Documents of the Regional Administrative Radio Conference for the Planning of Frequencies for Maritime Radiobeacons in the European Maritime Area

(Geneva, 1985)

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INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document 1001-E*)
15 August 1984
Original : French

PLENARY MEETING

Note by the Secretary-General

AGENDA OF THE CONFERENCE

The agenda of the Conference is contained in Resolution No. 898 adopted by the Administrative Council at its 38th session.

The text of the Resolution is attached.

R.E. BUTLER
Secretary-General

Annex : 1

*) Note by the General Secretariat
To avoid any confusion with the documents of the RARC for the Maritime Mobile Service and the Aeronautical Radionavigation Service in Certain Parts of the MF Band in Region 1, being held at about the same time, the 1000 series has been used for the numbering of the documents of this Conference.

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ANNEX

R No. 898 REGIONAL ADMINISTRATIVE RADIO CONFERENCE FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA

The Administrative Council,

considering that Recommendation No. 602(Rev.MOB-83) of the WARC for the Mobile Services, Geneva, 1983, invited the Administrative Council to take the necessary steps to convene a Regional Administrative Radio Conference for the planning of frequencies for maritime radiobeacons in the European maritime area in accordance with Resolution No. 7 of the Plenipotentiary Conference, Nairobi, 1982;

considering further the results of the consultation conducted by telegram on 10 May 1983;

resolves

1. **that a regional administrative radio conference for the planning of frequencies in the band 283.5 - 315 kHz used by maritime radiobeacons in the European maritime area be convened in Geneva on 4 March 1985 for a duration of 10 days;**

2. **that the agenda of the conference shall be as follows :**

2.1 **to prepare an agreement and an associated frequency assignment plan for the maritime radionavigation service (radiobeacons) in the European maritime area in the band 283.5 - 315 kHz intended to replace the "Regional Arrangement concerning Maritime Radiobeacons in the European Area of Region 1", Paris, 1951;**

2.2 **to afford appropriate protection to frequency assignments to stations of other services to which these bands are also allocated when establishing the Plan for the maritime radionavigation service;**

2.3 **to establish procedures intended for the future modifications of the Plan and permitting a compatible development of the other services to which the band is allocated;**

invites the CCIR to prepare during the interim meeting of Study Group 8 in 1984 a report on the technical parameters to be taken into account by administrations;

instructs the IFRB to invite the administrations of the European maritime area to communicate, at an appropriate date, their requirements on the basis of the information listed in the appropriate sections of Appendix 1 to the Radio Regulations.

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document 1002-E
15 August 1984
Original : French

PLENARY MEETING

Note by the Secretary-General

CREDENTIALS OF DELEGATIONS

1. Under Article 67 of the International Telecommunication Convention, Nairobi, 1982, the delegations sent by a Member of the Union to a conference shall be duly accredited in accordance with Nos. 381 to 387 of the Convention.

2. For ready reference, I hereby transmit to the Conference the text of the aforesaid Article 67 (see Annex).

R.E. BUTLER
Secretary-General

Annex : 1

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ANNEX

ARTICLE 67

Credentials for Delegations to Conferences

380 1. The delegation sent by a Member of the Union to a conference shall be duly accredited in accordance with Nos. 381 to 387.

381 2. (1) Accreditation of delegations to Plenipotentiary Conferences shall be by means of instruments signed by the Head of State, by the Head of the Government or by the Minister for Foreign Affairs.

382 (2) Accreditation of delegations to administrative conferences shall be by means of instruments signed by the Head of State, by the Head of the Government, by the Minister for Foreign Affairs or by the Minister responsible for questions dealt with during the conference.

383 (3) Subject to confirmation prior to the signature of the Final Acts, by one of the authorities mentioned in Nos. 381 or 382, delegations may be provisionally accredited by the Head of the diplomatic mission of the country concerned to the government of the country in which the conference is held. In the case of a conference held in the country of the seat of the Union, a delegation may also be provisionally accredited by the Head of the Permanent Delegation of the country concerned to the United Nations Office at Geneva.

384 3. Credentials shall be accepted if they are signed by the appropriate authority mentioned under Nos. 381 to 383, and fulfil one of the following criteria:

385 – they confer full powers;

386 – they authorize the delegation to represent its government, without restrictions;

387 – they give the delegation, or certain members thereof, the right to sign the Final Acts.

388 4. (1) A delegation whose credentials are found to be in order by the Plenary Meeting shall be entitled to exercise the right to vote of the Member concerned and to sign the Final Acts.

389 (2) A delegation whose credentials are found not to be in order by the Plenary Meeting shall not be entitled to exercise the right to vote or to sign the Final Acts until the situation has been rectified.

390 5. Credentials shall be deposited with the secretariat of the conference as early as possible. A special committee as described in No. 471 shall be entrusted with the verification thereof and shall report on its conclusions to the Plenary Meeting within the time specified by the latter. Pending the decision of the Plenary Meeting thereon, a delegation of a Member of the Union shall be entitled to participate in the conference and to exercise the right to vote of the Member concerned.

391 6. As a general rule, Members of the Union should endeavour to send their own delegations to conferences of the Union. However, if a Member is unable, for exceptional reasons, to send its own delegation, it may give the delegation of another Member powers to vote and sign on its behalf. Such powers must be conveyed by means of an instrument signed by one of the authorities mentioned in Nos. 381 or 382.

392 7. A delegation with the right to vote may give to another delegation with the right to vote a mandate to exercise its vote at one or more meetings at which it is unable to be present. In such a case it shall, in good time, notify the Chairman of the conference in writing.

393 8. A delegation may not exercise more than one proxy vote.

394 9. Credentials and the transfer of powers sent by telegram shall not be accepted. Nevertheless, replies sent by telegram to requests by the Chairman or the secretariat of the conference for clarification of credentials shall be accepted.

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document 1003-E
30 August 1984

PLENARY MEETING

Note by the Secretary-General

At the request of the Director of the CCIR, I have the honour to transmit herewith a copy of a Report by CCIR Study Group 8 to the Conference, established in response to Recommendation No. 602(Rev.) of the WARC Mobile Services (Geneva, 1983), and Resolution No. 898 of the Administrative Council.

R.E. BUTLER
Secretary-General

Annex : mentioned

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INTERNATIONAL TELECOMMUNICATION UNION

CCIR

INTERNATIONAL
RADIO CONSULTATIVE
COMMITTEE

REPORT

TO THE REGIONAL ADMINISTRATIVE RADIO CONFERENCE FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA

Geneva, 1984

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REPORT

TO THE REGIONAL ADMINISTRATIVE RADIO CONFERENCE FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA

Geneva, 1984

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C C I R

REPORT

TO THE

REGIONAL ADMINISTRATIVE RADIO CONFERENCE FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA

1985

FOREWORD

Recommendation No. 602 (Mob-83) of the World Administrative Radio Conference, for the Mobile Services, Geneva, 1983, relating to the planning of frequencies in the band 283.5 - 315 kHz used by Maritime Radiobeacons in the European Maritime Area, requested the CCIR to establish the technical bases needed for the work of the Conference.

CCIR Study Group 8, at its Interim Meeting held in 17 May - 6 June, 1984, studied this question and prepared the following Report, constituting the CCIR Report to the Conference.

The CCIR list of CCIR texts referred in this Report (Recommendations, Reports, etc., and their source document) is given on page ii.

Richard C. Kirby
Director

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LIST OF CCIR TEXTS REFERRED IN THIS REPORT

Recommendation 368-4	Volume V (Geneva, 1982)
Draft Report AC/6	Annex I to this Report
Recommendation 493	Volume VIII (Geneva, 1982)
Report 266	Volume VI (Geneva, 1982)
Recommendation 435	Volume VI (Geneva, 1982)

CCIR REPORT TO THE REGIONAL ADMINISTRATIVE RADIO CONFERENCE FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA

Origin and purpose of the report

a) Recommendation 602 (MOB-83) of the World Administrative Radio Conference for the Mobile Services, 1983, recommends that a regional administrative conference for the European Maritime Area should be convened to revise the provisions of the Paris Arrangement 1951, and prepare a plan of maritime radiobeacons in the European Maritime Area in the band 283.5 - 315 kHz.

b) Recommendation 602 (MOB-83) also invited the CCIR to establish the technical bases needed for the work of that conference.

c) The Administrative Council at its 39th session resolved that such a conference should be convened in Geneva in March 1985 (see Resolution 898 of the Administrative Council) and invited the CCIR to prepare during the interim meeting of Study Group 8 in 1984 a report on the technical parameters to be taken into account by administrations.

d) This report contains a concise summary of the conclusions reached on the technical topics of concern to the conference; these conclusions are based on CCIR texts and on additional information contained in contributions submitted from IALA in particular, to the interim meeting of Study Group 8 in 1984.

e) Some topics concerned with the conference are still under study and these are identified in the report.

f) The report has been prepared in a form designed primarily to assist administrations in their preparations for the conference and to facilitate the work of the conference.

MARITIME RADIOBEACONS

1. Introduction

1.1 Maritime radiobeacons in the European Maritime Area are governed by the "Regional Arrangement for Maritime Radiobeacons in the European Area of Region 1, Paris, 1951", which is largely based on the geographical distribution of radiobeacons existing before 1939 and on the state of maritime navigation at that time.

1.2 Since the conclusion of the Paris Arrangement, 1951, the geographical distribution and certain characteristics of maritime radiobeacons have been changed by bilateral or multilateral agreements, particularly to take into account the development of maritime navigation in the area in question.

1.3 The International Maritime Organization (IMO) has adopted performance standards for ship direction finders (IMO resolution A.223 (VII)) and for differential Omega correction by transmitting stations (IMO resolution A.425 (XI)).

1.4 To assist the safety of navigation of vessels which travel between Regions, the radiobeacon service in the European Maritime Area should be so designed that compatibility is maintained with the radiobeacon services in other Regions.

1.5 If the maritime radiobeacon service is revised existing direction finding receivers are unlikely to comply fully with new requirements. To avoid costly replacement of shipborne equipment, the allocation of new frequencies to radiobeacons should take into consideration their transmitter power and geographical distribution and, at least for a transition period, the technical characteristics, particularly the bandwidth of existing DF receivers.

2. Status of current studies

2.1 The International Association of Lighthouse Authorities (IALA) has submitted the results of a study in which it is shown that it would be possible while conforming to IMO performance standards :

- to eliminate the requirement of transmitting different audio modulating frequencies because :

  i) audio frequency modulation is not used for direction finding purposes;

  ii) any difference between modulation frequencies is not used for identification;

- to increase the number of channels in the allocated frequency band by reducing spacing between carrier frequencies;

- to continue the use of present direction finding receivers using aural identification whilst making future provision to display automatically the radiobeacon's bearing and the receiver's position;

- to reduce the present number of radiobeacon stations in a group.

2.2 The studies conducted in the CCIR relate to the necessary field strength values for the nominal service range, the protection ratio for radiobeacons, the possible format of radiobeacon signals and channelling of the maritime radiobeacon frequency band.

3. Protection Ratio

3.1 The protection ratio used in any frequency assignment plan should be based on the need to limit interference from other signals to such an extent that the error of a bearing obtained from a radiobeacon at a distance up to its nominal operating range would have a 95% probability of not exceeding 2°.

3.2 An analysis of the errors introduced into direction finders by unwanted signals has been reported to the International Association of Lighthouse Authorities (IALA). This analysis established that the maximum error occurs when the phase angle between the wanted and unwanted signals is 45° and that a protection of 15 dB should be adequate to meet the conditions given in paragraph 3.1.

4. Nominal service range

4.1 For planning purposes the nominal service range of radiobeacons in the European Maritime Area should be based on field strength as follows :

50 µV/m for maritime radiobeacons situated north of latitude 43° North;

75 µV/m for maritime radiobeacons situated south of latitude 43° North.

4.2 The field strengths should be determined by use of the appropriate ground wave, over sea propagation curves contined in Recommendation 368-4. However, consideration should also be given to draft CCIR Report AC/6 (Annex I).

5. Format of radiobeacon signals

5.1 Assuming that after revision of the Paris Arrangement 1951 the format of radiobeacon signals may, in some cases, need to ensure both the provision of information capable of use by existing direction-finders and the provision of information for an improved service, studies have shown that a suitable arrangement would technically be feasible.

5.2 The arrangement could consist of two different but time related transmissions being made by appropriately equipped radiobeacons. One, intended for existing direction-finders, could use amplitude modulation (A1A) and occupy about 40 seconds of time, the other could use frequency modulation (F1B), take a few seconds to transmit and meet one of the options of technical characteristics for a data transmission sequence set out in Annex II. A possible composition of the radiobeacon signals and their transmission sequence is described in Annex III.

6. Channelling of the maritime radiobeacon frequency band

6.1 The channelling arrangement will probably be dependent, primarily, upon the necessary bandwidth of the wanted signal, the frequency tolerance of the transmitter and the tuning error and frequency drift of direction finding receivers.

6.2 In considering the future radiobeacon service account needs to be taken of the bandwidth requirements for each class of emission :

6.2.1 For A1A class of emission :

i) the necessary bandwidth will probably be 50 Hz;

ii) the frequency tolerance of the transmitter will be not worse than ± 30 Hz (100 parts in 10^6, see Radio Regulations Appendix 7);

iii) receiver tuning and drift within the temperature range -10° to +55°C is likely to be less than ± 50 Hz.

6.2.2 For F1B class of emission :

i) the necessary bandwidth will probably be 304 Hz or, possibly, 64 Hz depending upon the frequency shift and transmission rate used;

ii) the frequency tolerance of the transmitter should be not worse than ± 10 Hz (see CCIR Recommendation 493-2, Annex 2, paragraph 1.3.3);

iii) receiver tuning and drift within the temperature range -10° to +55°C should be not worse than ± 10 Hz (see CCIR Recommendation 493-2, Annex 2, paragraph 1.3.3).

6.3 Taking these values into consideration the passband and attenuation of new direction finders could probably be :

i) For reception of A1A class of emission :

± 105 Hz at -6 dB

± 230 Hz at -30 dB

± 480 Hz at -60 dB

ii) For reception of F1B class of emission with frequency shift of ± 85 Hz and transmission rate of 100 bauds :

± 175 Hz at -6 dB

± 300 Hz at -30 dB

± 550 Hz at -60 dB

Under these circumstances the values for F1B class of emission dominate and these indicate that a channel plan based on frequency separation of 500 Hz as a minimum would technically be satisfactory.

iii) For reception of F1B class of emission with frequency shift of ± 10 Hz and transmission rate of 40 bauds :

± 52 Hz at -6 dB

± 90 Hz at -30 dB

± 170 Hz at -60 dB

Under these circumstances the values for A1A class of emission dominate and these indicate that a channel plan based on frequency separation of 400 Hz as a minimum would technically be satisfactory.

Annexes : 3

ANNEX I

DRAFT

REPORT AC/6

PROPAGATION CURVES FOR THE MARITIME MOBILE, AERONAUTICAL RADIONAVIGATION AND MARITIME RADIONAVIGATION SERVICES

1. Introduction

In 1985, two Regional Administrative Radio Conferences (RARC) are to be held concerning maritime and aeronautical services, namely :

i) RARC for the maritime mobile service and aeronautical radionavigation service in certain parts of the MF band in Region 1;

ii) RARC for the planning of frequencies in the LF and MF bands used by maritime radiobeacons in the European Maritime Area.

The frequency bands of concern are as follows :

283.5 - 315	kHz	Maritime Radiobeacons
415 - 435	kHz	Maritime Mobile and Aeronautical Radionavigation
435 - 526.5	kHz	Maritime Mobile
505 - 526.5	kHz	Aeronautical Radionavigation
1 606.5 - 1 625	kHz	Maritime Mobile
1 635 - 1 800	kHz	Maritime Mobile
2 045 - 2 160	kHz	Maritime Mobile

In establishing frequency assignment plans, the Conferences will need to consider two related problems : adequate coverage of the service area and minimization of interference. Propagation prediction data are needed to analyze these problems and examples are presented here of propagation curves which may be employed. In these examples, it is assumed that the propagation paths lie entirely over the sea, with both terminals unobstructed by land.

2. Coverage

For the services of interest, the coverage will be provided in most cases by the ground wave. Curves X and Y in Figure 1 correspond to ground-wave propagation (obtained from Recommendation 368-4) and represent the steady-state field strength as a function of distance, resulting from 1 kW e.m.r.p. with a short vertical monopole. The Recommendation also provides for the estimation of field strength over a path that is partly over land. In such cases, the coverage would be reduced.

3. Interference

Harmful interference may occur between the users of one service, and in some cases, between stations of different services using the same bands. Examples of high field strength conditions are shown in Figure 1 by curves A-D which correspond to sky-wave (ionospheric) propagation and represent the median night-time sky-wave field strength from 1 kW e.m.r.p. with a short vertical monopole. In practice, the received sky-wave field strength will be subject to fading and values above and below the median will occur (Report 266-5).

The sky-wave curves were calculated using the method of Recommendation 435-4. They contain a correction for sea-gain and apply to conditions at sunspot minimum and to midnight - circumstances under which the field strength would be expected to be at a maximum.

Figure 1 shows that beyond a certain distance, sky-wave propagation dominates at night-time, and thus this mode of propagation should be taken into account in an assessment of interference at night. The sky-wave field strength is a sensitive function of the location and orientation of the propagation path with respect to the geomagnetic field and the curves given here include examples for low and high latitudes. For the frequency range of interest, however, both ground-wave and sky-wave field strengths are not particularly sensitive functions of frequency for such sea paths. The oscillations appearing in the sky-wave curves for distances beyond about 1 000 km arise from the effect of variations in the vertical radiation angle (different propagation modes) and of the high conductivity of sea water. In day-time, the ground-wave curves apply, but it should be noted that in winter, day-time sky-wave field strengths at the lower frequencies of interest (i.e. around 300 kHz) may be only some 10 dB below night-time values and therefore may need to be considered in an interference assessment.

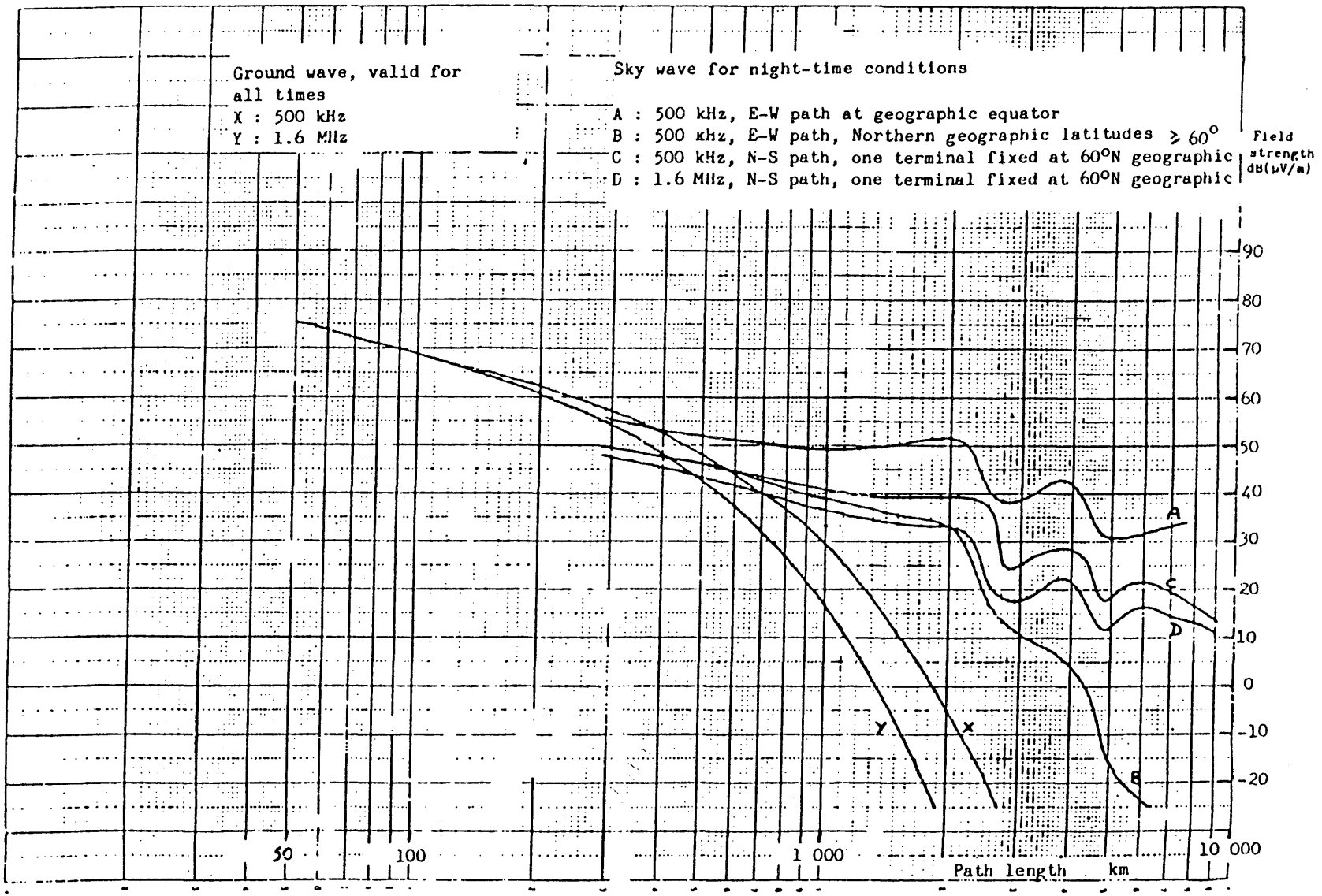


FIGURE 1 - MF curves for oversea propagation for 1 kW e.m.r.p.

ANNEX II

TECHNICAL CHARACTERISTICS OF A DATA TRANSMISSION SEQUENCE

1. This annex describes two possible methods of modulation which could be used for a data transmission sequence. Both methods use F1B class of emission and contain similar information content but have different frequency shifts, transmission rates and error checking arrangements.

2. The first method would use Frequency Shift Keying (FSK) with a frequency shift of ± 85 Hz, transmission rate of 100 bauds and necessary bandwidth of 304 Hz.

2.1 General

2.1.1 The system proposed would be synchronous and use a ten-unit error detecting code as listed in Table 1 of this Annex.

2.1.1.1 The first seven bits of the ten-unit code of Table 1 are information bits. Bits 8, 9 and 10 indicate, in the form of binary number, the number of B elements that occur in the seven information bits, a Y element being a binary number 1 and a B element a binary number 0.

2.1.1.2 The higher frequency corresponding to the B state and the lower frequency corresponding to the Y state of the signal elements.

2.1.2 If error correction in the form of time diversity is used in the transmission, each signal, apart from the phasing signals, would be transmitted twice in a time-spread mode. The first transmission (DX) of a specific signal being followed by the transmission of four other signals before the retransmission (RX) of that specific signal would take place, allowing for a time-diversity reception interval of 400 milliseconds.

2.2 Message format

2.2.1 Examples of the message format for four possible fast transmission sequences are given in Figure 1. The formats differ in that two are of four second duration and two of six seconds and one format of each duration uses error correction in the form of time diversity. The format selected for use in the future radiobeacon system is likely to depend upon the detail needed to define the position of the radiobeacon, the number of symbols considered necessary to cater for all possible messages which might be included in the transmission and the time available during which the transmission will need to take place.

2.2.2 Whatever the format chosen, it will probably need to include a phasing signal, self-identification, the position of the radiobeacon, provision for a message and an error check.

2.2.3 If time diversity is considered necessary to improve the probability of correct signal reception, a four second signal duration would enable the provision of position information accurate to 0.01° and one symbol would be available to contain a message. A six second signal would permit position information accurate to 0.001° to be transmitted and provide nine symbols for message purposes.

2.2.4 If time diversity is not considered necessary a four second signal would permit position information accurate to 0.001° to be transmitted and 19 symbols would be available for message purposes. A six second signal would provide an extra 20 symbols for message purposes.

2.3 Phasing sequence

2.3.1 The phasing sequence provides information to the direction finder to permit correct bit phasing and unambiguous determination of the positions of the signals within the transmission sequence.

2.3.2 If time diversity is considered necessary the phasing sequence could consist of specific signals in the DX and RX positions transmitted alternatively.

2.3.2.1 The phasing signal in the DX position would be four signals of symbol 125 of Table 1.

2.3.2.2 The phasing signals in the RX position specify the start of information and would consist of the signals for symbols 109, 108, 107, 106, 105 and 104 of Table 1, consecutively.

2.3.3 If time diversity is not considered necessary the phasing signal would specify the start of information and consist of the signals for symbols 109, 108, 107, 106, 105 and 104 of Table 1 transmitted consecutively.

2.4 Self-identification

Self-identification would be a two letter identification assigned to the radiobeacon station, coded in accordance with Table 2.

2.5 Position of the radiobeacon station

The position of the radiobeacon station would consist of ten or twelve digits coded in accordance with Table 1.

2.5.1 The first digit would indicate the quadrant in which the radiobeacon is sited as follows :

2.5.1.1 Quadrant NE would be indicated by the digit "0".

2.5.1.2 Quadrant NW would be indicated by the digit "1".

2.5.1.3 Quadrant SE would be indicated by the digit "2".

2.5.1.4 Quadrant SW would be indicated by the digit "3".

2.5.2 The second, third, fourth and fifth digits would indicate the latitude of the radiobeacon in tens, units, tenths of units and hundredths of units of degrees respectively.

2.5.3 The sixth, seventh, eighth, ninth and tenth digits would indicate the longitude of the radiobeacon in hundreds, tens, units, tenths of units and hundredths of units of degrees respectively.

2.5.4 If a message format of the type indicated in Figure 4c, d or e was used the eleventh and twelfth digits would indicate thousandths of units of latitude and longitude respectively.

2.6 Message

2.6.1 The "message" would consist of one or more symbols, the exact number being dependent upon the format selected. The particular meaning of each symbol in each block would need to be defined by an international organization concerned with the operational use of radiobeacons. The symbols 104, 105, 106, 107, 108, 109, 125 and 127 should not be used as part of a message.

2.6.2 The symbol 127 should, however, be inserted in the message format for each information block not used as part of the message content.

2.7 Error check character

The seven information bits of the error-check signal would be equal to the least significant bit of the modulo-2 sums of the corresponding bits of all information characters (i.e. even vertical parity). The phasing signals are not considered to be information characters. Where appropriate the error-check character would be sent in both the DX and RX positions.

3. The second method would use Minimum Frequency Shift Keying (MSK) with a frequency shift of ± 10 Hz, a transmission rate of 40 bauds and necessary bandwidth of 64 Hz. It should be noted that this method has not yet adequately been tested in the maritime environment. However IALA is currently conducting trials with radiobeacons in Sweden over sea paths and results from the trials should be available for consideration by the conference.

3.1 General

The data portion of the signal would consist of a four-second data stream as follows :

All data would be transmitted in the form of sequential data blocks each consisting of 12 bits. The block being initiated by a start bit followed by eight bits of data after which a parity check bit and two stop bits follow (see Figure 2).

3.2 Message format

The message would include a synchronizing sequence, self identification, the position of the radiobeacon and provision for other navigational information.

3.3 Synchronizing sequence

The data stream would start with a synchronizing bit sequence to be used for synchronization of an internal bit generator clock in the receiver. This would enable synchronous reception of the data blocks which follow and improve the bit error rate (BER). The duration of the synchronizing sequence would be 20 bit periods.

Next would follow a starting frame with a duration of 12 bit periods. The frequency being shifted to the higher value (f + = logical 1) during this period.

Table 1 - Ten-unit error-detecting code

Symbol No.	Emitted signal
0	BBBBBBBYYY
1	YBBBBBBYYB
2	BYBBBBBYYB
3	YYBBBBBYBY
4	BBYBBBBYYB
5	YBYBBBBYBY
6	BYYBBBBYBY
7	YYYBBBBYBB
8	BBBYBBBYYB
9	YBBYBBBYBY
10	BYBYBBBYBY
11	YYBYBBBYBB
12	BBYYBBBYBY
13	YBYYBBBYBB
14	BYYYBBBYBB
15	YYYYBBBBYY
16	BBBBYBBYYB
17	YBBBYBBYBY
18	BYBBYBBYBY
19	YYBBYBBYBB
20	BBYBYBBYBY
21	YBYBYBBYBB
22	BYYBYBBYBB
23	YYYBYBBBYY
24	BBBYYBBYBY
25	YBBYYBBYBB
26	BYBYYBBYBB
27	YYBYYBBBYY
28	BBYYYBBYBB
29	YBYYYBBBYY
30	BYYYYBBBYY
31	YYYYYBBBYB
32	BBBBBYBYYB
33	YBBBBYBYBY
34	BYBBBYBYBY
35	YYBBBYBYBB
36	BBYBBYBYBY
37	YBYBBYBYBB
38	BYYBBYBYBB
39	YYYBBYBBYY
40	BBBYBYBYBY
41	YBBYBYBYBB
42	BYBYBYBYBB
43	YYBYBYBBYY
44	BBYYBYBYBB
45	YBYYBYBBYY
46	BYYYBYBBYY
47	YYYYBYBBYB
48	BBBBYYBYBY
49	YBBBYYBYBB
50	BYBBYYBYBB
51	YYBBYYBBYY
52	BBYBYYBYBB
53	YBYBYYBBYY
54	BYYBYYBBYY
55	YYYBYYBBYB
56	BBBYYYBYBB
57	YBBYYYBBYY
58	BYBYYYBBYY
59	YYBYYYBBYB
60	BBYYYYBBYY
61	YBYYYYBBYB
62	BYYYYYBBYB
63	YYYYYYBBBY
64	BBBBBBYYYB
65	YBBBBBYYBY
66	BYBBBBYYBY
67	YYBBBBYYBB
68	BBYBBBYYBY
69	YBYBBBYYBB
70	BYYBBBYYBB
71	YYYBBBBYBY
72	BBBYBBYYBY
73	YBBYBBYYBB
74	BYBYBBYYBB
75	YYBYBBBYBY
76	BBYYBBYYBB
77	YBYYBBBYBY
78	BYYYBBBYBY
79	YYYYBBBYBB
80	BBBBYBYYBY
81	YBBBYBYYBB
82	BYBBYBYYBB
83	YYBBYBYBYY
84	BBYBYBYYBB
85	YBYBYBYBYY
86	BYYBYBYBYY
87	YYYBYBYBYB
88	BBBYYBYYBB
89	YBBYYBYBYY
90	BYBYYBYBYY
91	YYBYYBYBYB
92	BBYYYBYBYY
93	YBYYYBYBYB
94	BYYYYBYBYB
95	YYYYYBYBBY
96	BBBBBYYYBY
97	YBBBBYYYBB
98	BYBBBYYYBB
99	YYBBBYYBYY
100	BBYBBYYYBB
101	YBYBBYYBYY
102	BYYBBYYBYY
103	YYYBBYYBYB
104	BBBYBYYYBB
105	YBBYBYYBYY
106	BYBYBYYBYY
107	YYBYBYYBYB
108	BBYYBYYBYY
109	YBYYBYYBYB
110	BYYYBYYBYB
111	YYYYBYYBBY
112	BBBBYYYYBB
113	YBBBYYYBYY
114	BYBBYYYBYY
115	YYBBYYYBYB
116	BBYBYYYBYY
117	YBYBYYYBYB
118	BYYBYYYBYB
119	YYYBYYYBBY
120	BBBYYYYBYY
121	YBBYYYYBYB
122	BYBYYYYBYB
123	YYBYYYYBBY
124	BBYYYYYBYB
125	YBYYYYYBBY
126	BYYYYYYBBY
127	YYYYYYYBBB

B = 0
Y = 1

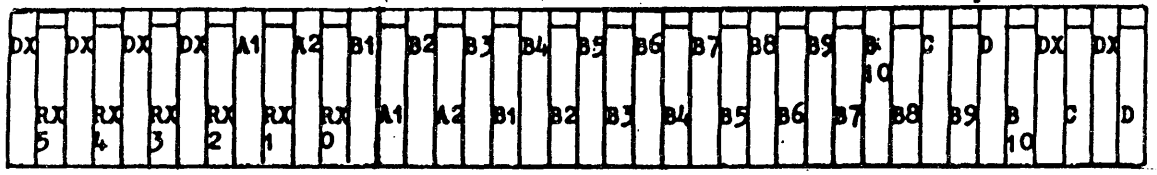
Table 2 - Self-identification code

Figures	Symbol No. (*)	Letters	Symbol No. (*)	Letters	Symbol No. (*)
0	48	A	65	N	78
1	49	B	66	O	79
2	50	C	67	P	80
3	51	D	68	Q	81
4	52	E	69	R	82
5	53	F	70	S	83
6	54	G	71	T	84
7	55	H	72	U	85
8	56	I	73	V	86
9	57	J	74	W	87
		K	75	X	88
		L	76	Y	89
		M	77	Z	90

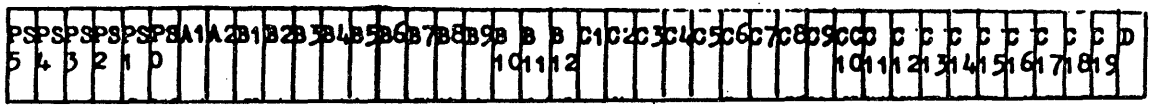
(*) See Table 1.

DX/RX or PS Phasing Sequence	A Self-ident symbols	B Position symbols	C Message symbols	D Error check symbol

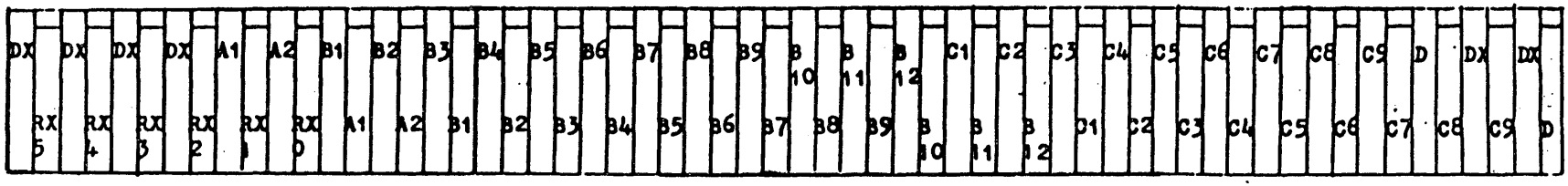
a. Technical format of a fast transmission sequence



b. Technical details of a 4 second transmission sequence with time diversity.



c. Technical details of a 4 second transmission sequence without time diversity.



d. Technical details of a 6 second transmission sequence with time diversity.

e. Technical details of a 6 second transmission sequence without time diversity.

note. Transmission time of each symbol is 100 milliseconds.

FIGURE 1

The purpose of the start frame would be to enable the use of standard asynchronous data communication circuits.

Synchronous receivers would be synchronized by the sync pulse train and data detection started at the beginning of the start frame (two consecutive logical 1). Thereafter synchronous receivers would ignore the rest of the start frame and all the following start and stop bits in the data block.

The parity check bits however could be used by both synchronous and asynchronous receivers.

3.4 Self identification

The first actual data block would start at bit 13 from the beginning of the start frame and have an internal format distributed above and shown in Figure 2d.

The eight data bits would be coded with the first identification letter of the radiobeacon using ASCII characters.

The second data block would contain the second letter of the radiobeacon identification signal also coded in ASCII.

3.5 Position of radiobeacon station

The third data block would give information concerning the earth quadrant in which the radiobeacon is situated. The last three bits in the block being used for this purpose (Figure 2e) and the remaining five bits being spare.

Data blocks 4, 5 and 6 would contain the latitude value for the radiobeacon using binary coded decimal values (BCD). The three blocks would contain the latitude value with 1/100 minute resolution. Blocks 4, 5 and 6 would be sub-divided into two halves each containing four bits to provide one BCD number (Figure 3).

Figure 3b shows an example of how the latitude value would be built up. Note that the most significant bit would be transmitted last in the data block.

Blocks 7, 8 and 9 would contain corresponding values for the longitude.

3.6 Additional navigational information

Blocks 10 and 11 would allow transmission of a coded message. With binary coding a total number of 65,536 different message codes could be transmitted.

COMPOSITION OF DATA SLOT

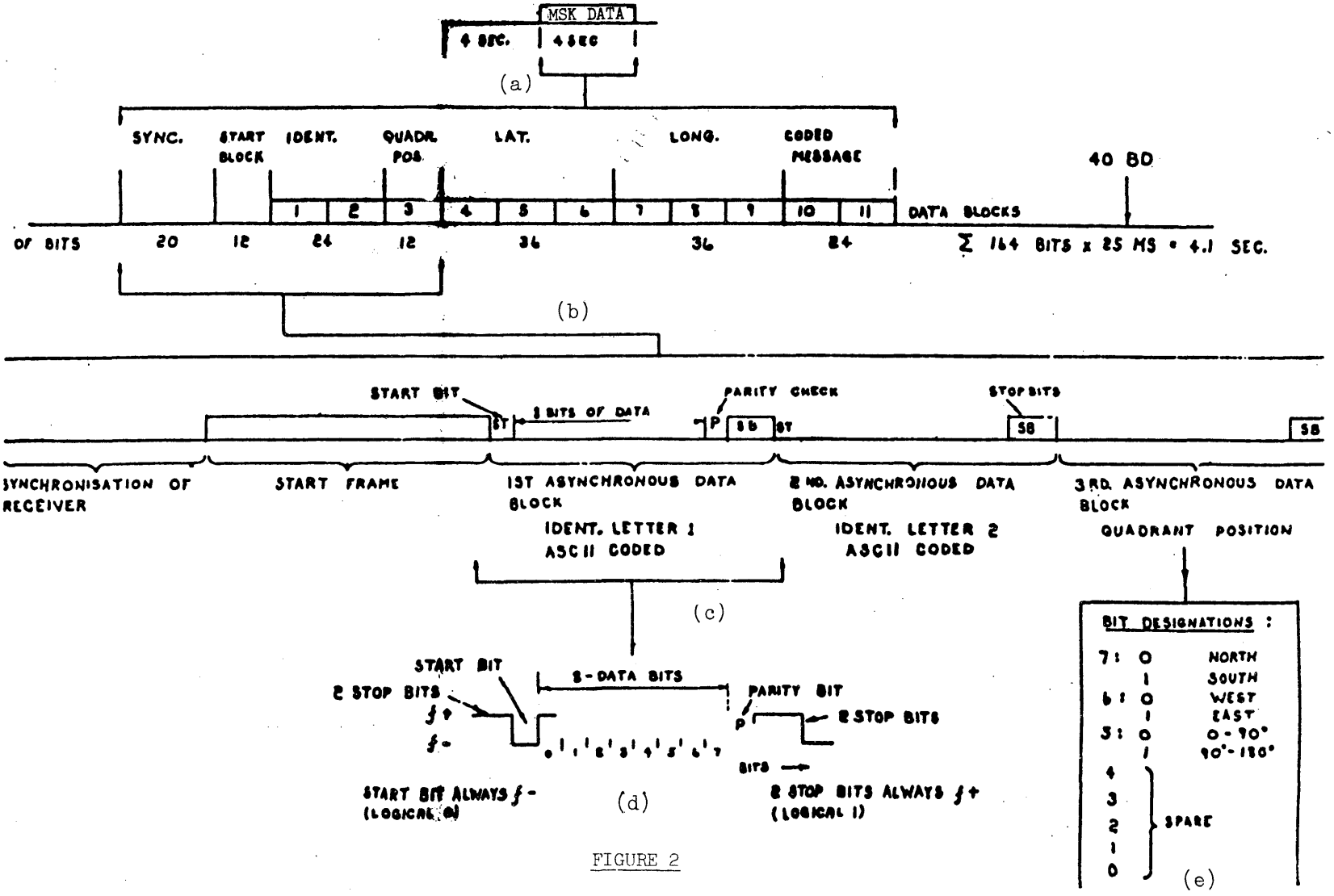
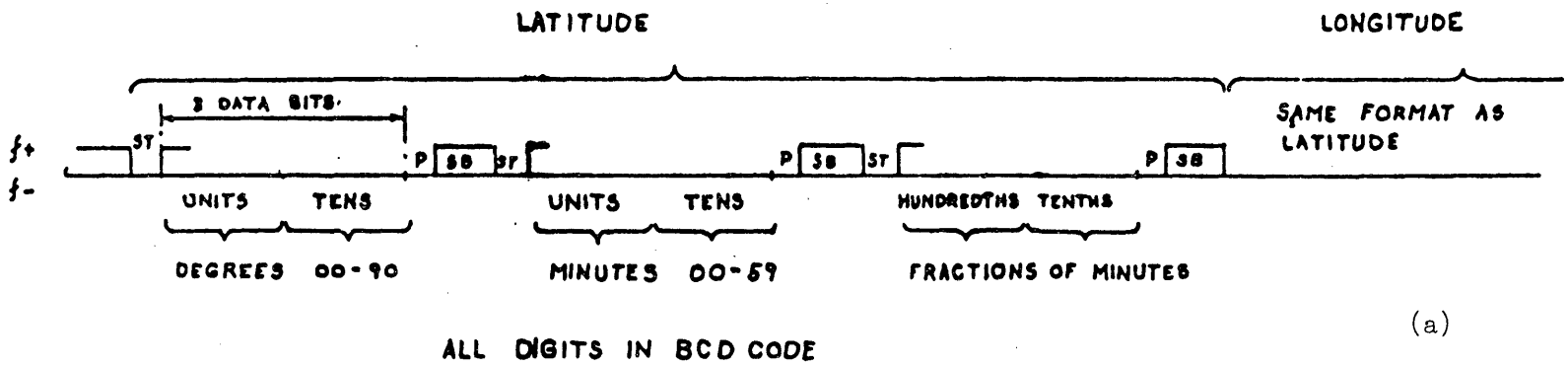
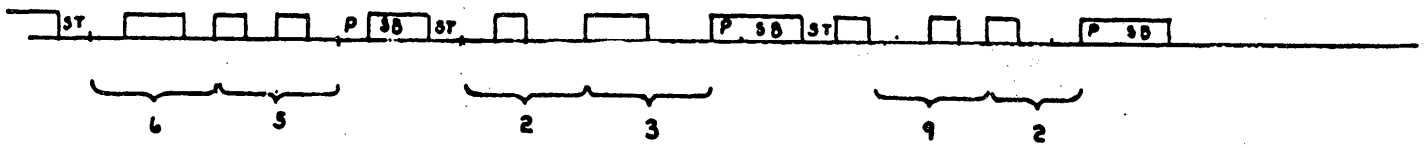


FIGURE 2



(a)

EXAMPLE: LATITUDE 56° 32'.29



(b)

FIGURE 3

ANNEX III

POSSIBLE COMPOSITION OF RADIOBEACON SIGNALS AND THEIR TRANSMISSION SCHEDULES

1. Possible composition of the maritime radiobeacon signal

Each maritime radiobeacon could transmit a signal composed as follows :

i)	the morse identification signal transmitted twice	7 seconds
ii)	a long dash lasting	31 seconds
iii)	a silent period lasting	1 second
iv)	a data transmission lasting	4 seconds
v)	a silent period lasting	17 seconds
	Total	60 seconds

Additionally, each radiobeacon could retransmit its data portion every minute (see Figure 1).

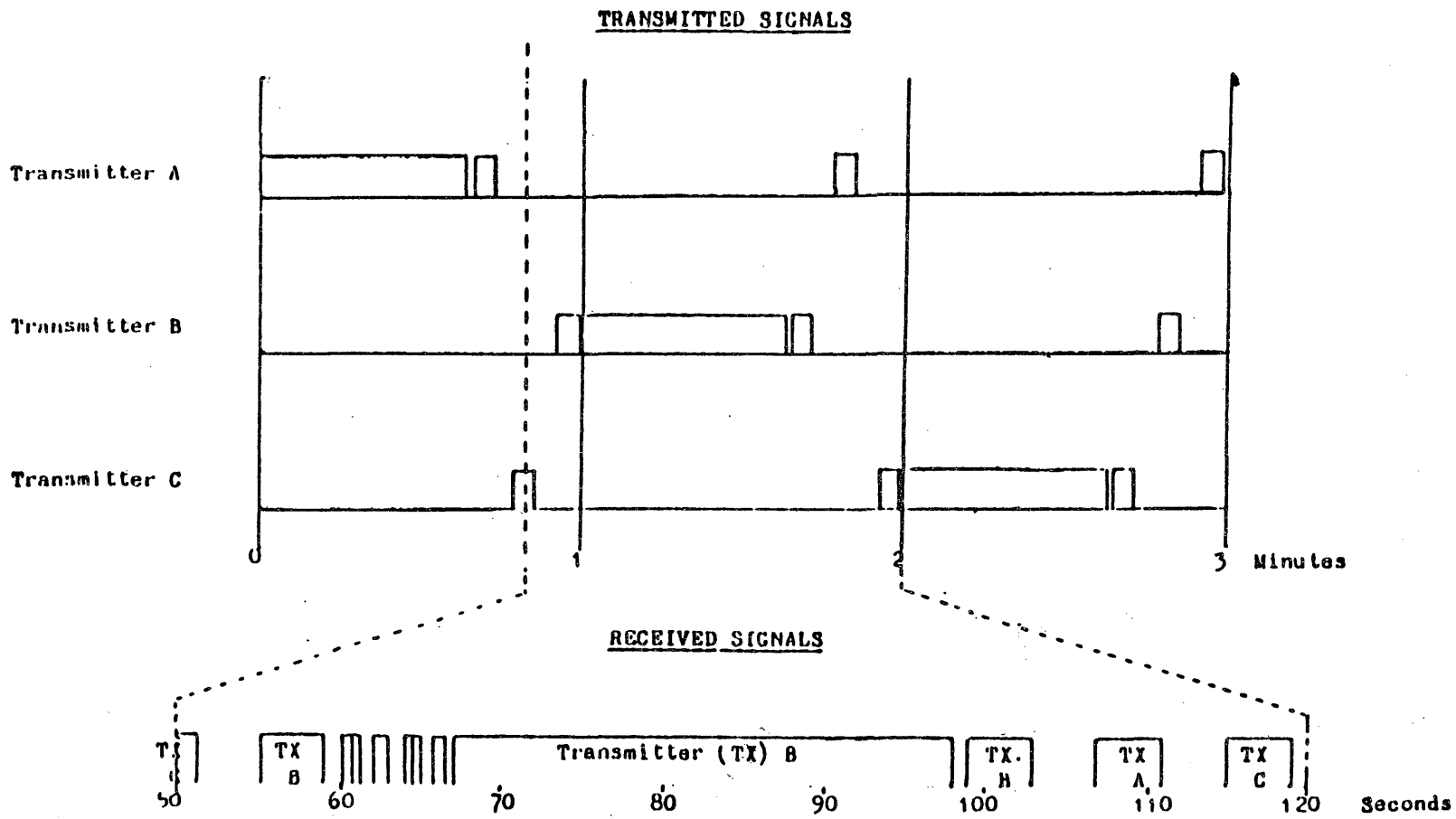
The identification signal could be increased to 12 seconds to allow a slower speed of Morse transmission. In this case, the long dash could be proportionally shortened but should not be less than 25 seconds. If data is not transmitted, the long dash could be extended up to a maximum of 52 seconds.

2. Possible tranmission schedules

A transmission schedule could be designated by the number(s) of the minute(s) in which the transmission occurs.

Number of radio-beacons in group	Schedule designation
1	continuous
2	1 or 2
3	1 or 2 or 3
6 (if regrouping is carried out and an interim period is necessary)	1 or 2 or 3 etc.

Possible composition of the signals of maritime radiobeacons operating in groups of three with data transmission sequences



POSSIBLE STRUCTURE OF THE RADIOBEACON SIGNAL

FIGURE 1

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document 1004(Rev.1)-E
8 January 1984
Original: English

PLENARY MEETING

UNITED KINGDOM PROPOSAL FOR A REGIONAL AGREEMENT for the EUROPEAN MARITIME AREA concerning the use of Frequencies by the Maritime Radionavigation (Radiobeacon) Service in the Band 283.5 - 315 kHz

G/1004/0 **Preamble**

The Delegates of the following Members of the International Telecommunication Union:-

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 (Radiobeacon) Service in the European Maritime Area.

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.

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ARTICLE 1

Definitions

G/1004/1 1. For the purposes of this Agreement, the following terms shall have the meanings defined below:-

Union: The International Telecommunication Union;

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

IFRB: The International Frequency Registration Board;

CCIR: The International Radio Consultative Committee;

Convention: The International Telecommunication Convention;

Radio Regulations: The Radio Regulations which complement the Convention;

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

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

Plan: The Plan forming Annex A to this Agreement and the Appendices to that Annex;

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

Administration: Any governmental department or service responsible for discharging the obligations undertaken in the International Telecommunication Convention and the Regulations.

ARTICLE 2

Frequency Band

G/1004/2 2. The provisions of this Agreement apply to the frequency band between 283.5 kHz and 315 kHz allocated to the Maritime Radionavigation Service on a primary basis under Article 8 of the Radio Regulations.

ARTICLE 3

Execution of this Agreement

G/1004/3 3. The Contracting Members shall adopt for their maritime radio-

beacon stations operating in the European Maritime Area in the frequency band referred to in this Agreement the characteristics specified in the Plan.

G/1004/4 4. 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.

G/1004/5 5. The Contracting Members shall endeavour to agree on the action required to reduce any harmful interference caused by the application of this Agreement.

ARTICLE 4

Procedure for Modifications to the Plan

G/1004/6 6. When a Contracting Member proposes to make a modification to the Plan in any of the cases described below, the procedure given in this Article shall be applied before any notification is made under the provisions of Article 12 of the Radio Regulations (in accordance with Article 5 of this Agreement). Modifications to the Plan will be necessary when an administration proposes:-

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

b) to bring into use an assignment to a maritime radiobeacon station not appearing in the Plan, or;

c) to modify the characteristics of a frequency assignment to a maritime radiobeacon station 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 maritime radiobeacon station.

G/1004/7 7. In the remainder of the present Article, the term "assignment in conformity with this Agreement" means any frequency assignment appearing in the Plan or any frequency assignment for which the procedure of this Article has been successfully applied.

<u>Procedure for Modifying the Characteristics of an Assignment or the Bringing into Use of a New Assignment</u>

G/1004/8 8. Whenever an administration intends to bring into use an assign-

ment in conformity with this Agreement it shall act in accordance with Article 5 of this Agreement.

G/1004/9 9. An administration proposing to modify the characteristics of an assignment or to bring an additional assignment into use shall seek the agreement of all the administrations having assignments in conformity with this Agreement on the same channel or on an adjacent channel which may be affected (see paragraph 13).

G/1004/10 10. An administration proposing to modify the characteristics of an assignment or to bring an additional assignment into use shall so inform the IFRB and shall furnish the characteristics of the modification or addition using the Form at Appendix 3 to Annex A and shall also notify to the IFRB the names of the administrations with which it considers agreement should be sought and of those with which agreement has been reached.

G/1004/11 11. The IFRB shall examine the Form referred to in paragraph 10 in order to identify the administrations having frequency assignments in conformity with this Agreement which may be affected within the meaning of paragraph 13. The results of this examination shall be sent immediately by the IFRB to the administration proposing the modification or addition to the Plan. The IFRB shall include the names of those administrations in the information received and shall publish the complete information in a special section of its weekly circular.

G/1004/12 12. An administration which considers that it should have been included in the list of administrations whose frequency assignments may be affected shall inform the administration proposing the modification or addition to the Plan and at the same time it shall, giving its reasons for so doing, request the IFRB to include its name in the list.

G/1004/13 13. An assignment may be considered to be affected when the protection ratio of its usable field strength is reduced to less than 15dB as a consequence of the proposed modification or addition to the Plan. The usable field strength is calculated at any point on the boundary of the service area resulting from the first recording of the assignment in the Plan. When the original assignment in the Plan has been modified in conformity with this Agreement, the calculation shall take account of this modification.

G/1004/14 14. An administration which has not notified its comments to the administration concerned and to the IFRB within 90 days following the date of the weekly circular referred to in paragraph 11 shall be understood to have agreed to the proposed modification or addition.

G/1004/15 15. If in seeking agreement an administration modifies its initial proposal, it shall again apply the provisions of paragraph 9 and the subsequent procedure.

G/1004/16 16. If no comments have been received on expiry of the period specified in paragraph 14 or if agreement has been reached with the administrations which have made comments, the administration proposing the modification or addition shall inform the IFRB in accordance with Article 5 of this Agreement, indicating the agreed characteristics of the assignment together with the names of the administrations with which agreement has been reached.

G/1004/17 17. If no agreement is reached between the administrations concerned, the IFRB shall make any study of the matter that may be requested by one or more of those administrations; the Board shall inform them of the results of the study and shall make such recommendations as it may be able to offer for the solution of the problem.

G/1004/18 18. An administration before initiating this procedure and at any stage thereof may request the assistance of the IFRB particularly in seeking the agreement of another administration.

G/1004/19 19. If after application of the procedure described in this Article, the administrations concerned have been unable to reach agreement, they may resort to one of the methods for the settlement of disputes described in Article 50 of the Convention or they may agree to apply the Optional Additional Protocol to the Convention.

G/1004/20 20. In all cases when notifying assignments the relevant provisions of Article 12 of the Radio Regulations shall be applied. If after following the procedure specified in this Article no agreement has been reached, the IFRB following the notification of an assignment shall record it in the Master International Frequency Register but shall place against the entry a symbol indicating that the entry has been made subject to the condition that no harmful interference will be caused to frequency assignments in conformity with this Agreement.

G/1004/21 21. An administration proposing to cancel an assignment made in conformity with this Agreement, whether or not as a result of a modification (for instance a change of frequency), shall immediately inform the IFRB. The Board shall publish this information in a special section of its weekly circular.

G/1004/22 22. 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 a recapitulative document 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 informed.

ARTICLE 5

Notification of Frequency Assignments

G/1004/23 23. 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. Any such assignment recorded in the Master Register as a result of the application of the provisions of Article 12 of the Radio Regulations shall, in addition to a date in Column 2a or Column 2b, bear a special symbol in the Remarks column.

G/1004/24 24. In relations between Contracting Members all frequency assignments brought into use in conformity with this Agreement and recorded in the Master Register shall be considered to have the same status irrespective of the date or dates entered in Column 2 for such assignments.

ARTICLE 6

Special Arrangements

G/1004/25 25. In addition to the procedures provided for in Article 4 of this Agreement and to facilitate their application with a view to improving the utilisation of the Plan, Contracting Members may conclude special arrangements in accordance with the relevant provisions of the Convention and of the Radio Regulations.

ARTICLE 7

Scope of Application of this Agreement

G/1004/26 26. This Agreement shall bind Contracting Members in their relations with one another but shall not bind those Members with respect to non-Contracting countries.

G/1004/27 27. 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 8

Approval of this Agreement

G/1004/28 28. This Agreement shall be subject to approval. Instruments of approval shall be deposited, in as short a time as possible, with the Secretary-General, who shall inform the other Contracting Members.

ARTICLE 9

Accession to this Agreement

G/1004/29 29. 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 modified 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 the other Contracting Members. This Agreement shall enter into force for each Member acceding to this Agreement after the date of its entry into force on the thirtieth day of the deposit by such a Member of its instrument of accession.

ARTICLE 10

Termination of Participation in this Agreement

G/1004/30 30. 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 the other Contracting Members.

G/1004/31 31. 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.

ARTICLE 11

Abrogation of the Regional Arrangement Concerning Maritime Radiobeacons in the European Area of Region 1

G/1004/32 32. The Regional Arrangement concerning Maritime Radiobeacons in the European Area of Region 1 (Paris, 1951), is hereby abrogated.

ARTICLE 12

Effective Date of this Agreement

G/1004/33 33. This Agreement shall enter into force on ..... , 19.. 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 French, English 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, .. March, 1985.

Annexes: 6

G/1004/35

ANNEX A

PLAN OF MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA

Note: This Annex contains a list of the United Kingdom maritime radiobeacons with their characteristics. Where radiobeacons in France, the Netherlands or the Republic of Ireland have been included this is simply to show the proposed grouping with related radiobeacons in the United Kingdom.

Station	Country	Identification	Range (nm)	Data Transmission Sequence	Channel No.
RADIOBEACONS OPERATING SINGLY					
Brighton Marina	G	BM	10		
Channel LSTN	G	CR	10		
Chichester Bar	G	CH	10		
Cloch Point[1]	G	CL	8		
Fidra	G	FD	10		
Hartland Point	G	HP	5		
Humber LSTN	G	MB	5		
Inchkeith	G	NK	10		
Mew Island	G	MC	5		
Nab Tower	G	NB	20		
Newhaven	G	NH	10		
Point Lynas[1]	G	PL	5		
Poole Harbour	G	PO	10		
St Helier	G	EC	10		
St Peter Port	G	GY	10		
Scarweather LSTN	G	RW	5		
Souter Point[1]	G	PT	5		
South Rock LSTN	G	SU	30		
Sunk LSTN	G	UK	10		
Tarbat Ness	G	TN	50		
RADIOBEACONS OPERATING IN GROUPS OF TWO					
Cap D'Alprech	F	PH	50		
Dungeness	G	DU	50		
Cap Frehal	F	FE	20		
La Corbiere	G	CB	20		

1 - Calibration Station

G/1004/35 (cont.)

