INTERNATIONAL TELECOMMUNICATION UNION

FINAL ACTS

of the Regional Administrative Conference for the Planning of the Maritime Radionavigation Service (Radiobeacons) in the European Maritime Area

Geneva, 1985

Geneva 1986

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REGIONAL AGREEMENT

Concerning the Planning of the Maritime Radionavigation Service (Radiobeacons) in the European Maritime Area

(Geneva, 1985)

PREAMBLE

The delegates of the following Members of the International Telecommunication Union:

People's Democratic Republic of Algeria, Federal Republic of Germany, Austria, Belgium, People's Republic of Bulgaria, Republic of Cyprus, Denmark, Spain, Finland, France, Greece, Hungarian People's Republic, Ireland, State of Israel, Italy, Socialist People's Libyan Arab Jamahiriya, Republic of Malta, Kingdom of Morocco, Monaco, Norway, Kingdom of the Netherlands, People's Republic of Poland, Portugal, German Democratic Republic, Socialist Republic of Romania, United Kingdom of Great Britain and Northern Ireland, Sweden, Czechoslovak Socialist Republic, Tunisia, Turkey, Union of Soviet Socialist Republics, Socialist Federal Republic of Yugoslavia,

meeting in Geneva for a Regional Administrative Radio Conference convened under the terms of Article 7 of the International Telecommunication Convention, Nairobi, 1982, have adopted subject to the approval of the competent authorities of their respective countries the following provisions relating to the maritime radionavigation service (radiobeacons) in the European Maritime Area.

ARTICLE 1

Definitions

For the purpose of this Agreement, the following terms shall have the meanings defined below:

1.1 *Union:* The International Telecommunication Union;

1.2 *Secretary-General:* The Secretary-General of the Union;

1.3 *IFRB:* The International Frequency Registration Board (also referred to as *the Board*);

1.4 *CCIR:* The International Radio Consultative Committee;

1.5 *Convention:* The International Telecommunication Convention, Nairobi, 1982;

1.6 *Radio Regulations:* The Radio Regulations, Geneva, 1979, as revised by WARC-MOB-83, annexed to the Convention;

1.7 *European Maritime Area:* The geographical area defined in No. 405 of the Radio Regulations;

1.8 *Agreement:* The whole of this Agreement including its Annexes and Appendices;

1.9 *Plan:* The Plan forming the Annex 1 to this Agreement

1.10 *Contracting Member:* Any Member of the Union which has approved or acceded to this Agreement;

1.11 *Administration:* Any governmental department or service responsible for discharging the obligations undertaken in the International Telecommunication Convention and the Radio Regulations;

1.12 *Assignment in conformity with the Agreement:* Any frequency assignment appearing in the Plan or any frequency assignment for which the procedure of Article 4 has been successfully applied.

ARTICLE 2

Frequency Bands

2.1 The provisions of this Agreement apply in the European Maritime Area to the band 283.5 - 315 kHz allocated under Article 8 of the Radio Regulations to the maritime radionavigation service (radiobeacons) on a primary basis.

These provisions also apply to frequency assignments to stations of the aeronautical radionavigation service to which the same frequency band is allocated on a permitted basis.

ARTICLE 3

Execution of this Agreement

3.1 The Contracting Members shall adopt, for their radiobeacon stations of the maritime radionavigation service operating in the European Maritime Area in the frequency band referred to in this Agreement, the characteristics specified in the Plan.

3.2 The Contracting Members shall not bring assignments complying with the Plan into use, modify the technical characteristics of stations specified in the Plan, or bring new stations into use, except under the conditions specified in Articles 4 and 5 of this Agreement.

3.3 When assigning frequencies to stations of the aeronautical radionavigation service, Contracting Members shall take account of the frequency assignments to radiobeacon stations of the maritime radionavigation service which are in conformity with this Agreement or for which the modification procedure contained in Article 4 has been initiated.

3.4 The Contracting Members shall endeavour to coordinate their efforts with a view to reducing any harmful interference that may result from the application of this Agreement.

ARTICLE 4

Procedure for Modifications to the Plan

SECTION A – GENERAL

4.1 When a Contracting Member proposes to make a modification to the Plan, that is:

a) to modify the characteristics of a frequency assignment to a radiobeacon station of the maritime radionavigation service shown in the Plan, whether or not the station has been brought into use; *or*

b) to bring into use an assignment to a radiobeacon station of the maritime radionavigation service not appearing in the Plan; *or*

c) to modify the characteristics of a frequency assignment to a radiobeacon station of the maritime radionavigation service for which the procedure in this Article has been successfully applied, whether or not the station has been brought into use; *or*

d) to cancel a frequency assignment to a radiobeacon station of the maritime radionavigation service;

the following procedure shall be applied at the same time as the notification is made under the provisions of Article 12 of the Radio Regulations (see Article 5 of this Agreement).

SECTION B – PROCEDURE FOR MODIFYING THE CHARACTERISTICS OF AN ASSIGNMENT OR THE BRINGING INTO USE OF A NEW ASSIGNMENT

4.2 An administration proposing to modify the characteristics of an assignment or to bring a new assignment into use shall, either directly or through the IFRB, seek the agreement of all other administrations whose assignments may be affected.

4.3 For the purposes of this procedure, these other administrations shall be the administrations of Contracting Members which have:

a) assignments in conformity with this Agreement whose service may be affected according to the criteria specified in Appendix 1 to Annex 3;

b) assignments recorded in the Master International Frequency Register for stations of the aeronautical radionavigation service which may be affected according to the provisions of No. 1241 of the Radio Regulations together with the technical criteria contained in Appendix 1 to Annex 3.

4.4 An administration proposing to modify the characteristics of an assignment or to bring a new assignment into use may at any time seek the agreement of any other Contracting Member which it has identified following the application of Appendix 1 to Annex 3 as having an assignment in the Plan which may be affected by the proposed modification to the Plan. It shall, in any case, so inform the Board not earlier than 90 days before the date of bringing into use and shall provide the Board with the characteristics listed in Appendix 1 to the Radio Regulations, and the names of the administrations with which it considers agreement should be sought and of those with which agreement has been reached. The IFRB shall consider this information as a notification in accordance with Article 12 of the Radio Regulations. Publication in Part I of the weekly circular shall at the same time constitute information to the Contracting Members on the proposed modification.

