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**Documents of the World Administrative Radio Conference for the planning of the HF bands allocated  
to the broadcasting service (2<sup>nd</sup> session) (WARC HFBC-87 (2))  
(Geneva, 1987)**

To reduce download time, the ITU Library and Archives Service has divided the conference documents into sections.

- This PDF includes Document No. 201-279
- The complete set of conference documents includes Document No. 1-279,  
DL No. 1-33, DT No. 1-73

# HFBC (2)

INTERNATIONAL TELECOMMUNICATION UNION  
WARC FOR THE PLANNING OF THE HF BANDS  
ALLOCATED TO THE BROADCASTING SERVICE  
SECOND SESSION, GENEVA, February-March 1987

Document 201-E  
26 February 1987  
Original : English  
French  
Spanish

Origin : Document 157 + Corr. 1

COMMITTEE 7

FIRST SERIES OF TEXTS FROM COMMITTEE 5  
TO THE EDITORIAL COMMITTEE

The texts of Annex 2 mentioned in Document 157, slightly amended,  
are submitted to the Editorial Committee.

C.T. NDIONGUE  
Chairman of Committee 5



COMMITTEE 3

Note from the Chairman of Committee 3

A copy of the letter received from the Director, CCIR, indicating the estimation of the costs which would be incurred by the CCIR for its post-conference work, is enclosed.

M.K. RAO  
Chairman of Committee 3

Annex: 1



• COMITÉ CONSULTATIF INTERNATIONAL  
DES RADIOCOMMUNICATIONS  
(C. C. I. R.)



COMITÉ CONSULTIVO INTERNACIONAL  
DE RADIOCOMUNICACIONES  
(C.C.I.R.)

INTERNATIONAL RADIO CONSULTATIVE COMMITTEE  
(C. C. I. R.)

☎ +41 22 99 51 11  
✱ COMRADIO, GENÈVE  
TX 421 000 UIT CH  
TELEFAX (GROUPE 2/3)  
+41 22 33 72 56

HFBC(2)/7

1211 GENÈVE 20  
2 RUE DE VAREMBÉ

26 February 1987

For the attention of Mr. M.K. RAO  
Chairman of Committee 3  
WARC-HFBC(2)

Dear Sir,

In reply to your letter of 9 February 1987, please find hereunder the CCIR estimation of costs which would be incurred by the post-conference work to be carried out by the CCIR (Resolution COM 4/3, document 106, rev. 1).

Resolution COM 4/3 suggests an updating of the CCIR Book of Antenna Diagrams (1984 edition). The work will be mainly carried out using existing staff and resources. However, certain supplementary costs are involved with preparation of diagrams, translation and editing of the resultant texts.

The following table shows the estimated supplementary costs involved for the execution of the above-mentioned updating work:

	<u>Sw.Frs.</u>
Computer equipment	10.000
Editing work (1 man-month)	10.000
Document preparation (translation, typing and printing)	5.000
	<hr/>
	25.000
	=====

  
Richard C. KIRBY  
Director

B.6

PLENARY MEETINGSIXTH SERIES OF TEXTS SUBMITTED BY THE  
EDITORIAL COMMITTEE TO THE PLENARY MEETING

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

<u>Source</u>	<u>Documents</u>	<u>Title</u>
COM.5	157 + Corr.1 (201)	Resolution COM5/1 (HFBC-87)
COM.6	171(Rév.1) (194)	Recommendation COM4/E (HFBC-87)
COM.6	172(Rév.1) (194)	Recommendation COM4/F (HFBC-87)
COM.6	180 (194)	Recommendation COM6/C (HFBC-87)

D. SAUVET-GOICHON  
Chairman of Committee 7

Annex: 12 pages

B.6/1

## RESOLUTION COM5/1 (HFBC-87)

**Provisions Relating to the Initial Establishment  
of the Requirements File and the Preparation of the  
First Seasonal [Schedule] [Plan]**

The World Administrative Radio Conference for the Planning of the HF Bands Allocated to the Broadcasting Service (Geneva, 1987),

considering

- a) that it has adopted a planning method that uses a requirements file;
- b) that the tentative requirements file established for the purpose of planning exercises pursuant to the decisions of the First Session of the Conference (Geneva, 1984) contains only requirements up to the season March-April 1988;
- c) that the Final Acts of the Conference will enter into force on ....;
- d) that a new requirements file referred to in [...] must be established in advance so that it can be used for the first seasonal [schedule] [plan] to apply after the date on which the Final Acts of the Conference enter into force;
- e) that, in establishing this new file, some time might be needed to enable the IFRB to consult administrations with a view to ensuring that their requirements conform to the decisions of the Conference, and to provide them with the results of the preliminary calculations referred to in [...],

resolves

1. that the IFRB shall request administrations to notify it, [two years] before the date of the first season below, of their requirements for the following seasons:

$$\begin{bmatrix} - \\ - \\ - \\ - \end{bmatrix}$$

2. that, for this purpose, administrations shall use the forms drawn up by the IFRB on the basis of Appendix 2 to the Radio Regulations as revised by this Conference;
3. that the Board shall examine the requirements thus expressed without necessarily applying the HFBC System in detail. Where possible, this examination will serve to identify obvious incompatibilities such as the case of two emissions with the same preset frequency serving the same area;

B.6/2

4. the requirements file shall be published on microfiche at an appropriate date in such a way that administrations may use it for the application of resolves 5 below. As circumstances warrant, and in response to individual requests by administrations, the published information shall also be available in computer readable form.

5. that, [one year] before the beginning of the first season to be dealt with, the Board shall inform administrations of the solar index for that season and request them to confirm the requirements to be used in that season at least [nine months] before it starts.

## RECOMMENDATION COM4/E (HFBC-87)

**Relative RF Protection Ratio Values for Single-Sideband (SSB) Emissions  
in the HF Bands Allocated Exclusively  
to the Broadcasting Service**

The World Administrative Radio Conference for the Planning of the HF Bands Allocated to the Broadcasting Service (Geneva, 1987),

considering

- a) that the Conference has adopted a method for the planning of the HF bands allocated exclusively to the broadcasting service;
- b) that this method is based on the use of double-sideband (DSB) emissions;
- c) that the RF co-channel protection ratio is one of the fundamental planning parameters;
- d) that the Conference has adopted Resolution COM4/2 (HFBC-87) relating to the transition from DSB to SSB emissions in the HF bands allocated exclusively to the broadcasting service and Recommendation COM4/B (HFBC-87) relating to the introduction of transmitters and receivers capable of both DSB and SSB modes of operation;
- e) that the SSB system characteristics for HF broadcasting are contained in Appendix [COM4/A] to the Radio Regulations;
- f) that, however, due to their provisional nature, the values of the relative RF protection ratio to be applied for all relevant combinations of wanted and unwanted DSB and SSB emissions have not been included in the Appendix mentioned in e) above;
- g) that preliminary studies have shown that SSB emissions may require a lower RF co-channel protection ratio for the same reception quality;
- h) Resolution COM6/1 (HFBC-87) relating to the procedure to be applied by the IFRB in the revision of relevant parts of its Technical Standards used for HF broadcasting,

recommends

that, subject to the procedure to be applied by the IFRB in the revision of relevant parts of its Technical Standards used for HF broadcasting given in Resolution COM6/1 (HFBC-87), the values of relative RF protection ratio given in the Annex to this Recommendation be used by the IFRB in its Technical Standards relating to SSB emissions in the HF bands allocated exclusively to the broadcasting service,

invites the CCIR

to continue to study the values of relative RF protection ratio for the different cases and frequency separations covered in the Annex to this Recommendation,

invites administrations

to participate actively in these studies.

ANNEX TO RECOMMENDATION COM4/E (HFBC-87)

**Relative Values of RF Protection Ratio**

1. The values of relative RF protection ratio given in the table should be used whenever SSB emissions in conformity with the specification in Appendix [COM4/A] to the Radio Regulations are involved in the [use] of the HF bands allocated exclusively to the broadcasting service.
2. The values given refer to the case of co-channel DSB wanted and unwanted signals for the same reception quality (reference co-channel RF protection ratio).
3. For the reception of DSB and SSB wanted signals (6 dB carrier reduction relative to peak envelope power), a conventional DSB receiver with envelope detection designed for a channel spacing of 10 kHz is assumed.
4. For the reception of a SSB wanted signal (12 dB carrier reduction relative to peak envelope power), the reference receiver as specified in Appendix [COM4/A], part B, section 3, to the Radio Regulations is assumed.
5. SSB signals with 6 dB carrier reduction relative to peak envelope power assume equivalent sideband power as specified in Appendix [COM4/A], part B, section 1.2, to the Radio Regulations.
6. The figures for case 2 in the table below relate to a situation where the centre frequency of the intermediate frequency pass-band of the DSB receiver is tuned to the carrier frequency of the wanted SSB signal. If this is not the case, the value for a difference of +5 kHz may increase to -1 dB.

Variations of RF protection ratios for combinations of DSB and SSB emissions, relative to the co-channel protection ratio required for the DSB wanted and DSB unwanted case (dB) \*

[For use in the HF bands allocated exclusively to the broadcasting service]

	Wanted signal	Unwanted signal	Carrier frequency separation $f_{\text{unwanted}} - f_{\text{wanted}}$ , $\Delta f$ (kHz)								
			-20	-15	-10	-5	0	+5	+10	+15	+20
1	DSB	SSB (6 dB carrier reduction relative to p.e.p.)	-51	-46	-32	+1	3	-2	-32	-46	-51
2	SSB (6 dB carrier reduction relative to p.e.p.)	DSB	-54	-49	-35	-3	0	-3	-35	-49	-54
3	SSB (6 dB carrier reduction relative to p.e.p.)	SSB (6 dB carrier reduction relative to p.e.p.)	-51	-46	-32	+1	0	-2	-32	-46	-51
4	SSB (12 dB carrier reduction relative to p.e.p.)	SSB (12 dB carrier reduction relative to p.e.p.)	-57	-57	-57	-45	0	-20	-47	-52	-57

\* [For planning purposes,] frequency separations  $\Delta f$  less than -20 kHz, as well as  $\Delta f$  greater than 20 kHz, need not be considered.

## RECOMMENDATION COM4/F (HFBC-87)

**Propagation Prediction Method to be Used for the [Planning] of the  
HF Bands Allocated Exclusively to the Broadcasting Service**

The World Administrative Radio Conference for the Planning of the HF Bands Allocated to the Broadcasting Service (Geneva, 1987),

considering

- a) that the First Session of the Conference (Geneva, 1984) established a propagation prediction method to be used for the planning of the HF bands allocated exclusively to the broadcasting service;
- b) the intersessional work of the CCIR in improving some aspects of the method adopted;
- c) that the IFRB has developed and used software\* based on the propagation prediction method established by the First Session and the further work by the CCIR, and has used this software for its intersessional work;
- d) that the propagation prediction method and the associated software used by the IFRB constitute the basis for any further improvements;
- e) Recommendation COM4/A (HFBC-87) relating to improvements to the propagation prediction method to be used for the HF bands allocated exclusively to the broadcasting service,

recommends

- 1. that the propagation prediction method and the associated computer software to be used [from the time of entry into force of the Final Acts] [in the post-Conference period] shall be those applied by the IFRB during the intersessional period;
- 2. that the IFRB prepare detailed documentation on the propagation prediction method, summarized in the annex to this Recommendation, for inclusion in its Technical Standards;
- 3. that the procedure to be applied by the IFRB in the revision of relevant parts of its Technical Standards, as established in Resolution COM6/1 (HFBC-87), be used for any further improvement to this method.

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\* Note - The most recent version of the software is available to administrations on request.



## ANNEX TO RECOMMENDATION COM4/F (HFBC-87)

**Summary of the Propagation Prediction Method\*  
to be Used for Determining the Sky-Wave Field Strength  
for HF Broadcast [Planning] Purposes**

1.     Introduction

The propagation prediction method, implemented by the IFRB and to be used as a basis in the post-conference period, was established by the First Session. It is based on CCIR studies prior to the First Session, and on further CCIR studies of particular aspects of the method.

The method is used for the prediction of field strength for HF broadcasting purposes and is composed of three parts:

- a)     for path lengths up to 7,000 km;
- b)     for path lengths greater than 9,000 km;
- c)     an interpolation procedure for path lengths between 7,000 and 9,000 km.

2.     Ionospheric parameters

Values of the ionospheric parameters foF2, M(3,000)F2 and foE are obtained from the numerical maps (the Oslo coefficients) and the procedures set out in CCIR Report 340, at the locations of the control points required by the short- and long-range methods. The basic MUFs for the required distances are obtained from these parameters, again using the procedures of Report 340. Appropriate interpolations are made for the level of sunspot activity.

3.     Distances up to 7,000 km

The short-range prediction method, based partly on CCIR Report 252-2, is used for path lengths up to 7,000 km. Calculations are also made by this method for path lengths between 7,000 and 9,000 km and the results are used in the interpolation procedure described later.

The method assumes great-circle propagation with reflection from the E-layer (for ranges up to 4,000 km) and from the F2-layer. The path is divided into a number of hops of equal length, each less than 4,000 km, for F2-modes, and 2,000 km, for E-modes. The hops are assumed to have mirror reflections in the ionosphere at their mid-points. The equivalent reflection height is taken as 110 km for E-modes, and is a variable, depending upon the values of the ionospheric parameters, for F2-modes.

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\* This summary does not modify in any way the propagation prediction method implemented by the IFRB.

For path lengths up to 4,000 km, screening of F2 propagation modes by the lower E-layer is applied when appropriate.

The central feature of the method is the prediction of the median field strength using the formula:

$$E_{ts} = 96.85 + P_t + G_t - 20 \log P' - L_i - L_m - L_g - L_h \text{ dB}(\mu\text{V/m}).$$

$P_t$  is the transmitter output power in dB relative to 1 kW;

$G_t$  is the isotropic antenna gain corresponding to the azimuth of the great-circle path and the elevation angle computed for the path geometry and the number of hops considered;

$P'$  is the virtual slant range in km, calculated along the ray paths;

$L_i$ ,  $L_m$ ,  $L_g$  and  $L_h$  are loss terms which account for the absorption loss (calculated for each hop and the results added), the "above the MUF" loss, the ground reflection loss and the auroral plus other signal losses, respectively.

The numerical constant term includes, inter alia, an allowance for those effects of sky-wave propagation which would not otherwise be included in this simplified method.

Although, for an isotropic antenna, the predicted field strength would be greatest for propagation modes with the minimum number of hops, this is not necessarily the case for antennas used in practice. The calculation is repeated with progressively greater numbers of hops, taking account of the corresponding antenna gain in each case, until a maximum value is reached. To facilitate the calculation for the large number of cases considered by the IFRB, in practice, field strength values have been pre-calculated and stored as tables for six F2-modes and six E-modes for the paths between all transmitter locations and all test points. During the consideration of each case, reference is made to the appropriate entries in these tables and the antenna gains are applied.

The method selects the two strongest F2-modes (i.e., the modes with the highest field strengths) and, where appropriate, the strongest E-mode, the corresponding field-strength values being combined by r.s.s. addition.

#### 4. Distances greater than 9,000 km

For distances greater than 9,000 km, the method is no longer based on geometric ray hops but on hypothetical ray paths with a number of equal hops each less than 4,000 km. This method is also used to calculate path lengths between 7,000 and 9,000 km and the results are used in the interpolation procedure described later.

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In the method, it is assumed that the field strength in the "transmission frequency range", i.e., between the lower frequency limit  $f_L$  and the upper frequency limit  $f_M$ , is determined by non-deviative absorption (near  $f_L$ ) and deviative absorption (near  $f_M$ ). The empirical fit to observations determines the shape of the curve between  $f_L$  and  $f_M$  as a function of the solar zenith angle, the path geometry, etc. The overall median field strength is given by

$$E_d = E_0 \left[ 1 - \frac{(f_M + f_H)^2}{(f_M + f_H)^2 + (f_L + f_H)^2} \left( \frac{(f_L + f_H)^2}{(f + f_H)^2} + \frac{(f + f_H)^2}{(f_M + f_H)^2} \right) \right] + P_t + G_d + G_{ap} - 32.5 \text{ dB}(\mu\text{V/m})$$

$E_0 = 139.6 - 20 \log P'$  is the free space field strength where  $P'$  is the slant range assuming that the height of the ionosphere is 300 km.

$f$  is the frequency at which the prediction is made;

$f_M$  is the upper limit frequency; it is determined separately for the first and last hop of the path and the lower value is taken.

$f_M = K \cdot f_b$ , where  $f_b$  is the basic MUF and  $K$  is a correction factor taking into account the diurnal variation and the absolute value of  $f_b$ ;

$f_L$  is the lower limit frequency and is mainly dependent on the solar zenith angle;

$f_H$  is the gyro-frequency;

$P_t$  is the transmitter output power in dB relative to 1 kW;

$G_d$  is the isotropic antenna gain, taken as the highest value in the range of vertical radiation angles from  $0^\circ$  to  $8^\circ$  at the corresponding azimuth;

$G_{ap}$  is the antipodal focussing gain, taking into account the increase in field strength at distances greater than 10,000 km.

The numerical constant term includes, inter alia, an allowance for those effects of sky-wave propagation which are not otherwise included in the method.

##### 5. Distances between 7,000 and 9,000 km

In this distance range, the field strengths  $E_{ts}$  and  $E_{tl}$  are determined by both of the above procedures and the resultant median field strength is obtained by linear interpolation, in dB, as follows:

$$E_{ti} = E_{ts} + \frac{D - 7,000}{2,000} (E_{tl} - E_{ts}) \text{ dB}(\mu\text{V/m}),$$

where  $D$  is the path length in kilometres.

Note - The constant terms in the equations for  $E_{ts}$  and  $E_{tl}$  include the values of -7.3 dB and +3.9 dB for the short- and long-range parts of the method, respectively, which were determined in CCIR Recommendation 621 following intersessional studies.

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## RECOMMENDATION COM6/C (HFBC-87)

**Planning Parameters for the  
Double-Sideband (DSB) System in the HF Bands  
Allocated Exclusively to the Broadcasting Service**

The World Administrative Radio Conference for the Planning of the HF Bands Allocated to the Broadcasting Service (Geneva, 1987),

considering

- a) that the Conference has considered in detail the planning and technical parameters used for HF broadcasting;
- b) that certain DSB system characteristics for HF broadcasting are contained in Appendix [COM4/A] to the Radio Regulations;
- c) that the RF protection ratio, minimum usable field strength and signal fading allowance are basic planning parameters which may be improved as a result of further studies;
- d) that the Conference has adopted Resolution [COM6/1 (HFBC-87)] relating to the procedure to be applied by the IFRB in the revision of relevant parts of its Technical Standards used for HF broadcasting,

recommends

that, subject to the procedure to be applied by the IFRB in the revision of relevant parts of its Technical Standards used for HF broadcasting given in Resolution COM6/1 (HFBC-87), the values of the planning parameters given in the annex to this Recommendation be used by the IFRB in its Technical Standards relating to the DSB system in the HF bands allocated exclusively to the broadcasting service,

invites the CCIR

to continue to study the values of the parameters contained in the annex to this Recommendation,

invites administrations

to participate actively in these studies.

## ANNEX TO RECOMMENDATION COM6/C (HFBC-87)

## Planning Parameters

1. Radio-frequency protection ratios1.1 Protection ratio for unsynchronized transmissions

[The co-channel protection ratio for unsynchronized transmissions should be ...] [to be developed by Committee 5].

1.2 Protection ratio for synchronized transmissions

The co-channel protection ratio between synchronized transmissions in the same network should be:

Distance L between synchronized transmitters (km)	Protection ratio (dB)
$L \leq 700$	0
$700 < L \leq 2,500$	4
$2,500 < L$	8

1.3 Relative radio-frequency protection ratios

The relative RF protection ratios ( $\alpha$ ) for carrier frequency separations\* ( $\Delta f$ ), with reference to the co-channel protection ratio, should be:

$\Delta f$	$\alpha$
0 kHz	0 dB
$\pm 5$ kHz	-3 dB
$\pm 10$ kHz	-35 dB
$\pm 15$ kHz	-49 dB
$\pm 20$ kHz	-54 dB

\* Frequency separations,  $\Delta f < -20$  kHz, as well as  $\Delta f > +20$  kHz, need not be considered in planning.

## 2. Minimum usable field strength

The minimum usable field strength should be determined by adding 34 dB to the greater of:

- the field strength due to atmospheric radio noise as contained in CCIR Report 322-2;
- 3.5 dB ( $\mu\text{V/m}$ ), which is the intrinsic receiver noise level.

## 3. Signal fading allowance

### 3.1 Short-term (within the hour) fading

The upper-decile amplitude deviation from the median of a single signal is to be taken as 5 dB and the lower-decile deviation is to be taken as -8 dB.

### 3.2 Long-term (day-to-day) fading

The magnitude of the long-term fading, as determined by the ratio of the operating frequency to the basic MUF, is given in Table III of CCIR Report 266-6.

For synchronized transmissions, the fading allowance associated with the predominant signal should be used. In cases where the contributing wanted field strengths are equal and Note 1 of Table III of CCIR Report 266-6 applies to at least one of the paths, the values for geomagnetic latitudes  $\geq 60^\circ$  should be used.

COMMITTEE 2

FOURTH REPORT OF THE WORKING GROUP  
OF COMMITTEE 2  
(CREDENTIALS)

The Working Group of Committee 2 held a fourth meeting on  
27 February 1987. It examined the credentials of the following delegations :

(In French alphabetical order)

Antigua and Barbuda  
Lesotho (Kingdom of)  
Madagascar (Democratic Republic of)  
Philippines (Republic of the)  
Venezuela (Republic of)

a total of 5 delegations

These credentials are all in order.

S.K. CHEMAI  
Chairman of Working Group C2-A



BELGIQUE  
BELGIUM  
BELGICA

1. Page 3 - Annexe 2 - point 2  
Page 3 - Annex 2 - item 2  
Página 3 - Anexo 2 - punto 2

Remplacer : [Document ...] par : Document 182  
Replace : [Document ...] by : Document 182  
Sustituir : [Documento ...] por : Documento 182

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2. Dans la version française uniquement :

In the French version only :

Solamente en el texto francés :

- a) Page 4 - Annexe 2 - point 7 - 1ère ligne

Remplacer : réserve par identifie

- b) Page 4 - Annexe 2 - Exemple - 3ème ligne

Remplacer : T = 100 par P = 100

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COMMITTEE 5

Belgium

PROPOSAL FOR FUTURE WORK

The Belgian Delegation has studied the rules for dealing with incompatibilities in the proposed "improved HFBC Planning System" as contained in Document 198, in the light of principle 4.1.2.9 of the Report of the First Session of the Conference.

Taking into account a number of ideas expressed during the Conference this Delegation offers for consideration two - mutually exclusive - proposals that may serve as a basis for discussion for a future adaptation of the HFBC Planning System. The two options are contained in Annexes 1 and 2.

Annexes: 2

ANNEX 1

BEL/205/1 All the steps in Document 198 are retained, with the exception of step 8 with is replaced by the following:

Step 8: If at this stage the problem of congestion is still not resolved, one determines the number of channels required to satisfy, with a minimum protection ratio of [17] dB, one, two, three ... n requirements per administration, until the total number of available channels is used. The IFRB informs the administrations how many of their requirements may be satisfied with a minimum protection ratio of [17] dB. The administrations then advise the IFRB which of their requirements are to be processed with this minimum protection ratio of [17] dB. These requirements are satisfied and recorded in file (9). The other requirements are transferred to the file of temporarily suspended requirements (10).

ANNEX 2

BEL/205/2

This proposal supplements the notion of priority requirement hours ("PRH"), with something called a "Unit of Priority" ("UP") which can be thought of as a weighted PRH. The total number of UP that can be spent by any given administration is equal for all administrations. The System identifies for every requirement a number ("W") which is used as the price (expressed in UP) for this requirement if it is to be considered as a PR-requirement ("PR", i.e. a requirement using PRH). The number W is established by comparing the number of available channels in the band under consideration and the number of channels necessary for resolving the congestion in which the particular requirement is involved. The higher the congestion, the higher the price to be paid for PRH-status.

In cases of low congestion, the price will be low, possibly zero: in those cases where all initially submitted requirements can easily be fitted, nothing is to be paid. However, it cannot be ruled out that there may be instances where, despite the high price, the PRs on their own will lead to a congestion problem. Rules must be provided even for this extreme case: it is proposed to apply the very same set of proposed suspension rules, with the exception of N1, N2 and N3, to resolve congestion between PRs only. The remaining (non-PR) requirements would be catered for on a re-insertion basis.

A possible set of additional rules follows:

1. If the requirement file contains indications about PRH this information is initially not used. [(See however step 6).]
2. The system as in [Document ...] is applied up to and including Rule NO.
3. For a given combination "i" of hour and frequency band the congestion is evaluated using the GIR concept. For each active requirement the number "V<sub>i</sub>" is determined using the formula:

$$V_i = \text{int} (S \cdot T / C) \quad (1)$$

With T = a constant = [2];  
S = the size of the maximum GIR in which this requirement takes part;  
C = the number of available channels in the band under consideration;  
int = keep integer fraction of argument.

If the requirement is not active in the combination "i" under consideration, V<sub>i</sub> is of course zero.

4. After the inspection of all  $9 \times 24 = 216$  combinations of hour and frequency bands, "W" and " $W_h$ " are determined for each requirement:

$$W = \sum V_i \quad (i = 1..216) \quad (2)$$

$$W_h = W/h \quad (3)$$

with  $h$  = number of hours this requirement is active.

W represents the number of UP associated with this requirement.

$W_h$  represents the weighting factor for each hour of this requirement.

5. The IFRB suspends further processing of this seasonal schedule and transmits to the administrations the factor "W" of each requirement. The administrations reply by indicating which of their requirements will enjoy the PR status, in such a way that the sum of the factors W for these requirements does not exceed [P] Units of Priority ("UP").

6. If the IFRB does not receive a reply within [4] weeks, it will automatically assign PRH to those requirements [for which PRH were requested on the requirement form], starting with the requirement with the lowest value of  $W_h$  so long as the number of [P] UP is not exceeded.

7. The IFRB earmarks the requirements to which PRH are granted and resumes the processing of the seasonal schedule. Rules N1, N2 and N3 are not to be applied to PRs. The remaining steps dealing with congestion are applied in such a way that the protection of PRs is not lower than it would be if only PRs would be present.

#### Example

Let us assume, for the purpose of this example:

$T = 2$  (the constant in formula (1))

$P = 100$  (the maximum number of UP)

Requirement A transmits from 0100 to 0500

Appropriate bands	0100-0200: band 1
identified by the	0200-0300: band 2
Planning System:	0300-0400: band 2 + band 3
	0400-0500: band 2 + band 3

The number of channels in the bands under consideration might be (in  $C_k$ ,  $k$  indicates the frequency band):

band 1:  $C_1 = 40$   
band 2:  $C_2 = 32$   
band 3:  $C_3 = 20$

The evaluation of congestion shows the following results for the maximum GIR in which requirement "A" is included (in  $S_k$ ,  $k$  indicates the frequency band):

0100-0200:	$S_1 = 119$	(in band 1, "A" is involved in a heavily congested situation)
0200-0300:	$S_2 = 15$	(band 2 seems OK)
0300-0400:	$S_2 = 49$	(first frequency in band 2, moderate congestion)
	$S_3 = 13$	(second frequency in band 3, low congestion)
0400 - 0500	$S_2 = 19$	(first frequency in band 2, low congestion)
	$S_3 = 9$	(second frequency in band 3, seems OK)

Formula (1) gives the following results (in  $V_i$ ,  $i$  represents an arbitrarily numbering):

0100-0200:	$V_1 = \text{int}(119*2/40) = 5$	(5 units for the first hour)
0200-0300:	$V_2 = \text{int}(15*2/32) = 0$	(second hour is free)
0300-0400:	$V_3 = \text{int}(49*2/32) = 3$	(third hour costs 3 units)
	$V_4 = \text{int}(13*2/20) = 1$	plus 1 unit for second freq.)
0400-0500:	$V_5 = \text{int}(19*2/32) = 1$	(fourth hour: 1 unit for first
	$V_6 = \text{int}(9*2/20) = 0$	freq.; second freq. is free)

Application of formula (2):  $W = 10$   
(3):  $W_h = 2.5$

This means that requirement "A" is taking up 10 of the 100 available UP. The mean weighting factor for each hour of requirement "A" is 2.5. Note that the second transmission hour (0200-0300) is not using up any UP. This is only fair because it is not involved in any congestion problem: there is no problem whatsoever in providing the required protection.

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COMMITTEE 5

SUMMARY RECORD  
OF THE  
TENTH MEETING OF COMMITTEE 5  
(PLANNING METHOD AND ASSOCIATED PROCEDURES)

Paragraph 1.5

Replace the word "imposed" by "improved" in the second sentence.

COMMITTEE 5

SUMMARY RECORD  
OF THE  
TENTH MEETING OF COMMITTEE 5  
(PLANNING METHOD AND ASSOCIATED PROCEDURES)

Friday, 27 February 1987, at 0900 hrs and at 1430 hrs

Chairman: Mr. C.T. NDIONGUE (Senegal)

Subjects discussed:

1. Consideration of the strategy (continued)
2. Proposal relating to Appendix 2
3. Overall broadcasting reliability

Documents

DT/59, DT/41,  
DL/24  
199

1. Consideration of the strategy (continued) (Documents DT/59 and DT/41)

1.1 The delegate of Algeria noted that there was room for improvement of the wording of the three points of concern listed at the beginning of Document DT/59. The word "great" should be inserted before "disruption" in the second point, and the word "all" deleted from the third.

1.2 The delegate of India asked whether the reference to improvement of the HFBC Planning System in Document DT/59 was to be taken to mean the improvement of software, hardware or the system itself. It was important to be perfectly clear on that point in order to allow discussion to proceed in an orderly manner. He supported the establishment of the Working Group proposed in the document.

1.3 The Chairman of the IFRB said that the development of software would clearly depend on the hardware available. The Conference had not yet finalized the Planning System it had decided to adopt; no clear idea of its implications for hardware or for operation of the system was thus possible at the present stage. It was for the Conference to decide what changes it wished to make in the HFBC Planning System and to provide clear instructions to the Board on how those changes were to be implemented. One crucial problem was what the Conference wished the Board to do about the large and increasing number of suspensions that would result from an improved planning system.

1.4 The delegates of Algeria, Tanzania, Libya, Kenya and Cameroon, drawing attention to the points of concern to delegates mentioned in Document DT/41, said that the need to guarantee all countries a minimum service with satisfactory protection was an essential element in any discussion of strategy and should be included in the terms of reference of the Working Group proposed in Document DT/57. For the same reason, the delegate of Algeria said those terms of reference should also include the need to improve Article 17, while the delegates of Tanzania, Libya, Kenya and Cameroon called for inclusion of the need to find an appropriate solution for both national and international uses.

1.5 The Chairman said that of the points of concern mentioned in Document DT/41, the three points identified in Document DT/59 were the ones subject to time constraints in implementation of the Planning System. An imposed HFBC Planning System and an imposed Article 17 had been drafted; what was now in question was an implementation strategy.

1.6 The delegate of Libya said it was not feasible to consider future strategy until final agreement had been reached on all the contents of the compromise package. That was why it was essential for consideration to be given in Document DT/59 to all the points concerned in Document DT/41.

1.7 The delegate of Brazil, while agreeing with the Libyan standpoint, said the purpose of the present debate was to determine the general feeling of the Committee with regard to a possible strategy on the compromise package outlined in Document DT/41 in order to allow the elements of that package to be defined more clearly. That was why Document DT/59 included only items bound by a time element. He suggested that the problem of national services was one that the Conference might consider submitting to a plenipotentiary conference for action since it was perhaps beyond the terms of reference of an ordinary administrative conference.



1.8 The delegate of France said that no solution was possible unless all aspects of the problem were considered, since they were all interrelated. It was thus illusory to think that the Working Group proposed in Document DT/59 could be successful if it confined itself solely to consideration of strategy. The terms of reference of that Working Group should therefore include all the items mentioned in Document DT/41.

1.9 The delegate of Bulgaria said that the problems of national broadcasting services differed greatly from administration to administration depending on the size of the territory to be covered by the service. The matter had to be considered primarily from the technical standpoint and blanket solutions were therefore not possible. He considered Document DT/59 a wise package of proposals in view of the short time left to the Conference to conclude its business. A Working Group with the terms of reference proposed in that document should be established at once.

1.10 The delegate of Pakistan made the following statement:

"While agreeing with the Delegation of Libya and others on the point that the strategy cannot be discussed without knowing what the package is, I would recall the package indicated by the Chairman of the Conference in the second paragraph of section 2.1 of Document 133. Let us assume, for the purposes of discussion of Document DT/59, that the package will consist of the operation of the HFBC System - after the improvements suggested by this Conference - in certain portions of the broadcasting spectrum, and Article 17 - either in its present form or subsequently in its improved form - in certain other portions of the spectrum. That is all we can presume at the present moment in order to be able to discuss DT/59.

Now we come to the various points that have been raised in DT/59 regarding a strategy. The need to improve the HF planning system was mentioned there but this has already been accomplished by the Conference. We went through two documents yesterday and approved about 90% of them, leaving only a few square brackets. This improved system will naturally have to be approved by the Plenary; let us hope it does so. Thereafter, the most pessimistic estimate given by the IFRB for the completion of software, etc., is two and a half years. The existing bands, the higher parts of which, in particular, are quite amenable to the introduction of the HFBC System, are available right now. Let us therefore assume that the system can be introduced into the existing system after two and a half years. The extended portions of the bands, with the exception of the 9 MHz bands, will be available from 1989 onwards, before the end of this two-and-a-half year period. The only bands not available until later will be the extensions to the 9 MHz bands. It therefore seems to me that, even at the most pessimistic estimate, the HFBC System as improved by this Conference should be able to be applied after two and a half years in certain parts of the spectrum.

The remaining parts of the spectrum will be available for application of existing Article 17. There is no reason why improvement of Article 17, as far as software is concerned, cannot be taken concurrently with improvement of the HFBC System. Even if this cannot be done, an improved Article 17 would, at the most pessimistic estimate, be in a position to be implemented after five years - after two periods of two and a half years each. It has been said repeatedly on the floor that, according to the test plans generated, the HFBC System will lead to suspension of 25% of requirements. The need to allow countries to continue operating their existing services would therefore require at least that those 25% of suspensions should be provided for under Article 17. This means that after two and a half years, when the software for the system is ready, the

system can be implemented at least in the 11 - 26 MHz bands, representing in terms of spectrum space 75% of the broadcasting bands, including the extension bands. Twenty-five per cent of the broadcasting bands can thus be left for the operation of existing Article 17, or a later improved version, in order to take care of the suspensions. This to my mind seems to be the short-term objective.

With regard to the medium-term objective, we can assume that the application in two and a half years' time of the Planning System above the 11 MHz band in 75% of the spectrum, will generate a certain degree of confidence in the system. By then we will have reached the date after which the extensions of the 9 MHz bands can be applied. That would be the medium-term plan.

Turning now to the long-term objective, I look at it in two stages. The first stage comprises the extension of the bands up to and including the 9 MHz band, for which purpose two separate Recommendations have been drafted. In the short-term plan I have outlined the national services will not be disturbed, as they will be operating as they are operating today. In the first long-term stage that I envisage, given sufficient expansion of the bands, it should be possible to plan both the national and international services to their satisfaction in the lower bands.

The second long-term stage would be the point of introduction of the SSB system. A Recommendation for the introduction of the SSB system is on the table but the position with regard to that system is extremely unclear at the moment. The Recommendation itself, while mentioning the date of 2015 for the cessation of the DSB transmissions, casts doubts even on this date by stressing the need to review the situation relating to the availability of SSB receivers and the introduction of SSB transmitters on a world-wide scale. A study is supposed to be made, which is supposed to be reviewed every 20 years by a world administrative radio conference. However, as long as a few DSB receivers survive in this world, it will not be possible to cease DSB operations and some DSB receivers can have a surprisingly lengthy life. As far as the life-time of the transmitters is concerned, no country, particularly a developing one, which has such transmitters in operation, will be willing to discard its equipment unless it becomes totally inoperative. Pakistan is a fairly developed country in the sense that we are now manufacturing some high-power transmitters ourselves; despite this, the last transmitter that Pakistan discarded had had 40 years of service. Hence the assumption that existing transmitters will be useless or will have been discarded by most countries in the immediately foreseeable future is rather premature. The second long-term objective, which concerns the introduction of SSB, is thus not for the immediately foreseeable future."

1.11 The delegates of Syria, Algeria, Saudi Arabia, Tunisia, Oman, Senegal, Bangladesh, Yemen Arab Republic, Kuwait, India, Central African Republic, the Islamic Republic of Iran, Libya and Bahrain warmly endorsed the very constructive proposals made by the delegate of Pakistan and suggested that they should be submitted in the form of a working document to the Working Group to be established.

1.12 The delegate of Australia said that the development of a strategy for future work was premised on the identification of short-, medium- and long-term stages. However, it was important to remember that there were many problems involved in the production of the Plan. Delegations had agreed to work towards their solution, and many countries were not opposed to planning, but there must be clear agreement on the results of the initial stage before any commitment could be made to the medium- and longer term.

1.13 The delegate of France said that the Pakistani proposals were based on the hypothesis that the package compromise would be on the lines which Pakistan had already presented. That was one of the hypotheses which should be considered but a number of delegations, of which he was one, were not in agreement with it. He asked that the French proposals in Document 33 should also be submitted to the Working Group to be set up.

1.14 The delegate of the Federal Republic of Germany said that Document DT/59 outlined an acceptable approach for the future work of the Conference but it could not be considered as an already established package. Other elements which must be considered included the French proposal in Document 33 and the working documents so far elaborated.

1.15 The delegate of the United States of America said that he strongly felt that any compromise package must address the issue of testing whether the decisions taken at that Conference had improved HFBC operation. During the intersessional period, his Administration had studied the impact of the decisions of HFBC(1) and had become convinced that there were severe problems associated with the HFBC Planning System as implemented after the First Session of the Conference. His Delegation had submitted data showing the basis for its concern, so that others would understand its position.

His Administration had had considerable experience in working with a system similar to the HFBC Planning System, and it agreed with the IFRB statement that it was not possible at that stage to determine whether the modifications to the system being made at the Conference would result in improvements. Indeed, his Administration thought that the opposite was the case. The changes would lead to more suspensions, and that was unacceptable to his Delegation. It would also be unacceptable if suspensions to the Planning System had to be accommodated in so small a portion of the spectrum that reception would be seriously impaired. The 25% of requirements which had been suspended were so incompatible that it was not possible to accommodate them in 25% of the spectrum. Much more space must be made available as was obvious from data supplied by the IFRB. It had been suggested that the higher bands were more amenable to the Planning System but, on the basis of the data in Document DT/60, he disagreed with that. At certain times of the year the higher bands were no more amenable to planning than the lower bands and a solution which involved planning the higher bands was not one his Delegation saw as workable.

His Delegation had often reiterated its willingness to compromise but it felt very strongly that the HFBC Planning System must be modified and tested before it was implemented and until the issue of testing was addressed by the Conference he did not see how progress could be made.

1.16 The delegates of the Netherlands, Belgium, Denmark and Greece said that both the Pakistani proposals and the French Document 33 should be submitted to the proposed Working Group.

1.17 The delegate of Portugal endorsed the comments by the delegates of Australia and the Netherlands. His Administration was convinced that the Planning System would only be accepted after fresh testing. He also supported the proposal to submit Document 33 to the proposed Working Group and suggested that Document 139 should be referred to it as well.

1.18 The delegate of Norway said that he too found the Pakistani proposal very interesting. Norway was a small country; it was prepared to support the majority view and much of Article 17 could be applied for its requirements. He

pointed out, however, that what was desired was one thing and what administrations and the Union could afford was another, and he wondered who would pay for the extremely costly and complex Planning System and for the implementation of the modified Article 17.

He saw only two alternatives for the work of the Working Group: the first was to use the existing Article 17, including modifications which were not too costly and utilizing some of the software already prepared by the IFRB; the second alternative was to use Article 17 and the modifications which were not too costly up to 1992 in parallel with the Planning System which was being proposed. By 1992 the Planning System would have been defined and modified, it would be known what progress had been made with SSB transmitters and receivers, what additional spectrum might be available for HFBC and what it would cost. It was necessary to be realistic, and cost was the prevailing factor.

1.19 The delegate of the German Democratic Republic supported the Norwegian delegate's views. The improved Article 17 would be very costly, so his Administration could go along with the existing Article 17. Moreover, it was essential that the HFBC System should be tested before it was implemented. He suggested that the Norwegian proposal too should be submitted to the proposed Working Group in writing.

1.20 The delegate of Japan supported the creation of a Working Group to seek a compromise on the basis of the French Document 33 and the Pakistani proposal, and associated itself with the concern expressed by Norway regarding cost.

1.21 The delegate of China considered the Pakistani proposal very important. A long-term strategy might comprise the gradual implementation of the improved HFBC Planning System together with the partial application of the improved Article 17; the use of extended bands in the Planning System as soon as those were endorsed by a competent WARC; and the introduction in the long term of SSB transmission which, with a broadened spectrum, would permit the overall implementation of the Plan.

1.22 The delegate of Singapore supported the proposal for the establishment of a Working Group to which all relevant proposals should be submitted, and which should evolve a solution satisfactory to all delegations. His Administration could not, at that stage, commit itself to the short-, medium- or long-term implementation of any planning system until it had seen the results of such a system and was satisfied by them.

1.23 The delegate of Kenya endorsed that view saying that all points must be combined to work out a solution acceptable to all. He stressed the need for any package deal to take full account of national sovereignty, pointing out that in some parts of the world some 60% of the 9 MHz band could not be used because of difficulties associated with jamming, which deprived other countries of access to the spectrum.

1.24 The delegate of the USSR supported the Chairman's proposal to set up a Working Group, which he believed should consider all the documents relating to the subject, no preference being given to any particular one. The Group should also consider the question of accelerating the introduction of the SSB. The Conference should adopt an improved system which should be tested and approved by an appropriate conference.

1.25 The delegate of Antigua and Barbuda thought that the Working Group must be a small one representing all five regions if it was to have any chance of success.

1.26 The delegate of Poland endorsed the Norwegian and Soviet proposals, in particular with respect to the need to test the system. The cost of coordinating the operation of the new system might be considerably reduced if an on-line system were adopted by all administrations. That matter had already been raised at the Nairobi Plenipotentiary Conference in 1982 which had taken account of the problems of implementing Article 12 and of priority in notifying frequencies. Doubts had been expressed about the time that might elapse before the on-line system was introduced. However, the cost of terminals had now come down considerably. Since in all coordination systems the major cost was data processing, an on-line system would greatly reduce expenditure. Coordination between the IFRB and administrations would also be speeded up. Since the Nairobi Conference had adopted a Resolution to defer introduction of the on-line system used until a decision was taken by the following Plenipotentiary Conference, it would be appropriate for preparatory work within the IFRB to be speeded up so that concrete proposals might be put before the 1989 Plenipotentiary Conference in Nice. That could have a considerable effect on the decisions of the Group to be set up and should not be overlooked.

1.27 The delegate of Botswana considered that all the contributions made by delegations should be considered by the Working Group, whose terms of reference should not be unduly restricted. The Group should also bear in mind the importance of keeping the cost of the proposed new system down. Moreover, the questions of national use and of the jamming that wasted the spectrum should also be tackled by the Group, which should be kept small if it were to have a chance of success.

1.28 The delegate of Italy agreed with the proposal to set up a Working Group which should consider any proposal that might help to solve the problem before the Committee, and in particular Document 33 submitted by the French Delegation and the Pakistan proposal. The improved HFBC System must first be properly tested and then approved by a competent conference. Economic aspects must be taken into account in considering planning or Article 17 procedures, and in that connection he supported the remarks of the Norwegian delegate.

1.29 The delegate of Spain also supported the establishment of a Working Group, which he believed should examine all relevant proposals, including those in Documents 33 and 139 and the ideas put forward by the delegates of Pakistan, Portugal, Italy and Norway.

He proposed that the Norwegian point be considered in conjunction with Document 191, a Note from the Chairman of Committee 3 on preliminary resources with estimates for the immediate post-conference work by the IFRB.

1.30 The delegate of Thailand endorsed the view of the delegate of Singapore and agreed with the Chairman's proposal to set up a Working Group to consider, inter alia, Document 33 and the Pakistan proposal. He asked whether the Secretary-General could reply to the question raised by the Norwegian delegate concerning the source of the funds to be allocated for improving the HFBC System.

1.31 The Secretary-General, replying to a question by the delegate of Libya, recalled a statement he had made at a previous meeting of the Committee in which he had stressed the difficulties that had arisen and the need for a practical solution to the problems and the constraints that had been introduced as well as at least interim arrangements to improve Article 17.

1.32 The delegate of the United Kingdom supported the Chairman's initiative in proposing the establishment of a Working Group. It should have no prior commitment to any particular course of action but should be free to take into account all the points of view expressed and must work in a spirit of urgency and realism.

1.33 The delegate of Turkey endorsed the establishment of a Working Group to find a compromise solution based on the elements provided by the Delegations of Pakistan and Norway. The delegate of Romania also supported the establishment of a Working Group, whose terms of reference should be discussed as soon as possible.

1.34 The delegate of Zaire supported the proposal of the Pakistan Delegation and considered that Document 33 should be taken into account by the Working Group. The delegate of Qatar also endorsed the points made by the delegate of Pakistan, which would help in a fair analysis of the problem. The delegate of Zimbabwe, supporting the proposal to set up a Working Group, agreed with the Kenyan delegate that an appropriate solution for national requirements must be included in its terms of reference.

1.35 The Chairman said that the discussion had been useful and he had noted the concerns voiced on all sides. He hoped that a satisfactory package could be achieved by the Working Group.

After a short discussion it was agreed that the members of the Working Group would be: Canada, the United States, Brazil, Colombia, France, Sweden, the Federal Republic of Germany, the United Kingdom, Algeria, Kenya, Senegal, Libya, USSR, Bulgaria, Poland, Pakistan, India, China, Saudi Arabia, Papua New Guinea and the Islamic Republic of Iran.

1.36 The Chairman suggested that the Working Group's terms of reference should take into account the general information contained in Documents DT/41 and 59, the statement by the Chairman of the Conference at the sixth Plenary Meeting (Document 133), the discussions on the subject and all the documents considered.

The meeting was suspended at 1200 hours and resumed at 1430 hours.

1.37 The Chairman invited the Committee to consider the draft terms of reference for Group ad hoc 5 as set out in Document DL/24. The word "package" in paragraph to suggest 1) should be replaced by the words "global compromise solution".

1.38 The delegates of Libya and Zimbabwe supported the draft terms of reference subject to a minor drafting amendment.

1.39 The delegate of the United Kingdom said that he was prepared to accept the draft terms of reference on the understanding that the English text did not imply an irrevocable commitment to the HFBC Planning System.

The draft terms of reference for Group 5/6 ad hoc 5 were adopted.

1.40 The Secretary-General said that the Conference had reached a critical stage and it was of fundamental importance that all substantive work should proceed in accordance with the programme distributed by the Steering Committee. Accordingly, he suggested that the deadline for the Group's deliberations should be set at 1700 hours on Monday, 2 March 1987, so that its report might be available for consideration by Committee 5 at 0900 hours on 3 March.

It was so agreed.

2. Proposal relating to Appendix 2 (Document 199)

2.1 The delegate of France proposed that the Committee should authorize Committee 6 to add further paragraphs, if required, to Appendix 2 and to arrange the technical characteristics in Appendix 2 in two parts, the first containing compulsory data and the second, optional data.

It was so agreed.

3. Overall broadcasting reliability

3.1 In reply to a query by the Chairman of Committee 4, the Chairman confirmed that when examining the reports of Working Group 5-A the Committee had retained the technical criterion BBR (basic broadcasting reliability) but not OBR (overall broadcasting reliability).

The meeting rose at 1450 hours.

The Secretary:

M. GIROUX

The Chairman:

C.T. NDIONGUE

**HFBC (2)**INTERNATIONAL TELECOMMUNICATION UNION  
**WARC FOR THE PLANNING OF THE HF BANDS  
ALLOCATED TO THE BROADCASTING SERVICE**  
SECOND SESSION, GENEVA, February-March 1987Addendum 1 to  
Document 207-E  
6 March 1987

R.3(Add.1)

PLENARY MEETINGTHIRD SERIES OF TEXTS SUBMITTED BY THE  
EDITORIAL COMMITTEE TO THE PLENARY MEETING

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

<u>Source</u>	<u>Documents</u>	<u>Title</u>
COM.7	235	Annex to Recommendation COM6/C (HFBC-87), § 3.3

D. SAUVET-GOICHON  
Chairman of Committee 7Annex: 1 page



3.3 Combined distribution of fading applicable to wanted and unwanted signals

The fading allowances for 10% and 90% of the time are each to be taken as 10 dB, except where the provisions of the following Note apply. In the latter case, 14 dB is to be used.

- Note
- a) If any point on that part of the great circle which passes through the transmitter and the receiver, and which lies between control points located 1,000 km from each end of the path reaches a corrected geomagnetic latitude of  $60^{\circ}$  or more, the values for  $\geq 60^{\circ}$  must be used.
  - b) These values relate to the path of the wanted signal only.
  - c) For synchronized emissions, the fading allowance associated with the predominant wanted signal is to be used. For those conditions where the constituent wanted field strengths are equal and point a) above applies to at least one of the paths, the value of 14 dB is to be used for the decile values.

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:

<u>Source</u>	<u>Documents</u>	<u>Title</u>
COM.7	203 (B.6)	Recommendation COM4/E (HFBC-87)
		Recommendation COM4/F (HFBC-87)
		Recommendation COM6/C (HFBC-87)

D. SAUVET-GOICHON  
Chairman of Committee 7

Annex: 10 pages

## RECOMMENDATION COM4/E (HFBC-87)

**Relative RF Protection Ratio Values for Single-Sideband (SSB) Emissions  
in the HF Bands Allocated Exclusively  
to the Broadcasting Service**

The World Administrative Radio Conference for the Planning of the HF Bands Allocated to the Broadcasting Service (Geneva, 1987),

considering

- [ a) that the Conference has adopted a method for the planning of the HF bands allocated exclusively to the broadcasting service; ]
- b) that this method is based on the use of double-sideband (DSB) emissions;
- c) that the RF co-channel protection ratio is one of the fundamental planning parameters;
- d) that the Conference has adopted Resolution COM4/2 (HFBC-87) relating to the transition from DSB to SSB emissions in the HF bands allocated exclusively to the broadcasting service and Recommendation COM4/B (HFBC-87) relating to the introduction of transmitters and receivers capable of both DSB and SSB modes of operation;
- e) that the SSB system characteristics for HF broadcasting are contained in Appendix [COM4/A] to the Radio Regulations;
- f) that, however, due to their provisional nature, the values of the relative RF protection ratio to be applied for all relevant combinations of wanted and unwanted DSB and SSB emissions have not been included in the Appendix mentioned in e) above;
- g) that preliminary studies have shown that SSB emissions may require a lower RF co-channel protection ratio for the same reception quality;
- [ h) Resolution COM6/1 (HFBC-87) relating to the procedure to be applied by the IFRB in the revision of relevant parts of its Technical Standards used for HF broadcasting, ]

recommends

that, subject to the procedure to be applied by the IFRB in the revision of relevant parts of its Technical Standards used for HF broadcasting given in [Resolution COM6/1 (HFBC-87)], the values of relative RF protection ratio given in the Annex to this Recommendation be used by the IFRB in its Technical Standards relating to SSB emissions in the HF bands allocated exclusively to the broadcasting service,

invites the CCIR

to continue to study the values of relative RF protection ratio for the different cases and frequency separations covered in the Annex to this Recommendation,

invites administrations

to participate actively in these studies.

#### ANNEX TO RECOMMENDATION COM4/E (HFBC-87)

##### Relative Values of RF Protection Ratio

1. The values of relative RF protection ratio given in the table should be used whenever SSB emissions in conformity with the specification in Appendix [COM4/A] to the Radio Regulations are involved in the use of the HF bands allocated exclusively to the broadcasting service.
2. The values given refer to the case of co-channel DSB wanted and unwanted signals for the same reception quality.
3. For the reception of DSB and SSB (6 dB carrier reduction relative to peak envelope power) wanted signals, a conventional DSB receiver with envelope detection designed for a channel spacing of 10 kHz is assumed.
4. For the reception of a SSB wanted signal (12 dB carrier reduction relative to peak envelope power), the reference receiver as specified in Appendix [COM4/A], part B, section 3, to the Radio Regulations is assumed.
5. SSB signals with 6 dB carrier reduction relative to peak envelope power assume equivalent sideband power as specified in Appendix [COM4/A], part B, section 1.2, to the Radio Regulations.
6. The figures for case 2 in the table below relate to a situation where the centre frequency of the intermediate frequency pass-band of the DSB receiver is tuned to the carrier frequency of the wanted SSB signal. If this is not the case, the value for a difference of +5 kHz may increase to -1 dB.

Relative RF protection ratio values with reference to the co-channel RF protection ratio for  
DSB wanted and unwanted signals (dB)\*  
for use in the HF bands allocated exclusively to the broadcasting service

	Wanted signal	Unwanted signal	Carrier frequency separation $f_{\text{unwanted}} - f_{\text{wanted}}$ , $\Delta f$ (kHz)								
			-20	-15	-10	-5	0	+5	+10	+15	+20
1	DSB	SSB (6 dB carrier reduction relative to p.e.p.)	-51	-46	-32	+1	3	-2	-32	-46	-51
2	SSB (6 dB carrier reduction relative to p.e.p.)	DSB	-54	-49	-35	-3	0	-3	-35	-49	-54
3	SSB (6 dB carrier reduction relative to p.e.p.)	SSB (6 dB carrier reduction relative to p.e.p.)	-51	-46	-32	+1	0	-2	-32	-46	-51
4	SSB (12 dB carrier reduction relative to p.e.p.)	SSB (12 dB carrier reduction relative to p.e.p.)	-57	-57	-57	-45	0	-20	-47	-52	-57

\* Frequency separations  $\Delta f$  less than -20 kHz, as well as  $\Delta f$  greater than 20 kHz, need not be considered.

## RECOMMENDATION COM4/F (HFBC-87)

**Propagation Prediction Method to be Used in the HF Bands Allocated  
Exclusively to the Broadcasting Service**

The World Administrative Radio Conference for the Planning of the HF Bands Allocated to the Broadcasting Service (Geneva, 1987),

considering

- a) that the First Session of the Conference (Geneva, 1984) established a propagation prediction method to be used for the planning of the HF bands allocated exclusively to the broadcasting service;
- b) the intersessional work of the CCIR in improving some aspects of the method adopted;
- c) that the IFRB has developed and used software\* based on the propagation prediction method established by the First Session and the further work by the CCIR, and has used this software for its intersessional work;
- d) that the propagation prediction method and the associated software used by the IFRB constitute the basis for any further improvements;
- e) Recommendation COM4/A (HFBC-87) relating to improvements to the propagation prediction method to be used for the HF bands allocated exclusively to the broadcasting service,

recommends

- 1. that the propagation prediction method and the associated software to be used [from the time of entry into force of the Final Acts] [in the post-Conference period] shall be those applied by the IFRB during the intersessional period;
- 2. that the IFRB prepare detailed documentation on the propagation prediction method, summarized in the annex to this Recommendation, for inclusion in its Technical Standards;
- 3. that the procedure to be applied by the IFRB in the revision of relevant parts of its Technical Standards, as established in Resolution COM6/1 (HFBC-87), be used for any further improvement to this method.

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\* Note - The most recent version of the software is available to administrations on request.

## ANNEX TO RECOMMENDATION COM4/F (HFBC-87)

**Summary of the Propagation Prediction Method\*  
to be Used for Determining the Sky-Wave Field Strength****1. Introduction**

The propagation prediction method, implemented by the IFRB and to be used as a basis in the post-conference period, was established by the First Session. It is based on CCIR studies prior to the First Session, and on further CCIR studies of particular aspects of the method.

The method is used for the prediction of field strength for HF broadcasting purposes and is composed of three parts:

- a) for path lengths up to 7,000 km;
- b) for path lengths greater than 9,000 km;
- c) an interpolation procedure for path lengths between 7,000 and 9,000 km.

**2. Ionospheric parameters**

Values of the ionospheric parameters foF2, M(3,000)F2 and foE are obtained from the numerical maps (the Oslo coefficients) and the procedures set out in CCIR Report 340, at the locations of the control points required by the short- and long-range methods. The basic MUFs\*\* for the required distances are obtained from these parameters, again using the procedures of Report 340. Appropriate interpolations are made for the level of sunspot activity.

**3. Distances up to 7,000 km**

The short-range prediction method, based partly on CCIR Report 252-2, is used for path lengths up to 7,000 km. Calculations are also made by this method for path lengths between 7,000 and 9,000 km and the results are used in the interpolation procedure described later.

The method assumes great-circle propagation with reflection from the E-layer (for ranges up to 4,000 km) and from the F2-layer. The path is divided into a number of hops of equal length, each less than 4,000 km, for F2-modes, and 2,000 km, for E-modes. The hops are assumed to have mirror reflections in the ionosphere at their mid-points. The equivalent reflection height is taken as 110 km for E-modes, and is a variable, depending upon the values of the ionospheric parameters, for F2-modes.

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\* This summary does not modify in any way the propagation prediction method implemented by the IFRB.

\*\* Basic MUF: The highest frequency at which a radio wave can propagate between given terminals, on a specified occasion, by ionospheric refraction alone.

For path lengths up to 4,000 km, screening of F2 propagation modes by the lower E-layer is applied when appropriate.

The central feature of the method is the prediction of the median field strength using the formula:

$$E_{ts} = 96.85 + P_t + G_t - 20 \log P' - L_i - L_m - L_g - L_h \text{ dB}(\mu\text{V/m}).$$

- $P_t$  is the transmitter output power in dB relative to 1 kW;
- $G_t$  is the isotropic antenna gain corresponding to the azimuth of the great-circle path and the elevation angle computed for the path geometry and the number of hops considered;
- $P'$  is the virtual slant range in km, calculated along the ray paths;
- $L_i$ ,  $L_m$ ,  $L_g$  and  $L_h$  are loss terms which account for the absorption loss (calculated for each hop and the results added), the "above the MUF" loss, the ground reflection loss and the auroral plus other signal losses, respectively.

The numerical constant term includes, inter alia, an allowance for those effects of sky-wave propagation which would not otherwise be included in this simplified method.

Although, for an isotropic antenna, the predicted field strength would be greatest for propagation modes with the minimum number of hops, this is not necessarily the case for antennas used in practice. The calculation is repeated with progressively greater numbers of hops, taking account of the corresponding antenna gain in each case, until a maximum value is reached. To facilitate the calculation for the large number of cases considered by the IFRB, in practice, field strength values have been pre-calculated and stored as tables for six F2-modes and six E-modes for the paths between all transmitter locations and all test points. During the consideration of each case, reference is made to the appropriate entries in these tables and the antenna gains are applied.

The method selects the two strongest F2-modes (i.e., the modes with the highest field strengths) and, where appropriate, the strongest E-mode, the corresponding field-strength values being combined by r.s.s. addition.

#### 4. Distances greater than 9,000 km

For distances greater than 9,000 km, the method is no longer based on geometric ray hops but on hypothetical ray paths with a number of equal hops each less than 4,000 km. This method is also used to calculate field strengths for path lengths between 7,000 and 9,000 km and the results are used in the interpolation procedure described later.



In the method, it is assumed that the field strength in the "transmission frequency range", i.e., between the lower limit frequency  $f_L$  and the upper limit frequency  $f_M$ , is determined by non-deviative absorption (near  $f_L$ ) and deviative absorption (near  $f_M$ ). The empirical fit to observations determines the shape of the curve between  $f_L$  and  $f_M$  as a function of the solar zenith angle, the path geometry, etc. The overall median field strength is given by

$$E_{ti} = E_0 \left[ 1 - \frac{(f_M + f_H)^2}{(f_M + f_H)^2 + (f_L + f_H)^2} \left( \frac{(f_L + f_H)^2}{(f + f_H)^2} + \frac{(f + f_H)^2}{(f_M + f_H)^2} \right) \right] + P_t + G_{t1} + G_{ap} - 32.5 \text{ dB}(\mu\text{V/m})$$

- $E_0 = 139.6 - 20 \log P'$  is the free space field strength where  $P'$  is the slant range assuming that the height of the ionosphere is 300 km.
- $f$  is the frequency at which the prediction is made;
- $f_M$  is the upper limit frequency; it is determined separately for the first and last hop of the path and the lower value is taken.  $f_M = K \cdot f_b$ , where  $f_b$  is the basic MUF and  $K$  is a correction factor taking into account the diurnal variation and the absolute value of  $f_b$ ;
- $f_L$  is the lower limit frequency and is mainly dependent on the solar zenith angle;
- $f_H$  is the gyro-frequency;
- $P_t$  is the transmitter output power in dB relative to 1 kW;
- $G_{t1}$  is the isotropic antenna gain, taken as the highest value in the range of vertical radiation angles from  $0^\circ$  to  $8^\circ$  at the corresponding azimuth;
- $G_{ap}$  is the antipodal focussing gain, taking into account the increase in field strength at distances greater than 10,000 km.

The numerical constant term includes, inter alia, an allowance for those effects of sky-wave propagation which are not otherwise included in the method.

#### 5. Distances between 7,000 and 9,000 km

In this distance range, the field strengths  $E_{ts}$  and  $E_{t1}$  are determined by both of the above procedures and the resultant median field strength is obtained by linear interpolation, in dB, as follows:

$$E_{ti} = E_{ts} + \frac{D - 7,000}{2,000} (E_{t1} - E_{ts}) \text{ dB}(\mu\text{V/m}),$$

where  $D$  is the path length in kilometres.

Note - The constant terms in the equations for  $E_{ts}$  and  $E_{t1}$  include the values of -7.3 dB and +3.9 dB for the short- and long-range parts of the method, respectively, which were determined in CCIR Recommendation 621 following intersessional studies.

## RECOMMENDATION COM6/C (HFBC-87)

**Planning Parameters for the  
Double-Sideband (DSB) System in the HF Bands  
Allocated Exclusively to the Broadcasting Service**

The World Administrative Radio Conference for the Planning of the HF Bands Allocated to the Broadcasting Service (Geneva, 1987),

considering

- a) that the Conference has considered in detail the planning and technical parameters used for HF broadcasting;
- b) that certain DSB system characteristics for HF broadcasting are contained in Appendix [COM4/A] to the Radio Regulations;
- c) that the RF protection ratio, minimum usable field strength and signal fading allowance are basic planning parameters which may be improved as a result of further studies;

[d) that the Conference has adopted Resolution [COM6/1 (HFBC-87)] relating to the procedure to be applied by the IFRB in the revision of relevant parts of its Technical Standards used for HF broadcasting,

recommends

that, subject to the procedure to be applied by the IFRB in the revision of relevant parts of its Technical Standards used for HF broadcasting given in [Resolution COM6/1 (HFBC-87)], the values of the planning parameters given in the Annex to this Recommendation be used by the IFRB in its Technical Standards relating to the DSB system in the HF bands allocated exclusively to the broadcasting service,

invites the CCIR

to continue to study the values of the parameters contained in the Annex to this Recommendation,

invites administrations

to participate actively in these studies.

## ANNEX TO RECOMMENDATION COM6/C (HFBC-87)

**Planning Parameters**1. Radio-frequency protection ratios1.1 Protection ratio for unsynchronized transmissions

[The co-channel protection ratio for unsynchronized transmissions should be ...] [to be developed by Committee 5].

1.2 Protection ratio for synchronized transmissions

The co-channel protection ratio between synchronized transmissions in the same network should be:

Distance L between synchronized transmitters (km)	Protection ratio (dB)
$L \leq 700$	0
$700 < L \leq 2,500$	4
$2,500 < L$	8

1.3 Relative radio-frequency protection ratios

The relative RF protection ratios ( $\alpha$ ) for carrier frequency separations\* ( $\Delta f$ ), with reference to the co-channel protection ratio, should be:

$\Delta f$	$\alpha$
0 kHz	0 dB
$\pm 5$ kHz	-3 dB
$\pm 10$ kHz	-35 dB
$\pm 15$ kHz	-49 dB
$\pm 20$ kHz	-54 dB

---

\* Frequency separations,  $\Delta f < -20$  kHz, as well as  $\Delta f > +20$  kHz, need not be considered.

## 2. Minimum usable field strength

The minimum usable field strength should be determined by adding 34 dB to the greater of:

- the field strength due to atmospheric radio noise as contained in CCIR Report 322-2;
- 3.5 dB ( $\mu\text{V/m}$ ), which is the intrinsic receiver noise level.

## 3. Signal fading allowance

### 3.1 Short-term (within the hour) fading

The upper-decile amplitude deviation from the median of a single signal is to be taken as 5 dB and the lower-decile deviation is to be taken as -8 dB.

### 3.2 Long-term (day-to-day) fading

The magnitude of the long-term fading, as determined by the ratio of the operating frequency to the basic MUF, is given in Table III of CCIR Report 266-6.

For synchronized transmissions, the fading allowance associated with the predominant signal should be used. In cases where the contributing wanted field strengths are equal and Note 1 of Table III of CCIR Report 266-6 applies to at least one of the paths, the values for geomagnetic latitudes  $\geq 60^\circ$  should be used.

COMMITTEE 5State of Israel

## PROPOSALS FOR THE CONFERENCE

Relating to the improvement in the use of the HF bands allocated to the broadcasting service, by avoiding harmful interference

The attached map (taken from the IFRB report on the implementation of Resolution COM5/1 of the First Session of the Conference) shows, at a glance, that reception of virtually all the high frequency broadcasting channels is harmfully interfered with - in practically all inhabited areas of the globe.

Whatever the origins of the interference, the fact is there, and any Planning System is doomed to failure if this fact is ignored.

According to the results of the monitoring programmes conducted by the IFRB, about 1,375 locations of stations causing harmful interference have been clearly identified, and the most probable geographical position of numerous other stations has been confirmed (see paragraph 2.8 of Document 9).

Whatever the final outcome of this Conference - and this Delegation remains optimistic - action must be taken against this predominant source of harmful interference.

This interference - if it continues - could easily ruin the greater part of any high frequency broadcasts - be they international, or domestic.

A modest contribution in this respect would be, in our view, the adoption of a Resolution along the following lines.

RESOLUTION

**Relating to the Improvement in the Use of the HF Bands Allocated to the  
Broadcasting Service by Avoiding Harmful Interference**

The World Administrative Radio Conference for the Planning of the HF  
Bands Allocated to the Broadcasting Service (Geneva, 1987),

considering

- a) Article 4 (No. 19) of the International Telecommunication Convention concerning the purposes of the Union;
- b) Article 10 (Nos. 79 and 80) of the International Telecommunication Convention concerning the duties of the IFRB;
- c) Article 35 (Nos. 158, 159 and 160) of the International Telecommunication Convention concerning harmful interference;
- d) Article 54 (No. 209) of the International Telecommunication Convention concerning the instructions which may be given to the IFRB by a world administrative radio conference;
- e) Article 20 of the Radio Regulations concerning the international monitoring system;
- f) Article 18 (No. 1798) of the Radio Regulations concerning measures against interference;
- g) Article 22 of the Radio Regulations concerning the procedure in cases of harmful interference,

considering further

- h) the results of the monitoring programmes conducted by the IFRB in implementation of Resolution COM5/1 of the First Session of the Conference (Document 9 of the Second Session of the Conference) which reported that about 1,375 locations of stations causing harmful interference have been clearly identified, and the most probable geographical position of numerous additional stations confirmed (paragraph 2.8 of Document 9);
- i) that virtually all the inhabited areas of the globe, and all frequency channels, were affected in varying degrees by these sources of interference (see map in Annex 8 of Document 9 and Annex 7 of the same document);
- j) that intentional interference is the predominant source of harmful interference;
- k) that so long as this harmful interference continues, any attempts to provide for the orderly, equitable planning of the high frequency broadcasting bands will be impossible to implement effectively,

resolves

that administrations responsible for the harmful interference reported in Document 9, take the necessary action to cease such interference, and that all administrations avoid harmful interference in the future,

instructs the IFRB

1. to organize periodic monitoring programmes in the bands allocated to the high frequency broadcasting service, with a view to continuing the identification of stations causing harmful interference;
2. to seek, as appropriate, the cooperation of administrations in identifying the sources of emissions which cause harmful interference, and to provide this information to administrations;
3. to inform the Administrative Council of the results of the activities referred to in 1 and 2 above,

invites the Administrative Council

to place the problem of intentional harmful interference on the agenda of any future competent conference,

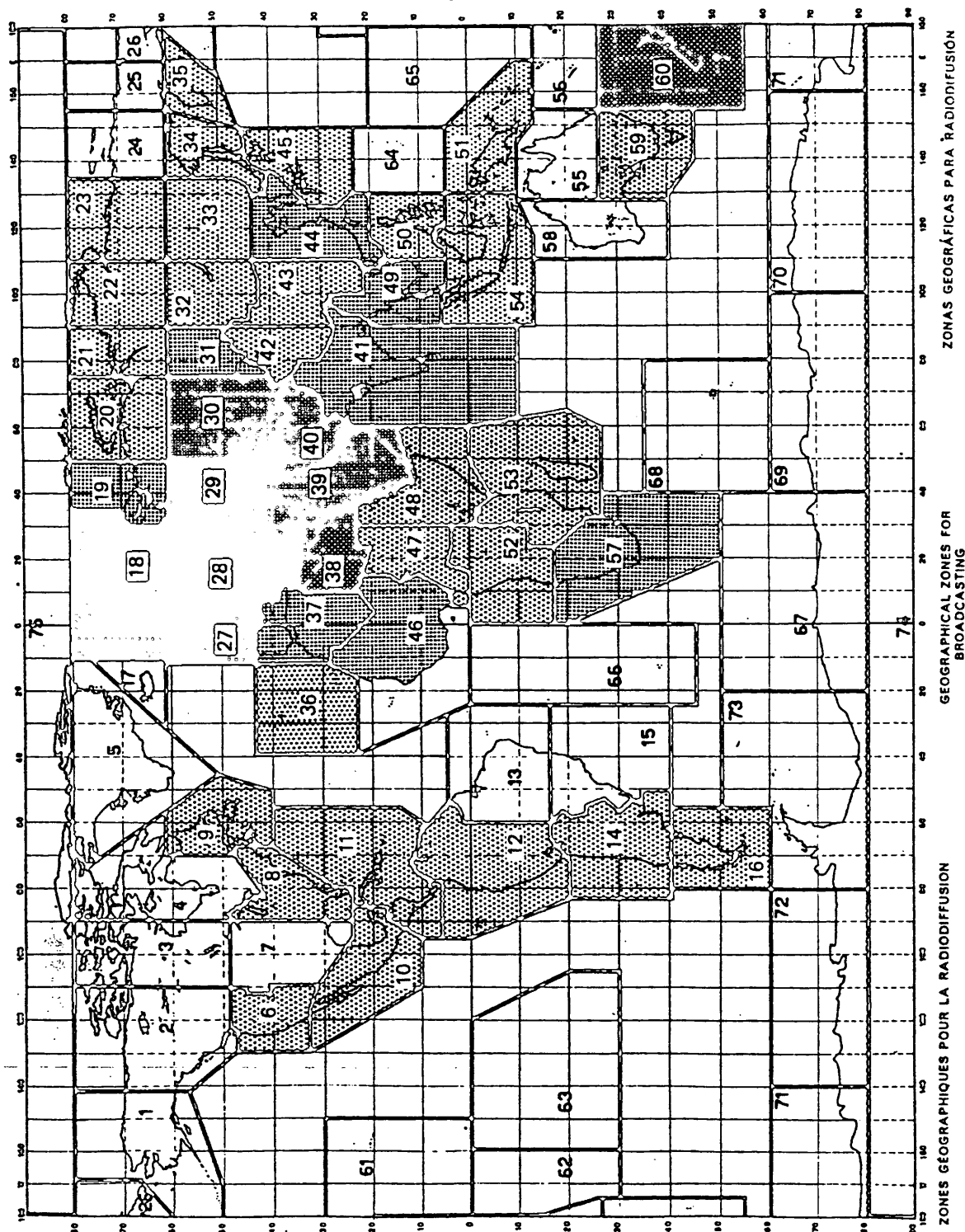
requests the Secretary-General

to bring this Resolution to the attention of administrations.

This annex contains the map of CIRAF zones on which have been represented, by categories of occurrences, the zones in which the reception of broadcasting transmissions on a given frequency was reported as having been subject to harmful interference.

The darker the CIRAF zone, the higher the number of frequencies on which interference was reported, in accordance with the following categories:

- More than 200 frequencies
- Between 101 and 200 frequencies
- Between 51 and 100 frequencies
- Between 11 and 50 frequencies
- Less than 11 frequencies





COMMITTEE 3Information Note by the Secretary-General

## ESTIMATE OF THE RESOURCES NEEDED FOR POST CONFERENCE WORK

No. 627 of Article 80 of the Convention (Nairobi, 1982) states:

"Before adopting proposals with financial implications, administrative conferences and the Plenary Assemblies of the International Consultative Committees shall take account of all the Union's budgetary provisions with a view to ensuring that these proposals will not result in expenses beyond the credits which the Administrative Council is empowered to authorize."

The purpose of the present Note is to provide the Budget Control Committee with financial information on the post Conference work which will have to be carried out by the IFRB, the CCIR and the General Secretariat.

A. IFRB - Document 191 (Rev.1) "PRELIMINARY RESOURCE ESTIMATES FOR THE IMMEDIATE POST CONFERENCE WORK TO BE CARRIED OUT BY THE IFRB"

In this document the Chairman of the IFRB provides preliminary resource estimates for the immediate post Conference work to be carried out by the IFRB.

These can be summarized as follows:

1. Supernumerary staff:	
Man months : P.4	160
G.6	77
Estimated cost of this supernumerary staff :	
Cost per m/m P.4	10,000
m/m G.6	5,500
3. Total cost: P.4	1,600,000
G.6	423,500
	<u>2,023,500</u>
less the credit already entered in the budget approved by the Administrative Council under section 18, i.e. 4 P.4, from 1.7.87 to 31.12.87	- 248,000
	<u>1,775,500</u>
4. According to information supplied by the IFRB during the third meeting of Committee 3, the supernumerary staff is made up of officials who are already in service. The cost must therefore be increased by a sum estimated at:	130,000
5. Repatriation costs:	180,000
	<u>2,085,500</u>
6. Estimated cost of the supernumerary staff:	
Total Swiss francs, value 1.1.1987	2,100,000 =====

B. CCIR - Document 202: LETTER FROM THE DIRECTOR OF THE CCIR

Document 202 indicates that the CCIR will have a certain amount of work to perform and the cost is estimated at:

Computer equipment	10,000
Editing work (1 man month)	10,000
Document preparation (translation, typing and printing)	5,000
	<u>25,000</u> =====

It will be up to the Administrative Council to decide how far these expenses may be absorbed by the credits for regular CCIR work. No credits are charged to the HFBC Conference in this estimate.

C. ADDITIONAL COSTS FOR THE GENERAL SECRETARIAT

C.1 Hedquarters expenditure

The cost of the computer resources is estimated at:  
(see the comments in Annex 2 of this document)

Computer resources

-	1987	100,000	
	1988	420,000	
-	1989	420,000	
		<hr/>	
		940,000	1)

Supernumerary/software staff

-	1987 (3 months)	30,000	
-	1988	120,000	
-	1989	120,000	
	(Permanent requirements	<hr/>	
	beyond 1989 with costs shared		
	with other functions)	270,000	

Total, 1987 - 1989 1,210,000

Document production and postage  
in connection with the revised  
Article 17

200,000 1)

The following additional expenditure  
should also be considered:

Premises - for 2 1/2 years	100,000
Furniture, supplies, etc.	80,000

Total 1,590,000

=====

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1) Note - operational costs (Computer time)( in 1986) for existing Article 17 is 100,000 Swiss francs, Printing costs 140,000 Swiss francs and Mailing 20,000 Swiss francs.

C.2 Proposed establishment of a Group of Experts - Document 139,  
submitted by the delegations of France and Canada

Number of representatives:	25
Number of meetings (for 2 years)	2
Duration of meetings	1 week
Average cost per representative (travel and per diem)	5,500
Cost for two meetings for 25 representatives	275,000
Interpretation, etc. 4 meetings, 6 languages	240,000
	<hr/>
	515.000
	=====

D. RECAPITULATION

A. IFRB	2,100,000
B. CCIR	p.m.
C. General Secretariat	
1. Headquarters	1,590,000 *)
2. Group of Experts	515,000
	<hr/>
Sw.frs. value 1.1.1987	4,205,000
Sw.frs. value 1.9.1982	4,000,000

\*) including additionnal staff (1 Professional, Computer Dept., P3)

E. SITUATION AS REGARDS LIMITS ON EXPENDITURE

The table in Annex 1 shows the situation regarding the credits available within the limits laid down by Additional Protocol I of the Nairobi Conference, 1982.

Annex 1 shows that for WARC-HFBC there is an available credit of 879,400 Swiss francs.

An estimate of the credits available under section 18 - Implementation by the IFRB of the decisions of world and regional administrative conferences, in the light of the provision made in the draft budget for 1988, presents a balance available estimated at 1,165,000 Swiss francs.

F. GENERAL REMARKS

At its 41st session, the Administrative Council expressed the view that staff expenditure deriving from the decisions of WARC-HFBC should be regarded - up to 30 June 1987 - as expenditure to be charged to the accounts of the Conference (see limit on expenditure as indicated in Annex 1).

The Administrative Council also decided that staff expenditure - as from 1 July 1987 - should be regarded as expenditure to be charged to section 18 - Implementation by the IFRB of the decisions of administrative conferences.

On the other hand, expenditure relating to computer facilities is considered as charged to the Conference budget.

G. In accordance with the above, the situation is as follows:

1. Expenditure under sections 11/17 - WARC-HFBC

Credit available within the limit on expenditure	879,400
Estimated expenditure (computer document production, postage, premises, and Group of Experts)	1,700,000

2. Expenditure under section 18 - Implementation  
by the IFRB of the decisions of conferences

Credit available within the limit on expenditure	1,165,000
Estimated expenditure (staff costs, including supernumerary staff, for the computer)	2,300,000

R.E. BUTLER  
Secretary-General

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It should be recalled that the consequences, adaptation and necessity of certain publications (Tentative High Frequency Broadcasting Schedule, the High Frequency Broadcasting Schedule (definitive), as well as the Annual High Frequency Broadcasting List) have no influence on the ordinary budget of the Union but concern the Publications budget.

Annexes : 2

ANNEX 1

LIMIT ON EXPENDITURE LAID DOWN BY ADDITIONAL PROTOCOL I TO THE  
NAIROBI CONVENTION, 1982

WARC-HFBC	Sections 11 and 17		
	Limit on expenditure Add. Prot. I	Actual or estimated expenditure	Difference
	- in Swiss francs -		
Limit on expenditure	10,000,000		
1983: Preparatory work		* 403,000	
1984: Preparatory work, cost of First Session, intersessional work		*2,860,600	
1985: Intersessional work		*1,655,000	
1986: Intersessional work		*1,754,000	
1987: Intersessional work, cost of Second Session, immediate post Conference work		o 2,448,000	
	10,000,000	9,120,600	879,400

The sums mentioned in the table correspond to 1.9.1982 values.

\* Actual expenditure.

o Expenditure provided for in the budget.

## ANNEX 2

### COMPUTER RESOURCES

#### 1. Hardware

Exact requirements are difficult to evaluate when the tasks to be performed are not yet clear. A working assumption used in deriving the figures shown in C.1 is that the central processing unit (CPU) requirements would not be significantly higher than the ones for the 1986 HFBC activities. With the upgraded configuration now in place even a factor of 2 increase in the CPU load would be possible to absorb during nights and weekends.

For this reason, we plan to keep the same CPUs for the time being. Configuration changes have to be planned well in advance and once in place should be kept for some time to avoid penalties associated with earlier cessation of rental contracts. This explains why no credits are necessary in 1987 for the rental of the installed CPUs, as proper funding had to be included in the 1987 budget which was approved in 1986. For 1988 and 1989, 220,000 SFR are necessary to maintain the existing configuration. This is exactly the credit which is in the 1987 budget, Chapter 11.

Instead of upgrading the CPU power, we plan to increase the main memory of the computer used for conference-related work, to take advantage of a new version of the BS2000 operating system which supports an extended address space. This could allow further optimization of the software. Credits are also needed for additional disk storage, terminals, magnetic tapes, as well as for a share of other costs. Accordingly, a yearly credit of 200,000 SFR is included in C.1 for both 1988 and 1989, in addition to the 100,000 SFR credit for the second half of 1987.

The preliminary estimates presented in C.1 will be refined, before the next session of the Administrative Council, once the post-conference activities and related work program are clearly specified.

#### 2. Support staff

The timely running of this complex system will greatly increase the operational/support load in the Computer Department. Traditionally the Computer Department does not request extra staff in association with conference work. One specific conference for which the IFRB requests a couple of man/years clearly would not justify extra staff for the Computer Department. But there is a limit to the increased load which can be absorbed without a degradation in service, which affects the productivity of all. The IFRB Conference Preparation and Computer Support Division has today a staff of about twenty, including 12 P4s and 2 P3s (for comparison the Computer Department has for all its divisions, 6 P4s and 8 P3s). The Computer Department system support group has been stable for several years while the community of users, particularly engineer/analysts, has grown considerably as illustrated above. This explains the credits entered in C.1 for supernumerary staff.

COMMITTEE 3

Information Note by the Secretary-General

ESTIMATE OF THE RESOURCES NEEDED FOR POST CONFERENCE WORK

No. 627 of Article 80 of the Convention (Nairobi, 1982) states:

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A. IFRB - Document 191 "PRELIMINARY RESOURCE ESTIMATES FOR THE IMMEDIATE POST CONFERENCE WORK TO BE CARRIED OUT BY THE IFRB"

In this document the Chairman of the IFRB provides preliminary resource estimates for the immediate post Conference work to be carried out by the IFRB.

These can be summarized as follows:



		Scenario		
		1	2	3
1. Supernumerary staff:				
Man months:	P.4	130	130	181
	G.6	77	77	138
2. Estimated cost of this supernumerary staff:		- in Swiss francs -		
Cost per m/m	P.4	10,000	10,000	10,000
	m/m G.6	5,500	5,500	5,500
3. Total cost:	P.4	1,300,000	1,300,000	1,810,000
	G.6	423,500	423,500	759,000
		-----	-----	-----
		1,723,500	1,723,500	2,569,000
less the credit already entered in the budget approved by the Administrative Council under section 18, i.e. 4 P.4, from 1.7.87 to 31.12.87		- 248,000	- 248,000	- 248,000
		1,475,500	1,475,500	2,321,000
4. According to information supplied by the IFRB during the third meeting of Committee 3, the supernumerary staff is made up of officials who are already in service. The cost must therefore be increased by a sum estimated at:		100,000	100,000	150,000
5. Repatriation costs:		150,000	150,000	200,000
6. Estimated cost of the supernumerary staff:		1,725,500	1,725,500	2,671,000
Total Swiss francs, value 1.1.1987		1,725,000	1,725,000	2,670,000

B. CCIR - Document 202: LETTER FROM THE DIRECTOR OF THE CCIR

Document 202 indicates that the CCIR will have a certain amount of work to perform and the cost is estimated at:

Computer equipment	10,000
Editing work (1 man month)	10,000
Document preparation (translation, typing and printing)	5,000
	<u>25,000</u>

C. ADDITIONAL COSTS FOR THE GENERAL SECRETARIAT

C.1 Hedquarters expenditure

The cost of the computer resources is estimated at:

	<u>Scenarios 1/2</u>	<u>Scenario 3</u>
Computer resources (Provision for disk space, main memory, etc., requirements for Scenario 3 depends on detailed study including work programme)		
- 1987		100,000
- 1988	220,000	420,000
- 1989	220,000	420,000
	<hr/> 440,000	1) 940,000
Supernumerary/software staff		
- 1987 (3 months)	30,000	30,000
- 1988	120,000	120,000
- 1989	120,000	120,000
(Permanent requirements beyond 1989 with costs shared with other functions)	<hr/> 270,000	<hr/> 270,000
Total, 1987 - 1989	710,000	1,210,000
Document production and postage in connection with the revised Article 17	200,000	1) 200,000
The following additional expenditure should also be considered:		
Premises - for 2 1/2 years	100,000	100,000
Furniture, supplies, etc.	80,000	80,000
	<hr/>	<hr/>
Total	1,090,000	1,590,000
	<hr/> <hr/>	<hr/> <hr/>

C.2 Proposed establishment of a Group of Experts - Document 139,  
submitted by the delegations of France and Canada

Number of representatives:	21	
Number of meetings (for 2 years)	4	
Duration of meetings	1 week	
Average cost per representative (travel and per diem)	5,500	
Cost for four meetings for 21 representatives		462,000
Interpretation, etc. 4 meetings, 6 languages		480,000
		<hr/> 942,000
		<hr/> <hr/>

1) Note - Operational costs (Computer time) in 1986 for existing Article 17 is 100,000 Swiss francs, Printing costs 140,000 Swiss francs and Mailing 20,000 Swiss francs.

E. RECAPITULATION

	<u>Scenario</u>		
	1	2	3
A. IFRB	1,725,000	1,725,000	2,670,000
B. CCIR	25,000	25,000	25,000
C. General Secretariat			
1. Headquarters	1,090,000	1,090,000	1,590,000
2. Group of Experts	942,000	942,000	942,000
	<hr/>	<hr/>	<hr/>
Sw.frs. value 1.1.1987	3,782,000	3,782,000	5,227,000
Sw.frs. value 1.9.1982	3,550,000	3,550,000	4,750,000

F. SITUATION AS REGARDS LIMITS ON EXPENDITURE

The table in Annex 1 shows the situation regarding the credits available within the limits laid down by Additional Protocol I of the Nairobi Conference, 1982.

Annex 1 shows that for WARC-HFBC there is an available credit of 879,400 Swiss francs.

An estimate of the credits available under section 18 - Implementation by the IFRB of the decisions of world and regional administrative conferences, in the light of the provision made in the draft budget for 1988, presents a balance available estimated at 1,165,000 Swiss francs.

G. GENERAL REMARKS

At its 41st session, the Administrative Council expressed the view that staff expenditure deriving from the decisions of WARC-HFBC should be regarded - up to 30 June 1987 - as expenditure to be charged to the accounts of the Conference (see limit on expenditure as indicated in Annex 1).

The Administrative Council also decided that staff expenditure - as from 1 July 1987 - should be regarded as expenditure to be charged to section 18 - Implementation by the IFRB of the decisions of administrative conferences.

On the other hand, expenditure relating to computer facilities is considered as charged to the Conference budget.

H. In accordance with the above, the situation is as follows:

1. Expenditure under sections 11/17 - WARC-HFBC

Credit available within the limit  
on expenditure 879,400

Estimated expenditure 1,650,000\*) 1,950,000\*\*)  
(computer document production,  
postage, premises, etc., and  
Group of Experts)

2. Expenditure under section 18 - Implementation  
by the IFRB of the decisions of conferences

Credit available within the limit  
on expenditure 1,165,000

Estimated expenditure 1,900,000\*) 2,800,000\*\*)  
(staff costs, including  
supernumerary staff, for  
the computer)

R.E. BUTLER  
Secretary-General

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\*) Scenarios 1 and 2 mentioned by the IFRB.

\*\*) Scenario 3 mentioned by the IFRB.

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It should be recalled that following decisions in Committee 5, Committee 6 is examining the consequences, adaptation and necessity of certain publications (Tentative High Frequency Broadcasting Schedule, the High Frequency Broadcasting Schedule (definitive), as well as the Annual High Frequency Broadcasting List) which are accounted for in a separate Publications Budget.

ANNEX 1

LIMIT ON EXPENDITURE LAID DOWN BY ADDITIONAL PROTOCOL I TO THE  
NAIROBI CONVENTION, 1982

WARC-HFBC	Sections 11 and 17		
	Limit on expenditure Add. Prot. I	Actual or estimated expenditure	Difference
	- in Swiss francs -		
Limit on expenditure	10,000,000		
1983: Preparatory work		* 403,000	
1984: Preparatory work, cost of First Session, intersessional work		*2,860,600	
1985: Intersessional work		*1,655,000	
1986: Intersessional work		*1,754,000	
1987: Intersessional work, cost of Second Session, immediate post Conference work		o 2,448,000	
	10,000,000	9,120,600	879,400

The sums mentioned in the table correspond to 1.9.1982 values.

\* Actual expenditure.

o Expenditure provided for in the budget.

COMMITTEE 5  
WORKING GROUP AD HOC 5

Pakistan

It is essential that the elements of the compromise proposal are tied with the strategy of implementation of the same. Considering the statement by the President of the Conference at the Sixth Plenary Meeting (Document 133), it seems clear that the package will have to have two elements, one element to provide for the planned requirements and the other element to cater to those requirements which will get suspended from the Planning Process; so as to allow the countries to continue operating their services satisfactorily.

Pakistan had made a proposal earlier on the floor of Committee 5 that the HFBC Planning System can be applied to the higher bands, where 80% to 95% of the requirements are shown to have a Protection Ratio of better than 17 dB. In a spirit of compromise and in deference to the wishes of the President of the Conference, the following comprehensive proposals are made.

Elements of the compromise solution - Short term

It has been repeatedly stated by some delegations that in the existing Planning system 25% of the requirements get suspended. In order to accommodate such suspensions, it is proposed that 75% of the higher band space including the extension bands is used for Planning purposes and 25% is reserved for catering to the suspended requirements under Article 17 procedure. Of course the 13 MHz band will have to be used totally for Planned usage as Article 17 is not applicable in this band under R.R. 531.

In the short term measure, the HFBC System should be applied in the 11 to 26 MHz bands as suggested above, as soon as the software has been modified and tested. The distribution of these bands will be as follows:

<u>Bands kHz</u>	<u>Width</u>	<u>Channels total</u>	<u>Article 17</u>	<u>HFBC</u>
11650-12050	400	40	10	30
13600-13800	200	20	-	20
15100-15600	500	50	12	38
17550-17900	350	35	8	27
21450-21850	400	40	10	30
25670-26100	430	43	10	33

Medium Term Measure

The above application in the short term measure will generate confidence in the system, and thereafter it will be possible to apply it in a similar manner to the 9 MHz band after 1994 when the extensions in this band are available for use.

Long Term - First Part

The application of the HFBC system can be tested and also applied in the lower bands only after these bands have been expanded sufficiently by a subsequent WARC to allow not only to cater to international but also national requirements.

Long Term - Second Part

This part of the long term plan assumes the cessation of the DSB transmissions which will increase the existing capacity available to broadcasting through SSB. This is linked with the decommissioning of all the DSB transmitters and availability of cheap SSB receivers all over the world. Even in fairly developed countries these transmitters are used for at least 40 years. For under developed countries with meagre resources it is unthinkable to junk the existing equipment before at least 50 years. Under these uncertainties even the year 2015 suggested in one of the documents seems very optimistic to say the least. Therefore the second part of the long term does not appear to be feasible at this stage in the foreseeable future.

Source: Documents DL/16(Rev.2), DL/17(Rev.1),  
DL/30, 177, DT/12, DL/18(Rev.1)

COMMITTEE 6

## REPORT OF DRAFTING GROUP 6-1

Drafting Group 6-1 was composed of the representatives of the following delegations:

ALG, B, CAN, CHN, CLM, D, F, G, IND, URS, USA.

The IFRB also participated in the deliberations of the Group.

In the light of the guidelines provided in Document 177, the Group has drafted the required regulatory provisions which are annexed.

The draft provisions have been grouped in sections, as follows:

Section [ ] HFBC requirements file

Section [ ] Procedure based on consultations

Section [ ] Record of seasonal usage

Section [ ] Miscellaneous provisions

These provisions concern the revision of Article 17 of the Radio Regulations.

Committee 5, while communicating Document 177 to Committee 6 had indicated that as regards points 15, 17, 18, 19 and 21 of the guidelines, it was unable to reach agreement despite a protracted discussion. The draft regulatory texts developed in the Group, corresponding to these points, gave rise to discussion regarding the best approach. It was, ultimately, decided to quote the text of guidelines, in square brackets, in place of the provisions. The regulatory texts, which were not discussed, are enclosed here as Annex 2, in accordance with the wish expressed in the Group.

At the start of Drafting Group 6-1's work, the Delegation of Algeria, a member of the Group, formulated a general reservation with regard to the results of the Group's work, invoking the following reasons.

- 1) The introductory note on page 1 of Document 177 did not give a clear idea of the general direction to be followed by Group 6-1 to reflect the content of sections 15, 17, 18, 19 and 21 of Document 177 in terms of regulatory procedures.



- 2) The guidelines set out in Document 177 are only part of a whole set of guidelines to be adopted by Committee 5. Document 177 was thus no more than a preliminary list of guidelines, some of which may be reviewed by Committee 5.

Nevertheless, the Algerian Delegation made every effort to contribute actively to the work of Group 6-1. In the course of discussions, the Algerian Delegation also formulated specific reservations on a number of paragraphs of the texts drafted by Group 6-1, which it might come back to when the texts in question are considered in Committee 6.

The Delegation of France proposed that the last part of point 4 of the section on "Procedures Based on Consultations" be amended as follows:

"If an administration does not communicate to the Board the information within this period, the Board will select a frequency or frequencies, taking account of the information submitted in paragraph [1] [2] and will select itself a frequency or frequencies for those requirements within the seasonal file that do not specify frequencies."

#### Reasons

As it is worded in Document DL/16(Rev.2), the last paragraph of point 4 does not seem to give the Board any instructions as to the action to be taken if an administration fails to reply in the two cases covered in:

- the first indent: "indicate to the Board the intention to use some ...";
- the second indent: "indicate to the Board the intention to use a frequency ....".

These reasons are also valid for the English text:

"...., for THOSE requirements ..... that do not specify ...".

The United States, supported by Canada:

- a) expressed reservation with regard to the deletion of the sentence:

"It shall also indicate, when possible, those requirements which have been confirmed for use in accordance with [ ] and [ ] but were not actually used."

from paragraph [7] of the section on HFBC Requirements File;

- b) proposed the inclusion of provisions in the section on "Procedures Based on Consultations" to the effect that the Board shall initiate specialized monitoring programs to determine the presence of harmful interference caused by unauthorized emissions and shall publish the results of such specialized monitoring programs.

Paragraph [3] of the section on "Procedures Based on Consultations" requires the IFRB to send to each administration the results of calculations made for each test point. Some concern was expressed in the Group on the cost of such distribution of results. Accordingly, square brackets appear in this paragraph.

Some doubt was expressed in the Group on the necessity of paragraph 8 in the section on "HFBC Requirements File". For this reason this paragraph has been put in square brackets.

J.F. BROERE  
Chairman of Drafting Group 6-1

Annexes: 2

ANNEX 1

Section [    ] HFBC Requirements File

1. Administrations shall submit to the IFRB, their operational and projected broadcasting requirements in the bands allocated exclusively to the broadcasting service between 5 950 and 26 100 kHz. These requirements shall be entered in the HFBC requirements file<sup>1</sup> which shall contain:

- requirements which are to be used within the next [    ] years;
- all requirements taken into account in the preparation of a seasonal schedule or during its operation;
- requirements used during the preceding [5] year period.

2. An entry in the HFBC requirements file shall be defined as a requirement indicated by an administration to provide a broadcasting service at specified periods of time to a specified reception area from a particular transmitting station.

3. Each requirement listed in the HFBC requirements file shall contain at least the basic characteristics listed in Appendix 2 together with the indication of the season(s) in which the requirement was or will be used.

4. Each seasonal schedule to be established in accordance with [    ] shall cover one of the seasonal propagation periods indicated below. The month shown in the parentheses indicates the month to be used for the propagation prediction:

- Season D - November - February (January);
- Season M - March - April (April);
- Season J - May - August (July);
- Season S - September - October (October).

Each seasonal [plan or seasonal] schedule shall be implemented at 0100 UTC on the first Sunday of the season concerned.

5. Administrations shall notify the Board, using Appendix 2, of any addition, modification or deletion of a requirement in the HFBC requirements file. Additions, modifications or deletions notified to the Board for a given season shall be taken into account provided that following their examination by the Board they are considered complete.

6. Upon receipt of notices pursuant to paragraph 5 above, the Board shall ensure that the basic information listed in Appendix 2 is given and is correct and shall request the notifying administration to notify the correct or missing information. Following this examination the Board shall indicate those incompatibilities which can be identified without the need for detailed calculations and shall inform the administrations concerned of the results obtained together with any recommendation that may assist in avoiding this incompatibility.

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<sup>1</sup> The initial establishment of the requirements file will be in accordance with Resolution [COM5/1].

7. After the end of each seasonal period, the Board shall enter into the requirements file for each requirement the frequency or frequencies used, together with any indication from administrations on the actual use of the requirement. Requirements already used shall be kept in the HFBC requirement file for a period of five years. No priority shall be derived from this history of use.

8. An administration shall inform the Board when a broadcasting requirement is temporarily withdrawn from service, due to a natural disaster or other calamitous events, for a period of time [not exceeding ...]. The Board shall identify this requirement in the requirements file by an appropriate symbol. When the administration concerned informs the Board that the requirement can again be brought into service and requests the removal of the symbol, the Board shall act in conformity with the request. If a request for the removal of the symbol is not received by the Board within the period of [.....] referred to above, the requirement shall be deleted from the requirements file.

#### Section [    ] Procedures Based on Consultations

1. [The provisions of this section apply to the broadcasting service in the bands [            ].]

1A. Periodically, administrations shall confirm to the IFRB which of their requirements appearing in the HFBC requirements file are to be used in a given season. Administrations may also notify additions and modifications to, or deletions from, the HFBC requirements file. For this purpose, the administrations shall furnish to the Board at least the basic characteristic listed in Appendix 2. When the Board finds that the information submitted by the administration is in conformity with Appendix 2, it shall update the seasonal file accordingly.

[Boxes]  
1,3

Administrations may:

- submit for all or part of their requirements the intended frequency schedule;
- request the Board to select the appropriate frequencies for their requirements.

On the basis of this information a seasonal file shall be established.

1B. The frequencies to be included in the seasonal schedule shall be in conformity with No. 1240 of the Radio Regulations.

2. The closure date for the receipt of the information referred to in [1A] is set by the Board. The Board shall gradually reduce the period between the closure date and the start of season to the minimum practicable.

[RR 17]

2A. If, in spite of reminders by the Board, no reply is received from an administration by the date set by the Board as in paragraph [2], the Board shall consider that the requirements appearing in the requirements file for the season under consideration

are [confirmed and that the requirements without an indication of a frequency shall have the frequencies selected by the Board]/[considered as not confirmed and therefore not included in the seasonal file].

3. The IFRB shall identify for each requirement its appropriate bands and shall calculate the field strength at each test point and the basic broadcasting reliability (BBR) in each of these bands. In so doing account shall be taken of the need to ensure a continuity in the frequency usage as indicated in [-]. The [results obtained relating to the requirements] of an administration shall be sent to it indicating, where appropriate, the number of frequencies required to achieve the required BBR.

[Boxes  
4,6]

4. When sending the results referred to in [3], the Board shall request administrations to provide, within a period of [8] weeks, the following information as appropriate:

- indicate to the Board the intention to use some or all of the frequencies already appearing in the seasonal file;
- indicate to the Board the intention to use a frequency or frequencies other than those in the seasonal file;
- indicate to the Board the frequency or frequencies intended for use for those requirements in the seasonal file that do not have a frequency or frequencies associated with them;
- request the Board to select the most appropriate frequency or frequencies.

[Boxes  
7,8,10]

If an administration does not communicate to the Board the information within this period, the Board will select a frequency or frequencies, taking account of the information submitted in paragraph [1], for those requirements within the seasonal file that do not specify frequencies.

5. Administrations may, following the receipt of the information referred to in [3], communicate additional requirements in the form prescribed in Appendix 2 with the indication or not of the selected frequency. These additional requirements shall be included in the seasonal file.

[Box 9]

6. At the end of the period indicated in [4] the Board shall repeat the calculations referred to in [3] and shall determine the number of appropriate frequencies necessary for each requirement. [The frequencies included in the seasonal schedule shall be limited to one frequency per band per requirement.] If an administration has indicated a number of frequencies for a requirement which exceeds the number resulting from the Board's calculations in application of section [ ] of Appendix [COM4/A, Document 179], the Board shall, in consultation with the administration concerned, reduce the number of frequencies for the requirement in question to the number resulting from the Board's calculations.

[Boxes  
11,12]

7. The Board shall select frequencies for those requirements which do not have the frequencies selected by the administrations or a preset frequency. In so doing, the Board shall take into account the

[Box 13]

need to ensure continuity in frequency usage as indicated in [ ]. The Board shall undertake a calculation of the possible incompatibilities between all requirements and an assessment of the performance of each requirement as indicated in [ ].

8. A draft seasonal schedule shall be prepared for publication indicating for each requirement the frequency or frequencies, notified or selected, and those basic characteristics permitting administrations to easily identify the requirement concerned. This schedule shall be sent to administrations [x] months before the start of the season. At the same time the Board shall also send the detailed results of calculations and performance assessment to each administration relating to its requirements indicating for each requirement a reference to the requirements with which it is incompatible. In addition, the Board shall provide, in a timely manner and on request, all other information deemed necessary by an administration.

[Box 14]

8A. Taking into account all available data the Board shall, where practicable, make recommendations to remove the incompatibilities and shall send them to administrations along with the draft seasonal schedule.

[ In preparing its recommendations to administrations, the Board shall take into account monitoring observations and all other available data. However, when actual frequency usage is apparently not in conformity with the assignments in a submitted schedule, the Board shall seek from the administration concerned confirmation of this information. ]

[ 9. Administrations will, either bilaterally or multilaterally, with the assistance of the IFRB if required, try to solve the remaining incompatibilities that may appear in the draft seasonal schedule. In this coordination, the administrations will take into consideration the principles stated in paragraph 4.1 of the Report to the Second Session. ]

[Box 15]

10. Changes in the transmission characteristics resulting from these consultations or decided unilaterally by the administration, with the view to eliminate or reduce the incompatibilities, shall be notified to the Board as soon as possible but no later than [ ] weeks following the date of publication of the draft seasonal schedule.

[Box 16]

[ 11. Administrations may, at this point, submit new additional requirements to the Board, indicating their frequencies if they so desire. ]

[Box 17]

[ 12. Taking into account information submitted under steps 16 and 17, the Board makes the compatibility analysis. ]

[Box 18]

[ 13. Modifications to the seasonal schedule after the start of the season are submitted to the Board. ]

[Box 21]

14. For changes notified in accordance with [13], the Board shall apply the same procedure as that specified in [6]. Such revisions to the seasonal schedules shall be published in the IFRB weekly circulars.

[Box 22]

**Section [    ] Record of Seasonal Usage**

15. After the end of each seasonal period, the Board shall update the requirements file to reflect the actual usage during the season as notified to the Board. Those assignments which the administrations found in practice to be unsatisfactory shall be notified to the Board and indicated in the requirements file by an appropriate symbol.

16. Upon request, the IFRB shall make available to administrations the information on frequency usage during the season, on computer tape or any other machine readable form.

**Section [    ] Miscellaneous Provisions**

17. The Technical Standards used by the Board when applying the provisions of this Article should be based not only on the factors listed in No. 1454 but also on the experience gained by the Board in the application of the provision of this Article (see also Resolution COM6/1).

18. With a view to the ultimate evolution of compatible technical plans for the frequency bands concerned, the Board shall take all necessary steps to carry out engineering studies on a long-term basis. For this purpose, the Board shall use all information made available to it on frequency usage in the application of the procedure prescribed in this Article. The Board shall also keep administrations informed of the progress and results of such studies at regular intervals.

19. In applying the provisions of Article 22 of these Regulations, problems of harmful interference which may arise in frequency usage in the bands concerned shall be resolved by administrations by exercising the utmost goodwill and mutual cooperation and by giving due consideration to all the relevant technical and operational factors involved.

ANNEX 2

9. Administrations shall endeavour, bilaterally or multilaterally, to resolve the remaining incompatibilities in the draft seasonal schedule. In this coordination, the administrations will take into consideration the principles stated in section [ ]. If required, the assistance of the Board may be requested.

[Box 15]

11. Administrations may at the same time notify additional requirements which shall be taken into account in the preparation of the seasonal schedules. [The Board shall examine these additional requirements in accordance with [6].]

[Box 17]

12. Using the information received in application of [10] and [11] the Board shall apply the calculation procedure described in [7] and shall prepare for publication the seasonal schedule to be issued to the administrations not later than [x] months before the beginning of the season.

[Box 18]

13. Changes in the seasonal schedule shall be notified to the Board as soon as they can be forecast.

[Box 21]

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COMMITTEE 6

NOTE FROM THE CHAIRMAN OF THE AD HOC GROUP  
OF THE PLENARY TO THE  
CHAIRMAN OF COMMITTEE 6

1. The text of the modification to Note 15) of Appendix 7 (Document 176) has been considered and is felt to be appropriate.

2. The definitions for

- Audio-frequency (AF) signal-to-interference ratio,
- Audio-frequency (AF) protection ratio, and
- Radio-frequency (RF) protection ratio

to be found under item 4 of Document 143, page 2 (Document 166 on page B.4/2, item 4) are felt to be unnecessary and should be deleted from the text. The other definitions under that item are felt to be appropriate and should be kept in their present form.

3. Item 2.2 of Part B of Document 179 (page 3) should be modified as follows:

"2.2 Frequency tolerance

The frequency tolerance shall be  $\pm 10$  Hz\*.

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\* See Note 21) to Appendix 7 of the Radio Regulations."

J. RUTKOWSKI  
Chairman of the ad hoc Group  
of the Plenary

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COMMITTEE 6

NOTE BY THE CHAIRMAN OF COMMITTEE 5 TO THE  
CHAIRMAN OF COMMITTEE 6

Committee 5, at the request of Committee 4, considered the utilization of the OBR Concept and decided not to use it for the purposes of this Conference.

C.T. NDIONGUE  
Chairman of Committee 5

COMMITTEE 2

FIFTH REPORT OF THE WORKING GROUP  
OF COMMITTEE 2  
(CREDENTIALS)

The Working Group of Committee 2 held a fifth meeting on  
2 March 1987. It examined the credentials of the following delegations :

(In French alphabetical order)

Ecuador  
Libya (Socialist People's Libyan Arab Jamahiriya)  
Sri Lanka (Democratic Socialist Republic of)

a total of 3 delegations

These credentials are all in order.

S.K. CHEMAI  
Chairman of Working Group C2-A

AMENDMENTS TO THE  
REPORT OF COMMITTEE 2 TO THE PLENARY MEETING

Following the oral report by the Chairman of Committee 2 to the ninth Plenary Meeting the following changes should be made in the annex to Document 215.

Section 2

Insert CENTRAL AFRICAN REPUBLIC

Section 3

Delete \*CENTRAL AFRICAN REPUBLIC

S.K. CHEMAI  
Chairman of Committee 2

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 40.

2. Meetings

The Committee met twice, on 3 February and 2 March 1987.

At its first meeting, it set up a Working Group consisting of the Chairman and Vice-Chairman of the Committee and one delegate from Canada, from the Federal Republic of Germany, and from Indonesia to verify delegations' credentials in accordance with Article 67 of the International Telecommunication Convention, Nairobi (1982).

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 verify the credentials received after the date of the present Report and to submit their conclusions to the Plenary Meeting on the matter.

S.K. CHEMAI

Chairman of Committee 2

Annex : 1

ANNEX

1. Credentials found to be in order, deposited by the delegations of countries having the right to vote

(In French alphabetical order)

Afghanistan (Democratic Republic of)  
Albania (Socialist People's Republic of)  
Algeria (People's Democratic Republic of)  
Germany (Federal Republic of)  
Antigua and Barbuda  
Saudi Arabia (Kingdom of)  
Argentine Republic  
Australia  
Belgium  
Byelorussian Soviet Socialist Republic  
Botswana (Republic of)  
Bulgaria (People's Republic of)  
Burkina Faso  
Cameroon (Republic of)  
Canada  
Chile  
China (People's Republic of)  
Cyprus (Republic of)  
Vatican City State  
Colombia (Republic of)  
Korea (Republic of)  
Côte d'Ivoire (Republic of)  
Cuba  
Denmark  
Egypt (Arab Republic of)  
United Arab Emirates  
Spain  
United States of America  
Finland  
France  
Ghana  
Greece  
Hungarian People's Republic  
India (Republic of)  
Indonesia (Republic of)  
Iran (Islamic Republic of)  
Iraq (Republic of)  
Iceland  
Israel (State of)  
Italy  
Japan  
Jordan (Hashemite Kingdom of)  
Kenya (Republic of)  
Kuwait (State of)

Lesotho (Kingdom of)  
Libya (Socialist People's Libyan Arab Jamahiriya)  
Luxembourg  
Madagascar (Democratic Republic of)  
Malaysia  
Maldives (Republic of)  
Malta (Republic of)  
Mexico  
Monaco  
Mongolian People's Republic  
Norway  
New Zealand  
Oman (Sultanate of)  
Pakistan (Islamic Republic of)  
Papua New Guinea  
Paraguay (Republic of)  
Netherlands (Kingdom of the)  
Philippines (Republic of the)  
Poland (People's Republic of)  
Portugal  
Qatar (State of)  
Syrian Arab Republic  
German Democratic Republic  
Democratic People's Republic of Korea  
Ukrainian Soviet Socialist Republic  
Romania (Socialist Republic of)  
United Kingdom of Great Britain and Northern Ireland  
Rwandese Republic  
Senegal (Republic of)  
Singapore (Republic of)  
Somali Democratic Republic  
Sri Lanka (Democratic Socialist Republic of)  
Sweden  
Switzerland (Confederation of)  
Suriname (Republic of)  
Swaziland (Kingdom of)  
Tanzania (United Republic of)  
Czechoslovak Socialist Republic  
Thailand  
Tunisia  
Turkey  
Union of Soviet Socialist Republics  
Uruguay (Eastern Republic of)  
Venezuela (Republic of)  
Viet Nam (Socialist Republic of)  
Yugoslavia (Socialist Federal Republic of)  
Zambia (Republic of)  
Zimbabwe (Republic of)

Conclusion : The delegations of these countries are entitled to vote and to sign the Final Acts.

./..

2. Credentials found to be in order, deposited by the delegations of countries which do not have the right to vote (see Document 22 + Rev.)

Angola (People's Republic of)  
Austria  
Brazil (Federative Republic of)  
Burundi (Republic of)  
Ecuador  
Gabonese Republic  
Gambia (Republic of the)  
Guinea (Republic of)  
Honduras (Republic of)  
Ireland  
Liberia (Republic of)  
Mali (Republic of)  
Morocco (Kingdom of)  
Mauritania (Islamic Republic of)  
Niger (Republic of the)  
Togolese Republic  
Yemen Arab Republic  
Yemen (People's Democratic Republic of)

Conclusion : The delegations of these countries are not entitled to vote,  
but may sign the Final Acts.

3. Delegations attending the Conference which have not deposited credentials

Bahrain (State of)  
\*Bangladesh (People's Republic of)  
\*Central African Republic  
Nigeria (Federal Republic of)  
\*Peru  
\*Zaire (Republic of)

Conclusion : The delegations of these countries are neither entitled to  
vote nor to sign the Final Acts.

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\* Appears in the list of countries which have  
lost their right to vote (see Document 22 + Rev.)



PLENARY MEETING

## MINUTES

## OF THE

## EIGHTH PLENARY MEETING

Saturday, 28 February 1987, at 0900 hrs

Chairman: Mr. K. BJÖRNSJÖ (Sweden)Subjects discussed:Documents

- |   |       |
|---|-------|
| 1. Oral reports by the Chairmen of Committees   | -     |
| 2. Fifth series of texts submitted by the Editorial Committee for first reading (B.5) | 187   |
| 3. Approval of the minutes of the sixth Plenary Meeting                               | 133   |
| 4. Establishment of an ad hoc Group to deal with technical matters in abeyance        | DL/27 |
| 5. Calendar of work for the remainder of the Conference                               | -     |



1. Oral reports by the Chairmen of Committees

1.1 Committee 2

1.1.1 The Chairman of Committee 2 said that, since the last Plenary Meeting, the Committee's Working Group had held a fourth meeting on 27 February 1987 and found the credentials of a further five delegations to be in order, as recorded in Document 204.

1.2 Committee 3

1.2.1 The Chairman of Committee 3 said that its third meeting, held on 26 February 1987, had examined the budgetary position with regard to estimated expenditure on the Conference as at 23 February and had found that a margin of some 64,000 Swiss francs still remained. Further inputs were still available from some permanent organizations.

1.2.2 The delegate of Pakistan asked if the estimates took account of the extension of the Conference until 8 March 1987.

1.2.3 The Secretary-General assured the Conference that its extension until 8 March was accountable within the budget, although he could not say to what extent the estimated margin of 64,000 Swiss francs would be utilized.

1.3 Committee 4

1.3.1 The Chairman of Committee 4 said that three minor technical problems had been raised during the consideration of its proposals in Committee 6. More similar problems might arise and it was also necessary to re-examine the definition of the radio-frequency protection ratio worked out by the First Session of the Conference in view of the seventh Plenary Meeting's finding that it was not in accordance with the Radio Regulations on the subject. Since Committee 4 had finished its work, he was proposing the establishment of an ad hoc Working Group of the Plenary Meeting to deal with such matters.

1.3.2 The Secretary-General, replying to an expression of concern by the delegate of Algeria, said that the establishment of such an ad hoc Working Group had been placed on the agenda because that was the correct practice for dealing with technical matters raised after Committee 4 had completed its proceedings.

1.4 Committee 5

1.4.1 The Chairman of Committee 5 said that since the last Plenary Meeting, all of the Committee's Working Groups had completed their work and the documents produced had been examined by the Committee. Some reservations had been recorded and decisions on certain questions deferred until the Committee had a better view of the overall solution to its task. An ad hoc Working Group had been established with precise terms of reference to make recommendations on the overall solution and on the programme to be adopted by the Conference. The ad hoc Working Group had held its first meetings on 27 February 1987 and considered various problems relating to the improvement and implementation of the HFBC Planning System and Article 17 of the Radio Regulations. The 21 delegations constituting the Working Group had shown that they appreciated the responsibility and trust placed in them to produce suitable results.

1.5 Committee 6

1.5.1 The Chairman of Committee 6 said that it had met once since the last Plenary Meeting and examined five reports from Working Group 6-A, whose mandate had been to consider Committee 4 documents. The reports contained Recommendations on relative radio-frequency protection ratio values for use in SSB systems, on the propagation prediction method to be used in the HF bands for the broadcasting service, on the system planning parameters for the use of DSB systems in the HF bands for the broadcasting service and an Appendix 1 document containing an appendix to the Radio Regulations with DSB and SSB system specifications. The texts had been submitted to Committee 7 with slight emendations.

The two Drafting Groups set up to draft regulatory provisions for improving Article 17 of the Radio Regulations and HFBC Planning System procedures still had much to do and it was not certain that they could complete their work in time for consideration by the Committee on 2 March 1987.

1.6 Committee 7

1.6.1 The Chairman of Committee 7 said that, in addition to the text next on the agenda, the first two series of texts to be submitted to the Plenary Meeting for second reading had now been circulated (Documents 164(Rev.1) and 186).

2. Fifth series of texts submitted by the Editorial Committee to the Plenary Meeting for first reading (B.5) (Document 187)

Resolution COM6/1

2.1 considering a) to g)

2.1.1 The representative of the IFRB (Mr. Berrada) said, and it was agreed, that the words "HF Broadcasting" in the title of the draft Resolution should be expanded to read "the HF Broadcasting Service in its Exclusive Bands".

2.1.2 The delegate of Qatar proposed, and it was agreed, that in considering b), line 3, the reference to "the field strength prediction method" should be amended to "the propagation prediction method".

2.1.3 The delegate of the Netherlands pointed out the need to insert the words "those used in" immediately before the amendment just made.

2.1.4 The delegate of Poland said that the reference in brackets at the end of considering d) might cause confusion, since pronounced ducting was not a phenomenon of HF broadcasting. The reference should therefore be deleted.

2.1.5 Following a discussion in which the delegates of Canada, the United Kingdom, the Federal Republic of Germany, Tanzania and Brazil, the Chairman of Committee 6, the representative of the IFRB (Mr. Berrada) and the Secretary-General took part, the Director of the CCIR proposed, and it was agreed, that the reference be deleted, subject to indication being made that that part of the Radio Regulations quoted (No. 1454) had been omitted.

2.1.6 The Chairman of Committee 7 pointed out that there were still square brackets around the reference to No. 1770 of the Radio Regulations in considering e).

2.1.7 The Chairman of the IFRB said that since Resolution COM6/1 was intended to cover both the HFBC Planning System and Article 17 procedures, considering e) should be amended to remedy the omission of any reference to the Board's past experience in broadcasting planning and to make it clear that more than one process was involved.

2.1.8 The delegate of Pakistan said that the free-for-all allowed under Article 17 could not be considered a planning process.

2.1.9 The delegate of the United Kingdom said that whether the Article 17 procedure was a planning process or not, No. 1770 of the Radio Regulations referred to the IFRB profiting from experience gained in applying it. Since Article 17 was likely to survive in modified form, considering e) should be worded so as to cover both it and the HFBC Planning System.

2.1.10 Following a discussion in which the delegates of Australia, Canada, and the Soviet Union, the Chairman of Committee 7 and the Secretary-General took part, it was agreed to place the whole of considering e) in square brackets pending reconsideration and redrafting by Committee 6.

## 2.2. resolves

2.2.1 The Chairman of the IFRB, in reply to a question by the delegate of Algeria, said that the IFRB would have no problem in implementing the provisions of resolves 3, 4, and 5, although their effect might be to create additional work and duplicate some already carried out.

2.2.2 The representative of the IFRB (Mr. Berrada), replying to a question by the delegate of Yugoslavia about resolves 4, said that the issues involved were highly complex, involving questions such as what the status and mandate of a consultative meeting would be and what sort of action - application of provisions or convening of further meetings - should be proposed by the Board.

2.2.3 The Secretary-General said that those points could well involve constitutional issues, particularly with regard to the status and mandate of consultative meetings.

2.2.4 The Chairman of Committee 6 said that the request to that Committee by Committee 4 in Document 91 reflected a desire for some rules to govern any changes in parameters in the post-conference period. Committee 6 had felt that some consultative meetings would be necessary prior to any such changes. In the original draft of resolves 4, the term used, within square brackets, had been "information meeting/consultative meeting of experts". The term in the current text had been adopted because many administrations had expressed doubts about being able to attend meetings.

2.2.5 The delegates of Algeria, Thailand and the Director of the CCIR having proposed changes to the texts of resolves 3, 4 and 5, the Chairman suggested that in view of the constitutional questions raised, perhaps the entire draft Resolution should be referred back to Committee 6.

2.2.6 The delegate of Mexico supported that suggestion.

2.2.7 The delegate of the United States supported by the delegates of Zimbabwe, Australia and Botswana said it was a matter for grave concern that a document, amply discussed in Committee and Working Group and virtually free from square brackets, should be referred back from a Plenary to a Committee at such a late stage, particularly when the considering part, with minor amendments, had been approved. His Delegation understood, after consulting informally with some of the Secretariat, that the draft text was not incompatible with the Convention's provisions. Perhaps it would be better to establish a small Group of the Plenary to consider the outstanding problems rather than refer the whole text back to Committee 6.

2.2.8 The Secretary-General said he was not aware of any discussion on the subject with the Secretariat. With regard to the observation made by the Director of the CCIR about resolves 5, a number of issues would require further study if it was a question of something to be considered outside a CCIR Plenary Assembly, whose decisions would have been based on widely representative discussion. On matters of procedure, the Secretariat did of course have a responsibility to provide guidance.

2.2.9 The Chairman of Working Group 6 ad hoc 2 stressed that nothing in the draft text was intended to influence the CCIR's mandate. He felt it would be quite suitable to replace the word "reconsideration" by "further study". He could support the proposal to form a small Group, in which the IFRB should be invited to participate, but only to deal with considering e) and resolves 4.

2.2.10 The delegate of Algeria said that his Delegation would prefer to use Resolution No. 35 and apply the provisions of No. 1001 of the Radio Regulations, and saw no necessity for the draft Resolution under discussion. However, his Delegation reiterated its proposals on the text and could support the Director of the CCIR about resolves 5. It also felt that resolves 3 should be placed within square brackets. Finally it was opposed to setting up a Group.

Following the suggestion of a number of further draft changes, the Chairman proposed that the entire draft Resolution contained in Document 187 should be referred back to Committee 6, the texts of resolves 3, 4 and 5 being placed within square brackets. In response to an observation by the Chairman of Working Group 6 ad hoc 2, he suggested that Committee 6 could look at the document again at its next meeting.

It was so agreed.

3. Approval of the minutes of the sixth Plenary Meeting (Document 133)

The minutes of the sixth Plenary Meeting were approved as amended (see Corrigendum 1 to Document 133).

4. Establishment of an ad hoc Group to deal with technical matters in abeyance (Document DL/27)

4.1 The delegate of Thailand considered that other matters should also be dealt with by the proposed Group and therefore advocated deletion of the word "technical".

4.2 The Chairman pointed out that the ad hoc Group was necessary since Committee 4 was no longer in existence. The Chairman of the former Committee 4 expected that the matters outstanding could be dealt with very briefly. The Group should deal with technical matters only and a further Group could be set up, if necessary, for consideration of other matters.

4.3 The delegate of Libya urged that before any ad hoc Groups were set up it was essential to identify the matters which they would deal with.

4.4 The Chairman of Committee 4 explained that three small items were in abeyance and that other technical matters requiring solution might arise from the work of Committees 5 and 6.

4.5 The delegate of Algeria proposed that the Group's terms of reference should read "remaining technical matters outstanding from the work of Committee 4".

4.6 The Secretary-General explained that the Steering Committee had decided that the establishment of an ad hoc Group was the correct procedure to adopt since Committee 4 had been dissolved and was therefore unable to consider the remaining technical matters. It was therefore up to the Plenary to establish such a Group. The words "5 and 6" could be deleted if that would provide satisfactory terms of reference.

4.7 The delegate of the USSR supported the creation of an ad hoc Group as proposed and preferred the terms of reference with the amendment suggested by the Secretary-General.

4.8 The Chairman suggested that the Group should be established with terms of reference as suggested by the Secretary-General, supported by the USSR, and with Mr. Rutkowski as its Chairman.

It was so decided.

#### 5. Calendar of work for the remainder of the Conference

5.1 The delegates of Brazil, Mexico, Venezuela, Chile, Pakistan and Colombia expressed their concern that the Conference had been extended by two days and urged that every possible effort should be made to intensify the meeting timetable so that work could be completed on schedule. Any extension would cause great inconvenience.

5.2 The delegate of Papua-New Guinea also expressed concern at the extension but asked that in any revised timetable an adequate midday break should be allowed to enable delegations to make the essential contacts with their countries.

5.3 The Secretary-General stressed that the availability of financial and human resources was limited and that the schedule proposed was the best practical solution to complete the work of the Conference, on the assumption that various delicate matters under discussion were resolved satisfactorily. When the Steering Committee met again it would, nevertheless, review the matter in the light of the comments made.

He reminded the meeting that the planned duration of the Conference was five weeks for a conference which commenced on Monday, 2 February 1987, and that in practice the Final Acts had been signed during the last weekend of conferences. At the request of some delegations, a circular telegram was being sent to administrations to notify them of the proposed calendar.

The meeting rose at 1140 hours.

The Secretary-General:

R.E. BUTLER

The Chairman:

K. BJÖRNSJÖ

COMMITTEE 3

SUMMARY RECORD  
OF THE  
FOURTH MEETING OF COMMITTEE 3  
(BUDGET CONTROL)

1. Paragraph 2.7

Amend the sentence beginning on the eleventh line to read:

"At an earlier meeting in the Conference, ..."