Station	Country	Identification	Range (nm)	Data Transmission Sequence	Channel No.
RADIOBEACONS OPERATING IN GROUPS OF TWO (Contd)					
Girdle Ness	G	GD	50		
Fife Ness	G	FP	50		
Lundy South	G	LS	50		
Flatholm	G	FL	50		
Oigh Sgeir	G	OR	50		
Eilean Glas	G	LG	50		
RADIOBEACONS OPERATING IN GROUPS OF THREE					
Altacarry Head	G	AH	50		
Pladda	G	DA	50		
Rinns of Islay	G	RN	70		
Barra Head	G	BD	200		
Tory Island	IRL	TY	100		
Eagle Island	IRL	GL	200		
Bressay	G	BY	50		
North Ronaldsay	G	NR	100		
Muckle Flugga	G	MF	150		
Cape Wrath	G	CW	50		
Butt of Lewis	G	BL	150		
Sule Skerry	G	LK	100		
Cregneish	G	CN	50		
Point of Ayre	G	PY	50		
Mew Island	G	MW	50		
Heugh	G	HS	50		
Flamborough Head	G	FB	50		
Spurn LSTN	G	SL	50		
Isle de Sein	F	SN	100		
Mizen Head	IRL	MZ	200		
Round Island	G	RR	200		
Longstone	G	LT	50		
Isle of May	G	LM	100		
Souter Point	G	SJ	50		
North Foreland	G	NF	50	Yes	
South Foreland	G	SD	50	Yes	
Falls LSTN	G	FS	50	Yes	
Outer Gabbard LSTN	G	GA	50		
Goerree	HOL	GR	50		
North Hinder LSTN	HOL	NR	50		

G/1004/35 (cont.)

RADIOBEACONS OPERATING IN GROUPS OF THREE (Contd)

Station	Country	Identification	Range (nm)	Data Transmission Sequence	Channel No.
Penlee Point	G	PE	50		
Ile Vierge	F	VE	70		
Lizard	G	LZ	50		
Portland Bill	G	PB	50		
St Catherines Point	G	CP	50		
Barfleur	F	FG	50		
Roches Douvres	F	RD	70		
Start Point	G	SP	50		
Casquets	G	QS	50		
Royal Sovereign	G	RY	50		
Bassurelle	F	WL	50		
Pointe D'Ailly	F	AL	50		
Skerries	G	SR	70		
Wicklow Head	IRL	WK	50		
Rockabill	IRL	RB	50		
Smiths Knoll	G	SK	50		
Cromer	G	CM	50		
Dudgeon LSTN	G	LV	50		
Stroma	G	OM	50		
Kinnaird Head	G	KD	100		
Sumburgh Head	G	SB	70		
Tuskar Rock	IRL	TR	50		
South Bishop	G	SB	50		
Bardsey	G	IB	50		
Walney Island	G	FN	50		
Point Lynas	G	PS	50		
Douglas	G	DG	50		

G/1004/35
(cont.)

APPENDIX 1 TO ANNEX A

ASSIGNMENT OF CHANNELS TO STATIONS
(Numerical Sequence of Channels)

Channel No.	Station	Country	Identification

G/1004/35
(cont.)

APPENDIX 2 TO ANNEX A

ASSIGNMENT OF CHANNELS TO STATIONS
(Alphabetical Sequence of Stations)

Station	Country	Identification	Channel No
Altacarry Head	G	AH	
Bardsey	G	IB	
Barra Head	G	BD	
Bressay	G	BY	
Brighton Marina	G	BM	
Butt of Lewis	G	BL	
Cape Wrath	G	CW	
Casquets	G	QS	
Channel LSTN	G	CR	
Chichester Bar	G	CH	
Cloch Point	G	CL	
Cregneish	G	CN	
Cromer	G	CM	
Douglas	G	DG	
Dudgeon LSTN	G	LV	
Dungeness	G	DU	
Eilean Glas	G	LG	
Falls LSTN	G	FS	
Fidra	G	FD	
Fife Ness	G	FP	
Flamborough Head	G	FB	
Flatholm	G	FL	
Girdle Ness	G	GD	
Hartland Point	G	HP	
Heugh	G	HS	
Humber LSTN	G	MB	
Inchkeith	G	NK	
Isle of May	G	LM	
Kinnaird Head	G	KD	
La Corbiere	G	CB	
Lizard	G	LZ	
Longstone	G	LT	
Lundy South	G	LS	
Mew Island	G	MW	
Mew Island	G	MC	
Muckle Flugga	G	MF	
Nab Tower	G	NB	
Newhaven	G	NH	
North Foreland	G	NF	
North Ronaldsay	G	NR	
Oigh Sgeir	G	OR	
Outer Gabbard LSTN	G	GA	
Penlee Point	G	PE	
Pladda	G	DA	
Point Lynas	G	PL	
Point Lynas	G	PS	
Point of Ayre	G	PY	
Poole Harbour	G	PO	
Portland Bill	G	PB	
Rinns of Islay	G	RN	

G/1004/35 (cont.)

Station	Country	Identification	Channel No.
Round Island	G	RR	
Royal Sovereign	G	RY	
St Catherines Point	G	CP	
St Helier	G	EC	
St Peter Port	G	GY	
Scarweather LSTN	G	RW	
Skerries	G	SR	
Smiths Knoll	G	SK	
Souter Point	G	PT	
Souter Point	G	SJ	
South Bishop	G	SB	
South Foreland	G	SD	
South Rock LSTN	G	SU	
Spurn LSTN	G	SL	
Start Point	G	SP	
Stroma	G	OM	
Sule Skerry	G	LK	
Sumburgh Head	G	SB	
Sunk LSTN	G	UK	
Tarbat Ness	G	TN	
Walney Island	G	FN	

G/1004/35
(cont.)

APPENDIX 3 TO ANNEX A

NOTIFICATION OF A MODIFICATION[1] TO AN ASSIGNMENT RECORDED IN THE PLAN OR THE ADDITION OF AN ASSIGNMENT TO THE PLAN - INFORMATION TO BE SUPPLIED IN ACCORDANCE WITH PARAGRAPH 6 OF ARTICLE 4

1. Name of Station .....
2. Country .....
3. Geographical Coordinates (Lat & Long) .....
4. Channel No. .....
5. Designation of Emission .....
6. Power:-
   a) Type .....
   b) Supplied to the Antenna in dBW .....
7. Characteristics of the Antenna:-
   a) Azimuth of Maximum Radiation .....
   b) Angular Width of Radiation Main Lobe .....
   c) Maximum Antenna Gain .....
8. Hours of Operation (UTC) .....
9. Service Area:-
   a) Zone Defined by Six Points, or .....
   b) Circular Service Area .....
10. Proposed Date of Bringing into Use .....
11. Coordination:-
    a) Administrations from which it is considered that agreement should be obtained .....
    .....
    b) Administrations from which agreement has been obtained .....
    .....

---

1 In the case of a modification, where applicable, indicate the modification by underlining followed by the current characteristics in parentheses.

G/1004/36

ANNEX B

THE STRUCTURE OF THE MARITIME RADIOBEACON SIGNAL

Basic Composition of the Maritime Radiobeacon Signal

1. Each maritime radiobeacon transmits a signal composed as follows:-

a)	the identification signal transmitted twice	7 seconds
b)	a long dash lasting	31 seconds
c)	a silent period lasting	1 second
d)	a data transmission sequence lasting	4 seconds
e)	a silent period lasting	17 seconds
	Total	60 seconds

2. The identification signal may be increased to 12 seconds to allow a slower speed of morse transmission. In this case, the long dash should be proportionally shortened but should not be less than 25 seconds. When data is not transmitted the long dash may be extended to a maximum duration of 52 seconds.

3. Radiobeacons transmitting Differential Omega correction information should neither transmit the F1B portion of the signal nor be grouped with other radiobeacons.

Composition of the Maritime Radiobeacon Signal with Grouped Radiobeacons

4. Maritime radiobeacons may be operated singly or in groups of 2, 3 or 6 radiobeacons. When operated singly the basic signal composition described in paragraph 1 should be used. Grouping of six radiobeacons can only be used where the data transmission sequence is not required or where the length of the data transmission sequence is reduced.

5. The composition of the signal of maritime radiobeacons operating in groups of two is as follows:-

a)	a silent period lasting	55 seconds
b)	a data transmission sequence lasting	4 seconds
c)	a silent period lasting	1 second
d)	the identification signal transmitted twice	7 seconds
e)	a long dash lasting	31 seconds
f)	a silent period lasting	1 second
g)	a data transmission sequence lasting	4 seconds
h)	a silent period lasting	17 seconds
	Total	120 seconds

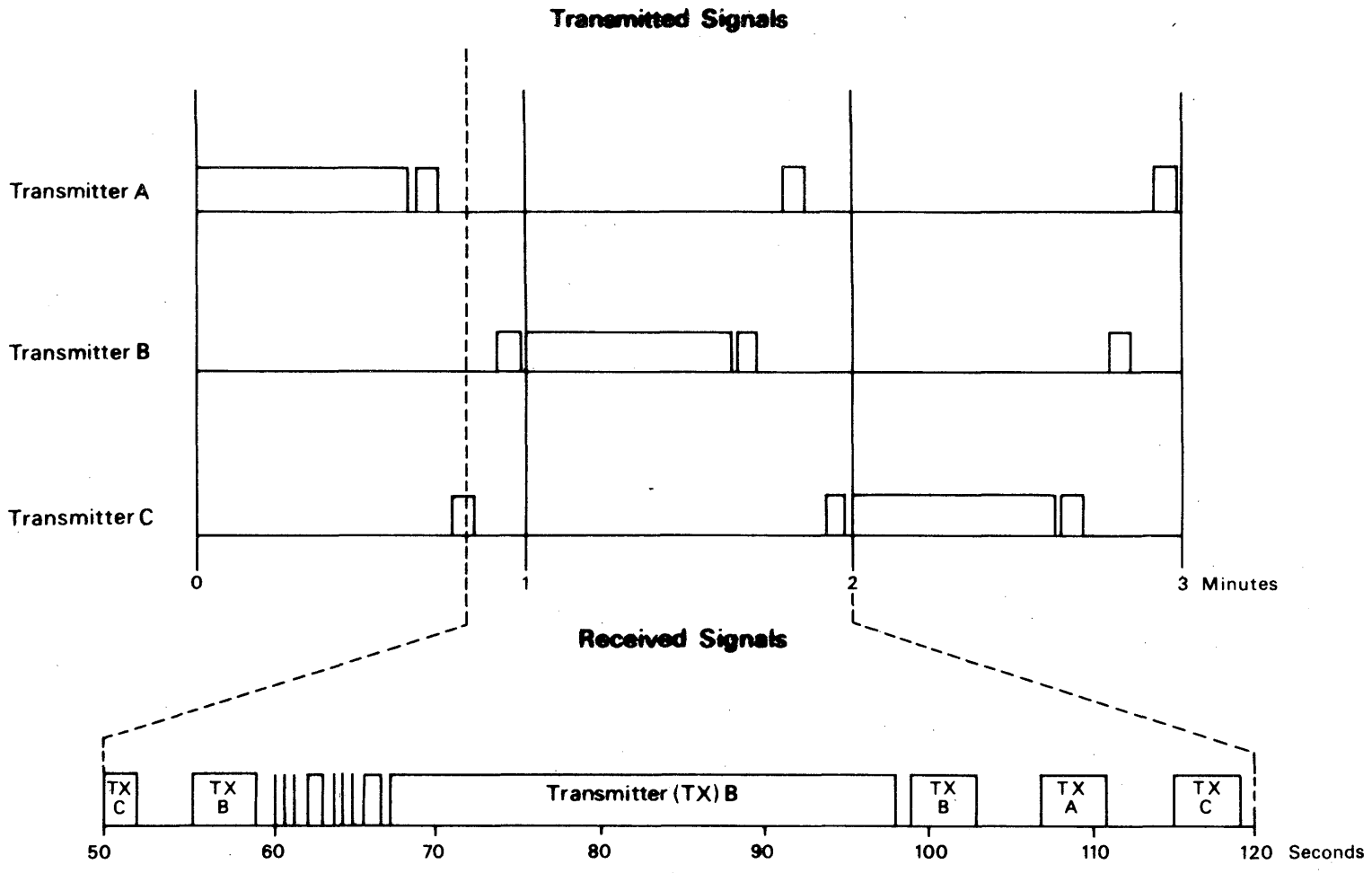
G/1004/36 (cont.) The start of the signal by one radiobeacon shall be 60 seconds after the start of the signal by the other radiobeacon.

6. The composition of the signal of maritime radiobeacons operating in groups of three is as follows:-

a)	a silent period lasting	55 seconds
b)	a data transmission sequence lasting	4 seconds
c)	a silent period lasting	1 second
d)	the identification signal transmitted twice	7 seconds
e)	a long dash lasting	31 seconds
f)	a silent period lasting	1 second
g)	a data transmission sequence lasting	4 seconds
h)	a silent period lasting	64 seconds
i)	a data transmission sequence lasting	4 seconds
j)	a silent period lasting	9 seconds
	Total	180 seconds

The start of the signal by one radiobeacon shall be 60 seconds after the start of the signal by the preceding radiobeacon in the group (see Figure 1).

Composition of the signals of maritime radiobeacons operating in groups of three with data transmission sequences



The Structure of the Radiobeacon Signal

Fig 1

G/1004/37

ANNEX C

RECOMMENDED MINIMUM TECHNICAL CHARACTERISTICS FOR MARITIME RADIOBEACONS IN THE BAND 283.5 - 315 kHz

ANTENNA AND EARTH SYSTEM

1. The antenna and earth system should be so designed as to restrict radiation of horizontally polarized waves and 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 minimise their influence on the radiation pattern, horizontal power and telecommunication lines at less than 100 metres from the antenna should be underground.

TRANSMITTERS

Frequencies

4. Frequencies assigned to maritime radiobeacons shall be 500 Hz apart and on integer multiples of 100 Hz.

5. Transmitters of A1A emissions shall maintain their assigned frequency within a tolerance of ± 30 Hz.

6. Transmitters of F1B emissions shall maintain their assigned frequency within a tolerance of ± 10 Hz.

7. Maximum spurious emission power levels of all transmitters shall conform to Appendix 8 of the Radio Regulations.

Modulation

8. A beacon identity of one or two morse letters followed by a 'long-dash' shall be transmitted using class of emission A1A.

9. Additional information, permitted as a further aid to navigation, may be transmitted by a radiobeacon using the class of emission F1B. In this case the radiobeacon assigned frequency shall be frequency shift keyed ± 85 Hz at a rate of 100 bauds.

10. The structure of the radiobeacon signal shall be as given at Annex B.

G/1004/37
(cont.)

Data F1B Transmission Sequences

11. Data F1B transmission sequences shall conform to the characteristic given at Annex F.

Accuracy of Timing

12. All maritime radiobeacons shall be controlled by a device ensuring the accuracy of the transmission schedules. The accuracy of transmission times should be maintained to within 0.25 seconds.

Field Strength Measurements

13. When a maritime radiobeacon is put 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.

14. Such measurements should be taken again at regular intervals not exceeding one year.

Monitoring of Radiobeacon Transmissions

15. Monitoring of maritime radiobeacon transmissions should be carried out to ensure that:-

a) the field strength does not vary by more than ± 3dB from the nominal value determined in accordance with paragraph 13;

b) the transmission frequency does not vary by more than ± 10 Hz for the F1B transmission and ± 30 Hz for the A1A transmission;

c) the transmitted signal is correct;

d) the timing is maintained within ± 0.25 seconds.

STANDBY DEVICES

16. Maritime radiobeacons should have the necessary standby devices to prevent any stoppage due to the breakdown of the electric supply, the transmitter or the timing device.

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ANNEX D

RECOMMENDED MINIMUM TECHNICAL CHARACTERISTICS FOR MARITIME RADIO DIRECTION-FINDERS WORKING ON FREQUENCIES BETWEEN 283.5 kHz AND 315 kHz[1]

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 permitted to transmit as a further aid to navigation. Such transmissions will be on the radiobeacon assigned frequency and be class F1B emissions.

SELECTIVITY

3. For class of emission A1A, the overall radio frequency (r.f.) and intermediate frequency (i.f.) selectivity of the direction-finder should be:-

a) bandwidth between 190 Hz and 210 Hz for 6 dB attenuation;

b) bandwidth less than 460 Hz for 30 dB attenuation;

c) bandwidth less than 960 Hz for 60 dB attentuation.

4. The image frequency rejection ratio should be 80 dB or higher.

5. The i.f. protection ratio should be 80 dB or higher.

6. For class of emission F1B, the overall r.f. and i.f. selectivity of the receiver should be:-

a) bandwidth between 270 Hz and 350 Hz for 6 dB attenuation;

b) bandwidth less than 600 Hz for 30 dB attenuation;

c) bandwidth less than 1100 Hz for 60 dB attenuation.

7. The image frequency rejection ratio should be 80 dB or higher.

8. The i.f. protection ratio should be 80 dB or higher.

---

1. Note: This Agreement does not relate to or in any way affect the characteristics of radio direction-finders intended to operate in any radio service other than the Maritime Radionavigation service or in any frequency band other than 283.5-315 kHz.

G/1004/38 (cont.)

SENSITIVITY

9. A field strength of equal to, or less than, 50 uV/m shall produce a signal in the headphones of a receiver of 1 mW, or greater, with a signal-to-noise ratio of 20 dB or higher[1].

MISCELLANEOUS CHARACTERISTICS

10. Maritime radio direction-finders shall include means by which A1A identification signals can be recognised.

11. The receivers shall maintain the frequency to which they are tuned within a tolerance of ± 50 Hz.

12. Receivers utilising the F1B transmissions shall:-

a) maintain the frequency to which they are tuned within a tolerance of ± 10 Hz;

b) be fitted with a method of displaying the additional navigational information obtained;

c) be fitted with means to indicate clearly when there is any discrepancy between displayed navigational information and its accompanying error check character (ECC).

13. 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.

TECHNICAL CONDITIONS FOR THE INSTALLATION OF RADIO DIRECTION-FINDERS IN VESSELS

14. 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.

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

16. The connecting cables between the antenna system and the apparatus should be electro-magnetically screened. All joints should be watertight.

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

---

1 A direction-finder having this sensitivity is capable of taking bearings in the presence of receiver noise with a rotation of the radiogoniometer control not exceeding + 3°.

G/1004/38 (cont.) CALIBRATION OF MARITIME RADIO DIRECTION-FINDERS

18. The calibration curve of the direction-finder should be plotted before the latter is put into operation and each time the position of the antennas or the conductors referred to above are changed or the superstructure of the vessel altered substantially.

19. The calibration of the direction-finder should be checked at intervals not exceeding 12 months.

20. When calibrating the radio direction-finder the frequency used should be as close as possible to 300 kHz.

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

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ANNEX E

FREQUENCY CHANNELLING OF MARITIME RADIOBEACONS

1. In the European Maritime Area frequencies assigned to maritime radiobeacons in the band 283.5-315 kHz shall be spaced 500 Hz apart and shall be on integer multiples of 100 Hz.

2. Channel Numbers of the frequencies used by maritime radiobeacons shall be:-

Channel No.	Frequency (kHz)	Channel No.	Frequency (kHz)	Channel No.	Frequency (kHz)
1	284.0	22	294.5	43	305.0
2	284.5	23	295.0	44	305.5
3	285.0	24	295.5	45	306.0
4	285.5	25	296.0	46	306.5
5	286.0	26	296.5	47	307.0
6	286.5	27	297.0	48	307.5
7	287.0	28	297.5	49	308.0
8	287.5	29	298.0	50	308.5
9	288.0	30	298.5	51	309.0
10	288.5	31	299.0	52	309.5
11	289.0	32	299.5	53	310.0
12	289.5	33	300.0	54	310.5
13	290.0	34	300.5	55	311.0
14	390.5	35	301.0	56	311.5
15	391.0	36	301.5	57	312.0
16	391.5	37	302.0	58	312.5
17	392.0	38	302.5	59	313.0
18	392.5	39	303.0	60	313.5
19	393.0	40	303.5	61	314.0
20	393.5	41	304.0	62	314.5
21	294.0	42	304.5		

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ANNEX F

TECHNICAL CHARACTERISTICS OF A DATA F1B TRANSMISSION SEQUENCE

General

1. The system shall be synchronous and use a ten-unit error detecting code as listed in Table 1 of this Annex.

a) The first seven bits of the ten-unit code of Table 1 are information bits. Bits 8, 9 and 10 indicate, in the form of a binary number, the number of B elements that occur in the seven information bits, a Y element being a binary number 1 and a B element a binary number 0.

b) The higher frequency corresponding to the B state and the lower frequency corresponding to the Y state of the signal elements.

Message Format

2. The message format shall include a phasing signal, self-identification, the position of the radiobeacon, provision for a message and an error check. The format is shown in Figure 1.

Phasing Sequence

3. The phasing sequence provides information to the direction-finder to permit correct bit phasing and unambiguous determination of the positions of the signals within the transmission sequence. It also specifies the start of information and consists of the signals for symbols 109, 108, 107, 106, 105 and 104 of Table 1 transmitted consecutively.

Self-Identification

4. Self-identification is the two letter identification assigned to the radiobeacon station, coded in accordance with Table 2.

Position of the Radiobeacon Station

5. The position of the radiobeacon station consists of twelve digits coded in accordance with Table 2.

a) The first digit indicates the quadrant in which the radiobeacon is sited as follows:-

1) Quadrant NE would be indicated by the digit "0";

2) Quadrant NW would be indicated by the digit "1";

G/1004/40
(cont.)

3) Quadrant SE would be indicated by the digit "2";

4) Quadrant SW would be indicated by the digit "3";

b) The second, third, fourth, fifth and sixth digits indicate the latitude of the radiobeacon in tens, units, tenths of units, hundredths of units and thousandths of units of degrees respectively;

c) The seventh, eighth, ninth, tenth, eleventh and twelfth digits indicate the longitude of the radiobeacon in hundreds, tens, units, tenths of units, hundredths of units and thousandths of units of degrees respectively.

Message

6. The "message" consists of nineteen symbols. The particular meaning of each symbol in each block should be defined by the International Association of Lighthouse Authorities as the organisation concerned with the operational use of radiobeacons. The symbols 104, 105, 106, 107, 108, 109 and 127 should not be used as part of a message.

7. The symbol 127 should, however, be inserted in the message format for each information block not used as part of the message content.

Error Check Character

8. The seven information bits of the error-check signal would be equal to the least significant bit of the modulo-2 sums of the corresponding bits of all information characters (ie even vertical parity). The phasing signals are not considered to be information characters.

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(cont.)

Table 1 - Ten-unit Error-detecting Code

Symbol No	Emitted signal	Symbol No	Emitted signal	Symbol No	Emitted signal
0	BBBBBBBYYY	43	YYBYBYBBYY	86	BYYBYBYBYY
1	YBBBBBBYYB	44	BBYYBYBYBB	87	YYYBYBYBYB
2	BYBBBBBYYB	45	YBYYBYBBYY	88	BBBYYBYYBB
3	YYBBBBBYBY	46	BYYYBYBBYY	89	YBBYYBYBYY
4	BBYBBBBYYB	47	YYYYBYBBYB	90	BYBYYBYBYY
5	YBYBBBBYBY	48	BBBBYYBYBY	91	YYBYYBYBYB
6	BYYBBBBYBY	49	YBBBYYBYBB	92	BBYYYBYBYY
7	YYYBBBBYBB	50	BYBBYYBYBB	93	YBYYYBYBYB
8	BBBYBBBYYB	51	YYBBYYBBYY	94	BYYYYBYBYB
9	YBBYBBBYBY	52	BBYBYYBYBB	95	YYYYYBYBBY
10	BYBYBBBYBY	53	YBYBYYBBYY	96	BBBBBYYYBY
11	YYBYBBBYBB	54	BYYBYYBBYY	97	YBBBBYYYBB
12	BBYYBBBYBY	55	YYYBYYBBYB	98	BYBBBYYYBB
13	YBYYBBBYBB	56	BBBYYYBYBB	99	YYBBBYYBYY
14	BYYYBBBYBB	57	YBBYYYBBYY	100	BBYBBYYYBB
15	YYYYBBBBYY	58	BYBYYYBBYY	101	YBYBBYYBYY
16	BBBBYBBYYB	59	YYBYYYBBYB	102	BYYBBYYBYY
17	YBBBYBBYBY	60	BBYYYYBBYY	103	YYYBBYYBYB
18	BYBBYBBYBY	61	YBYYYYBBYB	104	BBBYBYYYBB
19	YYBBYBBYBB	62	BYYYYYBBYB	105	YBBYBYYBYY
20	BBYBYBBYBY	63	YYYYYYBBBY	106	BYBYBYYBYY
21	YBYBYBBYBB	64	BBBBBBYYYB	107	YYBYBYYBYB
22	BYYBYBBYBB	65	YBBBBBYYBY	108	BBYYBYYBYY
23	YYYBYBBBYY	66	BYBBBBYYBY	109	YBYYBYYBYB
24	BBBYYBBYBY	67	YYBBBBYYBB	110	BYYYBYYBYB
25	YBBYYBBYBB	68	BBYBBBYYBY	111	YYYYBYYBBY
26	BYBYYBBYBB	69	YBYBBBYYBB	112	BBBBYYYYBB
27	YYBYYBBBYY	70	BYYBBBYYBB	113	YBBBYYYBYY
28	BBYYYBBYBB	71	YYYBBBYBYY	114	BYBBYYYBYY
29	YBYYYBBBYY	72	BBBYBBYYBY	115	YYBBYYYBYB
30	BYYYYBBBYY	73	YBBYBBYYBB	116	BBYBYYYBYY
31	YYYYYBBBYB	74	BYBYBBYYBB	117	YBYBYYYBYB
32	BBBBBYBYYB	75	YYBYBBYBYY	118	BYYBYYYBYB
33	YBBBBYBYBY	76	BBYYBBYYBB	119	YYYBYYYBBY
34	BYBBBYBYBY	77	YBYYBBYBYY	120	BBBYYYYBYY
35	YYBBBYBYBB	78	BYYYBBYBYY	121	YBBYYYYBYB
36	BBYBBYBYBY	79	YYYYBBYBYB	122	BYBYYYYBYB
37	YBYBBYBYBB	80	BBBBYBYYBY	123	YYBYYYYBBY
38	BYYBBYBYBB	81	YBBBYBYYBB	124	BBYYYYYBYB
39	YYYBBYBBYY	82	BYBBYBYYBB	125	YBYYYYYBBY
40	BBBYBYBYBY	83	YYBBYBYBYY	126	BYYYYYYBBY
41	YBBYBYBYBB	84	BBYBYBYYBB	127	YYYYYYYBBB
42	BYBYBYBYBB	85	YBYBYBYBYY		

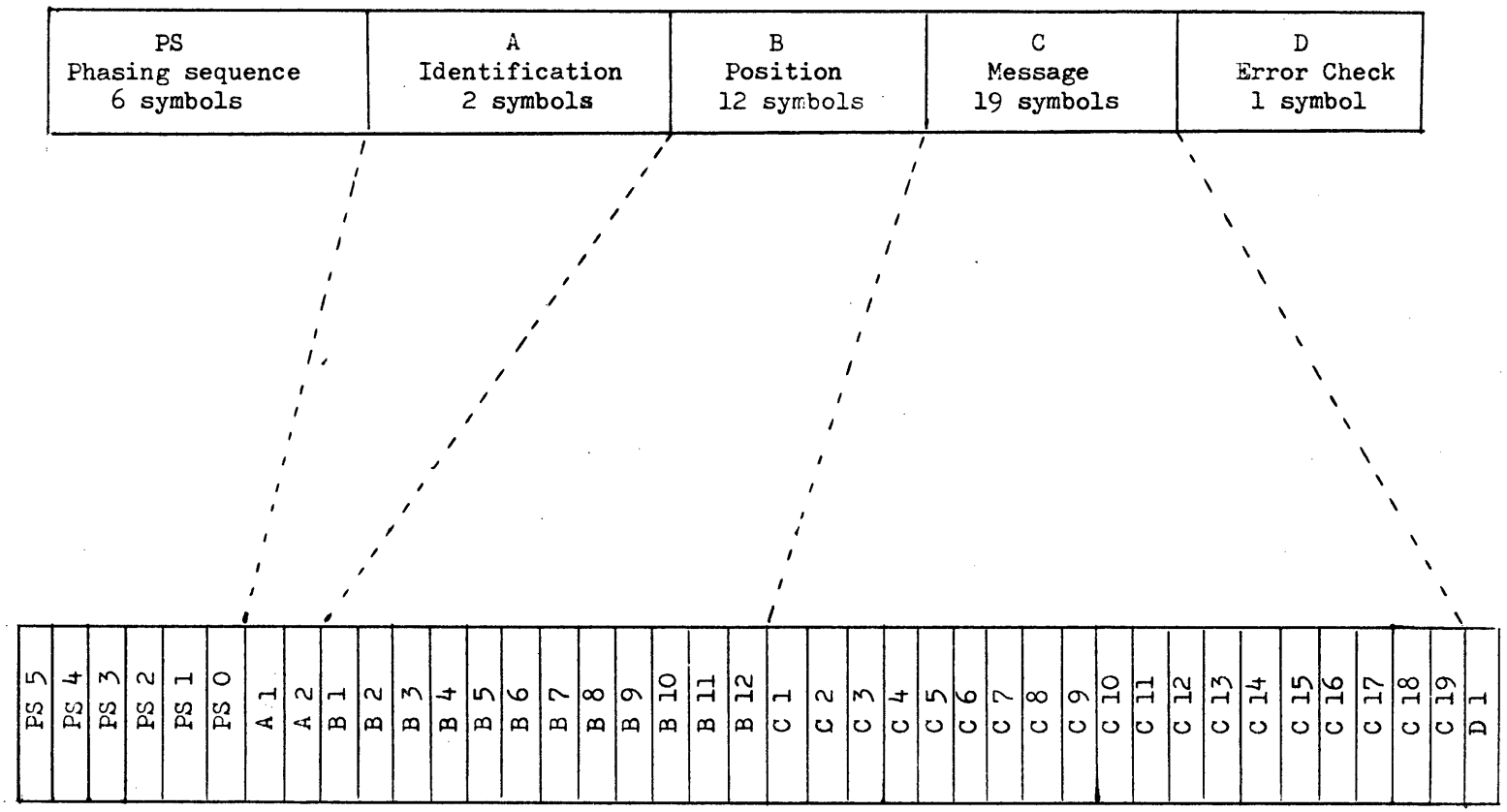
B = 0
Y = 1

Table 2 - Self-identification Code

Figures Symbol No*	Letters Symbol No*	Letters Symbol No*
0 - 48	A - 65	N - 78
1 - 49	B - 66	O - 79
2 - 50	C - 67	P - 80
3 - 51	D - 68	Q - 81
4 - 52	E - 69	R - 82
5 - 53	F - 70	S - 83
6 - 54	G - 71	T - 84
7 - 55	H - 72	U - 85
8 - 56	I - 73	V - 86
9 - 57	J - 74	W - 87
	K - 75	X - 88
	L - 76	Y - 89
	M - 77	Z - 90

* See Table 1

G/1004/40
(cont.)



Transmission time of each symbol is 100 milliseconds

FORMAT AND TECHNICAL DETAILS OF THE DATA TRANSMISSION SEQUENCE

Figure 1

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document 1004-E
30 August 1984
Original : English

PLENARY MEETING

United Kingdom

PROPOSAL FOR A

REGIONAL AGREEMENT FOR THE EUROPEAN MARITIME AREA

concerning the use of Frequencies by
the Maritime Radionavigation (Radiobeacon) Service in the
Band 283.5 - 315 kHz

G/1004/0 **Preamble**

The undersigned Delegates of the Administrations of the following countries:

meeting in Geneva for a Regional Administrative Radio Conference convened under the terms of Article 32 of the International Telecommunication Convention, Nairobi, 1982, have adopted, subject to the approval of their Administrations, the following provisions relating to the Maritime Radionavigation (Radiobeacon) service in the European Maritime Area.

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.

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ARTICLE 1

Definitions

G/1004/1 1. For the purposes of this Agreement, the following terms shall have the meanings defined below:

Union: The International Telecommunication Union;

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

IFRB: The International Frequency Registration Board;

CCIR: The International Radio Consultative Committee;

Radio Regulations: The Radio Regulations which complement the Convention;

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

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

Plan: The Plan forming Annex A to this Agreement and the Appendices to that Annex;

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

Administration: Any governmental department or service responsible for discharging the obligations undertaken in the International Telecommunication Convention and the Regulations.

ARTICLE 2

Frequency Band

G/1004/2 2. The provisions of this Agreement apply to the frequency band between 283.5 kHz and 315 kHz allocated to the Maritime Radionavigation service on a primary basis under Article 8 of the Radio Regulations.

ARTICLE 3

Execution of the Agreement

G/1004/3 3. The Contracting Members shall adopt for their maritime radio-

beacon stations operating in the European Maritime Area in the frequency band referred to in the Agreement the characteristics specified in the Plan.

G/1004/4 4. 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.

G/1004/5 5. The Contracting Members shall endeavour to agree on the action required to reduce any harmful interference caused by the application of this Agreement.

ARTICLE 4

Procedure for Modifications to the Plan

G/1004/6 6. When a Contracting Member proposes to make a modification to the Plan in any of the cases described below, the procedure given in this Article shall be applied before any notification is made under the provisions of Article 12 of the Radio Regulations (see Article 5 of this Agreement). Modifications to the Plan will be necessary when an administration proposes:-

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

b) to bring into use an assignment to a maritime radiobeacon station not appearing in the Plan, or;

c) to modify the characteristics of a frequency assignment to a maritime radiobeacon station 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 maritime radiobeacon station.

G/1004/7 7. In the remainder of the present Article, the term "assignment in conformity with the Agreement" means any frequency assignment appearing in the Plan or any frequency assignment for which the procedure of this Article has been successfully applied.

<u>Procedure for Modifying the Characteristics of an Assignment or the Bringing into Use of a New Assignment</u>

G/1004/8 8. Whenever an administration intends to bring into use an assign-

ment in conformity with the Agreement it shall act in accordance with Article 5.

G/1004/9 9. An administration proposing to modify the characteristics of an assignment or to bring an additional assignment into use shall seek the agreement of all the administrations having assignments in conformity with the Agreement on the same channel or on an adjacent channel which may be affected (see paragraph 13).

G/1004/10 10. An administration proposing to modify the characteristics of an assignment or to bring an additional assignment into use shall so inform the IFRB and shall furnish the characteristics of the modification or addition using the Form at Appendix 3 to Annex A and shall also notify to the IFRB the names of the administrations with which it considers agreement should be sought and of those with which agreement has been reached.

G/1004/11 11. The IFRB shall examine the Form referred to in paragraph 10 in order to identify the administrations having frequency assignments in conformity with the Agreement which may be affected within the meaning of paragraph 13. The results of this examination shall be sent immediately by the IFRB to the administration proposing the modification or addition to the Plan. The IFRB shall include the names of those administrations in the information received and shall publish the complete information in a special section of its weekly circular.

G/1004/12 12. An administration which considers that it should have been included in the list of administrations whose frequency assignments may be affected shall inform the administration proposing the modification or addition to the Plan and at the same time it shall, giving its reasons for so doing, request the IFRB to include its name in the list.

G/1004/13 13. An assignment may be considered to be affected when the protection ratio of its usable field strength is reduced to less than 15dB as a consequence of the proposed modification or addition to the Plan. The usable field strength is calculated at any point on the boundary of the service area resulting from the first recording of the assignment in the Plan. When the original assignment in the Plan has been modified in conformity with the Agreement, the calculation shall take account of this modification.

G/1004/14 14. An administration which has not notified its comments to the administration concerned and to the IFRB within 90 days following the date of the weekly circular referred to in paragraph 11 shall be understood to have agreed to the proposed modification or addition.

G/1004/15 15. If in seeking agreement an administration modifies its initial proposal, it shall again apply the provisions of paragraph 9 and the subsequent procedure.

G/1004/16 16. If no comments have been received on expiry of the period specified in paragraph 14 or if agreement has been reached with the administrations which have made comments, the administration proposing the modification or addition shall inform the IFRB in accordance with Article 5, indicating the agreed characteristics of the assignment together with the names of the administrations with which agreement has been reached.

G/1004/17 17. If no agreement is reached between the administrations concerned, the IFRB shall make any study of the matter that may be requested by one or more of those administrations; the Board shall inform them of the results of the study and shall make such recommendations as it may be able to offer for the solution of the problem.

G/1004/18 18. An administration before initiating this procedure and at any stage thereof may request the assistance of the IFRB particularly in seeking the agreement of another administration.

G/1004/19 19. If after application of the procedure described in this Article the administrations concerned have been unable to reach agreement, they may resort to one of the methods for the settlement of disputes described in Article 50 of the Convention or they may agree to apply the Optional Additional Protocol to the Convention.

G/1004/20 20. In all cases when notifying assignments the relevant provisions of Article 12 of the Radio Regulations shall be applied. If after following the procedure specified in this Article no agreement has been reached, the IFRB following the notification of an assignment shall record it in the Master International Frequency Register but shall place against the entry a symbol indicating that the entry has been made subject to the condition that no harmful interference will be caused to frequency assignments in conformity with the Agreement.

G/1004/21 21. An administration proposing to cancel an assignment made in conformity with the Agreement, whether or not as a result of a modification (for instance a change of frequency), shall immediately inform the IFRB. The Board shall publish this information in a special section of its weekly circular.

G/1004/22 22. 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 a recapitulative document 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 the Agreement, and any cancellations of which the Board has been informed.

ARTICLE 5

Notification of Frequency Assignments

G/1004/23 23. Whenever an administration intends to bring into use an assignment in conformity with the Agreement it shall notify the assignment to the IFRB in accordance with the provisions of Article 12 of the Radio Regulations. Any such assignment recorded in the Master Register as a result of the application of the provisions of Article 12 of the Radio Regulations shall, in addition to a date in Column 2a or Column 2b, bear a special symbol in the Remarks column.

G/1004/24 24. In relations between Contracting Members all frequency assignments brought into use in conformity with the Agreement and recorded in the Master Register shall be considered to have the same status irrespective of the date or dates entered in Column 2 for such assignments.

ARTICLE 6

Special Arrangements

G/1004/25 25. In addition to the procedure provided for in Article 4 of the Agreement and to facilitate their application with a view to improving the utilisation of the Plan, Contracting Members may conclude special arrangements in accordance with the relevant provisions of the Convention and of the Radio Regulations.

ARTICLE 7

Scope of Application of the Agreement

G/1004/26 26. This Agreement shall bind Contracting Members in their relations with one another but shall not bind those Members with respect to non-Contracting countries.

G/1004/27 27. If a Member makes reservations with regard to any provision of this Agreement, other Members shall be free to disregard that provision in their relations with the Member which has made such reservations.

ARTICLE 8

Approval of the Agreement

G/1004/28 28. Members shall notify their approval of this Agreement, as promptly as possible, to the Secretary-General, who shall at once inform the other Contracting Members.

ARTICLE 9

Accession to the Agreement

G/1004/29 29. 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 amended at the time of the accession and shall be made without reservation. The Secretary-General shall be notified thereof and he shall promptly inform the other Contracting Members.

G/1004/30 30. Accession to the Agreement shall take effect on the date on which the notification of accession is received by the Secretary-General.

ARTICLE 10

Termination of Participation in the Agreement

G/1004/31 31. Any Contracting Member shall have the right at any time to terminate its participation in the Agreement by a notification sent to the Secretary-General who shall inform the other Contracting Members.

G/1004/32 32. 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.

ARTICLE 11

Abrogation of the Regional Agreement Concerning Maritime Radiobeacons in the European Area of Region 1

G/1004/33 33. The Additional Protocol to the Final Acts of the Regional Administrative Radio Conference for the European Maritime Area, Geneva, 1985, provides for the abrogation of the Regional Agreement concerning Maritime Radiobeacons in the European Area of Region 1 (Paris, 1951).

ARTICLE 12

Effective Date of the Agreement

G/1004/34 34. The Agreement shall enter into force on ..... 19.. at 0001 UTC.

Annexes : 6

G/1004/35

ANNEX A

PLAN OF MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA

Note: This Annex contains a list of the United Kingdom maritime radiobeacons with their characteristics. Where radiobeacons in France, the Netherlands or the Republic of Ireland have been included this is simply to show the proposed grouping with related radiobeacons in the United Kingdom.

Station	Country	Identification	Range (nm)	Data Transmission Sequence	Channel No.
RADIOBEACONS OPERATING SINGLY					
Brighton Marina	G	BM	10		
Channel LSTN	G	CR	10		
Chichester Bar	G	CH	10		
Cloch Point[1]	G	CL	8		
Fidra	G	FD	10		
Hartland Point	G	HP	5		
Humber LSTN	G	MB	5		
Inchkeith	G	NK	10		
Nab Tower	G	NB	20		
Newhaven	G	NH	10		
Point Lynas[1]	G	PL	5		
Poole Harbour	G	PO	10		
St Helier	G	EC	10		
St Peter Port	G	GY	10		
Scarweather LSTN	G	RW	5		
Souter Point[1]	G	PT	5		
Sunk LSTN	G	UK	10		
Tarbat Ness	G	TN	50		
RADIOBEACONS OPERATING IN GROUPS OF TWO					
Cap D'Alprech	F	PH	50		
Dungeness	G	DU	50		
Cap Frehal	F	FE	20		
La Corbiere	G	CB	20		

1 - Calibration Station

G/1004/35 (cont.)

Station	Country	Identification	Range (nm)	Data Transmission Sequence	Channel No.
RADIOBEACONS OPERATING IN GROUPS OF TWO (Contd)					
Girdle Ness	G	GD	50		
Fife Ness	G	FP	50		
Lundy South	G	LS	50		
Flatholm	G	FL	50		
Mizen Head	IRL	MZ	200		
Round Island	G	RR	200		
Oigh Sgeir	G	OR	50		
Eilean Glas	G	LG	50		
RADIOBEACONS OPERATING IN GROUPS OF THREE					
Altacarry Head	G	AH	50		
Pladda	G	DA	50		
Rinns of Islay	G	RN	70		
Barra Head	G	BD	200		
Tory Island	IRL	TY	100		
Eagle Island	IRL	GL	200		
Bressay	G	BY	50		
North Ronaldsay	G	NR	100		
Muckle Flugga	G	MF	150		
Cape Wrath	G	CW	50		
Butt of Lewis	G	BL	150		
Sule Skerry	G	LK	100		
Cregneish	G	CN	50		
Point of Ayre	G	PY	50		
Mew Island	G	MW	50		
Heugh	G	HS	50		
Flamborough Head	G	FB	50		
Spurn LSTN	G	SL	50		
Longstone	G	LT	50		
Isle of May	G	LM	100		
Souter Point	G	SJ	50		
North Foreland	G	NF	50	Yes	
South Foreland	G	SD	50	Yes	
Falls LSTN	G	FS	50	Yes	
Outer Gabbard LSTN	G	GA	50		
Goerree	HOL	GR	50		
North Hinder LSTN	HOL	NR	50		
Penlee Point	G	PE	50		
Ile Vierge	F	VE	70		
Lizard	G	LZ	50		
Portland Bill	G	PB	50		
St Catherines Point	G	CP	50		
Barfleur	F	FG	50		

G/1004/35 (cont.)

RADIOBEACONS OPERATING IN GROUPS OF THREE (Contd)

Station	Country	Identification	Range (nm)	Data Transmission Sequence	Channel No.
Roches Douvres	F	RD	70		
Start Point	G	SP	50		
Casquets	G	QS	50		
Royal Sovereign	G	RY	50		
Bassurelle	F	WL	50		
Pointe D'Ailly	F	AL	50		
Skerries	G	SR	70		
Wicklow Head	IRL	WK	50		
Rockabill	IRL	RB	50		
Smiths Knoll	G	SK	50		
Cromer	G	CM	50		
Dudgeon LSTN	G	LV	50		
Stroma	G	OM	50		
Kinnaird Head	G	KD	100		
Sumburgh Head	G	SB	70		
Tuskar Rock	IRL	TR	50		
South Bishop	G	SB	50		
Bardsey	G	IB	50		
Walney Island	G	FN	50		
Point Lynas	G	PS	50		
Douglas	G	DG	50		

G/1004/35
(cont.)

APPENDIX 1 TO ANNEX A

ASSIGNMENT OF CHANNELS TO STATIONS
(Numerical Sequence of Channels)

Channel No.	Station	Country	Identification

G/1004/35
(cont.)

APPENDIX 2 TO ANNEX A

ASSIGNMENT OF CHANNELS TO STATIONS
(Alphabetical Sequence of Stations)

Station	Country	Identification	Channel No
Altacarry Head	G	AH	
Bardsey	G	IB	
Barra Head	G	BD	
Bressay	G	BY	
Brighton Marina	G	BM	
Butt of Lewis	G	BL	
Cape Wrath	G	CW	
Casquets	G	QS	
Channel LSTN	G	CR	
Chichester Bar	G	CH	
Cloch Point	G	CL	
Cregneish	G	CN	
Cromer	G	CM	
Douglas	G	DG	
Dudgeon LSTN	G	LV	
Dungeness	G	DU	
Eilean Glas	G	LG	
Falls LSTN	G	FS	
Fidra	G	FD	
Fife Ness	G	FP	
Flamborough Head	G	FB	
Flatholm	G	FL	
Girdle Ness	G	GD	
Hartland Point	G	HP	
Heugh	G	HS	
Humber LSTN	G	MB	
Inchkeith	G	NK	
Isle of May	G	LM	
Kinnaird Head	G	KD	
La Corbiere	G	CB	
Lizard	G	LZ	
Longstone	G	LT	
Lundy South	G	LS	
Mew Island	G	MW	
Muckle Flugga	G	MF	
Nab Tower	G	NB	
Newhaven	G	NH	
North Foreland	G	NF	
North Ronaldsay	G	NR	
Oigh Sgeir	G	OR	
Outer Gabbard LSTN	G	GA	
Penlee Point	G	PE	
Pladda	G	DA	
Point Lynas	G	PL	
Point Lynas	G	PS	
Point of Ayre	G	PY	
Poole Harbour	G	PO	
Portland Bill	G	PB	
Rinns of Islay	G	RN	

G/1004/35 (cont.)

Station	Country	Identification	Channel No.
Round Island	G	RR	
Royal Sovereign	G	RY	
St Catherines Point	G	CP	
St Helier	G	EC	
St Peter Port	G	GY	
Scarweather LSTN	G	RW	
Skerries	G	SR	
Smiths Knoll	G	SK	
Souter Point	G	PT	
Souter Point	G	SJ	
South Bishop	G	SB	
South Foreland	G	SD	
Spurn LSTN	G	SL	
Start Point	G	SP	
Stroma	G	OM	
Sule Skerry	G	LK	
Sumburgh Head	G	SB	
Sunk LSTN	G	UK	
Tarbat Ness	G	TN	
Walney Island	G	FN	

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(cont.)

APPENDIX 3 TO ANNEX A

NOTIFICATION OF A MODIFICATION[1] TO AN ASSIGNMENT RECORDED IN THE PLAN OR THE ADDITION OF AN ASSIGNMENT TO THE PLAN - INFORMATION TO BE SUPPLIED IN ACCORDANCE WITH PARAGRAPH 6 OF ARTICLE 4

1. Name of Station .....
2. Country .....
3. Geographical Coordinates (Lat & Long) .....
4. Channel No. .....
5. Designation of Emission .....
6. Power:-
   a) Type .....
   b) Supplied to the Antenna in dBW .....
7. Characteristics of the Antenna:-
   a) Azimuth of Maximum Radiation .....
   b) Angular Width of Radiation Main Lobe .....
   c) Maximum Antenna Gain .....
8. Hours of Operation (UTC) .....
9. Service Area:-
   a) Zone Defined by Six Points, or .....
   b) Circular Service Area .....
10. Proposed Date of Bringing into Use .....
11. Coordination:-
    a) Administrations from which it is considered that agreement should be obtained .....
    .....
    b) Administrations from which agreement has been obtained .....
    .....

---

1 In the case of a modification, where applicable, indicate the modification by underlining followed by the current characteristics in parentheses.

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ANNEX B

THE STRUCTURE OF THE MARITIME RADIOBEACON SIGNAL

Basic Composition of the Maritime Radiobeacon Signal

1. Each maritime radiobeacon transmits a signal composed as follows:-

a)	the identification signal transmitted twice	7 seconds
b)	a long dash lasting	31 seconds
c)	a silent period lasting	1 second
d)	a data transmission sequence lasting	4 seconds
e)	a silent period lasting	17 seconds
	Total	60 seconds

2. The identification signal may be increased to 12 seconds to allow a slower speed of morse transmission. In this case, the long dash should be proportionally shortened but should not be less than 25 seconds. When data is not transmitted the long dash may be extended to a maximum duration of 52 seconds.

3. Radiobeacons transmitting Differential Omega correction information should neither transmit the F1B portion of the signal nor be grouped with other radiobeacons.

Composition of the Maritime Radiobeacon Signal with Grouped Radiobeacons

4. Maritime radiobeacons may be operated singly or in groups of 2, 3 or 6 radiobeacons. When operated singly the basic signal composition described in paragraph 1 should be used. Grouping of six radiobeacons can only be used where the data transmission sequence is not required or where the length of the data transmission sequence is reduced.

5. The composition of the signal of maritime radiobeacons operating in groups of two is as follows:-

a)	a silent period lasting	55 seconds
b)	a data transmission sequence lasting	4 seconds
c)	a silent period lasting	1 second
d)	the identification signal transmitted twice	7 seconds
e)	a long dash lasting	31 seconds
f)	a silent period lasting	1 second
g)	a data transmission sequence lasting	4 seconds
h)	a silent period lasting	17 seconds
	Total	120 seconds

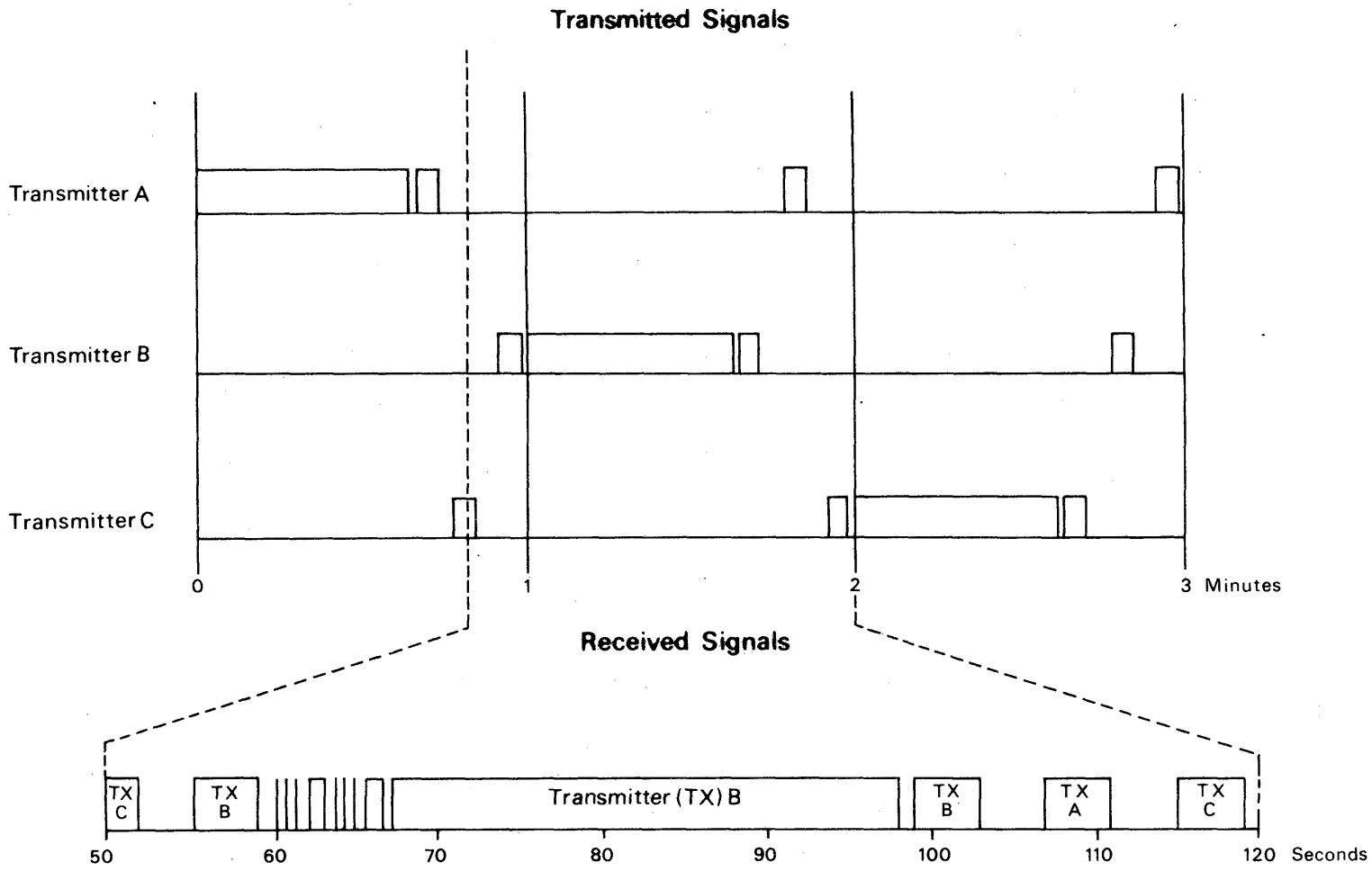
G/1004/36 (cont.) The start of the signal by one radiobeacon shall be 60 seconds after the start of the signal by the other radiobeacon.

6. The composition of the signal of maritime radiobeacons operating in groups of three is as follows:-

a)	a silent period lasting	55 seconds
b)	a data transmission sequence lasting	4 seconds
c)	a silent period lasting	1 second
d)	the identification signal transmitted twice	7 seconds
e)	a long dash lasting	31 seconds
f)	a silent period lasting	1 second
g)	a data transmission sequence lasting	4 seconds
h)	a silent period lasting	64 seconds
i)	a data transmission sequence lasting	4 seconds
j)	a silent period lasting	9 seconds
	Total	180 seconds

The start of the signal by one radiobeacon shall be 60 seconds after the start of the signal by the preceding radiobeacon in the group (see Figure 1).

Composition of the signals of maritime radiobeacons operating in groups of three with data transmission sequences



The Structure of the Radiobeacon Signal

Fig 1

G/1004/37

ANNEX C

RECOMMENDED MINIMUM TECHNICAL CHARACTERISTICS FOR MARITIME RADIOBEACONS IN THE BAND 283.5 - 315 kHz

ANTENNA AND EARTH SYSTEM

1. The antenna and earth system should be so designed as to restrict radiation of horizontally polarized waves and 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 minimise their influence on the radiation pattern, horizontal power and telecommunication lines at less than 100 metres from the antenna should be underground.

TRANSMITTERS

Frequencies

4. Frequencies assigned to maritime radiobeacons shall be 500 Hz apart and on integer multiples of 100 Hz.

5. Transmitters of A1A emissions shall maintain their assigned frequency within a tolerance of ± 30 Hz.

6. Transmitters of F1B emissions shall maintain their assigned frequency within a tolerance of ± 10 Hz.

7. Maximum spurious emission power levels of all transmitters shall conform to Appendix 8 of the Radio Regulations.

Modulation

8. A beacon identity of one or two morse letters followed by a 'long-dash' shall be transmitted using class of emission A1A.

9. Additional information, permitted as a further aid to navigation, may be transmitted by a radiobeacon using the class of emission F1B. In this case the radiobeacon assigned frequency shall be frequency shift keyed ± 85 Hz at a rate of 100 bauds.

10. The structure of the radiobeacon signal shall be as given at Annex B.

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(cont.)

Data F1B Transmission Sequences

11. Data F1B transmission sequences shall conform to the characteristic given at Annex F.

Accuracy of Timing

12. All maritime radiobeacons shall be controlled by a device ensuring the accuracy of the transmission schedules. The accuracy of transmission times should be maintained to within 0.25 seconds.

Field Strength Measurements

13. When a maritime radiobeacon is put 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.

14. Such measurements should be taken again at regular intervals not exceeding one year.

Monitoring of Radiobeacon Transmissions

15. Monitoring of maritime radiobeacon transmissions should be carried out to ensure that:-

a) the field strength does not vary by more than ± 3dB from the nominal value determined in accordance with paragraph 13;

b) the transmission frequency does not vary by more than ± 10 Hz for the F1B transmission and ± 30 Hz for the A1A transmission;

c) the transmitted signal is correct;

d) the timing is maintained within ± 0.25 seconds.

STANDBY DEVICES

16. Maritime radiobeacons should have the necessary standby devices to prevent any stoppage due to the breakdown of the electric supply, the transmitter or the timing device.

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ANNEX D

RECOMMENDED MINIMUM TECHNICAL CHARACTERISTICS FOR MARITIME RADIO DIRECTION-FINDERS WORKING ON FREQUENCIES BETWEEN 283.5 kHz AND 315 kHz[1]

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 permitted to transmit as a further aid to navigation. Such transmissions will be on the radiobeacon assigned frequency and be class F1B emissions.

