out in 3.9.1 apply in this case.

7.4.3 Protecting assignments on unallotted channels from assignments on allotted channels

Assignments on unallotted channels receive protection from assignments on allotted channels only to the extent that the latter must operate within the criteria set out in 7.3.

7.4.4 Protecting assignments on unallotted channels from other assignments on unallotted channels

The criteria set out in 3.9.2 apply in this case.

R. ZEITOUN
Chairman of Working Group 5-A