2. Paragraph 2.15

Amend the intervention by the delegate of the United States to read:

"... consideration to the totality of additional on-going costs of running ..."

3. Paragraphs 2.36 and 2.37

Replace the word "informal" by "information" in the second line.

COMMITTEE 3

SUMMARY RECORD  
OF THE  
FOURTH MEETING OF COMMITTEE 3  
(BUDGET CONTROL)

Monday, 2 March 1987, at 0905 hrs

Chairman: Dr. M.K. RAO (India)

Subjects discussed:

1. Draft report of the Budget Control Committee to the Plenary Meeting
2. Financial implications of decisions taken by the Conference

Documents

DT/63(Rev.1)

139, 191, 190,  
202, 209



1. Draft report of the Budget Control Committee to the Plenary Meeting  
(Document DT/63(Rev.1))

1.1 The Chairman drew attention to the amendments in the revised document, particularly the last sentence in paragraph 1 which took account of comments made by the United Kingdom Delegation at the Committee's previous meeting.

1.2 The Secretary added that there had been minor modifications to words and figures, such as the readjustments necessary to bring the situation up to 16 February 1987, and the addition of Annex 1. Section 7 still had to be completed.

1.3 The Chairman of the IFRB said that it would be useful, in view of the efforts made by the IFRB, if some comment could be made on the facilities provided by the Board for the benefit of administrations, particularly the computer and other facilities on the lower floor.

1.4 The delegate of Algeria, referring to Section 7, asked what upper limits had been set for the Conference and whether they could be detailed in a separate document.

1.5 The Secretary said that all the details were contained in the document. Column 1 in Annex 3 showed the limit on expenditure, which had been set at 10 million Swiss francs and column 2 indicated the actual expenditure, which was detailed in Annexes 1, 2.1, 2.2 and 2.3. Annex 1 showed the expenditure at 23 February 1987, indicating that the budget would not be exceeded, and Annex 3 the difference between the limit on expenditure and actual expenditure, namely the sum of 879,400 Swiss francs which would be used for post-conference work. The Chairman added that paragraph G (General Remarks) of the Information Note in Document 209 gave additional information which should help to clarify the situation. In response to a further question, he said that Section 7 would be partially completed after the current meeting and the remainder after the Committee's fifth meeting.

1.6 The delegate of the United States asked whether the Chairman intended to deal with the substance of paragraph 1.3 of Resolution No. 48 referred to in Section 7. The Chairman said that the Secretariat would prepare a Note for the Plenary on that subject because the benefits could not really be assessed by Committee 3. The Deputy Secretary-General added that that aspect was always difficult to deal with since decisions were usually taken at the last moment. However, the Secretariat would consider the question raised by the delegate of the United States to the extent possible.

1.7 The Secretary said that Sections 1 to 6 were traditional items in the terms of reference of Committee 3 set by the Plenipotentiary Conference. However, the Plenipotentiary Conference had given a special task to Committee 3, namely to consider the additional expenditure resulting from decisions of the Conference. Those decisions would only be known at the very end. Section 7 therefore contained for the moment an extract from Resolution No. 48 and would be completed at the appropriate time.

1.8 The delegate of Algeria then asked whether the final item in Annex 3 (intersessional work, cost of Second Session, immediate post-conference work) took account of the decision by the Administrative Council at its 41st session to maintain the 4 posts referred to at the beginning of the report.

1.9 The Secretary said that the Administrative Council had made provision in the 1987 budget for the possible extension of those 4 posts up to the end of 1987. However, from 1 July 1987 the expenditure incurred would be included in a special section of the budget "Implementation by the IFRB of the decisions of Administrative Conferences"; from that date, therefore, the extension of the 4 posts would not come under the Conference budget itself.

1.10 The delegate of the United Kingdom asked for clarification on the "financial provisions approved by the Budget Control Committee" in Section 7. The Secretary said that the explanation could be found in Document 209 which indicated the provisions made by the Administrative Council when it considered that the four P.4 posts might be necessary. Page 2 of that document showed the IFRB's estimate for the posts, as well as the credit allowed for them for the period 1 July 1987 to 31 December 1987.

In the light of those explanations, the Report of the Budget Control Committee to the Plenary was approved.

2. Financial implications of decisions taken by the Conference  
(Documents 139, 191, 190, 202, 209)

2.1 The delegate of Algeria proposed that Document 139 be withdrawn from the agenda because the Conference had not yet taken any decision on the matter, which was being referred to Committees 5 and 6. The delegates of Kenya, Mexico, Oman and Saudi Arabia supported that proposal, as did the delegate of India who proposed in addition that the section of Document 209 relating to Document 139 should not be considered either.

2.2 The delegate of the United States observed that the purpose of the Committee was to evaluate the potential budgetary impact of decisions under consideration by the Conference. Document 209 included the proposed creation of a Group of Experts as well as the improvement of the HFBC Planning System and the improvement to Article 17, none of which had been adopted by the Conference. As he saw it, Document 139 was not a document on which a decision was to be taken but a reference document to be used in the Committee's evaluation of Document 209.

2.3 The delegate of the United Kingdom supported that view. Nearly all the work of estimating the implications of decisions had to be hypothetical at the present stage of the Conference when so few decisions had been taken; he could not therefore support the proposal made by Algeria.

2.4 The delegate of Italy said that the Committee did not have to discuss the substance of Document 139 but should evaluate the expenditure aspect. If it did not consider the document at its present meeting, he was afraid that it would not have another opportunity to do so. The delegates of France and Japan shared those views.

2.5 The Deputy Secretary-General pointed out that Document 209 was an information note that had been presented for clarification purposes and to give an idea of what will be the financial implications of the Conference decisions. When Committees 5 and 6 had taken a decision on Document 139, the Secretariat would submit the budgetary implications of that decision to Committee 3.

2.6 The Chairman suggested that the Committee should take note of the information provided in Document 139, that the section of Document 209 relating to Document 139 be placed in square brackets for the time being, and that only the remainder of Document 209 be discussed at the present meeting.

2.7 The delegate of the United Kingdom said that his Delegation would have difficulty with that approach. It was true that the matters discussed in Document 139 and the relevant material in Document 209 were all hypothetical, but they were not the only hypothetical matters which might have cost implications, nor was it the only one where the details were not yet clear. The possible redesign of software for the Planning System and the possible application of that Planning System in the future were also matters on which the Conference had not yet taken a decision and, as in the case of the Group of Experts, perhaps never would. Those matters, too, would therefore have to be looked at in the same way. There was in fact a precedent for discussing the question of the Group of Experts. At an earlier meeting of Committee 3, the Algerian representative had gone into some detail in discussing the accuracy of estimates put forward for man hours on software redevelopment for Article 17, thereby accepting that it was appropriate to discuss cost implications on a matter which also was hypothetical. The Committee could of course decide to put all those hypothetical cost implications into abeyance and come back to them at the end of the Conference, but at that time it would be too late to fulfil one of the functions of Committee 3, which was to give reasonably accurate ideas to the Administrative Council as to what the costs might be. As he saw it, all the hypothetical matters had to be discussed, or none at all.

2.8 The delegate of Algeria said that if the IFRB had presented estimates on work to be carried out as a result of decisions of the Conference, they would not all have been hypothetical because, at the time of the previous meeting of the Budget Control Committee, Committee 5 had approved a certain number of documents containing guidelines for Committee 6, which contained more tangible indications than did Document 139 which had not been considered by any other Committee. He repeated that he thought it inappropriate for Committee 3 to consider the document at its present meeting, even though some delegations believed that it would have an important bearing on the Conference. He could, however, support the Chairman's proposal to note Document 209, and to leave aside Document 139 and the relevant part of Document 209 placed in square brackets.

The Algerian Delegation regretted that the Secretariat had not fully assessed the repercussions of a document that had been considered in the Plenary and transmitted to Committee 6 which made provision for the IFRB to organize meetings of experts to discuss the revision of technical standards. The Conference was sufficiently advanced to be able to consider such a possibility and the IFRB should have informed the Conference who was to bear the costs.

2.9 The Chairman asked whether the Committee could agree to his suggestion to note the existence of Document 139 and the estimated expenditure provided for it in Document 209 and place them in square brackets for discussion at the next meeting of the Committee.

2.10 The delegate of the United Kingdom expressed his agreement to that approach, provided that there was time to discuss the matter at the Committee's next meeting. The United Kingdom Delegation - like that of Algeria - regarded all the matters not yet decided by the Conference as purely hypothetical.

The Committee took note of Document 139 and the relevant part of Document 209 placing them in square brackets for discussion at the next meeting of Committee 3.

Document 191

2.11 The delegate of Algeria, referring to the last two sentences of the introduction, said that his Administration did not find it acceptable that the Conference prior to its closure could not have before it full information on the financial implications of its decisions. The Chairman of the IFRB, in reply, said that it was standard practice for the Board to provide preliminary estimates of costs of intersessional or post-conference work and for the situation to be revised before the costs were submitted to the Administrative Council. He appreciated the points made by the delegate of Algeria, but in a system as complicated as the HFBC Planning System it was clearly not possible in the time available before the end of the Conference to provide detailed financial estimates. The delegate of Algeria said that he could not accept that the document provided no overall or point-by-point evaluation of the work that would be involved in the implementation of the various hypotheses presented in the annexes.

2.12 The delegate of the United Kingdom recognized that it was impossible for the IFRB to give a detailed breakdown of expenditure before the Conference had taken final decisions. Nonetheless, information over a broader area could be made available by the next meeting of the Committee. Referring to Document 191, he said that there might be some confusion arising from the term "immediate post-conference work" used on pages 1-3, as it seemed to involve a longer period than that covered by the same term in earlier IFRB reports.

2.13 The Chairman of the IFRB confirmed that a longer period of immediate post-conference work was envisaged in Document 191 than previously. It had initially been expected that the work following the Conference would involve implementation of the HFBC System, with only minor changes. However, the present situation meant that implications would go beyond what had originally been expected for post-conference costing. It should be borne in mind that immediate post-conference work would come under Section 11.4 of the budget and comprised one-off tasks. The long-term implementation of procedures established by the Conference would come under Section 18.

He expressed doubts about the value of revising Document 191 at the present stage - although some aspects could perhaps be explained more clearly - without any movement within the Conference towards basic decisions.

2.14 The Deputy Secretary-General, referring to Article 80 of the Convention and Resolution No. 48 of the Nairobi Conference, said that the Conference must take steps to ensure that there is a financial basis for its decisions and that will help the Administrative Council to have an idea of the budgetary implications.

2.15 The delegate of the United Kingdom said that in addition to one-off tasks, the decisions taken by the Conference might involve an indefinite series of complex computer runs which would generate substantial expenditure. He asked for estimates of the computer costs for the hardware involved for a series of four seasons for an improved HFBC Planning System, and improved Article 17 and a combination of the two procedures, as such costs could be expected to be quite substantial. The delegate of the United States endorsed that request. The Committee must give consideration to the totality of additional organizing costs of running a dual Planning System and must obtain as much information as

possible. The Chairman of the IFRB pointed out that in addition to computer costs, considerable expenditure would be incurred in correspondence with administrations if a modified Article 17 procedure were adopted. He further pointed out that an improved Article 17 would involve more computer runs than would the improved HFBC Planning System since administrations had two opportunities to change or insert additional frequencies. The Deputy Secretary-General drew attention to the footnote on page 3 of Document 209, giving operational costs in 1986 for existing Article 17.

2.16 The delegate of Algeria agreed with previous speakers who had requested estimates for the three systems by the next meeting. Such indications had financial implications not only for the Conference budget but also for the budget of the Union and administrations were entitled to know what resources would be needed. Further details to determine first or second order costs should be made available.

2.17 In response to a request from the delegate of Botswana to provide comparative figures for items involving software development, the Chairman of the IFRB pointed out that in view of the changes being introduced, existing modules could no longer be used or had been changed completely, which meant that it would be difficult to provide such comparative information. All relevant work carried out in the intersessional period had been taken into account and incorporated in the estimates. The delegate of Botswana pointed out that the annexes to the document gave the impression that it would be necessary to start work afresh with completely new software. He therefore insisted that more information should be provided to show where and to what extent modifications would be required, particularly in the context of the time-scale established. The delegate of Yugoslavia agreed that an estimated two-and-a-half year period of work, as compared to the one-and-a-half years in which intersessional work had been undertaken, gave the impression that work was to be started completely afresh, when in fact what was being attempted was an improvement in the System. While the IFRB had estimated that a two-and-a-half year period would be required, his Delegation had been considering a period more in the order of one year. The delegates of Kenya, Syria, Tanzania, and Iraq endorsed the comments made the previous two speakers.

2.18 The delegate of Algeria observed an apparent contradiction since IFRB was arguing that it was impossible to give precise estimates for the work bearing in mind that the Conference had not yet taken clear decisions in that respect, while action was being proposed in connection with the scenarios envisaged by the Conference as though something completely new was involved which required almost twice as much work in terms of modules, time, software and costing, as had been undertaken after the First Session. Moreover, it should not be overlooked that the one-and-a-half year period after the First Session included time for staff recruitment, training and adaptation, which would not need to be repeated. Like previous speakers, he was very concerned about the uncertainties of the document.

Document 191 seemed to maximize pessimistic scenarios as a basis for work. It was the responsibility of administrations and organs of the Union, however, to consider the work of the Union more optimistically with a view to leading the international telecommunication community towards the achievement of its objectives. According to his Delegation's estimates, it should be possible to reduce the time calculated in the document by 60 or 80%. Generalities were not satisfactory; greater details in terms of material and manpower, not only of the HFBC team but also from the traditional IFRB resources, were required for the programme of work to be completed as soon as possible if the Conference was not to find itself in a dangerous position of stalemate.

2.19 The Chairman of the IFRB said it was clear from the preceding statements that a number of delegations assumed that the Board had considerably inflated its requirements for post-conference work. Yet that was not true: the IFRB was fully aware of its responsibilities, not only to administrations, but also to administrative conferences. There were some perfectly simple explanations of why the time-scale now differed from the one followed for intersessional work.

In the first place, the HFBC team which had carried out that work had been much bigger than one that could possibly be requested for post-conference activities, and that original team had worked all through many week-ends and had put in a great deal of unpaid overtime, to the detriment of the health of certain staff members; there was no way in which that great effort, undertaken in the interests of administrations and completed within the time-limit set by the First Session, could be sustained for another year or even two years.

Secondly, it must be borne in mind that the HFBC System presented by the Board had been very significantly changed. To take only a few examples, a new field strength package would have to be created to take account of the large increase in the number of antennas plus the new test points that had been established in a number of sectors; a new method of computing the BBR must be set up to identify cases where two or three frequencies would have to be used; it would now be necessary to consider clock-time changes, and the Board as yet had no clear idea of how those changes should be taken into account; the simple method of calculating continuity types 1 and 2, developed under Plan 59 and based on the preset frequency concept, could not be applied to the new continuity types adopted; and the incorporation of three types of continuity in the System was a very complicated matter.

In view of those and many other considerable modifications of the System, there was no way, without altering decisions already taken in the subsidiary bodies of Committee 5, of reducing the minimum time-scale to less than two and half years. Indeed, to the best of his understanding, Working Group ad hoc 5 had accepted the fact that, after the Board had examined all the implications and had decided upon the right direction to follow, the HFBC System could not be ready before the end of 1990.

2.20 The delegate of the United Kingdom observed that a distinction must be made between the time that would elapse until the System was ready and the actual man/months or man/years required. It was the second aspect that represented the funds and resources with which Committee 3 should properly be concerned.

It was agreed that the IFRB should submit a document showing clearly the time required for each activity in the scale.

2.21 The Chairman invited the Committee to consider Documents 190 and 202 with reference to CCIR expenditure.

2.22 The delegate of Algeria suggested that HFBC work should be absorbed in the regular activities of the CCIR and that there should be no need to provide for additional expenditure in that organ to implement the decisions of the Conference.

2.23 The delegate of the United Kingdom said that it was for the Administrative Council, not the Conference, to decide on the budget section under which the expenditure would be incurred, but that it was most important for the actual figures of that expenditure to appear in the Committee's report to the Plenary.

2.24 The Deputy Secretary-General pointed out that the Committee still had to decide whether or not to accept the figures in Document 202.

2.25 The representative of the CCIR observed that some funds still remained in the Conference budget for the performance of tasks assigned to the CCIR by Committee 4.

2.26 The delegate of Italy said he could not support the Algerian suggestion, since HFBC work must not be carried out at the expense of the regular activities of the CCIR.

2.27 The delegate of Saudi Arabia said he endorsed the Algerian suggestion provided the expenditure could indeed be covered by the regular CCIR budget.

2.28 The Chairman suggested as a compromise that the CCIR should be requested to review the figures in Document 202 in order to see whether any part of the expenditure might be absorbed by its regular budget.

It was so agreed.

2.29 The Chairman, reverting to Document 209, suggested that a consolidated document should be prepared, incorporating revised versions of Documents 209, 191 and possibly 202.

2.30 The Deputy Secretary-General said that any revision of Document 209 should relate to the figures only and he drew attention to the paragraph at the bottom of page 5 referring to the consequences, adaptation and necessity of certain publications which were still under consideration in Committee 6.

2.31 The delegate of Algeria, referring to section C.1 of Document 209, said that the basis on which the Secretariat had calculated expenditure additional to the regular headquarters budget was not entirely clear. Some further details in that regard would be welcome.

2.32 The Deputy Secretary-General said that the Finance Department would willingly provide the Algerian delegate with any details he might require.

2.33 The delegate of Algeria said it was difficult for all delegations to accept figures without material substantiating the actual operations to be performed. Details were extremely important since they could account for expenditure of some one million Swiss francs over a two-and-a-half year period. Section C.1 should therefore be revised to incorporate all the details of the work to be done by the IFRB, but even then should be left in square brackets until the Conference finally adopted the exact bases of those activities - the volume of work, the number of staff to be recruited and the amount of equipment to be acquired. A number of delegations were not convinced of the need for two-and-a-half years' work because the tasks involved had not yet been clearly enough specified; it might well be that the work could be done in one year and certain current expenses might in fact be considerably below the figures given.

2.34 The Deputy Secretary-General said that when the IFRB revised its estimates of the work it would have to do all the details of headquarters expenditure in that regard that fell within the competence of Committee 3 would be provided. In reply to the Chairman, he said that expenditure on the existing Article 17 procedure was already incorporated in the document, but might be more clearly reflected in the revised version.

2.35 The delegate of the United Kingdom, referring to section G of Document 209, asked that the relevant Administrative Council Decision should be reproduced as an annex to the revised document. The Secretary of the Committee said that the Administrative Council had adopted no formal Decision on the subject referred to in section G. Nevertheless, it would be seen from the Conference budget approved by the Council that the cost of four P.4 posts for the first six months of 1987 was to be charged to that budget, while the cost of those posts during the second half of the year was to be covered by Section 18 of the ordinary budget (Implementation by the IFRB of the Decisions of administrative conferences). The delegate of the United Kingdom said that that situation raised the problem whether the cost of work that remained to be done after the end of 1987 should be charged to the post-conference budget section; he would, however, pursue that question outside Committee 3.

2.36 The Chairman of the IFRB said that another subject to be dealt with in the revised document was that of the informal meetings which would be required, irrespective of the system finally adopted. Those meetings would be similar to those held in the past in collaboration with regional telecommunication organizations to explain the system and its operation to administrations and would be quite distinct from the Group of Experts proposed in Document 139. It should be borne in mind that the cost of such meetings was by no means negligible.

2.37 The delegate of Algeria said that, since the Conference had no document on informal meetings before it, the question should not be taken into consideration at that stage of the proceedings.

2.38 The Chairman of the IFRB said that the reason why no such document had been presented was that the Board had expected the HFBC System to be approved without significant changes. In the present situation, however, when there was still a possibility of the application of an improved HFBC Planning System, of an improved Article 17 procedure or of a combination of the two, further information meetings would be essential.

2.39 The Chairman agreed that the present situation was quite different from that prevailing at the beginning of the Conference. Nevertheless, the IFRB in its revised document should confine its suggestions to information meetings to be held in Geneva, since meetings at the regional level could be held only at the request of administrations and with the approval of the Administrative Council.

2.40 The delegate of the United States said that, although he concurred with the Chairman's views, the financial implications of holding information meetings in the Regions should be covered in some way in the revised document, particularly if the financial implications entailed a supplementary allocation in Additional Protocol I. The Chairman reiterated that the document should refer only to expenditure on information meetings to be held in Geneva.

The meeting rose at 1215 hours.

The Secretary:

R. PRELAZ

The Chairman:

M.K. RAO



COMMITTEE 6

SUMMARY RECORD  
OF THE  
SEVENTH MEETING OF COMMITTEE 6  
(REGULATORY)

Monday, 2 March 1987, at 1330 hrs

Chairman: Mr. R. BLOIS (Brazil)

Subjects discussed:

Documents

- |  |               |
|--|---------------|
| 1. Approval of the summary records of the third, fourth and fifth meetings | 142, 149, 173 |
| 2. Note from the Chairman of the ad hoc Group of the Plenary               | 212           |
| 3. Report of Drafting Group 6-1  | 211           |

1. Approval of the summary records of the third, fourth and fifth meetings  
(Documents 142, 149 and 173)

The summary records of the third (Document 142), fourth (Document 149) and fifth (Document 173) meetings of the Committee were approved.

2. Note from the Chairman of the ad hoc Group of the Plenary  
(Document 212)

2.1 The Chairman invited the Committee to consider Document 212 dealing with modifications to Document 176, Document 166 and a small part of Document 179.

2.2 The delegate of China suggested that the Committee should give some preliminary consideration to the question of where to place the definitions which would not be included in the appendix to the Radio Regulations being prepared by Committee 6.

2.3 The Chairman said that Committee 6 would only deal with definitions pertaining to its work and he assumed that the others could, for instance, be included in a section on definitions in the Final Acts of the Conference. That would be a matter for the Plenary to decide.

2.4 The delegate of the Federal Republic of Germany said that the question had been discussed in Drafting Group 6-2, and a solution had almost been reached.

The Committee noted the Note from the Chairman of the ad hoc Group of the Plenary to the Chairman of Committee 6 (Document 212).

3. Report of Drafting Group 6-1 (Document 211)

3.1 The Chairman reminded the Committee of the terms of reference of Drafting Group 6-1 as given in Document 178.

3.2 The Chairman of Drafting Group 6-1 gave a general introduction to the report of the Drafting Group (Document 211), stressing that it had worked only from the point of view of the existing Article 17 and not from that of the Planning System and that it had used Document 177 as the basis for its work. He drew attention to the reservations formulated by the Delegations of Algeria, and of the United States, supported by Canada, and the proposal made by the Delegation of France.

3.3 The Chairman thanked the Chairman of Drafting Group 6-1 for his cooperation in chairing successfully a Drafting Group dealing with such a difficult subject.

3.4 The delegate of the United States said that his Delegation could now withdraw its reservation a).

3.5 The delegate of Canada said that his Delegation could withdraw its reservations a) and b).

3.6 The Committee noted the withdrawal of those reservations.

Annex 1

Section [ ] HFBC requirements file

3.7 The Chairman of Drafting Group 6-1 said that in paragraph 1 and its footnote the Drafting Group had tried to indicate how the requirements file would be established and what it should contain. The first indent in the paragraph reflected future requirements, the second indent present requirements and the third indent past requirements. He drew attention to the square brackets in the first and third indents.

3.8 The delegate of Brazil proposed that in paragraph 1 the words "their operational and projected broadcasting requirements" should be replaced by "their operational requirements and those requirements that are expected to become operational".

It was so agreed.

3.9 In reply to a question by the delegate of Iraq, as to the date by which requirements should be submitted to the IFRB, the Chairman of Drafting Group 6-1 said that, as indicated in the footnote, the initial establishment of the requirements file would be in accordance with Resolution COM5/1. After the initial establishment, a rolling requirements file would be introduced, for which additional data could be submitted at any time although, as would become clear after consideration of later sections of Annex 1, the action which could be taken by the Board would be limited by the time of the year when the data was submitted. However, if one seasonal deadline for the submission of information was missed, the administration concerned could act within the next deadline.

3.10 The representative of the IFRB (Mr. Brooks) added that the requirements file was a general file which was open at all times for additions, modifications and deletions. Deadlines for the submission of requirements would be set at the beginning of each season, as indicated in the section on procedures based on consultations, to enable the Board to begin processing data.

He pointed out that the requirements file was applicable both to the revised Article 17 and to the Planning System and the dates in each case might be somewhat different.

Paragraph 1 - first indent

3.11 The delegate of Algeria proposed to amend the word "doivent" in the French text to "devraient" so as to remove the implication that administrations were obliged to use the requirements within the forthcoming period. He also proposed to insert the figure 5 and remove the square brackets.

3.12 The delegate of the United Kingdom suggested that the English version should be "requirements which are intended for use within the next .... years". Moreover, he considered that the figure in square brackets should be one year.

3.13 The delegate of China endorsed the United Kingdom proposal and agreed with the Algerian delegate that there should be no mandatory stipulation that requirements had to be used within a given period.

3.14 The delegates of Brazil, Mexico and France also considered that a one-year period was sufficient.

3.15 In reply to a question from the delegate of Iraq, the delegate of Algeria explained that he had chosen the period of five years on the basis of Documents 157, 177 and 165. The seasonal plan and schedule showed that the time between the indication of requirements and the adoption of the final schedule was more than a year and in fact two years might be needed to develop the first seasonal schedule because of the consultations needed between administrations and the IFRB. Moreover, it had more or less been agreed in Committee 5 and in informal discussions that the requirements file would be the common file for the development of the seasonal schedule and the seasonal file.

However, he could agree to a period of three years if five years appeared too long.

3.16 The delegate of Iraq endorsed that view.

3.17 The representative of the IFRB (Mr. Brooks) said that during the discussions in Committee 5 the IFRB had been asked to indicate a possible time-scale for the revised Article 17 procedure. The Board had indicated two periods of consultation (nine months in all) would be needed. Added to the two-month period mentioned in the report of Drafting Group 6-1, that made 11 months so a period of one year would be seem to be too short.

3.18 The delegate of the Netherlands, supported by the delegate of Paraguay, proposed that the period should be three years; the delegates of the United Kingdom and Brazil said that they could accept that period.

3.19 The delegate of France pointed out that when the file was first filled it would contain requirements introduced a year or 14 months later. So as not to overload the file a period of one year seemed reasonable. Once the file had a year's requirements in it the requirements would be indicated for the 12 months preceding their actual use so that the Board would have time to process them.

3.20 The delegate of Mexico endorsed that view.

3.21 The Chairman suggested that the square brackets be deleted from the first indent and that the figure 3 be inserted. Moreover, his oral report to Plenary should state that two administrations still had doubts about the period of three years.

It was so agreed.

#### Paragraph 1 - third indent

3.22 In reply to a question from the delegate of Australia, the representative of the IFRB (Mr. Brooks) explained that the five-year period mentioned in the third indent was derived from paragraph 7 of the annex in Document 192.

It was agreed to delete the square brackets around the figure 5.

#### Paragraph 3

3.23 In reply to the delegate of India, who queried the use of "basic" as applied to characteristics and suggested "essential" as a better term, the representative of the IFRB (Mr. Brooks) reminded the Committee that Drafting Group 6-2, after some discussion on the matter, had concluded in order to follow the existing terminology in Appendix 1, that "basic" should be used in preference to other terms to indicate the characteristics essential to a complete notification.

3.24 In reply to the delegate of Algeria, who asked whether the term "basic", in the special sense in which it was to be used in Appendix 2, should not be the subject of a definition in the Radio Regulations, the representative of the IFRB (Mr. Brooks) said that the term would be sufficiently defined in Appendix 2 by means of a footnote identifying the characteristics concerned. The delegate of the Federal Republic of Germany noted further that RR 1221 provided a precedent for leaving the application of "basic" to be specified by an appendix. The delegate of Finland suggested that Appendix 2 should, instead of leaving the definition of "basic" to a footnote, identify basic characteristics under sub-headings as was done in Appendix 1.

3.25 In reply to the delegate of Iraq, who felt it might be appropriate to add a sentence at the end of paragraph 3 to the effect that optional characteristics could also be provided, the Chairman said it would be sufficient to have those optional characteristics listed in Appendix 2.

3.26 The delegate of Iraq, supported by the delegate of Algeria, noting that paragraph 3 referred to "basic characteristics" and paragraph 6 to "basic information", suggested it would be better to use the same term throughout the text. "Information", as a wider term covering not only the technical but other data, was perhaps preferable to "characteristics".

It was agreed to replace the word "characteristics" on the second line by "information".

#### Paragraph 4

3.27 The Chairman explained that the square brackets in the first line were intended to contain a reference to the relevant section of the Final Acts (at present section 1.4 of Document 161) and would remain blank until that reference was finalized.

3.28 A discussion ensued on the use of the term "seasonal schedule" in the first line and "seasonal [plan or seasonal] schedule" in the penultimate line, in which the delegates of China, the Federal Republic of Germany, Iraq and the United Kingdom, the Chairmen of Drafting Groups 6-1 and 6-2 and the representative of the IFRB (Mr. Brooks) took part.

In the light of that discussion it was agreed to approve the text as it stood and, since there would ultimately be only one requirements file, to make any necessary amendment to the terms mentioned after the review of the report of Drafting Group 6-2.

#### Paragraph 5

3.29 To meet a point raised by the delegate of Australia, who considered the words "shall be taken into account" in the fourth line too vague, the delegate of the Federal Republic of Germany proposed to add "in updating the requirements file".

It was so agreed.

3.30 the delegate of the United States said that to avoid the inference that the Board was using its own judgement as to what constituted completeness, the words "are considered complete" in the last line should be replaced by "contain the basic information referred to in Appendix 2".

It was so agreed.

Paragraph 6

3.31 For the same reason as had motivated his amendment to paragraph 5, the delegate of the United States proposed that the first sentence should be replaced by the following:

"The Board shall examine these notices to determine that the basic information referred to in Appendix 2 has been provided. In the event that certain notices are found to be incomplete the Board shall so inform the notifying administration and provide an opportunity for the submission of such notices.".

3.32 The delegate of Israel proposed changing the word "submission" in the last line of that proposed amendment to "completion".

3.33 The delegates of Algeria and Iraq expressed a preference for the original text; the word "provide an opportunity for" in the last line of the proposed amendment did not accurately reflect what was in fact an obligation on the part of the Board to request missing information.

3.34 In view of those objections, the delegate of the United States withdrew his proposal.

Footnote 1

3.35 The delegate of Algeria proposed that since the Plenary had not yet considered Resolution [COM5/1], the footnote should be placed in square brackets.

It was so agreed.

The meeting rose at 1635 hours.

The Secretary:

M. AHMAD

The Chairman:

R. BLOIS

COMMITTEE 2

SUMMARY RECORD  
OF THE  
SECOND MEETING OF COMMITTEE 2  
(CREDENTIALS)

Monday, 2 March 1987, at 1600 hrs

Chairman: Mr. S.K. CHEMAI (Kenya)

Subjects discussed:

Documents

- |   |                      |
|---|----------------------|
| 1. Approval of the summary record of the first meeting          | 49                   |
| 2. First, second, third and fourth reports of Working Group 2-A | 74, 103,<br>167, 204 |
| 3. Oral report by the Chairman of Working Group 2-A             | -                    |
| 4. Draft report to the Plenary Meeting                          | DT/64                |



1. Approval of the summary record of the first meeting (Document 49)

The summary record of the first meeting was approved.

2. First, second, third and fourth reports of Working Group 2-A (Documents 74, 103, 167 and 204)

2.1 The delegate of the USSR, referring to the Working Group's first report (Document 74) in which the Federal Republic of Germany was listed among the delegations whose credentials had been examined and found in order, made the following statement:

"With reference to the List of Participants for the Second Session of the World Administrative Radio Conference for the Planning of the HF Bands Allocated to the Broadcasting Service, and with regard to the inclusion of the representatives of West Berlin, Mr. Wysocki Bodo and Mr. Gehrke Horst in the List of Delegates of the Federal Republic of Germany, we consider it necessary to emphasize that, under the Quadripartite Agreement of 3 September 1971, Berlin (West) is not an integral part of the Federal Republic of Germany and is not governed by it. Consequently, the above-named persons have no right to participate in this capacity in this Session.

The USSR delegation proposes that, in the List of Participants, registration for Berlin (West) should be effected in a manner consistent with the Quadripartite Agreement of 3 September 1971."

\*) 2.2 The delegate of the United States of America said that the question of the membership of delegations lay outside the terms of reference of Committee 2. His Delegation reserved its right to comment on the Soviet statement and, for the present, would confine itself to stating that it totally disagreed with the interpretation of the Quadripartite Agreement given by the Soviet delegate.

The Committee took note of Documents 74, 103, 167 and 204.

3. Oral report by the Chairman of Working Group 2-A

3.1 The Chairman, speaking as Chairman of Working Group 2-A, said that since the Working Group's Fourth meeting held on 27 February, the credentials of the Delegations of Sri Lanka, Ecuador and Libya had been received, examined and found in order.

4. Draft report to the Plenary Meeting (Document DT/64)

4.1 The Chairman pointed out that, in the light of the oral report which the Committee had just heard, the Delegations of Libya and Sri Lanka should be added to the list in section 1 of the annex to the draft report and Ecuador to the list in section 2. All three Delegations should be deleted from the list in section 3 of the annex. He also drew attention to paragraph 4 of the draft report ("Final remarks") and explained that since most of the delegations attending the Conference which had not deposited credentials to date were likely to do so at a later stage, the authorization of the Plenary Meeting was required in order to enable the Chairman and Vice-Chairman of Committee 2 to examine credentials received late.

Those remarks were noted and the draft report, as amended, was approved.

The meeting rose at 1615 hours.

The Secretary:

R. MACHERET

\*) See Annex.

The Chairman:

S.K. CHEMAI



A N N E X

Note by the Secretary-General

Referring to its declaration during the second and last meeting of Committee 2 (see para. 2.2), and as there will be no further meeting of that Committee, the United States Delegation has requested that the further comments on the USSR Statement be published as an annex to the present document :

"The Delegation of the United States of America on behalf of the Governments of the United States, France and the United Kingdom, wishes to state the following regarding the statement of the Soviet delegate concerning the 1971 Quadripartite Agreement.

There is nothing in the Quadripartite Agreement which supports the contention that residents of the Western Sectors of Berlin may not be included in the delegations of the Federal Republic of Germany to international conferences; in fact, Annex IV of the Quadripartite Agreement stipulates that, provided that 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 organizations and at international conferences and that permanent residents of the Western Sectors of Berlin 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.

Furthermore, 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."

**NOTE DU SECRETAIRE GENERAL**

A la suite de la huitième séance plénière et en réponse à la demande formulée par certaines délégations, le télégramme-circulaire ci-joint a été envoyé aux administrations de tous les pays Membres de l'UIT.

R.E. BUTLER  
Secrétaire général

**NOTE BY THE SECRETARY-GENERAL**

As indicated in the eighth Plenary Meeting, and in response to requests from some delegations, the enclosed circular-telegram has been sent to the administrations of all countries Members of the ITU.

R.E. BUTLER  
Secretary-General

**NOTA DEL SECRETARIO GENERAL**

Tal como se indicó en la octava sesión plenaria, y en respuesta a las peticiones formuladas por algunas delegaciones, se ha enviado a las administraciones de todos los países Miembros de la UIT el telegrama circular adjunto.

R.E. BUTLER  
Secretario General

Annexe: 1

ANNEXE / ANNEX / ANEXO

Copie du télégramme-circulaire No A533  
adressé aux Membres de l'UIT le 2 mars 1987

Copy of Circular-telegram No. A533  
addressed to Members of the ITU on 2 March 1987

Copia del telegrama circular N.o A533  
dirigido a los Miembros de la UIT el 2 de marzo de 1987

TCUIT A533

SUR LA BASE DE L'EVALUATION ACTUELLE DE L'AVANCEMENT DES TRAVAUX DE LA 2EME SESSION HFBC, LA COMMISSION DE DIRECTION DE LA CONFERENCE A REVISE LE CALENDRIER DES REUNIONS POUR LA DERNIERE SEMAINE ET PREVU LA FIN DE LA CONFERENCE AU DIMANCHE 8 MARS 1987 AU LIEU DU VENDREDI 6 MARS INITIALEMENT ARRETE STOP A LA DEMANDE DE CERTAINES DELEGATIONS, AI HONNEUR DE PORTER CET ETAT DE CHOSE A VOTRE HAUTE ATTENTION STOP VOUS SEREZ TENU INFORME DE TOUT AUTRE CHANGEMENT QUI POURRAIT INTERVENIR ULTERIEUREMENT STOP HAUTE CONSIDERATION. R.E. BUTLER, SEC GEN.

CTITU A533

IN THE LIGHT OF THE CURRENT PROGRESS OF WORK OF THE SECOND SESSION OF HFBC, THE STEERING COMMITTEE OF THE CONFERENCE HAS REVISED THE TIMETABLE OF MEETINGS FOR THE LAST WEEK WITH THE EFFECT THAT THE END OF THE CONFERENCE IS NOW SCHEDULED FOR SUNDAY, 8 MARCH 1987 INSTEAD OF FRIDAY, 6 MARCH, AS INITIALLY PLANNED. I HAVE THE HONOUR TO INFORM YOU OF THIS NEW SITUATION AT THE REQUEST OF SEVERAL DELEGATIONS. YOU WILL BE KEPT INFORMED OF ANY FURTHER CHANGES. HIGHEST CONSIDERATION. R.E. BUTLER, SEC GEN.

TCUIT A533

TRAS EVALUAR LA MARCHA ACTUAL DE LOS TRABAJOS DE LA SEGUNDA REUNION HFBC, LA COMISION DE DIRECCION DE LA CONFERENCIA HA REVISADO EL CALENDARIO DE SESIONES DE LA ULTIMA SEMANA Y PREVISTO QUE LA CONFERENCIA TERMINE EL DOMINGO 8 DE MARZO DE 1987 EN LUGAR DEL VIERNES 6 DE MARZO COMO INICIALMENTE DISPUESTO PUNTO A PETICION DE CIERTAS DELEGACIONES, TENGO EL HONOR DE PONER ESTA SITUACION EN SU CONOCIMIENTO PUNTO SE LE INFORMARA OPORTUNAMENTE DE TODA OTRA MODIFICACION EVENTUAL PUNTO ALTA CONSIDERACION. R.E. BUTLER, SEC GEN.

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COMMITTEE 6

NOTE FROM THE CHAIRMAN OF THE AD HOC GROUP OF THE PLENARY  
TO THE CHAIRMAN OF COMMITTEE 6

Note 21) to Appendix 7 of the Radio Regulations should be modified as follows:

"21) It is suggested that administrations avoid carrier frequency differences of a few hertz, which cause degradations similar to periodic fading. This could be avoided if the frequency tolerance were 0.1 Hz, a tolerance which would also be suitable for single-sideband emissions.\*

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- \* The World Administrative Radio Conference for the Planning of the HF Bands Allocated to the Broadcasting Service (Geneva, 1987) has drawn attention to the fact that the single-sideband system adopted for the bands exclusively allocated to HF broadcasting does not require a frequency tolerance less than 10 Hz. The above-mentioned degradation occurs when the ratio of wanted-to-interfering signal is well below the required protection ratio. This remark is equally valid for both double- and single-sideband emissions."

J. RUTKOWSKI  
Chairman of the ad hoc Group of the Plenary

Source: Documents DT/66, 179

COMMITTEE 6

REPORT OF DRAFTING GROUP 6-2 TO COMMITTEE 6

Drafting Group 6-2 has finished its work. The following four draft texts relevant to the Planning Method are annexed:

- Annex 1: "Procedures relating to the HFBC Planning System".
- Annex 2: "Appendix 2: Data to be entered into the requirements file".
- Annex 3: "Appendix [ . ]: System specifications and rules applicable to those HF bands exclusively allocated to broadcasting that are to be planned".
- Annex 4: "HFBC requirements file".

Note - Annex 4 is common to both HFBC schedule/planning

S.M. CHALLO  
Chairman of Drafting Group 6-2

Annexes: 4

ANNEX 1

Draft\*

Section [ ] procedures relating to the HFBC Planning System

[1. The provisions of this section apply to the broadcasting service in the bands [ ].]

2. Periodically, administrations shall confirm to the IFRB which of their requirements appearing in the HFBC requirements file are to be used in a given season. Administrations may also notify additions or modifications to, or deletions from, the HFBC requirements file. When the Board finds that the information submitted by the administration is in conformity with Appendix 2, it shall establish the seasonal file accordingly.

3. The broadcasting requirements of administrations shall be submitted in the requirements form prescribed in [Appendix] which specifies the data to be furnished.

4. The closure date for the receipt of the information referred to in [2] is set by the Board. The Board shall gradually reduce the time period between the closure date and the start of the season to the minimum practicable.

If, in spite of reminders by the Board, no reply is received from an administration by the closure date set by the Board, the Board shall consider that the requirements appearing in the requirements file for the season under consideration are [confirmed and that the requirements without an indication of a frequency shall have the frequencies selected by the Board]/[considered as not confirmed and therefore not included in the seasonal file].

5. The IFRB shall calculate the field strength at each test point and the basic broadcasting reliability (BBR) in each of these bands and shall identify for each requirement the appropriate bands. In so doing account shall also be taken of the need to ensure a continuity in the frequency usage as indicated in [-].

6. The IFRB shall, on the basis of the above calculations, apply the rules contained in [Appendix -] from which the following results are derived for each hour/band:

- a) a list of resolved requirements that shall be entered in the tentative plan including:
  - requirements with the protection ratio greater than or equal to 17 dB;
  - requirements with protection ratio less than 17 dB.  
Consultation shall be undertaken with administrations which have indicated in their requirement forms a desire for consultation;

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\* Reservations by the United Kingdom.

- b) a list of the requirements that could not be entered into the tentative plan as a result of a) above which need to be reviewed for their possible entry in the tentative plan following the consultations of the administrations concerned.

7. For those administrations wishing to be consulted and having requirements in the list of [6 a) second indent] the Board will consult the administration concerned to see if it wishes to have its requirement in the tentative plan with the characteristics notified and the resulting protection ratios.

8. For those administrations wishing to be consulted and having requirements in the list of [6 a) second indent] and who have indicated that they do not wish their requirements to be inserted in the tentative file under the specified conditions, the Board shall transfer those requirements to the list of [6 b)].

9. The Board shall send to each administration having requirements in the list of [6 b)] the results of its calculations. The Board shall also request administrations to submit any possible modifications to their requirements within a period of [6] weeks.

10. Upon receipt of the information referred to in [9] administrations shall reconsider their requirements and shall submit to the Board their modifications to their requirements.

If, in spite of reminders communicated to the administrations two weeks prior to the deadline, no reply is received within the time limit, the Board will attempt to insert these requirements in the tentative plan in accordance with [13].

11. Any administration may submit requirements after the closure date and before the date referred to in [9].

12. The Board shall advise all administrations of the time limit indicated in [9].

13. Following the receipt of the information received in accordance with [10 and 11], the Board shall process these requirements and shall attempt to insert them in the tentative plans following the steps indicated in [Appendix -] without affecting\* those requirements already entered in the tentative plan.

14. All requirements which could not be inserted following the application of [13] above will not be inserted in the tentative plan and the administrations will be informed accordingly.\*\*

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\* The criteria to determine whether a requirement is adversely affected are to be found in [Appendix -].

\*\* Reservation by the United States of America.

15. Administrations who so wish may request the Board to select alternative frequencies for their requirements. The Board shall attempt to select alternative frequencies without affecting the requirements appearing in the Plan. If the Board receives no comment from administrations following the publication of the tentative plan, it shall consider that the frequencies indicated in the seasonal plan will be assigned by administrations to their stations.

[Note 1 - Suspension Rules N1, N2 and N3 shall not apply to national requirements.]

[Note 2 - All rules shall only apply to requirements above an equal minimum number of requirement hours that should be satisfied for each administration on an equal basis.]



ANNEX 2

Draft Appendix 2

Data to be Entered into the Requirements File

A. Introduction

A broadcasting requirement is a requirement indicated by an administration to provide a broadcasting service at specified periods of time to a specified reception area from a particular transmitting station.

An administration wishing to notify a broadcasting requirement to the Board will do so on the basis of the characteristics provided in [B] of this Appendix. The necessary information shall be provided on a requirement form to be developed by the Board.

A separate requirement form shall be sent to the IFRB for notifying:

- each requirement to be put into use for particular seasons;
- any modification in the characteristics of a requirement;
- any deletion of a requirement.

The map of CIRAF Zones to be used in notifying a requirement is given in [C].

B. Information relating to the broadcasting service in the exclusive HFBC bands to be provided in requirement forms

1. Notifying administration\*

The notifying administration shall be indicated using the symbols given in Table ... of the Preface to the International Frequency List.

2. Name of transmitting station.\*

3. Symbol of the country or geographical area in which the transmitting station is located.\*

4. Geographical coordinates of the transmitting station\*

When two or more transmitting stations are almost co-located, the administration shall indicate, as far as possible, the same coordinates.

5. Required service areas\*

In specifying the required service area, reference shall be made to a combination of:

- CIRAF zones,
- quadrants of CIRAF zones,

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\* Basic information to be provided mandatorially by the administrations.

- a part of a quadrant specified by the set of test points contained within that part.

Where it is necessary to specify a required service area which is smaller than an entire zone or quadrant, this may be done by specifying the boundaries of the area as two azimuths and two ranges from the transmitter location.

6. Season\*

The season or seasons during which the requirement is intended to be operated. When the requirement is not intended to be used on a daily basis, the days during which it will be operated shall be indicated.

7. Hours of operation (UTC)\*

[7.1 Indication on legal clock time changes.]

8. Indication on temporary interruption of broadcasting services due, for example, to natural disasters.

9. Transmitting antenna characteristics\*

9.1 For all types of antennas indicate:

9.1.1 The type of antenna to be used with the specific reference of the antenna type appearing in the IFRB Technical Standards.

9.1.2 The azimuth of maximum radiation in degrees from true North in closewise direction.

9.1.3 The maximum gain (isotropic,  $G_i$ , dB) if different from that associated with the relevant pattern in the reference antenna set. In the case of slewed horizontal dipole arrays this maximum gain is the gain in the slewed mode.

9.1.4 The lowest and highest frequency bands (in MHz) for multi-band antennas, or the band for single band antennas.

9.2 For horizontal dipole arrays indicate in addition to the above parameters:

9.2.1 Type of radiator, end-fed or centre-fed dipole elements.

9.2.2 Type of reflector (tuned dipoles or aperiodic screen).

9.3 For multi-band horizontal dipole arrays indicate in addition to the above parameters:

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\* Basic information to be provided mandatorially by the administrations.

9.3.1 Design frequency, in MHz. If not indicated, the design frequency will be assumed as the arithmetic mean of the centre frequencies of the lowest and highest frequency bands covered by the antenna.

9.4 For slewed horizontal dipole arrays indicate in addition to the above parameters the:

9.4.1 Azimuth of the normal to the plane of the radiating elements in degrees from true North in clockwise direction.

10. Transmitter power (dBW)\*

- 1) For DSB emissions indicate the carrier power in dBW.
- 2) For SSB indicate the peak envelope power in dBW.
- 3) Indicate the range of available power capabilities.

11. Class of emission\*

Indicate if it is a double-sideband emission or a single-sideband emission with a reduced carrier of 6 dB or 12 dB relative to peak power.

11.1 Indicate if the transmitter can operate with two modes (DSB, SSB).\*\*

[12. Assigned frequencies [under Article 17].\*\*\*]

13. Preset frequencies (in kHz).\*\*\*

14. Preferred frequency (in kHz).\*\*\*

15. Preferred frequency band (in MHz).

16. Equipment availability.

Indicate the number of transmitters that can be used simultaneously and the associated bands for a possible use in case it is necessary to use more than one frequency to reach the required BBR.

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\* Basic information to be provided mandatorially by the administrations.

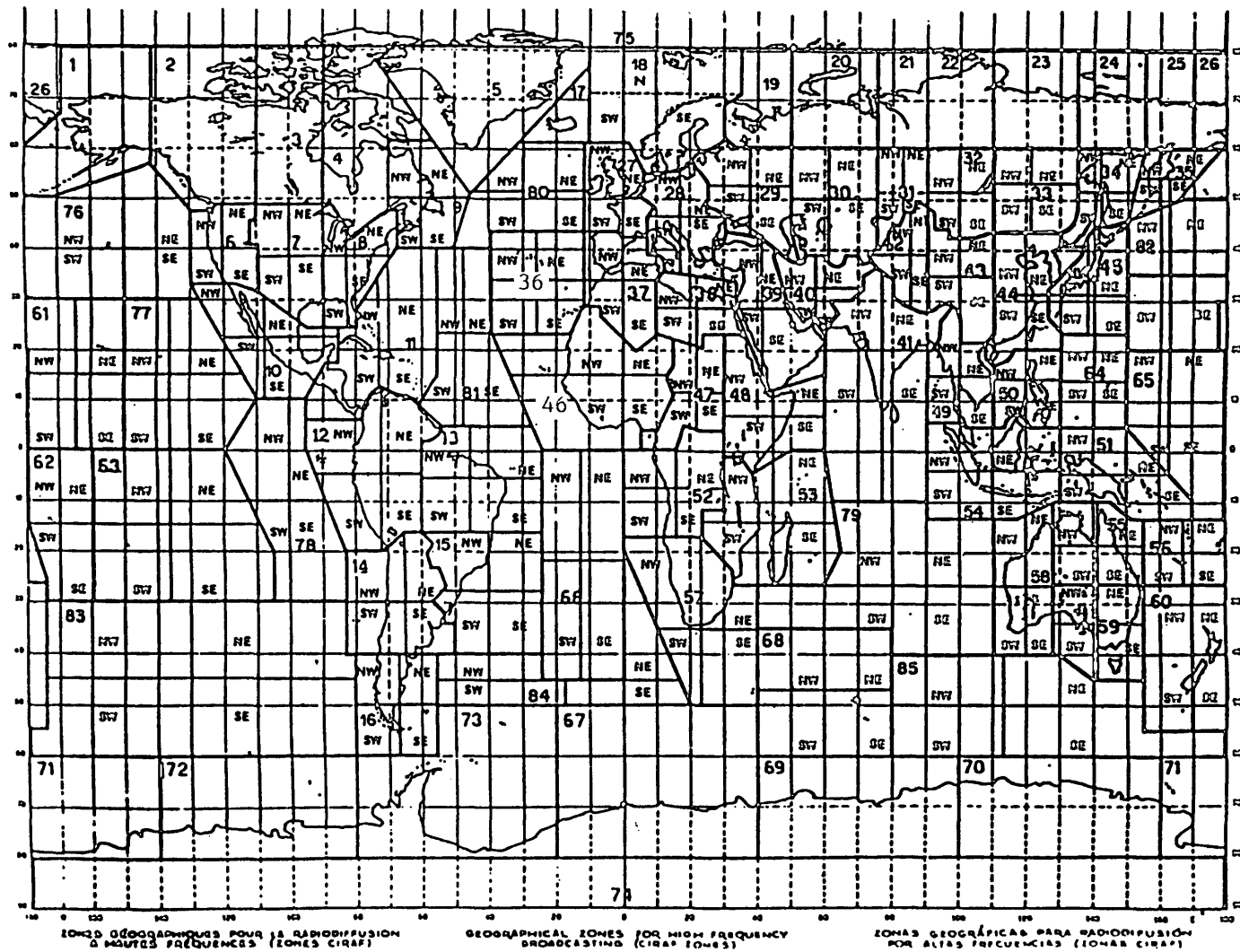
\*\* For information only.

\*\*\* a) For a double-sideband transmission, the assigned frequency shall be expressed in kHz terminating by 0 or 5.

b) For a single-sideband transmission, the assigned frequency shall be expressed in kHz terminating by 2.5 or 7.5.

17. Requested types of frequency continuity (types 2, 3, 4 and/or 5)
- 17.1 Identification of requirements related by these types of continuity.
18. Lowest value of BBR to be used for this requirement (see paragraph 3 of 4.2.3.4.4, Document 157).
19. Indication on the use of synchronized transmitters.
20. Indicate equipment limitations (frequency bands available).
21. Indication if consultations are required when the co-channel protection ratio is less than 17 dB.
- [22. Nature of requirement (national or international).]
- [23. Nature of requirement (see Document 134)].
24. Postal and telegraphic addresses of the administration responsible for the station (Appendix 2-5).
25. Remarks and supplementary information.

C.  
Map of CIRA F Zones



ANNEX 3

Draft Appendix [ ]

This appendix contains the following sections:

- A. Double-sideband system specifications in the HF bands allocated exclusively to the broadcasting service
- B. Single-sideband system specifications in the HF bands allocated exclusively to the broadcasting service
- C. Rules applicable to those HF bands exclusively allocated to broadcasting that are to be planned

A. [SEE PART A OF DOCUMENT 179]

B. [SEE PART B OF DOCUMENT 179]

C. RULES APPLICABLE TO THOSE HF BANDS  
EXCLUSIVELY ALLOCATED TO BROADCASTING  
THAT ARE TO BE PLANNED

I. INTRODUCTION

I.1 The planning of the HFBC in accordance with sections [--] and [--] of Article 17 shall use the criteria and method contained in this appendix.

I.2 The application of this appendix shall ensure the maximum possible utilization of all available channels.

II. DEFINITIONS

II.1 Appropriate frequency band

The appropriate band for a requirement, is the band which will ensure the continuity of use of the same frequency during the longest possible period of operation, with the best possible values of BBR (basic broadcast reliability), taking account of propagation conditions, operational limitations and equipment availability and limitations.

II.2 Circuit reliability

Probability for a circuit that a specified performance is achieved at a single frequency.

II.3 Reception reliability

Probability for a receiver that a specified performance is achieved, taking into account all transmitted frequencies.

#### II.4 Broadcast reliability

Probability for a service area that a specified performance is achieved, taking into account all transmitted frequencies.

#### II.5 Percentile

The X percentile (X%) value for a given set of values is defined by the following conditions:

- 1) the X% value is a member of the set of values;
- 2) the X% value is that value which is equal to or exceeded by at least X per cent of the members in the set;
- 3) the X% value is the largest value satisfying conditions 1 and 2.

Note 1 - In the above terms, circuit means a one-way transmission from one transmitter to one receiving location.

[ Note 2 - The term "reliability" is qualified by the word "basic" when the background consists of noise alone. ]

Note 3 - When the background consists of both noise and interference, the term "reliability" may relate either to the effects of a single interferer or to multiple interference from co-channel and adjacent-channel transmissions.

Note 4 - The specified performance is expressed by a given value of signal-to-noise ratio or signal-to-(noise and interference) ratio.

Note 5 - The term "reliability" relates to one or more periods of time, which shall be stated.

#### II.6 Radio-frequency (RF) wanted-to-interfering signal ratio

The ratio, expressed in dB, between the values of the radio-frequency voltage of the wanted signal and the interfering signal, measured at the receiver input under specified conditions<sup>1</sup>.

#### II.7 Relative radio-frequency protection ratio

The difference, expressed in dB, between the protection ratio when the carriers of the wanted and unwanted emissions have a frequency difference of  $\Delta F$  (Hz or kHz) and the protection ratio when the carriers of these emissions have the same frequency.

#### II.8 Term relating to the service area

- Required service area (in HF broadcasting): The area within which an administration proposes to provide a broadcasting service.

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<sup>1</sup> The specified conditions include such diverse parameters as: spacing  $\Delta F$  of the wanted and interfering carrier, emission characteristics (type of modulation, modulation depth, carrier-frequency tolerance, etc.), receiver input level, as well as the receiver characteristics (selectivity, susceptibility to cross-modulation, etc.).

II.9 Minimum usable field strength ( $E_{\min}$ )<sup>1</sup>

Minimum value of the field strength necessary to permit a desired reception quality, in specified receiving conditions, in the presence of natural and man-made noise, but in the absence of interference from other transmitters.

II.10 Usable field strength ( $E_u$ )<sup>1</sup>

Minimum value of the field strength necessary to permit a desired reception quality, in specified receiving conditions, in the presence of noise and interference, either in an existing situation or as determined by agreements or frequency plans.

III. PROPAGATION PREDICTION METHOD

The propagation prediction method to be used shall be that contained in the Technical Standards of the IFRB. For propagation prediction purposes the year shall be sub-divided into four seasons and predictions shall be made for a single to represent a season, as specified in Article [ ], section [ ] [HFBC requirements file].

The solar index to be used for planning shall be the 12-month running mean sunspot number  $R_{12}$ . The [seasonal] plan shall be prepared in accordance with the values of  $R_{12}$  for the period. The lowest value of  $R_{12}$  predicted for any of the months in that [season] shall be used.

[IV. HFBC PLANNING SYSTEM]

IV.1 Test points

The set of test points listed in the IFRB Technical Standards shall be used to represent the CIRAF zones and quadrants for planning purposes (see also IV.4.1.1).

Where a required service area, as notified by an administration in conformity with [Appendix 2, section B, paragraph 5], does not include a test point, the IFRB shall generate a new test point and include it within the Technical Standards. Such additions to the Technical Standards will be distributed to administrations (Nos. 1001 and 1001.1 of the Radio Regulations).

IV.2 Planning constraints

IV.2.1 Preset frequency

- a) When an administration indicates that its facilities can operate only on a limited number of fixed specified frequencies, the planning method shall take them into account as indicated in IV.4.11.

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<sup>1</sup> The terms "minimum usable field strength" and "usable field strength" refer to the specified field strength values which a wanted signal must have in order to provide the required reception quality.

In determining whether these requirements are met, the median value (50%) of a fading signal should be used.



IV.2.2 Limited use of the frequency bands

- a) When an administration indicates that its facilities can operate only in a given frequency band, only frequencies from that band shall be included in the plan.
- b) When an administration indicates a preferred frequency band, the system shall attempt to select a frequency from this band. If this is impossible, frequencies from the nearest appropriate band shall be tried. Otherwise the system will select frequencies from the appropriate band, taking into account the equipment constraints referred to in paragraph IV.2.1.

IV.2.3 Power

- a) When an administration indicates only a single power value due to equipment constraints, it shall be used in the planning process.
- b) When an administration indicates several possible power values, the appropriate value shall be used to achieve the basic circuit reliability, and a single power value shall be determined for the duration of the emission.

IV.2.4 Antenna

When an administration indicates that its antenna can operate only in a given frequency band, only frequencies from that band shall be included in the plan.

IV.2.5 Preferred frequency

In accordance with the planning principles and without imposing constraints on planning, the following provisions shall be applied in the seasonal plans:

- 1) administrations may indicate the preferred frequency;
- 2) during the planning process, attempts shall be made to include the preferred frequency in the plan;
- 3) if this is impossible, attempts shall be made to select a frequency in the same band.

Otherwise, the automated system shall be used to select the appropriate frequencies in such a way as to accommodate the maximum number of requirements, taking into account the constraints imposed by the technical characteristics of the equipment.

IV.3 Frequency continuity

IV.3.1 Introduction

Continuity in the use of a frequency is an important matter for both the broadcaster and the listener, it is a characteristic inherent in the broadcasting of a programme. In addition, limitations imposed by the technical characteristics of the means of transmission available to some administrations

will impose mandatory requirements for frequency continuity. The desirable aim is that changes in frequency should be limited to those necessitated by changes in propagation conditions. The rules for applying frequency continuity are given in paragraph IV.3.4 below.

#### IV.3.2 Definitions

##### IV.3.2.1 Intra-seasonal

###### IV.3.2.1.1 Type 1 continuity

Continuity of use of the same frequency within an hour or from one hour to another consecutive hour within a requirement.

###### IV.3.2.1.2 Type 2 continuity

Continuity of use of the same frequency in the same season when passing from one requirement to another or one time block to another.

##### IV.3.2.2 Inter-seasonal

###### IV.3.2.2.1 Type 3 continuity

Continuity of use of the same frequency by the same requirement in two consecutive seasons.

###### IV.3.2.2.2 Type 4 continuity

Continuity of use of the same frequency by the same requirement in two consecutive equinox seasons.

###### IV.3.2.2.3 Type 5 continuity

Continuity of use of the same frequency by the same requirement in the same season of two consecutive years.

#### IV.3.3 Relationship between frequency continuity and appropriate band(s)

IV.3.3.1 For the case where a single frequency is sufficient to provide basic broadcast reliability (BBR)\* equal to or greater than the agreed reference value, the appropriate band is to be established by the HFBC Planning System by taking account, amongst other things, of the rules set out in section IV.3.4 regarding the maintenance of the maximum frequency continuity within the limits of the agreed reference value for BBR 80%.

However, an administration may choose extended frequency continuity at the expense of BBR and shall indicate the lower value of BBR to be used in this event. As, in this portion of the requirement, the BBR falls below the above-mentioned reference value the second and/or third frequencies are afforded only when the application of frequency continuity would not result in a number of additional frequencies greater than would be necessary with operation in the appropriate bands.

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\* Abbreviations of the English terms are used throughout the three languages in order to facilitate the practical implementation of the concepts and methods described.

IV.3.3.2 In the case where BBR obtainable by use of a single frequency is less than 80% continuity of use of the first frequency or the single operating frequency will be provided within the lower limits of BBR indicated by the administration.

When the administration indicates that it has the capability to operate on more than one frequency the use of this lower value of BBR shall not lead to the use of a third frequency.

IV.3.3.3 When the requirement under consideration is eligible to use a second or third frequency according to the procedures established in section VI, frequency continuity shall also be applied to the second (and third) frequency in the same manner as for the first frequency.

IV.3.3.4 When the type 2 continuity is requested (from one requirement to another), the HFBC Planning System shall identify the appropriate band separately for each of the requirements concerned. The frequency assigned to the first of these requirements, shall be assigned to another related requirement if it is in its appropriate band.

#### IV.3.4 Application of continuity

IV.3.4.1 Type 1 continuity shall be applied automatically to all requirements under the conditions set out in section 3 above.

IV.3.4.2 At the request of an administration, type 2 continuity shall be applied when this corresponds to equipment constraints. However, in other cases, type 2 continuity could be applied to the extent possible. Paragraph IV.3.3.4 above applies to type 2 continuity.

IV.3.4.3 Continuity of types 3, 4 and 5 shall be applied to the extent possible when requested by the administration.

#### IV.4 Planning steps and rules for dealing with incompatibilities

##### IV.4.1 Definitions

###### IV.4.1.1 Unit of service area

Each CIRAF Zone is sub-divided into one or more smaller units of area called "quadrants"; these are depicted in Figure [ ] of Appendix [ ]. Any such "quadrant" containing at least one test point of a given requirement is called a "unit of service area" for the given requirement.

IV.4.1.2 A group of incompatible requirements (GIR) is a set of (two or more) requirements each of which is incompatible with all other requirements in the set.

IV.4.1.3 A greatest GIR (GGIR) is a GIR which contains the largest number of requirements.

IV.4.1.4 A maximal GIR (MGIR) is the set of all requirements contained in at least one GGIR.

IV.4.2 In the planning method, in order to evaluate congestion, use is made of the concept of the MGIR.

IV.4.3 Congestion is evaluated by determining the GGIR and by comparing the number of channels required by that group with the number of channels available in the band considered.

IV.4.4 When in a given hour/band no congestion is found the requirements concerned shall be entered in a file of requirements ("file of resolved requirements") for which a frequency to be assigned shall be identified.

IV.4.5 When a congestion in a given hour/band is identified by means of a GGIR, the requirements included in the MGIR will have their protection ratio reduced by a 3 dB value with the view to resolve the congestion. If, following this action, the congestion is not resolved, another MGIR is identified and a new attempt is made with the view to resolve the congestion. The process is repeated until it will not be possible to find a solution with a protection ratio [of 17 dB]. Requirements appearing in an hour/band that can be resolved in this manner are entered in the "file of resolved requirements".

IV.4.6 When following the action taken in accordance with [IV.4.5], if congestion still exists, a new MGIR is identified and a set of requirements of each administration in the band under consideration with identical service areas are identified. The planning process then suspends for further consideration a number of such requirements in order to resolve the congestion. With the view to identify the requirements to be first suspended, administrations having requirements in the MGIR are sorted in the decreasing order of the number of such requirements. The process is repeated as many times as necessary until the congestion is resolved or the number of such requirements becomes equal to one per administration. Requirements appearing in an hour/band that can be resolved in this manner are entered in the "file of resolved requirements".

IV.4.7 Following the application of [IV.4.6], if congestion still exists, all requirements of a given administration appearing in a MGIR have different service areas, some of them having common units of service area. More suspensions may be required with the view to resolve the congestion; they shall be made by having recourse to the identification of the unit of service area which appears very often in the requirements of a given administration in the hour/band under consideration. Once this unit of service area is identified, administrations having it in their requirements are sorted in a decreasing order with the view to suspend requirements containing the unit of service area which appears very often. The GGIR is re-evaluated to determine whether congestion exists and the process is repeated as many times as possible until the congestion is resolved or the number of such requirements becomes one for all administrations concerned. This suspension rule shall be applied in such a way that any quadrant notified by an administration in the band/hour under consideration appears at least once in the plan. Requirements appearing in an hour/band that can be resolved in this manner are entered in the "file of resolved requirements".

IV.4.8 If the congestion is not resolved following the application of [IV.4.7] the same rule is applied taking account of the requirements in all the bands with the view to identify the requirements containing the quadrant that appear very often. Requirements appearing in an hour/band that can be resolved in this manner are entered in the "file of resolved requirements".

IV.4.9 If the congestion is not resolved following the application of [IV.4.8], the requirements appearing in the MGIR are verified with the view to identify those which appear in two or three bands due to their low BBR. Such requirements may be suspended if they are present in another band with a better BBR. Requirements appearing in an hour/band that can be resolved in this manner are entered in the "file of resolved requirements".

IV.4.10 If the congestion is not resolved following the application of [IV.4.9], the requirements included in the MGIR shall have their protection ratio reduced by 3 dB. Following this action another MGIR is identified, and the

3 dB reduction shall be applied to requirements appearing in the new MGIR not yet affected by this reduction. The process of reduction by 3 dB shall be repeated until congestion is removed. Additional reductions of the protection ratio by steps of 3 dB are made in the same manner until all the remaining requirements are entered in the "file of resolved requirements". In this manner all requirements which, as a result of the previous steps, have not been suspended, have been placed in a "file of resolved requirements". This file contains, therefore, all the requirements which will always enter in the "Tentative Plan". This will be the case of requirements with a protection ratio less than [17 dB]. However, the requirements of those administrations who wish as a result of consultation with the IFRB may be included in the "file of resolved requirements" or in the "file of requirements to be reconsidered".\*

IV.4.11 Following the application of the above steps for the resolution of incompatibilities, frequencies shall be identified for its requirements appearing in the "file of resolved requirements". In this process the following shall be applied:

- requirements with a single preset frequency shall be assigned this frequency;
- requirements with more than one preset frequency shall be assigned that frequency that has the least degree of incompatibility;
- if two requirements have the same preset frequency, which after analysis results in an incompatibility, the case is referred to the administration(s) concerned;
- requirements with a preferred frequency, attempts shall be made to assign them this frequency.

IV.4.12 Requirements which have been suspended following the application of IV.4.6, IV.4.7, IV.4.8 and IV.4.9 are subject to consultation and are reinserted in the plan on the condition that they do not adversely affect the requirements already entered in the plan. In applying this provision a requirement already entered in the plan with a protection ratio exceeding [17 dB] is deemed to be adversely affected if its protection ratio is reduced below [17 dB]. A requirement already entered in the plan with a protection ratio lower than [17 dB] is deemed to be adversely affected if its protection ratio is reduced by more than [0.1 dB], [1 dB].\*

IV.4.13 Requirements received by the IFRB after the beginning of the planning exercise [after the deadline for submission of requirements] are entered in the plan under the conditions stipulated in [IV.4.11].

## V. RELIABILITY<sup>1</sup>

### V.1 Calculation of basic circuit reliability (BCR)

The process for calculating basic circuit reliability is indicated in Table C-2. The median value of field strength for the wanted signal at step (1) is determined by the field strength prediction method. The upper and lower decile values (2) through (5) are also determined, taking account of long-term

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\* Reservation by the United States.

<sup>1</sup> Abbreviations of the English terms are used in the formulae throughout the three languages in order to facilitate the practical implementation of the methods described in this section.

(day-to-day) and short-term (within the hour) fading. The combined upper and lower deciles of the wanted signal are then calculated in steps (6) and (7) in order to derive the signal levels exceeded for 10% and 90% of the time at steps (8) and (9).

The wanted signal probability distribution, assumed to be log-normal, is illustrated in Figure C-1 which indicates the signal level (in decibels) versus the probability that the value of signal level is exceeded (plotted on a normal probability scale). This distribution is used to obtain the basic circuit reliability (11), which is the value of probability corresponding to the minimum usable field strength (10).

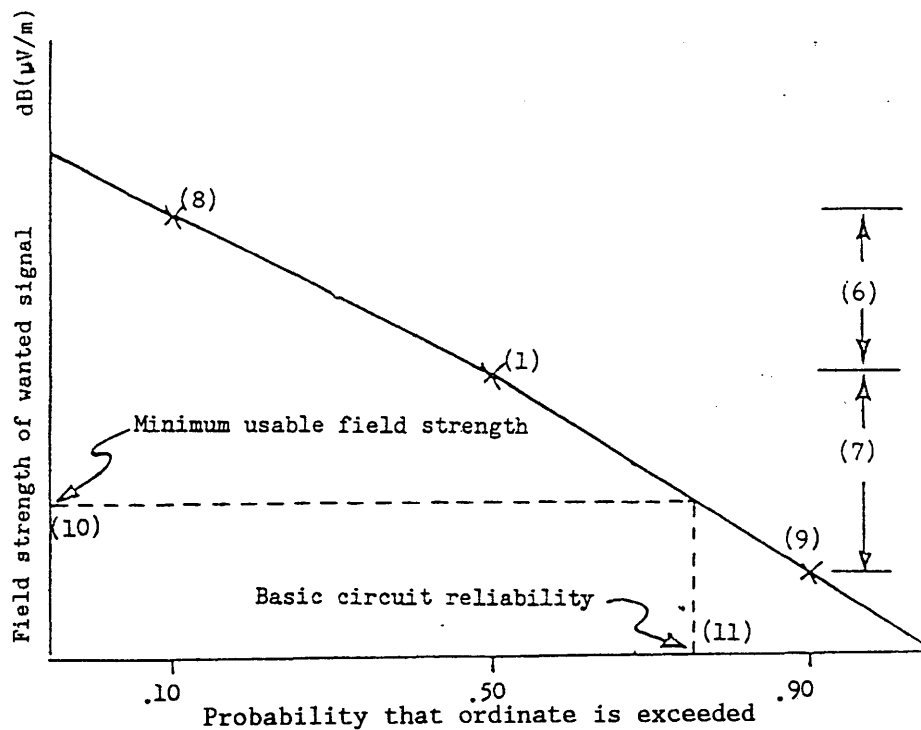


FIGURE C-1

Parameters used to compute basic circuit reliability

(Figures appearing in brackets refer to step numbers as shown in Table C-2.)

TABLE C-2

Parameters used to compute basic circuit reliability

STEP	PARAMETER	DESCRIPTION	SOURCE
(1)	$E_w(50)$ dB( $\mu$ V/m)	Median field strength of wanted signal <sup>1</sup>	IFRB Technical Standards
(2)	$D_U(S)$ dB	Upper decile of slow fading signal (day-to-day)	IFRB Technical Standards
(3)	$D_L(S)$ dB	Lower decile of slow fading signal (day-to-day)	IFRB Technical Standards
(4)	$D_U(F)$ dB	Upper decile of fast fading signal (within the hour)	IFRB Technical Standards
(5)	$D_L(F)$ dB	Lower decile of fast fading signal (within the hour)	IFRB Technical Standards
(6)	$D_U(E_w)$ dB	Upper decile of wanted signal	$\sqrt{D_U(S)^2 + D_U(F)^2}$
(7)	$D_L(E_w)$ dB	Lower decile of wanted signal	$\sqrt{D_L(S)^2 + D_L(F)^2}$
(8)	$E_w(10)$ dB ( $\mu$ V/m)	Wanted signal exceeded 10% of the time	$E_w + D_U(E_w)$
(9)	$E_w(90)$ dB ( $\mu$ V/m)	Wanted signal exceeded 90% of the time	$E_w - D_L(E_w)$
(10)	$E_{min}$ dB ( $\mu$ V/m)	Minimum usable field strength	IFRB Technical Standards
(11)	BCR	Basic circuit reliability	Expression (1), Figure C-1

Note 1 - In the calculation of BCR at the test points within the required service areas of synchronized transmitters, the field strength value to be used is calculated by the method of root sum square of the contributing field strengths in volts/metre.

The basic circuit reliability is given by the expression:

$$BCR = \frac{1}{\sqrt{2\pi}} \int_{-\infty}^{\gamma} \exp(-\tau^2/2) d\tau$$

when  $E_W \geq E_{min}$

$$\gamma = \frac{E_W - E_{min}}{\sigma_L}$$

$$\sigma_L = D_L(E_W)/1.282$$

when  $E_W < E_{min}$

$$\gamma = \frac{E_W - E_{min}}{\sigma_U}$$

$$\sigma_U = D_U(E_W)/1.282$$

## V.2 Calculation of [overall/interference] circuit reliability [(OCR) (ICR)]

The method is outlined in Table C-3. In step (1), the median wanted signal level is computed by the signal strength prediction method.

In step (2), the median field strength levels ( $E_i$ ) of each interfering source are obtained from the prediction method. In step (3), for a single source of interference the predicted median field strength is used; for multiple sources of interference the median field strength is calculated as follows: the field strengths of the interfering signals  $E_i$  are listed in decreasing order. Successive r.s.s. additions of the field strengths  $E_i$  are computed, stopping when the difference between the resultant field strength and the next field strength is greater than 6 dB. In step (3), the resultant field strength  $I$  is taken as the last computed value.

The values of the wanted signal and interference determined in steps (1) and (3) are combined in step (4) to derive the median signal-to-interference ratio. The 10% and 90% fading allowances are included in steps (5) and (6) in order to derive the signal-to-interference ratio exceeded for 10% and 90% of the time in steps (7) and (8).

The probability distribution for the signal-to-interference ratio may now be determined as shown in Figure C-2. The ratios are presented in decibels on a linear scale versus the probability that the value of the signal-to-interference ratio is exceeded on a normal probability scale. In Figure C-2, the value of probability corresponding to the required signal-to-interference ratio (9) is the circuit reliability in the presence of interference only (ICR). [The overall circuit reliability (OCR, step (12)) is the minimum value of either ICR (step (10)) or BCR (step (11)), whichever produces the lower value.]

The mathematical treatment of the calculation of ICR can be given in terms of the probability density distribution of the protection ratio. These functions are taken to be log normal, as is the resulting distribution of the signal-to-interference ratio.



The parameter ICR is given by the following expression:

$$ICR = \frac{1}{\sqrt{2\pi}} \int_{-\infty}^{\infty} \exp(-\tau^2/2) d\tau \quad (2)$$

when for  $E_W - I \geq RSI$

$$\gamma = \frac{E_W - I - RSI}{\sigma_L}$$

$$\sigma_L = D_L(SIR)/1.282$$

and for  $E_W - I < RSI$

$$\gamma = \frac{E_W - I - RSI}{\sigma_U}$$

$$\sigma_U = D_U(SIR)/1.282$$

Values of the various parameters in the above expressions are found in steps indicated below, Table C-3.

$E_W$	step (1)
$I$	step (3)
$D_U(SIR)$	step (5)
$D_L(SIR)$	step (6)
$RSI$	step (9)

TABLE C-3

Parameters used to compute overall circuit reliability

STEP	PARAMETER	DESCRIPTION	SOURCE
1	$E_w$ dB( $\mu$ V/m)	Median field strength of wanted signal	IFRB Technical Standards
2	$E_i$ dB( $\mu$ V/m)	Median field strength of interfering signals $E_1, E_2, \dots E_n$	IFRB Technical Standards
3	$I$ dB( $\mu$ V/m)	Resultant field strength of interference	1) $I = 20 \log_{10} \sqrt{\sum_{i=1}^n 10^{\left(\frac{E_i + \alpha}{10}\right)}}$
4	SIR(50)dB	Median signal to interference ratio	$E_w - I$
5	$D_U$ (SIR)dB	10% fading allowance	10 dB(<60°), 14 dB( $\geq 60^\circ$ ) <sup>2)</sup>
6	$D_L$ (SIR)dB	90% fading allowance	10 dB(<60°), 14 dB( $\geq 60^\circ$ ) <sup>2)</sup>
7	SIR(10)dB	Subjective signal-to-interference ratio exceeded 10% of the time	$SIR(50) + D_U(SIR)$
8	SIR(90)dB	Subjective signal-to-interference ratio exceeded 90% of the time	$SIR(50) - D_L(SIR)$
9	RSI dB	Required RF protection ratio <sup>3)</sup>	IFRB Technical Standards
10	ICR	Circuit reliability in presence of interference only (without noise)	Expression (2), Figure C-2
11	BCR	Basic circuit reliability	Expression (1), Figure C-1
12	OCR	Overall circuit reliability	Min(ICR, BCR)

Note 1 -  $\alpha$  is the appropriate relative protection ratio corresponding to the carrier frequency separation between the wanted and each unwanted signal.

Note 2 - i) If any point on that part of the great circle which passes through the transmitter and the receiver and which lies between control points located 1,000 km from each end of the path reaches a corrected geomagnetic latitude of 60° or more, the values for  $\geq 60^\circ$  have to be used.

ii) The value of 14 dB applies for overall circuit reliabilities not exceeding 80%. In other cases the value of 10 dB applies.

- iii) These values relate to the path of the wanted signal only.
- iv) For synchronized transmissions, the fading allowance associated with the predominant wanted signal is to be used. For those conditions where the contributing wanted field strengths are equal and Note 2 i) applies to at least one of the paths, the value of 14 dB is to be used for  $D_U(\text{SIR})$  and  $D_L(\text{SIR})$ .

Note 3 - In these calculations a single value of the co-channel protection ratio must be used.

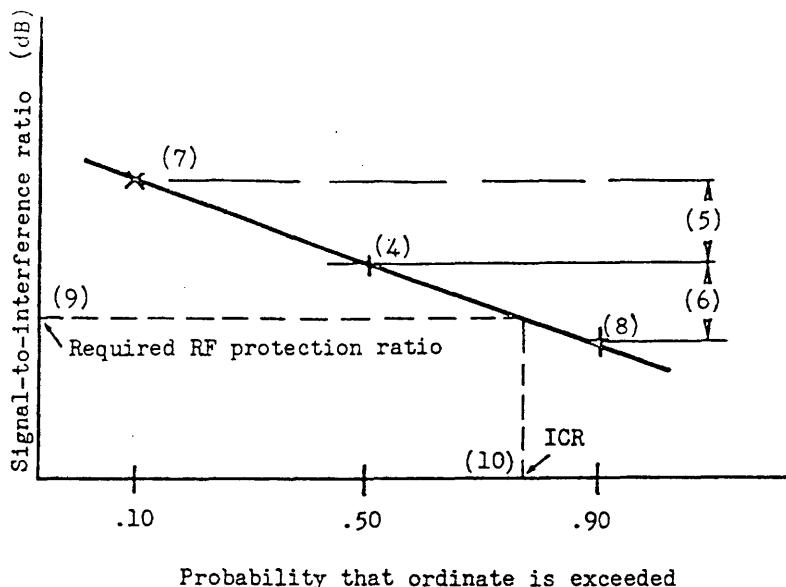


FIGURE C-2

Parameters used to compute overall circuit reliability

(Figures appearing in brackets refer to step numbers as shown in Table C-3.)

V.3 Basic reception reliability (BRR)

The method for computing basic reception reliability is outlined in Table C-4. With a single frequency, basic reception reliability (BRR) is the same as the basic circuit reliability (BCR) defined in section V.1. With multiple frequencies, the interdependence between propagation conditions at different frequencies leads to the computation method given in Table C-4. In steps (4) and (6), BCR (n) is the basic circuit reliability for frequency n, where  $n = F_1, F_2$ , etc. The basic reception reliability is obtained in step (2) for a single frequency, in step (4) for a set of two frequencies and in step (6) for a set of three frequencies.

V.4 Overall reception reliability (ORR)

The method for computing overall reception reliability is outlined in Table C-5. With a single frequency, overall reception reliability (ORR) is the same as the overall circuit reliability (OCR) defined in section V.2. With multiple frequencies, the interdependence between propagation conditions at different frequencies leads to the computation method given in Table C-5. In steps (4) and (6), OCR (n) is the overall circuit reliability for frequency n, where  $n = F_1, F_2$ , etc. The overall reception reliability is obtained in step (2) for a single frequency, in step (4) for a set of two frequencies and in step (6) for a set of three frequencies.

TABLE C-4

Basic reception reliability

The following parameters are involved:

Single-frequency operation

STEP	PARAMETER	DESCRIPTION	SOURCE
(1)	BCR (F <sub>1</sub> ) %	Basic circuit reliability for frequency F <sub>1</sub>	Step 11, Table C-2
(2)	BRR (F <sub>1</sub> ) %	Basic reception reliability	BCR (F <sub>1</sub> )

Two-frequency operation<sup>1</sup>

(3)	BCR (F <sub>2</sub> ) %	Basic circuit reliability for frequency F <sub>2</sub>	Step 11, Table C-2
(4)	BRR (F <sub>1</sub> ) (F <sub>2</sub> ) %	Basic reception reliability	F <sub>2</sub> 1 - Π (1 - BCR(n)) n=F <sub>1</sub>

<sup>1</sup> The two frequencies F<sub>1</sub> and F<sub>2</sub> shall be situated in different HF bands allocated to the broadcasting service.

TABLE C-4 (continued)

Basic reception reliability

Three-frequency operation<sup>1</sup>

STEP	PARAMETER	DESCRIPTION	SOURCE
(5)	BCR (F <sub>3</sub> ) %	Basic circuit reliability for frequency F <sub>3</sub>	Step 11, Table C-2
(6)	BRR (F <sub>1</sub> ) (F <sub>2</sub> ) (F <sub>3</sub> ) %	Basic reception reliability	F <sub>3</sub>  1 - Π (1 - BCR(n))  n=F <sub>1</sub>

- <sup>1</sup> The three frequencies F<sub>1</sub>, F<sub>2</sub> and F<sub>3</sub> shall be situated in different HF bands allocated to the broadcasting service.

TABLE C-5

Overall reception reliability

The following parameters are involved:

Single-frequency operation

STEP	PARAMETER	DESCRIPTION	SOURCE
(1)	OCR (F <sub>1</sub> ) %	Overall circuit reliability for frequency F <sub>1</sub>	Step 12, Table C-3
(2)	ORR (F <sub>1</sub> ) %	Overall reception reliability	OCR (F <sub>1</sub> )

Two-frequency operation<sup>1</sup>

(3)	OCR (F <sub>2</sub> ) %	Overall circuit reliability for frequency F <sub>2</sub>	Step 12, Table C-3
(4)	ORR (F <sub>1</sub> ) (F <sub>2</sub> ) %	Overall reception reliability	F <sub>2</sub>  1 - Π (1 - OCR(n))  n=F <sub>1</sub>

- <sup>1</sup> The two frequencies F<sub>1</sub> and F<sub>2</sub> shall be situated in different HF bands allocated to the broadcasting service.

TABLE C-5 (continued)

Overall reception reliability

Three-frequency operation<sup>1</sup>

STEP	PARAMETER	DESCRIPTION	SOURCE
(5)	OCR (F <sub>3</sub> ) %	Overall circuit reliability for frequency F <sub>3</sub>	Step 12, Table C-3
(6)	ORR (F <sub>1</sub> ) (F <sub>2</sub> ) (F <sub>3</sub> ) %	Overall reception reliability	F <sub>3</sub>  1 - $\prod$ (1 - OCR(n))  n=F <sub>1</sub>

<sup>1</sup> The three frequencies F<sub>1</sub>, F<sub>2</sub> and F<sub>3</sub> shall be situated in different HF bands allocated to the broadcasting service.

V.5 Basic and [overall/interference] broadcast reliability

The determination of basic broadcast reliability involves the use of test points within the required service area. The basic broadcast reliability is an extension of the basic reception reliability concept to an area instead of a single reception point. The method for computing basic broadcast reliability is outlined in Table C-6. In step (1), the basic reception reliabilities BRR (L<sub>1</sub>), BRR (L<sub>2</sub>), --- BRR (L<sub>N</sub>) are computed as described in Table C-4 at each test point L<sub>1</sub>, L<sub>2</sub> --- L<sub>N</sub>. These values are ranked in step (2) and the basic broadcast reliability is the value associated with a percentile [X] of the test points.

In a similar way, the [overall/interference] broadcast reliability is computed as described in Table C-7 and it is the value associated with a percentile [X] of the test points.

Broadcast reliability is associated with the expected performance of a broadcast service at a given hour. For periods longer than an hour, computation at one-hour intervals is required.

TABLE C-6

Basic broadcast reliability

The following parameters are involved:

STEP	PARAMETER	DESCRIPTION	SOURCE
(1)	BRR ( $L_1$ ), BRR ( $L_2$ ), --- BRR ( $L_N$ ) %	Basic reception reliability at all test points considered in the required service area	Step (2), (4) or (6), as appropriate, from Table C-4
(2)	BBR (X) %	Basic broadcast reliability associated with percentile [X]	Any percentile chosen from the values ranked from (1) of this table

TABLE C-7

Overall broadcast reliability

The following parameters are involved:

STEP	PARAMETER	DESCRIPTION	SOURCE
(1)	ORR ( $L_1$ ), ORR ( $L_2$ ), --- ORR ( $L_N$ ) %	Overall reception reliability at all points considered in the required service area	Step (2), (4) or (6), as appropriate, from Table C-5
(2)	OBR (X) %	Overall broadcast reliability associated with percentile [X]	Any percentile chosen from the values ranked from (1) of this table

## VI. PROPORTIONALLY REDUCED PROTECTION (PRP)

PRP is a margin (M) by which the RF protection ratio to be applied at a test point is reduced under the following specified conditions:

- 1) the  $BBR < [80\%]$ , and
- 2) only one frequency band is given by the planning system, and
- 3) at the test point considered the field strength  $E_w$  is less than  $E_{min}$  and greater than or equal to  $E_{min} - [Z]$ .

In these conditions M is determined as:  $M = E_{min} - E_w$ .

In such cases the proportionally reduced protection ratio is used in the evaluation of S/I at the test point considered. For all the remaining points within the required service area, full protection as determined by the relevant protection ratio is given when  $E_w \geq E_{min}$  and no protection is given when  $E_w < E_{min} - [Z]$ .

In cases where PRP is not applicable, full protection as determined by the relevant protection ratio is afforded when  $E_w \geq E_{min}$  and no protection is afforded when  $E_w < E_{min}$ .

## VII. MAXIMUM NUMBER OF FREQUENCIES REQUIRED PER REQUIREMENT

### VII.1 Introduction

Wherever possible, only one frequency should be used for a particular requirement. In certain special circumstances, it may be found necessary to use more than one frequency per requirement, i.e.:

- over certain paths, e.g. very long paths, those passing through the auroral zone, or paths over which the MUF is changing rapidly;
- areas where the depth of the area extending outwards from the transmitter is too great to be served by a single frequency;
- when highly directional antennas are used to maintain satisfactory signal-to-noise ratios, thereby limiting the geographical area covered by the station concerned.

The decision to use more than one frequency per requirement should be made on the merits of the particular case concerned.

Use of synchronized transmitters should be encouraged whenever possible with a view to minimizing the need for additional frequencies.



## VII.2 Use of additional frequencies

The number of frequencies needed to achieve the specified level of basic broadcast reliability shall be determined by the method given below. If the calculated basic broadcast reliability for a single frequency does not reach the adopted value, it is necessary to consider whether the BBR could be improved by additional frequencies in separate bands and whether the improvement would justify the use of additional frequencies.

## VII.3 Determination of additional frequency bands

In cases where the BBR<sup>1</sup> for the first band, based on all test points in the required service area, is between 50% and 80%, an additional band shall be tested as follows.

Those test points whose basic circuit reliability BCR is less than or equal to the BBR are identified and only these points are used to determine the second band. For each band, the minimum value of BCR ( $BCR_{min}$ ) at these points is determined and that band having the highest  $BCR_{min}$  value is selected. If more than one band has this value, the highest frequency band is selected. The two-band BBR, taking account of the BBR at all test points in the required service area is then computed and if it exceeds the limit specified in Figure C-3<sup>2</sup> then the second band is permitted. In those special cases where the two-band BBR is less than 80% then a third band shall be tested as follows.

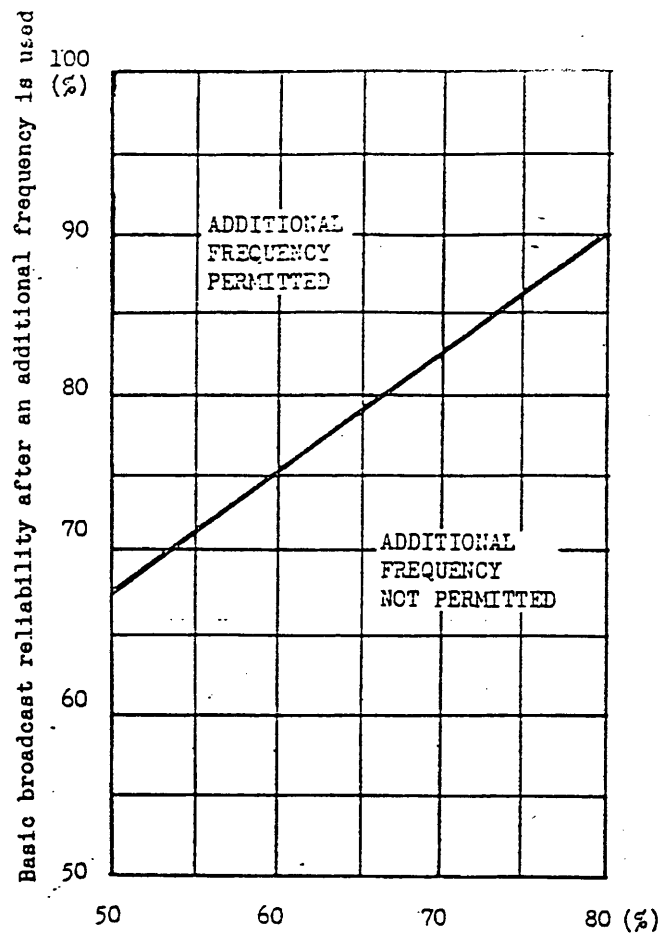
The BBR for each of the remaining bands is computed considering all test points in the required service area. Of these bands, that band having the highest BBR is selected as the third band. If more than one band has this value the highest frequency band is selected. If the resulting three-band BBR taking account of the BBR at all test points exceeds the limit specified in Figure C-3, the third band is permitted.

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<sup>1</sup> For calculation of the basic broadcast reliability, see paragraph V.5.

<sup>2</sup> The contents of this figure can be expressed by the following equation:

$BBR (after) > 30 + .75 * BBR (before)$	additional frequency permitted
$BBR (after) \leq 30 + .75 * BBR (before)$	additional frequency not permitted.



Basic broadcast reliability before an additional frequency is to be used

FIGURE C-3

Limits for use of an additional frequency

VIII. PERFORMANCE ASSESSMENT

[See Document 145.]

ANNEX 4

Draft section [1] HFBC requirements file

1. Administrations shall submit to the IFRB, their operational and projected broadcasting requirements in the bands allocated exclusively to the broadcasting service between 5 950 and 26 100 kHz. These requirements shall be entered in the HFBC requirements file<sup>1</sup> which shall contain:

- requirements which are to be used within the next [ ] years;
- all requirements taken into account in the preparation of a seasonal schedule or plan or during its operation;
- requirements used during the preceding [5] year period.

2. An entry in the HFBC requirements file shall be defined as a requirement indicated by an administration to provide a broadcasting service at specified periods of time to a specified reception area from a particular transmitting station.

3. Each requirement listed in the HFBC requirements file shall contain at least the basic characteristics listed in Appendix 2 together with the indication of the season(s) in which the requirement was or will be used.

4. Each seasonal schedule or seasonal plan to be established in accordance with [ ] shall cover one of the seasonal propagation periods indicated below. The month shown in the parentheses indicates the month to be used for the propagation prediction:

- Season D - November - February (January);
- Season M - March - April (April);
- Season J - May - August (July);
- Season S - September - October (October).

Each seasonal [plan or seasonal] schedule shall be implemented at 0100 UTC on the first Sunday of the season concerned.

5. Administrations shall notify the Board, using Appendix 2, of any addition, modification or deletion of a requirement in the HFBC requirements file. Additions, modifications or deletions notified to the Board for a given season shall be taken into account provided that following their examination by the Board they are considered complete.

6. Upon receipt of notices pursuant to paragraph 5 above, the Board shall ensure that the basic information listed in Appendix 2 is given and is correct and shall request the notifying administration to notify the correct or missing information. Following this examination the Board shall indicate those incompatibilities which can be identified without the need for detailed

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<sup>1</sup> The initial establishment of the requirements file will be in accordance with Resolution [COM5/1] and will not contain any history of frequency use prior to the establishment of the file.

calculations and shall inform the administrations concerned of the results obtained together with any recommendation that may assist in avoiding this incompatibility.

7. After the end of each seasonal period, the Board shall enter into the requirements file for each requirement the frequency or frequencies used, together with any indication from administrations on the actual use of the requirement. Requirements already used shall be kept in the HFBC requirement file for a period of five years. No priority shall be derived from this history of use.

8. (To be supplied by Drafting Group 6-1.)

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COMMITTEE 5

Argentina and Colombia

PROPOSAL FOR THE CONFERENCE

NATIONAL BROADCASTING IN THE HF BANDS

The experience gained from the analysis of the planning exercises as well as from the discussions which have taken place at the Second Session of the Conference (WARC-HFBC(2)) has led us to the conclusion that the two kinds of HF broadcasting, i.e. national and international, differ as to their technical and operating conditions. Since the Planning System should allow for this fact, we submit to the Conference the draft Recommendation in the annex hereto.

Annex: 1

ANNEX

ARG/CLM/223/1

RECOMMENDATION

**National Broadcasting in the HF Bands**

The World Administrative Radio Conference for the Planning of the HF Bands Allocated to the Broadcasting Service (Geneva, 1987),

considering

- a) the Report to the Second Session of the World Administrative Radio Conference for the Planning of the HF Bands Allocated to the Broadcasting Service;
- b) that the First Session of WARC-HFBC (1984) decided that due consideration should be given to the difference between national<sup>1</sup> and international broadcasting;
- c) that the HFBC Planning System must, in particular, take account of the way in which administrations' requirements for longer transmission periods, mainly for national broadcasting purposes, can best be accommodated;
- d) that the two kinds of HF broadcasting, national and international, differ as to their technical and operating conditions;
- e) that the Second Session of WARC-HFBC (1987) decided not to consider the question in detail,

recommends

that the Administrative Council should take the necessary steps to ensure that the agenda of the next World Administrative Radio Conference competent to deal with HF broadcasting includes the consideration of national broadcasting, under the conditions set out in the preambular part of this Recommendation.

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<sup>1</sup> An HF broadcasting use is considered as being for purposes of national coverage when the transmitting station and its associated required service area are both located within the territory of the same country. (There is a need for this note to appear in the Final Acts of the Conference.)

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COMMITTEE 5

SUMMARY RECORD  
OF THE  
ELEVENTH MEETING OF COMMITTEE 5  
(PLANNING METHOD AND ASSOCIATED PROCEDURE)

Tuesday, 3 March 1987, at 1045 hrs

Chairman: Mr. C.T. NDIONGUE (Senegal)

Subject discussed:

Document

1. Report of the Chairman of Working Group 5 ad hoc

DT/65

1. Report of the Chairman of Working Group 5 ad hoc (Document DT/65)

1.1 The Chairman, speaking as the Chairman of Working Group 5 ad hoc, said that Document DT/65 represented a possible compromise package reached after three days of frank discussion of the problems facing the Committee. A fundamental element of the package was its short- and medium-term strategy, of which the former was crucial in providing a period of several years for the improvement of both the HFBC Planning System and the Article 17 procedure before the convening of another WARC, possible in 1992, to examine the results achieved and decide on their implementation.

The package also addressed the basic problem of which frequency bands should be used for testing and implementing the first stage of the HFBC Planning System and the improved Article 17 procedure. It had been agreed that 200 kHz should be used for the HFBC Planning System in the bands and extension bands allocated for HF broadcasting between 26 MHz and 13 MHz, 125 kHz in the extension bands at 11 MHz and a further 125 kHz in the 9 MHz extension band as from 1994.

With respect to the Final Acts of the Conference, it had been decided that only the broad outlines of the planning method could be adopted. The HFBC Planning System as such, although based on the principles approved at the First Session, could not be adopted until it was agreed to be satisfactory.

The Working Group had also concluded that the long-standing problem of national and international broadcasting could not be tackled in the short- or medium-term and had therefore decided to recommend that it continue to be studied by administrations and the IFRB with a view to consideration of a solution at some future conference.

Finally, on the subject of possible bands extensions, he anticipated that they would be used for the HFBC Planning System when it eventually became operational in the medium term.

The package outlined represented a compromise, the whole of which could be endangered if serious attempts were made to change its individual elements. It was a compromise which the ad hoc Working Group believed would enable the Conference to achieve a positive outcome.

1.2 The delegate of Libya said that, in order to ensure that the proposed WARC in 1992 had concrete results to consider, paragraph 2 of the compromise document should provide for the improved HFBC Planning System to be tested in practice with operational transmitters as well as in theory and on paper.

1.3 The Chairman said that that possibility had been examined and rejected as contrary to ITU practice.

1.4 The delegate of the Islamic Republic of Iran said that some administrations could not adopt the HFBC Planning System until it had been tested using real data and operational transmitters. He wished to ensure that the proposed WARC in 1992 would not face the same problems as the current one.

1.5 The Chairman referred to his previous answer concerning operational testing. The reason why the HFBC Planning System could not be recommended for adoption at the current Conference was that the results to date were not satisfactory, so time had to be allowed for modifications and improvements to be tested.



1.6 The delegate of the Islamic Republic of Iran said that he had raised his point in Committee rather than in the ad hoc Working Group so as to have it on record. He was satisfied with the outcome.

1.7 The delegate of Syria said that the plan outlined in Document DT/65 was wholly theoretical and could not be implemented in practice, whether a further WARC was held or not. The very principles of the plan needed to be changed.

1.8 The delegate of Italy proposed that, in view of the Chairman's introductory statement, the reference in paragraph 2 of Document DT/65 to "these adopted principles and planning method" should be amended to read "the principles and the broad lines of the planning method adopted".

1.9 The delegate of Austria reserved his position on Document DT/65 and asked for clarification of an apparent contradiction between paragraph 5 and Annex 1 as to the parts of the HF bands in which the improved HFBC Planning System and Article 17 would be tested and implemented.

1.10 The Chairman said that, while the text could be amended to make its proposals clearer, the essential point was that the HFBC Planning System should be tested primarily in the extension bands but also in a small part of the bands currently allocated to HF broadcasting, whereas the Article 17 procedure would be applied only to the latter.

1.11 The delegate of Algeria recalled that his Delegation had voiced two reservations in the ad hoc Working Group. The first concerned the validity and objectivity of the estimates for immediate post-conference work by the IFRB (Document 191). In view of the substantial simplification of the HFBC Planning System worked out on 2 March, he believed that the date by which the System would become operational should be brought forward from the years 1990/1991 specified in paragraph 2 of Document DT/65.

His second reservation concerned the strategy proposed, which meant a long delay in solving the problems that the current Conference had been convened to settle. There was, moreover, no reason to believe that a further WARC in 1992, if held, would be any more successful. The same problems would exist and it was unlikely that administrations currently opposed to the Planning System would have changed their attitude. He therefore objected to the Conference being recommended to cede its authority to make the necessary decisions to a later WARC.

1.12 The delegate of Oman said that he shared the concerns expressed by the delegates of Algeria and the Islamic Republic of Iran. He also wondered why Document DT/65 omitted to mention long-term strategy and the effects of harmful interference.

1.13 The delegate of Tanzania considered that Document DT/65 was well-balanced but he had doubts referring implementation of the Planning System to another WARC in 1992 as proposed in paragraph 4.

1.14 The delegate of Qatar said that, to his mind, such a WARC could hardly approve the results of the Planning System unless they were tested in practice. However, paragraph 2 of the report only mentioned theoretical trials of the System. On a further point, he wished to confirm that paragraph 5 of the report referred to the improved Article 17 as well as the improved HFBC Planning System.

1.15 The Chairman, replying to the various questions raised, and addressing first the concerns of a number of delegations about tests, said that plans had always been adopted in the past on the basis of theoretical tests and there was no reason why the same course should not be followed in the case of HF broadcasting. On the subject of short-term and medium-term strategies, administrations had another chance to consider the test results in the light of changes in the interpretation of principles adopted by the First Session. The question of deadlines had been brought up in Working Group 5 ad hoc but he could not comment on the software. However, members of the Board had considered that the question could not be solved for the next two and a half years and he, as a non-expert, had to accept their word. The question of interference was not part of the terms of reference of the ad hoc Group and had not therefore been discussed.

As far as a long-term strategy was concerned, Working Group 5 ad hoc had considered that in view of the number of requirements and the problems that could arise over suspension, the only way of achieving the final aim of the Conference would be to introduce SSB in the hope that, when capacity was doubled, it might be possible to satisfy all requirements. It had been said, however, that the additional capacity might be taken up by a huge increase in requirements, and the difficulties of forecasting up to 1992 had also been emphasized. There was also the problem of receivers and transmitters with their life-span of between 15 and 40 years. The Group had therefore considered it premature to deal with the long-term question and had concentrated instead on the short-term and medium-term aspects. The question had then arisen that a conference might not be held in 1992 and that there was no certainty that the decisions taken by the present Conference would be applied as it wished. In its report, therefore, the ad hoc Group had committed itself to a planning method grosso modo and had assumed that the System would be improved, that the improvements would be considered and that in 1992 a date for introducing the System could be decided. The 1992 conference might therefore be the best way of guaranteeing that the decisions of the present Conference would be implemented, provided that it had a very precise agenda.

1.16 The Secretary-General, replying to the question raised by the delegate of Tanzania, said that it had been envisaged as a general part of the package that there would also be a conference in 1992 which could also follow up the separate Recommendation already prepared in connection with the review of the frequency bands exclusively available for HF broadcasting. The Administrative Council had been requested to take note of that Recommendation. In past world administrative radio conferences, wishes had been expressed either in the form of a Recommendation or a Resolution, the latter carrying with it, in theory, a higher degree of persuasion. However, the Recommendation could be transformed into a Resolution, or a separate Resolution could be passed by the Conference, giving a strong expression of administrations' views to that competent conference. That issue had been discussed at WARC-79 and it had been found on balance that it was desirable to provide for Resolutions which sought the convening of the various world and regional conferences. It was therefore a matter for the Conference to decide whether it wished to adopt a strong persuasive Resolution or to treat the matter as it had been treated already, in isolation, as a Recommendation.

1.17 The delegate of Canada recalled that Working Group 5-D had submitted to Committee 5 on 26 February a document (No. 188) recommending that a WARC should be held to consider the possibility of extending the HF spectrum allocated to the broadcasting service. That task might usefully be referred to in paragraph 4 of Document DT/65 as a third indent, and also in Annex 2 under "1992 Competent WARC" as "Consideration of the reallocation of the spectrum".

Similarly, and along the lines recommended by the Secretary-General, the Recommendation in Document 188 should be expanded to include the necessary action with regard to the HFBC Planning System as indicated in paragraph 4 of Document DT/65. At that time, and also in line with a comment made by the Secretary-General, that Recommendation might perhaps be strengthened and converted into a Resolution appropriately worded for the Administrative Council.

On the likelihood of a conference being held in 1992, he recalled that when schedules of future conferences were examined at Plenipotentiary Conferences, there had always been a willingness to accept the advice of a special service conference such as the present one, and he could not remember an occasion when an appropriate course of action recommended by such a service conference had been rejected.

Finally, the Delegations of France and Canada had introduced Document 139 the previous week, proposing the establishment of a Group of Experts. The matter had not yet been discussed in detail in Committee 5 but from private consultations he believed that there was a willingness that a key part of the post-conference programme of activities should include such a group and he would like that possibility to be reflected in Document DT/65, if it were to be revised.

1.18 The delegate of Tanzania, thanking the Secretary-General for his reply, said that the Recommendation in question should in his view be converted into a Resolution, and the additional task suggested by the delegate of Canada should be added.

1.19 The delegate of Japan said that the conclusions of Working Group 5 ad hoc contained in Document DT/65 provided the best possible compromise solution and were in line with Japan's own views. His Delegation therefore supported the conclusions in principle. Both in establishing and in implementing the System based on the proposals now under discussion, there were three major issues: the refinement of the HFBC Planning System, the adjustment between the HFBC Planning System and Article 17 with might involve a good deal of interaction and coordinated timing as far as the submission and handling of requirements was concerned, and the consideration of information both sufficient and necessary for each administration to be able to evaluate the improvement of the System provided by the Board. It was essential to maintain good communications between administrations and the IFRB in tackling those issues, and there should also be some machinery whereby administrations could pass on their advice. The Japanese Delegation was extremely interested in establishing the System to improve the situation of short-wave broadcasting and was prepared to cooperate in those activities to the extent possible.

1.20 The delegate of the Islamic Republic of Iran supported the idea of adopting a stronger attitude and proposed that whatever text was issued by the Conference should be drafted in the language of the Radio Regulations rather than as Recommendations so as to alleviate the doubts of some administrations. The question of the Group of Experts was a sensitive one and when it was discussed in detail, he would comment further.

1.21 The delegate of Brazil supported the proposal for a Resolution rather than a Recommendation, because there appeared to be an almost unanimous view in the Conference that another conference should be convened around 1992 to examine the results of the improved HFBC Planning System and improved Article 17, and to take decisions. He was very doubtful, however, about the Resolution contained in Document 188 since it contained no assurance whatsoever that such a conference would be held. The Plenipotentiary Conference would consider the possibility of holding a conference for the possible extension of the frequency bands

concerned. He therefore considered that the task of examining the results of the tests on the HFBC Planning System could not be combined with that of the possible expansion of frequency bands since the two were absolutely different. However, the Recommendation contained in Document 188 should perhaps reflect the fact that no decision had been taken by the present Conference to hold another conference to expand the bands.

1.22     The delegate of Syria asked for clarification about the testing in part of the band of requirements from the requirements file intended for the entire band. Theoretically, at least, such tests would prove a failure.

1.23     The Chairman of the IFRB, replying to questions raised, said that as far as the tests referred to in paragraph 2 were concerned, the software tests were self-explanatory, and were carried out to make sure that each module worked correctly and interfaced correctly with other modules. Those tests were followed up with tests on hypothetical data to make sure that the System functioned correctly. Testing would then be carried out with actual data as had been done with the December 1985 and other plans, and in that case the Board would hope to use the real requirements submitted by administrations. The question of practical trials was not one for the Board, although the Board did see difficulties in their implementation.

Another aspect which caused the Board some concern was the question of estimates, particularly those given in Document 191 which had been discussed in Committee 3 and also in Working Group 5 ad hoc. He understood that a comment had been made to the effect that the IFRB's efforts to produce estimates should be made more diligently and more economically. The Board made every effort to be objective in its work, but it was natural that some of its work should be acceptable to some delegations and not to others. In discussing estimates, however, it was important to bear in mind that the IFRB secretariat, as well as the Board members, had worked with that system for the past two and half years and had acquired some experience in HF planning and of what was feasible in a certain time and what was not. The Board had also been engaged for some years in the development of a Frequency Management System for processing notices and further extensions of the System to assist administrations. In that area of activity, therefore, he firmly believed that the estimates were the best time estimates possible for the moment. Administrations would want to be confident that the System, as developed on the instructions of the present Conference and by the Board, would be satisfactory as a system from the operational point of view, and that took time.

1.24     The Secretary-General said that as a complement to the various Resolutions passed at WARC-79 there had been an additional Recommendation which, because of technology and the programme of specialized world administrative conferences for the coming decade, had recommended that the Administrative Council should consider as from 1990 whether it was necessary to convene a world administrative radio conference to undertake a general or partial revision of the Radio Regulations. That, therefore, was a matter which the Administrative Council would have to consider before the Plenipotentiary Conference, and there were already a number of Resolutions and Recommendations from conferences demanding that issues be dealt with in a competent conference. Presumably that would be the one being discussed for 1992.

The meeting rose at 1215 hours.

The Secretary:

M. GIROUX

The Chairman:

C.T NDIONGUE

COMMITTEE 5

## SUMMARY RECORD

## OF THE

## TWELFTH MEETING OF COMMITTEE 5

## (PLANNING METHOD AND ASSOCIATED PROCEDURES)

Tuesday, 3 March 1987, at 1400 hrs and 1815 hrs

Chairman: Mr. C.T. NDIONGUE (Senegal)Subjects discussed:Documents

- |   |                |
|---|----------------|
| 1. Report of the Chairman of Group 5 ad hoc (continued)   | DT/65          |
| 2. Reports of the Chairmen of the Drafting Groups on revised Article 17 and the HFBC Planning System            | DT/67<br>DT/68 |
| 3. Preparation of a Recommendation on national broadcasting and a Resolution on the convening of a WARC in 1992 | -              |
| 4. Proposed establishment of a Group of Experts   | 139            |

1. Report of the Chairman of Group 5 ad hoc (continued)  
(Document DT/65)

1.1 The delegate of Algeria said that he shared the concern with regard to paragraph 4 of Document DT/65 expressed by the delegate of Tanzania at the previous meeting. As for the Canadian delegate's proposal that the Recommendation in Document 188 should be transformed into a Resolution, he found it surprising to say the least and fully associated himself with the comments made on that score by the delegate of Brazil.

1.2 The delegate of Colombia endorsed the statement just made by the delegate of Algeria as well as that of the delegate of Brazil at the previous meeting. A text for the Recommendation referred to in paragraph 6 of Document DT/65 had been prepared by a group of delegations, and he hoped that it might be included in the agenda for a forthcoming meeting of the Committee.

1.3 The Chairman said that the proposal would be discussed at the meeting of the Committee to be held on the next day.

1.4 The delegate of Kuwait, referring to paragraphs 2 and 3 of Document DT/65, asked whether work to be done by the WARC projected for 1992 would be deferred to WARC-1997 if the results of the tests were unsatisfactory. The delegate of Tunisia associated himself with that question and enquired further what would happen to the compromise package if WARC-1992 failed to take place. The delegate of Jordan asked what guarantees there were that the 1992 Conference would be convened at all and, if it was, that the items discussed would be those envisaged in the document. He wondered whether it was wise to pin all hopes upon the success of a hypothetical WARC to be held in 1992.

1.5 The delegate of Zimbabwe asked whether the gradual introduction of SSR had been taken into consideration in the preparation of Annex 2 to the document, and if not, why not.

1.6 The delegate of Thailand agreed with those speakers who considered that it was more suitable for the Recommendation in Document 188 to go forward as a Recommendation rather than as a Resolution.

1.7 The delegate of Cameroon said that he accepted Document DT/65 as a whole but was not clear as to what procedure was to apply to bands 6 and 7 after 1992.

1.8 The delegate of Yugoslavia said that although the prime objective of the Conference had not been met, he was prepared, in a spirit of compromise, to agree in principle with the package solution presented in Document DT/65, reserving his right to make proposals on points of detail at a later stage.

1.9 The delegate of Austria said that the Chairman's efforts to find a global compromise deserved appreciation. A number of important aspects had been brought into balance in Document DT/65. He felt some concern, however, at finding no mention of an aspect of importance to his Delegation as well as to a number of others, namely, the need to guarantee all countries a minimum service with satisfactory protection.

1.10 The delegate of Ecuador, referring to paragraph 2 of the document, suggested that the IFRB should be invited to notify the test results to member countries at least once a year. With regard to Annex 1, he shared the concerns expressed by the delegate of Cameroon; the situation with regard to band 6, at least, should be clarified further.

1.11 The delegate of Qatar said that the word "improved" should be inserted before the word "Article 17" in both sub-paragraphs of paragraph 5 of the document. He requested clarification of the sequence of events shown in paragraph 7.1 and expressed a further concern in connection with the theoretical tests referred to in paragraph 2.

1.12 The Chairman observed that the main concern expressed related to whether the 1992 Conference would indeed be held and to what would happen if the results submitted to that Conference were still unsatisfactory. With regard to the first point, to the best of his knowledge there had been no case in the history of the ITU in which a request for a conference had not been complied with. At the preceding meeting, the Secretary-General had suggested that the convening of the 1992 Conference should be the subject of a Resolution; he was convinced that such a Resolution would have the desired effect. Where the second point was concerned, it was for the present Conference to improve on the principles to be used by the IFRB as a basis for its post-conference work, since the shortcomings of the System presented by the Board were due to a misinterpretation of the principles laid down by the First Session. With regard to the modalities, the Conference would have to decide whether the IFRB should submit periodic reports on the results obtained or whether a Group of Experts should be set up to assist the Board in its task.

In reply to the Austrian delegate's question about satisfaction of minimum requirements, the procedure as he saw it would be to try to satisfy the first requirement of every administration, then to proceed to the second, and so on until the 17 dB criterion had been met, after which all remaining requirements would be dealt with under the improved Article 17 procedure.

Some delegates had criticized paragraph 7.1 on the grounds of insufficient precision but he would submit that, since the implementation of the improved HFBC Planning System and the improved Article 17 depended on the decisions of the 1992 Conference, the present Article 17, which would not be abrogated at the end of the current Conference, must continue to apply: there was no alternative to that procedure.

1.13 The Secretary-General said that the problem of confidence, which had beset the Conference from the outset, was now arising again in the form of doubts as to whether the 1992 Conference would in fact be convened. The present Conference would certainly approve texts calling for modifications of various Radio Regulations, Resolutions and Recommendations and involving problems of the legal status of certain texts; but it must be borne in mind that any Resolution adopted by the Conference would be destined, not for some body extraneous to the Union, but for another organ of the ITU itself - first the Administrative Council, on which 41 of the 116 Members attending the present Conference were represented, and then the Plenipotentiary Conference, which would probably be attended by at least 140 Member States: those bodies, which were responsible within the Union for taking the necessary final and practical decisions, would surely not ignore the advice of the present Conference.

1.14 The delegate of the Islamic Republic of Iran said that, although some delegations might be satisfied by those assurances, it would nevertheless be desirable to provide a safeguard for the IFRB and for administrations in the event that the 1992 Conference did not materialize for one reason or another. He therefore proposed that in such a case the improved HFBC Planning System and the improved Article 17 should be implemented in the bands shown in Annex 1 to Document DT/65 until such time as the new conference was convened and other decisions were taken. The delegates of Algeria, Libya and the Yemen Arab Republic supported that proposal.

1.15 The delegates of Papua New-Guinea, Botswana, Senegal and the USSR said they fully supported the statements made by the Chairman and the Secretary-General and expressed their confidence in the action that would be taken by the Administrative Council and the Plenipotentiary Conference.

1.16 The delegate of the United Kingdom said he assumed that the opinions expressed by delegates when Document DT/65 was considered paragraph by paragraph would be reflected in the revised report that the Chairman would submit to the Plenary Meeting.

1.17 The Chairman said he agreed with the Secretary-General that the Conference had suffered throughout from a lack of confidence. Indeed, the doubts that still seemed to persist had greatly delayed the work. At that stage in the proceedings, delegations had only one choice - to accept the compromise in Document DT/65 or to allow the present Article 17 to apply ad infinitum. He was convinced that there was a silent majority in the Committee which was in favour of the first course, and he therefore proposed to comply with the views of that majority.

The meeting was suspended at 1520 hours and resumed at 1815 hours.

1.18 The Chairman invited the Committee to consider the text of Document DT/65 from section 1 onwards with a view to making it the basis of a report by Committee 5 to the Plenary. It was his understanding as a result of the earlier discussion of the paper that the main lines of compromise proposed in the document were acceptable to the majority of delegates and should go forward unchanged to the Plenary; the present discussion should thus be restricted to clearing up any misunderstandings that might arise as a result of the way the text was worded.

1.19 A number of amendments to the text of sections 1 and 2 of Document DT/65 were put forward, and a number of points of principle made. The delegates of Algeria and Australia proposed amendments to section 1; the delegate of Yugoslavia considered that section 1 should make a stronger commitment to implementation of the improved HFBC Planning System. In section 2, the delegate of the United Kingdom considered it would be more correct not to mention the dates 1990/91 and to refer instead to the two and a half years the Board had estimated it would take to improve the System, the delegate of China considered the word "theoretical" in the term "theoretical trials" misleading and wished the text to clearly indicate that the tests, although on paper only, would comprise all those necessary for the implementation of the Planning System, the delegate of Australia considered that the text should make clear that only if the results obtained were found satisfactory and approved would implementation of the System go forward, the delegate of Libya considered the results should be used to improve the Planning System in accordance with the main lines indicated in the Final Acts, and the delegate of Syria sought reassurance that the tests were to be carried out on preferred requirements only.

1.20 The Chairman said that if agreement on the substance and main lines of the text was not possible without a large number of detailed drafting amendments, then in view of the late stage of the Conference it would not be possible to continue consideration of the document and he would withdraw it.

1.21 The delegate of the USSR proposed that, rather than considering drafting amendments, a better way to proceed would be for speakers to restrict their comments to the substance of each section. The Chairman could then use those comments as a basis for the issue of a revised document by the Chairman for submission to Plenary.



1.22 The Secretary-General drew the Committee's attention to the fact that if it failed to complete its discussion on Document DT/65, it would not have completed its work. The Committee had two courses of action open to it: the first was to apply the normal Committee procedure of discussion of the document with a view to making it a document of Committee 5 to the Plenary. Unfortunately, at the present stage of the Conference, there was not sufficient time left to follow that normal procedure; the second course of action, given the fact that the general outlines of the compromise had already been developed, was for the Committee to allow the Chairman to find the right balance in the application of the detail of that compromise and to report on it himself to the Plenary. That was the pragmatic proposal put forward by the USSR.

The USSR proposal was approved.

1.23 The delegate of the United States supported the spirit of the proposal contained in Document DT/65. He also supported the general thrust of the document subject to the following provisos: that there would be no suspension of the rules applied by the IFRB in operation of the HFBC Planning System; that it would be necessary to test and evaluate the results of the HFBC Planning System and the improved Article 17 and, in particular, to understand the inter-action between those two provisions and the changes made by the present Conference; and that the approval and, if possible, adoption of the planning method and improved Article 17 was a matter for a competent WARC, which should be held in the 1992 time-frame and should consider in addition the adequacy of the spectrum currently allocated on an exclusive basis to the HF broadcasting service.

1.24 The delegate of Algeria also supported the spirit of the proposal in Document DT/65 subject to the reservation that the present Conference should confirm the planning method and introduce its principles into the Radio Regulations, and that the System should be improved by the IFRB and should be tested and, if possible, submitted to a WARC in 1992. In any event, application of the System after 1992 should be carried out progressively at a rate of one requirement per country per year.

1.25 The delegates of Kenya, the German Democratic Republic and Poland supported the spirit and contents of the document.

The Chairman invited the Committee to consider the text of Document DT/65 section by section from section 1 onwards with a view to making it the basis of a report by the Chairman to the Plenary.

#### Section 1

1.26 The delegate of Yugoslavia reiterated the reservation he had expressed earlier.

#### Section 2

1.27 The delegate of Syria reiterated the reservation he had expressed earlier.

1.28 The delegate of Qatar said that section was acceptable provided that "operational" was changed to "available".

1.29 The delegate of Canada pointed out that in Document 139 his Delegation and that of France had recommended that a Group of Experts should be set up as part of the global compromise proposed; he requested that that should be mentioned in section 2 along with the reference to the development of an improved HFBC Planning System by the IFRB.

1.30 The Secretary-General said that Document 139 should be considered on another occasion. In clarification of an apparent misunderstanding that had arisen, he explained that tests would be carried out on real data relating to the requirements submitted by administrations, and the results would be submitted to the competent conference.

1.31 The delegate of Algeria stated that Canada's proposal had not been discussed in the ad hoc Group and there was no question of it forming part of the compromise package. He fully agreed that it should be discussed elsewhere.

1.32 The delegate of France conceded that it should be discussed on another occasion but stressed that, although he could agree with Document DT/65 in general, he would hesitate to agree to any compromise which failed to include reference to the Expert Group.

### Section 3

1.33 The delegate of Algeria said that it was not known when the Final Acts of the proposed 1992 Conference would come into force, or indeed whether the Conference would be held then; hence the current Article 17 would be applied until some as yet unspecified date in the future. He therefore felt that the wording of the section was too weak and should be placed in square brackets. The Chairman understood that concern but pointed out that the decision to implement depended on prior adoption of a plan. Furthermore, it was quite impossible at the present stage of the Conference to place square brackets around any wording; the substance was under discussion, not the wording. The delegate of Algeria stressed that it was incumbent on the ITU, its Members and the IFRB to commit themselves to some definite action beginning in 1992. He therefore suggested inclusion of wording to ensure that if the WARC were not held in 1992, implementation of the improved plan would begin then.

1.34 The Chairman explained that such a decision would have to be taken immediately and would imply that, whatever the results of the plan, it would be implemented as from 1992.

1.35 The Chairman of the Conference urged that all delegations should try their utmost to accept in principle the compromise set out in Document DT/65 with, at the most, very slight improvements, as all the points had been discussed in depth in the ad hoc Group. Unless the document could be accepted there would be no compromise and no Planning System. The proposal made by Algeria would conflict with section 2 of the document regarding the date of practical implementation of the System which had been agreed in the ad hoc Group and was an important element of the compromise.

The Chairman concurred that the proposal undermined the entire strategy.

1.36 The delegate of Tunisia supported the Algerian view. The agenda of the Conference contained an item on the refining and adopting of the planning method and failure to do that was tantamount to admitting failure.

1.37 The delegate of Libya advocated that the planning method and guidelines discussed in the ad hoc Group should be taken into consideration in the pertinent sections of Document DT/65, particularly in sections 2 and 4.

#### Section 4

1.38 The delegate pf Rwanda agreed with the spirit of Document DT/65 and asked that the parts of the band not affected by the planning should be taken into account. He therefore proposed a third indent under section 4 referring to planning for the remaining bands. The Chairman said that he would take that comment into account.

1.39 The delegate of India said that the Conference should express the urgency of implementing the decisions of the 1992 WARC with the least possible delay. He therefore proposed the insertion of a sentence to that effect somewhere in the text, assuming that it would not infringe the sovereignty of that Conference, in case the reference to 1993/1994 in Annex 2 led to delay.

1.40 The Chairman said that the need for urgency could be stressed in the drafting of the strong Resolution already discussed. As for Annex 2, the reference to 1993/1994 might be replaced by a reference to implementation of the Final Acts of the 1992 Conference in 1993, in all or in part.

1.41 The Secretary-General pointed out that the sovereignty of a 1992 WARC could not be bound by the current Conference.

1.42 The delegate of Yugoslavia proposed that the date for implementation of the improved HFBC Planning System and Article 17 procedure should be set at no later than 1 January 1994.

#### Section 5 and Annex 1

1.43 The Chairman pointed out that the English text of section 5 should be aligned with the French.

1.44 The delegate of the Federal Republic of Germany said that Document DT/65 reflected most of the ideas expressed in the ad hoc Group and also most of what the Chairman had said there. He supported the document and looked forward to seeing a revised text on the basis of discussion. He observed that concern had been expressed in the ad hoc Group regarding the fact that the spectrum reserved in Annex 1 for coordination might prove too small to accommodate the overflow from the parts vacated for the planning exercise.

1.45 The delegate of Iraq expressed his support for the spirit of the document but wondered how tests would be carried out on the improved Article 17: on which requirements would they be made and on what topic would the consultations be carried out?