SELECTIVITY

3. For class of emission A1A, the overall radio frequency (r.f.) and intermediate frequency (i.f.) selectivity of the direction-finder should be:-

a) bandwidth between 190 Hz and 210 Hz for 6 dB attenuation;

b) bandwidth less than 460 Hz for 30 dB attenuation;

c) bandwidth less than 960 Hz for 60 dB attentuation.

4. The image frequency rejection ratio should be 80 dB or higher.

5. The i.f. protection ratio should be 80 dB or higher.

6. For class of emission F1B, the overall r.f. and i.f. selectivity of the receiver should be:-

a) bandwidth between 270 Hz and 350 Hz for 6 dB attenuation;

b) bandwidth less than 600 Hz for 30 dB attenuation;

c) bandwidth less than 1100 Hz for 60 dB attenuation.

7. The image frequency rejection ratio should be 80 dB or higher.

8. The i.f. protection ratio should be 80 dB or higher.

---

1. Note: This Agreement does not relate to or in any way affect the characteristics of radio direction-finders intended to operate in any radio service other than the Maritime Radionavigation service or in any frequency band other than 283.5-315 kHz.

G/1004/38 (cont.)

SENSITIVITY

9. A field strength of equal to, or less than, 50 uV/m shall produce a signal in the headphones of a receiver of 1 mW, or greater, with a signal-to-noise ratio of 20 dB or higher[1].

MISCELLANEOUS CHARACTERISTICS

10. Maritime radio direction-finders shall include means by which A1A identification signals can be recognised.

11. The receivers shall maintain the frequency to which they are tuned within a tolerance of ± 50 Hz.

12. Receivers utilising the F1B transmissions shall:-

a) maintain the frequency to which they are tuned within a tolerance of ± 10 Hz;

b) be fitted with a method of displaying the additional navigational information obtained;

c) be fitted with means to indicate clearly when there is any discrepancy between displayed navigational information and its accompanying error check character (ECC).

13. 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.

TECHNICAL CONDITIONS FOR THE INSTALLATION OF RADIO DIRECTION-FINDERS IN VESSELS

14. 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.

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

16. The connecting cables between the antenna system and the apparatus should be electro-magnetically screened. All joints should be watertight.

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

---

1 A direction-finder having this sensitivity is capable of taking bearings in the presence of receiver noise with a rotation of the radiogoniometer control not exceeding + 3°.

G/1004/38 (cont.) CALIBRATION OF MARITIME RADIO DIRECTION-FINDERS

18. The calibration curve of the direction-finder should be plotted before the latter is put into operation and each time the position of the antennas or the conductors referred to above are changed or the superstructure of the vessel altered substantially.

19. The calibration of the direction-finder should be checked at intervals not exceeding 12 months.

20. When calibrating the radio direction-finder the frequency used should be as close as possible to 300 kHz.

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

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ANNEX E

FREQUENCY CHANNELLING OF MARITIME RADIOBEACONS

1. In the European Maritime Area frequencies assigned to maritime radiobeacons in the band 283.5-315 kHz shall be spaced 500 Hz apart and shall be on integer multiples of 100 Hz.

2. Channel Numbers of the frequencies used by maritime radiobeacons shall be:-

Channel No.	Frequency (kHz)	Channel No.	Frequency (kHz)	Channel No.	Frequency (kHz)
1	284.0	22	294.5	43	305.0
2	284.5	23	295.0	44	305.5
3	285.0	24	295.5	45	306.0
4	285.5	25	296.0	46	306.5
5	286.0	26	296.5	47	307.0
6	286.5	27	297.0	48	307.5
7	287.0	28	297.5	49	308.0
8	287.5	29	298.0	50	308.5
9	288.0	30	298.5	51	309.0
10	288.5	31	299.0	52	309.5
11	289.0	32	299.5	53	310.0
12	289.5	33	300.0	54	310.5
13	290.0	34	300.5	55	311.0
14	390.5	35	301.0	56	311.5
15	391.0	36	301.5	57	312.0
16	391.5	37	302.0	58	312.5
17	392.0	38	302.5	59	313.0
18	392.5	39	303.0	60	313.5
19	393.0	40	303.5	61	314.0
20	393.5	41	304.0	62	314.5
21	294.0	42	304.5		

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ANNEX F

TECHNICAL CHARACTERISTICS OF A DATA F1B TRANSMISSION SEQUENCE

General

1. The system shall be synchronous and use a ten-unit error detecting code as listed in Table 1 of this Annex.

a) The first seven bits of the ten-unit code of Table 1 are information bits. Bits 8, 9 and 10 indicate, in the form of a binary number, the number of B elements that occur in the seven information bits, a Y element being a binary number 1 and a B element a binary number 0.

b) The higher frequency corresponding to the B state and the lower frequency corresponding to the Y state of the signal elements.

Message Format

2. The message format shall include a phasing signal, self-identification, the position of the radiobeacon, provision for a message and an error check. The format is shown in Figure 1.

Phasing Sequence

3. The phasing sequence provides information to the direction-finder to permit correct bit phasing and unambiguous determination of the positions of the signals within the transmission sequence. It also specifies the start of information and consists of the signals for symbols 109, 108, 107, 106, 105 and 104 of Table 1 transmitted consecutively.

Self-Identification

4. Self-identification is the two letter identification assigned to the radiobeacon station, coded in accordance with Table 2.

Position of the Radiobeacon Station

5. The position of the radiobeacon station consists of twelve digits coded in accordance with Table 2.

a) The first digit indicates the quadrant in which the radiobeacon is sited as follows:-

1) Quadrant NE would be indicated by the digit "0";

2) Quadrant NW would be indicated by the digit "1";

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(cont.)

3) Quadrant SE would be indicated by the digit "2";

4) Quadrant SW would be indicated by the digit "3";

b) The second, third, fourth, fifth and sixth digits indicate the latitude of the radiobeacon in tens, units, tenths of units, hundredths of units and thousandths of units of degrees respectively;

c) The seventh, eighth, ninth, tenth, eleventh and twelfth digits indicate the longitude of the radiobeacon in hundreds, tens, units, tenths of units, hundredths of units and thousandths of units of degrees respectively.

Message

6. The "message" consists of nineteen symbols. The particular meaning of each symbol in each block should be defined by the International Association of Lighthouse Authorities as the organisation concerned with the operational use of radiobeacons. The symbols 104, 105, 106, 107, 108, 109 and 127 should not be used as part of a message.

7. The symbol 127 should, however, be inserted in the message format for each information block not used as part of the message content.

Error Check Character

8. The seven information bits of the error-check signal would be equal to the least significant bit of the modulo-2 sums of the corresponding bits of all information characters (ie even vertical parity). The phasing signals are not considered to be information characters.

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(cont.)

Table 1 - Ten-unit Error-detecting Code

Symbol No	Emitted signal	Symbol No	Emitted signal	Symbol No	Emitted signal
0	BBBBBBBYYY	43	YYBYBYBBYY	86	BYYBYBYBYY
1	YBBBBBBYYB	44	BBYYBYBYBB	87	YYYBYBYBYB
2	BYBBBBBYYB	45	YBYYBYBBYY	88	BBBYYBYYBB
3	YYBBBBBYBY	46	BYYYBYBBYY	89	YBBYYBYBYY
4	BBYBBBBYYB	47	YYYYBYBBYB	90	BYBYYBYBYY
5	YBYBBBBYBY	48	BBBBYYBYBY	91	YYBYYBYBYB
6	BYYBBBBYBY	49	YBBBYYBYBB	92	BBYYYBYBYY
7	YYYBBBBYBB	50	BYBBYYBYBB	93	YBYYYBYBYB
8	BBBYBBBYYB	51	YYBBYYBBYY	94	BYYYYBYBYB
9	YBBYBBBYBY	52	BBYBYYBYBB	95	YYYYYBYBBY
10	BYBYBBBYBY	53	YBYBYYBBYY	96	BBBBBYYYBY
11	YYBYBBBYBB	54	BYYBYYBBYY	97	YBBBBYYYBB
12	BBYYBBBYBY	55	YYYBYYBBYB	98	BYBBBYYYBB
13	YBYYBBBYBB	56	BBBYYYBYBB	99	YYBBBYYBYY
14	BYYYBBBYBB	57	YBBYYYBBYY	100	BBYBBYYYBB
15	YYYYBBBBYY	58	BYBYYYBBYY	101	YBYBBYYBYY
16	BBBBYBBYYB	59	YYBYYYBBYB	102	BYYBBYYBYY
17	YBBBYBBYBY	60	BBYYYYBBYY	103	YYYBBYYBYB
18	BYBBYBBYBY	61	YBYYYYBBYB	104	BBBYBYYYBB
19	YYBBYBBYBB	62	BYYYYYBBYB	105	YBBYBYYBYY
20	BBYBYBBYBY	63	YYYYYYBBBY	106	BYBYBYYBYY
21	YBYBYBBYBB	64	BBBBBBYYYB	107	YYBYBYYBYB
22	BYYBYBBYBB	65	YBBBBBYYBY	108	BBYYBYYBYY
23	YYYBYBBBYY	66	BYBBBBYYBY	109	YBYYBYYBYB
24	BBBYYBBYBY	67	YYBBBBYYBB	110	BYYYBYYBYB
25	YBBYYBBYBB	68	BBYBBBYYBY	111	YYYYBYYBBY
26	BYBYYBBYBB	69	YBYBBBYYBB	112	BBBBYYYYBB
27	YYBYYBBBYY	70	BYYBBBYYBB	113	YBBBYYYBYY
28	BBYYYBBYBB	71	YYYBBBYBYY	114	BYBBYYYBYY
29	YBYYYBBBYY	72	BBBYBBYYBY	115	YYBBYYYBYB
30	BYYYYBBBYY	73	YBBYBBYYBB	116	BBYBYYYBYY
31	YYYYYBBBYB	74	BYBYBBYYBB	117	YBYBYYYBYB
32	BBBBBYBYYB	75	YYBYBBYBYY	118	BYYBYYYBYB
33	YBBBBYBYBY	76	BBYYBBYYBB	119	YYYBYYYBBY
34	BYBBBYBYBY	77	YBYYBBYBYY	120	BBBYYYYBYY
35	YYBBBYBYBB	78	BYYYBBYBYY	121	YBBYYYYBYB
36	BBYBBYBYBY	79	YYYYBBYBYB	122	BYBYYYYBYB
37	YBYBBYBYBB	80	BBBBYBYYBY	123	YYBYYYYBBY
38	BYYBBYBYBB	81	YBBBYBYYBB	124	BBYYYYYBYB
39	YYYBBYBBYY	82	BYBBYBYYBB	125	YBYYYYYBBY
40	BBBYBYBYBY	83	YYBBYBYBYY	126	BYYYYYYBBY
41	YBBYBYBYBB	84	BBYBYBYYBB	127	YYYYYYYBBB
42	BYBYBYBYBB	85	YBYBYBYBYY		

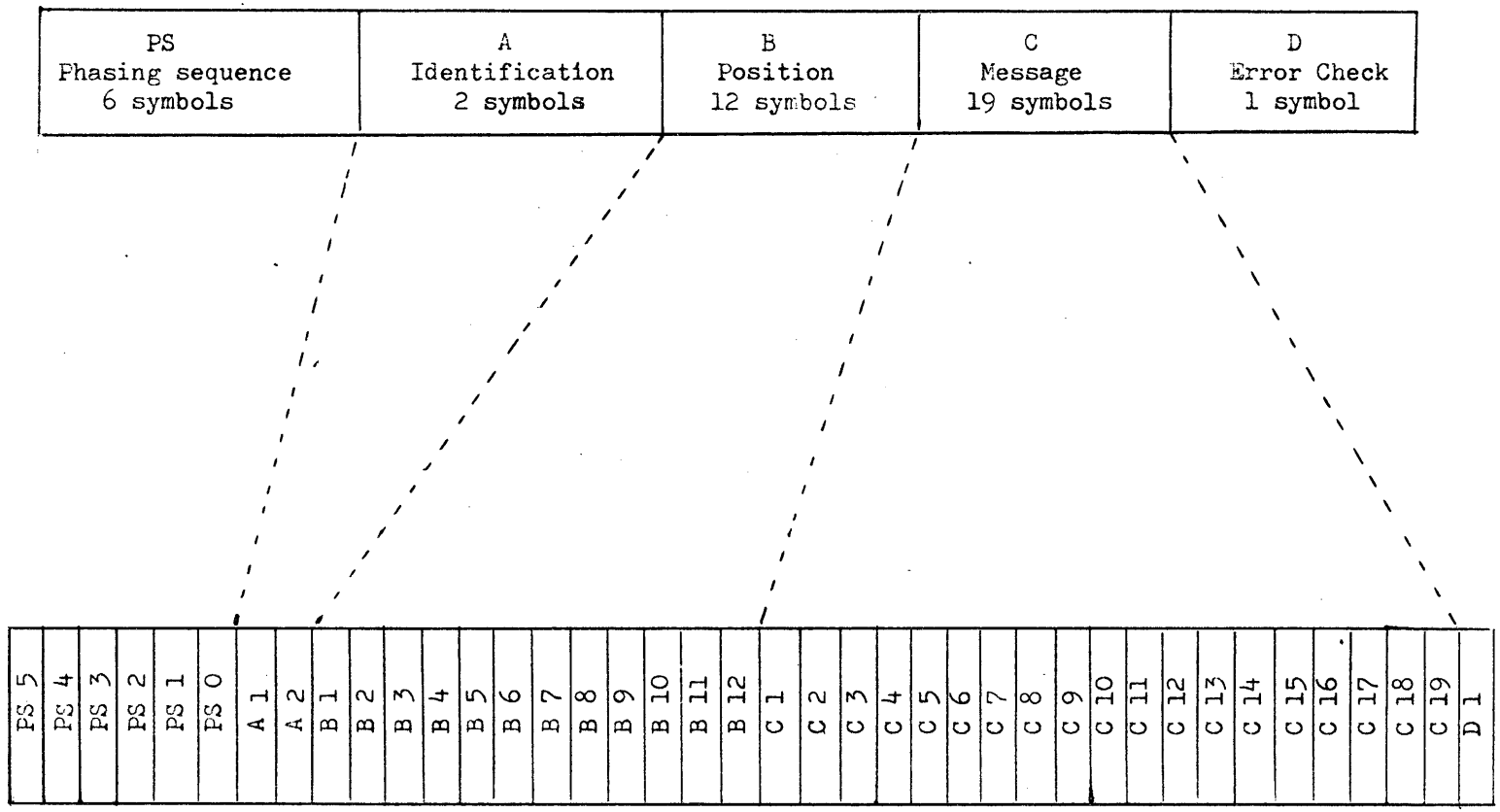
B = 0
Y = 1

Table 2 - Self-identification Code

Figures Symbol No*	Letters Symbol No*	Letters Symbol No*
0 - 48	A - 65	N - 78
1 - 49	B - 66	O - 79
2 - 50	C - 67	P - 80
3 - 51	D - 68	Q - 81
4 - 52	E - 69	R - 82
5 - 53	F - 70	S - 83
6 - 54	G - 71	T - 84
7 - 55	H - 72	U - 85
8 - 56	I - 73	V - 86
9 - 57	J - 74	W - 87
	K - 75	X - 88
	L - 76	Y - 89
	M - 77	Z - 90

* See Table 1

G/1004/40
(cont.)



Transmission time of each symbol is 100 milliseconds

FORMAT AND TECHNICAL DETAILS OF THE DATA TRANSMISSION SEQUENCE

Figure 1

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document 1005-E
20 November 1984
Original: French

PLENARY MEETING

France

PROPOSAL FOR THE WORKS OF THE CONFERENCE

Introduction

In the European maritime area maritime radiobeacons are presently regulated by the "Regional Plan concerning maritime radiobeacons in the European Area of Region 1" called "Paris Plan" concluded in Paris in 1951.

A number of amendements have been made since that date by bilateral or multilateral agreements.

The World Administrative Radiocommunication Conference, (Geneva 1979) set forth provisions Number 466 of the Radio Regulation regulating the use of radiobeacon stations for transmission of additionnal navigation information by narrow band techniques, for instance transmission of Differential Omega corrections.

In 1979, the International Maritime Organisation (IMO) recommended operating standards applicable to stations transmitting Differential Omega corrections in its Resolution No. A 425 (XI).

Finally, Study Group 8 of the CCIR, in its special report for the RARC to be held in 1985 (document 8/262, Rev. 1) considered a profound modification of the maritime radiobeacons transmission system.

1 - General principles of a new system

1.1. Uses of radiobeacons

The time has come to redefine the best use of the 283,5-315 kHz band allocated to maritime radionavigation (radiobeacons)

In effect, the evolution of radionavigation techniques towards the use of phase measurement systems and the necessity of navigation data transmissions leads to reviewing the relative importance lent to radio direction finding and the new needs arising in this band.

It is mainly for reasons of rescue and safety that the various SOLAS agreements concluded within the IMO after the wreck of the Titanic made it an obligation for ships of more than 1600 registered tons to be fitted with a radio direction finder capable of operating on radiotelegraphic frequencies.

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.

However, the new rescue and safety system which will be set up shortly will make obsolete the old process for locating ships in difficulty by radio direction finding and will lead to de jure or de facto discontinuation of Article 12 of the SOLAS Agreement.

After a considerable development in the past, the use of radio direction finders on board tradeships and fishing boats for radionavigation by radiobeacons has now been almost completely dropped for the benefit of phase-measurement systems and the obligation to carry such systems on board is no longer justified.

Thus, in a short time, the only users of radio direction finding will be pleasure boaters who appreciate the low cost of the receivers and can accept the mediocre accuracy of the system.

This single category of users does not perhaps require as dense a coverage as that presently existing and certainly not its extension.

In addition, certain pleasure boaters already use modern automatic interferometric systems, as the cost of the receivers has undergone a sustantial decrease.

1.2. New needs

The need for radionavigation systems operating in hyperbolic mode and the requirement for transmitting navigation data using differential techniques has arisen in this band.

1.2.1. Hyperbolic systems

The hyperbolic method consists of comparing the phase of waves transmitted by different synchronized beacons at the reception point. This method is one of the basic features common to a majority of the current radiolocation systems. Phase measurement can be achieved on an analogical or digital transmission.

It provides a very flexible means of obtaining high accuracy and good immunity to jamming, which is demonstrated by the development of hyperbolic systems in nearly all the bands available to maritime radionavigation.

The possibility of introducing such a system in the maritime radiobeacon band can and must be considered, to enable ships to find their position accurately at relatively long range, using very stable narrow-band transmissions on multiple and sequential frequencies.

1.2.2. Differential techniques

The dual need for systems with a very large coverage (the entire geoid) and high accuracy requires development of differential stations capable, within their range, of computing and transmitting the corrections to be made to the data provided by the overall system.

Number 466 of the Radio Regulation has already provided for such a possibility, put to use for transmission of the DIFFERENTIAL OMEGA system corrections.

As an exemple, a similar development was comtemplated by certain American manufacturers to locally improve the quality of the civil Global Positioning System.

1.3. Goals of the new agreement

The facts given above have led the French Administration to propose that explicit provision be made in the maritime radiobeacon band for other systems compatible with radiobeacons, to meet present and future needs of the navigators, essentially hyperbolic radionavigation systems and differential correction transmission systems.

2 - Proposals

F/1005/1 2.1. Differential system

In this respect, the transmission characteristics of the differential systems authorized should be specified.

The characteristics taken from IMO Recommandation A 425 XI (London 1979) concerning Differential Omega are attached herewith in Annex 1.

To improve operation of the system, continuous transmission of corrections should be promoted which means that the stations transmitting differential corrections should not be included in the groups.*

The frequency plan should provide for ten channels specific to radiobeacons transmitting Differential Omega corrections and will allocate a few channels for transmission of differential corrections by the satellite navigation system.

F/1005/2 2.2. Hyperbolic system

The agreement should provide for the possibility of using narrow band (less than 1 Hz) transmissions in mode NØN for radionavigation in hyperbolic mode.

In this respect, a group of ten frequencies should be provided to allow total ambiguity resolution in the presence of noise.

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* Group : all the stations which together cover a given maritime area and transmit sequentially on the same frequency.

F/1005/3 2.3. Data transmission by digital channel

In the special CCIR Report (doc.8/262 Rev. 1) and in the proposals attached herewith in Annex C, it is preferable to choose the minimum frequency spacing allowing a maximum number of channels available in order to meet the needs set forth in 2.1., 2.2. and 2.3.

F/1005/4 2.4. Transition period

The modifications proposed for the maritime radiobeacons bands, i.e. basically dropping of modulation A2 for mode A1, closer frequency spacing, the possible use of the transmitted wawe as carrier for data transmission systems using phase modulation should be implemented in order to perpetuate automatic radio direction finding.

The use of the carrier as support for data transmission obviously does not affect operation of conventional radio direction finders.

Dropping of modulation A2 should not jeopardize operation of receivers manufactured in accordance with the recommendations set forth by the Paris Plan and the SOLAS Agreement, which provided for capability to receive transmissions in both modes. Mode A1 could therefore be adopted immediately.

However, the addition of new channels, made possible by reducing the width of the radiobeacon transmission bands, is not possible before a transition period of sufficient duration to allow the development and distribution of new narrow band receivers.

During this transition period, the new frequency plan must preserve the current frequency spacings and geographic protection ratios.

F/1005/5 2.5. Date of implementation of the new agreement

Taking as basis a ten-year amortizement of the last wide band radio direction finders marketed in the framework of the present regulations, it is proposed to set the date of January 1, 1995 as the date for full application of the new agreement with use of the new frequencies.

F/1005/6 Conclusion

The French Administration would like the new agreement to explicitly extend the use of the 283,5 - 315 kHz Maritime Radionavigation band (radiobeacons) to services of real interest for trade and fishing navigation, and in particular to hyperbolic systems.

Annexes: 2

ANNEX 1

TRANSMISSION CHARACTERISTICS OF RADIOBEACONS TRANSMITTING CORRECTION FOR DIFFERENTIAL OMEGA

Transmission characteristics

1. Mode of transmission

1.1 Narrow spectrum sub-carrier phase modulation should be used to modulate the carrier frequency of the differential Omega transmitter.

2. Characteristics of transmission

2.1 Taking into consideration CCIR Report 777, the frequency of the transmitter should be between 250 and 500 kHz in an appropriate band allocated to radionavigation. The carrier frequency should be a multiple of 100 Hz with a stability which complies with the requirements of the Radio Regulations for radiodetermination stations.

2.2 The bandwidth should be compatible with the existing transmissions in the band and should comply with the requirements of the Radio Regulations. The correction data and, where appropriate, identification data should be transmitted by modulating sub-carriers which themselves modulate the carrier.

2.2.1 The sub-carrier(s) used should have a low frequency equal to or less than 30 Hz.

2.2.2 The sub-carrier(s) should modulate the carrier with a narrow spectrum phase modulation with a modulation index less than 0.6.

2.2.3 The data flow which modulates the sub-carrier(s) should have a narrow spectrum.

2.2.4 The two latter characteristics should be such that the total bandwidth occupied by the transmission (99 percent of the energy) is contained within plus or minus 50 Hz around the carrier.

3. Transmission of station corrections

3.1 General

3.3.1 The transmitted corrections should be in the form of separate phase corrections for each Omega signal and use an analogue method with the format given in the Appendix and synchronized to the Omega format.

3.1.2 The selection of signals for which corrections should be provided shall be the responsibility of the national authority which should consider such factors as modal interference, long path interference, prevailing signal-to-noise ratio and local navigation requirements.

3.1.3 The selection criteria used, as well as a list of specific signals to be transmitted by each station, should be published in appropriate nautical documents.

3.2 Transmission of the decimal part of the correction

3.2.1 For each Omega station whose reception on a frequency of 10.2 kHz is of sufficient quality, a sub-carrier signal of 20 Hz should be transmitted for the duration of the corresponding Omega segment. The phase of this sub-carrier represents the value of the correction, degree for degree.

3.2.2 If the corrections affecting other Omega navigation frequencies are transmitted in addition to those which are based on the frequency of 10.2 kHz, the procedure should be identical but supplementary sub-carriers should be used, as shown in the Appendix to this Annex.

3.3 Transmission of the integer part of the correction

3.3.1 The transmitted differential correction of 10.2 kHz signals may include the integer number of cycles.

3.3.2 If the integer is included a unique sub-carrier frequency of 8 Hz should be transmitted during the appropriate time segment and phase shifted by a value corresponding to 1/6 of the phase shift value of the 20 Hz carrier as shown in the following table:

Range of correction (centicycles)	-300	-200	-100	0	+100	+200
Phase shift of 8 Hz sub-carrier (degrees)	-50	$-33\frac{1}{3}$	$-16\frac{2}{3}$	0	$+16\frac{2}{3}$	$+33\frac{1}{3}$

3.3.3 Doubt on the validity of the integer number must result in the cessation of the 8 Hz sub-carrier during the appropriate time segment.

3.3.4 If the integer is not included a unique sub-carrier of 8 Hz without phase shift should be transmitted during the appropriate time segment. Any abnormal condition, such as a rate of change exceeding 0.03 cycle per minute, must result in the cessation of the 8 Hz sub-carrier.

4. Identification

4.1 The transmission should be identified by means of amplitude modulation of the carrier. The amplitude modulation should not include spectral components in the range 0 - 50 Hz and the depth of modulation should not exceed 80 percent.

4.2.1 An additional code should be used when differential Omega corrections are transmitted by a time-shared radiobeacon.

4.2.2 The additional code should comprise a low frequency sub-carrier signal with a duration between 2.3 and 2.7 seconds. The value of the frequency used for this code should enable the radiobeacon to be identified. Six different frequency values should be used: 11, 12, 13, 14, 15 and 16 Hz.

4.2.3 Transmission of such additional code by the corrections transmission station is not necessary if the carrier used is continuous.

5. Radiated power

5.1 Except when a differential Omega station is associated with a radiobeacon, the power of which is determined by international agreement, the power should be chosen with reference to the service area required and should be consistent with the satisfactory operation of other radio transmitters operating on the same or adjacent frequencies. The antenna should be capable of radiating signals adequate for the service area.

6. Update time

6.1 The transmission of differential Omega correction signals should preferably be continuous. Where continuous transmission is not practicable, a time interval between successive intervals not exceeding 3 minutes is desirable. However, an interval not exceeding 6 minutes is acceptable.

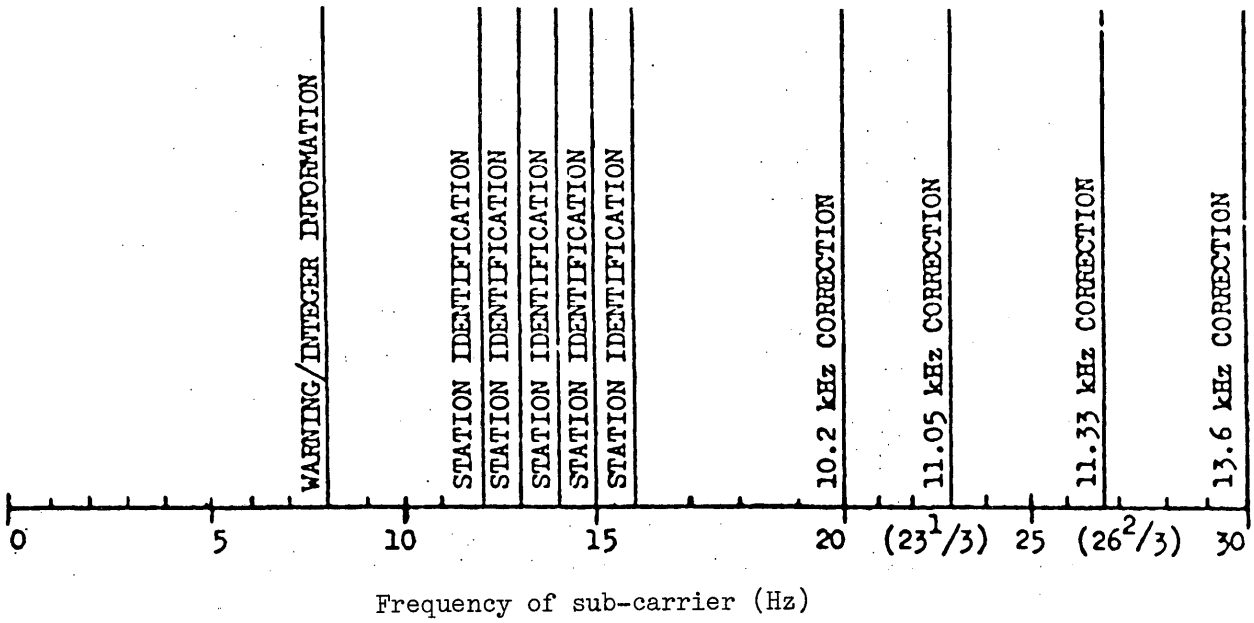
6.2 It is desirable that a period of at least 25 seconds, without interruption, is available for the transmission of corrections to permit the transmission of two complete Omega cycles and the additional station code.

APPENDIX

(to Annex 1)

Format of a differential Omega transmission

Frequency components of a differential Omega transmission



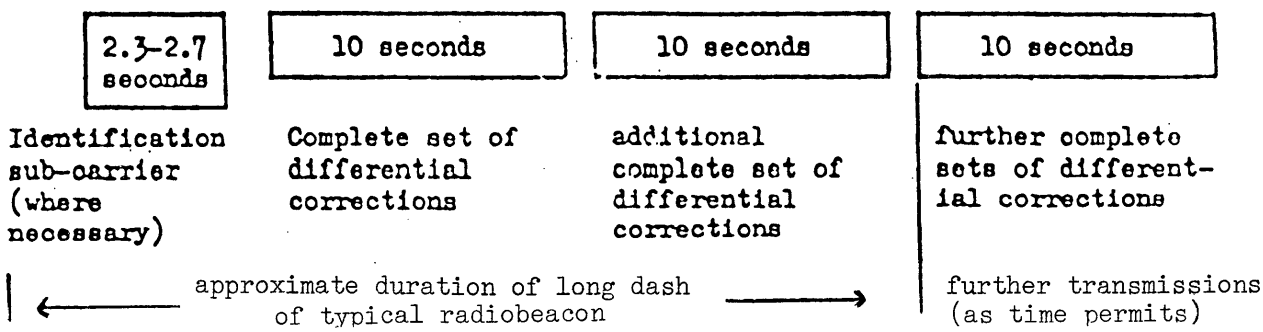
TIME COMPONENTS OF A DIFFERENTIAL OMEGA TRANSMISSION

10.2 kHz correction	A	B	C	D	E	F	G	H	(20 Hz sub-carrier)
13.6 kHz correction	H	A	B	C	D	E	F	G	(30 Hz sub-carrier)
11.33 kHz correction	G	H	A	B	C	D	E	F	($26^2/3$ Hz sub-carrier)
11.05 kHz correction	F	G	H	A	B	C	D	E	($23^1/3$ Hz sub-carrier)

Differential Omega format identical to, and synchronous with, format

← 10 seconds →

COMPOSITION OF RADIOBEACON (IN TIME)



ANNEX 2

DRAFT REGIONAL AGREEMENT FOR THE EUROPEAN MARITIME AREA OF REGION 1 CONCERNING THE USE OF FREQUENCIES BY THE MARITIME RADIOBEACON SERVICE IN THE BAND 283.5 - 315 kHz

F/1005/7 Preamble

The undersigned Delegates of the Administrations of the following countries:

meeting in Geneva for a Regional Conference convened under the terms of Article [ ] of the International Telecommunications Convention, Nairobi 1982, have adopted, subject to the approval of their respective Administrations, the following provisions relating to the maritime radiobeacon service in the European Maritime Area of Region 1.

F/1005/8

ARTICLE 1

Definitions

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

Union: The International Telecommunication Union;
Secretary-General: The Secretary-General of the Union;
I.F.R.B.: The International Frequency Registration Board;
C.C.I.R.: The International Radio Consultative Committee;
Convention: The International Telecommunication Convention;
Radio Regulations: The Radio Regulations annexed to the Convention;
European maritime area: The geographical area defined in No. 405 of the Radio Regulations, Geneva, 1979;
Agreement: The whole of this Agreement including its annexes;
Plan: The Plan and its appendices forming Annex 1 to this Agreement;
Contracting Member: Any Member of the Union which has approved or acceded to the Agreement;
Administration: Any governmental department or service responsible for discharging the obligations undertaken in the Convention and the Radio Regulations.

F/1005/9

ARTICLE 2

Frequency Bands

The provisions of the Agreement apply to the frequency bands between 283.5 and 315 kHz allocated to the marine radionavigation service under Article 18 of the Radio Regulations, Geneva, 1979.

F/1005/10

ARTICLE 3

Execution of the Agreement

1. The contracting Members shall adopt, for their marine radiobeacon stations operating in the European Maritime Area of Region 1 in the frequency bands referred to in the Agreement, the characteristics specified in the Plan.

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

3. The Contracting Members shall endeavour to agree on the action required to reduce any harmful interference caused by the application of this Agreement.

F/1005/11

ARTICLE 4

Procedure for Modifications to the Plan

1. When a Contracting Member proposes to make a modification to the Plan, ie. either:

   - to change the characteristics of a frequency assignment to a marine radiobeacon station shown in the Plan, whether or not the station has been brought into use, or

   - to bring into use an assignment to a marine radiobeacon station not appearing in the Plan, or

   - to change the characteristics of a frequency assignment to a marine radiobeacon station for which the procedure in this Article has been successfully applied, whether or not the station has been brought into use, or

   - to cancel a frequency assignment to a marine radiobeacon station,

   the following procedure shall be applied before any notification is made under the provisions of Article 12 of the Radio Regulations (see Article 5 of this Agreement).

2. In the remainder of the present Article, the term "assignment in accordance with the Agreement" means any frequency assignment appearing in the Plan or for which the procedure of this Article has been successfully applied.

3. Proposed Changes in the Characteristics of an Assignment or the Bringing into Use of a new Assignment

3.1 Any administration proposing a change in the characteristics of an assignment or the bringing into use of a new assignment shall seek the agreement of all the administrations having an assignment in accordance with the Agreement, in the same channel or an adjacent channel, which is considered to be affected (see 3.5)

3.2 An administration proposing to change the characteristics of an assignment or to bring a new assignment into use shall so inform the I.F.R.B. and furnish the characteristics of the modification or addition in the form adopted in the Plan and its appendices and shall notify to the I.F.R.B. the names of the administrations whose agreement it considers should be sought and of those with which agreement has been reached.

3.3 The I.F.R.B. shall determine the administrations having frequency assignments in accordance with the agreement which are considered to be affected within the meaning of 3.5. The results of these calculations shall be sent immediately by the I.F.R.B. to the administration proposing the modification to the Plan. The I.F.R.B. shall include the names of these administrations in the information received and shall publish the complete information in a special section of its weekly circular.

3.4 Any administration which considers that it should have been included in the list of administrations whose frequency assignments are considered to be affected may, giving its reasons for so doing, request the I.F.R.B. to include its name. A copy of the request shall be sent to the administration proposing the modifications to the Plan.

3.5 Any assignment may be considered affected when the protection ratio of its usable field strength is reduced to less than 15 dB as a consequence of the proposed modification to the Plan. The usable field strength is calculated at any point on the boundary of the service area resulting from the first recording of the assignment in the Plan. When the original assignment in the Plan has been modified in accordance with the Agreement, the calculation shall take account of this modification.

3.6 An administration which has not notified its comments either to the administration concerned or to the I.F.R.B. within a period of sixteen weeks following the date of the weekly circular referred to in 3.3 shall be understood to have agreed to the proposed change.

3.7 If in seeking agreement an administration makes changes in its initial proposal, it shall again apply the provisions of 3.1 and the consequent procedure.

3.8 If no comments have been received on expiry of the periods specified in 3.6 or if agreement has been reached with the administrations which have made comments, the administration proposing the modification

may proceed with its project and shall inform the I.F.R.B. indicating the final characteristics of the assignment together with the names of the administrations with which agreement has been reached.

3.9 If no agreement is reached between the administrations concerned, the I.F.R.B. shall make any study that may be requested by these administrations; the Board shall inform them of the result of the study and shall make such recommendations it may be able to offer for the solution of the problem.

3.10 Any administration may at any stage in the procedure described, or before applying it, request the assistance of the I.F.R.B. particularly in seeking the agreement of another administration.

3.11 If, after application of the procedure described in this Article, the administrations concerned have been unable ro reach agreement, they may resort to the procedure described in Article 50 of the Convention. Administrations may also agree to apply the Optional Additional Protocol to the Convention.

3.12 In any case, the relevant provisions of Article 12 of the Radio Regulations shall be applied when assignments are notified. When, no agreement having been reached, the I.F.R.B. following the notification of an assignment, records it in the Master International Frequency Register, the entry shall be accompanied by a symbol indicating that the entry has been made subject to the reservation that no harmful interference will be caused to frequency assignments in conformity with the Agreement.

3.13 The I.F.R.B. shall maintain an up-to-date master copy of the Plan, taking account of the application of the procedure specified in this Article; to this end the I.F.R.B. shall prepare a document listing the amendments to be made to the Plan as a result of modifications made in accordance with the procedure of this Article and of the addition of new assignments in conformity with the Agreement.

3.14 The Secretary-General shall be informed by the I.F.R.B. of these changes made in the Plan and shall publish an up-to-date version of the Plan in an appropriate form as and when the circumstances justify and in an case every five years.

4. Cancellation of Assignments

When an assignment in accordance with the Agreement is released, whether or not as a result of a modification (for instance a change of frequency), the administration concerned shall immediately so inform the I.F.R.B. The I.F.R.B. shall publish this information in a special section of its weekly circular.

F/1005/12

ARTICLE 5

Notification of Frequency Assignments

1. Whenever an administration intends to put into use a assignment in conformity with the Agreement it shall notify this assignment to the I.F.R.B. in accordance with the provisions of Article 12 of the Radio Regulations. Any such assignment recorded in the Master Register as a result of the application of the provisions of Article 12 of the Radio Regulations, shall, in addition to a date in Column 2a or Column 2b, bear a special symbol in the Remarks column.

2. In relations between Contracting Members, all frequency assignments brought into use in conformity with the Agreement and recorded in the Master Register shall be considered to have the same status, irrespective of the dates entered in Column 2a or Column 2b for such assignments.

F/1005/13

ARTICLE 6

Special Arrangements

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

Also, Contracting Members may put into service maritime radiobeacons with a range of 10 miles or less in addition to those in Annex 1, provided that harmful interference is not caused thereby within the nominal range of any radiobeacon provided for in the Agreement. Such radiobeacons shall not be installed within 40 miles of a neighbouring country without prior agreement between the administrations concerned.

F/1005/14

ARTICLE 7

Scope of Application of the Agreement

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

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

F/1005/15

ARTICLE 8

Approval of the Agreement

Members shall notify their approval of this Agreement, as promptly as possible, to the Secretary-General, who shall at once inform the other Members of the Union.

F/1005/16

ARTICLE 9

Accession to the Agreement

1. Any Member of the Union in the European Maritime Area of Region 1 which has not signed this Agreement may accede thereto at any time. Such accession shall extend to the Plan as amended at the time of the accession and shall be made without reservation. The Secretary-General shall be notified thereof and he shall inform the other Members of the Union.

2. Accession to the Agreement shall take effect on the date on which the notification of accession is received by the Secretary-General.

F/1005/17

ARTICLE 10

Termination of Participation in the Agreement

1. Any Contract Member shall have the right at any time to terminate its participation in the Agreement by a notification sent to the Secretary-General who shall inform the other Members of the Union.

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.

F/1005/18

ARTICLE 11

Abrogation of the Regional Arrangement concerning Maritime Radiobeacons in the European Area of Region 1

Additional Protocol to the Final Acts of the Conference provides for the abrogation of the Regional Arrangement concerning Maritime Radiobeacons in the European Area of Region 1 (Paris 1951).

F/1005/19

ARTICLE 12

Effective Date of the Agreement

The Agreement shall enter into force on at 0001 hours UTC.

Annex A - A typical Plan of maritime radiobeacons in the European Maritime Area of Region 1.

Chartlets showing possible revised maritime radiobeacon groupings in the European Maritime Area of Region 1.

Annex B - The structure of the radiobeacon signal.

Annex C - Recommended (minimum) technical characteristics for maritime radiobeacons in the band 283.5 KHz - 315 KHz.

Annex D - Recommended minimum technical characteristics for radio direction-finders working on frequencies between 283.5 KHz - 315 KHz.

Annex E - Technical Criteria of the maritime radiobeacon service in the European Maritime Area of Region 1.

ANNEX A

LIST OF FREQUENCES AND OTHER CHARACTERISTICS OF MARITIME RADIOBEACONS IN THE EUROPEAN AREA OF REGION 1

1. REF NO.	2. NAME OF STATION	3. CODE	4. COUNTRY	5. POSITION IN LAT & LONG	6. EMISSION	7. CHANNEL NO.	8. SEQ-UENCE	9. FIELD STRENGTH (μV/m)	10. NOMINAL RANGE (NM)	11. ESTAB-LISHED (X)	12. REMARKS
3747	KHODOVARIKHA	HR	USSR	68°56'.17N,53°45'.50E	A1A		3	50	150	X	
3749	OSTROV KOLGUYEV N	OK	USSR	69°30'.00N,49°06'.50E	A1A		2	50	150	X	Located 040° 1.9nm from 5
3751	MYS SVYATOY NOS	TJ	USSR	67°54'.50N,48°37'.00E	A1A		1	50	150	X	
3750	OSTROV KOLGUYEV S	DG	USSR	68°42' N,48°41' E	A1A		2	50	35	X	
3752	MYS MIKULKIN	MK	USSR	67°48'.50N,46°41'.00E	A1A		1	50	50	X	
3755	MYS KANIN NOS	KS	USSR	68°39'.33N,43°18'.00E	A1A		1	50	150	X	
3757	SHOYNA	ChN	USSR	67°52'.77N,44°08'.40E	A1A		3	50	150	X	
3758	KONUSHINSKIY	KO	USSR	67°12'.50N,43°46'.80E	A1A		2	50	25	X	
3760	MORZHOVSKIY	MV	USSR	66°43'.50N,42°28'.50E	A1A		1	50	60	X	
3761	MYS VORONOV	WR	USSR	66°30'.53N,42°14'.00E	A1A		2	50	150	X	
3759	MYS ABRAMOVSKIY	AB	USSR	66°24'.53N,43°16'.17E	A1A		3	50	30	X	
3763	MYS VEPREVSKIY	WP	USSR	65°37'.47N,39°52'.67E	A1A		3	50	100	X	
3765	OSTROV MUD'YUGSKIY	MU	USSR	64°55'.27N,40°13'.42E	A1A		2	50	100	X	
3767	OSTROV ZHIZHGINSKIY	VG	USSR	65°12'.17N,36°48'.90E	A1A		1	50	110	X	
3769	MYS CHESMENSKIY	NM	USSR	64°43'.05N,36°32'.40E	A1A		1	50	30	X	Located 280°2.4c from 5
3771	O BOL'SHOY ZHUZHMUY	BR	USSR	64°41'.00N,35°33'.50E	A1A		2	50	20	X	
3773	KASHKRANTSY	KC	USSR	66°20'.45N,36°00'.80E	A1A		3	50	100	X	
3775	MYS NIKODIMSKIY	NI	USSR	66°06'.20N,39°05'.40E	A1A		2	50	100	X	Located 230° 3.00c from 5
3777	SOSNOVETSKIY	SC	USSR	66°29'.43N,41°41'.00E	A1A		1	50	70	X	
3779	TERSKO-ORLOVSKIY	TO	USSR	67°11'.98N,41°19'.80E	A1A		1	50	75	X	
3781	GORODETSKIY	GD	USSR	67°41'.57N,40°58'.63E	A1A		3	50	150	X	
3783	MYS SVYATOY NOS	SW	USSR	68°09'.00N,39°45'.00E	A1A		2	50	150	X	
3787	OSTROV KHARLOV	OH	USSR	68°49'.33N,37°19'.75E	A1A		1	50	150	X	
3789	RUSSKIY	OR	USSR	69°05'.00N,36°20'.75E	A1A		2	50	150	X	
3791	MYS TERIBERSKIY	TB	USSR	69°15'.25N,35°09'.00E	A1A		3	50	150	X	
3794	VYJEV NAVOLOK	WK	USSR	69°27'.15N,33°04'.50E	A1A		C	50	15	X	
3793	MYS SET-NAVOLOK	SN	USSR	69°24'.20N,33°29'.70E	A1A		1	50	150	X	
3795	TSYP NAVOLOKSKIY	CK	USSR	69°44'.22N,33°05'.75E	A1A		2	50	150	X	Located 108° 18.3m from 5
3799	MYS NEMETSKIY	WD	USSR	69°57'.20N,31°56'.00E	A1A		3	50	150	X	
0811	BØKFJORD	BØ	NOR	69°52'.60N,30°10'.67E	A1A		C	50	50	X	
0809	VARDØ	VD	NOR	70°23'.35N,31°10'.07E	A1A		C	50	70	X	
0807	SLEITNES	SN	NOR	71°05'.35N,28°13'.55E	A1A		C	50	50	X	

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0805	HELNES	HS	NOR	71°03'.67N,26°13'.60E	A1A		C	50	50	X	Aeromarine
0803	FRUHOLMEN	FH	NOR	71°05'.62N,23°59'.50E	A1A		C	50	50	X	
0801	TORSVÅG	TG	NOR	70°14'.73N,19°30'.57E	A1A		C	50	50	X	
0799	HEKKINGEN	HK	NOR	69°36'.10N,17°50'.40E	A1A		C	50	50	X	
0795	ANDENES	AN	NOR	69°19'.45N,16°07'.40E	A1A		C	50	50	X	
0789	SKROVA	KN	NOR	67°09'.25N,14°39'.42E	A1A		C	50	100	X	Aeromarine
0787	SKOMVAER	SK	NOR	67°24'.68N,11°52'.62E	A1A		C	50	100	X	
0775	SKLINNA	KL	NOR	65°12'.07N,11°00'.22E	A1A		C	50	100	X	
0785	LANGEGODE	LG	NOR	67°26'.88N,14°23'.17E	A1A		C	50	10	X	
0783	TENNHOLMEN	HO	NOR	67°18'.10N,13°30'.30E	A1A		C	50	50	X	
0773	GRINNA	GA	NOR	64°45'.33N,10°58'.70E	A1A		C	50	15	X	
0771	BUHOLMRÅSA	BU	NOR	64°24'.18N,10°27'.70E	A1A		C	50	20	X	
0769	HALTEN	HA	NOR	64°10'.40N,09°24'.80E	A1A		C	50	50	X	
0763	GRIP	RP	NOR	63°14'.03N,07°36'.67E	A1A		C	50	50	X	
0761	BJØRNSUND	BJ	NOR	62°53'.77N,06°49'.00E	A1A		C	50	50	X	
0759	GRASØYANE	GY	NOR	62°25'.83N,05°46'.00E	A1A		C	50	20	X	
0757	SVINØY	SY	NOR	62°19'.65N,05°16'.38E	A1A		C	50	100	X	
0751	UTVAER	VR	NOR	61°02'.20N,04°30'.85E	A1A		C	50	70	X	
0755	HENDANES	HD	NOR	61°57'.85N,05°02'.45E	A1A		C	50	10	X	
0749	HOLMENGRÅ	HG	NOR	60°50'.60N,04°39'.05E	A1A		C	50	20	X	
0747	MARSTEIN	MA	NOR	60°07'.87N,05°00'.90E	A1A		C	50	50	X	
0737	GEITUNGANE	GU	NOR	59°07'.88N,05°14'.67E	A1A		C	50	50	X	
0729	FEISTEIN	FN	NOR	58°49'.62N,05°30'.40E	A1A		C	50	50		
0745	SLATTERØY	SL	NOR	59°54'.47N,05°04'.42E	A1A		C	50	10	X	
0741	TRESVIKPYNTEN	TN	NOR	59°16'.35N,05°19'.83E	A1A		C	50	10	X	

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0723	SKARVØY	GE	NOR	58°24'.43N,05°59'.25E	A1A		C	50	10	X	
0743	UTSIRA	UT	NOR	59°18'.45N,04°52'.33E	A1A		C	50	70	X	
0721	LISTA	LA	NOR	58°06'.57N,06°34'.20E	A1A		C	50	70	X	Located 029°62m from 5
0715	OKSØY	KY	NOR	58°04'.23N,08°03'.50E	A1A		C	50	50	X	
0709	TORUNGEN	TO	NOR	58°23'.80N,08°47'.80E	A1A		C	50	50	X	
0707	LANGØTANGEN	LN	NOR	58°59'.55N,09°45'.50E	A1A		C	50	20	X	
0701	FAERDER	FR	NOR	59°01'.58N,10°31'.90E	A1A		C	50	70	X	
0699	FULEHUKSJAER	FU	NOR	59°10'.57N,10°36'.05E	A1A		C	50	10	X	
0679	HÅLLÖ	LL	S	58°20'.18N,11°13'.20E	A1A		1	50	50	X	
0326	SKAGEN	SW	DNK	57°44'.98N,10°35'.78E	A1A		2	50	50	X	Located 000°50m from 5
0321	HIRTSHALS	LS	DNK	57°35'.00N,09°57'.00E	A1A		3	50	50	X	
0675	HÄTTEBERGET	BG	S	57°51'.82N,11°27'.67E	A1A		2	50	30	X	
0669	TRUBADUREN	AST	S	57°35'.70N,11°38'.10E	A1A		3	50	30	X	Aeromarine
0331	HIRSHOLM	HO	DNK	57°29'.15N,10°37'.50E	A1A		1	50	30	X	
0663	NIDINGEN	NI	S	57°18'.25N,11°54'.17E	A1A		2	50	30	X	
0345	ANHOLT KNOB	AK	DNK	56°45'.40N,11°53'.10E	A1A		3	50	30	X	
0363	NAKKEHOVED	NA	DNK	56°07'.20N,12°20'.80E	A1A		1	50	50	X	
0657	KULLEN	KUL	S	56°18'.10N,12°27'.15E	A1A		C	50	100	X	Aeromarine
0375	DROGDEN	DG	DNK	55°32'.20N,12°42'.73E	A1A		1	50	20	X	
0377	STEVNS KLINT	ST	DNK	55°17'.47N,12°27'.53E	A1A		2	50	50	X	
X001	MÖEN			54°56' N,12°38' E	A1A		3	50	50		New Station. P.A.
0647	FALSTERBOREV	FV	S	55°18'.53N,12°39'.50E	A1A		2	50	40	X	
0645	TRELLEBORG	TR	S	55°22'.20N,13°09'.23E	A1A		1	50	30	X	Located 005°7.8c from 5
0641	SANDHAMMAREN	SM	S	55°23'.17N,14°12'.00E	A1A		2	50	40	X	
0395	HAMMERODDE	MN	DNK	55°17'.97N,14°46'.43E	A1A		3	50	50	X	

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0389	RØNNE HAVN	RØ	DNK	55°05'.97N,14°42'.03E	A1A		C	50	10	X	Only in fog
0639	UTKLIPPAN	UK	S	55°57'.17N,15°42'.25E	A1A		1	50	50	X	
0635	OLANDS SÖDRA UDDE	SÖ	S	56°11'.80N,16°24'.00E	A1A		2	50	20	X	
0637	OLANDS SÖDRA GRUND	OG	S	56°04'.13N,16°40'.92E	A1A		3	50	70	X	
0625	HOBURG	OB	S	56°55'.40N,18°09'.20E	A1A		2	50	70	X	
0627	STORA KARLSÖ	KS	S	57°17'.40N,17°57'.77E	A1A		1	50	40	X	
0633	OLANDS NORRA UDDE	NO	S	57°22'.00N,17°06'.00E	A1A		2	50	70	X	
0617	KUNGSGRUNDET	KT	S	57°41'.13N,16°54'.37E	A1A		1	50	30	X	
0629	VISBY	VY	S	57°38'.30N,18°17'.20E	A1A		C	50	10	X	
0623	ÖSTERGARN	ÖN	S	57°26'.65N,18°59'.40E	A1A		3	50	50	X	
0621	FÅRÖ	FÅ	S	57°57'.70N,19°21'.10E	A1A		2	50	50	X	
0619	GOTSKA SANDÖN	SDN	S	58°23'.63N,19°11'.83E	A1A		1	50	100	X	Aeromarine
0615	GUSTAV DALEN	GD	S	58°35'.70N,17°28'.25E	A1A		3	50	40	X	
0613	LANDSORT	LO	S	58°44'.40N,17°52'.15E	A1A		2	50	50	X	
0609	ALMAGRUNDET	AL	S	59°09'.30N,19°07'.75E	A1A		1	50	50	X	
0607	SVENSKA BJÖRN	BN	S	59°32'.92N,20°01'.50E	A1A		3	50	50	X	
0605	SIMPNÄSKLUBB	SS	S	59°53'.60N,19°05'.00E	A1A		2	50	30	X	
0531	KORSÖ	KO	FNL	60°02'.35N,19°54'.00E	A1A		1	50	60	X	
0603	UNDERSTEN	UN	S	60°16'.55N,18°55'.40E	A1A		2	50	70	X	
0601	GRUNDKALLEN	DD	S	60°29'.85N,18°51'.30E	A1A		3	50	30	X	
0599	ORSKÄR	ÖR	S	60°31'.67N,18°22'.63E	A1A		1	50	40	X	
0597	EGGEGRUND	GG	S	60°43' 80N,17°33'.75E	A1A		2	50	50	X	
0593	HÄLLEGRUND	HD	S	61°16'.67N,17°24'.00E	A1A		3	50	30	X	Only in fog
0591	BRÄMÖN	BM	S	62°13'.20N,17°44'.70E	A1A		2	50	50	X	
0587	HEMSÖ	WA	S	62°42'.50N,18°07'.87E	A1A		3	50	60	X	
0585	SKAGSUDDE	SE	S	63°11'.37N,19°01'.22E	A1A		1	50	40	X	
0541	NORRSKÄR	NS	FNL	63°14'.03N,20°36'.45E	A1A		3	50	60	X	
0583	SYDOSTBROTTEN	VG	S	63°20'.20N,20°10'.70E	A1A		2	50	40	X	
0579	HOLMÖGADD	HG	S	63°35'.70N,20°45'.50E	A1A		1	50	60	X	
0581	NORDVALEN	KV	S	63°32'.23N,20°46'.60E	A1A		C	50	10	X	Only in fog

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0577	STORA FJÄDERÄGG	SF	S	63°48'.50N,21°00'.25E	A1A		1	50	20	X	
0575	RATASKÄR	RÄ	S	63°59'.60N,20°54'.07E	A1A		2	50	40	X	
0545	KALLAN	KN	FNL	63°45'.08N,22°31'.50E	A1A		3	50	60	X	
0573	BJURÖKLUBB	BB	S	64°28'.87N,21°34'.75E	A1A		2	50	70	X	
0569	NORSTRÖMSGRUND	ND	S	65°06'.72N,22°19'.50E	A1A		1	50	40	X	
0565	FARSTUGRUNDEN	FA	S	65°19'.83N,22°45'.30E	A1A		1	50	60	X	
0563	MALÖREN	MM	S	65°31'.72N,23°33'.50E	A1A		2	50	30	X	Located 306°1c. from 5
0553	AJOS	AJ	FNL	65°39'.52N,24°35'.15E	A1A		1	50	60	X	Located 100°1.7nm from 5
0549	MARJANIEMI	MI	FNL	65°02'.40N,24°33'.92E	A1A		3	50	60	X	
XO22	ULKOKALLEN		FNL	64°24' N,23°45' E	A1A		2	50	60		New Station. P.A.
0539	MÄNTYLUOTO	MÄ	FNL	61°35'.60N,21°27'.90E	A1A		3	50	60	X	
0537	KYLMÄPIHLAJA	KP	FNL	61°08'.65N,21°18'.33E	A1A		2	50	60	X	
0535	ISOKARI	IK	FNL	60°43'.10N,21°00'.92E	A1A		1	50	60	X	
0525	UTÖ	UÖ	FNL	59°46'.85N,21°22'.38E	A1A		1	50	60	X	
0523	GUSTAVSVÄRN	GN	FNL	59°48'.00N,22°56'.80E	A1A		2	50	60	X	Located 180°66m from 5
0521	PORKKALA	PR	FNL	59°52'.15N,24°18'.35E	A1A		3	50	60	X	
0515	HELSINKI	SI	FNL	59°56'.90N,24°55'.78E	A1A		3	50	60	X	
0511	KALBADAGRUND	KD	FNL	59°59'.13N,25°36'.13E	A1A		2	50	60	X	
0509	ORRENGRUND	ON	FNL	60°16'.47N,26°27'.07E	A1A		1	50	60	X	Located 079°700m from 5
0519	HARMAJA	HA	FNL	60°06'.30N,24°58'.73E	A1A		C	50	60	X	
0497	MYS LOUNATRIVI	ÜG	USSR	60°00'.65N,27°00'.60E	A1A		1	50	50	X	
0499	KAYBOLOVO	KA	USSR	59°44'.75N,28°02'.33E	A1A		3	50	75	X	
0495	MOKHNI	MH	USSR	59°41'.30N,25°48'.08E	A1A		2	50	75	X	
0494	TALLINN	TN	USSR	59°42'.70N,24°44'.00E	A1A		1	50	25	X	
0493	PIKASÄÄRE OTS	NG	USSR	59°36'.25N,24°30'.83E	A1A		1	50	75	X	
0491	PAKRINEEM	PA	USSR	59°23'.25N,24°02'.40E	A1A		3	50	80	X	
0489	OSTROV OSMUSSAR	OR	USSR	59°18'.23N,23°21'.67E	A1A		2	50	80	X	
0487	RISTNA	RS	USSR	58°56'.35N,22°03'.25E	A1A		3	50	100	X	
0485	VILSANDI	WD	USSR	58°23'.25N,21°49'.17E	A1A		2	50	50	X	
0467	VENTSPILS	WV	USSR	57°24'.05N,21°32'.70E	A1A		1	50	100	X	