4.5 When the Board reaches an unfavourable finding under No. 1241 of the Radio Regulations in relation to frequency assignments recorded in the Master Register on behalf of non-Contracting Members, it shall notify the administration proposing the modification and shall make recommendations with a view to reaching a satisfactory solution to the problem.

4.6 When the Board reaches a favourable finding under No. 1241 of the Radio Regulations in relation to frequency assignments recorded in the Master Register on behalf of non-Contracting Members, it shall examine the modification proposed in relation to assignments:

– in conformity with this Agreement;

– published in Part I of the weekly circular in accordance with paragraph 4.4 above;

– of the aeronautical radionavigation service recorded in the Master Register on behalf of Contracting Members.

The Board shall inform the administration proposing the modification of the results of its examination.

4.7 When the administration proposing the modification is informed of the results of the Board's examination, it shall endeavour to seek the agreement of the other administrations as soon as possible and in any case, before bringing the assignment into use, it shall inform the Board of the results of its efforts.

4.8 Following the examination carried out in accordance with paragraph 4.6 above, the Board shall record the assignment in the Master Register in accordance with Nos. 1311 to 1313 of the Radio Regulations indicating the names of those administrations whose agreement has to be obtained.

4.9 When an administration confirms that its assignment has been brought into use, it shall inform the Board of the names of administrations with which agreement has been reached. When the Board finds that the agreement of an administration has not been obtained, it shall request the notifying administration to delete its entry from the Master Register. If this administration insists, its assignment shall be retained in the Master Register subject to the application of the procedure of No. 1255 of the Radio Regulations; the period of two months specified in No. 1259 of the Radio Regulations shall start when the assignment of the Member country whose agreement is required is brought into use.

4.10 When the Board finds that the agreement of Contracting Members is not required or when the Board is informed that the required agreement has been obtained, it shall update the master copy of the Plan.

SECTION C – CANCELLATION OF ASSIGNMENTS

4.11 An administration proposing to cancel an assignment in the Plan, whether or not as a result of a modification (for instance a change of frequency), shall immediately so inform the IFRB. The Board shall update the master copy of the Plan accordingly.

SECTION D – MAINTENANCE AND PUBLICATION OF THE PLAN

4.12 The IFRB shall maintain an up-to-date master copy of the Plan and its appendices, taking account of the application of the procedure specified in this Article; to this end the IFRB shall periodically prepare recapitulative documents listing all amendments made to the Plan as a result of modifications made in accordance with the procedure of this Article, the addition of new assignments in conformity with this Agreement, and any cancellations of which the Board has been notified.

4.13 The Secretary-General shall publish an up-to-date version of the Plan in an appropriate form as and when circumstances justify and in any case every five years.

ARTICLE 5

Notification of Frequency Assignments

5.1 Whenever an administration intends to bring into use an assignment in conformity with this Agreement, it shall notify the assignment to the IFRB in accordance with the provisions of Article 12 of the Radio Regulations.

5.2 Notices of frequency assignments in conformity with this Agreement shall not be examined by the Board under No. 1241 with respect to frequency assignments recorded in the Master Register on behalf of Contracting Members for stations of primary or permitted services of administrations, Parties to this Agreement.

5.3 In relations between Contracting Members, assignments thus brought into service and entered into the Master Register will have the same status, irrespective of the date on which they are brought into service.

ARTICLE 6

Procedure Applicable to New Assignments of the Aeronautical Radionavigation Service

6.1 In order to permit the compatible development of the aeronautical radionavigation service in the band 283.5 - 315 kHz, the IFRB shall examine in accordance with No. 1245 of the Radio Regulations the frequency assignments of this service notified by Contracting Members. To this effect the following provisions shall be applied.

6.2 The Board shall examine the frequency assignment with respect to the probability of harmful interference to the service provided or to be provided by a station for which a frequency assignment:

a) is already recorded in the Master Register and bears a date in Column 2a; *or*

b) is in conformity with No. 1240 of the Radio Regulations and is recorded in the Master Register with a date in Column 2b, but has not, in fact, caused harmful interference to any frequency assignment with a date in Column 2a or to any assignment in conformity with No. 1240 with an earlier date in Column 2b;

c) is in conformity with this Agreement but has not yet been notified in accordance with Article 4;

d) was published in Part I of the weekly circular in accordance with paragraph 4.4 (Article 4).

6.3 In the event of the finding being unfavourable with respect to a frequency assignment described in paragraphs 6.2 *c)* or 6.2 *d)* above, if the administration resubmits the notice under No. 1255 of the Radio Regulations the period of two months specified in No. 1259 shall not start until the assignment which gave rise to the unfavourable finding is brought into service.

6.4 For the purpose of these examinations, the IFRB's Technical Standards shall apply.

ARTICLE 7

Special Arrangements

7.1 In addition to the procedure provided for in Article 4 of this Agreement and to facilitate its application with a view to improving the utilization of the Plan, Contracting Members may conclude special arrangements in accordance with the relevant provisions of the Convention and of the Radio Regulations.

ARTICLE 8

Scope of Application of this Agreement

8.1 This Agreement shall bind Contracting Members in their relations with one another but shall not bind those Members with respect to non-Contracting countries.

8.2 If a Contracting Member makes reservations with regard to any provision of this Agreement, other Contracting Members shall be free to disregard that provision in their relations with the Contracting Member which has made such reservations.

ARTICLE 9

Approval of this Agreement

9.1 This Agreement shall be subject to approval by the competent authorities of the countries on behalf of which the Agreement was signed. Instruments of approval shall be deposited, in as short a time as possible, with the Secretary-General, who shall inform all the Members of the Union.