1.46 the Chairman explained that the improved Article 17 would be tested at the same time as the improved HFBC Planning System so that the results would be available in late 1990/early 1991. He suggested adding to the end of the first paragraph in section 5 wording to the effect that improved Article 17 would be tested in the remaining parts of the bands. Furthermore, testing of the improved Article 17 would be on the basis of the requirement files submitted by administrations.

1.47 The delegate of France agreed to the suggested addition and drew attention to the fact that for testing of the improved Article 17, administrations would have to provide requirements under the format for the old Article 17 and the new Article 17 at the same time. Perhaps the requirements file could be used in the same format for the two sets of requirements to facilitate the matter; Committee 6 might wish to discuss that question and the need to amend Appendix 2 in that light.

1.48 The delegate of Canada suggested that in sections 3, 4 and 5 where reference had been made to the competent WARC it might be appropriate to add the text used in the current Recommendation COM5/A beginning "recommends to the Administration Council to take action ...". The Chairman said that the Recommendation was part of the compromise but would be placed in a special, separate paragraph.

1.49 In reply to a question from the delegate of Qatar, the Chairman explained that the ad hoc Group had done no more than decide on the bandwidths on the basis of a number of proposals all having the common denominator that extension bands should be used for the HFBC Planning System.

1.50 The delegate of Turkey said that it was necessary to show that there was no intention of having any extension in the bands 6 and 7 MHz and that they should be placed in one of the columns shown in the list. The delegate of the Islamic Republic of Iran advocated that there should be continuity in the portion of the band used for the application of the improved Planning System. The delegate of France said it was essential to specify clearly which parts of the band would be used as, in testing the improved Article 17, administrations must know which frequencies to request. A decision on the matter was therefore unavoidable.

1.51 The delegate of Libya said that in the 26 MHz band there would be 200 channels available for application of the improved Article 17 and 230 for the improved Planning System and in the 15 Mhz band there would be 200 under Article 17 and 300 for the Planning System.

1.52 The delegate of India suggested that there would be no difficulty in adopting the frequencies 25 900 to 26 100 for the improved HFBC Planning System and the extension bands could be put along with the specified bandwidths adjacent to that in the remaining bands. He could foresee no problem in the 11 MHz band.

1.53 The Chairman said that 50 kHz could be taken for the 21, 17 and 15 bands adjacent to the extension band. The rest posed no problem as very little was being taken of what was allocated at present.

1.54 The delegate of Switzerland supported Document DT/65 and advocated that discussions on detail should be avoided and left for examination until the 1992 Conference. He asked the Chairman to indicate which of the material under discussion could go into the Radio Regulations.

1.55 The Chairman said that the question raised by France was pertinent since requirements would have to be submitted before 1992 and so administrations must be informed beforehand of the frequencies to be used. The second point raised by Switzerland would be examined by Committee 5 later.

1.56 The delegate of the United Kingdom held the view that there was very little practical value in choosing bands at the present time, thus restricting the scope of testing that the Board would have to do for the improved HFBC System and improved Article 17; the IFRB should be free to test across the range. The Chairman took note of that comment; if the IFRB felt that undue constraints were being imposed it would undoubtedly report on the matter.

## Section 6

1.57 The Chairman explained that the conflict between national and international needs was a long-standing problem which could not be solved at the present Conference. The latter could, however, make a recommendation concerning further studies so that the Board could try to provide a solution and perhaps a future conference could settle the problem finally.

1.58 The delegate of Zimbabwe agreed with that approach but pointed out that he had hoped that that problem would be solved at the present Conference. He was prepared to agree to the compromise provided that other administrations also made a similar effort.

1.59 The delegate of Tanzania seconded that statement. He felt, however, that it was pointless to refer to further study by administrations since the problem had persisted for 40 years and was unlikely to be solved by further study.

1.60 The delegate of Colombia approved the ad hoc Group's work on condition that there would be no suspension of national services. He considered it important that a decision should be taken on the problem under discussion, not at the present Conference but at least at the next one. To that end he had prepared, with the delegate of Argentina, a text for a draft Recommendation on the subject. The Chairman said that he was sure that the basis was available for a Drafting Group on such a Recommendation to make speedy progress.

## Section 7 and Annex 2

1.61 The Chairman said that sub-paragraph 7.1 and accompanying Annex 2 simply itemized the various aspects of the short-term strategy to be implemented up to 1992.

1.62 The delegate of Saudi Arabia said that sub-paragraph 7.1 g) mentioned implementation of the improved Article 17, but a separate entry needed to be made for the process of improvement itself.

1.63 The delegate of Algeria asked in what way the Conference was to confirm the planning principles adopted by the First Session and adopt the planning method, as stated in sub-paragraph 7.1 a).

1.64 The Secretary-General said that it was for the Conference to decide. It might, for instance, introduce the planning principles presented in the Report to the Second Session into Article 17 as an integral part of the Radio Regulations. There was still insufficient agreement on some parts of the planning method but key elements could be incorporated in a Resolution referring to the relevant Radio Regulations. Paragraph 1 of Document DT/65 referred to its adoption grosso modo.

1.65 The Chairman, replying to questions from the delegates of Papua New Guinea and Zimbabwe, said that the decision whether implementation of the HFBC Planning System in the 9 MHz band would be part of the short- or medium-term strategy would depend on the 1992 Conference, and there was no entry against the 6 MHz and 7 MHz bands in Annex 1 because they would be covered entirely by the improved Article 17 procedure.

In the absence of any further comment, he now had a clear idea of the Committee's views on his draft report as a whole. Consideration of Document DT/65 was thus concluded and it would form the basis of his report to the Plenary Meeting.

1.66 The representative of the IFRB (Mr. Berrada) said that Document DT/65 as it stood raised several problems for the Board which he would like to see clarified. They concerned, in particular, the form which the results of the Conference were to take and the way in which requirements for the improved HFBC Planning System and Article 17 procedure were to be notified by administrations and processed by the Board. The question of establishing a Working Group to draft the Recommendation on national and international broadcasting mentioned in paragraph 6 also remained open.

1.67 The Secretary-General agreed that due form would have to be given to all the results of the Conference which could not be allowed to remain as documents whose status was unclear. The question of administrations and the IFRB studying the problem of national and international broadcasting might be clarified when the Recommendation on the subject initiated by the delegates of Argentina and Colombia was considered.

1.68 The Chairman said that he had taken note of the main problems requiring solution and would deal with them.

2. Reports of the Chairmen of the Drafting Groups on revised Article 17 and on the HFBC Planning System (Documents DT/67 and DT/68)

2.1 The Chairman said that Documents DT/67 and DT/68 had been drafted by informal Groups set up by Working Group 5 ad hoc to examine the possible simplification of the revised Article 17 and the HFBC Planning System. After consideration by the Committee, their contents, as amended, would be passed to Committee 6.

2.2 The delegate of the USSR said that the documents were very interesting and the ideas contained in them should be transmitted to the IFRB for possible use in its work.

2.3 The Secretary-General said that the documents affected other texts already developed by Committee 6 and should be referred to that Committee first to be put into proper form for the action envisaged.

2.4 The Chairman of Committee 6 confirmed that it had already drafted texts dealing with revised Article 17 and the HFBC System on the assumption that the procedures would be incorporated into the Final Acts of the Conference or Radio Regulations. If Documents DT/67 and DT/68 were referred to Committee 6, no problems would be raised which required precise guidelines for their consideration and solution.

2.5 The delegate of Côte d'Ivoire said that Document DT/68 in particular offered two alternative approaches to the treatment of requirements notified for the HFBC Planning System and a choice should be made before referring it to Committee 6.

2.6 The Chairman of Committee 6 said that he needed to know whether the texts to be prepared were to be included in the Radio Regulations, in a report for the 1992 WARC, in the Final Acts or in a Resolution.

2.7 The Secretary-General said that the question was what the Conference wished to include in the Final Acts. It seemed clear that some provisions, concerning planning principles and certain technical parameters for example, would be incorporated into the Radio Regulations. Resolutions and Recommendations calling for definitive actions to be taken must also be included in the Final Acts. However, Committee 6 might well wonder how to deal with texts

concerning detailed procedures and still, in some cases, containing passages in square brackets. The question was whether such texts were to be included in the Final Acts or in the records of the Conference. They should not be lost altogether but it was not for Committee 5 to decide. Perhaps Committee 6 could consider the matter and advise the Plenary Meeting.

2.8 The Chairman of the Conference said that since Committee 6 had already prepared texts for the improved Article 17 and HFBC Planning System, it might produce alternatives which took account of the amendments in Documents DT/67 and DT/68 as the basis for a choice. In the current stage of the Conference, it was important to start work on formulating the text of provisions for inclusion either in the Radio Regulations or, for example, as annexes to Resolutions or Recommendations.

Speaking as the delegate of Sweden, he said that a sentence should be added at the end of paragraph 14 of the proposed modifications to revised Article 17 in the annex to Document DT/67. It was needed to remedy an omission inadvertently made during the reconsideration of Document 177 by the informal Working Group of which he had been a member. The sentence had been agreed with other delegations and would read:

"In the attempts to resolve incompatibilities, the administrations will take into consideration the principles stated in paragraph 4.1 of the Report to the Second Session of the Conference.".

2.9 The delegate of the USSR said that since Documents DT/67 and DT/68 could not be sent to Committee 6 as Committee 5 papers because they had not been discussed, they should be transmitted as they were to save time and Committee 6 should select from them as it saw fit.

2.10 The delegate of Canada proposed that the meeting be suspended to allow the Chairman of the Conference, the Chairmen of Committees 5 and 6, the Secretary-General and the Chairman of the IFRB to consider how and where best to deal with Documents DT/67 and DT/68.

It was so agreed.

The meeting was suspended at 2140 hours and resumed at 2215 hours.

2.11 The Chairman announced that it had been agreed informally to pass Documents DT/67 and DT/68 to Committee 6 for consideration as working papers.

3. Preparation of a Recommendation on national broadcasting and a Resolution on the convening of a WARC in 1992

3.1 The Chairman said the Committee still had two tasks before it; first, to prepare a Recommendation on national broadcasting in the HF bands, for which a draft text had already been proposed by Argentina and Colombia (Document 223); and secondly, to prepare a Resolution urging in the strongest terms that a WARC be convened in 1992 to decide on an improved HFBC Planning System.

He proposed that two Drafting Groups be set up for the purpose.

3.2 The Secretary-General having pointed out that there were not sufficient facilities available to service two Drafting Groups, the delegate of Brazil proposed that Drafting Groups be dispensed with altogether and that the preparation of both the Recommendation and Resolution be left to the Chairman, in consultation with the Chairman of the Conference and the Secretary-General.

It was so agreed.

4. Proposed establishment of a Group of Experts (Document 139)

4.1 The delegate of Canada, introducing the draft Resolution contained in Document 139, said the setting up of a Group of Experts was an essential part of the follow-up process to the current Conference. The Group would have some 21 members, so selected as to give a proper balance between the various regions of the Union. He suggested that a Drafting Group be formed to re-draft the Resolution in order to take into account views expressed during discussions in Committees 5 and 6.

As indicated in Document DT/65, the IFRB, on the instructions of the present Conference, would set to work on developing an improved HFBC Planning System, and the Group would assist it in carrying out that task. It was not envisaged that there would be any sharing of responsibility between IFRB and the Group. The Resolution needed to be re-worded to reflect that point.

4.2 The delegate of Norway said he could support the draft Resolution in principle, provided that the work of the proposed Group did not interfere with the sovereignty of either the IFRB or of the ITU Secretariat. In view of the fact that not all Member countries of the Union were members of the Administrative Council, he proposed that the words " ... and the administrations" should be added at the end of resolves 4; it was important that all Members should be kept informed of the Group's findings.

4.3 The delegate of Algeria wished to know how the proposed membership of 19 to 21 would be apportioned in order to ensure balanced geographical representation. He was not happy with the wording of resolves 5; it could not be proper for the Conference to instruct the Administrative Council to embody in its report to the Plenipotentiary Conference the findings of a Group which the Council had not set up.

He failed to see how a Group of Experts could play a part either in improving the propagation forecasting method or in incorporating modifications into the System; those were tasks for the IFRB. Similarly, it would be for the IFRB to decide the form in which the analysis of the planned tests would be presented, and for administrations to put forward their comments on that analysis.

4.4 The delegate of Canada, in reply to the question raised by the delegate of Kenya about the costs of meetings, said that resolves 2 provided for only two annual meetings of one week; there would be no permanent secondment of experts to Geneva. Under the final operative paragraph of the Resolution, the Administrative Council was invited to make provision in the Union's budget to cover the cost of participation by one expert from each administration; that was to avoid the risk of the Group becoming merely a "rich man's club". He pointed out that under resolves 5 it would be for the Plenipotentiary Conference to decide whether the Group was to continue its activities.



He could accept the amendment proposed by the delegate of Norway. In reply to the points raised by the delegate of Algeria, he said that while it was true that IFRB possessed outstanding expertize in the matter, the Group's two meetings per year would still be of value in enabling the IFRB to take advantage of skills acquired by administrations. On the matter of representation, the membership of 21 would include seven members from each of ITU's three regions; the number 21 had been chosen as striking a balance between a Group too small to be representative and a Group too large to be workable.

He agreed that the wording of resolves 5 was inappropriate; the Conference should rather "request the Administrative Council" to embody the Group's findings in its report. The Group's terms of reference, as set out in paragraphs A and B of the annex to the draft Resolution, should also be redrafted.

4.5 The delegate of France stressed that the proposed Group of Experts would not be in competition with administrations but would be working through administrations to assist the IFRB. Its task would be to compare the results of plan tests received from the IFRB with practical experience in the field.

4.6 The delegate of Japan, while supporting the draft Resolution in principle, thought it would be better not to limit membership of the Group to 21 but to leave it open to any administration which had expertize to contribute.

4.7 The delegate of Syria said he would like further clarification on the precise role of the Group. He suggested that further consideration of the terms of reference be deferred until the following day.

4.8 The delegate of Mauritania said he too was unclear as to what would be the role of such a Group vis-à-vis the IFRB. He would like to know how the work to be carried out within administrations to assist the IFRB was to be financed.

4.9 The delegate of the Federal Republic of Germany pointed out that during the process of development of the planning method there had already been useful informal meetings between experts of various administrations and the IFRB, and that process could well be continued. The Group's role would merely be to give advice and assistance to the IFRB.

Since he was not sure whether the Conference was in fact empowered to set up a Group of Experts he would suggest that the phrase "invites the Administrative Council" be substituted for "resolves". On the question of membership, some restriction on numbers was desirable. The five regions of the ITU might be represented by four members each. He suggested that the Delegations of Canada and France, in consultation with the Chairman, should redraft the terms of reference for submission to the Plenary for final adoption.

4.10 The delegate of Chile doubted whether it was appropriate to set up a Group of Experts when the IFRB already possessed sufficient expertize.

4.11 The delegate of Canada, in reply to questions raised, said it had been felt that in the interests of cost-effectiveness the size of the Group should be limited. The cost of any task carried out by experts in Member countries as part of their normal work would be covered by administrations themselves. He believed that the Conference was in fact competent to set up such a Group, although it would be for the Administrative Council to provide the funding for it. He could agree to the suggestion that membership of the Group should include four representatives from each of the five regions.

4.12 The representative of the IFRB (Mr. Berrada) said that the practice of holding information meetings, as already adopted for the First Session, had proved most fruitful, both for the IFRB and for administrations. Whatever decision was finally taken, the IFRB would continue to follow that practice because it believed it useful that its work should be brought to the attention of administrations, and that administrations in their turn should have the opportunity of making comments on it.

A proposal to set up a Group of Experts had been put forward at a number of conferences but no conference had so far acted on it. The concept of having a Group of Experts working within the Union also posed certain problems; if a conference existed as a legal entity only while it was in session, the same was true for the Administrative Council. It was not, of course, for the IFRB to tell the Conference whether or not it was entitled to set up a Group of Experts; the IFRB was ready to assist administrations in any way possible. He wished only to urge that if such a Group was established, it was essential that its terms of reference be clearly defined in order to avoid the risk of interference with the IFRB's work, and no such clear definition was to be found in the text of the draft Resolution.

The meeting rose at 2335 hours.

The Secretary:

M. GIROUX

The Chairman:

C.T. NDIONGUE

PLENARY MEETING

MINUTES

OF THE

NINTH PLENARY MEETING

Tuesday, 3 March 1987, at 1600 hrs

Chairman: Mr. K. BJÖRNSJÖ (Sweden)

Subjects discussed:

Documents

- |  |     |
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| 2. Oral reports by the Chairmen of the Committees  | -   |
| 3. Sixth series of texts submitted by the Editorial Committee to the Plenary Meeting for first reading (B.6) | 203 |

1. Report by the Chairman of the Credentials Committee (Document 215)

1.1 The Chairman of Committee 2 presented the report of Committee 2 (Document 215). All the credentials submitted had been found to be in order, and the status of the delegations submitting credentials was as indicated in the annex to the report. Since the final meeting of Committee 2, credentials had been received from the Central African Republic. Those would be dealt with as indicated in paragraph 4 of the report, and he requested the Plenary Meeting to authorize him and the Vice-Chairman of Committee 2 to verify the credentials received after the date of the report and submit their conclusions to the Plenary Meeting.

The report of the Credentials Committee (Document 215) was adopted.

The Chairman and Vice-Chairman of the Committee were authorized to proceed as in paragraph 4 of the report.

2. Oral reports by the Chairmen of the Committees

2.1 Committee 3

2.1.1 The Chairman of Committee 3 said that Committee 3 had held its fourth meeting on 2 March and had considered six documents as well as its draft report to the Plenary. During its discussions, certain inputs from the permanent organs of ITU and from Committees had been examined and their financial impact had been scrutinized. Some clarification concerning those matters was still awaited and the Committee proposed to meet again on Thursday 5 and Friday 6 March, after which it would report back to the Plenary.

2.2 Committee 5

2.2.1 The Chairman of Committee 5 reported that Working Group 5 ad hoc had completed its work that morning, and Committee 5 had met that morning and that afternoon to ascertain the reactions of delegations to Document DT/65 which contained the compromise package. He noted that the majority of delegations realized that that package was the ultimate solution possible and their attitude towards it was one of wisdom and responsibility. The Committee would meet again that evening at 1730 hours to ensure that the document had been formulated in the best possible way, but without going into the substance of the compromise since all the elements of the "package" were indissociable. A final meeting of Committee 5 was scheduled for the following morning, at which some Recommendations and Resolutions to be incorporated in the Final Acts would be discussed.

2.3 Committee 6

2.3.1 The Chairman of Committee 6 said that since the last Plenary Meeting, Drafting Groups 6-1 and 6-2 had completed their work and their reports were to be found in Document 211 for the revision of Article 17 and Document DT/66 for the HFBC Planning System. Committee 6 had considered Document 211, in which provisions relating to Article 17 were grouped in four sections. The Committee had completed consideration of the first section in the annex to Document 211 and administrations had stressed that the requirements file should contain requirements submitted for use within the next one year, instead of the next three years, because of the difficulties of forecasting requirements a long time ahead. The other sections of the annex to Document 211 had not yet been considered since they might be modified in the light of decisions taken by Working Group 5 ad hoc.

He pointed out that Committee 6 would require a further short meeting, which had not been scheduled, in which to set up a Working Group to deal with Documents DT/67 and DT/68, which had not yet been approved by Committee 5.

2.3.2 The Chairman of Committee 5 said that Documents DT/67 and DT/68 should in fact have been issued as yellow (DL) documents since they related only to the work of Working Group 5 ad hoc. No decision had been taken by Working Group 5 ad hoc concerning Article 17 and the Planning System, which had been left to the discretion of the Chairman of Committee 5. He therefore thought the Chairman of Committee 6 might work on the basis of the Notes from the Chairman of Committee 5 rather than on the basis of Documents DT/67 and DT/68.

2.3.3 The Chairman said he understood Committee 5 would take a final decision on those documents at its meeting that evening, and he suggested that Committee 6 should then hold a short meeting to set up the Working Group.

It was so agreed

## 2.4 Ad hoc Group of the Plenary

2.4.1 The Chairman of the ad hoc Group of the Plenary said that the ad hoc Group had held two meetings and the result of its work was to be found in Documents 212 and 221. Because of the time constraint, he had sent those documents directly to Committee 6 but they did in fact require formal approval by the Plenary.

The ad hoc Group would also require a further short meeting to deal with two technical problems that had arisen in connection with the calculations of reliability.

The Plenary approved the transmission of Documents 212 and 221 to Committee 6.

## 3. Sixth series of texts submitted by the Editorial Committee to the Plenary Meeting for first reading (B.6) (Document 203)

### Resolution COM5/1 (HFBC-87)

It was decided to defer consideration of Resolution COM5/1 pending completion of Committee 5's work.

### Recommendation COM4/E (HFBC-87)

3.1 The Chairman of Committee 7 pointed out that considering a) in the English text should be in square brackets.

3.2 The delegate of Algeria said that considering h) should be in square brackets until Resolution COM6/1 (HFBC-87) had been adopted, as should the reference to that Resolution in recommends.

It was so agreed.

### Annex to Recommendation COM4/E (HFBC-87)

3.3 The Chairman of Committee 7, supported by the delegate of the United Kingdom, proposed that the square brackets be deleted from around the word "use" in paragraph 1.

It was so agreed.

3.4 The delegate of Qatar proposed that the words in brackets in paragraph 2 should be amended to read: "(with reference to the DSB wanted and DSB unwanted signals protection ratio)".

It was so agreed.

He also suggested that a definite figure of, say, 17 dB should be inserted for the protection ratio. The Chairman of Committee 4 said that that matter had already been extensively discussed in the Working Group and in the Committee.

3.5 The delegate of Paraguay proposed that the reference to the appendix in paragraph 4 be deleted and that the characteristics specified in the appendix be inserted. The delegate of the Federal Republic of Germany considered that that was unnecessary since not all the characteristics in the appendix were pertinent. A general reference would be better, as otherwise the annex would be unbalanced. In reply to the Chairman, the delegate of Paraguay said he would not press his point but thought that in Spanish at least the paragraph could be better drafted.

It was so agreed.

3.6 The Chairman of Committee 7 proposed that the title of the table in the annex should be amended to read: "Relative RF protection ratio values with reference to the co-channel RF protection ratio for the DSB wanted and DSB unwanted signals", and that the square brackets be deleted, the words therein remaining unchanged.

It was so agreed.

3.7 The Chairman of Committee 4 recalled that the words ["For planning purposes"] had been included in the footnote only because the planning method had not yet been adopted. Now that Committee 5 was about to agree that planning and Article 17 would operate in parallel it would probably be best to delete those words. After discussion, it was so agreed.

Recommendation COM4/E, as amended, was approved.

#### Recommendation COM4/F (HFBC-87)

3.8 The Chairman of Committee 7 drew attention to the word "planning" in square brackets in the heading of the Recommendation. The Secretary-General suggested that now it appeared that the Conference was going to adopt a dual approach, the square brackets around the word "planning", which appeared in several places in the text, should be removed and the Editorial Committee should be requested to provide a description of what it meant. Otherwise, misunderstandings might arise.

The Chairman of Committee 7 pointed out that it was not for the Editorial Committee to provide such a definition. He proposed to simplify the title by deleting the words "the planning of the ...". Moreover, the Editorial Committee might be authorized in all future texts to make the same correction.

After discussion, it was so agreed.

3.9 In response to a question by the delegate of Algeria, the Chairman said that the square brackets in recommends 1 would have to remain for the time being.

Annex

3.10 The Chairman said that in accordance with the decision just taken, the word "planning" should be deleted from the title.

3.11 The delegate of Qatar regretted the proposal to delete the word "planning" since the propagation prediction method had been specially developed for planning purposes.

3.12 The Chairman of Committee 4 reiterated that matters had changed now that the situation with regard to the use of Article 17 had become clear. It would be a waste of time and money to advise the IFRB to use different prediction methods. It was therefore preferable to delete the word "planning" in the title and elsewhere. The Chairman of Committee 7 and the delegate of the United Kingdom endorsed that view, the latter adding that his Delegation would like to see an improved planning method applied also to Article 17.

3.13 After further discussion, in response to the delegate of Algeria, the representative of the IFRB (Mr. Berrada) suggested that to save time it would be best to reduce the title to the words "Summary of the propagation prediction method". The Secretary-General said that it must be borne in mind that the Recommendations and Resolutions were not just for application by the IFRB but by those in the field and those concerned with national planning. The delegate of the Federal Republic of Germany proposed that the title be amended to read: "Summary of the propagation prediction method to be used for determining the sky-wave field strength".

It was so agreed.

3.14 The delegate of the United Kingdom proposed to amend the second sentence of paragraph 4 to read: "This method is also used to calculate field strengths for path lengths ...".

It was so agreed.

3.15 The delegate of the Federal Republic of Germany suggested that it would now be appropriate to add the definition of basic MUFs contained in Document 166, as a footnote.

It was so agreed.

Recommendation COM4/F was approved as amended.

Recommendation COM6/C (HFBC-87)

3.16 The Chairman of Committee 7 pointed out that the square brackets in considering d) had been omitted in the Spanish text. The delegate of Algeria pointed out that the whole of considering d) should be placed in square brackets.

It was so agreed.

3.17 The Chairman announced that the square brackets in paragraph 1.1 would have to be retained pending submission of material from Committee 5.

Recommendation COM6/C was approved as amended.

The sixth series of texts submitted by the Editorial Committee (with the exception of Resolution COM5/1) was approved, as amended, on first reading.

The meeting rose at 1740 hours.

The Secretary-General:

R.E. BUTLER

The Chairman:

K. BJÖRNSJÖ



COMMITTEE 6

SUMMARY RECORD  
OF THE  
EIGHTH MEETING OF COMMITTEE 6  
(REGULATORY)

Tuesday, 3 March 1987, at 1035 hrs

Chairman: Mr. R. BLOIS (Brazil)

Subjects discussed:

1. Report of Drafting Group 6-1 (continued)
2. Note from the Chairman of the ad hoc Group  
of the Plenary to the Chairman of Committee 6

Documents

211

221

1. Report of Drafting Group 6-1 (Document 211) (continued)

1.1 The Chairman suggested that, in view of the impact on Committee 6's work of the reports from the Chairmen of the Drafting Groups on revised Article 17 and the HFBC Planning System (Documents DT/67 and DT/68) to Working Group ad hoc 5, the discussion should be limited for the time being to paragraphs 7 and 8 of the section on the HFBC requirements file.

Paragraph 7

1.2 The delegate of Thailand said that despite withdrawal of the reservation about deletion of the sentence mentioned in indent a) under Reasons on page 2 of the report, his Delegation still had doubts about cases of requirements confirmed but not actually used. Therefore, he proposed the addition of a paragraph 7bis, worded:

"The Board shall delete from the Requirements File any requirements which have been confirmed for use but were not actually used for three consecutive years".

He agreed with the representative of the IFRB (Mr. Brooks) that, in effect, it could oblige the Board to automatically delete any requirement confirmed by an administration for three consecutive years but not picked up in any monitoring reports to the Board. His proposal was aimed at international operations and not at unmonitored national broadcasts from low-powered stations.

1.3 The delegate of Australia said he shared the concern expressed by the delegate of Thailand that the Requirements File might become overburdened with unused requirements.

1.4 The delegate of Algeria, supported by the delegate of Colombia, said that, as had been generally agreed during discussion in Drafting Groups, the Board was in no position to evaluate requirements on the basis of monitoring, and that the text of paragraph 7 should not be amended.

1.5 The representative of the IFRB (Mr. Brooks) pointed out that even if the Board was authorized to delete unused requirements there was nothing to stop administrations from reinserting them under the provisions of paragraph 5.

1.6 The delegate of the United Kingdom endorsed that observation and agreed with the comments made by the delegate of Algeria. Requirements could not be deleted on the strength of information gleaned from monitoring.

1.7 The delegate of Thailand said that, in view of the observations made, he would withdraw his proposal.

Paragraph 8

1.8 The Chairman of Drafting Group 6-1 said that the Drafting Group had considered the paragraph superfluous in view of the provisions of paragraphs 5 and 6 but the Group had placed the text within square brackets rather than delete it, in view of the guidelines given by Committee 5 (Document 177), which had taken into account the concern expressed by the Australian Administration about broadcasting facilities temporarily suspended by national disasters or other calamitous events.

1.9 The delegate of Australia said that the topic was perhaps difficult to discuss at the current stage, since it depended on how the regulations were to be drafted in respect of continuity between seasons, bearing in mind the final sentence in paragraph 7 as well as the aspect of continuity reflected in paragraphs 3 and 7 of the section on "Procedures Based on Consultations". Perhaps the matter could be left in abeyance until the continuity aspect relating to Article 17 and the HFBC Planning System had been deliberated.

1.10 The Chairman drew attention also to the difficulty encountered by the Drafting Group on the HFBC Planning System, referred to in paragraph 2 of Document DT/68, in ensuring mandatory frequency continuity within the duration of a requirement. He too felt that the matter should be left in abeyance.

1.11 The delegate of Mexico agreed, but reserved the right to make an observation on the matter in due course.

1.12 The delegate of Italy said that since the text failed to reflect the concern expressed about broadcasting facilities temporarily suspended for the reasons mentioned, he proposed that a sentence should be added to it or, alternatively, to Appendix 2 as part of the optional information, to the effect that, for each requirement, an administration might include a standing request for the Board to select frequencies.

1.13 The representative of the IFRB (Mr. Brooks) suggested that the matter could be deferred until the Committee considered Annex 2.

It was so agreed.

2. Note from the Chairman of the ad hoc Group of the Plenary to the Chairman of Committee 6 (Document 221)

2.1 The Chairman of the ad hoc Group of the Plenary proposed that Committee 6 should forward Document 221 to the Editorial Committee, subject to agreement by the Plenary.

It was so agreed.

The meeting rose at 1110 hours.

The Secretary:

M. AHMAD

The Chairman:

R. BLOIS

COMMITTEE 6

NOTE FROM THE CHAIRMAN OF THE AD HOC GROUP OF THE PLENARY  
TO THE CHAIRMAN OF COMMITTEE 6

The following changes should be made to Document 222, pages 22 and 23:

- Table C-3, step 3: replace "α" by "α<sub>r</sub>".
- Table C-3, steps 5 and 6: replace the present text in "Source" by the words: "IFRB Technical Standards".
- Note 1: replace "α" by "α<sub>r</sub>".
- Delete Note 2.
- Renumber "Note 3" as "Note 2".

Furthermore, the information presently contained in Document 222, pages 22 and 23, under "Source", for steps 5 and 6, as well as the present contents of "Note 2", should be placed in section 3 to the Annex to Recommendation COM6/C.

J. RUTKOWSKI  
Chairman of the ad hoc Group  
of the Plenary

COMMITTEE 6

NOTE FROM THE CHAIRMAN OF THE AD HOC GROUP  
OF THE PLENARY TO THE CHAIRMAN OF COMMITTEE 6

Draft change to section 3 of the annex

Add new section 3.3:

"3.3 The joint distribution of fading where both wanted and unwanted signals are concerned.

The fading allowances for both 10% and 90% of the time are to be taken as 10 dB, except where the provisions of the note apply. In the latter case 14 dB is to be used.

- Note
- i) If any point on that part of the great circle which passes through the transmitter and the receiver and which lies between control points located 1,000 km from each end of the path reaches a corrected geomagnetic latitude of 60° or more, the values for  $\geq 60^\circ$  have to be used.
  - [ ii) The value of 14 dB applies for overall circuit reliabilities not exceeding 80%. In other cases the value of 10 dB applies. ]
  - iii) These values relate to the path of the wanted signal only.
  - iv) For synchronized transmissions, the fading allowance associated with the predominant wanted signal is to be used. For those conditions where the contributing wanted field strengths are equal and Note i) applies to at least one of the paths, the value of 14 dB is to be used for  $D_U(\text{SIR})$  and  $D_L(\text{SIR})$ ."

J. RUTKOWSKI  
Chairman of the ad hoc Group of the Plenary

Source: Document DT/65

PLENARY MEETING

FIRST REPORT BY THE CHAIRMAN OF COMMITTEE 5 TO THE PLENARY

Committee 5 considered globally the question of the elements of the package to be discussed, i.e.:

- adoption of the main features of the planning method;
- improvement of the HFBC Planning System;
- improvement of Article 17;
- interim provisions;
- adoption of the improved HFBC Planning System and improved Article 17 and the decision on the date of their implementation;
- possible extension of the bands;
- national and international broadcasting;
- short- and medium-term strategy.

Important - All the elements of the "package" are indissociable.

Committee 5 arrived at the following conclusions:

1. General

It is proposed that the Conference should confirm the planning principles laid down by the First Session and adopt the main lines of the planning method, which is incorporated in the Final Acts.

This adoption will constitute a commitment on the part of the Conference to the effect that the process initiated in 1979 and the method agreed in 1984 for planning of the bands allocated to HF broadcasting would be followed.

2. Development and tests

On the basis of these adopted principles and planning method, the IFRB will develop an improved HFBC Planning System. The improvement of the System will be completed in 1990/1991. After its development, it will have undergone:

- software tests;
- tests with hypothetical data;
- tests with data from the requirements file.

Although these will still only be trials on paper, they should consist of all the tests necessary for the implementation of the Planning System. The test on real data would represent requirements submitted by administrations for seasons [1991/1992].

3. Adoption of the improved HFBC Planning System and the improved Article 17

A competent WARC shall be convened for 1992 in order to:

- consider and study the results provided by the IFRB on the improved HFBC Planning System and the improved Article 17 which will also be available in 1990/1991;
- study the interaction between the two "systems" (improved HFBC System and improved Article 17);
- decide on any improvements that need to be made to the two "systems";
- decide, on the basis of an analysis of test results, if the results are conclusive, on the date for the implementation of the two systems. The decision relating to the implementation of the two systems shall be made as soon as possible after WARC-1992.

A draft Resolution addressed to the Administrative Council will be drawn up and submitted directly to the Plenary.

4. Interim measure

Up to the date decided by the WARC in 1992, the current provisions of Article 17 will be applied as an interim measure.

5. Frequency bands

The parts of the frequency bands to be used for the tests and for the implementation of the improved HFBC Planning System and the improved Article 17 are given in Annex 1.

The improved HFBC Planning System will be applied in the parts of the bands which are made up of extension bands plus parts of the existing bands.

The improved Article 17 will be tested and applied in the remaining parts of the bands (see Annex 1).

6. Possible extension of bands

The problem of the possible extension of bands is dealt with in the Recommendation (Recommendation COM5/A, Document 188).

7. National and international broadcasting

In view of the decisions taken for implementation of the HFBC Planning System in the parts of the bands shown in Annex 1, it was considered that the problem of national broadcasting could not be solved at this Conference (see Recommendation ....).

8. Short- and medium-term strategy (see time-table in Annex 2)

8.1 Short-term strategy

The short-term strategy comprises the following stages:

- a) confirmation of the planning principles adopted by the First Session and adoption of the main features of the planning method by this Conference with further consideration of the replacement of suspension rules by rules for transfer to the improved Article 17;
- b) application of the current Article 17 up to the date of entry into force of the Final Acts of the WARC-1992;
- c) improvement of the HFBC Planning System by the IFRB;
- d) improvement of Article 17;
- e) testing of the improved HFBC Planning System and the improved Article 17;
- f) analysis of the results of the HFBC Planning System and the improved Article 17;
- g) implementation of the HFBC Planning System in the parts of the bands shown in Annex 1;
- h) implementation of the improved Article 17 in the parts of the bands listed in Annex 1.

8.2 Medium-term strategy

The medium-term strategy comprises the following two stages:

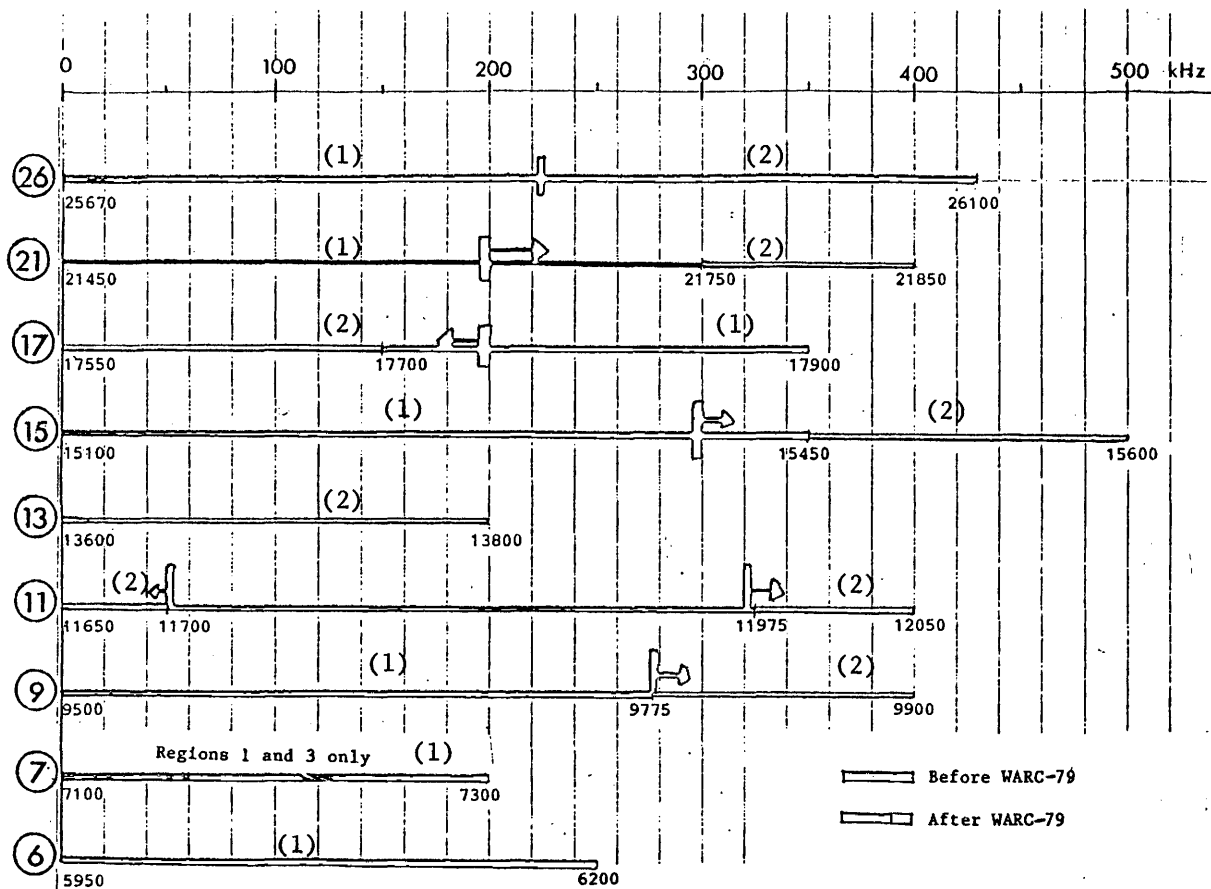
- a) implementation of the HFBC Planning System in the 9 MHz extension bands (1994);
- b) possible band extension.

C.T. NDIONGUE  
Chairman of Committee 5



## ANNEX 1

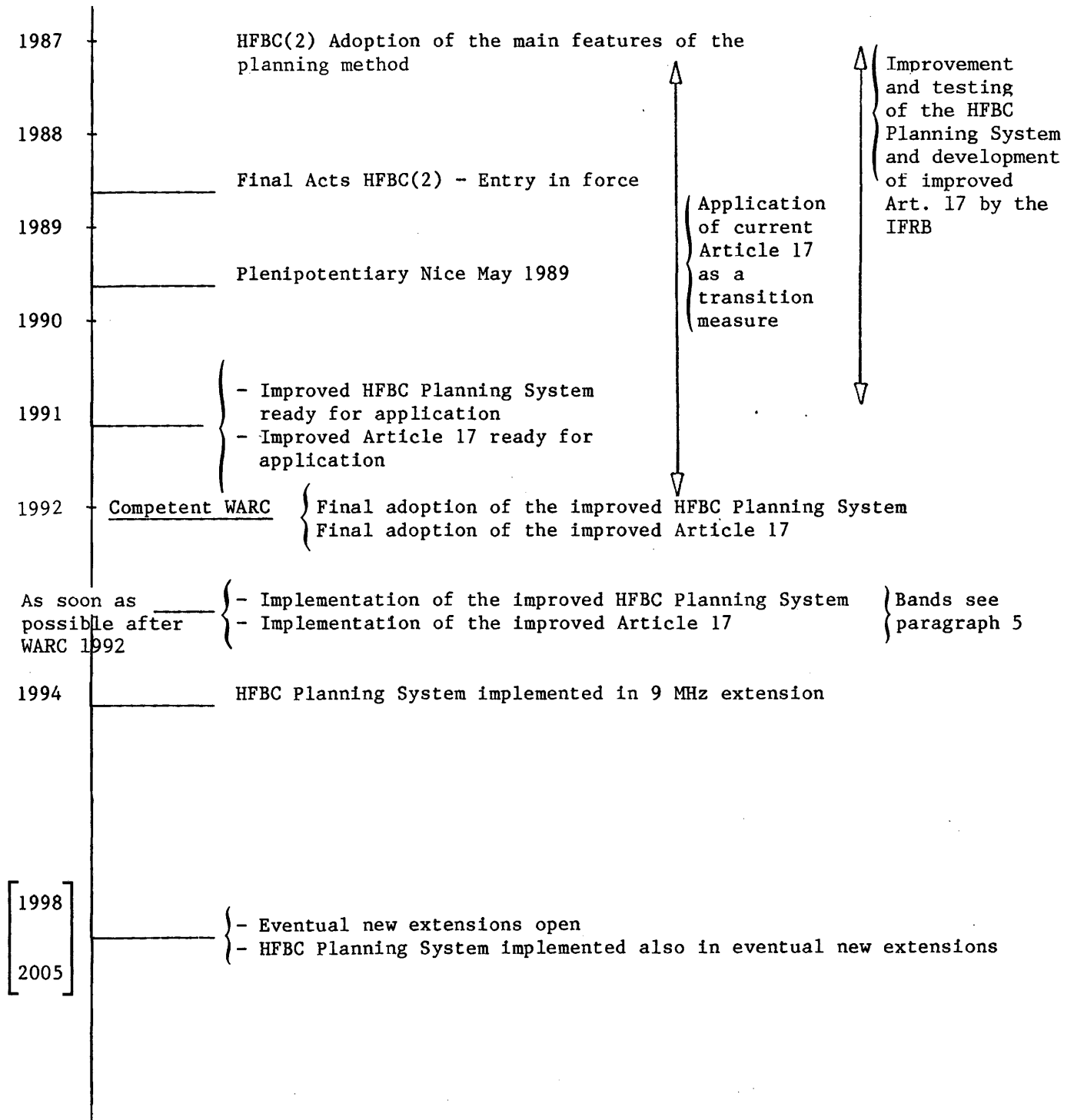
Mid-term.



TOTAL

Total (kHz)	Application of the improved Article 17 (kHz) (1)	Application of the improved HFBC Planning System (kHz) (2)
430	230	200
400	200	200
350	150	200
500	300	200
200		200
400	275	125
400	275	125
200	200	
250	250	
<b>3130</b>	<b>1880</b>	<b>1250</b>

ANNEX 2



## PLENARY MEETING

### SECOND REPORT BY THE CHAIRMAN OF COMMITTEE 5 TO THE PLENARY

Committee 5, at its thirteenth and last meeting, took the following decisions:

1. Considering Document 161

1.1 The value of BBR was set at 80%.

1.2 The value of Z for the calculation of the proportionally reduced protection is equal to 10 dB.

1.3 Committee 5 confirmed its previous decision not to use the OBR for planning purposes. It is proposed that the ad hoc Group of the Plenary be requested to prepare a text on the S/I criteria.

1.4 The HFBC Planning System shall endeavour to satisfy the requirements with a minimal co-channel RF protection ratio of 17 dB under stable conditions without taking account of the fading allowances and multiple interference entries. In cases of congestion this ratio may be lowered until the congestion is resolved.

2. Considering Document 177

2.1 Remove all square brackets.

Note - Reservation by Algeria on paragraphs 17 and 21. Reservation by India on paragraph 17.

3. Considering Document 192

3.1 Remove square brackets on paragraph 3.

4. Considering Document 198

4.1 Delete both notes at the end of the document.

5. Considering Document 199

5.1 Remove all square brackets.

5.2 A note will be added by Committee 7 to specify which items would be used for testing purposes.

6. Considering Document 139

6.1 No decision could be taken by Committee 5.

6.2 This question will be submitted to the Plenary.

7. Considering RR 531

7.1 This question will be submitted to the Plenary.

C.T. NDIONGUE  
Chairman of Committee 5

COMMITTEE 7

FOURTH SERIES OF TEXTS FROM COMMITTEE 6  
TO THE EDITORIAL COMMITTEE

The enclosed texts are hereby submitted to the Editorial Committee.  
They concern:

- Notes 15 and 21 of Appendix 17 to the Radio Regulations;
- Recommendations Nos. 500, 501 and 503.

R. BLOIS  
Chairman of Committee 6

Annex: 1

ANNEX

1. Modify Note 15) of Appendix 7 to read as follows:

"15) For A3E transmitters with carrier power of 10 kW or less the tolerance is 20 parts in  $10^6$ , 15 parts in  $10^6$  and 10 parts in  $10^6$  in the bands 1 606.5 (1 605 Region 2) - 4 000 kHz, 4 - 5.95 MHz and 5.95 - 29.7 MHz respectively."

2. Note 21) to Appendix 7 of the Radio Regulations should be modified as follows:

"21) It is suggested that administrations avoid carrier frequency differences of a few hertz, which cause degradations similar to periodic fading. This could be avoided if the frequency tolerance were 0.1 Hz, a tolerance which would also be suitable for single-sideband emissions.\*

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\* The World Administrative Radio Conference for the Planning of the HF Bands Allocated to the Broadcasting Service (Geneva, 1987) has drawn attention to the fact that the single-sideband system adopted for the bands exclusively allocated to HF broadcasting does not require a frequency tolerance less than 10 Hz. The above-mentioned degradation occurs when the ratio of wanted-to-interfering signal is well below the required protection ratio. This remark is equally valid for both double- and single-sideband emissions."

3. SUP Recommendation No. 500.

4. MOD Recommendation No. 503

- in "recommends 1", update to "328-6";
- in "invites administrations", update to "205-2".

5. SUP Recommendation No. 501.
-

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Source: Document 179

COMMITTEE 7

FIFTH SERIES OF TEXTS FROM COMMITTEE 6  
TO THE EDITORIAL COMMITTEE

The text of the new appendix [COM4/A] to the Radio Regulations is hereby submitted to the Editorial Committee. This text has been extracted from Document 179 and slightly amended.

R. BLOIS  
Chairman of Committee 6

Draft texts for inclusion in the Final Acts

APPENDIX [COM4/A] TO THE RADIO REGULATIONS<sup>1</sup>

**Double-Sideband and Single-Sideband System Specifications  
in the HF Bands Allocated to the Broadcasting Service**

PART A

Double-sideband system

1. Channel spacing

The nominal spacing for double-sideband (DSB) shall be 10 kHz. However, the interleaved channels with a separation of 5 kHz may be used in accordance with the relative protection criteria.

2. Transmission characteristics

2.1 Nominal carrier frequencies

Nominal carrier frequencies shall be integral multiples of 5 kHz.

2.2 Audio-frequency band

The upper limit of the audio-frequency band (at -3 dB) of the transmitter shall not exceed 4.5 kHz and the lower limit shall be 150 Hz with lower frequencies attenuated at a slope of 6 dB per octave.

2.3 Modulation processing

If audio-frequency signal processing is used, the dynamic range of the modulating signal shall be not less than 20 dB.

2.4 Necessary bandwidth

The necessary bandwidth shall not exceed 9 kHz.

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<sup>1</sup> The provisions of this appendix will come into force as of the date of entry into force of the Final Acts of the WARC ... (see Resolution No. ...).



PART B

Single-sideband system

1. System planning parameters

1.1 Channel spacing

During the transition period [(see Resolution COM4/2)], the channel spacing shall be 10 kHz. In the interest of spectrum conservation, during the transition period, it is also permissible to interleave SSB emissions midway between two adjacent DSB channels, i.e., with 5 kHz separation between carrier frequencies, provided that the interleaved emission is not to the same geographical area as either of the emissions between which it is interleaved.

After the end of the transition period the channel spacing and carrier frequency separation shall be 5 kHz.

1.2 Equivalent sideband power

When the carrier reduction relative to peak envelope power is 6 dB, an equivalent SSB emission is one giving the same audio-frequency signal-to-noise ratio at the receiver output as the corresponding DSB emission, when it is received by a DSB receiver with envelope detection. This is achieved when the sideband power of the SSB emission is 3 dB larger than the total sideband power of the DSB emission. (The peak envelope power of the equivalent SSB emission as well as the carrier power are the same as that of the DSB emission.)

2. Transmission characteristics

2.1 Nominal carrier frequencies

Nominal carrier frequencies shall be integral multiples of 5 kHz.

2.2 Frequency tolerance

The frequency tolerance shall be  $\pm 10$  Hz.\*

2.3 Audio-frequency band

The upper limit of the audio-frequency band (at -3 dB) of the transmitter shall not exceed 4.5 kHz with a further slope of attenuation of 35 dB/kHz and the lower limit shall be 150 Hz with lower frequencies attenuated at a slope of 6 dB per octave.

2.4 Modulation processing

If audio-frequency signal processing is used, the dynamic range of the modulating signal shall be not less than 20 dB.

2.5 Necessary bandwidth

The necessary bandwidth shall not exceed 4.5 kHz.

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\* See Note 21) to Appendix 7 of the Radio Regulations.

2.6 Carrier reduction (relative to peak envelope power)

During the transition period the carrier reduction shall be 6 dB to allow SSB emissions to be received by conventional DSB receivers with envelope detection without significant deterioration of the reception quality.

At the end of the transition period, the carrier reduction shall be 12 dB.

2.7 Sideband to be emitted

Only the upper sideband shall be used.

2.8 Suppression of the unwanted sideband

The suppression of the unwanted sideband (lower sideband) and of intermodulation products in that part of the emission spectrum shall be at least 35 dB relative to the wanted sideband signal level. However, since there is in practice a large difference between signal amplitudes in adjacent channels, a greater attenuation is recommended.

3. Characteristics of the reference receiver

The reference receiver has the main characteristics as given below. For more detailed characteristics see the relevant CCIR Recommendations.

3.1 Noise limited sensitivity

The value of the noise limited sensitivity is equal to or less than 40 dB( $\mu$ V/m).

3.2 Demodulator and carrier acquisition

The reference receiver is equipped with a synchronous demodulator, using for the carrier acquisition a method whereby a carrier is regenerated by means of a suitable control loop which locks the receiver to the incoming carrier. The reference receiver should work as well with conventional DSB emissions as with SSB emissions having a carrier reduced to 6 or 12 dB below peak envelope power.

3.3 Overall selectivity

The reference receiver has an overall bandwidth (at -3 dB) of 4 kHz, with a slope of attenuation of 35 dB/kHz.

Note - Other combinations of bandwidth and slope of attenuation are possible, as given below, and will give the same relative RF protection ratio of about -27 dB at 5 kHz carrier difference.

Slope of attenuation	Overall bandwidth (-3 dB)
25 dB/kHz	3 300 Hz
15 dB/kHz	2 700 Hz

**HFBC (2)**

INTERNATIONAL TELECOMMUNICATION UNION  
WARC FOR THE PLANNING OF THE HF BANDS  
ALLOCATED TO THE BROADCASTING SERVICE  
SECOND SESSION, GENEVA, February-March 1987

Document 234-E  
4 March 1987

B.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  
first reading:

<u>Source</u>	<u>Documents</u>	<u>Title</u>
COM.6	233	Appendix [COM4/A] Part A Part B

D. SAUVET-GOICHON  
Chairman of Committee 7

Annex: 3 pages

APPENDIX [COM4/A] TO THE RADIO REGULATIONS<sup>1</sup>**Double-Sideband (DSB) and Single-Sideband (SSB) System Specifications  
in the HF Bands Allocated Exclusively to the Broadcasting Service**

## PART A

Double-sideband system1. Planning parameterChannel spacing

The nominal spacing for DSB shall be 10 kHz. However, the interleaved channels with a separation of 5 kHz may be used in accordance with the relative protection criteria.

2. Emission characteristics2.1 Nominal carrier frequencies

Nominal carrier frequencies shall be integral multiples of 5 kHz.

2.2 Audio-frequency band

The upper limit of the audio-frequency band (at -3 dB) of the transmitter shall not exceed 4.5 kHz and the lower limit shall be 150 Hz, with lower frequencies attenuated at a slope of 6 dB per octave.

2.3 Modulation processing

If audio-frequency signal processing is used, the dynamic range of the modulating signal shall be not less than 20 dB.

2.4 Necessary bandwidth

The necessary bandwidth shall not exceed 9 kHz.

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<sup>1</sup> The provisions of this appendix will take effect from the date of entry into force of the Final Acts of the WARC [1992] (see Resolution No. [ ]).

## PART B

Single-sideband system1. Planning parameters1.1 Channel spacing

During the transition period (see Resolution COM4/2), the channel spacing shall be 10 kHz. In the interest of spectrum conservation, during the transition period, it is also permissible to interleave SSB emissions midway between two adjacent DSB channels, i.e., with 5 kHz separation between carrier frequencies, provided that the interleaved emission is not to the same geographical area as either of the emissions between which it is interleaved.

After the end of the transition period, the channel spacing and carrier frequency separation shall be 5 kHz.

1.2 Equivalent sideband power

When the carrier reduction relative to peak envelope power is 6 dB, an equivalent SSB emission is one giving the same audio-frequency signal-to-noise ratio at the receiver output as the corresponding DSB emission, when it is received by a DSB receiver with envelope detection. This is achieved when the sideband power of the SSB emission is 3 dB larger than the total sideband power of the DSB emission. (The peak envelope power of the equivalent SSB emission and the carrier power are the same as that of the DSB emission.)

2. Emission characteristics2.1 Nominal carrier frequencies

Nominal carrier frequencies shall be integral multiples of 5 kHz.

2.2 Frequency tolerance

The frequency tolerance shall be  $\pm 10$  Hz.\*

2.3 Audio-frequency band

The upper limit of the audio-frequency band (at -3 dB) of the transmitter shall not exceed 4.5 kHz with a further slope of attenuation of 35 dB/kHz and the lower limit shall be 150 Hz, with lower frequencies attenuated at a slope of 6 dB per octave.

2.4 Modulation processing

If audio-frequency signal processing is used, the dynamic range of the modulating signal shall be not less than 20 dB.

2.5 Necessary bandwidth

The necessary bandwidth shall not exceed 4.5 kHz.

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\* See Note 21) to Appendix 7 of the Radio Regulations.

## 2.6 Carrier reduction (relative to peak envelope power)

During the transition period, the carrier reduction shall be 6 dB to allow SSB emissions to be received by conventional DSB receivers with envelope detection without significant deterioration of the reception quality.

At the end of the transition period, the carrier reduction shall be 12 dB.

## 2.7 Sideband to be emitted

Only the upper sideband shall be used.

## 2.8 Attenuation of the unwanted sideband

The attenuation of the unwanted sideband (lower sideband) and of intermodulation products in that part of the emission spectrum shall be at least 35 dB relative to the wanted sideband signal level. However, since there is in practice a large difference between signal amplitudes in adjacent channels, a greater attenuation is recommended.

## 3. Characteristics of the reference receiver

The reference receiver has the main characteristics given below. For more detailed characteristics, see the relevant CCIR Recommendations.

### 3.1 Noise-limited sensitivity

The value of the noise-limited sensitivity is equal to or less than 40 dB( $\mu$ V/m).

### 3.2 Demodulator and carrier acquisition

The reference receiver is equipped with a synchronous demodulator, using for the carrier acquisition a device which regenerates a carrier by means of a suitable control loop which locks the receiver to the incoming carrier. The reference receiver should work as well with DSB emissions as with SSB emissions having a carrier reduced to 6 or 12 dB below peak envelope power.

### 3.3 Overall selectivity

The reference receiver has an overall bandwidth (at -3 dB) of 4 kHz, with a slope of attenuation of 35 dB/kHz.

Note - Other combinations of bandwidth and slope of attenuation are possible, as given below, and will provide the same performance at 5 kHz carrier difference.

Slope of attenuation	Overall bandwidth (at -3 dB)
25 dB/kHz	3 300 Hz
15 dB/kHz	2 700 Hz

**HFBC (2)**

INTERNATIONAL TELECOMMUNICATION UNION  
**WARC FOR THE PLANNING OF THE HF BANDS  
ALLOCATED TO THE BROADCASTING SERVICE**  
SECOND SESSION, GENEVA, February-March 1987

Document 235-E  
4 March 1987

B.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  
first reading:

<u>Source</u>	<u>Document</u>	<u>Title</u>
COM.6	229	Annex to Recommendation COM6/C (HFBC-87)

Note by the Editorial Committee - This document should be considered together  
with Document 207 as an addition to page R.3/10.

D. SAUVET-GOICHON  
Chairman of Committee 7

Annex: 1 page

### 3.3 Combined distribution of fading applicable to wanted and unwanted signals

The fading allowances for 10% and 90% of the time are each to be taken as 10 dB, except where the provisions of the following Note apply. In the latter case, 14 dB is to be used.

#### Note

- a) If any point on that part of the great circle which passes through the transmitter and the receiver, and which lies between control points located 1,000 km from each end of the path reaches a corrected geomagnetic latitude of  $60^\circ$  or more, the values for  $\geq 60^\circ$  must be used.
- b) The value of 14 dB applies to overall circuit reliabilities not exceeding 80%. In other cases, the value of 10 dB applies.
- c) These values relate to the path of the wanted signal only.
- d) For synchronized emissions, the fading allowance associated with the predominant wanted signal is to be used. For those conditions where the constituent wanted field strengths are equal and point a) above applies to at least one of the paths, the value of 14 dB is to be used for  $D_U(\text{SIR})$  and  $D_L(\text{SIR})$ .



COMMITTEE 5

SUMMARY RECORD  
OF THE  
THIRTEENTH AND LAST MEETING OF COMMITTEE 5  
(PLANNING METHOD AND ASSOCIATED PROCEDURE)

Wednesday, 4 March 1987, at 0910 hrs

Chairman: Mr. C.T. NDIONGUE (Senegal)

Subjects discussed:

Documents

- |   |  |
|---|--|
| 1. Items requiring decisions from Committee 5               | 161 + Corr.1 and 2, 177, 192, 198, 199 |
| 2. Proposed establishment of a Group of Experts (continued) | 139                                    |
| 3. Application of RR 531                                    | -                                      |
| 4. Completion of the work of Committee 5                    | -                                      |

1. Items requiring decisions from Committee 5 (Documents 161 + Corr.1 and 2, 177, 192, 198 and 199)

1.1 The Chairman said that the Committee had to take decisions on the outstanding documents listed. Only the relevant parts of those documents would therefore be considered.

1.2 Document 161 + Corr.1 and 2 (Note from the Chairman of Committee 4)

It was agreed - following an explanation by the delegate of Brazil - to adopt a value of 10 dB for Z (Note 1).

LIST I

It was agreed to remove the square brackets around 80% in 1.2.1 and around 1.4 as a whole.

1.2.1 The Chairman said that in the light of the Committee's decision to use only the BBR, 1.6.2 and 1.6.4 could be deleted and likewise in 1.6.5 all references to interference could be deleted.

1.2.2 The delegate of the United States said that his Delegation considered it unwise to cut out all measures relating to interference. Both the ICR and OCR parameters provided some indication of the performance of a service taking into account fading and interference, and his Delegation would have great difficulty if the Conference decided not to use those parameters. It was therefore in favour of retaining at least one of the two paragraphs.

1.2.3 The representative of the IFRB (Mr. Berrada) said that the Board needed to know whether or not the principles in 1.6.2 and subsequent sections were to be maintained or not because they had to be taken into account in the development of the software programs. As he saw it, all the sections could be replaced by a single paragraph which the Board would be prepared to draft. That might meet the concerns of the United States Delegation.

1.2.4 The delegate of Iraq asked whether the ad hoc Group of the Plenary would be drafting a text for S/I.

1.2.5 The Chairman said that in view of the time factor, the authors of the documents for discussion would themselves have to rearrange their texts in the light of the decisions taken by Committee 5 and the comments made there. He would ensure that his Note to the Chairman of the ad hoc Group of the Plenary, which was dealing with matters previously covered by Committee 4, contained all the necessary information.

1.2.6 Referring to 3.1.1, the representative of the IFRB (Mr. Berrada) pointed out that 17 dB had been set as a minimum value, but the Working Group had decided to start with 33 dB. The delegate of India said that the most acceptable solution would be to say that 17 dB should be used, but that for planning purposes a lower value could be obtained. Mr. Berrada agreed with that suggestion. The paragraph should probably refer only to the HFBC Planning System because there was no limit to the protection ratio for Article 17.

1.2.7 The delegates of Iraq and Brazil supported the views of India and were in favour of having a text drafted accordingly.

1.2.8 The delegate of Côte d'Ivoire said that if the Committee did not decide a value for the protection ratios it would be failing in its duty. Delegates had been led to believe that an essential element in the planning process was the satisfaction of a minimum number of requirements at a certain protection value. Instead, the Committee appeared merely to be confirming the system developed by the Board during the intersessional period in spite of the fact that that system was not satisfactory. Rather than taking decisions in order not to change to software, the Committee's task should be to make changes to improve the system.

1.2.9 The delegates of Italy and France supported those views. The two basic differences in approach were clearly set out in Document DT/68, and those positions were still largely maintained.

1.2.10 The Chairman replied that a change in the processing would entail an extremely costly change in the software. Perhaps the Board should be asked to stop the hour-by-hour processing and use another method, irrespective of the cost.

1.2.11 The delegate of the United States having asked whether the Board understood the meaning of co-channel protection ratio to be that under stable conditions, in the absence of fading for which 3 or 6 dB would not be added, the representative of the IFRB (Mr. Berrada) replied that 17 dB was the protection ratio under stable conditions and without taking account of fading. The processing of the HFBC Planning System on a daily basis rather than an hourly basis would require very complex software and a high-capacity computer and would lead to an imbalance in the loading of different hours and frequencies. In reply to queries about values below 17 dB, he said that whatever approach was adopted, requirement per country or minimum requirements, specific situations would always occur in which the protection ratio would need to be reduced. He repeated that the IFRB was ready to prepare a text containing all those elements in order to save time.

1.2.12 The Chairman said that such a text would be welcome and could probably be considered in the ad hoc Group of the Plenary.

### 1.3 Document 177 (Note from the Chairman of Committee 5)

1.3.1 The delegate of Algeria expressed his Delegation's reservations about the removal of the square brackets in paragraphs 17 and 21.

1.3.2 The delegate of India expressed his Delegation's reservation in respect of paragraph 17. He would revert to the matter under Document DT/67 which, in his view, would change the paragraphs considerably.

1.3.3 The delegate of Italy recalled that when Document 177 had previously been discussed in Committee 5, his Delegation had entered reservations on the entire procedure, which was extremely complex and cumbersome. It was however prepared to accept the procedure indicated in Document DT/67.

1.3.4 The Chairman said that Committee 6 would be asked to take Document DT/67 into account when it considered Document 177.

### 1.4 Document 192 (Note from the Chairman of Committee 5)

It was agreed to remove the square brackets around the words "plans or schedules" in 4.2.3.1 and, as a result those around the whole of paragraph 3.

At the suggestion of the Chairman it was agreed that Committee 7 would decide how the deadlines in 4.2.3.2 would correspond.

1.4.1 The delegate of Saudi Arabia supported by the delegate of India suggested that the title of the annex, Planning method, should be changed in the light of the decision to retain the two words "plans" and "schedules" in paragraph 3 of Section 4.2.3.1. The delegate of Israel suggested that the problem might be solved by asking Committee 7 to add a note indicating that the requirements file was common to both systems. The delegate of India said that the matter might best be settled outside the meeting with Members of the Board. The delegates of Algeria, France and Tunisia supported those views.

It was so agreed.

1.5 Document 198 (Note from the Chairman of Committee 5)

It was agreed to remove the square brackets around 17 dB in Step 3 and also from Step 6.

1.5.1 The Chairman suggested that Note 1 might be deleted; the delegates of Colombia and Zimbabwe said that it should be retained until a decision had been given by Committee 6. The Chairman said that as it had been decided that the specific case of national and international requirements would be incorporated into a Recommendation, Note 1 was no longer required. The delegate of Colombia replied that provided that situation was expressed in a Recommendation, she could accept the deletion of Note 1.

1.5.2 The delegate of France, supported by the delegate of the USSR was in favour of the deletion of Note 2, because it was too abridged and would lead to considerable problems of interpretation. The problem was better covered in Document DT/68. The delegates of Libya, Iraq and Qatar objected saying that only the square brackets should be removed. The delegate of France agreed that Note 2 should be retained in square brackets and be dealt with by Committee 6, on the understanding that the notion of equality was properly maintained.

1.5.3 The delegate of Brazil said that the difficulty with both Note 1 and Note 2 arose from the problems concerning suspension. Since transfer had replaced suspension, he suggested that both Notes should be deleted.

It was so agreed; it was further agreed that the problem would be dealt with by Committee 6 in connection with Document DT/68.

1.6 The delegate of the United States observed that, during the earlier debate on the topics under consideration, in connection with Document 182, he had raised the question of procedures for dealing with harmful interference in the context of the HFBC System. The IFRB had not devised any means of incorporating such a procedure in its planning algorithm and the Conference had not yet considered the question, but his Administration wished to emphasize that a procedure must be found, at the present Conference or during the testing period, for periodically updating the monitoring programme established in pursuance of Resolution COM5/1 of the First Session and described in Document 9. The delegate of Australia endorsed that view.

1.7 The Chairman of the IFRB said that, although it was difficult to consider procedures that might be developed in the absence of any discussion of Document 9, a point of departure might be acceptance of the definition of harmful interference in the HFBC bands appearing in section 3 of that document. In any case, some definition was required, bearing in mind the link between the HFBC System and Article 17 procedures and the fact that the impact of harmful interference on the HFBC System was more severe than on the Article 17 procedure, because the system indicated frequencies and so far did not take harmful interference into account.

1.8 The delegate of Pakistan, observing that the definition of harmful interference in Document 9 in effect meant any interference resulting from operations not in conformity with Article 17, pointed out that the present Article 17 represented nothing but the law of the jungle, so that constant interference was the general rule for all administrations except the very few which had enough frequencies to be able to use several of them for the same programme.

1.9 The Chairman suggested that the question of the revision of Resolution COM5/1 of the First Session should be referred to Committee 6. The delegate of the United Kingdom suggested that specific reference should be made to the need for periodic updating of monitoring information.

It was so decided.

Document 198 was approved for transmission to Committee 6.

1.10 Document 199 (Note from the Chairman of Committee 5)

1.10.1 The representative of the IFRB (Mr. Berrada) observed that, while Appendix 2 had originally been intended to appear in the Radio Regulations for use in applying the present Article 17, the guidelines in the document now contained information unconnected with that application but relating to testing during the period between the two Conferences. The delegate of France suggested that a note should be added to the annex to the document, indicating that the IFRB should have some latitude in formulating those parameters which related only to testing.

It was so agreed.

1.10.2 The Chairman proposed that Document 199 should be referred to Committee 6 with all the square brackets removed. The delegates of Paraguay, the United Kingdom and Australia supported that proposal.

After some discussion, it was so decided.

2. Proposed establishment of a Group of Experts (Document 139)  
(continued)

2.1 The delegate of the USSR said that the replies given to his questions by the authors of the proposal had confirmed his view that it would be inadvisable to set up the Group of Experts.

2.2 The delegate of India said that, since the date of the next Conference had been set for 1992, thus giving the IFRB three and a half years to complete its work, there no longer seemed to be any urgent reason for the Board to be assisted by a Group of Experts. He therefore considered that a procedure should be established whereby the IFRB would regularly inform all administrations of the progress made, soliciting their views and taking them into account as far as possible; information meetings might also be convened if the Board considered that to be essential, on the understanding that they should not be too frequent.

2.3 The delegates of Algeria and Saudi Arabia endorsed the views of the two previous speakers.

2.4 The delegate of Cameroon said that, since the purely advisory nature of the proposed Group seemed to have been established, it might indeed be advisable to set it up. The delegates of the United States and the Netherlands also supported the establishment of the Group.

2.5 The Secretary-General, referring to the verbal opinion on the competence of the Conference that he had given at the Committee's sixth meeting (Document 174, paragraph 3.5.3), said that the study of the legal issues requested by the IFRB had been completed and communicated to the Board. Under No. 281 of the Convention, the Secretary-General provided the legal advice to the organs of the Union. The Conference was, of course, such an organ.

The legal opinion now available recognized that the Conference was competent to take decisions concerning the establishment of the Group of Experts, but stated that interaction with the Administrative Council was necessary in that regard, so that the definitive establishment of the Group depended on the decisions of both the Conference and the Administrative Council. Moreover, the legal opinion made it quite clear that there could be no question whatsoever of any form of instructions being given to the IFRB.

2.6 The Chairman suggested that the question should be referred to the Plenary Meeting.

It was so decided.

### 3. Application of RR 531

3.1 The Chairman reminded the Committee that under RR 351 the extension bands would become available for HF broadcasting in 1989 and it had been suggested that a Resolution or Recommendation should be adopted on the use of those bands.

3.2 The delegate of Pakistan expressed his Delegation's strongly held view that the extension bands should be used only for the HFBC Planning System and in no circumstances whatsoever for the Article 17 procedure. Any decision by the Conference sanctioning the use of the bands under Article 17 could jeopardize all HFBC planning for the rest of the century.

3.3 The delegate of India said that his Administration was against the use of the bands without any planning and thought that they should be used for practical tests in accordance with the plans developed by the IFRB during the transition period.

3.4 The Chairman said that, in view of some of the decisions already taken, it might be unnecessary to regulate the use of the bands for the time being. As professional broadcasters, all the delegates present were aware of the responsibilities involved, and their administrations would surely not take any measures prejudicial to the final planning of the HFBC bands.

3.5 The delegate of the Islamic Republic of Iran said he was not as sure as the Chairman seemed to be that no such measures would be taken. The extension bands should be reserved exclusively for the HFBC Planning System, as the Pakistani delegate had suggested. The delegates of Tunisia and Libya endorsed that view.

3.6 The Chairman said that a Resolution or Recommendation to that effect covering the transitional period would be liable to misinterpretation and therefore reiterated his view that no regulation of the use of the bands should be decided upon at that stage.

3.7 In reply to a question by the delegate of India, the Chairman of the IFRB said that notices of frequency assignments in the bands concerned were normally registered under Article 12, but that those relating to broadcasting would come under the Article 17 procedure. In addition, unless the Conference took some decision on the subject, that large part of the spectrum could not be used by the broadcasting or any other service from 1989 until the relevant decision of the 1992 Conference was implemented.

3.8 The delegate of India, supported by the delegates of Pakistan and Kenya, said that the fixed services operating in the bands would not have to vacate them until the HFBC planning was completed. He therefore could not see why a portion of the bands should be left to the Article 17 procedure.

3.9 The Chairman of the Conference suggested that the discussion should be mentioned in the Chairman's report to the Plenary and should be reopened in that forum.

It was so decided.

4. Completion of the work of Committee 5

After the customary exchange of courtesies, the Chairman announced that the Committee had completed the work assigned to it.

The meeting rose at 1200 hours.

The Secretary

M. GIROUX

The Chairman

C.T. NDIONGUE

COMMITTEE 6

SUMMARY RECORD  
OF THE  
NINTH MEETING OF COMMITTEE 6  
(REGULATORY)

Wednesday, 4 March 1987, at 1010 hrs

Chairman: Mr. R. BLOIS (Brazil)

Subjects discussed:

1. Draft Resolution COM6/1
2. Draft Appendix 2

Documents

DT/69  
222



1. Draft Resolution COM6/1 (Document DT/69)

1.1 The Chairman invited the Committee to consider the text of draft Resolution COM6/1 as revised in Document DT/69.

Title

It was agreed, on a proposal by the delegate of the Federal Republic of Germany, to add, at the end of the title, "in its exclusive bands".

considering

It was agreed, following observations by the delegates of Algeria, France and the United Kingdom relating to considering d), to add, in the second line, the words "inter alia:" after the words "based on, to end the paragraph with the term "in certain regions ...;" and to delete the square brackets and contents at the end of the text.

It was also agreed, following a discussion involving the Chairman, the delegates of the Federal Republic of Germany and Oman, the representative of the IFRB (Mr. Brooks) and the Chairman of Working Group 6 ad hoc 2, to replace the words "in applying the periodic planning process" by "in the application of the provisions of Article 17".

resolves

Following a discussion relating to the words "unless it would be impractical to do so" in resolves 3 in which the delegates of the Netherlands, Spain, Algeria, Mexico, India, the United States, Oman, Brazil, Japan and the United Kingdom, the representative of the IFRB (Mr. Brooks) and the Chairman took part, it was agreed to leave the text as it stood.

1.2 The representative of the IFRB (Mr. Brooks), replying to the delegate of Thailand, said that the last sentence of paragraph resolves 4 meant that in the absence of significant support for the proposed meeting the Board would be obliged to reconsider the proposed action and to seek further comments by way of advice, but would not be bound to go along with the views received; in other words, administrations would have no power of veto in the matter. Replying to the delegate of Yugoslavia, he said that the words "action proposed by the Board" in the second sentence of the same paragraph referred to the holding of a meeting of experts and not to the introduction of changes. In reply to a point raised by the delegate of Mexico, he said that the precise details of the Resolution's application had not yet been considered. If the Board saw a need for a meeting of experts, it would provide all the relevant information concerning its date, duration, etc., in a Circular-letter inviting all administrations to attend if they so desired on an optional basis. Replying to the delegate of Syria, he said that the process would be similar to that followed by the Board in arranging the two meetings held during the period leading up to the present session in connection with the need to develop some software for the Planning System. The term "meeting of experts" had been adopted in preference to "information meeting" because some delegates had felt that it might make it easier to obtain their administrations' approval for participating in these meetings.

1.3 The delegates of Spain and the United Kingdom said that although not wholly satisfied by the text of resolves 4, they were prepared to accept it in the light of the explanations just given.

Resolution COM6/1 (HFBC-87), as amended, was approved.

2. Draft Appendix 2 (Document 222)

2.1 The representative of the IFRB (Mr. Brooks) suggested that the title of draft Appendix 2 appearing in Annex 2 to Document 222 should be amended to read: "Form of notice for submitting high-frequency broadcasting requirements to the IFRB".

It was so agreed.

Replying to a query by the delegate of the United Kingdom, he said that the proposed text was intended to replace Appendix 2 as presently contained in the Radio Regulations.

Section B: Information relating to the broadcasting service in the exclusive HFBC bands to be provided in requirement forms

2.2 The representative of the IFRB (Mr. Brooks) suggested the insertion of a new paragraph 1 a) reading as follows: "The administration's identification number of the requirement."

It was so agreed.

He further proposed the inclusion of a footnote to Section B as a whole, reading: "The Board may add other items of an administrative nature."

Replying to the delegate of the United States, he said that the existing Appendix 2 in the Radio Regulations would continue to apply until the entry into force of the Final Acts of the present Conference, whereupon the new Appendix 2, now under consideration, would replace it. Replying to the delegate of Algeria he said that the additional information referred to in the proposed footnote would not be basic and its provision would therefore not be mandatory. A statement to that effect could be added to the footnote for additional clarity.

After discussion, it was agreed that the first sub-paragraph of paragraph 5 of Section B should read as follows: "In specifying the required service area, reference shall be made to a combination of one or more of ...".

The meeting rose at 1205 hours.

The Secretary:

M. AHMAD

The Chairman:

R. BLOIS

COMMITTEE 6

SUMMARY RECORD  
OF THE  
TENTH AND LAST MEETING OF COMMITTEE 6  
(REGULATORY)

Wednesday, 4 March 1987, at 1405 hrs

Chairman: Mr. R. BLOIS (Brazil)

<u>Subjects discussed:</u>	<u>Documents</u>
1. Notes from the Chairman of the ad hoc Group of the Plenary to the Chairman of Committee 6	228, 229
2. Approval of the summary record of the sixth meeting	184
3. Draft Appendix 2 (continued)	222
4. Draft Resolution (the post-Conference work by the IFRB)	DT/71
5. Updating of draft Resolution COM5/1	-
6. Completion of the work of Committee 6	-

1. Notes from the Chairman of the ad hoc Group of the Plenary to the Chairman of Committee 6 (Documents 228 and 229)

The Committee took note of Document 228, with a minor editorial amendment and a correction, and of Document 229.

2. Approval of the summary record of the sixth meeting (Document 184)

The summary record of the sixth meeting was approved.

3. Draft Appendix 2 (continued) (Document 222)

#### Part B (continued)

It was agreed to add the words "one or more of" after "a combination of" and to replace "a part of a quadrant" in the third indent by "parts of quadrants".

3.1 The delegate of Qatar, supported by the delegate of Tunisia, having proposed that sub-item 7.1 be deleted entirely, the delegate of the Federal Republic of Germany felt that an entry in the file to indicate legal clock time changes would be useful and without prejudice to the Board's work.

3.2 The representative of the IFRB (Mr. Brooks) suggested the addition of the words "to be used for the post-Conference testing of the improved HFBC Planning System".

Following further observations by the delegates of Israel, Mexico, France, Algeria, Tunisia and Yugoslavia, it was agreed to retain 7.1, deleting the square brackets and adding two asterisks to denote that it was for information only.

It was agreed to add the words "or other types of disaster" at the end of item 8.

3.3 The delegate of Spain said that in the Spanish text of 9.1.3 the term "diagrama de turno" should be replaced by "diagrama de radiación pertinente".

3.4 The delegates of India and Tunisia, referring to item 12, felt that the term "Notified" was preferable to "Assigned". The delegates of the United Kingdom, the United States and the USSR on the other hand preferred to retain the term as it stood.

Following a brief discussion, in which the representative of the IFRB (Mr. Brooks) and the delegate of Yugoslavia also took part, it was agreed to retain item 12 but remove the square brackets.

In the texts of a) and b) accompanying the triple asterisk relating to items 12, 13 and 14 the word "transmission" was replaced by "emission".

3.5 The representative of the IFRB (Mr. Brooks) suggested the addition of a footnote to item 17 worded: "For the explanation of the types of frequency continuity, see Annex [ ] Resolution [ ]." He also suggested that, in

item 18, the acronym BBR should be spelt out and appropriately cross-referenced and that the references within parentheses in that item should be placed within square brackets for the time being.

It was so agreed.

3.6 The delegate of China proposed that the word "frequency" inside the parentheses in item 20 should be preceded by "e.g.".

It was so agreed.

3.7 The delegate of Brazil, supported by the delegates of Mexico and Paraguay, proposed that the square brackets should be removed from items 22 and 23.

3.8 The delegate of the USSR, supported by the delegate of the United Kingdom, proposed the deletion of both items. Following further discussion, in which the delegates of Poland, the Federal Republic of Germany, Algeria, Australia, Chile, Kenya and the representative of the IFRB (Mr. Brooks) took part, it was proposed that item 22 should be kept within square brackets and item 23 deleted. The delegates of the Netherlands and Thailand supported that proposal.

3.9 The Chairman suggested that both items should be left within square brackets, pending a decision by the Plenary Meeting. The delegate of Brazil supported that suggestion.

3.10 The delegate of China moved closure of the debate pursuant to No. 520 of the Convention, proposing that the Chairman's suggestion should be adopted.

It was so agreed.

3.11 The delegate of the United Kingdom suggested that the wording of item 25 should be expanded to bring it into line with the provisions for supplementary information relating to coordination appearing in the current Appendix 2.

It was so agreed.

3.12 The delegate of Algeria suggested that a further paragraph should be added after item 25 to provide for information of the kind referred to in paragraphs 3.1 and 3.2 of Document DT/68. The delegates of India and Pakistan concurred.

After a discussion in which the delegates of Algeria, the United States, the USSR, Brazil and Pakistan and the representative of the IFRB (Mr. Brooks) took part, it was agreed to insert a second sub-paragraph under item 25 reading as follows: "Any other information that the Board might require for the evaluation of the improved system (see in particular paragraphs 3.1 and 3.2 of Document DT/68)."

#### Section C: Map of CIRAF zones

3.13 The delegate of Canada, supported by the delegate of Qatar, suggested that the following note should be added to Section C: "Note - Information concerning the test points associated with these CIRAF Zones and quadrants is given in [...]", a reference to the appropriate document being inserted between the square brackets.

It was so agreed.

3.14 The delegate of the United Kingdom, remarking that the quadrants in some instances straddled two regions, wondered whether the special provisions taken by the Board as described in paragraph 2 of Annex 1 to Chapter 2, section 3 of Document 8 could be incorporated in Appendix 2 before its definitive adoption.

4. Draft Resolution (the post-Conference work by the IFRB)  
(Document DT/71)

4.1 The delegate of China suggested that resolves that the IFRB 1 should read as follows: "shall base its post-Conference activities relating to the improvements to the software for the revised planning procedures and the revised procedures based on consultation on the stipulations contained and listed in Annex 1 to this Resolution".

4.2 The delegate of India agreed that the paragraph needed re-writing and drew attention to other instances of linguistic inconsistencies in the text of the draft Resolution. Referring to considering d), he remarked that the point at issue was surely to permit administrations to receive frequency assignments rather than to have all their HFBC taken into account in the Radio Regulations. Paragraph resolves 4 was, in his view, too open-ended; the intervals at which the Board should report to administrations should be specified. Lastly, the final reports to administrations referred to in resolves 5 should be prepared a good deal earlier than eight months prior to WARC-1992.

4.3 The delegate of Pakistan associated himself with both the previous speakers.

4.4 The delegate of the Islamic Republic of Iran suggested that the words "as revised" or "as modified" should be added to the text of Annex 2 to the draft Resolution.

4.5 The representative of the IFRB (Mr. Brooks), replying to a point raised by the delegate of France concerning paragraph resolves 2, said that immediately after the entry into force of the Final Acts of the Conference the procedures in force would be those of the new Appendix 2. Replying to the delegate of China, he said that Annex 3 of Document 222, as modified by Document DT/68, formed part of the results of Drafting Group 6-2 and would be mentioned in Section III of Annex 1 to the draft Resolution.

4.6 The delegate of Algeria agreed with previous speakers that considering d) needed some improvement, as did resolves 1. With regard to resolves 4, he agreed that an interval should be specified. As for resolves 5, he believed that the figure appearing in square brackets could be altered.

4.7 The Chairman said that he would take all the comments made into consideration in revising the draft Resolution. Since this was the last meeting of the Committee, the revised Resolution will be submitted directly to the Plenary with the remark that its text had not been approved in Committee 6.

5. Updating of Resolution COM5/1

5.1 The delegate of the United States gave notice of his intention to propose in Plenary that with a view to updating Resolution COM5/1 adopted at the First Session a new considering h) referring to Document 9 by its official title should be inserted and that a new noting d) should be added reading as follows: "that the successful implementation of the HFBC Planning System would be adversely affected by the presence of harmful interference".

As Committee 6 had already run out of time, the proposal could not be discussed. The Committee took note of the proposal and the Chairman suggested that the Delegation of the United States of America may raise the matter in the Plenary Meeting.

6. Completion of the work of Committee 6

After the customary exchange of courtesies, the Chairman announced that the Committee had completed its work.

The meeting rose at 1645 hours.

The Secretary:

M. AHMAD

The Chairman:

R. BLOIS

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PLENARY MEETING

MINUTES

OF THE

TENTH PLENARY MEETING

Wednesday, 4 March 1987, at 1735 hrs

Chairman: Mr. K. BJÖRNSJÖ (Sweden)

Subjects discussed:

Document

1. First report by the Chairman of Committee 5

230



1. First report by the Chairman of Committee 5 (Document 230)

1.1 The Chairman of Committee 5 introduced his first report to the Plenary (Document 230) stressing the most important points of the compromise it contained and explaining the strategy. The work in Committee 5 had taken account of delegations' main concerns, namely to improve the HFBC Planning System, to ensure it could be successfully implemented in the future and to find a satisfactory solution for dealing with national and international needs by guaranteeing that the minimum requirements of each administration would be met. The aim of the short- and medium-term strategy was to ensure that it should be possible, in 1992, to study the results of the planning system as improved at that session and to take the ensuing decisions, and secondly to decide from 1992 onwards on the possible implementation of the HFBC Planning System. That had involved the consideration of questions regarding interim provisions, the frequency bands to be chosen, the bands to be tested and the possible extension of bands. Finally, the Committee had considered the need to adopt a Resolution to ensure that the Administrative Council would permit the holding of a competent conference in 1992 to carry on the work.

In conclusion, he drew attention to a number of typing errors in the text of the report.

1.2 The Chairman stressed that the report under consideration was a very carefully balanced package, all the elements of which were indissociable. He hoped that the Plenary would find it possible to adopt it in principle without making any substantial amendments.

Section 2

1.3 The delegate of Spain proposed, for the sake of clarity, that the last sentence should read:

"The test on data from the requirements file would correspond to requirements submitted by administrations for seasons [1991/1992]."

1.4 The representative of the IFRB (Mr. Berrada) pointed out that, unless otherwise decided by the Conference, the requirements file would not be set up until 1992 and until that date the current Article 17 would be operated with Appendix 2. The Chairman of Committee 5 added that it would be necessary at the time of the tests to submit requirements within the framework of the improved HFBC Planning System which was the same as the improved Article 17. Concrete requirements must be submitted for the tests.

1.5 The Secretary-General said that delegates should reflect seriously before taking a decision to set up a requirements file at an early date, since adaptations would be required to treat the information in a new form but using the existing system (Article 17). It would be many months before requirements could be submitted in the new form. He therefore suggested that the question of the date of entry into force of the change to Appendix 2 be left in abeyance.

1.6 The representative of the IFRB (Mr. Berrada) said that as he understood it Committee 5 had decided that the current Article 17 should be used with the modified Appendix 2 and the documents now being prepared were based on that decision. The only question was whether it would be advisable to establish a requirements file immediately to be used with the current Article 17 and after 1992 with the decisions of the 1992 Conference. It would simplify the task both of administrations and of the Board if the requirements file were to be brought into use subsequent to the decisions of the present Conference. No change would be required in the text of Document 230 except that proposed by the Spanish Delegation, but in the Final Acts the section concerning the requirements file would appear as a part of the Radio Regulations.

1.7 The delegate of Algeria enquired whether the dates 1990/1991 in Section 2 were still appropriate since Document DT/68 simplified the planning system considerably. The representative of the IFRB (Mr. Berrada) said that although at first sight Document DT/68 did appear to simplify matters, in fact it complicated the software for the HFBC System slightly. The IFRB had submitted Document 191(Rev.1) giving only one scenario which would require fewer man/months than the third scenario in Document 191, but the actual duration would remain the same since the interim work would have to be done by the same number of staff.

1.8 The Secretary-General confirmed that the changes would reduce operational costs but not those of software development.

1.9 The delegate of Pakistan having asked how much time would be required for the two slight modifications to existing software proposed in Document DT/68, the representative of the IFRB (Mr. Berrada) said that considering only the changes introduced by Document DT/68 and not the modifications proposed by Committees 4 and 5, it should be a matter of a few months.

1.10 The delegate of Saudi Arabia proposed that "development" be replaced by "improvement" in the title and the text of Section 2; the Chairman said that since Document 130 would not appear in the Final Acts it was unnecessary to amend it formally but the spirit of that proposal would be taken into account.

### Section 3

1.11 The delegate of Libya, referring to the fourth indent, wished to remove the implication that the two systems might not be implemented. He proposed that the words "The decision relating to the implementation of the two systems shall be made as soon as possible after WARC-1992" be amended to read: "... shall be made not later than 1 January 1994".

1.12 The Secretary-General said that since conferences were sovereign the present Conference could not take a decision binding any future one. Nevertheless, it would be possible to adopt a Resolution on an advanced date of implementation i.e. in advance of the date of entry into force at the proposed 1992 Conference.

1.13 The delegate of Tanzania, referring to the words "if the results are conclusive" in the fourth indent, enquired what would happen if the results were not conclusive; the Chairman of Committee 5 replied that at the present stage it was impossible to say, but that administrations must have confidence to move forward. The delegate of Algeria suggested that those words be omitted.

1.14 In reply to the delegate of Syria, who asked what improvements were to be made in the system and what the rate of such improvements might be, the representative of the IFRB (Mr. Berrada) said that one improvement was the decision of the Conference to make frequency continuity a first priority and to convert the suspension rules into transfer rules. The decisions of Committee 4 concerning the antennas could also be considered an improvement. The Chairman of the IFRB said that before a detailed study was carried out it was difficult to say precisely what degree of improvement there would be from the point of view of administrations.

1.15 The delegate of Tunisia, supported by the delegate of the Islamic Republic of Iran, said that he had great difficulty with the words "decide, on the basis of an analysis of test results, if the results are conclusive, on the date of the implementation of the two systems". The planning method was bound to fail if it was made subject to such a condition. he therefore proposed to delete "if the results are conclusive".

1.16 The Chairman repeated that the text under discussion would not appear in the Final Acts and was not subject to amendment. The discussion would be reflected in the minutes and would be taken into account in considering the final texts.

In reply to the French delegate, he explained that all final texts would be submitted for consideration at a subsequent Plenary Meeting.

1.17 The delegate of Spain said that the report of the Chairman of Committee 5 must reflect exactly what had been said in that Committee. To delete the words "if the results are conclusive" would change the meaning of the rest of the sentence and leave open the question of the implementation of the two systems.

1.18 The delegate of the Federal Republic of Germany pointed out that the sense of the discussion in Committee 5 had been that if the test results were unsatisfactory there should be an opportunity to change the system. The words in question should therefore be maintained.

1.19 The delegate of Tunisia said that as his Delegation had not taken part in the Working Group it was difficult for it to accept that argument. He asked whether the representative of the IFRB could estimate the degree of improvement that might be attained by 1992. He considered that the very large number of requirements submitted by administrations would make it impossible for the proposed method to succeed.

1.20 The Chairman of Committee 5 pointed out that it would be for WARC-1992 to judge whether the results were conclusive or not. It was not for the IFRB but for administrations to make that judgement. It would not be reasonable for an administration to submit requirements to a plan in which half of its operating transmitters would have to be thrown away. He stressed that all the elements of the package had to be accepted.

1.21 The delegate of Iraq observed that it was only sensible to consider reasonable proposals for amendment. Any delegation had the right to make such proposals, and an opportunity had to be provided for their consideration. Care should be taken in drafting the directive given to the WARC-1992 Conference in the fourth indent of paragraph 3: in its present form that indent, which differed from the text of Document DT/65, introduced an element of uncertainty and would be misinterpreted. His Delegation could not agree to the words "if the results are conclusive" being included in the Final Acts or other documents of the Conference.

1.22 The Chairman appealed to the meeting to accept the text as it stood, which was merely the basis for others which would go into the Final Acts.

#### Section 4

1.23 The delegate of Pakistan, supported by the delegate of Libya, said he had understood that the current provisions of Article 17 would apply as an interim measure in the HFBC bands prior to WARC-1979. Since Article 17 could not apply legally in the extension bands, he proposed to add the words "in the HFBC band allocated prior to WARC-1979" at the end of Section 4.

1.24 The Chairman said that Section 4 implied that the interim measure related only to the HF bands allocated at WARC-1979, in other words those bands that were open at the moment for HF broadcasting. The point would be noted and the question of the extension bands dealt with later, when the second report from the Chairman of Committee 5 was discussed.

1.25 The delegate of France pointed out that the wording of the French version of Section 4 would have to be changed if the Pakistan amendment was accepted, as otherwise it would imply that the current provisions of Article 17 would be applied definitively.

#### Section 8

1.26 The delegate of Yugoslavia pointed out that it was not clear from paragraph 8.1 b) whether Article 17 would be applied at the date of entry into force of the Final Acts or at another date which would be decided by WARC-1992.

1.27 The delegate of Pakistan said that his comments in connection with paragraph 4 also applied to paragraph 8.1. b) in respect of the application of Article 17 in the bands allocated prior to WARC-1979.

1.28 The Secretary-General said that a distinction must be made between the date of entry into force of regulations, and the date of application of particular Resolutions. As he had earlier pointed out, Conferences adopted transitional provisions in the form of Resolutions, pending the entry into force of regulations. The point made by the Yugoslav delegate could be covered by a Resolution. However, to make the text more comprehensible it might be appropriate to interpret the provision in the Final Acts.

1.29 The Chairman said that that point would be borne in mind in drafting the Final Acts.

1.30 In reply to a request for clarification from the delegate of Syria, the representative of the IFRB (Mr. Berrada) said that the transfer rules (mentioned in Document DT/68), whereby requirements that could not be accommodated under the HFBC Planning System would not be suspended but transferred to Article 17, as would requirements for which frequency continuity was requested, were one of the main features of the planning method mentioned in sub-paragraph a).

1.31 The delegate of Libya said that it would be useful, during the period the IFRB was making improvements to the HFBC Planning System and Article 17, for an annual meeting to be held to allow the Board to exchange views with broadcasters and experts, which any administration that so wished could attend. He suggested that a sentence referring to the convening of such an annual meeting should be inserted after sub-paragraph d).

1.32 On the delegate of Canada noting that the question of convening an Expert Group to discuss such matters was covered in the draft Resolution in Document 139(Rev.1) to be considered later by the Plenary, the Chairman requested the delegate of Libya to make his proposal when that document was discussed, rather than referring to the matter in the report.

1.33 The delegate of the United States said that, in order to clarify a point on which there was general agreement, a sub-paragraph referring to adoption of the improved HFBC Planning System and the improved Article 17 by a competent WARC should be entered between sub-paragraphs f) and g).

It was so agreed.

1.34 In reply to the delegate of Saudi Arabia, who noted that the 1992 WARC would adopt the Planning System (Annex 2) and decide the date of its implementation (Section 3, fourth indent), and asked what the connection was between those actions and adoption of the planning method by the present Conference (Section 1), the Chairman of Committee 5 said that the present Conference would adopt overall planning principles and the main features of the planning method, whereas the 1992 Conference would consider for adoption the outcome of the work carried out by the IFRB on the basis of those planning principles and main features.

1.35 The delegate of Qatar proposed, for clarity, that the word "improved" should be added before "HFBC Planning System" in sub-paragraphs f) and g) and also in sub-paragraph a) of 8.2.

It was so agreed.

#### Annex 1

1.36 In reply to a request by the delegate of Zimbabwe for clarification regarding bands 6 and 7 in Annex 1, the Chairman of Committee 5 said that if it was decided to apply the improved HFBC Planning System after 1992, it would apply only to some of the bands but the improved Article 17 procedure would apply to all the other bands.

1.37 The delegate of Spain pointed out that the word "mid-term" should be placed inside column (2). The Chairman of Committee 5 noted that the word "mid-term" should be moved to a place opposite the 9 MHz band (in the English version). The Spanish text should be aligned on the French and English texts.

1.38 In reply to the delegate of Qatar who referred to the usefulness of reverting to an earlier proposal to modify the order of numbering of the bands, the Chairman reminded the meeting that the report represented a very sensitive compromise package, matters relating to the frequency bands being a particularly delicate issue. Agreement would not be possible on the report as a whole if that issue was re-opened.

1.39 The delegate of the United States said that as there had been no wide discussion of the table in Annex 1 outside Working Group ad hoc 5, he wished, solely for the information of those delegates that had not participated in the work of that Group, to draw attention to the fact that his Administration would have preferred to see under application of the improved HFBC Planning System (column 2) 150 kHz and not 200 kHz in the case of the 15 and 17 MHz bands. The reason the higher figure was not considered appropriate was that harmful interference was experienced from time to time in those bands.

1.40 The delegate of Libya stated his disagreement with the preference expressed by the previous speaker and proposed that the figures for columns 1 and 2 of the 26 and 15 MHz bands be amended to read 200 and 230 kHz, and 200 and 300 kHz respectively.

1.41 The delegate of Pakistan, supported by the delegate of Norway, reiterated the Chairman's views that the proposed compromise represented a package and that no individual element of that package should be disturbed. His Administration, like others no doubt, also had amendments it would like to see to Annex 1. In the interests of reaching general agreement he therefore proposed that Annex 1 should not be open to amendment.

It was so agreed.

#### Annex 2

1.42 In reply to the delegate of Mexico, who considered the two entries at the bottom of the annex, referring to the dates 1998 and 2005, were not clear and should perhaps be merged, the Chairman said that those two entries referred to the same band extensions, and that the two dates merely indicated a possible time-frame for the opening of the new extensions eventually decided upon by the WARC-1992. The HFBC Planning System might be implemented in those possible extensions by the same date.

In reply to the delegate of Egypt, who wished to see the date for the introduction of the SSB system reflected in Annex 2, he said that the introduction of SSB came under long-term strategy, which had not been considered by Committee 5 in the context of the report since SSB came under the terms of reference of Committee 4.

1.43 In answer to a request for clarification from the delegate of Brazil, he said that Annex 2 had been added to the report to give the Plenary an indication of a possible time frame for the compromise package. The table in the annex would not appear in the Final Acts, which would instead contain regulatory texts setting out the dates agreed upon for the various events.

The report and the comments thereon were noted.

The meeting rose at 2040 hours.

The Secretary-General

R.E. BUTLER

The Chairman

K. BJØRNSJØ

# HFBC (2)

INTERNATIONAL TELECOMMUNICATION UNION  
WARC FOR THE PLANNING OF THE HF BANDS  
ALLOCATED TO THE BROADCASTING SERVICE  
SECOND SESSION, GENEVA, February-March 1987

Document 240-E  
4 March 1987  
Original : English  
French  
Spanish

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Origin : Document 188

COMMITTEE 7

SECOND SERIES OF TEXTS FROM COMMITTEE 5  
TO THE EDITORIAL COMMITTEE

The texts of the Annex to Document 188, slightly amended, are  
submitted to the Editorial Committee.

C.T. NDIONGUE  
Chairman of Committee 5

PLENARY MEETING

Pakistan and India

UTILIZATION OF THE FREQUENCY BAND EXTENSIONS  
AS AGREED BY WARC-79

The WARC-79 agreed to enlarge the existing HF bands exclusively allocated to the broadcasting service in the 9, 11, 15, 17 and 21 MHz bands. In addition, the WARC-79 also agreed to allocate a new frequency band of 13 MHz for this service. These extensions would be available from 1 July 1989 excepting the 9 MHz extensions which would be available from 1 July 1994. In terms of No. 531 of the Radio Regulations, the use of these band extensions for the HF broadcasting service shall be subject to planned usage only.

As per Document 230 of this Conference (First report of the Chairman of Committee 5 to the Plenary), the application of the improved HFBC Planning System has to be adopted by a competent WARC in 1992. This implies that the use of the band extensions cannot be effected from 1 July 1989, until the improved Planning System comes into implementation. It would be undesirable not to use the extended portions from 1 July 1989 and leave them in abeyance until the final adoption of the Planning System. It is preferable to apply to these band extensions the HFBC Planning System as developed by the IFRB during the intersessional period between the First and Second Sessions of the WARC-HFBC together with modifications proposed in Document DT/68 taking care of concerns related to suspensions and frequency discontinuities. It was noted that the IFRB, in response to a clarification sought during the tenth Plenary Meeting on 4 March 1987, indicated that the Board would need only a few months to introduce the necessary changes in the present HFBC Planning System in terms of Document DT/68. It would, therefore, be possible to use the band extensions (except in the 9 MHz band) from 1 July 1989 with the application of the existing HFBC Planning System improved to the extent of Document DT/68 mentioned above. Additionally this will also provide the opportunity of practically testing the HFBC Planning System as it is being improved by the IFRB, much ahead of what has been envisaged in Document 230. It is of course recognized that the improved HFBC Planning System which would eventually emerge from the WARC-1992 will also be applicable to these band extensions from the date decided by that Conference.

This proposal is submitted to the Plenary for urgent consideration.



**HFBC (2)**

INTERNATIONAL TELECOMMUNICATION UNION  
WARC FOR THE PLANNING OF THE HF BANDS  
ALLOCATED TO THE BROADCASTING SERVICE  
SECOND SESSION, GENEVA, February-March 1987

Document 242-E  
4 March 1987

B.9

PLENARY MEETING

NINTH SERIES OF TEXTS SUBMITTED BY THE  
EDITORIAL COMMITTEE TO THE PLENARY MEETING

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

<u>Source</u>	<u>Documents</u>	<u>Title</u>
COM.6	222	New Appendix 2

D. SAUVET-GOICHON  
Chairman of Committee 7

Annex: 5 pages

New Appendix 2**Form of Notice for the Submission of HF Broadcasting Requirements  
to the IFRB****A. Introduction**

A broadcasting requirement is a requirement indicated by an administration to provide a broadcasting service at specified periods of time to a specified reception area from a particular transmitting station.

An administration wishing to notify a broadcasting requirement to the Board will do so on the basis of the characteristics provided in [B] of this Appendix. The necessary information shall be provided on a requirement form to be developed by the Board.

A separate requirement form shall be sent to the IFRB for notifying:

- each requirement to be put into use for particular seasons;
- any modification in the characteristics of a requirement;
- any deletion of a requirement.

The map of the CIRAF Zones to be used in notifying a requirement is given in [C].

**B. Information relating to the broadcasting service in the exclusive HFBC bands to be provided in requirement forms<sup>1</sup>****1. Notifying administration\***

The notifying administration shall be indicated using the symbols given in Table ... of the Preface to the International Frequency List.

**1.1 Administration's identification number.****2. Name of transmitting station.\*****3. Symbol of the country or geographical area in which the transmitting station is located.\***

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<sup>1</sup> Note - The Board will develop a form for the submission of HF broadcasting requirements based on the items of information and corresponding explanations contained in this Appendix. Furthermore, the Board may add other items of an administrative nature, although provision of the information in these additional items will not be obligatory.

\* Basic information that must be provided by administrations.

## 4. Geographical coordinates of the transmitting station\*

When two or more transmitting stations are almost co-located, the administration shall indicate, as far as possible, the same coordinates.

## 5. Required service areas\*

In specifying the required service area, reference shall be made to a combination of:

- CIRAF zones,
- quadrants of CIRAF zones,
- parts of quadrants specified by the set of test points contained within that part.

Where it is necessary to specify a required service area which is smaller than an entire zone or quadrant, this may be done by specifying the boundaries of the area as two azimuths and two ranges from the transmitter location.

## 6. Season\*

The season or seasons to which the requirement is intended to apply. When the requirement is not intended to be implemented on a daily basis, the days on which it will be implemented shall be indicated.

## 7. Hours of operation (UTC)\*

## 7.1 Indicate legal clock time changes.\*\*

## 8. Indicate temporary interruptions of broadcasting services due, for example, to natural disasters or other types of catastrophe.

## 9. Transmitting antenna characteristics\*

## 9.1 For all types of antenna indicate:

9.1.1 The type of antenna to be used, with reference to the antenna type appearing in the IFRB Technical Standards.

9.1.2 The azimuth of maximum radiation in degrees from true North in clockwise direction.

9.1.3 The maximum gain (isotropic,  $G_i$ , dB) if different from that associated with the relevant pattern in the reference antenna set. In the case of slewed horizontal dipole arrays this maximum gain is the gain in the slewed mode.

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\* Basic information that must be provided by administrations.

\*\* For information only.

9.1.4 The lowest and highest frequency bands (in MHz) for multi-band antennas, or the frequency band for single band antennas.

9.2 For horizontal dipole arrays, indicate in addition to the above parameters:

9.2.1 Type of radiator (end-fed or centre-fed dipole elements).

9.2.2 Type of reflector (tuned dipoles or aperiodic screen).

9.3 For multi-band horizontal dipole arrays, indicate in addition to the above parameters:

9.3.1 Design frequency, in MHz. If not indicated, the design frequency will be assumed as the arithmetic mean of the centre frequencies of the lowest and highest frequency bands covered by the antenna.

9.4 For slewed horizontal dipole arrays, indicate in addition to the above parameters:

9.4.1 Azimuth of the normal to the plane of the radiating elements (in degrees from true North in the clockwise direction).

10. Transmitter power (dBW)\*

- 1) For DSB emissions, indicate the carrier power in dBW.
- 2) For SSB emissions, indicate the peak envelope power in dBW.
- 3) Indicate the range of available powers.

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\* Basic information that must be provided by administrations.

## 11. Class of emission\*

Indicate whether it is a DSB emission, or an SSB emission with a carrier reduced by 6 dB or by 12 dB relative to peak power (see Article 4 of the Radio Regulations).

11.1 Indicate if the transmitter can operate in either mode (DSB and SSB).\*\*

[ 12. Assigned frequency,\*\*\* alternative frequency,\*\*\* or frequency band  
[under Article 17]. ]

13. Preset frequencies (in kHz).\*\*\*

14. Preferred frequency (in kHz).\*\*\*

15. Preferred frequency band (in MHz).

16. Equipment availability

Indicate the number of transmitters that can be used simultaneously and the associated bands for possible use in case more than one frequency has to be used to achieve the required BBR.<sup>1</sup>

17. Requested types of frequency continuity (types 2, 3, 4 and/or 5)<sup>2</sup>

17.1 Identify requirements which are related by these types of continuity.

18. Lowest value of BBR to be used for this requirement [(see paragraph 3 of 4.2.3.4.4, Document 157)].

19. Indicate the use of synchronized transmitters.

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\* Basic information that must be provided by administrations.

\*\* For information only.

\*\*\* a) For a DSB emission, the assigned frequency shall be expressed in kHz ending with 0 or 5.

b) For an SSB emission, the assigned frequency shall be expressed in kHz ending with 2.5 or 7.5.

<sup>1</sup> For explanation of the types of continuity, see Annex [ ] to Resolution [ ].

<sup>2</sup> Basic broadcast reliability.

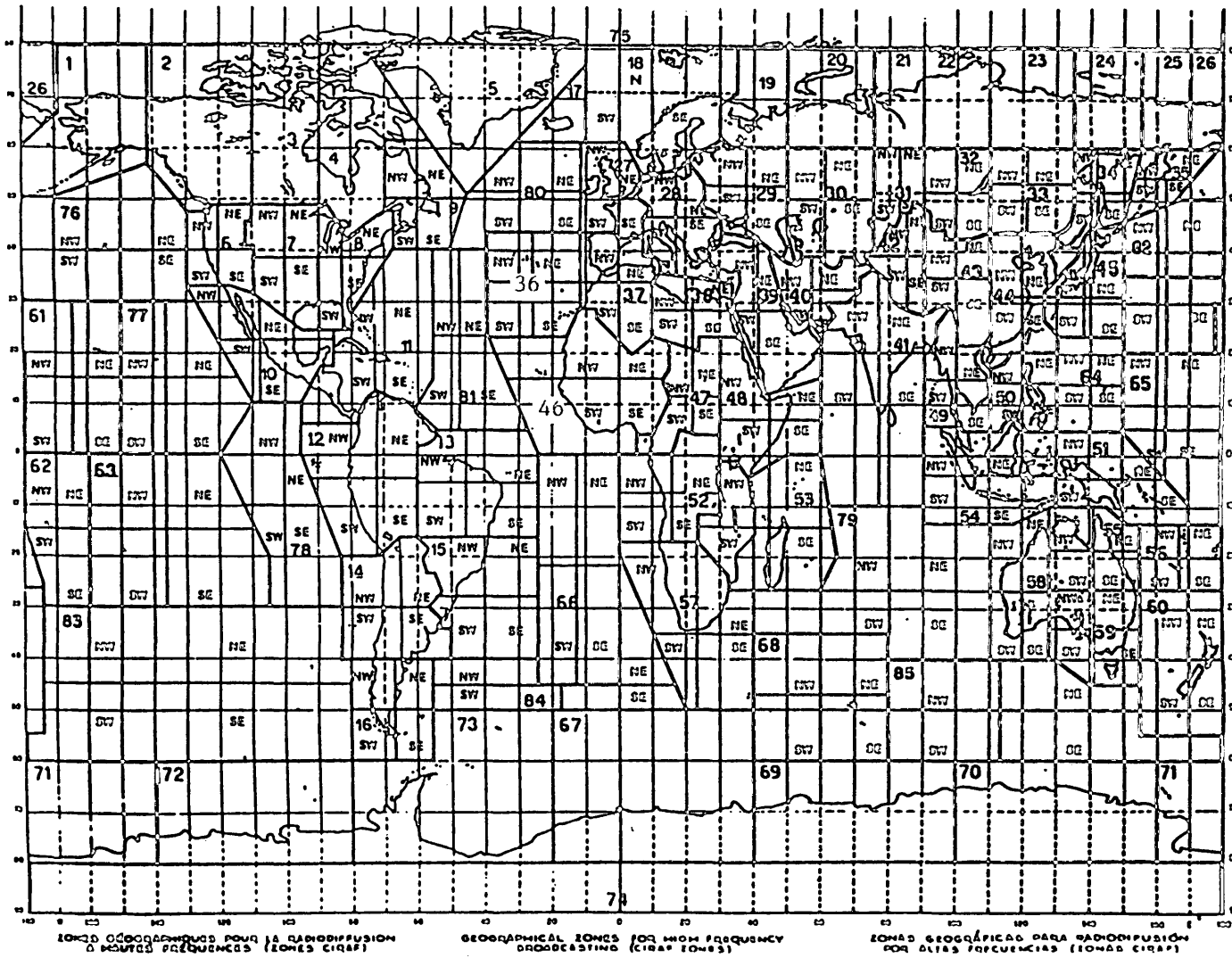
20. Indicate equipment limitations (e.g. frequency bands available).
21. Indicate whether consultations are required when the co-channel protection ratio is less than 17 dB.
- [22. Nature of requirement (national or international).]
- [23. Nature of requirement [(see Document 134)].]
24. Postal and telegraphic addresses of the administration responsible for the station (see Appendix 2-5).
25. Remarks and supplementary information

Indicate, after the symbol COORD/, the name of any administration with which coordination has been effected for use of the frequency.

Indicate any other information that the Board may require for the evaluation of the improved HFBC Planning System [see Document DT/68, paragraphs 3.1 and 3.2].

9.

## Map of CIRAF Zones



Note - Information concerning the test points associated with these CIRAf Zones and quadrants is given in 7.

Source: Documents DT/67, DT/71, 211, 222 and 230

PLENARY MEETING

NOTE FROM THE CHAIRMAN OF COMMITTEE 6 TO THE PLENARY

1. The draft Resolution [COM6/2] and the annexes thereto are enclosed for consideration of the Plenary Meeting.
2. The text of the draft Resolution, as annexed here, has not been adopted by Committee 6 due to lack of time. Nevertheless, the subject-matter of this Resolution was briefly discussed in the last meeting of Committee 6 and an attempt has been made to reflect the suggestions made by those who participated in the discussion.
3. Annex 1 to the draft Resolution [COM6/2] is composed of three sections as follows:
  - Section 1: HFBC Requirements File; derived from Documents 211 and 222;
  - Section 2: Procedures based on consultations;
    - Option 1 is derived from Document 211;
    - Option 2 is Document 211, modified by Document DT/67;
  - Section 3: Procedures relating to the HFBC Planning Systems;
    - Option 1 is derived from Annex 1 of Document 222; the attachment to the section is derived from Annex 3 to Document 222;
    - Option 2 is Option 1 as modified by the Document DT/68.
4. Annex 2 to draft Resolution [COM6/2] is Annex 1 to Document 230.
5. The texts of Section 1 of Annex 1 and part of the attachment to Section 3 of Annex 2 have been approved at the Committee 6 level. The remaining texts have not been discussed in Committee 6.
6. Towards the end of the last meeting of Committee 6, the United States Delegation referred to Resolution COM5/1 of the First Session of the Conference and proposed that it should be updated and included in the Final Acts of the present Session. He suggested the addition of:

"considering

  - h) the Report by the IFRB on the Implementation of Resolution COM5/1 of the First Session (Geneva, 1984);" and



"noting

d) that the successful implementation of an HFBC Planning System would be adversely affected by the presence of harmful interference;"

to the text of 1984 version of the Resolution.

As Committee 6 had already run out of time, the proposal could not be discussed. The Committee took note of the proposal and the Chairman suggested that the delegation concerned may raise the matter in the Plenary Meeting.

R. BLOIS  
Chairman of Committee 6

Enclosures

DRAFT RESOLUTION [COM6/2]

Relating to Improvements to the HFBC Planning System  
and Article 17 Procedures

The World Administrative Radio Conference for the Planning of the HF Bands Allocated to the Broadcasting Service (Geneva, 1987),

considering

- a) that its First Session held from 10 January to 11 February 1984 adopted a planning method based on seasonal planning and charged the IFRB to prepare to this effect the appropriate computer software and to test it using variations of criteria;
- b) the Report of the IFRB on the activities carried out since its First Session;
- c) that the planning exercises demonstrated that the HFBC Planning System developed by the IFRB on the basis of the decisions of the First Session could not include in the seasonal plans all the requirements submitted by administrations;
- d) that with the view to enable all HFBC requirements of the administrations to be brought into operation the procedure of the present Article 17 of the Radio Regulations should be improved and used in combination with an improved HFBC Planning System;
- e) that the working assumptions used by the IFRB in the planning exercises were reviewed and the HFBC planning method was revised;
- f) that consequently there is a need to modify the related software and to test the HFBC planning method before its final adoption by a competent World Administrative Radio Conference (see Resolution [ ... ]).

resolves that the IFRB

- 1. shall in the post-conference period, improve the software for the procedures relating to the HFBC Planning System ( ) and the procedures based on consultations ( ), in accordance with the provisions contained in Annex 1 to this Resolution;
- 2. shall test both the procedures in the post-conference period using requirements in the requirements file. The administrations when submitting requirements shall indicate which of the requirements shall be treated under the HFBC Planning System and which shall be accommodated under the consultation procedure;
- 3. the above test shall be carried out in the bands indicated in Annex 2 to this Resolution;
- 4. shall report on a regular basis, at intervals not exceeding 6 months, to the administrations on the results of the work carried out under resolves 1, 2 and 3;
- 5. shall prepare and communicate to the administrations a final report twelve months prior to the convening of the competent World Administrative Radio Conference (see Resolution [ .. ]).

ANNEX 1

Draft section [1] HFBC requirements file

1. Administrations shall submit to the IFRB, their operational broadcast requirements and those which are expected to become operational in the bands allocated exclusively to the broadcasting service between 5 950 and 26 100 kHz. These requirements shall be entered in the HFBC requirements file<sup>1</sup> which shall contain:

- requirements which are intended for use within the next 3 years;
- all requirements taken into account in the preparation of a seasonal schedule or plan or during its operation;
- requirements used during the preceding 5 year period.

2. An entry in the HFBC requirements file shall be defined as a requirement indicated by an administration to provide a broadcasting service at specified periods of time to a specified reception area from a particular transmitting station.

3. Each requirement listed in the HFBC requirements file shall contain at least the basic information listed in Appendix 2 together with the indication of the season(s) in which the requirement was or will be used.

4. Each seasonal schedule [ ] or seasonal plan to be established in accordance with [ ] shall cover one of the seasonal propagation periods indicated below. The month shown in the parentheses indicates the month to be used for the propagation prediction:

- Season D - November - February (January);
- Season M - March - April (April);
- Season J - May - August (July);
- Season S - September - October (October).

Each seasonal [plan or seasonal] schedule shall be implemented at 0100 UTC on the first Sunday of the season concerned.

5. Administrations shall notify the Board, using Appendix 2, of any addition, modification or deletion of a requirement in the HFBC requirements file. Additions, modifications or deletions notified to the Board for a given season shall be taken into account for updating the requirements file provided that following their examination by the Board they are found to contain the basic information referred to in Appendix 2.

6. Upon receipt of notices pursuant to paragraph 5 above, the Board shall ensure that the basic information listed in Appendix 2 is given and is correct and shall request the notifying administration to notify the correct or missing information. Following this examination the Board shall indicate those incompatibilities which can be identified without the need for detailed calculations and shall inform the administrations concerned of the results obtained together with any recommendation that may assist in avoiding this incompatibility.

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[ <sup>1</sup> The initial establishment of the requirements file will be in accordance with Resolution [COM5/1]. ]

7. After the end of each seasonal period, the Board shall enter into the requirements file for each requirement the frequency or frequencies used, together with any indication from administrations on the actual use of the requirement. Requirements already used shall be kept in the HFBC requirement file for a period of five years. No priority shall be derived from this history of use.

8. An administration shall inform the Board when a broadcasting requirement is temporarily withdrawn from service, due to a natural disaster or other calamitous events, for a period of time [not exceeding ...]. The Board shall identify this requirement in the requirements file by an appropriate symbol. When the administration concerned informs the Board that the requirement can again be brought into service and requests the removal of the symbol, the Board shall act in conformity with the request. If a request for the removal of the symbol is not received by the Board within the period of [.....] referred to above, the requirement shall be deleted from the requirements file.

#### **Draft Section [2] Procedures Based on Consultations**

##### Option 1

1. Periodically, administrations shall confirm to the IFRB which of their requirements appearing in the HFBC requirements file are to be used in a given season. Administrations may also notify additions and modifications to, or deletions from, the HFBC requirements file. For this purpose, the administrations shall furnish to the Board at least the basic characteristic listed in Appendix 2. When the Board finds that the information submitted by the administration is in conformity with Appendix 2, it shall update the seasonal file accordingly.

Administrations may:

- submit for all or part of their requirements the intended frequency schedule;
- request the Board to select the appropriate frequencies for their requirements.

On the basis of this information a seasonal file shall be established.

2. The frequencies to be included in the seasonal schedule shall be in conformity with No. 1240 of the Radio Regulations.

3. The closure date for the receipt of the information referred to in [ ] is set by the Board. The Board shall gradually reduce the period between the closure date and the start of season to the minimum practicable.

4. If, in spite of reminders by the Board, no reply is received from an administration by the date set by the Board as in paragraph [ ], the Board shall consider that the requirements appearing in the requirements file for the season

under consideration are [confirmed and that the requirements without an indication of a frequency shall have the frequencies selected by the Board]/[considered as not confirmed and therefore not included in the seasonal file].

5. The IFRB shall identify for each requirement its appropriate bands and shall calculate the field strength at each test point and the basic broadcasting reliability (BBR) in each of these bands. In so doing account shall be taken of the need to ensure a continuity in the frequency usage as indicated in [-]. The [results obtained relating to the requirements] of an administration shall be sent to it indicating, where appropriate, the number of frequencies required to achieve the required BBR.

6. When sending the results referred to in [ ], the Board shall request administrations to provide, within a period of [8] weeks, the following information as appropriate:

- indicate to the Board the intention to use some or all of the frequencies already appearing in the seasonal file;
- indicate to the Board the intention to use a frequency or frequencies other than those in the seasonal file;
- indicate to the Board the frequency or frequencies intended for use for those requirements in the seasonal file that do not have a frequency or frequencies associated with them;
- request the Board to select the most appropriate frequency or frequencies.

If an administration does not communicate to the Board the information within this period, the Board will select a frequency or frequencies, taking account of the information submitted in paragraph [ ], for those requirements within the seasonal file that do not specify frequencies.

7. Administrations may, following the receipt of the information referred to in [ ], communicate additional requirements in the form prescribed in Appendix 2 with the indication or not of the selected frequency. These additional requirements shall be included in the seasonal file.

8. At the end of the period indicated in [ ] the Board shall repeat the calculations referred to in [ ] and shall determine the number of appropriate frequencies necessary for each requirement. [The frequencies included in the seasonal schedule shall be limited to one frequency per band per requirement.] If an administration has indicated a number of frequencies for a requirement which exceeds the number resulting from the Board's calculations in application of section [ ] of Appendix [COM4/A, Document 179], the Board shall, in consultation with the administration concerned, reduce the number of frequencies for the requirement in question to the number resulting from the Board's calculations.

9. The Board shall select frequencies for those requirements which do not have the frequencies selected by the administrations or a preset frequency. In so doing, the Board shall take into account the need to ensure continuity in frequency usage as indicated in [ ]. The Board shall undertake a calculation of the possible incompatibilities between all requirements and an assessment of the performance of each requirement as indicated in [ ].

10. A draft seasonal schedule shall be prepared for publication indicating for each requirement the frequency or frequencies, notified or selected, and those basic characteristics permitting administrations to easily identify the requirement concerned. This schedule shall be sent to administrations [x] months before the start of the season. At the same time the Board shall also send the detailed results of calculations and performance assessment to each administration relating to its requirements indicating for each requirement a reference to the requirements with which it is incompatible. In addition, the Board shall provide, in a timely manner and on request, all other information deemed necessary by an administration.

11. Taking into account all available data the Board shall, where practicable, make recommendations to remove the incompatibilities and shall send them to administrations along with the draft seasonal schedule.

[ In preparing its recommendations to administrations, the Board shall take into account monitoring observations and all other available data. However, when actual frequency usage is apparently not in conformity with the assignments in a submitted schedule, the Board shall seek from the administration concerned confirmation of this information. ]

12. Administrations shall endeavour, bilaterally or multilaterally, to resolve the remaining incompatibilities in the draft seasonal schedule. In this coordination, the administrations will take into consideration the principles stated in section [ ]. If required, the assistance of the Board may be requested.

13. Changes in the transmission characteristics resulting from these consultations or decided unilaterally by the administration, with the view to eliminate or reduce the incompatibilities, shall be notified to the Board as soon as possible but no later than [ ] weeks following the date of publication of the draft seasonal schedule.

14. Administrations may at the same time notify additional requirements which shall be taken into account in the preparation of the seasonal schedules. [The Board shall examine these additional requirements in accordance with [ ].]

15. Using the information received in application of [ ] and [ ] the Board shall apply the calculation procedure described in [ ] and shall prepare for publication the seasonal schedule to be issued to the administrations not later than [x] months before the beginning of the season.

16. Changes in the seasonal schedule shall be notified to the Board as soon as they can be forecast.

17. For changes notified in accordance with [ ], the Board shall apply the same procedure as that specified in [ ]. Such revisions to the seasonal schedules shall be published in the IFRB weekly circulars.

### Record of Seasonal Usage

18. After the end of each seasonal period, the Board shall update the requirements file to reflect the actual usage during the season as notified to the Board. Those assignments which the administrations found in practice to be unsatisfactory shall be notified to the Board and indicated in the requirements file by an appropriate symbol.

19. Upon request, the IFRB shall make available to administrations the information on frequency usage during the season, on computer tape or any other machine readable form.

### Miscellaneous Provisions

20. The Technical Standards used by the Board when applying the provisions of this Article should be based not only on the factors listed in No. 1454 but also on the experience gained by the Board in the application of the provision of this Article (see also Resolution COM6/1).

21. With a view to the ultimate evolution of compatible technical plans for the frequency bands concerned, the Board shall take all necessary steps to carry out engineering studies on a long-term basis. For this purpose, the Board shall use all information made available to it on frequency usage in the application of the procedure prescribed in this Article. The Board shall also keep administrations informed of the progress and results of such studies at regular intervals.

22. In applying the provisions of Article 22 of these Regulations, problems of harmful interference which may arise in frequency usage in the bands concerned shall be resolved by administrations by exercising the utmost goodwill and mutual cooperation and by giving due consideration to all the relevant technical and operational factors involved.

### Option 2

1. Periodically, administrations shall confirm to the IFRB which of their requirements appearing in the HFBC requirements file are to be used in a given season. Administrations may also notify additions and modifications to, or deletions from, the HFBC requirements file. For this purpose, the administrations shall furnish to the Board at least the basic characteristic listed in Appendix 2. When the Board finds that the information submitted by the administration is in conformity with Appendix 2, it shall update the seasonal file accordingly.

Administrations may:

- submit for all or part of their requirements the intended frequency schedule;
- request the Board to select the appropriate frequencies for their requirements.

On the basis of this information a seasonal file shall be established.