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0483	KUBASSAAR	KR	USSR	58°26'.00N,23°18'.33E	A1A		1	50	100	X	
0475	KOLKASRAGS	KL	USSR	57°54'.20N,22°35'.58E	A1A		2	50	100	X	
0473	SORVE (SYRVE)	SY	USSR	57°54'.97N,22°03'.75E	A1A		3	50	100	X	
0477	MERSRAGS	MR	USSR	57°22'.75N,23°07'.75E	A1A		C	50	15	X	Only in fog
0471	MIKEL'BAKA	MB	USSR	57°36'.33N,21°58'.92E	A1A		C	50	20	X	Directional. On request or in fog.
0469	IRBENSKIY	PM	USSR	57°51'.33N,21°37'.58E	A1A		C	50	15	X	Only in fog
0466	AKMENRAGS	AK	USSR	56°50'.17N,21°03'.92E	A1A		2	50	100	X	
0465	LIEPAJA	LB	USSR	56°31'.07N,20°59'.52E	A1A		3	50	120	X	
0463	KLAIPEDA	KA	USSR	55°43'.98N,21°06'.17E	A1A		1	50	120	X	
0462	NIDDEN (NIDA)	ND	USSR	55°18'.33N,21°00'.00E	A1A		1	50	20	X	
0461	MYS TARAN	BT	USSR	54°57'.60N,19°59'.00E	A1A		1	50	120	X	
X004	BALTIJSK		USSR	54°45' N,19°54' E	A1A		2	50	80	X	
0453	KRYNICA MORSKA	KM	POL	54°23'.23N,19°27'.18E	A1A		3	50	50	X	
0447	HEL	HL	POL	54°36'.08N,18°48'.90E	A1A		3	50	50	X	
0445	ROZEWIE	RO	POL	54°49'.97N,18°20'.25E	A1A		1	50	50	X	Located 290°90m from 5
0443	LEBA	LE	POL	54°46'.02N,17°33'.30E	A1A		2	50	50	X	Located 345°68m from 5
0440	JAROSŁAWIEC	JA	POL	54°32'.67N,16°32'.97E	A1A		3	50	50	X	Located 035°450m from 5
0437	KOŁOBRZEG	KB	POL	54°11'.28N,15°33'.55E	A1A		2	50	50	X	Located 090°93m from 5
0435	SWINOUJSCIE	OD	POL	53°55'.05N,14°17'.17E	A1A		1	50	50	X	
0425	STUBBENKAMMER	SR	DDR	54°34'.38N,13°39'.60E						X	To be discontinued
0386	MON SE LT. V.	MO	DNK	54°47'.70N,12°46'.70E	A1A		1	50	30	X	
0383	HESTEHOVED	HE	DNK	54°50'.05N,12°10'.13E	A1A		2	50	30	X	1.
0422	WARNEMÜNDE	WN	DDR	54°10'.90N,12°05'.27E	A1A		3	50	20	X	
0419	TRAVEMÜNDE	TD	D	53°57'.70N,10°53'.10E	A1A		1	50	50	X	Range increased
X003	DAMESHÖVED		D	54°12'.00N,11°00'.60E	A1A		2	50	50		New Station
0415	MARIENLEUCHTE	MR	D	54°29'.65N,11°14'.32E	A1A		2	50	50	X	Located 196°1c from 5
0411	NEULAND	NL	D	54°21'.68N,10°36'.13E	A1A		3	50	50	X	Located 080°61m from 5
0413	FEHMARNBELT LT. V.	FE	D	54°36'.00N,11°09'.00E	A1A		C	50	20	X	

1. To be moved, renamed Gedser & call sign altered.

YBAAAL

1. REF NO.	2. NAME OF STATION	3. CODE	4. COUNTRY	5. POSITION IN LAT & LONG	6. EMISSION	7. CHANNEL NO.	8. SEQ-UENCE	9. FIELD STRENGTH (μV/m)	10. NOMINAL RANGE (NM)	11. ESTAB-LISHED (X)	12. REMARKS
0407	KIEL	KI	D	54°30'.02N,10°16'.50E	A1A		1	50	50	X	)Ranges
0405	KALKGRUND	FS	D	54°49'.52N,09°53'.35E	A1A		2	50	50	X	)increased
X005	ALS		DNK	55°05' N,10°11' E	A1A		3	50	50		New Station. P.A.
0358	RØSNAES	RS	DNK	55°44'.65N,10°52'.22E	A1A		1	50	30	X	
0351	SLETTERHAGE	SL	DNK	56°05'.75N,10°31'.00E	A1A		3	50	50	X	
0361	SJAELLANDS REV	SG	DNK	56°06'.08N,11°12'.17E	A1A		2	50	30	X	
0353	AARHUS	AS	DNK	56°10'.03N,10°13'.28E	A1A		C	50	10	X	
0349	GRENAA HAVEN	GH	DNK	56°24'.78N,10°56'.12E	A1A		3	50	50	X	To be renamed Fornaes
0339	HALS BARRE	HB	DNK	56°57'.32N,10°25'.60E	A1A		2	50	50	X	
0337	LAESØ RENDE	LR	DNK	57°13'.15N,10°49'.43E	A1A		1	50	30	X	
0333	FREDERIKSHAVN	FK	DNK	57°26'.02N,10°33'.43E	A1A		C	50	10	X	Only in fog
0323	HIRTSHALS HAVN	IR	DNK	57°35'.72N,09°57'.72E	A1A		C	50	10	X	
0319	HANSTHOLM	HM	DNK	57°06'.78N,08°36'.00E	A1A		1	50	100	X	
0317	THYBORØN	TN	DNK	56°42'.53N,08°13'.00E	A1A		2	50	100	X	
X006	LYNGVIG		DNK	56°15' N,08°09' E	A1A		3	50	100		New Station. P.A.
0310	BLÅVANDSHUK	BH	DNK	55°33'.52N,08°05'.07E	A1A		3	50	50	X	Range decreased
0287	ROTE KLIFF	RF	D	54°56'.87N,08°20'.50E	A1A		1	50	50	X	Range increased
X007	WESTER HEVERSAND		D	54°22'. N,08°38'. E	A1A		2	50	50		New Station
0279	DEUTSCHE BUCHT LT.V.	DB	D	54°10'.70N,07°26'.10E	A1A		C	50	20	X	Range reduced
0275	ELBE NO. 1 LT.V.	EL	D	54°00'.00N,08°06'.58E	A1A		C	50	20	X	Range reduced
0265	ALTE WESER	AR	D	53°51'.85N,08°07'.72E	A1A		C	50	20	X	
X024	HELGOLAND	HE	D	54°11'.02N,07°52'.95E	A1A		3	50	50		New Station
0274	GROSSER VOGELSAND	VS	D	53°59'.78N,08°28'.68E	A1A		2	50	50	X	)Ranges
0264	WANGEROOGE	WE	D	53°47'.45N,07°51'.52E	A1A		1	50	50	X	)increased
0257	BORKUMRIFF LT.V.	BF	D	53°47'.50N,06°22'.13E	A1A		C	50	20	X	Range reduced
0259	BORKUM LITTLE	BE	D	53°34'.78N,06°40'.08E	A1A		2	50	50	X	Ranges
0247	AMELAND	AD	HOL	53°27'.02N,05°37'.60E	A1A		1	50	50	X	increased. Only in Fog
0245	VLIELAND	VL	HOL	53°17'.80N,05°03'.57E	A1A		3	50	50	X	Range reduced
0243	EIERLAND	ER	HOL	53°10'.97N,04°51'.40E	A1A		C	50	20	X	Only in fog

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0241	TEXEL LT.V.	HK	HOL	52°47'.10N,04°06'.60E	A1A		3	50	50	X	
0237	IJMUIDEN	YM	HOL	52°27'.78N,04°34'.57E	A1A		1	50	20	X	
0231	HOEK VAN HOLLAND	HH	HOL	51°58'.90N,04°06'.83E	A1A		2	50	20	X	
0229	GOEREE	GR	HOL	51°55'.53N,03°40'.18E	A1A		1	50	50	X	
0225	NOORD HINDER LT.V.	NR	HOL	52°00'.15N,02°51'.20E	A1A		2	50	50	X	
0135	OUTER GABBARD LT.V.	GA	G	51°59'.38N,02°04'.63E	A1A		3	50	50	X	
0219	ZEEBRUGGE MOLE	ZB	BEL	51°20'.90N,03°12'.25E	A1A		C	50	5	X	
0223	WEST HINDER LT.V.	WH	BEL	51°23'.08N,02°26'.40E	A1A		3	50	20	X	
0217	OOSTENDE	OE	BEL	51°14'.23N,02°55'.90E	A1A		2	50	30	X	
0825	CALAIS	CS	F	50°57'.73N,01°51'.30E	A1A		1	50	20	X	
0215	NIEUWPOORT	NP	BEL	51°09'.40N,02°43'.08E	A1A		C	50	5	X	
0823	DUNKERQUE LT. BUOY	DK	F	51°03'.07N,01°51'.83E	A1A		C	50	10	X	
0143	S. FORELAND	SD	G	51°08'.40N,01°22'.40E	A1A		3	50	50		In lieu of E. Goodwin LT.V
0142	FALLS LT.V.	FS	G	51°18'.10N,01°48'.50E	A1A		1	50	50	X	
0141	NORTH FORELAND	NF	G	51°22'.47N,01°26'.80E	A1A		2	50	50	X	
0139	TONGUE LT.V.	GU	G	51°30'.68N,01°23'.05E						X	To be discontinued
0137	SUNK LT.V.	UK	G	51°51'.00N,01°35'.00E	A1A		C	50	10	X	
0131	SMITHS KNOLL LT.V.	SK	G	52°43'.30N,02°18'.00E	A1A		1	50	50	X	
0127	CROMER	CM	G	52°55'.45N,01°19'.10E	A1A		2	50	50	X	
0125	DUDGEON LT.V.	LV	G	53°15'.50N,01°13'.50E	A1A		3	50	50	X	
0123	SPURN LT.V.	SL	G	53°33'.32N,01°14'.20E	A1A		3	50	50	X	
0119	FLAMBOROUGH HD	FB	G	54°06'.95N,00°04'.87W	A1A		2	50	50	X	Located 190°50m from 5
0117	HEUGH	HS	G	54°41'.78N,01°10'.45W	A1A		1	50	50	X	
0111	SOUTER POINT	SJ	G	54°58'.23N,01°21'.80W	A1A		1	50	50		In lieu of Tyrmouth
0109	LONGSTONE	LT	G	55°38'.63N,01°36'.55W	A1A		2	50	50	X	Range increased
0105	ISLE OF MAY	LM	G	56°11'.13N,02°33'.30W	A1A		3	50	100	X	Located 135°0.3 from 5
X008	FIDRA	FD	G	56°06' N,02°52' W	A1A		C	50	20		New Station. P.A.
0107	INCHKEITH	NK	G	56°02'.02N,03°08'.08W	A1A		C	50	10	X	
0103	FIFE NESS	FP	G	56°16'.73N,02°35'.10W	A1A		2	50	50	X	
0097	GIRDLE NESS	GD	G	57°08'.32N,02°02'.83W	A1A		1	50	50	X	

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0099	ABERTAY LT FLOAT	AY	G	56°27'.35N,02°40'.92W						X	
0095	KINNAIRDS HD	KD	G	57°41'.87N,02°00'.13W	A1A		1	50	100	X	
0089	SWILKIE PT	OM	G	58°41'.78N,03°06'.92W	A1A		3	50	50	X	
0086	SUMBURGH HD	SB	G	59°51'.30N,01°16'.37W	A1A		2	50	70	X	
X009	TARBATNESS	TN	G	57°46' N,03°52' W	A1A		C	50	20		New Station P.A.
0087	NORTH RONALDSAY	NR	G	59°23'.40N,01°22'.80W	A1A		1	50	100	X	
0083	BRESSAY	BY	G	60°07'.25N,01°07'.18W	A1A		2	50	50	X	Range increased
0081	MUCKLE FLUGGA	MF	G	60°51'.33N,00°53'.00W	A1A		3	50	150	X	
0079	SULE SKERRY	LK	G	59°05'.10N,04°24'.30W	A1A		3	50	100	X	
0077	CAPE WRATH	CW	G	58°37'.55N,04°59'.87W	A1A		1	50	50	X	
0075	BUTT OF LEWIS	BL	G	58°30'.93N,06°15'.72W	A1A		2	50	150	X	
0073	EILEAN GLAS	LG	G	57°51'.43N,06°38'.45W	A1A		1	50	50	X	
0067	HYSKEIR	OR	G	56°58'.13N,06°40'.80W	A1A		2	50	50	X	
0069	BARRA HD	BD	G	56°47'.13N,07°39'.18W	A1A		1	50	200	X	
0197	TORY ISLAND	TY	IRL	55°16'.35N,08°14'.92W	A1A		2	50	100	X	
0199	EAGLE ISLAND	GL	IRL	54°16'.98N,10°05'.52W	A1A		3	50	200	X	
0201	SLYNE HD	SN	IRL	53°23'.97N,10°14'.00W	A1A		1	50	50	X	
0203	LOOP HD	LP	IRL	52°33'.65N,09°55'.90W	A1A		2	50	50	X	
0066	RHINNS OF ISLAY	RN	G	55°40'.38N,06°30'.70W	A1A		2	50	70	X	
0192	ALTACARRY HD	AH	G	55°18'.07N,06°10'.20W	A1A		3	50	50	X	
0059	PLADDA	DA	G	55°25'.30N,05°07'.07W	A1A		1	50	50	X	Range increased
0191	MEW ISLAND	MW	G	54°41'.92N,05°30'.75W	A1A		2	50	50	X	
0045	POINT OF AYRE	PY	G	54°24'.95N,04°22'.03W	A1A		3	50	50	X	
0051	CREGNEISH	CN	G	54°03'.92N,04°45'.87W	A1A		1	50	50	X	
0189	SOUTH ROCK	SU	G	54°24'.47N,05°21'.92W	A1A		C	50	30	X	Range reduced
0047	DOUGLAS	DG	G	54°08'.83N,04°28'.00W	A1A		3	50	50	X	)
0041	WAINEY ISLAND	FN	G	54°02'.92N,03°10'.55W	A1A		2	50	50	X	)Ranges increased
0034	POINT LYNAS	PS	G	53°24'.97N,04°17'.30W	A1A		1	50	50	X	)
0033	SKERRIES	SR	G	53°25'.25N,04°37'.45W	A1A		1	50	70	X	Range increased
0183	WICKLOW HD	WK	IRL	52°57'.88N,05°59'.83W	A1A		2	50	70	X	
X010	ROCKABILL	RB	IRL	52°25' N,06°10' W	A1A		3	50	50		New Station P.A.

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0185	KISH BANK	KH	IRL	53°18'.68N,05°55'.38W	A1A		C	50	10	X	Range reduced. Also calibration station.
0032	BARDSEY	IB	G	52°44'.97N,04°47'.93W	A1A		1	50	50	X	Range increased
0182	TUSKAR ROCK	TR	IRL	52°12'.15N,06°12'.38W	A1A		2	50	50	X	
0029	SOUTH BISHOP	SB	G	51°51'.15N,05°24'.35W	A1A		3	50	50	X	
X011	HOOK		IRL	52°03' N,07°26' W	A1A		3	50	50		New Station P.A.
0181	BALLYCOTTON	BN	IRL	51°49'.55N,07°59'.05W	A1A		1	50	50	X	
0180	OLD HD OF KINSALE	OH	IRL	51°36'.27N,08°31'.97W	A1A		2	50	50	X	
0179	MIZEN HD	MZ	IRL	51°26'.97N,09°49'.18W	A1A		1	50	200	X	
0017	ROUND ISLAND	RR	G	49°58'.70N,06°19'.33W	A1A		2	50	200	X	
0863	ISLE DE SEIN	SN	F	48°02'.60N,04°51'.98W	A1A		3	50	100	X	Range increased
X025	HARTLAND POINT	HP	G	51°01'. 3N,04°31'.40W	A1A		C	50	5		New Station
0021	LUNDY S.	LS	G	51°09'.70N,04°39'.30W	A1A		1	50	50	X	
0024	FLATHOLM	FL	G	51°22'.52N,03°07'.05W	A1A		2	50	50	X	
0014	PENLEE POINT	PE	G	50°19'.12N,04°11'.27W	A1A		1	50	50	X	
0015	LIZARD	LZ	G	49°57'.58N,05°12'.07W	A1A		2	50	50	X	
0856	ILE VIERGE	VG	F	48°38'.36N,04°34'.10W	A1A		3	50	70	X	
0013	START POINT	SP	G	50°13'.32N,03°38'.47W	A1A		2	50	50	X	
0159	CASQUETS	QS	G	49°43'.38N,02°22'.55W	A1A		3	50	50	X	
0854	ROCHES DOUVRES	RD	F	49°06'.47N,02°48'.82W	A1A		1	50	70	X	
0160	CHANNEL LT. V.	CR	G	49°54'.42N,02°53'.67W	A1A		C	50	10	X	
0162	CASTLE B'WATER	GY	G	49°27'.37N,02°31'.37W	A1A		C	50	10	X	
0010	PORTLAND BILL	PB	G	50°30'.82N,02°27'.32W	A1A		1	50	50	X	
0004	ST CATHERINE'S PT	CP	G	50°34'.52N,01°17'.80W	A1A		2	50	50	X	
0847	CHERBOURG	RB	F	48°40'.50N,01°38'.87W	A1A		3	50	50	X	
0008	POOLE	PO	G	50°40'.95N,01°56'.73W	A1A		C	50	10	X	
0002	NAB	NB	G	50°39'.40N,00°56'.20W	A1A		C	50	20	X	
0003	CHICHESTER BAR BN	CH	G	50°45'.88N,00°56'.35W	A1A		C	50	10	X	
0001	BRIGHTON MARINA	BM	G	50°48'.67N,00°05'.95W	A1A		C	50	10	X	
0150	NEWHAVEN	NH	G	50°46'.87N,00°03'.52E	A1A		C	50	10	X	

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0149	ROYAL SOVEREIGN	RY	G	50°43'.38N,00°26'.13E	A1A		2	50	50	X	
0833	BASSURELLE	UL	F	50°32'.70N,00°57'.80E	A1A		1	50	50	X	
0827	CAP GRIS NEZ	GN	F	50°52'.17N,01°35'.07E	A1A		C	50	30	X	1.
0831	BOULOGNE		F	50°44'.42N,01°35'.80E	A1A		C	50	5	X	Directional
0147	DUNGENESS	DU	G	50°54'.77N,00°58'.67W	A1A		1	50	50	X	)Ranges increased
0829	CAP D'ALPRECH	PH	F	50°41'.95N,01°33'.83W	A1A		2	50	50	X	)
0837	POINTE D'AILLY	AL	F	49°55'.13N,00°57'.58E	A1A		3	50	50	X	Located 027°250m from 5.
0839	CAP D'ANTIFER	TI	F	49°41'.07N,00°01'.00E	A1A		1	50	50	X	Located 40m NNW from 5.
0843	POINTE DE VER	ÉR	F	49°20'.47N,00°31'.15W	A1A		3	50	20	X	
0846	POINTE DE BARFLEUR	FG	F	49°41'.87N,01°15'.87W	A1A		2	50	70	X	
0845	PORT EN BESSIN	BS	F	49°21'.00N,00°45'.60W	A1A		C	50	70	X	
0841	LE HAVRE LANBY	LH	F	49°31'.67N,00°09'.80W	A1A		C	50	10	X	
0166	SAINT HELIER HR	EC	G	49°10'.62N,02°07'.50W	A1A		C	50	10	X	
0849	LE GRAND JARDIN	GJ	F	48°40'.27N,02°04'.90W	A1A		C	50	10	X	
0167	LA CORBIÈRE	CB	G	49°10'.85N,02°14'.90W	A1A		1	50	20	X	
0850	CAP FRÉHEL	FÉ	F	48°41'.10N,02°19'.07W	A1A		2	50	20	X	
0852	ROSÉDO	DO	F	48°51'.50N,03°00'.32W	A1A		C	50	10	X	
0855	ROSCOFF-BLOSCON	BC	F	48°43'.30N,03°57'.75W	A1A		C	50	10	X	
0857	POINTE DE CRÉAC'H	CA	F	48°27'.62N,05°07'.72W	A1A		C	50	100	X	1 & 2.
0859	POINTE ST MATHIEU	SM	F	48°19'.83N,04°46'.28W	A1A		2	50	20	X	
0865	ECKMÜHL	ÜH	F	47°47'.92N,04°22'.43W	A1A		1	50	50	X	
0861	POINTE DU PORTZIC	PZ	F	48°21'.55N,04°31'.97W	A1A		C	50	5	X	On request
0866	POINTE DE COMBRIT	CT	F	47°51'.88N,04°06'.82W	A1A		3	50	20	X	
0871	PEN MEN	GX	F	47°38'.87N,03°30'.48W	A1A		1	50	50	X	Located 055° 125m from 5.
0873	BELLE ILE	BI	F	47°18'.67N,03°13'.67W	A1A		2	50	100	X	

1. Transmits Differential Omega corrections 2. Located 068° 130m from 5.

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0875	ST NAZAIRE	NZ	F	47°08'.10N,02°14'.67W	A1A		1	50	35	X	
0883	LES BALEINES	BN	F	46°14'.67N,01°33'.67W	A1A		2	50	50	X	
0891	PTE DE LA COUBRE	LK	F	45°41'.87N,01°13'.93W	A1A		3	50	100	X	
0877	ILE DU PILIER	PR	F	47°02'62N,02°21'.53W	A1A		C	50	10	X	
0879	ILE D'YEU	YE	F	46°43'.10N,02°22'.90W	A1A		C	50	100	X	1.
0881	LES SABLES D'OLONNE	SO	F	46°29'.65N,01°47'.75W	A1A		C	50	5	X	
0885	LA PALLICE	LP	F	46°09'.75N,01°14'.35W	A1A		C	50	5	X	
0887	LA ROCHELLE	RE	F	46°08'.92N,01°10'.37W	A1A		C	50	5	X	
0889	BXA LT. FLOAT	BX	F	45°37'.60N,01°28'.60W	A1A		C	50	5	X	
0895	CAP FERRET	FT	F	44°38'.83N,01°15'.02W	A1A		2	50	100	X	
0911	CABO MACHICHACO	MA	E	43°27'.13N,02°45'.25W	A1A		3	50	100	X	
0917	CABO MAYOR	MY	E	43°29'.42N,03°47'.47W	A1A		1	50	50	X	
0919	LLANES	LA	E	43°25'.20N,04°44'.90W	A1A		1	50	50	X	
0921	CABO PEÑAS	PS	E	43°39'.33N,05°50'.90W	A1A		2	50	50	X	
0925	PUNTA ESTACA DE BARES	BA	E	43°47'.17N,07°41'.07W	A1A		1	50	100	X	
0929	CABO VILLANO	VI	E	43°09'.68N,09°12'.80W	A1A		2	50	100	X	
0931	CABO FINISTERRE	FI	E	42°52'.93N,09°16'.33W	A1A		3	75	100	X	1.
0926	CABO PRIORIÑO	C	E	43°27'.50N,08°20'.40W	A1A		2	50	50	X	
0928	TORRE DE HÉRCULES	L	E	43°23'.15N,08°24'.40W	A1A		1	50	30	X	
0933	CABO ESTAY	VS	E	42°11'.15N,08°48'.75W	A1A		C	75	7	X	2.
0935	CABO SILLEIRO	RO	E	42°06'.23N,08°53'.83W	A1A		C	75	200	X	
0945	MONTEDOR	MR	POR	41°45'.00N,08°52'.40W	A1A		1	75	50	X	Range reduced
0949	LEÇA	LC	POR	41°12'.00N,08°42'.65W	A1A		2	75	100	X	
0955	AVEIRO	AV	POR	40°38'.47N,08°44'.80W	A1A		3	75	50	X	
0957	CABO MONDEGO	MD	POR	40°11'.42N,08°54'.20W	A1A		1	75	50	X	Range reduced
0959	ILHA BERLENGA	IB	POR	39°24'.83N,09°30'.50W	A1A		2	75	200	X	
0961	CABO CARVEIRO	CV	POR	39°21'.53N,09°24'.40W	A1A		3	75	50	X	

1. Transmits Differential Omega Corrections. 2. Directional. Only at night or in fog.

YBAAAK

1. REF NO.	2. NAME OF STATION	3. CODE	4. COUNTRY	5. POSITION IN LAT & LONG	6. EMISSION	7. CHANNEL NO.	8. SEQ-UENCE	9. FIELD STRENGTH (μV/m)	10. NOMINAL RANGE (NM)	11. ESTAB-LISHED (X)	12. REMARKS
0963	CABO ROCA	RC	POR	38°46'.70N,09°29'.82W	A1A		1	75	100	X	
0969	CABO ESPICHEL	PI	POR	38°24'.83N,09°12'.90W	A1A		3	75	100	X	Range increased
0971	CABO DE SINES	SN	POR	37°57'.42N,08°53'.12W	A1A		2	75	50	X	Located 260°3c from 5
0973	CABO DE SÃO VICENTE	VC	POR	37°01'.32N,08°59'.58W	A1A		1	75	200	X	
0979	CABO DE SANTA MARIA	SM	POR	36°58'.55N,07°51'.80W	A1A		3	75	50	X	
0981	V.R. DE SANTO ANTÓNIO	VR	POR	37°11'.28N,07°24'.90W	A1A		2	75	50	X	
0992	ROTA	D	E	36°37'.68N,06°22'.77W	A1A		1	75	80	X	
0994	CABO TRAFALGAR	B	E	36°11'.10N,06°02'.10W	A1A		3	75	50	X	
0996	TARIFA	O	E	36°00'.12N,05°36'.47W	A1A		2	75	50	X	
1005	MÁLAGA	GA	E	36°42'.93N,04°24'.80W	A1A		1	75	50	X	
1007	CABO DE GATA	TA	E	36°43'.42N,02°11'.50W	A1A		2	75	50	X	
1008	CABO DE PALOS	PA	E	37°38'.17N,00°41'.42W	A1A		3	75	50	X	
1006	ALBORÁN	ALB	E	35°56'.42N,03°02'.12W	A1A		C	75	50	X	1.
1012	CABO DE LA NAO	NO	E	38°44'.17N,00°14'.20E	A1A		1	75	50	X	
1014	CASTELLÓN	AS	E	39°58'.17N,00°01'.23E	A1A		2	75	50	X	
1015	CABO SALOU	UD	E	41°03'.30N,01°10'.20E	A1A		3	75	50	X	
1031	P. DE CALA FIGUERA	FI	E	39°27'.53N,02°31'.40E	A1A		2	75	50	X	
1027	MAHÓN	MH	E	39°51'.83N,04°18'.28E	A1A		3	75	100	X	2.
1021	PUNTA DEL LLOBREGAT	OR	E	41°19'.57N,02°09'.20E	A1A		1	75	50	X	
1023	CABO SAN SEBASTIÁN	SN	E	41°53'.60N,03°12'.17E	A1A		2	75	50	X	
1043	CAP BÉAR	BR	F	42°31'.00N,03°08'.27E	A1A		2	75	50	X	
1045	SÉTE	SÉ	F	43°23'.80N,03°41'.47E	A1A		3	50	50	X	
1051	ISLE DU PLANIER	PN	F	43°11'.95N,05°13'.90E	A1A		1	50	100	X	
1047	PTE DE ST GERVAIS	PG	F	43°25'.70N,04°56'.43E	A1A		1	50	50	X	
1049	CAP COURONNE	CR	F	43°19'.53N,05°03'.20E	A1A		2	50	50	X	
1053	PORQUEROLLES	PQ	F	42°59'.00N,06°12'.40E	A1A		C	50	200	X	3.
1055	LA GAROUPE	GO	F	43°33'.83N,07°08'.25E	A1A		1	50	100	X	
1081	POINTE REVELLATA	RV	F	42°34'.90N,08°43'.57E	A1A		3	75	100	X	
1077	POINTE SÉNÉTOSE	SE	F	41°33'.47N,08°47'.80E	A1A		2	75	100	X	

1. Aeromarine. Continuous in fog. Clear: for 30 mins at 0600,0900,1200,1800,2300 2. Located 258° 152m from San Carlos LT YBAAAK
3. Transmits Differential Omega Corrections.

1. REP NO.	2. NAME OF STATION	3. CODE	4. COUNTRY	5. POSITION IN LAT & LONG	6. EMISSION	7. CHANNEL NO.	8. SEQ-UENCE	9. FIELD STRENGTH (μV/m)	10. NOMINAL RANGE (NM)	11. ESTAB-LISHED (X)	12. REMARKS
1067	ILE DE LA GIRAGLIA	GL	F	43°01'.55N,09°24'.43E	A1A		1	50	100	X	
1073	POINTE DE CHIAPPA	CP	F	41°35'.67N,09°22'.05E	A1A		3	75	100	X	
X023	PERTUSATOA		F		A1A		C	75	100		New Station. 1.
1075	ILE LAVEZZI	VZ	F	41°20'.03N,09°15'.53E	A1A		C	75	10	X	
	CIVITAVECCHIA	CH	I	42°05'.87N,11°49'.08E	A1A		1	75	70	X	
1111	GENOVA	GV	I	44°24'.25N,08°54'.33E	A1A		2	50	70	X	
1093	CAPO FERRO	CF	I	41°09'.23N,09°31'.60E	A1A		3	75	70	X	
1113	ISOLA TINO	TO	I	44°01'.55N,09°51'.02E	A1A		C	75	70	X	0000-2400
1097	CAPO SANDALO	IP	I	39°08'.80N,08°12'.42E	A1A		C	75	70	X	0000-2400
1133	PUNTA CARENA	NP	I	40°32'.27N,14°12'.03E	A1A		1	75	100	X	
1142	S. VITO LO CAPO	CL	I	38°11'.25N,12°44'.00E	A1A		2	75	100	X	
1137	CAPO VATICANO	VN	I	38°37'.10N,15°49'.72E	A1A		3	75	100	X	
1145	I. PANTELLERIA	PT	I	36°50'.05N,11°56'.75E	A1A		1	75	100	X	
1147	COZZO SPADARO	PZ	I	36°41'.10N,15°08'.00E	A1A		2	75	100	X	
1149	AUGUSTA	AT	I	37°12'.00N,15°09'.30E	A1A		3	75	100	X	
1159	S. VITO TARANTO	TN	I	40°24'.63N,17°12'.33E	A1A		C	75	70	X	000-2400
1161	S. MARIA DI LEUCA	MC	I	39°47'.68N,18°22'.22E	A1A		1	75	100	X	
1173	VIESTE	VS	I	41°53'.30N,16°11'.10E	A1A		2	75	70	X	
1212	MOLUNAT	YC	YUG	42°27'.13N,18°25'.57E	A1A		3	75	100	X	
1175	PUNTA PENNA	TL	I	42°10'.13N,14°52'.95E	A1A		1	75	100	X	
1177	S.BENEDETTO TRONTO	CI	I	42°57'.12N,13°53'.23E	A1A		2	75	100	X	
1208	MOVAR	YV	YUG	43°30'.33N,15°58'.27E	A1A		3	50	100	X	
1179	SENIGALLIA	SA	I	43°43'.20N,13°13'.33E	A1A		1	50	100	X	
1204	KAMENJAK	YP	YUG	44°47'.17N,13°54'.90E	A1A		2	50	100	X	
1184	PUNTA DELLA MAESTRA	ME	I	44°58'.08N,12°31'.90E	A1A		3	50	100	X	
1183	PORTO CORSINI	RA	I	44°29'.40N,12°17'.05E	A1A		C	50	10	X	To be discontinued.
1191	TRIESTE	RD	I	45°40'.50N,13°45'.43E	A1A		C	50	70	X	0000-2400
1261	AXIOS	AWAE	GRC	40°30'.73N,22°44'.90E	A1A		1	75	130	X	Directional only in fog
1263	THESSALONÍKI	TNTS	GRC	40°36'.63N,22°57'.02E	A1A		2	75	130	X	Directional only in fog
1355	RUMELI BURNU	RB	TUR	41°14'.30N,29°06'.65E	A1A		1	75	150	X	Located 337°380m from 5
1353	KEFKEN ADASI	KF	TUR	41°13'.00N,30°17'.08E	A1A		2	75	150	X	

1. Transmits Differential Omega Corrections

YBAAAK

1. REF NO.	2. NAME OF STATION	3. CODE	4. COUNTRY	5. POSITION IN LAT & LONG	6. EMISSION	7. CHANNEL NO.	8. SEQ-UENCE	9. FIELD STRENGTH (μV/m)	10. NOMINAL RANGE (NM)	11. ESTAB-LISHED (X)	12. REMARKS
1279	MASLEN NOS	MN	BUL	42°18'.50N,27°50'.50E	A1A		1	75	100	X	
1281	NOS EMINE	EL	BUL	42°41'.95N,27°54'.10E	A1A		2	75	100	X	
1283	NOS KALIAKRA	KL	BUL	43°21'.80N,28°30'.30E	A1A		3	50	100	X	
1289	CONSTANTA	CT	ROU	44°09'.50N,28°37'.92E	A1A		3	50	100	X	
1291	SFÂNTUL GHEORGHE	SG	ROU	44°54'.33N,29°37'.13E	A1A		2	50	50	X	
1293	OSTROV ZMEINYY	ZM	USSR	45°14'.87N,30°11'.75E	A1A		1	50	100	X	
1295	II'ICHEVSK	IÖ	USSR	46°18'.57N,30°40'.57E	A1A		C	50	25	X	
1297	ODESSKIY	OD	USSR	46°22'.38N,30°44'.57E	A1A		2	50	150	X	
1301	TENDROVSKIY	TD	USSR	46°19'.00N,31°30'.50E	A1A		1	50	150	X	
1303	MYS TARKHANKUTSKIY	TR	USSR	45°20'.87N,32°29'.60E	A1A		3	50	150	X	
1299	VORONTSOVSKIY FRONT	WR	USSR	46°29'.80N,30°45'.68E	A1A		C	50	100	X	
1300	OSTROV BEREZAN	BZ	USSR	46°35'.57N,31°24'.40E	A1A		C	50	15	X	
1302	GULF OF PEREKOP	KZ	USSR	45°41'.40N,31°42'.50E	A1A		C	50	15	X	
1305	MYS YEVPATORIYSKIY	EX	USSR	45°09'.00N,33°16'.25E	A1A		1	50	150	X	
1307	MYS KHERSONESSKIY	SW	USSR	44°34'.52N,33°22'.97E	A1A		2	50	150	X	
1309	MYS AYTODORSKIY	AT	USSR	44°25'.65N,34°07'.50E	A1A		1	50	150	X	
1311	IL'INSKIY	IL	USSR	45°01'.00N,35°25'.67E	A1A		2	50	150	X	
1313	MYS KYZ-AUL'SKIY	KA	USSR	45°03'.25N,36°22'.05E	A1A		3	50	150	X	
1321	BELOSARAYSKIK	BS	USSR	46°52'.90N,37°21'.17E	A1A		3	50	150	X	
1319	BERDYANSKIY	NB	USSR	46°37'.80N,36°45'.40E	A1A		2	50	150	X	
1325	AKHTARSKIY	AH	USSR	46°06'.33N,38°11'.17E	A1A		2	50	150	X	
1315	(1) YENIKAL'SKIY	EN	USSR	45°22'.80N,36°38'.00E	A1A		1	50	150	X	
1315	(2) YENIKAL'SKIY	EN	USSR	45°22'.80N,36°38'.00E	A1A		C	50	25	X	Only at night or in fog
1327	AKHILLEONSKIY	AN	USSR	45°26'.50N,36°48'.50E	A1A		C	50	25	X	
1329	MYS ZHELEZNYY ROG	VR	USSR	45°06'.25N,36°44'.05E	A1A		1	50	25	X	
1330	ANAPSKIY	AP	USSR	44°52'.90N,37°17'.65E	A1A		2	50	15	X	
1331	DOOBSKIY	DB	USSR	44°37'.23N,37°54'.35E	A1A		3	50	150	X	
1333	MYS KODOSHSKIY	KD	USSR	44°05'.90N,39°02'.27E	A1A		3	50	150	X	
1335	SOCHINSKIY	SÖ	USSR	43°34'.75N,39°43'.25E	A1A		2	50	150	X	
1337	PITSUNDSKIY	PC	USSR	43°09'.17N,40°21'.50E	A1A		1	50	150	X	

YBAAAK

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1339	MYS SUKHUMSKIY	SM	USSR	42°58'.87N,40°58'.33E	A1A		2	75	150	X	
1341	POTIYSKIY	PT	USSR	42°08'.00N,41°39'.75E	A1A		3	75	150	X	
1343	BATUMSKIY	BT	USSR	41°39'.37N,41°38'.53E	A1A		1	75	150	X	
1363	FINIKE	FR	TUR	36°16'.83N,30°09'.50E	A1A		C	75	300	X	Continuous in fog
1391	BANIAS	BAN	SYR	35°13'.62N,35°57'.38E	A1A		C	75	130	X	
1403	SIDON	SAD	LBN	33°30'.07N,35°20'.52E	A1A		C	75	240	X	Aeromarine
1408	MOUNT CARMEL	HA	ISR	32°49'.70N,34°58'.00E	A1A		C	75	75	X	
1457	TARÂBULUS	TRI	LBY	32°53'.95N,13°12'.38E	A1A		C	75	20	X	
1469	EL ATTAIA	KR	TUN	34°44'.50N,11°18'.33E	A1A		1	75	100	X	
X012	MONASTER		TUN	36°12' N,10°30' E	A1A		2	75			New Station. P.A.
1477	CAP BLANC	BC	TUN	37°19'.72N,09°50'.13E	A1A		3	75	100	X	Located at Sig Stn
X013	UNKNOWN		TUN	37°00' N,08°52' E	A1A		2	75			New Station P.A.
1473	CAP BON	BN	TUN	37°04'.22N,11°02'.57E						X	1.
1487	RAS EL HAMRA	GD	ALG	36°58'.08N,07°47'.13E	A1A		1	75	50	X	
1489	RAS BOURGAROUN	CB	ALG	37°05'.25N,06°28'.17E	A1A		2	75	50	X	
1495	BEJAÏA	BI	ALG	36°45'.20N,05°06'.25E	A1A		C	75	10	X	
1499	RAS MATIFOU	MF	ALG	36°48'.72N,03°14'.88E	A1A		1	75	30	X	
1501	ALGIERS	AL	ALG	36°46'.67N,03°04'.80E	A1A		2	75	20	X	Only in fog
1503	RAS CAXINE	CX	ALG	36°48'.83N,02°57'.37E	A1A		3	75	200	X	
1506	RAS TENES	TS	ALG	36°33'.08N,01°20'.67E	A1A		2	75	30	X	
1509	RAS AIGUILLE	AG	ALG	35°52'.63N,00°29'.00W	A1A		1	75	100	X	
1507	MOSTAGANEM	MN	ALG	35°56'.05N,00°04'.25E	A1A		C	75	5	X	
1529	CEUTA	CE	MCR	35°53'.83N,05°18'.62W	A1A		C	75	10	X	Directional
1531	CABO ESPARTEL	SP	MCR	35°47'.40N,05°55'.55W	A1A		C	75	200	X	Located at Fog Sig Stn
1539	OUKACHA	AK	MCR	33°37'.10N,07°33'.85W	A1A		C	75	20	X	
1541	POINTE D'EL HANK	HA	MCR	33°36'.77N,07°39'.37W	A1A		C	75	100	X	

1. Located at Sig Stn. Transmits Differential Omega Corrections.

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X014	SELVAGEM		POR	30°09' N,15°52' W	A1A		1	75	200		New Station
X015	P. PARGO		POR	32°49' N,17°16' W	A1A		2	75	200		New Station
X016	I. CIMA		POR	33°03' N,16°17' W	A1A		3	75	200		New Station
X017	GONCALO VELHO		POR	36°57' N,25°01' W	A1A		1	75	200		New Station
X018	ARNEL		POR	37°49' N,25°08' W	A1A		2	75	100		New Station
X019	CONTENDAS		POR	38°39' N,31°14' W	A1A		3	75	100		New Station
X020	RIBEIRINOA		POR	38°36' N,28°36' W	A1A		1	75	200		New Station
X021	PONTA DA BARCA		POR	39°06' N,28°03' W	A1A		2	75	200		New Station
X022	ALBERNAZ		POR	39°31' N,31°14' W	A1A		3	75	200		New Station
6519	RAUFARHÖFN	RG	ISL	66°27'.07N,15°57'.05W	A1A		C	50	100	X	Located 244°105lm from 5
6523	VOPNAFJÖRDHUR	SK	ISL	65°54'.40N,14°38'.80W	A1A		C	50	100	X	Located 071°6c from 5
6527	DALATANGI	DA	ISL	65°16'.22N,13°34'.65W	A1A		C	50	100	X	
6529	DJÚPIVOGUR	DV	ISL	64°39'.13N,14°16'.62W	A1A		C	50	100	X	
6535	INGÓLFSHÖFDHI	IN	ISL	63°48'.10N,16°38'.50W	A1A		C	50	100	X	
6539	SKARDHSFJARA	SF	ISL	63°31'.00N,17°59'.00W	A1A		C	50	UNKNOWN	X	
6547	REYKJANES	RN	ISL	63°48'.87N,22°43'.00W	A1A		C	50	100	X	Located 270°2c from 5
6563	MALARRIF	MA	ISL	64°43'.72N,23°48'.50W	A1A		C	50	100	X	
6569	BJARGTANGAR	BT	ISL	65°30'.10N,24°31'.50W	A1A		C	50	100	X	
6574	SVALVOGAR	SL	ISL	65°54'.50N,23°50'.70W	A1A		C	50	20	X	
6576	GÖLTUR	GV	ISL	66°09'.75N,23°34'.08W	A1A		C	50	100	X	
6585	HORNBJARG	HO	ISL	66°24'.73N,22°23'.03W	A1A		C	50	100	X	Located 052°74m from 5
6596	SKAGATÁ	SM	ISL	66°07'.17N,20°06'.33W	A1A		C	50	100	X	
6613	GRÍMSEY	GR	ISL	66°31'.53N,17°59'.10W	A1A		C	50	100	X	

YAWAK

LIST OF FREQUENCIES AND OTHER CHARACTERISTICS OF MARITIME CALIBRATION BEACONS IN THE EUROPEAN AREA OF REGION 1

1. REF NO.	2. NAME OF STATION	3. CODE	4. COUNTRY	5. POSITION IN LAT & LONG	6. EMISSION	7. CHANNEL NO.	8. SEQ-UENCE	9. FIELD STRENGTH (μV/m)	10. NOMINAL RANGE (NM)	11. ESTAB-LISHED (X)	12. REMARKS
0785	LANDEGODE		NOR	67°26'.88N,14°23'.17E	A1A			50		X	On request in clear weather
0713	ODDERØYA		NOR	58°07'.83N,08°00'.40E	A1A			50		X	
0699	FULEHUKSKJAER	FU	NOR	59°10'.57N,10°36'.05E	A1A			50	10	X	On request in clear weather
0367	SVANEMOLLEVAERKET	MU	DNK	55°42'.83N,12°35'.38E	A1A			50	10	X	On request in clear weather
0493	PIKASÄÄRE	NJS	USSR	59°36'.25N,24°30'.83E	A1A			50	15	X	On request
0467	VENTSPILS	P	USSR	57°24'.05N,21°32'.70E	A1A			50	20	X	On request
0449	GDYNIA	G	POL	54°31'.82N,18°33'.72E	A1A			50		X	On request
0447	HEL	H	POL	54°36'.08N,18°48'.90E	A1A			50		X	On request
0441	USTKA	U	POL	54°35'.37N,16°51'.42E	A1A			50		X	On request
0437	KOŁOBRZEG	K	POL	54°11'.28N,15°33'.55E	A1A			50		X	On request
0435	SWINOUJŚCIE	OD	POL	53°55'.05N,14°17'.17E	A1A			50	10	X	On request
0424	STRALSUND	STR	DDR	54°19'.15N,13°05'.70E	A1A			50		X	On request
0423	WARNEMÜNDE	LHD	DDR	54°10'.72N,12°05'.92E	A1A			50		X	On request
0421	TIMMENDORF	02	DDR	53°59'.55N,11°22'.73E	A1A			50		X	On request
0418	TRAVEMÜNDE	UB	D	53°57'.77N,10°52'.97E	A1A			50		X	On request
0409	FRIEDRICHSORT	KB	D	54°23'.48N,10°11'.68E	A1A			50		X	On request
0408	KIEL	KB	D	54°30'.02N,10°16'.50E	A1A			50		X	On request
0275	ELBE NO. 1 LT.V.	LB	D	54°00'.00N,08°06'.58E	A1A			50		X	On request
0273	HOLLERWETTERN	HB	D	53°50'.53N,09°21'.23E	A1A			50		X	On request
0269	BREMERHAVEN	GB	D	53°32'.40N,08°34'.87E	A1A			50		X	On request
0263	WESER LANBY	WB	D	53°54'.55N,07°50'.00E	A1A			50		X	On request
0258	EMS PILOT VESSEL	BB	D	53°37' N,06°20' E	A1A			50		X	On request when pilot vessel at Outer Station

YBAAAK

1. REP NO.	2. NAME OF STATION	3. CODE	4. COUNTRY	5. POSITION IN LAT & LONG	6. EMISSION	7. CHANNEL NO.	8. SEQ-UENCE	9. FIELD STRENGTH (μV/m)	10. NOMINAL RANGE (NM)	11. ESTAB-LISHED (X)	12. REMARKS
0237	IJMUIDEN	YC	HOL	52°27'.78N,04°34'.57E	A1A			50	5	X	On request
0233	SCHEVENINGEN	HO	HOL	52°06'.30N,04°16'.17E	A1A			50		X	On request
0121	HUMBER LT.V.	MB	G	53°36'.72N,00°21'.60E	A1A			50	5	X	)Continuous from 1 hour
0113	SOUTER	PT	G	54°58'.23N,01°21'.80W	A1A			50	5	X	)after sunrise to 1 hour)before sunset
0099	ABERTAY LT. FLOAT		G	56°27'.35N,02°40'.92W						X	
0179	MIZEN HEAD	ZC	IRL	51°26'.97N,09°49'.18W	A1A			50	5	X	On request
0057	CLOCH PT	CL	G	55°56'.53N,04°52'.67W	A1A			50	8	X	On request
0191	MEW ISLAND	MC	G	54°41'.92N,05°30'.75W	A1A			50	5	X	On request
0034	POINT LYNAS	PS	G	53°24'.97N,04°17'.30W	A1A			50	5	X	As 0121 and 0113 above
0185	KISH BANK	KH	IRL	53°18'.68N,05°55'.38W	A1A			50	5	X	1.
0181	BALLYCOTTON	BC	IRL	51°49'.55N,07°59'.05W	A1A			50	5	X	On request
0026	SCARWEATHER LT.V.	RW	G	51°26'.85N,03°56'.02W	A1A			50	5	X	As 0121 & 0113 above
0893	POINTE DE GRAVE	VR	F	45°34'.17N,01°03'.90W	A1A			50	5	X	Daytime only
1111	GENOVA		I	44°24'.25N,08°54'.33E	A1A			50		X	On request
1133	PUNTA CARENA		I	40°32'.15N,14°12'.12E	A1A			75		X	On request
1225	FORT RICASOLI		MLT	35°53'.92N,14°31'.75E	A1A			75		X	On request
1159	CAPO VITO		I	40°24'.63N,17°12'.35E	A1A			75		X	On request
1179	SENIGALLIA		I	43°43'.08N,13°13'.33E	A1A			50		X	On request
1205	RIJEKA		YUG	45°06' N,14°32' E	A1A			50		X	On request
1209	SPLIT	YUS	YUG	43°30'.05N,16°27'.60E	A1A			50		X	On request
1213	DUBROVNIK	YUX	YUG	42°38'. N,18°06' E	A1A			75		X	On request
1215	BAR	YUW	YUG	42°05'.00N,19°04'.50E	A1A			75		X	On request. P.A.
1501	ALGIERS		ALG	36°46'.67N,03°04'.80E	A1A			75		X	On request through Alger (FFA)

1. RC reduce to Calib St. Existing Calib St. to be discontinued.

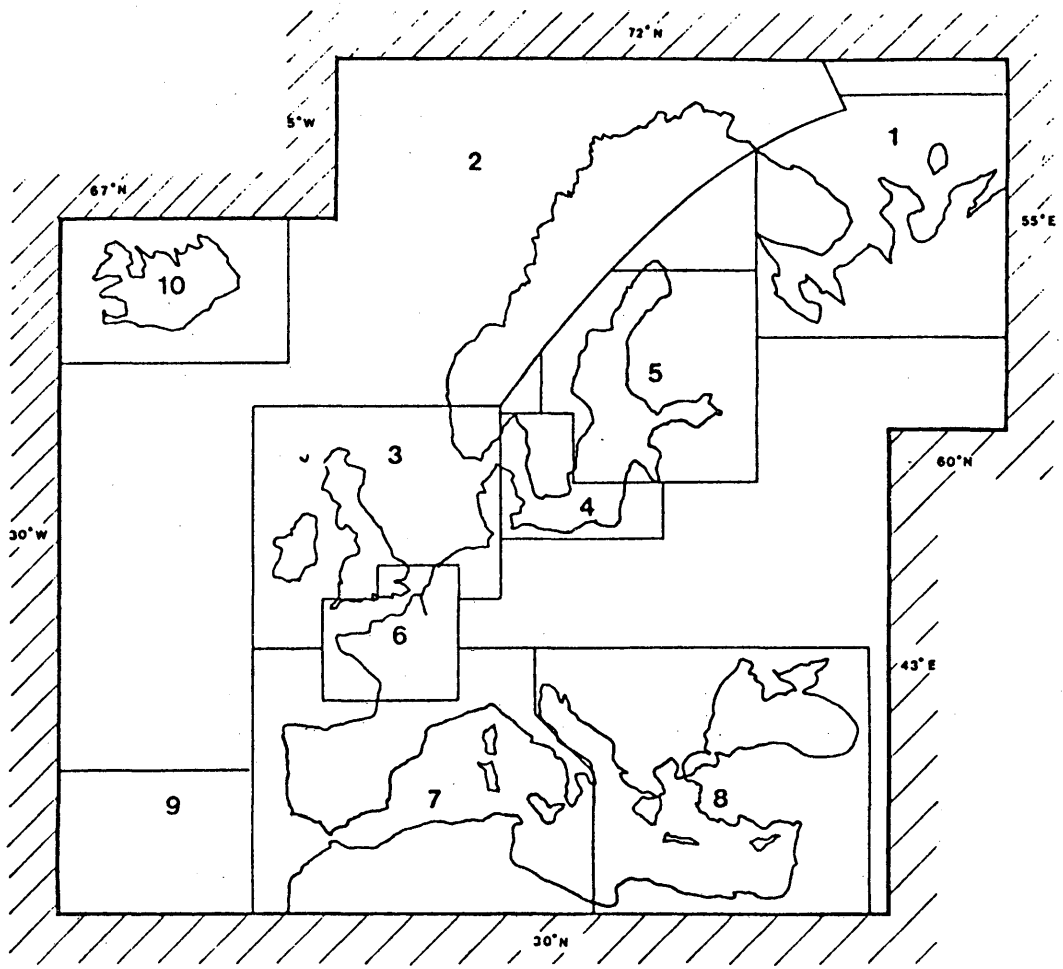
Channel Allocations for Special Services

Service	Total Number of Channels Allocated	Channel Numbers
1) Short range radiobeacons ie. 25nm or less		
2) Differential Omega		
3) Differential GPS		
4) Calibration beacons		
5) Experimental radiobeacons		
6) Rana		

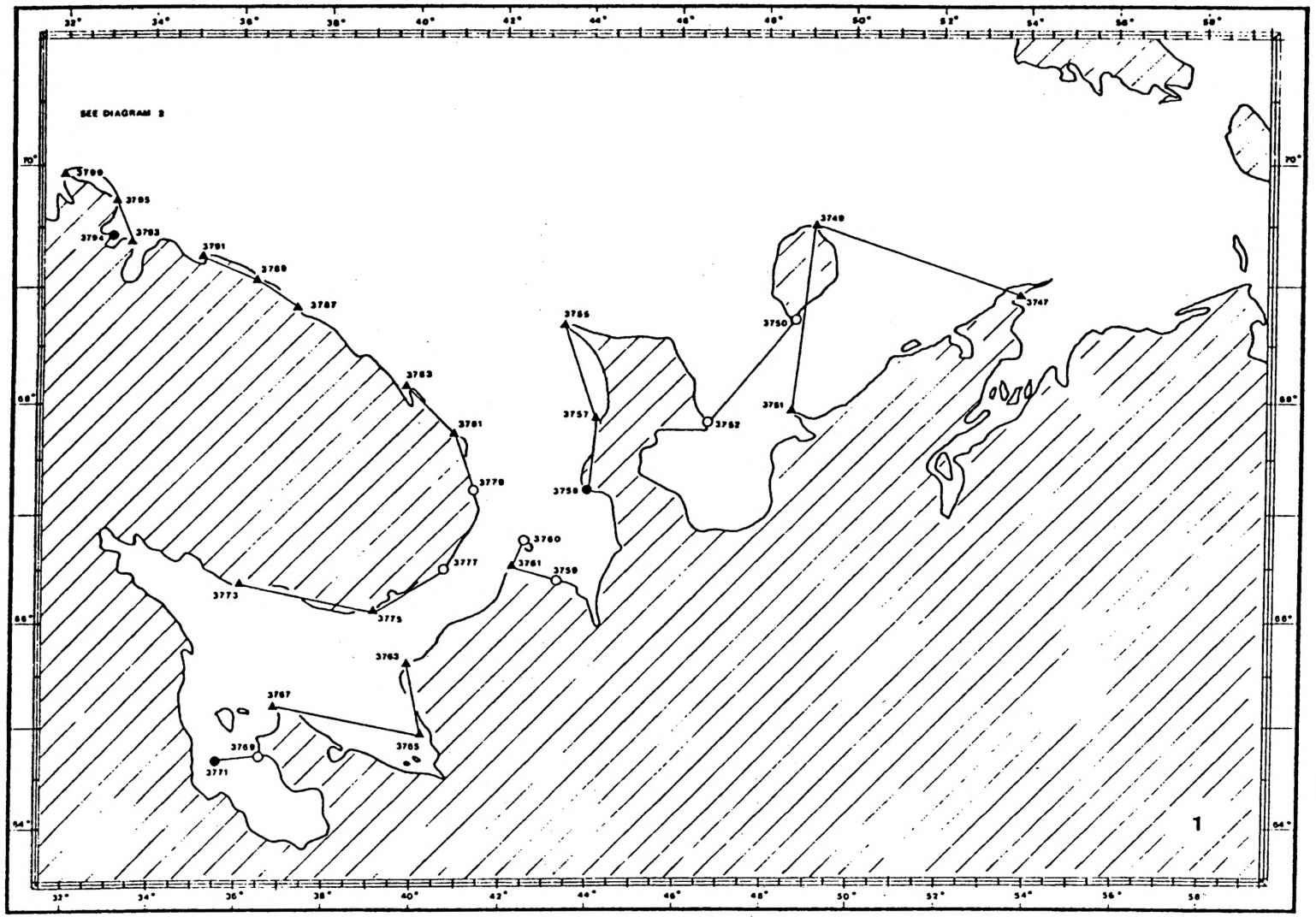
List of Abbreviations used in the Lists of frequencies and other Characteristics of Maritime Radiobeacons and Calibration Beacons in the European Area of Region 1 (Annex A)