ARTICLE 10

Accession to this Agreement

10.1 Any Member of the Union in the European Maritime Area which has not signed this Agreement may accede thereto at any time. Such accession shall extend to the Plan as it stands at the time of the accession and shall be made without reservation. The instruments of accession shall be deposited with the Secretary-General who shall promptly inform all the Members of the Union. After the date of entry into force of this Agreement, for each Member acceding to the Agreement it shall enter into force on the date of the deposit by such a Member of its instrument of accession.

ARTICLE 11

Termination of Participation in this Agreement

11.1 Any Contracting Member shall have the right at any time to terminate its participation in this Agreement by a notification sent to the Secretary-General, who shall inform all the Members of the Union.

11.2 Such termination of participation shall take effect after a period of one year from the date of receipt by the Secretary-General of the said notification.

11.3 On the date on which the termination of participation becomes effective, the IFRB shall delete from the Plan the assignments entered in the name of the Member concerned.

ARTICLE 12

Revision of the Agreement

12.1 No revision of this Agreement shall be undertaken except by a competent administrative radio conference of the Members of the Union in the European Maritime Area, convened in accordance with the procedure laid down in the Convention.

ARTICLE 13

Abrogation and Replacement of the Regional Arrangement Concerning Maritime Radiobeacons in the European Area of Region 1 (Paris, 1951)

13.1 This Agreement abrogates and replaces the Regional Arrangement Concerning Maritime Radiobeacons in the European Area of Region 1 (Paris, 1951).

ARTICLE 14

Entry into Force of this Agreement

14.1 This Agreement shall enter into force on 1 April 1992 at 0001 hours UTC.

IN WITNESS WHEREOF the delegations of Members of the Union mentioned above have, on behalf of their respective competent authorities, signed this Agreement in a single copy in the Arabic, English, French, Russian and Spanish languages in which, in case of dispute, the French text shall be authentic. This copy shall remain deposited in the archives of the Union. The Secretary-General shall forward one certified copy to each Member in the European Maritime Area.

Done at Geneva, 13 March, 1985.

For the People's Democratic Republic of Algeria:

N. BOUHIRED
A. HAMOUI
M. SAIS
M. KAHLAL

In the name of the Federal Republic of Germany:

FRIEDRICH G. WIEFELSPÜTZ
EBERHARD GEORGE

For Austria:

ERNST STEINER

For Belgium:

A. L. I. MOERMAN

For the People's Republic of Bulgaria:

D. STAMATOV

For the Republic of Cyprus:

ANDREAS XENOPHONTOS

For Denmark:

B. WEDERVANG
SØREN HESS
IB PFORR-WEISS

For Spain:

VALERIANO MARTIN MANRIQUE
CARLOS MARTIN ALLEGUE
FERNANDO BUENO SEVILLA
JOSE HERNANDO REQUEJO

For Finland:

T. HAHKIO
JORMA KARJALAINEN
PETRI HUKKI
KARI KOHO

For France:

J. L. BLANC
J. P. RENOUX
R. BISNER

For Greece:

DIMITRIOS STRATIGOULAKOS
IOANNIS NIKOLAKOPOULOS
FILIPPOS PITAOULIS
IOANNIS MOUROULIS

For the Hungarian People's Republic:

PETE JÓZSEF

For Ireland:

THOMAS A. DEMPSEY
PATRICK CAREY
BRIAN MILLANE
PATRICK KEATING

For the State of Israel:

E. F. HARAN

For Italy:

ANDREA DELL'OVO

For the Socialist People's Libyan Arab Jamahiriya:

MAHMOUD MILAD ZEREBA
MOHAMED EL GHAWI
ALI M. BOUEISHI

For the Republic of Malta:

ALFRED FALZON
JOSEPH BARTOLO
ANTHONY VELLA
ALEXANDER BONNICI

For the Kingdom of Morocco:

I. TOUMI AHMED

For Monaco:

CESAR CHARLES SOLAMITO

For Norway:

THORMOD BØE
GEIR SUNDE

For the Kingdom of the Netherlands:

M. BOORSMA
A. R. VISSER

For the People's Republic of Poland:

JANUSZ FAJKOWSKI

For Portugal:

FERNÃO MANUEL HOMEM DE GOUVEIA FAVILA VIEIRA
JOAQUIM FERNANDES PATRICIO
AMERICO CAMACHO DE CAMPOS
JOSE MANUEL MARQUES RIBEIRO REIS
JOSE AUGUSTO VILAS BOAS TAVARES

For the German Democratic Republic:

D. ZAMZOW

For the Socialist Republic of Romania:

CONSTANTIN CEAU✈ESCU

For the United Kingdom of Great Britain and Northern Ireland:

MICHAEL PETER DAVIES
LESLIE WILLIAM BARCLAY
MICHAEL JOHN BATES

For Sweden:

KRISTER BJÖRNSJÖ

For the Czechoslovak Socialist Republic:

BUKOVIANSKY GREGOR

For Tunisia:

M. SALEM BCHINI
M. HABIB BOUFARES

For Turkey:

IBRAHIM GÖKSEL
HÜSEYIN GÜLER

For the Union of Soviet Socialist Republics:

B. CHIRKOV

For the Socialist Federal Republic of Yougoslavia:

Dr DRAŠKO MARIN

ANNEX 1

Frequency Assignment Plan for Stations of the Radionavigation Service (Radiobeacons) for the European Maritime Area in the Band 283.5 - 315 kHz

Column	*Plan column headings*
1	*Assigned frequency (kHz)*
2	*Channel number*
3	*Country symbol*
4	*Transmitting station name*
5	*Symbols of the country or geographical area in which the transmitting station is located* (see Table 1 of the Preface to the International Frequency List)
6	*Longitude and latitude* (in degrees and minutes) *of the transmitting station*
7	*Radius (km) of the circular service area* (considered for ground-wave propagation conditions)[1]
8	*Nature of service*
9	*Necessary bandwidth and class of emission*[2]
10	*Necessary Effective Monopole Radiated Power (e.m.r.p.) (dBW)*[3] (value calculated on the basis of the minimum field strength to be protected and the service range for ground-wave propagation conditions)
11	*Antenna characteristics (ND)*
12	*Regular hours of operation (UTC)* of the frequency assignment
13	*Remarks*

[1] Sky-wave propagation occurs at night and this will cause bearing errors at long ranges. Thus the night-time service range should be adjusted, where necessary, to give a maximum range not exceeding 150 nautical miles (280 km). With this limitation it is not necessary to consider the sky-wave field strength for planning purposes.