2. The frequencies to be included in the seasonal schedule shall be in conformity with No. 1240 of the Radio Regulations.
  3. The closure date for the receipt of the information referred to in [ ] is set by the Board. The Board shall gradually reduce the period between the closure date and the start of season to the minimum practicable.
  4. If, in spite of reminders by the Board, no reply is received from an administration by the date set by the Board as in paragraph [ ], the Board shall consider that the requirements appearing in the requirements file for the season under consideration are [confirmed and that the requirements without an indication of a frequency shall have the frequencies selected by the Board]/[considered as not confirmed and therefore not included in the seasonal file].
  5. The IFRB shall identify for each requirement its appropriate bands and shall calculate the field strength at each test point and the basic broadcasting reliability (BBR) in each of these bands. In so doing account shall be taken of the need to ensure a continuity in the frequency usage as indicated in [-]. The [results obtained relating to the requirements] of an administration shall be sent to it indicating, where appropriate, the number of frequencies required to achieve the required BBR.
  6. When sending the results referred to in [ ], the Board shall request administrations to provide, within a period of [8] weeks, the following information as appropriate:
    - indicate to the Board the intention to use some or all of the frequencies already appearing in the seasonal file;
    - indicate to the Board the intention to use a frequency or frequencies other than those in the seasonal file;
    - indicate to the Board the frequency or frequencies intended for use for those requirements in the seasonal file that do not have a frequency or frequencies associated with them;
    - request the Board to select the most appropriate frequency or frequencies.
- If an administration does not communicate to the Board the information within this period, the Board will select a frequency or frequencies, taking account of the information submitted in paragraph [ ], for those requirements within the seasonal file that do not specify frequencies.
7. Administrations may, following the receipt of the information referred to in [ ], communicate additional requirements in the form prescribed in Appendix 2 with the indication or not of the selected frequency. These additional requirements shall be included in the seasonal file.
  8. Those requirements that cannot be included in the seasonal schedule as a result of the Planning System are included in the subsequent processing.
  9. At the end of the period indicated in [ ] the Board shall repeat the calculations referred to in [ ] and shall determine the number of appropriate frequencies necessary for each requirement. [The frequencies included in the seasonal schedule shall be limited to one frequency per band per requirement.]



If an administration has indicated a number of frequencies for a requirement which exceeds the number resulting from the Board's calculations in application of section [ ] of Appendix [COM4/A, Document 179], the Board shall, in consultation with the administration concerned, reduce the number of frequencies for the requirement in question to the number resulting from the Board's calculations.

10. The Board shall select frequencies for those requirements which do not have the frequencies selected by the administrations or a preset frequency. In so doing, the Board shall take into account the need to ensure continuity in frequency usage as indicated in [ ]. The Board shall undertake a calculation of the possible incompatibilities between all requirements and an assessment of the performance of each requirement as indicated in [ ].

11. A seasonal schedule shall be prepared for publication indicating for each requirement the frequency or frequencies, notified or selected, and those basic characteristics permitting administrations to easily identify the requirement concerned. This schedule shall be sent to administrations [x] months before the start of the season. At the same time the Board shall also send the detailed results of calculations and performance assessment to each administration relating to its requirements indicating for each requirement a reference to the requirements with which it is incompatible. In addition, the Board shall provide, in a timely manner and on request, all other information deemed necessary by an administration.

However, administrations are urged to take all possible actions to resolve incompatibilities prior to the start of the season. In the attempts to resolve the incompatibilities the administrations will take into consideration the principles stated in paragraph [ ] of Article 17.

12. Taking into account all available data the Board shall, where practicable, make recommendations to remove the incompatibilities and shall send them to administrations along with the draft seasonal schedule.

[ In preparing its recommendations to administrations, the Board shall take into account monitoring observations and all other available data. However, when actual frequency usage is apparently not in conformity with the assignments in a submitted schedule, the Board shall seek from the administration concerned confirmation of this information. ]

[13. After publication of the seasonal schedule, administrations may notify additions and modifications to or deletions from their seasonal requirements. However, administrations are urged to refrain from submitting additional requirements at this stage.]

14. For changes notified in accordance with [ ], the Board shall apply the same procedure as that specified in [ ]. Such revisions to the seasonal schedules shall be published in the IFRB weekly circulars.

### **Record of Seasonal Usage**

15. After the end of each seasonal period, the Board shall update the requirements file to reflect the actual usage during the season as notified to the Board. Those assignments which the administrations found in practice to be unsatisfactory shall be notified to the Board and indicated in the requirements file by an appropriate symbol.

16. Upon request, the IFRB shall make available to administrations the information on frequency usage during the season, on computer tape or any other machine readable form.

### **Miscellaneous Provisions**

17. The Technical Standards used by the Board when applying the provisions of this Article should be based not only on the factors listed in No. 1454 but also on the experience gained by the Board in the application of the provision of this Article (see also Resolution COM6/1).

18. With a view to the ultimate evolution of compatible technical plans for the frequency bands concerned, the Board shall take all necessary steps to carry out engineering studies on a long-term basis. For this purpose, the Board shall use all information made available to it on frequency usage in the application of the procedure prescribed in this Article. The Board shall also keep administrations informed of the progress and results of such studies at regular intervals.

19. In applying the provisions of Article 22 of these Regulations, problems of harmful interference which may arise in frequency usage in the bands concerned shall be resolved by administrations by exercising the utmost goodwill and mutual cooperation and by giving due consideration to all the relevant technical and operational factors involved.

### **Draft\* Section [3] procedures relating to the HFBC Planning System**

#### Option 1

[1. The provisions of this section apply to the broadcasting service in the bands [ ].]

2. Periodically, administrations shall confirm to the IFRB which of their requirements appearing in the HFBC requirements file are to be used in a given season. Administrations may also notify additions or modifications to, or deletions from, the HFBC requirements file. When the Board finds that the information submitted by the administration is in conformity with Appendix 2, it shall establish the seasonal file accordingly.

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\* Reservations by the United Kingdom.

3. The broadcasting requirements of administrations shall be submitted in the requirements form prescribed in [Appendix 2] which specifies the data to be furnished.

4. The closure date for the receipt of the information referred to in [2] is set by the Board. The Board shall gradually reduce the time period between the closure date and the start of the season to the minimum practicable.

If, in spite of reminders by the Board, no reply is received from an administration by the closure date set by the Board, the Board shall consider that the requirements appearing in the requirements file for the season under consideration are [confirmed and that the requirements without an indication of a frequency shall have the frequencies selected by the Board]/[considered as not confirmed and therefore not included in the seasonal file].

5. The IFRB shall calculate the field strength at each test point and the basic broadcasting reliability (BBR) in each of these bands and shall identify for each requirement the appropriate bands. In so doing account shall also be taken of the need to ensure a continuity in the frequency usage as indicated in [the attachment].

6. The IFRB shall, on the basis of the above calculations, apply the rules contained in [the attachment] from which the following results are derived for each hour/band:

- a) a list of resolved requirements that shall be entered in the tentative plan including:
  - requirements with the protection ratio greater than or equal to 17 dB;
  - requirements with protection ratio less than 17 dB. Consultation shall be undertaken with administrations which have indicated in their requirement forms a desire for consultation;
- b) a list of the requirements that could not be entered into the tentative plan as a result of a) above which need to be reviewed for their possible entry in the tentative plan following the consultations of the administrations concerned.

7. For those administrations wishing to be consulted and having requirements in the list of [6 a) second indent] the Board will consult the administration concerned to see if it wishes to have its requirement in the tentative plan with the characteristics notified and the resulting protection ratios.

8. For those administrations wishing to be consulted and having requirements in the list of [6 a) second indent] and who have indicated that they do not wish their requirements to be inserted in the tentative file under the specified conditions, the Board shall transfer those requirements to the list of [6 b)].

9. The Board shall send to each administration having requirements in the list of [6 b)] the results of its calculations. The Board shall also request administrations to submit any possible modifications to their requirements within a period of [6] weeks.

10. Upon receipt of the information referred to in [9] administrations shall reconsider their requirements and shall submit to the Board their modifications to their requirements.

If, in spite of reminders communicated to the administrations two weeks prior to the deadline, no reply is received within the time limit, the Board will attempt to insert these requirements in the tentative plan in accordance with [13].

11. Any administration may submit requirements after the closure date and before the date referred to in [9].

12. The Board shall advise all administrations of the time limit indicated in [9].

13. Following the receipt of the information received in accordance with [10 and 11], the Board shall process these requirements and shall attempt to insert them in the tentative plans following the steps indicated in [Appendix -] without affecting\* those requirements already entered in the tentative plan.

14. All requirements which could not be inserted following the application of [13] above will not be inserted in the tentative plan and the administrations will be informed accordingly.\*\*

15. Administrations who so wish may request the Board to select alternative frequencies for their requirements. The Board shall attempt to select alternative frequencies without affecting the requirements appearing in the Plan. If the Board receives no comment from administrations following the publication of the tentative plan, it shall consider that the frequencies indicated in the seasonal plan will be assigned by administrations to their stations.

[Note 1 - Suspension Rules N1, N2 and N3 shall not apply to national requirements.]

[Note 2 - All rules shall only apply to requirements above an equal minimum number of requirement hours that should be satisfied for each administration on an equal basis.]

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\* The criteria to determine whether a requirement is adversely affected are to be found in [Appendix -].

\*\* Reservation by the United States of America.

Attachment to Section / 3 /

This attachment contains the following sub-sections:

- A. Double-sideband system specifications in the HF bands allocated exclusively to the broadcasting service
- B. Single-sideband system specifications in the HF bands allocated exclusively to the broadcasting service
- C. Rules applicable to those HF bands exclusively allocated to broadcasting that are to be planned

A. [SEE PART A OF DOCUMENT 179]

B. [SEE PART B OF DOCUMENT 179]

C. RULES APPLICABLE TO THOSE HF BANDS  
EXCLUSIVELY ALLOCATED TO BROADCASTING  
THAT ARE TO BE PLANNED

I. INTRODUCTION

I.1 The planning of the HFBC in accordance with sections [--] and [--] of Article 17 shall use the criteria and method contained in this appendix.

I.2 The application of this appendix shall ensure the maximum possible utilization of all available channels.

II. DEFINITIONS

II.1 Appropriate frequency band

The appropriate band for a requirement, is the band which will ensure the continuity of use of the same frequency during the longest possible period of operation, with the best possible values of BBR (basic broadcast reliability), taking account of propagation conditions, operational limitations and equipment availability and limitations.

II.2 Circuit reliability

Probability for a circuit that a specified performance is achieved at a single frequency.

II.3 Reception reliability

Probability for a receiver that a specified performance is achieved, taking into account all transmitted frequencies.

#### II.4 Broadcast reliability

Probability for a service area that a specified performance is achieved, taking into account all transmitted frequencies.

#### II.5 Percentile

The X percentile (X%) value for a given set of values is defined by the following conditions:

- 1) the X% value is a member of the set of values;
- 2) the X% value is that value which is equal to or exceeded by at least X per cent of the members in the set;
- 3) the X% value is the largest value satisfying conditions 1 and 2.

Note 1 - In the above terms, circuit means a one-way transmission from one transmitter to one receiving location.

[ Note 2 - The term "reliability" is qualified by the word "basic" when the background consists of noise alone. ]

Note 3 - When the background consists of both noise and interference, the term "reliability" may relate either to the effects of a single interferer or to multiple interference from co-channel and adjacent-channel transmissions.

Note 4 - The specified performance is expressed by a given value of signal-to-noise ratio or signal-to-(noise and interference) ratio.

Note 5 - The term "reliability" relates to one or more periods of time, which shall be stated.

#### II.6 Radio-frequency (RF) wanted-to-interfering signal ratio

The ratio, expressed in dB, between the values of the radio-frequency voltage of the wanted signal and the interfering signal, measured at the receiver input under specified conditions<sup>1</sup>.

#### II.7 Relative radio-frequency protection ratio

The difference, expressed in dB, between the protection ratio when the carriers of the wanted and unwanted emissions have a frequency difference of  $\Delta F$  (Hz or kHz) and the protection ratio when the carriers of these emissions have the same frequency.

#### II.8 Term relating to the service area

- Required service area (in HF broadcasting): The area within which an administration proposes to provide a broadcasting service.

<sup>1</sup> The specified conditions include such diverse parameters as: spacing  $\Delta F$  of the wanted and interfering carrier, emission characteristics (type of modulation, modulation depth, carrier-frequency tolerance, etc.), receiver input level, as well as the receiver characteristics (selectivity, susceptibility to cross-modulation, etc.).

II.9 Minimum usable field strength ( $E_{min}$ )<sup>1</sup>

Minimum value of the field strength necessary to permit a desired reception quality, in specified receiving conditions, in the presence of natural and man-made noise, but in the absence of interference from other transmitters.

II.10 Usable field strength ( $E_u$ )<sup>1</sup>

Minimum value of the field strength necessary to permit a desired reception quality, in specified receiving conditions, in the presence of noise and interference, either in an existing situation or as determined by agreements or frequency plans.

III. PROPAGATION PREDICTION METHOD

The propagation prediction method to be used shall be that contained in the Technical Standards of the IFRB. For propagation prediction purposes the year shall be sub-divided into four seasons and predictions shall be made for a single to represent a season, as specified in Article [ ], section [ ] [HFBC requirements file].

The solar index to be used for planning shall be the 12-month running mean sunspot number  $R_{12}$ . The [seasonal] plan shall be prepared in accordance with the values of  $R_{12}$  for the period. The lowest value of  $R_{12}$  predicted for any of the months in that [season] shall be used.

[IV. HFBC PLANNING SYSTEM]

IV.1 Test points

The set of test points listed in the IFRB Technical Standards shall be used to represent the CIRAF zones and quadrants for planning purposes (see also IV.4.1.1).

Where a required service area, as notified by an administration in conformity with [Appendix 2, section B, paragraph 5], does not include a test point, the IFRB shall generate a new test point and include it within the Technical Standards. Such additions to the Technical Standards will be distributed to administrations (Nos. 1001 and 1001.1 of the Radio Regulations).

IV.2 Planning constraints

IV.2.1 Preset frequency

- a) When an administration indicates that its facilities can operate only on a limited number of fixed specified frequencies, the planning method shall take them into account as indicated in IV.4.11.

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<sup>1</sup> The terms "minimum usable field strength" and "usable field strength" refer to the specified field strength values which a wanted signal must have in order to provide the required reception quality.

In determining whether these requirements are met, the median value (50%) of a fading signal should be used.

#### IV.2.2 Limited use of the frequency bands

- a) When an administration indicates that its facilities can operate only in a given frequency band, only frequencies from that band shall be included in the plan.
- b) When an administration indicates a preferred frequency band, the system shall attempt to select a frequency from this band. If this is impossible, frequencies from the nearest appropriate band shall be tried. Otherwise the system will select frequencies from the appropriate band, taking into account the equipment constraints referred to in paragraph IV.2.1.

#### IV.2.3 Power

- a) When an administration indicates only a single power value due to equipment constraints, it shall be used in the planning process.
- b) When an administration indicates several possible power values, the appropriate value shall be used to achieve the basic circuit reliability, and a single power value shall be determined for the duration of the emission.

#### IV.2.4 Antenna

When an administration indicates that its antenna can operate only in a given frequency band, only frequencies from that band shall be included in the plan.

#### IV.2.5 Preferred frequency

In accordance with the planning principles and without imposing constraints on planning, the following provisions shall be applied in the seasonal plans:

- 1) administrations may indicate the preferred frequency;
- 2) during the planning process, attempts shall be made to include the preferred frequency in the plan;
- 3) if this is impossible, attempts shall be made to select a frequency in the same band.

Otherwise, the automated system shall be used to select the appropriate frequencies in such a way as to accommodate the maximum number of requirements, taking into account the constraints imposed by the technical characteristics of the equipment.

#### IV.3 Frequency continuity

##### IV.3.1 Introduction

Continuity in the use of a frequency is an important matter for both the broadcaster and the listener, it is a characteristic inherent in the broadcasting of a programme. In addition, limitations imposed by the technical characteristics of the means of transmission available to some administrations



will impose mandatory requirements for frequency continuity. The desirable aim is that changes in frequency should be limited to those necessitated by changes in propagation conditions. The rules for applying frequency continuity are given in paragraph IV.3.4 below.

#### IV.3.2 Definitions

##### IV.3.2.1 Intra-seasonal

###### IV.3.2.1.1 Type 1 continuity

Continuity of use of the same frequency within an hour or from one hour to another consecutive hour within a requirement.

###### IV.3.2.1.2 Type 2 continuity

Continuity of use of the same frequency in the same season when passing from one requirement to another or one time block to another.

##### IV.3.2.2 Inter-seasonal

###### IV.3.2.2.1 Type 3 continuity

Continuity of use of the same frequency by the same requirement in two consecutive seasons.

###### IV.3.2.2.2 Type 4 continuity

Continuity of use of the same frequency by the same requirement in two consecutive equinox seasons.

###### IV.3.2.2.3 Type 5 continuity

Continuity of use of the same frequency by the same requirement in the same season of two consecutive years.

#### IV.3.3 Relationship between frequency continuity and appropriate band(s)

IV.3.3.1 For the case where a single frequency is sufficient to provide basic broadcast reliability (BBR)\* equal to or greater than the agreed reference value, the appropriate band is to be established by the HFBC Planning System by taking account, amongst other things, of the rules set out in section IV.3.4 regarding the maintenance of the maximum frequency continuity within the limits of the agreed reference value for BBR 80%.

However, an administration may choose extended frequency continuity at the expense of BBR and shall indicate the lower value of BBR to be used in this event. As, in this portion of the requirement, the BBR falls below the above-mentioned reference value the second and/or third frequencies are afforded only when the application of frequency continuity would not result in a number of additional frequencies greater than would be necessary with operation in the appropriate bands.

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\* Abbreviations of the English terms are used throughout the three languages in order to facilitate the practical implementation of the concepts and methods described.

IV.3.3.2 In the case where BBR obtainable by use of a single frequency is less than 80% continuity of use of the first frequency or the single operating frequency will be provided within the lower limits of BBR indicated by the administration.

When the administration indicates that it has the capability to operate on more than one frequency the use of this lower value of BBR shall not lead to the use of a third frequency.

IV.3.3.3 When the requirement under consideration is eligible to use a second or third frequency according to the procedures established in section VI, frequency continuity shall also be applied to the second (and third) frequency in the same manner as for the first frequency.

IV.3.3.4 When the type 2 continuity is requested (from one requirement to another), the HFBC Planning System shall identify the appropriate band separately for each of the requirements concerned. The frequency assigned to the first of these requirements, shall be assigned to another related requirement if it is in its appropriate band.

#### IV.3.4 Application of continuity

IV.3.4.1 Type 1 continuity shall be applied automatically to all requirements under the conditions set out in section 3 above.

IV.3.4.2 At the request of an administration, type 2 continuity shall be applied when this corresponds to equipment constraints. However, in other cases, type 2 continuity could be applied to the extent possible. Paragraph IV.3.3.4 above applies to type 2 continuity.

IV.3.4.3 Continuity of types 3, 4 and 5 shall be applied to the extent possible when requested by the administration.

#### IV.4 Planning steps and rules for dealing with incompatibilities

##### IV.4.1 Definitions

###### IV.4.1.1 Unit of service area

Each CIRAF Zone is sub-divided into one or more smaller units of area called "quadrants"; these are depicted in Figure [ ] of Appendix [ ]. Any such "quadrant" containing at least one test point of a given requirement is called a "unit of service area" for the given requirement.

IV.4.1.2 A group of incompatible requirements (GIR) is a set of (two or more) requirements each of which is incompatible with all other requirements in the set.

IV.4.1.3 A greatest GIR (GGIR) is a GIR which contains the largest number of requirements.

IV.4.1.4 A maximal GIR (MGIR) is the set of all requirements contained in at least one GGIR.

IV.4.2 In the planning method, in order to evaluate congestion, use is made of the concept of the MGIR.

IV.4.3 Congestion is evaluated by determining the GGIR and by comparing the number of channels required by that group with the number of channels available in the band considered.

IV.4.4 When in a given hour/band no congestion is found the requirements concerned shall be entered in a file of requirements ("file of resolved requirements") for which a frequency to be assigned shall be identified.

IV.4.5 When a congestion in a given hour/band is identified by means of a GGIR, the requirements included in the MGIR will have their protection ratio reduced by a 3 dB value with the view to resolve the congestion. If, following this action, the congestion is not resolved, another MGIR is identified and a new attempt is made with the view to resolve the congestion. The process is repeated until it will not be possible to find a solution with a protection ratio [of 17 dB]. Requirements appearing in an hour/band that can be resolved in this manner are entered in the "file of resolved requirements".

IV.4.6 When following the action taken in accordance with [IV.4.5], if congestion still exists, a new MGIR is identified and a set of requirements of each administration in the band under consideration with identical service areas are identified. The planning process then suspends for further consideration a number of such requirements in order to resolve the congestion. With the view to identify the requirements to be first suspended, administrations having requirements in the MGIR are sorted in the decreasing order of the number of such requirements. The process is repeated as many times as necessary until the congestion is resolved or the number of such requirements becomes equal to one per administration. Requirements appearing in an hour/band that can be resolved in this manner are entered in the "file of resolved requirements".

IV.4.7 Following the application of [IV.4.6], if congestion still exists, all requirements of a given administration appearing in a MGIR have different service areas, some of them having common units of service area. More suspensions may be required with the view to resolve the congestion; they shall be made by having recourse to the identification of the unit of service area which appears very often in the requirements of a given administration in the hour/band under consideration. Once this unit of service area is identified, administrations having it in their requirements are sorted in a decreasing order with the view to suspend requirements containing the unit of service area which appears very often. The GGIR is re-evaluated to determine whether congestion exists and the process is repeated as many times as possible until the congestion is resolved or the number of such requirements becomes one for all administrations concerned. This suspension rule shall be applied in such a way that any quadrant notified by an administration in the band/hour under consideration appears at least once in the plan. Requirements appearing in an hour/band that can be resolved in this manner are entered in the "file of resolved requirements".

IV.4.8 If the congestion is not resolved following the application of [IV.4.7] the same rule is applied taking account of the requirements in all the bands with the view to identify the requirements containing the unit of service area that appear very often. Requirements appearing in an hour/band that can be resolved in this manner are entered in the "file of resolved requirements".

IV.4.9 If the congestion is not resolved following the application of [IV.4.8], the requirements appearing in the MGIR are verified with the view to identify those which appear in two or three bands due to their low BBR. Such requirements may be suspended if they are present in another band with a better BBR. Requirements appearing in an hour/band that can be resolved in this manner are entered in the "file of resolved requirements".

IV.4.10 If the congestion is not resolved following the application of [IV.4.9], the requirements included in the MGIR shall have their protection ratio reduced by 3 dB. Following this action another MGIR is identified, and the

3 dB reduction shall be applied to requirements appearing in the new MGIR not yet affected by this reduction. The process of reduction by 3 dB shall be repeated until congestion is removed. Additional reductions of the protection ratio by steps of 3 dB are made in the same manner until all the remaining requirements are entered in the "file of resolved requirements". In this manner all requirements which, as a result of the previous steps, have not been suspended, have been placed in a "file of resolved requirements". This file contains, therefore, all the requirements which will always enter in the "Tentative Plan". This will be the case of requirements with a protection ratio less than [17 dB]. However, the requirements of those administrations who wish as a result of consultation with the IFRB may be included in the "file of resolved requirements" or in the "file of requirements to be reconsidered".\*

IV.4.11 Following the application of the above steps for the resolution of incompatibilities, frequencies shall be identified for its requirements appearing in the "file of resolved requirements". In this process the following shall be applied:

- requirements with a single preset frequency shall be assigned this frequency;
- requirements with more than one preset frequency shall be assigned that frequency that has the least degree of incompatibility;
- if two requirements have the same preset frequency, which after analysis results in an incompatibility, the case is referred to the administration(s) concerned;
- requirements with a preferred frequency, attempts shall be made to assign them this frequency.

IV.4.12 Requirements which have been suspended following the application of IV.4.6, IV.4.7, IV.4.8 and IV.4.9 are subject to consultation and are reinserted in the plan on the condition that they do not adversely affect the requirements already entered in the plan. In applying this provision a requirement already entered in the plan with a protection ratio exceeding [17 dB] is deemed to be adversely affected if its protection ratio is reduced below [17 dB]. A requirement already entered in the plan with a protection ratio lower than [17 dB] is deemed to be adversely affected if its protection ratio is reduced by more than [0.1 dB], [1 dB].\*

IV.4.13 Requirements received by the IFRB after the beginning of the planning exercise [after the deadline for submission of requirements] are entered in the plan under the conditions stipulated in [IV.4.12].

## V. RELIABILITY<sup>1</sup>

### V.1 Calculation of basic circuit reliability (BCR)

The process for calculating basic circuit reliability is indicated in Table C-2. The median value of field strength for the wanted signal at step (1) is determined by the field strength prediction method. The upper and lower decile values (2) through (5) are also determined, taking account of long-term

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\* Reservation by the United States.

<sup>1</sup> Abbreviations of the English terms are used in the formulae throughout the three languages in order to facilitate the practical implementation of the methods described in this section.

(day-to-day) and short-term (within the hour) fading. The combined upper and lower deciles of the wanted signal are then calculated in steps (6) and (7) in order to derive the signal levels exceeded for 10% and 90% of the time at steps (8) and (9).

The wanted signal probability distribution, assumed to be log-normal, is illustrated in Figure C-1 which indicates the signal level (in decibels) versus the probability that the value of signal level is exceeded (plotted on a normal probability scale). This distribution is used to obtain the basic circuit reliability (11), which is the value of probability corresponding to the minimum usable field strength (10).

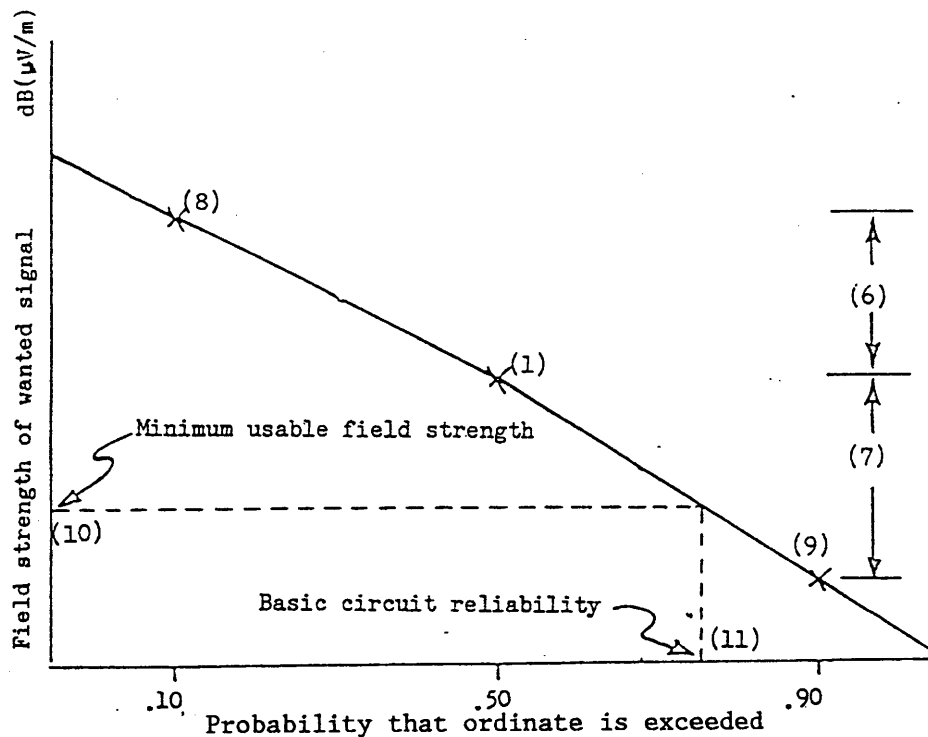


FIGURE C-1

Parameters used to compute basic circuit reliability

(Figures appearing in brackets refer to step numbers as shown in Table C-2.)

TABLE C-2

Parameters used to compute basic circuit reliability

STEP	PARAMETER	DESCRIPTION	SOURCE
(1)	$E_w(50)$ dB( $\mu$ V/m)	Median field strength of wanted signal <sup>1</sup>	IFRB Technical Standards
(2)	$D_U(S)$ dB	Upper decile of slow fading signal (day-to-day)	IFRB Technical Standards
(3)	$D_L(S)$ dB	Lower decile of slow fading signal (day-to-day)	IFRB Technical Standards
(4)	$D_U(F)$ dB	Upper decile of fast fading signal (within the hour)	IFRB Technical Standards
(5)	$D_L(F)$ dB	Lower decile of fast fading signal (within the hour)	IFRB Technical Standards
(6)	$D_U(E_w)$ dB	Upper decile of wanted signal	$\sqrt{D_U(S)^2 + D_U(F)^2}$
(7)	$D_L(E_w)$ dB	Lower decile of wanted signal	$\sqrt{D_L(S)^2 + D_L(F)^2}$
(8)	$E_w(10)$ dB ( $\mu$ V/m)	Wanted signal exceeded 10% of the time	$E_w + D_U(E_w)$
(9)	$E_w(90)$ dB ( $\mu$ V/m)	Wanted signal exceeded 90% of the time	$E_w - D_L(E_w)$
(10)	$E_{min}$ dB ( $\mu$ V/m)	Minimum usable field strength	IFRB Technical Standards
(11)	BCR	Basic circuit reliability	Expression (1), Figure C-1

Note 1 - In the calculation of BCR at the test points within the required service areas of synchronized transmitters, the field strength value to be used is calculated by the method of root sum square of the contributing field strengths in volts/metre.

The basic circuit reliability is given by the expression:

$$BCR = \frac{1}{\sqrt{2\pi}} \int_{-\infty}^{\gamma} \exp(-\tau^2/2) d\tau \quad (1)$$

when  $E_W \geq E_{min}$

$$\gamma = \frac{E_W - E_{min}}{\sigma_L}$$

$$\sigma_L = D_L(E_W)/1.282$$

when  $E_W < E_{min}$

$$\gamma = \frac{E_W - E_{min}}{\sigma_U}$$

$$\sigma_U = D_U(E_W)/1.282$$

## V.2 Calculation of [overall/interference] circuit reliability [(OCR) (ICR)]

The method is outlined in Table C-3. In step (1), the median wanted signal level is computed by the signal strength prediction method.

In step (2), the median field strength levels ( $E_i$ ) of each interfering source are obtained from the prediction method. In step (3), for a single source of interference the predicted median field strength is used; for multiple sources of interference the median field strength is calculated as follows: the field strengths of the interfering signals  $E_i$  are listed in decreasing order. Successive r.s.s. additions of the field strengths  $E_i$  are computed, stopping when the difference between the resultant field strength and the next field strength is greater than 6 dB. In step (3), the resultant field strength  $I$  is taken as the last computed value.

The values of the wanted signal and interference determined in steps (1) and (3) are combined in step (4) to derive the median signal-to-interference ratio. The 10% and 90% fading allowances are included in steps (5) and (6) in order to derive the signal-to-interference ratio exceeded for 10% and 90% of the time in steps (7) and (8).

The probability distribution for the signal-to-interference ratio may now be determined as shown in Figure C-2. The ratios are presented in decibels on a linear scale versus the probability that the value of the signal-to-interference ratio is exceeded on a normal probability scale. In Figure C-2, the value of probability corresponding to the required signal-to-interference ratio (9) is the circuit reliability in the presence of interference only (ICR). [The overall circuit reliability (OCR, step (12)) is the minimum value of either ICR (step (10)) or BCR (step (11)), whichever produces the lower value.]

The mathematical treatment of the calculation of ICR can be given in terms of the probability density distribution of the protection ratio. These functions are taken to be log normal, as is the resulting distribution of the signal-to-interference ratio.

The parameter ICR is given by the following expression:

$$ICR = \frac{1}{\sqrt{2\pi}} \int_{-\infty}^Y \exp(-\tau^2/2) d\tau \quad (2)$$

when for  $E_W - I \geq RSI$

$$Y = \frac{E_W - I - RSI}{\sigma_L}$$

$$\sigma_L = D_L(SIR)/1.282$$

and for  $E_W - I < RSI$

$$Y = \frac{E_W - I - RSI}{\sigma_U}$$

$$\sigma_U = D_U(SIR)/1.282$$

Values of the various parameters in the above expressions are found in steps indicated below, Table C-3.

$E_W$       step (1)

$I$           step (3)

$D_U(SIR)$    step (5)

$D_L(SIR)$    step (6)

$RSI$         step (9)



TABLE C-3

Parameters used to compute overall circuit reliability

STEP	PARAMETER	DESCRIPTION	SOURCE
1	$E_w$ dB( $\mu$ V/m)	Median field strength of wanted signal	IFRB Technical Standards
2	$E_i$ dB( $\mu$ V/m)	Median field strength of interfering signals $E_1, E_2, \dots E_n$	IFRB Technical Standards
3	$I$ dB( $\mu$ V/m)	Resultant field strength of interference	1) $I = 20 \log_{10} \sqrt{\sum_{i=1}^n \left( \frac{E_i + \alpha_i}{10} \right)}$
4	SIR(50)dB	Median signal to interference ratio	$E_w - I$
5	$D_U$ (SIR)dB	10% fading allowance	IFRB Technical Standards
6	$D_L$ (SIR)dB	90% fading allowance	IFRB Technical Standards
7	SIR(10)dB	Subjective signal-to-interference ratio exceeded 10% of the time	$SIR(50) + D_U(SIR)$
8	SIR(90)dB	Subjective signal-to-interference ratio exceeded 90% of the time	$SIR(50) - D_L(SIR)$
9	RSI dB	Required RF protection ratio 3)	IFRB Technical Standards
10	ICR	Circuit reliability in presence of interference only (without noise)	Expression (2), Figure C-2
11	BCR	Basic circuit reliability	Expression (1), Figure C-1
12	OCR	Overall circuit reliability	$\text{Min}(ICR, BCR)$

Note 1 -  $\alpha_i$  is the appropriate relative protection ratio corresponding to the carrier frequency separation between the wanted and each unwanted signal.

Note 2 - In these calculations a single value of the co-channel protection ratio must be used.

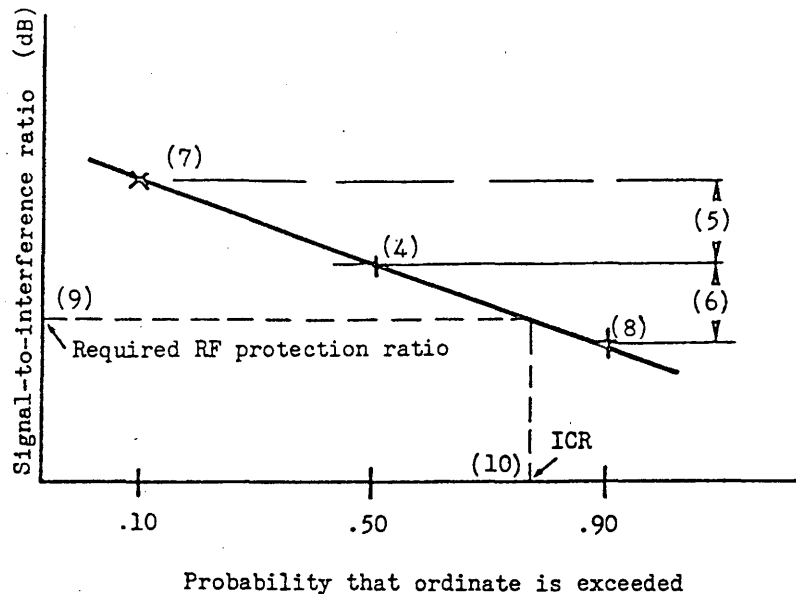


FIGURE C-2

Parameters used to compute overall circuit reliability

(Figures appearing in brackets refer to step numbers as shown in Table C-3.)

V.3 Basic reception reliability (BRR)

The method for computing basic reception reliability is outlined in Table C-4. With a single frequency, basic reception reliability (BRR) is the same as the basic circuit reliability (BCR) defined in section V.1. With multiple frequencies, the interdependence between propagation conditions at different frequencies leads to the computation method given in Table C-4. In steps (4) and (6), BCR (n) is the basic circuit reliability for frequency n, where  $n = F_1, F_2$ , etc. The basic reception reliability is obtained in step (2) for a single frequency, in step (4) for a set of two frequencies and in step (6) for a set of three frequencies.

V.4 Overall reception reliability (ORR)

The method for computing overall reception reliability is outlined in Table C-5. With a single frequency, overall reception reliability (ORR) is the same as the overall circuit reliability (OCR) defined in section V.2. With multiple frequencies, the interdependence between propagation conditions at different frequencies leads to the computation method given in Table C-5. In steps (4) and (6), OCR (n) is the overall circuit reliability for frequency n, where  $n = F_1, F_2$ , etc. The overall reception reliability is obtained in step (2) for a single frequency, in step (4) for a set of two frequencies and in step (6) for a set of three frequencies.

TABLE C-4

Basic reception reliability

The following parameters are involved:

Single-frequency operation

STEP	PARAMETER	DESCRIPTION	SOURCE
(1)	BCR ( $F_1$ ) %	Basic circuit reliability for frequency $F_1$	Step 11, Table C-2
(2)	BRR ( $F_1$ ) %	Basic reception reliability	BCR ( $F_1$ )

Two-frequency operation<sup>1</sup>

(3)	BCR ( $F_2$ ) %	Basic circuit reliability for frequency $F_2$	Step 11, Table C-2
(4)	BRR ( $F_1$ ) ( $F_2$ ) %	Basic reception reliability	$F_2$ $1 - \prod (1 - \text{BCR}(n))$ $n = F_1$

<sup>1</sup> The two frequencies  $F_1$  and  $F_2$  shall be situated in different HF bands allocated to the broadcasting service.

TABLE C-4 (continued)

Basic reception reliability

Three-frequency operation<sup>1</sup>

STEP	PARAMETER	DESCRIPTION	SOURCE
(5)	BCR (F <sub>3</sub> ) %	Basic circuit reliability for frequency F <sub>3</sub>	Step 11, Table C-2
(6)	BRR (F <sub>1</sub> ) (F <sub>2</sub> ) (F <sub>3</sub> ) %	Basic reception reliability	F <sub>3</sub> 1- Π (1-BCR(n)) n=F <sub>1</sub>

- <sup>1</sup> The three frequencies F<sub>1</sub>, F<sub>2</sub> and F<sub>3</sub> shall be situated in different HF bands allocated to the broadcasting service.

TABLE C-5

Overall reception reliability

The following parameters are involved:

Single-frequency operation

STEP	PARAMETER	DESCRIPTION	SOURCE
(1)	OCR (F <sub>1</sub> ) %	Overall circuit reliability for frequency F <sub>1</sub>	Step 12, Table C-3
(2)	ORR (F <sub>1</sub> ) %	Overall reception reliability	OCR (F <sub>1</sub> )

Two-frequency operation<sup>1</sup>

(3)	OCR (F <sub>2</sub> ) %	Overall circuit reliability for frequency F <sub>2</sub>	Step 12, Table C-3
(4)	ORR (F <sub>1</sub> ) (F <sub>2</sub> ) %	Overall reception reliability	F <sub>2</sub> 1- Π (1-OCR(n)) n=F <sub>1</sub>

- <sup>1</sup> The two frequencies F<sub>1</sub> and F<sub>2</sub> shall be situated in different HF bands allocated to the broadcasting service.

TABLE C-5 (continued)

Overall reception reliability

Three-frequency operation<sup>1</sup>

STEP	PARAMETER	DESCRIPTION	SOURCE
(5)	OCR (F <sub>3</sub> ) %	Overall circuit reliability for frequency F <sub>3</sub>	Step 12, Table C-3
(6)	ORR (F <sub>1</sub> ) (F <sub>2</sub> ) (F <sub>3</sub> ) %	Overall reception reliability	F <sub>3</sub>  1 - $\prod$ (1 - OCR(n))  n=F <sub>1</sub>

<sup>1</sup> The three frequencies F<sub>1</sub>, F<sub>2</sub> and F<sub>3</sub> shall be situated in different HF bands allocated to the broadcasting service.

V.5 Basic and [overall/interference] broadcast reliability

The determination of basic broadcast reliability involves the use of test points within the required service area. The basic broadcast reliability is an extension of the basic reception reliability concept to an area instead of a single reception point. The method for computing basic broadcast reliability is outlined in Table C-6. In step (1), the basic reception reliabilities BRR (L<sub>1</sub>), BRR (L<sub>2</sub>), --- BRR (L<sub>N</sub>) are computed as described in Table C-4 at each test point L<sub>1</sub>, L<sub>2</sub> --- L<sub>N</sub>. These values are ranked in step (2) and the basic broadcast reliability is the value associated with a percentile [X] of the test points.

In a similar way, the [overall/interference] broadcast reliability is computed as described in Table C-7 and it is the value associated with a percentile [X] of the test points.

Broadcast reliability is associated with the expected performance of a broadcast service at a given hour. For periods longer than an hour, computation at one-hour intervals is required.

TABLE C-6

Basic broadcast reliability

The following parameters are involved:

STEP	PARAMETER	DESCRIPTION	SOURCE
(1)	BRR ( $L_1$ ), BRR ( $L_2$ ), --- BRR ( $L_N$ ) %	Basic reception reliability at all test points considered in the required service area	Step (2), (4) or (6), as appropriate, from Table C-4
(2)	BBR (X) %	Basic broadcast reliability associated with percentile [X]	Any percentile chosen from the values ranked from (1) of this table

TABLE C-7

Overall broadcast reliability

The following parameters are involved:

STEP	PARAMETER	DESCRIPTION	SOURCE
(1)	ORR ( $L_1$ ), ORR ( $L_2$ ), --- ORR ( $L_N$ ) %	Overall reception reliability at all points considered in the required service area	Step (2), (4) or (6), as appropriate, from Table C-5
(2)	OBR (X) %	Overall broadcast reliability associated with percentile [X]	Any percentile chosen from the values ranked from (1) of this table

## VI. PROPORTIONALLY REDUCED PROTECTION (PRP)

PRP is a margin (M) by which the RF protection ratio to be applied at a test point is reduced under the following specified conditions:

- 1) the BBR < [80%], and
- 2) only one frequency band is given by the planning system, and
- 3) at the test point considered the field strength  $E_w$  is less than  $E_{min}$  and greater than or equal to  $E_{min} - [Z]$ .

In these conditions M is determined as:  $M = E_{min} - E_w$ .

In such cases the proportionally reduced protection ratio is used in the evaluation of S/I at the test point considered. For all the remaining points within the required service area, full protection as determined by the relevant protection ratio is given when  $E_w \geq E_{min}$  and no protection is given when  $E_w < E_{min} - [Z]$ .

In cases where PRP is not applicable, full protection as determined by the relevant protection ratio is afforded when  $E_w \geq E_{min}$  and no protection is afforded when  $E_w < E_{min}$ .

## VII. MAXIMUM NUMBER OF FREQUENCIES REQUIRED PER REQUIREMENT

### VII.1 Introduction

Wherever possible, only one frequency should be used for a particular requirement. In certain special circumstances, it may be found necessary to use more than one frequency per requirement, i.e.:

- over certain paths, e.g. very long paths, those passing through the auroral zone, or paths over which the MUF is changing rapidly;
- areas where the depth of the area extending outwards from the transmitter is too great to be served by a single frequency;
- when highly directional antennas are used to maintain satisfactory signal-to-noise ratios, thereby limiting the geographical area covered by the station concerned.

The decision to use more than one frequency per requirement should be made on the merits of the particular case concerned.

Use of synchronized transmitters should be encouraged whenever possible with a view to minimizing the need for additional frequencies.

## VII.2 Use of additional frequencies

The number of frequencies needed to achieve the specified level of basic broadcast reliability shall be determined by the method given below. If the calculated basic broadcast reliability for a single frequency does not reach the adopted value, it is necessary to consider whether the BBR could be improved by additional frequencies in separate bands and whether the improvement would justify the use of additional frequencies.

## VII.3 Determination of additional frequency bands

In cases where the BBR<sup>1</sup> for the first band, based on all test points in the required service area, is between 50% and 80%, an additional band shall be tested as follows.

Those test points whose basic circuit reliability BCR is less than or equal to the BBR are identified and only these points are used to determine the second band. For each band, the minimum value of BCR ( $BCR_{min}$ ) at these points is determined and that band having the highest  $BCR_{min}$  value is selected. If more than one band has this value, the highest frequency band is selected. The two-band BBR, taking account of the BBR at all test points in the required service area is then computed and if it exceeds the limit specified in Figure C-3<sup>2</sup> then the second band is permitted. In those special cases where the two-band BBR is less than 80% then a third band shall be tested as follows.

The BBR for each of the remaining bands is computed considering all test points in the required service area. Of these bands, that band having the highest BBR is selected as the third band. If more than one band has this value the highest frequency band is selected. If the resulting three-band BBR taking account of the BBR at all test points exceeds the limit specified in Figure C-3, the third band is permitted.

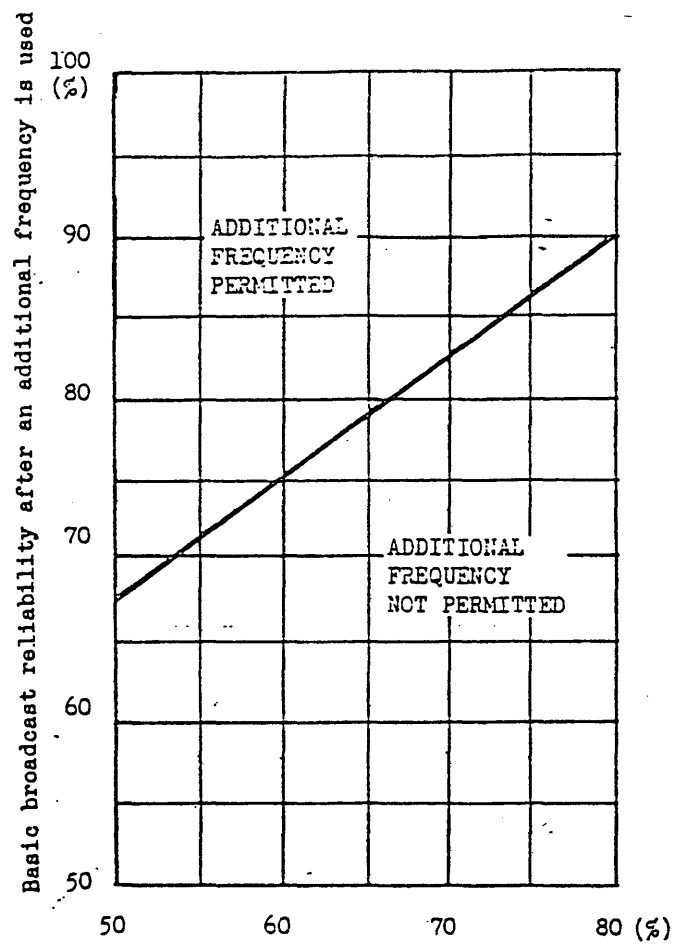
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<sup>1</sup> For calculation of the basic broadcast reliability, see paragraph V.5.

<sup>2</sup> The contents of this figure can be expressed by the following equation:

$$\begin{array}{ll} \text{BBR (after)} > 30 + .75 \cdot \text{BBR (before)} & \text{additional frequency permitted} \\ \text{BBR (after)} \leq 30 + .75 \cdot \text{BBR (before)} & \text{additional frequency not} \\ & \text{permitted.} \end{array}$$





Basic broadcast reliability before an additional frequency is to be used

FIGURE C-3

Limits for use of an additional frequency

VIII. PERFORMANCE ASSESSMENT

[See Document 145.]

Option 2

Note - The following paragraphs replace the corresponding paragraphs in Option 1 to form Option 2:

A. Changes to section [3]

- b) a list of the requirements that could not be entered into the planned bands as a result of a) above which will be treated in accord with [section ].
- Delete 9 and 10.
- 11. Any administration may submit requirements after the closure date and before the date referred to in [9].
- Delete 12.
- 13. Following the receipt of the information received in accordance with [11], the Board shall process these requirements and shall attempt to insert them in the tentative plans following the steps indicated in [Appendix ] without affecting\* those requirements already entered in the tentative plan.

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\* The criteria to determine whether a requirement is adversely affected are to be found in [the attachment].

- Delete 14 and its footnote.
- [Note 1 - Transfer Rules N1, N2 and N3 shall not apply to national requirements.]

B. Changes to the attachment

IV.4.6 When following the action taken in accordance with [IV.4.5], if congestion still exists, a new MGIR is identified and a set of requirements of each administration in the band under consideration with identical service areas are identified. The planning process then identifies for transfer to the procedure in section [ ] a number of such requirements in order to resolve the congestion. With the view to identify the requirements to be first transferred, administrations having requirements in the MGIR are sorted in the decreasing order of the number of such requirements. The process is repeated as many times as necessary until the congestion is resolved or the number of such requirements becomes equal to one per administration. Requirements appearing in an hour/band that can be resolved in this manner are entered in the "file of resolved requirements".

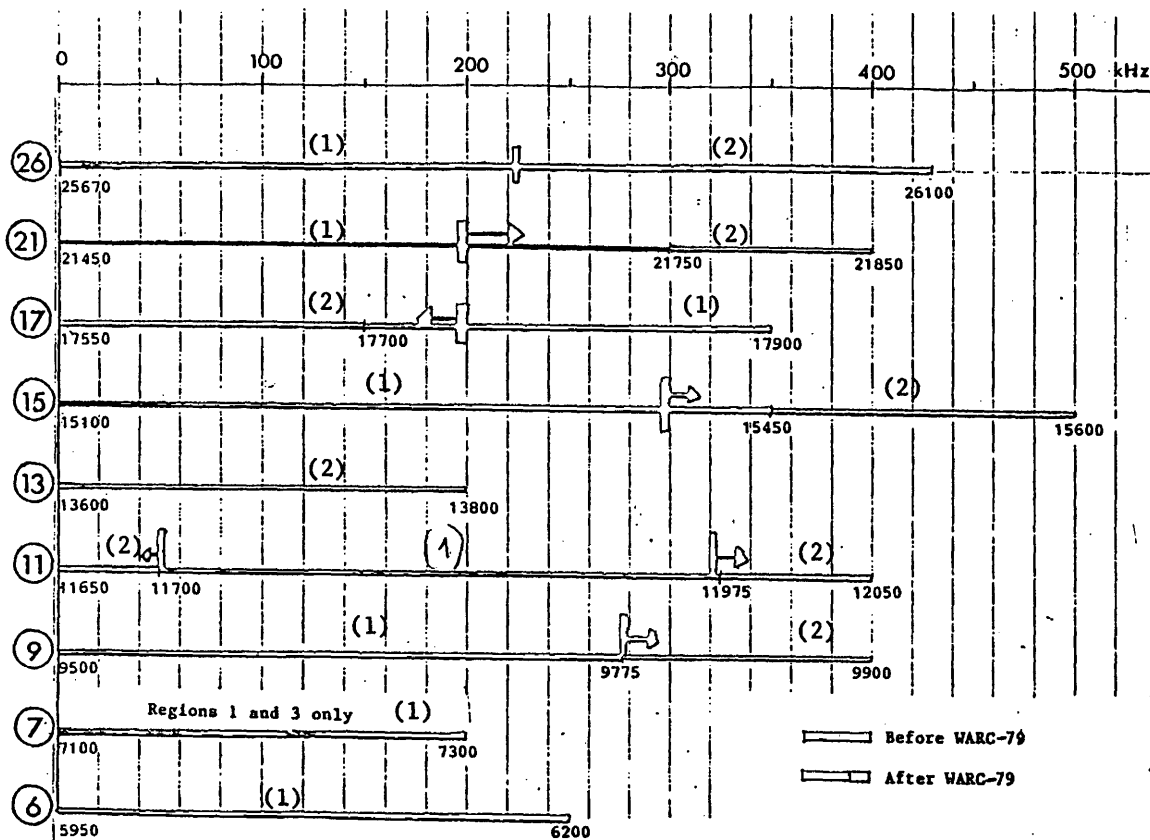
IV.4.7 Following the application of [IV.4.6], if congestion still exists, all requirements of a given administration appearing in a MGIR have different service areas, some of them having common units of service area. More suspensions may be required with the view to resolve the congestion; they shall be made by having recourse to the identification of the unit of service area which appears very often in the requirements of a given administration in the hour/band under consideration. Once this unit of service area is identified, administrations having it in their requirements are sorted in a decreasing order with the view to transfer to section [ ] requirements containing the unit of service area which appears very often. The GGIR is re-evaluated to determine

whether congestion exists and the process is repeated as many times as possible until the congestion is resolved or the number of such requirements becomes one for all administrations concerned. This rule shall be applied in such a way that any quadrant notified by an administration in the band/hour under consideration appears at least once in the plan. Requirements appearing in an hour/band that can be resolved in this manner are entered in the "file of resolved requirements".

IV.4.9 If the congestion is not resolved following the application of [IV.4.8], the requirements appearing in the MGIR are verified with the view to identify those which appear in two or three bands due to their low BBR. Such requirements may be transferred to section [ ] if they are present in another band with a better BBR. Requirements appearing in an hour/band that can be resolved in this manner are entered in the "file of resolved requirements".

IV.4.10 If the congestion is not resolved following the application of [IV.4.9], the requirements included in the MGIR shall have their protection ratio reduced by 3 dB. Following this action another MGIR is identified, and the 3 dB reduction shall be applied to requirements appearing in the new MGIR not yet affected by this reduction. The process of reduction by 3 dB shall be repeated until congestion is removed. Additional reductions of the protection ratio by steps of 3 dB are made in the same manner until all the remaining requirements are entered in the "file of resolved requirements". In this manner all requirements which, as a result of the previous steps, have not been transferred to section [ ], have been placed in a "file of resolved requirements". This file contains, therefore, all the requirements which will always enter in the "Tentative Plan". This will be the case of requirements with a protection ratio less than [17 dB]; however, the requirements of those administrations who wish as a result of consultation with the IFRB may be transferred to section [ ].

IV.4.12 Before transferring a requirement to section [ ] the Board shall verify if the administration indicated that the frequency continuity shall be applied in any case. In such cases the requirement throughout the entirety of its transmission period within the appropriate band shall be transferred to section [ ].



Total (kHz)	Application of the improved Article 17 (kHz) (1)	Application of the improved HFBC Planning System (kHz) (2)
430	230	200
400	200	200
350	150	200
500	300	200
200		200
400	275	125
400	275	125
200	200	
250	250	
<b>TOTAL</b>	<b>1880</b>	<b>1250</b>

ANNEX 2

Mid-term.

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PLENARY MEETING

MINUTES

OF THE

ELEVENTH PLENARY MEETING

Wednesday, 4 March 1987, at 2045 hrs

Chairman: Mr. K. BJÖRNSJÖ (Sweden)

Subjects discussed:

1. Second report by the Chairman of  
Committee 5

Documents

231  
139 (Rev.1)

1. Second report by the Chairman of Committee 5 (Document 231)

1.1 The Chairman of Committee 5 introduced the report and drew attention in particular to the reservations expressed by some delegations on certain paragraphs of Document 177 and to the fact that Committee 5 was referring to the Plenary consideration of Document 139 and RR 531.

1.2 In reply to a request for clarification from the delegate of the United States, the Chairman confirmed that the Plenary was not expected to approve the documents mentioned but to take note of Committee 5's action on them. They would be considered by the Plenary when they emerged from Committee 6 as regulatory texts.

Section 1: Considering Document 161

1.3 The delegate of Italy, supported by the delegates of Romania, France and Belgium, could not accept the last sentence of sub-section 1.4 since lowering the protection ratio indefinitely virtually invalidated the Plan; any protection ratio lower than 17 dB was unsatisfactory.

1.4 The representative of the IFRB (Mr. Berrada) pointed out that whatever approach to planning was adopted, the spectrum was limited and if requirements exceeded the available capacity there were only two courses of action open: either to eliminate some requests or to lower the protection ratio until each country had at least one requirement satisfied. If the sentence were deleted, all the steps in the Planning System would have to be altered.

1.5 The delegate of India, supported by the delegates of Brazil and Algeria, pointed out that if demand exceeded supply, it was inevitable that technical standards would have to be lowered.

1.6 The delegate of Pakistan supported the previous speaker and said that the alternative was to transfer unsatisfied requirements to the Article 17 procedure.

1.7 The delegate of Paraguay, supported by the delegate of Tanzania, advocated retaining the sentence.

1.8 The delegate of Qatar asked if, once the minimum number of requirements had been satisfied at the 17 dB protection ratio, the remaining requirements would be transferred to the improved Article 17 procedure. Until he had received clarification on that point, he had a reservation on the last sentence. The Chairman suggested that he consult the IFRB later.

Section 2: Considering Document 177

1.9 The delegate of Algeria repeated the reservations he had already formulated on paragraphs 17 and 21 of Document 177; any modifications made to requirements submitted by administrations were certain to downgrade the seasonal schedule and so were unacceptable. He had had no opportunity to discuss Document DT/67 on which he might have reservations.

1.10 The delegate of Italy reiterated his reservation on the entire procedure set out in Document 177 which was very complicated and costly. He preferred that contained in Document DT/67.

1.11 The delegate of India had serious reservations about paragraph 17 for the reasons expressed by the two previous speakers; the procedure in Document DT/67 would simplify matters and produce reasonable results.

1.12 The delegate of Pakistan reserved his position on both existing Article 17 and modified Article 17.

Section 6: Considering Document 139(Rev.1)

1.13 The delegate of France, presenting Document 139(Rev.1), said that its two authors strongly advocated a rational approach to the development of the new HFBC Planning System and felt that all means should be employed to ensure a successful conclusion to the exercise. They were determined not to repeat the error whereby several years' work by the IFRB, despite its expertise and application, had resulted in a Planning System unacceptable to administrations with the consequence that the decision expected of the present Conference had had to be deferred until 1992.

That was why the proposal had been made to use the undoubted expertise - often of a very practical nature - available in administrations to collaborate closely with the IFRB in the difficult task of developing the Planning System. He acknowledged that there would be problems involved in such collaboration and was open to constructive criticism.

He therefore urged delegations to give the proposal their unqualified support.

1.14 The delegate of Libya supported the idea for consultation between the IFRB and national broadcasters and experts in designing the system and proposed that the Board should hold an annual meeting, with the participation of all interested administrations, to provide them with information about the work to be carried out and provide for an exchange of ideas between the Board and the administrations. Such action would be beneficial to all in overcoming any unforeseen difficulties in the system design and as an information exercise, particularly for the purpose of adhering to the agreed timescale for the work.

1.15 The delegate of the Islamic Republic of Iran shared the concerns of the previous speaker and considered that the proposal embodied a very constructive approach at a time when it was essential to take all possible practical steps to ensure the success of the 1992 Conference. On the question of the proposed information and exchange meetings he thought that any interested administration should be allowed to participate. In addition, he felt that further clarification was needed on a number of points including the activities, composition and terms of reference of the proposed Group of Experts.

1.16 The delegate of Italy considered that collaboration on the matter was essential for the work after the Conference and therefore he supported the principles inherent in Document 139(Rev.1).

1.17 The delegate of the Federal Republic of Germany also expressed his support, pointing out that such Groups had provided excellent results in the past. Furthermore, the proposal provided a good basis for exchange of views between the IFRB and participating administrations of all regions. On the subject of the proposal made by Libya, he thought that resolves 4) could perhaps be expanded to cover that question.

1.18 The delegate of Pakistan said that there was no evidence to suggest that a Group of Experts would ensure development of an HFBC Planning System satisfactory to all administrations. Furthermore, he wondered what the composition and exact function of such a Group would be. Those matters would have to be very carefully considered and clear indications laid down if such a Group were to be envisaged. On the other hand, he agreed that the exchange of information was very important and suggested that that point could be adequately covered by resolves 4) of the proposal.

1.19 The delegate of India said that having studied the revised document very carefully he was convinced that very little would be achieved by setting up a Group of Experts as suggested. Referring to considering c), he wondered how a few experts could pin-point the widely varying constraints which occurred; that was a matter for each administration to deal with in accordance with its specific requirements and all must have the opportunity to do so. He agreed that the IFRB should keep all administrations informed by meetings and correspondence as necessary and preferred such interaction to the establishment of a Group of Experts restricted to a few administrations.

1.20 The delegate of Tunisia said that it seemed that the implementation of the proposals contained in Document 139(Rev.1) would only create further problems. One of the main difficulties stemmed from the composition of the Group, and the fact that a representative from one administration would have to represent the interests of a number of others. In addition, the Group appeared to have the freedom to introduce changes, which might not have been approved by all administrations, in the rules established by the present Conference. In view of those and other difficulties, the Tunisian Delegation supported the Libyan proposal.

1.21 The delegate of Australia supported the proposal for the establishment of a Group of Experts; it was a very useful concept, would assist with the proposed 1992 Conference and would be instrumental in building confidence in the Planning System. One of the essentials of building a system was meeting the requirements of the users, and that required interaction with them. Without such interaction, there was a risk of building a system which did not meet users' expectations or requirements. It would therefore be wrong to think that a system could be built successfully without such interaction. Had that approach been followed from the beginning, the results might have been very different.

The Australian Delegation also supported the concept of information meetings, not as a substitute for the Group of Experts, but as an additional mechanism of interaction. Information meetings were useful but not necessarily well attended, and participants might have great difficulty in a large group in following the results of changes. The Group of Experts would provide an opportunity to examine the results more closely and to give them the attention they deserved. It would also be to the benefit of the Board and the users. Such an important system had to be developed upon recognized lines, and the Group of Experts would facilitate that process.

1.22 The delegate of Canada, replying to points raised, said that in preparing Document 139(Rev.1) his Delegation had consulted many of those who had raised concerns previously, including members of the General Secretariat and the IFRB, and had made considerable effort to ensure that the revised version reflected those concerns. Concern had been expressed as to whether or not the work of the Group would succeed and whether its programme would produce results acceptable in 1992. The exercise would not give the guarantee which the delegate of Pakistan appeared to seek but it would be able to make a significant contribution. It would also put 27 people into the field with an intimate knowledge of the work carried out, and they would constitute a very important nucleus at the 1992 Conference. As to the question of expertise, the Group would bring field and operational experience, and the Board, in developing its software, identifying solutions and other matters could consult the Group for first-hand information on such matters as national systems.



As to instructions to the Board, resolves 1) indicated quite clearly that the Group of Experts would assist the Board in carrying out tasks relating to the planning system. It would assist, therefore, by giving the Board the benefit of its skilled expertise. There was no question of the Group of Experts constituting a mini-conference; it would merely help the Board implement the decisions of the Conference.

It had also been stated that an information meeting would be adequate. While information meetings aimed to provide a two-way discussion, they had in the past primarily provided an opportunity for the Board to issue information on what it was doing. The type of meeting proposed by France and Canada would provide an opportunity for information to flow in the other direction. It had also been said that information meetings would be less costly than the meetings of a Group of Experts. However, the cost incurred in information meetings was substantial. Another very important difference was reflected in invites the Administrative Council: the sponsors of the draft Resolution believed that the Group would be truly representative, regardless of the financial ability of individual administrations to send representatives, because the cost would be borne by the Union. That would largely contribute to the success of the exercise.

The sponsors had consulted the IFRB in revising their document, and it might be useful if the Board could say whether its earlier concerns remained or whether they had been met by the revised document.

1.23 The delegate of Norway said that his Delegation supported the principles of the proposals contained in Document 139(Rev.1), as it had supported those in the original document. In addition it shared the views of the Federal Republic of Germany. The delegate of Portugal also supported the revised proposal.

1.24 The delegate of Qatar opposed the establishment of a Group of Experts but was in favour of small Study Groups open to any administrations which wished to participate.

1.25 The delegate of Spain supported the proposal to establish a Group of Experts. However, as a member of the Administrative Council, he wished it to be clear that the Conference had to work within a special institutional framework, and that any decision with financial implications had to be approved by the Administrative Council. He therefore proposed that the draft Resolution should be converted into a Recommendation to the Administrative Council.

1.26 The delegate of the Netherlands, supporting the creation of a Group of Experts said that the interest of listeners was important and should be taken into account.

1.27 The delegate of Botswana said that having heard the statement made by the delegate of the United Kingdom, he now believed that the idea was a good one, and that the Board's doubts about the original proposal lay in some unfortunate experience in the past, particularly in relation to the previous Group's terms of reference. He therefore requested clarification from the IFRB on that issue. As many administrations considered information meetings to be of little value, the terms used in resolves 4) might usefully be changed.

1.28 The delegate of Kenya said that his Delegation could now support the ideas contained in Document 139(Rev.1); their particular merit lay in enabling countries to participate in the development and improvement of the process and in the interaction with the Board. The delegates of Cameroon and Japan likewise could support the proposal, as could the delegate of Zimbabwe who expressed the hope that the terms of reference might at some stage include the task of considering national requirements.

1.29 The delegates of Algeria and Turkey said that their Delegations still felt unable to accept the revised version of the document on account of the numerous problems it raised. The delegate of Saudi Arabia too was not able to endorse the creation of a Group of Experts.

1.30 The representative of the IFRB (Mr. Berrada) said that the statement he had made in Committee 5 had been intended to illustrate the Board's concern about the relatively vague manner in which the ideas had originally been expressed, and particularly the concern that a Group consisting of representatives of administrations might interfere in the work of the Board. After further discussions with the French and Canadian Delegations, he had been reassured that the Group would be composed of persons designated after selection by the Board, the Secretary-General and the Administrative Council, and that the sole purpose of the Group would be to assist the Board. A similar approach had been adopted by the First Session in Resolution COM5/2, but in the light of the poor response from administrations information meetings had been arranged. It was regrettable that in the Board's contacts with developing countries, the main difficulty had been one of communication and the fact that the developing countries had considered it difficult to participate in such meetings. Meetings had been more beneficial at the regional level, and the conclusion to be drawn was that financial difficulties were the main obstacle to participation. A solution to that difficulty had been found by the Delegations of France and Canada by limiting the Group to a relatively small number and by inviting the Administrative Council to provide in the Union budget for the cost of participation.

1.31 The delegate of Iraq said that the revised document did not meet all the concerns expressed by his Delegation in Committee 5 and he could not support it; he could however support the ideas expressed in Libya's proposal and suggested that that proposal be discussed by the Plenary. The delegate of Kuwait also said that his Delegation could not support the revised document but did support the alternative proposal by Libya.

1.32 The delegate of Oman considered that the Board was a very competent body and did not require outside assistance. His Delegation put its trust in the Board alone.

1.33 The delegates of Belgium, the United Kingdom and the United States supported the objectives of Document 139(Rev.1).

1.34 The delegate of Pakistan wondered why the Board had not taken administrations' views into account at the information meetings held in the intersessional period. Experts from the developed countries had actually participated in a Group which had given advice to the Board in the context of Resolution COM5/2. According to the theory expanded in Document 139(Rev.1), there should not therefore have been any problems arising in the HF broadcasting system.

1.35 The delegate of Senegal supported the French and Canadian proposal. Even if total success for a conference around 1992 could not be guaranteed, at least the advantages would be in the administrations' favour.

1.36 Summarizing the discussion the Chairman felt that the difference between the two positions was not very great. Many of the views expressed by those who opposed the establishment of the Group were in fact covered by the draft Resolution. A possible compromise, therefore, might be, as the delegate of Spain had suggested, to submit a Recommendation to the Administrative Council rather than a Resolution.

It was so agreed.

To that end, he suggested that a small Drafting Group be set up, chaired by the delegate of Spain, and consisting of the delegates of Canada, Libya, France and Islamic Republic of Iran, to transform the draft Resolution into a Recommendation to the Administrative Council, embodying the views expressed as far as possible.

It was so agreed.

The meeting rose at 2345 hours.

The Secretary-General:

R.E. BUTLER

The Chairman:

K. BJÖRNSJÖ

Note by the Secretary-General

FOR INFORMATION

FINAL DAYS OF THE CONFERENCE

1. Final Acts

The copies of the Final Acts will be distributed in principle, by means of one copy per delegate, distributed in the document distribution boxes before the signing ceremony.

Note - Delegates who leave the Conference before the signing ceremony are requested to fill in a form available at the Document Distribution Service to enable the Secretariat to dispatch their copies after the Conference.

2. Declarations concerning the Final Acts

When the last text to be included in the Final Acts of the Conference has been approved in second reading by the Plenary Meeting, a time limit will be set for the deposit of declarations concerning the Final Acts.

The declarations concerning the Final Acts are to be handed in to the Executive Secretary of the Conference (J.165) for publication in a consolidated document.

The Plenary Meeting will take note (without debate) of the declarations concerning the Final Acts and fix a second deadline for the deposit of additional declarations having regard to the first set of declarations.

A subsequent Plenary Meeting will take note (without debate) of the additional declarations.

3. Signing ceremony

Between the final adoption, in second reading, of the last texts of the Final Acts and the signing ceremony, a period of 18 hours is required:

- for the preparation and printing of the Final Acts, and
- for the deposit and publication of the declarations and additional declarations, as well as for the Plenary Meeting held to take note of them.

The time of the opening of the signing ceremony will therefore depend on when the last text is cleared in Plenary.

It should be noted that delegations (or members thereof) wishing to sign the Final Acts before the signing ceremony may do so by application to office J.165 (Mr. Macheret).

R.E. BUTLER

Secretary-General

For reasons of economy, this document is printed in a limited number of copies. Participants are therefore kindly asked to bring their copies to the meeting since no others can be made available.

MODIFICATIONS TO THE RADIO REGULATIONS

MOD  
HFBC-87                    Modify Note 15) of Appendix 7 to read as follows:

"15) For A3E emissions with carrier power of 10 kW or less the tolerance is 20 parts in  $10^6$ , 15 parts in  $10^6$  and 10 parts in  $10^6$  in the bands 1 606.5 (1 605 Region 2) - 4 000 kHz, 4 - 5.95 MHz and 5.95 - 29.7 MHz respectively."

Note 21) to Appendix 7 should be modified as follows:

MOD  
HFBC-87                    "21) It is suggested that administrations avoid carrier frequency differences of a few hertz, which cause degradations similar to periodic fading. This could be avoided if the frequency tolerance were 0.1 Hz, a tolerance which would also be suitable for single-sideband emissions.\*"

ADD  
HFBC-87                    "\*\* The World Administrative Radio Conference for the Planning of the HF Bands Allocated to the Broadcasting Service (Geneva, 1987) has drawn attention to the fact that the single-sideband system adopted for the bands exclusively allocated to HF broadcasting does not require a frequency tolerance less than 10 Hz. The above-mentioned degradation occurs when the ratio of wanted-to-interfering signal is well below the required protection ratio. This remark is equally valid for both double- and single-sideband emissions."

SUP  
HFBC-87                    Recommendation No. 500.

MOD  
HFBC-87                    Recommendation No. 503

- in "recommends that administrations, 1.", replace "328-4" by "328-6";
- in "invites administrations", replace "205-1" by "205-2".

SUP  
HFBC-87                    Recommendation No. 501.

RECOMMENDATION COM5/A (HFBC-87)

**Possibility of Extending the Frequency Spectrum  
Allocated Exclusively to HF Broadcasting at a Future Competent  
World Administrative Radio Conference**

The World Administrative Radio Conference for the Planning of the HF Bands Allocated to the Broadcasting Service (Geneva, 1987),

considering

- a) Resolution No. 508 of the WARC (Geneva, 1979) inviting the Administrative Council to convene a conference in two sessions with a view to the planning of the HF bands allocated exclusively to the broadcasting service;
- b) the Report of the First Session to the Second Session of the Conference;
- c) Administrative Council Resolution No. 912 containing the agenda of the Second Session of the WARC for the Planning of the HF Bands Allocated to the Broadcasting Service (HFBC(2));
- d) the results of the planning exercises carried out by the IFRB during the intersessional period;
- e) that this Conference, to achieve more efficient use of the HF bands allocated exclusively to the broadcasting service, has adopted measures such as [improved planning and] the use of single-sideband techniques but has concluded that these measures might be insufficient to meet the current and future needs of HF broadcasting,

recognizing

that a possible extension of the frequency spectrum allocated for HF broadcasting would have an impact on other radio services operating in accordance with the Table of Frequency Allocations contained in Article 8 of the Radio Regulations,

recommends to the Administrative Council

to take the necessary steps to request the Plenipotentiary Conference (Nice, 1989) to consider whether or not to hold a WARC which should include in its agenda the possibility of extending the HF frequency spectrum allocated exclusively to the broadcasting service [with the aim of planning that spectrum within the framework of the improved HFBC Planning System,

instructs the Secretary-General

to bring this Recommendation to the attention of all administrations and of the 42nd session of the Administrative Council, 1987.

**HFBC (2)**

INTERNATIONAL TELECOMMUNICATION UNION  
**WARC FOR THE PLANNING OF THE HF BANDS  
ALLOCATED TO THE BROADCASTING SERVICE**  
SECOND SESSION, GENEVA, February-March 1987

Document 246-E  
5 March 1987

B.10

PLENARY MEETING

TENTH SERIES OF TEXTS SUBMITTED BY THE  
EDITORIAL COMMITTEE TO THE PLENARY MEETING

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

<u>Source</u>	<u>Documents</u>	<u>Title</u>
COM.6	232	Modifications to the Radio Regulations
COM.6	188 (240)	Recommendation COM5/A

D. SAUVET-GOICHON  
Chairman of Committee 7

Annex: 2 pages

B.10/1

## MODIFICATIONS TO THE RADIO REGULATIONS

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"15) For A3E emissions with carrier power of 10 kW or less the tolerance is 20 parts in  $10^6$ , 15 parts in  $10^6$  and 10 parts in  $10^6$  in the bands 1 606.5 (1 605 Region 2) - 4 000 kHz, 4 - 5.95 MHz and 5.95 - 29.7 MHz respectively."

Note 21) to Appendix 7 should be modified as follows:

MOD  
HFBC-87

"21) It is suggested that administrations avoid carrier frequency differences of a few hertz, which cause degradations similar to periodic fading. This could be avoided if the frequency tolerance were 0.1 Hz, a tolerance which would also be suitable for single-sideband emissions.\*"

ADD  
HFBC-87

"\* The World Administrative Radio Conference for the Planning of the HF Bands Allocated to the Broadcasting Service (Geneva, 1987) has drawn attention to the fact that the single-sideband system adopted for the bands exclusively allocated to HF broadcasting does not require a frequency tolerance less than 10 Hz. The above-mentioned degradation occurs when the ratio of wanted-to-interfering signal is well below the required protection ratio. This remark is equally valid for both double- and single-sideband emissions."

SUP  
HFBC-87

Recommendation No. 500.

MOD  
HFBC-87

Recommendation No. 503

- in "recommends that administrations, 1.", replace "328-4" by "328-6";
- in "invites administrations", replace "205-1" by "205-2".

SUP  
HFBC-87

Recommendation No. 501.



B.10/2

## RECOMMENDATION COM5/A (HFBC-87)

**Possibility of Extending the Frequency Spectrum  
Allocated Exclusively to HF Broadcasting at a Future Competent  
World Administrative Radio Conference**

The World Administrative Radio Conference for the Planning of the HF Bands Allocated to the Broadcasting Service (Geneva, 1987),

considering

- a) Resolution No. 508 of the WARC (Geneva, 1979) inviting the Administrative Council to convene a conference in two sessions with a view to the planning of the HF bands allocated exclusively to the broadcasting service;
- b) the Report of the First Session to the Second Session of the Conference;
- c) Administrative Council Resolution No. 912 containing the agenda of the Second Session of the WARC for the Planning of the HF Bands Allocated to the Broadcasting Service (HFBC(2));
- d) the results of the planning exercises carried out by the IFRB during the intersessional period;
- e) that this Conference, to achieve more efficient use of the HF bands allocated exclusively to the broadcasting service, has adopted measures such as [improved planning and] the use of single-sideband techniques but has concluded that these measures might be insufficient to meet the current and future needs of HF broadcasting,

recognizing

that a possible extension of the frequency spectrum allocated for HF broadcasting would have an impact on other radio services operating in accordance with the Table of Frequency Allocations contained in Article 8 of the Radio Regulations,

recommends to the Administrative Council

to take the necessary steps to request the Plenipotentiary Conference (Nice, 1989) to consider whether or not to hold a WARC which should include in its agenda the possibility of extending the HF frequency spectrum allocated exclusively to the broadcasting service [with the aim of planning that spectrum within the framework of the improved HFBC Planning System,

instructs the Secretary-General

to bring this Recommendation to the attention of all administrations and of the 42nd session of the Administrative Council, 1987.

PLENARY MEETING

Drafting Group of the Plenary

RECOMMENDATION

**Participation by Administrations in the Improvement of the  
Method of Planning the HF Bands Allocated to Broadcasting**

The World Administrative Radio Conference for the Planning of the HF Bands Allocated to the Broadcasting Service (Geneva, 1987),

considering

- a) that it has improved the planning method and instructed the IFRB to modify the HFBC System accordingly;
- b) that the work assigned to the IFRB is to be carried out in the years which follow the Conference;
- c) that the steps of the planning method relate to technical and operational constraints which may vary from country to country and from region to region;
- d) that the IFRB can only obtain information on these constraints through contacts with the administrations;
- e) that administrations from all the regions must have an opportunity to take part in the improvement process through the participation of qualified experts;
- f) that administrations need to be informed periodically on the status of work and the planning exercises and be allowed to comment on them;
- g) that to promote the participation of countries from all the regions it may be necessary to defray the expenses involved from the Union budget,

recommends to the Administrative Council

- 1. to establish a Group of Experts selected from individuals proposed by administrations to assist the IFRB in carrying out the tasks relating to the planning method entrusted to it by the Conference;
- 2. that the Group shall comprise [27] experts from countries belonging to the five administrative regions, distributed as follows:

Region A: 5  
Region B: 5  
Region C: 3  
Region D: 7  
Region E: 7

3. that the Group of Experts shall hold one annual meeting of one week on the initiative of the Board, and that if necessary a second meeting could be organized;

4. that in order to keep all the administrations informed of the progress of work, it will be necessary to organize annual information meetings to which all the administrations shall be invited;

5. that such information meetings should be held in conjunction with the Group of Experts meeting for a duration of two or three days,

also recommends to the Administrative Council

1. taking into account of the possibility of the ordinary budget of the Union and the availability of other financial resources provide necessary resources for the above activities mainly with respect to the costs relating to the participation in the meetings of the Group of Experts of one expert from each administration for the years 1988 and 1989;

2. in case the Group of Experts should meet in following years to include in its Report to the Plenipotentiary Conference a request for financial resources in the ordinary budget of the Union,

instructs the Secretary-General

1. to consult the administrations and request them, if they so wish, to nominate an expert with the necessary qualifications to sit on the Group of Experts;

2. to examine the nominations received in collaboration with the Board and put forward to the 42nd Session of the Administrative Council a list of experts to be appointed in line with the distribution indicated in recommends 2.

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Note by the Secretary-General

At the request of the delegation of the Federal Republic of Germany,  
I transmit herewith, for information, a copy of a letter I received from  
this delegation.

R.E. BUTLER  
Secretary-General

Annex: 1

ANNEX

DELEGATION OF THE FEDERAL REPUBLIC OF GERMANY  
TO THE WARC-HFBC(2)

To the  
Secretary-General of the  
International Telecommunication Union  
Mr Richard E. Butler  
Geneva

Geneva, 5th March, 1987

Sir,

we refer to the summary record of the second meeting of Committee 2 (Document 219) of the World Administrative Radio Conference for the Planning of the HF Bands allocated to the Broadcasting Service, Second Session, which contains a statement made by the delegate of the USSR and statements made by the delegation of the United States of America on behalf of the United States, and on behalf of the United States, France and the United Kingdom (para 2.2 and Annex of the summary record).

We wish to state that the Government of the Federal Republic of Germany shares the positions set out in the statements of the delegation of the United States. We kindly request you to have the text of this letter circulated as a document of the Conference.

Please accept, Sir, the assurance of my highest consideration.



W. Lewalter  
Head of Delegation



H. Venhaus  
Head of Delegation

COMMITTEE 3

SUMMARY RECORD  
 OF THE  
 FIFTH MEETING OF COMMITTEE 3  
 (BUDGET CONTROL)

Thursday, 5 March 1987, at 1100 hrs

Chairman: Dr. M.K. RAO (India)

Subjects discussed:

Documents

- |  |                             |
|--|-----------------------------|
| 1. Approval of the summary record of<br>the third meeting of Committee 3 | 195                         |
| 2. Financial implications of decisions<br>taken by the Conference        | 191 (Rev.1),<br>209 (Rev.1) |

1. Approval of the summary record of the third meeting of Committee 3  
(Document 195)

The summary record of the third meeting was approved as amended (see Corrigendum 1 to Document 195).

2. Financial implications of decisions taken by the Conference  
(Documents 191(Rev.1) and 209(Rev.1))

2.1 Document 191(Rev.1)

Page 2

2.1.1 The delegate of Algeria, referring to the second sentence of section 2, proposed that the word "significant" should be inserted before "reduction", in order to reflect a statement made in that connection by the representative of the IFRB at the eleventh Plenary Meeting.

2.1.2 The Chairman of the IFRB said that, although he had not been present at that meeting, he understood that there had been some misunderstanding of the statement in question. Mr. Berrada had in fact said that the time-scale might be considerably reduced if the HFBC System were to be introduced as it had appeared at the end of the planning exercises, together with the relatively simple continuity rules in plan 59 and the suspension rules. Since the situation had now changed considerably, however, it would be inaccurate to introduce the qualifying adjective proposed by the Algerian delegate.

2.1.3 The delegate of Algeria said that it nevertheless seemed to his Delegation and to others which had participated in the eleventh Plenary Meeting that, in the light of the contents of Documents DT/67 and DT/68, of the guidelines in Document DT/65 and of the existence of the relevant software, the necessary modifications were not so extensive as to warrant more than a few man/months of extra work by the IFRB. The objective of the Conference and, indeed, of the Union as a whole must be to reduce expenditure on implementing decisions to the absolute minimum. He therefore pressed his amendment to section 2.

2.1.4 The Chairman of the IFRB said that the Board itself had no misunderstanding on the subject. In accordance with the Committee's instructions, Document 191(Rev.1) had been based on the present situation as reflected in Documents DT/65, DT/67 and DT/68; it would only be if the Conference decided to take a different direction, using the unimproved HFBC System and the plan 59 continuity rules, that substantial savings could be made.

2.1.5 The representative of the IFRB (Mr. Brooks) said that he had attended the Plenary Meeting in question and understood the position to be as follows: Committees 4 and 5 had previously developed certain decisions based on the independent use of the two systems, and the Board had reflected those decisions in the estimates given in Annex 3 to Document 191; but Document DT/68 contained some additional changes over and above those Committee decisions, and it was the costs relating to the integrated system that were now reflected in Document 191(Rev.1). To a question put to the Board Mr. Berrada had reiterated his understanding of the question and had indicated the implications that would arise if only the HFBC System as presented at the beginning of the Conference were taken into account, disregarding all previous Committee decisions and other improvements of the System.

2.1.6 The delegate of Algeria noted that additional information and asked for some clarification of the last phrase of section 2, beginning with the words "... it is of paramount importance ...".

2.1.7 The Chairman of the IFRB said that, since the document was mainly concerned with software development, it had been considered advisable to draw attention to the fact that the System would come into operation with real requirements after satisfactory testing.

Page 5

2.1.8 The Chairman of the IFRB said that the seventh indent in section 3.7 had been placed in square brackets because some of the requirements of the application of the present Article 17 might be modified in the light of certain Conference decisions, particularly with regard to Appendix 2. No significant additional costs were expected if the Conference proceeded with the combined system, and any extra expenditure could probably be covered within the existing resources.

2.1.9 In reply to a question by the delegate of Algeria concerning the information meetings referred to in the fourth indent, the Chairman of the IFRB said that, whatever the Plenary might decide with regard to the proposed Group of Experts, information meetings would have to be held in one form or another during the two or three years of the development of the improved HFBC System and improved Article 17. The reference in section 3.7 related only to the internal administrative costs of arranging such meetings.

Page 6

2.1.10 The Chairman of the IFRB observed that sections 5.1 and 5.2 had been included at the request of delegations at the preceding meeting, largely for information.

Page 7

2.1.11 In reply to a question by the delegate of the United Kingdom concerning the impact of the decisions of the eleventh Plenary Meeting on estimated staff requirements, the Chairman of the IFRB said that there had not been time to incorporate any changes in the document, although the reference to OBR in the tenth indent of the annex could now be deleted in view of a recent Conference decision. The representative of the IFRB (Mr. Brooks) added that the Plenary had indicated the number of trials to be held in 1990 and 1991 but had come to no conclusion on the establishment of the Group of Experts, which would certainly affect the Board's estimates. Indeed, there were as yet so many unknown factors that the IFRB would only be able to make a proper evaluation based on the final decisions when it submitted its report to the Administrative Council.

The Committee took note of Document 191(Rev.1) in the light of that statement.

2.1.12 The delegate of Algeria reserved the right to return to various aspects of the document at the next meeting of Committee 3.

2.2 Document 209(Rev.1)

2.2.1 The Deputy Secretary-General, introducing the document, said that it was largely based on Documents 191 and 209, except that three possible scenarios were no longer taken into account, in view of the decision to use a combined system. It would be seen that the total figure in section A had been reduced from 2,670,000 to 2,100,000 Swiss francs. Section C.1 had been amplified as far



as possible to meet the Algerian delegate's request for further details, but it was difficult to make any precise assessment until the tasks had been clearly defined and the document to be submitted to the Administrative Council would contain more specific data. With regard to section C.2, Document 139(Rev.1) currently under consideration in Plenary consisted of a draft Resolution which now entailed two meetings of the Group of Experts instead of the four originally proposed and the corresponding change had been taken into account in the estimates. Information meetings had not been taken into consideration and any expenditure in that regard would be additional. Finally, the total estimated expenditure amounted to 4,000,000 Swiss francs, whereas the credits available within the limit of expenditure stood at 2,044,000 Swiss francs. In reply to a question by the delegate of France, he said that the only possible course of action was for the Administrative Council to hold a consultation of all the Members of the Union requesting permission to exceed the limit of expenditure.

2.2.2 In reply to a question by the delegate of the United States concerning the relationship between the amount of 879,400 Swiss francs in section G.1 and the margin of 64,000 Swiss francs shown in Document 185, the Secretary of the Committee said that, if the Conference managed to maintain the margin that had existed at 23 February, the figure of 879,000 Swiss francs would of course be correspondingly increased. In any case, provision had been made in the original estimates for the additional expenditure entailed by the prolongation of the Conference.

2.2.3 The delegate of Algeria, referring to the procedure that was being followed, observed that the Committee was taking note of the information in the documents before it without having time to draw the necessary conclusions. On the basis of past experience, however, actual expenditure on administrative conferences generally turned out to be considerably less than the estimates: for example, in the case cited at the Committee's second meeting, the estimates for the Conference had exceeded expenditure by as much as 30%. He considered that what might be called the optimism coefficient incorporated in the documentation should be more realistic and that the estimates should never be much higher than actual expenditure.

His Delegation could not support the estimates in section C.2: if the Conference retained the principle of accepting support from administrations, it would surely be better for that support to take the form of human resources such as the 25 man/months provided for intersessional work under section 5.1 of Document 191(Rev.1).

The wording of section 2 of Annex 2 ran counter to the optimism that should guide the work of the Union and the Conference and cast doubt on the capacity of the Conference to take decisions in conformity with the Convention. In any case, all the figures should be further reviewed in the light of the fact that actual expenditure on past conferences had generally been much less than the estimates.

2.2.4 The delegate of the United Kingdom said that optimism must be balanced by realism. The Union's experience of many other software contracts had shown that estimates nearly always fell short of the actual costs. He preferred to follow the best advice that could be offered by the experienced and devoted staff of the Union in the performance of their duties, rather than to cast doubt on their estimates by referring to optimism and pessimism coefficients.

According to the figures in section G, the estimated expenditure exceeded the credits available within the limits by some 800,000 Swiss francs for section 11 of the budget and by some 1,100,000 Swiss francs for section 18, which meant that all the uncommitted credits under section 18 would be consumed by the implementation of the decisions of the current Conference.

Finally, although he thought there was an element of understatement in the last two sentences of the section on support staff in Annex 2, he could accept the relevant figures in section C.1 as the most realistic that the ITU staff could produce at that stage.

2.2.5 The delegate of the United States endorsed the views expressed by the previous speaker. The exact requirements for IFRB work of course still remained to be determined and the full implications would not be known for two months or so, but his Delegation was already greatly concerned by the open-ended commitments that were being made in some areas - for example, with regard to the number and complementarity of additional antennas. The United States was afraid that the estimates submitted might be conservative and awaited the detailed report to the Administrative Council with some apprehension. The Council would of course try to see how much of the expenditure could be absorbed in the ordinary budget, but it should be borne in mind that in recent years the element of flexibility in that budget had been very greatly reduced.

2.2.6 The Chairman of the IFRB, referring to the 30% over-estimate for the intersessional work of the AFBC Conference mentioned by the Algerian delegate, said that there were several reasons for that discrepancy. In the first place, the estimates had been made in Nairobi, but it had been found in Geneva that use could be made of much of the software prepared for the 1984 VHF BC Conference. Secondly, in the particular case of Africa, attempts had been made to draw on the Union's own resources as far as possible. Unfortunately that case could not be taken as any kind of a precedent for the present estimates, which could only be regarded as a minimum in view of the complexity of the software required for the combined system. Delegates could therefore be sure that there would be no great difference between the estimates and the actual resources evaluated for the Administrative Council.

With regard to the United Kingdom delegate's comment on the consumption of all the remaining credits under section 18 by implementation of the decisions of the current Conference, the two other conferences that might make demands on that section were the MOB-87 Conference to be held in the autumn and the Second Session of the ORB Conference in 1988.

2.2.7 The Deputy Secretary-General endorsed that statement and said that estimates would be made of the possible expenditure for those conferences under section 18.

2.2.8 The delegates of Italy, Japan and the United States reserved their Delegations' right to return to the question of the financial implications of the decisions of the Conference at a later stage.

The Committee took note of Document 209(Rev.1).

2.2.9 The delegate of Algeria said that his Delegation indeed took a realistic view of the situation and wished to take all the facts and specific details into account in order to confirm that the IFRB was still capable of undertaking its tasks with a creative approach towards the possibility of using existing resources to a greater extent. Where the Union as a whole was concerned, the fact that it had always been possible in the past to reduce the estimated expenditure on conferences was an essential indicator in all evaluations and estimates and his Delegation could not accept figures which did not take that reality into account. Document 191(Rev.1) had not yet been examined in detail and he reserved his Delegation's right to do so at an opportune time.

2.2.10 The delegate of the United Kingdom said that, in the light of that statement, he was obliged to reserve his Delegation's right to return to the subject at a Plenary Meeting.

The meeting rose at 1210 hours.

The Secretary:

R. PRELAZ

The Chairman:

M.K. RAO

## LIST OF DOCUMENTS

(Documents 201 to 250)

No.	Origin	Title	Destination
201	C.5	First series of texts from Committee 5 to the Editorial Committee	C.7
202	C.3	Note from the Chairman of Committee 3	C.3
203	C.7	B.6	PL
204	WG 2A	Fourth Report of the Working Group of Committee 2 (Credentials)	C.2
205 + Corr.1	BEL	Proposal for future work	C.5
206	C.5	Summary Record of the Tenth Meeting of Committee 5	C.5
207	C.7	R.3	PL
208	ISR	Proposals for the Conference	C.5
209 (Rev.1)	SG	Estimate of the resources needed for post Conference work	C.3
210	PAK	Elements of the compromise solution	C.5
211	6-1	Report of Drafting Group 6-1	C.6
212	Ad Hoc PL	Note from the Chairman of the Ad Hoc Group of the Plenary to the Chairman of Committee 6	C.6
213	C.5	Note by the Chairman of Committee 5 to the Chairman of Committee 6	C.6
214	WG 2A	Fifth Report of the Working Group of Committee 2 (Credentials)	C.2
215 + Corr.1	C.2	Report of Committee 2 to the Plenary Meeting (Credentials)	PL



No.	Origin	Title	Destination
216	PL	Minutes of the Eighth Plenary Meeting	PL
217	C.3	Summary Record of the Fourth Meeting of Committee 3	C.3
218	C.6	Summary Record of the Seventh Meeting of Committee 6	C.6
219	C.2	Summary Record of the Second Meeting of Committee 2	C.2
220	SG	Note by the Secretary-General concerning the Circular-Telegram No. A533	-
221	Ad Hoc PL	Note from the Chairman of the Ad Hoc Group of the Plenary to the Chairman of Committee 6	C.6
222	6-2	Report of Drafting Group 6-2 to Committee 6	C.6
223	ARG, CLM	Proposal for the Conference - National broadcasting in the HF Bands	C.5
224	C.5	Summary Record of the Eleventh Meeting of Committee 5	C.5
225	C.5	Summary Record of the Twelfth Meeting of Committee 5	C.5
226	PL	Minutes of the Ninth Plenary Meeting	PL
227	C.6	Summary Record of the Eighth Meeting of Committee 6	C.6
228	Ad Hoc PL	Note from the Chairman of the Ad Hoc Group of the Plenary to the Chairman of Committee 6	C.6
229	Ad Hoc PL	Note from the Chairman of the Ad Hoc Group of the Plenary to the Chairman of Committee 6	C.6
230	C.5	First Report by the Chairman of Committee 5 to the Plenary	PL
231	C.5	Second Report by the Chairman of Committee 5 to the Plenary	PL
232	C.6	Fourth series of texts from Committee 6 to the Editorial Committee	C.7
233	C.6	Fifth series of texts from Committee 6 to the Editorial Committee	C.7

No.	Origin	Title	Destination
234	C.7	B.7	PL
235	C.7	B.8	PL
236	C.5	Summary Record of the Thirteenth Meeting of Committee 5	C.5
237	C.6	Summary Record of the Ninth Meeting of Committee 6	C.6
238	C.6	Summary Record of the Tenth Meeting of Committee 6	C.6
239	PL	Minutes of the Tenth Plenary Meeting	PL
240	C.5	Second series of texts from Committee 5 to the Editorial Committee	C.7
241	PAK, IND	Utilization of the frequency band extensions as agreed by WARC-79	PL
242	C.7	B.9	PL
243	C.6	Note from the Chairman of Committee 6 to the Plenary	PL
244	PL	Minutes of the Eleventh Plenary Meeting	PL
245	SG	Information Note - Final days of the Conference	-
246	C.7	B.10	PL
247	Draf.G PL	Recommendation - Participation by administrations in the Improvement of the Method of Planning the HF Bands Allocated to Broadcasting	PL
248	SG	Note by the Secretary-General (Letter from the Federal Republic of Germany)	-
249	C.3	Summary Record of the Fifth Meeting of Committee 3	C.3
250	SG	List of documents (201 to 250)	-

PLENARY MEETING

MINUTES

OF THE

TWELFTH PLENARY MEETING

Thursday, 5 March 1987, at 0900 hrs

Chairman: Mr. K. BJÖRNSJÖ (Sweden)

Subjects discussed:

Documents

- |   |            |
|---|------------|
| 1. Fifth series of texts submitted by the Editorial Committee to the Plenary Meeting for first reading (B.5(Rev.1)) | 187(Rev.1) |
| 2. Seventh series of texts submitted by the Editorial Committee to the Plenary Meeting for first reading (B.7)      | 234        |

1. Fifth series of texts submitted by the Editorial Committee to the Plenary Meeting for first reading (B.5(Rev.1) (Document 187(Rev.1))

1.1 Resolution COM6/1

1.1.1 The Chairman of Committee 7 proposed, and it was agreed, to delete the dots at the end of considering d) which indicated the omission of a part of No. 1454 of the Radio Regulations not relevant to HF broadcasting.

1.1.2 The Chairman of the IFRB said that unless No. 1770 of the Radio Regulations was to be revised, considering e) would be incorrect if it left out the reference to the Board's past experience in broadcasting planning currently contained therein.

1.1.3 The Chairman of Committee 6 said that the reference had been omitted during drafting as a result of doubts expressed about the amount of experience gained to date in planning HF broadcasting.

1.1.4 The delegate of Pakistan, supported by the delegates of Finland and Algeria, proposed that the reference be restored and it was so agreed.

1.1.5 The Chairman of Committee 7 said, and it was agreed, that the square brackets should now be removed from the reference to No. 1770 of the Radio Regulations in considering e).

1.1.6 The delegate of Algeria said that the words "sur le plan pratique" at the end of resolves 3 of the French text had no counterpart in the English text and should be deleted.

1.1.7 The representative of the IFRB (Mr. Berrada) said that the passage in which the words occurred was there because the obligation on the IFRB to take the comments requested from administrations into account would be unconditional without it, even if their proposals were harmful. The French and English texts could be aligned by amending the end of resolves 3 in the former to read: "a moins qu'il ne soit pas possible de le faire", which would allow the IFRB to ignore any unreasonable proposal received.

1.1.8 The Chairman said that the Editorial Committee would make the necessary amendments.

1.1.9 The delegate of China suggested that resolves 4 required amendment to clarify its exact meaning, particularly in its second and third sentences.

1.1.10 The delegate of Yugoslavia proposed, and it was agreed, that the meaning of the second sentence of resolves 4 would be made clear if the existing phrase "concerning such a meeting supports the action proposed by the Board" were replaced by the words "support the necessity of holding such a meeting".

1.1.11 The delegate of Canada suggested, and it was agreed, that the words "before implementing" in the third sentence of resolves 4 should be amended to read "before making its final decision on the implementation of".



1.1.12 The representative of the IFRB (Mr. Berrada) replying to questions from the delegates of Saudi Arabia and Iraq about the precise meaning of the expressions "an appropriate period" and "a significant number of replies" in resolves 4, said that it would be best to allow the IFRB some latitude to decide in each case. So far as the latter was concerned, "a significant number" need not mean a majority, since there were no rules for determining what constituted a majority and any meeting held would be open to any administration wishing to attend.

The fifth series of texts submitted by the Editorial Committee (B.5(Rev.1)), as amended, was approved on first reading.

2. Seventh series of texts submitted to the Plenary Meeting for first reading (B.7) (Document 234)

2.1 Appendix [COM4/A] to the Radio Regulations

Double-Sideband (DSB) and Single-Sideband (SSB) System Specifications in the HF Bands Allocated Exclusively to the Broadcasting Service

2.1.1 The Chairman of Committee 7 said that Document B.7 contained only Parts A and B of the appendix; Part C had not yet been dealt with by the Editorial Committee, and would be submitted later.

#### Title

2.1.2 The delegate of Italy, referring to footnote 1, wondered whether it was proper from the legal point of view to consider the appendix as taking effect from the date of entry into force of the Final Acts of a conference whose date had not yet been fixed.

2.1.3 The Secretary-General said there was in fact no legal obstacle to indicating that the provisions would take effect on a date that had yet to be decided. On the other hand, he had some difficulty in accepting the notion that entry into force of the provisions of the appendix should be tied to the entry into force of the Final Acts of WARC 1992; Final Acts comprised not only Regulations, but also Resolutions and Recommendations, which by their very nature would have different dates of coming into effect. He suggested that the footnote be left in square brackets, pending consultation with the Legal Adviser.

2.1.4 The delegate of China shared Italy's concern over the footnote to the title, which seemed to him to be inconsistent with the Resolution adopted the previous day by Committee 6 (Document DT/71) concerning IFRB's post-conference activities.

2.1.5 The Chairman suggested that in view of the shortage of time the point raised by the delegate of China should be taken into account in informal consultations.

2.1.6 The Chairman of Committee 4 wished it to be recorded that the entry into force of the Final Acts of the present Conference and the entry into force of the Final Acts of the 1992 Conference were two quite different questions, which should be dealt with separately.

2.1.7 The Chairman of Committee 7 indicated an editorial amendment to the French text of the title: "(DBL)" should be added after "double bande latérale".

2.1.8 The delegate of the Federal Republic of Germany pointed out that paragraph 1 of the annex to Resolution COM4/2, already adopted, read, "The immediate introduction of SSB emissions is encouraged, i.e. the transition period starts immediately". It was therefore urgent that at least the SSB system specifications should enter into force with the Final Acts of the present Conference, and not be delayed till 1992.

The title was approved, the footnote being retained in square brackets pending consultations.

Part A - Double-sideband system

2.1.9 The Chairman of Committee 4 indicated an editorial amendment to the heading of paragraph 1, which should read "Planning parameters".

2.1.10 The delegate of Syria said he was not clear what was meant by the phrase "interleaved channels with a separation of 5 kHz may be used" in paragraph 1.1. He proposed that the phrase "... provided that the interleaved emission is not to the same geographical area as either of the emissions between which it is interleaved" be added to the second sentence to bring the wording into line with the corresponding provision in Part B.

2.1.11 The delegate of the Federal Republic of Germany considered that addition too restrictive and technically unnecessary.

2.1.12 The Chairman of Committee 4 said the original wording of 1.1 had been modified on the basis of the results of the planning exercise. However, he had no strong objection to the Syrian proposal.

That proposal was approved.

Part B: Single-sideband system

2.1.13 The delegate of Italy indicated an editorial amendment to paragraph 2.2; "+" should be omitted, in line with Appendix 7 of the Radio Regulations.

The seventh series of texts submitted by the Editorial Committee (series B.7) was approved, as amended, on first reading.

The meeting rose at 1020 hours.

The Secretary-General:

R.E. BUTLER

The Chairman:

K. BJÖRNSJÖ

PLENARY MEETING

MINUTES

OF THE

THIRTEENTH PLENARY MEETING

Thursday, 5 March 1987, at 1410 hrs

Chairman: Mr. K. BJÖRNSJÖ (Sweden)

Subject discussed:

Document

1. Report by the Chairman of  
Committee 6

243

1. Report by the Chairman of Committee 6 (Document 243)

1.1 The Chairman of Committee 6, introducing the report which had been based on Documents 211, 222, DT/67 and DT/68, drew particular attention to the fact that it contained a number of items which Committee 6 had been unable to discuss or adopt due to lack of time. Draft Resolution [COM6/2] had not been adopted although the subject had been discussed briefly at the last meeting of the Committee and an attempt had been made to reflect the suggestions of participating administrations. Of the three sections into which Annex 1 to the draft Resolution was divided, two options had been given for draft section 2, Procedures based on consultations: the first option had been based directly on Document 221 which contained a complete set of procedures based on consultations: option 2, however, was based on Document 211 modified by Document DT/67 which had not been considered by Committee 5 and which had reached Committee 6 too late to be taken properly into account. For the same reasons, section 3 also contained two options, based on Document 222, and Document 222 as modified by Document DT/68 respectively.

The only texts discussed and approved by Committee 6 were section 1, HFBC requirements file, and part of the attachment to section 3 of Annex 2. The document also contained a number of square brackets: some related to cases in which the two Drafting Groups of Committee 6 had been unable to reach agreement and which had been referred to Committee 6, which in turn had not been able to discuss all the reports. Sections on which no agreement had been possible in Committee 6 were also contained in square brackets. Lastly, certain decisions concerning the OBR and S/I criteria were to be taken after the Plenary Meeting, and the items to which they related were also in square brackets.

1.2 The representative of the IFRB (Mr. Brooks), referring to a number of square brackets where references needed to be inserted, suggested that to save time the Board should assist the Chairman after the meeting in identifying the appropriate references which would appear in a later version of the document.

It was so agreed.

Draft Resolution [COM6/2]

It was agreed, on the proposal of the Chairman, that the expression "consultation procedures" should be used throughout to replace "Article 17 procedures" and "procedures based on consultations".

It was further agreed on the proposal of the delegate of Finland that in considering c) "seasonal plans" should read "draft seasonal plans".

1.3 The delegate of the United Kingdom proposed an alternative wording for considering c) and, as a consequence, for considering d).

1.4 The delegate of the United States supported those proposals, but after a brief discussion the delegate of the United Kingdom said he could withdraw his proposal in order to speed up deliberations.

1.5 The delegate of the United Kingdom, addressing resolves 2, proposed that the words "these procedures" should replace "both the procedures".

1.6 The delegate of Finland proposed that the words "for this purpose" be inserted after "submitting requirements" to avoid confusion.

Those two amendments were adopted and it was agreed that the first sentence in the French text should be aligned with the English.

Annex 1

Draft section [1] HFBC requirements file

1.7 The representative of the IFRB (Mr. Berrada) said that footnote 1 was no longer necessary.

1.8 The delegate of Mexico, referring to the first indent of paragraph 1, proposed that the period should be one year, not three. In any case, the French and Spanish texts specified no figure. The delegate of Brazil supported that proposal: the period should be one year or four seasons, as stipulated in Document 192, on the understanding that administrations could modify their requirements later.

1.9 The representative of the IFRB (Mr. Berrada) said that the period was directly related to the options the Plenary would consider for the revised Article 17. If the latter were in the format designed by Committee 5 one year would not be adequate. He suggested a period not exceeding three years which would leave administrations the choice.

1.10 The delegate of Colombia wished the number of seasons to be specified. The delegates of Algeria and Kenya pointed out that the period of three years was already a compromise as some administrations had wanted the period to be even longer. In response to a question from the delegate of Poland, the representative of the IFRB (Mr. Berrada) explained that the exercise for a given season was not dependent on the figure given in the text under discussion.

1.11 The delegate of France proposed that the text should refer to the forthcoming years without specifying any particular period.

That proposal was supported by the delegates of Brazil and Mexico and it was so agreed.

It was agreed to remove the square brackets in the first line of the first sub-paragraph of paragraph 4, the words "in accordance with" and the square brackets in the second line, and the square brackets in the second sub-paragraph.

1.12 The delegates of Paraguay and Zimbabwe suggested that paragraph 8 be deleted altogether.

1.13 The delegate of Australia on the other hand, supported by the delegates of the United Kingdom and Papua New Guinea, proposed removal of the square brackets considering that the text was needed to ensure that a station put out of service for one or more seasons would not be at a disadvantage. Although paragraph 7 laid down that no priority would be derived from history of use, it was stated elsewhere that continuity from one season to another was of importance.

1.14 The delegate of Mexico agreed; any administration might be subject to a calamitous event over which it could exercise no control.

It was agreed to remove the square brackets around the text plus those within the text, and to insert the figure "5 years".

Draft section [2] - Procedures based on consultations

1.15 The Chairman said that the Plenary was to consider option 2 only as he understood that the simplified HFBC Planning System and simplified Article 17 were part of the compromise package.

1.16 The Chairman of Committee 6 explained the differences between options 1 and 2 and summarized the sources of a number of paragraphs.

It was noted that the reference to replace the square brackets in paragraph 3 would be inserted later.

1.17 Referring to paragraph 4, the delegate of Brazil, supported by the delegate of Thailand, expressed his preference for the second alternative in square brackets as the Resolution related to post-conference work.

1.18 The delegate of Kenya, supported by the delegates of Mexico, Swaziland, Tanzania, Libya and Burkina Faso pointed out that some countries might not receive reminders in time. He preferred the first alternative as otherwise the requirements of such countries might not be included in the file.

1.19 The delegate of the United Kingdom, supported by the delegates of the Netherlands, Italy, Japan, Romania and Zimbabwe, could understand the difficulties referred to by Kenya but felt that it was uneconomic to retain in the file frequencies not being used. About six months was allowed before reminders were sent and he felt it not unreasonable to request administrations to state their intentions concerning the frequencies contained in the requirements file.

1.20 The delegate of India suggested as a compromise that those requirements which had been operated during the previous season should be considered by the IFRB for inclusion in the next plan.

1.21 The delegate of the United States preferred the proposal made by the United Kingdom but could accept the compromise suggested by India even though he felt that it was similar to alternative 1 and he would have preferred that the best use be made of the spectrum.

1.22 The representative of the IFRB (Mr. Brooks) said that the difficulty for the Board was knowing which services had been operated. The suggestion was acceptable on the understanding that the word operated implied that they had been confirmed in the previous seasons.

The text was amended to read: "those requirements which were operated in the previous season" and the square brackets were removed.

1.23 The Chairman of Committee 6, referring to paragraph 5, proposed that, at the end of the second sentence, the square brackets should be removed and the words "the attachment to section 3", added and that, in the third sentence, the square brackets should be removed and the word "final" inserted before "results".

It was so agreed.

1.24 Referring to paragraph 6, he proposed that the square brackets should be deleted around the period of eight weeks and that the square brackets should be deleted from the preceding line; the requisite reference would be supplied by the Secretariat. The delegate of France, supported by the Chairman of Committee 6, proposed that the words "and will select itself a frequency or frequencies" should be inserted between the blank paragraph reference in square

brackets and the words "for those requirements" in the last sentence, so as to conform to the French Delegation's proposal shown on page 2 of Document 211. The delegate of Italy having questioned the need for that insertion, the representative of the IFRB (Mr. Berrada) suggested that item 6 should be left in abeyance pending informal consultations between the Delegation of France and the Board.

It was so agreed.

1.25 The representative of the IFRB (Mr. Brooks), in reply to a query by the delegate of the United States about the entry of frequencies into the seasonal schedule, proposed that paragraph 8 should be entirely reworded to read:

"Those requirements that cannot be included in the corresponding seasonal plan following the application of the procedures of the Planning System contained in section 3 are entered into the seasonal file and are treated in accordance with the following paragraphs."

In response to a question by the delegate of Algeria, he said that everything in the seasonal plan, including any additional requirements or overflows from the Planning System not reflected in the flowchart, would be entered in the requirements file. Referring to an observation by the delegate of Finland, he thought it might be cumbersome to try to distinguish, in the current text, between the files, a matter which the Board would deal with in any case when developing the requisite software.

The proposed revised text of paragraph 8 was approved.

1.26 The delegate of India, referring to paragraph 9, proposed that the second sentence and the surrounding square brackets should be deleted entirely. The delegate of Algeria and the Chairman of Drafting Group 6-1 having supported the proposed deletion, it was so agreed.

It was also agreed, on a proposal by the Chairman of Committee 6, to replace the words "section [ ] of Appendix [COM4/A, Document 179] by "the attachment to section 3".

1.27 The Chairman of Committee 6, referring to paragraph 11, proposed that, in the second sentence, a period of two months should be indicated and the square brackets deleted.

It was so agreed.

It was agreed to remove the square brackets from the second sub-paragraph of paragraph 12.

1.28 The delegate of Algeria, referring to paragraph 13, proposed deletion of the entire text and the square brackets.

1.29 The Chairman, noting a number of objections to that proposal, invited the delegations concerned to hold informal consultations on the matter before the next meeting.

The meeting rose at 1710 hours.

The Secretary General:

R.E. BUTLER

The Chairman:

K. BJÖRNSJÖ



Source: Document 230

PLENARY MEETING

Note from the Chairman of the Conference

DRAFT RESOLUTION [PL/1]

**Programme of Action Relating to the Improvement, Testing, Adoption and Practical Implementation of the Planning System for the High Frequency Bands Allocated Exclusively to the Broadcasting Service, and Associated Provisions**

The World Administrative Radio Conference for the Planning of the HF Bands Allocated to the Broadcasting Service, (Geneva, 1987),

considering

the need to adopt a programme of action,

resolves

1. that the software of the HFBC Planning System is to be improved in accordance with the further instructions contained in Resolution [COM6/2];
2. that the improved HFBC Planning System is to be tested in accordance with the instructions contained in Resolution [COM6/2] for adoption, if acceptable to a competent world administrative radio conference and for application in the following bands allocated exclusively to the broadcasting service:

26 MHz band: 25 900 - 26 100 kHz  
21 MHz band: 21 650 - 21 850 kHz  
17 MHz band: 17 550 - 17 750 kHz  
15 MHz band: 15 400 - 15 600 kHz  
13 MHz band: 13 600 - 13 800 kHz  
11 MHz band: 11 650 - 11 700/11 975 - 12 050 kHz  
9 MHz band: 9 775 - 9 900 kHz\*,

decides to recommend

that a world administrative radio conference should be convened not later than 1992,

\* This band cannot be implemented before 1 July 1994 (Resolution No. 8, WARC-79).

that this conference should:

- examine the results of the improved HFBC Planning System and improved Article 17 provided by the IFRB;
- examine the effects of the interaction between the two "systems" (improved HFBC Planning System and improved Article 17);
- decide on any improvements to be made to the two "systems";
- on the basis of the analysis of test results, decide on the date of introduction of the two systems, which should be as soon as possible after the WARC of 1992;
- decide on the date of introduction of the HFBC Planning System in the 9 MHz extension band;
- take the necessary steps to settle the question of the processing of national broadcasting requirements;
- establish a long-term plan with a view to planning all the bands allocated exclusively to HF broadcasting,

invites the Plenipotentiary Conference

as a matter of priority to make the necessary arrangements for including the WARC of 1992 in the schedule of conferences it is to establish,

invites the Administrative Council

to take whatever action is necessary for convening the conference not later than 1992,

instructs the IFRB

to undertake the improvements in the software of the HFBC Planning System, to test the system and to submit their results to administrations and to the WARC mentioned above,

instructs the Secretary-General

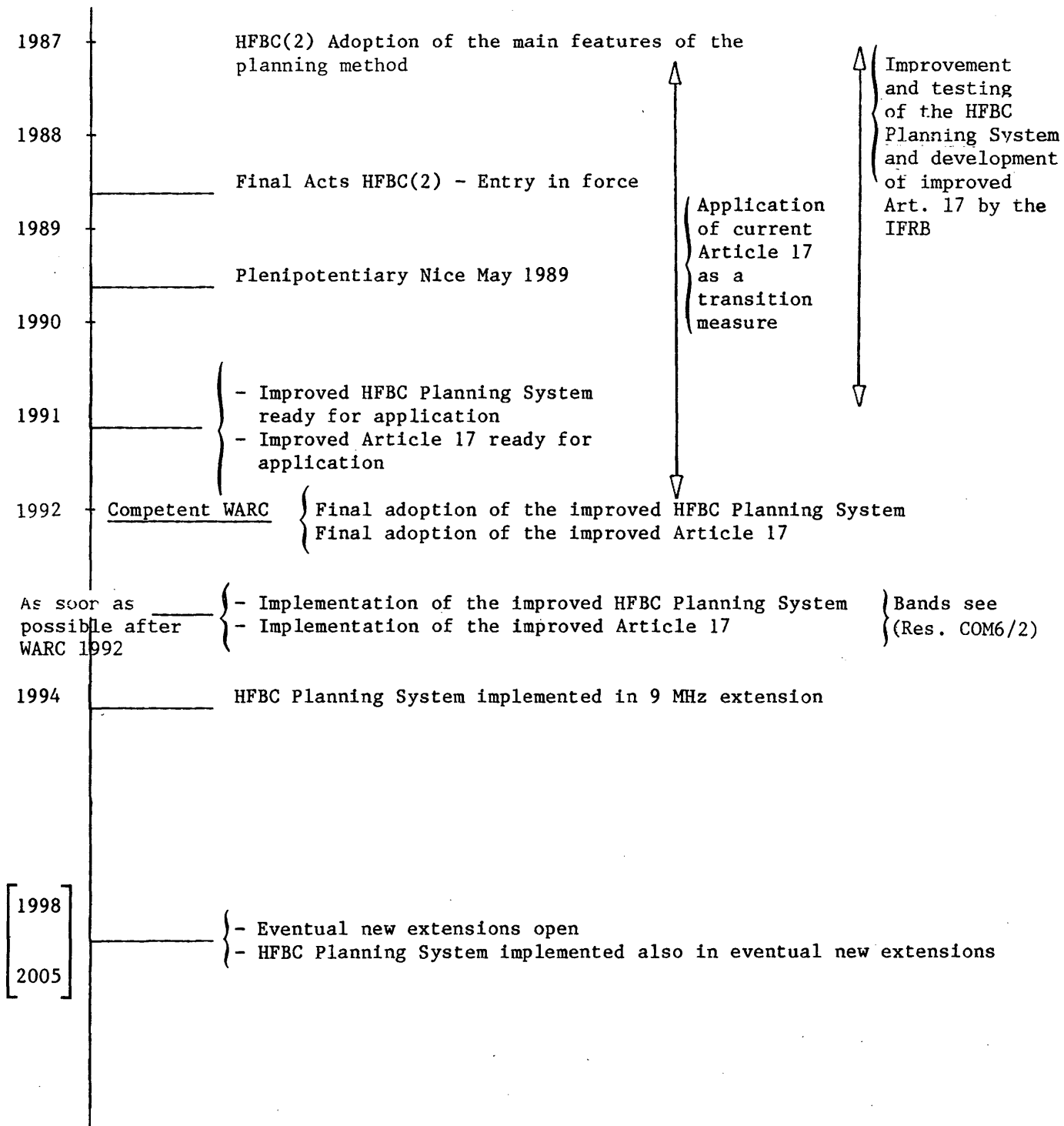
to bring this Resolution to the attention of the Administrative Council.

Note - The programme of action is illustrated in the annex.

J.K. BJÖRNSJÖ  
Chairman

Annex: 1

ANNEX



Source: Document 230

PLENARY MEETING

Note from the Chairman of the Conference

DRAFT RESOLUTION [PL/1]

**Programme of Action Relating to the Improvement, Testing, Adoption and Practical Implementation of the Planning System for the High Frequency Bands Allocated Exclusively to the Broadcasting Service, and Associated Provisions**

The World Administrative Radio Conference for the Planning of the HF Bands Allocated to the Broadcasting Service, (Geneva, 1987),

considering

the need to adopt a programme of action,

resolves

1. that the software of the HFBC Planning System is to be improved in accordance with the further instructions contained in Resolution [COM6/2];
2. that the improved HFBC Planning System is to be tested in accordance with the instructions contained in Resolution [COM6/2] for adoption, if acceptable to a competent world administrative radio conference and for application in the following bands allocated exclusively to the broadcasting service:

26 MHz band: 25 900 - 26 100 kHz  
21 MHz band: 21 650 - 21 850 kHz  
17 MHz band: 17 550 - 17 750 kHz  
15 MHz band: 15 400 - 15 600 kHz  
13 MHz band: 13 600 - 13 800 kHz  
11 MHz band: 11 650 - 11 700/11 975 - 12 050 kHz  
9 MHz band: 9 775 - 9 900 kHz\*,

decides

that a world administrative radio conference should be convened not later than 1992,

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\* This band cannot be implemented before 1 July 1994 (Resolution No. 8, WARC-79).

that this conference should:

- examine the results of the improved HFBC Planning System and improved Article 17 provided by the IFRB;
- examine the effects of the interaction between the two "systems" (improved HFBC Planning System and improved Article 17);
- decide on any improvements to be made to the two "systems";
- on the basis of the analysis of test results, decide on the date of introduction of the two systems, which should be as soon as possible after the WARC of 1992;
- decide on the date of introduction of the HFBC Planning System in the 9 MHz extension band;
- take the necessary steps to settle the question of the processing of national broadcasting requirements;
- establish a long-term plan with a view to planning all the bands allocated exclusively to HF broadcasting,

invites the Plenipotentiary Conference

as a matter of priority to make the necessary arrangements for including the WARC of 1992 in the schedule of conferences it is to establish,

invites the Administrative Council

to take whatever action is necessary for convening the conference not later than 1992,

instructs the IFRB

to undertake the improvements in the software of the HFBC Planning System, to test the system and to submit their results to administrations and to the WARC mentioned above,

instructs the Secretary-General

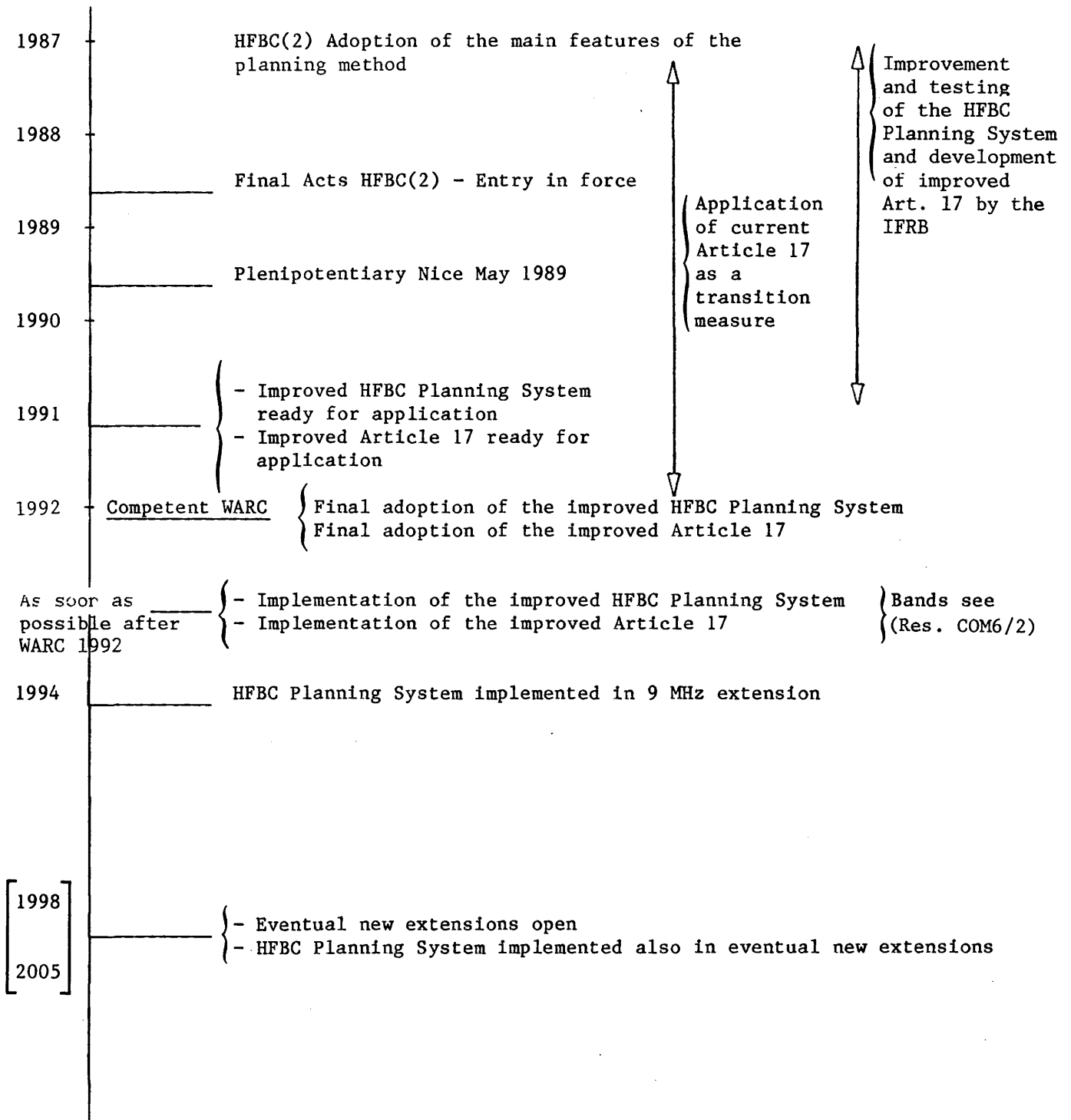
to bring this Resolution to the attention of the Administrative Council.

Note - The programme of action is illustrated in the annex.

J.K. BJÖRNSJÖ  
Chairman

Annex: 1

ANNEX



PLENARY MEETING

MINUTES

OF THE

FOURTEENTH PLENARY MEETING

Thursday, 5 March 1987, at 1810 hrs

Chairman: Mr. K. BJÖRNSJÖ (Sweden)

Subject discussed:

Document

1. Report by the Chairman of  
 Committee 6 (continued)

243

1. Report by the Chairman of Committee 6 (continued) (Document 243)

Section [2]: Procedures based on consultations - Option 2 (continued)

1.1 The delegates of Kenya and the Netherlands said it was essential to retain paragraph 13.

1.2 The delegate of Algeria said that in view of the opinions expressed, he would not insist on his request for the deletion of paragraph 13.

It was agreed to delete the square brackets round the paragraph.

1.3 The delegate of Italy pointed out that the French text of paragraph 14 should be aligned with the English text.

Draft section [3]: Procedures relating to the HFBC Planning System

1.4 The Chairman said he assumed that, as in the case of draft section [2], the Plenary would use option 2 which had been developed at a later stage in Committee 5 and constituted a simplification of the procedure.

1.5 The delegate of the USSR said he could not agree to the use of option 2 because, in essence, it changed the consideration of the Planning System. Moreover, it had been developed in a Working Group and had not been discussed by Committee 6, and it was not at present possible to anticipate what the consequences of its use would be.