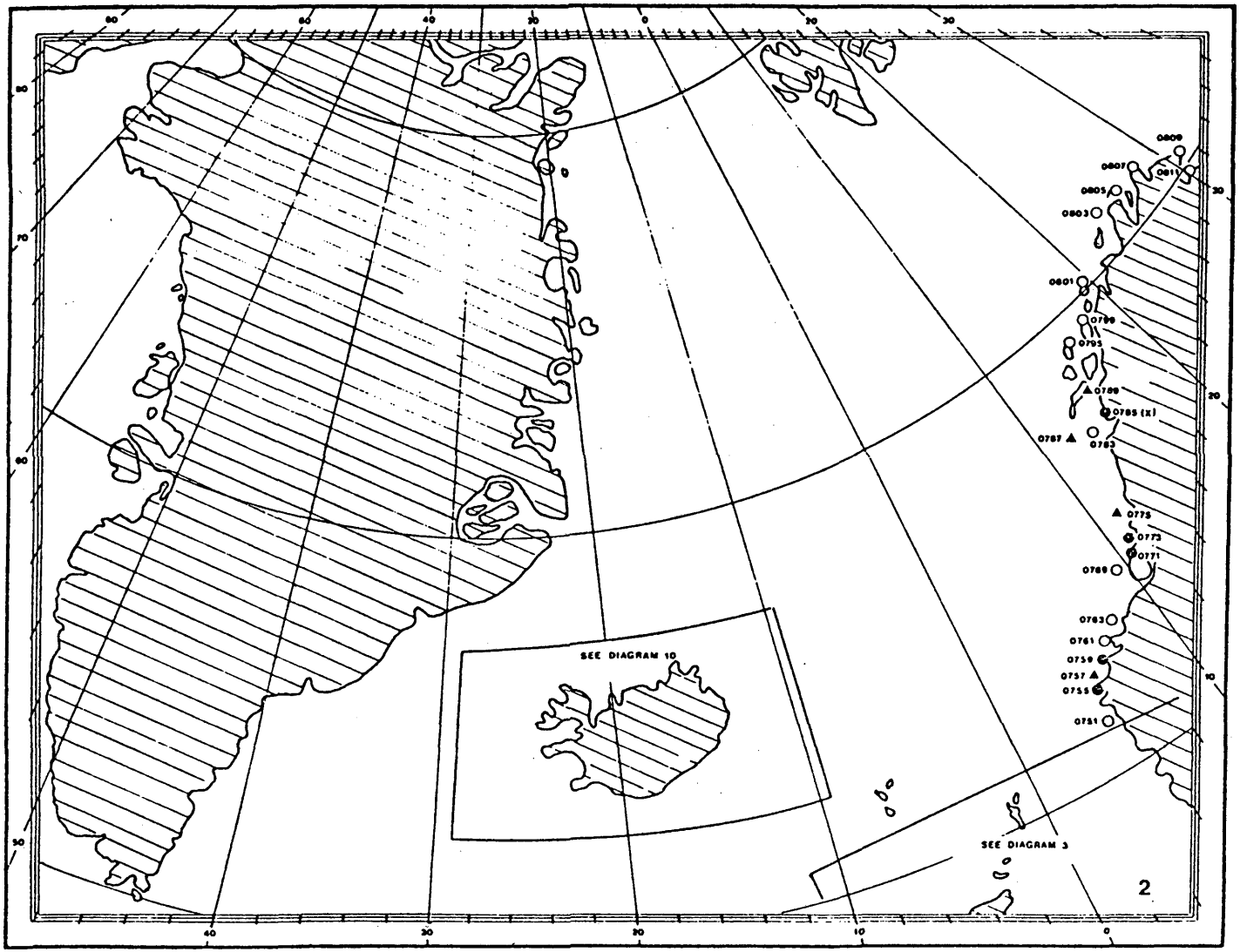
BN	Beacon
B'WATER	Breakwater
c	Cables
C	Continuous
Lat	Latitude
Long	Longitude
LT	Light
LT.V	Light Vessel
m	Metres
M	Miles
nm (NM)	Nautical Miles
No.	Number
P.A.	Position Approximate
REF	Reference
V/m	Microvolts per Metre

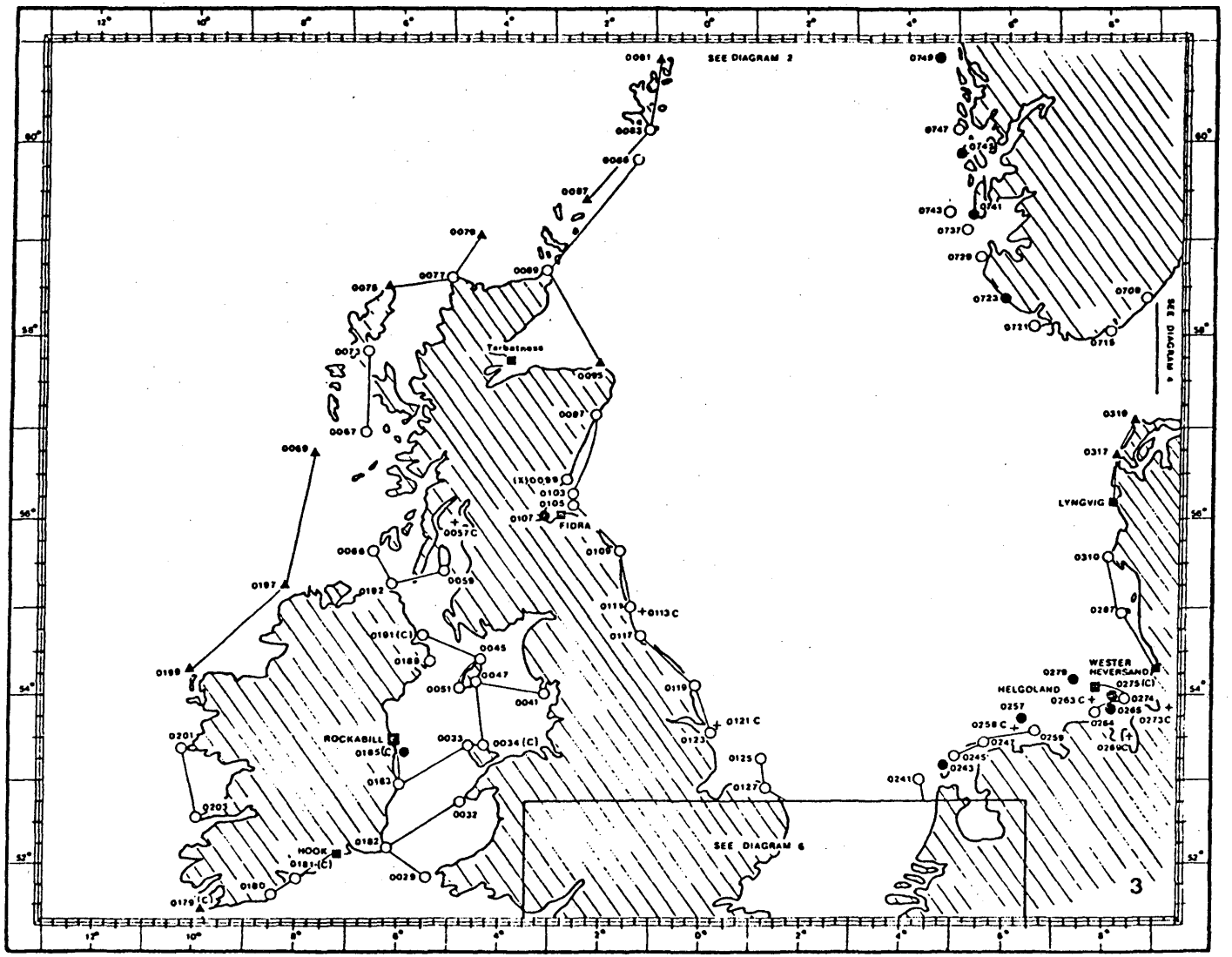
NOTE: Symbols designating countries or geographical areas are in accordance with the International Frequency List

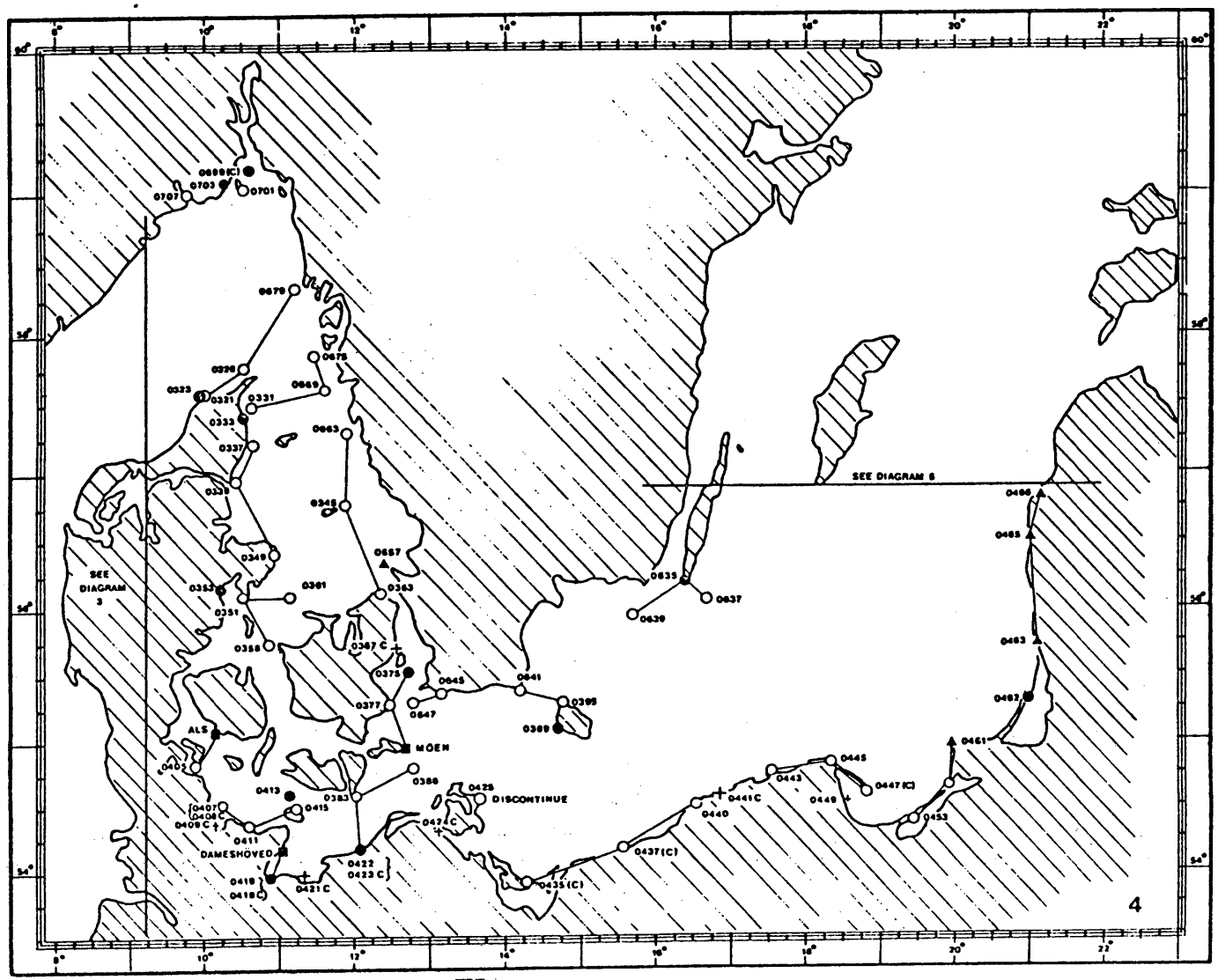


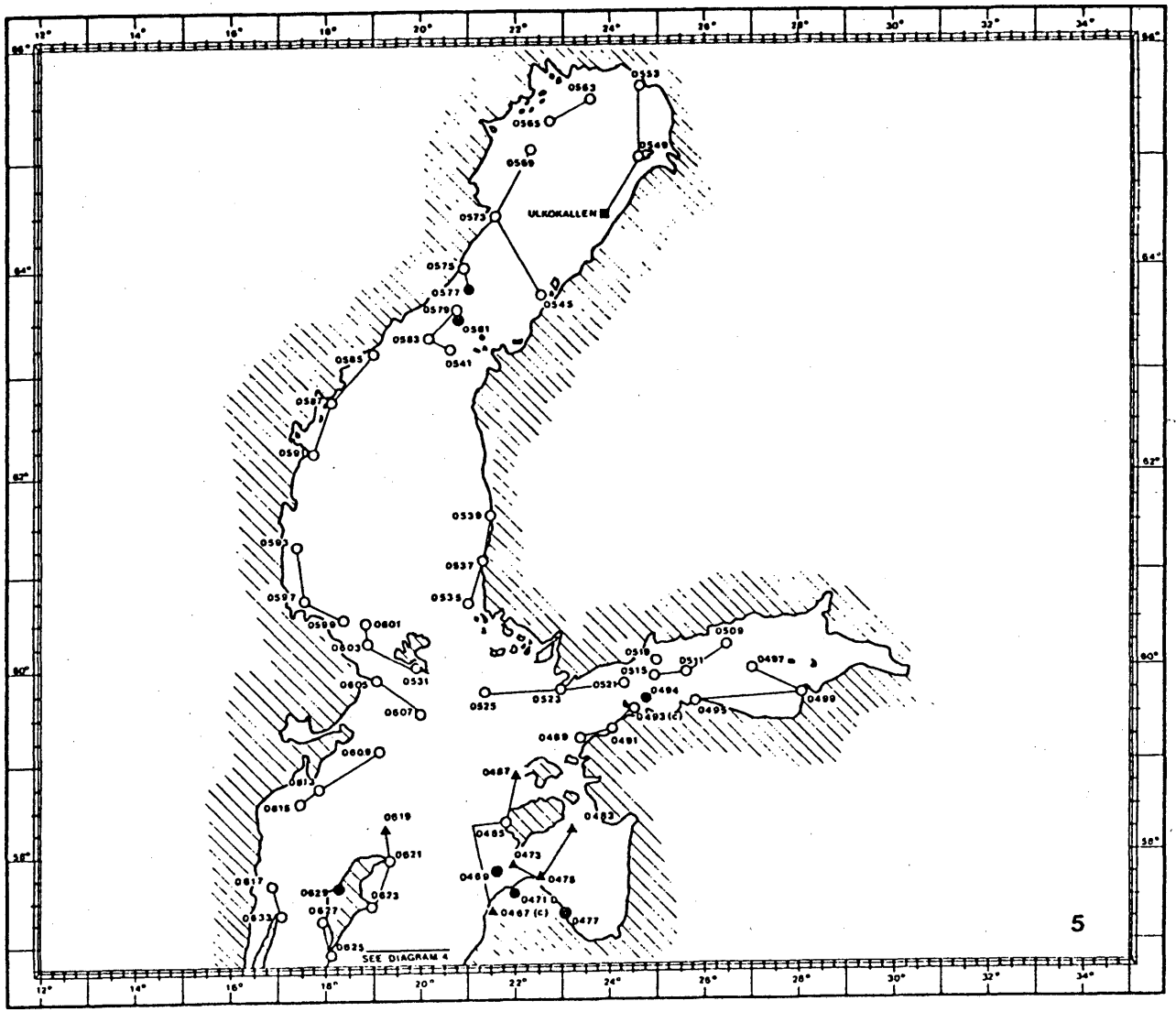
INDEX TO RADIOBEACON DIAGRAMS WITHIN
THE EUROPEAN MARITIME AREA OF REGION 1.

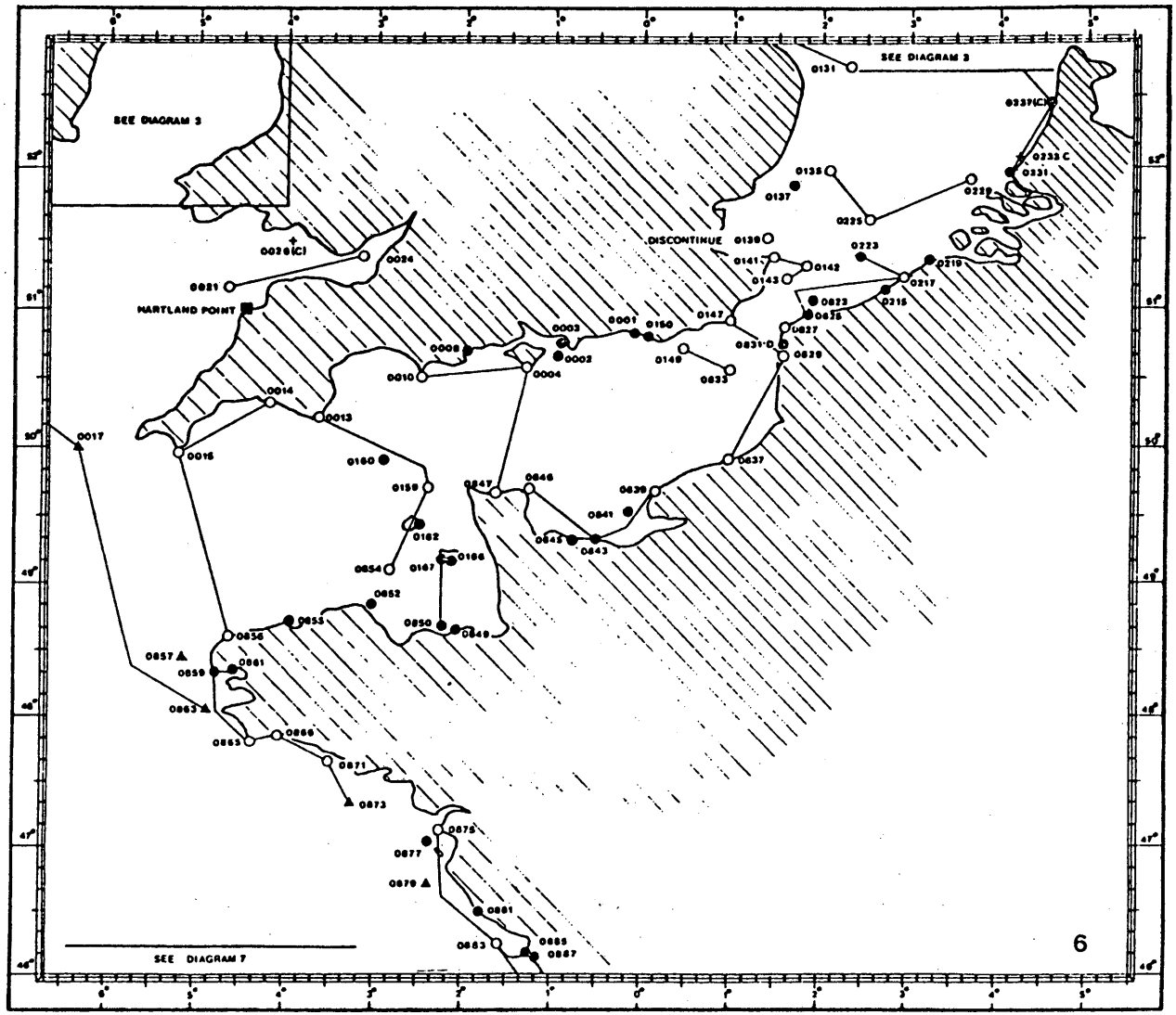

SEE DIAGRAM 2
3799
3795
3794
3793
3791
3789
3787
3783
3781
3779
3777
3775
3773
3767
3769
3771
3765
3763
3760
3761
3759
3758
3757
3755
3752
3751
3750
3749
3747
1

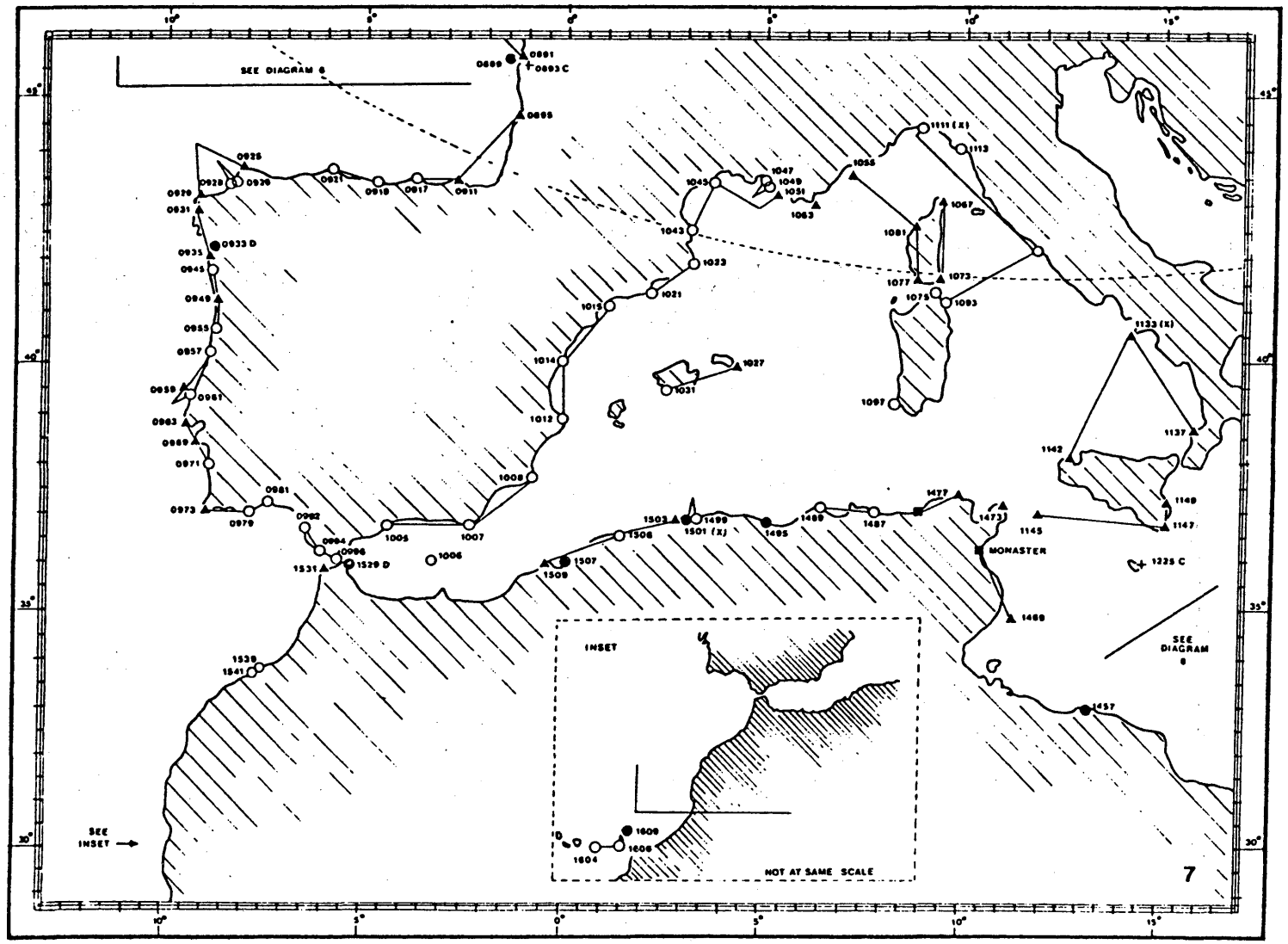

0809
0807
0811
0805
0803
0801
0799
0795
0789
0785 (x)
0787
0783
0775
0773
0771
0769
0763
0761
0759
0757
0755
0751
SEE DIAGRAM 10
SEE DIAGRAM 3
2

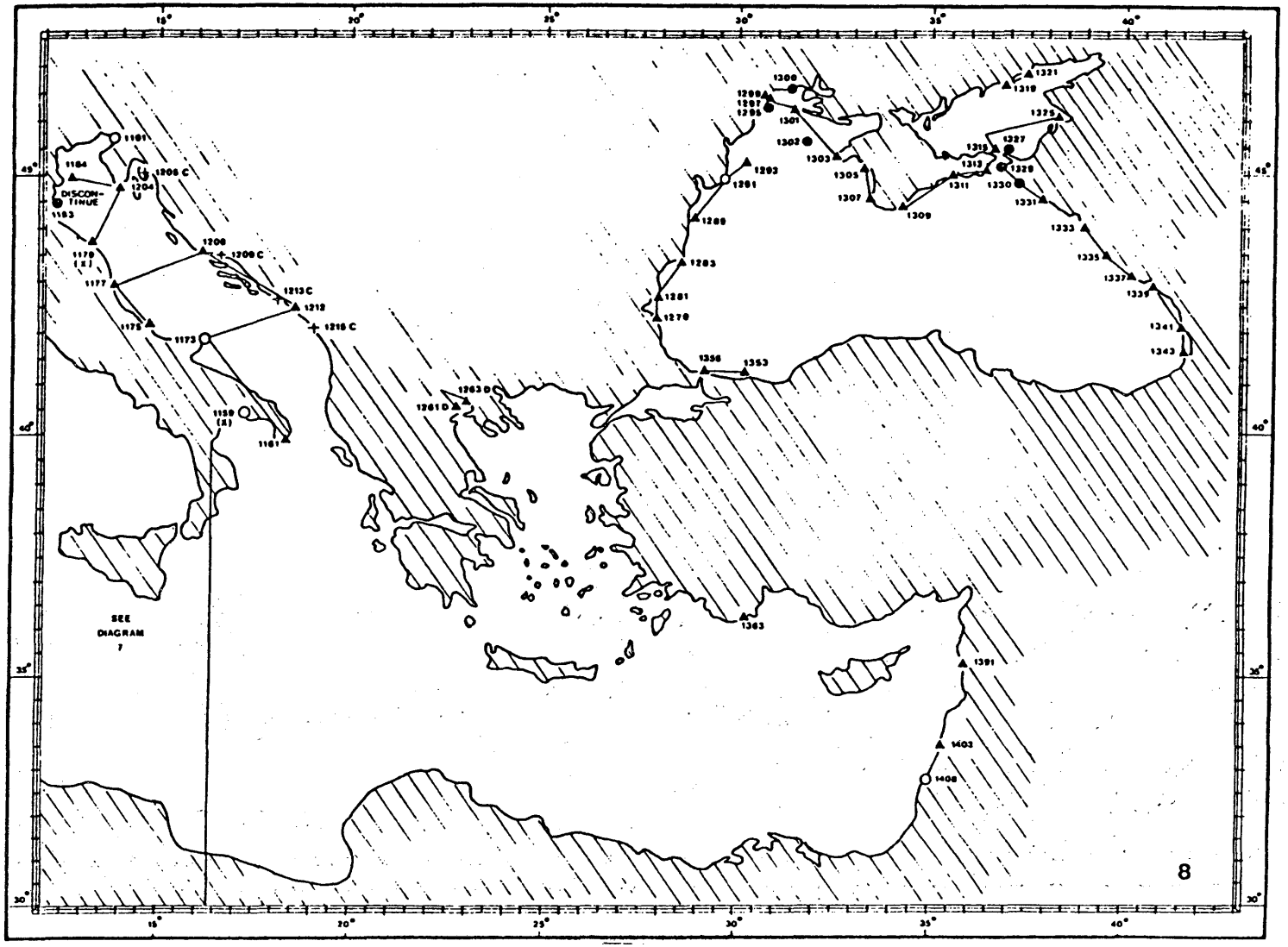

SEE DIAGRAM 2
SEE DIAGRAM 4
SEE DIAGRAM 6
Tarbatness
FIDRA
ROCKABILL
HOOK
LYNGVIG
WESTER HEVERSAND
HELGOLAND
3

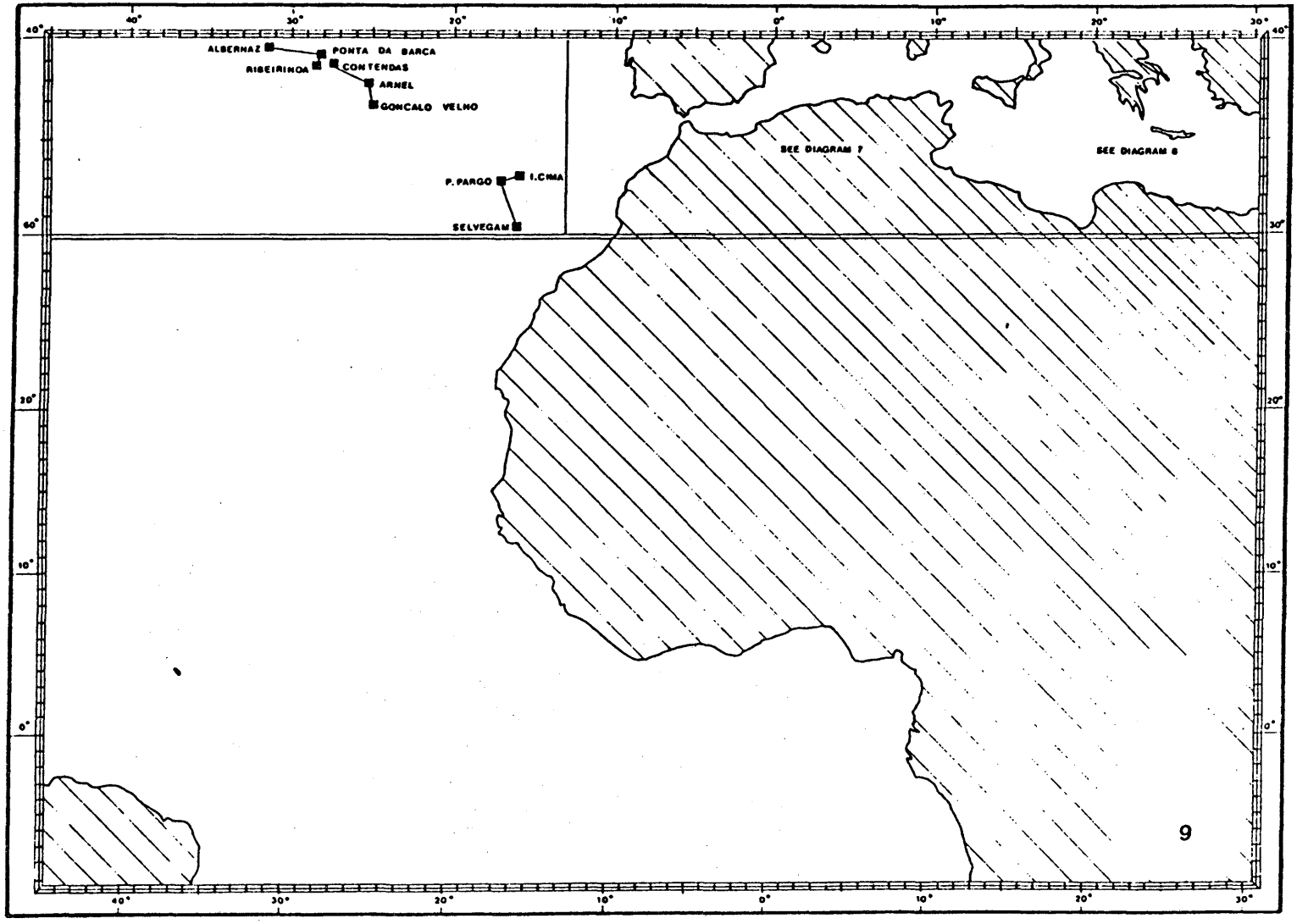

SEE DIAGRAM 3
SEE DIAGRAM 6
ALS
MOEN
DISCONTINUE
DAMESHOVED
4

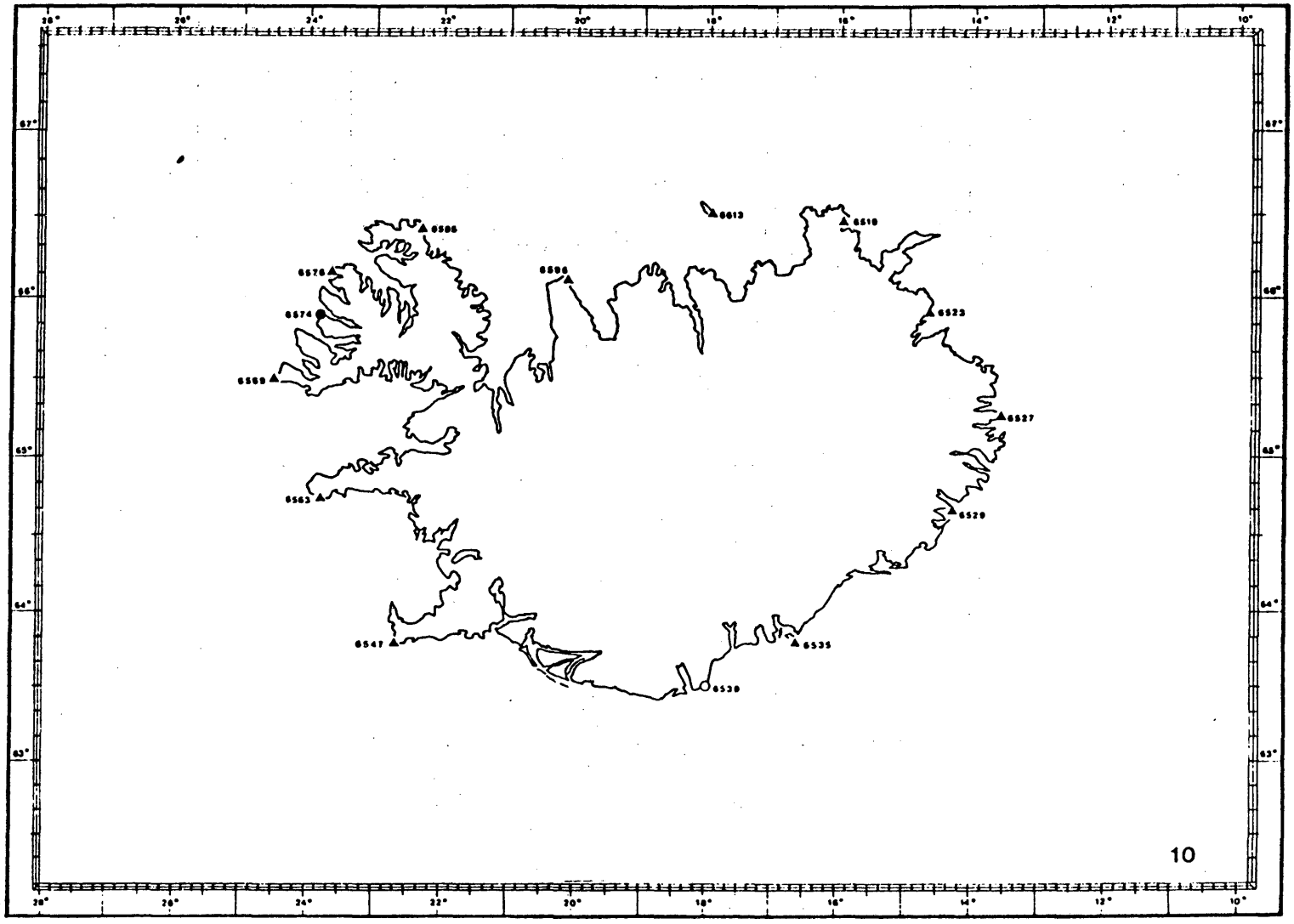

ULKOKALLEN
SEE DIAGRAM 4
5


SEE DIAGRAM 3
SEE DIAGRAM 3
HARTLAND POINT
DISCONTINUE
SEE DIAGRAM 7
6


SEE DIAGRAM 6
SEE INSET
INSET
NOT AT SAME SCALE
MONASTER
SEE DIAGRAM 8
7


15°
20°
25°
30°
35°
40°
45°
40°
35°
30°
DISCON-
TINUE
SEE
DIAGRAM
7
8


ALBERNAZ
PONTA DA BARCA
RIBEIRINOA
CONTENDAS
ARNEL
GONCALO VELHO
P. PARGO
I. CHMA
SELVEGAM
SEE DIAGRAM 7
SEE DIAGRAM 8
9


6613
6510
6523
6527
6529
6535
6538
6547
6563
6569
6574
6576
6586
6596
10

List of Symbols and Abbreviations used in the Chartlets showing the revised maritime Radiobeacon groupings in the European Maritime Area of Region 1

C	A calibration station
(C)	A calibration station in conjunction with a radiobeacon station.
(D)	Directional
(X)	Station where calibration transmissions are available
▲	A Radiobeacon station having a range of 100 nautical miles (nm) or more
o	A Radiobeacon station having a range of over 25 nm but below 100 nm
●	A Radiobeacon station having a range of 25 nm or less
■	A proposed new radiobeacon station

ANNEX B

THE STRUCTURE OF THE RADIOBEACON SIGNAL

F/1005/20 1. Composition of the Maritime Radiobeacon Signal

Each maritime radiobeacon transmits a signal composed as follows:-

(i)	the identification signal transmitted twice	7 seconds
(ii)	a long dash lasting	31 seconds
(iii)	a silent period lasting	1 second
(iv)	a data transmission (optional) lasting	4 seconds
(v)	a silent period lasting	17 seconds
	Total	60 seconds

Additionally, each radiobeacon retransmits its data portion every minute in accordance with Fig. 1A which shows the three beacon group situation.

The identification signal may be increased to 12 seconds to allow a slower speed of Morse transmission. In this case, the long dash should be shortened accordingly. It should not be less than 25 seconds. When data are not transmitted this time period can be used to extend the long dash.

Radiobeacons transmitting Differential Omega correction information should not transmit the F1B portion of the signal nor be grouped with radiobeacons which do transmit the F1B portion in order to allow continuous updating of the Differential Omega Correction facility if required.

F/1005/21 2. Transmission schedule

A transmission schedule is designated by the number(s) of the minute(s) in which the transmission occurs.

Length of Signal	Number of Radiobeacons in Group	Schedule Designation
1 minute	1	Continuous
1 minute	2	1 or 2
1 minute	3	1 or 2 or 3
1 minute	6 (If an interim period is necessary)	1 or 2 or 3 etc.

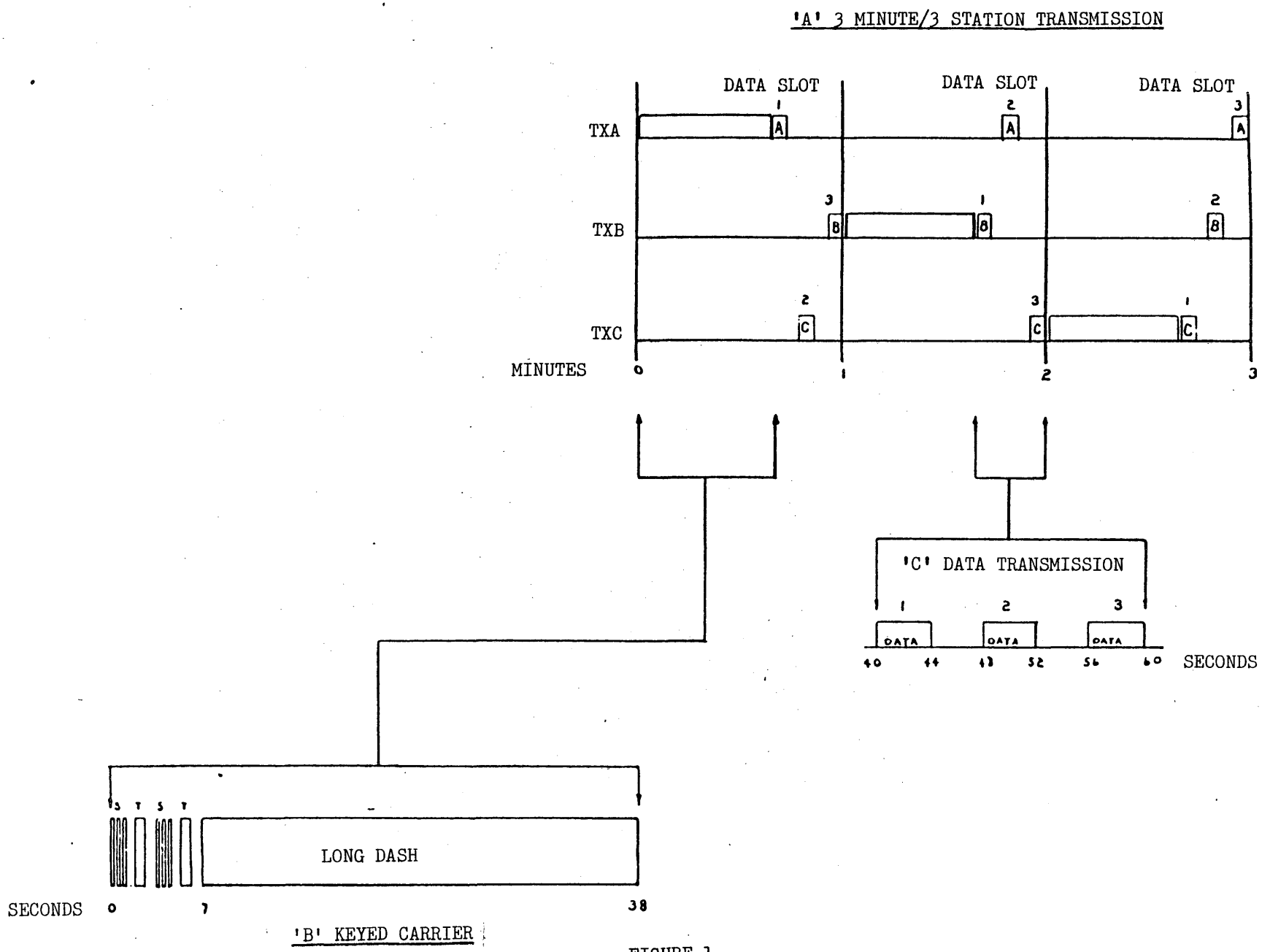

'A' 3 MINUTE/3 STATION TRANSMISSION
DATA SLOT
DATA SLOT
DATA SLOT
TXA
TXB
TXC
MINUTES
0
1
2
3
'C' DATA TRANSMISSION
DATA
DATA
DATA
40
44
48
52
56
60
SECONDS
LONG DASH
SECONDS
0
7
38
'B' KEYED CARRIER

FIGURE 1

ANNEX C

RECOMMENDED (MINIMUM) TECHNICAL CHARACTERISTICS FOR MARITIME RADIOBEACONS IN THE BAND 283.5KHz to 315KHz

F/1005/22 1. AERIAL AND EARTH SYSTEM

The aerial and earth system should be so designed as to restrict radiation of horizontally polarized waves and signals directed towards the ionosphere.

A vertical or T antenna should be used for preference.

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

Horizontal power and telecommunication lines at less that 100 metres from the antenna should be underground.

2. TRANSMITTERS

F/1005/23 2.1 Frequency

The assignment of frequencies to maritime radiobeacons in this band should be based on a protection ratio of at least 15dB for each beacon throughout its service area.

Radiobeacon assigned frequencies should be on integer multiples of 100 Hz.

Transmitters of A1A emissions shall maintain their assigned frequency within a tolerance of ± 30Hz.

Transmitters of F1B emissions shall maintain their assigned frequency within a tolerance of ± 10Hz.

Maximum spurious emission power levels of all transmitters shall conform to Appendix 8 of the International Telecommunication Union Radio Regulations (Geneva, 1979).

F/1005/24 2.2 Modulation

A beacon identity of two morse letters transmitted twice followed by a 'long-dash' should be emitted using the class of emission A1A.

Additional information, permitted as a further aid to navigation, may be transmitted by a radiobeacon using the class of emission F1B.

The structure of the radiobeacon signal should be as given at ANNEX B.

F/1005/25 2.3 Coding

The coding of any F1B transmissions should conform to the characteristics given at ANNEX E.

F/1005/26 2.4 Accuracy of timing

All maritime radiobeacons should be controlled by a device ensuring the accuracy of the transmission schedules.

The accuracy of transmission times should be maintained to within ± 2 seconds.

F/1005/27 2.5 Field strength measurements

When a maritime radiobeacon is put into service or if alterations are made to the equipment or aerial 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 range. The corresponding aerial currents should also be measured.

Such measurements should be taken again as detailed in Paragraph 2.6.

F/1005/28 2.6 Recommended Monitoring Standards for Maritime Radiobeacons

2.6.1 The following monitoring standards are recommended for all radiobeacons:-

Monitoring should be carried out to ensure that

(i) the field strength does not vary by more than ± 3dB (95% probability) from the nominal value as defined in Paragraph 2.5.

(ii) the transmission frequency does not vary by more than ± 10 Hz for the F1B transmission and ± 30 Hz for the A1A transmission.

(iii) there should be no corruption of coding or data when transmitted.

(iv) the timing is maintained within ± 2 seconds

Additionally field strength should be measured at least once per year.

2.6.2 For radiobeacons having nominal ranges of 10 miles or less, continuous local monitoring of field strength and/or aerial current is recommended.

F/1005/29 3. STANDBY DEVICES

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

ANNEX D

RECOMMENDED MINIMUM

TECHNICAL CHARACTERISTICS FOR

RADIO DIRECTION-FINDERS WORKING ON FREQUENCIES

BETWEEN 283.5KHz AND 315KHz

F/1005/30 1. FREQUENCY BANDS

Radio direction-finders should permit bearings to be taken on class A1A emissions in the maritime radiobeacon frequency band.

Direction-finders may also be equipped to receive, decode and display the additional information which a radiobeacon is permitted to transmit as a further aid to navigation. Such transmissions will be on the radiobeacon assigned frequency and be class F1B emissions.

F/1005/31 2. SELECTIVITY

For the class of emission A1A, the overall RF and IF selectivity of the direction-finder should be:

- bandwidth of at least 190Hz for 6dB attenuation;
- bandwidth less than 460Hz for 30dB attenuation;
- bandwidth less than 960Hz for 60dB attenuation.

The image frequency rejection ratio should be 80dB, or higher.

The IF protection ratio should be 80dB, or higher.

For the class of emission F1B, the overall RF and IF selectivity of the receiver should be:

- bandwidth of at least 100Hz for 6dB attenuation;
- bandwidth less than 180Hz for 30dB attenuation;
- bandwidth less than 340Hz for 60 dB attenuation.

The image frequency rejection ratio should be 80dB, or higher.

The IF protection ratio should be 80dB, or higher.

F/1005/32 3. SENSITIVITY

A field strength of equal to, or less than, 50 μV/m shall produce a signal in the headphones of a receiver of 1 mW, or greater, with a signal-to-noise ratio of 20dB, or higher.

F/1005/33 4. BEARING ACCURACY

Direction finding receivers 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.

F/1005/34 5. MISCELLANEOUS CHARACTERISTICS

5.1 Radio direction-finding receivers should be fitted with a beat frequency oscillator (BFO).

5.2 The sense-finding device should give a ratio of at least 15 dB between the signals on the direct and reciprocal bearings.

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

5.4 Receivers utilising the F1B transmissions should be fitted with a method of displaying the additional navigational information obtained and an indication of the correctness of this information.

5.5 F1B receivers should maintain the frequency to which they are tuned within a tolerance of ± 10Hz.

5.6 Radio direction-finding receivers installed on vessels travelling outside the European Maritime Area of Region 1 should be capable of operating with type A2A (tone modulated) and H2A (dual carrier) radiobeacons with modulation frequencies up to 1020Hz.

F/1005/35 6. TECHNICAL CONDITIONS FOR THE INSTALLATION OF RADIO DIRECTION-FINDERS IN VESSELS

6.1 The aerial assembly should be mounted as near as practicable to the vessels centre line, and should be as remote as is practicable from large movable metal objects and conductors, such as derricks, wires and the ships' aerials.

6.2 The sense-finding aerial should be as short as practicable.

6.3 The connecting cables between the aerial system and the apparatus should be screened, all joints should be watertight.

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

F/1005/36 7. CALIBRATION OF RADIO DIRECTION-FINDERS

The calibration curve of the direction-finder should be plotted before the latter is put into operation, and each time the position of the aerials or the conductors referred to above are changed or the superstructure of the vessel is materially altered. In addition the direction-finder should be recalibrated at yearly intervals.

When calibrating the radio direction-finder for use in the maritime radiobeacon frequency band the frequency used should be as close as possible to 300KHz.

The calibration curve should preferably be plotted by means of bearings on short range continuous radiobeacons.

ANNEX E

TECHNICAL CRITERIA OF THE MARITIME RADIOBEACON SERVICE IN THE EUROPEAN MARITIME AREA OF REGION 1 (RR NO. 405)

F/1005/37 1. Frequencies

In the European Maritime Area of Region 1, maritime radiobeacons will operate on frequencies in the band 283.5 - 315 KHz and should be based on integer multiples of 100 Hz.

F/1005/38 2. Type of Emission

The type of emission should be A1A for those radiobeaocns transmitting only the keyed carrier portion of the transmission and A1A and F1B for those radiobeacons transmitting both the keyed carrier and data portions of the transmission. The data portion is transmitted using F1B.

F/1005/39 3. Nominal Range

The nominal range of a maritime radiobeacon is the distance at which the RMS value of the field strength over water during the day is:

50 u./m for maritime radiobeacons situated North of latitude 43° North
75 uV/m for maritime radiobeacons situated South of latitude 43° North

F/1005/40 4. Radiated Power

The power radiated by each maritime radiobeacon shall be adjusted to the minimum required to produce, at the limit of range, the field strength prescribed in 3. above.

F/1005/41 5. Identification Signal

Each maritime radiobeacon is distinguished by an identification signal of two morse letters.

6. Technical Characteristics of the F1B Transmission Sequence

6.1 This section describes two possible methods of modulation which could be used for a data transmission sequence. Both methods use F1B class of emission and contain similar information content but have different frequency shifts, transmission rates and error checking arrangements.

F/1005/42 6.2 The first method would use Frequency Shift Keying (FSK) with a frequency shift of ± 85 Hz, baud rate of 100 and necessary bandwidth of 304 Hz.

6.2.1 General

6.2.1.1 The system proposed would be synchronous and use a ten-unit error detecting code as listed in Table 1 of this Annex.

6.2.1.1.1 The first seven bits of the ten-unit code of Table 1 are information bits. Bits 8, 9 and 10 indicate, in the form of binary number, the number of B elements that occur in the seven information bits, a Y element being a binary number 1 and a B element a binary number 0.

6.2.1.1.2 The higher frequency corresponding to the B state and the lower frequency corresponding to the Y state of the signal elements.

6.2.1.2 If error correction in the form of time deversity is used in the transmission, each signal, apart from the phasing signals, would be transmitted twice in a time-spread mode. The first transmission (DX) of a specific signal being followed by the transmission of four other signals before the retransmission (RX) of that specific signal would take place, allowing for a time-diversity reception interval of 400 milliseconds.

6.2.2 Message format

6.2.2.1 Examples of the message format for four possible fast transmission sequences are given in Figure 1. The formats differ in that two are of four second duration and two of six seconds and one format of each duration uses error correction in the form of time diversity. The format selected for use in the future radiobeacon system is likely to depend upon the detail needed to define the position of the radiobeacon, the number of symbols considered necessary to cater for all possible messages which might be included in the transmission and the time available during which the transmission will need to take place.

6.2.2.2 Whatever the format chosen, it will probably need to include a phasing signal, self-identification, the position of the radiobeacon, provision for a message and an error check.

6.2.2.3 If time diversity is considered necessary to improve the probability of correct signal reception, a four second signal duration would enable the provision of position information accurate to 0.01° and one symbol would be available to contain a message. A six second signal would permit position information accurate to 0.001° to be transmitted and provide nine symbols for message purposes.

6.2.2.4 If time deversity is not considered necessary a four second signal would permit position information accurate to 0.001° to be transmitted and 19 symbols would be available for message purposes. A six second signal would provide an extra 20 symbols for message purposes.

6.2.3 Phasing sequence

6.2.3.1 The phasing sequence provides information to the direction finder to permit correct bit phasing and unambiguous

determination of the positions of the signals within the transmission sequence.

6.2.3.2 If time diversity is considered necessary the phasing sequence could consist of specific signals in the DX and RX positions transmitted alternatively.

6.2.3.2.1 The phasing signal in the DX position would be four signals of symbol 125 of Table 1.

6.2.3.2.2 The phasing signals in the RX position specify the start of information and would consist of the signals for symbols 109, 108, 107, 106, 105 and 104 of Table 1, consecutively.

6.2.3.3 If time diversity is not considered necessary the phasing signal would specify the start of information and consist of the signals for symbols 109, 108, 107, 106, 105 and 104 of Table 1, transmitted consecutively.

6.2.4 Self-identification

Self-identification would be a two letter identification assigned to the radiobeacon station, coded in accordance with Table 2.

6.2.5 Position of the radiobeacon station

The position of the radiobeacon station would consist of ten or twelve digits coded in accordance with Table 1.

6.2.5.1 The first digit would indicate the quadrant in which the radiobeacon is sited as follows:

6.2.5.1.1 Quadrant NE would be indicated by the digit "0".

6.2.5.1.2 Quadrant NW would be indicated by the digit "1".

6.2.5.1.3 Quadrant SE would be indicated by the digit "2".

6.2.5.1.4 Quadrant SW would be indicated by the digit "3".

6.2.5.2 The second, third, fourth and fifth digits would indicate the latitude of the radiobeacon in tens, units, tenths of units and hundredths of units of degrees respectively.

6.2.5.3 The sixth, seventh, eighth, ninth and tenth digits would indicate the longitude of the radiobeacon in hundreds, tens, units, tenths of units and hundredths of units of degrees respectively.

6.2.5.4 If a message format of the type indicated in Figure 1c d or e was used the eleventh and twelfth digits would indicate thousandths of units of latitude and longitude respectively.

6.2.6 Message

6.2.6.1 The "message" would consist of one or more symbols, the exact number being dependent upon the format selected. The particular meaning of each symbol in each block would need to be defined by an international organization concerned with the operational use of radiobeacons. The symbols 104, 105, 106, 107, 108, 109, 125 and 127 should not be used as part of a message.

6.2.6.2 The symbol 127 should, however, be inserted in the message format for each information block not used as part of the message content.

6.2.7 Error Check character

The seven information bits of the error-check signal would be equal to the least significant bit of the modulo-2 sums of the corresponding bits of all information characters (i.e. even parity). The phasing signals are not considered to be vertical characters. Where appropriate the error-check character information would be sent in both the DX and RX positions.

F/1005/43 6.3 The second method would use Minimum Frequency Shift Keying (MSK) with a frequency shift of ± 10 Hz, a transmission rate of 40 bauds and necessary bandwidth of 64 Hz. It should be noted that this method has not yet adequately been tested in the maritime environment. However IALA is currently conducting trials with radiobeacons in Sweden over sea paths and results from the trials should be available for consideration by the Conference.

6.3.1 General

The data portion of the signal would consist of a four-second data stream as follows:

All data would be transmitted in the form of sequential data blocks each consisting of 12 bits. The block being initiated by a start bit followed by eight bits of data after which a parity check bit (even parity) and two stop bits follow (see Figure 2).

6.3.2 Message format

The message would include a synchronizing sequence, self identification, the position of the radiobeacon and provision for other navigational information.

6.3.3 Synchronizing sequence

The data stream would start with a synchronizing bit sequence to be used for synchronisation of an internal bit clock generator in the receiver. This would enable synchronous reception of the data blocks which follow and improve the bit error rate (BER). The duration of the synchronizing sequence would be 20 bit periods.

Next would follow a starting frame with a duration of 12 bit periods. The frequency being shifted to the higher value (f + = logical 1) during this period.

The purpose of the start frame would be to enable the use of standard asynchronous data communication circuits.

Synchronous receivers would be synchronized by the sync pulse train and data detection started at the beginning of the start frame after receipt of two consecutive logical 1's. Thereafter synchronous receivers would ignore the rest of the start frame and all the following start and stop bits in the data block.

The parity check bits however could be used by both synchronous and asynchronous receivers.

6.3.4 Self identification

The first actual data block would start at bit 13 from the beginning of the start frame and have an internal format described above and shown in Figure 2D.

The eight data bits would be coded with the first identification letter of the radiobeacon using ASCII characters.

The second data block would contain the second letter of the radiobeacon identification signal also coded in ASCII.

6.3.5 Position of radiobeacon station

The third data block would give information concerning the earth quadrant in which the radiobeacon is situated. The last three bits in the block being used for this purpose (Figure 2E) and the remaining five bits being spare.

Data blocks 4, 5 and 6 would contain the latitude value for the radiobeacon using binary coded decimal values (BCD). The three blocks would contain the latitude value with 1/100 minute resolution. Blocks 4, 5 and 6 would be sub-divided into two halves each containing four bits to provide one BCD number (Figure 3).

Figure 3B shows an example of how the latitude value would be built up. Note that the most significant bit would be transmitted last in the data block.

Blocks 7, 8 and 9 would contain corresponding values for the longitude.

6.3.6 Additional navigational information

Blocks 10 and 11 would allow transmission of a coded message codes could be transmitted.