[2] The Plan was established on the basis of class of emission A1A. However, the technical parameters also provide for composite emissions using both A1A and F1B.

[3] The type of power to be notified under Article 12 of the Radio Regulations shall be the peak envelope power determined by the A1A emission of the primary function of the radiobeacon.

ANNEX 2

Channelling Arrangement for Maritime Radiobeacons in the Band 283.5 - 315 kHz[1]

Channel No.	Frequency (kHz)	Channel No.	Frequency (kHz)
1	284.0	31	299.0
2	284.5	32	299.5
3	285.0	33	300.0
4	285.5	34	300.5
5	286.0	35	301.0
6	286.5	36	301.5
7	287.0	37	302.0
8	287.5	38	302.5
9	288.0	39	303.0
10	288.5	40	303.5
11	289.0	41	304.0
12	289.5	42	304.5
13	290.0	43	305.0
14	290.5	44	305.5
15	291.0	45	306.0
16	291.5	46	306.5
17	292.0	47	307.0
18	292.5	48	307.5
19	293.0	49	308.0
20	293.5	50	308.5
21	294.0	51	309.0
22	294.5	52	309.5
23	295.0	53	310.0
24	295.5	54	310.5
25	296.0	55	311.0
26	296.5	56	311.5
27	297.0	57	312.0
28	297.5	58	312.5
29	298.0	59	313.0
30	298.5	60	313.5
		61	314.0
		62	314.5

[1] One multi-frequency navigation system using maritime radiobeacons needs the use of frequencies which, except for one of them, are not integer multiples of 500 Hz.

If no protection area exists, the one frequency (285.5 kHz) which is an integer multiple of 500 Hz should be designated for the exclusive use of this system.

ANNEX 3

TECHNICAL DATA

Technical Parameters Used in Establishing a Frequency Assignment Plan in the European Maritime Area for the Maritime Radionavigation Service (Radiobeacons) in the Band 283.5 - 315 kHz

1. *Maritime radionavigation service (radiobeacons)*

1.1 *Class of emission*

The Plan was established on the basis of class of emission A1A. However, the technical parameters also provide for composite emissions using both A1A and F1B.

1.2 *Propagation*

The ground-wave mode of propagation only was used. Ground-wave field strength was calculated according to CCIR Recommendation 368-4 for propagation over sea, with $\sigma = 5$ S/m, $\varepsilon = 70$. The curve for 300 kHz was used. This is given in Figure 3.1 and refers to an e.m.r.p. of 1 kW.

It was recognized that, where some part of the propagation path is over land, the resulting field strength will be lower than that obtained using the prediction for an oversea path. This was taken into account in the Plan.

1.3 *Minimum field strength to be protected*

The following values of minimum field strength to be protected (see also Nos. 2861 and 2862 of the Radio Regulations) were applied:

1.3.1 34 dB(μV/m) for stations north of parallel 43° North;

1.3.2 37.5 dB(μV/m) for stations on and south of parallel 43° North.