1.6 The delegates of Algeria, Brazil, Pakistan and India supported the use of option 2 which they considered the best among the possible solutions.

1.7 The delegate of France said that because the contents of Document DT/68 had not been approved by Committee 5 and it included reservations by some delegations, he could not agree to the Chairman's proposal to use option 2, unless Document DT/68 became an official conference document to which reference could be made in future.

1.8 The Chairman said that to solve the procedural difficulties, Documents DT/67 and DT/68 would be annexed to the minutes of the meeting.

1.9 The Chairman invited the meeting to consider those parts of option 1 which were the same as option 2 and to insert the relevant paragraphs from option 2 as appropriate.

It was agreed to delete the title "option 1" and paragraph 1.

It was agreed to delete the square brackets round Appendix 2, in paragraph 3.

1.10 The delegate of India said that after deletion of the sets of square brackets in the second part of paragraph 4, as proposed by the Chairman of Committee 6, the wording should be slightly amended to read:

"... the requirements appearing in the requirements file for the season under consideration are confirmed if they were operational in the previous season."



It was so agreed.

It was agreed to remove the square brackets round "the attachment" in paragraphs 5 and 6.

1.11 The representative of the IFRB (Mr. Brooks) suggested that in paragraph 6 a) the word "shall" should be changed to "will" and in paragraph 6 b) the words "planned bands" should be changed to "seasonal plan".

It was so agreed.

It was agreed to remove the square brackets in paragraphs 7 and 8 and to delete paragraphs 9 to 12 altogether.

1.12 The delegate of Denmark proposed that the word "adversely" should be inserted before the words "affecting those requirements". The delegate of Algeria said that if he had understood the proposed simplification of the procedure in option 2 correctly, he saw no need for paragraph 13, and he proposed that it be deleted. The representative of the IFRB (Mr. Berrada) outlined and explained the procedure involved in the application of Rules N1 to N5.

1.13 Following a suggestion by the representative of the IFRB (Mr. Brooks), it was agreed that paragraph 13 should be amended to read:

"The Board shall establish a time limit for administrations to submit new requirements and shall process these requirements and attempt to insert them in the seasonal plan following the steps indicated in the attachment without adversely affecting those requirements already entered in the seasonal plan."

There would then be a consequential amendment to section 2, where paragraph 8 should be moved to a place between paragraphs 4 and 5 to provide the possibility for administrations to be consulted on the requirements that were impossible to satisfy, but under the improved Article 17 procedure.

It was agreed to delete paragraph 14 together with the footnote relating thereto.

It was agreed to amend paragraph 15 by inserting the word "adversely" in the third line before "affecting" and deleting the two footnotes in square brackets.

#### Attachment to section [3]

It was agreed to delete the first nine lines of the heading, which would then read:

"RULES APPLICABLE TO THOSE HF BANDS EXCLUSIVELY ALLOCATED TO BROADCASTING THAT ARE TO BE PLANNED".

It was agreed to delete paragraph I.1 in the Introduction, to remove the square brackets around paragraph I.2, to amend the word "annex" to read "attachment" in paragraph I.2.

## II. DEFINITIONS

1.14 The delegate of Brazil asked for the Spanish translation of "appropriate" in definition II.1 to be aligned with the English and French by the Editorial Committee.

1.15 The delegate of the United Kingdom thought that Part II, Definitions, might also have a place in the procedures for the improved Article 17. The same comment also applied to Parts II, IV, V and VIII.

1.16 The Secretary-General said that that matter raised a broader issue. He and the Chairman had been asked to give some thought to a partial revision of the revised Radio Regulations as a result of HFBC(2). They had concluded that a modification of Article 17, Appendix 2 and minor modifications to Appendix 7 would be needed as well as possible provision for definitions and technical parameters concerning the use of the HF bands exclusively allocated to broadcasting. It would be useful for the Plenary to decide whether or not it wished to have definitions II.1-10 in the Radio Regulations, representing regulatory requirements for the future.

1.17 The Chairman observed that the option was to place the definitions into the Annex of the Appendix to the Radio Regulations. They would then apply both to the HFBC Planning System and the improved consultation procedure.

1.18 The representative of the IFRB (Mr. Berrada) enquired whether the principles behind the definitions were to be applied with the current Article 17. His understanding was that the Radio Regulations contained only those definitions that were required by the provisions of the Radio Regulations.

1.19 The Secretary-General replied that consideration would have to be given to the entry into force of the particular provisions, but that it was for the Conference itself to decide whether to include the definitions in the Radio Regulations or only in the Final Acts in a Resolution.

1.20 The delegate of the United States considered that the best place for the definitions would be in a Resolution rather than in the Radio Regulations proper. They could be included in the Radio Regulations following the decisions taken at the 1992 Conference concerning the improved Article 17 procedure and the Planning System.

1.21 The delegate of the United Kingdom said that he had in fact raised a simpler matter, namely which parts of the attachment under discussion were relevant to both the improved HFBC Planning System and the work of the IFRB on improving Article 17. The Chairman of Committee 6 explained that the whole of the attachment applied to section 3, and parts to section 2, paragraphs 5 and 10 which, in fact, contained cross-references to the attachment.

1.22 The delegate of Papua New Guinea did not think that the definitions related at all to the existing Article 17, for that was serviced by the definitions in Article 1, which were to stand. To change Article 1 would be very difficult. He believed that the definitions under discussion referred to the improved Article 17 and the HFBC method, and should be kept distinct. Moreover, he would prefer to have the definitions mentioned in a Resolution in the Radio Regulations, with separate documentation, for which many precedents existed.

1.23 The Secretary-General added that he and the Chairman had concluded that a new appendix was needed dealing with the peculiarities of the service, which could, if desired, include the definitions as well as the technical parameters relating to the use of the HF bands allocated exclusively to the broadcasting service. Hence there was a need for a new Appendix, possible 45 and the question was whether to have the definitions included in a Resolution for the time being, or a guideline for inclusion in an additional appendix being worked out later.

1.24 The delegate of Canada thought the best way of dealing with the matter was to have the definitions contained in a Resolution representing a self-contained package which could easily be transferred to an appendix at a later stage.

1.25 The delegate of the USSR endorsed that view.

1.26 The delegate of Algeria said that it might have been useful to have an introductory statement explaining the legal status of an appendix, a Resolution and a Recommendation.

1.27 The delegate of China pointed out that in the new Appendix 2 to the Radio Regulations the term "required service areas" was not defined and therefore had no legal standing.

1.28 The representative of the IFRB (Mr. Berrada) replied that since the notion of service area was specific to each service, it would be difficult to have a definition applicable to all services. In the case of Document 242, the term "required service area" was clearly defined by the text that followed. Regional Agreements, for instance that of Geneva 1975, contained a definition of service area in Appendix 30 of the Radio Regulations for the broadcasting service.

1.29 The delegate of Brazil thought that the definitions should be adopted in the form suggested in Document 243 or else annexed to a Resolution.

1.30 The Chairman observed that the general view seemed to be that the definitions should be included in an annex or attachment to a Resolution.

1.31 Replying to the delegate of India who asked where the principles adopted at the First Session would be included, the Secretary-General said that they would appear in the revised Article 17 to be re-titled "Planning and procedures for the bands allocated exclusively to the broadcasting service". That Article would contain an introduction, planning principles, a reference to the planning method and a consultation procedure, with independent regulations, from the present Article 17. If the Plenary now adopted suitable definitions they could be included in a new appendix together with the technical parameters in Document 242 that had been adopted.

It was agreed to remove the square brackets around Note 2.

### III. PROPAGATION PREDICTION METHOD

1.32 The Chairman of Committee 4 said that a footnote reading "see also Recommendation COM4/F" should be inserted with reference to the first sentence.

The Chairman of Committee 6 indicated some minor editorial amendments and said the square brackets could be removed. It was so agreed.

### IV. HFBC PLANNING SYSTEM

1.33 The delegate of Libya said that in order to make it clear that no CIRAF zone could be sub-divided into more than four smaller units the words "or more" on the first line of paragraph IV.4.1.1 should be replaced by "to four".

It was so agreed.

The Chairman of Committee 4 said he would provide the Editorial Committee with the references to be inserted in the square brackets.

1.34 The delegate of the United States said with reference to paragraphs IV.4.1.2 to IV.4.1.4, that the GIR was a fundamental parameter for determining incompatibility. In order to ensure that its implications were fully understood, he proposed that the above paragraphs should be provided with a footnote drawing attention to the Report of the IFRB to the Second Session of the Conference, which contained a description of the concepts behind the GIR, GGIR and MGIR and showed how they were determined.

1.35 The representative of the IFRB said it was not the usual practice for the Radio Regulations or the regulatory texts of conferences to contain a reference to such a document. He suggested instead that the note should refer readers to the CCIR Technical Standards and that the Board should have the passages in question inserted in those Technical Standards.

It was so agreed.

The delegate of Algeria was of the opinion that paragraphs IV.4.2 to IV.4.13 which made up a whole, should be recast as sub-paragraphs to a new paragraph IV.4.2 which would take the form of a suitable overall title.

It was agreed that the consideration of, and a decision on, the format of these paragraphs should be left to the Chairmen of Committees 6 and 7.

For paragraph IV.4.6, the text of option 2 was adopted, subject to removal of the square brackets and on the understanding that the Editorial Committee would insert the appropriate section number on the fifth line.

1.37 The Chairman of Committee 4 said that in view of earlier decisions the word "suspensions" on the fourth line of paragraph IV.4.7 (option 2) should be replaced by "transfer".

1.38 The Chairman of the IFRB suggested that the Editorial Committee be asked to amend the eighth line in order to make its meaning more apparent.

The paragraph was approved with those amendments, removal of the square brackets and on the understanding that the Editorial Committee would insert the appropriate section number on the ninth line.

1.39 In reply to the delegate of Syria, the representative of the IFRB (Mr. Berrada) confirmed that paragraph IV.4.9 (option 2) referred to a given requirement that might appear in two or three bands. He suggested, to make that clear, that the words "the requirements appearing in the MGIR are verified with the view" on the second line should be replaced by "each requirement appearing in the MGIR is verified with a view".

It was so agreed, as was removal of the square brackets and insertion of the appropriate section number.

1.40 Referring to the text of option 2 for paragraph IV.4.10, the delegate of Qatar said he had already, during the discussion of paragraph 1.4 of Document 231, expressed his reservation with regard to an RF protection ratio of less than 17 dB. He also had an engineering concern and consequent reservation on the paragraph under discussion, a planning step which triggered production of an RF protection ratio below 17 dB. In his view a step should be inserted

between paragraphs IV.4.9 and IV.4.10 providing for an increase in the hour/band concept to two hours/band or three hours/band in order to cover the congested period as a whole with a view to achieving equal access and so equal frequency/hours for all requirements in that period before starting to destroy them by further reducing the protection ratio below 17 dB in one hour/band units throughout the congested period. It was also his view that, from the engineering point of view, the Conference should not give the IFRB instructions to reduce the RF protection ratio indefinitely. A floor level should be indicated (such as 14, 11 or 8 dB) below which the protection ratio should not be allowed to fall.

That reservation was noted.

1.41 The Chairman of Committee 4 said that those doubts might well be resolved when the Plenary came to discuss the text on performance assessment which had been drafted by the ad hoc Group of the Plenary.

He noted that the words "Tentative Plan" on the twelfth line should be replaced by "seasonal plan".

It was agreed to remove the square brackets and insert the appropriate section number in the tenth and last lines.

1.42 In reply to a concern expressed by the delegate of Syria on paragraph IV.4.12 (option 2), the representative of the IFRB (Mr. Berrada) said that the paragraph in no way implied that frequency continuity could only be applied to frequencies transferred to Article 17. All it meant was, that when a frequency belonging to a requirement with frequency continuity was in a congested hour and had to be transferred to section 2 (Article 17), the other frequencies in the requirement were transferred with it if the administration concerned indicated, after consultation by the Board, that it wished to retain frequency continuity in that requirement.

It was agreed to remove the square brackets and insert the appropriate section numbers in the first and last lines.

1.43 In reply to the delegates of China and the United States who pointed out that there was an inconsistency between paragraph IV.4.13 and the next text just adopted for paragraph IV.4.12, the Chairman of Committee 6 proposed that the text of the entire paragraph be replaced by:

"Requirements received by the IFRB after the beginning of the planning exercise are entered in the Plan on the condition that they do not adversely affect the requirements already entered in the Plan. In applying this provision a requirement already entered in the Plan with a protection ratio exceeding 17 dB is deemed to be adversely affected if its protection ratio is reduced below 17 dB. A requirement already entered in the Plan with a protection ratio lower than 17 dB is deemed to be adversely affected if its protection ratio is reduced by more than 1 dB.\*".

It was so agreed.

## V. RELIABILITY

It was agreed to leave paragraph V.2, including Table C-3 and Figure C-2, paragraph V.4 including paragraph C-5 and section V.5 including Tables C-6 and C-7 in abeyance.

VI. PROPORTIONALLY REDUCED PROTECTION (PRP)

It was agreed to remove the square brackets around "80%" in indent 1) and around "Z" in indent 3) and in the second sub-paragraph, replacing Z by 10.

VII. MAXIMUM NUMBER OF FREQUENCIES REQUIRED PER REQUIREMENT

Approved.

VIII. PERFORMANCE ASSESSMENT

It was agreed to leave the section in abeyance.

Annex 2

1.44 The Chairman, replying to the representative of Ecuador and Spain, said that minor inconsistencies in the table in Annex 2 would be rectified by Committee 7.

Miscellaneous provisions (resumed)

1.45 The Chairman of the IFRB, recalling that the Plenary at its preceding meeting had introduced an amendment in the text of Resolution COM6/1, said that paragraph 17 of section 2 (option 2) should be amended in consequence to read: "... not only on the factors listed in No. 1454 but also on past experience in broadcasting planning and on the experience gained by the Board in the application of the provision of this Article (see also Resolution COM6/1)."

It was so agreed.

IV. (resumed)

1.46 The delegate of the United States said that the adoption of a provision concerning actions relating to harmful interference was essential to the effective functioning of the planning approach. He accordingly proposed a new paragraph IV.4.14 consisting of the text of paragraph 4.2.5 of the Report to the Second Session of the Conference.

1.47 The delegates of the Federal Republic of Germany, the United Kingdom, Canada, Italy, France, Japan, Portugal, Botswana, Greece and Spain supported that proposal.

1.48 The delegate of Syria said that his Delegation too believed that interference exercised a negative effect on the Plan. However, paragraph 4.2.5 had been included in the Report of the First Session on the assumption that all requirements were going to be assigned under the Planning System. Now that requirements affected by harmful interference were to be transferred to Article 17, there was no need to repeat the paragraph.

1.49 The Chairman said that, in view of the extensive support it had received, he would consider the United States proposal carried.

It was so agreed.

1.50 The delegate of the United States drew attention to the United States proposal referred to in paragraph 6 of the note from the Chairman of Committee 6 (Document 243) and said that a document on the subject would be circulated before the next Plenary Meeting.

That statement was noted.

Document 243, as amended in the discussion and subject to further editorial corrections was approved.

The meeting rose at 2335 hours.

The Secretary-General:

R.E. BUTLER

The Chairman:

K. BJÖRNSJÖ

Annex

HFBC (2)

INTERNATIONAL TELECOMMUNICATION UNION  
WARC FOR THE PLANNING OF THE HF BANDS  
ALLOCATED TO THE BROADCASTING SERVICE  
SECOND SESSION, GENEVA, February-March 1987

Document DT/67-E  
2 March 1987  
Original: English

AD HOC 5

REPORT OF THE CHAIRMAN OF THE DRAFTING GROUP  
ON REVISED ARTICLE 17 TO AD HOC 5

It was understood that this Drafting Group was established to simplify the proposed revision of Article 17.

Document 177 was used as a basis for the whole of the Group.

The recommended changes are contained in the annex to this report.

The Drafting Group re-examined the provisions in boxes 6-8 whereby the IFRB selects the frequencies on behalf of administrations. While it was noted that there would be a saving if this feature was deleted, it was recognized that administrations could request this same assistance under Article 10, No. 999.

During the consideration of the deletion of boxes 15-19 inclusive, it was recognized that this would save one round of consultation (perhaps two months) and reduce the burden on the IFRB. One administration, however, expressed a concern that, while the calculation of incompatibilities under box 22 would replace those previously carried out under box 18, the results would not be available as early.

Some delegates objected to additional requirements submitted after the publication of the seasonal schedule (see old box 21). This concern is reflected in the square brackets around box 16.

Another administration favoured the retention of the flow chart as contained on page 6 in Document 177 and in particular was of the view that boxes 14-19 provided more opportunities for the resolution of incompatibilities.

The Drafting Group realized that the recommended changes will not result in any reduction in the required software development by the IFRB.

E.D. DuCHARME  
Chairman

Annex: 1



ANNEX

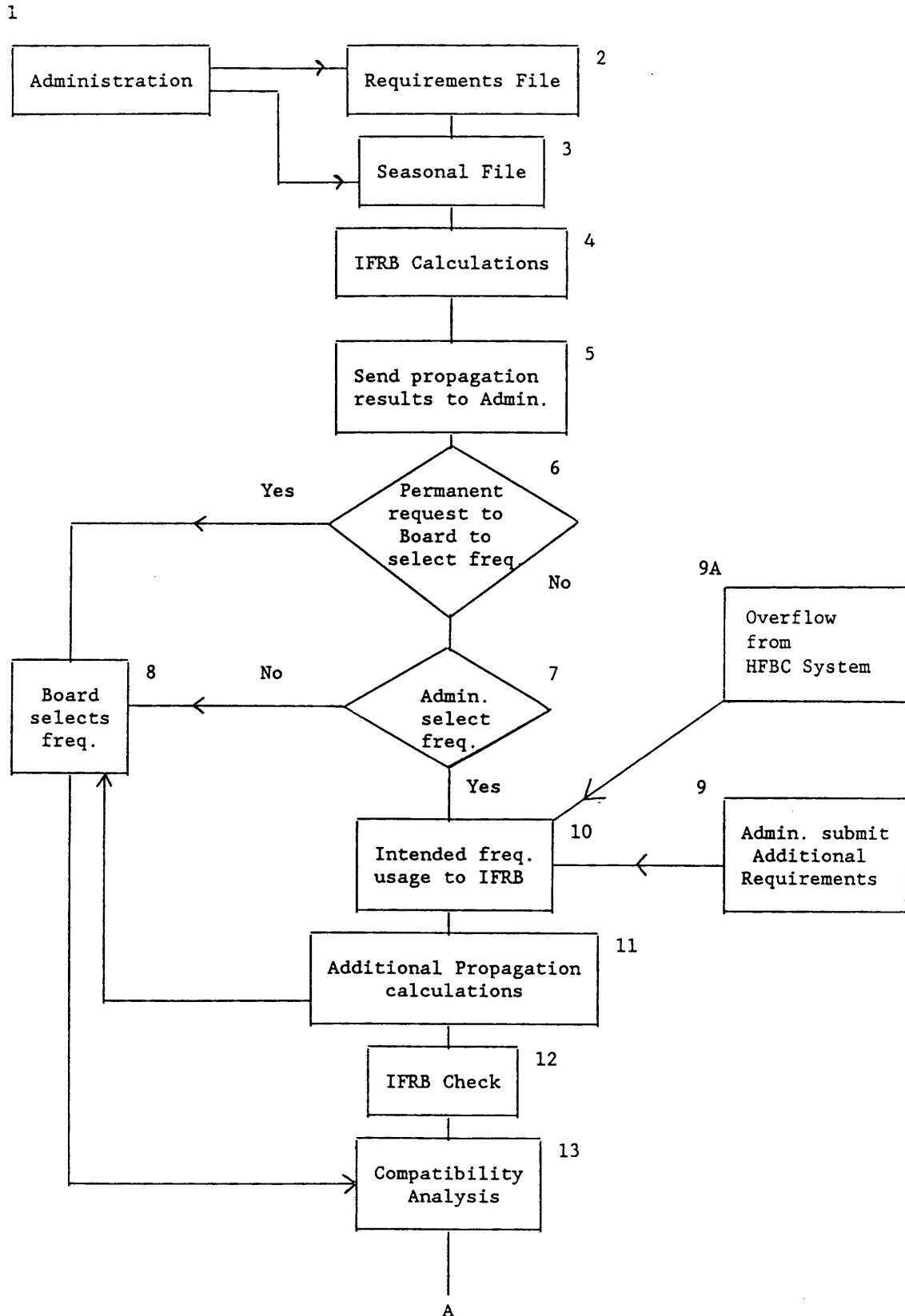
Proposed modifications to revised Article 17

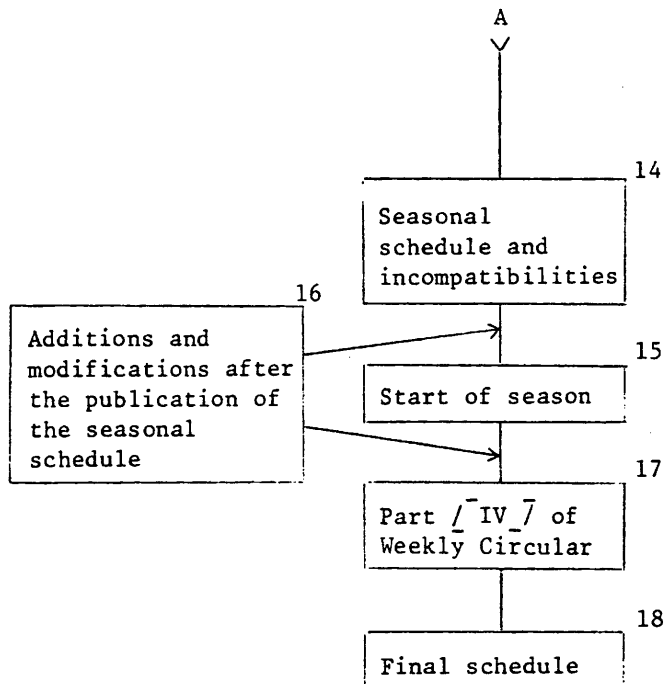
1. Boxes 1-13 are unchanged except for the addition of Box 9A:  
  
9A Those requirements that cannot be included in the seasonal schedule as a result of the Planning System are entered into the Article 17 process.
2. Boxes 14-23 are replaced by the following.
14. The Board publishes the seasonal schedule containing for each transmission:
  - frequency;
  - the notifying administration;
  - identification number of the requirement in the requirements file;
  - the transmitter site;
  - the hours of operation, including specifics when not on a daily basis;
  - the number of frequencies for the requirement;
  - the required service area (see Document 161, paragraph 1.3);
  - the transmitter power;
  - antenna characteristics (see annex to Document 132).

Associated with the draft seasonal schedule, the Board will provide information on the frequency incompatibilities. In addition, the Board will provide, in a timely manner and on request, all other information deemed necessary by an administration.

Administrations are urged to take all possible actions to resolve incompatibilities prior to the start of the season.

15. Start of season.
16. [Additions and modifications after publication of the seasonal schedule. Administrations are urged to refrain from submitting additional requirements at this stage. This should be done at box 9.]
17. IFRB publishes the information received under step 16 in part IV of the Weekly Circular. The Board will make an incompatibility analysis and publish the results with respect to the information received under step 16.
18. The final schedule is not needed to be published. However, the information on the frequency usage during the season may be made available upon request to an administration, on magnetic tape.





HFBC (2)

INTERNATIONAL TELECOMMUNICATION UNION  
WARC FOR THE PLANNING OF THE HF BANDS  
ALLOCATED TO THE BROADCASTING SERVICE  
SECOND SESSION, GENEVA, February-March 1987

Document DT/68-E  
2 March 1987  
Original: English

5 AD HOC GROUP

REPORT OF THE CHAIRMAN OF THE DRAFTING GROUP ON THE HFBC PLANNING SYSTEM

The Drafting Group considered the proposed approach to planning consisting in entering a first requirement for each administration in the seasonal plan followed by a second requirement and so on until it is impossible to do so.

The Group concluded that this approach would require an administration to indicate some order of priorities as between its requirements.

While this approach will avoid suspensions because those requirements which cannot be included will automatically be accommodated under the Article 17 procedure, it was concluded that it may lead to difficulties for some administrations and would require significant changes to the software. Consequently the Group felt that it would be preferable to use the available software as far as possible to meet the same objective with only a limited degree of modification.

2. The alternative approach suggested by the Drafting Group would meet two basic objectives:

- i) avoid elimination of requirements, and
- ii) ensure equal treatment as between administrations.

In considering the alternative approach the Group encountered a significant difficulty in ensuring mandatory frequency continuity within the duration of a requirement while, at the same time, applying the transfer rules.

3. The proposed approach is briefly described below:

3.1 Administrations when submitting their requirements shall indicate which requirements should be planned and which should be accommodated under Article 17. In so doing the Administrations should preferably include in the Article 17 part those requirements for which frequency continuity is considered to be crucial.

3.2 The Administrations shall also indicate among the requirements to appear in the planned part those requirements for which Type 1 frequency continuity shall be applied in any case. In so doing the Administration will be deemed to have accepted that if in a given hour the requirement cannot be entered in the plan, the requirement through whole of its transmission period within the appropriate band will be transferred to the Article 17 procedure.

3.3 The HFBC Planning System shall be applied to those requirements which the Administration wishes to be accommodated in the planned part and the rules N<sub>1</sub> to N<sub>4</sub> will be applied as transfer rules from the HFBC Planning System to the Article 17 procedure and the rule N<sub>5</sub> will be applied, if required to the requirements which are not transferred. Consequently those requirements that cannot be satisfied by the Planning System will be transferred and treated under the Article 17 procedure.

3.4 Frequency continuity of Type 1 will be ensured for the requirements entered in the HFBC Planning System under the conditions specified in Document 198. However, where a transfer to Article 17 procedure occurs only during a part of the duration of the requirement, frequency discontinuity will be inevitable. In such a case the requirement will be transferred to the Article 17 procedure during its entire duration within the appropriate band if the Administration has indicated that frequency continuity is essential.

4. This approach represents the conclusions reached within the Drafting Group. However, some participants stated that this should not imply their agreement without reservation because of possible implications.

O.P.KHUSHU  
Chairman of the Drafting Group

PLENARY MEETING

United States of America

RESOLUTION

Relating to the Improvement in the Use of the  
HF Bands Allocated to the Broadcasting Service  
by Avoiding Harmful Interference

The attached resolution would serve to renew the mandate of Resolution COM 5/1 of the First Session, which authorized the IFRB to organize monitoring by administrations of harmful interference in the HF broadcast bands. The Board's report on the results of the intersessional monitoring is contained in Document 9 of the Second Session. This resolution would enable the IFRB to organize periodic monitoring of such interference, as circumstances may warrant, in the future.

Annex : 1

Annex

RESOLUTION

**Relating to the Improvement in the Use of the  
HF Bands Allocated to the Broadcasting Service  
by Avoiding Harmful Interference**

The World Administrative Radio Conference for the Planning of the HF Bands Allocated to the Broadcasting Service (Geneva, 1987),

considering

- a) Article 4 (No. 19) of the International Telecommunication Convention concerning the purposes of the Union;
- b) Article 10 (Nos. 79 and 80) of the International Telecommunication Convention concerning the duties of the IFRB;
- c) Article 35 (No. 158) of the International Telecommunication Convention concerning harmful interference;
- d) Article 54 (No. 209) of the International Telecommunication Convention concerning the instructions which may be given to the IFRB by a world administrative radio conference;
- e) Article 20 of the Radio Regulations concerning the international monitoring system;
- f) Article 18 (No. 1798) of the Radio Regulations concerning measures against interference;
- g) Article 22 of the Radio Regulations concerning the procedure in cases of harmful interference;
- h) Report by the IFRB on the Implementation of Resolution COM5/1 of the First Session (Geneva, 1984),

noting

- a) that harmful interference has a negative impact on the use of the frequency spectrum in general and on the use of frequency channels available for high frequency broadcasting in particular;
- b) that broadcasting on channels adjacent to those being affected directly may also be subject to interference;
- c) that a considerable number of high frequency broadcasting channels in various parts of the world are rendered useless by harmful interference;
- d) that the successful implementation of an HFBC Planning System would be adversely affected by the presence of harmful interference,

recognizing

- a) that it is desirable for detailed information on the extent and impact of harmful interference to be available on a periodic basis;
- b) that an increase in the number of stations participating in the international monitoring system and the effective use of the information obtained from such stations would be of considerable assistance;

urges administrations

to avoid causing harmful interference,

instructs the IFRB

in accordance with the Radio Regulations,

1. to organize periodic specialized monitoring programmes in the bands allocated to the high frequency broadcasting service with a view to identifying stations causing harmful interference;
2. to seek, as appropriate, the cooperation of administrations in identifying the sources of emissions which cause harmful interference and to provide this information to administrations;
3. to issue summaries of the monitoring data, including identification of all transmissions which have been reported with a class of emission different from the one used for broadcasting;
4. to inform the Administrative Conference referred to in Resolution [ ] of the results of the activities referred to in 1, 2 and 3 above,

invites administrations

1. to take part in monitoring programmes set up by the IFRB in accordance with the provisions of this Resolution;
  2. to apply the provisions of Article 22 of the Radio Regulations in case of harmful interference.
-



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:

<u>Source</u>	<u>Documents</u>	<u>Title</u>
COM.7	234 (B.7)	Appendix [COM4/A] Parts A and B
COM.7	187(Rev.1) (B.5(Rev.1))	Resolution COM6/1

D. SAUVET-GOICHON  
Chairman of Committee 7

Annex: 5 pages

APPENDIX COM4/A TO THE RADIO REGULATIONS<sup>1</sup>**Double-Sideband (DSB) and Single-Sideband (SSB) System Specifications  
in the HF Bands Allocated to the Broadcasting Service**

## PART A

Double-sideband system1. Planning parametersChannel spacing

The nominal spacing for DSB shall be 10 kHz. However, the interleaved channels with a separation of 5 kHz may be used in accordance with the relative protection criteria, provided that the interleaved emission is not to the same geographical area as either of the emissions between which it is interleaved.

2. Emission characteristics2.1 Nominal carrier frequencies

Nominal carrier frequencies shall be integral multiples of 5 kHz.

2.2 Audio-frequency band

The upper limit of the audio-frequency band (at -3 dB) of the transmitter shall not exceed 4.5 kHz and the lower limit shall be 150 Hz, with lower frequencies attenuated at a slope of 6 dB per octave.

2.3 Modulation processing

If audio-frequency signal processing is used, the dynamic range of the modulating signal shall be not less than 20 dB.

2.4 Necessary bandwidth

The necessary bandwidth shall not exceed 9 kHz.

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<sup>1</sup> [The provisions of this appendix will take effect from the date of entry into force of the Final Acts of the WARC 1992 (see Resolution No.     ).]

## PART B

Single-sideband system1. Planning parameters1.1 Channel spacing

During the transition period (see Resolution COM4/2), the channel spacing shall be 10 kHz. In the interest of spectrum conservation, during the transition period, it is also permissible to interleave SSB emissions midway between two adjacent DSB channels, i.e., with 5 kHz separation between carrier frequencies, provided that the interleaved emission is not to the same geographical area as either of the emissions between which it is interleaved.

After the end of the transition period the channel spacing and carrier frequency separation shall be 5 kHz.

1.2 Equivalent sideband power

When the carrier reduction relative to peak envelope power is 6 dB, an equivalent SSB emission is one giving the same audio-frequency signal-to-noise ratio at the receiver output as the corresponding DSB emission, when it is received by a DSB receiver with envelope detection. This is achieved when the sideband power of the SSB emission is 3 dB larger than the total sideband power of the DSB emission. (The peak envelope power of the equivalent SSB emission and the carrier power are the same as that of the DSB emission.)

2. Emission characteristics2.1 Nominal carrier frequencies

Nominal carrier frequencies shall be integral multiples of 5 kHz.

2.2 Frequency tolerance

The frequency tolerance shall be 10 Hz.\*

2.3 Audio-frequency band

The upper limit of the audio-frequency band (at -3 dB) of the transmitter shall not exceed 4.5 kHz with a further slope of attenuation of 35 dB/kHz and the lower limit shall be 150 Hz with lower frequencies attenuated at a slope of 6 dB per octave.

2.4 Modulation processing

If audio-frequency signal processing is used, the dynamic range of the modulating signal shall be not less than 20 dB.

2.5 Necessary bandwidth

The necessary bandwidth shall not exceed 4.5 kHz.

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\* See Note 21) to Appendix 7 to the Radio Regulations.

## 2.6 Carrier reduction (relative to peak envelope power)

During the transition period the carrier reduction shall be 6 dB to allow SSB emissions to be received by conventional DSB receivers with envelope detection without significant deterioration of the reception quality.

At the end of the transition period, the carrier reduction shall be 12 dB.

## 2.7 Sideband to be emitted

Only the upper sideband shall be used.

## 2.8 Attenuation of the unwanted sideband

The attenuation of the unwanted sideband (lower sideband) and of intermodulation products in that part of the emission spectrum shall be at least 35 dB relative to the wanted sideband signal level. However, since there is in practice a large difference between signal amplitudes in adjacent channels, a greater attenuation is recommended.

## 3. Characteristics of the reference receiver

The reference receiver has the main characteristics as given below. For more detailed characteristics see the relevant CCIR Recommendations.

### 3.1 Noise limited sensitivity

The value of the noise limited sensitivity is equal to or less than 40 dB( $\mu$ V/m).

### 3.2 Demodulator and carrier acquisition

The reference receiver is equipped with a synchronous demodulator, using for the carrier acquisition a device which regenerates a carrier by means of a suitable control loop which locks the receiver to the incoming carrier. The reference receiver should work as well with DSB emissions as with SSB emissions having a carrier reduced to 6 or 12 dB below peak envelope power.

### 3.3 Overall selectivity

The reference receiver has an overall bandwidth (at -3 dB) of 4 kHz, with a slope of attenuation of 35 dB/kHz.

Note - Other combinations of bandwidth and slope of attenuation are possible, as given below, and will provide the same performance at 5 kHz carrier difference.

Slope of attenuation	Overall bandwidth (-3 dB)
25 dB/kHz	3 300 Hz
15 dB/kHz	2 700 Hz

## RESOLUTION COM6/1 (HFBC-87)

**Procedure to be Applied by the IFRB in the Revision of the  
Relevant Parts of its Technical Standards Used in the HF Bands  
Allocated Exclusively to the Broadcasting Service**

The World Administrative Radio Conference for the Planning of the HF Bands Allocated to the Broadcasting Service (Geneva, 1987),

considering

- a) that it has examined in detail the technical parameters used in the HF bands allocated exclusively to the broadcasting service;
- b) that the planning exercises conducted by the IFRB in the intersessional period indicated that some of the technical parameters, such as those used in the propagation prediction method, may need to be improved, and applied with some flexibility, depending on the results of the actual regular implementation of plans and the technical studies carried out by the CCIR;
- c) that, under No. 1001 of the Radio Regulations, the functions of the Board include the development of its Technical Standards;
- d) that, under No. 1454 of the Radio Regulations, the Technical Standards of the IFRB shall be based, inter alia, on:
  - the relevant provisions of the Radio Regulations and the Appendices thereto,
  - the decisions of administrative conferences of the Union, as appropriate,
  - the Recommendations of the CCIR,
  - the state of the radio art,
  - the development of new transmission techniques,

account being taken of exceptional propagation conditions which may prevail in certain regions;

- e) that, in accordance with No. 1770 of the Radio Regulations, the Technical Standards of the IFRB shall be based on the items listed in paragraph d) above, on past experience in broadcasting planning, and on the experience gained by the Board in the application of the provisions of Article 17 of the Radio Regulations;

f) that, with respect to the Technical Standards of the IFRB, the CCIR could provide competent advice on technical matters;

g) the importance of the active involvement of administrations in the process of revising the technical parameters,

resolves

1. that, following each CCIR Plenary Assembly, the IFRB shall review its Technical Standards relating to the technical parameters of HF broadcasting in the light of new or modified CCIR Recommendations, and shall circulate to all administrations the results of its review, indicating the reasons for its proposed actions;

2. that, whenever the IFRB considers it appropriate to review its Technical Standards relating to the technical parameters of HF broadcasting without departing from the decisions of this Conference, it shall circulate to all administrations the proposed changes and the reasons for them;

3. that, before implementing any changes, the IFRB shall request administrations to provide their comments on the subjects referred to in resolves 1 and 2 within 4 months, and shall take them into account, unless it would be impossible to do so;

4. that the IFRB shall circulate a summary of comments received from administrations, together with the Board's views thereon, indicating whether a meeting of experts is necessary or not, before a final decision is taken. If a significant number of replies subsequently received from administrations supports the need for such a meeting, the Board shall proceed accordingly. If not, the Board shall inform the administrations accordingly and allow an appropriate period for further comments before taking its final decision on the implementation of the proposed changes;

5. that if, on the subject referred to in point 1 above and following the action mentioned in points 3 and 4 above, the Technical Standards of the IFRB are not modified, the IFRB shall prepare a contribution to the CCIR indicating the provisions of the new or modified CCIR Recommendations that were not included in the IFRB Technical Standards, together with any information required for further study of the matter.

# HFBC (2)

INTERNATIONAL TELECOMMUNICATION UNION  
WARC FOR THE PLANNING OF THE HF BANDS  
ALLOCATED TO THE BROADCASTING SERVICE  
SECOND SESSION, GENEVA, February-March 1987

Document 257-E  
5 March 1987  
Original : English

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Note by the Secretary-General

At the request of the delegation of the German Democratic Republic,  
I transmit herewith, for information, a copy of a letter received from this  
delegation.

R.E. BUTLER  
Secretary-General

Annex : 1

A N N E X

DELEGATION OF THE GERMAN DEMOCRATIC REPUBLIC TO THE  
SECOND SESSION OF THE WARC FOR THE PLANNING OF THE HFBC

5 March 1987

Mr. J. K. Björnsjö  
Chairman  
Second Session of the WARC  
for the Planning of the HFBC  
Geneva


Mr. Chairman,

With reference to the statement of the delegation of the Union of Soviet Socialist Republics of 2 March 1987 concerning the fact that the delegation of the Federal Republic of Germany to the present session includes Mr. Bodo Wysocki and Mr. Horst Gehrke, the delegation of the German Democratic Republic feels prompted to state the following:

The delegation of the German Democratic Republic fully supports the statement of the Soviet delegation.

In this connection, I feel compelled to reiterate the view of the German Democratic Republic that under the Quadripartite Agreement of 3 September 1971 Berlin (West) continues not to be a constituent part of the Federal Republic of Germany and not to be governed by it. For this reason, the above-mentioned persons are not entitled to take part in this session in their present capacity.

Please accept, Mr. Chairman, the assurances of my highest consideration.

  
Herbert Goetze

Acting Head of Delegation



**HFBC (2)**

INTERNATIONAL TELECOMMUNICATION UNION  
**WARC FOR THE PLANNING OF THE HF BANDS  
ALLOCATED TO THE BROADCASTING SERVICE**  
SECOND SESSION, GENEVA, February-March 1987

Addendum 1 to  
Document 258-E  
6 March 1987

B.11(Add.1)

PLENARY MEETING

ELEVENTH SERIES OF TEXTS SUBMITTED BY THE  
EDITORIAL COMMITTEE TO THE PLENARY MEETING

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

<u>Source</u>	<u>Documents</u>	<u>Title</u>
COM.6	243	Resolution COM6/2 (HFBC-87) Annex to section 3
PL	DT/70	Resolution No. 91 (HFBC-87)

D. SAUVET-GOICHON  
Chairman of Committee 7

Annex: 23 pages

## ANNEX TO SECTION 3

**Rules Applicable to the HF Bands which are Allocated Exclusively  
to the Broadcasting Service and are to be Planned****I.        INTRODUCTION**

I.1        The planning of HF broadcasting in accordance with sections [--] and [--] of Article 17 shall be based on the criteria and method contained in this Appendix.

I.2        The application of this Appendix shall ensure the best possible use of all the available channels.

**II.       DEFINITIONS****II.1      Appropriate frequency band**

The appropriate band for a requirement is the band which will ensure the continuity of use of the same frequency during the longest possible period of operation, with the best possible values of basic broadcast reliability (BBR)\*, taking account of propagation conditions, operational limitations and equipment availability and constraints.

**II.2      Circuit reliability**

Probability for a circuit that a specified performance is achieved at a single frequency.

**II.3      Reception reliability**

Probability for a receiver that a specified performance is achieved, taking into account all transmitted frequencies.

**II.4      Broadcast reliability**

Probability for a service area that a specified performance is achieved, taking into account all transmitted frequencies.

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\* The English acronyms are used in all three working languages for the sake of uniformity.

Note 1 - In the above terms, circuit means a one-way transmission from one transmitter to one receiving location.

Note 2 - The term "reliability" is qualified by the word "basic" when the background consists of noise alone.

Note 3 - When the background consists of both noise and interference, the term "reliability" may relate either to the effects of a single interferer or to multiple interference from co-channel and adjacent-channel transmissions.

Note 4 - The specified performance is expressed by a given value of signal-to-noise ratio or signal-to-(noise and interference) ratio.

Note 5 - The term "reliability" relates to one or more periods of time, which shall be stated.

## II.5 Percentile

The X percentile (X%) value for a given set of values is defined by the following conditions:

- 1) the X% value is a member of the set of values;
- 2) the X% value is that value which is equal to or exceeded by at least X per cent of the members in the set;
- 3) the X% value is the largest value satisfying conditions 1 and 2.

## II.6 Radio-frequency (RF) wanted-to-interfering signal ratio

The ratio, expressed in dB, between the values of the radio-frequency voltage of the wanted signal and the interfering signal, measured at the receiver input under specified conditions<sup>1</sup>.

## II.7 Relative radio-frequency protection ratio

The difference, expressed in dB, between the protection ratio when the carriers of the wanted and unwanted emissions have a frequency difference of  $\Delta F$  (Hz or kHz) and the protection ratio when the carriers of these emissions have the same frequency.

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<sup>1</sup> The specified conditions include such diverse parameters as: spacing  $\Delta F$  of the wanted and interfering carrier, emission characteristics (type of modulation, modulation depth, carrier-frequency tolerance, etc.), receiver input level, as well as the receiver characteristics (selectivity, susceptibility to cross-modulation, etc.).

## II.8 Term relating to the service area

- Required service area (in HF broadcasting): The area within which an administration proposes to provide a broadcasting service.

## II.9 Minimum usable field strength ( $E_{\min}$ )<sup>1</sup>

Minimum value of the field strength necessary to permit a desired reception quality, in specified receiving conditions, in the presence of natural and man-made noise, but in the absence of interference from other transmitters.

## II.10 Usable field strength ( $E_u$ )<sup>1</sup>

Minimum value of the field strength necessary to permit a desired reception quality, in specified receiving conditions, in the presence of noise and interference, either in an existing situation or as determined by agreements or frequency plans.

## III. PROPAGATION PREDICTION METHOD

The propagation prediction method to be used shall be that contained in the Technical Standards of the IFRB.<sup>2</sup> For propagation prediction purposes, the year shall be sub-divided into four seasons and predictions shall be made for a single month to represent a season, as specified in section 1 (HFBC requirements file).

The solar index to be used for planning shall be the 12-month running mean sunspot number  $R_{12}$ . The seasonal plan shall be prepared in accordance with the values of  $R_{12}$  for the period concerned. The lowest value of  $R_{12}$  predicted for any of the months in that season shall be used.

## IV. HFBC PLANNING SYSTEM

### IV.1 Test points

The set of test points listed in the Technical Standards of the IFRB shall be used to represent the CIRAF zones and quadrants for planning purposes (see also IV.4.1.1).

Where a required service area, as notified by an administration in conformity with Appendix 2, does not include a test point, the IFRB shall establish a new test point and include it in the Technical Standards. Such additions to the Technical Standards shall be distributed to administrations (Nos. 1001 and 1001.1 of the Radio Regulations).

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<sup>1</sup> The terms "minimum usable field strength" and "usable field strength" refer to the specified field strength values which a wanted signal must have in order to provide the required reception quality.

In determining whether these requirements are met, the median value (50%) of a fading signal should be used.

<sup>2</sup> See also Recommendation COM4/F.

## IV.2 Planning constraints

### IV.2.1 Preset frequency

When an administration indicates that its facilities can operate only on a limited number of fixed specified frequencies, the planning method shall take this into account as indicated in section IV.4.11.

### IV.2.2 Limited use of the frequency bands

- a) When an administration indicates that its facilities can operate only in a given frequency band, only frequencies from that band shall be included in the plan.
- b) When an administration indicates a preferred frequency band, the system shall attempt to select a frequency from this band. If this is impossible, frequencies from the nearest appropriate band shall be tried. Otherwise the system will select frequencies from the appropriate band, taking into account the equipment constraints referred to in section IV.2.1.

### IV.2.3 Power

- a) When an administration indicates only a single power value due to equipment constraints, it shall be used in the planning process.
- b) When an administration indicates several possible power values, the appropriate value shall be used to achieve the basic circuit reliability, and a single power value shall be determined for the duration of the emission.

### IV.2.4 Antenna

When an administration indicates that its antenna can operate only in a given frequency band, only frequencies from that band shall be included in the plan.

### IV.2.5 Preferred frequency

In accordance with the planning principles and without imposing constraints on planning, the following provisions shall be applied in the seasonal plans:

- 1) administrations may indicate a preferred frequency;
- 2) during the planning process, attempts shall be made to include the preferred frequency in the plan;
- 3) if this is impossible, attempts shall be made to select a frequency in the same band.

Otherwise, the HF planning system shall be used to select the appropriate frequencies in such a way as to accommodate the maximum number of requirements, taking into account the constraints imposed by the technical characteristics of the equipment.

### IV.3 Frequency continuity

#### IV.3.1 Introduction

Continuity in the use of a frequency is an important matter for both the broadcaster and the listener; it is a characteristic inherent in the broadcasting of a programme. In addition, limitations imposed by the technical characteristics of the means of transmission available to some administrations will impose mandatory requirements for frequency continuity. The desirable aim is that changes in frequency should be limited to those necessitated by variations in propagation conditions. The rules for applying frequency continuity are given in section IV.3.4 below.

#### IV.3.2 Definitions

##### IV.3.2.1 Intra-seasonal continuity

###### IV.3.2.1.1 Type 1 continuity

Continuity of use of the same frequency within an hour or from one hour to the following hour for one requirement.

###### IV.3.2.1.2 Type 2 continuity

Continuity of use of the same frequency in the same season when passing from one requirement to another or one time block to another.

##### IV.3.2.2 Inter-seasonal continuity

###### IV.3.2.2.1 Type 3 continuity

Continuity of use of the same frequency for the same requirement in two consecutive seasons.

###### IV.3.2.2.2 Type 4 continuity

Continuity of use of the same frequency for the same requirement in two consecutive equinoctial seasons.

###### IV.3.2.2.3 Type 5 continuity

Continuity of use of the same frequency for the same requirement in the same season in two consecutive years.

### IV.3.3 Relationship between frequency continuity and appropriate band(s)

IV.3.3.1 When a single frequency is sufficient to provide basic broadcast reliability (BBR) equal to or greater than the agreed reference value, the appropriate band is to be determined by the HFBC planning system by taking account, inter alia, of the rules set out in section IV.3.4 regarding the maintenance of the maximum frequency continuity within the limits of the agreed reference value for BBR (80%).

However, an administration may choose extended frequency continuity at the expense of BBR; in this event, it shall indicate the lower value of BBR to be used. As, in this portion of the requirement, the BBR falls below the above-mentioned reference value, the second and/or third frequencies are allowed only when the application of frequency continuity would not result in a number of additional frequencies greater than would be necessary with operation in the appropriate bands.

IV.3.3.2 When BBR obtainable by use of a single frequency is less than 80%, continuity of use of the first frequency or the single operating frequency will be assured within the lower limit of BBR indicated by the administration.

When the administration indicates that it is able to operate on more than one frequency, the use of this lower value of BBR shall not entail the use of a third frequency.

IV.3.3.3 When the requirement under consideration may use a second or third frequency according to the procedures established in section VII, frequency continuity shall also be applied to the second (and third) frequency in the same manner as for the first frequency.

IV.3.3.4 When type 2 continuity is requested (from one requirement to another), the HFBC planning system shall identify the appropriate band separately for each of the requirements concerned. The frequency assigned to the first of these requirements shall be assigned to the other related requirement if it is in its appropriate band.

#### IV.3.4 Application of continuity

IV.3.4.1 Type 1 continuity shall be applied automatically to all requirements under the conditions set out in section 3 above.

IV.3.4.2 At the request of an administration, type 2 continuity shall be applied when this corresponds to equipment constraints. However, in other cases, this continuity may be applied to the extent possible (see section IV.3.3.4).

IV.3.4.3 Continuity of types 3, 4 and 5 shall be applied to the extent possible when requested by the administration.

#### IV.4 Planning steps and rules for dealing with incompatibilities

##### IV.4.1 Definitions

###### IV.4.1.1 Unit of service area

Each CIRAF zone is sub-divided into one to four units of area called "quadrants"; these are depicted in Figure C of Appendix 2. Any such "quadrant" containing at least one test point of a given requirement is called a "unit of service area" for the given requirement.

IV.4.1.2 A group of incompatible requirements (GIR) is a set of requirements, each of which is incompatible with all other requirements in the set.

IV.4.1.3 The GGIR\* (greatest GIR) is a GIR which contains the largest number of requirements.

IV.4.1.4 The MGIR\* (maximal GIR) is the set of all requirements contained in at least one GGIR.

#### Planning steps and rules

IV.4.2 The MGIR concept is used in the planning method to evaluate congestion.

IV.4.3 Congestion is evaluated by determining the GGIR and by comparing the number of channels required by that group with the number of channels available in the band considered.

IV.4.4 When, in a given hour/band, no congestion is found, the requirements concerned, for which a frequency will be identified, shall be entered in a "file of resolved requirements".

IV.4.5 When congestion is identified in a given hour/band by means of a GGIR, the requirements included in the MGIR will have their protection ratio reduced by 3 dB with a view to resolving the congestion. If, following this action, the congestion is not resolved, another MGIR is identified and the process is repeated until it is impossible to find a solution with a protection ratio [of 17 dB]. Requirements appearing in an hour/band that can be resolved in this manner are entered in the "file of resolved requirements".

IV.4.6 If the congestion is not resolved following the application of IV.4.5, a new MGIR is identified, as well as, for each administration, a set of requirements in the band under consideration with identical service areas. The planning process then identifies for transfer to the procedure in section 1, step 8 a number of such requirements in order to resolve the congestion. In order to identify the requirements to be transferred first, administrations having requirements in the MGIR are sorted in decreasing order of the number of such requirements. The process is repeated as many times as necessary until the congestion is resolved or the number of such requirements becomes equal to one per administration concerned. Requirements appearing in an hour/band that can be resolved in this manner are entered in the "file of resolved requirements".

IV.4.7 If the congestion is not resolved following the application of IV.4.6, all requirements of a given administration appearing in a MGIR have different service areas, some of them having common units of service area. More transfers may be required in order to resolve the congestion; they shall be made by having recourse to the identification of the unit of service area which appears most often in the requirements of a given administration in the hour/band under consideration. Once this unit of service area is identified, administrations having it in their requirements are sorted in decreasing order of the number of their requirements where this unit appears, with a view to transferring to section 1, step 8 requirements containing the unit of service area which appears most often. The GGIR is re-evaluated to determine whether congestion exists and the process is repeated as many times as necessary until the congestion is resolved or the number of such requirements becomes one per administration concerned. This rule shall be applied in such a way that any quadrant notified by an administration in the band/hour under consideration appears at least once in the plan. Requirements appearing in an hour/band that can be resolved in this manner are entered in the "file of resolved requirements".

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\* Refer to the Technical Standards of the IFRB.



IV.4.8 If the congestion is not resolved following the application of [IV.4.7] the same rule is applied taking account of the requirements in all the bands in order to identify the requirements containing the unit of service area which appears most often. Requirements appearing in an hour/band that can be resolved in this manner are entered in the "file of resolved requirements".

IV.4.9 If the congestion is not resolved following the application of IV.4.8, each requirement appearing in the MGIR is examined in order to establish whether it appears in two or three bands due to its low BBR. Such a requirement may be transferred to section 1, step 8 if it appears in another band with a better BBR. Requirements appearing in an hour/band that can be resolved in this manner are entered in the "file of resolved requirements".

IV.4.10 If the congestion is not resolved following the application of IV.4.9, the requirements included in the MGIR shall have their protection ratio reduced by 3 dB. Following this action another MGIR is identified, and the 3 dB reduction shall be applied to requirements appearing in the new MGIR not yet affected by this reduction. The process of reduction by 3 dB shall be repeated until congestion is removed. Additional reductions of the protection ratio by steps of 3 dB are made in the same manner until all the remaining requirements are entered in the "file of resolved requirements". In this manner all requirements which, as a result of the previous steps, have not been transferred to section 1, step 8, have been placed in a "file of resolved requirements". This file contains, therefore, all the requirements which will always appear in the "seasonal plan". This will be the case of requirements with a protection ratio less than 17 dB; however, the requirements of those administrations who so wish may be transferred to section 1, step 8 as a result of consultation with the IFRB.

IV.4.11 Following the application of the above steps for the resolution of incompatibilities, frequencies shall be granted for the requirements appearing in the "file of resolved requirements". This process shall be applied as follows:

- requirements with a single preset frequency shall be granted this frequency;
- requirements with more than one preset frequency shall be granted that frequency that has the least degree of incompatibility;
- if two requirements have the same preset frequency, which after analysis results in an incompatibility, the case is referred to the administration(s) concerned;
- requirements with a preferred frequency, attempts shall be made to grant them this frequency.

IV.4.12 Before transferring a requirement to section 1, step 8, the Board shall verify whether the administration has indicated that the frequency continuity shall be applied in all circumstances. If so, the requirement shall be transferred to section 1, step 8 throughout the entirety of its transmission period within the appropriate band.

IV.4.13 Requirements received by the IFRB after the beginning of the planning exercise are entered in the plan on condition that they do not adversely affect the requirements already entered in the plan. In applying this provision, a requirement already entered in the plan with a protection ratio exceeding 17 dB is deemed to be adversely affected if its protection ratio is reduced below 17 dB. A requirement already entered in the plan with a protection ratio lower than 17 dB is deemed to be adversely affected if its protection ratio is reduced by more than 1 dB.

#### IV.4.14 Actions relating to harmful interference

In the event of harmful interference to an HF broadcasting service which is using an assignment in accordance with a current seasonal plan, the administration concerned shall have the right to request the prompt assistance of the IFRB in finding another frequency to help restore that service to the level of reliability achieved in the plan. Any new frequency proposed by the IFRB shall not adversely affect the seasonal plan in operation. The central automated system must be able to respond, as far as possible, to such requests from administrations. The cause of a situation of harmful interference shall find its definitive solution in accordance with Article 22 of the Radio Regulations. The original frequency shall be made available for future use once this problem has been solved.

### V. RELIABILITY

#### V.1 Calculation of basic circuit reliability (BCR)

The method for calculating basic circuit reliability is given in Table C-2 which describes steps (1) to (11). The median value of field strength for the wanted signal at step (1) is determined by the field strength prediction method. The upper and lower decile values, steps (2) through (5), are also determined, taking account of long-term (day-to-day) and short-term (within the hour) fading. The combined upper and lower deciles of the wanted signal are then calculated at steps (6) and (7) in order to derive the signal levels exceeded for 10% and 90% of the time at steps (8) and (9).

The wanted signal probability distribution, assumed to be log-normal, is illustrated in Figure C-1 (plotted on a normal probability scale for the abscissa) which indicates the signal level (in decibels) versus the probability that the value of signal level is exceeded. This distribution is used to obtain the basic circuit reliability (11), which is the value of probability corresponding to the minimum usable field strength (10).

B.11/20

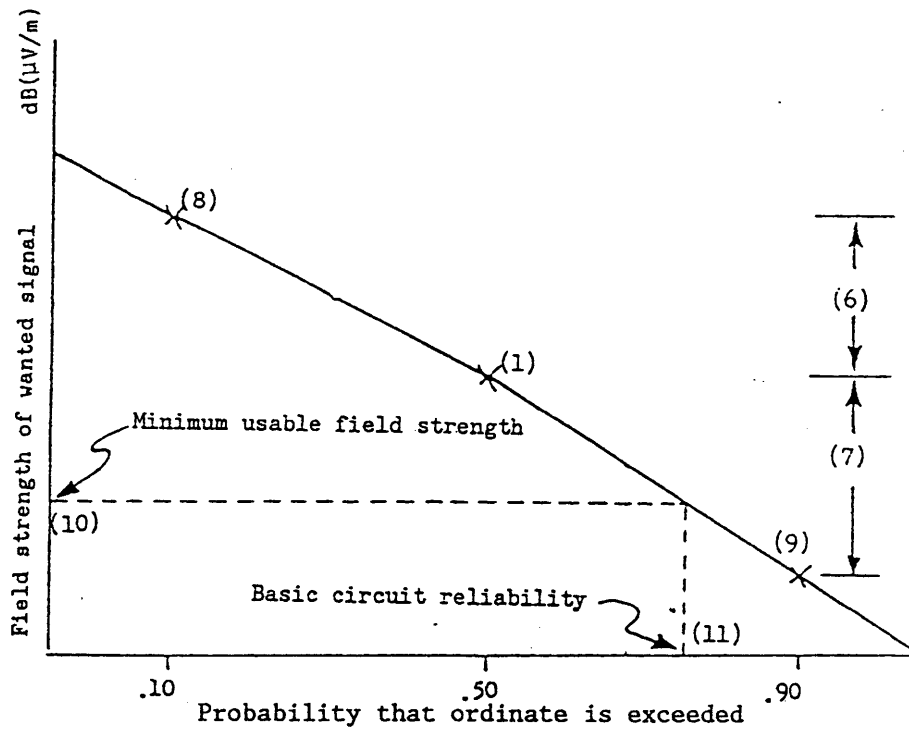


FIGURE C-1

Parameters used to compute basic circuit reliability (BCR)

(Figures appearing in brackets refer to the step numbers in Table C-2)

TABLE C-2

Parameters used to compute basic circuit reliability (BCR)

STEP	PARAMETER	DESCRIPTION	SOURCE
(1)	$E_w(50)$ dB( $\mu$ V/m)	Median field strength of wanted signal <sup>1</sup>	IFRB Technical Standards
(2)	$D_U(S)$ dB	Upper decile of slow fading signal (day-to-day)	IFRB Technical Standards
(3)	$D_L(S)$ dB	Lower decile of slow fading signal (day-to-day)	IFRB Technical Standards
(4)	$D_U(F)$ dB	Upper decile of fast fading signal (within the hour)	IFRB Technical Standards
(5)	$D_L(F)$ dB	Lower decile of fast fading signal (within the hour)	IFRB Technical Standards
(6)	$D_U(E_w)$ dB	Upper decile of wanted signal	$\sqrt{D_U(S)^2 + D_U(F)^2}$
(7)	$D_L(E_w)$ dB	Lower decile of wanted signal	$\sqrt{D_L(S)^2 + D_L(F)^2}$
(8)	$E_w(10)$ dB ( $\mu$ V/m)	Wanted signal exceeded 10% of the time	$E_w + D_U(E_w)$
(9)	$E_w(90)$ dB ( $\mu$ V/m)	Wanted signal exceeded 90% of the time	$E_w - D_L(E_w)$
(10)	$E_{min}$ dB ( $\mu$ V/m)	Minimum usable field strength	IFRB Technical Standards
(11)	BCR	Basic circuit reliability	Formula (1) or Figure C-1

Note 1 - In the calculation of BCR at the test points within the required service areas of synchronized transmitters, the field strength value to be used is obtained by the method of root sum square addition of the constituent field strengths in microvolts/metre ( $\mu$ V/m).

The basic circuit reliability is given by the formula:

$$BCR = \frac{1}{\sqrt{2\pi}} \int_{-\infty}^{\gamma} \exp(-\tau^2/2) d\tau \quad (1)$$

when  $E_W \geq E_{min}$

$$\gamma = \frac{E_W - E_{min}}{\sigma_L}$$

$$\sigma_L = D_L(E_W)/1.282$$

when  $E_W < E_{min}$

$$\gamma = \frac{E_W - E_{min}}{\sigma_U}$$

$$\sigma_U = D_U(E_W)/1.282$$

## V.2 Calculation of [overall/interference] circuit reliability [(OCR) (ICR)]

The method of calculation is shown in Table C-3. In step (1), the median wanted signal level is computed by the signal strength prediction method.

In step (2), the median field strength levels ( $E_i$ ) of each interfering source are obtained from the prediction method. In step (3), for a single source of interference the predicted median field strength is used; for multiple sources of interference the median field strength is calculated as follows: the field strengths of the interfering signals  $E_i$  are listed in decreasing order. Successive root sum square (r.s.s.) additions of the field strengths  $E_i$  are computed, stopping when the difference between the resultant field strength and the next field strength is greater than 6 dB. In step (3), the last computed value represents the resultant interference field strength I.

The values of the wanted signal and interference determined in steps (1) and (3) are combined in step (4) to obtain the median signal-to-interference ratio. The 10% and 90% fading allowances are included in steps (5) and (6) in order to obtain the signal-to-interference ratio exceeded for 10% and 90% of the time in steps (7) and (8).

The probability distribution for the signal-to-interference ratio may now be determined as shown in Figure C-2. The ratios are presented (in dB on a linear scale) versus the probability that the value of the signal-to-interference ratio is exceeded (on a normal probability scale). In Figure C-2, the value of probability corresponding to the required signal-to-interference ratio, step (9), is the circuit reliability in the presence of interference only (ICR). [The overall circuit reliability (OCR, step (12)) is the minimum value of either ICR (step (10)) or BCR (step (11)), whichever produces the lower value.]

The mathematical treatment of the calculation of ICR can be given in terms of the probability density distribution of the protection ratio. These functions are taken to be log normal, as is the resulting distribution of the signal-to-interference ratio.

The parameter ICR is given by the following formula:

$$ICR = \frac{1}{\sqrt{2\pi}} \int_{-\infty}^{\gamma} \exp(-\tau^2/2) d\tau \quad (2)$$

when for  $E_W - I \geq RSI$

$$\gamma = \frac{E_W - I - RSI}{\sigma_L}$$

$$\sigma_L = D_L(SIR)/1.282$$

and for  $E_W - I < RSI$

$$\gamma = \frac{E_W - I - RSI}{\sigma_U}$$

$$\sigma_U = D_U(SIR)/1.282$$

Values of the various parameters in the above expressions are found in the steps indicated below, Table C-3.

$E_W$	step (1)
$I$	step (3)
$D_U(SIR)$	step (5)
$D_L(SIR)$	step (6)
$RSI$	step (9)

TABLE C-3

Parameters used to compute [overall] circuit reliability ([OCR])

STEP	PARAMETER	DESCRIPTION	SOURCE
1	$E_w$ dB( $\mu$ V/m)	Median field strength of wanted signal	IFRB Technical Standards
2	$E_i$ dB( $\mu$ V/m)	Median field strength of interfering signals $E_1, E_2, \dots E_n$	IFRB Technical Standards
3	$I$ dB( $\mu$ V/m)	Resultant field strength of interference	1) $I = 20 \log_{10} \sqrt{\sum_{i=1}^n \left( \frac{E_i + \alpha_i}{10} \right)^2}$
4	SIR(50)dB	Median signal-to-interference ratio	$E_w - I$
5	$D_U$ (SIR)dB	10% fading allowance	IFRB Technical Standards
6	$D_L$ (SIR)dB	90% fading allowance	IFRB Technical Standards
7	SIR(10)dB	Subjective signal-to-interference ratio exceeded 10% of the time	$SIR(50) + D_U(SIR)$
8	SIR(90)dB	Subjective signal-to-interference ratio exceeded 90% of the time	$SIR(50) - D_L(SIR)$
9	RSI dB	Required RF protection ratio 2)	IFRB Technical Standards
10	ICR	Circuit reliability in presence of interference only (without noise)	Formula (2) or Figure C-2
11	BCR	Basic circuit reliability	Formula (1) or Figure C-1
12	OCR	[Overall] circuit reliability	$\text{Min}(ICR, BCR)$

Note 1 -  $\alpha_i$  is the appropriate relative protection ratio corresponding to the carrier frequency separation between the wanted and each unwanted signal.

Note 2 - In these calculations, a single value of the co-channel protection ratio must be used.

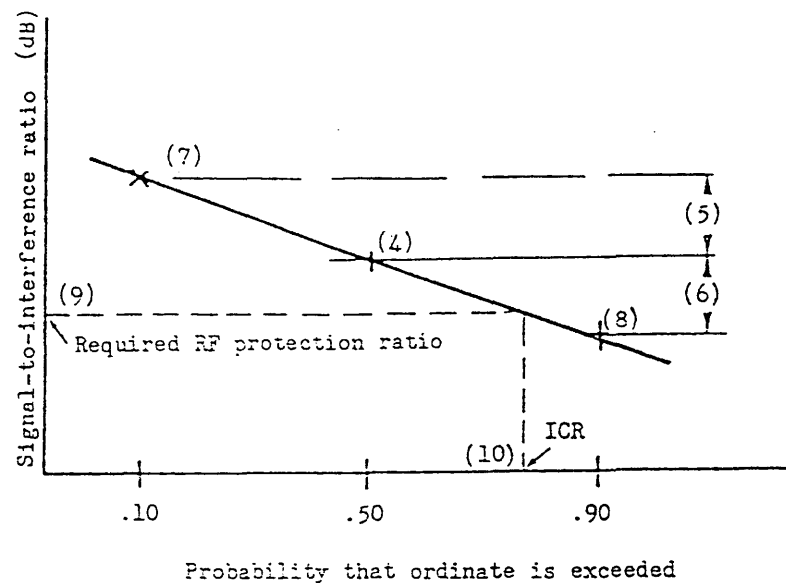


FIGURE C-2

Parameters used to compute [overall] circuit reliability ([OCR])

(Figures appearing in brackets refer to the step numbers in Table C-3.)

### V.3 Basic reception reliability (BRR)

The method for computing basic reception reliability is given in Table C-4. With a single frequency, basic reception reliability (BRR) is the same as the basic circuit reliability (BCR) defined in section V.1. With multiple frequencies, the interdependence between propagation conditions at different frequencies leads to the computation method given in Table C-4. In steps (4) and (6), BCR (n) is the basic circuit reliability for frequency n, where  $n = F_1, F_2$ , etc. The basic reception reliability is obtained in step (2) for a single frequency, in step (4) for a set of two frequencies and in step (6) for a set of three frequencies.

### [V.4 SUP]



TABLE C-4

Basic reception reliability

The following parameters are involved:

Single-frequency operation

STEP	PARAMETER	DESCRIPTION	SOURCE
(1)	BCR (F <sub>1</sub> ) %	Basic circuit reliability for frequency F <sub>1</sub>	Step 11, Table C-2
(2)	BRR (F <sub>1</sub> ) %	Basic reception reliability	BCR (F <sub>1</sub> )

Two-frequency operation<sup>1</sup>

(3)	BCR (F <sub>2</sub> ) %	Basic circuit reliability for frequency F <sub>2</sub>	Step 11, Table C-2
(4)	BRR (F <sub>1</sub> ) (F <sub>2</sub> ) %	Basic reception reliability	F <sub>2</sub> $1 - \prod (1 - \text{BCR}(n))$ n=F <sub>1</sub>

- <sup>1</sup> The two frequencies F<sub>1</sub> and F<sub>2</sub> shall be situated in different HF bands allocated to the broadcasting service.

Three-frequency operation<sup>2</sup>

STEP	PARAMETER	DESCRIPTION	SOURCE
(5)	BCR (F <sub>3</sub> ) %	Basic circuit reliability for frequency F <sub>3</sub>	Step 11, Table C-2
(6)	BRR (F <sub>1</sub> ) (F <sub>2</sub> ) (F <sub>3</sub> ) %	Basic reception reliability	F <sub>3</sub> $1 - \prod (1 - \text{BCR}(n))$ n=F <sub>1</sub>

- <sup>2</sup> The three frequencies F<sub>1</sub>, F<sub>2</sub> and F<sub>3</sub> shall be situated in different HF bands allocated to the broadcasting service.

V.5 Basic (BBR) and [overall[(OBR)]/interference (IBR)] broadcast reliability

The determination of basic broadcast reliability involves the use of test points within the required service area. The basic broadcast reliability is an extension of the basic reception reliability concept to an area instead of a single reception point. The method for computing basic broadcast reliability is shown in Table C-6. In step (1), the basic reception reliabilities BRR ( $L_1$ ), BRR ( $L_2$ ), --- BRR ( $L_N$ ) are computed as described in Table C-4 at each test point  $L_1$ ,  $L_2$  ---  $L_N$ . These values are ranked in step (2) and the basic broadcast reliability is the value associated with a percentile [X] of the test points.

In a similar way, the [overall/interference] broadcast reliability is computed as described in Table C-7 and corresponds to the value associated with a percentile [X] of the test points.

Broadcast reliability is associated with the expected performance of a broadcast service at a given hour. For periods longer than an hour, computation at one-hour intervals is required.

TABLE C-6

Basic broadcast reliability

The following parameters are involved:

STEP	PARAMETER	DESCRIPTION	SOURCE
(1)	BRR ( $L_1$ ), BRR ( $L_2$ ), --- BRR ( $L_N$ ) %	Basic reception reliability at all test points considered in the required service area	Step (2), (4) or (6), as appropriate, from Table C-4
(2)	BBR (X) %	Basic broadcast reliability associated with percentile [X]	Any percentile chosen from the values ranked from (1) of this table

TABLE C-7

Overall broadcast reliability

The following parameters are involved:

STEP	PARAMETER	DESCRIPTION	SOURCE
(1)	ORR ( $L_1$ ), ORR ( $L_2$ ), --- ORR ( $L_N$ ) %	Overall reception reliability at all points considered in the required service area	Step (2), (4) or (6), as appropriate, from Table C-5
(2)	OBR (X) %	Overall broadcast reliability associated with percentile [X]	Any percentile chosen from the values ranked from (1) of this table

VI. PROPORTIONALLY REDUCED PROTECTION (PRP)

Proportionally reduced protection (PRP) is a margin (M) by which the RF protection ratio to be applied at a test point may be reduced under the following specified conditions:

- 1) the BBR < 80%, and
- 2) only one frequency band is given by the planning system, and
- 3) at the test point considered the field strength  $E_w$  is less than  $E_{min}$  and greater than or equal to  $E_{min} - 10$ .

In these conditions, M is determined as:  $M = E_{min} - E_w$ .

In such cases, the proportionally reduced protection ratio is used in the evaluation of S/I at the test point considered. For all the remaining points within the required service area, full protection as determined by the relevant protection ratio is given when  $E_w \geq E_{min}$ , and no protection is given when  $E_w < E_{min} - 10$ .

In cases where PRP is not applicable, full protection as determined by the relevant protection ratio is afforded when  $E_w \geq E_{min}$ , and no protection is given when  $E_w < E_{min}$ .

VII. MAXIMUM NUMBER OF FREQUENCIES REQUIRED PER REQUIREMENTVII.1 Introduction

Wherever possible, only one frequency should be used for a given requirement. In certain special circumstances, it may be found necessary to use more than one frequency per requirement, i.e.:

- over certain paths, e.g., very long paths, those passing through the auroral zone, or paths over which the MUF is changing rapidly;
- areas where the depth of the area extending outwards from the transmitter is too great to be served by a single frequency;
- when highly directional antennas are used to maintain satisfactory signal-to-noise ratios, thereby limiting the geographical area covered by the station concerned.

The decision to use more than one frequency per requirement should be taken on the merits of the particular case concerned.

The use of synchronized transmitters should be encouraged whenever possible in order to minimize the need for additional frequencies.

## VII.2 Use of additional frequencies

The number of frequencies needed to achieve the specified level of BBR<sup>1</sup> shall be determined by the method given below. If the calculated BBR for a single frequency does not reach the adopted value, it is necessary to consider whether the BBR could be improved by additional frequencies in separate bands and whether the improvement would justify the use of additional frequencies.

## VII.3 Determination of additional frequency bands

In cases where the BBR for the first band, based on all test points in the required service area, is between 50% and 80%, an additional band shall be tested using the following procedure.

Those test points whose basic circuit reliability (BCR) is less than or equal to the BBR are identified, and only these points are used to determine the second band. For each band, the minimum value of BCR ( $BCR_{min}$ ) at these points is determined and that band having the highest  $BCR_{min}$  value is selected. If more than one band has this value, the highest frequency band is selected. The two-band BBR, taking account of the BBR at all test points in the required service area, is then computed, and if it exceeds the limit specified in Figure C-3, the second band is permitted. In those special cases where the two-band BBR is less than 80%, a third band shall be tested as follows.

The BBR for each of the remaining bands is computed, using all the test points in the required service area. Of these bands, that band having the highest BBR is selected as the third band. If more than one band has this value the highest frequency band is selected. If the resulting three-band BBR, taking account of the BBR at all test points, exceeds the limit specified in Figure C-3, the third band is permitted.

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<sup>1</sup> For calculation of the basic broadcast reliability (BBR), see paragraph V.5.

B.11/31

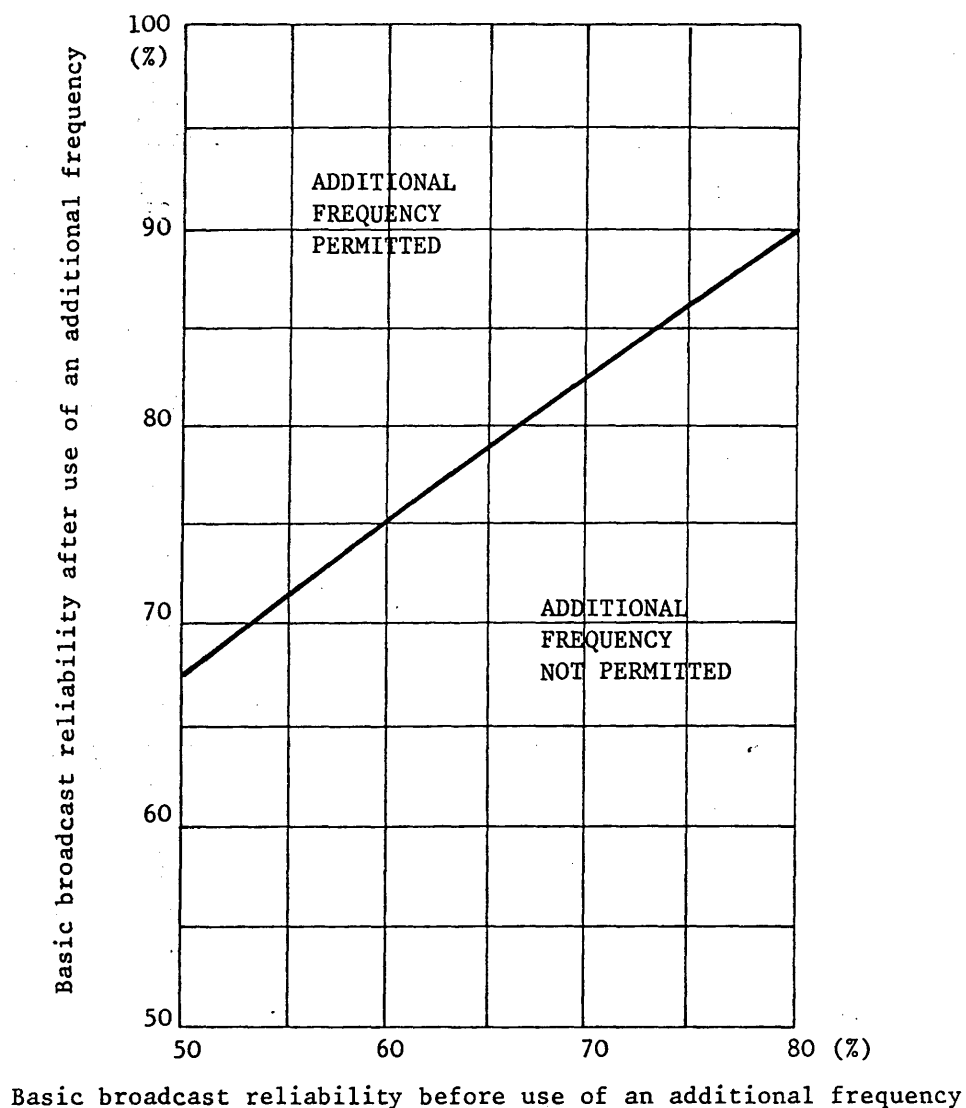


FIGURE C-3

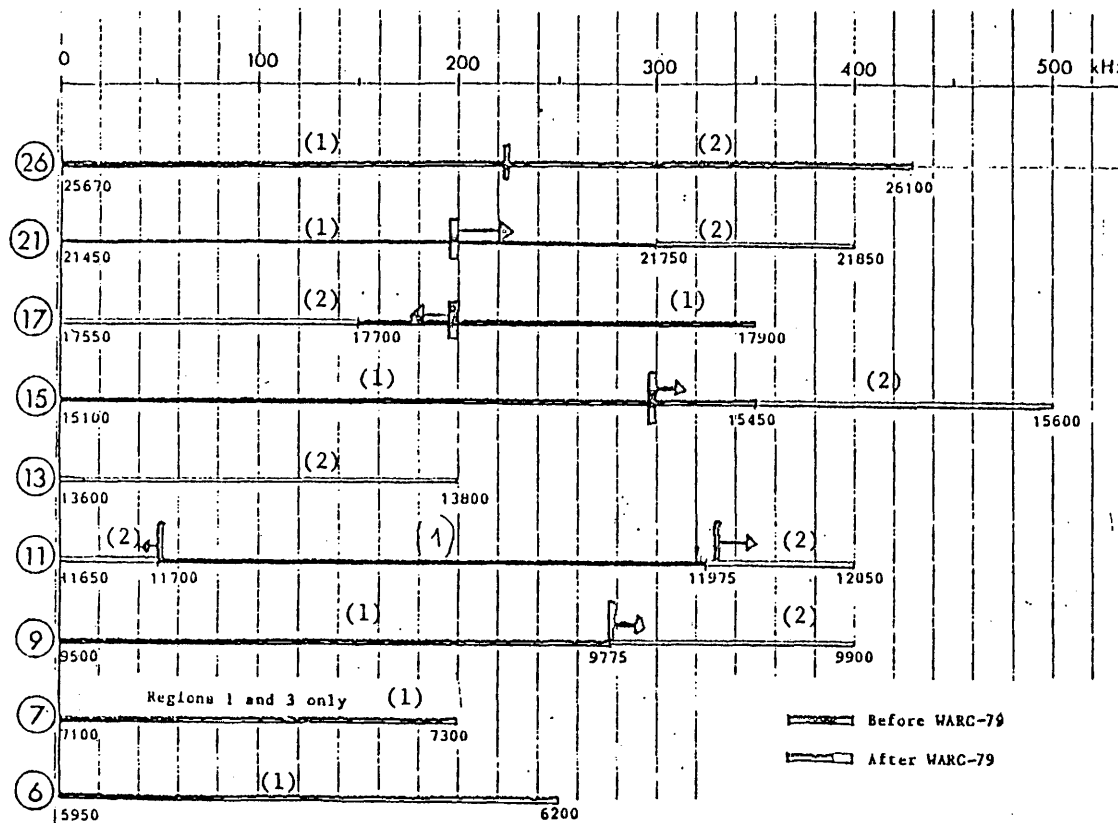
Limits for use of an additional frequency

The contents of this figure can be expressed by the following formulae:

$BBR \text{ (after)} > 30 + 0.75 \cdot BBR \text{ (before)}$	additional frequency permitted
$BBR \text{ (after)} \leq 30 + 0.75 \cdot BBR \text{ (before)}$	additional frequency not permitted.

VIII. PERFORMANCE ASSESSMENT

[See Document 145.]



Total (kHz)	Application of the improved Article 17 (kHz) (1)	Application of the improved HFBC Planning System (kHz) (2)
430	230	200
400	200	200
350	150	200
500	300	200
200		200
400	275	125
400	275	125
200	200	
250	250	
TOTAL	1880	1250

Mid-term.

ANNEX 2

B.11/32

B.11/33

## RESOLUTION No. 91 (HFBC-87)

**Revision, Replacement and Abrogation of Resolutions and  
Recommendations of the World Administrative Radio Conference  
(Geneva, 1979)**

The World Administrative Radio Conference for the Planning of the HF Bands Allocated to the Broadcasting Service (Geneva, 1987),

considering

its agenda as contained in Administrative Council Resolution No. 912, in particular agenda item 2.1.6, and the action taken on one Resolution and three Recommendations of the World Administrative Radio Conference (Geneva, 1979),

considering further

a) that the following Resolution and Recommendation have been revised as follows:

Resolution No. 641    Relating to the Use of the Frequency  
Band 7 000 - 7 100 kHz - superseded by  
Resolution No. 641 (Rev. HFBC-87),

Recommendation No. 503    Relating to HF Broadcasting - superseded  
by Recommendation No. 503 (Rev. HFBC-87);

b) that all the action required by the following Recommendations has been taken:

Recommendation No. 500    Relating to the Preparation of the Technical  
Information Necessary for the World  
Administrative Radio Conference for  
HF Broadcasting,

Recommendation No. 501    Relating to Studies for the Introduction of  
Single-Sideband (SSB) Techniques in the  
HF Bands Allocated to the Broadcasting  
Service, in Preparation for the World  
Administrative Radio Conference for  
HF Broadcasting,

resolves

that the Resolution and Recommendations of the World Administrative Radio Conference (Geneva, 1979) listed under a) and b) above, shall be abrogated.



B.11

PLENARY MEETINGELEVENTH SERIES OF TEXTS SUBMITTED BY THE  
EDITORIAL COMMITTEE TO THE PLENARY MEETING

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

<u>Source</u>	<u>Document</u>	<u>Title</u>
COM.6	243	Resolution COM6/2 (HFBC-87) with Annex 1: Sections 1, 2, 3

D. SAUVET-GOICHON  
Chairman of Committee 7

Annex: 10 pages

B.11/1

## RESOLUTION COM6/2 (HFBC-87)

**Improvements to the HFBC Planning System  
and Consultation Procedures**

The World Administrative Radio Conference for the Planning of the HF Bands Allocated to the Broadcasting Service (Geneva, 1987),

considering

- a) that its First Session, held from 10 January to 11 February 1984, adopted a planning method based on seasonal planning and instructed the IFRB to prepare the appropriate software and to test it using variations of criteria;
- b) the Report of the IFRB on its activities during the intersessional period;
- c) that the planning exercises demonstrated that the HFBC Planning System, developed by the IFRB on the basis of the decisions of the First Session, did not allow all the requirements submitted by administrations to be included in the draft seasonal plans;
- d) that, to enable all HFBC requirements of administrations to be implemented, the procedure of the present Article 17 of the Radio Regulations should be improved, and used in combination with an improved HFBC Planning System;
- e) that the working assumptions used by the IFRB in the planning exercises were reviewed and the HFBC planning method was revised;
- f) that consequently there is a need to modify the relevant software and to test the HFBC planning method before its final adoption by a competent World Administrative Radio Conference (see Resolution [ ... ]),

resolves that the IFRB

1. shall, in the post-conference period, improve the software for the procedures relating to the HFBC Planning System ( ) and the procedures based on consultations ( ), in accordance with the provisions contained in Annex 1 to this Resolution;
2. shall test both procedures, in the post-conference period, using the requirements in the requirements file. When submitting requirements, administrations shall indicate which of the requirements should be dealt with under the HFBC Planning System, and which under the consultation procedure;

3. the above tests shall be carried out in the bands indicated in Annex 2 to this Resolution;
4. shall report regularly to administrations, at intervals not exceeding 6 months, the results of the work carried out under resolves 1, 2 and 3;
5. shall prepare and communicate a final report to administrations twelve months prior to the convening of the competent World Administrative Radio Conference (see Resolution [ .. ]).

Annexes: 2

## ANNEX 1

## Section 1 - HFBC Requirements File

1. Administrations shall submit to the IFRB their operational broadcasting requirements and those which are expected to become operational in the bands allocated exclusively to the broadcasting service between 5 950 and 26 100 kHz. These requirements shall be entered in the HFBC requirements file, which shall contain:

- requirements intended for use within the next 3 seasons;
- all requirements taken into account in the preparation or during the operation of a seasonal schedule or plan;
- requirements used during the preceding 5 year period.

2. An entry in the HFBC requirements file shall be defined as a requirement indicated by an administration as necessary to provide a broadcasting service at specified periods of time to a specified reception area from a particular transmitting station.

3. Each requirement listed in the HFBC requirements file shall contain at least the basic information listed in Appendix 2 together with an indication of the season(s) in which the requirement was or will be used.

4. Each seasonal schedule or seasonal plan to be established shall cover one of the seasonal propagation periods indicated below. The month shown in the parentheses indicates the month to be used for the propagation prediction:

- Season D - November - February (January);
- Season M - March - April (April);
- Season J - May - August (July);
- Season S - September - October (October).

Each seasonal plan or seasonal schedule shall be implemented at 0100 UTC on the first Sunday of the season concerned.

5. Administrations shall notify the Board, using Appendix 2, of any addition, modification or deletion of a requirement in the HFBC requirements file. Additions, modifications or deletions notified to the Board for a given season shall be taken into account for updating the requirements file provided that, following their examination by the Board, they are found to contain the basic information referred to in Appendix 2.

6. On receipt of notices pursuant to paragraph 5 above, the Board shall ensure that the basic information listed in Appendix 2 has been provided and is correct and, if necessary, shall request the notifying administration to supply corrected or missing information. Following this examination the Board shall indicate those incompatibilities which can be identified without the need for detailed calculations and shall inform the administrations concerned of the results obtained together with any recommendation that may assist in avoiding this incompatibility.

7. After the end of each seasonal period the Board shall enter into the requirement file, for each requirement, the frequency or frequencies used, together with any indication from administrations of the actual use of the requirement. Requirements already used shall be kept in the HFBC requirement file for a period of five years. No priority shall be derived from this history of use.

8. An administration shall inform the Board when a broadcasting requirement is temporarily withdrawn, due to a natural disaster or other calamitous event, for a period of time not exceeding five years. The Board shall identify this requirement in the file by an appropriate symbol. When the administration concerned informs the Board that the requirement can be brought back into service and requests the removal of the symbol, the Board shall act in conformity with the request. If a request for the removal of the symbol is not received by the Board within the period of five years referred to above, the requirement shall be deleted from the file.

#### Section [2] - Procedures Based on Consultations

1. Periodically, administrations shall confirm to the IFRB which of their requirements appearing in the HFBC requirements file are to be used in a given season. Administrations may also notify additions, modifications or deletions. For this purpose, administrations shall furnish to the Board at least the basic characteristic listed in Appendix 2. When the Board finds that the information submitted by administrations is in conformity with Appendix 2, it shall update the seasonal file accordingly.

Administrations may:

- submit, for all or part of their requirements, the frequencies they intend to use;
- request the Board to select the appropriate frequencies for their requirements.

A seasonal file shall be established on the basis of this information.

2. The frequencies to be included in the seasonal schedule shall be in conformity with No. 1240 of the Radio Regulations.

3. The closing date for the receipt of the information referred to in [1] shall be set by the Board. The Board shall gradually reduce the period between the closing date and the start of season to the minimum possible.

4. If, in spite of reminders by the Board, no reply is received from an administration by the date set by the Board as in [3], the Board shall consider that the requirements appearing in the requirements file for the season under consideration are confirmed in they were in operation during the previous season.

[4bis Ex 8] Those requirements that cannot be included in the corresponding seasonal plan following application of the Planning System procedure contained in Section 3 are entered in the seasonal file and dealt with in accordance with the following paragraphs.

5. The IFRB shall identify, for each requirement, its appropriate bands and shall calculate the field strength at each test point, and the basic broadcasting reliability (BBR) in each of these bands. In so doing it shall take account of the need to ensure frequency continuity as indicated in the Annex to Section 3. The [results obtained relating to the requirements] of an administration shall be sent to that administration with an indication, where appropriate, of the number of frequencies needed to achieve the required BBR.

6. When sending the results referred in [5], the Board shall request administrations to inform it, within a period of 8 weeks, as appropriate:

- whether they intend to use some or all of the frequencies already appearing in the seasonal file;
- whether they intend to use a frequency or frequencies other than those in the seasonal file;
- of the frequency or frequencies which they intend to use for those requirements for which no frequency or frequencies appear in the seasonal file;
- whether or not the Board should select the most appropriate frequency or frequencies.

On the basis of the information referred to in paragraph [1], the Board shall select one or more frequencies for any requirement for which the information received does not specify a frequency, and for any requirement concerning which no information has been received from the administration within this period.

7. Administrations may, following receipt of the information referred to in [5], communicate additional requirements in the form prescribed in Appendix 2 with or without indication of the selected frequency. These additional requirements shall be included in the seasonal file.

[8 now 4bis]

B.11/6

9. At the end of the period indicated in [6] the Board shall repeat the calculations referred to in [5] and shall determine the number of appropriate frequencies necessary for each requirement. If an administration has indicated a number of frequencies for a requirement which exceeds the number resulting from the Board's calculations in application of the Annex to Section 3, the Board shall, in consultation with the notifying administration, reduce the number of frequencies for the requirement in question to the number resulting from the Board's calculations.

10. The Board shall select frequencies for those requirements which have neither frequencies selected by the notifying administration nor preset frequencies. In so doing, the Board shall take into account the need to ensure frequency continuity as indicated [5]. The Board shall undertake a calculation of the possible incompatibilities between all requirements and an assessment of the performance of each requirement as indicated in [5].

11. A seasonal schedule shall be prepared for publication, indicating for each requirement the frequency or frequencies, notified or selected, and the basic characteristics enabling administrations to identify easily the requirement concerned. This schedule shall be sent to administrations 2 months before the start of the season. At the same time the Board shall send to each administration detailed results of the calculations and performance assessment for its requirements, indicating, for each requirement, the requirements with which it is incompatible. In addition, the Board shall promptly provide, on request, all other information deemed necessary by an administration.

However, administrations are urged to take all possible action to resolve incompatibilities prior to the start of the season. In their attempts to resolve the incompatibilities, administrations will take into consideration the principles stated in [ ] of Article 17.

12. Taking into account all available data, the Board shall, where practicable, make recommendations to eliminate the incompatibilities and shall send them to administrations along with the draft seasonal schedule.

In preparing its recommendations to administrations, the Board shall take into account monitoring observations and all other available data. However, when actual frequency usage is apparently not in conformity with the assignments in a submitted schedule, the Board shall seek confirmation of this information from the administration concerned.

13. After publication of the seasonal schedule, administrations may notify additions, modifications or deletions in their seasonal requirements. However, administrations are urged to refrain from submitting additional requirements at this stage.

14. For changes notified in accordance with [13], the Board shall apply the procedure specified in [9]. Such revisions to the seasonal schedules shall be published in the IFRB weekly circular.

#### **Record of Seasonal Usage**

15. After the end of each seasonal period, the Board shall update the requirements file to reflect the actual usage during the season as notified to the Board. Those assignments which the administrations found to be unsatisfactory in practice shall be reported to the Board and marked in the requirements file by an appropriate symbol.

16. Upon request, the IFRB shall make available to administrations the information on frequency usage during the season, on computer tape or in any other machine readable form.

#### **Miscellaneous Provisions**

17. The Technical Standards used by the Board when applying the provisions of this Article should be based not only on the factors listed in No. 1454 but also on past experience in broadcasting planning and on the experience gained by the Board in the application of this Article (see also Resolution COM6/1).

18. With a view to the eventual development of compatible technical plans for the frequency bands concerned, the Board shall take all necessary steps to carry out long-term engineering studies. For this purpose, the Board shall use all the information on frequency usage made available to it in the application of the procedure described in this Article. The Board shall inform administrations at regular intervals of the progress and results of such studies.

19. In applying Article 22 of these Regulations, administrations shall resolve problems of harmful interference which may arise in frequency usage in the bands concerned by exercising the utmost goodwill and mutual cooperation, and by giving due consideration to all the relevant technical and operational factors involved.



**Section [3]\* - Procedures Relating to the HFBC Planning System****[1. SUP]**

2. Periodically, administrations shall confirm to the IFRB which of their requirements appearing in the HFBC requirements file are to be used in a given season. Administrations may also notify additions, modifications or deletions. When the Board finds that the information submitted by administrations is in conformity with Appendix 2, it shall establish the seasonal file accordingly.

3. The broadcasting requirements of administrations shall be submitted on the requirements form set out in Appendix 2 which specifies the data to be furnished.

4. The closing date for receipt of the information referred to in [2] shall be set by the Board. The Board shall gradually reduce the time period between the closing date and the start of the season to the minimum possible.

If, in spite of reminders by the Board, no reply is received from an administration by the closing date set by the Board, the Board shall consider that the requirements appearing in the requirements file for the season under consideration are confirmed if they were in operation during the previous season.

5. The IFRB shall calculate the field strength at each test point and the basic broadcasting reliability (BBR) in each of these bands and shall identify the appropriate bands for each requirement. In so doing it shall also take account of the need to ensure frequency continuity as indicated in the Annex.

6. The IFRB shall, on the basis of the above calculations, apply the rules contained in the Annex, from which the following results are derived for each hour/band:

- a) a list of resolved requirements that will be entered in the seasonal plan, including:
  - i) requirements with a protection ratio greater than or equal to 17 dB;
  - ii) requirements with a protection ratio less than 17 dB. Consultations shall be undertaken with administrations which so request in their requirements forms;

---

\* Reservations by the United Kingdom.

- b) a list of the requirements that could not be entered into the seasonal plan under a) above and which will be dealt with in accordance with Section 2.

7. The Board shall consult those administrations that wish to be consulted and have requirements of the type referred to in 6 a) ii) above to ascertain whether they wish requirements to be entered in the seasonal plan with the characteristics notified and the resulting protection ratios.

8. When administrations that wish to be consulted and have requirements of the type referred to in 6 a) ii) above have indicated that they do not wish their requirements to be inserted in the seasonal file under the specified conditions, the Board shall transfer those requirements to the list referred to in 6 b).

[9. to 12. SUP]

13. The Board shall establish a time limit for administrations to submit new requirements, and shall process these requirements and endeavour to insert them in the seasonal plans following the steps indicated in the Annex without adversely affecting\* those requirements already entered in the seasonal plans.

[14. SUP]

15. Administrations that so wish may request the Board to select alternative frequencies for their requirements. The Board shall endeavour to select alternative frequencies without adversely affecting the requirements appearing in the Plan. If the Board receives no comment from administrations following the publication of the seasonal plan, it shall consider that the frequencies indicated in the seasonal plan will be assigned by administrations to their stations.

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\* The criteria to determine whether a requirement is adversely affected are to be found in the Annex.

B.11/10

ANNEX TO SECTION 3

(Will be published as an addendum)

Source: Document 223

PLENARY MEETING

Note by the Chairman of the Conference

DRAFT RECOMMENDATION (PL/A)

**Broadcasting for National Coverage in the HF Bands**

The World Administrative Radio Conference for the Planning of the HF Bands Allocated to the Broadcasting Service (Geneva, 1987),

considering

- a) the Report to the Second Session of the World Administrative Radio Conference for the Planning of the HF Bands Allocated to the Broadcasting Service;
- b) that the First Session of WARC-HFBC (1984) decided that due consideration should be given to the difference between national and international broadcasting;
- c) that the HFBC Planning System must, in particular, take account of the way in which administrations' requirements for longer transmission periods, mainly for national broadcasting purposes, can best be accommodated;
- d) that steps must be taken to guarantee appropriate continuity for national broadcasting requirements;
- e) that the two kinds of HF broadcasting, national and international, differ as to their technical and operating conditions;
- f) that the Second Session of WARC-HFBC (1987) decided not to consider the question in detail,

noting

that an HF broadcasting use is considered as being for purposes of national coverage when the transmitting station and its associated required service area are both located within the territory of the same country,

recommends

that the Administrative Council should take the necessary steps to ensure that the agenda of the next World Administrative Radio Conference competent to deal with HF broadcasting includes the consideration of national broadcasting, under the conditions set out in the preambular part of this Recommendation.

J.K. BJÖRNSJÖ  
Chairman

Source: Document 223

PLENARY MEETING

Note by the Chairman of the Conference

DRAFT RECOMMENDATION (PL/A)

**Broadcasting for National Coverage in the HF Bands**

The World Administrative Radio Conference for the Planning of the HF Bands Allocated to the Broadcasting Service (Geneva, 1987),

considering

- a) the Report to the Second Session of the World Administrative Radio Conference for the Planning of the HF Bands Allocated to the Broadcasting Service;
- b) that the First Session of WARC-HFBC (1984) decided that due consideration should be given to the difference between national and international broadcasting;
- c) that the HFBC Planning System must, in particular, take account of the way in which administrations' requirements for longer transmission periods, mainly for national broadcasting purposes, can best be accommodated;
- d) that appropriate steps must be taken to guarantee continuity for national broadcasting requirements;
- e) that the two kinds of HF broadcasting, national and international, differ as to their technical and operating conditions;
- f) that the Second Session of WARC-HFBC (1987) decided not to consider the question in detail,

noting

that an HF broadcasting use is considered as being for purposes of national coverage when the transmitting station and its associated required service area are both located within the territory of the same country,

recommends

that the Administrative Council should take the necessary steps to ensure that the agenda of the next World Administrative Radio Conference competent to deal with HF broadcasting includes the consideration of national broadcasting, under the conditions set out in the preambular part of this Recommendation.

J.K. BJÖRNSJÖ  
Chairman

Source: Document DL/33

PLENARY MEETING

REPORT FROM THE CHAIRMAN OF THE AD HOC GROUP  
OF THE PLENARY TO THE PLENARY

Please find attached the modifications to Documents 243 and 235 as agreed at the ad hoc Group meeting.

J. RUTKOWSKI  
Chairman of the ad hoc Group  
of the Plenary

Annexes: 2

ANNEX 1

Insert in the Attachment to section 3, Part C, Section VIII, of Document 243:

"VIII. Performance assessment\*

In order to assess the performance of a requirement, the following values should be given for each 15 minute period, each hour, or for the duration of the requirement, as appropriate:

- 1) BBR - basic broadcast reliability at 80th percentile of all test points;
- 2) percentages of test points for each frequency band where field strength is equal to or exceeds  $E_{\min}$  dB( $\mu$ V/m), and ( $E_{\min} - 10$  dB) dB( $\mu$ V/m) where proportionally reduced protection applies;
- 3) SIR (dB) - median signal-to-interference ratio using the calculation procedure of section V.2 at the 80th percentile of test points where the field strength is equal to or exceeds  $E_{\min}$ , or ( $E_{\min} - 10$ ) where proportionally reduced protection applies. If economically practical, it would be desirable to indicate the test points which have been used in determining the signal to interference ratio.\*\*
- 4) TP (%) - percentage of test points for each frequency band where both the field strength is equal to or exceeds  $E_{\min}$  dB( $\mu$ V/m), or ( $E_{\min} - 10$  dB) dB( $\mu$ V/m) where proportionally reduced protection applies, and the median signal to interference ratio is equal to or exceeds 17 dB."

---

\* The IFRB may develop additional parameters for assessing performance.

\*\* The IFRB pointed out that the requirement to indicate the test points may add significantly to the computer memory required and to the volume of the reports.

ANNEX 2

Amendments to texts

Document 243

Section V.2

- 1) Change title to read:  
"Calculation of median signal to interference ratio (S/I)".  
Second line: replace "signal strength" by "propagation"
- 2) Retain paragraphs 1 and 2 and paragraph 3, sentence 1.
- 3) Delete paragraph 3, sentence 2, and the remainder of the section.

Table C-3

Step 4 Replace SIR(50)dB by S/I

- 1) Change title to read:  
"Calculation of median signal to interference ratio (S/I)".
- 2) Delete steps 5-12 and Note 2.

Figure C-2

Delete

Section V-4

Delete

Table C-5

Delete

Section V-5

Title: Delete "and [overall/interference]".

Delete paragraph 2.

Table C-7

Delete

In Section V-5 and Table C-6 replace [X] by 80.



Document 235

Note b)

Delete.

Note d)

Replace " $D_U(SIR)$  and  $D_L(SIR)$  by "for the decile values".

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BUDGET CONTROL  
COMMITTEE

REPORT OF THE BUDGET CONTROL COMMITTEE  
 TO THE PLENARY MEETING

The Budget Control Committee held six meetings during the Conference and examined the questions arising from its terms of reference.

Under Nos. 475 to 479 of the International Telecommunication Convention (Nairobi, 1982), the Committee's terms of reference are:

- a) to determine the organization and the facilities available to delegates;
- b) to examine and approve the accounts for expenditure incurred throughout the duration of the Conference;
- c) to estimate the costs that may be entailed by the execution of the decisions taken by the Conference.

In addition, for the work immediately following the World Administrative Radio Conference HFBC(2), the Administrative Council, at its 41st session (1986), approved the extension of four posts until 30 June 1987, and the possible extension of these posts until 31 December 1987, subject to a decision by the Second Session of WARC-HFBC and the financial provisions approved by the Budget Control Committee.

1. Determination of the organization and facilities available to delegates

The Committee took note of the fact that no delegation had made any comments on the subject of the organization and facilities or the administrative arrangements made by the Secretary-General. It expressed the view that the organization and the arrangements made by the Secretary-General, and in particular the common services provided for the Conference, had been entirely satisfactory. The Committee also expressed its appreciation for the facilities made available by the IFRB to delegates at the Conference Centre in the form of special terminals linked to the ITU computer as well as the services of engineers of the IFRB Specialized Secretariat, which had permitted delegates an insight into the complexity of the HFBC Planning System and had contributed to the better understanding of the problems the Conference had to deal with.

2. Conference budget

The Budget Control Committee examined the Conference budget, amounting to 2,210,000 Swiss francs, including IFRB post-conference work for 1987, which was approved by the Administrative Council at its 41st session (1986).

The Committee noted that the Conference budget did not comprise expenditure on common services supernumerary staff salaries, which are charged to a special section of the ordinary budget. This expenditure was estimated at 542,000 Swiss francs.

In addition, the Committee noted that the Conference budget had been adjusted to take into account changes in the common system of the United Nations and the specialized agencies with regard to the salaries and allowances of short-term supernumerary staff and fluctuations in the rate of exchange between the US dollar and the Swiss franc, as required by Administrative Council Resolution No. 647. As a result of these adjustments, the budget of the Conference stands at 2,061,000 Swiss francs, i.e. a decrease of 149,000 Swiss francs.

3. Final Acts

Under the terms of Administrative Council Resolution No. 83 (amended),

"... if a conference or meeting prints, for its own use, documents of which the typographical composition can subsequently be used, in whole or in part, for the printing of the Final Acts, it must bear a percentage of the composition costs and the whole of the printing costs of the said document;"

"... the percentage of the composition costs ... shall be decided by the Plenary Meeting of the conference or meeting."

As all the documents which can be used as a basis for the sales edition of the Final Acts of the Conference are prepared using word processing systems, no expenditure under this heading need be charged to the supplementary publications budget.

On the other hand, in accordance with the provisions of Nos. 119 and 122 of the Convention (Nairobi, 1982), the costs of translating the Final Acts of the Conference into the six official languages are charged to the Conference.

4. Situation of Conference expenditure

Under No. 478 of the Convention, the Budget Control Committee has to submit a report to the Plenary Meeting showing, as accurately as possible, the estimated total expenditure of the Conference.

Accordingly, Annex 1 contains a statement showing the Conference budget, as approved by the Administrative Council and adjusted under Resolution No. 647, together with a breakdown of credits among the budget sub-heads and items as well as the actual expenditure incurred as at 23 February 1987. There is also an indication of the expenditure committed up to that date and an estimate of expenditure up to the close of the Conference's work.

The above statement shows that the total amount to be charged to the ordinary budget for WARC-HFBC(2) is estimated at 1,997,000 Swiss francs, i.e. 64,000 Swiss francs less than the amount allocated by the Administrative Council and adjusted under Resolution No. 647. It can therefore be assumed that Conference expenditure will remain within the limits laid down.

Annexes 2.1, 2.2 and 2.3 to this document show, for information, the situation of expenditure on preparatory work for the First Session of the WARC-HFBC, expenditure for the First Session, 1984, and intersessional work for 1985 and 1986.

5. Expenditure limit fixed by Additional Protocol I to the Convention (Nairobi, 1982)

Committee 3 considered the situation of Conference expenditure, including expenditure on preparatory work and intersessional work, in relation to the expenditure limit fixed for WARC-HFBC by the Plenipotentiary Conference (see Annex 3 to this document).

6. Recognized private operating agencies and international organizations taking part in the Conference

Under Article 16 of the Financial Regulations, the report of the Budget Control Committee must include a list of the recognized private operating agencies and international organizations which contribute to the expenses of the Conference. To this shall be added a list of the international organizations which have been exempted from payment in accordance with Resolution No. 925 of the Administrative Council.

The list is found in Annex 4 to this document.

7. Additional expenditure to be envisaged for implementation of the decisions of the Conference

No. 478 of the International Telecommunication Convention (Nairobi, 1982) provides that the Budget Control Committee's report to the Plenary Meeting must show, as accurately as possible, the costs that may be entailed by the execution of the decisions taken by the Conference. Article 80 of the Convention, concerning the financial responsibilities of administrative conferences, specifies that before adopting proposals with financial implications, conferences must take account of all the Union's budgetary provisions with a view to ensuring that those proposals will not result in expenses beyond the credits which the Administrative Council is empowered to authorize.

Furthermore, Resolution No. 48 of the Plenipotentiary Conference (Nairobi, 1982) provides,

"that before adopting Resolutions and Recommendations or taking decisions which are likely to result in additional and unforeseen demands upon the budgets of the Union, administrative conferences, having regard to the need for economy, shall:

1.1 prepare and take into account estimates of the additional demands made on the budgets of the Union;

1.2 where two or more proposals are involved, arrange them in order of priority;

- 1.3 prepare and submit to the Administrative Council a statement of the estimated budgetary impact, together with a summary of the significance and benefit to the Union of financing the implementation of those decisions, and an indication of priorities where appropriate."

In this connection, it is recalled that, in the budget approved for 1987, the Administrative Council made provision for the possible extension of four P.4 posts for immediate post-conference work for the period from 1 July to 31 December 1987, the period up to 30 June 1987 being already covered by the budget of the Second Session of the Conference itself. Provision for the possibility of extending these posts was included up to the end of 1987 in section 18 relating to expenditure concerning the "implementation by the IFRB of the decisions of administrative conferences" subject to a decision by the Second Session of WARC-HFBC and the financial provisions approved by the Budget Control Committee.

In going through item 1.2 of Resolution No. 48 of the Plenipotentiary Conference (Nairobi, 1982) relating to priorities to give to the different proposals, the Committee has been of the opinion that the Conference had agreed that most of the post conference work should be considered as a package where all elements were linked and where priorities could not be established.

The Budget Control Committee gave detailed consideration to the estimates of the resources needed for post-conference work, in particular:

- Document 191(Rev.1) prepared by the IFRB;
- Document 202 submitted by the Director of the CCIR;
- the recapitulation of additional costs submitted by the Secretary-General, setting out the financial implications of the IFRB and CCIR requirements as well as those relating to the computer and the Group of Experts (Document 209(Rev.1)). Extracts from these documents are found in Annexes 5, 6 and 7.

During the consideration of these estimates, several members of the Budget Control Committee expressed their concern and preoccupation at the high level of expenditure contemplated. Some members considered that the estimates are unrealistic and could be reduced. While some members reserved their position regarding the high level of expenditure contemplated, some others reserved their position regarding the estimates of expenditure indicated in Documents 191(Rev.1) and 209(Rev.1).

With regard to the limits set on expenditure by the Plenipotentiary Conference in Additional Protocol I, the Committee noted in particular that the estimates were substantially higher than the amounts authorized, namely:

Sections 11/17

Limit on WARC-HFBC expenditure approved by the Nairobi Conference	10,000,000
Balance available (estimate)	879,400
Expenditure contemplated	1,700,000

Section 18 - Implementation by the IFRB  
of Conference Decisions

Limit approved by the Nairobi Conference	4,550,000
Balance available (estimate) (for WARC-HFBC as well as for WARC MOB-87 and ORB-88)	1,165,000
Expenditure contemplated	2,300,000

It is up to the Plenary Meeting to give its opinion on this situation.

In accordance with No. 479 of the Convention, this report, after consideration and approval, will be transmitted to the Secretary-General, together with the observations of the Plenary Meeting, for submission to the Administrative Council at its next session.

\* \* \*

The Plenary Meeting is requested to examine this report and to take the necessary decisions regarding items 1.1 and 1.3 of Resolution No. 48 of the Plenipotentiary Conference of Nairobi, 1982.

Dr. M.K. RAO  
Chairman of the  
Budget Control Committee

Annexes: 7

ANNEX 1

Position of WARC-HFBC 1987 accounts as at 23 February 1987

Heading	Budget approved by AC	Budget adjusted on 01.02.87	Expenditure at 23.02.87  actual committed estimated total		
col.	1	2	3	4	5
thousands of Swiss francs					
Subheads II-IV - Work of the Conference					
Subhead II - Staff costs					
423.11 Salaries and related exp.	1326	1195	45	1110	1155
423.38 Recruit. travel costs	81	81	6	52	58
423.41 Insurance	35	35	7	35	42
	1442	1311	58	1197	1255
Subhead III - Premises and equipment costs					
433.61 Premises, furniture, machines	40	40	0	39	39
433.62 Document production	60	60	0	69	69
433.63 Office supplies & costs	50	50	3	33	36
433.64 PTT	50	50	25	23	48
433.65 Technical installations	4	4	0	4	4
433.69 Sundry & unforeseen	10	10	1	9	10
	214	214	29	177	206
Subhead IV - Other expenditure					
443.00 Final Acts of the Conference	54	54	0	54	54
Subhead VI - Post-Conference work					
461.11 Salaries & related exp.	103				0
461.12 Supernumerary staff	120	225	82	143	225
461.41 Insurance	20				0
461.50 Computer facilities	217	217	1	216	217
461.61 Premises, furniture, machines	40	40	4	36	40
	500	482	87	395	482
TOTAL SECTION 11.4	2210	2061	174	1823	1997
UNUSED CREDITS					64

Col. 2: Budget including additional credits to take account of changes in the common system of the United Nations and its specialized agencies.

ANNEX 2.1

Preparatory work in 1983 for the World  
Administrative Conference for HF Broadcasting

Items	Budget 1983	1983 Accounts
	- Swiss francs -	
<u>Sub-head I - Staff expenditure</u>		
11.401 Salaries and related expenses	205,700	198,773.40
11.402 Insurance	31,400	35,609.70
Total, sub-head I	237,100	234,383.10
<u>Sub-head II - Other expenses</u>		
11.405 Document production	-	8,265.95
11.410 CCIR preparatory work	270,000	86,385.70
Total, sub-head II	270,000	94,651.65
<u>Total expenditure, Section 11.4</u>	507,100	329,034.75



ANNEX 2.2

World Radio Conference HFBC-84

Items	Budget 1984	Accounts 1984
	- Swiss francs -	
<u>Sub-head 1 - IFRB preparatory work</u>		
11.401 Salaries and related expenses	506,200	458,371.35
11.402 Initial installation expenses	105,000	116,736.05
11.403 Insurance	90,200	76,692.75
11.404 Office space, furniture	104,000	86,267.00
11.405 Electronic equipment	100,000	105,049.65
Total for sub-head 1	941,400	843,116.80
<u>Sub-head 2 - Staff expenditure</u>		
11.421 Salaries and related expenditure	1,192,500	1,183,146.15
11.422 Travel - recruitment	92,000	78,254.85
11.423 Insurance	34,000	16,869.85
Total for sub-head 2	1,318,500	1,278,270.85
<u>Sub-head 3 - Premises and equipment</u>		
11.431 Premises, furniture, machines	90,000	36,370.65
11.432 Document production	100,000	74,041.50
11.433 Office supplies and overheads	40,000	48,003.05
11.434 PTT	43,000	21,721.45
11.435 Technical installations	20,000	-
11.436 Sundry and unforeseen	10,000	7,016.65
Total for sub-head 3	303,000	187,153.30
<u>Sub-head 4 - Other expenses</u>		
11.441 Report to the Second Session/ Final Acts	15,000	4,721.95
Total, Section 11.4	2,577,900	2,313,262.90

ANNEX 2.3

World Radio Conference HFBC-84  
intersessional work

Items	Budget 1985	Expenses 1985
	- Swiss francs -	
<u>Sub-head I - IFRB preparatory work</u>		
11.451 Salaries and related expenses	1,060,600	1,058,570.85
11.453 Insurance	214,600	195,782.55
11.454 Computer facilities	332,000	326,506.40
11.455 Offices, furniture, supplies	120,000	124,768.45
Total, sub-head I	1,727,200	1,705,628.25
<u>Sub-head II - CCIR preparatory work</u>		
11.461 Salaries and related expenses and insurance	80,000	72,135.05
11.462 Document production	20,000	17,737.65
Total, sub-head II	100,000	89,872.70
Total, Section 11.4	1,827,200	1,795,500.95

ANNEX 3

Expenditure limit fixed by Additional Protocol I  
to the Convention (Nairobi, 1982)

WARC-HFBC	Sections 11 and 17		
	Limit on expenditure Add. Prot. I	Actual or estimated expenditure	Difference
	- Swiss francs -		
<u>Limit on expenditure</u>	10,000,000		
1983: Preparatory work		403,000*	
1984: Preparatory work, cost of First Session, intersessional work		2,860,600*	
1985: Intersessional work		1,655,000*	
1986: Intersessional work		1,754,000*	
1987: Intersessional work, cost of Second Session, immediate post-Conference work		2,448,000**	
	10,000,000	9,120,600	879,400

The figures given in the table correspond to 1 September 1982 values.

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\* Actual expenses.

\*\* Expenses provided for in the budget.

ANNEX 4

List of recognized private operating agencies and international  
organizations contributing to the work of the Conference

	<u>No. of contributory units</u>
I. <u>Recognized private operating agencies</u>	
None	
II. <u>International organizations</u>	
II.1 <u>United Nations</u>	*)
II.2 <u>Specialized agencies</u>	
International Civil Aviation Organization (ICAO)	*)
World Meteorological Organization (WMO)	*)
II.3 <u>Regional telecommunication organizations</u>	
Arab Telecommunication Union (ATU)	*)
II.4 <u>Other international organizations</u>	
International Association of Broadcasting (IAB)	*)
International Radio and Television Organization (OIRT)	*)
Asia-Pacific Broadcasting Union (ABU)	*)
Arab States Broadcasting Union (ASBU)	*)
Union of National Radio and Television Organizations of Africa (URTNA)	*)
European Broadcasting Union (EBU)	*)
International Amateur Radio Union (IARU)	*)

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\*) Exempted from any contribution by Administrative Council Resolution No. 925.

ANNEX 5

(Extract from Document HFBC(2)/191(Rev.1)-E)

PRELIMINARY RESOURCE ESTIMATES  
FOR THE IMMEDIATE POST CONFERENCE WORK  
TO BE CARRIED OUT BY THE IFRB

1. INTRODUCTION

On the basis of the latest discussions held in various committees as well as on the basis of the "decisions" so far taken by the Conference, the Board has revised the preliminary resource estimates which are based on a new single scenario; the estimates are given in the Annex. An accurate assessment of the decisions of the Conference, can only be made, after a detailed study by the Board, after the Conference. The results of such a study will be communicated to the 42nd Session of the Administrative Council.

To carry on the software development work given in the Annex, a minimal period of 2 1/2 years is necessary. Additional time periods will be required to:

- i) allow the Board to undertake a detailed study of the decisions of this Conference;
- ii) carry out the extensive tests of the integrated system once the software has been completed.

2. SCENARIO: COMBINATION OF THE IMPROVED HFBC PLANNING SYSTEM AND THE IMPROVED ARTICLE 17 PROCEDURE INTO A SINGLE INTEGRATED SYSTEM

The assumption is made that a combined HFBC Planning System/Article 17 represents the decision of the Conference as it would result from Documents DT/65, DT/67 and DT/68. The simplifications introduced permit the reduction of the required total effort. For this new integrated system to be developed the tasks listed below need to be executed. It should be noted that because of the introduction of the consultation phases, which were not present in the previous version of the HFBC Planning System, as well as the need to develop a system for implementation, it is of paramount importance to design the integrated system, with operational aspects in mind.

3. TASKS

The list of tasks given below is to be interpreted simply as an inventory of the different items that need to be considered. These items are interlinked to the extent that the introduction or modifications of one of them has repercussions in all others. As an example, the addition of one or more test points will mean that virtually all the modules are affected and require change. Moreover the dimensions of the arrays in the various modules need to take into account the amount of available main computer memory. The introduction of new test points may lead to the total redesign of the modules (eg: GIR, frequency assignment) which require a large amount of main memory.

It should be also understood that some of the tasks which are required such as frequency continuity of type 3, 4, 5 will necessitate a totally new approach to the design and operation of the integrated system.

3.1 Aspects that will require modifications of software up to, and including, the selection of appropriate band

- a) Addition of new test points;
- b) Antenna patterns (slewed, multiband, tropical and any other type);
- c) Field strength calculations using the middle of the band in the planned portions, and the actual frequency in the coordinated portions;
- d) Linked requirements (type 2 continuity);
- e) Synchronized requirements;
- f) Mandatory application of type 1 frequency continuity;
- g) Application of frequency continuity of types 3, 4, 5, to the extent practicable;
- h) New method for computation of BBR (second and third bands);
- i) Use of a different value of Z for PRP;
- j) Definition of appropriate band.

3.2 Aspects that will require modifications of software after the selection of appropriate band

- a) Addition of test points;
- b) Congestion and transfer rules;
- c) Frequency assignment method;
- d) Linked requirements;
- e) Synchronized requirements;
- f) Application of continuity of all types;
- g) Calculation of S/I;
- h) Software for performance assessment;
- i) Linking the two procedures (Improved HFBC Planning System/Improved Article 17).

3.3 Other aspects

- a) Operation of a requirement on one or more days in a week;
- b) Impact of SSB on GIR, S/I, Frequency assignment (SSB-SSB, SSB-DSB, DSB-SSB).

3.4 Studies (engineering/software/operational)

- a) frequency continuity;
- b) synchronized requirements;
- c) conversion of new antenna patterns into the reference set;
- d) optimization of the GIR method;
- e) optimization of the frequency assignment;
- f) hour by hour processing versus 24 hours processing;
- g) change of modules because of memory limitations;
- h) further optimization of modules;
- i) extremely large number of magnetic tapes, files;
- j) linking of all modules, operational optimization of entire system;
- k) implementation of the partition of the bands between the planned portions and the coordinated portions.

3.5 Work resulting from consultation process

- requirement to send propagation results to administrations leads to the development of special modules, publication, etc.;
- selection of frequencies by the administration requires separate modules, including a separate data capture module;
- submission of additional requirements or modifications before the publication of the tentative plan/schedule, requires separate modules;
- processing of additions and modifications after the publication of the final plan/schedule, including the selection of frequencies at this stage requires separate modules.

3.6 Design of reports/forms, documentation

- design of new form and corresponding software for data capture and validation system;
- documentation of all modules and particularly development and documentation of a stand alone field strength prediction program incorporating new antennas,  $E_{min}$ , BCR, appropriate band.

- design of new output layouts and corresponding software;
- revision of IFRB technical standards (eg: SSB);
- preparation for and participation in information meetings;
- statistical reports.

3.7 Administrative support

- circular-letters;
- correspondence;
- documentation of software;
- information meetings;
- new version of planning system/Article 17 improved;
- publication of output reports/microfiche, etc.;
- [- requirements for the application of the current Article 17?;]
- requirements for tests purposes.

4. SCOPE OF RESOURCE ESTIMATES

The preliminary resource estimates given in the Annex will be reviewed and submitted to the 42<sup>nd</sup> Session of the Administrative Council. They pertain only to the design, software development, testing of modules and testing of the integrated system with a requirements file, documentation and administrative support and do not reflect any recurrent yearly expenditure associated with the operation of the procedures that may be adopted.

The expenditures associated with office space, supplies and computer support/facilities, as given in Document 209, will need to be revised by the Secretary General, in the light of the estimates contained in the Annex.

The estimates do not include any expenditures associated with information meetings that may be held in Geneva.



**PRELIMINARY ESTIMATES ON THE COMBINED  
IMPROVED HFBC PLANNING SYSTEM/IMPROVED ARTICLE 17**  
(based on Documents DT/65, DT/67 and DT/68)  
(Minimum Calendar Time of 2 1/2 years)

ITEM	SOFTWARE DEVELOPMENT (m/m)	DOCUMENTATION (m/m)
- Requirements file	10	2 (design of new form)
- Propagation	6	6
- New antenna patterns	3	3
- Usable bands	3	
- Reliabilities	3	
- Appropriate band (Frequency continuity)	9	
- Assessment of congestion and transfer rules	9	
- Frequency assignment (Frequency continuity)	9	
- Modifications and new requirements	9	
- OBR/SI	6	
- Final Plan schedule/ Tentative Plan schedule	6	
- Overall redesign	18	
- Testing (all modules)	12	
- Special problems (Synchronized, linked requirements, multiband antennas)	9	
- Other modules (Statistical reports)	12	
- Administrative support		30
- Other administrative activities (Drafting of reports, publications, presentations at information meetings, circular-letters etc.)		18
- Technical standards		18
- Data capture	6	
- Operational resources for the testing and running of the integrated system with the requirements file	30	
<b>SUB TOTALS</b>	<b>160 m/m 13 m/years</b>	<b>77 m/m 7 m/years</b>
<b>TOTAL</b>	<b>237 m/m or 20 m/years</b>	

ANNEX 6

(Extract from Document HFBC(2)/202-E)

WORK TO BE CARRIED OUT BY THE CCIR AFTER THE WARC-HFBC

The following table shows the estimated supplementary costs involved for the execution of the above-mentioned updating work :

	<u>- Swiss Francs -</u>
Computer equipment	10,000
Editing work (1 man-month)	10,000
Document preparation (translation, typing and printing)	5,000
	<u>25,000</u>
	=====

ANNEX 7

(Extract from Document HFBC(2)/209(Rev.1)-E)

ESTIMATE OF THE RESOURCES NEEDED FOR POST CONFERENCE WORK

A. PRELIMINARY RESOURCE ESTIMATES FOR THE IMMEDIATE POST CONFERENCE  
WORK TO BE CARRIED OUT BY THE IFRB

1. Supernumerary staff:	
Man months: P.4	160
G.6	77
	<u>Swiss francs</u>
2. Estimated cost of this supernumerary staff:	
Cost per m/m P.4	10,000
m/m G.6	5,500
3. Total cost: P.4	1,600,000
G.6	423,500
	<hr/>
	2,023,500
less the credit already entered in the budget approved by the Administrative Council under Section 18, i.e. 4 P.4, from 1.7.87 to 31.12.87	- 248,000
	<hr/>
	1,775,500
4. According to information supplied by the IFRB during the third meeting of Committee 3, the supernumerary staff is made up of officials who are already in service. The cost must therefore be increased by a sum estimated at:	130,000
5. Repatriation costs:	180,000
	<hr/>
6. Estimated cost of the supernumerary staff:	2,085,500
Total Swiss francs, value 1.1.1987	2,100,000
	<hr/> <hr/>

B. CCIR

Work to be carried out by the CCIR:  
Estimate of expenditure:

Computer equipment	10,000
Editing work (1 man month)	10,000
Document preparation (translation, typing and printing)	5,000
	<hr/>
	25,000
	<hr/>

It will be up to the Administrative Council  
to decide how far these expenses may be absorbed  
by the credits for regular CCIR work. No credits  
are charged to the HFBC Conference in this estimate.