TABLE 1

Ten-unit error-detecting code

Symbol No.	Emitted signal
0	BBBBBBBYYY
1	YBBBBBBYYB
2	BYBBBBBYYB
3	YYBBBBBYBY
4	BBYBBBBYYB
5	YBYBBBBYBY
6	BYYBBBBYBY
7	YYYBBBBYBB
8	BBBYBBBYYB
9	YBBYBBBYBY
10	BYBYBBBYBY
11	YYBYBBBYBB
12	BBYYBBBYBY
13	YBYYBBBYBB
14	BYYYBBBYBB
15	YYYYBBBBYY
16	BBBBYBBYYB
17	YBBBYBBYBY
18	BYBBYBBYBY
19	YYBBYBBYBB
20	BBYBYBBYBY
21	YBYBYBBYBB
22	BYYBYBBYBB
23	YYYBYBBBYY
24	BBBYYBBYBY
25	YBBYYBBYBB
26	BYBYYBBYBB
27	YYBYYBBBYY
28	BBYYYBBYBB
29	YBYYYBBBYY
30	BYYYYBBBYY
31	YYYYYBBBYB
32	BBBBBYBYYB
33	YBBBBYBYBY
34	BYBBBYBYBY
35	YYBBBYBYBB
36	BBYBBYBYBY
37	YBYBBYBYBB
38	BYYBBYBYBB
39	YYYBBYBBYY
40	BBBYBYBYBY
41	YBBYBYBYBB
42	BYBYBYBYBB

Symbol No.	Emitted signal
43	YYBYBYBBYY
44	BBYYBYBYBB
45	YBYYBYBBYY
46	BYYYBYBBYY
47	YYYYBYBBYB
48	BBBBYYBYBY
49	YBBBYYBYBB
50	BYBBYYBYBB
51	YYBBYYBBYY
52	BBYBYYBYBB
53	YBYBYYBBYY
54	BYYBYYBBYY
55	YYYBYYBBYB
56	BBBYYYBYBB
57	YBBYYYBBYY
58	BYBYYYBBYY
59	YYBYYYBBYB
60	BBYYYYBBYY
61	YBYYYYBBYB
62	BYYYYYBBYB
63	YYYYYYBBBY
64	BBBBBBYYYB
65	YBBBBBYYBY
66	BYBBBBYYBY
67	YYBBBBYYBB
68	BBYBBBYYBY
69	YBYBBBYYBB
70	BYYBBBYYBB
71	YYYBBBYBYY
72	BBBYBBYYBY
73	YBBYBBYYBB
74	BYBYBBYYBB
75	YYBYBBYBYY
76	BBYYBBYYBB
77	YBYYBBYBYY
78	BYYYBBYBYY
79	YYYYBBYBYB
80	BBBBYBYYBY
81	YBBBYBYYBB
82	BYBBYBYYBB
83	YYBBYBYBYY
84	BBYBYBYYBB
85	YBYBYBYBYY

Symbol No.	Emitted signal
86	BYYBYBYBYY
87	YYYBYBYBYB
88	BBBYYBYYBB
89	YBBYYBYBYY
90	BYBYYBYBYY
91	YYBYYBYBYB
92	BBYYYBYBYY
93	YBYYYBYBYB
94	BYYYYBYBYB
95	YYYYYBYBBY
96	BBBBBYYYBY
97	YBBBBYYYBB
98	BYBBBYYYBB
99	YYBBBYYBYY
100	BBYBBYYYBB
101	YBYBBYYBYY
102	BYYBBYYBYY
103	YYYBBYYBYB
104	BBBYBYYYBB
105	YBBYBYYBYY
106	BYBYBYYBYY
107	YYBYBYYBYB
108	BBYYBYYBYY
109	YBYYBYYBYB
110	BYYYBYYBYB
111	YYYYBYYBBY
112	BBBBYYYYBB
113	YBBBYYYBYY
114	BYBBYYYBYY
115	YYBBYYYBYB
116	BBYBYYYBYY
117	YBYBYYYBYB
118	BYYBYYYBYB
119	YYYBYYYBBY
120	BBBYYYYBYY
121	YBBYYYYBYB
122	BYBYYYYBYB
123	YYBYYYYBBY
124	BBYYYYYBYB
125	YBYYYYYBBY
126	BYYYYYYBBY
127	YYYYYYYBBB

B - 0
Y - 1

TABLE 2

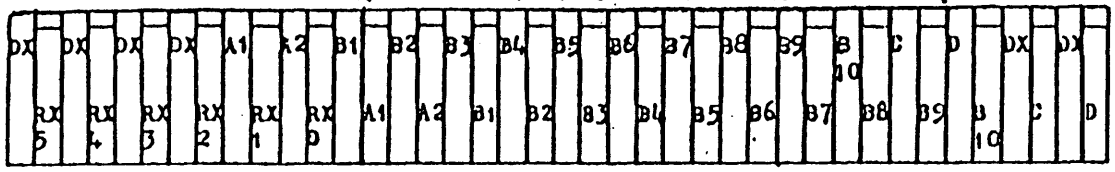
Self-identification code

Figures	Symbol No.[1]	Letters	Symbol No.[1]	Letters	Symbol No.[1]
0	48	A	65	N	78
1	49	B	66	O	79
2	50	C	67	P	80
3	51	D	68	Q	81
4	52	E	69	R	82
5	53	F	70	S	83
6	54	G	71	T	84
7	55	H	72	U	85
8	56	I	73	V	86
9	57	J	74	W	87
		K	75	X	88
		L	76	Y	89
		M	77	Z	90

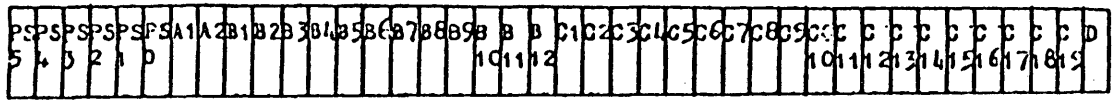
[1]See Table 1

DX/RX or PS Phasing Sequence	A Self-ident symbols	B Position symbols	C Message symbols	D Error check symbol

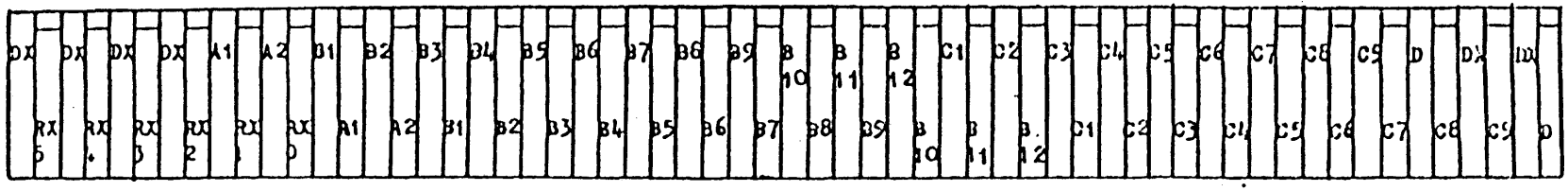
a. Technical format of a fast transmission sequence



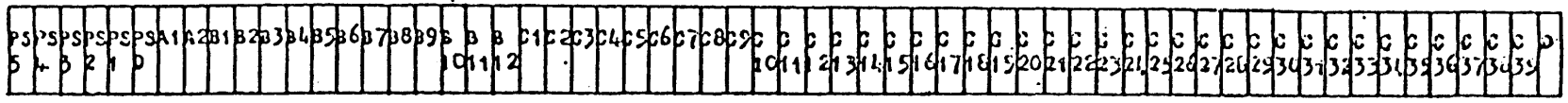
b. Technical details of a 4 second transmission sequence with time diversity.



c. Technical details of a 4 second transmission sequence without time diversity.



d. Technical details of a 6 second transmission sequence with time diversity.



e. Technical details of a 6 second transmission sequence without time diversity.

note. Transmission time of each symbol is 100 milliseconds.

FIGURE 1

— COMPOSITION OF DATA SLOT —

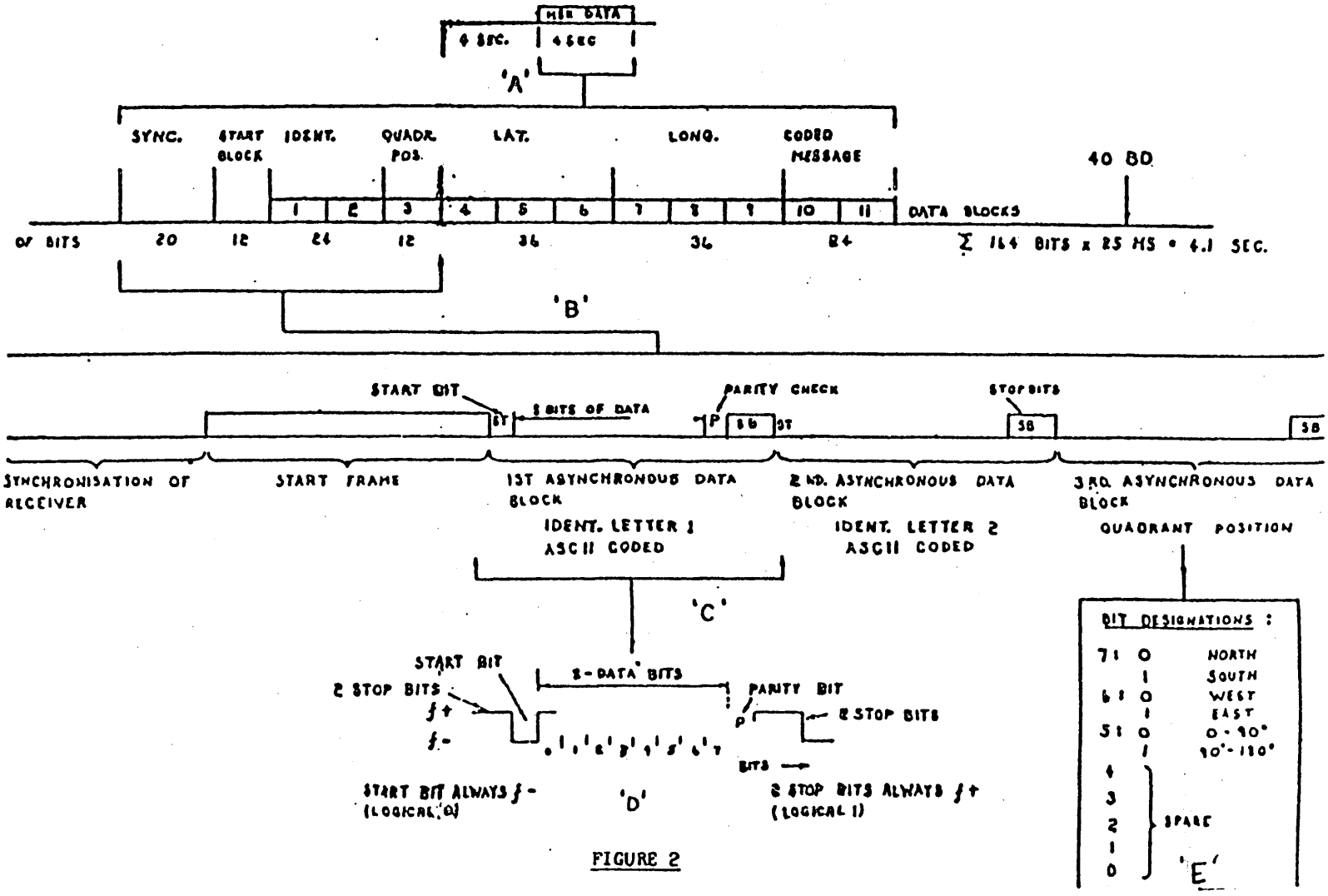


FIGURE 2

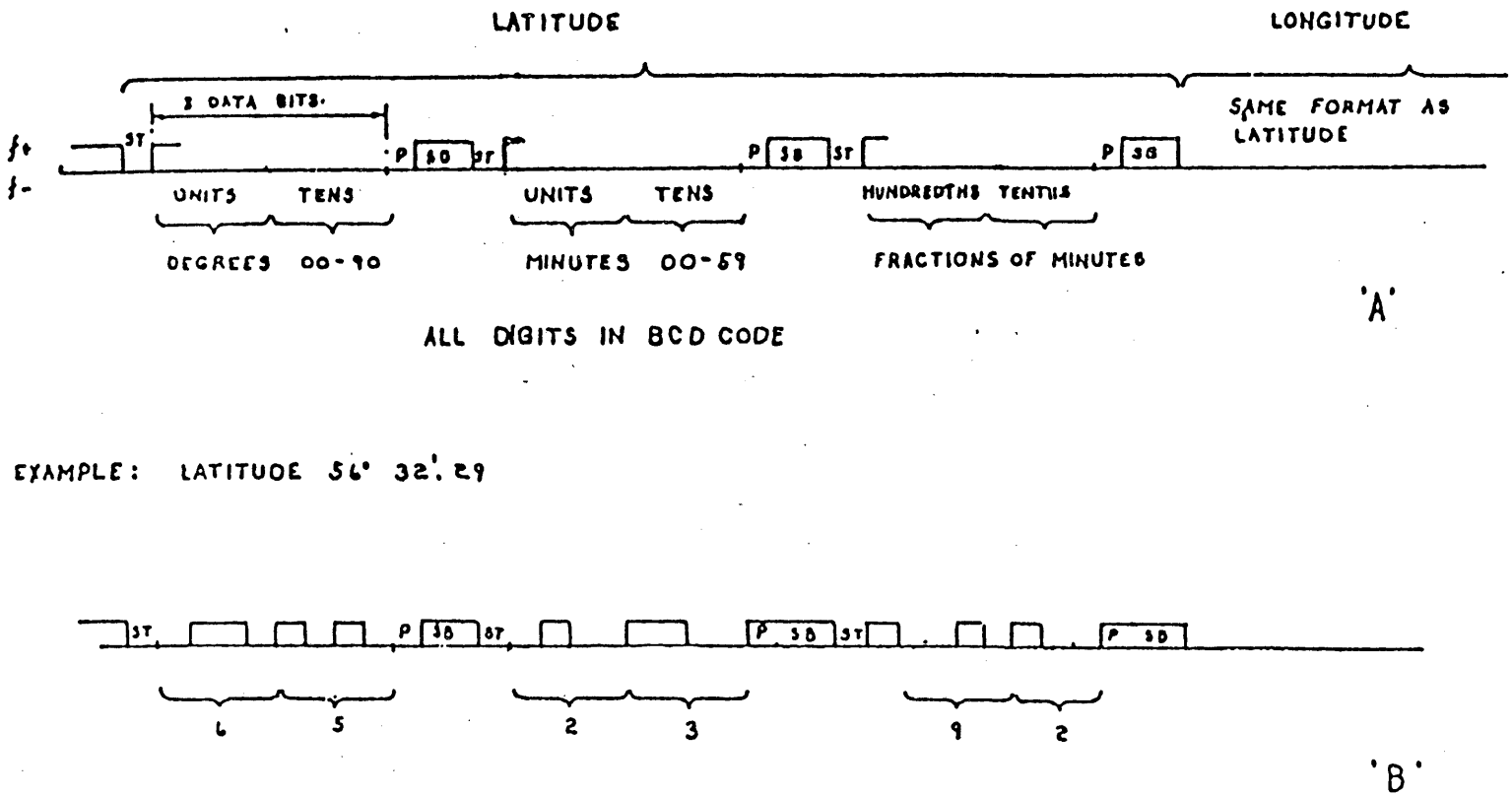

LATITUDE
LONGITUDE
3 DATA BITS
ST
P
SD
SAME FORMAT AS LATITUDE
UNITS
TENS
HUNDREDTHS
TENTHS
DEGREES 00-90
MINUTES 00-59
FRACTIONS OF MINUTES
'A'
ALL DIGITS IN BCD CODE
EXAMPLE: LATITUDE 56° 32'.29
6
5
2
3
9
2
'B'

FIGURE 3

UNION INTERNATIONALE DES TÉLÉCOMMUNICATIONS
CARR POUR LA PLANIFICATION DES FRÉQUENCES UTILISÉES PAR LES RADIOPHARES MARITIMES DANS LA ZONE EUROPÉENNE MARITIME
GENÈVE, MARS 1985

EUROP.

Corrigendum 1 à
l'Addendum 2 au
Document 1006-F/E/S
7 mars 1985

COMMISSION 5
COMMITTEE 5
COMISIÓN 5

Dans l'Annexe 3 à l'Addendum 2 au Document 1006 modifier la Remarque N° 1519 comme suit :

1519 MOD

a) Station d'étalonnage sur demande.

b) Sur 295,5 kHz fonctionne en Pologne un radiophare aéronautique omnidirectionnel à MIELEC (21E27 50N19) utilisant émission 2K00A2AAN, puissance 27 dBW et signal d'identification SA.

In Annex 3 of Addendum 2 to Document 1006, modify Remark No. 1519 as follows :

1519 MOD

a) Calibration station on request.

b) An omnidirectional aeronautical radiobeacon is operating on 295.5 kHz at MIELEC in Poland (21E27 50N19) using emission 2K00A2AAN, power 27 dBW and identification signal SA.

En el Anexo 3 del Addendum 2 al Documento 1006, modifíquese la Observación N.° 1519 como sigue:

1519 MOD

a) Estación de calibración a petición

b) En 295,5 kHz funcionan en Polonia un radiofaro aeronáutico omnidireccional en MIELEC (21E27 50N19) que utiliza la emisión 2K00A2AAN, potencia 27 dBW y señal de identificación SA.

Pour des raisons d'économie, ce document n'a été tiré qu'en un nombre restreint d'exemplaires. Les participants sont donc priés de bien vouloir apporter à la réunion leurs documents avec eux, car il n'y aura pas d'exemplaires supplémentaires disponibles.

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Addendum 2 to
Document 1006-E
5 March 1985
Original: French/
English/
Spanish

COMMITTEE 4

This addendum contains the information received by the Board, in response to IFRB Circular-letter No. 555 of 8 September 1983, between 11 February 1985 (date of establishment of Addendum 1 to Document 1006) and 5 March 1985. The presentation of the annexes is the same as that used in Document 1006.

The requirements are presented according to the following categories (with symbols used for identification appearing below the IFRB serial number):

MOD: Modification to a requirement published in Document 1006

SUP: Suppression of a requirement published in Document 1006

ADD: Requirement received or completed after the 11 February 1985

INCPL: Requirement for which the Board received incomplete information.

L.W. BARCLAY
Chairman of Committee 4

Annexes: 3

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.

ANNEX 1

Explanation of the symbols included in the list in Annex 2

IFRB No.	Serial number given by the IFRB for identification of the requirement.
COU	Country or geographical area in which the station is located.
ADM	Country symbol designating the Administration submitting the requirement.
TRANSMITTING-STATION	Name by which the station will be known.
COORDINATES	Geographical coordinates of the site of the transmitting antenna in degrees and minutes.
CL.	Class of station, NL = Maritime Radiobeacon.
NAT.	Nature of service.
IDENTIFIC.	Identification signal to be used by the station.
OP-HOURS	Hours of operation of the station (UTC).
EMISSION	Characteristics of the emission.
POWER	Power supplied to the antenna in dBW.
ANT-GAIN	In case of directional antenna, the maximum antenna gain.
AZIMUTH	In case of directional antenna, the azimuth of maximum radiation of the transmitting antenna; In case of non-directional antenna : ND.
BEAM-WIDTH	Angular width of radiation of the main lobe.
SERVICE AREA	In case of a circular service area : the geographical coordinates of the center and value of the radius; In case of a service area defined by points : the geographical coordinates of the points limiting the service area.
FREQUENCY-IN-USE	Frequency currently in use.
PREFERRED-BAND	Desired frequency band for the requirement.
REMARK	Identification number of the Remark, which appears in Annex 3.
COORDINATED OPER. WITH	Symbol(s) of administration(s) having station(s) with which the radiobeacon operates on a time-sharing basis.

RADIOPHARES MARITIMES * MARITIME RADIOBEACONS * RADIOFAROS MARITIMOS 1
LISTE DES BESOINS - PAR PAYS. * LIST OF REQUIREMENTS - BY CNTRY. * LISTA DE SOLICITUDES - POR PAIS. 03/06/85

IFRB NO.	COU ADM	TRANSMITTING-STATION COORDINATES	CL. NAT. IDENTIFIC.	OP-HOURS COORDINATED	EMISSION OP.CTRY.	POWER ANT-GAIN	AZIMUTH BEAMWIDTH	SERVICE AREA	FREQ-IN-USE PREF-BAND	REMARK
70680	ALB	VLORA NAVIGATION	NL RC	0000-2400	2K10A2AAN	Y 20.0 DBW	ND	019E29 40N27 100 KM	313.8000 KHZ	
ADD		019E29 40N27	VLO						284.0 314.5 KHZ	

RADIOPHARES MARITIMES * MARITIME RADIOBEACONS * RADIOFAROS MARITIMOS 2
LISTE DES BESOINS - PAR PAYS. * LIST OF REQUIREMENTS - BY CNTRY. * LISTA DE SOLICITUDES - POR PAIS. 03/06/85

IFRB NO.	COU ADM	TRANSMITTING-STATION COORDINATES	CL. NAT. IDENTIFIC.	OP-HOURS COORDINATED	EMISSION OP.CTRY.	POWER ANT-GAIN	AZIMUTH BEAMWIDTH	SERVICE AREA		FREQ-IN-USE PREF-BAND	REMARK
70587 MOD	ALG	CAP SIGLI 004E45 36N53	NL RC	0000-2400	2K10A2A	Y 26.0 DBW	ND	004E45 36N53	370 KM	313.5000 KHZ 284.0 284.0 KHZ	1540
70588 SUP	ALG	CAP DJINET 003E42 36N52	NL RC	0000-2400	2K10A2A	Y 17.0 DBW	ND	003E42 36N52	111 KM	288.1000 KHZ 284.0 284.0 KHZ	
70589 SUP	ALG	PHARE DE CHERCHELL 002E11 36N36	NL RC	0000-2400	2K10A2A	Y 17.0 DBW	ND	002E11 36N36	92 KM	297.3000 KHZ 284.0 284.0 KHZ	
70591 SUP	ALG	COLOMBIE 000E56 36N26	NL RC	0000-2400	2K10A2A	Y 17.0 DBW	ND	000E56 36N26	92 KM	288.1000 KHZ 284.0 284.0 KHZ	
70592 SUP	ALG	AIN BRAHIM PLAGE 000E48 36N22	NL RC	0000-2400	2K10A2A	Y 17.0 DBW	ND	000E48 36N22	100 KM	304.2000 KHZ 284.0 284.0 KHZ	
70595 SUP	ALG	LA SALAMANDRE 000W03 35N49	NL RC	0000-2400	2K10A2A	Y 17.0 DBW	ND	000W03 35N49	92 KM	292.7000 KHZ 284.0 284.0 KHZ	
70596 SUP	ALG	ILOT D'ARZEW 000W17 35N52	NL RC	0000-2400	2K10A2A	Y 17.0 DBW	ND	000W17 35N52	92 KM	290.4000 KHZ 284.0 284.0 KHZ	
70597 SUP	ALG	CAP FALCON 000W47 35N46	NL RC	0000-2400	2K10A2A	Y 17.0 DBW	ND	000W47 35N46	92 KM	311.1000 KHZ 284.0 284.0 KHZ	
70598 SUP	ALG	ILE SRIJINA 006E53 36N56	NL RC	0000-2400	2K10A2A	Y 17.0 DBW	ND	006E53 36N56	92 KM	301.9000 KHZ 284.0 284.0 KHZ	
70601 SUP	ALG	ILOT MANSOURIAH 005E28 36N40	NL RC	0000-2400	2K10A2A	Y 17.0 DBW	ND	005E28 36N40	92 KM	292.7000 KHZ 284.0 284.0 KHZ	
70602 SUP	ALG	CAP BENGUT 003E53 36N55	NL RC	0000-2400	2K10A2A	Y 17.0 DBW	ND	003E53 36N55	92 KM	295.0000 KHZ 284.0 284.0 KHZ	
70603 SUP	ALG	CAP CARBON 005E06 36N46	NL RC	0000-2400	2K10A2A	Y 17.0 DBW	ND	005E06 36N46	185 KM	290.4000 KHZ 284.0 284.0 KHZ	
70604 SUP	ALG	RAS EL AFIA 005E41 36N49	NL RC	0000-2400	2K10A2A	Y 17.0 DBW	ND	005E41 36N49	92 KM	299.6000 KHZ 284.0 284.0 KHZ	
70605 SUP	ALG	RAS ATIA 006E15 37N01	NL RC	0000-2400	2K10A2A	Y 17.0 DBW	ND	006E15 37N01	185 KM	304.2000 KHZ 284.0 284.0 KHZ	
70607 SUP	ALG	ILES HABIBAS 001W07 35N43	NL RC	0000-2400	2K10A2A	Y 17.0 DBW	ND	001W07 35N43	100 KM	306.5000 KHZ 284.0 284.0 KHZ	
70608 SUP	ALG	CAP MILONIA 002W36 35N06	NL RC	0000-2400	2K10A2A	Y 23.0 DBW	ND	002W36 35N06	100 KM	285.8000 KHZ 284.0 284.0 KHZ	
70609 MOD	ALG	CAP CAXINE 002E57 36N48	NL RC	0000-2400	2K10A2A	Y 26.0 DBW	ND	002E57 36N48	370 KM	313.5000 KHZ 284.0 284.0 KHZ	1541
70610 SUP	ALG	PHARE DE TIPAZA 002E27 36N36	NL RC	0000-2400	2K10A2A	Y 17.0 DBW	ND	002E27 36N36	92 KM	308.8000 KHZ 284.0 284.0 KHZ	

RADIOPHARES MARITIMES * MARITIME RADIOBEACONS * RADIOFAROS MARITIMOS 3
LISTE DES BESOINS - PAR PAYS. * LIST OF REQUIREMENTS - BY CNTRY. * LISTA DE SOLICITUDES - POR PAIS. 03/06/85

IFRB NO.	COU ADM	TRANSMITTING-STATION COORDINATES	CL. NAT. IDENTIFIC.	OP-HOURS COORDINATED	EMISSION OP.CTRY.	POWER ANT-GAIN	AZIMUTH BEAMWIDTH	SERVICE AREA		FREQ-IN-USE PREF-BAND	REMARK
70613 MOD	ALG	CAP DE FER 007E10 37N04	NL RC	0000-2400	2K10A2A	Y 26.0 DBW	ND	007E10 37N04	277 KM	313.5000 KHZ 284.0 284.0 KHZ	1542
70614 SUP	ALG	CAP TACOUCH 007E23 37N04	NL RC	0000-2400	2K10A2A	Y 17.0 DBW	ND	007E23 37N04	111 KM	288.1000 KHZ 284.0 284.0 KHZ	
70616 SUP	ALG	CAP ROSA 008E14 36N56	NL RC	0000-2400	2K10A2A	Y 17.0 DBW	ND	008E14 36N56	111 KM	306.5000 KHZ 284.0 284.0 KHZ	
70617 SUP	ALG	PORT D'EL KALA 008E26 36N54	NL RC	0000-2400	2K10A2A	Y 10.0 DBW	ND	008E26 36N54	37 KM	311.1000 KHZ 284.0 284.0 KHZ	
70618 SUP	ALG	GHAZAOUET PORT 001W52 35N05	NL RC	0000-2400	2K10A2A	Y 26.0 DBW	ND	001W52 35N05	277 KM	288.1000 KHZ 284.0 284.0 KHZ	

RADIOPHARES MARITIMES * MARITIME RADIOBEACONS * RADIOFAROS MARITIMOS 4
LISTE DES BESOINS - PAR PAYS. * LIST OF REQUIREMENTS - BY CNTRY. * LISTA DE SOLICITUDES - POR PAIS. 03/06/85

IFRB NO.	COU ADM	TRANSMITTING-STATION COORDINATES	CL. NAT. IDENTIFIC.	OP-HOURS COORDINATED	EMISSION OP.CTRY.	POWER ANT-GAIN	AZIMUTH BEAMWIDTH	SERVICE AREA	FREQ-IN-USE PREF-BAND	REMARK
70310 MOD	CYP	PERA BEACON 033E17 35N03	NL RC PR	0000-2400	100HA1A	X 27.0 DBW	ND	033E17 36N08 034E49 35N47 034E49 34N19 033E17 33N33 031E44 34N19 031E44 35N47	284.0 314.5 KHZ	

IFRB NO.	COU ADM	TRANSMITTING-STATION COORDINATES	CL. NAT. IDENTIFIC.	OP-HOURS COORDINATED	EMISSION OP.CTRY.	POWER ANT-GAIN	AZIMUTH BEAMWIDTH	SERVICE AREA		FREQ-IN-USE PREF-BAND	REMARK
70434	F	BLOSCON	NL RC	0000-2400	1K10A1AAN	Y 14.0 DBW	ND	003W58 48N43	20 KM	287.3000 KHZ	
MOD		003W58 48N43	BC							284.0 314.5 KHZ	
70435	F	C BEAR	NL RC	0000-2400	1K20A1AAN	Y 26.0 DBW	ND	003E08 42N31	100 KM	287.3000 KHZ	
MOD		003E08 42N31	BR							284.0 314.5 KHZ	
70436	F	LA PALLICE	NL RC	0000-2400	900HA1AAN	Y 14.0 DBW	ND	001W14 46N10	10 KM	287.3000 KHZ	
MOD		001W14 46N10	LP							284.0 314.5 KHZ	
70437	F	LAVEZZI PHARE	NL RC	0000-2400	1K70A1AAN	Y 14.0 DBW	ND	009E16 41N20	60 KM	287.3000 KHZ	
MOD		009E16 41N20	VZ							284.0 314.5 KHZ	
70438	F	PLANIER PHARE	NL RC	0000-2400	1K20A1AAN	Y 17.0 DBW	ND	005E14 43N12	185 KM	287.3000 KHZ	
MOD		005E14 43N12	PN							284.0 314.5 KHZ	
70439	F	SETE HT S CLAIR LH	NL RC	0000-2400	1K20A1AAN	Y 14.0 DBW	ND	003E41 43N24	100 KM	287.3000 KHZ	
MOD		003E41 43N24	SE							284.0 314.5 KHZ	
70440	F	BOULOGNE SUR MER	NL RD	0000-2400	2K10A1AAN	Y 20.0 DBW	101.0	001E36 50N44	10 KM	289.6000 KHZ 1224	
MOD		001E36 50N44	AN							284.0 314.5 KHZ	
70441	F	I DE GROIX PEN MEN	NL RC	0000-2400	2K10A1AAN	Y 20.0 DBW	ND	003W31 47N39	100 KM	289.6000 KHZ	
MOD		003W31 47N39	GX							284.0 314.5 KHZ	
70442	F	C S MATHIEU PHARE	NL RC	0000-2400	2K10A1AAN	Y 20.0 DBW	ND	004W46 48N20	100 KM	289.6000 KHZ	
MOD		004W46 48N20	SM							284.0 314.5 KHZ	
70443	F	COMBRIT PHARE	NL RC	0000-2400	2K10A1AAN	Y 14.0 DBW	ND	004W07 47N52	40 KM	289.6000 KHZ	
MOD		004W07 47N52	CT							284.0 314.5 KHZ	
70444	F	ECKMUHL PHARE	NL RC	0000-2400	2K10A1AAN	Y 14.0 DBW	ND	004W23 47N48	100 KM	289.6000 KHZ	
MOD		004W23 47N48	UH							284.0 314.5 KHZ	
70445	F	GIRONDE BATEAU BXA	NL RC	0000-2400	1K00A1AAN	Y 01.0 DBW	ND	001W29 45N40	10 KM	289.6000 KHZ	
MOD		001W29 45N40	BX							284.0 314.5 KHZ	
70446	F	S NAZAIRE S GILDAS	NL RC	0000-2400	2K10A1AAN	Y 14.0 DBW	ND	002W15 47N08	70 KM	289.6000 KHZ	
MOD		002W15 47N08	NZ							284.0 314.5 KHZ	
70447	F	ANTIFER PHARE	NL RC	0000-2400	1K30A1AAN	Y 17.0 DBW	ND	000E10 49N41	100 KM	291.9000 KHZ	
MOD		000E10 49N41	TI	G						284.0 314.5 KHZ	
70448	F	BY LH LE HAVRE	NL RC	0000-2400	1K30A1AAN	Y 14.0 DBW	ND	000W09 49N32	40 KM	291.9000 KHZ	
MOD		000W09 49N32	LH	G						284.0 314.5 KHZ	
70449	F	GATTEVILLE PHARE	NL RC	0000-2400	1K30A1AAN	Y 17.0 DBW	ND	001W16 49N42	130 KM	291.9000 KHZ	
MOD		001W16 49N42	FG	G						284.0 314.5 KHZ	
70450	F	LA ROCHELLE	NL RC	0000-2400	1K00A1AAN	Y 14.0 DBW	ND	001W48 46N30	10 KM	291.9000 KHZ	
MOD		001W10 46N09	RE							284.0 314.5 KHZ	
70451	F	LES SABLES OLONNE	NL RC	0000-2400	1K10A1AAN	Y 14.0 DBW	ND	001W48 46N30	10 KM	291.9000 KHZ	
MOD		001W48 46N30	SO							284.0 314.5 KHZ	

RADIOPHARES MARITIMES * MARITIME RADIOBEACONS * RADIOFAROS MARITIMOS 6
LISTE DES BESOINS - PAR PAYS. * LIST OF REQUIREMENTS - BY CNTRY. * LISTA DE SOLICITUDES - POR PAIS. 03/06/85

IFRB NO.	COU ADM	TRANSMITTING-STATION COORDINATES	CL. NAT. IDENTIFIC.	OP-HOURS COORDINATED	EMISSION OP.CTRY.	POWER ANT-GAIN	AZIMUTH BEAMWIDTH	SERVICE AREA		FREQ-IN-USE PREF-BAND	REMARK
70452 MOD	F	VER SUR MER PHARE 000W31 49N20	NL RC ER	0000-2400 G	1K30A1AAN Y	14.0 DBW	ND	000W31 49N20	40 KM	291.9000 KHZ 284.0 314.5 KHZ	
70453 MOD	F	BY LH DUNKERQUE 001E52 51N03	NL RC DK	0000-2400	1K20A1AAN Y	14.0 DBW	ND	001E52 51N03	20 KM	294.2000 KHZ 284.0 314.5 KHZ	
70454 MOD	F	GR JARDIN PHARE 002W05 48N40	NL RC GJ	0000-2400	700HA1AAN Y	14.0 DBW	ND	002W05 48N40	20 KM	294.2000 KHZ 284.0 314.5 KHZ	
70455 MOD	F	LA GAROUPE PHARE 007E08 43N34	NL RC GO	0000-2400	1K70A1AAN Y	23.0 DBW	ND	007E08 43N34	185 KM	294.2000 KHZ 284.0 314.5 KHZ	
70456 MOD	F	LA REVELLATA PHARE 008E44 42N35	NL RC RV	0000-2400	1K70A1AAN Y	23.0 DBW	ND	008E44 42N35	185 KM	294.2000 KHZ 284.0 314.5 KHZ	
70457 MOD	F	ROSEDO PHARE 003W00 48N51	NL RC DO	0000-2400	700HA1AAN Y	14.0 DBW	ND	003W00 48N51	20 KM	294.2000 KHZ 284.0 314.5 KHZ	
70458 MOD	F	SENETOSE PHARE 008E48 41N33	NL RC SE	0000-2400	1K70A1AAN Y	17.0 DBW	ND	008E48 41N33	185 KM	294.2000 KHZ 284.0 314.5 KHZ	
70459 MOD	F	C FERRET 001W15 44N39	NL RC FT	0000-2400 E	1K90A1AAN Y	17.0 DBW	ND	001W15 44N39	185 KM	296.5000 KHZ 284.0 314.5 KHZ	
70460 MOD	F	I VIERGE PHARE 004W34 48N38	NL RC VG	0000-2400 G	1K10A1AAN Y	17.0 DBW	ND	004W34 48N38	130 KM	298.8000 KHZ 284.0 314.5 KHZ	
70461 MOD	F	LE PILIER PHARE 002W22 47N03	NL RC PR	0000-2400	800HA1AAN Y	14.0 DBW	ND	002W22 47N03	20 KM	298.8000 KHZ 284.0 314.5 KHZ	
70462 MOD	F	ROCHES DOUVRES PHARE 002W50 49N06	NL RC RD	0000-2400 G	1K10A1AAN Y	17.0 DBW	ND	002W50 49N06	130 KM	298.8000 KHZ 284.0 314.5 KHZ	
70463 MOD	F	S GERVAIS 004E50 43N26	NL RC PG	0000-2400	1K10A1AAN Y	14.0 DBW	ND	004E50 43N26	20 KM	298.8000 KHZ 284.0 314.5 KHZ	
70464 MOD	F	BELLE ILE EN MER LH 003W14 47N19	NL RC BT	0000-2400	1K30A1AAN Y	23.0 DBW	ND	003W14 47N19	185 KM	303.4000 KHZ 284.0 314.5 KHZ	
70465 MOD	F	I DE SEIN PHARE 004W52 48N03	NL RC SN	0000-2400	1K30A1AAN Y	17.0 DBW	ND	004W52 48N03	130 KM	303.4000 KHZ 284.0 314.5 KHZ	
70466 MOD	F	LA COUBRE 001W14 45N42	NL RC LK	0000-2400	1K30A1AAN Y	17.0 DBW	ND	001W14 45N42	185 KM	303.4000 KHZ 284.0 314.5 KHZ	
70467 MOD	F	LES BALEINES PHARE 001W34 46N15	NL RC BN	0000-2400	1K35A1AAN Y	23.0 DBW	ND	001W34 46N15	100 KM	303.4000 KHZ 284.0 314.5 KHZ	
70468 MOD	F	CALAIS PHARE 001E51 50N58	NL RC CS	0000-2400 G BEL	1K20A1AAN Y	14.0 DBW	ND	001E51 50N58	40 KM	305.7000 KHZ 284.0 314.5 KHZ	
70469 MOD	F	C COURONNE PHARE 005E03 49N20	NL RC CR	0000-2400	1K00A1AAN Y	14.0 DBW	ND	005E03 49N20	100 KM	305.7000 KHZ 284.0 314.5 KHZ	

IFRB NO.	COU ADM	TRANSMITTING-STATION COORDINATES	CL. NAT. IDENTIFIC.	OP-HOURS COORDINATED	EMISSION OP.CTRY.	POWER ANT-GAIN	AZIMUTH BEAMWIDTH	SERVICE AREA		FREQ-IN-USE PREF-BAND	REMARK
70470 MOD	F	FREHEL PHARE 002W19 48N41	NL RC FE	0000-2400 G	1K70A1AAN	Y 14.0 DBW	ND	002W19 48N41	40 KM	305.7000 KHZ 284.0 314.5 KHZ	
70471 MOD	F	CREAC'H OUESSANT LH 005W08 48N28	NL RC CA	0000-2400 G IRL	2K10A1AAN	Y 23.0 DBW	ND	005W08 48N28	185 KM	308.0000 KHZ 284.0 314.5 KHZ	1225
70472 MOD	F	LA CHIAPPA PHARE 009E22 41N36	NL RC CP	0000-2400	1K50A1AAN	Y 23.0 DBW	ND	009E22 41N36	185 KM	308.0000 KHZ 284.0 314.5 KHZ	
70473 MOD	F	LA GIRAGLIA PHARE 009W24 43N02	NL RC GL	0000-2400	1K50A1AAN	Y 17.0 DBW	ND	009W24 43N02	185 KM	308.0000 KHZ 284.0 314.5 KHZ	
70474 MOD	F	PERTUSATO PHARE 009E11 41N22	NL RC PR	0000-2400	1K50A1AAN	Y 23.0 DBW	ND	009E11 41N22	185 KM	308.0000 KHZ 284.0 314.5 KHZ	
70475 MOD	F	PNT DE GRAVE LH 001W04 45N34	NL RC VR	0000-2400	900HA1AAN	Y 14.0 DBW	ND	001W04 45N34	10 KM	308.0000 KHZ 284.0 314.5 KHZ	
70476 MOD	F	AILLY PHARE 000E57 49N55	NL RC AL	0000-2400 G	1K50A1AAN	Y 17.0 DBW	ND	000E57 49N55	100 KM	310.3000 KHZ 284.0 314.5 KHZ	
70477 MOD	F	ALPRECH PHARE 001E34 50N42	NL RC PH	0000-2400 G	1K50A1AAN	Y 14.0 DBW	ND	001E34 50N42	40 KM	310.3000 KHZ 284.0 314.5 KHZ	
70478 MOD	F	GRIS NEZ PHARE 001E35 50N52	NL RC GN	0000-2400 G	1K50A1AAN	Y 17.0 DBW	ND	001E35 50N52	60 KM	310.3000 KHZ 284.0 314.5 KHZ	1225
70479 MOD	F	LSH LA BASSURELLE 000W58 50N34	NL RC UL	0000-2400 G	1K50A1AAN	Y 17.0 DBW	ND	000W58 50N34	100 KM	310.3000 KHZ 284.0 314.5 KHZ	
70480 MOD	F	CHERBOURG FT W LH 001W39 49N41	NL RC RB	0000-2400 G	2K10A1AAN	Y 14.0 DBW	ND	001W39 49N41	40 KM	312.6000 KHZ 284.0 314.5 KHZ	
70481 MOD	F	I D'YEU PHARE 002W23 46N43	NL RC YE	0000-2400 MRC	1K00A1AAN	Y 17.0 DBW	ND	002W23 46N43	186 KM	312.6000 KHZ 284.0 314.5 KHZ	1225
70482 MOD	F	CALAIS PT 001E51 50N28	NL RC CL	0000-2400	800HA1AAN	Y 14.0 DBW	ND	001E51 50N28	10 KM	313.5000 KHZ 284.0 314.5 KHZ	
70483 MOD	F	PORQUEROLLES PHARE 006E12 42N59	NL RC PQ	0000-2400 ALG TUN	30H0A1AAN	Y 26.0 DBW	ND	006E12 42N59	370 KM	313.5000 KHZ 284.0 314.5 KHZ	1225
70484 MOD	F	PT EN BESSIN PHARE 000W46 49N21	NL RC BS	0000-2400	1K10A1AAN	Y 14.0 DBW	ND	000W46 49N21	10 KM	313.5000 KHZ 284.0 314.5 KHZ	

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LISTE DES BESOINS - PAR PAYS. * LIST OF REQUIREMENTS - BY CNTRY. * LISTA DE SOLICITUDES - POR PAIS. 03/06/85

IFRB NO.	COU ADM	TRANSMITTING-STATION COORDINATES	CL. NAT. IDENTIFIC.	OP-HOURS COORDINATED	EMISSION OP.CTRY.	POWER ANT-GAIN	AZIMUTH BEAMWIDTH	SERVICE AREA	FREQ-IN-USE PREF-BAND	REMARK
70681	LBN	SAIDA	NL RC	0000-2400	1K70A2A	Y 27.0 DBW	ND	035E21 33N30 370 KM	296.5000 KHZ	
IFRB		035E21 33N30							284.0 314.5 KHZ	

RADIOPHARES MARITIMES * MARITIME RADIOBEACONS * RADIOFAROS MARITIMOS 9
LISTE DES BESOINS - PAR PAYS. * LIST OF REQUIREMENTS - BY CNTRY. * LISTA DE SOLICITUDES - POR PAIS. 03/06/85

IFRB NO.	COU ADM	TRANSMITTING-STATION COORDINATES	CL. NAT. IDENTIFIC.	OP-HOURS COORDINATED	EMISSION OP.CTRY.	POWER ANT-GAIN	AZIMUTH BEAMWIDTH	SERVICE AREA		FREQ-IN-USE PREF-BAND	REMARK
70665	LBY	TOBRUCK	NL RC	0000-2400	2K10A2A	Y 17.0 DBW	ND	024E00 32N02	111 KM	306.5000 KHZ	
ADD		024E00 32N02	TOU							284.0 314.5 KHZ	
70666	LBY	RASLANAUF	NL RC	0000-2400	2K10A2A	Y 17.0 DBW	ND	018E32 30N31	92 KM	311.1000 KHZ	
ADD		018E32 30N31	RL							284.0 314.5 KHZ	
70667	LBY	TARABULUS	NL RC	0000-2400	2K10A2A	Y 17.0 DBW	ND	013E12 32N53	111 KM	288.0000 KHZ	
ADD		013E12 32N53	TRI							284.0 314.5 KHZ	
70668	LBY	ESSIDERA	NL RC	0000-2400	2K10A2A	Y 24.7 DBW	ND	018E22 30N38	130 KM	301.1000 KHZ	
ADD		018E22 30N38	SD							284.0 314.5 KHZ	
70669	LBY	EZWETINA	NL RC	0000-2400	2K10A2A	Y 17.0 DBW	ND	020E08 30N57	92 KM	285.5000 KHZ	
ADD		020E08 30N57	ZWT							284.0 314.5 KHZ	
70670	LBY	ELBREGA	NL RC	0000-2400	2K10A2A	Y 17.0 DBW	ND	019E33 30N25	92 KM	295.0000 KHZ	
ADD		019E33 30N25	BG							284.0 314.5 KHZ	
70671	LBY	BENGAZI	NL RC	0000-2400	2K10A2A	Y 24.7 DBW	ND	020E03 32N07	370 KM	308.0000 KHZ	
ADD		020E03 32N07	BNG							284.0 314.5 KHZ	
70672	LBY	DERNA	NL RC	0000-2400	2K10A2A	Y 17.0 DBW	ND	022E40 32N46	185 KM	290.4000 KHZ	
ADD		022E40 32N46	DRN							284.0 314.5 KHZ	
70673	LBY	KHOMS	NL RC	0000-2400	2K10A2A	Y 21.7 DBW	ND	014E15 32N48	19 KM	312.6000 KHZ	
ADD		014E15 32N48	KMS							284.0 314.5 KHZ	
70674	LBY	MESURATA	NL RC	0000-2400	2K10A2A	Y 17.0 DBW	ND	015E13 32N22	92 KM	295.0000 KHZ	
ADD		015E13 32N22	MES							284.0 314.5 KHZ	
70675	LBY	ZUARA	NL RC	0000-2400	2K10A2A	Y 17.0 DBW	ND	012E26 32N49	92 KM	299.0000 KHZ	
ADD		012E26 32N49	ZUR							284.0 314.5 KHZ	

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LISTE DES BESOINS - PAR PAYS. * LIST OF REQUIREMENTS - BY CNTRY. * LISTA DE SOLICITUDES - POR PAIS. 03/06/85

IFRB NO.	COU ADM	TRANSMITTING-STATION COORDINATES	CL. NAT. IDENTIFIC.	OP-HOURS COORDINATED	EMISSION OP.CTRY.	POWER ANT-GAIN	AZIMUTH BEAMWIDTH	SERVICE AREA		FREQ-IN-USE PREF-BAND	REMARK
70376	MLT	MALTA RADIO	NL RC	0000-2400	100HA2AAN	Y 35.0 DBW	ND	014E24 35N49	370 KM	287.5000 KHZ	
MOD		014E24 35N52	00002400							284.0 314.5 KHZ	
70634	MLT	XLOKK RADIO	NL RC	0000-2400	100HA2AAN	Y 35.0 DBW	ND	014E24 35N49	200 KM		
MOD		014E32 35N49	9HJ							284.0 314.5 KHZ	

IFRB NO.	COU ADM	TRANSMITTING-STATION COORDINATES	CL. NAT. IDENTIFIC.	OP-HOURS COORDINATED	EMISSION OP.CTRY.	POWER ANT-GAIN	AZIMUTH BEAMWIDTH	SERVICE AREA		FREQ-IN-USE PREF-BAND	REMARK
70656	POL	GDYNIA	NL RC	0000-2400	900HA2AAN	Y 10.0 DBW	ND	018E34 54N32	19 KM	296.5000 KHZ 1519	
ADD		018E34 54N32	G							284.0 314.5 KHZ	
70657	POL	HEL	NL RC	0000-2400	1K30A2AAN	Y 10.0 DBW	ND	018E49 54N36	19 KM	306.5000 KHZ 1519	
ADD		018E49 54N36	H							284.0 314.5 KHZ	
70658	POL	KOLOBRZEG	NL RC	0000-2400	1K10A2AAN	Y 10.0 DBW	ND	015E33 54N11	08 KM	296.5000 KHZ 1519	
ADD		015E33 54N11	K							284.0 314.5 KHZ	
70659	POL	SWINOUJSCIE	NL RC	0000-2400	1K44A2AAN	Y 10.0 DBW	ND	014E17 53N55	19 KM	296.5000 KHZ 1519	
ADD		014E17 53N55	S							284.0 314.5 KHZ	
70660	POL	USTKA	NL RC	0000-2400	1K90A2AAN	Y 10.0 DBW	ND	014E17 53N55	20 KM	306.5000 KHZ 1519	
ADD		016E51 54N35								284.0 314.5 KHZ	

RADIOPHARES MARITIMES * MARITIME RADIOBEACONS * RADIOFAROS MARITIMOS 12
LISTE DES BESOINS - PAR PAYS. * LIST OF REQUIREMENTS - BY CNTRY. * LISTA DE SOLICITUDES - POR PAIS. 03/06/85

IFRB NO.	COU ADM	TRANSMITTING-STATION COORDINATES	CL. NAT. IDENTIFIC.	OP-HOURS COORDINATED	EMISSION OP.CTRY.	POWER ANT-GAIN	AZIMUTH BEAMWIDTH	SERVICE AREA	FREQ-IN-USE PREF-BAND	REMARK
70682	SYR	HASSAKEH	NL RC	0000-2400	2K04A2A	Y 30.0 DBW ND	040E45 36N30	80 KM	296.5000 KHZ	
IFRB		040E45 36N30							284.0 314.5 KHZ	

IFRB NO.	COU ADM	TRANSMITTING-STATION COORDINATES	CL. NAT. IDENTIFIC.	OP-HOURS COORDINATED	EMISSION OP.CTRY.	POWER ANT-GAIN	AZIMUTH BEAMWIDTH	SERVICE AREA	FREQ-IN-USE PREF-BAND	REMARK
70661	TUN	RAS TURGENESS	NL RC	0000-2400	100HA1A	X 20.0 DBW	ND	011E02 33N49 100 KM		
ADD		011E02 33N49	TR						284.0 314.5 KHZ	
70662	TUN	MAHDIA	NL RC	0000-2400	100HA1A	X 14.0 DBW	ND	009E12 35N51 100 KM		
ADD		009E12 35N51	MD						284.0 314.5 KHZ	
70663	TUN	PLATF FORME TAZARKA	NL RC	0600-2000	100HA1A	X 14.0 DBW	ND	011E40 36N36 70 KM	326.0000 KHZ 1522	
ADD		011E40 36N36	TZ						284.0 314.5 KHZ	
70664	TUN	LA GALITE	NL RC	0000-2400	100HA1A	X 20.0 DBW	ND	008E56 37N31 100 KM		
ADD		008E56 37N31	GL						284.0 314.5 KHZ	

IFRB NO.	COU ADM	TRANSMITTING-STATION COORDINATES	CL. NAT. IDENTIFIC.	OP-HOURS COORDINATED	EMISSION OP.CTRY.	POWER ANT-GAIN	AZIMUTH BEAMWIDTH	SERVICE AREA	FREQ-IN-USE PREF-BAND	REMARK
70377	TUR	HOPA	NL RC	0000-2400	2K10A2AAN Y	20.9 DBW ND	041E20 41N22	185 KM		1524
MOD		041E20 41N22	HP						284.0 314.5 KHZ	
70378	TUR	IGNE ADA	NL RC	0000-2400	2K10A2AAN Y	20.9 DBW ND	028E03 41N53	185 KM		1524
MOD		028E03 41N53	IA						284.0 314.5 KHZ	
70379	TUR	YASUN BURNU	NL RC	0000-2400	2K10A2AAN Y	20.9 DBW ND	037E41 41N08	185 KM		1526
MOD		037E41 41N08	YB						284.0 314.5 KHZ	
70380	TUR	BAFRA BURNU	NL RC	0000-2400	2K10A2AAN Y	20.9 DBW ND	035E56 41N43	185 KM		1536
MOD		035E56 41N43	BB						284.0 314.5 KHZ	
70381	TUR	SINOP INCEBURUN	NL RC	0000-2400	2K10A2AAN Y	20.9 DBW ND	034E56 42N06	185 KM		1525
MOD		034E56 42N06	SI						284.0 314.5 KHZ	
70382	TUR	KEREMPE BURNU	NL RC	0000-2400	2K10A2AAN Y	20.9 DBW ND	033E20 42N01	185 KM		1532
MOD		033E20 42N01	KB						284.0 314.5 KHZ	
70383	TUR	OLUCE BURNU	NL RC	0000-2400	2K10A2AAN Y	20.9 DBW ND	031E24 41N18	185 KM	301.1000 KHZ	1528
MOD		031E24 41N18	OB						284.0 314.5 KHZ	
70384	TUR	KEFREN ADA	NL RC	0000-2400	2K10A2AAN Y	22.4 DBW ND	030E17 41N13	278 KM	301.1000 KHZ	1533
MOD		030E17 41N13	KF						284.0 314.5 KHZ	
70385	TUR	RUMELI BURNU	NL RC	0000-2400	2K10A2AAN Y	26.9 DBW ND	029E06 41N13	278 KM	301.1000 KHZ	1527
MOD		029E06 41N13	RB						284.0 314.5 KHZ	
70386	TUR	MARMARA EREGLISI	NL RC	0000-2400	2K10A2AAN Y	20.9 DBW ND	027E57 40N58	185 KM		1531
MOD		027E57 40N58	HE						284.0 314.5 KHZ	
70387	TUR	FENERBAHCE	NL RC	0000-2400	2K10A2AAN Y	20.9 DBW ND	029E01 40N58	185 KM		1535
MOD		029E01 40N58	FB						284.0 314.5 KHZ	
70388	TUR	MEHMETCIK BURNU	NL RC	0000-2400	2K10A2AAN Y	20.9 DBW ND	026E10 40N02	185 KM		1530
MOD		026E10 40N02	HB						284.0 314.5 KHZ	
70389	TUR	IZMIR KARABURUN	NL RC	0000-2400	2K10A2AAN Y	20.9 DBW ND	026E31 38N39	185 KM		1534
MOD		026E31 38N39	IK						284.0 314.5 KHZ	
70390	TUR	FINIKE	NL RC	0000-2400	2K10A2AAN Y	24.7 DBW ND	030E09 36N16	556 KM	303.4000 KHZ	1538
MOD		030E09 36N16	FR						284.0 314.5 KHZ	
70391	TUR	MERSIN	NL RC	0000-2400	2K10A2AAN Y	20.9 DBW ND	034E37 36N47	185 KM		1529
MOD		034E37 36N47	MR						284.0 314.5 KHZ	
70392	TUR	AKINCI BURNU	NL RC	0000-2400	2K10A2AAN Y	20.9 DBW ND	035E47 36N19	185 KM		1537
MOD		035E47 36N19	AB						284.0 314.5 KHZ	
70683	TUR	TEKIR FENERI	NL RC	0000-2400	2K10A2AAN Y	20.9 DBW ND	027E22 36N41	185 KM		1524
ADD		027E22 36N41	TK						284.0 314.5 KHZ	
70684	TUR	INCEKUM BURNU	NL RC	0000-2400	2K10A2AAN Y	20.9 DBW ND	033E57 36N14	185 KM		
ADD		033E57 36N14	IB						284.0 314.5 KHZ	

RADIOPHARES MARITIMES * MARITIME RADIOBEACONS * RADIOFAROS MARITIMOS 15
LISTE DES BESOINS - PAR PAYS. * LIST OF REQUIREMENTS - BY CNTRY. * LISTA DE SOLICITUDES - POR PAIS. 03/06/85

IFRB NO.	COU ADM	TRANSMITTING-STATION COORDINATES	CL. NAT. IDENTIFIC.	OP-HOURS COORDINATED	EMISSION OP.CTRY.	POWER ANT-GAIN	AZIMUTH BEAMWIDTH	SERVICE AREA	FREQ-IN-USE PREF-BAND	REMARK
70685	TUR	ANAMUR BURNU	NL RC	0000-2400	2K10A2AAN	Y 20.9 DBW	ND	032E48 36N01 185 KM		1524
ADD		032E48 36N01	AN						284.0 314.5 KHZ	

IFRB NO.	COU ADM	TRANSMITTING-STATION COORDINATES	CL. NAT. IDENTIFIC.	OP-HOURS COORDINATLD	EMISSION OP.CTRY.	POWER ANT-GAIN	AZIMUTH BEAMWIDTH	SERVICE AREA		FREQ-IN-USE PREF-BAND	REMARK
70181 MOD	URS	IRBENSKIY 021E37 57N51	NL RC PM	0000-2400	100HA1AAN Y	20.0 DBW	ND	021E37 57N51	28 KM	309.5000 KHZ 309.5 309.5 KHZ	162
70183 MOD	URS	MERSRAGS 023E07 57N22	NL RC MR	0000-2400	100HA1AAN Y	20.0 DBW	ND	023E07 57N22	28 KM	291.5000 KHZ 291.5 291.5 KHZ	155
70184 MOD	URS	MIKELBAKA 021E59 57N36	NL RC MB	0000-2400	100HA1AAN Y	17.0 DBW	ND	021E59 57N36	35 KM	302.5000 KHZ 302.5 302.5 KHZ	159
70185 MOD	URS	VENTSPILS 021E33 57N24	NL RC WW	0000-2400	100HA1AAN X	24.0 DBW	ND	021E33 57N24	185 KM	312.5000 KHZ 312.5 312.5 KHZ	163
70186 MOD	URS	AKMENRAGS 021E04 56N50	NL RC AK	0000-2400	100HA1AAN Y	24.0 DBW	ND	021E04 56N50	185 KM	312.5000 KHZ 312.5 312.5 KHZ	163
70187 MOD	URS	LIEPAIA 021E00 56N31	NL RC LB	0000-2400	100HA1AAN Y	24.0 DBW	ND	021E00 56N31	225 KM	312.5000 KHZ 312.5 312.5 KHZ	163
70188 MOD	URS	KLAYPEDA 021E06 55N44	NL RC KA	0000-2400	100HA1AAN Y	24.0 DBW	ND	021E06 55N44	225 KM	312.5000 KHZ 312.5 312.5 KHZ	163
70190 MOD	URS	TARAN 019E59 54N58	NL RC BT	0000-2400	100HA1AAN Y	24.0 DBW	ND	019E59 54N58	225 KM	312.5000 KHZ 312.5 312.5 KHZ	163
70193 MOD	URS	AKHILLEONSKIY 036E47 45N26	NL RC AN	0000-2400	100HA1AAN Y	17.0 DBW	ND	036E47 45N26	47 KM	300.5000 KHZ 300.5 300.5 KHZ	158
70195 MOD	URS	ZHELEZNYY ROG 036E44 45N07	NL RC VR	0000-2400	100HA1AAN Y	20.0 DBW	ND	036E44 45N07	47 KM	315.5000 KHZ 315.5 315.5 KHZ	164
70196 MOD	URS	ANAPSKIY 037E18 44N53	NL RC AP	0000-2400	100HA1AAN Y	17.0 DBW	ND	037E18 44N53	28 KM	315.5000 KHZ 284.0 314.5 KHZ	164
70207 MOD	URS	KONUSHINSKIY 043E47 67N12	NL RC KO	0000-2400	100HA1AAN Y	20.0 DBW	ND	043E47 67N12	47 KM	303.5000 KHZ 303.5 303.5 KHZ	160
70210 MOD	URS	ABRAMOVSKIY 043E16 66N25	NL RC AB	0000-2400	100HA1AAN Y	20.0 DBW	ND	043E16 66N25	55 KM	291.5000 KHZ 291.5 291.5 KHZ	155
70218 MOD	URS	CHESMENSKIY 036E32 64N43	NL RC NM	0000-2400	100HA1AAN Y	20.0 DBW	ND	036E32 64N43	55 KM	300.5000 KHZ 300.5 300.5 KHZ	158
70219 MOD	URS	ZHUZHMUYSKIY 035E34 64N41	NL RC BR	0000-2400	100HA1AAN Y	17.0 DBW	ND	035E34 64N41	37 KM	309.5000 KHZ 309.5 309.5 KHZ	162
70225 MOD	URS	MIKULKIN 046E41 67N48	NL RC MK	0000-2400	100HA1AAN Y	20.0 DBW	ND	046E41 67N48	95 KM	297.5000 KHZ 297.5 297.5 KHZ	157
70227 MOD	URS	KOLGUYEV YUZNY 048E40 68N42	NL RC DG	0000-2400	100HA1AAN Y	20.0 DBW	ND	048E40 68N42	65 KM	303.5000 KHZ 303.5 303.5 KHZ	160
70676 ADD	URS	LJAMCHIN 059W07 69N52	NL RC NR	0000-2400	100HA1AAN Y	20.0 DBW	ND	059W07 69N52	30 KM	312.5000 KHZ 312.5 312.5 KHZ	

IFRB NO.	COU ADM	TRANSMITTING-STATION COORDINATES	CL. NAT. IDENTIFIC.	OP-HOURS COORDINATED	EMISSION OP.CTRY.	POWER ANT-GAIN	AZIMUTH BEAMWIDTH	SERVICE AREA		FREQ-IN-USE PREF-BAND	REMARK
70677	URS	SVJATONOSSKII	NL RC	0000-2400	2K10A2AAN	Y 24.0 DBW	ND	039W45 68N09	150 KM	312.5000 KHZ	
ADD		039W45 68N09	SV							312.5 312.5 KHZ	
70678	URS	SCHWEDSKII	NL RC	0000-2400	100HA1AAN	Y 17.0 DBW	ND	055W49 68N36	30 KM	309.5000 KHZ	
ADD		055W49 68N36	NT							309.5 309.5 KHZ	
70679	URS	MATVEEV	NL RC	0000-2400	2K10A2AAN	Y 24.0 DBW	ND	058W30 69N28	150 KM	294.5000 KHZ	
ADD		058W30 69N28	MA							294.5 294.5 KHZ	
70686	URS	GULJALVSKOII KOSCHKI	NL RC	0000-2400	100HA1AAN	Y 17.0 DBW	ND	055E32 68N54	15 KM	291.5000 KHZ	
ADD		055E32 68N54	RM							291.5 291.5 KHZ	
70687	URS	DAUGAVGRIVA	NL RC	0000-2400	2K10A2AAN	Y 20.0 DBW	ND	024W01 57N04	60 KM	318.5000 KHZ	
ADD		024W01 57N04	DG							284.0 314.5 KHZ	

IFRB NO.	COU ADM	TRANSMITTING-STATION COORDINATES	CL. NAT. IDENTIFIC.	OP-HOURS COORDINATED	EMISSION OP.CTRY.	POWER ANT-GAIN	AZIMUTH BEAMWIDTH	SERVICE AREA		FREQ-IN-USE PREF-BAND	REMARK
70654	YUG	DUBROVNIK	NL RC	0000-2400	100HA1A	Y 17.0 DBW	ND	018E07 42N38	10 KM	312.6000 KHZ	1352
ADD		018E07 42N38	YUX							284.0 314.5 KHZ	
70655	YUG	BAR	NL RC	0000-2400	100HA1A	Y 17.0 DBW	ND	019E09 42N01	10 KM	312.6000 KHZ	1352
ADD		019E09 42N01	YUW							284.0 314.5 KHZ	

ANNEX 3

REMARKS

Additional information given by Administrations when submitting their requirements

27 MOD a) The position of this radiobeacon is outside the European maritime area (as defined in RR405). However, the Conference is requested to consider this radiobeacon during the planning process as it makes part of a chain with two other nearby radiobeacons, these being within the EMA.

b) This radiobeacon will operate in accordance with IALA proposals and as a standard radiobeacon grouped with PONTA DA BARCA and RIBEIRINHA radiobeacons.