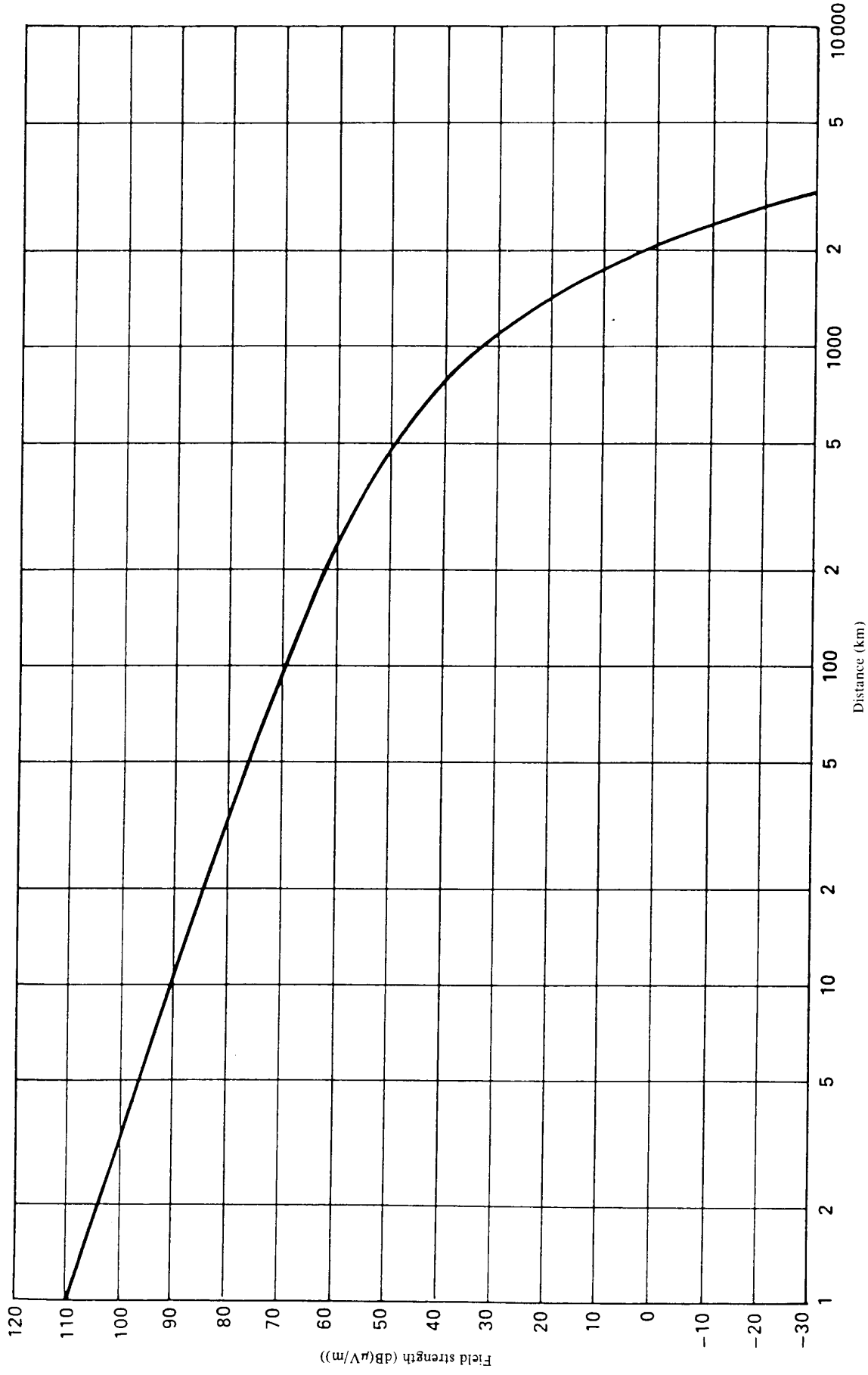

FIGURE 3.1

Ground-wave propagation curve for 300 kHz
(sea water, average salinity), 20 °C with σ = 5 S/m, ε = 70)

1.4 *Protection ratio*

The following values of protection ratio (see No. 164 of the Radio Regulations) were applied:

Frequency separation between wanted and interfering signal in kHz	Protection ratio in dB
0	15
0.5	–39
1.0	–60
1.5	–60

No account was taken of protection ratio requirements for frequency separations exceeding 1.5 kHz.

1.5 *Multiple interference*

For a given compatibility calculation only the interference contribution from the strongest interfering signal was considered.

1.6 *Channel spacing*

0.5 kHz.

1.7 *Radiated power*

The effective monopole radiated power (e.m.r.p.) (see No. 157 of the Radio Regulations) was derived from the minimum field strength to be protected at the edge of the coverage area.

2. *Compatiblity between the maritime radionavigation service (radiobeacons) and the aeronautical radionavigation service*

In applying the planning program as part of the computer program package for the establishment of the Plan, a frequency for stations of the maritime radionavigation service was selected on the basis of criteria contained in this Annex. In applying in the second stage the incompatibility analysis program as part of the computer program package, the final compatibility analysis vis-a-vis stations of the aeronautical radionavigation service to which this band is also allocated on a permitted basis was carried out on the basis of the Technical Standards of the IFRB. This analysis identified those cases where there was a probability of harmful interference in either direction.

APPENDIX 1 TO ANNEX 3

Criteria to be Used in Identifying Administrations Whose Assignments may be Affected by a Modification to the Plan

The following criteria shall be used in identifying administrations with which an agreement is required because their assignments may be affected by a modification to the Plan.

For the purpose of this Annex the following definitions are used:

– the service area of a maritime radiobeacon station is the area limited on the one hand by the coast and on the other hand by the service area radius which is indicated in the Plan;

– the service area of a station of the aeronautical radionavigation service is the area around this station limited by the service area radius.

1. *Maritime radionavigation service (radiobeacons) of a country in the European Maritime Area*

The service provided by a station for which an assignment is in conformity with the Plan may be affected by a modification to the Plan when the wanted-to-interfering signal ratio at any point in the service area resulting from the proposed modification to the Plan is less than the protection ratio indicated in section 1.4 of Annex 3. The calculation of the protection ratio is based on the criteria in Annex 3.

2. *Maritime radionavigation service (radiobeacons) of a country outside the European Maritime Area or aeronautical radionavigation service*

The service provided by a station in the maritime radionavigation service of a country outside the European Maritime Area or in the aeronautical radionavigation service, for which an assignment is recorded in the Master Register, may be affected by a modification to the Plan when the application of the relevant Technical Standards of the IFRB produces an unfavourable finding.

APPENDIX 2 TO ANNEX 3

The Transmission of Differential Omega Corrections

According to No. 466 of the Radio Regulations, it is possible to add information on the long dash of a radiobeacon transmission by using narrow-band techniques in order to provide differential Omega corrections, provided that the prime function of the radiobeacon is not significantly degraded.

FINAL PROTOCOL[1]

At the time of signing the Final Acts of the Regional Administrative Conference for the Planning of the Maritime Radionavigation Service (Radiobeacons) in the European Maritime Area (Geneva, 1985), the undersigned delegates take note of the following statements made by signatory delegations.

No. 1

(*Original:* French)

For Portugal:

The Delegation of Portugal to the Regional Administrative Conference for the Planning of the Maritime Radionavigation Service (Radiobeacons) in the European Maritime Area (Geneva, 1985) reserves the right of its Government to take such measures as it deems necessary to safeguard its interests should Members fail in any way to abide by the provisions of the Conference or if reservations made by other countries jeopardize the operation of its radiocommunication services.

No. 2

(*Original:* English)

For the Republic of Malta:

The Maltese Delegation to the Regional Administrative Conference for the Planning of the Maritime Radionavigation Service (Radiobeacons) in the European Maritime Area (Geneva, 1985) declares that its Administration reserves the right to take such action as it considers necessary to safeguard its interests should any Member fail in any way to comply with the provisions of the Agreement, its Annexes and Protocol attached to it or should reservations by other countries jeopardize Malta's maritime radionavigation service.

No. 3

(*Original:* French)

For the People's Democratic Republic of Algeria, the Socialist People's Libyan Arab Jamahiriya, the Kingdom of Morocco and Tunisia:

The Delegations of the above countries to the Regional Administrative Conference for the Planning of the Maritime Radionavigation Service (Radiobeacons) in the European Maritime Area (Geneva, 1985) hereby state that the signature and possible subsequent ratification by their respective Governments or competent authorities of the Final Acts of the Conference are not valid with regard to the Zionist entity referred to in Annex 1 to the Convention under the alleged name of Israel and do not in any way imply recognition of it.