C. ADDITIONAL COSTS FOR THE GENERAL SECRETARIAT

C.1 Headquarters expenditure

The cost of the computer resources is estimated at:

Computer resources

- 1987	100,000
- 1988	420,000
- 1989	420,000
	<hr/>
	940,000

Supernumerary/software staff

- 1987 (3 months)	30,000
- 1988	120,000
- 1989	120,000
	<hr/>
	270,000

Total, 1987 - 1989	1,210,000
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Document production and postage in connection with the revised Article 17	200,000
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The following additional expenditure  
should also be considered:

Premises - for 2 1/2 years	100,000
Furniture, supplies, etc.	80,000

Total	<hr/> 1,590,000 <hr/>
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C.2 Group of Experts

Number of representatives:	25	
Number of meetings (for 2 years)	2	
Duration of meetings	1 week	
Average cost per representative (travel and per diem)	5,500	
Cost for two meetings for 25 representatives		275,000
Interpretation, etc. 2 meetings, 6 languages		240,000
		<hr/>
		515,000
		=====

D. RECAPITULATION

A. IFRB	2,100,000
B. CCIR	p.m.
C. General Secretariat	
1. Headquarters	1,590,000*
2. Group of Experts	515,000
	<hr/>
Sw.frs. value 1.1.1987	4,205,000
Sw.frs. value 1.9.1982	4,000,000

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\* including additional staff  
(1 Professional, Computer Dept., P.3)

E. SITUATION AS REGARDS LIMITS ON EXPENDITURE

At its 41st session, the Administrative Council expressed the view that staff expenditure deriving from the decisions of WARC-HFBC should be regarded - up to 30 June 1987 - as expenditure to be charged to the accounts of the Conference.

The Administrative Council also decided that staff expenditure - as from 1 July 1987 up to the end of 1987 - should be regarded as expenditure to be charged to Section 18 - Implementation by the IFRB of the decisions of administrative conferences.

On the other hand, expenditure relating to computer facilities is considered as charged to the Conference budget.

In accordance with the above, the situation is as follows:

1. Expenditure under Sections 11/17 - WARC-HFBC

Credit available within the limit on expenditure	879,400
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Estimated expenditure (computer document production, postage, premises, etc., and Group of Experts)	1,700,000
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2. Expenditure under Section 18 - Implementation  
by the IFRB of the decisions of conferences

Credit available within the limit on expenditure (HFBC + MOB-87 + ORB-88)	1,165,000
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Estimated expenditure (staff costs, including supernumerary staff, for the computer)	2,300,000
---	-----------

# HFBC (2)

INTERNATIONAL TELECOMMUNICATION UNION  
WARC FOR THE PLANNING OF THE HF BANDS  
ALLOCATED TO THE BROADCASTING SERVICE  
SECOND SESSION, GENEVA, February-March 1987

Addendum 1 to  
Document 262-E  
7 March 1987  
Original: English

## PLENARY MEETING

### Note by the Chairman

#### PARTIAL REVISION OF THE RADIO REGULATIONS

#### Article 8

#### Frequency Allocation

Provision No. 531 shall be modified by inserting the following text after the reference is made to Resolution 508:

"The provisions of Resolution PL/[2](HFBC) also apply".

K. BJÖRNSJÖ  
Chairman

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PLENARY MEETING

Note from the Chairman

PARTIAL REVISION OF THE RADIO REGULATIONS

1. Having regard to the conclusions in the Plenary, the texts annexed hereto are draft partial revisions of the Radio Regulations related to :
  - Modifications to Article 17
  - Modifications to Article 30
2. Appropriate modifications to Appendices 2 and 7 have been approved in First Reading in Document 242 (B.9) and 246 (B.10). In the Document 234 (B.7), the text of new Appendix 45 is introduced.
3. A draft Preamble will be published separately.

J.K. BJÖRNSJÖ  
Chairman



ARTICLE 17

MOD        Planning and Procedures for the Bands Allocated Exclusively to the  
             Broadcasting Service Between 5 950 kHz and 26 100 kHz

ADD 1741   Section I Introduction

ADD 1742   The operation of the existing procedure of Article 17 shall take into  
             account the principles listed in Section II. All administrations  
             are urged to comply with these principles to the maximum extent  
             possible.

ADD 1743   Section II Planning Principles

ADD 1744   §1. (1) In accordance with the International Telecommunication  
             Convention and with the Radio Regulations annexed thereto, the planning  
             of the High Frequency bands allocated to the broadcasting service shall  
             be based on the principle of equal rights of all countries, large or  
             small, to equitable access to these bands and to utilize them in  
             accordance with the decisions taken by this Conference. In planning,  
             an attempt shall also be made to achieve an efficient utilization of  
             these frequency bands, account being taken of the technical and  
             economical constraints that may exist in certain cases. On the basis  
             of the foregoing, the following planning principles shall be applied.

             (2) All the broadcasting requirements, current or future,  
             formulated by the administrations, shall be taken into account and be  
             treated on an equitable basis, so as to guarantee the equality of  
             rights referred to in paragraph [§1. (1)] and to enable each  
             administration to provide a satisfactory service.

             (3) All the broadcasting requirements, national <sup>1/</sup> and  
             international, shall be treated on an equal basis, with due  
             consideration of the differences between these two kinds of  
             broadcasting requirements.

             (4) In the planning procedure, an attempt shall be made to  
             ensure, as far as practicable, the continuity of the utilization of a  
             frequency or of a frequency band. However, such continuity should not  
             prevent equal and technically optimum treatment of all broadcasting  
             requirements.

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<sup>1/</sup> An HF broadcasting use is considered as being for purposes of national  
coverage when the transmitting station and its associated required service area  
are both located within the territory of the same country.

(5) The periodical planning process shall be based solely on the broadcasting requirements to become operational during the planning period. It shall furthermore be flexible to take into account new broadcasting requirements and modifications to the existing broadcasting requirements, [in accordance with the modification procedures to be adopted by the Conference].

(6) The planning procedure shall be based on DSB transmissions. SSB transmissions which administrations might wish to make may, however, be permitted in lieu of planned DSB transmissions, provided that the level of interference caused to DSB transmissions [appearing in the Plan] is not increased.

(7) For efficient spectrum utilization, whenever possible, only one frequency should be used to meet a given broadcasting requirement in a given required service area and in any case the number of frequencies used should be the minimum necessary to provide satisfactory reception.

(8) Those broadcasting requirements for which, through lack of the requisite technical facilities, the agreed minimum usable field strength is not ensured at any point of the required service area, [could obtain proportionally reduced protection against interference].

(9) In a first stage of the equitable application of [the] [a new] planning procedure, an attempt will be made to include the highest possible number of the submitted requirements so as to achieve the desired quality level. The remaining requirements would be processed on the understanding that lower quality levels would be acceptable.

(10) The planning method shall satisfy on an equal basis a minimum of the broadcasting requirements submitted by administrations with [the] [an acceptable] level of overall broadcasting reliability adopted by the [a future competent] Conference. Special consideration shall be given to administrations which, in the first instance, are unable to achieve the overall broadcasting reliability.

**ADD 1745 Section III Planning Method**

**ADD 1746** The Planning Method developed in accordance with the decisions of the WARC HFBC, Geneva 1987 shall be improved and tested in accordance with the instructions contained in Resolution [PL/1] for adoption, if acceptable to a competent World Administrative Radio Conference

**ADD 1747 Section IV - Consultation Procedure**

[No change in provisions 1748 to 1772 except for renumbering of Sections.]

Article 30

Broadcasting Service and  
Broadcasting-Satellite Service

Section I. Broadcasting Service

ADD 2673A.

C. HF Bands allocated exclusively to the  
Broadcasting Service.

ADD 2673B

Double-sideband and single-sideband transmitting  
stations operating in the HF bands allocated  
exclusively to the Broadcasting Service shall  
satisfy the respective system specifications  
contained in Appendix 45.

PLENARY MEETINGNote by the Chairman**FINAL ACTS****of the World Administrative Radio Conference for the Planning of the HF  
Bands Allocated to the Broadcasting Service (HFBC-87)**

Geneva, 1987

**PREAMBLE**

The World Administrative Radio Conference (Geneva, 1979), in its Resolution No. 508, considering, inter alia, that the existing situation in the HF bands allocated exclusively to the broadcasting service is not satisfactory, resolved that the use of the HF bands allocated to the broadcasting service should be the subject of planning by a world administrative radio conference to be held in two sessions.

The Plenipotentiary Conference (Nairobi, 1982), in its Resolution Nr. 1, decided and made provisions that this Conference should be held in two sessions.

The Administrative Council, at the opening meeting of its 38th Session, considered Resolution No. 508 of the WARC-79 and took necessary steps for the convening of the First Session of the World Administrative Radio Conference for the Planning of HF Bands Allocated to the Broadcasting Service, with the adoption of Resolution No. 874.

The First Session, which took place in Geneva from 10 January to 11 February 1984, established, in its Report to the Second Session, technical parameters to be used for planning as well as the principles governing the use of the HF bands exclusively allocated to broadcasting service. Having adopted an associated method of planning the First Session requested the IFRB to develop Computer programmes and test procedures for the preparation of the application of the planning method. Furthermore, it also requested CCIR to continue and to complete the complementary studies on certain technical elements.

The Administrative Council, at its 39th Session, established, by its Resolution No. 912, the agenda for the Second Session and, at its 41st Session, considering the results of the foregoing consultations, amended that Resolution and resolved that the Second Session, be convened in Geneva for five weeks commencing on Monday, 2 February 1987.

Consequently, the Second Session of the World Administrative Radio Conference for the Planning of the HF Bands Allocated to the Broadcasting Service was held at Geneva from 2 February to 8 March 1987 and adopted a partial revision of the Radio Regulations which comprises the following elements :

- MOD Art 17 Planning and Procedures for the Bands allocated Exclusively to the Broadcasting Service between 5 950 kHz and 26 100 kHz;
- MOD Art 30 Broadcasting Service and Broadcasting Satellite Service
- MOD App 2 Submission of information to the IFRB for High Frequency Broadcasting Requirements;
- MOD App 7 Table of transmitter frequency tolerances;
- ADD App 45 Technical Parameters Relating to the use of the HF Bands Exclusively Allocated to the Broadcasting Service.

The partial revision of the Radio Regulations, as outlined above, shall form an integral part of the latter and shall enter into force on 1 September 1988, at 0001 hours UTC, unless a different date of entry into force is stipulated therein with regard to anyone, or to anyone part, of the elements referred to in the preceding paragraph.

The Conference also defined and adopted the short term and medium term programme of action to be followed towards an improved use of the HF bands exclusively allocated to the broadcasting service.

The delegates signing this partial revision of the Radio Regulations hereby declare that, should an administration make reservations concerning the application of one or more of the revised provisions of the Radio Regulations, no other administration shall be obliged to observe that provision or those provisions in its relations with that particular administration.

Members of the Union shall inform the Secretary-General of their approval of the partial revision of the Radio Regulations by the World Administrative Radio Conference for the Planning of the HF Bands Allocated to the Broadcasting Service (Geneva, 1987). The Secretary-General shall inform Members promptly regarding receipt of such notifications of approval.

IN WITNESS WHEREOF, the delegates of the Members of the International Telecommunication Union mentioned below have, on behalf of their respective competent authorities, signed one copy of the present Final Acts in the Arabic, Chinese, English, French, Russian and Spanish languages. In case of dispute, the French text shall prevail. This copy shall remain deposited in the archives of the Union. The Secretary-General shall forward one certified true copy to each Member of the International Telecommunication Union.

Done at Geneva, ... March 1987

J.K. BJÖRNSJÖ

Chairman

COMMITTEE 3

SUMMARY RECORD  
OF THE  
SIXTH AND LAST MEETING OF COMMITTEE 3  
(BUDGET CONTROL)

Friday, 6 March 1987, at 1000 hrs

Chairman: Dr. M.K. RAO (India)

Subjects discussed:

Documents

- |  |       |
|--|-------|
| 1. Approval of the summary record of the fourth meeting of Committee 3 | 217   |
| 2. Draft report of the Budget Control Committee to the Plenary Meeting | DT/72 |
| 3. Completion of the work of the Committee                             | -     |

1. Approval of the summary record of the fourth meeting of Committee 3  
(Document 217)

The summary record of the fourth meeting was approved, as amended (see Corrigendum 1 to Document 217).

2. Draft report of the Budget Control Committee to the Plenary Meeting  
(Document DT/72)

2.1 The Chairman said that, as compared with Document DT/63(Rev.1), the draft report now contained a minor addition to Section 1, expressing appreciation for the facilities made available by the IFRB, and Section 7 (Additional expenditure to be envisaged for implementation of the decisions of the Conference) had been completed.

2.2 The Committee Secretary said that the passages added to complete Section 7 since the fifth meeting of the Committee summarized the estimated costs of implementing Conference decisions.

2.3 The delegate of the United Kingdom said that in the third paragraph of Section 7, lines 5-6, the reference to the provision made for the possibility of extending the four P.4 posts in question should be qualified by adding "to the end of 1987" after "posts". Section E of the new Annex 7 should likewise be amended in its second paragraph to make it clear that the Administrative Council decision under reference applied only until the end of 1987.

2.4 The representative of the IFRB (Mr. Berrada) said that the estimated balance of 1,165,000 Swiss francs shown as being available under Section 18 for implementation by the IFRB of Conference decisions was not exclusively for the current Conference and that fact should be indicated.

2.5 The delegate of Algeria said that he could not agree with the estimates now included in Section 7 because he considered the requirements on which they were based exaggerated.

2.6 The delegate of the United States proposed that the final sentence requesting the Plenary Meeting to examine the report be extended to read "and make the necessary decisions regarding provisions 1.2 and 1.3 of Resolution No. 48 of the Plenipotentiary Conference concerning the priorities to be observed in post-Conference work". He wished to record his Government's extreme concern about the cost implications of the Conference's decisions and the ability of the ITU to carry them out within existing budget levels. If that was not possible, it was important for the Conference to provide the Administrative Council with an order of priorities so as to assist its decisions on the work to be carried out with the funds available.

2.7 The Chairman said that while it was generally necessary to indicate the priority of Conference decisions, he wondered if that was possible in the current case where they were so interlinked that it would be difficult to separate them.

2.8 The delegate of Algeria agreed with the Chairman that it would be difficult for the Conference to give precise guidance on priorities. It was for the Administrative Council to assess the problems of reconciling the expenditures required with the funds available. The estimates in the draft report were not definitive and he believed that they could be substantially reduced.



2.9 The delegate of the United Kingdom said that it was not for the Committee but for the Plenary Meeting to pronounce on the question of determining priorities, and it should have full estimates of the financial implications to assist its discussions.

2.10 The delegate of the Federal Republic of Germany suggested the addition of a sentence covering the problem of establishing priorities to assist the Conference in adopting the Committee's report.

2.11 The delegate of Canada agreed with that proposal, but thought that priorities could be determined as between the package of indissociable elements identified by Committee 5 and such other matters as the establishment of a Group of Experts, monitoring programmes and CCIR work resulting from Conference decisions. Efforts must be made to ensure that funds would be available for the work required.

2.12 The delegate of Saudi Arabia expressed agreement with the delegate of Algeria's remarks.

2.13 The delegate of the United States said that it was important for the Conference to state its position on the matter of priorities because, under Article 80 of the Convention, the problem passed to the Administrative Council to settle if the Conference was unable to do so. So far as the estimates provided were concerned, they were doubtless the best available and there was no reason to adjust them.

2.14 The delegate of Algeria said that when considering priorities, all the essential elements were included in the indissociable package described in Document DT/65. The other matters mentioned were not part of the package and had not yet been considered by the Conference. It was not for the Committee to specify how they should be handled.

2.15 The delegate of Canada said that although the main elements of the package were those agreed in Document DT/65, Canada believed that such items as the proposals for a conference on the HF broadcasting expansion bands and for a Group of Experts were also important features of it. With regard to priorities, the calendar set out in draft Resolution [PL/1] (Document 253) was consistent with spreading the costs of the package over a period of years which would include the holding of the next Plenipotentiary Conference. He suggested that after that document had been examined in Plenary, its Annex should be attached to the Committee's report.

2.16 The delegate of France supported the previous speaker's view that the establishment of a Group of Experts should be considered part of the package to be agreed by the Conference.

2.17 The delegate of Italy reserved her Delegation's right to revert to the financial implications of Conference decisions in the Plenary Meeting.

2.18 The Chairman of the IFRB said that the estimates presented were the lowest possible. The Board was as concerned as administrations about costs. It was unfortunate that they were so high but that was not due to over-estimating. In general, the Board under-estimated costs and covered any excess out of general resources and by unpaid overtime. However, that had become very difficult as a result of the pressure on the ITU to cut costs since the last Plenipotentiary Conference and there were now no margins available to cover additional tasks.

2.19 The delegate of Algeria said that the matter of the establishment of a Group of Experts had not yet been decided and the Committee's report should therefore contain no reference to expenditure on it.

2.20 The delegate of the Federal Republic of Germany said that he believed the decision to establish a Group of Experts had already been taken in principle. One way for the Conference to settle the matter of the additional expenditure required to implement its decisions might be to insert into its draft Resolution on the Programme of Action to be undertaken (Document 253) an invitation to the Administrative Council to solve the problem in the light of that Resolution's other provisions.

2.21 The delegate of Tunisia expressed surprise at the previous speaker's view that a decision had already been taken in principle to establish a Group of Experts. He was opposed to members of any such group intervening in the work of the IFRB, which should be left to international civil servants.

2.22 The delegate of the United Kingdom, intervening on a point of order, questioned if the Committee's mandate covered the discussion in progress.

2.23 The delegate of Spain said that the Committee should deal with financial matters and not with questions to be decided by the Plenary Meeting.

2.24 The delegate of the United States also agreed that the discussion was totally inappropriate for the Committee, which simply had to provide the Plenary Meeting with the necessary budgetary information for the decisions under consideration.

2.25 The Deputy Secretary-General, agreeing with the previous speakers, said that the estimates would of course be reconsidered after the Conference had adopted its decisions and before they were submitted to the Administrative Council. The question whether to invite the Administrative Council to provide funding for the activities approved by the Conference in the draft Resolution currently being prepared should be left to the Plenary Meeting. It was not customary to do so when costs were implicit in such Resolutions.

2.26 The Chairman said that the comments made would be reflected in the record of the meeting and he would make minor amendments to the Committee's draft report where necessary. While it was true that the Committee's function was to consider the estimates, it had both a right and a responsibility to scrutinize them in every respect and ensure that they were relevant.

### 3. Completion of the work of the Committee

After the customary exchange of compliments, the Chairman declared the Committee's work completed.

The meeting rose at 1100 hours.

The Secretary:

R. PRELAZ

The Chairman:

M.K. RAO

PLENARY MEETING

MINUTES

OF THE

FIFTEENTH PLENARY MEETING

Friday, 6 March 1987 at 1115 hrs and at 1440 hrs

Chairman: Mr. K. BJÖRNSJÖ (Sweden)

<u>Subjects discussed:</u>	<u>Documents</u>
1. Recommendation on national broadcasting in HF bands	259(Rev.1)
2. Ninth series of texts submitted by the Editorial Committee for first reading (series B.9)	242
3. Eighth series of texts submitted by the Editorial Committee for first reading (series B.8)	235
4. Tenth series of texts submitted by the Editorial Committee for first reading (series B.10)	246
5. Second report by the Chairman of Committee 5 (items 6 and 7)	231, 241, 247
6. Ninth series of texts submitted by the Editorial Committee (continued)	

1. Recommendation on national broadcasting in HF bands  
(Document 259(Rev.1))

1.1 The Chairman drew the attention of the meeting to the draft Recommendation on broadcasting for national coverage in the HF bands, prepared in accordance with the decisions of Committee 5.

1.2 The delegates of Zimbabwe, Botswana, Ecuador, Tanzania, Algeria and Cuba supported the draft Recommendation.

1.3 The delegates of the United Kingdom, Tanzania and Mexico said that the text of considering b) should be in conformity with the Report of the First Session (paragraph 4.1.2.2).

1.4 The Chairman proposed the following text for considering b):

"that the First Session of WARC-HFBC (1984) decided that national and international broadcasting requirements shall be treated on an equal basis, with due consideration of the differences between these two kinds of broadcasting requirements".

It was so agreed.

1.5 The delegate of Iraq said that, in his opinion, considering c) was in contradiction with the amended draft of considering b), since it dealt only with the HFBC Planning System. In the light of the remarks of the Chairman that considering c) reflected the concern of many delegations, and of the delegate of Brazil that it was drawn from paragraph 4.2.3.4.5 of the Report of the First Session, he said that he would not press for its deletion.

1.6 Following a remark by the delegate of Italy, concerning considering f) to the effect that it was incorrect to state that the Second Session of WARC-HFBC (1987) had decided not to consider the question in detail, whereas in reality it had been unable to do so, the delegate of Brazil proposed that the word "decided" be replaced by "did".

It was so agreed.

1.7 The delegate of Poland said that national HF broadcasting should not be considered in isolation from tropical broadcasting. He therefore proposed the insertion of a new considering, to follow considering e):

"that the needs for national broadcasting of countries in the tropical zone are partially covered in the bands allocated to tropical broadcasting and partially in the bands allocated exclusively to HF broadcasting".

1.8 The delegates of Kenya, Papua New Guinea, Brazil and Ghana supported that proposal.

It was so agreed.

1.9 The delegate of Poland further suggested that the phrase "taking also into account the situation in the tropical bands" be inserted under "recommends" but the delegate of Brazil, having said that he found that suggestion unacceptable, withdrew the proposal.

Draft Recommendation (PL/A) was approved, as amended.

2. Ninth series of texts submitted by the Editorial Committee for first reading (series B.9) (Document 242)

New Appendix 2

2.1 The Chairman of Committee 7 said that in the English text the title should be deleted. Following observations by the Secretary-General and the delegate of Poland, the Chairman suggested that the title should read:

"APPENDIX 2 (HFBC - 87)

**Submission of HF Broadcasting Requirements to the IFRB**

(See Article 17)"

It was so agreed.

- 2.2 The delegate of the Federal Republic of Germany pointed out that the Article number might have to be changed later.

Introduction

2.3 The delegate of Qatar said that the term "reception area" in the first paragraph should be rendered "required service area" but after the explanation by the delegate of Spain and the Chairman that "reception area" had been used in paragraph 2.11 of the Report of the First Session, he agreed to accept the original drafting.

2.4 In response to the delegate of Finland, the delegate of the United Kingdom said that the word "characteristics" in the second paragraph should be replaced by "information".

Section B

2.5 In reply to a concern expressed by the delegate of Syria concerning the administration's identification number in paragraph 1.1, the representative of the IFRB (Mr. Brooks) said that the number was merely for reference purposes in correspondence with the administrations. At the Chairman's suggestion it was agreed to refer to the number as the "administration's reference number".

2.6 The delegate of Qatar considered that the map of CIRAF zones should be mentioned at the end of paragraph 5.

The meeting was suspended at 1220 hours and resumed at 1440 hours.

2.7 The Chairman drew the meeting's attention to changes made by the Editorial Committee to paragraph 5, which would now read:

"... parts of quadrants specified by the sets of test points contained within those parts."

Paragraph 11.1

After an exchange of views in which the delegates of Syria and Poland participated, it was agreed to retain paragraph 11.1.

Paragraph 12

2.8 The representative of the IFRB (Mr. Brooks) suggested that paragraph 12 should read:

"Assigned frequency (for application of Article 17 or section 2 of the Annex to Resolution COM6/2).

\*Administrations may indicate:

Assigned frequency\*\*\*  
Alternative frequency/frequencies\*\*\*  
Preferred frequency band."

In reply to a query from the Chairman of Committee 7, he said that the assigned frequency could be used for application not only of Article 17 as it stood at present, but also, for testing purposes, for application of the amended Article 17 between now and 1992.

2.9 The delegate of Syria proposed that footnotes \*\*\* a) and b) be deleted. The delegate of Poland strongly opposed that proposal, which contained very important information. The delegate of Austria proposed that the sentence "Carrier frequencies should be expressed in kHz ending with 0 to 5" be added at the end of b) of the same footnote.

2.10 The representative of the IFRB (Mr. Berrada), in answer to a question from the delegate of China, said that the requirements file would be applicable both to sections 2 and 3 of Article 17.

2.11 The representative of the IFRB (Mr. Brooks) suggested an additional sentence:

"If no information is provided, the Board will select the appropriate band and frequency in accordance with the Annex to Resolution COM6/2."

Paragraph 16

2.12 The representative of the IFRB (Mr. Berrada) suggested that paragraph 16 should read:

"... in case more than one frequency has to be used to achieve the required basic broadcast reliability (BBR) (see Resolution ...)".

Footnote (1) could then be deleted.

2.13 In reply to concern expressed by both the delegate of Brazil and the delegate of the United States as to the appropriateness of having cross-references to a Resolution incorporated in the Appendix to the Radio Regulations, he said that such cross-references would only be included in specific cases, to avoid misunderstanding, not as a general rule.

Paragraph 21

2.14 The delegate of Yugoslavia proposed that in paragraph 21, "(RF)" be added after "co-channel protection ratio".

Paragraphs 22 and 23

2.15 The Chairman of Committee 6, supported by the delegates of Botswana and Colombia, suggested that paragraph 22 should be retained and the square brackets deleted.

2.16 The delegate of the United States said that if paragraphs 22 and 23 related to the testing phase of the HFBC Planning System or to the improved Article 17, it would be premature to include them in the Appendix to the Radio Regulations. It would be more appropriate to transfer them to Resolution COM6/2.

2.17 The delegate of Iraq said that if the word "national" was to be used, there should be a cross-reference to the definition of that term.

2.18 The Chairman of Committee 6 said it had already been indicated by the representative of the IFRB that the Appendix could contain information referring to the post-conference testing period. There could thus well be a cross-reference in paragraph 22 to the definition of a national service. He saw no harm in including the paragraph in the appendix.

2.19 The delegate of the United Kingdom, supported by the delegate of Iraq, proposed that paragraphs 22 and 23 be combined as follows: "Nature of requirement (for example, national or international)", with a reference to the footnote "for information only".

2.20 The Chairman of Committee 6 said the new Appendix 2 covered three categories of information: basic (which had to be taken into account by the IFRB); optional (which, if supplied, had also to be taken into account); and "for information only", on which the IFRB was not required to act. Information to be used for post-conference testing was not in the latter category, and so that footnote could not be used.

2.21 The Chairman suggested reference be made to a footnote reading as follows: "For application of Resolution COM6/2. For application of Article 17, this characteristic is for information only."

2.22 The Secretary-General drew the meeting's attention to a footnote on page 74 of the Report to the Second Session, which read: "An HF broadcasting use is considered as being for purposes of national coverage when the transmitting station and its associated required service area are both located within the territory of the same country." There is a need for this note to appear in the texts of the Conference.

2.23 The representative of the IFRB (Mr. Berrada), in reply to a point raised by the delegate of Italy, noted that the current Article 17 did not differentiate between national and international. However, testing to be carried out in accordance with Resolution COM6/2 would earmark requirements which were national, so that administrations could identify them.

It was agreed to leave paragraphs 22 and 23 in abeyance, pending informal consultations.

Section C: Map of CIRAF zones

2.24 The representative of the IFRB (Mr. Berrada) suggested that wherever "CIRAF" was mentioned in the text there should be a footnote explaining that it stood for "Conferencia Internacional Radiodifusión de Altas Frecuencias".

The ninth series of texts submitted by the Editorial Committee (B.9), as amended and with the exception of paragraphs 22 and 23 was approved on first reading.

3. Eighth series of texts submitted by the Editorial Committee for first reading (series B.8) (Document 235)

Annex to Recommendation COM6/C

- 3.1 The Chairman of the ad hoc Group of the Plenary drew attention to the modifications to the main text contained in Document 260.

The eighth series of texts submitted by the Editorial Committee (Series B.8) was approved on first reading.

4. Tenth series of texts submitted by the Editorial Committee for first reading (series B.10) (Document 246)

Modifications to the Radio Regulations

- 4.1 The Chairman of the Editorial Committee said that the first two and a half lines should be deleted from ADD HFBC-87 so that the first sentence started: "The single-sideband system ..."

- 4.2 The delegate of Iraq suggested that the text of ADD HFBC-87 should be amended to read: "The single-sideband system adopted for progressive introduction in the bands ...". The delegate of Tunisia supported that proposal.

- 4.3 The Chairman pointed out that the decision concerning the introduction of the system was already reflected elsewhere.

- 4.4 The delegate of Paraguay drew attention to the fact that the text in question had already been agreed upon and was not in square brackets.

- 4.5 The Chairman of Committee 4 said that the parameters for double-sidebands and single-sidebands had already been considered in Appendix COM4/A to the Radio Regulations (Document 234) and approved; there had been no mention there of progressive introduction.

- 4.6 The delegate of Botswana was of the opinion that there was no need for such mention in the present text. The delegate of Brazil said that the text was quite clear and should remain as it was.

- 4.7 The delegate of the Islamic Republic of Iran supported by the delegate of Algeria then proposed that a cross-reference to the relevant text should be inserted, but after explanations by the Chairman of Committee 4, he withdrew the proposal.

The modification to the Radio Regulations as amended by the Editorial Committee was approved on first reading.

Recommendation COM5/A

- 4.8 The Chairman of the Editorial Committee said that the word "exclusively" should be deleted from the third line of paragraph considering a) and that the contents of the brackets at the end of paragraph considering c) should read "(HFBC-87)".



4.9 The delegate of the Federal Republic of Germany proposed that Recommendation COM/A might be combined with the draft Resolution contained in Document 253.

4.10 The Chairman said that at first sight the two texts appeared to overlap. However, while the items considered might possibly coincide at the same conference that would not necessarily be the case.

4.11 The delegate of Spain suggested that the matter might be left to the Administrative Council to decide. The delegates of the USSR and Canada shared that view.

4.12 The delegates of Brazil, Chile and Mexico said that the two texts should be kept separate.

4.13 The delegate of Italy said that his Delegation had not been satisfied with the wording of the Recommendation when it had been discussed in Committee 5. In view of the fact that it might be necessary to hold a conference around 1992, however, he would not oppose it.

4.14 The delegate of the Netherlands pointed out that no date was mentioned in the Recommendation whereas the draft Resolution made a specific reference to a date.

4.15 The delegate of Canada suggested that the Recommendation might be amended to state that a WARC should be held as soon as possible after the Plenipotentiary Conference.

4.16 The delegate of the United Kingdom was in favour of keeping the Recommendation and Resolution separate and introducing a link between the two in considering e), by adding "... broadcasting service, has adopted a target timetable for the introduction of an improved Planning System for the use of these bands and for the introduction of SSB techniques (see Resolution PL/1) but has concluded that this might be insufficient ...". In reply to a comment by the delegate of Chile, he said that the reference to Resolution PL/1 did not imply dates for the extension of bands but was related to the planning system of improved Article 17.

The amendment was adopted.

4.17 The delegate of Spain suggested that the words "Administrative Council Resolution No. 912 containing" should be deleted in paragraph considering c). The delegate of Canada said that the deletion would subtract some useful information from the text. The delegate of Spain consequently suggested that reference should be not to the Administrative Council Resolution but to Document 1 of the Conference.

4.18 The delegate of Canada suggested that paragraph considering c) should read:

"that at the thirty-ninth session (1984) of the Administrative Council, Resolution No. 912 was adopted establishing the agenda of the ...".

It was so agreed.

4.19 The delegate of the USSR proposed that the final phrase, in square brackets, of the paragraph under "recommends to the Administrative Council" should be deleted as it would imply prejudgement of the situation. The delegates of Paraguay, the Netherlands, Bulgaria, Czechoslovakia, Australia and the United States supported that proposal.

4.20 The delegate of Algeria proposed that the phrase should be retained and the square brackets removed. The delegates of Saudi Arabia, Mauritania, Tanzania, Tunisia, Iraq, Pakistan, Oman, Syria, Qatar, Kuwait, United Arab Emirates and India supported deletion of the square brackets.

4.21 The Chairman took it that the text would be retained with the removal of the square brackets.

It was so agreed.

The delegate of Australia reserved his position on the matter.

Recommendation COM5/A was approved, as amended.

The tenth series of texts submitted by the Editorial Committee (Series B.10) was approved, as amended, on first reading.

At the request of the delegate of China it was agreed that Committee 7 should be asked to pay special attention to the English and French terminology used in recommends to the Administrative Council.

5. Second report by the Chairman of Committee 5 (continued)  
(Documents 231, 241 and 247)

5.1 The Chairman invited the Plenary to consider the outstanding items in Document 231, namely sections 6 and 7. He recalled that a special Drafting Group had been set up to prepare a text that would reflect the French and Canadian proposals in Document 139(Rev.1), a proposal by Libya, and views expressed when Document 139(Rev.1) had first been discussed. The Group had consulted members of the Secretariat and the IFRB and its compromise text contained in Document 247 was now submitted to the Plenary Meeting for approval.

5.2 The delegate of Spain, speaking as Chairman of the special Drafting Group, introducing Document 247, said that the text was now in the form of a Recommendation to the Administrative Council. Considering f) was new, as was an element introduced into the financial aspects, namely the possibility of partial funding from "other financial resources". Two time periods had been taken into account, that between the end of the present Conference and the Plenipotentiary Conference, and that following the Plenipotentiary Conference. The notion of having a group composed of experienced individuals proposed by administrations, rather than of individuals belonging to an administration, was also new.

5.3 The delegate of Yugoslavia, supported by the delegates of Pakistan and India proposed that the words "Planning System" should replace "planning method" throughout the text.

It was so agreed.

The square brackets in the second paragraph of "recommends to the Administrative Council" were removed.

It was agreed that the delegate of Canada should assist the Editorial Committee in re-drafting paragraphs 1) and 2) slightly to make the meaning clearer.

5.4 The delegate of Iraq suggested that in paragraph 2) the geographical areas represented by Regions A to E should be properly indicated.

It was agreed that Committee 7 should be asked to indicate the Regions accordingly.

5.5 The delegate of Qatar supported by the delegate of Saudi Arabia proposed that "annual information meetings" be replaced by "annual coordination meetings" in paragraph 4). The delegate of Botswana opposed that proposal.

5.6 The Secretary-General said that "coordination" would suggest an agreement on the part of the IFRB to coordinate with administrations, which would border on certain constitutional issues.

5.7 The Chairman of Committee 7 proposed that the last part of recommends 4 should read: "it will be necessary to organize annual meetings for the exchange of information ...".

It was so agreed.

5.8 The delegate of Spain proposed that paragraph 1) of "also recommends to the Administrative Council" be reworded to reflect the possibility of more than one expert being nominated from a single administration, by agreement with other countries. It should not be compulsory to have one expert from one administration.

5.9 The delegate of Canada said that there had never been any intention of having more than one expert from each administration, because one of the features of the Group had been its broad representation of expertise. That was in fact clear from instructs the Secretary-General 1). The Drafting Group had adequately captured many of the points raised at the earlier discussion, but the text now before the Plenary was not as clear as the previous one. The matter might best be left to the Editorial Committee.

5.10 The delegates of Algeria and Iraq said that they could not agree to having more than one expert per administration.

The Spanish proposal was rejected.

5.11 The delegate of Poland said that before taking any decision on the Group of Experts, it would be useful to have some idea of the administrative costs of the Group of Experts' meetings and the costs of interpretation for five languages.

5.12 The Secretary-General said that those costs were for the Administrative Council to consider. However, in Document 209(Rev.1) the cost of two meetings for 25 representatives had been put at 275,000 Swiss francs and the cost of interpretation for four meetings, using six languages, had been put at 240,000 Swiss francs. However, it would be unique for a Working Group in the ITU sense to require interpretation in six languages, because other than for conferences and major Study Group activity, interpretation was confined to the working languages of the Union.

5.13 The delegate of Libya said that in the special Drafting Group he had raised the question of the financial difficulties that might prevent some administrations from participating in the annual information meetings. He had consequently proposed that the ITU should provide grants or fellowships to such administrations to enable them to attend. That proposal had been received sympathetically by other members of the Drafting Group and, having consulted the Secretary-General, his Delegation wished to propose a third indent of "instructs the Secretary-General" as follows:

"3) to seek ways of providing fellowships for the participants from the least developed countries."

5.14 The Secretary-General said that he was surprised at some of the terminology used in the Recommendation, particularly relating to the availability of other financial resources. UNDP fellowships related to national programmes set by governments in accordance with given priorities and it would be extremely rare for a fellowship to be granted for the ITU for other than training purposes. The ITU had a voluntary programme and contributions could be made to it. However, the cost of involving all developing countries would be in the order of 800,000 Swiss francs. His indication to the delegate of Libya had been that for any fellowships funds that might from time to time be available, the least developed countries should be given priority. Even so, the cost of travel and per diem to enable the participants from all least developed countries to attend a three-day meeting would be in the order of 250,000 to 300,000 Swiss francs, and the resources available to the Secretary-General were not of that order. While, therefore, understanding the spirit of the proposal, he regretted that it was not the practice of the Secretary-General to be anything other than prudent when discussing matters of that nature.

5.15 The delegate of Pakistan proposed that in view of the assurance given to him by the sponsors of the Recommendation that experts would have field and operational experience in HF broadcasting, the vague term "the necessary qualifications" be replaced by "field and operational experience in HF broadcasting".

5.16 The delegate of Japan, wondered whether field expertise was really useful for a group which would be examining the improvement of the HFBC Planning System as well as Article 17. As the work would involve computer programs and administrative procedures, he felt that Pakistan's proposal was unacceptable.

5.17 The Chairman of the IFRB, speaking as a member of the Board, said that he had grave doubts as to the wisdom of the Board being involved in the selection of candidates for the Group of Experts, for reasons that were both practical and procedural. First there was the question of qualifications, and in that connection the proposal made by Pakistan did not go far enough; second, there was the problem of selection criteria. The document gave no indication as to how the experts would be selected, and difficulties would arise in the cases of the candidates who were not accepted because they would have been nominated by the administrations. From the procedural point of view, it would be very unusual for the Secretariat to be involved in the selection of candidates for a body of experts which would cooperate with the Board. Arrangements for the selection of candidates should be left to the Administrative Council and the Board should not be involved in selection criteria.

5.18 The delegate of Algeria said that the selection of experts was the responsibility of each administration. The Secretary-General could invite nominations and then invite the Administrative Council to make the final selection.

5.19 The Secretary-General said that, as Secretary of the Administrative Council, he would be responsible for executing and obtaining information and presenting it to the Council for the necessary decisions. To be realistic, if there were more nominations from some regions than from others, the issue could become very sensitive. It might therefore be useful to reflect more on that section of the Recommendation.

5.20 The delegate of Qatar said that it had emerged from discussions with other delegates that agreement could be reached on the proposal made by Pakistan, with a slight amendment: the words "in the HF broadcasting field" should be added after "necessary qualifications".

5.21 The delegate of Pakistan objected: there were no qualifications in that field, only experience.

5.22 The Chairman suggested that the text should read: "... with the necessary experience in the HF broadcasting field ...".

It was so agreed.

5.23 The Secretary-General expressed his belief that the Group of Experts should have been selected by the present Conference and ratified by the Administrative Council but clearly that was not possible. He therefore suggested that paragraph 2) should be deleted and replaced by:

"to forward the list of candidates for consideration by the 42nd session of the Administrative Council."

It was so agreed.

Document 247, as amended, was approved.

5.24 The delegate of Pakistan introduced Document 241 and summarized the proposal contained therein on utilization of the frequency band extensions agreed by WARC-79.

5.25 The representative of the IFRB (Mr. Berrada) noted that, according to that document, the IFRB had indicated that it would need only a few months to introduce the necessary changes in the current HFBC Planning System in terms of Document DT/68; in fact, the Board's indication of several months had referred to the time required for the software in cases where modifications were limited to the transfer rules - a reply which he confirmed.

5.26 The delegate of Japan said that although he, too, was concerned about the restriction implied in No. 531 of the Radio Regulations, the matter needed to be considered very carefully, particularly since the proposal in question seemed to contradict that in Document 230 relating to the planning principles and main lines of the planning method. He proposed, therefore, that the Conference should adopt a Resolution embodying three points: firstly, the extension bands would be used after 1 July 1989 for the broadcasting service; secondly, the existing Article 17 was applicable to that use as an interim measure; thirdly, certain conditions should be laid down: if the Planning System was introduced at a WARC-92 all transmissions in the extension bands pursuant to the current Article 17 should cease six months prior to that System's implementation; if tests using transmitters were to be decided upon, all transmissions must be treated alike; and, during the interim period, all equipment for use only on fixed frequencies should be prohibited. With such a Resolution, the band extensions could be used without creating any obstacle for the future HFBC Planning System.

5.27 The delegate of Turkey supported the proposal contained in Document 241. In the third sentence of the second paragraph, however, the phrase "It would be undesirable not to use" should be reworded "It would be desirable to use".

5.28 The delegates of Libya, Tunisia, Qatar and Bangladesh also supported the proposal.

5.29 The delegate of Senegal said that Document 241 would upset the compromise approach so painstakingly discussed. A Resolution of the kind sought by the delegate of Japan would be useful as an interim measure until the Final Acts of a WARC-92 came into effect, on the strict understanding that no prior rights would thereby be established and thus inhibit the decisions taken by that conference to implement the improved Planning System. Such a Resolution, therefore, must clearly be without prejudice to the rulings of WARC-92.

5.30 The delegate of the United Kingdom said he took it that the compromise package put forward by the Chairman of Committee 5, and set forth in Document 253(Rev.1), had been generally accepted. He was at a loss, therefore, to understand the proposal contained in Document 241 which would apply the unimproved system to the band extensions without further development, testing or analysis, and prior to any adoption by a subsequent WARC. There would indeed be a problem in managing that area of the spectrum to become available for broadcasting subject to Resolution No. 8; but the measures proposed in Document 241 were questionable. The proposal made by the delegate of Japan would be the best and simplest way to bring into use the part of the spectrum concerned.

5.31 The delegate of the Federal Republic of Germany said that an interim procedure was indeed required but could be provided on the basis of Document 230, utilizing the current Article 17; all that was needed was to draft a Resolution accordingly. The compromise approach did pose some problems for his Administration, which was nevertheless prepared to accept it in that spirit; but the proposal contained in Document 241 was utterly unacceptable, and the question of how it was dealt with was a vital issue for the current Conference.

5.32 The delegate of France said it had been clear from the outset that the Conference could succeed only if the participants agreed to compromise on certain elements, an essential one being the planning of the frequency band extensions. His own Delegation's proposals had been based on the assumption that, in the first stage, the planning method should be improved and that a competent conference would decide on its application. His Delegation saw only two possible solutions: to leave the bands as they were or to apply the provisions of the current Article 17; it had no strong preference for either. But the substance of Document 241 undermined the very principle of the compromise which the Chairman of Committee 5 had struggled so hard to achieve.

5.33 The delegate of India said that Document 241 would not affect the compromise package. RR 531 clearly showed that the band extensions would be used only after the planning had been completed, and their operation would be governed by the terms of Resolution No. 9 of WARC-79. The sponsors of Document 241 had felt it desirable to test the IFRB method by making small adjustments to the Planning System, pending a decision by a subsequent WARC.

5.34 The Chairman invited the delegations concerned to hold informal consultations in an effort to reach a compromise solution.

The meeting was suspended at 2040 hours and resumed at 2145 hours.

5.35 The Chairman said that, after consultation with a number of delegations, it had become apparent that a compromise solution might be possible by changing the date of 1 July 1989 in Resolution No. 8 of WARC-79 so that the bands in question would not be allocated to the broadcasting service before the entry into force of the decisions of the 1992 Conference; meanwhile, broadcasting stations could use the bands only in accordance with RR 342, in other words, provided they did not cause harmful interference to stations operating in conformity with the Radio Regulations. After the decisions of the 1992 Conference came into force, stations operating on frequencies assigned under the Plan would have rights while those still operating under RR 342 would have none.

The technical way of making that change would be to replace the date of 1 July 1989 in the first indent of paragraph 17 in Part II of Annex A to Resolution No. 8 by the words "the date of the entry into force of the provisions of the competent WARC foreseen for 1992".

5.36 The representative of the IFRB (Mr. Berrada) said that, since Resolution No. 8 applied to services other than the broadcasting service, it would be preferable to have a separate Resolution for that service and to insert references to that Resolution in Resolution No. 8 and RR 531.

5.37 The delegates of Canada and Brazil strongly supported that compromise solution, which was both timely and even-handed.

5.38 The delegate of Japan said that, although his Delegation could go along with the proposal, the solution would have a number of drawbacks. Continued use of the extension bands by other services would have an adverse effect on the future reallocation conference; most administrations had completed measures for the transfer of all their broadcasting stations to the new bands in accordance with the decisions of WARC-79; and under those decisions the bands had been reallocated from other services to the broadcasting service, which should therefore be able to use them.

5.39 The Chairman said he was quite aware that the solution was not ideal, but proposed that the Conference should accept it as the only possible compromise. A draft text of the proposal would be submitted the following day.

The Chairman's proposal was approved on that understanding.

6. Ninth series of texts submitted by the Editorial Committee for first reading (B.9) (Document 242) (continued)

6.1 The Chairman of Committee 6 said that consultations (see paragraph 2.23 above) had resulted in the following text to replace paragraphs 22 and 23:

"Nature of requirement (for instance, national and international)"

"For the application of Resolution C6/2 only".

6.2 The delegate of Iraq proposed that the footnote should contain a reference in brackets to the note which appeared at the foot of page 69 in the Report of the Second Session of the Conference which, he understood, would appear in the Radio Regulations.

6.3 The delegate of Libya asked for the words "the guaranteed minimum number of requirements" to be inserted after "national or international" to facilitate the IFRB's work after the Conference. The delegate of Botswana, having remarked that it would be inappropriate to include such wording in the Form of Notice, said that the wording could be included elsewhere.

6.4 The delegate of Qatar could agree to replace paragraph 22 with the wording proposed by the Chairman of Committee 6 but thought that paragraph 23 should be maintained as it provided for useful information to be communicated to the IFRB by administrations.

6.5 The delegate of France pointed out that during discussion of Document 243 two notes on the same type of subject had been deleted; to be logical, paragraph 23 should receive the same treatment. He, along with other delegations, had made concessions when approving various documents and he felt that all delegations should adopt a similar attitude.

The text read out by the Chairman of Committee 6 to replace paragraphs 22 and 23 in Document 242 was approved on first reading.

The Chairman's proposal was approved on that understanding.

The meeting rose at 2230 hours.

The Secretary-General:

R.E. BUTLER

The Chairman:

K. BJÖRNSJÖ



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PLENARY MEETING

MINUTES  
OF THE  
SIXTEENTH PLENARY MEETING

Page 7, read the paragraph 2.22 as follows:

2.22        So as not to prolong the discussion unduly, the delegate of Spain said that although his proposal was based on Nos. 212 and 248 of the Convention, he would withdraw it, so long as it was recorded in the minutes.

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PLENARY MEETING

MINUTES

OF THE

SIXTEENTH PLENARY MEETING

Friday, 6 March 1987, at 2230 hours and  
Saturday, 7 March 1987 at 0920 hours

Chairman: Mr. K. BJÖRNSJÖ (Sweden)

<u>Subjects discussed:</u>	<u>Documents</u>
1. Eleventh series of texts submitted by the Editorial Committee for first reading (B.11 + Add.1)	258 + Add.1
2. Draft Resolution PL/1	253(Rev.1)
3. Resolution relating to the Improvement in the Use of the HF Bands Allocated to the Broadcasting Service by Avoiding Harmful Interference	255
4. First series of texts submitted by the Editorial Committee for second reading (Series R.1(Rev.1))	164(Rev.1)
5. Second series of texts submitted by the Editorial Committee for second reading (Series R.2)	186
6. Third series of texts submitted by the Editorial Committee for second reading (Series R.3)	207 + Add.1
7. Fourth series of texts submitted by the Editorial Committee for second reading (Series R.4)	256
8. Statement by the Chairman of Committee 5	
9. Expression of sympathy	

1. Eleventh series of texts submitted by the Editorial Committee for first reading (B.11 + Add.1) (Document 258 + Add.1)

1.1 The Chairman suggested that the report by the Chairman of the ad hoc Group of the Plenary (Document 260) should be considered under that item.

It was so agreed.

1.2 The Chairman suggested that the Plenary should take the decision referred to in No. 597 of the Convention, namely, to entrust the Secretary-General with the final numbering of the chapters, Articles and paragraphs after their adoption at the first reading. Correction of material errors and minor drafting changes should also be entrusted to the Secretary-General.

It was so decided.

Resolution COM6/2 (HFBC-87)

1.3 After a brief discussion of a change in the title suggested by the delegate of Poland, the delegate of Algeria suggested that the title should read "Improved HFBC Planning System and Consultation Procedures".

1.4 The Chairman of Committee 7 said that the word "method" in considering paragraphs e) and f) should be replaced by "system" to bring the texts into line with the title and that the opening words of the English text of resolves that the IFRB paragraph 3 should be amended to read:

"shall carry out the above tests in the bands ...".

1.5 The representative of the IFRB (Mr. Berrada) said it should be recorded that the words "twelve months prior to the convening of the competent World Administrative Radio Conference" in resolves that the IFRB paragraph 5 meant twelve months before the starting date of that Conference.

Resolution COM6/2 was approved as amended.

Annex 1

Section 2

1.6 The delegate of the Netherlands, referring to paragraph 5, said that the square brackets in the fifth line should be removed and that the word "final" should be inserted before "results", in accordance with a decision already taken.

1.7 The representative of the IFRB (Mr. Berrada) said that the decision to insert the former paragraph 8 after paragraph 4 had some further implications. paragraph 5 should now end with the words "Section 3" and the last sentence should become a separate paragraph reading:

"The final results obtained relating to the requirements of an administration in application of paragraph 5 as well as the requirements mentioned in § [4bis] shall be sent to the administrations concerned with an indication, where appropriate, of the number of frequencies needed to achieve the required BBR."

Moreover, paragraph 5 should be placed after paragraph 4 and the new paragraph should follow paragraph [4bis].

1.8 The Chairman said that the word "draft" should be deleted from the third line of paragraph 12.

1.9 The Chairman of Committee 7 said that the word "Article" in the second line of paragraph 17 and the fifth line of paragraph 18 should be replaced by "Annex" and that the words "this Article" in the fourth line of paragraph 17 should be replaced by "Article 17 of the Radio Regulations".

Section 2 was approved as amended.

### Section 3

1.10 The Chairman of Committee 7 said that the asterisk in the title and the corresponding footnote should be deleted, even if the United Kingdom maintained its reservations.

1.11 The delegate of the United Kingdom said that his Delegation would reconsider the matter and would make its decision known at the stage of the second reading.

1.12 The delegate of India said that the word "file" in the third line of paragraph 8 should be replaced by "plan".

Section 3 was approved as amended.

### Annex to section 3 (Addendum 1 to Document 258)

#### I. INTRODUCTION

1.13 The Chairman of Committee 7 said that paragraph I.1 had been left in the text by mistake and should be deleted.

#### II. DEFINITIONS

1.14 After a brief discussion on the meaning of Note 5 to section II.4, the Chairman said that the text should be amended to read:

"The time periods to which the term 'reliability' relates shall be stated."

#### IV. HFBC PLANNING SYSTEM

1.15 In response to the delegate of India who requested information about the procedure for calculating the median S/I ratio within a given area, the Chairman of Committee 4 proposed to place an asterisk after the word "incompatible" in section IV.4.1.2 and to insert a footnote to that paragraph reading: "Refer to the Technical Standards of the IFRB".

It was so agreed.

It was agreed to delete the square brackets round the words "of 17 dB" in section IV.4.5.

It was also agreed to replace "section 1, step 8" by "section 2" in section IV.4.6 (and to request the Editorial Committee to make the same amendment where those words appeared in other paragraphs) and to find a better formula than sorting in decreasing order in 4.6 and 4.7.

1.16 Following a request by the delegates of Paraguay, Mexico and Ecuador it was agreed that the Spanish version of the words "in accordance with Article 22 of the Radio Regulations" in section IV.4.14 should be reviewed by the Editorial Committee.

1.17 The delegate of the United States proposed to amend "level of reliability" in the fifth line of section IV.4.14 to read "level of performance". It was so agreed.

## V. RELIABILITY

It was agreed to amend the expression " $(\sqrt{V_m})$ " in Note 1 to Table C-2 in V.1 to read " $(\sqrt{V/m})$ ".

### Section V.2

1.18 The Chairman of Committee 7 drew attention to the amendments to section V.2 contained in Document 260. The square brackets should be deleted from around the section and the title should be amended to read: "Calculation of median signal to interference ratio (S/I)". In the first paragraph of the section the words "signal strength" should be replaced by "propagation". The second sentence of paragraph 3 and the remainder of the section should be deleted.

1.19 The Chairman of Committee 7 drew attention to the amendments to Table C-3 in Document 260. The square brackets should be deleted from round the table and the title amended to read: "Calculation of median signal to interference ratio (S/I)". In Step 4, "SIR (50) dB" should be replaced by "S/I". Steps 5-12, Note 2, and Figure C-2 should be deleted.

### Section V.5

1.20 The Chairman of Committee 7 said that the large square brackets should be deleted, the title amended to read "Basic broadcasting reliability (BBR)", the term "[X]" in the last line of the first paragraph replaced by "80", and the second paragraph deleted.

In addition, both "X"s should be replaced by 80, and the square brackets removed in Table C-6 and Table C-7 should be deleted.

## Section VI

1.21 The delegate of Italy pointed out that the term " $E_{\min} - 10$ " should be amended to read " $E_{\min} - 10$  dB" in both places where it appeared.

## Section VIII

1.22 The Chairman of Committee 7 said that the new text was to be found on page 2 of Document 260, which would be considered as being submitted for first reading.

1.23 The representative of the IFRB (Mr. Berrada) noted that the second footnote was addressed to the meeting and should thus be deleted.

1.24 The delegate of Yugoslavia pointed out that the term

"( $E_{\min} - 10$ )" in paragraph 3) should be amended to read:  
"( $E_{\min} - 10$  dB)" to be consistent with paragraphs 2) and 4).

1.25 In response to a comment by the delegate of India, the Chairman said that it could be left to the Editorial Committee to decide whether to use dB ( $\mu\text{V/m}$ ) in defining  $E_{\min}$ .

Annex 2

1.26 In response to a comment by the Chairman, the representative of the IFRB (Mr. Berrada) noted that the term "Mid-term" should be deleted. The delegate of Spain said that, in the Spanish text, the arrow pointing to the right in the 11 MHz band should be aligned to 11 975. The delegate of Ecuador said that there was no arrow for the 9 MHz band. The delegate of the Federal Republic of Germany said that the central column should be headed "Application of the consultation procedures".

Resolution No. 91 (HFBC-87)

1.27 The delegate of Papua New Guinea recalled that the reference to Administrative Council Resolution No. 912 should be aligned with the earlier decision.

1.28 The Chairman of the IFRB said that the Resolution should allow for the inclusion of amendment to Resolution No. 8.

1.29 Following remarks by the Chairman of Committee 4 and the delegate of Papua New Guinea, the Secretary-General proposed that, for clarity, the resolves part should specify the Resolution and Recommendations to be abrogated and should thus read "that Resolution 641 and Recommendations 500, 501 and 503 of the World Administrative Radio Conference (Geneva, 1979) shall be abrogated".

It was agreed.

1.30 In response to a concern voiced by the delegate of Brazil, the representative of the IFRB (Mr. Brooks) confirmed that the information provided by administrations under Box number 22 would be included in the analysis of the planning exercise and that some statistics would be produced on the national/international aspects.

1.31 The delegate of Yugoslavia said that he would present in writing a number of amendments concerning protection ratio and radio frequency, for the consideration of the Editorial Committee.

Draft Resolution No. 91 (HFBC-87) was approved, as amended.

The eleventh series of texts submitted by the Editorial Committee was approved, as amended, on first reading.

The meeting was suspended at 0045 hours and resumed at 0920 hours on 7 March 1987.

2. First reading of draft Resolution [PL/1] (Document 253(Rev.1))

2.1 The Chairman invited the meeting to consider draft Resolution [PL/1]

2.2 The delegate of Qatar proposed that resolves 1 be amended to read:

"That the HFBC Planning System and associated software are to be improved ...".

2.3 The representative of the IFRB (Mr. Berrada), responding to a question from the delegate of Brazil as to whether the Board was empowered to improve the Planning System rather than the software, said that it was implicit in many documents, though not explicitly stated, that the planning method was that which appeared in the Final Acts of the Conference and that the Planning System was the system derived from that method. If his statement was recorded in the minutes of the meeting, it was understood that the IFRB would work on that basis.

2.4 The delegate of India said that although he preferred the original text, he could accept the proposed amendment in the light of Mr. Berrada's clarification.

Resolves 1 was approved as amended.

2.5 The delegate of Libya proposed that the penultimate indent of decides to recommend that this Conference should: be extended to cover not only the processing of national broadcasting requirements but also the guaranteed minimum requirements for each administration, so as to ensure that the 1992 Conference settled that problem. The point was a crucial one of substance.

The delegate of Algeria supported that proposal.

2.6 The delegate of the Federal Republic of Germany said that if the indents were to be amended, he would insist that the phrase "if the results are conclusive", adopted in paragraph 3 of Document 230 but omitted from the fourth indent under consideration, should be reinserted.

2.7 The Chairman pointed out that the revision of Article 17 of the Radio Regulations contained in Document 262 provided for the incorporation of ten planning principles, the last of which stated that the planning method should satisfy on an equal basis a minimum of the broadcasting requirements submitted by administrations. If the point raised so far were discussed again, others would arise and, in view of the time factor, the Conference could end with no Final Acts and no approved future programme of action.

2.8 The Secretary-General warned against the dangers of repetition of the situation in which insufficient participants had been present at the closing stages of an earlier Conference.

2.9 The delegate of the Netherlands proposed that the penultimate indent be approved as it stood and that, to meet the Libyan delegate's point, the phrase "satisfying all administrations" should be added to the final indent.

2.10 The delegate of Tunisia said that the question remained, when and at which conference the principle of guaranteeing the minimum requirements of all administrations was to be considered.

2.11 The Chairman said that the answer was by 1992, when the proposed new WARC would have the revised Article 17 on its agenda. He therefore urged that the text be approved unchanged, in the interests of preserving the compromise achieved with such great efforts.

2.12 The delegate of Qatar said that it was essential to know whether the planning method mentioned in principle (10) of the revised Article 17 (Document 262) referred only to the improved Article 17 procedure or to the improved HFBC System as well.

2.13 The Chairman pointed out that under the new No. 1742 of the Radio Regulations in the same document, the existing Article 17 procedure would take account of all the planning principles listed as soon as the new provisions came into force.

2.14 The Chairman of the Editorial Committee said, and the Chairman confirmed, that the expression "improved Article 17" should be replaced by a more formally correct phrase wherever it appeared.

2.15 The delegate of Libya said that although proposals had been made to guarantee an equal minimum number of requirements, it had only been possible in the Drafting Group to agree to satisfy an equal minimum number. A guarantee could not be given by the IFRB in the limited time available for technical reasons. No administration was against a guarantee in principle. That was why he believed that the Board should tackle the problem with the aid of administrations in the post-conference period and that the 1992 WARC should be committed to settling it.

2.16 The delegate of Tunisia said that the necessity of ensuring broadcasting services enjoying adequate protection had been recognized during negotiation of the package to be adopted. He could not understand why there was a problem, since it was simply a question of telling the next conference to consider the matter and decide on a solution.

2.17 The delegate of Botswana urged the meeting to accept the Chairman's advice and approve the passage under consideration without amendment. The delegates of Italy, the Netherlands, Switzerland and Venezuela supported that view, the latter pointing out that reservations could always be submitted in writing.

The section decides to recommend that this Conference should: was approved as it stood.

2.18 The delegates of Afghanistan, Albania, Algeria, Iraq, Jordan, Kuwait, Libya, Mauritania, Morocco, Oman, Qatar, Saudi Arabia, Syria, Tunisia and the United Arab Emirates expressed their reservations on the subject.

2.19 The delegate of Spain proposed that invites the Plenipotentiary Conference be deleted and that invites the Administrative Council be amended to read:

"in its report to the Plenipotentiary Conference (1989) to emphasize the priority of the WARC to be held in 1992, at the latest, within the programme of conferences and meetings to be approved by the Plenipotentiary Conference."

2.20 The Secretary-General, replying to a question from the delegate of India, reiterated that there was no objection to the Conference addressing the Plenipotentiary Conference directly in a Resolution. However, the proposal made by the delegate of Spain to address it via the Administrative Council was also valid, since the Council's report to the Plenipotentiary Conference would have to deal with the subject of conferences in general.

2.21 The delegate of India, supported by the delegates of Canada, the Islamic Republic of Iran and Brazil said that they would prefer the original text to be maintained.

2.22 The delegate of Spain said that although his proposal was based on Articles 212 and 38 of the Convention, he would withdraw it in the interests of expediency so long as it was recorded.



2.23 The Chairman said that the Secretary-General would take the proposal into account when the draft report of the Administrative Council to the Plenipotentiary Conference was prepared.

Instructs the IFRB and instructs the Secretary-General were adopted.

2.24 Following a suggestion by the delegate of India, it was agreed to add the words "in the frequency bands allocated to the broadcasting service before WARC-79" after the words "Application of current Article 17 as a transition measure" in the annex.

After a brief discussion it was agreed to delete the square brackets and the figures 1998 and 2005 appearing in the first column of the annex.

2.25 The delegate of Iraq said that the course of action adopted in respect of the draft Resolution under consideration was at variance with customary practice. In view of the large number of reservations entered, some method should have been sought of taking the wishes of the administrations concerned into consideration. It was to be hoped that a more satisfactory procedure would be adopted at the next stage of consideration of the document.

2.26 The Chairman pointed out that the reservations had been entered after the approval of the relevant part of the draft Resolution. While recognising that a considerable number of reservations had been expressed, he did not think it appropriate to reopen a discussion which was bound to take several hours, thus making it impossible for the Conference to complete its work on the next day or to sign any Final Acts. The Conference of 1992 would be fully competent to discuss the problem in its entirety.

2.27 The delegate of Iraq said that he failed to see how the addition of a paragraph inviting the 1992 Conference to consider the need to guarantee all countries with a minimum service with satisfactory protection could impair the balance of the draft Resolution. Precisely because of the importance it attached to the successful outcome of the present Conference, his Delegation continued to feel that an issue of such importance should not be thrust into the background.

The draft Resolution, as amended, was approved on first reading.

3. Resolution relating to the Improvement in the Use of the HF Bands Allocated to the Broadcasting Service by Avoiding Harmful Interference (Document 255)

3.1 The delegate of the United States introduced his proposal for the updating of Resolution COM5/1 of the First Session (Document 255).

The proposal was adopted.

Resolution PL/2 was approved on first reading.

4. First series of texts submitted by the Editorial Committee for second reading (Series R.1(Rev.1)) (Document 164(Rev.1))

4.1 The Chairman of Committee 7 said that the reference to Document 84(Rev.1) in considering d) should be replaced by the words "Appendix COM4/A" and the square brackets removed.

4.2 The delegate of Finland proposed the insertion of the word "lead" between the words "that" and "time" in considering further f) and of the words "which are" between "transmitters" and "installed" in recommends to administrations.

It was so agreed.

The first series of texts submitted by the Editorial Committee, as amended, was approved on second reading.

5. Second series of texts submitted by the Editorial Committee for second reading (Series R.2) (Document 186)

Resolution No. 641(Rev. HFBC-87)

Approved.

Resolution COM4/1 (HFBC-87)

It was agreed to delete the reference to Document 84(Rev.1) in paragraph considering h) and to remove the square brackets.

Following a suggestion (which had been discussed between the Chairman of Committee 4, the Director of the CCIR and the General Secretariat) by the Secretary-General, it was agreed to replace the words "invites the CCIR" by "instructs the Secretary-General", to replace the word "provide" in the second line by "submit", to delete the words "to the Administrative Council of the ITU for submission" in the third line of the same paragraph, and to replace the words "CCIR in its" in invites administrations by the words "Secretary-General in this".

It was further agreed to delete the reference to Document 84(Rev.1) and to remove the square brackets in paragraphs 3 and 6 of the annex.

Resolution COM4/2 was approved, as amended.

Resolution COM4/3

It was agreed to delete the square brackets in considering a) and, following a suggestion by the delegate of Mexico, to replace the words "invites administrations" by "recommends administrations".

Recommendation COM4/A

After a brief discussion, it was agreed to remove the square brackets in "invites the CCIR" and to add a paragraph reading as follows:

"recommends administrations

to participate actively in the studies".

Recommendation COM4/A was approved as amended.

The second series of texts submitted by the Editorial Committee was approved, as amended, on second reading.

6. Third series of texts submitted by the Editorial Committee for second reading (Series R.3) (Document 207 + Add.1)

6.1 Recommendation COM4/E (HFBC-87)

It was agreed to remove the square brackets from considering a) and h) and to maintain the text of those sub-paragraphs; to remove the square brackets from considering e) and recommends; to replace "invites administrations" by "and recommends administrations" and to delete the square brackets from paragraphs 4 and 5 of the annex.

Recommendation COM4/E was approved as amended.

6.2 Recommendation COM4/F (HFBC-87)

It was agreed to remove the square brackets from paragraph recommends 3 and to maintain the text of that paragraph.

After a brief discussion, it was agreed to delete both of the passages in square brackets in recommends 1 and to replace them by the words "in application of Recommendation...".

6.2.1 The Chairman proposed the deletion of the footnote; the delegate of Qatar said that he was strongly opposed to that proposal.

6.2.2 The Secretary-General said that to refer to transitional arrangements in the Final Acts of a Conference would create a precedent. The objection of the delegate of Qatar would be recorded in the Minutes and an appropriate reference would be included, if necessary, in a circular-letter to administrations.

It was agreed to delete the footnote.

Recommendation COM4/F, including the annex thereto, was approved as amended.

6.3 Recommendation COM6/C (HFBC-87)

It was agreed to remove the square brackets from considering d) on page R.3/8 and to maintain the text; to remove the square brackets from considering b) and recommends.

6.3.1 After a discussion in which the Chairman of Committee 4, the representative of the IFRB (Mr. Berrada) and the delegates of Qatar and Brazil took part, it was agreed to remove the square brackets and replace the text of paragraph 1.1 in the annex with an amended version of the text of paragraph 1.4 of Document 231, as follows:

"The HFBC Planning System shall endeavour to satisfy the requirements with a minimal co-channel RF protection ratio of 17 dB without taking account of the fading allowances and multiple interference entries. In cases of congestion this ratio may be lowered until the congestion is resolved."

6.3.2 The delegate of Qatar said that his Delegation maintained the reservations it had voiced previously concerning the last sentence of the sub-paragraph.

That statement was noted.

Recommendation COM6/C and the Annex thereto (Addendum 1 to Document 207) was approved, as amended.

The third series of texts submitted by the Editorial Committee was approved, as amended, on second reading.

7. Fourth series of texts submitted by the Editorial Committee for second reading (Series R.4) (Document 256)

7.1 Appendix COM4/A

It was agreed to delete the footnote to Part A.

After a brief discussion it was agreed that the first section heading in both Part A and Part B should be: "1. System parameters".

7.2 Resolution COM6/1 (HFBC-87): approved

The fourth series of texts submitted by the Editorial Committee was approved, as amended, on second reading.

8. Statement by the Chairman of Committee 5

8.1 The Chairman of Committee 5 recalled that at a certain stage of the discussions, reference had been made to Document DT/41 and to certain guarantees given by the Chairman of Committee 5. As far as the satisfaction of a minimum number of requirements was concerned, he had honoured his commitments to the letter: he had proposed at the end of the work of Working Group 5 ad hoc that the IFRB should be requested to take in order the requirements submitted by each administration until a value of 17 dB was achieved, at which stage the remaining requirements would be transferred. He had taken it that the commitment would be respected, but he could not be responsible for the way in which his proposal might be interpreted or dealt with later on. When Document DT/68 had subsequently been produced, it was clear that administrations had decided not to accept that proposal. He did not feel that he personally had been at fault, and therefore considered that what had been stated earlier had been out of place.

9. Expression of sympathy

9.1 Before the adjournment until Saturday morning, the delegate of Papua New Guinea expressed his sympathy for the countries concerned in the maritime disaster that had just occurred in the English Channel.

The meeting rose at 1215 hours.

The Secretary-General:

R.E. BUTLER

The Chairman:

K. BJÖRNSJÖ

**HFBC (2)**

INTERNATIONAL TELECOMMUNICATION UNION  
WARC FOR THE PLANNING OF THE HF BANDS  
ALLOCATED TO THE BROADCASTING SERVICE  
SECOND SESSION, GENEVA, February-March 1987

Document 267-E  
6 March 1987

B.12

PLENARY MEETING

TWELFTH SERIES OF TEXTS SUBMITTED BY THE  
EDITORIAL COMMITTEE TO THE PLENARY MEETING

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

<u>Source</u>	<u>Documents</u>	<u>Title</u>
COM.7	259	Recommendation PL/A (HFBC-87)
	247	Recommendation PL/B (HFBC-87)

D. SAUVET-GOICHON  
Chairman of Committee 7

Annex: 3 pages

## RECOMMENDATION PL/A (HFBC-87)

**Broadcasting for National Coverage in the HF Bands**

The World Administrative Radio Conference for the Planning of the HF Bands Allocated to the Broadcasting Service (Geneva, 1987),

considering

- a) the Report to the Second Session of the World Administrative Radio Conference for the Planning of the HF Bands Allocated to the Broadcasting Service;
- b) that the First Session of WARC-HFBC (1984) decided that all the broadcasting requirements, national and international, shall be treated on an equal basis, with due consideration of the differences between these two kinds of broadcasting requirements;
- c) that the HFBC planning system take account in particular, of the way in which administrations' requirements for longer transmission periods, mainly for national broadcasting purposes, can best be accommodated;
- d) that continuity for national broadcasting requirements must be guaranteed by appropriate means;
- e) that the two types of broadcasting, national and international, in the HF bands, differ as to their technical and operating conditions;
- f) that the needs of national broadcasting in countries in the Tropical Zone are covered partially in the bands allocated to the broadcasting service for use in the Tropical Zone and partially in the HF bands allocated exclusively to the broadcasting service;
- g) that the Second Session of WARC-HFBC (1987) did not consider the question in detail,

noting

that an HF broadcasting use is considered as being for purposes of national coverage when the transmitting station and its associated required service area are both located within the territory of the same country,

recommends

that the Administrative Council should take the necessary steps to ensure that the agenda of the next World Administrative Radio Conference competent to deal with HF broadcasting includes the consideration of national broadcasting, under the conditions set out in the preamble of this Recommendation.

## RECOMMENDATION PL/B (HFBC-87)

**Participation by Administrations in the Improvement of the Planning System  
for the HF Bands Allocated Exclusively to the Broadcasting Service**

The World Administrative Radio Conference for the Planning of the HF Bands Allocated to the Broadcasting Service (Geneva, 1987),

considering

- a) that it has improved the planning method and instructed the IFRB to modify the HFBC Planning System accordingly;
- b) that the work assigned to the IFRB is to be carried out in the years which follow the Conference;
- c) that the steps of the planning method relate to technical and operational constraints which may vary from country to country and from region to region;
- d) that the IFRB can only obtain information on these constraints through contacts with administrations;
- e) that administrations from all the regions must have an opportunity to take part in the improvement process through the participation of qualified experts;
- f) that administrations need to be informed periodically on the progress made and on the planning exercises and need to have the opportunity to comment on them;
- g) that to promote the participation of countries from all the regions it may be necessary to defray the expenses involved from the Union budget,

recommends the Administrative Council

- 1. to establish a group of experts selected from among individuals proposed by administrations to assist the IFRB in carrying out the tasks relating to the Planning System entrusted to it by the Conference;
- 2. that the group shall comprise 27 experts from countries belonging to the five administrative regions, distributed as follows:

Region A (Americas): 5  
Region B (Western Europe): 5  
Region C (Eastern Europe and Northern Asia): 3  
Region D (Africa): 7  
Region E (Asia and Australia): 7

3. that the group of experts shall hold one annual meeting of one week on the initiative of the Board, and that a second meeting could be organized if necessary;
4. that in order to keep all administrations informed of the progress made and the results of the group of experts meetings, it will be necessary to organize annual meetings to exchange information to which all administrations shall be invited;
5. that such meetings to exchange information should be held in conjunction with the group of experts meetings for a duration of two or three days,

also recommends the Administrative Council

1. taking into account the ordinary budget of the Union and the availability of other financial resources, to provide the necessary resources for the above activities including resources to defray the costs of participation in the group of experts meetings of one expert from each administration for the years 1988 and 1989;
2. should the Group of Experts have to meet after 1989, to include in its Report to the Plenipotentiary Conference a request for the provision of financial resources in the ordinary budget of the Union,

instructs the Secretary-General

1. to consult administrations and request them, if they so wish, to nominate an expert with the necessary experience in the HF field to participate in the group of experts;
2. to forward a list of candidates for consideration by the 42nd session of the Administrative Council.



R.5

PLENARY MEETINGFIFTH SERIES OF TEXTS SUBMITTED BY THE  
EDITORIAL COMMITTEE TO THE PLENARY MEETING

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

<u>Source</u>	<u>Documents</u>	<u>Title</u>
COM.7	242 (B.9)	Appendix 2 - HFBC-87
	246 (B.10)	Modifications to the Radio Regulations
		Recommendation COM5/A

D. SAUVET-GOICHON  
Chairman of Committee 7

Annex: 8 pages

MOD

APPENDIX 2  
HFBC-87

## Submission of HF Broadcasting Requirements to the IFRB

(See Article 17)

A. Introduction

A broadcasting requirement is a requirement indicated by an administration to provide a broadcasting service at specified periods of time to a specified reception area from a particular transmitting station.

An administration wishing to notify a broadcasting requirement to the Board will do so on the basis of the information provided in B of this Appendix. The necessary information shall be provided on a requirement form to be developed by the Board.

A separate requirement form shall be sent to the IFRB for notifying:

- each requirement to be put into use for particular seasons;
- any modification in the characteristics of a requirement;
- any deletion of a requirement.

B. Information relating to the broadcasting service in the exclusive HFBC bands to be provided in requirement forms<sup>1</sup>

## 1. Notifying administration\*

The notifying administration shall be indicated using the symbols given in the Preface to the International Frequency List.

## 1.1 Requirement reference number allocated by the administration.

## 2. Name of transmitting station.\*

## 3. Symbol of the country or geographical area in which the transmitting station is located.\*

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<sup>1</sup> Note - The Board will develop a form for the submission of HF broadcasting requirements based on the items of information and corresponding explanations contained in this Appendix. Furthermore, the Board may add other items of an administrative nature, although provision of the information in these additional items will not be obligatory.

\* Basic information that must be provided by administrations.

4. Geographical coordinates of the transmitting station\*

When two or more transmitting stations are almost co-located, the administration shall indicate, as far as possible, the same coordinates.

5. Required service areas\*

In specifying the required service area, reference shall be made to a combination of:

- CIRAF zones,\*\*\*
- quadrants of CIRAF zones,
- parts of quadrants specified by the sets of test points contained within those parts.

Where it is necessary to specify a required service area which is smaller than an entire zone or quadrant, this may be done by specifying the boundaries of the area as two azimuths and two ranges from the transmitter location.

The map of the CIRAF Zones to be used in notifying a requirement is given in C.

6. Season\*

The season or seasons to which the requirement is intended to apply. When the requirement is not intended to be implemented on a daily basis, the days on which it will be implemented shall be indicated.

7. Hours of operation (UTC)\*

7.1 Indicate legal clock time changes.\*\*

8. Indicate temporary interruptions of broadcasting services due, for example, to natural disasters or other types of catastrophe.

9. Transmitting antenna characteristics\*

9.1 For all types of antenna indicate:

9.1.1 The type of antenna to be used, with reference to the antenna type appearing in the IFRB Technical Standards.

9.1.2 The azimuth of maximum radiation in degrees from true North in clockwise direction.

9.1.3 The maximum gain (isotropic,  $G_i$ , dB) if different from that associated with the relevant pattern in the reference antenna set. In the case of slewed horizontal dipole arrays this maximum gain is the gain in the slewed mode.

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\* Basic information that must be provided by administrations.

\*\* For information only.

\*\*\* CIRAF: Conferencia Internacional de Radiodifusión por Alta Frecuencia (International High Frequency Broadcasting Conference), Mexico, 1948.

9.1.4 The lowest and highest frequency bands (in MHz) for multi-band antennas, or the frequency band for single band antennas.

9.2 For horizontal dipole arrays, indicate in addition to the above parameters:

9.2.1 Type of radiator (end-fed or centre-fed dipole elements).

9.2.2 Type of reflector (tuned dipoles or aperiodic screen).

9.3 For multi-band horizontal dipole arrays, indicate in addition to the above parameters:

9.3.1 Design frequency, in MHz. If not indicated, the design frequency will be assumed as the arithmetic mean of the centre frequencies of the lowest and highest frequency bands covered by the antenna.

9.4 For slewed horizontal dipole arrays, indicate in addition to the above parameters:

9.4.1 Azimuth of the normal to the plane of the radiating elements (in degrees from true North in the clockwise direction).

10. Transmitter power (dBW)\*

- 1) For DSB emissions, indicate the carrier power in dBW.
- 2) For SSB emissions, indicate the peak envelope power in dBW.
- 3) Indicate the range of available powers.

---

\* Basic information that must be provided by administrations.

11. Class of emission\*

Indicate whether it is a DSB emission, or an SSB emission with a carrier reduced by 6 dB or by 12 dB relative to peak power (see Article 4 of the Radio Regulations).

11.1 Indicate if the transmitter can operate in either mode (DSB and SSB).\*\*

12. Assigned frequency (for application of Article 17 of the Radio Regulations or Section 2 of Annex 1 to Resolution COM6/2 (HFBC-87)). Administrations may indicate:

- the assigned frequency (in kHz);\*\*\*
- alternative frequencies (in kHz);\*\*\*
- the frequency band (in MHz).

If no information is provided, the Board will select the appropriate band and frequency in accordance with Annex 1 to Resolution COM6/2 (HFBC-87).

13. Preset frequencies (in kHz).\*\*\*

14. Preferred frequency (in kHz).\*\*\*

15. Preferred frequency band (in MHz).

16. Equipment availability

Indicate the number of transmitters that can be used simultaneously and the associated bands for possible use in case more than one frequency has to be used to achieve the required basic broadcast reliability (see the Appendix to Section 3 of Resolution COM6/2 (HFBC-87)).

17. Requested types of frequency continuity (types 2, 3, 4 and/or 5) (see 4.3 of the Appendix to Section 3 of Resolution COM6/2 (HFBC-87)).

17.1 Identify requirements which are related by these types of continuity.

18. Lowest value of BBR to be used for this requirement (see 4.3.3 of the Appendix to Section 3 of Resolution COM6/2 (HFBC-87)).

19. Indicate the use of synchronized transmitters.

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\* Basic information that must be provided by administrations.

\*\* For information only.

\*\*\* a) For a DSB emission, the assigned frequency shall be expressed in kHz ending with 0 or 5.

b) For an SSB emission, the assigned frequency shall be expressed in kHz ending with 2.5 or 7.5.

20. Indicate equipment limitations (e.g. frequency bands available).
21. Indicate whether consultations are required when the co-channel RF protection ratio is less than 17 dB.
22. Nature of requirement (for instance, national or international).\*\*\*\*
24. Postal and telegraphic addresses of the administration responsible for the station.
25. Remarks and supplementary information

Indicate, after the symbol COORD/, the name of any administration with which coordination has been effected for use of the frequency.

Indicate any other information that the Board may require for the evaluation of the improved HFBC Planning System (see COM6/2 (HFBC-87)).

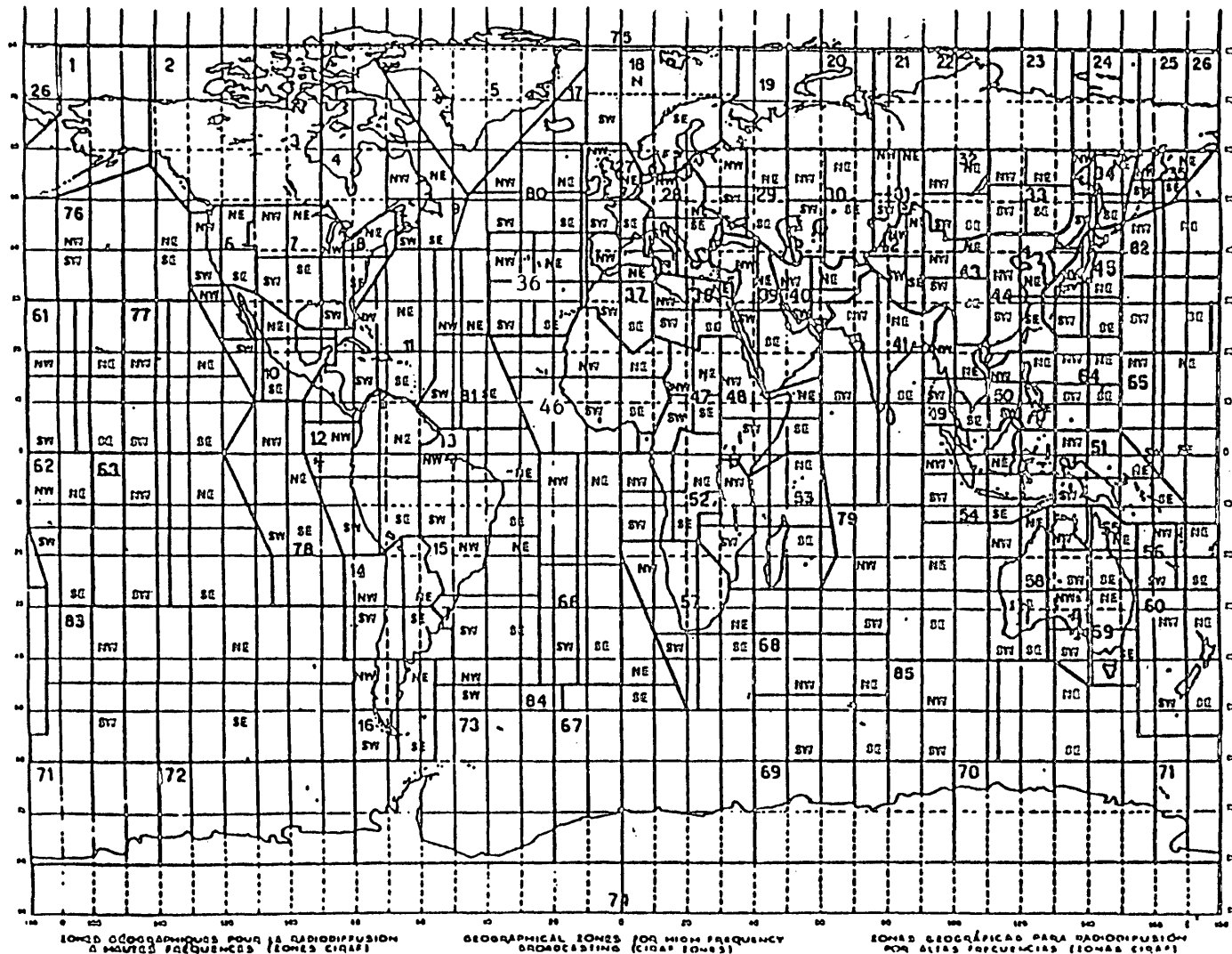
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\*\*\*\* For the purpose of Resolution COM6/2 (HFBC-87) only (see Note [1] in Article 17).

C.

Map of CIRAF Zones

R.5/6



Note - Information concerning the test points associated with these CIRAF Zones and quadrants is given in the IFRB Technical Standards.

## MODIFICATIONS TO THE RADIO REGULATIONS

MOD  
HFBC-87

Modify Note 15) of Appendix 7 to read as follows:

"15) For A3E emissions with carrier power of 10 kW or less the tolerance is 20 parts in  $10^6$ , 15 parts in  $10^6$  and 10 parts in  $10^6$  in the bands 1 606.5 (1 605 Region 2) - 4 000 kHz, 4 - 5.95 MHz and 5.95 - 29.7 MHz respectively."

Note 21) to Appendix 7 should be modified as follows:

MOD  
HFBC-87

"21) It is suggested that administrations avoid carrier frequency differences of a few hertz, which cause degradations similar to periodic fading. This could be avoided if the frequency tolerance were 0.1 Hz, a tolerance which would also be suitable for single-sideband emissions.\*"

ADD  
HFBC-87

"\* The single-sideband system adopted for the bands exclusively allocated to HF broadcasting does not require a frequency tolerance less than 10 Hz. The above-mentioned degradation occurs when the ratio of wanted-to-interfering signal is well below the required protection ratio. This remark is equally valid for both double- and single-sideband emissions."

SUP  
HFBC-87

Recommendation No. 500.

MOD  
HFBC-87

Recommendation No. 503

- in "recommends that administrations, 1.", replace "328-4" by "328-6";
- in "invites administrations", replace "205-1" by "205-2".

SUP  
HFBC-87

Recommendation No. 501.



## RECOMMENDATION COM5/A (HFBC-87)

**Possibility of Extending the Frequency Spectrum  
Allocated Exclusively to HF Broadcasting at a Future Competent  
World Administrative Radio Conference**

The World Administrative Radio Conference for the Planning of the HF Bands Allocated to the Broadcasting Service (Geneva, 1987),

considering

- a) Resolution No. 508 of the WARC (Geneva, 1979) inviting the Administrative Council to convene a conference in two sessions with a view to the planning of the HF bands allocated to the broadcasting service;
- b) the Report of the First Session to the Second Session of the Conference;
- c) that, at its 39th session (1984), the Administrative Council adopted Resolution No. 912 establishing the agenda of the Second Session of the WARC for the Planning of the HF Bands Allocated to the Broadcasting Service (HFBC-87);
- d) the results of the planning exercises carried out by the IFRB during the intersessional period;
- e) that this Conference, to achieve more efficient use of the HF bands allocated exclusively to the broadcasting service, has adopted a programme of action relating to the improvement, testing, adoption and practical implementation of the Planning System for these bands, and a timetable (see Resolution PL/1 (HFBC-87)) for the introduction of single-sideband techniques (see Resolution COM4/2 (HFBC-87)), but has concluded that these measures might be insufficient to meet the current and future needs of HF broadcasting,

recognizing

that a possible extension of the frequency spectrum allocated for HF broadcasting would have an impact on other radio services operating in accordance with the Table of Frequency Allocations contained in Article 8 of the Radio Regulations,

recommends to the Administrative Council

to take the necessary steps to request the Plenipotentiary Conference (Nice, 1989) to consider whether or not to hold a WARC, the agenda of which should include the possibility of extending the HF frequency spectrum allocated exclusively to the broadcasting service with the aim of planning that spectrum within the framework of the improved HFBC Planning System,

instructs the Secretary-General

to bring this Recommendation to the attention of all administrations and of the 42nd session of the Administrative Council, 1987.

R.6

PLENARY MEETINGSIXTH SERIES OF TEXTS SUBMITTED BY THE  
EDITORIAL COMMITTEE TO THE PLENARY MEETING

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

<u>Source</u>	<u>Document</u>	<u>Title</u>
COM.7	258 + Add.1 (B.11) 260	Resolution COM6/2 (HFBC-87)
	258 (B.11)	Resolution 91 (HFBC-87)

D. SAUVET-GOICHON  
Chairman of Committee 7

Annex: 30 pages

## RESOLUTION COM6/2 (HFBC-87)

**Improvements to the HFBC Planning System  
and the Consultation Procedures**

The World Administrative Radio Conference for the Planning of the HF Bands Allocated to the Broadcasting Service (Geneva, 1987),

considering

- a) that its First Session, held from 10 January to 11 February 1984, adopted a planning method based on seasonal planning and instructed the IFRB to prepare the appropriate software and to test it using variations of criteria;
- b) the Report of the IFRB on its activities during the intersessional period;
- c) that the planning exercises demonstrated that the HFBC Planning System, developed by the IFRB on the basis of the decisions of the First Session, did not allow all the requirements submitted by administrations to be included in the draft seasonal plans;
- d) that, to enable all HFBC requirements of administrations to be implemented, the procedure of the present Article 17 of the Radio Regulations should be improved, and used in combination with an improved HFBC Planning System;
- e) that the working assumptions used by the IFRB in the planning exercises were reviewed and the HFBC Planning System was revised;
- f) that consequently there is a need to modify the relevant software and to test the HFBC Planning System before its final adoption by a competent World Administrative Radio Conference (see Resolution [...]),

resolves that the IFRB

1. shall, in the post-conference period, improve the software for the procedures relating to the HFBC Planning System (section 3 of Annex 1) and the procedures based on consultations (section 2 of Annex 1), in accordance with the provisions contained in Annex 1 to this Resolution;
2. shall test both procedures, in the post-conference period, using the requirements in the requirements file. When submitting requirements, administrations shall indicate which of the requirements should be dealt with under the HFBC Planning System, and which under the consultation procedure;

3. shall carry out the above tests in the bands indicated in Annex 2 to this Resolution;
4. shall report regularly to administrations, at intervals not exceeding 6 months, the results of the work carried out under resolves 1, 2 and 3;
5. shall prepare and communicate a final report to administrations twelve months prior to the convening of the competent World Administrative Radio Conference (see Resolution [ .. ] ).

Annexes: 2

## ANNEX 1 TO RESOLUTION COM6/2 (HFBC-87)

## Section 1 - HFBC Requirements File

1. Administrations shall submit to the IFRB their operational broadcasting requirements and those which are expected to become operational in the bands allocated exclusively to the broadcasting service between 5 950 and 26 100 kHz. These requirements shall be entered in the HFBC requirements file, which shall contain:

- requirements intended for use within the next seasons;
- all requirements taken into account in the preparation or during the operation of a seasonal schedule or plan;
- requirements used during the preceding 5 year period.

2. An entry in the HFBC requirements file shall be defined as a requirement indicated by an administration as necessary to provide a broadcasting service at specified periods of time to a specified reception area from a particular transmitting station.

3. Each requirement listed in the HFBC requirements file shall contain at least the basic information listed in Appendix 2 (HFBC-87) together with an indication of the season(s) in which the requirement was or will be used.

4. Each seasonal schedule or seasonal plan to be established shall cover one of the seasonal propagation periods indicated below. The month shown in the parentheses indicates the month to be used for the propagation prediction:

- Season D - November - February (January);
- Season M - March - April (April);
- Season J - May - August (July);
- Season S - September - October (October).

Each seasonal plan or seasonal schedule shall be implemented at 0100 UTC on the first Sunday of the season concerned.

5. Administrations shall notify the Board, using Appendix 2 (HFBC-87), of any addition, modification or deletion of a requirement in the HFBC requirements file. Additions, modifications or deletions notified to the Board for a given season shall be taken into account for updating the requirements file provided that, following their examination by the Board, they are found to contain the basic information referred to in Appendix 2 (HFBC-87).

6. On receipt of notices pursuant to paragraph 5 above, the Board shall ensure that the basic information listed in Appendix 2 (HFBC-87) has been provided and is correct and, if necessary, shall request the notifying administration to supply corrected or missing information. Following this examination the Board shall indicate those incompatibilities which can be identified without the need for detailed calculations and shall inform the administrations concerned of the results obtained together with any recommendation that may assist in avoiding this incompatibility.

7. After the end of each seasonal period the Board shall enter into the requirement file, for each requirement, the frequency or frequencies used, together with any indication from administrations of the actual use of the requirement. Requirements already used shall be kept in the HFBC requirement file for a period of five years. No priority shall be derived from this history of use.

8. An administration shall inform the Board when a broadcasting requirement is temporarily withdrawn, due to a natural disaster or other calamitous event, for a period of time not exceeding five years. The Board shall identify this requirement in the file by an appropriate symbol. When the administration concerned informs the Board that the requirement can be brought back into service and requests the removal of the symbol, the Board shall act in conformity with the request. If a request for the removal of the symbol is not received by the Board within the period of five years referred to above, the requirement shall be deleted from the file.

## Section 2 - Procedures Based on Consultations

1. Periodically, administrations shall confirm to the IFRB which of their requirements appearing in the HFBC requirements file are to be used in a given season. Administrations may also notify additions, modifications or deletions. For this purpose, administrations shall furnish to the Board at least the basic information listed in Appendix 2 (HFBC-87). When the Board finds that the information submitted by administrations is in conformity with Appendix 2 (HFBC-87), it shall update the seasonal file accordingly.

Administrations may:

- submit, for all or part of their requirements, the frequencies they intend to use;
- request the Board to select the appropriate frequencies for their requirements.

A seasonal file shall be established on the basis of this information.

2. The frequencies to be included in the seasonal schedule shall be in conformity with No. 1240 of the Radio Regulations.

3. The closing date for the receipt of the information referred to in 1 shall be set by the Board. The Board shall gradually reduce the period between the closing date and the start of season to the minimum possible.

4. If, in spite of reminders by the Board, no reply is received from an administration by the date set by the Board as in 3, the Board shall consider that the requirements appearing in the requirements file for the season under consideration are confirmed if they were in operation during the previous season.

5. The IFRB shall identify, for each requirement, its appropriate bands and shall calculate the field strength at each test point, and the basic broadcasting reliability (BBR) in each of these bands. In so doing it shall take account of the need to ensure frequency continuity as indicated in the Appendix to Section 3.

5bis. Those requirements that cannot be included in the corresponding seasonal plan following application of the Planning System procedure contained in Section 3 are entered in the seasonal file and dealt with in accordance with the following paragraphs.

5ter. The final results obtained relating to the requirements of an administration in application of paragraph 5 as well as the results mentioned in paragraph 5bis shall be sent to the administrations with an indication, where appropriate, of the number of frequencies needed to achieve the required BBR.

6. When sending the results referred in 5, the Board shall request administrations to inform it, within a period of 8 weeks, as appropriate:

- whether they intend to use some or all of the frequencies already appearing in the seasonal file;
- whether they intend to use a frequency or frequencies other than those in the seasonal file;
- of the frequency or frequencies which they intend to use for those requirements for which no frequency or frequencies appear in the seasonal file;
- whether or not the Board should select the most appropriate frequency or frequencies.

On the basis of the information referred to in 1, the Board shall select one or more frequencies for any requirement for which the information received does not specify a frequency, and for any requirement concerning which no information has been received from the administration within this period.

7. Administrations may, following receipt of the information referred to in 5, communicate additional requirements in the form prescribed in Appendix 2 (HFBC-87) with or without indication of the selected frequency. These additional requirements shall be included in the seasonal file.

8. At the end of the period indicated in 6 the Board shall repeat the calculations referred to in 5 and shall determine the number of appropriate frequencies necessary for each requirement. If an administration has indicated a number of frequencies for a requirement which exceeds the number resulting from the Board's calculations in application of the Appendix to Section 3, the Board shall, in consultation with the notifying administration, reduce the number of frequencies for the requirement in question to the number resulting from the Board's calculations.

9. The Board shall select frequencies for those requirements which have neither frequencies selected by the notifying administration nor preset frequencies. In so doing, the Board shall take into account the need to ensure frequency continuity as indicated in IV.3. The Board shall undertake a calculation of the possible incompatibilities between all requirements and an assessment of the performance of each requirement as indicated in VIII.

10. A seasonal schedule shall be prepared for publication, indicating for each requirement the frequency or frequencies, notified or selected, and the basic characteristics enabling administrations to identify easily the requirement concerned. This schedule shall be sent to administrations 2 months before the start of the season. At the same time the Board shall send to each administration detailed results of the calculations and performance assessment for its requirements, indicating, for each requirement, the requirements with which it is incompatible. In addition, the Board shall promptly provide, on request, all other information deemed necessary by an administration.

However, administrations are urged to take all possible action to resolve incompatibilities prior to the start of the season. In their attempts to resolve the incompatibilities, administrations will take into consideration the principles stated in [...] of Article 17.

11. Taking into account all available data, the Board shall, where practicable, make recommendations to eliminate the incompatibilities and shall send them to administrations along with the seasonal schedule.

In preparing its recommendations to administrations, the Board shall take into account monitoring observations and all other available data. However, when actual frequency usage is apparently not in conformity with the assignments in a submitted schedule, the Board shall seek confirmation of this information from the administration concerned.



12. After publication of the seasonal schedule, administrations may notify additions, modifications or deletions in their seasonal requirements. However, administrations are urged to refrain from submitting additional requirements at this stage.

13. For changes notified in accordance with 13, the Board shall apply the procedure specified in 9. Such revisions to the seasonal schedules shall be published in the IFRB weekly circular.

#### **Record of Seasonal Usage**

14. After the end of each seasonal period, the Board shall update the requirements file to reflect the actual usage during the season as notified to the Board. Those assignments which the administrations found to be unsatisfactory in practice shall be reported to the Board and marked in the requirements file by an appropriate symbol.

15. Upon request, the IFRB shall make available to administrations the information on frequency usage during the season, on computer tape or in any other machine readable form.

#### **Miscellaneous Provisions**

16. The Technical Standards used by the Board when applying the provisions of this Annex should be based not only on the factors listed in No. 1454 but also on past experience in broadcasting planning and on the experience gained by the Board in the application of Article 17 of the Radio Regulations (see also Resolution COM6/1 (HFBC-87)).

17. With a view to the eventual development of compatible technical plans for the frequency bands concerned, the Board shall take all necessary steps to carry out long-term engineering studies. For this purpose, the Board shall use all the information on frequency usage made available to it in the application of the procedure described in this Annex. The Board shall inform administrations at regular intervals of the progress and results of such studies.

18. In applying Article 22 of the Radio Regulations, administrations shall resolve problems of harmful interference which may arise in frequency usage in the bands concerned by exercising the utmost goodwill and mutual cooperation, and by giving due consideration to all the relevant technical and operational factors involved.

### Section 3 - Procedures Relating to the HFBC Planning System

[1. SUP]

2. Periodically, administrations shall confirm to the IFRB which of their requirements appearing in the HFBC requirements file are to be used in a given season. Administrations may also notify additions, modifications or deletions. When the Board finds that the information submitted by administrations is in conformity with Appendix 2 (HFBC-87), it shall establish the seasonal file accordingly.

3. The broadcasting requirements of administrations shall be submitted on the requirements form set out in Appendix 2 (HFBC-87) which specifies the data to be furnished.

4. The closing date for receipt of the information referred to in 2 shall be set by the Board. The Board shall gradually reduce the time period between the closing date and the start of the season to the minimum possible.

If, in spite of reminders by the Board, no reply is received from an administration by the closing date set by the Board, the Board shall consider that the requirements appearing in the requirements file for the season under consideration are confirmed if they were in operation during the previous season.

5. The IFRB shall calculate for each band the field strength at each test point and the basic broadcasting reliability (BBR) and shall identify the appropriate bands for each requirement. In so doing it shall also take account of the need to ensure frequency continuity as indicated in the Appendix to this Section.

6. The IFRB shall, on the basis of the above calculations, apply the rules contained in the Appendix to this Section, from which the following results are derived for each hour/band:

- a) a list of resolved requirements that will be entered in the seasonal plan, including:
  - i) requirements with an RF protection ratio greater than or equal to 17 dB;
  - ii) requirements with an RF protection ratio less than 17 dB. Consultations shall be undertaken with administrations which so request in their requirements forms;

- b) a list of the requirements that could not be entered into the seasonal plan under a) above and which will be dealt with in accordance with Section 2.

7. The Board shall consult those administrations that wish to be consulted and have requirements of the type referred to in 6 a) ii) above to ascertain whether they wish their requirements to be entered in the seasonal plan with the characteristics notified and the resulting RF protection ratios.

8. When administrations that wish to be consulted and have requirements of the type referred to in 6 a) ii) above have indicated that they do not wish their requirements to be inserted in the seasonal plan under the specified conditions, the Board shall transfer those requirements to the list referred to in 6 b).

[9. to 12. SUP]

13. The Board shall establish a time limit for administrations to submit new requirements, and shall process these requirements and endeavour to insert them in the seasonal plans following the steps indicated in the Appendix to this Section without adversely affecting\* those requirements already entered in the seasonal plans.

[14. SUP]

15. Administrations that so wish may request the Board to select alternative frequencies for their requirements. The Board shall endeavour to select alternative frequencies without adversely affecting\* the requirements appearing in the Plan. If the Board receives no comment from administrations following the publication of the seasonal plan, it shall consider that the frequencies indicated in the seasonal plan will be assigned by administrations to their stations.

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\* The criteria to determine whether a requirement is adversely affected are to be found in the Appendix to this Section.

## APPENDIX TO SECTION 3

**Rules Applicable to the HF Bands Which are Allocated Exclusively  
to the Broadcasting Service and are to be Planned**I. INTRODUCTION

The application of this Appendix shall ensure the best possible use of all the available channels.

II. DEFINITIONSII.1 Appropriate frequency band

The appropriate band for a requirement is the band which will ensure the continuity of use of the same frequency during the longest possible period of operation, with the best possible values of basic broadcast reliability (BBR)\*, taking account of propagation conditions, operational limitations and equipment availability and constraints.

II.2 Circuit reliability

Probability for a circuit that a specified performance is achieved at a single frequency.

II.3 Reception reliability

Probability for a receiver that a specified performance is achieved, taking into account all transmitted frequencies.

II.4 Broadcast reliability

Probability for a service area that a specified performance is achieved, taking into account all transmitted frequencies.

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\* The English acronyms are used in all three working languages for the sake of uniformity.

Note 1 - In the above terms, circuit means a one-way transmission from one transmitter to one receiving location.

Note 2 - The term "reliability" is qualified by the word "basic" when the background consists of noise alone.

Note 3 - When the background consists of both noise and interference, the term "reliability" may relate either to the effects of a single interferer or to multiple interference from co-channel and adjacent-channel transmissions.

Note 4 - The specified performance is expressed by a given value of signal-to-noise ratio or signal-to-(noise and interference) ratio.

Note 5 - The time periods to which the term "reliability" relates shall be stated.

## II.5 Percentile

The X percentile (X%) value for a given set of values is defined by the following conditions:

- 1) the X% value is a member of the set of values;
- 2) the X% value is that value which is equal to or exceeded by at least X per cent of the members in the set;
- 3) the X% value is the largest value satisfying conditions 1 and 2.

## II.6 Radio-frequency (RF) wanted-to-interfering signal ratio

The ratio, expressed in dB, between the values of the radio-frequency voltage of the wanted signal and the interfering signal, measured at the receiver input under specified conditions<sup>1</sup>.

## II.7 Relative radio-frequency protection ratio

The difference, expressed in dB, between the protection ratio when the carriers of the wanted and unwanted emissions have a frequency difference of  $\Delta F$  (Hz or kHz) and the protection ratio when the carriers of these emissions have the same frequency.

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<sup>1</sup> The specified conditions include such diverse parameters as: spacing  $\Delta F$  of the wanted and interfering carrier, emission characteristics (type of modulation, modulation depth, carrier-frequency tolerance, etc.), receiver input level, as well as the receiver characteristics (selectivity, susceptibility to cross-modulation, etc.).

## II.8 Term relating to the service area

- Required service area (in HF broadcasting): The area within which an administration proposes to provide a broadcasting service.

## II.9 Minimum usable field strength ( $E_{\min}$ )<sup>1</sup>

Minimum value of the field strength necessary to permit a desired reception quality, in specified receiving conditions, in the presence of natural and man-made noise, but in the absence of interference from other transmitters.

## II.10 Usable field strength ( $E_u$ )<sup>1</sup>

Minimum value of the field strength necessary to permit a desired reception quality, in specified receiving conditions, in the presence of noise and interference, either in an existing situation or as determined by agreements or frequency plans.

## III. PROPAGATION PREDICTION METHOD

The propagation prediction method to be used shall be that contained in the Technical Standards of the IFRB.<sup>2</sup> For propagation prediction purposes, the year shall be sub-divided into four seasons and predictions shall be made for a single month to represent a season, as specified in Section 1 (HFBC requirements file).

The solar index to be used for planning shall be the 12-month running mean sunspot number  $R_{12}$ . The seasonal plan shall be prepared in accordance with the values of  $R_{12}$  for the period concerned. The lowest value of  $R_{12}$  predicted for any of the months in that season shall be used.

## IV. HFBC PLANNING SYSTEM

### IV.1 Test points

The set of test points listed in the Technical Standards of the IFRB shall be used to represent the CIRAF zones and quadrants for planning purposes (see also IV.4.1.1).

Where a required service area, as notified by an administration in conformity with Appendix 2 (HFBC-87), does not include a test point, the IFRB shall establish a new test point and include it in the Technical Standards. Such additions to the Technical Standards shall be distributed to administrations (Nos. 1001 and 1001.1 of the Radio Regulations).

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<sup>1</sup> The terms "minimum usable field strength" and "usable field strength" refer to the specified field strength values which a wanted signal must have in order to provide the required reception quality.

In determining whether these requirements are met, the median value (50%) of a fading signal should be used.

<sup>2</sup> See also Recommendation COM4/F.

## IV.2 Planning constraints

### IV.2.1 Preset frequency

When an administration indicates that its facilities can operate only on a limited number of fixed specified frequencies, the planning method shall take this into account as indicated in section IV.4.11.

### IV.2.2 Limited use of the frequency bands

- a) When an administration indicates that its facilities can operate only in a given frequency band, only frequencies from that band shall be included in the plan.
- b) When an administration indicates a preferred frequency band, the system shall attempt to select a frequency from this band. If this is impossible, frequencies from the nearest appropriate band shall be tried. Otherwise the system will select frequencies from the appropriate band, taking into account the equipment constraints referred to in section IV.2.1.

### IV.2.3 Power

- a) When an administration indicates only a single power value due to equipment constraints, it shall be used in the planning process.
- b) When an administration indicates several possible power values, the appropriate value shall be used to achieve the basic circuit reliability, and a single power value shall be determined for the duration of the emission.

### IV.2.4 Antenna

When an administration indicates that its antenna can operate only in a given frequency band, only frequencies from that band shall be included in the plan.

### IV.2.5 Preferred frequency

In accordance with the planning principles and without imposing constraints on planning, the following provisions shall be applied in the seasonal plans:

- 1) administrations may indicate a preferred frequency;
- 2) during the planning process, attempts shall be made to include the preferred frequency in the plan;
- 3) if this is impossible, attempts shall be made to select a frequency in the same band.

Otherwise, the HF planning system shall be used to select the appropriate frequencies in such a way as to accommodate the maximum number of requirements, taking into account the constraints imposed by the technical characteristics of the equipment.

### IV.3 Frequency continuity

#### IV.3.1 Introduction

Continuity in the use of a frequency is an important matter for both the broadcaster and the listener; it is a characteristic inherent in the broadcasting of a programme. In addition, limitations imposed by the technical characteristics of the means of transmission available to some administrations will impose mandatory requirements for frequency continuity. The desirable aim is that changes in frequency should be limited to those necessitated by variations in propagation conditions. The rules for applying frequency continuity are given in section IV.3.4 below.

#### IV.3.2 Definitions

##### IV.3.2.1 Intra-seasonal continuity

###### IV.3.2.1.1 Type 1 continuity

Continuity of use of the same frequency within an hour or from one hour to the following hour for one requirement.

###### IV.3.2.1.2 Type 2 continuity

Continuity of use of the same frequency in the same season when passing from one requirement to another or one time block to another.

##### IV.3.2.2 Inter-seasonal continuity

###### IV.3.2.2.1 Type 3 continuity

Continuity of use of the same frequency for the same requirement in two consecutive seasons.

###### IV.3.2.2.2 Type 4 continuity

Continuity of use of the same frequency for the same requirement in two consecutive equinoctial seasons.

###### IV.3.2.2.3 Type 5 continuity

Continuity of use of the same frequency for the same requirement in the same season in two consecutive years.

#### IV.3.3 Relationship between frequency continuity and appropriate band(s)

IV.3.3.1 When a single frequency is sufficient to provide basic broadcast reliability (BBR) equal to or greater than the agreed reference value, the appropriate band is to be determined by the HFBC planning system by taking account, *inter alia*, of the rules set out in section IV.3.4 regarding the maintenance of the maximum frequency continuity within the limits of the agreed reference value for BBR (80%).



However, an administration may choose extended frequency continuity at the expense of BBR; in this event, it shall indicate the lower value of BBR to be used. As, in this portion of the requirement, the BBR falls below the above-mentioned reference value, the second and/or third frequencies are allowed only when the application of frequency continuity would not result in a number of additional frequencies greater than would be necessary with operation in the appropriate bands.

IV.3.3.2 When BBR obtainable by use of a single frequency is less than 80%, continuity of use of the first frequency or the single operating frequency will be assured within the lower limit of BBR indicated by the administration.

When the administration indicates that it is able to operate on more than one frequency, the use of this lower value of BBR shall not entail the use of a third frequency.

IV.3.3.3 When the requirement under consideration may use a second or third frequency according to the procedures established in section VII, frequency continuity shall also be applied to the second (and third) frequency in the same manner as for the first frequency.

IV.3.3.4 When type 2 continuity is requested (from one requirement to another), the HFBC planning system shall identify the appropriate band separately for each of the requirements concerned. The frequency assigned to the first of these requirements shall be assigned to the other related requirement if it is in its appropriate band.

#### IV.3.4 Application of continuity

IV.3.4.1 Type 1 continuity shall be applied automatically to all requirements under the conditions set out in 4.3.3 above.

IV.3.4.2 At the request of an administration, type 2 continuity shall be applied when this corresponds to equipment constraints. However, in other cases, this continuity may be applied to the extent possible (see section IV.3.3.4).

IV.3.4.3 Continuity of types 3, 4 and 5 shall be applied to the extent possible when requested by the administration.

#### IV.4 Planning steps and rules for dealing with incompatibilities

##### IV.4.1 Definitions

###### IV.4.1.1 Unit of service area

Each CIRAF zone is sub-divided into one to four units of area called "quadrants"; these are depicted in Figure C of Appendix 2 (HFBC-87). Any such "quadrant" containing at least one test point of a given requirement is called a "unit of service area" for the given requirement.

IV.4.1.2 A group of incompatible requirements (GIR) is a set of requirements, each of which is incompatible\* with all other requirements in the set.

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\* Refer to the Technical Standards of the IFRB.

IV.4.1.3 The GGIR\* (greatest GIR) is a GIR which contains the largest number of requirements.

IV.4.1.4 The MGIR\* (maximal GIR) is the set of all requirements contained in at least one GGIR.

#### Planning steps and rules

IV.4.2 The MGIR concept is used in the planning method to evaluate congestion.

IV.4.3 Congestion is evaluated by determining the GGIR and by comparing the number of channels required by that group with the number of channels available in the band considered.

IV.4.4 When, in a given hour/band, no congestion is found, the requirements concerned, for which a frequency will be identified, shall be entered in a "file of resolved requirements".

IV.4.5 When congestion is identified in a given hour/band by means of a GGIR, the requirements included in the MGIR will have their RF protection ratio reduced by 3 dB with a view to resolving the congestion. If, following this action, the congestion is not resolved, another MGIR is identified and the process is repeated until it is impossible to find a solution with an RF protection ratio of 17 dB. Requirements appearing in an hour/band that can be resolved in this manner are entered in the "file of resolved requirements".

IV.4.6 If the congestion is not resolved following the application of IV.4.5, a new MGIR is identified, as well as, for each administration, a set of requirements in the band under consideration with identical service areas. The planning process then identifies for transfer to the procedure in Section 2, a number of such requirements in order to resolve the congestion. In order to identify the requirements to be transferred first, administrations having requirements in the MGIR are sorted in decreasing order of the number of such requirements. The process is repeated as many times as necessary until the congestion is resolved or the number of such requirements becomes equal to one per administration concerned. Requirements appearing in an hour/band that can be resolved in this manner are entered in the "file of resolved requirements".

IV.4.7 If the congestion is not resolved following the application of IV.4.6, all requirements of a given administration appearing in a MGIR have different service areas, some of them having common units of service area. More transfers may be required in order to resolve the congestion; they shall be made by having recourse to the identification of the unit of service area which appears most often in the requirements of a given administration in the hour/band under consideration. Once this unit of service area is identified, administrations having it in their requirements are sorted in decreasing order of the number of their requirements where this unit appears, with a view to transferring to Section 2, requirements containing the unit of service area which appears most often. The GGIR is re-evaluated to determine whether congestion exists and the process is repeated as many times as necessary until the congestion is resolved or the number of such requirements becomes one per administration concerned. This rule shall be applied in such a way that any quadrant notified by an administration in the band/hour under consideration appears at least once in the plan. Requirements appearing in an hour/band that can be resolved in this manner are entered in the "file of resolved requirements".

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\* Refer to the Technical Standards of the IFRB.

IV.4.8 If the congestion is not resolved following the application of IV.4.7 the same rule is applied taking account of the requirements in all the bands in order to identify the requirements containing the unit of service area which appears most often. Requirements appearing in an hour/band that can be resolved in this manner are entered in the "file of resolved requirements".

IV.4.9 If the congestion is not resolved following the application of IV.4.8, each requirement appearing in the MGIR is examined in order to establish whether it appears in two or three bands due to its low BBR. Such a requirement may be transferred to Section 2 if it appears in another band with a better BBR. Requirements appearing in an hour/band that can be resolved in this manner are entered in the "file of resolved requirements".

IV.4.10 If the congestion is not resolved following the application of IV.4.9, the requirements included in the MGIR shall have their RF protection ratio reduced by 3 dB. Following this action another MGIR is identified, and the 3 dB reduction shall be applied to requirements appearing in the new MGIR not yet affected by this reduction. The process of reduction by 3 dB shall be repeated until congestion is removed. Additional reductions of the RF protection ratio by steps of 3 dB are made in the same manner until all the remaining requirements are entered in the "file of resolved requirements". In this manner all requirements which, as a result of the previous steps, have not been transferred to Section 2, have been placed in a "file of resolved requirements". This file contains, therefore, all the requirements which will always appear in the "seasonal plan". This will be the case of requirements with an RF protection ratio less than 17 dB; however, the requirements of those administrations who so wish may be transferred to Section 2 as a result of consultation with the IFRB.

IV.4.11 Following the application of the above steps for the resolution of incompatibilities, frequencies shall be granted for the requirements appearing in the "file of resolved requirements". This process shall be applied as follows:

- requirements with a single preset frequency shall be granted this frequency;
- requirements with more than one preset frequency shall be granted that frequency that has the least degree of incompatibility;
- if two requirements have the same preset frequency, which after analysis results in an incompatibility, the case is referred to the administration(s) concerned;
- requirements with a preferred frequency, attempts shall be made to grant them this frequency.

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IV.4.12 Before transferring a requirement to Section 2, the Board shall verify whether the administration has indicated that the frequency continuity shall be applied in all circumstances. If so, the requirement shall be transferred to Section 2, throughout the entirety of its transmission period within the appropriate band.

IV.4.13 Requirements received by the IFRB after the beginning of the planning exercise are entered in the plan on condition that they do not adversely affect the requirements already entered in the plan. In applying this provision, a requirement already entered in the plan with an RF protection ratio exceeding 17 dB is deemed to be adversely affected if its RF protection ratio is reduced below 17 dB. A requirement already entered in the plan with an RF protection ratio lower than 17 dB is deemed to be adversely affected if its RF protection ratio is reduced by more than 1 dB.

#### IV.4.14 Actions relating to harmful interference

In the event of harmful interference to an HF broadcasting service which is using an assignment in accordance with a current seasonal plan, the administration concerned shall have the right to request the prompt assistance of the IFRB in finding another frequency to help restore that service to the level of performance achieved in the plan. Any new frequency proposed by the IFRB shall not adversely affect the seasonal plan in operation. The central automated system must be able to respond, as far as possible, to such requests from administrations. The cause of a situation of harmful interference shall find its definitive solution in accordance with Article 22 of the Radio Regulations. The original frequency shall be made available for future use once this problem has been solved.

### V. RELIABILITY

#### V.1 Calculation of basic circuit reliability (BCR)

The method for calculating basic circuit reliability is given in Table C-2 which describes steps (1) to (11). The median value of field strength for the wanted signal at step (1) is determined by the field strength prediction method. The upper and lower decile values, steps (2) to (5) inclusive, are also determined, taking account of long-term (day-to-day) and short-term (within the hour) fading. The combined upper and lower deciles of the wanted signal are then calculated at steps (6) and (7) in order to derive the signal levels exceeded for 10% and 90% of the time at steps (8) and (9).

The wanted signal probability distribution, assumed to be log-normal, is illustrated in Figure C-1 (plotted on a normal probability scale for the abscissa) which indicates the signal level (in decibels) versus the probability that the value of signal level is exceeded. This distribution is used to obtain the basic circuit reliability (11), which is the value of probability corresponding to the minimum usable field strength (10).

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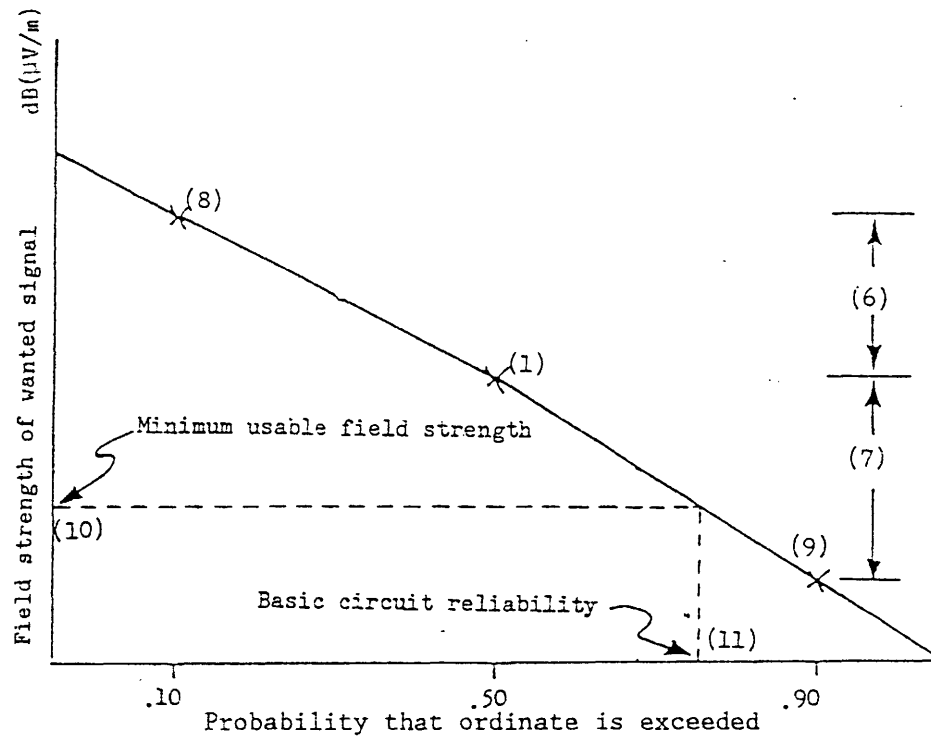


FIGURE C-1

Parameters used to compute basic circuit reliability (BCR)

(Figures appearing in brackets refer to the step numbers in Table C-2)

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[TABLE C-1 SUP]

TABLE C-2

Parameters used to compute basic circuit reliability (BCR)

STEP	PARAMETER	DESCRIPTION	SOURCE
(1)	$E_w(50)$ dB( $\mu$ V/m)	Median field strength of wanted signal <sup>1</sup>	IFRB Technical Standards
(2)	$D_U(S)$ dB	Upper decile of slow fading signal (day-to-day)	IFRB Technical Standards
(3)	$D_L(S)$ dB	Lower decile of slow fading signal (day-to-day)	IFRB Technical Standards
(4)	$D_U(F)$ dB	Upper decile of fast fading signal (within the hour)	IFRB Technical Standards
(5)	$D_L(F)$ dB	Lower decile of fast fading signal (within the hour)	IFRB Technical Standards
(6)	$D_U(E_w)$ dB	Upper decile of wanted signal	$\sqrt{D_U(S)^2 + D_U(F)^2}$
(7)	$D_L(E_w)$ dB	Lower decile of wanted signal	$\sqrt{D_L(S)^2 + D_L(F)^2}$
(8)	$E_w(10)$ dB ( $\mu$ V/m)	Wanted signal exceeded 10% of the time	$E_w + D_U(E_w)$
(9)	$E_w(90)$ dB ( $\mu$ V/m)	Wanted signal exceeded 90% of the time	$E_w - D_L(E_w)$
(10)	$E_{min}$ dB ( $\mu$ V/m)	Minimum usable field strength	IFRB Technical Standards
(11)	BCR	Basic circuit reliability	Formula (1) or Figure C-1

Note 1 - In the calculation of BCR at the test points within the required service areas of synchronized transmitters, the field strength value to be used is obtained by the method of root sum square addition of the constituent field strengths in microvolts/metre ( $\mu$ V/m).

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The basic circuit reliability is given by the formula:

$$BCR = \frac{1}{\sqrt{2\pi}} \int_{-\infty}^{\gamma} \exp(-\tau^2/2) d\tau \quad (1)$$

when  $E_W \geq E_{min}$

$$\gamma = \frac{E_W - E_{min}}{\sigma_L}$$

$$\sigma_L = D_L(E_W)/1.282$$

when  $E_W < E_{min}$

$$\gamma = \frac{E_W - E_{min}}{\sigma_U}$$

$$\sigma_U = D_U(E_W)/1.282$$

## V.2 Calculation of median signal-to-interference ratio (S/I)

The method of calculation is shown in Table C-3. In step (1), the median wanted signal level is computed by the propagation prediction method.

In step (2), the median field strength levels ( $E_i$ ) of each interfering source are obtained from the prediction method. In step (3), for a single source of interference the predicted median field strength is used; for multiple sources of interference the median field strength is calculated as follows: the field strengths of the interfering signals  $E_i$  are listed in decreasing order. Successive root sum square (r.s.s.) additions of the field strengths  $E_i$  are computed, stopping when the difference between the resultant field strength and the next field strength is greater than 6 dB. In step (3), the last computed value represents the resultant interference field strength  $I$ .

The values of the wanted signal and interference determined in steps (1) and (3) are combined in step (4) to obtain the median signal-to-interference ratio.

TABLE C-3

Calculation of median signal-to-interference ratio (S/I)

STEP	PARAMETER	DESCRIPTION	SOURCE
1	$E_w$ dB( $\mu$ V/m)	Median field strength of wanted signal	IFRB Technical Standards
2	$E_i$ dB( $\mu$ V/m)	Median field strength of interfering signals $E_1, E_2, \dots E_n$	IFRB Technical Standards
3	$I$ dB( $\mu$ V/m)	Resultant field strength of interference	1) $I = 20 \log_{10} \sqrt{\sum_{i=1}^n 10^{\left(\frac{E_i + \alpha_i}{10}\right)}}$
4	S/I	Median signal-to-interference ratio	$E_w - I$

Note 1 -  $\alpha_i$  is the appropriate relative protection ratio corresponding to the carrier frequency separation between the wanted and each unwanted signal.

### V.3 Basic reception reliability (BRR)

The method for computing basic reception reliability is given in Table C-4. With a single frequency, basic reception reliability (BRR) is the same as the basic circuit reliability (BCR) defined in section V.1. With multiple frequencies, the interdependence between propagation conditions at different frequencies leads to the computation method given in Table C-4. In steps (4) and (6), BCR (n) is the basic circuit reliability for frequency n, where n =  $F_1, F_2$ , etc. The basic reception reliability is obtained in step (2) for a single frequency, in step (4) for a set of two frequencies and in step (6) for a set of three frequencies.

[V.4 SUP]



TABLE C-4

Basic reception reliability

The following parameters are involved:

Single-frequency operation

STEP	PARAMETER	DESCRIPTION	SOURCE
(1)	BCR (F <sub>1</sub> ) %	Basic circuit reliability for frequency F <sub>1</sub>	Step 11, Table C-2
(2)	BRR (F <sub>1</sub> ) %	Basic reception reliability	BCR (F <sub>1</sub> )

Two-frequency operation<sup>1</sup>

(3)	BCR (F <sub>2</sub> ) %	Basic circuit reliability for frequency F <sub>2</sub>	Step 11, Table C-2
(4)	BRR (F <sub>1</sub> ) (F <sub>2</sub> ) %	Basic reception reliability	F <sub>2</sub> $1 - \prod (1 - \text{BCR}(n))$ n=F <sub>1</sub>

<sup>1</sup> The two frequencies F<sub>1</sub> and F<sub>2</sub> shall be situated in different HF bands allocated to the broadcasting service.