ADD

1352 Operating on request (for calibration).

1519 An omnidirectional aeronautical radiobeacon is operating on 295.5 kHz at MIELEC in Poland (21E27 50N19) using emission 2K00A2AAN, power 27 dBW and identification signal SA.

1522 In service since 1980.

1524 This station is under planning and will be operating singly.

1525 This station is under planning and will be operating in group of four with YASUN BURNU 9IFRB No. 70379), BAFRA BURNU (IFRB No. 70380) and KEREMPE BURNU (IFRB No. 70382).

1526 This station is under planning and will be operating in group of four with BAFRA BURNU (IFRB No. 70380), SINO INCEBURUN (IFRB No. 70381) and KEREMPE BURNU (IFRB No. 70382)

1527 This station is working and will be operating in group of three with OLUCE BURNU (IFRB No. 70383) and KEFREN ADA (IFRB No. 70384).

1528 This station is under planning and will be operating in group of three with KEFREN ADA (IFRB No. 70384) and RUMELI BURNU (IFRB No. 70385).

1529 This station is under planning and will be operating in group of two with AKINLI BURNU (IFRB No. 70392).

1530 This station is under planning and will be operating in group of two with IZMIR KARABURUN (IFRB No. 70389).

1531 This station is under planning and will be operating in group of two with FENERBAHCE (IFRB No. 70387).

1532 This station is under planning and will be operating in group of four with YASUN BURNU (IFRB No. 70379), BAFRA BURNU (IFRB No. 70380) and SINOP INCEBURUN (IFRB No. 70381).

1533 This station is working and will be operating in group of three with OLUCE BURNU (IFRB No. 70383) and RUMELI BURNU (IFRB No. 70385).

1534 This station is under planning and will be operating in group of two with MEHMETCIK BURNU (IFRB No. 70388).

1535 This station is under planning and will be operating in group of two with MARMARA EREGLISI (IFRB No. 70386).

1536 This station is under planning and will be operating in group of four with YASUN BURNU (IFRB No. 70379), SINOP ICEBURUN (IFRB No. 70381) and KEREMPE BURNU (IFRB No. 70382).

1537 This station is under planning and will be operating in group of two with MERSIN (IFRB No. 70391).

1538 This station is working and operating singly.

1540 Grouping with CAP CAXINE and CAP DE FER.

1541 Grouping foreseen with CAP DE FER and CAP SIGLI.

1542 Grouping with CAP CAXINE and CAP SIGLI.

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Addendum 1 to
Documento 1006-E
19 February 1985
Original: English
French
Spanish

PLENARY MEETING

Note by the Secretary-General

REPORT BY THE IFRB
TO THE REGIONAL ADMINISTRATIVE RADIO CONFERENCE FOR THE PLANNING OF FREQUENCIES FOR THE MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA

At the request of the International Frequency Registration Board, I transmit the attached Addendum to the IFRB Report for the information of the Conference.

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.

REPORT BY THE IFRB

This Addendum contains the information received by the Board, in response to IFRB Circular-letter No. 555 of 8 September 1983, between the 15 October 1984 (date of establishment of Document 1006) and 11 February 1985. The presentation of the Annexes is the same as that used in Document 1006.

The requirements are presented according to the following categories (with symbols used for identification appearing below the IFRB Serial Number):

MOD: Modification to a requirement published in Document 1006

SUP: Suppression of a requirement published in Document 1006

ADD: Requirement received or completed after the 15 October 1984

INCPL: Requirement for which the Board received incomplete information.

Annexes: 3

ANNEX 1

Explanation of the symbols included in the list in Annex 2

IFRB No.	Serial number given by the IFRB for identification of the requirement.
COU	Country or geographical area in which the station is located.
ADM	Country symbol designating the Administration submitting the requirement.
TRANSMITTING-STATION	Name by which the station will be known.
COORDINATES	Geographical coordinates of the site of the transmitting antenna in degrees and minutes.
CL.	Class of station, NL = Maritime Radiobeacon.
NAT.	Nature of service.
IDENTIFIC.	Identification signal to be used by the station.
OP-HOURS	Hours of operation of the station (UTC).
EMISSION	Characteristics of the emission.
POWER	Power supplied to the antenna in dBW.
ANT-GAIN	In case of directional antenna, the maximum antenna gain.
AZIMUTH	In case of directional antenna, the azimuth of maximum radiation of the transmitting antenna; In case of non-directional antenna : ND.
BEAM-WIDTH	Angular width of radiation of the main lobe.
SERVICE AREA	In case of a circular service area : the geographical coordinates of the center and value of the radius; In case of a service area defined by points : the geographical coordinates of the points limiting the service area.
FREQUENCY-IN-USE	Frequency currently in use.
PREFERRED-BAND	Desired frequency band for the requirement.
REMARK	Identification number of the Remark, which appears in Annex 5.
COORDINATED OPER. WITH	Symbol(s) of administration(s) having station(s) with which the radiobeacon operates on a time-sharing basis.

ALG

Algérie (République algérienne démocratique et populaire)
Algeria (People's Democratic Republic of)
Argelia (República Argelina Democrática y Popular)

70592	ALG	AIN BRAHIM PLAGE	NL	RC	0000-2400	2K10A2A	Y	17.0 dBW	ND	000E48 36N22	100 km	304.2000 kHz
ADD		000E48 36N22										
70600	ALG	BEJAIA	NL	RC	0000-2400	2K10A2A	Y	10.0 dBW	ND	005E06 36N45	18 km	285.8000 kHz
ADD		005E06 36N45										
70602	ALG	CAP BENGUT	NL	RC	0000-2400	2K10A2A	Y	17.0 dBW	ND	003E53 36N55	92 km	295.0000 kHz
ADD		003E53 36N55										
70620	ALG	CAP BOUGAROUN	NL	RC	0000-2400	2K10A2A	Y	17.0 dBW	ND	006E28 37N05	92 km	313.4000 kHz
ADD		006E28 37N05										
70603	ALG	CAP CARBON	NL	RC	0000-2400	2K10A2A	Y	17.0 dBW	ND	005E06 36N46	185 km	290.4000 kHz
ADD		005E06 36N46										
70609	ALG	CAP CAXINE	NL	RC	0000-2400	2K10A2A	Y	26.0 dBW	ND	002E57 36N48	370 km	313.4000 kHz
ADD		002E57 36N48										
70619	ALG	CAP COBELLIN	NL	RC	0000-2400	2K10A2A	Y	17.0 dBW	ND	004E25 36N54	92 km	306.5000 kHz
ADD		004E25 36N54										
70613	ALG	CAP DE FER	NL	RC	0000-2400	2K10A2A	Y	26.0 dBW	ND	007E10 37N04	277 km	285.8000 kHz
ADD		007E10 37N04										
70615	ALG	CAP DE GARDE	NL	RC	0000-2400	2K10A2A	Y	17.0 dBW	ND	007E47 36N58	92 km	295.0000 kHz
ADD		007E47 36N58										
70588	ALG	CAP DJINET	NL	RC	0000-2400	2K10A2A	Y	17.0 dBW	ND	003E42 36N52	111 km	288.1000 kHz
ADD		003E42 36N52										
70597	ALG	CAP FALCON	NL	RC	0000-2400	2K10A2A	Y	17.0 dBW	ND	000W47 35N46	92 km	311.1000 kHz
ADD		000W47 35N46										
70593	ALG	CAP IVI	NL	RC	0000-2400	2K10A2A	Y	17.0 dBW	ND	000E13 36N06	92 km	299.6000 kHz
ADD		000E13 36N06										
70612	ALG	CAP MATIFOU	NL	RC	0000-2400	2K10A2A	Y	17.0 dBW	ND	003E14 36N48	92 km	285.8000 kHz
ADD		003E14 36N48										
70608	ALG	CAP MILONIA	NL	RC	0000-2400	2K10A2A	Y	23.0 dBW	ND	002W36 35N06	100 km	285.8000 kHz
ADD		002W36 35N06										
70616	ALG	CAP ROSA	NL	RC	0000-2400	2K10A2A	Y	17.0 dBW	ND	008E14 36N56	111 km	306.5000 kHz
ADD		008E14 36N56										

REQUIREMENTS FOR MARITIME RADIOBEACONS
****

IFRB NO.	COU ALM	TRANSMITTING-STATION COORDINATES	CL. NAT. IDENTIFIC.	OP-HOURS	EMISSION		POWER ANT-GAIN	AZIMUTH BEAM-WIDTH	SERVICE AREA		FREQUENCY-IN-USE PREFERRED-BAND	REMARK	COORDINATED OPER. WITH
70587 ADD	ALG	CAP SIGLI 004E45 36N53	NL RC	0000-2400	2K10A2A	Y	26.0 dBW	ND	004E45 36N53	370 km	311.1000 kHz		
70614 ADD	ALG	CAP TACOUCH 007E23 37N04	NL RC	0000-2400	2K10A2A	Y	17.0 dBW	ND	007E23 37N04	111 km	288.1000 kHz		
70590 ADD	ALG	CAP TENES 001E20 36N33	NL RC	0000-2400	2K10A2A	Y	17.0 dBW	ND	001E20 36N33	92 km	290.4000 kHz		
70591 ADD	ALG	COLOMBIE 000E56 36N26	NL RC	0000-2400	2K10A2A	Y	17.0 dBW	ND	000E56 36N26	92 km	288.1000 kHz		
70618 ADD	ALG	GHAZAOUET PORT 001W52 35N05	NL RC	0000-2400	2K10A2A	Y	26.0 dBW	ND	001W52 35N05	277 km	288.1000 kHz		
70606 ADD	ALG	ILE RACHGOUN 001W28 35N19	NL RC	0000-2400	2K10A2A	Y	17.0 dBW	ND	001W28 35N19	92 km	295.0000 kHz		
70598 ADD	ALG	ILE SRIJINA 006E53 36N56	NL RC	0000-2400	2K10A2A	Y	17.0 dBW	ND	006E53 36N56	92 km	301.9000 kHz		
70607 ADD	ALG	ILES HABIBAS 001W07 35N43	NL RC	0000-2400	2K10A2A	Y	17.0 dBW	ND	001W07 35N43	100 km	306.5000 kHz		
70596 ADD	ALG	ILOT D'ARZEW 000W17 35N52	NL RC	0000-2400	2K10A2A	Y	17.0 dBW	ND	000W17 35N52	92 km	290.4000 kHz		
70601 ADD	ALG	ILOT MANSOURIAH 005E28 36N40	NL RC	0000-2400	2K10A2A	Y	17.0 dBW	ND	005E28 36N40	92 km	292.7000 kHz		
70595 ADD	ALG	LA SALAMANDRE 000W03 35N49	NL RC	0000-2400	2K10A2A	Y	17.0 dBW	ND	000W03 35N49	92 km	292.7000 kHz		
70589 ADD	ALG	PHARE DE CHERCHELL 002E11 36N36	NL RC	0000-2400	2K10A2A	Y	17.0 dBW	ND	002E11 36N36	92 km	297.3000 kHz		
70599 ADD	ALG	PHARE DE L'AIGUILLE 000W29 35N52	NL RC	0000-2400	2K10A2A	Y	26.0 dBW	ND	000W29 35N52	277 km	313.4000 kHz		
70610 ADD	ALG	PHARE DE TIPAZA 002E27 36N36	NL RC	0000-2400	2K10A2A	Y	17.0 dBW	ND	002E27 36N36	92 km	308.8000 kHz		
70611 ADD	ALG	PORT D'ALGER 003E04 36N48	NL RC	0000-2400	2K10A2A	Y	10.0 dBW	ND	003E04 36N48	37 km	301.9000 kHz		
70617 ADD	ALG	PORT D'EL KALA 008E26 36N54	NL RC	0000-2400	2K10A2A	Y	10.0 dBW	ND	008E26 36N54	37 km	311.1000 kHz		
70594 ADD	ALG	PORT DE MOSTAGANEM 000W04 35N56	NL RC	0000-2400	2K10A2A	Y	10.0 dBW	ND	000W04 35N56	28 km	285.8000 kHz		
70605 ADD	ALG	RAS ATIA 006E15 37N01	NL RC	0000-2400	2K10A2A	Y	17.0 dBW	ND	006E15 37N01	185 km	304.2000 kHz		

REQUIREMENTS FOR MARITIME RADIOBEACONS
****

IFRB NO.	COU ADM	TRANSMITTING-STATION COORDINATES	CL. NAT. IDENTIFIC.	OP-HOURS	EMISSION	POWER ANT-GAIN	AZIMUTH BEAM-WIDTH	SERVICE AREA	FREQUENCY-IN-USE PREFERRED-BAND	REMARK	COORDINATED OPER. WITH
70604 ADD	ALG	RAS EL AFIA 005E41 36N49	NL RC	0000-2400	2K10A2A	Y 17.0 dBW	ND	005E41 36N49 92 km	299.6000 kHz		

DNK

Danemark
Denmark
Dinamarca

70491 MOD	DNK	DROGDEN 012E43 55N32	NL RC	0000-2400	100HA1A	X 17.0 dBW	ND	012E43 55N32 90 km			

EGY

Egypte (République arabe d')
Egypt (Arab Republic of)
Egipto (República Árabe de)

70622 ADD	EGY	ALEXANDRIA 029E50 31N13	NL RC AL	0000-2400	850HA1A	X 25.4 dBW	ND	029E50 31N13 150 km		1329	
70627 ADD	EGY	ARISH 033E48 31N08	NL RC	0000-2400	850HA1A	X 25.4 dBW	ND	033E48 31N08 150 km		1330	
70624 ADD	EGY	DEMIETTA 031E51 31N31	NL RC DA	0000-2400	850HA1A	X 25.4 dBW	ND	031E51 31N31 150 km		1330	
70628 ADD	EGY	HURGADA 033E50 27N15	NL RC	0000-2400	850HA1A	X 25.4 dBW	ND	033E50 27N15 150 km		1331	
70625 ADD	EGY	PORT-SAID 032E17 31N16	NL RC PTS	0000-2400	850HA1A	X 17.0 dBW	ND	032E17 31N16 80 km		1330	
70630 INCPL	EGY	RAS EL SHEKEIN	NL RC	0000-2400	850HA1A	X 25.4 dBW	ND	150 km		1329	
70623 ADD	EGY	ROSETTA 030E21 31N30	NL RC RO	0000-2400	850HA1A	X 25.4 dBW	ND	030E21 31N30 150 km		1329	
70629 ADD	EGY	SAFAGA 033E57 26N45	NL RC	0000-2400	850HA1A	X 25.4 dBW	ND	033E57 26N45 150 km		1331	
70631 INCPL	EGY	SHAKER ISLAND	NL RC	0000-2400	850HA1A	X 25.4 dBW	ND	150 km		1331	

REQUIREMENTS FOR MARITIME RADIOBEACONS
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IFRB NO.	COU ADM	TRANSMITTING-STATION COORDINATES	CL. NAT. IDENTIFIC.	OP-HOURS	EMISSION		POWER ANT-GAIN	AZIMUTH BEAM-WIDTH	SERVICE AREA		FREQUENCY-IN-USE PREFERRED-BAND	REMARK	COORDINATED OPER. WITH
70626 ADD	EGY	TOR 033E35 28N15	NL RC TOR	0000-2400	850HA1A	X	17.0 dBW	ND	033E35 28N15	80 km		1329	

F

France
Francia

IFRB NO.	COU ADM	TRANSMITTING-STATION COORDINATES	CL. NAT. IDENTIFIC.	OP-HOURS	EMISSION		POWER ANT-GAIN	AZIMUTH BEAM-WIDTH	SERVICE AREA		FREQUENCY-IN-USE PREFERRED-BAND	REMARK	COORDINATED OPER. WITH
70435 MOD	F	C BEAR 003E08 42N31	NL RC BR	0000-2400	1K20A2AAN	Y	26.0 dBW	ND	003E08 42N31	100 km	287.3000 kHz		
70635 ADD	F	JOBOURG LA HAGUE 001W55 49N40	NL	0000-2400	H100N0N	X	0.3 dBW	ND	001W55 49N40	400 km	286.0000 kHz	146	
70636 ADD	F	OLONNE SUR MER 001W48 46N32	NL	0000-2400	H100N0N	X	0.3 dBW	ND	001W48 46N32	400 km	286.0000 kHz	146	
70637 ADD	F	PLEUMEUR GAUTHIER 003W10 48N48	NL	0000-2400	H100N0N	X	0.3 dBW	ND	003W10 48N48	400 km	286.0000 kHz	146	
70638 ADD	F	PLOMEUR 004W21 47N50	NL	0000-2400	H100N0N	X	0.3 dBW	ND	004W21 47N50	400 km	286.0000 kHz	146	
70639 ADD	F	PLOUDALMEZEAU 004W39 48N31	NL	0000-2400	H100N0N	X	0.3 dBW	ND	004W39 48N31	400 km	286.0000 kHz	146	
70640 ADD	F	PLOUHARNEL 003W06 47N37	NL	0000-2400	H100N0N	X	0.3 dBW	ND	003W06 47N37	400 km	286.0000 kHz	146	
70641 ADD	F	PONT DE BUIS 004W05 48N18	NL	0000-2400	H100N0N	X	0.3 dBW	ND	004W05 48N18	400 km	286.0000 kHz	146	
70642 ADD	F	SOULAC 001W07 45N32	NL	0000-2400	H100N0N	X	0.3 dBW	ND	001W07 45N32	400 km	286.0000 kHz	146	
70643 ADD	F	TARNOS 001W31 43N32	NL	0000-2400	H100N0N	X	0.3 dBW	ND	001W31 43N32	400 km	285.4000 kHz	146	
70644 ADD	F	TARNOS 001W31 43N32	NL	0000-2400	H100N0N	X	0.3 dBW	ND	001W31 43N32	400 km	285.4750 kHz	146	
70645 ADD	F	TARNOS 001W31 43N32	NL	0000-2400	H100N0N	X	0.3 dBW	ND	001W31 43N32	400 km	285.6000 kHz	146	
70646 ADD	F	TARNOS 001W31 43N32	NL	0000-2400	H100N0N	X	0.3 dBW	ND	001W31 43N32	400 km	286.0000 kHz	146	
70647 ADD	F	TARNOS 001W31 43N32	NL	0000-2400	H100N0N	X	0.3 dBW	ND	001W31 43N32	400 km	300.6000 kHz	146	

REQUIREMENTS FOR MARITIME RADIOBEACONS
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IFRB NO.	COU ADM	TRANSMITTING-STATION COORDINATES	CL. NAT. IDENTIFIC.	OP-HOURS	EMISSION	POWER ANT-GAIN	AZIMUTH BEAM-WIDTH	SERVICE AREA	FREQUENCY-IN-USE PREFERRED-BAND	REMARK	COORDINATED OPER. WITH
70648 ADD	F	TARNOS 001W31 43N32	NL	0000-2400	H100N0N	X 0.3 dBW	ND	001W31 43N32 400 km	306.8000 kHz	146	
70649 ADD	F	TARNOS 001W31 43N32	NL	0000-2400	H100N0N	X 0.3 dBW	ND	001W31 43N32 400 km	311.2000 kHz	146	
70650 ADD	F	TARNOS 001W31 43N32	NL	0000-2400	H100N0N	X 0.3 dBW	ND	001W31 43N32 400 km	313.0000 kHz	146	
70651 ADD	F	TARNOS 001W31 43N32	NL	0000-2400	H100N0N	X 0.3 dBW	ND	001W31 43N32 400 km	314.4000 kHz	146	

GRC

Grèce
Greece
Grecia

70584 INCPL	GRC	AXIOS 022E44 40N30	NL RD AWAE	0000-2400	700HA2AA	Y 23.0 dBW	160	022E44 40N30 20 km	287.3000 kHz		
70583 INCPL	GRC	THESSALONIKI 022E57 40N36	NL RD TNTS	0000-2400	1K00A2A	Y 23.0 dBW	230	022E57 40N36 20 km	308.0000 kHz		

IRL

Irlande
Ireland
Irlanda

70092 MOD	IRL	BALLYCOTTON LSTN 007W59 51N50	NL RC BN	0000-2400	2K30A2A	Y 21.7 dBW	ND	007W59 51N50 93 km	296.5000 kHz	330 G	
70093 MOD	IRL	BALLYCOTTON LSTN 007W59 51N50	NL RC BC	0900-1800	2K30A2A	Y 10.0 dBW	ND	007W59 51N50 9 km	312.6000 kHz 300 kHz	330	
70094 MOD	IRL	EAGLE ISLAND LSTN 010W06 54N17	NL RC GL	0000-2400	2K30A2A	Y 24.7 dBW	ND	010W06 54N17 370 km	308.0000 kHz	330 G F	
70096 MOD	IRL	KISH BANK LSTN 005W55 53N19	NL RC KH	0000-2400	2K30A2A	Y 21.7 dBW	ND	005W55 53N19 19 km	312.6000 kHz 300 kHz	330	
70098 MOD	IRL	LOOPHEAD LSTN 009W56 52N34	NL RC LP	0000-2400	2K30A2A	Y 24.7 dBW	ND	009W56 52N34 93 km	289.6000 kHz	330	

REQUIREMENTS FOR MARITIME RADIOBEACONS
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IFRB NO.	COU ADM	TRANSMITTING-STATION COORDINATES	CL. NAT. IDENTIFIC.	OP-HOURS	EMISSION	POWER ANT-GAIN	AZIMUTH BEAM-WIDTH	SERVICE AREA	FREQUENCY-IN-USE PREFERRED-BAND	REMARK	COORDINATED OPER. WITH
70104 MOD	IRL	TORY ISLAND LSTN 008W15 55N16	NL RC TY	0000-2400	2K30A2A	Y 24.7 dBW	ND	008W15 55N16 185 km	308.0000 kHz	330	G F
70106 MOD	IRL	WICKLOW HEAD LSTN 006W00 52N58	NL RC WK	0000-2400	2K30A2A	Y 24.7 dBW	ND	006W00 52N58 130 km	301.1000 kHz	330	G

MLT

Malte (République de)
Malta (Republic of)
Malta (República de)

IFRB NO.	COU ADM	TRANSMITTING-STATION COORDINATES	CL. NAT. IDENTIFIC.	OP-HOURS	EMISSION	POWER ANT-GAIN	AZIMUTH BEAM-WIDTH	SERVICE AREA	FREQUENCY-IN-USE PREFERRED-BAND	REMARK	COORDINATED OPER. WITH
70634 ADD	MLT	MALTARADIO 014E32 35N49	NL RC 9HD	0000-2400	100HA2AAN	Y 35.0 dBW	ND	014E24 35N49 800 km			

NOR

Norvège
Norway
Noruega

IFRB NO.	COU ADM	TRANSMITTING-STATION COORDINATES	CL. NAT. IDENTIFIC.	OP-HOURS	EMISSION	POWER ANT-GAIN	AZIMUTH BEAM-WIDTH	SERVICE AREA	FREQUENCY-IN-USE PREFERRED-BAND	REMARK	COORDINATED OPER. WITH
70422 MOD	NOR	TENNHOLMEN 013E30 67N18	NL RC HO	0000-2400	100HA1A	X 20.0 dBW	ND	013E30 67N18 92 km			

ROU

Roumanie (République socialiste de)
Romania (Socialist Republic of)
Rumania (República Socialista de)

IFRB NO.	COU ADM	TRANSMITTING-STATION COORDINATES	CL. NAT. IDENTIFIC.	OP-HOURS	EMISSION	POWER ANT-GAIN	AZIMUTH BEAM-WIDTH	SERVICE AREA	FREQUENCY-IN-USE PREFERRED-BAND	REMARK	COORDINATED OPER. WITH
70247 SUP	ROU	CONSTANTA 028E40 44N10	NL RC CTA	0000-2400	2K00A2AAN	Y 27.0 dBW	ND	028E40 44N10 200 km			
70652 ADD	ROU	CONSTANTA 028E38 44N10	NL RC CT	0000-2400	100HA1A	X 23.0 dBW	ND	028E38 44N10 185 km	291.5000 kHz		
70245 SUP	ROU	MANGALIA 028E36 43N40	NL RC MGL	0000-2400	2K00A2AAN	Y 27.0 dBW	ND	028E36 43N40 200 km			

REQUIREMENTS FOR MARITIME RADIOBEACONS
****

IFRB NO.	COU ADM	TRANSMITTING-STATION COORDINATES	CL. NAT. IDENTIFIC.	OP-HOURS	EMISSION	POWER ANT-GAIN	AZIMUTH BEAM-WIDTH	SERVICE AREA	FREQUENCY-IN-USE PREFERRED-BAND	REMARK	COORDINATED OPER. WITH
70249 SUP	ROU	SFINTU GHEORGHE 029E36 44N54	NL RC SGH	0000-2400	2K00A2AAN	Y 27.0 dBW	ND	029E36 44N54 200 km			
70653 ADD	ROU	SFINTU GHEORGHE 029E36 45N00	NL RC SG	0000-2400	100HA1A	X 20.0 dBW	ND	029E36 45N00 365 km	291.5000 kHz		
70248 SUP	ROU	SULINA 029E40 45N10	NL RC SLN	0000-2400	2K00A2AAN	Y 27.0 dBW	ND	029E40 45N10 200 km			
70246 SUP	ROU	TUZLA 028E39 44N01	NL RC TZL	0000-2400	2K00A2AAN	Y 27.0 dBW	ND	028E39 44N01 200 km			
S						**Suède Sweden Suecia**					
70345 MOD	S	OELANDS SOEDRA GRUND 016E41 56N04	NL RC OG	0000-2400	30H0A1A	X 20.0 dBW	ND	016E41 56N04 130 km	298.8000 kHz	425	
TUN						**Tunisie Tunisia Túnez**					
70632 ADD	TUN	EL ATTAYA 011E18 34N44	NL RC KR	0000-2400	850HA2AAN	Y 23.0 dBW	ND	011E18 34N44 185 km	308.0000 kHz		

REQUIREMENTS FOR MARITIME RADIOBEACONS
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IFRB NO.	COU AIM	TRANSMITTING-STATION COORDINATES	CL. NAT. IDENTIFIC.	OP-HOURS	EMISSION	POWER ANT-GAIN	AZIMUTH BEAM-WIDTH	SERVICE AREA	FREQUENCY-IN-USE PREFERRED-BAND	REMARK	COORDINATED OPER. WITH

URS

Union des Républiques socialistes soviétiques
Union of Soviet Socialist Republics
Unión de Repúblicas Socialistas Soviéticas

70185	URS	VENTSPILS	NL RC	0000-2400	100HA1BAN	X	24.0 dBW	ND	021E33 57N24	185 km	312.5000 kHz	163	
MOD		021E33 57N24	WW										

ANNEX 3

REMARKS

Supplied by the Administrations in relation to their requirements

330 MOD
a) Calibration beacons at Ballycotton, Kish and Mizen Head (IFRB Nos. 70093, 70097 and 70100) should be assigned frequencies as close to 300 kHz as possible.
b) As calibration facilities are achieved at Kish by reducing the power of the main beacon (IFRB Nos. 70096 and 70097) these beacons should also be assigned a frequency close to 300 kHz if possible.
c) Existing emission designations have been listed in each instance. Should the Conference decide on different emission modes as expected from IALA plans the Administration of Ireland would adopt the new modes subject to satisfactory implementation timescales.
d) Stations at Rockabill and Hook Point are new stations and are only required if the new IALA plan is implemented.

Present Grouping Arrangments	Proposed Grouping Arrangements
Barra Head (G)	Barra Head (G)
Tory Island (IRL)	Tory Island (IRL)
Eagle Island (IRL)	Eagle Island (IRL)
Mizen Head (IRL)	-------
Round Island (G)	Mizen Head (IRL)
Creach D'Ouessant (F)	Round Island (G)
-------	Isle de Sein (F)
Slyne Head (IRL)	-------
Loop Head (IRL)	Slyne Head (IRL)
-------	Loop Head (IRL)
Ballycotton (IRL)	-------
Old Head Kinsale (IRL)	Old Head Kinsale (IRL)
Lundy Island (G)	Ballycotton (IRL)
Flat Holm (G)	*Hook Point (IRL)
South Bishop (G)	-------
Tuskar Rock (IRL)	Tuskar Rock (IRL)
-------	South Bishop (G)
Skerries (G)	Bardsey (G)
Bardsey (G)	-------
Wicklow Head (IRL)	Wicklow Head (IRL)
Gregneish (G)	Skerries (G)
Point of Ayre (G)	*Rockabill (IRL)
South Rock LV (G)	-------
-------	Kish Bank (IRL)
Kish Bank (IRL)	

* New Stations

1329 ADD
a) Desired frequency: 303.4 kHz.
b) Designation of emission: 850HA1A and 850HA2A.

1330 ADD
a) Desired frequency: 310.4 kHz.
b) Designation of emission: 850HA1A and 850HA2A.

1331 ADD
a) Desired frequency: 296.6 kHz.
b) Designation of emission: 850HA1A and 850HA2A.

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document 1006-E
27 November 1984
Original : English
French
Spanish

PLENARY MEETING

Note by the Secretary-General

REPORT BY THE IFRB
TO THE REGIONAL ADMINISTRATIVE RADIO CONFERENCE
FOR THE PLANNING OF FREQUENCIES FOR THE MARITIME RADIOBEACONS
IN THE EUROPEAN MARITIME AREA

At the request of the International Frequency Registration Board, I transmit the attached IFRB Report for the information of the Conference.

R.E. BUTLER
Secretary-General

Annex : 1

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.

A N N E X

Report by the IFRB to the Regional Administrative Radio Conference for the Planning of Frequencies for the Maritime Radiobeacons in the European Maritime Area

On the basis of Recommendation No. 602 (Rev.MOB-83) of the WARC-MOB-83, the Administrative Council, in its Resolution No. 898, instructed the IFRB to invite the administrations of the European Maritime Area to communicate their requirements for maritime radiobeacons using the information listed in the appropriate sections of Appendix 1 to the Radio Regulations.

2. The Board, in its Circular-letter No. 555 of 8 September 1983, requested the administrations of the European Maritime Area to submit their requirements for the preparation of the Conference. These requirements concerned maritime radiobeacons in the frequency band 283.5 - 315 kHz. Annex 2 to the above circular-letter contained the form to be used when submitting the requirements to the IFRB.

3. The purpose of the present Report is to communicate to the Conference the information received in response to the above circular-letter. Annex 2 to the present Report contains the list of requirements for maritime radiobeacons in the frequency band 283.5 - 315 kHz. This list is arranged in country order and in alphabetical order of station names, and therein are included all those requirements which were found complete by 15 October 1984 according to the form of notice previously sent to administrations. The incomplete requirement notices for which the Board receives the necessary complementary information before the Conference will be issued in a supplement to the present Report. Annex 1 to the present Report contains explanation of the information included in the columns of the list in Annex 2 as well as the meaning of the symbols or abbreviations used in the column headings.

4. The Board compiled the remarks or other information that the administrations supplied in relation with the requirements. These remarks are reproduced in Annex 3 to the present Report. The serial number of the remarks serves as cross-reference to the remark column of the corresponding requirement in the list of Annex 2.

5. Resolves 2.2 of Resolution No. 898 of the Administrative Council requests the Conference "to afford appropriate protection to frequency assignments to stations of other services to which these bands are also allocated when establishing the Plan for the maritime radionavigation service". The Board is currently preparing a list of the assignments concerned by the above provision and will communicate it to the Conference in another Report.

Annexes:
1) Explanation of the information included in the columns of the list in Annex 2.
2) List of requirements for maritime radiobeacons.
3) List of remarks.

Annex 1

Explanation of the symbols included in the list in Annex 2

IFRB NO.	Serial number given by the IFRB for identification of the requirement.
COU	Country or geographical area in which the station is located.
ADM	Country symbol designating the Administration submitting the requirement.
TRANSMITTING-STATION	Name by which the station will be known.
COORDINATES	Geographical coordinates of the site of the transmitting antenna in degrees and minutes.
CL.	Class of station, NL = Maritime Radiobeacon.
NAT.	Nature of service.
IDENTIFIC.	Identification signal to be used by the station.
OP-HOURS	Hours of operation of the station (UTC).
EMISSION	Characteristics of the emission.
POWER	Power supplied to the antenna in dBW.
ANT-GAIN	In case of directional antenna, the maximum antenna gain.
AZIMUTH	In case of directional antenna, the azimuth of maximum radiation of the transmitting antenna; In case of non-directional antenna : ND.
BEAM-WIDTH	Angular width of radiation of the main lobe.
SERVICE AREA	In case of a circular service area : the geographical coordinates of the center and value of the radius; In case of a service area defined by points : the geographical coordinates of the points limiting the service area.
FREQUENCY-IN-USE	Frequency currently in use.
PREFERRED-BAND	Desired frequency band for the requirement.
REMARK	Identification number of the Remark, which appears in Annex 5.
COORDINATED OPER. WITH	Symbol(s) of administration(s) having station(s) with which the radiobeacon operates on a time-sharing basis.

REQUIREMENTS FOR MARITIME RADIOBEACONS
****

IFRB NO.	COU ADM	TRANSMITTING-STATION COORDINATES	CL. NAT. IDENTIFIC.	OP-HOURS	EMISSION		POWER ANT-GAIN	AZIMUTH BEAM-WIDTH	SERVICE AREA		FREQUENCY-IN-USE PREFERRED-BAND	REMARK	COORDINATED OPER. WITH
		ALB					**Albanie (République populaire socialiste d') Albania (Socialist People's Republic of) Albania (República Popular Socialista de)**						
70485	ALB	DURRES NAVIGATION 019E26 41N27	NL RC DRS	0000-2400	2K10A2AAN	Y	20.0 dBW	ND	019E26 41N27	100 km	294.2000 kHz	1226	
		AZR					**Açores Azores**						
70289	AZR POR	ALBARNAZ 031W14 39N31	NL RC BZ	0000-2400	304HF1B	X	26.0 dBW	ND	031W14 39N31	370 km		27	
70292	AZR POR	ARNEL 025W08 37N49	NL RC AR	0000-2400	304HF1B	X	20.0 dBW	ND	025W08 37N49	185 km		34	
70290	AZR POR	CONTENDAS 027W05 38N39	NL RC CN	0000-2400	304HF1B	X	20.0 dBW	ND	027W05 38N39	185 km		28	
70291	AZR POR	GONZALO VELHO 025W01 36N57	NL RC GV	0000-2400	304HF1B	X	26.0 dBW	ND	025W01 36N57	370 km		33	
70287	AZR POR	PONTA DA BARCA 028W03 39N06	NL RC BR	0000-2400	304HF1B	X	26.0 dBW	ND	028W03 39N06	370 km		25	
70288	AZR POR	RIBEIRINHA 028W36 38N36	NL RC RI	0000-2400	304HF1B	X	26.0 dBW	ND	028W36 38N36	370 km		26	

REQUIREMENTS FOR MARITIME RADIOBEACONS
****

IFRB NO.	COU ADM	TRANSMITTING-STATION COORDINATES	CL. NAT. IDENTIFIC.	OP-HOURS	EMISSION		POWER ANT-GAIN	AZIMUTH BEAM-WIDTH	SERVICE AREA		FREQUENCY-IN-USE PREFERRED-BAND	REMARK	COORDINATED OPER. WITH
BEL							**Belgique Belgium Bélgica**						
70488	BEL	NIEUWPOORT PHARE 002E43 51N09	NL RC NP	0000-2400	1K50A2A	Y	15.0 dBW	ND	002E43 51N09	10 km	296.5000 kHz		
70487	BEL	OOSTENDE PHARE 002E55 51N14	NL RC OE	0000-2400	1K50A2A	Y	15.0 dBW	ND	002E55 51N14	60 km	305.7000 kHz		
70489	BEL	WESTHINDER BF PHARE 002E26 51N23	NL RC WH	0000-2400	1K50A2A	Y	15.0 dBW	ND	002E43 51N09	40 km	305.7000 kHz		
70486	BEL	ZEEBRUGGEPHARE 003E12 51N20	NL RC ZB	0000-2400	1K50A2A	Y	15.0 dBW	ND	003E12 51N20	10 km	296.5000 kHz		
BUL							**Bulgarie (République populaire de) Bulgaria (People's Republic of) Bulgaria (República Popular de)**						
70511	BUL	MASLEN NOS 027E50 42N18	NL RC MN	0000-2400	100HA2HA	Y	24.0 dBW	ND	027E50 42N18	100 km	291.5000 kHz		
70510	BUL	NOS EMINE 027E54 42N41	NL RC MN	0000-2400	100HA2HA	Y	24.0 dBW	ND	027E54 42N41	100 km			
70509	BUL	NOS KALIAKRA 028E30 43N21	NL RC MN	0000-2400	100HA2HA	Y	24.0 dBW	ND	028E30 43N21	100 km			

REQUIREMENTS FOR MARITIME RADIOBEACONS
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IFRB NO.	COU ADM	TRANSMITTING-STATION COORDINATES	CL. NAT. IDENTIFIC.	OP-HOURS	EMISSION	POWER ANT-GAIN	AZIMUTH BEAM-WIDTH	SERVICE AREA	FREQUENCY-IN-USE PREFERRED-BAND	REMARK	COORDINATED OPER. WITH
CYP		**Chypre (République de) Cyprus (Republic of) Chipre (República de)**									
70310	CYP	PERA BEACON 033E17 35N03	NL RC PR	0000-2400	2K10A2A	Y 33.0 dBW	ND	033E17 36N08 034E49 35N47 034E49 34N19 033E17 33N33 031E44 34N19 031E44 35N47			
D		**Allemagne ((République fédérale d') Germany (Federal Republic of) Alemania (República Federal de)**									
70502	D	ALTE WESER 008E08 53N52	NL RC AR	0000-2400	50H0A1A	X 19.0 dBW	ND	008E08 53N52 37 km	291.9000 kHz	1296	
70496	D	BORKUM 006E40 53N35	NL RC BE	0000-2400	50H0A1A	X 19.0 dBW	ND	006E40 53N35 92 km	298.8000 kHz	1294	HOL
70500	D	BORKUMRIFF 006E22 53N47	NL RC BF	0000-2400	50H0A1A	X 19.0 dBW	ND	006E22 53N47 37 km	308.0000 kHz		
70508	D	DAMESHOEVED 011E00 54N12	NL RC DH	0000-2400	50H0A1A	X 19.0 dBW	ND	011E00 54N12 92 km		1299	
70503	D	DEUTSCHE BUCHT FS 007E26 54N11	NL RC DB	0000-2400	50H0A1A	X 19.0 dBW	ND	007E26 54N11 37 km	308.0000 kHz	1297	
70501	D	ELBE 1 FS 008E07 54N00	NL RC EL	0000-2400	50H0A1A	X 19.0 dBW	ND	008E07 54N00 37 km	308.0000 kHz		
70497	D	FEHMARNBELT 011E09 54N36	NL RC FE	0000-2400	50H0A1A	X 19.0 dBW	ND	011E09 54N36 37 km	294.2000 kHz		
70505	D	GROSSER VOGELSAND 008E29 54N00	NL RC VS	0000-2400	50H0A1A	X 19.0 dBW	ND	008E29 54N00 92 km	301.1000 kHz	1298	
70504	D	HELGOLAND 007E53 54N11	NL RC HE	0000-2400	50H0A1A	X 19.0 dBW	ND	007E53 54N11 92 km	397.2000 kHz	1298	
70492	D	KALKGRUND 009E53 54N50	NL RC FS	0000-2400	50H0A1A	X 19.0 dBW	ND	009E53 54N50 92 km	310.3000 kHz	1292	DNK

REQUIREMENTS FOR MARITIME RADIOBEACONS
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IFRB NO.	COU ADM	TRANSMITTING-STATION COORDINATES	CL. NAT. IDENTIFIC.	OP-HOURS	EMISSION		POWER ANT-GAIN	AZIMUTH BEAM-WIDTH	SERVICE AREA		FREQUENCY-IN-USE PREFERRED-BAND	REMARK	COORDINATED OPER. WITH
70493	D	KIEL 010E16 54N30	NL RC KI	0000-2400	50H0A1A	X	19.0 dBW	ND	010E16 54N30	92 km	294.2000 kHz	1292	DNK
70498	D	MARIENLEUCHTE 011E14 54N30	NL RC MR	0000-2400	50H0A1A	X	19.0 dBW	ND	011E14 54N30	92 km	294.2000 kHz	1295	
70499	D	NEULAND 010E36 54N22	NL RC NL	0000-2400	50H0A1A	X	19.0 dBW	ND	010E36 54N22	92 km	294.2000 kHz	1295	
70495	D	ROTE KLIFF 008E21 54N57	NL RC RF	0000-2400	50H0A1A	X	19.0 dBW	ND	008E21 54N57	92 km	301.1000 kHz	1293	DNK
70507	D	TRAVEMUENDE 010E53 53N58	NL RC TD	0000-2400	50H0A1A	X	19.0 dBW	ND	010E53 53N58	92 km	301.1000 kHz	1299	
70506	D	WANGEROOGE 007E51 53N47	NL RC WE	0000-2400	50H0A1A	X	19.0 dBW	ND	007E51 53N47	92 km	291.9000 kHz	1298	
70494	D	WESTERHEVERSAND 008E38 54N22	NL RC WS	0000-2400	50H0A1A	X	19.0 dBW	ND	008E38 54N22	92 km		1293	DNK

DDR

République démocratique allemande
German Democratic Republic
República Democrática Alemana

70075	DDR	STUBBENKAMMER 013E38 54N35	NL RC SR	0000-2400	2K10A2N	Y	23.0 dBW	ND	013E38 54N35	90 km	287.3000 kHz		POL
70074	DDR	WARNEMUENDE 012E05 54N11	NL RC WN	0000-2400	2K10A2N	Y	15.0 dBW	ND	012E05 54N11	35 km	303.4000 kHz		DNK

REQUIREMENTS FOR MARITIME RADIOBEACONS
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DNK

Danemark
Denmark
Dinamarca

IFRB NO.	COU ADM	TRANSMITTING-STATION COORDINATES	CL. NAT. IDENTIFIC.	OP-HOURS	EMISSION	POWER ANT-GAIN	AZIMUTH BEAM-WIDTH	SERVICE AREA	FREQUENCY-IN-USE PREFERRED-BAND	REMARK	COORDINATED OPER. WITH
70276	DNK	AARHUS 010E13 56N10	NL RC	0000-2400	100HA1A	X 17.0 dBW	ND	010E13 56N10 90 km			
70272	DNK	ALS 010E11 55N05	NL RC	0000-2400	100HA1A	X 17.0 dBW	ND	010E11 55N05 90 km			D
70266	DNK	ANHOLT KNOB 011E53 56N45	NL RC	0000-2400	100HA1A	X 17.0 dBW	ND	011E53 56N45 90 km			S
70285	DNK	BLAAVANOSHUK 008E05 55N34	NL RC	0000-2400	100HA1A	X 17.0 dBW	ND	008E05 55N34 90 km			D
70491	DNK	DROGDEN 012E49 55N32	NL RC	0000-2400	100HA1A	X 17.0 dBW	ND	012E43 55N32 90 km			
70277	DNK	FORNAES 010E56 56N25	NL RC	0000-2400	100HA1A	X 17.0 dBW	ND	010E56 56N25 90 km			
70280	DNK	FREDERIKSHAVN 010E33 57N26	NL RC	0000-2400	100HA1A	X 17.0 dBW	ND	010E33 57N26 90 km			
70278	DNK	HALS BARRE 010E26 56N57	NL RC	0000-2400	100HA1A	X 17.0 dBW	ND	010E26 56N57 90 km			
70269	DNK	HAMMERODDE 014E46 55N18	NL RC	0000-2400	100HA1A	X 17.0 dBW	ND	014E46 55N18 90 km			S
70282	DNK	HANSTHOLM 008E36 57N07	NL RC	0000-2400	100HA1A	X 17.0 dBW	ND	008E36 57N07 90 km			
70271	DNK	HESTEHOVED 012E10 54N50	NL RC	0000-2400	100HA1A	X 17.0 dBW	ND	012E10 54N50 90 km			DDR
70265	DNK	HIRSHOLM 010E38 57N29	NL RC	0000-2400	100HA1A	X 17.0 dBW	ND	010E38 57N29 90 km			S
70264	DNK	HIRTSHALS 009E57 57N35	NL RC	0000-2400	100HA1A	X 17.0 dBW	ND	009E57 57N35 90 km			S
70281	DNK	HIRTSHALS HAVN 009E58 57N36	NL RC	0000-2400	100HA1A	X 17.0 dBW	ND	009E58 57N36 90 km			
70279	DNK	LAESOE RENDE 010E49 57N13	NL RC	0000-2400	100HA1A	X 17.0 dBW	ND	010E49 57N13 90 km			

REQUIREMENTS FOR MARITIME RADIOBEACONS
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IFRB NO.	COU ADM	TRANSMITTING-STATION COORDINATES	CL. NAT. IDENTIFIC.	OP-HOURS	EMISSION	POWER ANT-GAIN	AZIMUTH BEAM-WIDTH	SERVICE AREA	FREQUENCY-IN-USE PREFERRED-BAND	REMARK	COORDINATED OPER. WITH
70284	DNK	LYNGVIG 008E09 56N15	NL RC	0000-2400	100HA1A	X 17.0 dBW	ND	008E09 56N15 90 km			
70270	DNK	MON 012E47 54N48	NL RC	0000-2400	100HA1A	X 17.0 dBW	ND	012E47 54N48 90 km			DDR
70267	DNK	NAKKEHOVED 012E21 56N07	NL RC	0000-2400	100HA1A	X 17.0 dBW	ND	012E21 56N07 90 km			S
70273	DNK	ROENAES 010E52 55N45	NL RC	0000-2400	100HA1A	X 17.0 dBW	ND	010E52 55N45 90 km			
70275	DNK	SJAELLANOS REV 011E12 56N06	NL RC	0000-2400	100HA1A	X 17.0 dBW	ND	011E12 56N06 90 km			
70263	DNK	SKAGEN 010E35 57N44	NL RC	0000-2400	100HA1A	X 17.0 dBW	ND	010E35 57N44 90 km			S
70274	DNK	SLETTERHAGE 010E31 56N06	NL RC	0000-2400	100HA1A	X 17.0 dBW	ND	010E31 56N06 90 km			
70268	DNK	STEVNS KLINT 012E28 55N18	NL RC	0000-2400	100HA1A	X 17.0 dBW	ND	012E28 55N18 90 km			
70283	DNK	THYBOROEN 008E13 56N43	NL RC	0000-2400	100HA1A	X 17.0 dBW	ND	008E13 56N43 90 km			

E

Espagne
Spain
España

IFRB NO.	COU ADM	TRANSMITTING-STATION COORDINATES	CL. NAT. IDENTIFIC.	OP-HOURS	EMISSION	POWER ANT-GAIN	AZIMUTH BEAM-WIDTH	SERVICE AREA	FREQUENCY-IN-USE PREFERRED-BAND	REMARK	COORDINATED OPER. WITH
70165	E	ADRA 003W02 36N45	NL RC AD	0000-2400	600HA2A	Y 23.0 dBW	ND	003W02 36N45 90 km		382	
70130	E	ALBORAN 003W02 35N56	NL RC ALB	0000-2400	100HA1A	Y 20.0 dBW	ND	003W02 35N56 50 km	519.0000 kHz		
70166	E	C BLANCO 002E47 39N22	NL RC CB	0000-2400	600HA2A	Y 23.0 dBW	ND	002E47 39N22 90 km		383	
70148	E	C DE GATA 002W11 36N43	NL RC TA	0000-2400	600HA2A	Y 23.0 dBW	ND	002W11 36N43 90 km	298.8000 kHz	366	
70133	E	C DE LA NAO 000E14 38N44	NL RC NO	0000-2400	600HA2A	Y 23.0 dBW	ND	000E14 38N44 90 km	294.2000 kHz	352	ALG
70169	E	C DE LAS HUERTAS 000W24 38N21	NL RC DH	0000-2400	600HA2A	Y 23.0 dBW	ND	000W24 38N21 185 km		386	

REQUIREMENTS FOR MARITIME RADIOBEACONS
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IFRB NO.	COU ADM	TRANSMITTING-STATION COORDINATES	CL. NAT. IDENTIFIC.	OP-HOURS	EMISSION	POWER ANT-GAIN	AZIMUTH BEAM-WIDTH	SERVICE AREA	FREQUENCY-IN-USE PREFERRED-BAND	REMARK	COORDINATED OPER. WITH
70132	E	C DE PALOS 000W41 37N38	NL RC PA	0000-2400	600HA2A	Y 23.0 dBW	ND	000W41 37N38 90 km	294.2000 kHz	351	ALG
70135	E	C ESTAY 008W49 42N11	NL RC VS	0000-2400	600HA2A	Y 23.0 dBW	ND	008W49 42N11 90 km	296.5000 kHz		
70136	E	C FINISTERRE 009W16 42N53	NL RC FI	0000-2400	600HA2A	Y 23.0 dBW	ND	009W16 42N53 185 km	310.3000 kHz	354	
70134	E	C MACHICHACO 002W45 43N27	NL RC MA	0000-2400	600HA2A	Y 23.0 dBW	ND	002W45 43N27 185 km	296.5000 kHz	353	F
70131	E	C MAYOR 003W47 43N29	NL RC MY	0000-2400	600HA2A	Y 23.0 dBW	ND	003W47 43N29 90 km	296.5000 kHz	350	F
70150	E	C PENAS 005W51 43N39	NL RC PS	0000-2400	600HA2A	Y 23.0 dBW	ND	005W51 43N39 90 km	301.1000 kHz	368	
70153	E	C PRIORINO CHICO 008W20 43N27	NL RC C	0000-2400	600HA2A	Y 23.0 dBW	ND	008W20 43N27 90 km	305.7000 kHz	370	
70146	E	C SALOU 001E10 41N03	NL RC UD	0000-2400	600HA2A	Y 23.0 dBW	ND	001E10 41N03 90 km	298.8000 kHz	364	
70143	E	C SAN SEBASTIAN 003E12 41N53	NL RC SN	0000-2400	600HA2A	Y 23.0 dBW	ND	003E12 41N53 90 km	291.9000 kHz	361	
70155	E	C SILLEIRO 008W54 42N06	NL RC RO	0000-2400	600HA2A	Y 23.0 dBW	ND	008W54 42N06 185 km	310.3000 kHz	372	
70138	E	C TRAFALGAR 006W02 36N11	NL RC B	0000-2400	600HA2A	Y 23.0 dBW	ND	006W02 36N11 90 km	289.6000 kHz	356	
70156	E	C VILLANO 009W13 43N10	NL RC VI	0000-2400	600HA2A	Y 23.0 dBW	ND	009W13 43N10 185 km	310.3000 kHz	373	
70145	E	CALA FIGUERA 002E31 39N27	NL RC FI	0000-2400	600HA2A	Y 23.0 dBW	ND	002E31 39N27 90 km	298.8000 kHz	363	
70144	E	CASTELLON 000E01 39N58	NL RC AS	0000-2400	600HA2A	Y 23.0 dBW	ND	000E01 39N58 90 km	298.8000 kHz	362	
70158	E	CASTRO URDIALES 003W13 43N23	NL RC E	0000-2400	600HA2A	Y 23.0 dBW	ND	003W13 43N23 90 km		375	
70152	E	CEUTA 005W18 35N54	NL RC CE	0000-2400	600HA2A	Y 23.0 dBW	ND	005W18 35N54 90 km	305.7000 kHz		
70140	E	CHIPIONA 006W26 36N44	NL RC CH	0000-2400	600HA2A	Y 23.0 dBW	ND	006W26 36N44 90 km	289.6000 kHz	358	
70151	E	ESTACA DE BARES 007W41 43N47	NL RC BA	0000-2400	600HA2A	Y 23.0 dBW	ND	007W41 43N47 185 km	301.1000 kHz	369	