No. 4

(*Original:* French)

For Tunisia:

In signing the Final Acts of the Regional Administrative Conference for the planning of the Maritime Radionavigation Service (Radiobeacons) in the European Maritime Area (Geneva, 1985), the Tunisian Delegation reserves its Government's right to take any measures it may consider necessary to safeguard its interests should any other country fail in any way to observe the provisions laid down in the Final Acts or should the reservations made by another country jeopardize the radiocommunication services of the Tunisian Republic.

No. 5

(*Original:* French)

For the Kingdom of Morocco:

The towns of Sebta (Ceuta) and Melillia (Melilla), together with their areas, are an integral part of the territory of the Kingdom of Morocco.

Consequently, the Moroccan Administration reserves all of its country's rights with regard to the frequency assignments for maritime radiobeacons included in the Plan on behalf of Spain in the above-mentioned territories.

Signature of the Final Acts of this Conference in no way implies recognition of Spanish sovereignty over these territories.

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1 *Note by the General Secretariat:* The texts of the Final Protocol are shown in the chronological order of their deposit. In the table of contents these texts are grouped in the alphabetical order of country names.

No. 6

(*Original:* French)

For France:

In signing the Final Acts of the Regional Administrative Conference for the Planning of the Maritime Radionavigation Service (Radiobeacons) in the European Maritime Area (Geneva, 1985), the Delegation of France reserves its Government's right to take whatever action it may consider necessary to ensure the protection and proper operation of its maritime radionavigation service which uses the phase measurement multifrequency system.

No. 7

(*Original:* English)

For the Federal Republic of Germany, Denmark, Finland, Ireland, Norway, the Kingdom of the Netherlands, the United Kingdom of Great Britain and Northern Ireland, Sweden and Turkey:

Recognizing the vital contribution made by maritime radiobeacons to safety at sea, the above-mentioned Contracting Members view with concern the decision of the Conference to defer the entry into force of the Agreement until 1992. There will therefore be a period of seven years before the new Frequency Plan for maritime radiobeacons can be implemented and during that period the beacons must continue to operate under the Paris Arrangement of 1951.

The above-mentioned Contracting Members therefore urge all Contracting Members and the IFRB to do everything possible to preserve the integrity of the new Plan so that when it is brought into use maritime radiobeacons can continue to contribute to safety at sea in the European Maritime Area.

No. 8

(*Original:* Spanish)

For Spain:

The Spanish Delegation urges the other Delegations attending the Conference to impress upon their administrations the need to safeguard the integrity of the new Plan until the date on which it enters into force.

No. 9

(*Original:* Spanish)

For Spain:

The Spanish Delegation to this Conference rejects the reservation bearing the No. 5 in the Final Protocol and entered by the Delegation of the Kingdom of Morocco with regard to the entry of frequencies for the stations of Ceuta and Melilla in the Plan.

Ceuta and Melilla are Spanish cities and as such constitute part of the national territory. Spanish sovereignty over them therefore cannot be questioned.

No. 10

(*Original:* English)

For the State of Israel:

The declarations made by certain Delegations in No. 3 of the Final Protocol, being in flagrant contradiction with the principles and purposes of the International Telecommunication Union, and therefore void 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 regarding 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 right to safeguard its interests should the Governments of these Delegations in any way violate any of the provisions of the Final Acts of the Regional Administrative Conference for the Planning of the Maritime Radionavigation Service (Radiobeacons) in the European Maritime Area (Geneva, 1985).

The Delegation of Israel further notes that declaration No. 3 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.

(The signatures follow)

(The signatures following the Final Protocol are those shown on pages 7 and 8)

RESOLUTION No. 1

Application of Articles 4, 5 and 6 of the Agreement Before its Entry into Force

The Regional Administrative Conference for the Planning of the Maritime Radionavigation Service (Radiobeacons) in the European Maritime Area (Geneva, 1985),

considering

a) that, in accordance with its agenda, it has adopted an Agreement and an associated Plan for the maritime radionavigation service (radiobeacons) in the band 283.5 - 315 kHz;

b) that some administrations may need to modify the characteristics of assignments appearing in the Plan or to add new assignments to the Plan or to notify assignments included in the Plan before the Agreement enters into force;

c) that some administrations may need to notify frequency assignments in the aeronautical radionavigation service in the band 283.5 - 315 kHz before the Agreement enters into force;

d) that means must be provided, before the date of entry into force of the Agreement, to permit modifications to the Plan and to ensure that the proposed uses of the aeronautical radionavigation service in the relevant band are compatible with the Plan;

resolves

1. that, pending the entry into force of the Agreement, administrations and the IFRB shall apply the procedures set out in Article 4 of the Agreement for modifications of the Plan;

2. that, during the same period, administrations and the IFRB shall apply the procedures set out in Articles 5 and 6 of the Agreement for the notification, examination and recording of frequency assignments in the relevant frequency band, as well as the provisions of paragraph 3 below;

3. that the transitional procedure in the Annex to this Resolution shall be applicable during the period in question.

4. that new radiobeacon stations of the maritime radionavigation service brought into use before the date of entry into force of the Agreement shall conform to the characteristics specified in the Plan except as regards the frequency;

5. that when selecting frequencies for use in the transitional period, administrations shall take account of the fact that some receivers in current use are less selective than the equipment to be used in future.

ANNEX TO RESOLUTION No. 1

Transitional Procedure Applicable to Frequency Assignments Notified Under the Terms of Article 5 of the Agreement Before its Entry into Force

1. When an administration proposes to modify the characteristics of an assignment entered in the Master Register in order to make it consistent with the Plan, or when an administration wishes to bring into service an assignment in conformity with the Plan, it shall notify that assignment in accordance with Article 5 of the Agreement.

2. The IFRB shall examine such notifications relating to assignments entered in the Master Register on the date of receipt of the notification and shall inform the notifying administration of any incompatibility with assignments of other administrations.