Three-frequency operation<sup>2</sup>

STEP	PARAMETER	DESCRIPTION	SOURCE
(5)	BCR (F <sub>3</sub> ) %	Basic circuit reliability for frequency F <sub>3</sub>	Step 11, Table C-2
(6)	BRR (F <sub>1</sub> ) (F <sub>2</sub> ) (F <sub>3</sub> ) %	Basic reception reliability	F <sub>3</sub> $1 - \prod (1 - \text{BCR}(n))$ n=F <sub>1</sub>

<sup>2</sup> The three frequencies F<sub>1</sub>, F<sub>2</sub> and F<sub>3</sub> shall be situated in different HF bands allocated to the broadcasting service.

V.5 Basic broadcast reliability (BBR)

The determination of basic broadcast reliability involves the use of test points within the required service area. The basic broadcast reliability is an extension of the basic reception reliability concept to an area instead of a single reception point. The method for computing basic broadcast reliability is shown in Table C-6. In step (1), the basic reception reliabilities BRR ( $L_1$ ), BRR ( $L_2$ ), --- BRR ( $L_N$ ) are computed as described in Table C-4 at each test point  $L_1$ ,  $L_2$  ---  $L_N$ . These values are ranked in step (2) and the basic broadcast reliability is the value associated with the 80th percentile of the test points.

Broadcast reliability is associated with the expected performance of a broadcast service at a given hour. For periods longer than an hour, computation at one-hour intervals is required.

[TABLE C-5 SUP]

TABLE C-6

Basic broadcast reliability

The following parameters are involved:

STEP	PARAMETER	DESCRIPTION	SOURCE
(1)	BRR ( $L_1$ ), BRR ( $L_2$ ), --- BRR ( $L_N$ ) %	Basic reception reliability at all test points considered in the required service area	Step (2), (4) or (6), as appropriate, from Table C-4
(2)	BBR (80) %	Basic broadcast reliability associated with the 80th percentile	Any percentile chosen from the values ranked from (1) of this table

VI. PROPORTIONALLY REDUCED PROTECTION (PRP)

Proportionally reduced protection (PRP) is a margin (M) by which the RF protection ratio to be applied at a test point may be reduced under the following specified conditions:

- 1) the BBR < 80%, and
- 2) only one frequency band is given by the planning system, and
- 3) at the test point considered the field strength  $E_w$  is less than  $E_{min}$  and greater than or equal to  $E_{min} - 10$  dB.

In these conditions, M is determined as:  $M = E_{min} - E_w$ .

In such cases, the proportionally reduced protection ratio is used in the evaluation of S/I at the test point considered. For all the remaining points within the required service area, full protection as determined by the relevant protection ratio is given when  $E_w \geq E_{min}$ , and no protection is given when  $E_w < E_{min} - 10$  dB.

In cases where PRP is not applicable, full protection as determined by the relevant protection ratio is given when  $E_w \geq E_{min}$ , and no protection is given when  $E_w < E_{min}$ .

VII. MAXIMUM NUMBER OF FREQUENCIES REQUIRED PER REQUIREMENTVII.1 Introduction

Wherever possible, only one frequency should be used for a given requirement. In certain special circumstances, it may be found necessary to use more than one frequency per requirement, i.e.:

- over certain paths, e.g., very long paths, those passing through the auroral zone, or paths over which the MUF is changing rapidly;
- areas where the depth of the area extending outwards from the transmitter is too great to be served by a single frequency;
- when highly directional antennas are used to maintain satisfactory signal-to-noise ratios, thereby limiting the geographical area covered by the station concerned.

The decision to use more than one frequency per requirement should be taken on the merits of the particular case concerned.

The use of synchronized transmitters should be encouraged whenever possible in order to minimize the need for additional frequencies.

## VII.2 Use of additional frequencies

The number of frequencies needed to achieve the specified level of BBR<sup>1</sup> shall be determined by the method given below. If the calculated BBR for a single frequency does not reach the adopted value, it is necessary to consider whether the BBR could be improved by additional frequencies in separate bands and whether the improvement would justify the use of additional frequencies.

## VII.3 Determination of additional frequency bands

In cases where the BBR for the first band, based on all test points in the required service area, is between 50% and 80%, an additional band shall be tested using the following procedure.

Those test points whose basic circuit reliability (BCR) is less than or equal to the BBR are identified, and only these points are used to determine the second band. For each band, the minimum value of BCR ( $BCR_{min}$ ) at these points is determined and that band having the highest  $BCR_{min}$  value is selected. If more than one band has this value, the highest frequency band is selected. The two-band BBR, taking account of the BRR at all test points in the required service area, is then computed, and if it exceeds the limit specified in Figure C-3, the second band is permitted. In those special cases where the two-band BBR is less than 80%, a third band shall be tested as follows.

The BBR for each of the remaining bands is computed, using all the test points in the required service area. Of these bands, that band having the highest BBR is selected as the third band. If more than one band has this value the highest frequency band is selected. If the resulting three-band BBR, taking account of the BRR at all test points, exceeds the limit specified in Figure C-3, the third band is permitted.

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<sup>1</sup> For calculation of the basic broadcast reliability (BBR), see V.5.

R.6/27

[FIGURE - C-2 SUP]

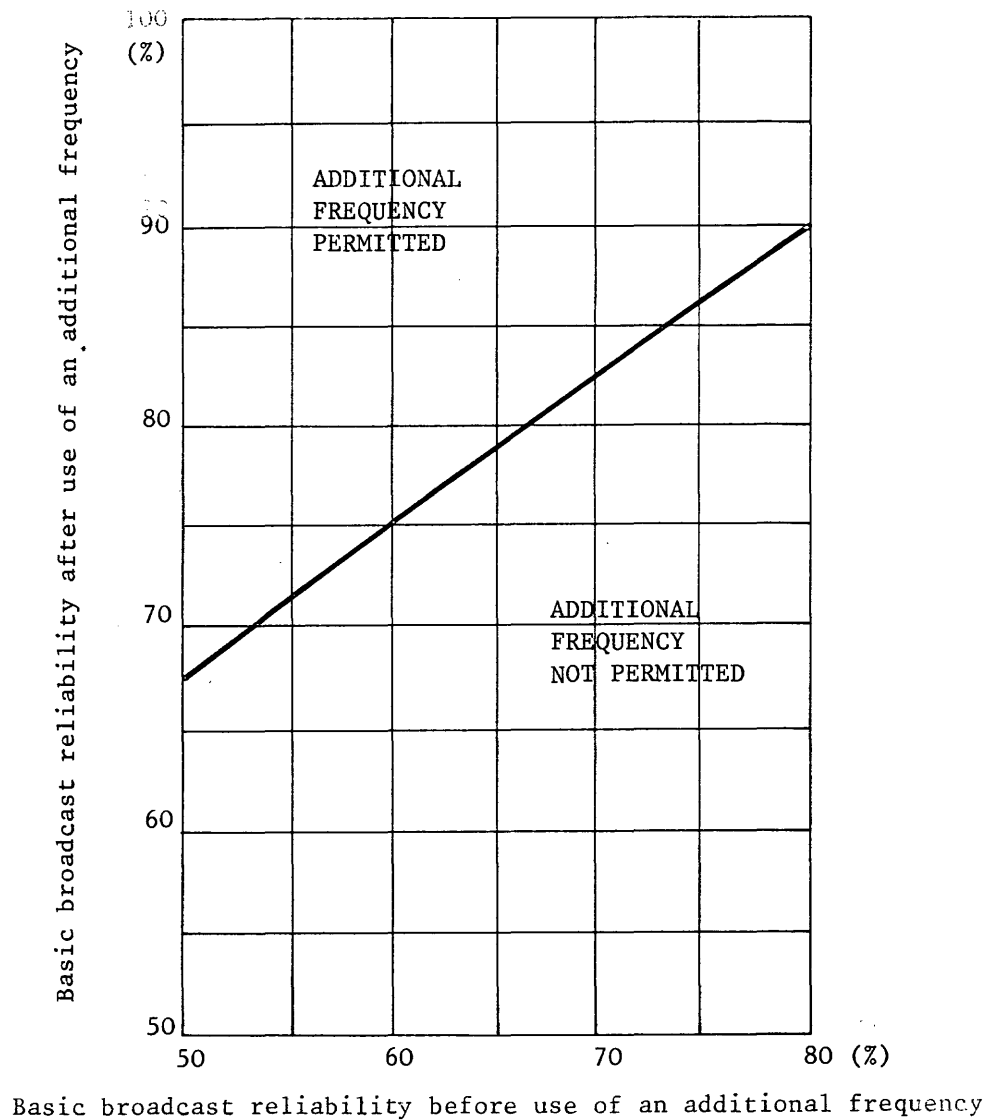


FIGURE C-3

Limits for use of an additional frequency

The contents of this figure can be expressed by the following formulas:

$BBR (after) > 30 + 0.75 * BBR (before)$	additional frequency permitted
$BBR (after) \leq 30 + 0.75 * BBR (before)$	additional frequency not permitted.

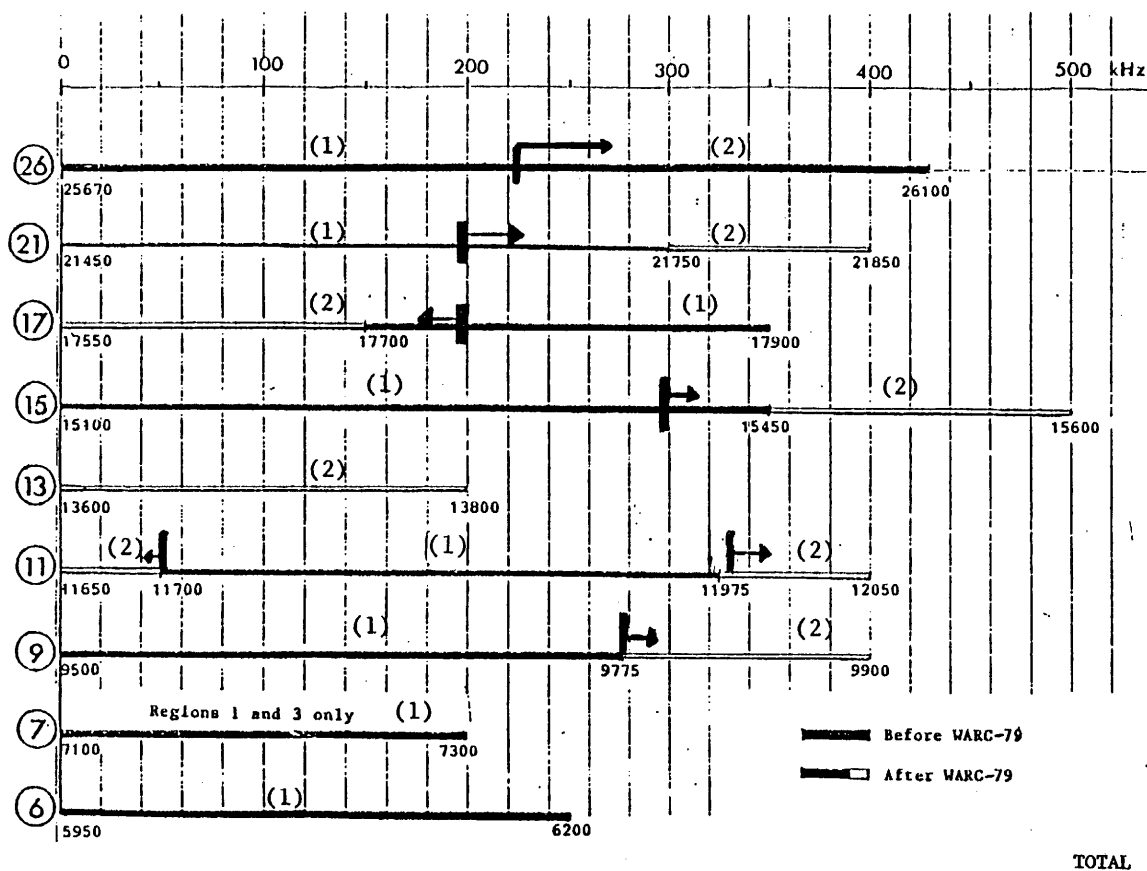
VIII. Performance assessment\*

In order to assess the performance of a requirement, the following values should be given for each 15 minute period, each hour, or for the duration of the emission, as appropriate:

- 1) BBR - basic broadcast reliability at the 80th percentile of all test points;
- 2) percentages of test points for each frequency band where the field strength is equal to or greater than  $E_{\min}$ , and  $E_{\min} - 10$  dB where proportionally reduced protection applies;
- 3) S/I (dB) - median signal-to-interference ratio obtained using the calculation procedure of section V.2 at the 80th percentile of test points where the field strength is equal to or greater than  $E_{\min}$ , or  $E_{\min} - 10$  dB where proportionally reduced protection applies. If economically practical, it would be desirable to indicate the test points which have been used in determining the signal-to-interference ratio.
- 4) TP (%) - percentage of test points for each frequency band where the field strength is equal to or greater than  $E_{\min}$ , or  $E_{\min} - 10$  dB where proportionally reduced protection applies, and the median signal-to-interference ratio is equal to or greater than 17 dB.

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\* The IFRB may develop additional parameters for assessing performance.



Total (kHz)	Application of the consultation procedure (Article 17) (kHz) (1)	Application of the improved HFAC Planning System (kHz) (2)
430	230	200
400	200	200
350	150	200
500	300	200
200		200
400	275	125
400	275	125
200	200	
250	250	
<b>TOTAL</b>	<b>1880</b>	<b>1250</b>

ANNEX 2

R.6/29

## RESOLUTION 91 (HFBC-87)

Revision, Replacement and Abrogation of Resolutions and  
Recommendations of the World Administrative Radio Conference  
(Geneva, 1979)

The World Administrative Radio Conference for the Planning of the HF  
Bands Allocated to the Broadcasting Service (Geneva, 1987),

considering

its agenda as contained in 912 adopted by the Administrative Council  
at its 39th session (1984), in particular agenda item 2.1.6, and the action  
taken on [two] Resolution[s] and three Recommendations of the World  
Administrative Radio Conference (Geneva, 1979),

considering further

a) that the following Resolution[s] and Recommendation have been revised  
as follows:

[Resolution 8 .....]

Resolution 641 relating to the Use of the Frequency  
Band 7 000 - 7 100 kHz - superseded by  
Resolution 641 (Rev. HFBC-87),

Recommendation 503 relating to HF Broadcasting - superseded  
by Recommendation 503 (Rev. HFBC-87);

b) that all the action required by the following Recommendations has been  
taken:

Recommendation 500 relating to the Preparation of the Technical  
Information Necessary for the World  
Administrative Radio Conference for  
HF Broadcasting,

Recommendation 501 relating to Studies for the Introduction of  
Single-Sideband (SSB) Techniques in the  
HF Bands Allocated to the Broadcasting  
Service, in Preparation for the World  
Administrative Radio Conference for  
HF Broadcasting,

resolves

that Resolution[s] [8 and] 641 and Recommendations 500, 501 and 503 of  
the World Administrative Radio Conference (Geneva, 1979) shall be abrogated.



PLENARY MEETINGNote by the Chairman of the Conference

## DRAFT RESOLUTION [PL/2]

**Operation of HFBC Transmitters in the Extended Bands Above 10 MHz**

The World Administrative Radio Conference for the Planning of the HF Bands Allocated to the Broadcasting Service (Geneva, 1987),

considering

- a) that WARC-79 allocated new HF bands to the broadcasting service on an exclusive basis;
- b) that in accordance with Resolution No. 8 of WARC-79 these bands will be available for use by the broadcasting service on 1 July 1989 (see Resolution No. 8, WARC-79);
- c) that in accordance with No. 531 of the Radio Regulations, the use of these extended bands by the broadcasting service shall be subject to provisions to be established by the WARC for the Planning of HF Bands Allocated to the Broadcasting Service (see Resolution No. 508, WARC-79),

considering further

that the improved HFBC Planning System could be applied in the extended HF bands as specified in No. 531 of the Radio Regulations only after the entry into force of the provisions of the competent WARC foreseen for 1992,

resolves

- 1. that operation of HFBC transmitting stations in the bands above 10 MHz specified in No. 531 of the Radio Regulations shall occur only at the date decided by the future WARC referred to in Resolution PL/1;
- 2. that the date of 1 July 1989, as indicated in Annex A, paragraph 17 of Resolution No. 8 of WARC-79, is extended to the date decided by the future competent WARC referred to in Resolution PL/1 with respect to the following frequency bands:

11 650 - 11 700 kHz  
11 975 - 12 050 kHz  
13 600 - 13 800 kHz  
15 450 - 15 600 kHz  
17 550 - 17 700 kHz  
21 750 - 21 850 kHz

**HFBC (2)**

INTERNATIONAL TELECOMMUNICATION UNION  
**WARC FOR THE PLANNING OF THE HF BANDS  
ALLOCATED TO THE BROADCASTING SERVICE**  
SECOND SESSION, GENEVA, February-March 1987

Document 271-E  
7 March 1987

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:

<u>Source</u>	<u>Document</u>	<u>Title</u>
PL	253(Rev.1)	Resolution PL/1 (HFBC-87)

D. SAUVET-GOICHON  
Chairman of Committee 7

Annex: 3 pages

R.7/1

## RESOLUTION PL/1 (HFBC-87)

**Programme of Action Relating to the Improvement, Testing, Adoption and Practical Implementation of the Planning System for the High Frequency Bands Allocated Exclusively to the Broadcasting Service, and Associated Provisions**

The World Administrative Radio Conference for the Planning of the HF Bands Allocated to the Broadcasting Service (Geneva, 1987),

considering

the need to adopt a programme of action,

resolves

1. that the HFBC Planning System and associated software are to be improved in accordance with the further instructions contained in Resolution COM6/2 (HFBC-87);
2. that the improved HFBC Planning System is to be tested in accordance with the instructions contained in Resolution COM6/2 (HFBC-87) for adoption, if acceptable to a competent world administrative radio conference and for application in the following bands allocated exclusively to the broadcasting service:

26 MHz band: 25 900 - 26 100 kHz  
21 MHz band: 21 650 - 21 850 kHz  
17 MHz band: 17 550 - 17 750 kHz  
15 MHz band: 15 400 - 15 600 kHz  
13 MHz band: 13 600 - 13 800 kHz  
11 MHz band: 11 650 - 11 700/11 975 - 12 050 kHz  
9 MHz band: 9 775 - 9 900 kHz\*,

decides to recommend

that a world administrative radio conference should be convened not later than 1992,

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\* This band cannot be implemented before 1 July 1994 (Resolution No. 8, WARC-79).

R.7/2

that this conference should:

- examine the results, provided by the IFRB, of the improved HFBC Planning System and the Article 17 Consultation Procedure;
- examine the effects of the interaction between the two "systems" (improved HFBC Planning System and Article 17 Consultation Procedure);
- decide on any improvements to be made to the two "systems";
- on the basis of the analysis of test results, decide on the date of introduction of the two systems, which should be as soon as possible after the WARC of 1992;
- decide on the date of introduction of the HFBC Planning System in the 9 MHz extension band;
- take the necessary steps to settle the question of the processing of national broadcasting requirements;
- establish a long-term plan with a view to planning all the bands allocated exclusively to HF broadcasting,

invites the Plenipotentiary Conference

as a matter of priority to make the necessary arrangements for including the WARC of 1992 in the schedule of conferences it is to establish,

invites the Administrative Council

to take whatever action is necessary for convening the conference not later than 1992,

instructs the IFRB

to undertake the improvements in the software of the HFBC Planning System, to test the system and to submit their results to administrations and to the WARC mentioned above,

instructs the Secretary-General

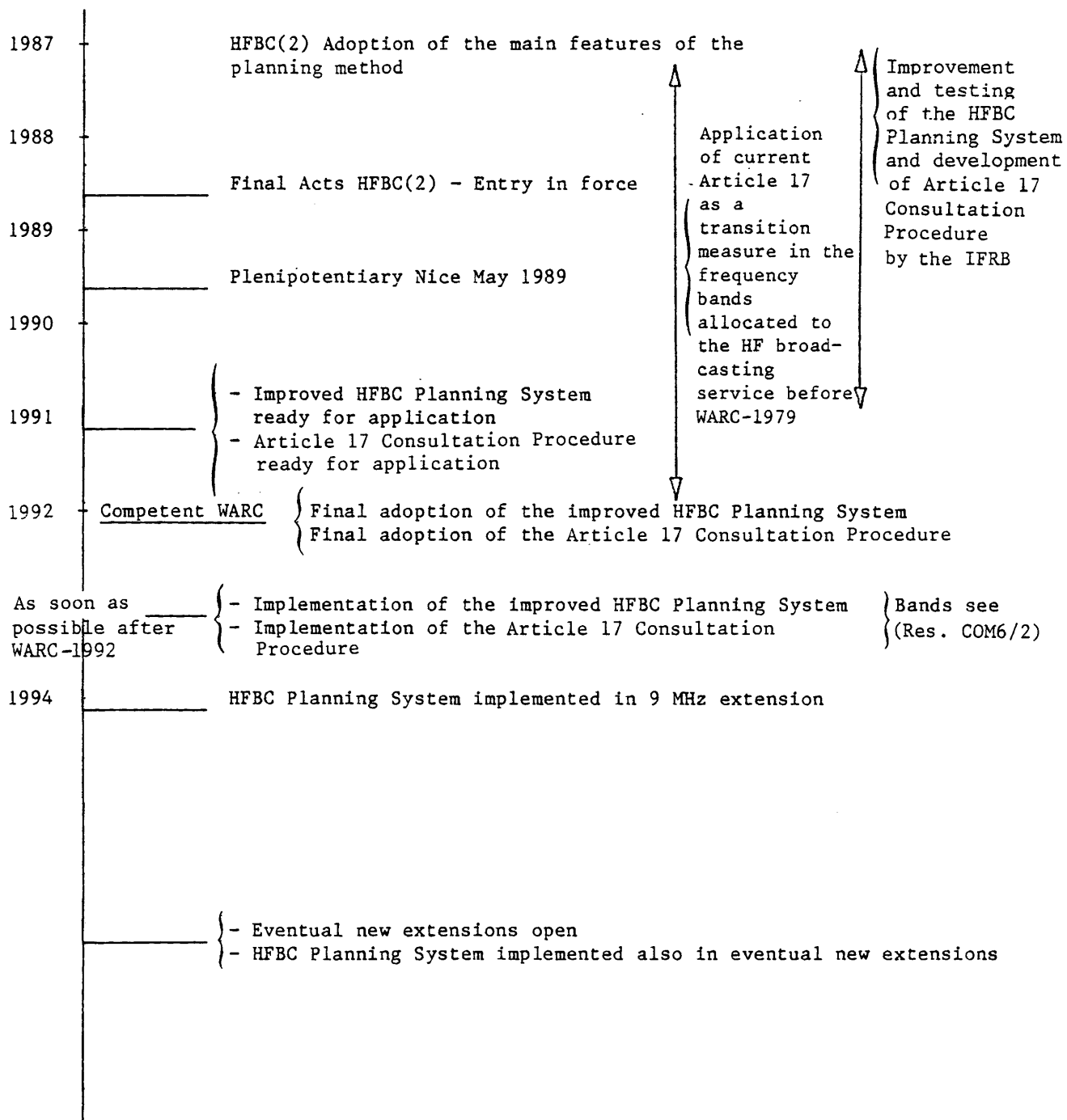
to bring this Resolution to the attention of the Administrative Council.

Note - The programme of action is illustrated in the annex.

Annex: 1

R.7/3

## ANNEX



PLENARY MEETING

MINUTES

OF THE

SEVENTEENTH PLENARY MEETING

Saturday, 7 March 1987, at 1415 hrs

Chairman: Mr. K. BJÖRNSJÖ (Sweden)

Subjects discussed:

Documents

- |  |                            |
|--|----------------------------|
| 1. First reading of draft Resolution [PL/2]  | 270                        |
| 2. Note by the Chairman of the Conference<br>on the partial revision of the<br>Radio Regulations | 262 + Add.1                |
| 3. Note by the Chairman of the Conference:<br>Preamble to the Final Acts                         | 263                        |
| 4. Twelfth series of texts submitted by the<br>Editorial Committee for first reading (B.12)      | 267                        |
| 5. Fifth series of texts submitted by the<br>Editorial Committee for second reading (R.5)        | 268                        |
| 6. Sixth series of texts submitted by the<br>Editorial Committee for second reading (R.6)        | 269                        |
| 7. Other texts submitted for second reading  | 271, 255, 267,<br>270, 263 |
| 8. Approval of the minutes of the seventh Plenary<br>Meeting                                     | 175                        |

1. First reading of draft Resolution [PL/2] (Document 270)

1.1 The Chairman read out the text of draft Resolution [PL/2] which was based on a compromise he had suggested in relation to the proposal submitted by the Delegations of Pakistan and India in Document 241; it would bear a reference to Resolution No. 8, WARC-79, and would be applied in conjunction with the latter.

1.2 The delegate of the Syrian Arab Republic, supported by the delegate of Tunisia, proposed that a third operative paragraph should be added to the draft Resolution in order to protect other services in the already congested bands.

1.3 The Chairman, referring to a response by the Chairman of the IFRB, suggested that it might suffice to add a reference to Resolution No. 9, WARC-79, which dealt with the concern mentioned.

1.4 The Secretary-General said that the Secretariat had intended, in any case, to propose a cross-reference to Resolution No. 8, WARC-79, which, by interpretation, would recognize the applicability of Resolution No. 9.

1.5 The delegate of Algeria proposed that Resolution No. 9 should be referred to in the preambular part also of draft Resolution [PL/2].

1.6 The delegate of the United Kingdom felt that the second operative paragraph was itself sufficient, and proposed the deletion of resolves 1.

1.7 The Chairman, replying to the delegate of the Syrian Arab Republic, said that the procedure in Resolution No. 8 was to replace the assignments in Article 12 to the fixed service by assignments in other bands. Therefore, the current regulation for the fixed service was in order. He urged delegations to bear in mind the lengthy discussion which had resulted in the compromise text before the meeting and to accept that text as it stood.

1.8 The delegate of Canada endorsed the Chairman's appeal.

1.9 The delegate of the United States said that, although his Delegation was willing to support a compromise with a view to making progress, it was prepared, if necessary, to be as obdurate as those who seemed disposed to set the compromise efforts at naught. His Delegation could support the proposal to delete the first operative paragraph and retain only the second.

1.10 The delegate of Libya, speaking on a point of order, regretted the tone of the statement just made and the implied criticism of certain delegations, which had the right at any time to make proposals and defend their interests. The delegate of Algeria endorsed that view.

1.11 The delegate of Argentina said he could agree with the compromise text put forward; but it should be borne in mind that WARC-79 had left a serious problem for countries such as his in respect of other services. The substitution channels were not applicable on account of heavy congestion and incompatibilities, which rendered entire bands impossible to utilize.

1.12 The Chairman proposed adoption of the text of draft Resolution [PL/2] as it stood.

1.13 The delegates of Brazil, Yugoslavia, Tanzania, Norway, Poland and the United Kingdom supported the Chairman's proposal.

1.14 The delegate of Algeria withdrew his proposal relating to an additional preambular paragraph but recorded his Delegation's reservations on the text as it stood. His Delegation too believed in compromise; it deeply regretted the opposition to making reference to texts of the Union and the threatening attitude of some towards proposals which they disapproved of.

1.15 The delegates of the Syrian Arab Republic, Libya, Iraq, Jordan, Oman and Qatar recorded their Delegations' reservation on the text as it stood.

1.16 The delegate of Saudi Arabia seconded those reservations. His Delegation also regretted the unprecedented approach in which documents were submitted under a plea for speedy adoption of the texts as they stood, which made fruitful discussion impossible. The delegate of Tunisia endorsed that observation.

1.17 The delegate of Japan supported by the delegate of Finland, said that adoption of draft Resolution [PL/2] was contrary to the intention at WARC-79; it implied serious consequences for future reallocation of frequency bands. Moreover, the failure to clarify the length of the transfer period made any planning of broadcasting services prior to WARC-92 impossible. The decision taken, therefore, was very unfavourable to the broadcasting service.

1.18 The delegates of the United States and Botswana associated themselves with that statement, and recorded their appreciation of the Chairman's skill and patience in seeking a fair compromise throughout the discussions.

1.19 The delegate of Argentina endorsed the tributes paid to the Chairman's efforts. He also wished it to be recorded in the proceedings of the Conference that 23 countries of Region 2 had been absent.

Draft Resolution [PL/2] was approved on first reading.

1.20 The Chairman of the IFRB said that the Board would have to review the text's implications for the existing Resolution No. 8, WARC-79, particularly with regard to the status of services and the uncertainty about the date, which was to be decided by the future WARC and would not appear in the Final Acts. For several years the Board had been carrying out a transfer arrangement, to which considerable resources had been devoted; the decision just taken would prolong that task, with little benefit to the fixed service and none to the broadcasting service.

2. Note by the Chairman of the Conference on the partial revision of the Radio Regulations (Document 262 + Add.1)

2.1 The Chairman said that Document 262 contained modifications to Articles 17 and 30, and Add.1 to Doc. 262 contained a modification to Article 8. The Plenary Meeting had already approved modifications to Appendices 2 and 7, and a new Appendix 45. The draft Preamble was contained in Document 263.

2.2 The Secretary-General said that, as had been indicated at earlier Plenary Meetings, the document had been based on elements taken from the Report to the Second Session dealing with planning principles. In reviewing the text with the Secretariat, it had become evident that with the passage of time some of the words used were no longer applicable. The text had therefore been presented to the Chairman exactly as extracted, but square brackets had been used to indicate areas where a more appropriate text might be used.



Article 17

2.3 The Chairman, taking up a proposal made by the delegate of the United Kingdom, suggested that ADD 1742 be reworded as follows:

"In operating the procedures under Section IV, all administrations are urged to conform to the principles in Section II to the maximum extent possible."

It was so agreed.

2.4 The Chairman of Committee 7 proposed that the first phrase of ADD 1744 should be deleted and that the provision should start with:

"The planning of the high-frequency bands allocated to the broadcasting service ...".

2.5 The Secretary-General supported that proposal because the principles taken from the Report to the Second Session now formed an integral part of the Convention and of the Radio Regulations.

2.6 The delegate of India suggested that the first sentence should end at "equitable access to these bands", the remainder being deleted.

The above amendments were adopted.

2.7 The Secretary-General said that as the Conference had not adopted a legal form of modification procedure, the phrase in square brackets in ADD 1744(5) should be deleted.

It was so agreed.

2.8 The Chairman replying to a question raised by the delegate of Qatar recalled that the planning period referred to in the first sentence had been set at three years, which included several seasons.

2.9 The Secretary-General said that the words in square brackets in ADD 1744(6) did not represent reality at the present stage and could be deleted.

It was so agreed.

2.10 The delegate of Qatar expressed concern that with the deletion of the words in square brackets, such terms as "relating to a plan", "planning period" and "planning procedure" remained, when Article 17 covered only a notification and certain coordination procedure.

2.11 The Secretary-General said that the only way of implementing the wish of the Conference that the principles established at the First Session should be preserved, and given legal status, was to incorporate them into the Radio Regulations. The delegate of Qatar should therefore look ahead for the reasons given in Section I of Article 17 which could, of course, be reviewed at the 1992 Conference.

2.12 The representative of the IFRB (Mr. Berrada) explained that the words in square brackets in ADD 1744(8) related to the proportionately reduced interference covered by the Resolution adopted by the Plenary Meeting.

The square brackets were removed.

2.13 The Secretary-General said that since the words "the equitable application of the planning procedure" in (9) did not exactly reflect the present situation, the Secretariat had proposed that the phrase should read:

"The equitable application of a new planning procedure."

It was so agreed.

2.14 The representative of the IFRB (Mr. Berrada) suggested, since overall broadcasting reliability was no longer used, and to remain consistent with the terminology used in (9), the first sentence of (10) should read: "The planning method shall satisfy on an equal basis a minimum of the broadcasting requirements submitted by administrations with the desired quality level." In the last sentence "the overall broadcasting reliability" should be replaced by "this quality level".

It was so agreed.

ADD 1746

2.15 The delegate of India suggested that the words "Planning System" should be used instead of "planning method" both in the title and in the provision, and that the words "the principles in Section II and ..." be inserted after "in accordance with". The delegate of China supported that proposal, since it would maintain the terminology used elsewhere. The delegate of the Islamic Republic of Iran also supported India's proposal, provided that the rest of the text remained unchanged.

2.16 The representative of the IFRB (Mr. Berrada) said that if that proposal were adopted, either the words "for adoption" should be replaced by "for consideration", or the phrase should read "for adoption of the planning method, if acceptable" unless it was the wish of the Conference that a future conference should adopt the system.

2.17 The Secretary-General said that the problem was that the method and system could not be entirely separated. If the word "system" were adopted, then the suggestion made by the representative of the IFRB was valid. The Secretary-General said that it would not be correct to introduce references to decisions which appeared in documents of the First Session into the Radio Regulations. One reason for inserting the planning principles was to give them status, since they were only at the report level from the First Session and legal difficulties might arise if implementation was attempted without raising their status. The proposal made by the delegate of India caught the point and he urged the meeting to accept it. ADD 1746 would then read:

"The Planning System developed in accordance with the principles set out in Section II and the decisions of the WARC HFBC, Geneva 1987, shall be improved and tested in accordance with the instructions contained in Resolution PL/1 (HFBC-87) for adoption, if acceptable to a competent World Administrative Radio Conference."

2.18 The delegates of the United Kingdom, Poland, Brazil, the Islamic Republic of Iran and Yugoslavia supported that proposal.

It was so agreed.

2.19 The Chairman said that the title of Section III would then be changed to "Planning System".

1748-1772

2.20 The delegate of Finland said that, despite the statement in brackets to the contrary, changes could usefully be made to certain outdated provisions between Nos. 1748 and 1772 of Article 17, which WARC-79 had not yet been empowered to alter. In particular, No. 1769 (old Section V) could be deleted and perhaps Nos. 1766 to 1768 (old Section IV) also.

2.21 The representative of the IFRB (Mr. Berrada) said that No. 1769 could be deleted but not Nos. 1766 to 1768, since the High-Frequency Broadcasting Schedule was still published regularly. Consequential modifications would then be required to RR 1350, 1753 and 1769. In addition, the first sentence of No. 1749 might be deleted.

It was so agreed.

Article 30

ADD 2673B

It was agreed to change the word "satisfy" to "meet".

Article 8 (Addendum 1 to Document 262)

Approved.

The texts in Document 262 + Addendum 1 were approved, as amended, on first reading.

2.22 The Secretary-General said that, as agreed, the partial revision of the Radio Regulations also required the addition of a reference to Resolution PL/3, now that it had been adopted, under the title of Resolution No. 8 of WARC-79, which it affected.

That addition was approved on first reading.

3. Note by the Chairman of the Conference: Preamble to the Final Acts  
(Document 263)

3.1 The Chairman said that Document 263 contained the customary elements of such preambles. As a result of the decisions just taken, the modifications to Articles 8 and 12 of the Radio Regulations would need to be inserted at the head of the list of such amendments.

3.2 The delegate of China proposed that the eighth paragraph be amended to begin:

"The Conference also adopted Resolutions and Recommendations relating to the short-term and medium-term programmes of action to be followed towards ..."

It was so agreed.

Document 263, as amended, was approved on first reading.

The meeting was suspended at 1720 hours and resumed at 1800 hours.

4. Twelfth series of texts submitted to the Plenary Meeting for first reading (B.12) (Document 267)

Recommendation PL/A (HFBC-87)

Approved, subject to a minor editorial amendment to the English text of considering c).

Recommendation PL/B (HFBC-87)

It was agreed, following an observation by the Secretary-General that in paragraph 2 of recommends to the Administrative Council the word "Australia" against Region E should be replaced by "Australasia."

- 4.1 The delegate of Algeria said that, in paragraphs 1 and 2 of recommends to the Administrative Council, the word "group" should have a lower case initial in the French text, as in the English, and likewise, in other parts of the Recommendation and in paragraph 1 the words "group of" should be deleted, and the word "experts" should appear with a lower case initial throughout.

Following a brief discussion in which the delegates of Saudi Arabia, France, Canada, Algeria and Australia and the Secretary-General took part, it was agreed to leave the term "group of experts" in square brackets throughout the text until the second reading.

- 4.2 The Chairman of the IFRB, referring to paragraph 1 of instructs the Secretary-General, said that the term "HF field" should read "HF broadcasting field".

- 4.3 The Chairman of the Editorial Committee, in response to a query by the delegate of Italy about paragraph 2 of that section, said the words "qui sera examinée" in the French text of the second paragraph should be replaced by the words "pour examen", so as to conform to the English text.

Recommendation PL/B was approved, as amended.

The twelfth series of texts submitted by the Editorial Committee (B.12) was approved, as amended, on first reading.

5. Fifth series of texts submitted by the Editorial Committee for second reading (R.5) (Document 268)

5.1 Appendix 2 (HFBC-87)

- 5.1.1 The representative of the IFRB (Mr. Brooks), replying to a question by the delegate of Finland concerning the asterisk against item B.9, said the intention was that administrations must provide basic information relating to the respective types of antennas referred to in paragraphs 9.2, 9.3 and 9.4, as well as the information basic to all types, as mentioned in 9.1.

- 5.1.2 The delegate of the United States proposed that 9.1.1 should bear four asterisks and a corresponding footnote giving a cross-reference to Resolution COM4/3.

It was so agreed.

5.1.3 The delegate of Iraq, referring to the footnote relating to item B.22, said that the square brackets could be deleted from the phrase "(see Note [1] in Article 17)", which should be preceded by the word "also" within the parentheses.

It was so agreed.

Appendix 2 (HFBC-87), as amended and subject to an editorial correction to the title in the French text, was approved.

5.2 Modifications to the Radio Regulations

Approved.

5.3 Recommendation COM5/A (HFBC-87)

5.3.1 The delegate of Australia withdrew his Delegation's reservation on Recommendation COM5/A (HFBC-87).

5.3.2 The delegate of the Federal Republic of Germany, referring to considering e), proposed that the words "a timetable" in the fourth line should be replaced by "an associated timetable" and that, in the following line, the words "for the introduction" should be preceded by ", as well as the procedure".

It was so agreed.

It was also agreed, following an observation by the delegate of China on recommends to the Administrative Council, that in the third line of the French text the word "comporterait" should be replaced by "devrait comporter" in line with the English text, and that the Spanish text would be so aligned if necessary.

5.3.3 The Chairman, in response to an observation by the delegate of the Syrian Arab Republic, said that although the current Conference could agree on the need to extend frequency bands for the HF broadcasting service it was not mandated to rule on whether or not the bands should be expanded; that was for a future competent WARC to decide. No decisions which would affect the fixed service could be taken in the current forum, in which the fixed service itself was not represented.

Recommendation COM5/A (HFBC-87), as amended, was approved.

The fifth series of texts submitted by the Editorial Committee was approved, as amended, on second reading.

6. Sixth series of texts submitted by the Editorial Committee for second reading (R.6) (Document 269)

6.1 Resolution COM6/2 (HFBC-87)

6.1.1 The Secretary-General, referring to an observation by the delegate of China relating to paragraph 1 of resolves that the IFRB, said that Annex 1 to the Resolution contained an appropriate reference, in paragraph 3 of section 1, to Appendix 2 (HFBC-87), which dispensed with the need for a further cross-reference.

Annex 1

It was agreed:

- to amend the phrase "to the administrations" in the third line of 5ter of section 2 to read "to the administrations concerned",
- to replace the suspension points and square brackets by "section 2" in section 2, paragraph 10, and to replace the figures 13 and 9 by 12 and 8 respectively in section 2, paragraph 13.

It was also agreed:

- to have the Secretariat remove the square brackets and effect the requisite paragraph renumbering in section 3;
- to amend, in the footnote to paragraph 15 of that section, the term "in the appendix" to read "in paragraph IV.4.13 of the appendix";
- to align the Spanish text with the term "appropriate bands" at the end of IV.3.3.1 of that appendix, and to replace the term "Any percentile" by "The percentile" in the SOURCE column against Step (2) in Table C-6.

Following observations by the delegate of the United Kingdom and the representative of the IFRB respectively it was agreed to replace "S/I" by "SIR" at the beginning of VIII.3) of the appendix to section 3, and to amend the French text of the footnote.

Annex 2

Resolution COM6/2 (HFBC-87), as amended, was approved.

6.2 Resolution 91 (HFBC-87)

6.2.1 The Chairman, in response to an observation by the delegate of Algeria, said that the text was a new Resolution, the old one having been abrogated; likewise, Recommendation 503 was superseded by Recommendation 503 (Rev. HFBC 87).

6.2.2 The Chairman of the Editorial Committee said that, in the considering part, the reference to two Resolutions would be amended to read one Resolution and the square brackets deleted accordingly; likewise, the plural within square brackets would be deleted from a), and the reference to Resolution No. 8 and the suspension points, as well as the square brackets, would be deleted. The corresponding part of the text under resolves would be amended to read "that Resolution No. 641 and".

6.2.3 The Secretary-General, replying to a question by the delegate of Brazil, said that it had been thought best to reflect the modified title of Resolution No. 8 by means of a cross-reference rather than include it in the revisions set forth in Resolution No. 91 (HFBC-87).

Resolution No. 91 (HFBC-87), as amended, was approved.

The sixth series of texts submitted by the Editorial Committee was approved, as amended, on second reading.

7. Other texts submitted for second reading

7.1 Resolution PL/1 (HFBC-87) (Document 271)

7.1.1 The delegate of China proposed that the expression "Article 17 Consultation Procedure", which might imply that Article 17 was concerned only with that procedure, should be amended to read "Consultation Procedure in Article 17" wherever it appeared in the Resolution.

It was so agreed.

Resolution PL/1 (HFBC-87), as amended, was approved on second reading.

7.2 Resolution (PL/2) on Improvement in the Use of the HF Bands Allocated Exclusively to the Broadcasting Service by Avoiding Harmful Interference (Document 255)

7.2.1 The Chairman said that the reference in paragraph 4 of the document should be to Resolution PL/1.

Resolution PL/2 (HFBC-87) with that addition was approved on second reading.

7.3 Recommendation PL/A (HFBC-87) on Broadcasting for National Coverage in the HF Bands (Document 267, page B.12/1)

Recommendation PL/A (HFBC-87) was approved on second reading.

7.4 Recommendation PL/B (HFBC-87) on Participation by Administrations in the Improvement of the Planning System for the HF Bands Allocated Exclusively to the Broadcasting Service (Document 267, pages B.12/2 and B.12/3)

7.4.1 The delegate of Australia said that, after consultations with the delegate of Algeria, he could agree to deletion of the words "group of" before "experts" in recommends the Administrative Council 3, 4 and 5 and in also recommends the Administrative Council 2.

7.4.2 The delegate of the United Kingdom proposed, that instructs the Secretary-General 2 should be amended to read:

"to forward the list of candidates to the 42nd session of the Administrative Council for consideration."

It was so agreed.

Recommendation PL/B (HFBC-87) was approved on second reading with those amendments.

7.5 Resolution (PL/3) on Operation of HFBC Transmitters in the Extended Bands above 10 MHz (Document 270)

Resolution PL/3 (HFBC-87) was approved on second reading.

7.6 Partial revision of the Radio Regulations (Document 262 + Add.1)

The partial revisions of Articles 8, 12, 17 and 30 of the Radio Regulations, as amended on the first reading of Document 262 + Add.1, together with the insertion of a reference to Resolution PL/3 (HFBC-87) under the title of Resolution No. 8 (WARC-79), were approved on second reading.

7.7 Preamble to the Final Acts (Document 263)

The Preamble to the Final Acts, as amended on first reading, was approved on second reading with the insertion of 8 March 1987 as the date of signature.

8. Approval of the minutes of the seventh Plenary Meeting (Document 175)

The minutes of the seventh Plenary Meeting were approved as amended (see Corrigendum 1 to Document 175).

The meeting rose at 1955 hours.

The Secretary-General:

R.E. BUTLER

The Chairman:

K. BJÖRNSJÖ



## FINAL PROTOCOL

Page 3, Declaration No. 5, last line of the Declaration, read:

"..... till the time an HF....." instead of " ..... until the time an HF ..."

PLENARY MEETING

## FINAL PROTOCOL

At the time of signing the Final Acts of the World Administrative Radio Conference for the Planning of the HF Bands Allocated to the Broadcasting Service (Geneva, 1987), the undersigned delegates take note of the following statements made by signatory delegations.

1

Original: EnglishFor the Republic of Maldives:

The Delegation of the Republic of Maldives to the Second Session of the World Administrative Radio Conference for the Planning of the HF Bands Allocated to the Broadcasting Service (Geneva, 1987), reserves for its Government the right to take such measures as it may consider necessary to safeguard its interests to meet the needs of its broadcasting service.

2

Original: English

For the Democratic Republic of Afghanistan, the People's Democratic Republic of Algeria, the Kingdom of Saudi Arabia, the State of Bahrain, the People's Republic of Bangladesh, the United Arab Emirates, the Islamic Republic of Iran, the Republic of Iraq, the Hashemite Kingdom of Jordan, the State of Kuwait, the Socialist People's Libyan Arab Jamahiriya, the Kingdom of Morocco, the Islamic Republic of Mauritania, the Sultanate of Oman, the Islamic Republic of Pakistan, the State of Qatar, the Syrian Arab Republic, the Somali Democratic Republic, Tunisia, the Yemen Arab Republic, the People's Democratic Republic of Yemen:

The Delegations of the above-mentioned countries to the World Administrative Radio Conference for the Planning of the HF Bands Allocated to the Broadcasting Service (Geneva 1987) declare that the signature and possible approval by their respective Governments or competent authorities of the Final Acts of this Conference are not valid with respect to the Zionist Entity appearing in Annex 1 of the Convention under the name of the so-called Israel and in no way whatsoever imply its recognition.

Original: English

For the Kingdom of Saudi Arabia:

The Delegation of the Kingdom of Saudi Arabia to the Second Session of the World Administrative Radio Conference for the Planning of the HF Bands Allocated to the Broadcasting Service (Geneva, 1987), reserves the right of his Administration to take any action it deems necessary to safeguard its interest in the subjects covered by this Conference, if any administration takes any action whatsoever, in violation of the Final Acts of this Conference, which may have any effect on the broadcasting service of the Kingdom of Saudi Arabia.

Original: English

For the Republic of Liberia:

In signing the Final Acts of the World Administrative Radio Conference on the Planning of the HF Bands Allocated to the Broadcasting Service held in Geneva from 2 February to 8 March 1987, the Delegation of the Republic of Liberia reserves for its government the right to take any action it may deem necessary to safeguard its interests and rights should any Member administration or State fail in any way to comply with the provisions and annexes contained in the Final Acts as adopted by the World Administrative Radio Conference (HFBC(2)).

Should the imposition of the transfer of requirements, or any other restriction in the realization of the broadcasting requirements, national or international, infringe on the sovereign rights of the Republic of Liberia, our Delegation reserves the right to take or adopt any action in pursuit of guarding its sovereignty.

Original: English

For the Islamic Republic of Pakistan:

Considering:

- a) that the implementation of the planned usage of the HF broadcasting spectrum has been delayed further;
- b) that the present, as well as the modified, Article 17 of the Radio Regulations does not ensure an equitable distribution of the HF broadcasting spectrum to all countries;
- c) that the 6 and 7 MHz broadcasting bands are highly congested, in particular,

the Delegation of Pakistan reserves its right to take whatever action it considers necessary to protect the HF broadcasting interests of Pakistan. This reservation will be effective until the time an HF broadcasting plan is implemented.

Original: Spanish

For the Republic of Honduras:

The Delegation of the Republic of Honduras to the Second Meeting of the WARC for the Planning of the HF Bands Allocated to the Broadcasting Service (Geneva, 1987) wishes to make the following statement:

- 1. All countries should exercise their sovereign rights as regards access to the use of the bands allocated to HFBC.
- 2. The application of the improved Article 17 procedure together with the improved HFBC Planning System will guarantee that the radio spectrum allocated to these bands will be used efficiently and equitably.
- 3. The overall document submitted to this meeting of the Conference constitutes an adequate and acceptable solution to the problem.
- 4. It is a matter of considerable concern that a competent WARC could revise the allocation of bands and that the bands allocated to HFBC could as a result be extended to the detriment of the fixed and mobile services, in view of the fact that these services operating in the HF bands are an invaluable means of progress for the developing countries.
- 5. The Honduran Delegation reserves its Government's right to take any action it considers necessary and proper to protect its national interests.

Original: French

For Tunisia:

The Delegation of the Republic of Tunisia to the World Administrative Radio Conference for the Planning of the HF Bands Allocated to the Broadcasting Service (Geneva, 1987), deeply concerned at the approach imposed upon the work of the Conference, whereby preference is given to the application of improved Article 17 at the expense of the HFBC Planning System, and disappointed at the results obtained, declares that in signing the Final Acts it reserves for its Government the right to take all appropriate action to ensure the proper operation of its broadcasting services and to satisfy its HF requirements.

Original: English

For Antigua and Barbuda:

In signing the Final Acts of the World Administrative Radio Conference for the Planning of the HF Bands Allocated to the Broadcasting Service (Geneva 1987), the Delegation of Antigua and Barbuda reserves the right of its Government to take whatever action may be necessary to ensure the proper functioning of its telecommunication services should any country fail to comply with the provisions adopted by the Conference or the Associated Plan.

Original: English

For the State of Israel:

1. On the subject of harmful interference

According to the results of the monitoring programmes conducted by the IFRB, about 1,375 stations causing harmful interference have been clearly identified and located and the most probable geographical position of numerous other stations has been confirmed (see paragraph 2.8 of the IFRB Report in Document 9 of the Second Session of this Conference).

The IFRB Report clearly demonstrates the destructive nature and effect of this intentional harmful interference on the reception of short-wave broadcasts of virtually all administrations.

This type of deliberate interference is a flagrant breach of the letter and spirit, of both the Convention and the Radio Regulations, (e.g. Article 4 of the Convention - concerning the purposes of the Union; Article 35 of the Convention - concerning harmful interference; Article 18 of the Radio Regulations - concerning harmful interference) - apart from the contravention of other common international principles which are the concern of other international bodies.

The IFRB formally declared in Plenary that if only one administration used frequencies other than those allocated by the Planning System, the System would collapse - not to speak of massive deliberate interference.

Unfortunately, this unbiased professional advice from the ITU, as well as other publicly voiced warnings from short-wave broadcasting experts, have been practically, totally ignored and remain but voices crying in the wilderness.

In these circumstances, Israel reserves its right, and duty, to take any action necessary to adequately maintain and protect its short-wave broadcasting services. In so doing, however, Israel will endeavour - as in the past - to respect, as far as practicable, the rights of administrations which operate in conformity with the Convention and the Radio Regulations.

2. General

The Delegation of Israel declares that its signature to this Agreement and its eventual approval by its Administration shall be valid and binding only in relation to those administrations which apply the provision of the Convention and the Radio Regulations in their relations with the State of Israel.

10

Original: French

For the People's Republic of Bulgaria:

The Delegation of the People's Republic of Bulgaria to the Second Session of the World Administrative Radio Conference for the Planning of the HF Bands Allocated to the Broadcasting Service (Geneva, 1987) reserves for its Government the right to take all appropriate action which it might regard as essential, in the event of violation of the principles embodied in the Final Acts.

11

Original: Spanish

For the Republic of Paraguay:

The Delegation of the Republic of Paraguay to the Second Session of the World Administrative Radio Conference for the Planning of the HF Bands Allocated to the Broadcasting Service (Geneva, 1987) reserves for its Government the right to take any measures it may deem necessary to safeguard its interests should the contents of the Final Acts of the Conference, or parts thereof, or declarations by other administrations jeopardize its radio services.

12

Original: English

For Papua New Guinea:

The Delegation of Papua New Guinea reserves for its Government, the right to take such action as it may consider necessary to safeguard its interests should Members in any way fail to comply with these Final Acts or fail to comply with the requirements of the International Telecommunication Convention (Nairobi, 1982) or its Annexes or the Protocols attached thereto or should reservations by other Members jeopardize the telecommunications services of Papua New Guinea.

Original: French

For the Republic of Cameroon:

The Delegation of Cameroon declares on behalf of its Government as follows:

1. Equitable access to scarce natural resources common to all mankind, and especially the radio spectrum in the HF bands reserved for national and international broadcasting, is a present need.
2. In this respect, the process initiated by this Conference aimed at rationalizing the use of HF wavebands, and in particular those reserved for broadcasting, appear, in our opinion, altogether positive and hopeful.
3. Following the principle of dialogue and humanism which underlies its policy of international cooperation, the Republic of Cameroon will spare no effort to comply with the commitments undertaken at the time of the signature of these Final Acts; it reserves the right, nevertheless, to take whatever measures may be appropriate, should the operation of its short-wave broadcasting network be disturbed as a result of the failure by any other countries to comply with the decisions of the Conference.

Original: Spanish

For the Republic of Colombia:

In signing the Final Acts of the World Administrative Radio Conference for the Planning of the HF Bands Allocated to the Broadcasting Service (WARC-HFBC, Geneva, 1987), the Delegation of Colombia declares that Colombia does not consider itself bound by the acts, agreements, Resolutions or provisions of this Conference insofar as they jeopardize the operation of its broadcasting stations within its territory in the HF bands and other telecommunication services, while it reserves the right of its Government to adopt such measures as it considers appropriate to safeguard the country's interests in these matters or in the event that the application or interpretation of any of the provisions of the Conference make it necessary to do so.

The Delegation of Colombia also reserves the right of its Government to adopt such measures as it considers necessary in accordance with its internal legal system and international law to safeguard its national interests in the event that reservations entered by representatives of other countries may affect its telecommunication services or encroach upon its full sovereign rights.



Original: English

For the Kingdom of Swaziland:

In view of the deliberations and the outcome of the HFBC Conference, (Geneva 1987), the Administration of the Kingdom of Swaziland notes with deep concern that the Conference has not lived to its expectations particularly with regard to the non-treatment of national and international requirements.

Furthermore, this Administration regrets with dissatisfaction on the results of the HFBC Planning System which failed to accommodate an appreciable number of frequency assignments; and worse still even those which were captured were deprived of frequency continuity.

The Administration of the Kingdom of Swaziland therefore, reserves its sovereign rights to take the decisions it deems necessary in order to protect and maintain continuity of its broadcast services and its interests in the subjects covered by the Second Session of this Conference should any Administration party to the Conference take any action that might have any effect on its broadcasting services.

Original: English

For the United Republic of Tanzania:

In view of the outcome of the Second Session of the HFBC Conference, (Geneva 1987), the United Republic of Tanzania declares:

1. that this Administration is very much dismayed by the failure of this Conference to discuss in detail and take into consideration differences between national and international broadcasting requirements as was stipulated in Chapter 4 paragraph 4.1.2.2 of the Report of the First Session to the Second Session; noting also that it is now 40 years since this issue was raised for the first time (Atlantic City 1947 Conference);

2. that the results of the HFBC Planning System have turned out to be a great disappointment to almost all the administrations;

3. nevertheless, this Administration reserves its sovereign rights to take action it will deem necessary in order to protect its broadcasting requirements against a country which will infringe with its broadcast requirements.

Original: English

For the Republic of Indonesia:

The Delegation of the Republic of Indonesia to the Second Session of the World Administrative Radio Conference for the Planning of the HF Bands Allocated to the Broadcasting Service (Geneva, 1987), reserves the right of its Government to take:

1. Any action it may deem necessary to safeguard its interest, should Members in any way fail to comply with the requirements in the Final Acts of the Conference or should reservations by other Members tend to jeopardize its HF broadcasting service.

2. Further action in accordance with the Constitution and Laws of the Republic of Indonesia.

Original: English

For the Hungarian People's Republic:

The Delegation of the Hungarian People's Republic to the World Administrative Radio Conference for the Planning of the HF Bands Allocated to the Broadcasting Service (Geneva, 1987) reserves for its Government the right to take any action it may consider necessary to safeguard its interest should any Member of the Union fail to comply with the provisions of this Conference, or should reservations by other countries jeopardize its HF broadcasting service.

Original: English

For the Socialist Federal Republic of Yugoslavia:

In signing the Final Acts, the Delegation of the Socialist Federal Republic of Yugoslavia to the World Administrative Radio Conference for the Planning of the HF Bands Allocated to the Broadcasting Service declares the following:

The Yugoslav Delegation wishes to express its concern and regrets that better results in response to Resolution No. 508 of the WARC-79 and in the organized approach to the orderly use of the HF spectrum could not be reached. At the same time, this Delegation expresses its belief that this will be compensated for in the years ahead.

The Yugoslav Delegation therefore reserves the right of its Administration to take any action it deems necessary to safeguard the interest of its HF broadcasting service. In so doing, the Yugoslav Administration will take account of the interest of other countries to the greatest extent possible.

Original: English

For Libya (Socialist People's Libyan Arab Jamahiriya)

The Socialist People's Libyan Arab Jamahiriya considers radio-frequency bands as a natural resource, each country is therefore allowed to have its rightful natural share of them. The principle of Equal Rights of large and small countries alike can only be achieved by guaranteeing a minimum of requirements to each country at a desired level, taking into account their national requirements in the framework of the ideal organized use of an HFBC plan for all bands.

We believe that the Conference has not been able to achieve these objectives because the road to them was purposefully blocked by a small number of administrations which have a large number of HF radio transmitters, and which wanted to delay or even abort any possible success.

While we consider this Conference to be of a technical nature, it was very clear that those administrations were moved by other motives in order to achieve political and cultural objectives, so that the present anarchy that reigns over the HFBC bands lasts as long as possible.

Given the fact that the Socialist People's Libyan Arab Jamahiriya believes in the principle of Equal Rights between countries, our Administration will reserve the right to continue working for the achievement of that goal on future occasions, namely at the future WARC-1992. We would also like to stress that it is the duty of the IFRB to improve the two systems (HFBC Planning System and the coordination procedures) and to find positive solutions for all countries by WARC-1992.

Original: English

For the Republic of Iraq:

The Delegation of the Republic of Iraq in signing the Final Acts of the Conference declares that:

1. Consideration by the Board in the post-conference period of requirements from administrations in accordance with Resolution COM6/2 should adhere to the principle of equality of treatment of all requirements on equal footing and to the definition appearing in footnote (1) to the planning principle, Article 17, provision 1744; and hence improvements to the HFBC System should not in any way introduce any preferential treatment of requirements, with respect to their nature, at any stage of its forthcoming development.

2. The principle of satisfying a guaranteed equal minimum of requirements to all administrations was not properly responded to in the Final Acts in spite of the fact that this principle is widely accepted, and regret that a decision on this regard was not appropriately taken.

3. It reserves the right of its Government to take appropriate action it deems necessary to safeguard its national interests with regard to the use of the HF broadcasting band in case of any interpretation contrary to the above, and of the use of these bands in a manner contrary to the Radio Regulations and the Final Acts.

Original: French

For the Republic of Côte d'Ivoire:

The Delegation of Côte d'Ivoire to the Second Session of the World Administrative Radio Conference for the Planning of the HF Bands Allocated to the Broadcasting Service (Geneva, 1987) (HFBC(2)) agrees in a spirit of compromise to sign the Final Acts of this Conference.

It reserves its Government's right to take any measures required to safeguard its interests in the field of HF broadcasting should any administration represented at this Conference fail to apply the decisions which have been adopted as a compromise.

Original: Spanish

For Peru:

Upon signing ad referendum the Final Acts of the World Administrative Radio Conference for the Planning of the HF Bands Allocated to the Broadcasting Service (WARC-HFBC(2), Geneva, 1987), the Delegation of Peru declares that it does not consider itself bound by the Acts and provisions of this Conference insofar as they jeopardize the operation of its HF broadcasting service within its territory and other telecommunication services, while it reserves the right of its Government to take whatever decisions and measures it considers necessary to safeguard its telecommunication services in the event that the Final Acts and plans related thereto conflict with its Constitution and laws, or that its interests are affected by the decisions of this Conference or by reservations submitted by other administrations.

Original: Spanish

For the Republic of Venezuela:

Upon signing the Final Acts of the World Administrative Radio Conference for the Planning of the HF Bands Allocated to the Broadcasting Service, the Delegation of the Republic of Venezuela reserves the right for its Government to ratify or not to ratify the contents of these Final Acts, or any part thereof, as well as the right to adopt whatever measures it may consider appropriate to safeguard its interests in the event that any present or future Member fails to comply with the provisions of the said Acts or undertakes any action in breach of Venezuela's sovereignty or its internal legislation.

The Venezuelan Delegation also reserves the right for its Government not to be bound as a result of any act or reservations of other administrations giving rise to an increase in Venezuela's contributions towards defraying the expenses of the International Telecommunication Union.

Original: French

For the Socialist Republic of Viet Nam:

The Delegation of the Socialist Republic of Viet Nam to the Second Session of the World Administrative Radio Conference for the Planning of HF Bands Allocated to the Broadcasting Service, held at Geneva in 1987 (WARC HFBC-87), taking note of the principles and methods of the planning of HF bands allocated to the broadcasting service, declares as follows:

1. In the application of SSB frequencies to the broadcasting service, the Vietnamese Delegation would like the ITU and its Member States to further strengthen their cooperation with and technical assistance to developing countries, particularly those whose broadcasting infrastructure is not yet developed.

2. On the basis of the principles of equality, sovereignty and territorial integrity, and with a view to meeting broadcasting requirements as fully as possible and using frequencies without jeopardizing that national and international broadcasting services of other Members of the ITU, the Vietnamese Delegation reaffirms the position of its Government, already stated in its declaration to the First Session of the WARC HFBC-84 (Document HFBC(1)/245-E) and declares that the Government of the Socialist Republic of Viet Nam reserves the right to take whatever measures it considers necessary to oppose any abusive use of the principles adopted by this Conference to the detriment of the country's broadcasting service.

Original: French

For the Republic of Senegal:

Upon signing the Final Acts of the Second Session of the World Administrative Radio Conference for the Planning of the HF Bands Allocated to the Broadcasting Service, the Delegation of the Republic of Senegal reserves the right for its Government to take whatever measures it may consider necessary to protect its interests in the event that any Member should fail in any way to comply with the provisions of these Final Acts or that any reservations entered by other Members should jeopardize the proper operation of its telecommunication services.

Original: French

For Burkina Faso:

Upon signing the Final Acts of the WARC HFBC(2), Geneva, 1987, the Delegation of Burkino Faso reserves the right for its Government to take whatever measures it may consider necessary to safeguard its interests in the event that the provisions of this Conference are not respected or that any reservations entered by other Members should jeopardize its broadcasting services.

Our country or death - we shall prevail!

Original: English

For the People's Democratic Republic of Algeria, the Kingdom of Saudi Arabia, the State of Bahrain, the United Arab Emirates, the Republic of Iraq, the Hashemite Kingdom of Jordan, the State of Kuwait, the Socialist People's Libyan Arab Jamahiriya, the Kingdom of Morocco, the Islamic Republic of Mauritania, the Sultanate of Oman, the State of Qatar, the Syrian Arab Republic, the Somali Democratic Republic, Tunisia, the Yemen Arab Republic, the People's Democratic Republic of Yemen:

The Delegations of the above-mentioned countries to the World Administrative Radio Conference for the Planning of the HF Bands Allocated to the Broadcasting Service (Geneva, 1987):

1. Reserve their rights on the unsatisfactory outputs of this Conference which could not achieve its objectives.
2. Declare their dissatisfaction that the results of this Conference could not even provide them with a guarantee for satisfying minimum requirements of their HF broadcasting services.
3. Express their regret on the way this Conference proceedings were ruled.

Original: English

For the Republic of Kenya:

The Delegation of the Republic of Kenya, on behalf of the Government of the Republic of Kenya and in accordance with the powers conferred on it by the Government the Republic of Kenya, herewith declares:

1. That it fully supports and endorses the planning method for the HFBC developed by the First Session of the HFBC Conference and as modified by the Second Session of the Conference.

2. Its commitment to the holding of the 1992 World Administrative Radio Conference that shall provide for the adoption and the implementation of the said planning method to all the HF bands exclusively allocated to the broadcasting service not later than 1994.

3. That it reserves the right of its Government to take any action it may consider necessary to safeguard and protect its interests should any Member fail to comply, as required, with the provisions of the International Telecommunication Convention (Nairobi, 1982) and in particular with Resolution No. 9 of the Nairobi Convention.

4. That the Government of the Republic of Kenya does not accept responsibility for consequences arising out of reservations made by Members of the Union to these Final Acts.

Original: English

For Malaysia:

The Delegation of Malaysia, on behalf of the Government and her Administrations hereby:

1. associates herself with the Guiding Principles of Planning of HF Bands Allocated Exclusively for Broadcasting as laid out in the Report to the Second Session of this Conference, and reiterates the principles of equal right and equal access of the frequency spectrum for broadcasting of all countries;

2. notes that the questions of national and international requirements are different and they should be given serious considerations in subsequent competent conference;

3. and reserves her right in all cases at any point in time to safeguard her interest in accessing to the spectrum for HF Broadcasting until such time that the Union rectifies any shortcomings that jeopardize her broadcasting needs.



Original: English

For the Federal Republic of Germany:

In signing the Final Acts of the WARC-HFBC 1987, the Delegation of the Federal Republic of Germany declares that the Final Acts and the Resolutions and Recommendations of this Conference do not prejudice in any way the position of its Government on the improved HFBC Planning System and the improved Consultation Procedure under Article 17 of the Radio Regulations to be taken at a competent WARC.

The Delegation expressly reserves for its Government the right, inter alia:

- to make the decisions it will take at a competent WARC dependent on whether the test results are acceptable;
- to decide at a competent WARC in what parts of the bands allocated exclusively to the broadcasting service the Planning System and the Consultation Procedure shall be applied respectively in order to keep the increase of congestion as low as possible in those parts of the spectrum which are governed by the Consultation Procedure; furthermore, the Delegation maintains the Reservation No. 35 made by the Federal Republic of Germany when signing the Final Acts of WARC-1979;
- to make its decision dependent on the appropriate treatment of national and international broadcasting services with respect to RR 954;
- to make its decision on the HFBC Planning System dependent on the inclusion of appropriate provisions for the case of harmful interference.

Original: English

For Thailand:

The Delegation of Thailand reserves for its Government the right to take any action that it deems necessary to safeguard its interests should any country fail, in any way, to comply with the Final Acts of the World Administrative Radio Conference for the Planning of the HF Bands Allocated to the Broadcasting Service (HFBC-87) or should reservations by other countries affect its full sovereignty and jeopardize the radiocommunication services of Thailand.

Original: English

For the Republic of Singapore:

The Delegation of the Republic of Singapore reserves for its Government the right to take such action as it may consider necessary to safeguard its HF broadcasting service should any Member fail in any way to comply with the Final Acts of the 1987 World Administrative Radio Conference for the Planning of the HF Bands Allocated to the Broadcasting Service (HFBC-87), or should reservations by any country jeopardize its HF broadcasting service.

Original: English

For the Socialist People's Republic of Albania:

Since the Second Session of the HFBC Conference has not succeeded in drawing up a plan in accordance with the principles adopted at the First Session, and since the existing Article 17 does not guarantee a satisfactory HF broadcasting service for many countries, including my own, our Delegation reserves the right for its Government to take the necessary measures to defend its interests in the field of HF broadcasting.

Original: Spanish

For the Argentine Republic:

In accordance with the reservation which appears in the minutes of the seventeenth Plenary Meeting of this HFBC-87 Conference, the Delegation of the Argentine Republic reserves for its Government the right to take such steps as it may consider appropriate to ensure the continued smooth functioning of the fixed and mobile stations which operate on its territory and are protected by virtue of assignments recorded with a favourable finding in the International Frequency Register, in those portions of the bands allocated to the fixed service which WARC-79 set aside for the extension of the HF broadcasting bands (RR No. 531), having regard to the fact that most of the substitute channels to which the fixed and mobile assignments are supposed to be transferred are unsuitable owing to the high density of such stations in operation.

Original: English

For the Republic of Malta:

The Maltese Delegation to the Second Session of the World Administrative Radio Conference for the Planning of the HF Bands Allocated to the Broadcasting Service (Geneva, 1987), declares that its Administration reserves the right to take whatever action it considers necessary to safeguard its interests should any Member fail in any way to comply with the provisions of the Final Acts or should reservations by other countries jeopardize Malta's broadcasting service or its telecommunication services.

The Delegation further reserves its Government's right to take any action required, whether by technical or other measures, to ensure by whatever means the integrity of its national territory in the face of any external interference and to protect its broadcasting service.

Original: Russian

For the Byelorussian Soviet Socialist Republic, the Ukrainian Soviet Socialist Republic and the Union of Soviet Socialist Republics:

In signing the Final Acts of the Second Session of the World Administrative Radio Conference for the Planning of the HF Bands Allocated to the Broadcasting Service (Geneva, 1987), the Delegations of the Byelorussian Soviet Socialist Republic, the Ukrainian Soviet Socialist Republic and the Union of Soviet Socialist Republics state that the partial revision of the Radio Regulations adopted by the Conference, the planning method developed, the improvements to the automated Planning System and the amendments to Article 17 of the Radio Regulations should be tried out, using test seasonal schedules and frequency lists to be developed, and analyzed before they are submitted for consideration by a future competent conference.

Should the test plans drawn up on the basis of the decisions of this Conference fail to satisfy the HF broadcasting requirements of the Byelorussian Soviet Socialist Republic, the Ukrainian Soviet Socialist Republic and the Union of Soviet Socialist Republics, these Administrations will hold consultations with the countries concerned and the IFRB and, if necessary, take any measures they may deem appropriate to safeguard their interests.

Original: Spanish

For Mexico:

The Delegation of Mexico, noting that the decisions of the Second Session of the World Administrative Radio Conference for the Planning of the HF Bands Allocated to the Broadcasting Service (Geneva, 1987) include a Recommendation to the effect that the need should be considered of convening a WARC with a view to studying the possible extension of the HF bands allocated on an exclusive basis to the broadcasting service, reserves for its Government the right to take such steps as it may consider appropriate to protect its radio services in these bands.

Original: English

For the United Kingdom of Great Britain and Northern Ireland:

I

Recalling Statement No. 36, in the Final Protocol to the Final Acts of the WARC-79, the United Kingdom notes that the inadequacy of the high frequency bands allocated to the broadcasting service has been proved by the unacceptable results of the IFRB tests on the HFBC Planning System and therefore reserves the right to take such action as may be necessary, consistent with the Radio Regulations, to ensure the continued operation of its HF broadcasting services.

II

Recalling the results of the monitoring programmes established by the IFRB in accordance with Resolution COM5/1 of the First Session of the WARC HFBC and the positive identification of many stations causing extensive harmful interference to broadcasting services, the United Kingdom urges the administrations concerned to take prompt action to cease the operation of such stations and thereby to avoid prejudicing the prospects of successfully implementing any decisions that may be taken by a competent WARC.

III

Recalling the unacceptable performance of the HFBC Planning System developed in accordance with the instructions of the First Session of the WARC HFBC, as evidenced in Document 120 of the Second Session, the United Kingdom reserves its position on the future acceptability of the System until it has been improved by the IFRB, until the improved System has been thoroughly tested together with its interactions with the revised Article 17, and until the results have been considered and found acceptable by a competent WARC.

IV

Recalling Article 80 of the Convention and Resolution No. 48 of the Plenipotentiary Conference, Nairobi 1982, the United Kingdom reserves its position on all financial implications of the decisions of the WARC HFBC 1987 including the costs of the post-conference work on the improved HFBC System and the improved Article 17 as well as the potential costs to the ITU of implementing either or both developments.

Original: Spanish

For Cuba

The Delegation of the Republic of Cuba, in signing the Final Acts of the Second Session of the World Administrative Radio Conference for the Planning of the HF Bands Allocated to the Broadcasting Service, states that:

1. It denounces the aggressive nature of transmissions broadcast from the territory of the United States of America in various bands allocated or not allocated to the broadcasting services.

As it has stated on previous occasions, these transmissions are clearly intended to disseminate fallacious and misleading information in daily infringement of Cuba's national sovereignty and political and economic stability and in flagrant violation of the International Telecommunication Convention (Nairobi, 1982); furthermore they cause serious interference to the various radio services operating in Cuba in accordance with the Radio Regulations.

Consequently, it reserves for its Government the right to adopt such measures as it deems necessary to safeguard its national interests in the various bands concerned, particularly those allocated to the broadcasting service.

2. It also reserves for its Government the right to take whatever action it may deem necessary to safeguard its interests if:

- a) the effects of applying any HF broadcasting planning method or provision, adopted by this Conference, should adversely affect the existing and planned broadcasting services of the Republic of Cuba;
- b) the reservations and statements made by other administrations should be prejudicial to those services;
- c) other Members of the Union should fail to comply with any of the provisions laid down by this Conference.

Original: English

For Australia:

Recalling Article 80 of the Convention and Resolution No. 48 of the Plenipotentiary Conference, Nairobi 1982, Australia reserves its position on all financial implications of the decisions of the WARC HFBC-1987, including the costs of any post-conference work on the development of systems and the potential costs of implementing such systems.

42

Original: Spanish

For the Eastern Republic of Uruguay:

In signing the Final Acts of the Second Session of the World Administrative Radio Conference for the Planning of the HF Bands Allocated to the Broadcasting Service (Geneva, 1987), the Delegation of the Eastern Republic of Uruguay reserves for its Government the right to take such action as it may deem necessary to ensure the proper development and operation of its HF broadcasting service, should its interests be affected by the application of any of the Resolutions, Recommendations, annexes or provisions adopted by this Conference.

It also reserves the right to adopt any measures it sees fit to protect its HF radio services from the harmful effects of reservations made by other administrations or of the failure of any other Member of the Union to comply with those provisions.

43

Original: French

For the Gabonese Republic:

In signing the Final Acts of the World Administrative Radio Conference for the Planning of the HF Bands Allocated to the Broadcasting Service, the Delegation of the Gabonese Republic reserves for its Government the right to take whatever action it may deem necessary to protect its HF broadcasting interests if:

1. other Members should fail in any way to comply with the provisions adopted by this Conference;
2. the reservations made by other Members should jeopardize the proper operation of its broadcasting services.

44

Original: French

For the People's Republic of Angola:

The Delegation of the People's Republic of Angola, having regard to the declarations made by several delegations in respect of the results of the World Administrative Radio Conference for the Planning of the HF Bands Allocated to the Broadcasting Service (Geneva, 1987), reserves for its Government the right to take whatever action it may deem necessary to protect its interests should other Members of the Union fail to comply with the Final Acts of the Conference.

Original: English

For the United States of America:

I

The Delegation of the United States of America, recalling its reservations in Protocols 36 and 38 of the Final Protocol of WARC-79 regarding the failure to provide adequate allocations to the HF broadcasting service, reaffirms its view that without such adequate allocations it will not be possible to plan all frequency bands to enable countries to sustain their broadcasting services in the face of varying conditions throughout the solar cycle. In the absence of adequate spectrum, the Administration of the United States of America reserves its right to take the necessary steps to meet the needs of its HF broadcasting services.

II

The Administration of the United States of America, calling attention to the fact that some of its broadcasting in the high frequency bands allocated to the broadcasting service are subject to harmful interference in contravention of Article 35 of the Convention, and that the continuation of such harmful interference would make it impossible to implement effectively the proposed new planning procedures discussed at this Conference, reserves its right with respect to such interference to take necessary and appropriate actions to protect its broadcasting interests. In so doing, however, it intends to respect, to the extent practicable, the rights of administrations operating in accordance with the Convention and the Radio Regulations.

III

The Administration of the United States of America declares that it does not, by signature of these Final Acts authorizing the development of software to test the adequacy of proposed new planning procedures for the HF bands allocated exclusively to the broadcasting service, accept any obligations in respect to the implementation of such procedures pending the completion and evaluation of adequate tests and the subsequent decisions of a competent Administrative Radio Conference.

IV

The Administration of the United States of America reserves its position on the financial costs of the decisions made at the WARC-HFBC(2) Conference, including any costs for the post-conference activities as well as the future costs to the ITU of implementing any of these decisions.



46

Original: English

For the People's Democratic Republic of Algeria, the Kingdom of Saudi Arabia, the State of Bahrain, the United Arab Emirates, the Republic of Iraq, the Hashemite Kingdom of Jordan, the State of Kuwait, the Socialist People's Libyan Arab Jamahiriya, the Kingdom of Morocco, the Islamic Republic of Mauritania, the Sultanate of Oman, the State of Qatar, the Syrian Arab Republic, Tunisia, the Yemen Arab Republic, the People's Democratic Republic of Yemen:

The Delegations of the above-mentioned countries to the World Administrative Radio Conference for the Planning of the HF Bands Allocated to the Broadcasting Service (HFBC WARC-1987, Geneva) reserve their Governments' or competent authorities' rights to take such action as they may consider necessary to protect their interests, should any decision of this Conference fail in any way to observe Resolution No. 9 amongst other provisions of the International Telecommunication Convention (Nairobi, 1982).

These Governments or competent authorities make the same reservation should any Member fail to observe such provisions.

47

Original: English

For the Republic of India:

In signing the Final Acts of the World Administrative Radio Conference for the Planning of the HF Bands Allocated to the Broadcasting Service (Geneva, 1987), the Delegation of the Republic of India reserves the right of its Administration to take appropriate steps, if necessary, to ensure proper functioning of its radio services, should any country make reservations and/or fail to apply any provision or provisions of the Radio Regulations or the Convention.

48

Original: English

For the Islamic Republic of Iran:

The Delegation of the Islamic Republic of Iran reserves for its Government the right to take any action as it may consider necessary to safeguard its interests should they be affected by decisions taken at this Conference, or by failure on the part of any other country or administration in any way to comply with the requirements of the International Telecommunication Convention (Nairobi, 1982) or its Annexes or the Protocols or the Regulations attached thereto, or these Final Acts, or should Reservations or Declarations by other countries or administrations jeopardize the proper and efficient operation of its telecommunications services, or infringe the full exercise of the sovereign rights of the Islamic Republic of Iran.

Original: English

For Finland and Sweden:

The Delegations of Finland and Sweden to the Second Session of the World Administrative Radio Conference for the Planning of the HF Bands Allocated to the Broadcasting Service (Geneva, 1987) note with regret that the Conference did not take necessary decisions which in the near future would lead to implementation of provisions called for by the World Administrative Radio Conference (Geneva, 1979) to improve the existing unsatisfactory situation in the HF bands allocated exclusively to the broadcasting service.

Therefore, in signing the Final Acts, the above-mentioned Delegations reserve for their Administrations the right to take necessary measures to meet the requirements of HF broadcasting services of their respective countries. In so doing, the Administrations of Finland and Sweden will take into account, to the greatest extent practicable, the interests of services of other countries operating in accordance with the Radio Regulations and the decisions of this Conference.

Original: English

For the People's Republic of China:

In signing the Final Acts of the World Administrative Radio Conference for the Planning of the HF Bands Allocated to the Broadcasting Service (Geneva, 1987), the Chinese Delegation states the following:

The Chinese Administration has always been of the view that the planning of the HF bands allocated exclusively to the broadcasting service is an effective measure for rational utilization of the frequency spectrum as well as for change of the unsatisfactory existing situation of the HF bands allocated to the broadcasting service. With the joint efforts of the participating delegations, the present Conference has made some progress in this respect, but it has not been able to make the final decision on the implementation of the Plan. Therefore, the Chinese Delegation reiterates that the Chinese Delegation's statement included in the Final Protocol to the Final Acts of WARC-1979 still remains valid.

Original: English

For the Democratic Republic of Afghanistan:

The Delegation of the Democratic Republic of Afghanistan, on behalf of its Government, reserves the right to take any measures it deems necessary to protect its interests if other countries or administrations fail to observe the provisions contained in the Final Acts and the annexes thereto, as adopted by this Conference.

52

Original: French

For the Islamic Republic of Mauritania:

The Delegation of the Islamic Republic of Mauritania, in signing the Final Acts of this Conference, reserves for its Government the right to take whatever action it may deem necessary to protect its interests should any Member whatsoever fail in any way to comply with the said Final Acts or should the reservations made by other administrations jeopardize its telecommunication services or entail an increase in its contribution to defraying Union expenses.

53

Original: French

For Belgium, Ireland and Luxembourg

Paragraph 10 of new section 2 of Article 17 of the Radio Regulations refers to the concept of minimum requirements to be satisfied for each administration with an acceptable level of quality.

In the view of the above-mentioned Delegations, the consultation procedure and planning system described in Annex 1 to Resolution COM 6/2 (HFBC-87) cannot ensure the fulfilment of the principle set out in paragraph 10 of new section 2 of Article 17 of the Radio Regulations.

In order to enable the conference scheduled for 1992 to take a final decision at an early stage, the above-mentioned Delegations hold the view that the IFRB should study ways and means of satisfying these minimum requirements for each administration, having particular regard to the software implications. To this end, the Belgian Delegation has submitted Document 205 setting out a number of solutions which the above-mentioned Delegations propose should be taken into consideration by the IFRB.

54

Original: French

For Italy:

The report of the Budget Control Committee (Document 261) shows that the implementation of the decisions of WARC HFBC-87 will entail expenditure which substantially exceeds the limits set by the Administrative Council on the basis of Additional Protocol I to the International Telecommunication Convention (Nairobi, 1982).

In signing the Final Acts of the Conference, the Delegation of Italy reserves its Administration's position with regard to future budgetary considerations.

55

Original: English

For Canada:

The Administration of Canada draws attention to the Report of the IFRB describing the results of the monitoring programme in the high frequency bands allocated to the broadcasting service. This report lists a large number of transmissions which have a class of emission different from the one used for broadcasting, which are not in conformity with Nos. 340 and 341 of Article 17 of the Radio Regulations, and which are considered to cause harmful interference to other broadcasting stations operating in accordance with the Radio Regulations.

In signing the Final Acts, Canada emphasizes that the successful implementation of an HFBC Planning System would be adversely affected by the presence of harmful interference.

56

Original: Spanish

For Chile:

The Delegation of Chile to WARC-HFBC(2) reserves for its Government the right to take whatever action it may deem necessary to ensure the proper operation of its telecommunication services and to safeguard its national sovereignty.

57

Original: English

For the Arab Republic of Egypt:

The Delegation of the Arab Republic of Egypt reserves the right for its Government to take such action as it may deem necessary to safeguard its interests should any administration fail in any way to comply with the provisions of the Final Acts of this Conference and the annexes thereto, or should declarations by other administrations harm in any way its telecommunication or broadcasting services.

58

Original: French

For France:

A

The French Delegation reserves for its Government the right to take any action it may deem necessary to safeguard its interests should any Member fail in any way to comply with the provisions of the Convention and the Regulations annexed thereto, or should reservations by other administrations jeopardize the operation of its radiocommunication services.

B

The signature of the Final Acts by the French Delegation is without prejudice to its Government's position when the financial implications of the decisions of the Conference are considered.

59

Original: Spanish

For Ecuador:

The Delegation of Ecuador, on behalf of its Government, declares that its Administration will endeavour to comply with all the provisions of the partial revision of the Radio Regulations adopted by the present Conference, and reserves the right to:

- a) take such steps as it considers necessary to protect Ecuador's radiocommunication services should they be affected by the provisions of the Final Acts of the present Conference or the Annexes thereto, or by the failure of other Members of the Union to comply with those provisions;
- b) to begin using the single-sideband (SSB) system when the conditions are favourable for its implementation; and
- c) not to accept the reservations formulated by other countries if they prove detrimental to the national interests of Ecuador.

Finally, it endorses reservation No. 66 formulated at the World Administrative Radio Conference (Geneva, 1979) and reservation No. 80 formulated at the Plenipotentiary Conference (Nairobi, 1982) in their entirety.

Original: English

For the Democratic People's Republic of Korea:

The Delegation of the Democratic People's Republic of Korea participated in the Second Session to HFBC with its belief that it could establish the HFBC Planning System to a certain extent on the basis of the principles adopted at the First Session.

However, it wishes to express its concern and regret that the global results of testing are not as satisfactory as they could be, as analyzed and recognized during the Conference.

We have great hopes that the next competent WARC will develop and adopt an improved HFBC Planning System in accordance with the Resolutions and Recommendations adopted at the current Conference and the experiences gained by the IFRB during the intersessional period so that the HF spectrum can be used on an equal basis, in particular in the interests of the developing countries according to the spirit of the Nairobi Plenipotentiary Conference.

# HFBC (2)

INTERNATIONAL TELECOMMUNICATION UNION  
WARC FOR THE PLANNING OF THE HF BANDS  
ALLOCATED TO THE BROADCASTING SERVICE  
SECOND SESSION, GENEVA, February-March 1987

Corrigendum to  
Document 274-E  
27 March 1987  
Original : Spanish

## ADDITIONAL DECLARATIONS

This Corrigendum concerns <sup>Spanish</sup> only the English text.

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PLENARY MEETING

ADDITIONAL DECLARATIONS

61

Original: English

For the United States of America:

The United States of America, noting the statement (No. 40) entered by the Administration of Cuba rejects the allegations contained therein and recalls its rights to broadcast to Cuba on appropriate frequencies free of jamming or other wrongful interference and reserves its rights with respect to existing interference and any future interference by Cuba with United States broadcasting.

62

Original: English

For the State of Israel:

The declarations made by certain delegations in No. 2 of the Final Protocol, being in flagrant contradiction with the principles and purposes of the International Telecommunication Union and, therefore, devoid of any legal validity, the Government of Israel wishes to put on record that it rejects these declarations outright and will proceed on the assumption that they can have no validity with respect to the rights and duties of any Member State of the International Telecommunication Union.

In any case, the Government of Israel will avail itself of its rights to safeguard its interests should the Governments of those delegations in any way violate any of the provisions of the Convention, or the Annexes, Protocols or Regulations attached thereto, or the Final Acts of this Conference.

The Delegation of Israel further notes that declaration No. 2 does not refer to the State of Israel by its full and correct name. As such it is totally inadmissible and must be repudiated as a violation of recognized rules of international behaviour.



Original: English

For Libya (Socialist People's Libyan Arab Jamahiriya):

Having noted the statements made, in signing the Final Acts and Final Protocol, the Socialist People's Libyan Arab Jamahiriya reserves the right to take any appropriate action it deems necessary to safeguard the Libyan national interest of its HF broadcasting service, in case the reservations of other countries jeopardize the proper operation of its broadcasting services, or other members fail to apply any provision adopted by this Conference, Radio Regulations or the Convention.

Original: French

For the Socialist Republic of Romania

A

Noting the reservations made by various delegations to the Second Session of the World Administrative Radio Conference for the Planning of the HF Bands Allocated to the Broadcasting Service, the Delegation of the Socialist Republic of Romania reserves for its Government the right to take any action it might deem necessary to protect its interests and to meet the requirements of its broadcasting service should any Members fail in any way to comply with the provisions of the Convention and of the Regulations annexed thereto, or should reservations formulated by other administrations jeopardize proper operation of that service.

B

Signing of the Final Acts by the Delegation of the Socialist Republic of Romania does not prejudice the position which its Government will see fit to adopt when the budgetary implications of the decisions taken by the Conference are examined.

65

Original: English

For the Kingdom of the Netherlands:

The Delegation of the Kingdom of the Netherlands, disappointed by the great number of reservations made by a majority of the delegations present at the Second Session of the WARC HFBC-1987, on the use of the HFBC bands, feels obliged to reserve its right and to take any action it deems necessary to safeguard the interests of its HFBC service. In so doing the Administration of the Kingdom of the Netherlands will take into account, to the greatest extent practicable, the interests of services of other countries operating in accordance with the Radio Regulations and the decisions of this Conference.

66

Original: English

For Turkey:

After having noted the declarations already deposited, the Turkish Delegation, to the Second Session of the World Administrative Radio Conference for the Planning of the HF Bands Allocated to the Broadcasting Service (Geneva, 1987) reserves for its Government the right to take such measures as it may consider necessary to safeguard its interests to meet the needs of its broadcasting service.

67

Original: French

For the Republic of Mali:

Having noted the declarations already deposited, the Delegation of the Republic of Mali, in signing the Final Acts of the Second Session of the HFBC World Administrative Radio Conference, reserves for its Government the right to take whatever action it may deem necessary to protect its interests if:

- a) reservations or declarations by other administrations were to jeopardize the proper operation of its radiocommunication installations;
- b) other Members were to fail in any way to comply with the provisions of the Convention and the Radio Regulations.

Original: English

For the Democratic Socialist Republic of Sri Lanka:

The Delegation of the Democratic Socialist Republic of Sri Lanka disappointed by the great number of reservations made by a majority of the delegations present at the Second Session of the WARC HFBC-87 on the use of the HFBC bands, feels obliged to reserve the right of its administration to safeguard the interests of its HFBC service.

In so doing the administration of the Democratic Socialist Republic of Sri Lanka will take into account to the greatest extent practicable, the interests of services of other countries operating in accordance with the Radio Regulations and the decisions of this Conference.

Original: English

For the People's Republic of China:

In signing the Final Acts of the World Administrative Radio Conference for the Planning of the HF Bands Allocated to the Broadcasting Service (Geneva, 1987) and having noted the statement No. 25, the Chinese Delegation reiterates the position of the Chinese Government, already stated in its declaration (No. 115) included in the Final Protocol to the International Telecommunication Convention (Nairobi, 1982).

PLENARY MEETING

MINUTES

OF THE

EIGHTEENTH PLENARY MEETING

Sunday, 8 March 1987, at 0015 hrs

Chairman: Mr. K. BJÖRNSJÖ (Sweden)

Subject discussed:

Documents

1. Report by the Budget Control Committee
2. Declarations

261

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1. Report by the Budget Control Committee (Document 261)

1.1 The Chairman of Committee 3 introduced the report, laying special stress on some salient points. Committee 3 had expressed its appreciation of the organization of the Conference and the arrangements made by the Secretary-General and of the facilities and advice provided by the IFRB, particularly the HFBC team. It would be seen that there had been a net saving of some 64,000 Swiss francs on the Conference budget of 2,061,000 Swiss francs and a net saving of 879,400 Swiss francs in relation to the limit of expenditure for budget Sections 11 and 17. With regard to Section 18, however, the estimates for the implementation of the decisions of the Conference showed excess expenditure of about 2,100,000 Swiss francs. During the discussions, several delegates had asked for further details of estimated expenditure by the IFRB and the General Secretariat, and that request had resulted in the revisions of Documents 191 and 209 which had served as a basis for Annex 7 to the report. It would be seen from the third paragraph of Section 7 that the Administrative Council had made provision for the possible extension of four P.4 posts for immediate post-conference work from 1 July to 31 December 1987, the period up to 30 June being covered by the Conference budget: the Conference might wish to approve that extension. The sixth paragraph of Section 7 related to the concern expressed by Members at the high level of the estimated expenditure and the reservations made by delegations in that regard. In conclusion, he pointed out that under Resolution No. 48 of the Nairobi Conference the present Conference had to indicate priorities for post-conference work. Committee 3 had been unable to recommend any such priorities or to provide the Plenary with any information on the issue; in any case, the matter was one for the Conference as a whole.

1.2 The Chairman invited delegates to make general comments on the report.

1.3 The delegate of the United Kingdom said that his Delegation attached great importance to the work of the Budget Control Committee and considered that the report and its annexes gave a realistic view of the situation. Recognizing that there had been no time to provide the information he had asked for at the fourth meeting of Committee 3 (Document 217, paragraph 2.15), he looked forward to seeing the relevant figures in the report to be submitted to the Administrative Council.

1.4 The delegate of Algeria said that it would have been desirable to have a constant flow of information between Committee 3 and Committees 4 and 5 throughout the Conference, so that the objective of Resolution No. 48 could be achieved. The report indeed gave cause for deep concern, but represented a faithful account of the Committee's deliberations and decisions. Nevertheless, his Delegation would have liked the information on which the report was based to have been made available sooner, so that an even greater effort could have been made to elicit from the General Secretariat and the IFRB a proposal more acceptable to delegations and to the Union as a whole.

1.5 The delegate of the United States expressed his Delegation's appreciation of the report but agreed with the previous speaker that it would have been useful to have had the documents earlier, since that would have helped the Conference to decide between certain options. Nevertheless, the work of Committee 3 had been valuable and showed that, as more experience was acquired, Budget Control Committees could play an increasingly prominent part in decision-making at conferences.

The Nairobi Conference had clearly recognized that the Union faced a situation of limited resources and that choices must be made between competing objectives; that preoccupation was reflected in Article 80 of the Convention and in Resolution No. 48. At that juncture, many Member governments, not only those of the smaller contributors, were facing strong constraints on their national budgets and could not afford even a modest increase in assessments over those previously agreed. His Delegation was obliged to emphasize the commitment of the United States Government to the concept of fiscal responsibility established by the Plenipotentiary Conference and to note that it expected the ITU to fulfil the mandate of that Conference by funding post-conference activities within the existing level of resources authorized for the current budget period. To that end, it was incumbent on the ITU to establish a ranking of priorities for programme activity and, if necessary, to curtail, eliminate or postpone programmes with low priority in order to accommodate new activities considered to be more important.

1.6 The Chairman of the IFRB said that, in assessing the requirements for post-conference work, the Board had been considerably hampered by the lack of any decisions at the early stages of the Conference. Those who had participated in Working Group 5 ad hoc must be aware that the Board had produced the best possible resource estimates based on the decisions taken in the Working Groups and Committees. He wished to emphasize strongly the link between the lateness of Conference decisions and the lateness of the estimates. Moreover, as he had pointed out on several occasions in the ad hoc Working Group and in Committee 3, the minimum resource estimates submitted were the best that the IFRB as a whole could offer in the circumstances: it was most important for the Conference to realize that fact.

1.7 The Secretary-General said that, while there was always a degree of complexity in the interworking between the Budget Control Committee and other Committees, the Chairman of Committee 3 had in fact drawn the attention of the Chairmen of Committees 4 and 5 to their responsibilities with regard to the budgetary implications, and he himself had raised the issue at the first Plenary Meeting, when the document on the financial responsibilities of administrative conferences had been referred to Committee 3. In speaking of fiscal responsibility with respect to the ITU, delegates should judge for themselves in respect of their relationship as Members within the consortium of 162 States. Other elements of the ITU are the permanent organs at Headquarters, and particularly the IFRB and the General Secretariat and in this regard he would like delegates making general statements to reflect a little on the extent to which fiscal responsibility had in fact been respected in the Union. To cite only a few facts, in November 1982, the Plenipotentiary Conference had decided on a 12% cut, applicable from 1 January 1983, in the resources available for the regular functioning of ITU Headquarters, including the cost of the Administrative Council and the permanent, day-to-day work of the Union. With regard to meetings, the normal budget had been slashed by 15%, except for one conference scheduled for early 1984 on which no obvious savings had been made: not only had that 15% reduction been more than achieved, but substantial savings had been made in the costs of conferences and meetings of the Union. With special reference to conferences, all intersessional work, the volume of which was considerably greater than the estimates at the Plenipotentiary Conference, had been met from those savings, obtained by avoiding recruitment of staff, cooperation with governments in reducing the volume of documentation and, particularly in the case of the current Conference, reducing the duration from seven to five weeks. That had made it possible for substantial credits to be available to finance intersessional and post-conference work. All those facts, together with the continuing growth of demands on the day-to-day functioning of the Union, should not be overlooked. He asked for understanding of the way in which fiscal responsibility had been met at the Headquarters.

1.8 The delegate of Canada said that the role of Committee 3 at the Conference and subsequently of the Administrative Council was to ensure that the limited resources were used as effectively as possible. With regard to post-conference work, he was sure that the Secretary-General would make every effort to absorb as much of the expenditure as he could in the ordinary budget and that a certain amount could be trimmed off the IFRB estimates. The main point, however, was that the delegates present at the Conference, which was about to approve a delicately-balanced compromise package, should try to impress on their colleagues in the Administrative Council, the absolute necessity of keeping that package together and not engaging in a debate that might destroy the entire outcome of the Conference.

1.9 The delegate of the United States, referring to his earlier statement, said that his Administration certainly appreciated the efforts of the ITU management to effect savings wherever possible.

1.10 The delegate of Italy, noting that the estimates unfortunately exceeded the limits established, expressed the hope that those as yet approximate estimates would not be even higher in the version to be submitted to the Administrative Council. He was confident, however, that the Secretary-General would try and keep the expenditure as low as possible.

1.11 The Chairman invited the Plenary to consider the report section by section.

#### Section 7

1.12 The delegate of Japan, supported by the delegate of Algeria, proposed that the four P.4 posts referred to in the third paragraph should be extended from 1 July to 31 December 1987.

It was so decided.

1.13 The delegate of Algeria, referring to the seventh paragraph, said it should be noted that the balance available under the limit approved by the Nairobi Conference had to cover not only the present Conference, but also WARC's MOB-87 and ORB-88. With regard to the sixth paragraph, his Delegation had been among those which had reserved their position on the high level of expenditure contemplated and was now sure that the Secretary-General would be able to find resources to cover the deficit.

#### Annex 4

1.14 In reply to a question by the delegate of Algeria, the Secretary-General explained that, by decision of the Administrative Council, and in the case of United Nations specialized agencies, by right, certain international organizations were exempt from contributing to defraying the costs of participation in conferences on a basis of reciprocity with the ITU. All the international organizations participating in the current Conference fell into that category.

#### Annex 5

1.15 In reply to a question by the delegate of Botswana, the Chairman of the IFRB said that the table on page 16 related to the resource requirements for software development, documentation, administrative support and so forth amounting to 20 man/years. It was estimated that a period of two and a half years would be required after the system had been analyzed and

the Board had decided that it was at the proper stage from the point of view of design to make it possible to proceed with its development. Although some of the items in the table bore the same titles as modules of the present system, there was no duplication with respect to the content of the modules, which would all be changed for the purposes of software development.

Annex 7

1.16 The Chairman of Committee 3 said that the figure "25" which occurred twice in section C.2 should be changed to "27".

Document 261 was approved.

1.17 The delegate of Japan said that, while his Delegation fully understood the importance of the decisions taken by the Conference with respect to the compromise package, it was very concerned by the budgetary implications. In view of his Government's very stringent financial situation, it reserved its position concerning the budgetary situation in the future.

1.18 The Chairman of the IFRB said he wished to raise two questions with financial implications that were not covered in the report. In the first place, there had been no time to estimate the resources required for the monitoring programmes resulting from the Resolution approved at the preceding meeting; the Board had no permanent resources for monitoring, although the Administrative Council approved the creation of a post for two years in that connection as the result of a Resolution of the First Session. Some additional comments on the subject might appear in the report to the Administrative Council. Secondly, for a programme of the kind adopted, lasting for about three and half years, it might be necessary to hold information meetings with administrations, despite the establishment of the Group of Experts.

2. Declarations (Document 273)

2.1 The Chairman invited the Plenary to take note of the declarations in the document.

The Plenary took note of the declarations.

2.2 The Chairman said that the time limit for the submission of additional declarations would be set at 0230 hours and that those additional declarations would be noted at the following Plenary Meeting.

The meeting rose at 0140 hours.

The Secretary-General:

R.E. BUTLER

The Chairman:

K. BJÖRNSJÖ



# HFBC (2)

INTERNATIONAL TELECOMMUNICATION UNION  
WARC FOR THE PLANNING OF THE HF BANDS  
ALLOCATED TO THE BROADCASTING SERVICE  
SECOND SESSION, GENEVA, February-March 1987

Document 276-E  
7 April 1987  
Original: English

## PLENARY MEETING

### MINUTES

### OF THE

### NINETEENTH PLENARY MEETING

Sunday, 8 March 1987, at 0925 hrs

Chairman: Mr. K. BJÖRNSJÖ (Sweden)

#### Subjects discussed:

#### Document

1. Additional declarations

274

1. Additional declarations (Document 274)

The additional declarations contained in Document 274 were noted.

1.1 The Secretary-General said that a number of minor editorial amendments which had been submitted the previous evening would be taken into account when the definitive version of the Final Acts was printed. He also drew attention to the fact that additional declarations, as well as the declarations to which they were related, could only be submitted by signatories to the Final Acts. The Secretariat would verify that that condition had been met when it came to the printing of the Final Acts.

The meeting rose at 0930 hours.

The Secretary-General:

R.E. BUTLER

The Chairman:

K. BJÖRNSJÖ

# HFBC (2)

INTERNATIONAL TELECOMMUNICATION UNION  
WARC FOR THE PLANNING OF THE HF BANDS  
ALLOCATED TO THE BROADCASTING SERVICE  
SECOND SESSION, GENEVA, February-March 1987

Document 277-E  
7 April 1987  
Original: English

## PLENARY MEETING

### MINUTES

### OF THE

### TWENTIETH AND LAST PLENARY MEETING

Sunday, 8 March 1987, at 0930 hrs

Chairman: Mr. K. BJÖRNSJÖ (Sweden)

#### Subject discussed:

1. Signing ceremony and closure of the Conference



1. Signing ceremony and closure of the Conference

1.1 The countries listed in Annex 1 signed the Final Acts and Final Protocol.

1.2 The countries listed in Annex 2 signed the Final Acts only.

1.3 The Chairman announced that a total of 108 delegations had signed the Final Acts, and 107 had signed the Final Protocol.

1.4 The Secretary-General made the statement reproduced in Annex 3.

1.5 The delegate of India said that the World Administrative Radio Conference dealing with high frequency broadcasting services marked one of the very important milestones in the long history of the Union, and its success had been largely due to the Chairman who had accomplished a tremendous task in guiding delegates through two difficult sessions. He had managed to alleviate the tension and change conflicting views into compromise solutions whenever serious problems had arisen. He had acted both as Chairman of the Conference and participant of ad hoc Groups, committees, Drafting Groups and informal groups, constantly keeping an eye on the progress of the Conference and helping out where needed. On his own behalf, therefore, and on behalf of his Delegation, his Administration and all the participants, he expressed his deep gratitude to the Chairman for his admirable work. He also thanked the Secretary-General, whose dynamic approach and deep interest had ensured that the Conference moved in the right direction, the staff of the Union and everyone who had played a part in making the Conference a success.

1.6 The delegate of the USSR associated himself with the words expressed both by the Secretary-General and by the delegate of India, particularly with regard to the Chairman, with whom he had had the pleasure of working over many years and at many conferences, both within the framework of the ITU and outside. He had combined both firmness, courage and kindness and had an incomparable sense of humour. He had listened very patiently to delegates and, from his gestures and responses it had been difficult to tell whether he had agreed or disagreed. He had shown great tact, kindness and skill at all times and towards all delegations, and judging by the appearance and state of health of all present, in spite of long night meetings, they would all be attending the 1992 Conference to welcome the Chairman back again, gavel in hand. Thanks were also expressed to the Secretariat, headed by the Secretary-General and Deputy Secretary-General, the entire Secretariat machinery, the IFRB that had worked so hard during the intersessional period and still had much work before it, and the CCIR that had prepared the technical reports.

1.7 The delegate of Kenya, on behalf of his Delegation, thanked the Chairman for the excellent way in which he had conducted the work of the Conference. He had not personally attended the First Session, but understood that it had been as difficult as the Second and it took courage to agree to go through the same difficulties twice. It had indeed been a great pleasure to work with the Chairman and to note the inspiration and admiration which his courage and patience had aroused. The Kenyan Delegation placed great hope in the spirit of compromise which had prevailed throughout the discussions, and which had resulted in success. Compromise solutions never satisfied the requirements of all delegations: some lost and some gained, but they did produce friendship, understanding and love among all the nations of the world. A compromise was not therefore a sign of weakness but was a source of strength which bound all mankind in a common purpose. He thanked in particular all those delegates who had accepted compromises and expressed the belief that that same spirit of compromise would prevail in 1992 when the next competent World Administrative Radio Conference would, it was to be hoped, completely satisfy the aspirations

of all, and bring order to the planning and management of the HF broadcasting spectrum. The work done by the Chairman of Committee 5 could not go unremarked. The Kenyan Delegation has the deepest admiration for the way in which he had championed the compromise solution, at a time when his patience had been tested to the limit. His strength and determination had been the right ingredients for the success of Committee 5. Thanks were also extended to the Secretary-General and his Deputy, the permanent organs of the ITU and the Secretariat for the work which they had performed.

1.8       The delegate of the United States said that in expressing his warmest thanks to the Chairman he was surely echoing the feelings of all present. The Conference just ended had been long, difficult and at times on the brink of failure; the final successful outcome was due largely to the Chairman's efforts. The glowing tributes already paid to him were fully justified; he had exercised remarkable patience throughout the many controversies which, whilst perhaps not justified by the issues, were understandable in view of the wide variety of regions, cultures and problems involved. The fact that an understanding had been reached testified to the wisdom of the delegates and the Chairman. The Secretary-General, too, had devoted constant attention and tireless energy to his task; his efforts, and those of the Deputy Secretary-General, the Chairman and members of the IFRB and the interpreters were greatly appreciated. Although the Conference had not produced the results desired by some, it had been marked by a degree of wisdom, guidance and frank discussion which boded well for a future occasion.

1.9       The delegate of the Netherlands said that when opening the current session he had been mindful of the challenge faced by the Chairman during the First Session and about to confront him again. The Chairman had acquitted himself very well, being unsparing in his efforts behind the scenes to reach a compromise solution. A point to bear in mind in chairing such conferences was the equal footing of all participants, regardless of the time they occupied in speaking; those who were brief should nevertheless have their concerns given due weight. Although no participants had secured the results they themselves would have liked, the Conference had, under the Chairman's guidance, taken the Union's work a step forward. The Chairman had been ably assisted by the Committee Chairmen; thanks were due also to the Secretary-General, the Deputy Secretary-General, the IFRB and all the staff for their work in the conduct of the Conference.

He wished the Chairman every success in his future career.

1.10       The delegate of Tanzania, on behalf of his Administration, expressed his sincere and unreserved appreciation for the manner in which the Chairman had conducted the Conference, and paid special tribute to the entire Secretariat staff and the ITU management. His Administration had noted the many declarations concerning the Final Acts but did not consider that they reflected badly on the proceedings. The Tanzanian Delegation would spare no effort to cooperate with all the organs of the ITU in the future.

1.11       The delegate of Yugoslavia expressed his Delegation's appreciation for the work which the Chairman had done for the benefit of the Conference. It was regrettable that better results could not have been achieved, but they would undoubtedly be compensated in the years ahead. The Chairman had made a very great individual contribution to the Conference, and through his influence many difficulties had been overcome. Particular thanks were therefore due to him, to the Secretary-General, the Deputy Secretary-General, the IFRB and the CCIR for their strenuous efforts to make the Conference a success.

1.12 The delegate of Brazil expressed his wholehearted support for the tributes paid by previous speakers. His Delegation was grateful to the Secretariat as a whole and to the IFRB which had contributed to much of the success of the Session. Particular thanks were due to Mr. Ndiongue, to the Secretary-General and of course to the Chairman for his patience, impartiality and firmness. The results achieved bore witness to the trust placed in him, and on behalf of the Brazilian Administration and the Latin American countries he wished him every happiness in his future professional and personal life.

1.13 The delegate of China said that the acceptable final compromise had been gained after much effort and his Delegation wished to congratulate the Chairman on his wise guidance of the debates. His honesty, wisdom and patience had been widely appreciated. He would also like to thank the Chairmen of Committees, the Secretary-General and Deputy Secretary-General, the members of the IFRB and the entire Secretariat, as well as all delegations for their cooperation. Administrations had a difficult task before them up to 1992 and further efforts would be necessary. For their part, the Chinese Delegation and Administration would continue to cooperate with the Secretary-General and the IFRB with a view to achieving successful results in 1992.

1.14 The delegate of Saudi Arabia thanked the Chairman to whose firm and wise guidance the Session owed what success it had achieved and wished him every success in the future. He also wished to thank the Secretary-General and the IFRB for their valuable assistance.

1.15 The delegate of Senegal said that after many difficult moments, a result had been reached which could be regarded as fairly satisfactory. That was largely due to the Chairman whose courage, disinterestedness and patience had been outstanding. Thanks to him, the extraordinary spirit of cooperation which prevailed throughout the ITU had been preserved. He had been particularly touched by the Chairman's expression of confidence in him as Chairman of Committee 5 which had enabled him to continue in his unenviable task. On behalf of his Government, he also wished to address his sincere congratulations and encouragement to the Secretary-General who had made himself available at all times and whose sole concern had been to ensure that the Conference reached a successful conclusion.

As Chairman of Committee 5, he wished to thank the Chairmen of the Working Groups - Messrs. Arnaud, Terzani, Broere, DuCharme and Khushu - who had been determining elements in reaching a compromise in Committee 5.

In conclusion, he thanked all delegates for their support and understanding and their will to work together in a spirit of cooperation.

1.16 The delegate of Norway said that the Nordic Group could not allow the Chairman to close the Conference without paying tribute to him and his work. Both he and all his Nordic colleagues congratulated the Chairman for his guidance through the Second Session. His kindness, patience, humour and never-ending readiness to listen to each and every delegate and to compromise had made it possible to come through a very difficult Conference. Thanks were also due to the Secretary-General and Deputy Secretary-General, the Secretariat, the IFRB and its members who had worked day and night to pull everything together.

1.17 The delegate of Egypt considered that the Conference marked a great step forward in the history of HF broadcasting. It had provided an opportunity to realize the important role played by the ITU and to observe the realities of international cooperation. He believed it was now the duty of all concerned to consolidate the results achieved by all the means available and to make the necessary efforts with a view to obtaining satisfactory solutions. From the outset of the Conference it had been obvious that the task before it was a formidable one and at times his Delegation had had doubts about the possibility

of obtaining positive results, but final success had been made possible by the Chairman's competence, skill and wisdom.

During the coming stages of the work, up to 1992, all administrations would have to be flexible in their thinking. He would again call to mind the appeal he had made at the close of the First Session for simplification of planning, which would both increase effectiveness and reduce costs. He therefore hoped that options would be presented to help administrations to resolve the problems.

In conclusion, he thanked, in addition to the Chairman, the Secretary-General and Deputy Secretary-General, the IFRB, the CCIR and all members of the Secretariat, and not least all the administrations which had helped to achieve the success of the Second Session of the Conference.

1.18 The delegate of the Yemen Arab Republic thanked the Chairman for his competent and wise guidance, and all Members of the Union, the Secretary-General, the IFRB, the Secretariat, the interpreters and précis writers for their contribution to the success of an historic Conference. It was to be hoped that the 1992 Conference would enjoy similar success and that the wishes of all administrations would be fulfilled.

1.19 The Chairman thanked everyone for their kind expressions of appreciation which he did not feel were truly justified. What had been achieved, had been achieved together. He concurred in the thanks and appreciation expressed to the Committee Chairmen whose excellent work had contributed to a successful outcome, and in particular he endorsed the appreciation expressed to the Chairman of Committee 5 who had had the most difficult Committee insofar as compromise solutions were concerned. He also thanked the Vice-Chairmen of the Conference, all of whom had given him much support in the efforts to find compromise solutions, and strongly endorsed the words of appreciation for the Secretary-General who had been a tower of strength and whose work behind the scenes, knowing everyone's feelings and positions, has been invaluable. He also thanked the Deputy Secretary-General who had given strong support, and the IFRB which had carried out tremendous work both during the present Conference and the intersessional period. Although many problems remained, the system as developed was a very important first step, and the Union could now continue its work and look forward to future development. What had been important was the way in which each and everyone had contributed to the success which had culminated in the signing of the Final Acts. Compromises had certainly been more difficult than at any other Conference: everyone had ended up both pleased and disappointed, and he felt much sympathy for those who were disappointed. In spite of everything, however, the Union had taken a great step forward in line with its traditions.

In conclusion, he declared the twentieth and last Plenary Meeting closed.

The meeting rose at 1130 hours.

The Secretary-General:

R.E. BUTLER

The Chairman:

K. BJÖRNSJÖ

Annexes: 3

ANNEX 1

The following countries signed the Final Acts and the Final Protocol:

Afghanistan (Democratic Republic of)  
Albania (Socialist People's Republic of)  
Algeria (People's Democratic Republic of)  
Germany (Federal Republic of)  
Angola (People's Republic of)  
Antigua and Barbuda  
Saudi Arabia (Kingdom of)  
Argentine Republic  
Australia  
Austria  
Belgium  
Byelorussian Soviet Socialist Republic  
Botswana (Republic of)  
Brazil (Federative Republic of)  
Bulgaria (People's Republic of)  
Burkina Faso  
Cameroon (Republic of)  
Canada  
Central African Republic  
Chile  
China (People's Republic of)  
Cyprus (Republic of)  
Vatican City State  
Colombia (Republic of)  
Korea (Republic of)  
Côte d'Ivoire (Republic of)  
Cuba  
Denmark  
Egypt (Arab Republic of)  
United Arab Emirates  
Ecuador  
Spain  
United States of America  
Finland  
France  
Gabonese Republic



Ghana  
Greece  
Guinea (Republic of)  
Honduras (Republic of)  
Hungarian People's Republic  
India (Republic of)  
Indonesia (Republic of)  
Islamic Republic of Iran  
Iraq (Republic of)  
Ireland  
Iceland  
Israel (State of)  
Italy  
Japan  
Jordan (Hashemite Kingdom of)  
Kenya (Republic of)  
Kuwait (State of)  
Lesotho (Kingdom of)  
Liberia (Republic of)  
Libya (Socialist People's Libyan Arab Jamahiriya)  
Luxembourg  
Madagascar (Democratic Republic of)  
Malaysia  
Maldives (Republic of)  
Mali (Republic of)  
Malta (Republic of)  
Morocco (Kingdom of)  
Mauritania (Islamic Republic of)  
Mexico  
Monaco  
Mongolian People's Republic  
Niger (Republic of the)  
Norway  
New Zealand  
Oman (Sultanate of)  
Pakistan (Islamic Republic of)  
Papua New Guinea  
Paraguay (Republic of)  
Netherlands (Kingdom of the)  
Philippines (Republic of the)

Portugal  
Qatar (State of)  
Syrian Arab Republic  
German Democratic Republic  
Democratic People's Republic of Korea  
Ukrainian Soviet Socialist Republic  
Romania (Socialist Republic of)  
United Kingdom of Great Britain and Northern Ireland  
Rwandese Republic  
Senegal (Republic of)  
Singapore (Republic of)  
Somali Democratic Republic  
Sri Lanka (Democratic Socialist Republic of)  
Sweden  
Switzerland (Confederation of)  
Suriname (Republic of)  
Swaziland (Kingdom of)  
Tanzania (United Republic of)  
Czechoslovak Socialist Republic  
Thailand  
Togolese Republic  
Tunisia  
Turkey  
Union of Soviet Socialist Republics  
Uruguay (Eastern Republic of)  
Venezuela (Republic of)  
Viet Nam (Socialist Republic of)  
Yemen Arab Republic  
Yemen (People's Democratic Republic of)  
Yugoslavia (Socialist Federal Republic of)  
Zimbabwe (Republic of)

ANNEX 2

The following country signed the Final Acts only:

Poland (People's Republic of)

ANNEX 3

Closing Address by the Secretary-General

Mr. Chairman,  
Excellencies,  
Ladies and Gentlemen,

The signature of the Final Acts of this Conference, so difficult in its nature, marks a further step on the way to the objectives fixed by previous competent conferences related to the HF Broadcasting Service in the bands exclusively allocated to it. Although the concept of such a complex process has been reviewed on various occasions in the last four decades, never has there been such profound examination on the best ways to achieve improved and equitable solutions to satisfy all Members' aspirations and interests.

The history of such meetings at Mexico City, (1947-48) Rapallo (1950), Geneva (1951 and 1959) provides ample evidence of the complexities and the challenges to the ITU (international community). They are many. I will not dwell on them, except to say that the resolutions of all the issues can only be settled progressively and realistically, taking advantage of :

- . technology advances;
- . the tools available to us such as computer; and
- . the full understanding of the aspirations of the individual countries' service operations and environment - not the least economic, which presently necessitate such extensive use of the HF Bands for national services.

The Final Acts reflect the results of your consideration on those matters.

The partial revision of the Radio Regulations and the accompanying resolutions and recommendations represent further progress in a process which you have recognized, necessitate short, medium and long-term actions. Such actions will take us well into the 21st century.

Planning principles have been clearly identified and enshrined into the Radio Regulations. The need for improved planning (I use the term in its general sense) has been agreed, and provided for in the dual approach which you have adopted for assuring future access to the spectrum.

Apart from taking advantage of advances in technology, benefits will also be evident in the application of improved scientific knowledge in regard to propagation and other technical information. Parameters have been established for single side bands (SSB) operations. No doubt, this latter decision will provide the necessary stimulus for the manufacturing industry - of transmitters and for the development of low cost receivers for the public.

Further work has been set in motion for the permanent organs of the Union and particularly for the IFRB to bring a further development of the planning methods in one approach identified in your global compromise. I refer to the development of the HFBC System and the related software adaptation. Progress and work are also required on the other part of the dual approach that is the improved consultation procedure.

You have set objectives and the framework of an Agenda for a further World Administrative Radio Conference in 1992, which will be another significant event in the programme in the application of strategy for the improved planning of the HFBC Bands and services.

In addition, there will be the continuing work in the CCIR.

The significant post conference work and the related preparation for the next round of the definitive decisions in 1992 will necessitate very substantive work by the IFRB and its secretariat which will be supported by the computer services in the General Secretariat. This entails substantive resources. Thus, I make a special appeal for effective understanding of all the ramifications when your governments come to consider the budgetary aspects and the related elements inherent in your decisions. I would like to emphasize that the expenditure should be considered against the background of all the services interests and investments which are involved in the establishment and operation of effective services.

In concluding, I wish to turn to you, Mr. Chairman, our Chairman, who guided us prudently along the narrow road of common understanding - an old tradition of the Union.

Demonstrating impartiality at every moment, you deployed always courage and untiring efforts through two HFBC Sessions trying to bring this Conference to a success. Today you completed the difficult tasks with honour and wisdom, so much demanded when you have been looking for compromise solutions together with your Vice-Chairmen and Committee Chairmen. We thank you.

I wish to thank publicly all ITU staff members permanent and supernumerary who have not hesitated to respond to the work situation at a short notice.

Finally, this conference has again shown that, notwithstanding the complexities of the service and of the national and international considerations, the ITU Community continues to find practical results and orientations for the application of the International Telecommunication Convention.