3. The notifying administration shall endeavour to secure the agreement of the administrations identified under the terms of paragraph 2 above.

4. When the agreement of the administrations concerned has been obtained, the assignment may be brought into service in accordance with the Plan, and, if necessary, the corresponding assignment which has been the subject of the modification shall be deleted from the Master Register.

RESOLUTION No. 2

Updating of the Master International Frequency Register with Regard to Assignments to Stations of the Maritime Radionavigation Service (Radiobeacons) in the Band 283.5 - 315 kHz to Permit the Entry into Force of the Agreement and Associated Plan

The Regional Administrative Conference of the Planning of the Maritime Radionavigation Service (Radiobeacons) in the European Maritime Area (Geneva, 1985),

considering

a) that, in accordance with its agenda the present Conference has adopted an Agreement and an associated Plan for the maritime radionavigation service (radiobeacons) stations in the band 283.5 - 315 kHz;

b) that under the provisions of Article 5 of the Agreement prepared by the present Conference, the Contracting Members shall notify the IFRB of frequency assignments to stations of the planned service before they are brought into operation;

c) that the administrations of Contracting Members and the IFRB should have an appropriate procedure for implementing the Plan agreed at the present Conference with the least possible difficulty;

resolves

1. that, 90 days prior to the entry into force of the Agreement, administrations shall notify the IFRB of the assignments in conformity with the Plan that are intended to replace the corresponding assignments entered in the Master Register;

2. that if, in examining the frequency assignments notified by administrations under the terms of paragraph 1 of this Resolution, the Board arrives at a favourable finding under No. 1241 of the Radio Regulations, these assignments shall retain the original date entered in column 2;

3. that, 30 days after the date of entry into force of the Agreement, assignments entered in the Master Register for which the IFRB has not received a notice concerning the entry into service of the corresponding assignment in the Plan shall be retained in the Master Register, with a remark in the appropriate column to show that the assignment in question is not entitled to any protection in relation to assignments that are in conformity with the Agreement and shall not cause any harmful interference to such assignments. Each administration concerned shall be advised of such action;

4. that if, upon expiry of the above-mentioned period, the Board receives a notice under the terms of paragraph 1 above, it shall delete the corresponding assignment from the Master Register;

invites the IFRB

to provide administrations with all the necessary assistance in the implementation of the provisions of this Resolution.

RESOLUTION No. 3

**Choice Between the FSK and MSK Techniques
for Data Transmissions from Maritime Radiobeacons**

The Regional Administrative Conference for the Planning of the Maritime Radionavigation Service (Radiobeacons) in the European Maritime Area (Geneva, 1985),

considering

a) that there would be operational advantage in employing radiobeacons for the transmission of data to ships;

b) that this could be achieved by the inclusion in the emissions from such beacons of periods of data transmissions employing the frequency shift keying technique (FSK) using a shift of ± 85 Hz or the minimum shift keying technique (MSK) using a shift of ± 10 Hz;

c) that there may be operational advantage in being able to take an automatic radio bearing for a short period during or immediately adjacent to the data transmission;

d) that there are unresolved doubts as to which is the better technique;

e) that further studies and practical tests on the above-mentioned techniques are required;

f) that the choice of either technique will not affect the frequency plan for maritime radiobeacons as adopted by this Conference;

g) that a single world-wide standard technique is desirable;

resolves

1. to invite the CCIR to undertake further studies on the technical, operational and economic aspects of the above techniques and to report the outcome to the World Administrative Radio Conference for the Mobile Services, 1987;

2. to invite administrations to take part in the CCIR studies and to arrange or participate in further operational trials;

3. to invite the Administrative Council to include the matter in the agenda for the World Administrative Radio Conference for the Mobile Services, 1987;

4. to invite the World Administrative Radio Conference for the Mobile Services, 1987, to consider the matter and, if possible, to choose between the FSK and MSK techniques;

instructs the Secretary-General

to draw the attention of the International Maritime Organization (IMO) and the International Association of Lighthouse Authorities (IALA) to this Resolution and invite them to participate in the studies.

RECOMMENDATION No. 1

Minimum Technical Characteristics and Conditions to be Applied for Maritime Radiobeacons and Radio-Direction Finders in the Band 283.5 - 315 kHz

The Regional Administrative Conference for the Planning of the Maritime Radionavigation Service (Radiobeacons) in the European Maritime Area (Geneva, 1985),

considering

a) that in accordance with its agenda it adopted an Agreement and an associated Plan for the maritime radionavigation service (radiobeacons) in the band 283.5 - 315 kHz;

b) that direction-finders installed in ships in compliance with the International Convention for the Safety of Life at Sea, 1974, as amended in 1981, are required to operate on additional frequencies using other classes of emissions;

recommends

that administrations take account of the technical characteristics and conditions contained in Annexes A, B and C to this Recommendation.

ANNEX A

Minimum Technical Characteristics for Maritime Radiobeacons

ANTENNA AND EARTH SYSTEM

1. The antenna and earth system should be so designed as to restrict radiation of horizontally polarized waves and of signals directed towards the ionosphere. A vertical or T antenna should be used for preference.

2. The earthing system or counterpoise associated with the antenna should, as far as possible, preserve the symmetry of the radiation system as a whole.

3. To minimize their influence on the radiation pattern, horizontal power and telecommunication lines less than 100 metres from the antenna should be underground.

TRANSMITTERS

Frequencies

4. The frequency tolerance specified in Appendix 7 to the Radio Regulations is applicable to the transmitters of A1A emissions.

5. Transmitters of F1B emissions should maintain their assigned frequency with a tolerance of ± 10 Hz.

6. Appendix 8 to the Radio Regulations specifies the maximum permitted spurious emission power levels of all transmitters.

Modulation and structure of signal

7. The signal transmitted from a maritime radiobeacon comprises: an identification signal transmitted twice using Morse code with A1A emission; a long dash for direction finding purposes; and an optional data transmission sequence with F1B emission.