## 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 l'Union - Members of the Union - Miembros de la Unión
- II Exploitations privées reconnues - Recognized private operating agencies - Empresas privadas de explotación reconocidas
- III Organisations internationales - International Organizations - Organizaciones Internacionales
  - III.1 Nations Unies - United Nations - Naciones Unidas
  - III.2 Institutions spécialisées - Specialized Agencies - Instituciones especializadas
  - III.3 Organisations régionales (Art. 32 de la Convention) - Regional Organizations (Art. 32 of the Convention) - Organizaciones regionales (Art. 32 del Convenio)
  - III.4 Autres Organisations - Other Organizations - Otras Organizaciones
- IV Siège de l'Union - Headquarters of the Union - Sede de la Unión
- V Secrétariat de la Conférence - Secretariat of the Conference - Secretaría de la Conferencia

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### 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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I. MEMBRES DE L'UNION - MEMBERS OF THE UNION - MIEMBROS DE LA UNIÓN

AFG	Afghanistan (République démocratique d') - Afghanistan (Democratic Republic of) - Afganistán (República Democrática del)	ALG	Algérie (République algérienne démocratique et populaire) - Algeria (People's Democratic Republic of) - Argelia (República Argelina Democrática y Popular)
C	M. KARIMI Mohammad Zarin Deputy Minister State Radio Inspection Ministry of Communications Kabul	C	M. ALI-BELHADJ Mohamed Chargé d'études et de synthèse Ministère des postes et télécommunications Alger
CA	M. BURHANI Mirazizullah President State Radio Inspection Dept. Ministry of Communications Kabul	CA	M. YOUYOU Mohand-Salah Directeur central Ministère des postes et télécommunications Alger
D	M. FOROUGH Faizuddin Chief Engineer State Committee for Radio, Television and Cinematography Kabul	D	M. BENACER Tahar Chef de division Ministère des postes et télécommunications Alger
D	M. SANGIN Mohammad Khan Director General Frequency Management and Planning State Radio Inspection Dept. Ministry of Communications Kabul	D	M. BOUHADEB Slimane Chef de bureau radiocommunications Ministère des postes et télécommunications Alger
ALB	Albanie (République populaire socialiste d') - Albania (Socialist People's Republic of) - Albania (República Popular Socialista de)	D	M. BOUNAB Rezki Sous-Directeur Radiodiffusion Télévision Algérienne Alger
C	M. KRYEZIU Rifat Vice-Directeur général de radiodiffusion Direction générale de la radio-télévision albanaise Tirana	D	M. DERRAGUI Mohamed Chef de département Radiodiffusion Télévision Algérienne Alger
D	M. BOÇI Koço General Direction of Radiotelevision Tirana	D	M. DJEMATENE Slimane Ingénieur Radiodiffusion Télévision Algérienne Alger
D	M. MANDIA Irfan Direction générale de la radio-télévision albanaise Tirana	D	M. HAMOUI Ahmed Services radioélectriques Ministère des postes et télécommunications Alger
		D	Mlle KHENCHELAOUI Houria Chef de bureau fréquences Ministère des postes et télécommunications Alger
		D	M. KHIDER Abderrezak Directeur général Télédiffusion algérienne Alger

- ALG Algérie (République algérienne démocratique et populaire) - Algeria (People's Democratic Republic of) - Argelia (República Argelina Democrática y Popular) (suite)
- D M. LOUNIS Abdenasser  
Ingénieur  
Ministère des postes et télécommunications  
Alger
- D M. MAALEM Abdelmadjid  
Chef de bureau  
Ministère des affaires étrangères  
Alger
- D M. MEHNI Mohamed  
Directeur des études générales  
Radiodiffusion Télévision Algérienne  
Alger
- D M. MEROUANE Ali  
Sous-Directeur Exploitation Radio  
Radiodiffusion Télévision Algérienne  
Alger
- D M. RACHEDI Mahmoud  
Ingénieur  
Ministère des postes et télécommunications  
Alger
- D Allemagne (République fédérale d') - Germany (Federal Republic of) - Alemania (República Federal de)
- C M. LEWALTER Walter  
Botschafter  
Auswärtiges Amt  
Bonn
- C M. VENHAUS Heinrich Ludwig  
Ministerialdirigent  
Bundesministerium für das Post- und Fernmeldewesen  
Bonn
- CA M. MASSON Franz  
Ministerialrat  
Bundesministerium für das Post- und Fernmeldewesen  
Bonn
- CA M. MERK Hans Günther  
Ministerialdirigent  
Bundesministerium des Innern  
Bonn
- D Allemagne (République fédérale d') - Germany (Federal Republic of) - Alemania (República Federal de) (suite)
- CA M. SAUERMAN Erwin  
Ministerialrat  
Bundesministerium für das Post- und Fernmeldewesen  
Bonn
- D Dr. BODESHEIM Joachim  
Institut für Rundfunktechnik  
München
- D M. DAHRENDORF Ingo  
Technischer Direktor  
Westdeutscher Rundfunk  
Köln
- D Dr. DAMBOLDT Thomas  
Forschungsgruppenleiter  
Forschungsinstitut der DBP  
Darmstadt
- D M. EBERLE Rainer  
Legationsrat  
Auswärtiges Amt  
Bonn
- D Dr. FERNAU Michael  
Legationsrat 1. Klasse  
Ständige Vertretung der Bundesrepublik Deutschland bei den Vereinten Nationen  
Genève
- D M. FRANKENBERG Klaus  
Technischer Fernmeldeamtsrat  
Fernmeldetechnisches Zentralamt  
Darmstadt
- D Dr. FUCHS Karl J.  
Wissenschaftlicher Mitarbeiter  
Fernmeldetechnisches Zentralamt  
Darmstadt
- D M. GEHRING Günter  
Dipl. Eng.  
Techn. Direktion  
Saarländischer Rundfunk  
Saarbrücken
- D M. GEHRKE Horst  
Sender Freies Berlin  
Berlin (West)
- D M. GEORGE Eberhard  
Postdirektor  
Fernmeldetechnisches Zentralamt  
Darmstadt



- D    **Allemagne (République fédérale d') -  
Germany (Federal Republic of) -  
Alemania (República Federal de)**  
      (suite)
- D    M. GROSCHER Günther  
      Wissenschaftlicher Mitarbeiter  
      Fernmeldetechnisches Zentralamt  
      Darmstadt
- D    M. HARTMANN Heiner  
      Deutsche Welle  
      Köln
- D    M. KNIESTEDT Joachim  
      Oberamtsrat  
      Bundesministerium für das Post-  
      und Fernmeldewesen  
      Bonn
- D    M. KUSSMANN Horst T.  
      Postdirektor  
      Fernmeldetechnisches Zentralamt  
      Darmstadt
- D    M. LERNBECHER Michael  
      Technischer Fernmeldeamtman  
      Bundesministerium für das Post-  
      und Fernmeldewesen  
      Bonn
- D    Miss LUTZ Margarete  
      Diplom-Übersetzerin  
      Bundesministerium für das Post-  
      und Fernmeldewesen  
      Bonn
- D    M. NIEMANN Walter  
      Südwestfunk  
      Baden-Baden
- D    M. ROESSLER Günter R.  
      Technischer Direktor  
      Deutsche Welle  
      Köln
- D    M. SCHALL Norbert  
      Deutsche Welle  
      Köln
- D    M. SCHLICHTING Ove  
      Vortragender Legationsrat  
      Auswärtiges Amt  
      Bonn
- D    M. SCHNABEL Wolfgang D.  
      Technischer Fernmeldeamtman  
      Fernmeldetechnisches Zentralamt  
      Darmstadt
- D    **Allemagne (République fédérale d') -  
Germany (Federal Republic of) -  
Alemania (República Federal de)**  
      (suite)
- D    M. SCHOLZ Horst  
      Deutsche Welle  
      Köln
- D    M. SENER Peter  
      Deutsche Welle  
      Köln
- D    M. STRICK Joachim S.  
      Oberamtsrat  
      Bundesministerium für das Post-  
      und Fernmeldewesen  
      Bonn
- D    M. VON OLDENBURG Hans-Jürgen  
      Fernmeldeamtsrat  
      Fernmeldeamt Düren  
      Rundfunkdienstbüro  
      Düren
- D    M. WYSOCKI Bodo  
      Hauptabteilungsleiter Sendertechnik  
      RIAS - Berlin  
      Berlin (West)
- AGL    **Angola (République populaire d') -  
Angola (People's Republic of) -  
Angola (República Popular de)**
- C    M. LUBANZA João-Pedro  
      Chef du département des  
      radiocommunications  
      Direcção Nacional de Correios  
      e Telecomunicações  
      Ministère des transports et  
      Communications  
      Luanda
- D    M. SARAIVA José Alves  
      Directeur technique  
      Radio nationale d'Angola  
      Luanda
- ATG    **Antigua-et-Barbuda -  
Antigua and Barbuda -  
Antigua y Barbuda**
- C    M. MATTHEW Campbell Mickey  
      Telecommunications Officer  
      Ministry of Public Works  
      and Communication  
      St. John's - Antigua

ARS Arabie saoudite (Royaume d') -  
Saudi Arabia (Kingdom of) -  
Arabia Saudita (Reino de)

C M. GHANDOURAH Suleiman M.  
Deputy Minister for financial and  
administrative affairs  
Ministry of Posts, Telegraphs  
and Telephones  
Riyadh

CA M. TAHER Fouad A.  
Assistant Deputy Minister  
Engineering Affairs  
Ministry of Information  
Riyadh

D M. AL-BASHEER Sami S.  
Director  
Conferences and International  
Relations  
Ministry of Posts, Telegraphs  
and Telephones  
Riyadh

D M. AL-DHALAAN Abdulaziz Ali  
Communication Engineer Officer  
Saudi Armed Forces  
Ministry of Defense  
Riyadh

D M. AL-ELAIWI Daloh M.  
Ministry of Posts, Telegraphs  
and Telephones  
Riyadh

D M. AL-HUTHAIL Abdulaziz A.  
Electrical Engineer  
Frequency Management  
Ministry of Information  
Riyadh

D M. AL-MEGHAILEETH Saleh  
Electrical Engineer  
Engineering Affairs  
Ministry of Information  
Riyadh

D M. AL-NAJEM Saad H.  
Director General, Projects  
Ministry of Information  
Riyadh

D M. AL-RASHEED Saud A.  
Assistant Director, Frequencies  
Ministry of Information  
Riyadh

ARS Arabie saoudite (Royaume d') -  
Saudi Arabia (Kingdom of) -  
Arabia Saudita (Reino de) (suite)

D M. AL-SAMNAN Suleiman A.  
Director, Frequency Management  
Ministry of Information  
Riyadh

D M. AL-SHANKITI Habeeb K.  
Director General,  
Radiocommunications  
Ministry of Posts, Telegraphs  
and Telephones  
Riyadh

D M. SHAMRANI Ayed M.  
Engineer  
Ministry of Information  
Riyadh

ARG Argentine (République) -  
Argentine Republic -  
Argentina (República)

C M. GUERRA José  
Director de departamento  
Dirección General de Organización  
y Control  
Secretaría de Comunicaciones  
Buenos Aires

CA M. ANADON Tomas Salvador  
Inspector Tecnico Mayor  
Dirección General de Organización  
y Control  
Secretaría de Comunicaciones  
Buenos Aires

A Mme BERDOU Viviana C.  
Secretario de Embajada  
Misión Permanente de la Argentina  
Ginebra

A M. RICCHERI Luis M.  
Ministro Plenipotenciario  
Misión Permanente de la Argentina  
Ginebra

AUS Australie - Australia - Australia

C M. McDONNELL T.P.  
Assistant Secretary  
Spectrum Policy & Planning Branch  
Department of Communications  
Belconnen

**AUS** **Australie - Australia - Australia**  
(suite)

- CA M. MALCOLM Keith Graham  
Supervising Engineer  
Department of Communications  
Belconnen
- CA M. PLACE Ronald William  
Controller Resources and Services  
Radio Australia  
Department of Communications  
Belconnen
- D M. DOBSON C.W.  
Frequency Manager  
Telecom Australia  
Broadcasting Directorate  
Melbourne
- D M. HARTLEY David  
Director of Engineering Planning  
Department of Communications  
Belconnen
- D M. OLIVER Colin L.  
Director, Radiocommunications  
Administrative Policy Branch  
Department of Communications  
Belconnen
- D M. ROTTIER A.J.  
First Secretary  
Australian Permanent Mission  
Geneva

**AUT** **Autriche - Austria - Austria**

- C M. LETTNER Gerd  
Oberrat  
Generaldirektion für Die Post-  
und Telegraphenverwaltung  
Wien
- CA M. BUCHER Helmut  
Amtssekretär  
Fernmeldetechnisches Zentralamt  
Wien
- D Dr. BERGER Josef  
Head of Frequency and Coverage  
Planning  
Österreichischer Rundfunk  
Wien
- D M. BURGSTALLER Josef  
Head of Service Planning  
Österreichischer Rundfunk  
Wien

**AUT** **Autriche - Austria - Austria** (suite)

- D M. KUBESCH Erwin  
Conseiller  
Mission permanente de l'Autriche  
Genève
- D Dr. LANG Reinhart  
Frequency Planner, Short Wave  
Österreichischer Rundfunk  
Wien
- D M. THUN-HOHENSTEIN Christoph  
Secrétaire d'Ambassade  
Mission permanente de l'Autriche  
Genève
- D M. WASSICZEK Norbert  
Adviser  
Österreichischer Rundfunk  
Wien

**BHR** **Bahreïn (Etat de) - Bahrain**  
(State of) - Bahrein (Estado de)

- C M. THANI Yusuf Ahmed  
Engineering Operations  
Superintendent  
Bahrain Television  
Ministry of Information  
Manama

**BGD** **Bangladesh (République**  
**populaire du) - Bangladesh**  
(People's Republic of) -  
**Bangladesh (República Popular de)**

- C M. RASHID Abdur M.  
Senior Engineer-in-Charge  
National Broadcasting Authority  
Ministry of Information  
Dhaka
- D M. RAHMAN M. Fazlur  
Director (Overseas)  
Bangladesh Telegraph and Telephone  
Board  
Dhaka
- D M. ROUF KHAN Mahbubur  
Major  
Signal Corps  
Dhaka

**BEL Belgique - Belgium - Bélgica**

- C M. PETRONIO Frédéric  
Ingénieur principal  
Chef de service  
Radio télévision belge de la  
communauté française  
Bruxelles
- CA M. GEWILLIG Michel  
Directeur-général  
Belgische Radio en Televisie  
Bruxelles
- D M. AUDENAERT Désiré  
Ingénieur-Directeur  
Belgische Radio en Televisie  
Bruxelles
- D M. CABUS Marc  
Ingénieur principal  
Belgische Radio en Televisie  
Bruxelles
- D M. DEVENTER Etienne  
Ingénieur principal  
Chef de service  
Belgische Radio en Televisie  
Bruxelles
- D S.E. M. THUYSBAERT Prosper  
Représentant permanent  
Mission permanente de la Belgique  
Genève
- D M. VAN DER NOOT Christian  
Ingénieur principal  
Radio télévision belge de la  
communauté française  
Bruxelles
- A M. WILLEMARCK Luc  
Conseiller  
Mission permanente de la Belgique  
Genève

**BLR Biélorussie (République socialiste soviétique de) - Byelorussian Soviet Socialist Republic - Bielorrusia (República Socialista Soviética de)**

- C M. VOLOCHTCHOUK Vassili  
Ministre des Postes et  
télécommunications  
Minsk

**BLR Biélorussie (République socialiste soviétique de) - Byelorussian Soviet Socialist Republic - Bielorrusia (República Socialista Soviética de) (suite)**

- CA M. BOUDAI Anatoli  
Chief of the Radio Department  
Minsk

**BOT Botswana (République du) - Botswana (Republic of) - Botswana (República de)**

- C M. SEKETE Joseph M.B.  
Botswana Telecommunications  
Corporation  
Gaborone

**B Brésil (République fédérative du) - Brazil (Federative Republic of) - Brasil (República Federativa del)**

- C M. PINHEIRO Savio  
Coordinator for International  
Telecommunications  
Ministry of Communications  
Brasilia
- CA M. BLOIS Roberto  
Diretor da Divisão de  
Radiodifusão  
Departamento Nacional de  
Telecomunicações  
Ministerio das Comunicações  
Brasilia
- D Mrs ARAUJO Sueili  
Jefe de la Sesión de  
Notificaciones Internacionales  
Ministerio das Comunicações  
Brasilia

- D M. FROTA Lucio  
Engineer  
Ministerio das Comunicações  
Radiobras  
Brasilia

- D M. MESQUITA Gustavo  
Secrétaire de la division des  
transports et communications  
Ministère des affaires étrangères  
Rio de Janeiro

**B** **Brésil (République fédérative du) -**  
**Brazil (Federative Republic of) -**  
**Brasil (República Federativa del)**  
(suite)

**D** **M. OLIVEIRA Kleber**  
Ingeniero  
Secretaría de Servicios de  
Radiodifusión  
Ministerio das Comunicações  
Brasília

**A** **M. PURRI Victor**  
President of Technical Committee  
Brazilian Association of  
Broadcasters  
Rio de Janeiro

**BFA** **Burkina Faso - Burkina Faso -**  
**Burkina Faso**

**C** **M. BONKOUNGOU Zouli**  
Ingénieur des télécommunications  
Direction générale ONATEL  
Ouagadougou

**CA** **M. ONADIA Raphael L.**  
Directeur des centres d'émission  
Radiodiffusion du Burkina  
Ouagadougou

**D** **M. OUEDRAOGO Pousbilo**  
Ingénieur des travaux PTT  
Direction générale ONATEL  
Ouagadougou

**BUL** **Bulgarie (République populaire de) -**  
**Bulgaria (People's Republic of) -**  
**Bulgaria (República Popular de)**

**C** **M. GANTCHEV Svetlozar**  
Vice-président  
Association nationale des postes  
et télécommunications  
Sofia

**CA** **M. STAMATOV Dimitar**  
Spécialiste en chef  
Association nationale des postes  
et télécommunications  
Sofia

**D** **M. DELEV Orlin**  
Premier secrétaire  
Mission permanente de Bulgarie  
Genève

**D** **M. HARLOV Boyko**  
Spécialiste en chef  
Association nationale des postes  
et télécommunications  
Sofia

**D** **M. PETKOV Boris**  
Spécialiste en chef  
Association nationale des postes  
et télécommunications  
Sofia

**D** **M. TODOROV Atana S.**  
Spécialiste en chef  
Association nationale des postes  
et télécommunications  
Sofia

**BDI** **Burundi (République du) -**  
**Burundi (Republic of) -**  
**Burundi (República de)**

**C** **M. NDIKUMWAMI Laurent**  
Directeur technique de la  
Radio-Télévision  
Radiodiffusion et télévision  
nationale du Burundi  
Bujumbura

**D** **M. CUBWA Siméon**  
Chef des transmissions  
ONATEL  
Bujumbura

**CME** **Cameroun (République du) -**  
**Cameroon (Republic of) -**  
**Cameroon (República de)**

**C** **M. KAMDEM KAMGA Emmanuel**  
Inspecteur général des  
télécommunications  
Ministère des postes et  
télécommunications  
Yaoundé

**CA** **M. SING Joseph**  
Directeur des transmissions  
Ministère de la défense  
Yaoundé

**D** **M. MAGA Richard**  
Directeur adjoint  
Direction des études et programmes  
Ministère des postes et  
télécommunications  
Yaoundé

**OME** Cameroun (République du) -  
Cameroon (Republic of) -  
Camerún (República de) (suite)

D M. NGUAMBA NLOUTSIRI Emmanuel  
Conseiller technique  
Ministère de l'Information  
et de la Culture  
Yaoundé

D M. NKEMBE Jacob  
Chef, Service des études  
Direction radiodiffusion  
Yaoundé

D M. ONGUENE MBITA Michel  
Chef de Service  
Radiodiffusion du Cameroun  
Ministère de l'Information  
et de la Culture  
Yaoundé

**CAN** Canada - Canada - Canadá

C M. WARREN Gaby I.  
Director general  
International Relations Branch  
Department of Communications  
Ottawa

CA M. DUCHARME E.D.  
Director  
Regulatory Policy and Planning  
Department of Communications  
Ottawa

CA Miss ZIMMERMAN Betty  
Director  
Radio Canada International  
Montreal

D M. BOILARD Jean-Marie  
Head, National and International  
Planning  
Broadcast Spectrum Engineering  
Department of Communications  
Ottawa

D M. DUROCHER Michel  
Assistant Director  
Strategic Engineering Department  
Canadian Broadcasting Corporation  
Montreal

D M. FRASER Donald  
Conference Officer  
Department of Communications  
Ottawa

**CAN** Canada - Canada - Canadá (suite)

D M. JONES Tom  
Frequency Management and Licensing  
Division  
Department of Communications  
Ottawa

D M. MORNEAULT Paul  
Head of Engineering  
Radio Canada International  
Montreal

D M. ROSS Donald  
Manager, VLF-HF Propagation Research  
Department of Communications  
Ottawa

D M. STAINFORTH Piers  
Foreign Service Officer  
Department of External Affairs  
Ottawa

**CAF** Centrafricaine (République) -  
Central African Republic -  
Centroafricana (República)

C M. BATA Michel  
Directeur des services techniques  
Radio Centrafrique  
Bangui

**CHL** Chili - Chile - Chile

C M. PEZOA LIZAMA Claudio Abel  
Subsecretaría de Telecomunicaciones  
Santiago

D M. LENNON PEIME Luis Antonio  
Jefe de Departamento  
Subsecretaría de Telecomunicaciones  
Santiago

**CHN** Chine (République populaire de) -  
China (People's Republic of) -  
China (República Popular de)

C M. XU CHONGHUA  
Vice Minister  
Ministry of Radio, Film and  
Television  
Beijing

CHN Chine (République populaire de) -  
China (People's Republic of) -  
China (República Popular de) (suite)

CA M. LIU ZHONGEN  
Deputy Director  
Department of External Affairs  
Ministry of Posts and  
Telecommunications  
Beijing

CA M. WEN YALIN  
Deputy Director of Engineering  
Department  
Ministry of Radio, Film and  
Television  
Beijing

CA M. ZHANG ZHIJIAN  
Deputy Chief Engineer  
Ministry of Radio, Film and  
Television  
Beijing

D Mrs DING DONGYI  
Engineer, Engineering Department  
Ministry of Radio, Film and  
Television  
Beijing

D Mrs FENG Cui  
First Secretary  
Permanent Mission of China  
Geneva

D M. GE HONGZHANG  
Senior Engineer  
Engineering Department  
Ministry of Radio, Film and  
Television  
Beijing

D M. LIN GUOQING  
Second Secretary  
Permanent Mission of China  
Geneva

D M. PAN KANHUI  
Engineer  
Ministry of Posts and  
Telecommunications  
Beijing

D M. PAN ZHENZHONG  
Senior Engineer  
Ministry of Radio, Film and  
Television  
Beijing

CHN Chine (République populaire de) -  
China (People's Republic of) -  
China (República Popular de) (suite)

D Mrs SUN GUIFANG  
Section Deputy Director  
Engineering Department  
Ministry of Radio, Film and  
Television  
Beijing

D M. TANG Guangting  
Second Secretary  
Permanent Mission of China  
Geneva

D Mrs WANG XIULAN  
Engineer, Engineering Department  
Ministry of Radio, Film and  
Television  
Beijing

D M. WU XIANLUN  
Senior Engineer  
Engineering Department  
Ministry of Radio, Film and  
Television  
Beijing

D M. ZHANG JINCHENG  
Engineer  
Ministry of Radio, Film and  
Television  
Beijing

D M. ZHU SANBAO  
Officer  
Ministry of Posts and  
Telecommunications  
Beijing

CYP Chypre (République de) -  
Cyprus (Republic of) -  
Chipre (República de)

CA M. MICHAELIDES Andreas  
Head Transmitters Division  
Cyprus Broadcasting Corporation  
Nicosia

**CVA Cité du Vatican (Etat de la) -  
Vatican City State -  
Ciudad del Vaticano (Estado de la)**

C M. MATIS Eugenio  
Technical Director  
Vatican Radio  
Vatican City

CA M. GIUDICI Pier Vincenzo  
Chief Engineer  
Vatican Radio  
Vatican City

D M. PACIFICI Costantino  
Engineer  
Vatican Radio  
Vatican City

A M. TOLAINI Umberto  
Frequency Management Office  
Vatican Radio  
Vatican City

**CLM Colombie (République de) -  
Colombia (Republic of) -  
Colombia (República de)**

C M. MARTINEZ LONDONO Sergio  
Secretario general  
Ministerio de Comunicaciones  
Bogotá

D M. CESPEDES CLAVIJO José Genaldo  
Jefe del grupo de proyectos  
Ministerio de Comunicaciones  
Bogotá

D Mme DE GAMBOA SUAREZ Silvia  
Jefe de la División radio  
Ministerio de Comunicaciones  
Bogotá

D M. LUNA Luis Alberto  
Primer Secretario  
Misión Permanente de Colombia  
Ginebra

D M. PULIDO SIERRA José Humberto  
Jefe, Sección internacional  
Ministerio de Comunicaciones  
Bogotá

**KOR Corée (République de) -  
Korea (Republic of) -  
Corea (República de)**

C M. AHN Jong Koo  
Minister  
Permanent Mission of the  
Republic of Korea  
Geneva

CA M. KANG Shin-Yong  
Director  
Broadcast Division, Radio Regulation  
Bureau  
Ministry of Communications  
Seoul

D M. BAE Jang Ho  
Assistant Manager  
Korean Broadcasting System (KBS)  
Seoul

D M. LEE Jong-Ho  
Deputy Director  
Radio Planning Division, Radio  
Regulation Bureau  
Ministry of Communications  
Seoul

D M. LEE Kwang Tae  
Assistant Manager  
Korean Broadcasting System (KBS)  
Seoul

**CTI Côte d'Ivoire (République de) -  
Côte d'Ivoire (Republic of) -  
Côte d'Ivoire (República de)**

C M. TIEMELE Kouande Charles  
Inspecteur général  
Ministère de l'Information, de la  
Culture, de la Jeunesse et des Sports  
Abidjan

CA M. YAO Kouakou J.B.  
Chef de bureau de la réglementation,  
coordination et gestion des fréquences  
Office national des télécommunications  
Abidjan

D M. COULIBALY Yacouba  
Ingénieur des télécommunications  
Office national des télécommunications  
Abidjan

D M. N'GUESSAN Koffi  
Ingénieur  
Direction technique de la  
Radiodiffusion  
Abidjan



<b>CUB</b>	<b>Cuba - Cuba - Cuba</b>	<b>DNK</b>	<b>Danemark - Denmark - Dinamarca</b> (suite)
C	M. HILDAGO-GATO BELLO José A. Director de Radiocomunicaciones Ministerio de Comunicaciones Habana	D	M. THUESEN J.B. Senior Administrator Telecom Inspectorate Copenhagen
CA	M. JIMÉNEZ SOLÍS Eugenio Jefe del Departamento de Radio Dirección de Radiocomunicaciones Ministerio de Comunicaciones Habana	<b>EGY</b>	<b>Egypte (République arabe d') -</b> <b>Egypt (Arab Republic of) -</b> <b>Egipto (República Árabe de)</b>
D	M. CRUZ DIAZ Juan Especialista en Comunicaciones Instituto de Radio y Televisión (ICRT) Habana	C	M. ALI MOUSSA Farouk Ibrahim Chairman, Engineering Sector Egyptian Radio & Television Union (ERTU) Cairo
D	M. JIMÉNEZ ADAY Miguel Segundo Secretario Misión Permanente de Cuba Ginebra	CA	M. IBRAHIM Ibrahim Attia Mohamed Head of Antennas, Propagation and Monitoring Egyptian Radio & Television Union (ERTU) Cairo
D	M. MIRA MÉNDEZ Mario Especialista en Radiodifusión Ministerio de Comunicaciones Habana	D	M. HAMZA Salah M. General Director, Transmission Projects Department Engineering Sector Egyptian Radio & Television Union (ERTU) Cairo
<b>DNK</b>	<b>Danemark - Denmark - Dinamarca</b>	<b>UAE</b>	<b>Emirats arabes unis -</b> <b>United Arab Emirates -</b> <b>Emiratos Árabes Unidos</b>
C	M. LARSEN P.V. Telegraph Inspector Ministry of Public Works General Directorate of Posts and Telegraphs Copenhagen	C	M. FANOUS Halim Director of Telecommunications Ministry of Communications Abu Dhabi
C	M. RISUM Jarl Senior Engineer Ministry of Public Works General Directorate of Posts and Telegraphs Copenhagen	CA	M. ALI Ibrahim Abo Serei Technical Adviser Ministry of Information and Culture Abu Dhabi
CA	M. LAVRSEN I.H. Senior Engineer Telecom Denmark Radio Communications Office Copenhagen	CA	M. HASIB Ahmed Najib Controller of Engineering U.A.E. Radio and Television Dubai
D	Mlle JOERGENSEN P. Administrator Telecom Inspectorate Copenhagen	CA	M. HATTAB Rushdi A. Chief Engineer Radio Transmitters Sadiyat Transmitting Station Abu Dhabi

**UAE Emirats arabes unis -  
United Arab Emirates -  
Emiratos Árabes Unidos (suite)**

D M. BABIKR Omer Khadir  
Senior Engineer  
Ministry of Information and Culture  
Abu Dhabi

D M. UL-HAQ Rais  
Senior Engineer  
Ministry of Information and Culture  
Abu Dhabi

A M. DAVEY Norman Charles  
Technical Advisor  
U.A.E. Radio and Television  
Dubai

A M. PARKER Hugh  
Chief Engineer, Radio  
U.A.E. Radio and Television  
Dubai

**EQA Equateur - Ecuador - Ecuador**

C M. MUÑOZ POMBAR Javier A.  
Director Nacional de Frecuencias  
Instituto Ecuatoriano de  
Telecomunicaciones  
Quito

CA M. VALDIVIESO-EGUIGUREN Fabian  
Primer Secretario  
Misión Permanente del Ecuador  
Ginebra

**E Espagne - Spain - España**

CA M. MENENDEZ SANCHEZ Pascual  
Subdirector Gral. Concesiones y  
Gestión del Espectro Radioeléctrico  
Dirección Gral. de Telecomunicaciones  
Ministerio de Transportes, Turismo  
y Comunicaciones  
Madrid

CA M. MOLINA NEGRO Francisco  
Subdirector General de  
Ordenación y Reglamentación  
Dirección Gral. de Telecomunicaciones  
Ministerio de Transportes, Turismo  
y Comunicaciones  
Madrid

**E Espagne - Spain - España (suite)**

D M. ALONSO MARTINEZ Isidoro  
Jefe Servicio de frecuencias  
Radiotelevisión Española (RTVE)  
Madrid

D M. CAMBLOR FERNANDEZ José Ramón  
Director de Programas  
Dirección Gral. de Telecomunicaciones  
Ministerio de Transportes, Turismo  
y Comunicaciones  
Madrid

D M. CHAMORRO SANTA CRUZ Lorenzo  
Jefe de Relaciones técnicas  
exteriores  
Dirección técnica  
Radiotelevisión Española (RTVE)  
Madrid

D M. JIMENEZ GONZALEZ Antonio  
Ingeniero de frecuencias  
Radiotelevisión Española (RTVE)  
Madrid

D M. MARESCA CABRE Manuel  
Subdirector Adjunto para las  
Relaciones Internacionales  
con Organismos Técnicos  
Radiotelevisión Española (RTVE)  
Madrid

D M. PEREZ DEL ARCO Manuel  
Ministro Plenipotenciario  
Misión Permanente de España  
Ginebra

D M. PRIETO TEJEIRO José A.  
Jefe de Sección Organismos  
Internacionales  
Dirección General de  
Telecomunicaciones  
Ministerio de Transportes, Turismo  
y Comunicaciones  
Madrid

D M. VILCHEZ BARROS José Luis  
Subdirector General de Régimen  
jurídico de radiodifusión y televisión  
Dirección General de Medios  
de Comunicación Social  
Ministerio de Relaciones con las  
Cortes y de la Secretaría del Gobierno  
Madrid

USA Etats-Unis d'Amérique -  
United States of America -  
Estados Unidos de América

- C H.E. Mr. MARKS Leonard H.  
Ambassador  
Department of State  
Washington
- CA1) M. SHUB Anatole  
Bureau of International Communications  
and Information Policy  
Department of State  
Washington
- 1) Executive Director
- CA M. BALAZS Phillip Terry  
Bureau of International Communications  
and Information Policy  
Department of State  
Washington
- CA M. DAVID Jonathan  
Chief, International Negotiations  
Federal Communications Commission  
Washington
- CA M. LEINWOLL Stanley  
Director of Engineering for  
Propagation and Frequency Management  
Radio Free Europe/Radio Liberty  
New York
- CA M. RICHARDS Warren G.  
Deputy Director  
Office of International Radio  
Communications  
Bureau of International Communications  
and Information Policy  
Washington
- CA M. RUSH Charles  
Deputy Director, Institute for  
Telecommunications Sciences  
National Telecommunications and  
Information Administration  
Department of Commerce  
Washington
- CA M. URBANY Francis  
Associate Administrator  
National Telecommunications and  
Information Administration  
Department of Commerce  
Washington
- CA M. WALSH Thomas M.  
Chief, Office of Frequency  
Management and Monitoring  
Voice of America  
Washington

USA Etats-Unis d'Amérique -  
United States of America -  
Estados Unidos de América (suite)

- D M. ANDERSON Dexter  
Office of Frequency Management  
and Monitoring  
Voice of America  
Washington
- D M. BENCH Mark  
Vice President and General Manager  
WNSR-FM  
New York
- D M. BRUCE Thomas  
Senior Staff  
House Foreign Affairs Committee  
Washington
- D M. COHEN David  
Spectrum Division  
National Telecommunications and  
Information Administration  
Department of Commerce  
Washington
- D M. DOERLE Bruce  
Office of Frequency Management  
and Monitoring  
Voice of America  
Washington
- D M. HARDY Howard  
United States Information Agency  
Bureau of International Communications  
and Information Policy  
Department of State  
Washington
- D M. HORAN Harold H.  
Consultant  
Bureau of International Communications  
and Information Policy  
Department of State  
Washington
- D M. JACOBS George  
Technical Advisor  
Board for International Broadcasting  
Washington
- D M. JAHN William H.  
Deputy Director  
Bureau of International Communications  
and Information Policy  
Department of State  
Washington

**USA Etats-Unis d'Amérique -  
United States of America -  
Estados Unidos de América (suite)**

- D Mrs LADY DOUGAN Diana  
US Coordinator and Director  
Bureau of International Communications  
and Information Policy  
Department of State  
Washington
- D M. MONTGOMERY Harry  
Telecommunications Attache  
United States Mission  
Geneva
- D M. PALMER Lawrence  
Radio Conference Program Manager  
National Telecommunications and  
Information Administration  
Department of Commerce  
Washington
- D M. RICHARDSON Joseph P.  
International Resources and  
Management Officer  
United States Mission  
Geneva
- D M. SCHROEDER Norbert  
Office of Frequency Management  
and Monitoring  
Voice of America  
Washington
- D Ms SOWERS Mary W.  
Spectrum Division, Institute for  
Telecommunications Sciences  
National Telecommunications and  
Information Administration  
Department of Commerce  
Washington
- D M. SWANSON Richard  
Office of International Conferences  
National Telecommunications and  
Information Administration  
Department of Commerce  
Washington

**FNL Finlande - Finland - Finlandia**

- C M. TERASVUO Kalevi  
Chief Engineer  
General Directorate of Posts and  
Telecommunications  
Radio Department  
Helsinki

**FNL Finlande - Finland - Finlandia  
(suite)**

- CA M. MESKANEN Tapio  
Frequency Planning Engineer  
General Directorate of Posts and  
Telecommunications  
Radio Department  
Helsinki
- D M. HUUKKA Esko Erkki Johannes  
Chief of HF Planning  
Oy. Yleisradio Ab.  
Helsinki

- D M. KOSKENNIEMI Osmo Matti  
Head of Network Planning  
Oy. Yleisradio Ab.  
Helsinki

**F France - France - Francia**

- C S.E. M. MARANDET Philippe  
Ambassadeur  
Ministère des affaires étrangères  
Paris
- CA M. ARNAUD Jean-François  
Ingénieur en chef  
R.F.I.  
Paris
- CA M. POPOT Michel  
Secrétaire général du CCT  
Ministère des PTT  
Paris
- D M. BLANC Jean-Louis  
Administrateur  
Direction générale des  
télécommunications - DAI - SAI  
Montrouge
- D M. BOCHENT Daniel  
Responsable du service ondes  
décamétriques  
Télédiffusion de France (TDF)  
Montrouge
- D Mme de LA BATUT Jeanne Thérèse  
Chargé de mission  
Ministère des affaires étrangères  
Paris
- D M. DONZELLE Michel  
Ingénieur  
Télédiffusion de France (TDF)  
Paris

**F France - France - Francia (suite)**

- D M. GOURBEILLE André  
Ingénieur en chef  
Télédiffusion de France (TDF)  
Montrouge
- D M. LEMAIRE Jean C.  
Sous-Directeur du trafic et  
des fréquences  
Télédiffusion de France (TDF)  
Montrouge
- D Mlle NEBES Anne-Marie  
Inspecteur principal des PTT  
Bureau des radiocommunications  
Ministère des PTT  
Paris
- D Mme NIEL Dominique F.M.  
Ingénieur  
Télédiffusion de France (TDF)  
Montrouge
- D M. SAUVET-GOICHON Daniel  
Sous-Directeur Recherche et  
Industrie  
Télédiffusion de France (TDF)  
Montrouge
- D Mme YOUNSI Michèle  
Inspecteur des PTT  
Bureau des radiocommunications  
Ministère des PTT  
Paris
- A M. LADSOUS Hervé  
Deuxième conseiller  
Mission permanente de la France  
Chambésy

**GAB Gabonaise (République) -  
Gabonese Republic -  
Gabonesa (República)**

- C M. EDANE NKWELE Jacques  
Directeur général adjoint  
chargé de la technique  
Radiodiffusion télévision  
gabonaise (RTG)  
Libreville
- CA M. YOMBIYENI Joseph Isidore  
Secrétaire général du Comité de  
coordination des télécommunications  
Office des postes et  
télécommunications (OPT)  
Libreville

**GAB Gabonaise (République) -  
Gabonese Republic -  
Gabonesa (República) (suite)**

- D M. ENGOHANG OBIANG Gaston  
Directeur technique radio  
Radiodiffusion télévision  
gabonaise (RTG)  
Libreville
- D M. NKOGHE N'DONG Louis  
Ingénieur des télécommunications  
Office des postes et  
télécommunications  
Libreville

**GMB Gambie (République de) -  
Gambia (Republic of the) -  
Gambia (República de)**

- C M. TOURE Yankouba  
Radio Gambia  
Banjul

**GHA Ghana - Ghana - Ghana**

- C M. QUARTEY I.Q.  
Deputy Director of Engineering  
Ghana Broadcasting Corporation  
Accra
- D M. JACKSON K.A.  
Chief Technical Coordinator  
Ghana Frequency Regulation  
and Control Board  
Office of the PNDC  
Accra
- D M. SOLOMON J.E.  
Chief Engineer  
Ghana Broadcasting Corporation  
Accra
- A M. ABDULLAH Alhaj M.  
First Secretary  
Permanent Mission of Ghana  
Geneva

**GRC Grèce - Greece - Grecia**

- C M. VIDOURIS D.  
Directeur des archives et  
des communications  
Ministère des affaires étrangères  
Athènes
- CA M. CASMAS A.  
Directeur des services techniques  
ERT - Radiodiffusion-Télévision  
Hellénique  
Athènes
- CA M. HAGER C.  
Chef de Service radio fréquences  
Ministère des communications  
Athènes
- D Mlle GEORGIOU K.  
Ministère des affaires étrangères  
Athènes
- D M. GIANNAKAKIS Nikolaos  
ERT - Radiodiffusion-Télévision  
Hellénique  
Athènes
- D M. KATSELIS G.  
ERT - Radiodiffusion-Télévision  
Hellénique  
Athènes
- D M. KOKOSSIS T.  
Engineer  
ERT - Radiodiffusion-Télévision  
Hellénique  
Athènes

**GUI Guinée (République de) -  
Guinea (Republic of) -  
Guinea (República de)**

- C M. SYLLA Abdourahmane  
Secrétaire général du CNCT  
Secrétariat d'Etat aux postes  
et télécommunications  
Conakry
- D M. CISSE Naby Ibrahima  
Chef de division  
Secrétariat d'Etat aux postes  
et télécommunications  
Conakry
- D M. DOUMBOUYA Laye  
Attaché  
Mission permanente de Guinée  
Genève

**GUI Guinée (République de) -  
Guinea (Republic of) -  
Guinea (República de) (suite)**

- D M. SQUARE Souleymane  
Technicien  
RTG  
Conakry
- D M. SOW Mamadou Diouldé  
Ingénieur chargé de la gestion  
des fréquences  
CNCT  
Secrétariat d'Etat aux postes  
et télécommunications  
Conakry

**END Honduras (République du) -  
Honduras (Republic of) -  
Honduras (República de)**

- C S.E. M. MALDONADO J.M.  
Embajador  
Misión Permanente de Honduras  
Ginebra
- CA M. LAITANO MARTINEZ Humberto  
Jefe Departamento Comprobación  
Técnica  
Dirección de Radiocomunicaciones  
HONDUTEL  
Tegucigalpa

**ENG Hongroise (République populaire) -  
Hungarian People's Republic -  
Húngara (República Popular)**

- C M. VALTER Ferenc  
Deputy Minister, Vice President  
of the Hungarian PTT  
Central Administration of the Hungarian  
Posts and Telecommunications  
Budapest
- CA M. PETE József  
Head of Frequency Section  
Central Administration of the Hungarian  
Posts and Telecommunications  
Budapest
- D M. HECKENAST G.  
Technical Director  
Hungarian Radio  
Budapest

HNG Hongroise (République populaire) -  
Hungarian People's Republic -  
Húngara (República Popular) (suite)

D M. HORVÁTH Ferenc  
Senior Counsellor  
Central Administration of the Hungarian  
Posts and Telecommunications  
Budapest

D M. KISS Csaba  
Hungarian Frequency Bureau  
Budapest

D M. SIMON Gyula  
Senior Counsellor  
Central Administration of the Hungarian  
Posts and Telecommunications  
Budapest

D M. SZABO Miklós  
Head of Department  
Hungarian Broadcasting  
Budapest

D M. SZÉKELY János  
Senior Counsellor  
Central Administration of the Hungarian  
Posts and Telecommunications  
Budapest

A M. SZÉNÁSI György  
Premier secrétaire  
Mission permanente de la  
République populaire hongroise  
Genève

IND Inde (République de l') -  
India (Republic of) -  
India (República de la)

C Dr. RAO M.K.  
Wireless Adviser to the  
Government of India  
Ministry of Communications  
New Delhi

CA M. KHUSHU O.P.  
Ministry of Communications  
New Delhi

D M. AGRAWAL H.O.  
Director Engineering  
All India Radio  
New Delhi

IND Inde (République de l') -  
India (Republic of) -  
India (República de la) (suite)

D M. BHATNAGAR Ashok Kumar  
Deputy Director  
All India Radio  
New Delhi

D Mrs CHAKRABARTY Ratna  
Ministry of Communications  
New Delhi

D M. IYENGAR Raman  
Counsellor  
Permanent Mission of India  
Geneva

D M. JOSHI A.M.  
Joint Wireless Adviser  
Ministry of Communications  
New Delhi

INS Indonésie (République d') -  
Indonesia (Republic of) -  
Indonesia (República de)

C M. WIKANTO R.  
Senior Official  
Department of Posts and  
Telecommunications  
Jakarta

D M. SUMARTONO T.  
Senior Government Official  
Department of Information  
Jakarta

A M. TUPUK SUTRISMO  
Second Secretary  
Indonesian Permanent Mission  
Geneva

IRN Iran (République islamique d') -  
Iran (Islamic Republic of) -  
Irán (República Islámica del)

C Dr. SHERAFAT Ahmad Reza  
Advisor  
Ministry of PTT  
Tehran

CA M. BAHMANI Mohammad Reza  
Head of Frequency Affairs  
Ministry of PTT  
Tehran

IRN Iran (République islamique d') -  
Iran (Islamic Republic of) -  
Irán (República Islámica del)  
(suite)

- CA M. HARANDIAN Mohammad Esmail  
Deputy of the Managing Director  
Islamic Republic of Iran  
Broadcasting  
Tehran
- D M. ETEMADI Mohammad  
Frequency Expert  
Ministry of PTT  
Tehran
- D M. GASPARI Vanand  
Head of Short-Wave Project  
Management  
Islamic Republic of Iran  
Broadcasting  
Tehran
- D M. HASHEMI Mohammad  
Managing Director  
Islamic Republic of Iran  
Broadcasting  
Tehran
- D M. JAVID YAZDI Aflatoon  
Senior Engineer  
HF Planning  
Islamic Republic of Iran  
Broadcasting  
Tehran
- D M. KELISHADI R.  
Chief of Besat-Kamal Abad Station  
Islamic Republic of Iran  
Broadcasting  
Tehran
- D M. MOKHTAR TAJVIDI Saied  
Senior Engineer  
Islamic Republic of Iran  
Broadcasting  
Tehran
- D M. ROSHANFEKR RAD Ahmad  
Director General of  
Telecommunications  
Ministry of PTT  
Tehran
- D M. SALEHIAN Khalil  
Deputy Director of International  
Technical Affairs  
Islamic Republic of Iran  
Broadcasting  
Tehran

IRN Iran (République islamique d') -  
Iran (Islamic Republic of) -  
Irán (República Islámica del)  
(suite)

- D M. TABRIZI Sadegh  
Engineer Besat (Kamal Abad) Station  
Islamic Republic of Iran  
Broadcasting  
Tehran
- D M. VAFAI Fereydoun  
Senior Engineer  
HF Planning  
Islamic Republic of Iran  
Broadcasting  
Tehran
- D M. ZAMANIAN Mashour  
Senior Engineer  
HF Planning  
Islamic Republic of Iran  
Broadcasting  
Tehran

IRQ Iraq (République d') - Iraq  
(Republic of) - Iraq (República del)

- C M. ABACHI Nasi Y.A.  
Chief Engineer  
State Organization of Posts and  
Telecommunications  
Baghdad
- CA M. HINDI A.S.M.  
Chief Engineer  
State Organization of Posts and  
Telecommunications  
Baghdad
- D M. AL KADHI  
Premier secrétaire  
Mission permanente d'Iraq  
Genève
- D M. AL-SAAD Abdul-Wahid  
Chief Engineer  
Iraqi Broadcasting and TV  
Establishment  
Baghdad
- D M. NAOUM Adil Hana  
Chief Engineer  
Iraqi Broadcasting and TV  
Establishment  
Baghdad



**IRL Irlande - Ireland - Irlanda**

- C M. DEMPSEY Thomas  
Staff Engineer  
Telecommunications and  
Radio Technology Division  
Department of Communications  
Dublin
- CA M. KENNINGTON Thomas  
Assistant Principal  
Radio and Broadcasting Division  
Department of Communications  
Dublin
- D M. BREEN John  
Assistant Staff Engineer  
Telecommunications and  
Radio Technology Division  
Department of Communications  
Dublin
- D M. CURLEY Colm  
Radio Telefis Eireann  
RTE  
Dublin

**ISL Islande - Iceland - Islandia**

- C M. HARDARSON Hordur R.  
Engineer  
Posts and Telecommunications  
Administration  
Reykjavik

**ISR Israël (Etat d') - Israel (State of) - Israel (Estado de)**

- C M. SIEV Yaacov  
Vice-President  
Engineering and Planning  
Bezeq Israel Telecommunication  
Corporation  
Jerusalem
- C 1) M. SHAKKED Michael  
Consulting Telecommunications  
Engineer  
Ministry of Communications  
Tel Aviv
- 1) Alternate Head
- CA M. MILLO Avraham  
Minister, Counsellor  
Permanent Mission of Israel  
Geneva

**ISR Israël (Etat d') - Israel (State of) - Israel (Estado de) (suite)**

- D M. FAIRMONT Moss  
Liaison Officer with  
International Organizations  
Ministry of Communications  
Tel Aviv
- D M. KAMINSKI Marian  
Head, HFBC Department  
Israel Telecommunication  
Corporation  
Tel Aviv
- D M. KLEPNER Samuel  
Director of Engineering  
and Licensing  
Ministry of Communications  
Tel Aviv
- D M. LEVIN Zalman  
Chief Engineer  
Broadcasting Department  
Israel Telecommunication  
Corporation  
Tel Aviv
- D M. NAVE Ilan  
First Secretary  
Permanent Mission of Israel  
Geneva
- D M. ORON Giora  
Consulting Engineer  
Ministry of Communications  
Tel Aviv

**I Italie - Italy - Italia**

- C M. PETTI Angelo  
Dirigeant supérieur  
A.S.S.T.  
Roma
- CA M. FARIOLI Marcello  
Vice Dirigeant tlc  
Ministero Poste e Telecomunicazioni  
Direzione Centrale Servizi  
Radioelettrici  
Roma
- D M. BORELLO Paolo  
Fonctionnaire  
RAI - Radiotelevisione Italiana  
Gestione Piani di Trasmissione OC  
Torino

**I Italie - Italy - Italia (suite)**

- D Mlle DAMIA Giovanna  
Directeur Division  
Ministero Poste e Telecomunicazioni  
Direzione Generale - U.R.I.  
Roma
- D M. FORMICA Filippo  
Premier secrétaire  
Mission permanente d'Italie  
Genève
- D Mme INVERNIZZI Maria Luisa  
Dirigeant  
RAI - Radiotelevisione Italiana  
Gestione Piani di Trasmissione OC  
Torino
- D M. LARI Mario  
Directeur, Planning  
RAI - Radiotelevisione Italiana  
Roma
- D M. MAGENTA Alfredo  
Fonctionnaire  
Supporto Tecnico  
Centro Esercizio Trasmettitori  
RAI - Radiotelevisione Italiana  
Roma
- D M. PACIFICI Sandro  
Fonctionnaire  
Supporto Tecnico  
Progettazione Alta Frequenza  
RAI - Radiotelevisione Italiana  
Roma
- D M. SABBADINI Sergio  
Ministry of Foreign Affairs  
Rome
- D M. SCOTTI Aldo  
Fonctionnaire  
RAI - Radiotelevisione Italiana  
Monza
- D M. TERZANI Carlo  
Conseiller pour les relations  
techniques internationales  
RAI - Radiotelevisione Italiana  
Roma

**J Japon - Japan - Japón**

- C M. ARAI Akira  
Director General  
Kanto Telecommunications  
Administration Bureau  
Ministry of Posts and  
Telecommunications  
Tokyo

**J Japon - Japan - Japón (suite)**

- CA M. HAKOISHI Chiyohiko  
Senior Adviser to Director General  
of Telecommunications  
Ministry of Posts and  
Telecommunications  
Tokyo
- CA M. NAKAMURA Mitsuhiro  
Counsellor  
Permanent Mission of Japan  
Geneva
- CA M. YOSHIZAKI Hideo  
Senior Adviser to Director General  
of the Communications Policy Bureau  
Ministry of Posts and  
Telecommunications  
Tokyo
- D M. CHONO Hikaru  
First Secretary  
Permanent Mission of Japan  
Geneva
- D M. KINOSHITA Ichiro  
Section Chief  
International Affairs Division  
Ministry of Posts and  
Telecommunications  
Tokyo
- D M. SATO Kiyoshi  
Deputy Director  
Engineering Division  
Broadcasting Bureau  
Ministry of Posts and  
Telecommunications  
Tokyo
- A M. FUJIOKA Masayoshi  
Adviser  
Ministry of Posts and  
Telecommunications  
Tokyo
- A M. HARA Shozo  
Adviser  
Ministry of Posts and  
Telecommunications  
Tokyo
- A M. HAYASE Wataru  
Adviser  
Ministry of Posts and  
Telecommunications  
Tokyo

J Japon - Japan - Japan (suite)

- A M. IHARA Akio  
Adviser  
Ministry of Posts and  
Telecommunications  
Tokyo
- A M. KURIKI Tomio  
Adviser  
Ministry of Posts and  
Telecommunications  
Tokyo
- A M. MASUKO Yutata  
Adviser  
Ministry of Posts and  
Telecommunications  
Tokyo
- A M. MIZUKOSHI Akio  
Adviser  
Ministry of Posts and  
Telecommunications  
Tokyo
- A M. NAKAMURA Yoshiro  
Adviser  
Ministry of Posts and  
Telecommunications  
Tokyo
- A M. SEKIGUCHI Kinya  
Adviser  
Ministry of Posts and  
Telecommunications  
Tokyo
- A M. TADOKORO Yasushi  
Adviser  
Ministry of Posts and  
Telecommunications  
Tokyo
- A M. TAKENAKA Osamu  
Adviser  
Ministry of Posts and  
Telecommunications  
Tokyo
- A M. TANAKA Hiromasa  
Adviser  
Ministry of Posts and  
Telecommunications  
Tokyo
- A M. TOZUKA Yoshinori  
Adviser  
Ministry of Posts and  
Telecommunications  
Tokyo

JOR Jordanie (Royaume hachémite de) -  
Jordan (Hashemite Kingdom of) -  
Jordania (Reino Hachemita de)

- C 1) M. AL-ARAINI Yusef Aref  
Chief Engineer  
Jordan Radio and Television  
Corporation (JRTV)  
Amman  
1) 3 - 20.2
- C 1) M. ASFOURA Osama Ahmad  
Assistant Director of Engineering  
Jordan Radio and Television  
Corporation (JRTV)  
Amman  
1) 21.2 - 8.3
- D M. IBRAHIM Ahmed Mustafa  
Telecommunications Corporation (TCC)  
Amman
- D M. IBRAHIM Majed Lutfi  
Engineer  
Jordan Radio and Television  
Corporation (JRTV)  
Amman
- D M. MAHMOUD Mohammed Y.M.  
Telecommunication Engineer  
Special Communications Commission  
Ministry of Defence  
Amman
- D M. MALKAWI Hisham Nazem  
Telecommunications Corporation (TCC)  
Amman
- D M. NASHAWATI Mohamed Kamal  
Jordan Radio and Television  
Corporation (JRTV)  
Amman
- D M. SAID Munzer Said Saleh  
Telecommunications Corporation (TCC)  
Amman
- D M. YOUSEF Abdullah Hussein  
Telecommunications Corporation (TCC)  
Amman

- KEN** Kenya (République du) -  
Kenya (Republic of) -  
Kenya (República de)
- C M. CHEMAI Samson Kipkoech  
Kenya Posts and Telecommunications  
Corporation  
Nairobi
- CA M. NGARUIYA Joed  
Chief International Relations  
Kenya Posts and Telecommunications  
Corporation  
Nairobi
- D M. CHALLO Stephen Mushomba  
Senior Engineer  
Kenya Posts and Telecommunications  
Corporation  
Nairobi
- D M. GITHUA Daniel Kariuki  
Development Engineer  
Voice of Kenya  
Nairobi
- D M. KIMANI James Peter  
Chief Engineer  
Voice of Kenya  
Nairobi
- D M. THIONGO John Patrick  
Assistant Chief Engineer  
Voice of Kenya  
Nairobi
- KWT** Koweït (Etat du) - Kuwait  
(State of) - Kuwait (Estado de)
- C M. AL-MAZEEDI Jawad Abdullah  
Director of Engineering  
Ministry of Information  
Safat
- CA M. AL-FURAIHI Abdul Aziz M.S.  
Director of Frequency Lic.  
Management  
Ministry of Communications  
Safat
- CA M. MOHAMMED Ahmed Abdullah  
Chief Engineer  
Radio Kuwait  
Ministry of Information  
Safat
- KWT** Koweït (Etat du) - Kuwait  
(State of) - Kuwait (Estado de)  
(suite)
- CA M. AL-SUNEEN Abdulwahab Ali  
Head of Frequency Section  
Ministry of Communications  
Safat
- D M. AL-HADDAD Sulaiman Yousef  
Assistant Engineer  
Ministry of Information  
Safat
- D M. HEJAZI Mohammed Abdul Latif  
Controller of TV Transmitters  
Ministry of Information  
Safat
- D M. JAF'FAR Ali N.  
Chief, Frequency Management  
Radio Kuwait  
Ministry of Information  
Safat
- D M. SHEHADA Jamal Hussein  
Controller of Frequency  
& Maintenance  
Ministry of Information  
Safat
- ISO** Lesotho (Royaume du) -  
Lesotho (Kingdom of) -  
Lesotho (Reino de)
- C M. MOETI R.T.  
Chief Technical Officer  
Ministry of Information and  
Broadcasting  
Maseru
- LR** Libéria (République du) -  
Liberia (Republic of) -  
Liberia (República de)
- C M. HOFF Julius F.  
Assistant Minister for  
Telecommunications and Planning  
Ministry of Posts and  
Telecommunications  
Monrovia
- CA M. GARGARD S.J.M.  
Deputy Managing Director  
Liberia Telecommunications  
Corporation  
Monrovia

**LBR** Libéria (République du) -  
Liberia (Republic of) -  
Liberia (República de) (suite)

D M. GIBSON Winston  
Operations Manager  
Liberia Telecommunications  
Corporation  
Monrovia

**LBY** Libye (Jamahiriya arabe libyenne  
populaire et socialiste) - Libya  
(Socialist People's Libyan Arab  
Jamahiriya) - Libia (Jamahiriya  
Árabe Libia Popular y Socialista)

C M. LUTFI Walid A.  
Chief of Technical Planning  
Section  
Secretariat of General People's  
Committee of Information and  
Culture  
Tripoli

D M. ABUKHRIS Ali  
Co-manager, Administration  
of Frequencies  
Ministry of Transportation  
Tripoli

D M. AL-MEJRAB Yousef  
Broadcasting Engineer  
Libyan Broadcasting  
Tripoli

D M. EL-MAHJOUB Ammar G.  
Technical Director  
Libyan Broadcasting  
Tripoli

D M. ELHASOUUNI Mohamed  
Engineer in Frequency  
Administration  
Ministry of Transportation  
Tripoli

D M. KRAWA Hussein  
Engineer  
Planning Department  
Section of Information  
Tripoli

D M. SABER Ali M.  
Engineer  
Secretariat of Information  
Tripoli

D M. SALEM ABDELHADI Salem  
Libyan Broadcasting  
Tripoli

**LBY** Libye (Jamahiriya arabe libyenne  
populaire et socialiste) - Libya  
(Socialist People's Libyan Arab  
Jamahiriya) - Libia (Jamahiriya  
Árabe Libia Popular y Socialista)  
(suite)

D M. SEBIE Emhemed S.  
Frequency Management  
General Posts and Telecommunications  
Administration  
Tripoli

D M. ZAREBA Mahmoud M.  
Director, Planning  
General Posts and Telecommunications  
Administration  
Tripoli

**LUX** Luxembourg - Luxembourg - Luxemburgo

C M. HEINEN Marcel  
Ingénieur chef de division  
Administration des P et T  
Luxembourg

CA M. ERPELDING Armand  
Ingénieur, Inspecteur principal  
1er en rang  
Administration des P et T  
Luxembourg

D M. DEITZ Edouard  
Ingénieur technicien de la CLT  
Radio Télé Luxembourg  
Luxembourg

D M. HERZOG Marc  
Ingénieur en chef de la CLT  
Administration des P et T  
Luxembourg

D M. MAACK Léon  
Directeur technique de la CLT  
Administration des P et T  
Luxembourg

D M. THURMES Roland  
Ingénieur technicien  
Administration des P et T  
Luxembourg

D M. WANGEN Edouard  
Ingénieur technicien  
Administration des P et T  
Luxembourg

**LUX** Luxembourg - Luxembourg - Luxemburgo  
(suite)

D M. ZAHLES René  
Représentant permanent adjoint  
Mission permanente de Luxembourg  
Genève

**MDG** Madagascar (République démocratique  
de) - Madagascar (Democratic Republic  
of) - Madagascar (República  
Democrática de)

C M. RAKOTOARIVELO Benjamin  
Chef du Service Réseau Radio  
Radiotélévision Malagasy  
Tananarive

CA M. RANDRIANARIVELO Paul Armand  
Chef de Service de la  
programmation  
Direction générale de l'Information  
Ministère de l'Information  
Antananarivo

**MLA** Malaisie - Malaysia - Malasia

C M. ISMAIL BIN OSMAN  
Director Frequency Management  
Telecoms Malaysia  
Kuala Lumpur

D M. SHAHADAN Abdullah  
Engineer-in-charge  
(Transmission and Monitoring)  
Department of Broadcasting  
Kuala Lumpur

**MLD** Maldives (République des) -  
Maldives (Republic of) -  
Maldivas (República de)

C M. SHAREEF Hussain  
Deputy Director  
Department of Posts and  
Telecommunications  
Male

D M. MANIKU Ahmed  
Chief Engineer  
Voice of Maldives  
Department of Information and  
Broadcasting  
Male

**MLI** Mali (République du) - Mali  
(Republic of) - Malí (República de)

C M. SISSOKO Sikon  
Chef de la division transmission  
des télécommunications  
Office des postes et  
télécommunications  
Bamako

CA M. COULIBALY Sékou  
Chef de la division technique  
Radiodiffusion télévision du Mali  
Bamako

CA M. SAMAKE Idrissa  
Directeur régional  
Office des postes et  
télécommunications  
Bamako

D M. TRAORE Nouhoum  
Chef de centre haute fréquence  
Radiodiffusion télévision du Mali  
Bamako

**MLT** Malte (République de) - Malta  
(Republic of) - Malta (República de)

C H.E. Mr. GAUCI Victor J.  
Ambassador  
Permanent Mission of the Republic of  
Malta  
Geneva

CA M. BARTOLO Joseph F.  
Head, Wireless Telegraphy Branch  
Office of the Prime Minister  
Valletta

D M. LATEO Albert J.  
Inspector of Wireless Telegraphy  
Office of the Prime Minister  
Valletta

D M. SPITERI George J.  
Inspector of Wireless Telegraphy  
Office of the Prime Minister  
Valletta

- MRC** Maroc (Royaume du) - Morocco  
(Kingdom of) - Marruecos (Reino de)
- C S.E. M. BENHIMA Ghali  
Ambassadeur  
Mission permanente du Maroc  
Genève
- CA M. TOUMI Ahmed  
Ministère des postes et  
télécommunications  
Rabat
- D M. HAMMOUDA Mohamed  
Chef de Service études  
et planification  
Radiodiffusion télévision  
marocaine  
Rabat
- D Mlle NAAMAN Khadija  
Ministère de l'information  
Rabat
- M. BENDAOUD Abderrahim  
Premier secrétaire  
Mission permanente du Maroc  
Genève
- MTN** Mauritanie (République islamique  
de) - Mauritania (Islamic Republic  
of) - Mauritania (República  
Islámica de)
- C M. EL HADJ OUMAR Ould Mohamed Vall  
Chef de Service études et  
approvisionnement  
Office de radiodiffusion  
télévision de Mauritanie  
Nouakchott
- MEX** Mexique - Mexico - México
- C M. BROWN HERNANDEZ Luis Manuel  
Jefe del Departamento de  
Registro y Planificación  
Dirección General de Normatividad  
y Control de Comunicaciones  
Secretaría de Comunicaciones  
y Transportes  
Mexico
- CA Mme RAMIREZ DE ARELLANO Rosa María  
Directora de Consulta y  
Estudios Jurídicos  
Dirección General de Asuntos  
Jurídicos  
Secretaría de Comunicaciones y  
Transportes  
Mexico
- MEX** Mexique - Mexico - México (suite)
- D Mme ARCE M.A.  
Segundo Secretario  
Misión Permanente de México  
Ginebra
- D M. ARRIAZOLA PETO RUEDA Armando  
Tercer Secretario  
Misión Permanente de México  
Ginebra
- D M. GUTIERREZ QUIROZ Alejandro  
Jefe de la Oficina de Control  
Internacional del Espectro  
Radioeléctrico  
Dirección General de Normatividad  
y Control de Comunicaciones  
Secretaría de Comunicaciones  
y Transportes  
Mexico
- A M. SALGADO GALICIA Héctor  
Jefe del Departamento local  
de Ingeniería  
Telecomunicaciones de Salamanca  
Petróleos Mexicanos  
Mexico
- MOO** Monaco - Monaco - Mónaco
- C M. SOLAMITO César Charles  
Responsable des postes et  
télécommunications  
Direction générale des postes et  
télécommunications  
Monaco
- D M. ALLAVENA Lucien  
Ingénieur  
Direction générale des postes et  
télécommunications  
Monaco
- MNG** Mongolie (République populaire de) -  
Mongolian People's Republic -  
Mongolia (República Popular de)
- C S.E. M. BAYART Luvsandorj  
Ambassadeur  
Mission permanente de Mongolie  
Genève
- D Mme BANZRAGCHI Luvsanchimid  
Officer  
Ministry of Telecommunication  
Ulan Bator

- NGR Niger (République du) -  
Niger (Republic of the) -  
Níger (República del)**
- C M. MOUNGA Hayaki  
Chef de centre émetteur  
de radiodiffusion  
Office de radiodiffusion  
télévision du Niger  
Niamey
- NIG Nigéria (République fédérale du) -  
Nigeria (Federal Republic of) -  
Nigeria (República Federal de)**
- C M. FASANVA J.O.  
Attaché  
Permanent Mission of Nigeria  
Geneva
- D M. OIEPOLA E.A.  
Third Secretary  
Permanent Mission of Nigeria  
Geneva
- NOR Norvège - Norway - Noruega**
- C M. BOE Thormod  
Chief Engineer  
Norwegian Telecommunications  
Administration  
Oslo
- D M. JOHNSEN Ingar  
Senior Engineer  
Norwegian Telecommunications  
Administration  
Oslo
- A M. GRIMDALEN Olav  
Engineer  
Norwegian Telecommunications  
Administration  
Oslo
- A M. ØVENSEN Tore  
Chief Engineer  
Norsk Rikskringkasting  
Oslo
- A M. THOKLE Erling  
Programme Director  
Radio Norway International  
Oslo
- NZL Nouvelle-Zélande - New Zealand -  
Nueva Zelandia**
- C M. SHILLING Harry Edwin  
Divisional Engineer  
Engineer in Chiefs Office  
Post Office Headquarters  
Wellington
- D M. BRACEGIRDLE A.M.  
First Secretary  
New Zealand Permanent Mission  
Geneva
- D M. INGE Stephen Russel  
Principal Engineer  
Broadcasting Engineering Centre  
Broadcasting Corporation of  
New Zealand  
Wellington
- OMA Oman (Sultanat d') -  
Oman (Sultanate of) -  
Omán (Sultanía de)**
- C M. AL-KINDY Hamed Yahya  
Director, Technical Office  
Ministry of Information  
Muscat
- D M. AL-BALUSHI Ahmed Abdulrahman  
Technical Adviser to the Minister  
Ministry of Information  
Muscat
- PAK Pakistan (République islamique du) -  
Pakistan (Islamic Republic of) -  
Pakistán (República Islámica del)**
- C M. IRFANULLAH Khan  
Director of Engineering  
Pakistan Broadcasting Corporation  
Islamabad
- CA M. SHEIKH Ghulam Muheyyuddin  
Chief Engineer  
Overseas Communications  
Pakistan Telegraphs and  
Telephones Department  
Islamabad
- D M. MALIK Nazir Ahmad  
Controller, Planning and Research  
Pakistan Broadcasting Corporation  
Islamabad



PNG	Papouasie-Nouvelle-Guinée - Papua New Guinea - Papua Nueva Guinea	HOL	Pays-Bas (Royaume des) - Netherlands (Kingdom of the) - Países Bajos (Reino de los) (suite)
C	M. ONA Stan Manager Spectrum Engineering Posts and Telecommunications Corporation Port Moresby	D	M. BLIEK J.J. Senior Technical Officer PTT Headquarters The Hague
CA	M. RAILTON Hugh Controller Spectrum Management Posts and Telecommunications Corporation Port Moresby	D	M. BROERE J.F. Head Policy Branch Radio Control Service Groningen
D	M. KUNDIN William Deputy Chairman National Broadcasting Commission Port Moresby	D	M. MILIUS H.C. Senior Technical Officer PTT Headquarters The Hague
D	M. KUSINGGI Dominic Director Engineering National Broadcasting Commission Port Moresby	D	M. VAN AMSTEL W. Coordinator for Matters of Frequency Management PTT Headquarters The Hague
PRG	Paraguay (République du) - Paraguay (Republic of) - Paraguay (República del)	D	M. VASTENHOUD Jim Engineering Consultant Radio Nederland Hilversum
C	M. MONTANARO Sabino Ernesto Gerente de Servicios Tecnicos Administración Nacional de Telecomunicaciones ASUNCION	D	M. VERHEUGD Cornelis Hendrikus Director General Radio Nederland Hilversum
CA	M. LOPEZ ZAYAS Osmar Guillermo Jefe Departamento Tecnico Dirección de Radiocomunicaciones ASUNCION	D	M. WOLFFERS Engelbert J.H. Deputy Head, Technical and Financial Affairs Section Radio, Television and Press Directorate Ministry of Welfare, Health and Cultural Affairs The Hague
HOL	Pays-Bas (Royaume des) - Netherlands (Kingdom of the) - Países Bajos (Reino de los)	D	M. ZANDVLIET J.W.C. Plenipotentiary Minister Permanent Mission of the Netherlands Geneva
C	M. NEUBAUER F.R. Advisor on Radiotechnical Affairs PTT Headquarters The Hague	A	M. BAKHUIZEN J. Frequency Management Engineer Radio Nederland Wereldomroep Hilversum
CA	M. DE ZWART H.K. Head of the Radio and Television Broadcasting Branch PTT Headquarters The Hague		

PRU	Pérou - Peru - Perú	POL	Pologne (République populaire de) - Poland (People's Republic of) - Polonia (República Popular de) (suite)
C	M. GONZALES TERRONES Javier Ministro, Representante permanente alterno Misión Permanente del Perú Ginebra	D	M. CZEMPINSKI Gromosław Councillor Ministerstwo Łączności Warszawa
PHL	Philippines (République des) - Philippines (Republic of the) - Filipinas (República de)	D	Mrs GRODZICKA Filomena Chief of Section Ministerstwo Łączności Warszawa
C	M. SIBAL Rosauo Commissioner National Telecommunications Commission Quezon City	D	Mrs HAJDUK Jolanta Councillor Ministerstwo Łączności Warszawa
CA	Mme MARCELO Sylvia Chief, Broadcast Service Department National Telecommunications Commission Quezon City	D	M. LISICKI Wacław Expert principal Ministerstwo Łączności Warszawa
A	M. DIZON Jr. Roberto N. Assistant Managing Director Far East Broadcasting Co. Manila	D	M. NOWAKOWSKI Zdzisław Councillor Ministerstwo Łączności Warszawa
A	M. LLAVORE Honorio Supervisor, Frequency Management Section Philippine Radio Educational and Information Center-Radio Veritas Manila	D	M. RAU Roman Radio Engineer Ministerstwo Łączności Warszawa
		D	M. RUTKOWSKI Jerzy Adviser to the Minister Ministerstwo Łączności Warszawa
POL	Pologne (République populaire de) - Poland (People's Republic of) - Polonia (República Popular de)	D	M. WESOŁOWSKI Czesław Engineer Ministerstwo Łączności Warszawa
C	M. BLASZKOW Andrzej Deputy Minister Ministry of Posts and Telecommunications Ministerstwo Łączności Warszawa	A	M. MAKUCH Edward Polish Committee on Radio and Television Warszawa
CA	M. FAJKOWSKI Janusz Director of Department Ministry of PTT Ministerstwo Łączności Warszawa	A	M. PIETRUSKI Mieczysław Polish Committee on Radio and Television Warszawa

**FOR Portugal - Portugal - Portugal**

- C M. COSTA Miguel António I.H.  
Vice-Président du conseil  
d'administration des PTT  
Correios e Telecomunicações  
de Portugal  
Lisboa
- CA M. AQUILES DE OLIVERA Emilio  
Conseiller économique  
Mission permanente du Portugal  
Genève
- CA M. CARNEIRO Rogerio Simões  
Directeur des services de  
radiocommunications des PTT  
Direcção dos Serviços de  
Radiocomunicações dos CTT  
Lisboa
- CA M. FRANCO Domingos António Pires  
Ingénieur en chef  
Direcção dos Serviços de  
Radiocomunicações dos CTT  
Lisboa
- D M. ABRANTES Luis Manuel Martins  
Ingénieur en chef  
Radiodifusão Portuguesa  
Lisboa
- D Mme MENDES Maria Luisa C. M.  
Ingénieur en chef  
Direcção dos Serviços de  
Radiocomunicações dos CTT  
Lisboa
- D M. RIDE Carlos de Sousa Baptista  
Ingénieur en chef  
RARET - Sociedade de Radio  
Retransmissão Lda.  
Lisboa

**QAT Qatar (Etat du) - Qatar (State of) -  
Qatar (Estado de) (suite)**

- A M. ERLEVENT H. Alev  
UNDP/ITU Project Manager  
Ministry of Information  
Doha
- SYR République arabe syrienne -  
Syrian Arab Republic -  
República Árabe Siria**
- C Dr. BARA Michel  
Director of Engineering  
Syrian Radio and TV Authority  
Damascus
- D Mrs AL ARJA Khadije  
Engineer  
Syrian Radio and TV Authority  
Damascus
- D M. ATFI Bashir  
Engineer  
Syrian PTT  
Damascus
- D M. KHALIL Ali  
Engineer  
Syrian PTT  
Damascus
- D M. MOUSSA Badi  
Electrical Department  
Ministry of Radio Telecommunications  
Damascus
- D M. SULAYMAN Ali  
Engineer  
Syrian PTT  
Damascus

**QAT Qatar (Etat du) - Qatar (State of) -  
Qatar (Estado de)**

- C M. QASSEM Q.  
Controller of Engineering Sections  
Qatar Broadcasting Services  
Ministry of Information  
Doha
- D M. AL-MUSLIH Abdulrazzaq Abubaker  
Head of Frequency Division  
Engineering Department  
Ministry of Information  
Doha

**DDR République démocratique allemande -  
German Democratic Republic -  
República Democrática Alemana**

- C Dr. HAMMER Hans-Jürgen  
Deputy Minister  
Ministry of Posts and  
Telecommunications  
Berlin
- CA M. GOTZE Herbert  
Head of Division  
Ministry of Posts and  
Telecommunications  
Berlin

DDR	République démocratique allemande - German Democratic Republic - República Democrática Alemana (suite)	UKR	République socialiste soviétique d'Ukraine - Ukrainian Soviet Socialist Republic - República Socialista Soviética de Ucrania
D	Mrs CALOV Hannelore Scientific Adviser Ministry of Posts and Telecommunications Berlin	C	M. DELIKATNYI Vladimir Ministre des postes et télécommunications Kiev
D	M. HENSE Bernd-Uwe Head of Division Staatliches Komitee für Rundfunk beim Ministerrat der DDR Berlin	CA	M. BOGOUNENKO Edouard Deputy Chief Engineer Ministry of Posts and Telecommunications Kiev
D	Dr. MUELLER Eberhard Head of Division Ministry of Posts and Telecommunications Berlin	ROU	Roumanie (République socialiste de) - Romania (Socialist Republic of) - Rumania (República Socialista de)
D	Dr. SYDOW Werner Deputy Chairman Staatliches Komitee für Rundfunk beim Ministerrat der DDR Berlin	C	S.E. M. DOLGU M.G. Ambassadeur Mission permanente de Roumanie Genève
KRE	République populaire démocratique de Corée - Democratic People's Republic of Korea - República Popular Democrática de Corea	CA	Dr. CONSTANTINESCU L. Chef, Département Radio Direction générale des postes et télécommunications Ministère des transports et télécommunications Bucuresti
C	M. KIM Rye Hyon Director Ministry of Posts and Telecommunications Pyongyang	D	M. DAN Sandu Premier secrétaire Mission permanente de Roumanie Genève
D	M. HWANG CHOL PUNG Director Ministry of Posts and Telecommunications Pyongyang	D	M. POPA M. Gheorghe Ingénieur Direction générale des postes et télécommunications Ministère des transports et télécommunications Bucuresti
D	M. LI Jung Won Director of Central Frequency Monitoring Station Ministry of Posts and Telecommunications Pyongyang	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
D	M. LI Suk Yong Senior Officer Ministry of Posts and Telecommunications Pyongyang	C	Sir GRAHAM John A.N. Ambassador (RTD) Foreign and Commonwealth Office London

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 (suite)

CA M. CLARK G.  
Counsellor  
Foreign and Commonwealth Office  
London

CA Dr. DURKIN John  
Director General of Radio Technology  
Department of Trade and Industry  
London

CA M. MANSELL Gerard E.H.  
Leader of BBC Delegation  
BBC External Services  
London

D M. BARCLAY L.W.  
Deputy Director  
Radiocommunications Division  
Department of Trade and Industry  
London

D M. BOON Peter  
Member, WARC-HFBC Unit  
Foreign and Commonwealth Office  
London

D M. CORBETT Dennis John  
Chief Engineer  
BBC External Broadcasting  
BBC External Services  
London

D M. CORBETT M.A.  
First Secretary  
Foreign and Commonwealth Office  
London

D M. DAVEY Ian Edward  
Senior Engineer  
BBC External Services  
London

D M. DAVID T.J.  
First Secretary  
UK Permanent Mission  
Geneva

D M. DAVIES Michael Peter  
Radiocommunications Division  
Department of Trade and Industry  
London

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 (suite)

D M. EDWARDS Keith  
Consultant  
Radiocommunications Division  
Department of Trade and Industry  
London

D M. HARRISON Michael B.M.  
Special Assistant to Managing  
Director  
BBC External Services  
London

D M. HUGHES Peter  
Second Secretary  
UK Permanent Mission  
Geneva

D M. LEGGATT P.  
Chief Engineer External Relations  
British Broadcasting Corporation  
London

D Mrs LEMON T.L.  
Personal Secretary  
Radiocommunications Division  
Department of Trade and Industry  
London

D Dr. MARSHALL Alan  
Head of Branch 1  
Radiocommunications Division  
Department of Trade and Industry  
London

D M. MOORE David E.R.  
Higher Executive Officer  
Frequency Policy Section  
Radiocommunications Division  
Department of Trade and Industry  
London

D M. MOSS David  
Deputy Permanent Representative  
UK Permanent Mission  
Geneva

D 1) M. O'NEILL John  
Radiocommunications Division  
Department of Trade and Industry  
London

1) Conference Officer

- 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 (suite)
- D S.E. M. SANKEY John  
Ambassador  
UK Permanent Mission  
Geneva
- D M. SPELLS Geoffrey Stanley  
Senior Engineer  
British Broadcasting Corporation  
London
- D M. TAIT Brian  
Research Engineer  
British Broadcasting Corporation  
Research Department  
Tadworth
- D Mlle TAIT Catherine Mary  
Secretary to Chief Engineer  
BBC External Broadcasting  
BBC External Services  
London
- D M. THOMPSON Dennis  
Head of Transmission Planning Unit  
External Services  
British Broadcasting Corporation  
London
- D Mlle TOWNSEND Isabel  
Foreign and Commonwealth Office  
London
- D M. WHEELER Fraser  
Third Secretary  
UK Permanent Mission  
Geneva
- D M. WILLMETS David Prebble  
Head of Regulatory Section  
Radiocommunications Division  
Department of Trade and Industry  
London
- A Dr. NARAIN Mahindra G.  
Department of Politics  
University of Lancaster  
Lancaster
- A M. NIEDUSZYNSKI Anthony John  
Under Secretary  
Head of Radiocommunications Division  
Department of Trade and Industry  
London
- RRW Rwandaise (République) - Rwandese Republic - Rwandesa (República)
- C M. SEBAPIRA Laurent  
Directeur technique des télécommunications  
Direction générale des télécommunications  
Ministère des transports et des communications  
Kigali
- CA M. SERUGENDO Joseph  
Directeur technique  
Office Rwandais d'information  
Kigali
- SEN Sénégal (République du) - Senegal (Republic of) - Senegal (República del)
- C M. NDIONGUE Cheikh Tidiane  
Conseiller technique en télécommunications  
Ministère de la Communication  
Dakar
- D M. CISSE Mademba  
Directeur des affaires internationales et de la coopération  
Société nationale des télécommunications (SONATEL)  
Dakar
- D M. CISSE Mamadou  
Chef du Département de la coopération  
Société nationale des télécommunications (SONATEL)  
Dakar
- D M. DIALLO M. Seydou  
Ingénieur, Chef des services techniques radio  
Office de radiodiffusion télévision du Sénégal  
Dakar
- D M. FALL Makhtar  
Chef, Service gestion des fréquences  
Société nationale des télécommunications (SONATEL)  
Dakar

- SNG** Singapour (République de) -  
Singapore (Republic of) -  
Singapur (República de)
- C** M. SIM Choon Hin  
Senior Executive Engineer  
(Transmission)  
Singapore Broadcasting Corporation  
Singapore
- D** M. LIM Choon Sai  
Departmental Manager  
(Regulations and Licensing)  
Telecoms Headquarters  
Singapore
- SOM** Somalie (République démocratique) -  
Somali Democratic Republic -  
Somalí (República Democrática)
- C** M. KAHIN Mohamed Hassan  
Director General Radio and TV  
Ministry of Information  
Mogadishu
- D** M. KHALIF Ahmed Khalif Mohamud  
Radio Broadcasting Engineer  
Ministry of Information and  
National Guidance  
Mogadishu
- CIN** Sri Lanka (République socialiste  
démocratique de) - Sri Lanka  
(Democratic Socialist Republic of) -  
Sri Lanka (República Socialista  
Democrática de)
- C** M. PADMASIRI Thoranege Dhammika  
Director Engineering  
Sri Lanka Broadcasting Corporation  
Colombo
- D** Miss PERERA Biyanwilage Maneesha  
Engineer  
Spectrum Management  
Department of Telecommunications  
Colombo
- S** Suède - Sweden - Suecia
- C** M. BJORNSJO J. Krister  
Manager, Planning,  
Standards and Approvals  
Frequency Management  
Swedish Telecom Radio  
Farsta
- CA** M. OLSTRUP Bertil  
Manager, Sound Broadcasting  
Swedish Telecom Radio  
Farsta
- D** M. GUSTAFSSON Bengt  
Director  
Radio Sweden International  
Stockholm
- D** M. HAMBERG Lars  
Program Director  
Radio Sweden International  
Stockholm
- D** M. SANDSTROM E. Anders  
Manager, Broadcasting  
Swedish Telecom Radio  
Farsta
- A** M. DANIELSSON Lars  
First Secretary  
Permanent Mission of Sweden  
Geneva
- A** M. LEJERKRANS Jan-Erik  
Radio Department  
Swedish Telecommunication  
Administration  
Farsta
- SUI** Suisse (Confédération) -  
Switzerland (Confederation of) -  
Suiza (Confederación)
- C** M. SCHWARZ Ernst  
Chef de division  
Division équipements des  
radiocommunications  
Direction générale des PTT  
Berne
- CA** M. KIEFFER Henry  
Chef de section  
Section gestion des fréquences et  
régale des émissions  
Direction générale des PTT  
Berne

**SUI** Suisse (Confédération) -  
Switzerland (Confederation of) -  
Suiza (Confederación) (suite)

- D M. ALLEMANN Urs  
Avocat, adjoint scientifique  
Service de la radio et de la  
télévision, Secrétariat général  
Département fédéral des transports,  
des communications et de l'énergie  
Berne
- D M. BADERTSCHER Paul  
Chef de département  
Radio Suisse Internationale  
Berne
- D M. FREI William  
Secrétaire d'ambassade  
Mission permanente de la Suisse près  
les organisations internationales  
Genève
- D M. HAAS Werner  
Adjoint  
Section gestion de l'exploitation  
Direction générale des PTT  
Berne
- D M. LOMBARD Nicolas  
Chef de département  
Radio Suisse Internationale  
Berne

**SUR** Suriname (République du) -  
Suriname (Republic of) -  
Suriname (República de)

- C M. NEEDE Johan Ricardo  
Director  
Telesur  
Paramaribo

**SWZ** Swaziland (Royaume du) -  
Swaziland (Kingdom of) -  
Swazilandia (Reino de)

- C M. MOTSA Cyprian Sipho  
Manager, Traffic  
Posts and Telecommunications  
Mbabane
- D M. MOTSA Christopher  
Senior Technical Officer  
Swaziland Broadcasting and  
Information Services  
Mbabane

**SWZ** Swaziland (Royaume du) -  
Swaziland (Kingdom of) -  
Swazilandia (Reino de) (suite)

- D M. SIKHONDZE John Selby  
Director of Posts and  
Telecommunications  
Mbabane

**TZA** Tanzanie (République-Unie de) -  
Tanzania (United Republic of) -  
Tanzanía (República Unida de)

- C M. MKONGWE E.A.H.  
Senior Radio Engineer  
Radio Tanzania  
Dar-es-Salaam
- CA M. MANGE Emmanuel T.K.  
Executive Engineer  
Tanzania Posts and  
Telecommunications Corporation  
Dar-es-Salaam

**TCH** Tchécoslovaque (République  
socialiste) - Czechoslovak Socialist  
Republic - Checoslovaca (República  
Socialista)

- C M. LOSINSKÝ Jaroslav  
Vice Minister  
Federal Ministry of Posts  
and Telecommunications  
Praha
- CA M. DUSÍK Milan  
Chef de la section des  
radiocommunications  
Ministère fédéral des postes  
et télécommunications  
Praha
- CA M. KRÁLÍK Frantisek  
Chef de la section des fréquences  
Ministère fédéral des postes  
et télécommunications  
Praha
- D M. MAZUR Ján  
Ingénieur spécialiste  
Ministère fédéral des postes  
et télécommunications  
Praha



**TCH Tchecoslovaque (République socialiste) - Czechoslovak Socialist Republic - Checoslovaca (República Socialista) (suite)**

D M. ROUCKA Bohuslav  
Federal Ministry of Posts  
and Telecommunications  
Praha

**THA Thaïlande - Thailand - Tailandia**

C M. PORNSUTEE Kraisor  
Director, Office of Frequency  
Management  
Post & Telegraph Department  
Bangkok

CA M. JITHAVECH Suwatt  
Director, Radio Engineering  
and Licensing Division  
Public Relations Department  
National Broadcasting Services of  
Thailand  
Bangkok

D M. RONGSAWAT Choosak  
Engineer  
Public Relations Department  
National Broadcasting Services of  
Thailand  
Bangkok

**TGO Togolaise (République) -  
Togolese Republic -  
Togolesa (República)**

C 1) M. AKPAKI Koffi Ossandjou  
Ingénieur des travaux  
Centre émetteur de Togblékopé  
Radiodiffusion du Togo  
Lomé

1) 9 - 20.2

C 1) M. GNASSOUNOU-AKPA Kouassi  
Ingénieur coordonnateur  
Direction générale de  
l'information  
Lomé

1) 26.2 - 8.3

**TUN Tunisie - Tunisia - Túnez**

C M. MONGI Chaffai  
Directeur général de la  
télédiffusion  
Ministère des communications  
Tunis

CA M. BCHINI Mohamed Salem  
Sous-Directeur des radiocommunications  
et réseaux spécialisés  
Direction générale des  
télécommunications  
Tunis

D M. BETTAIEB Bechir  
Chef de service  
Télédiffusion  
Tunis

D M. DAHECHE Salah  
Ingénieur  
Télédiffusion  
Tunis

D M. DOUIHECH H.  
Chef de la Division technique  
Direction des transmissions  
Tunis

D M. KHLASS Sadok  
Chef du service des transmissions  
Direction des transmissions  
Tunis

A M. BOUFARES Habib  
Conseiller  
Mission permanente de la Tunisie  
Genève

**TUR Turquie - Turkey - Turquía**

C 1) M. GOKSEL Ibrahim  
Director General of  
Radiocommunications  
General Directorate of  
Radiocommunications (TGM)  
Ministry of Transportation  
and Communications  
Ankara

1) 1 - 8.3

C 1) M. GURSOY Hayrettin  
CA2) Deputy Technical Director General  
Turkish Radio and Television  
Corporation  
Ankara

1) 2 - 28.2

2) 1 - 8.3

**TUR Turquie - Turkey - Turquía (suite)**

- D Mrs CENKCILER Dilek  
Engineer  
Turkish Radio and Television  
Corporation  
Ankara
- D M. GÜLER Hüseyin  
Deputy, System Planning  
Department  
General Directorate of  
Radiocommunications (TGM)  
Ministry of Transportation  
and Communications  
Ankara
- D M. KURU Yücel  
Deputy, Frequency Planning  
Department  
General Directorate of  
Radiocommunications (TGM)  
Ministry of Transportation  
and Communications  
Ankara
- D M. SAYRAÇ Timur  
Chief Engineer  
Turkish Radio and Television  
Corporation  
Ankara
- D M. TULOMEN Ali  
Deputy Technical Director General  
General Directorate of  
Radiocommunications (TGM)  
Ministry of Transportation  
and Communications  
Ankara
- D Mrs UNVER Meral  
Chief Engineer  
Turkish Radio and Television  
Corporation  
Ankara

**URS Union des Républiques socialistes  
soviétiques - Union of Soviet  
Socialist Republics - Unión de  
Repúblicas Socialistas Soviéticas**

- C M. BADALOV Ashot  
Deputy Minister  
Ministry of Posts and  
Telecommunications  
Moscow

**URS Union des Républiques socialistes  
soviétiques - Union of Soviet  
Socialist Republics - Unión de  
Repúblicas Socialistas Soviéticas  
(suite)**

- CA M. ISSAIEV Alexandre N.  
Deputy Director, Research and  
Scientific Radio Institute  
Ministry of Posts and  
Telecommunications  
Moscow
- D M. DMITRIEV Leonid N.  
Engineer  
Ministry of Posts and  
Telecommunications  
Moscow
- D M. GLEBOV Igor  
Ministère de l'Industrie  
d'équipements PTT  
Moscow
- D M. GRINTSOV Anatoli V.  
Ministry of Posts and  
Telecommunications  
Moscow
- D M. KHLIBNIKOV Valewin I.  
State Committee for Television  
and Radio  
Moscow
- D M. KRIVOSHEEV Mark J.  
Chief of Department  
Radio Research Institute  
Ministry of Posts and  
Telecommunications  
Moscow
- D M. LIOUTOV Vladimir S.  
Inspection générale des  
télécommunications  
Ministère des postes et  
télécommunications  
Moscow
- D M. MALTSEV Yuri V.  
Expert, Department of International  
Economic Relations  
Ministry of Foreign Affairs  
Moscow
- D M. NIKOULIN Y.G.  
Deuxième secrétaire  
Mission permanente de l'URSS  
Genève

URS Union des Républiques socialistes soviétiques - Union of Soviet Socialist Republics - Unión de Repúblicas Socialistas Soviéticas (suite)

D M. SERGEIEV Oleg I.  
Ministry of Posts and Telecommunications  
Moscow

D M. SOKOLOV Andrei I.  
State Inspectorate of Telecommunications  
Moscow

D M. TCHERNOV Youri A.  
Ministry of Posts and Telecommunications  
Moscow

D M. TIMOFEEV Valeri V.  
Chief of Division  
Radio Research Institute  
Ministry of Posts and Telecommunications  
Moscow

D M. TITOV Anatoli T.  
Ministry of Posts and Telecommunications  
Moscow

A M. BIRULEV Sergey  
Représentant permanent adjoint  
Mission permanente de l'URSS  
Genève

A M. BLATOV Valery  
Deuxième Secrétaire  
Mission permanente de l'URSS  
Genève

A M. DOTOLIEV Valeri G.  
Ministry of Posts and Telecommunications  
Moscow

A M. RAKOV Anatoli S.  
Ministry of Posts and Telecommunications  
Moscow

A M. SMIRNOV B.V.  
Counsellor  
Permanent Mission of the USSR  
Geneva

URS Union des Républiques socialistes soviétiques - Union of Soviet Socialist Republics - Unión de Repúblicas Socialistas Soviéticas (suite)

1) Mme CHVYRKOVA Galina  
Ministère des postes et télécommunications  
Moscow

1) Secrétaire

1) M. OUKHANOV Vladimir  
Chef adjoint de section  
Ministère des postes et télécommunications  
Moscow

1) Secrétaire

URG Uruguay (République orientale de l') - Uruguay (Eastern Republic of) - Uruguay (República Oriental del)

C M. HERNANDEZ HERNANDEZ Rosendo F.  
Gerente Técnico  
Dirección Nacional de Comunicaciones  
Montevideo

D M. CERVERA GATTI Juan  
Ayudante Técnico  
Dirección Nacional de Comunicaciones  
Montevideo

VEN Venezuela (République du) - Venezuela (Republic of) - Venezuela (República de)

C M. MARTINEZ S. Sixto  
Director general sectorial de comunicaciones  
Ministerio de transporte y comunicaciones  
Caracas

CA M. DIAZ GARCIA Norberto  
Director de educación de la armada  
Ministerio de la defensa  
Caracas

D M. PENUELA GALVIS Carlos  
Jefe de la división de mantenimiento y operaciones de los servicios de comunicaciones y electrónica de las fuerzas armadas  
Ministerio de la defensa  
Caracas

**VEN** Venezuela (République du) -  
Venezuela (Republic of ) -  
Venezuela (República de) (suite)

D M. ROMERO Juan  
Jefe de la Sección de  
notificaciones de frecuencias  
Dirección general sectorial de  
comunicaciones  
Ministerio de transporte y  
comunicaciones  
Caracas

A Srta CLAUWAERT GONZALEZ Jenny  
Segundo Secretario  
Misión Permanente de Venezuela  
Ginebra

A M. RUIZ Luis  
Primer Secretario  
Misión Permanente de Venezuela  
Ginebra

**VTN** Viet Nam (République socialiste du) -  
Viet Nam (Socialist Republic of) -  
Viet Nam (República Socialista de)

C M. NGUYEN NHANH  
Directeur gestion de fréquence  
Direction générale des  
postes et télécommunications  
Hanoi

D M. VU HUY TAN  
Troisième secrétaire  
Mission permanente du Vietnam  
Genève

**YEM** Yémen (République arabe du) -  
Yemen Arab Republic -  
Yemen (República Árabe del)

C M. FARHAN Abdalla Mohamed  
Radio Engineering Director  
Radio and TV Organization  
Sanaa

D M. AL-SHAABI Abdullah  
Engineer  
Radio and TV Organization  
Sanaa

D M. SAAD YESER Ahmed  
Head, Frequency Management Section  
Ministry of Communications  
Sanaa

**YEM** Yémen (République arabe du) -  
Yemen Arab Republic -  
Yemen (República Árabe del) (suite)

A M. AL-NONO Hussein Hussein  
Technical Adviser  
Radio and TV Organization  
Sanaa

**YDS** Yémen (République démocratique  
populaire du) - Yemen (People's  
Democratic Republic of) - Yemen  
(República Democrática Popular del)

C M. AZZANI Mohamed Ali  
Director of Broadcasting Transmission  
Ministry of Culture & Information  
Broadcasting Transmission Station  
Aden

D M. OMER Kamal Hasson  
Head, Radio Regulatory Division  
Yemen Telecommunication Corporation  
Aden

**YUG** Yougoslavie (République socialiste  
fédérative de) - Yugoslavia (Socialist  
Federal Republic of) - Yugoslavia  
(República Socialista Federativa de)

C Dr. MARIN Drasko  
Director  
Federal Radiocommunication  
Direction  
Beograd

C Prof. Dr. STOJANOVIC Ilija  
Senior Special Adviser  
Federal Radiocommunication  
Direction  
Beograd

CA M. MEDAN Rodoljub  
Technical Director  
Radio Yugoslavia  
Beograd

D M. RACKOV Borislav  
Frequency Manager  
Radio Yugoslavia  
Beograd

D M. RAJIC Milija  
Department Head  
Federal Radiocommunication  
Direction  
Beograd

- YUG** Yougoslavie (République socialiste fédérative de) - Yugoslavia (Socialist Federal Republic of) - Yugoslavia (República Socialista Federativa de) (suite)
- D M. SIMIĆ Momcilo  
Department Director  
Radio Belgrade  
Beograd
- D M. STEVANCEVIĆ Milan  
Senior Adviser  
Federal Committee of Transport and Communications  
Beograd
- D Mrs VUKOVOJAC Anđelka  
Senior Adviser  
Federal Radiocommunication Direction  
Beograd
- ZAI** Zaïre (République du) - Zaire Republic of) - Zaire (República del)
- C M. ILEO Yoka  
Conseiller technique  
Département de l'Information et Presse  
Kinshasa
- D M. BINTOMA Masaka  
Conseiller technique OZRT  
Voix du Zaïre  
Kinshasa
- D M. LEPAMABILA Saye  
Directeur technique Radio-TV  
Office Zaïrois de radiodiffusion et télévision (OZRT)  
Kinshasa
- A M. NVENDO Iyaqwi-Kath  
Conseiller  
Mission permanente de Zaïre  
Genève
- ZMB** Zambie (République de) - Zambia (Republic of) - Zambia (República de)
- C M. SHAMATUTU Joseph Mukwanka  
Senior Superintendent Engineer  
Zambia Broadcasting Services  
Lusaka
- ZWE** Zimbabwe (République du) - Zimbabwe (Republic of) - Zimbabwe (República de)
- C M. MARECHERA Gervase Tony  
Assistant Director Telecommunication Executive  
Posts and Telecommunications Corporation  
Harare
- D M. HEROLD Ken  
Chief Engineer  
Transmitter Section  
Zimbabwe Broadcasting Corporation  
Harare

II. EXPLOITATIONS PRIVÉES RECONNUES —  
RECOGNIZED PRIVATE OPERATING AGENCIES —  
EMPRESAS PRIVADAS DE EXPLOTACIÓN RECONOCIDAS

---

III. ORGANISATIONS INTERNATIONALES —  
INTERNATIONAL ORGANIZATIONS —  
ORGANIZACIONES INTERNACIONALES

III.1 NATIONS UNIES — UNITED NATIONS —  
NACIONES UNIDAS

---

III.2 INSTITUTIONS SPECIALISEES —  
SPECIALIZED AGENCIES —  
INSTITUCIONES ESPECIALIZADAS

---

III.3 ORGANISATIONS REGIONALES (ART. 32  
DE LA CONVENTION) — REGIONAL  
ORGANIZATIONS (ART. 32 OF THE  
CONVENTION) — ORGANIZACIONES  
REGIONALES (ART. 32 DEL CONVENIO)

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III.4 AUTRES ORGANISATIONS —  
OTHER ORGANIZATIONS —  
OTRAS ORGANIZACIONES

Association internationale de  
radiodiffusion - International  
Association of Broadcasters -  
Asociación Internacional de  
Radiodifusión (AIR)

M. BENCH Mark

(Voir Etats-Unis)

M. PURRI Victor

(Voir Brésil)

Organisation internationale de  
radiodiffusion et télévision -  
International Radio and  
Television Organization -  
Organización Internacional de  
Radiodifusión y de Televisión  
(OIRT)

M. KACHEL A.  
Director of the Technical Centre  
Praha

Union de radiodiffusion  
"Asie-Pacifique" - Asia-Pacific  
Broadcasting Union - Unión de  
Radiodifusión "Asia-Pacífico"  
(ABU)

M. BHARGAVA J.C.  
Senior Engineer  
Kuala Lumpur

Union de radiodiffusion des  
Etats arabes - Arab States  
Broadcasting Union - Unión  
de Radiodifusión de los  
Estados Árabes (ASBU)

M. SULIEMAN Abdelrahim  
Head of Technical Affairs  
Tunis

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  
(URINA)

M. LÔ Medoune  
Directeur Centre technique  
Bamako

Union européenne de  
radiodiffusion - European  
Broadcasting Union -  
Unión Europea de  
Radiodifusión (UER)

M. WATERS George T.  
Director - Technical Centre  
Bruxelles

M. BERGER Michel  
Bruxelles

M. HUNT K.J.  
Senior Engineer  
Bruxelles

Mrs RYSMAN Michèle  
Bruxelles

Mr. WASSICZEK Norbert

(Voir Autriche)

Union internationale des  
radioamateurs - International  
Amateur Radio Union - Unión  
Internacional de Aficionados  
de Radio (IARU)

M. SMITH Carl L.  
Vice President  
Newington

M. ALLAWAY John  
Secretary Region 1

M. MANDRINO Mirko  
Member Executive Committee  
Region 1

M. NIETYKSZA Wojciech  
Vice-Chairman Region 1

Mrs STROM Rossella  
Member Executive Committee  
Region 1

IV. SIEGE DE L'UNION — HEADQUARTERS OF THE UNION — SEDE DE LA UNIÓN

IV.1 Secrétariat général

M. R.E. Butler, Secrétaire général  
Assistants: Mme P. Taillefer  
Mlle E. Miles

M. J. Jipguep, Vice-Secrétaire général  
Assistante: Mme C. Pierrard

M. G. Barboux, Département des conférences et services communs  
M. M. Bardoux, Département du personnel  
M. A. Embedoklis, Département de la coopération technique  
M. J. Francis, Département des relations extérieures  
M. L. Goelzer, Département de l'ordinateur  
M. R. Prélaz, Département des finances

IV.2 IFRB

M. W.H. Bellchambers, Président  
Assistante: Mlle M. Iglesias

M. Y. Kurihara, Vice-Président  
Assistante: Mme J. Simić

M. A. Berrada, Membre  
Assistante: Mme D. Phéné

M. G.C. Brooks, Membre  
Assistante: Mme J. Fox

M. V.V. Kozlov, Membre  
Assistante: Mme M. Zinovieff

M. K. Olms, Chef, Département de l'enregistrement et des opérations  
M. M. Sant, Chef, Bureau du Comité

Assistants: Mme M. Kellner  
Mme T. Balfroid

IV.3 CCIR

M. R.C. Kirby, Directeur  
Assistante: Mme G. Benoit

M. R.L. Nickelson, Conseiller supérieur  
M. R.G. Struzak, Conseiller supérieur  
M. K. Hughes, Conseiller  
M. G. Rossi, Conseiller

IV.4 CCITT

M. Th. Irmer, Directeur  
Assistante: Mme C. Vigneulle



V. SECRETARIAT DE LA CONFERENCE - SECRETARIAT OF THE CONFERENCE -  
SECRETARÍA DE LA CONFERENCIA

V.1 Secrétaire de la Conférence : M. R.E. Butler,  
Secrétaire général  
  
Secrétaire exécutif : M. R. Macheret  
  
Secrétaire technique : M. M. Harbi  
  
Secrétaire administratif : M. J. Escudero

V.2 Séances plénières et commissions

Séance plénière : M. D. Schuster  
Assistante: Mme Ch. Boccard  
  
Commission 1 : M. D. Schuster  
  
Commission 2 : M. R. Macheret  
Assistante: Mlle H. Tulloch  
  
Commission 3 : M. R. Prélaz  
Assistante: Mme P. Bertinotti  
  
Commission 4 : M. T. O'Leary  
  
Commission 5 : M. M. Giroux  
  
Commission 6 : M. M. Ahmad  
  
Commission 7 : M. P.A. Traub  
Assistante: Mme S. Petter

V.3 Division technique

Secrétaire technique : M. M. Harbi, assisté de  
M. J. Da Silva

Groupe d'ingénieurs et analystes

M. R. Chopra  
Mme M. Degert  
M. L.S. Huang  
M. M. Ohara  
M. I. Marini  
M. V. Timofeev  
M. T. Tsolov  
M. Y. Xu

Assistantes administratives

Mme M.C. Revenga  
Mlle S. Peic

Groupe Saisie de données

M. J. Bertol de la Torre  
Mme B. Abbédécroux  
Appui à  
l'exploitation  
de l'ordinateur : M. H. Allebroeck

V.4 Affaires de caractère légal : M. A. Noll  
Assistante: Mlle M.J. Urena

V.5 Division "Services de la Conférence"

Secrétaire administratif : M. J. Escudero  
Assistante: Mlle H. Tulloch

Protocole : M. E. Augsburg

Relations avec la presse/  
information publique : Mme F. Lambert  
Assistante: Mme V. Shahna

Division linguistique : Mlle M.A. Delgado

- Traduction française : M. M. Brodsky  
- Traduction anglaise : M. A. Jennings  
- Traduction espagnole : M. A. Descalzi

Service des interprètes : Mme S. Mangelmann

Service des  
procès-verbalistes : Mlle J. Barley

Inscription des délégués : Mme H. Di Rosa

Salles : Mlle Ch. Clin

Contrôle des documents : Mme L. Jeanmonod

Division de la production  
des documents : M. P. Bronzini

- Composition des documents : Mme D. Duvernay

- Reprographie : M. Ph. Constantin  
Assistant: M. J. Allinger

- Distribution des documents : M. G. Delaye

Secrétaire du Président de  
la Conférence : Mme S. Quinn

Huissiers : M. G. Cudré-Mauroux

Assistance générale : Mlle S. Kumenius

## FINAL LIST OF DOCUMENTS

### A. Basic Documents of the Conference

	Documents		Documents
<u>Conference Chairmanships</u>	43 + Corr.1	COMMITTEE 4 (Technical)	
<u>Conference Structure</u>	40	<u>Summary Records</u>	
<u>List of participants</u>	278	1st meeting .....	48
PLENARY MEETING		2nd meeting .....	67
<u>Minutes</u>		3rd meeting .....	88
1st meeting .....	44	4th meeting .....	95
2nd meeting .....	45	5th meeting .....	121 + Corr.1
3rd meeting .....	56 + Corr.1	6th meeting .....	151
4th meeting .....	70	7th meeting .....	152
5th meeting .....	94 + Corr.1	8th meeting .....	153 + Corr.1
6th meeting .....	133 + Corr.1	COMMITTEE 5 (Planning)	
7th meeting .....	175 + Corr.1	<u>Summary Records</u>	
8th meeting .....	216	1st meeting .....	57
9th meeting .....	226	2nd meeting .....	65
10th meeting .....	239	3rd meeting .....	82
11th meeting .....	244	4th meeting .....	96
12th meeting .....	251	5th meeting .....	111
13th meeting .....	252	6th meeting .....	174 + Corr.1
14th meeting .....	254	7th meeting .....	183 + Corr.1
15th meeting .....	265	8th meeting .....	196
16th meeting .....	266	9th meeting .....	197 + Corr.1
17th meeting .....	272	10th meeting .....	206 + Corr.1
18th meeting .....	275	11th meeting .....	224
19th meeting .....	276	12th meeting .....	225
20th meeting + Closing meeting	277	13th meeting .....	236
COMMITTEE 2 (Credentials)		<u>Reports</u>	
<u>Summary Records</u>		1st report .....	230
1st meeting .....	49	2nd report .....	231
2nd meeting .....	219	COMMITTEE 6 (Regulatory)	
<u>Report</u>	215	<u>Summary Records</u>	
COMMITTEE 3 (Budget)		1st meeting .....	83
<u>Summary Records</u>		2nd meeting .....	101
1st meeting .....	64	3rd meeting .....	142
2nd meeting .....	140 + Corr.1	4th meeting .....	149
3rd meeting .....	195 + Corr.1	5th meeting .....	173
4th meeting .....	217 + Corr.1	6th meeting .....	184
5th meeting .....	249	7th meeting .....	218
6th meeting .....	264	8th meeting .....	227
<u>Report</u>	261	9th meeting .....	237
		10th meeting .....	238
		<u>Report</u>	114
		COMMITTEE 7 (Editorial)	
		<u>Summary Record</u> .....	66

B. Complete list of documents in numerical order

LIST OF DOCUMENTS  
(Documents 1 to 279)

PL = Plenary Meeting  
C = Committee  
WG = Working Group

No.	Origin	Title	Destination
1	SG	Agenda of the Conference	PL
2	SG	Credentials of Delegations	C.2
3	SG	IFRB Report to the Second Session of the WARC-HFBC on the establishment of the Tentative Requirement File	C.5
4 + Add.1 + Corr.1	SG	CCIR's Report to the Conference	C.4
5	SG	CCIR's Report 892 - Computation of reliability for HF radio systems	C.4
6	F	Improvements to the requirement form	C.5
7	SG	List of those Articles of the Radio Regulations concerning the use of the HF Bands allocated exclusively to the Broadcasting Service prepared by the IFRB	C.6
8	SG	Report by the IFRB "HFBC Planning System"	C.4, C.5
9	SG	Report by the IFRB on the implementation of Resolution COM5/1 of the First Session of the Conference	C.5, C.6
10	ALG	Proposals for the work of the Conference	C.4, C.5
11	SG	Report by the IFRB on the Results of the Planning Exercises	C.4, C.5
12	SEN	Proposals for the work of the Conference	C.4, C.5
13	AUT	Analysis of the IFRB-HFBC/D 85 planning exercise	C.4, C.5
14 (Rev.1)	AUT	Proposals for the work of the Conference	C.4, C.5

No.	Origin	Title	Destination
15	AUT	Proposed modifications to the requirement form	C.5
16 + Add.1	AUS	Proposals for the work of the Conference	C.5, C.6
17	SG	Budget of the Conference	C.3
18	SG	Contributions of recognized private operating agencies and non-exempt international organizations	C.3
19	SG	Financial Responsibilities of Administrative Conferences	PL, C.3
20	SG	Invitations	-
21 + Add. 1	SG	Participation requests submitted by international organizations	PL
22 (Rev. 6)	SG	Loss of the right to vote	-
23	BGD	Proposals for the work of the Conference	C.5
24	B	Proposals for the work of the Conference	C.4, C.5
25	ISR	Proposals for the work of the Conference	C.4, C.6
26	SG	Report by the IFRB on the application of Resolution PLEN/2 of the First Session of the Conference	C.6
27	E	Proposals for the work of the Conference	C.4, C.5
28	F	Propagation prediction method	C.4
29	F	Evaluation of the planning method	C.5
30	D	Proposals for the work of the Conference	C.5, C.6
31	SG	IFRB Report on the Tentative Requirements File - Modifications and additions	C.5
32	B	Proposals for the work of the Conference	C.4
33	F	Proposals for the work of the Conference	C.5, C.6

No.	Origin	Title	Destination
34 + Corr.1	CLM	Considerations and Proposals for the work of the Conference	C.5, C.6
35	TUN	Proposals for the work of the Conference	C.5
36	ARG	Proposals for the work of the Conference - HFBC Planning System (Agenda item 2.1.1)	C.4, C.5
37	ISR	Proposals for the Conference	C.5
38	SG	Secretariat of the Conference	-
39	-	Allocation of documents	-
40	-	Conference structure for the Second Session of the Conference	-
41 + Corr.1	PRG	Proposals for the work of the Conference	C.4, C.5, C.6
42	-	Information paper - Provisional General schedule of the work of the Conference	-
43 + Corr.1	-	Conference Chairmanships	-
44 + Corr.1	PL	Minutes of the First Plenary Meeting	PL
45	PL	Minutes of the Second Plenary Meeting	PL
46	KEN	Proposals to the Second Session of the Conference	C.4, C.5, C.6
47 (Rev. 1)	MLI	Proposals for the work of the Conference	C.4, C.5, C.6
48	C.4	Summary Record of the First Meeting of Committee 4	C.4
49	C.2	Summary Record of the First Meeting of Committee 2	C.2
50	SG	List of documents (1 to 50)	-
51	IND	Proposals for the work of the Conference	C.4, C.5
52	URS	Quality of SSB reception by a standard domestic receiver with an amplitude detector	C.4

No.	Origin	Title	Destination
53 + Corr.1	URS	Assessment of co-channel and adjacent channel protection ratios for SSB transmissions	C.4
54	CHN	Seasonal fixed frequencies	C.5
55	TZA	Proposals for the work of the Conference	C.4, C.5
56 + Corr.1	PL	Minutes of the Third Plenary Meeting	PL
57 + Corr.1	C.5	Summary record of the first meeting of Committee 5	C.5
58	G	Proposals for the work of the Conference - Synchronisation	C.4
59	G	Proposals for the work of the Conference - The assessment of broadcast quality	C.4
60	SG	Instrument of accession to the International Telecommunication Convention, Nairobi, 1982 by the Government of Antigua and Barbuda	-
61	D	Introduction of the SSB system in HFBC	C.4
62	D	Proposals for the work of the Conference - Continuity	C.5
63	D	Proposals for the work of the Conference - Changes of the legal clock time in many countries	C.4, C.5
64	C.3	Summary Record of the First Meeting of Committee 3	C.3
65 + Corr.1	C.5	Summary Record of the Second Meeting of Committee 5	C.5
66	C.7	Summary Record of the First Meeting of Committee 7	C.7
67	C.4	Summary Record of the Second Meeting of Committee 4	C.4
68	D	Proposal for the work of the Conference - Propagation prediction method	C.4

No.	Origin	Title	Destination
69 + Corr.1	PAK	Field intensity program for microcomputers	C.4, C.5
70	PL	Minutes of the Fourth Plenary Meeting	PL
71	G	Treatment of synchronized requirements	C.4, C.5
72	IRQ	Proposal for the work of the Conference - Planning principles	C.5
73	AUT, BEL, HNG, IRL, LUX, SUI	Proposal for the work of the Conference	C.5
74	WG 2A	First Report by Working Group C2-A to Committee 2	C.2
75	IND	Performance of the HFBC Planning System vis-à-vis the Article 17 procedure	C.5
76	Ad Hoc 4B-1	Report of ad hoc 4B-1 to Working Group 4B - Relative RF protection ratios (dB)	WG 4B
77	C.4	Note by the Chairman of Committee 4 to the Chairman of Committee 5 - Technical characteristics required for planning	C.5
78	SG	Note by the Secretary-General (proxy Iceland to Norway)	-
79	CVA	Proposals for the work of the Conference	C.4
80	C.3	Note by the Chairman of Committee 3 to the Chairmen of Committees 4, 5 and 6	C.4, C.5, C.6
81	Ad Hoc 4B-2	Report of Ad Hoc 4B/2 to Working Group 4B - Recommendation concerning the introduction of transmitters and receivers capable of functionning both in DSB and in SSB modes	WG 4B
82	C.5	Summary Record of the Third Meeting of Committee 5	C.5
83 + Corr.1	C.6	Summary Record of the First Meeting of Committee 6	C.6
84 (Rev.1)	WG 4B	First Report of Working Group 4B	C.4
85	ROU	Proposals for the work of the Conference	C.4



No.	Origin	Title	Destination
86	WG 4A	First Report of Working Group 4A to Committee 4 - Articles of the Radio Regulations concerning the use of the HF Bands allocated to the broadcasting service related to the work of Committee 4 and its working groups	C.4
87	WG 4A	Field strength prediction method	C.4
88 + Corr.1	C.4	Summary record of the Third Meeting of Committee 4	C.4
89	Ad hoc 4A-3	Report of ad hoc 4A-3 to Working Group 4A	WG 4A
90	IRQ	Proposal for the work of the Conference - BBR and OBR results	C.5
91	C.4	Note from Chairman of Committee 4 to Chairman of Committee 6	C.6
92	WG 4A	Second Report of Working Group 4A	C.4
93	WG 4B	Second Report of Working Group 4B	C.4
94 + Corr.1	PL	Minutes of the Fifth Plenary Meeting	PL
95	C.4	Summary Record of the Fourth Meeting of Committee 4	C.4
96	C.5	Summary Record of the Fourth Meeting of Committee 5	C.5
97	Ad Hoc 6-1	Report of Working Group 6 Ad Hoc 1 to Committee 6	C.6
98	C.4	Proposed modifications to Articles of the Radio Regulations concerning the use of the HF Bands allocated to the broadcasting service related to the work of Committee 4	C.6
99	WG 4B	Third Report of Working Group 4B	C.4
100	SG	List of documents (51 to 100)	-
101	C.6	Summary Record of the Second Meeting of Committee 6	C.6
102	C.4	First series of texts from Committee 4 to the Editorial Committee	C.7

No.	Origin	Title	Destination
103	WG 2A	Second Report of the Working Group of Committee 2 (Credentials)	C.2
104	WG 4B	Fourth Report of Working Group 4B	C.4
105	WG 4B	Fifth Report of Working Group 4B	C.4
106 (Rev. 1)	C.4	Draft text for inclusion in the Final Acts - Draft Resolution [COM4/3]	C.4
107	WG 4A	Draft text for inclusion in the Final Acts - Draft Recommendation [COM4/D]	C.4
108	C.6	Note from the Chairman of Committee 6 to the Chairman of Committee 4	C.4
109 + Corr.1	C.7	B.1	PL
110	LBY	Proposal for the work of the Conference - Planning principles	C.5
111	C.5	Summary Record of the Fifth Meeting of Committee 5	C.5
112	Ad Hoc 6-2	Report by the Chairman of Working Group 6 Ad Hoc 2	C.6
113	C.6	First series of texts from Committee 6 to the Editorial Committee	C.7
114	C.6	First Report of Chairman of Committee 6	PL
115	WG 4B	Sixth Report of Working Group 4B	C.4
116	WG 4A	The provision of additional frequencies	C.4
117 + Corr.1	WG 4A	Reliability	C.4
118	WG 4A	Third Report of Working Group 4A to Committee 4	C.4
119	C.4	Proposed modification to the Radio Regulations related to the work of Committee 4	C.6
120	USA	Summary of results of the IFRB planning tests	C.5
121 + Corr.1	C.4	Summary Record of the Fifth Meeting of Committee 4	C.4
122	C.5	Note by the Chairman of Committee 5 to the Chairman of Committee 4	C.4

No.	Origin	Title	Destination
123	HOL	Proposal relating to Agenda item 2.1.2	C.5
124	SG	Limit of expenditure laid down by the 1982 Nairobi Conference for WARC HFBC	C.3
125	SG	Situation of accounts of the Conference as at 10 February 1987	C.3
126	ALG	Proposal	C.5
127	WG 4A	Fourth Report of Working Group 4A to Committee 4	C.4
128	WG 5A	Note by the Chairman of Working Group 5A	C.5
129	C.4	Second series of texts from Committee 4 to the Editorial Committee	C.7
130	C.4	Third series of texts from Committee 4 to the Editorial Committee	C.7
131 + Corr.1	C.4	Proposed modifications to articles of the Radio Regulations concerning the use of the HF bands allocated to the broadcasting service related to the work of Committee 4	C.6
132	C.4	Note from the Chairman of Committee 4 to the Chairmen of Committees 5 and 6	C.5, C.6
133 + Corr.	PL	Minutes of the Sixth Plenary Meeting	PL
134	WG 5A	Note by the Chairman of Working Group 5A	C.5
135	C.5	Note by the Chairman of Committee 5 - Terms of reference of Working Groups	C.5
136	WG 4A	Fifth Report of Working Group 4A to Committee 4 - Double-sideband system specification for the HF bands allocated to the broadcasting service	C.4
137	Ad Hoc 4A-5	Draft - Recommendation [COM4/F] - Propagation Prediction Method to be Used for the [Planning] of the HF Bands Allocated to the Broadcasting Service	WG 4A
138	C.7	B.2	PL

No.	Origin	Title	Destination
139 (Rev. 1)	F, CAN	Proposed establishment of a Group of Experts	C.5, C.6
140 + Corr.1	C.3	Summary Record of the Second Meeting of Committee 3	C.3
141	Ad Hoc 4A-5	Outline of the propagation prediction method	WG 4A
142	C.6	Summary Record of the Third Meeting of Committee 6	C.6
143	WG 4A	Sixth Report of Working Group 4A to Committee 4	C.4
144	WG 4A	Seventh Report of Working Group 4A to Committee 4	C.4
145	C.4	Note by the Chairman of Committee 4 to the Chairman of Committee 5	C.5
146	CVA	Proposals for the work of the Conference	C.4
147	WG 4A	Eighth and last Report of Working Group 4A to Committee 4 - Propagation prediction method	C.4
148	CVA	Proposal for the work of the Conference - Optimization of requirements and assignment of a second frequency	C.5
149	C.6	Summary Record of the Fourth Meeting of Committee 6	C.6
150	SG	List of documents (101 to 150)	-
151	C.4	Summary Record of the Sixth Meeting of Committee 4	C.4
152	C.4	Summary Record of the Seventh Meeting of Committee 4	C.4
153 + Corr.1	C.4	Summary Record of the Eighth and Last Meeting of Committee 4	C.4
154	C.4	Fourth series of texts from Committee 4 to the Editorial Committee	C.7
155	C.6	Second series of texts from Committee 6 to the Editorial Committee	C.7
156	C.4	Fifth series of texts from Committee 4 to the Editorial Committee	C.7

No.	Origin	Title	Destination
157 + Corr.1	WG 5A	First Report of Working Group 5A to Committee 5	C.5
158	C.4	Note from the Chairman of Committee 4 to the Chairman of Committee 5	C.5
159	C.4	Note from the Chairman of Committee 4 to the Chairmen of Committees 5 and 6	C.5, C.6
160	C.4	Note from the Chairman of Committee 4 to the Chairman of Committee 6	C.6
161 + Corr.1 + Corr.2	C.4	Note from the Chairman of Committee 4 to the Chairmen of Committees 5 and 6	C.5, C.6
162	C.4	Sixth and last series of texts from Committee 4 to the Editorial Committee	C.7
163	C.7	B.3	PL
164 (Rev. 1)	C.7	R.1	PL
165	WG 5C	Report of Working Group 5C to Committee 5	C.5
166	C.7	B.4	PL
167	WG 2A	Third Report of the Working Group of Committee 2 (Credentials)	C.2
168	C.7	Note by the Chairman of the Editorial Committee	PL
169	WG 5B	Report of the Chairman of Working Group 5B to Committee 5	C.5
170	WG 6A	First Report of Working Group 6A to Committee 6	C.6
171 (Rev. 1)	WG 6A	Second Report of Working Group 6A	C.6
172 (Rev. 1)	WG 6A	Third Report of Working Group 6A	C.6
173	C.6	Summary Record of the Fifth Meeting of Committee 6	C.6

No.	Origin	Title	Destination
174 +Corr.1	C.5	Summary Record of the Sixth Meeting of Committee 5	C.5
175 + Corr.1	PL	Minutes of the Seventh Plenary Meeting	PL
176	C.4	Note from the Chairman of Committee 4 to the Chairman of Committee 6	C.6
177	C.5	Note from the Chairman of Committee 5 to the Chairman of Committee 6	C.6
178	C.6	Note by the Chairman of Committee 6 - Terms of reference of Working Groups	C.6
179	WG 6A	Fourth Report of Working Group 6A	C.6
180	WG 6A	Fifth Report of Working Group 6A	C.6
181	WG 6A	Sixth Report of Working Group 6A	C.6
182	WG 5A	Second Report of Working Group 5A to Committee 5	C.5
183 + Corr.1	C.5	Summary Record of the Seventh Meeting of Committee 5	C.5
184	C.6	Summary Record of the Sixth Meeting of Committee 6	C.6
185	SG	Situation of the Conference accounts as at 23 February 1987	C.3
186	C.7	R.2	PL
187 (Rev.1)	C.7	B.5	PL
188	WG 5D	Report of Working Group 5D to Committee 5	C.5
189	WG 5A	Third and final Report of Working Group 5A to Committee 5	C.5
190	C.4	Note from the Chairman of Committee 4 to the Chairman of Committee 3	C.3
191 (Rev.1)	C.3	Note from the Chairman - Preliminary resource estimates for the immediate post Conference work to be carried out by the IFRB	C.3

No.	Origin	Title	Destination
192	C.5	Note from the Chairman of Committee 5 to the Chairman of Committee 6	C.6
193	CTI	Proposal for future work	C.5
194	C.6	Third series of texts from Committee 6 to the Editorial Committee	C.7
195 + Corr.1	C.3	Summary Record of the Third Meeting of Committee 3	C.3
196	C.5	Summary Record of the Eighth Meeting of Committee 5	C.5
197 + Corr.1	C.5	Summary Record of the Ninth Meeting of Committee 5	C.5
198	C.5	Note from the Chairman of Committee 5 to the Chairman of Committee 6	C.6
199	C.5	Note from the Chairman of Committee 5 to the Chairman of Committee 6	C.6
200	SG	List of Documents (151 to 200)	-
201	C.5	First series of texts from Committee 5 to the Editorial Committee	C.7
202	C.3	Note from the Chairman of Committee 3	C.3
203	C.7	B.6	PL
204	WG 2A	Fourth Report of the Working Group of Committee 2 (Credentials)	C.2
205 + Corr.1	BEL	Proposal for future work	C.5
206 + Corr.1	C.5	Summary Record of the Tenth Meeting of Committee 5	C.5
207 + Add.1	C.7	R.3	PL
208	ISR	Proposals for the Conference	C.5
209 (Rev.1)	SG	Estimate of the resources needed for post Conference work	C.3
210	PAK	Elements of the compromise solution	C.5

No.	Origin	Title	Destination
211	6-1	Report of Drafting Group 6-1	C.6
212	Ad Hoc PL	Note from the Chairman of the Ad Hoc Group of the Plenary to the Chairman of Committee 6	C.6
213	C.5	Note by the Chairman of Committee 5 to the Chairman of Committee 6	C.6
214	WG 2A	Fifth Report of the Working Group of Committee 2 (Credentials)	C.2
215 + Corr.1	C.2	Report of Committee 2 to the Plenary Meeting (Credentials)	PL
216	PL	Minutes of the Eighth Plenary Meeting	PL
217 + Corr.1	C.3	Summary Record of the Fourth Meeting of Committee 3	C.3
218	C.6	Summary Record of the Seventh Meeting of Committee 6	C.6
219	C.2	Summary Record of the Second Meeting of Committee 2	C.2
220	SG	Note by the Secretary-General concerning the Circular-Telegram No. A533	-
221	Ad Hoc PL	Note from the Chairman of the Ad Hoc Group of the Plenary to the Chairman of Committee 6	C.6
222	6-2	Report of Drafting Group 6-2 to Committee 6	C.6
223	ARG, CLM	Proposal for the Conference - National broadcasting in the HF Bands	C.5
224	C.5	Summary Record of the Eleventh Meeting of Committee 5	C.5
225	C.5	Summary Record of the Twelfth Meeting of Committee 5	C.5
226	PL	Minutes of the Ninth Plenary Meeting	PL
227	C.6	Summary Record of the Eighth Meeting of Committee 6	C.6



No.	Origin	Title	Destination
228	Ad Hoc PL	Note from the Chairman of the Ad Hoc Group of the Plenary to the Chairman of Committee 6	C.6
229	Ad Hoc PL	Note from the Chairman of the Ad Hoc Group of the Plenary to the Chairman of Committee 6	C.6
230	C.5	First Report by the Chairman of Committee 5 to the Plenary	PL
231	C.5	Second Report by the Chairman of Committee 5 to the Plenary	PL
232	C.6	Fourth series of texts from Committee 6 to the Editorial Committee	C.7
233	C.6	Fifth series of texts from Committee 6 to	C.7
234	C.7	B.7	PL
235	C.7	B.8	PL
236	C.5	Summary Record of the Thirteenth Meeting of Committee 5	C.5
237	C.6	Summary Record of the Ninth Meeting of Committee 6	C.6
238	C.6	Summary Record of the Tenth Meeting of Committee 6	C.6
239	PL	Minutes of the Tenth Plenary Meeting	PL
240	C.5	Second series of texts from Committee 5 to the Editorial Committee	C.7
241	PAK, IND	Utilization of the frequency band extensions as agreed by WARC-79	PL
242	C.7	B.9	PL
243	C.6	Note from the Chairman of Committee 6 to the Plenary	PL
244	PL	Minutes of the Eleventh Plenary Meeting the Editorial Committee	PL

No.	Origin	Title	Destination
245	SG	Information Note - Final days of the Conference	-
246	C.7	B.10	PL
247	Draf.G PL	Recommendation - Participation by administrations in the Improvement of the Method of Planning the HF Bands Allocated to Broadcasting	PL
248	SG	Note by the Secretary-General (Letter from the Federal Republic of Germany)	-
249	C.3	Summary Record of the Fifth Meeting of Committee 3	C.3
250	SG	List of documents (201 to 250)	-
251	PL	Minutes of the Twelfth Plenary Meeting	PL
252	PL	Minutes of the Thirteenth Plenary Meeting	PL
253 (Rev.1)	Chairman Conf.	Draft Resolution [PL/1]	PL
254	PL	Minutes of the Fourteenth Plenary Meeting	PL
255	USA	Resolution relating to the Improvement in the Use of the HF Bands Allocated to the Broadcasting Service by Avoiding Harmful Interference	PL
256	C.7	R.4	PL
257	SG	Transmission of a letter received from the German Democratic Republic	-
258 + Add.1	C.7	B.11	PL
259 (Rev.1)	Chairman Conf.	Draft Recommendation [PL/A]	PL
260	ad hoc PL	Report from the Chairman of the Ad Hoc Group	PL
261	C.3	Report of the Budget Control Committee to PL	PL

No.	Origin	Title	Destination
262 + Add.1	Chairman Conf.	Partial Revision of the RR	PL
263	Chairman Conf.	Final Acts - Preamble	PL
264	C.3	Summary Record of the Sixth Meeting of the Committee 3	C.3
265	PL	Minutes of the Fifteenth Plenary Meeting	PL
266 + Corr. 1	PL	Minutes of the Sixteenth Plenary Meeting	PL
267	C.7	B.12	PL
268	C.7	R.5	PL
269	C.7	R.6	PL
270	Chairman Conf.	Draft Resolution [PL/2]	PL
271	C.7	R.7	PL
272	PL	Minutes of the Seventeenth Plenary Meeting	PL
273 + Corr.1	-	Final Protocol	PL
274 + Corr.1	-	Additional Declarations	PL
275	PL	Minutes of the Eighteenth Plenary Meeting	PL
276	PL	Minutes of the Nineteenth Plenary Meeting	PL
277	PL	Minutes of the Twentieth Plenary Meeting	PL
278	SG	List of participants	-
279	SG	Final List of the documents	-