8. The basic sequence of the transmission is composed as follows:

- an identification signal in Morse code transmitted at least twice, followed by a long dash of at least 25 seconds, the total transmission time being 38 seconds;
- optional F1B data messages transmitted from the station (or from stations operating in groups) in the next 22 seconds; or, if no data are transmitted, this period may be used to extend the long dash;
- when radiobeacons are grouped together, the stations transmit the A1A message sequentially in consecutive minutes.

Accuracy of timing

9. All maritime radiobeacons operating in groups should be controlled by a device ensuring the accuracy of the transmission schedules to within ± 2 seconds.

Field strength measurements

10. When a maritime radiobeacon is brought into service or if alterations are made to the equipment or antenna and earth system of a maritime radiobeacon in service, field strength measurements should be made to adjust the radiated power to the correct values to give the nominal day ranges with a 95% probability (± 3 dB).

11. Such measurements should be repeated at regular intervals not exceeding one year.

Verification of radiobeacon emissions

12. Each administration should ensure that:

a) the field strength does not vary by more than ± 3 dB from the nominal value determined in accordance with paragraph 10;

b) the transmission frequency is maintained within the specified tolerance;

c) the transmitted signal is correct;

d) for maritime radiobeacons operating in groups, the timing accuracy is maintained with the specified limits.

STANDBY EQUIPMENT

13. Maritime radiobeacons should have the necessary standby equipment to prevent any stoppage due to the failure of the electricity supply, the transmitter or the timing device.

ANNEX B

Minimum Technical Characteristics for Maritime Radio Direction-Finders

FREQUENCY BANDS

1. Maritime radio direction-finders should permit bearings to be taken on class A1A emissions in the maritime radiobeacon frequency band between 283.5 kHz and 315 kHz.

2. Maritime radio direction-finders may also be equipped to receive, decode and display the additional information which a radiobeacon is allowed to transmit as a further aid to navigation. Such transmissions should be on the radiobeacon assigned frequency and should be of class F1B.

SELECTIVITY

3. For class of emission A1A, the overall radio frequency and intermediate frequency selectivity of the direction-finder should be as follows:

a) for an attenuation of 6 dB, the bandwidth is equal to or less than 210 Hz;

b) for an attenuation of 30 dB, the bandwidth is less than 460 Hz;

c) for an attenuation of 60 dB, the bandwidth is less than 960 Hz.

4. The spurious response rejection ratio should be 80 dB or higher.

SENSITIVITY

5. A field strength equal to 50 μV/m should produce a signal in the headphones of a receiver with an S/N ratio of 20 dB or higher, sufficient to identify and indicate the bearing of the transmitting station with a readout accuracy within ± 1 degree of the correct bearing.

MISCELLANEOUS CHARACTERISTICS

6. Maritime radio direction-finders should include means of recognizing A1A identification signals.

7. The receiver should maintain the frequency to which they are tuned within a tolerance of ± 50 Hz.

8. Maritime radio direction-finders should be provided with means of indicating the bearing of the wanted signal. After allowing for any site error, the relative bearing indicated by the receiver should be within 1° of the correct bearing for all measurements made.

9. The radio direction-finder should be capable of detecting the presence of interference which may cause a bearing to be incorrect.

ANNEX C

Technical Conditions for the Installation and Calibration of Radio Direction-Finders in Vessels[1]

1. The antenna assembly should be mounted as near as practicable to the vessel's centre line and should be as remote as is practicable from large movable metal objects and conductors such as other antennas, cranes, derricks and wires.

2. The sense-finding antenna should be as short as practicable.

3. The connecting cables between the antenna system and the apparatus should be electromagnetically screened. All joints should be watertight.

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[1] It should be noted that direction-finders installed in ships which are in compliance with the International Convention of the Safety of Life at Sea, 1974, as amended in 1981, are installed and calibrated in compliance with that Convention.

4. The receiver should be earthed to the hull of the vessel by means of a conductor with as low a resistance as possible.

5. As far as possible, the direction-finder should be so located that mechanical or other noise will cause as little interference as possible to the efficient determination of bearings.

6. A means of providing information on the ship's magnetic or gyro compass heading should be provided in the vicinity of the direction-finder.

7. The calibration curve of the direction-finder should be determined before the latter is brought into use and whenever the position of the antennas or the conductors referred to above is changed or the superstructure of the vessel is altered substantially.

8. The calibration of the direction-finder should be checked at intervals not exceeding 12 months and the direction-finder should be recalibrated if the calibration curve is found to be subtantially in error.

9. When the radio direction-finder is calibrated, the frequency used should be as close as possible to 300 kHz.

10. The calibration curve should preferably be determined by means of bearings on short range radiobeacons specially provided for the calibration of radio direction-finders.

RECOMMENDATION No. 2

Use of Maritime Radionavigation Hyperbolic Systems

The Regional Administrative Conference for the Planning of the Maritime Radionavigation Service (Radiobeacons) in the European Maritime Area (Geneva, 1985),

considering

a) that the operation of the maritime radionavigation service has undergone a thorough reorganization with regard to maritime radiobeacons;

b) that there is a trend in maritime radionavigation techniques in the band 283.5 - 315 kHz towards the adoption of new systems;

c) that a requirement for a phase measurement multi-frequency radionavigation system has arisen in the band 283.5 - 315 kHz;

d) that the CCIR is studying the possibility of using radiobeacons in the hyperbolic mode;

recommends

1. that these new requirements should be taken into account;

2. that a future competent World Administrative radio conference should consider the revision of the relevant articles of the Radio Regulations and the allocations given in the table in Article 8 of the Radio Regulations;

invites the Administrative Council

to include consideration of the relevant modifications to the Radio Regulations in the agenda of the World Administrative Radio Conference for the Mobile Services in 1987;

invites the CCIR

to continue the study of this matter;

invites the administrations

to submit contributions on this subject;

instructs the Secretary-General

to bring this Recommendation to the attention of the International Maritime Organization (IMO) and the International Association of Lighthouse Authorities (IALA).