REQUIREMENTS FOR MARITIME RADIOBEACONS
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IFRB NO.	COU ADM	TRANSMITTING-STATION COORDINATES	CL. NAT. IDENTIFIC.	OP-HOURS	EMISSION	POWER ANT-GAIN	AZIMUTH BEAM-WIDTH	SERVICE AREA	FREQUENCY-IN-USE PREFERRED-BAND	REMARK	COORDINATED OPER. WITH
70167	E	FAVARITX 004E16 40N00	NL RC TX	0000-2400	600HA2A	Y 23.0 dBW	ND	004E16 40N00 90 km		384	
70162	E	ISLA TAPIA 006W57 43N34	NL RC T	0000-2400	600HA2A	Y 23.0 dBW	ND	006W57 43N34 90 km		379	
70149	E	LLANES 004W45 43N25	NL RC IA	0000-2400	600HA2A	Y 23.0 dBW	ND	004W45 43N25 90 km	301.1000 kHz	367	
70160	E	LUARCA 006W32 43N33	NL RC R	0000-2400	600HA2A	Y 23.0 dBW	ND	006W32 43N33 90 km		377	
70142	E	MAHON 004E18 39N52	NL RC MH	0000-2400	600HA2A	Y 23.0 dBW	ND	004E18 39N52 185 km	291.9000 kHz	360	
70147	E	MALAGA 004W25 36N43	NL RC GA	0000-2400	600HA2A	Y 23.0 dBW	ND	004W25 36N43 90 km	298.8000 kHz	365	
70168	E	MESA DE ROLDAN 001W54 36N56	NL RC MR	0000-2400	600HA2A	Y 23.0 dBW	ND	001W54 36N56 90 km		385	
70164	E	PNT CARNERO 005W26 36N05	NL RC N	0000-2400	600HA2A	Y 23.0 dBW	ND	005W26 36N05 90 km		381	
70141	E	PNT LLOBREGAT 002E09 41N19	NL RC OR	0000-2400	600HA2A	Y 23.0 dBW	ND	002E09 41N19 90 km	291.9000 kHz	359	
70159	E	PNT SILLA 004W24 43N24	NL RC I	0000-2400	600HA2A	Y 23.0 dBW	ND	004W24 43N24 90 km		376	
70163	E	ROMPIDO 007W08 37N13	NL RC P	0000-2400	600HA2A	Y 23.0 dBW	ND	007W08 37N13 90 km		380	
70139	E	ROTA 006W23 36N38	NL RC D	0000-2400	600HA2A	Y 23.0 dBW	ND	006W23 36N38 148 km	289.6000 kHz	357	
70161	E	SACRATIF 003W28 36N41	NL RC SC	0000-2400	600HA2A	Y 23.0 dBW	ND	003W28 36N41 185 km		378	
70157	E	SENOCOZULUA 001W56 43N20	NL RC Z	0000-2400	600HA2A	Y 23.0 dBW	ND	001W56 43N20 90 km		374	
70137	E	TARIFA 005W36 36N00	NL RC O	0000-2400	600HA2A	Y 23.0 dBW	ND	005W36 36N00 90 km	289.6000 kHz	355	
70154	E	TORRE DE HERCULES 008W24 43N23	NL RC I	0000-2400	600HA2A	Y 23.0 dBW	ND	008W24 43N23 90 km	305.7000 kHz	371	

REQUIREMENTS FOR MARITIME RADIOBEACONS
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F

France
Francia

IFRB NO.	COU ADM	TRANSMITTING-STATION COORDINATES	CL. NAT. IDENTIFIC.	OP-HOURS	EMISSION		POWER ANT-GAIN	AZIMUTH BEAM-WIDTH	SERVICE AREA		FREQUENCY-IN-USE PREFERRED-BAND	REMARK	COORDINATED OPER. WITH
70476	F	AILLY PHARE 000E57 49N55	NL RC AL	0000-2400	1K50A2AAN	Y	17.0 dBW	ND	000E57 49N55	100 km	310.3000 kHz		G
70477	F	ALPRECH PHARE 001E34 50N42	NL RC PH	0000-2400	1K50A2AAN	Y	14.0 dBW	ND	001E34 50N42	40 km	310.3000 kHz		G
70447	F	ANTIFER PHARE 000E10 49N41	NL RC TI	0000-2400	1K30A2AAN	Y	17.0 dBW	ND	000E10 49N41	100 km	291.9000 kHz		G
70464	F	BELLE ILE EN MER LH 003W14 47N19	NL RC BT	0000-2400	1K30A2AAN	Y	23.0 dBW	ND	003W14 47N19	185 km	303.4000 kHz		
70434	F	BLOSCON 003W58 48N43	NL RC BC	0000-2400	1K10A2AAN	Y	14.0 dBW	ND	003W58 48N43	20 km	287.3000 kHz		
70440	F	BOULOGNE SUR MER 001E36 50N44	NL RD AN	0000-2400	2K10A2AAN	Y	20.0 dBW	101.3 5.00	001E36 50N44	10 km	289.6000 kHz	1224	
70453	F	BY LH DUNKERQUE 001E52 51N03	NL RC DK	0000-2400	1K20A2AAN	Y	14.0 dBW	ND	001E52 51N03	20 km	294.2000 kHz		
70448	F	BY LH LE HAVRE 000W09 49N32	NL RC LH	0000-2400	1K30A2AAN	Y	14.0 dBW	ND	000W09 49N32	40 km	291.9000 kHz		G
70435	F	C BEAR 003E08 42N31	NL RC BR	0000-2400	1K20A2AAN	Y	26.0 dBW	ND	003W08 42N31	100 km	287.3000 kHz		
70469	F	C COURONNE PHARE 005E03 49N20	NL RC CR	0000-2400	1K00A2AAN	Y	14.0 dBW	ND	005E03 49N20	100 km	305.7000 kHz		
70459	F	C FERRET 001W15 44N39	NL RC FT	0000-2400	1K90A2AAN	Y	17.0 dBW	ND	001W15 44N39	185 km	296.5000 kHz		E
70442	F	C S MATHIEU PHARE 004W46 48N20	NL RC SM	0000-2400	2K10A2AAN	Y	20.0 dBW	ND	004W46 48N20	100 km	289.6000 kHz		
70468	F	CALAIS PHARE 001E51 50N58	NL RC CS	0000-2400	1K20A2AAN	Y	14.0 dBW	ND	001E51 50N58	40 km	305.7000 kHz		G BEL
70482	F	CALAIS PT 001E51 50N28	NL RC CL	0000-2400	800HA2AAN	Y	14.0 dBW	ND	001E51 50N28	10 km	313.5000 kHz		
70480	F	CHERBOURG FT W LH 001W39 49N41	NL RC RB	0000-2400	2K10A2AAN	Y	14.0 dBW	ND	001W39 49N41	40 km	312.6000 kHz		G

REQUIREMENTS FOR MARITIME RADIOBEACONS
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IFRB NO.	COU ADM	TRANSMITTING-STATION COORDINATES	CL. NAT. IDENTIFIC.	OP-HOURS	EMISSION		POWER ANT-GAIN	AZIMUTH BEAM-WIDTH	SERVICE AREA		FREQUENCY-IN-USE PREFERRED-BAND	REMARK	COORDINATED OPER. WITH
70443	F	COMBRIT PHARE 004W07 47N52	NL RC CT	0000-2400	2K10A2AAN	Y	14.0 dBW	ND	004W07 47N52	40 km	289.6000 kHz		
70471	F	CREAC´H OUESSANT LH 005W08 48N28	NL RC CA	0000-2400	2K10A2AAN	Y	23.0 dBW	ND	005W08 48N28	185 km	308.0000 kHz	1225	G IRL
70444	F	ECKMUHL PHARE 004W23 47N48	NL RC UH	0000-2400	2K10A2AAN	Y	14.0 dBW	ND	004W23 47N48	100 km	289.6000 kHz		
70470	F	FREHEL PHARE 002W19 48N41	NL RC FE	0000-2400	1K70A2AAN	Y	14.0 dBW	ND	002W19 48N41	40 km	305.7000 kHz		G
70449	F	GATTEVILLE PHARE 001W16 49N42	NL RC FG	0000-2400	1K30A2AAN	Y	17.0 dBW	ND	001W16 49N42	130 km	291.9000 kHz		G
70445	F	GIRONDE BATEAU BXA 001W29 45N40	NL RC BX	0000-2400	1K00A2AAN	Y	1.0 dBW	ND	001W29 45N40	10 km	289.6000 kHz		
70454	F	GR JARDIN PHARE 002W05 48N40	NL RC GJ	0000-2400	700HA2AAN	Y	14.0 dBW	ND	002W05 48N40	20 km	294.2000 kHz		
70478	F	GRIS NEZ PHARE 001E35 50N52	NL RC GN	0000-2400	1K50A2AAN	Y	17.0 dBW	ND	001E35 50N52	60 km	310.3000 kHz	1225	G
70481	F	I D´YEU PHARE 002W23 46N43	NL RC YE	0000-2400	1K00A2AAN	Y	17.0 dBW	ND	002W23 46N43	130 km	312.6000 kHz	1225	MRC
70441	F	I DE GROIX PEN MEN 003W31 47N39	NL RC GX	0000-2400	2K10A2AAN	Y	20.0 dBW	ND	003W31 47N39	100 km	289.6000 kHz		
70465	F	I DE SEIN PHARE 004W52 48N03	NL RC SN	0000-2400	1K30A2AAN	Y	17.0 dBW	ND	004W52 48N03	130 km	303.4000 kHz		
70460	F	I VIERGE PHARE 004W34 48N38	NL RC VG	0000-2400	1K10A2AAN	Y	17.0 dBW	ND	004W34 48N38	130 km	298.8000 kHz		G
70519	F	JOBOURG LA HAGUE 001W55 49N40	NL	0000-2400	H100N0N	X	0.3 dBW	ND	001W55 49N40	400 km	285.4000 kHz	146	
70533	F	JOBOURG LA HAGUE 001W55 49N40	NL	0000-2400	H100N0N	X	0.3 dBW	ND	001W55 49N40	400 km	285.5440 kHz	146	
70535	F	JOBOURG LA HAGUE 001W55 49N40	NL	0000-2400	H100N0N	X	0.3 dBW	ND	001W55 49N40	400 km	285.6000 kHz	146	
70543	F	JOBOURG LA HAGUE 001W55 49N40	NL	0000-2400	H100N0N	X	0.3 dBW	ND	001W55 49N40	400 km	300.6000 kHz	146	
70551	F	JOBOURG LA HAGUE 001W55 49N40	NL	0000-2400	H100N0N	X	0.3 dBW	ND	001W55 49N40	400 km	306.8000 kHz	146	
70559	F	JOBOURG LA HAGUE 001W55 49N40	NL	0000-2400	H100N0N	X	0.3 dBW	ND	001W55 49N40	400 km	311.2000 kHz	146	

REQUIREMENTS FOR MARITIME RADIOBEACONS
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IFRB NO.	COU ADM	TRANSMITTING-STATION COORDINATES	CL. NAT. IDENTIFIC.	OP-HOURS	EMISSION		POWER ANT-GAIN	AZIMUTH BEAM-WIDTH	SERVICE AREA	FREQUENCY-IN-USE PREFERRED-BAND	REMARK	COORDINATED OPER. WITH
70567	F	JOBOURG LA HAGUE 001W55 49N40	NL	0000-2400	H100N0N	X	0.3 dBW	ND	001W55 49N40 400 km	313.0000 kHz	146	
70575	F	JOBOURG LA HAGUE 001W55 49N40	NL	0000-2400	H100N0N	X	0.3 dBW	ND	001W55 49N40 400 km	314.4000 kHz	146	
70472	F	LA CHIAPPA PHARE 009E22 41N36	NL RC CP	0000-2400	1K50A2AAN	Y	23.0 dBW	ND	009E22 41N36 185 km	308.0000 kHz		
70466	F	LA COUBRE 001W14 45N42	NL RC LK	0000-2400	1K30A2AAN	Y	17.0 dBW	ND	001W14 45N42 185 km	303.4000 kHz		
70455	F	LA GAROUPE PHARE 007E08 43N34	NL RC GO	0000-2400	1K70A2AAN	Y	23.0 dBW	ND	007E08 43N34 185 km	294.2000 kHz		
70473	F	LA GIRAGLIA PHARE 009W24 43N02	NL RC GL	0000-2400	1K50A2AAN	Y	17.0 dBW	ND	009W24 43N02 185 km	308.0000 kHz		
70436	F	LA PALLICE 001W14 46N10	NL RC LP	0000-2400	900HA2AAN	Y	14.0 dBW	ND	001W14 46N10 10 km	287.3000 kHz		
70456	F	LA REVELLATA PHARE 008E44 42N35	NL RC RV	0000-2400	1K70A2AAN	Y	23.0 dBW	ND	008E44 42N35 185 km	294.2000 kHz		
70450	F	LA ROCHELLE 001W10 46N09	NL RC RE	0000-2400	1K00A2AAN	Y	14.0 dBW	ND	001W48 46N30 10 km	291.9000 kHz		
70437	F	LAVEZZI PHARE 009E16 41N20	NL RC VZ	0000-2400	1K70A2AAN	Y	14.0 dBW	ND	009E16 41N20 60 km	287.3000 kHz		
70461	F	LE PILIER PHARE 002W22 47N03	NL RC PR	0000-2400	800HA2AAN	Y	14.0 dBW	ND	002W22 47N03 20 km	298.8000 kHz		
70467	F	LES BALEINES PHARE 001W34 46N15	NL RC BN	0000-2400	1K35A2AAN	Y	23.0 dBW	ND	001W34 46N15 100 km	303.4000 kHz		
70451	F	LES SABLES OLONNE 001W48 46N30	NL RC SO	0000-2400	1K10A2AAN	Y	14.0 dBW	ND	001W48 46N30 10 km	291.9000 kHz		
70479	F	LSH LA BASSURELLE 000W58 50N34	NL RC UL	0000-2400	1K50A2AAN	Y	17.0 dBW	ND	000W58 50N34 100 km	310.3000 kHz		G
70520	F	OLONNE SUR MER 001W48 46N32	NL	0000-2400	H100N0N	X	0.3 dBW	ND	001W48 46N32 400 km	285.4000 kHz	146	
70531	F	OLONNE SUR MER 001W48 46N32	NL	0000-2400	H100N0N	X	0.3 dBW	ND	001W48 46N32 400 km	285.5120 kHz	146	
70536	F	OLONNE SUR MER 001W48 46N32	NL	0000-2400	H100N0N	X	0.3 dBW	ND	001W48 46N32 400 km	285.6000 kHz	146	
70544	F	OLONNE SUR MER 001W48 46N32	NL	0000-2400	H100N0N	X	0.3 dBW	ND	001W48 46N32 400 km	300.6000 kHz	146	

REQUIREMENTS FOR MARITIME RADIOBEACONS
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IFRB NO.	COU ADM	TRANSMITTING-STATION COORDINATES	CL. NAT. IDENTIFIC.	OP-HOURS	EMISSION		POWER ANT-GAIN	AZIMUTH BEAM-WIDTH	SERVICE AREA	FREQUENCY-IN-USE PREFERRED-BAND	REMARK	COORDINATED OPER. WITH
70552	F	OLONNE SUR MER 001W48 46N32	NL	0000-2400	H100N0N	X	0.3 dBW	ND	001W48 46N32 400 km	306.8000 kHz	146	
70560	F	OLONNE SUR MER 001W48 46N32	NL	0000-2400	H100N0N	X	0.3 dBW	ND	001W48 46N32 400 km	311.2000 kHz	146	
70568	F	OLONNE SUR MER 001W48 46N32	NL	0000-2400	H100N0N	X	0.3 dBW	ND	001W48 46N32 400 km	313.0000 kHz	146	
70576	F	OLONNE SUR MER 001W48 46N32	NL	0000-2400	H100N0N	X	0.3 dBW	ND	001W48 46N32 400 km	314.4000 kHz	146	
70474	F	PERTUSATO PHARE 009E11 41N22	NL RC PR	0000-2400	1K50A2AAN	Y	23.0 dBW	ND	009E11 41N22 185 km	308.0000 kHz		
70438	F	PLANIER PHARE 005E14 43N12	NL RC PN	0000-2400	1K20A2AAN	Y	17.0 dBW	ND	005E14 43N12 185 km	287.3000 kHz		
70521	F	PLEUMEUR GAUTHIER 003W10 48N48	NL	0000-2400	H100N0N	X	0.3 dBW	ND	003W10 48N48 400 km	285.4000 kHz	146	
70528	F	PLEUMEUR GAUTHIER 003W10 48N48	NL	0000-2400	H100N0N	X	0.3 dBW	ND	003W10 48N48 400 km	285.4620 kHz	146	
70537	F	PLEUMEUR GAUTHIER 003W10 48N48	NL	0000-2400	H100N0N	X	0.3 dBW	ND	003W10 48N48 400 km	285.6000 kHz	146	
70545	F	PLEUMEUR GAUTHIER 003W10 48N48	NL	0000-2400	H100N0N	X	0.3 dBW	ND	003W10 48N48 400 km	300.6000 kHz	146	
70553	F	PLEUMEUR GAUTHIER 003W10 48N48	NL	0000-2400	H100N0N	X	0.3 dBW	ND	003W10 48N48 400 km	306.8000 kHz	146	
70561	F	PLEUMEUR GAUTHIER 003W10 48N48	NL	0000-2400	H100N0N	X	0.3 dBW	ND	003W10 48N48 400 km	311.2000 kHz	146	
70569	F	PLEUMEUR GAUTHIER 003W10 48N48	NL	0000-2400	H100N0N	X	0.3 dBW	ND	003W10 48N48 400 km	313.0000 kHz	146	
70577	F	PLEUMEUR GAUTHIER 003W10 48N48	NL	0000-2400	H100N0N	X	0.3 dBW	ND	003W10 48N48 400 km	314.4000 kHz	146	
70522	F	PLOMEUR 004W21 47N50	NL	0000-2400	H100N0N	X	0.3 dBW	ND	004W21 47N50 400 km	285.4000 kHz	146	
70529	F	PLOMEUR 004W21 47N50	NL	0000-2400	H100N0N	X	0.3 dBW	ND	004W21 47N50 400 km	285.4870 kHz	146	
70538	F	PLOMEUR 004W21 47N50	NL	0000-2400	H100N0N	X	0.3 dBW	ND	004W21 47N50 400 km	285.6000 kHz	146	
70546	F	PLOMEUR 004W21 47N50	NL	0000-2400	H100N0N	X	0.3 dBW	ND	004W21 47N50 400 km	300.6000 kHz	146	

REQUIREMENTS FOR MARITIME RADIOBEACONS
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IFRB NO.	COU ADM	TRANSMITTING-STATION COORDINATES	CL. NAT. IDENTIFIC.	OP-HOURS	EMISSION		POWER ANT-GAIN	AZIMUTH BEAM-WIDTH	SERVICE AREA		FREQUENCY-IN-USE PREFERRED-BAND	REMARK	COORDINATED OPER. WITH
70554	F	PLOMEUR 004W21 47N50	NL	0000-2400	H100N0N	X	0.3 dBW	ND	004W21 47N50	400 km	306.8000 kHz	146	
70562	F	PLOMEUR 004W21 47N50	NL	0000-2400	H100N0N	X	0.3 dBW	ND	004W21 47N50	400 km	311.2000 kHz	146	
70570	F	PLOMEUR 004W21 47N50	NL	0000-2400	H100N0N	X	0.3 dBW	ND	004W21 47N50	400 km	313.0000 kHz	146	
70578	F	PLOMEUR 004W21 47N50	NL	0000-2400	H100N0N	X	0.3 dBW	ND	004W21 47N50	400 km	314.4000 kHz	146	
70523	F	PLOUDALMEZEAU 004W39 48N31	NL	0000-2400	H100N0N	X	0.3 dBW	ND	004W39 48N35	400 km	285.4000 kHz	146	
70527	F	PLOUDALMEZEAU 004W39 48N31	NL	0000-2400	H100N0N	X	0.3 dBW	ND	004W39 48N31	400 km	285.4430 kHz	146	
70539	F	PLOUDALMEZEAU 004W39 48N31	NL	0000-2400	H100N0N	X	0.3 dBW	ND	004W39 48N31	400 km	285.6000 kHz	146	
70547	F	PLOUDALMEZEAU 004W39 48N31	NL	0000-2400	H100N0N	X	0.3 dBW	ND	004W39 48N31	400 km	300.6000 kHz	146	
70555	F	PLOUDALMEZEAU 004W39 48N31	NL	0000-2400	H100N0N	X	0.3 dBW	ND	004W39 48N31	400 km	306.8000 kHz	146	
70563	F	PLOUDALMEZEAU 004W39 48N31	NL	0000-2400	H100N0N	X	0.3 dBW	ND	004W39 48N31	400 km	311.2000 kHz	146	
70571	F	PLOUDALMEZEAU 004W39 48N31	NL	0000-2400	H100N0N	X	0.3 dBW	ND	004W39 48N31	400 km	313.0000 kHz	146	
70579	F	PLOUDALMEZEAU 004W39 48N31	NL	0000-2400	H100N0N	X	0.3 dBW	ND	004W39 48N31	400 km	314.4000 kHz	146	
70524	F	PLOUHARNEL 003W06 47N37	NL	0000-2400	H100N0N	X	0.3 dBW	ND	003W06 47N37	400 km	285.4000 kHz	146	
70532	F	PLOUHARNEL 003W06 47N37	NL	0000-2400	H100N0N	X	0.3 dBW	ND	003W06 47N37	400 km	285.5310 kHz	146	
70540	F	PLOUHARNEL 003W06 47N37	NL	0000-2400	H100N0N	X	0.3 dBW	ND	003W06 47N37	400 km	285.6000 kHz	146	
70548	F	PLOUHARNEL 003W06 47N37	NL	0000-2400	H100N0N	X	0.3 dBW	ND	003W06 47N37	400 km	300.6000 kHz	146	
70556	F	PLOUHARNEL 003W06 47N37	NL	0000-2400	H100N0N	X	0.3 dBW	ND	003W06 47N37	400 km	306.8000 kHz	146	
70564	F	PLOUHARNEL 003W06 47N37	NL	0000-2400	H100N0N	X	0.3 dBW	ND	003W06 47N37	400 km	311.2000 kHz	146	

REQUIREMENTS FOR MARITIME RADIOBEACONS
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IFRB NO.	COU ADM	TRANSMITTING-STATION COORDINATES	CL. NAT. IDENTIFIC.	OP-HOURS	EMISSION		POWER ANT-GAIN	AZIMUTH BEAM-WIDTH	SERVICE AREA		FREQUENCY-IN-USE PREFERRED-BAND	REMARK	COORDINATED OPER. WITH
70572	F	PLOUHARNEL 003W06 47N37	NL	0000-2400	H100N0N	X	0.3 dBW	ND	003W06 47N37	400 km	313.0000 kHz	146	
70580	F	PLOUHARNEL 003W06 47N37	NL	0000-2400	H100N0N	X	0.3 dBW	ND	003W06 47N37	400 km	314.4000 kHz	146	
70475	F	PNT DE GRAVE LH 001W04 45N34	NL RC VR	0000-2400	900HA2AAN	Y	14.0 dBW	ND	001W04 45N34	10 km	308.0000 kHz		
70525	F	PONT DE BUIS 004W05 48N18	NL	0000-2400	H100N0N	X	0.3 dBW	ND	004W05 48N18	400 km	285.4000 kHz	146	
70530	F	PONT DE BUIS 004W05 48N18	NL	0000-2400	H100N0N	X	0.3 dBW	ND	004W05 48N18	400 km	285.5060 kHz	146	
70541	F	PONT DE BUIS 004W05 48N18	NL	0000-2400	H100N0N	X	0.3 dBW	ND	004W05 48N18	400 km	285.6000 kHz	146	
70549	F	PONT DE BUIS 004W05 48N18	NL	0000-2400	H100N0N	X	0.3 dBW	ND	004W05 48N18	400 km	300.6000 kHz	146	
70557	F	PONT DE BUIS 004W05 48N18	NL	0000-2400	H100N0N	X	0.3 dBW	ND	004W05 48N18	400 km	306.8000 kHz	146	
70565	F	PONT DE BUIS 004W05 48N18	NL	0000-2400	H100N0N	X	0.3 dBW	ND	004W05 48N18	400 km	311.2000 kHz	146	
70573	F	PONT DE BUIS 004W05 48N18	NL	0000-2400	H100N0N	X	0.3 dBW	ND	004W05 48N18	400 km	313.0000 kHz	146	
70581	F	PONT DE BUIS 004W05 48N18	NL	0000-2400	H100N0N	X	0.3 dBW	ND	004W05 48N18	400 km	314.4000 kHz	146	
70483	F	PORQUEROLLES PHARE 006E12 42N59	NL RC PQ	0000-2400	30H0A1AAN	Y	26.0 dBW	ND	006E12 42N59	370 km	313.5000 kHz	1225	ALG TUN
70484	F	PT EN BESSIN PHARE 000W46 49N21	NL RC BS	0000-2400	1K10A2AAN	Y	14.0 dBW	ND	000W46 49N21	10 km	313.5000 kHz		
70462	F	ROCHES DOUVRES PHARE 002W50 49N06	NL RC RD	0000-2400	1K10A2AAN	Y	17.0 dBW	ND	002W50 49N06	130 km	298.8000 kHz		G
70457	F	ROSEDO PHARE 003W00 48N51	NL RC DO	0000-2400	700HA2AAN	Y	14.0 dBW	ND	003W00 48N51	20 km	294.2000 kHz		
70463	F	S GERVAIS 004E50 43N26	NL RC PG	0000-2400	1K10A2AAN	Y	14.0 dBW	ND	004E50 43N26	20 km	298.8000 kHz		
70446	F	S NAZAIRE S GILDAS 002W15 47N08	NL RC NZ	0000-2400	2K10A2AAN	Y	14.0 dBW	ND	002W15 47N08	70 km	289.6000 kHz		
70458	F	SENETOSE PHARE 008E48 41N33	NL RC SE	0000-2400	1K70A2AAN	Y	17.0 dBW	ND	008E48 41N33	185 km	294.2000 kHz		

REQUIREMENTS FOR MARITIME RADIOBEACONS
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IFRB NO.	COU ADM	TRANSMITTING-STATION COORDINATES	CL. NAT. IDENTIFIC.	OP-HOURS	EMISSION	POWER ANT-GAIN	AZIMUTH BEAM-WIDTH	SERVICE AREA	FREQUENCY-IN-USE PREFERRED-BAND	REMARK	COORDINATED OPER. WITH
70439	F	SETE MT S CLAIR LH 003E41 43N24	NL RC SE	0000-2400	1K20A2AAN	Y 14.0 dBW	ND	003E41 43N24 100 km	287.3000 kHz		
70526	F	SOULAC 001W07 45N32	NL	0000-2400	H100N0N	X 0.3 dBW	ND	001W07 45N32 400 km	285.4000 kHz	146	
70534	F	SOULAC 001W07 45N32	NL	0000-2400	H100N0N	X 0.3 dBW	ND	001W07 45N32 400 km	285.5500 kHz	146	
70542	F	SOULAC 001W07 45N32	NL	0000-2400	H100N0N	X 0.3 dBW	ND	001W07 45N32 400 km	285.6000 kHz	146	
70550	F	SOULAC 001W07 45N32	NL	0000-2400	H100N0N	X 0.3 dBW	ND	001W07 45N32 400 km	300.6000 kHz	146	
70558	F	SOULAC 001W07 45N32	NL	0000-2400	H100N0N	X 0.3 dBW	ND	001W07 45N32 400 km	306.8000 kHz	146	
70566	F	SOULAC 001W07 45N32	NL	0000-2400	H100N0N	X 0.3 dBW	ND	001W07 45N32 400 km	311.2000 kHz	146	
70574	F	SOULAC 001W07 45N32	NL	0000-2400	H100N0N	X 0.3 dBW	ND	001W07 45N32 400 km	313.0000 kHz	146	
70582	F	SOULAC 001W07 45N32	NL	0000-2400	H100N0N	X 0.3 dBW	ND	001W07 45N32 400 km	314.4000 kHz	146	
70452	F	VER SUR MER PHARE 000W31 49N20	NL RC ER	0000-2400	1K30A2AAN	Y 14.0 dBW	ND	000W31 49N20 40 km	291.9000 kHz		G

FNL

Finlande
Finland
Finlandia

70076	FNL	AJOS 024E35 65N40	NL RC AJ	0000-2400	200HA1A	X 17.0 dBW	ND	024E35 65N40 90 km	298.8000 kHz	1196	
70077	FNL	GUSTAVSVARN 022E57 59N48	NL RC GN	0000-2400	200HA1A	X 17.0 dBW	ND	022E57 59N48 90 km	287.3000 kHz	1197	
70078	FNL	HARMAJA 024E59 60N06	NL RC HA	0000-2400	200HA1A	X 17.0 dBW	ND	024E59 60N06 90 km	298.8000 kHz	1198	
70079	FNL	HELSINKI 024E56 59N57	NL RC HI	0000-2400	200HA1A	X 17.0 dBW	ND	024E56 59N57 90 km	303.4000 kHz	1199	
70080	FNL	ISOKARI 021E01 60N43	NL RC IK	0000-2400	200HA1A	X 17.0 dBW	ND	021E01 60N43 90 km	413.0000 kHz	1200	

REQUIREMENTS FOR MARITIME RADIOBEACONS
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IFRB NO.	COU ADM	TRANSMITTING-STATION COORDINATES	CL. NAT. IDENTIFIC.	OP-HOURS	EMISSION	POWER ANT-GAIN	AZIMUTH BEAM-WIDTH	SERVICE AREA	FREQUENCY-IN-USE PREFERRED-BAND	REMARK	COORDINATED OPER. WITH
70081	FNL	KALBADAGRUND 025E36 59N59	NL RC KD	0000-2400	200HA1A	X 17.0 dBW	ND	025E36 59N59 90 km	303.4000 kHz	1199	
70082	FNL	KALLAN 022E32 63N45	NL RC KN	0000-2400	200HA1A	X 17.0 dBW	ND	022E32 63N45 90 km	298.8000 kHz	1202	
70083	FNL	KORSO 019E54 60N02	NL RC KO	0000-2400	200HA1A	X 17.0 dBW	ND	019E54 60N02 90 km	296.5000 kHz	1203	
70084	FNL	KYLMAPIHLAJA 021E18 61N09	NL RC KP	0000-2400	200HA1A	X 17.0 dBW	ND	021E18 61N09 90 km	308.0000 kHz	1200	
70085	FNL	MANTYLUOTO 021E28 61N36	NL RC MA	0000-2400	200HA1A	X 17.0 dBW	ND	021E28 61N36 90 km	308.0000 kHz	1200	
70086	FNL	MARJANIEMI 024E34 65N02	NL RC MI	0000-2400	200HA1A	X 17.0 dBW	ND	024E34 65N02 90 km	298.8000 kHz	1196	
70087	FNL	NORRSKAR 020E36 63N14	NL RC NS	0000-2400	200HA1A	X 17.0 dBW	ND	020E36 63N14 90 km	291.9000 kHz	1207	
70088	FNL	ORRENGRUND 026E27 60N17	NL RC ON	0000-2400	200HA1A	X 17.0 dBW	ND	026E27 60N17 90 km	303.4000 kHz	1199	
70089	FNL	PORKKALA 024E18 59N52	NL RC PR	0000-2400	200HA1A	X 17.0 dBW	ND	024E18 59N52 90 km	312.5000 kHz	1197	
70090	FNL	ULKOKALLA 023E27 64N20	NL RC UL	0000-2400	200HA1A	X 17.0 dBW	ND	023E27 64N20 90 km	298.8000 kHz	1196	
70091	FNL	UTO 021E22 59N47	NL RC UO	0000-2400	200HA1A	X 17.0 dBW	ND	021E22 59N47 90 km	287.3000 kHz	1197	

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Reino Unido de Gran Bretana e Irlanda del Norte

70003	G	ALTACARRY HEAD LSTN 006W10 55N18	NL RC AH	0000-2400	100HA1A	X 17.0 dBW	ND	006W10 55N18 92 km	294.2000 kHz	326	
70004	G	BARDSEY LSTN 004W47 52N44	NL RC IB	0000-2400	100HA1A	X 17.0 dBW	ND	004W47 52N44 92 km	301.1000 kHz	326	IRL
70005	G	BARRA HEAD 007W39 56N47	NL RC BD	0000-2400	100HA1A	X 25.0 dBW	ND	007W39 56N47 364 km	308.0000 kHz	326	IRL
70006	G	BRESSAY 001W07 60N07	NL RC BY	0000-2400	100HA1A	X 15.0 dBW	ND	001W07 60N07 92 km	287.3000 kHz	326	

REQUIREMENTS FOR MARITIME RADIOBEACONS
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IFRB NO.	COU ADM	TRANSMITTING-STATION COORDINATES	CL. NAT. IDENTIFIC.	OP-HOURS	EMISSION	POWER ANT-GAIN	AZIMUTH BEAM-WIDTH	SERVICE AREA	FREQUENCY-IN-USE PREFERRED-BAND	REMARK	COORDINATED OPER. WITH
70007	G	BRIGHTON MARINA LSTN 000W06 50N48	NL RC BM	0000-2400	100HA1A	X 14.0 dBW	ND	000W06 50N48 19 km	303.4000 kHz	326	
70008	G	BUTT OF LEWIS 006W16 58N31	NL RC BL	0000-2400	100HA1A	X 23.0 dBW	ND	006W16 58N31 273 km	298.8000 kHz	326	
70015	G	CAPE WRATH 005W00 58N38	NL RC CW	0000-2400	100HA1A	X 20.0 dBW	ND	005W00 58N38 92 km	298.8000 kHz	326	
70009	G	CASQUETS LSTN 002W22 49N43	NL RC QS	0000-2400	100HA1A	X 17.0 dBW	ND	002W22 49N43 92 km	298.8000 kHz	326	F
70010	G	CHANNEL LSTN 002W53 49N54	NL RC CR	0000-2400	100HA1A	X 14.0 dBW	ND	002W53 49N54 19 km	287.3000 kHz	326	
70011	G	CHICHESTER BAR 000W56 50N45	NL RC CH	0000-2400	100HA1A	X 14.0 dBW	ND	000W56 50N45 19 km	303.4000 kHz	326	
70012	G	CLOCH POINT 004W53 55N57	NL RC CLOCH	0000-2400	2K30H3E	X 12.0 dBW	ND	004W53 55N57 13 km	308.0000 kHz	327	
70013	G	CREGNEISH 004W46 54N04	NL RC CN	0000-2400	100HA1A	X 20.0 dBW	ND	004W56 54N04 92 km	301.1000 kHz	326	
70014	G	CROMER LSTN 001E19 52N55	NL RC CM	0000-2400	100HA1A	X 17.0 dBW	ND	001E19 52N55 92 km	287.3000 kHz	326	
70016	G	DOUGLAS 004W28 54N09	NL RC DG	0000-2400	100HA1A	X 20.0 dBW	ND	004W28 54N09 92 km	287.3000 kHz	326	
70017	G	DUDGEON LSTN 001E13 53N15	NL RC LV	0000-2400	100HA1A	X 17.0 dBW	ND	001E13 53N15 92 km	287.3000 kHz	326	
70018	G	DUNGENESS LSTN 000E58 50N54	NL RC DU	0000-2400	100HA1A	X 17.0 dBW	ND	000E58 50N54 92 km	310.3000 kHz	326	F
70019	G	EILEAN GLAS 006W38 57N51	NL RC LG	0000-2400	100HA1A	X 20.0 dBW	ND	006W38 57N51 92 km	294.2000 kHz	326	
70020	G	FALLS LSTN 001E48 51N18	NL RC FS	0000-2400	100HA1A	X 17.0 dBW	ND	001E48 51N18 92 km	305.7000 kHz	326	
70021	G	FALLS LSTN 001E48 51N18	NL RC FS	0000-2400	304HF1B	X 17.0 dBW	ND	001E48 51N18 92 km	305.7000 kHz	326	
70022	G	FIFE NESS 002W03 57N08	NL RC FP	0000-2400	100HA1A	X 20.0 dBW	ND	002W03 57N08 92 km	310.3000 kHz	326	
70023	G	FLAMBOROUGH HEAD 000W04 54N06	NL RC FB	0000-2400	100HA1A	X 20.0 dBW	ND	000W04 54N06 92 km	303.4000 kHz	326	
70024	G	FLATHOLM LSTN 003W07 51N22	NL RC FL	0000-2400	100HA1A	X 17.0 dBW	ND	003W07 51N22 92 km	296.5000 kHz	326	

REQUIREMENTS FOR MARITIME RADIOBEACONS
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IFRB NO.	COU ADM	TRANSMITTING-STATION COORDINATES	CL. NAT. IDENTIFIC.	OP-HOURS	EMISSION	POWER ANT-GAIN	AZIMUTH BEAM-WIDTH	SERVICE AREA	FREQUENCY-IN-USE PREFERRED-BAND	REMARK	COORDINATED OPER. WITH
70025	G	GIRDLE NESS 002W03 57N08	NL RC GD	0000-2400	100HA1A	X 20.0 dBW	ND	002W03 57N08 92 km	310.3000 kHz	326	
70026	G	HARTLAND POINT LSTN 004W31 51N01	NL RC HP	0000-2400	100HA1A	X 11.0 dBW	ND	004W31 51N01 10 km	287.3000 kHz	326	
70027	G	HEUGH LSTN 001W10 54N41	NL RC HS	0000-2400	100HA1A	X 17.0 dBW	ND	001W10 54N41 92 km	294.2000 kHz	326	
70028	G	HUMBER LSTN 000E21 53N36	NL RC MB	0000-2400	100HA1A	X 11.0 dBW	ND	000E21 53N36 10 km	312.6000 kHz	326	
70029	G	INCHKEITH 003W08 56N02	NL RC NK	0000-2400	100HA1A	X 12.0 dBW	ND	003W08 56N02 19 km	296.5000 kHz	326	
70030	G	ISLE OF MAY 002W33 56N11	NL RC LM	0000-2400	100HA1A	X 22.0 dBW	ND	002W33 56N11 182 km	303.4000 kHz	326	
70031	G	KINNAIRD HEAD 002W00 57N42	NL RC KD	0000-2400	100HA1A	X 22.0 dBW	ND	002W00 57N42 182 km	291.9000 kHz	326	
70032	G	LA CORBIERE 002W14 49N10	NL RC CB	0000-2400	100HA1A	X 14.0 dBW	ND	002W14 49N10 37 km	305.7000 kHz	326 F	
70033	G	LIZARD LSTN 005W12 49N57	NL RC LZ	0000-2400	100HA1A	X 20.0 dBW	ND	005W12 49N57 92 km	298.8000 kHz	326 F	
70034	G	LONGSTONE LSTN 001W36 55N38	NL RC LT	0000-2400	100HA1A	X 17.0 dBW	ND	001W36 55N38 92 km	303.4000 kHz	326	
70035	G	LUNDY SOUTH 004W39 51N09	NL RC LS	0000-2400	100HA1A	X 17.0 dBW	ND	004W39 51N09 92 km	296.5000 kHz	326	
70036	G	MEW ISLAND LSTN 005W31 54N42	NL RC MW	0000-2400	100HA1A	X 13.0 dBW	ND	005W31 54N42 92 km	294.2000 kHz	326	
70037	G	MUCKLE FLUGGA 000W53 60N51	NL RC MF	0000-2400	100HA1A	X 28.0 dBW	ND	000W53 60N51 276 km	298.8000 kHz	326	
70038	G	NAB TOWER 000W57 50N40	NL RC NB	0000-2400	100HA1A	X 14.0 dBW	ND	000W57 50N40 37 km	312.6000 kHz	326	
70039	G	NEWHAVEN 000W03 50N46	NL RC NH	0000-2400	100HA1A	X 11.0 dBW	ND	000W03 50N46 19 km	303.4000 kHz	326	
70040	G	NORTH FORELAND LSTN 001E26 51N22	NL RC NF	0000-2400	100HA1A	X 17.0 dBW	ND	001E26 51N22 92 km	301.1000 kHz	326	
70041	G	NORTH FORELAND LSTN 001E26 51N22	NL RC NF	0000-2400	304HF1B	X 17.0 dBW	ND	001E26 51N22 92 km	301.1000 kHz	326	
70042	G	NORTH RONALDSAY 002W23 59N23	NL RC NR	0000-2400	100HA1A	X 22.0 dBW	ND	002W23 59N23 182 km	291.9000 kHz	326	

REQUIREMENTS FOR MARITIME RADIOBEACONS
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IFRB NO.	COU ADM	TRANSMITTING-STATION COORDINATES	CL. NAT. IDENTIFIC.	OP-HOURS	EMISSION	POWER ANT-GAIN	AZIMUTH BEAM-WIDTH	SERVICE AREA	FREQUENCY-IN-USE PREFERRED-BAND	REMARK	COORDINATED OPER. WITH
70043	G	OIGH SGEIR 006W41 56N58	NL RC OR	0000-2400	100HA1A	X 20.0 dBW	ND	006W41 56N58 92 km	294.2000 kHz	326	
70044	G	OUTER GABBARD LSTN 002E04 51N59	NL RC GA	0000-2400	100HA1A	X 17.0 dBW	ND	002E04 51N59 92 km	287.3000 kHz	326	HOL
70045	G	PENLEE POINT LSTN 004W11 50N19	NL RC PE	0000-2400	100HA1A	X 17.0 dBW	ND	004W11 50N19 92 km	298.8000 kHz	326	F
70046	G	PLADDA 005W07 55N25	NL RC DA	0000-2400	100HA1A	X 17.0 dBW	ND	005W07 55N25 92 km	294.2000 kHz	326	
70049	G	POINT LYNAS 004W17 53N24	NL RC PL	0000-2400	100HA1A	X 11.0 dBW	ND	004W17 53N24 10 km	310.3000 kHz	327	
70048	G	POINT LYNAS LSTN 004W17 53N24	NL RC PS	0000-2400	100HA1A	X 17.0 dBW	ND	004W17 53N24 92 km	287.3000 kHz	326	
70047	G	POINT OF AYRE 004W22 54N25	NL RC PY	0000-2400	100HA1A	X 20.0 dBW	ND	004W22 54N25 92 km	301.1000 kHz	326	
70050	G	POOLE HARBOUR 001W55 50N40	NL RC PO	0000-2400	100HA1A	X 11.0 dBW	ND	001W55 50N40 19 km	303.4000 kHz	326	
70051	G	PORTLAND BILL LSTN 002W27 50N30	NL RC PB	0000-2400	100HA1A	X 17.0 dBW	ND	002W27 50N30 50 km	291.9000 kHz	326	F
70052	G	RINNS OF ISLAY 006W31 55N40	NL RC RN	0000-2400	100HA1A	X 22.0 dBW	ND	006W31 55N40 127 km	294.2000 kHz	326	
70053	G	ROUND ISLAND LSTN 006W19 49N58	NL RC RR	0000-2400	100HA1A	X 23.0 dBW	ND	006W19 49N58 372 km	308.0000 kHz	326	IRL
70054	G	ROYAL SOVEREIGN LSTN 000E26 50N43	NL RC RY	0000-2400	100HA1A	X 17.0 dBW	ND	000E26 50N43 92 km	310.3000 kHz	326	F
70058	G	SCARWEATHER LSTN 003W56 51N26	NL RC RW	0000-2400	100HA1A	X 11.0 dBW	ND	003W56 51N26 10 km	312.6000 kHz	326	
70059	G	SKERRIES 004W36 53N25	NL RC SR	0000-2400	100HA1A	X 17.0 dBW	ND	004W36 53N25 92 km	301.1000 kHz	326	IRL
70060	G	SMITHS KNOLL LSTN 002E18 52N43	NL RC SK	0000-2400	100HA1A	X 17.0 dBW	ND	002E18 52N43 92 km	287.3000 kHz	326	
70061	G	SOUTER POINT 001W24 55N00	NL RC TJ	0000-2400	100HA1A	X 20.0 dBW	ND	001W24 55N00 92 km	303.4000 kHz	326	
70062	G	SOUTER POINT LSTN 001W21 54N58	NL RC PT	0000-2400	100HA1A	X 11.0 dBW	ND	001W21 54N58 10 km	312.6000 kHz	327	
70063	G	SOUTH BISHOP LSTN 005W24 51N51	NL RC SB	0000-2400	100HA1A	X 17.0 dBW	ND	005W24 51N51 92 km	296.5000 kHz	326	IRL

REQUIREMENTS FOR MARITIME RADIOBEACONS
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IFRB NO.	COU ADM	TRANSMITTING-STATION COORDINATES	CL. NAT. IDENTIFIC.	OP-HOURS	EMISSION	POWER ANT-GAIN	AZIMUTH BEAM-WIDTH	SERVICE AREA	FREQUENCY-IN-USE PREFERRED-BAND	REMARK	COORDINATED OPER. WITH
70065	G	SOUTH FORELAND 001E22 51N08	NL RC SD	0000-2400	304HF1B	X 17.0 dBW	ND	001E22 51N08 92 km		326	
70066	G	SOUTH FORELAND 001E22 51N08	NL RC SD	0000-2400	100HA1A	X 17.0 dBW	ND	001E22 51N08 92 km		326	
70064	G	SPURN LSTN 000E07 53N34	NL RC SL	0000-2400	100HA1A	X 17.0 dBW	ND	000E07 53N34 92 km	303.4000 kHz	326	
70055	G	ST CATHERINES POINT 001W17 50N34	NL RC CP	0000-2400	100HA1A	X 17.0 dBW	ND	001W17 50N34 92 km	291.9000 kHz	326	F
70056	G	ST HELIER HARBOUR 002W07 49N10	NL RC EC	0000-2400	100HA1A	X 11.0 dBW	ND	002W07 49N10 19 km	287.3000 kHz	326	
70057	G	ST PETER PORT 002W31 49N27	NL RC GY	0000-2400	100HA1A	X 11.0 dBW	ND	002W31 49N27 19 km	285.0000 kHz	326	
70067	G	START POINT LSTN 003W38 50N13	NL RC SP	0000-2400	100HA1A	X 20.0 dBW	ND	003W38 50N13 92 km	298.8000 kHz	326	F
70068	G	STROMA 003W07 58N42	NL RC	0000-2400	100HA1A	X 20.0 dBW	ND	003W07 58N42 92 km	291.9000 kHz	326	
70071	G	SULE SKERRY 004W24 59N05	NL RC LK	0000-2400	100HA1A	X 21.0 dBW	ND	004W24 59N05 182 km	298.8000 kHz	326	
70072	G	SUMBURGH HEAD 001W16 59N51	NL RC SB	0000-2400	100HA1A	X 22.0 dBW	ND	001W16 59N51 127 km	291.9000 kHz	326	
70073	G	SUNK LSTN 001E35 51N51	NL RC UK	0000-2400	100HA1A	X 11.0 dBW	ND	001E35 51N51 19 km	312.6000 kHz	326	

HOL

Pays-Bas (Royaume des)
Netherlands (Kingdom of the)
Países Bajos (Reino de los)

70256	HOL	AMELAND PHARE 005E38 53N27	NL RC AD	0000-2400	100HA1AAN	X 14.7 dBW	ND	005E38 53N27 90 km	298.8000 kHz	393	D
70255	HOL	EIERLAND PHARE 004E52 53N11	NL RC ER	0000-2400	100HA1AAN	X 14.7 dBW	ND	004E52 53N11 90 km	294.2000 kHz	392	
70253	HOL	GOEREE LIGHTPLATFORM 003E40 51N56	NL RC GR	0000-2400	100HA1AAN	X 16.0 dBW	ND	003E40 51N56 90 km	287.3000 kHz	390	G
70251	HOL	HOEKVAN HOLLANDPHARE 004E07 51N59	NL RC HH	0000-2400	100HA1AAN	X 14.7 dBW	ND	004E07 51N59 90 km	294.2000 kHz	388	

REQUIREMENTS FOR MARITIME RADIOBEACONS
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IFRB NO.	COU ADM	TRANSMITTING-STATION COORDINATES	CL. NAT. IDENTIFIC.	OP-HOURS	EMISSION	POWER ANT-GAIN	AZIMUTH BEAM-WIDTH	SERVICE AREA	FREQUENCY-IN-USE PREFERRED-BAND	REMARK	COORDINATED OPER. WITH
70252	HOL	IJMUIDEN PHARE 004E35 52N28	NL RC YM	0000-2400	100HA1AAN	X 14.7 dBW	ND	004E35 52N28 90 km	294.2000 kHz	389	
70312	HOL	IJMUIDEN PHARE 004E35 52N28	NL RC YC	0700-1600	100HA1AAN	X 10.0 dBW	ND	004E35 52N28 10 km	314.5000 kHz	416	
70254	HOL	NO HINDER BF PHARE 002E51 52N00	NL RC NR	0000-2400	100HA1AAN	X 16.0 dBW	ND	002E51 52N00 90 km	287.3000 kHz	391	G
70313	HOL	SCHEVENINGEN PHARE 004E16 52N06	NL RC HO	0700-1600	100HA1AAN	X 10.0 dBW	ND	004E16 52N06 10 km	312.6000 kHz	416	
70250	HOL	TEXEL BF PHARE 004E07 52N47	NL RC HK	0000-2400	100HA1AAN	X 16.0 dBW	ND	004E07 52N47 90 km	308.0000 kHz	387	
70257	HOL	VLIELAND PHARE 005E04 53N18	NL RC VL	0000-2400	100HA1AAN	X 23.0 dBW	ND	005E04 53N18 90 km	308.0000 kHz	394	D

I

Italie
Italy
Italia

70107	I	AUGUSTA DROMOGIGGIA 015E09 37N12	NL RC AT	0000-2400	120HA1A	X 20.0 dBW	ND	015E09 37N12 130 km	301.1000 kHz	331	
70108	I	CAPO FERRO 009E31 41N09	NL RC CF	0000-2400	120HA1A	X 20.0 dBW	ND	009E31 41N09 130 km	303.4000 kHz	332	
70110	I	CAPO SAN VITO TARANT 017E12 40N25	NL RC TN	0000-2400	120HA1A	X 20.0 dBW	ND	017E12 40N25 130 km	291.9000 kHz		
70109	I	CAPO SANDALO 008E13 39N09	NL RC IP	0000-2400	120HA1A	X 20.0 dBW	ND	008E13 39N09 130 km	289.6000 kHz		
70111	I	CAPO VATICANO 015E49 38N37	NL RC VN	0000-2400	120HA1A	X 20.0 dBW	ND	015E49 38N37 130 km	296.5000 kHz	333	
70112	I	CIVITAVECCHIA 011E49 42N05	NL RC CH	0000-2400	120HA1A	X 20.0 dBW	ND	011E49 42N05 130 km		334	
70113	I	COZZO SPADARO 015E08 36N41	NL RC PZ	0000-2400	120HA1A	X 20.0 dBW	ND	015E08 36N41 130 km	301.1000 kHz	335	
70114	I	GENOVA 008E54 44N24	NL RC GV	0000-2400	120HA1A	X 20.0 dBW	ND	008E54 44N24 130 km	301.1000 kHz	336	
70115	I	ISOLA PANTELLERIA 011E57 36N50	NL RC PT	0000-2400	120HA1A	X 25.0 dBW	ND	011E57 36N50 185 km	287.3000 kHz	337	

REQUIREMENTS FOR MARITIME RADIOBEACONS
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IFRB NO.	COU ADM	TRANSMITTING-STATION COORDINATES	CL. NAT. IDENTIFIC.	OP-HOURS	EMISSION	POWER ANT-GAIN	AZIMUTH BEAM-WIDTH	SERVICE AREA	FREQUENCY-IN-USE PREFERRED-BAND	REMARK	COORDINATED OPER. WITH
70116	I	ISOLA TINO 009E51 44N02	NL RC TO	0000-2400	120HA1A	X 20.0 dBW	ND	009E51 44N02 130 km	301.1000 kHz		
70117	I	PUNTA CARENA 014E12 40N32	NL RC NP	0000-2400	120HA1A	X 25.0 dBW	ND	014E12 40N32 185 km	296.5000 kHz	338	
70118	I	PUNTA DELLA MAESTRA 012E36 44N58	NL RC ME	0000-2400	120HA1A	X 25.0 dBW	ND	012E36 44N58 185 km	298.8000 kHz	339	YUG
70119	I	PUNTA PENNA 014E42 42N10	NL RC TL	0000-2400	120HA1A	X 25.0 dBW	ND	014E42 42N10 185 km		340	YUG
70122	I	S BENEDETTO TRONTO 013E53 42N57	NL RC CI	0000-2400	120HA1A	X 25.0 dBW	ND	013E53 42N57 185 km		343	YUG
70121	I	SAN VITO LO CAPO 012E44 38N11	NL RC LC	0000-2400	120HA1A	X 25.0 dBW	ND	012E44 38N11 185 km		342	
70120	I	SANTA MARIA DI LEUCA 018E22 39N48	NL RC MC	0000-2400	120HA1A	X 25.0 dBW	ND	018E22 39N48 185 km	291.9000 kHz	341	YUG
70123	I	SENIGALLIA 013E13 43N43	NL RC SA	0000-2400	120HA1A	X 25.0 dBW	ND	013E13 43N43 185 km	298.8000 kHz	344	YUG
70124	I	TRIESTE 013E45 45N40	NL RC RD	0000-2400	120HA1A	X 20.0 dBW	ND	013E45 45N40 130 km	311.5000 kHz		
70125	I	VIESTE 016E11 41N53	NL RC VS	0000-2400	120HA1A	X 20.0 dBW	ND	016E11 41N53 130 km	305.7000 kHz	345	YUG

IRL

Irlande
Ireland
Irlanda

70092	IRL	BALLYCOTTON LSTN 007W59 51N49	NL RC BN	0000-2400	2K30A2A	Y 21.7 dBW	ND	007W59 51N49 93 km	296.5000 kHz	330	G
70093	IRL	BALLYCOTTON LSTN 007W59 51N49	NL RC BC	0900-1800	2K30A2A	Y 10.0 dBW	ND	007W59 51N49 9 km	312.6000 kHz 300 kHz	330	
70094	IRL	EAGLE ISLAND LSTN 010W05 54N17	NL RC GL	0000-2400	2K30A2A	Y 24.7 dBW	ND	010W05 54N17 370 km	308.0000 kHz	330	G F
70095	IRL	HOOK POINT LSTN 006W56 52N07	NL RC HK	0000-2400	2K30A2A	Y 21.7 dBW	ND	006W56 52N07 93 km		330	
70096	IRL	KISH BANK LSTN 005W55 53N19	NL RC KH	0000-2400	2K30A2A	Y 21.7 dBW	ND	005W55 53N19 37 km	312.6000 kHz 300 kHz	330	

REQUIREMENTS FOR MARITIME RADIOBEACONS
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IFRB NO.	COU ADM	TRANSMITTING-STATION COORDINATES	CL. NAT. IDENTIFIC.	OP-HOURS	EMISSION	POWER ANT-GAIN	AZIMUTH BEAM-WIDTH	SERVICE AREA	FREQUENCY-IN-USE PREFERRED-BAND	REMARK	COORDINATED OPER. WITH
70097	IRL	KISH BANK LSTN 005W55 53N19	NL RC KH	0000-2400	2K30A2A	Y 10.0 dBW	ND	005W55 53N19 9 km	312.6000 kHz 300 kHz	330	
70098	IRL	LOOPHEAD LSTN 009W54 52N33	NL RC LP	0000-2400	2K30A2A	Y 24.7 dBW	ND	009W56 52N33 93 km	289.6000 kHz	330	
70099	IRL	MIZEN HEAD LSTN 009W49 51N27	NL RC MZ	0000-2400	2K30A2A	Y 24.7 dBW	ND	009W49 51N27 370 km	308.0000 kHz	330	G F
70100	IRL	MIZEN HEAD LSTN 009W49 51N27	NL RC ZC	0900-1800	2K30A2A	Y 10.0 dBW	ND	009W49 51N27 9 km	312.6000 kHz 300 kHz	330	
70101	IRL	OLD HD KINSALE LSTN 008W32 51N36	NL RC OH	0000-2400	2K30A2A	Y 21.7 dBW	ND	008W32 51N36 93 km	296.5000 kHz	330	G
70102	IRL	ROCKABILL LSTN 006W00 53N36	NL RC RB	0000-2400	2K30A2A	Y 21.7 dBW	ND	006W00 53N36 93 km		330	G
70103	IRL	SLYNE HEAD LSTN 010W14 53N24	NL RC SN	0000-2400	2K30A2A	Y 24.7 dBW	ND	010W14 53N24 93 km	289.6000 kHz	330	
70104	IRL	TORY ISLAND LSTN 008W14 55N16	NL RC TY	0000-2400	2K30A2A	Y 24.7 dBW	ND	008W14 55N16 185 km	308.0000 kHz	330	G F
70105	IRL	TUSKAR ROCK LSTN 006W12 52N12	NL RC TR	0000-2400	2K30A2A	Y 24.7 dBW	ND	006W12 52N12 93 km	296.5000 kHz	330	G
70106	IRL	WICKLOW HEAD LSTN 005W59 52N58	NL RC WK	0000-2400	2K30A2A	Y 24.7 dBW	ND	005W59 52N58 130 km	301.1000 kHz	330	G

ISL

Islande
Iceland
Islandia

70361	ISL	BJARGTANGAR 024W32 65N30	NL RC BT	0000-2400	1K50A2A	Y 50.0 dBW	ND	024W32 65N30 160 km	287.3000 kHz	463	
70372	ISL	DALATANGI 013W35 65N16	NL RC DA	0000-2400	1K00A2A	Y 50.0 dBW	ND	013W35 65N16 160 km	305.7000 kHz	463	
70371	ISL	DJUPIVOGUR 014W17 64N39	NL RC DV	0000-2400	2K00A2A	Y 51.1 dBW	ND	014W17 64N39 160 km	298.8000 kHz	463	
70370	ISL	GOELTUR 023W34 66N10	NL RC GV	0000-2400	2K00A2A	Y 50.0 dBW	ND	023W34 66N10 160 km	310.3000 kHz	463	
70369	ISL	GRIMSEY 017W59 66N32	NL RC GR	0000-2400	1K40A2A	Y 50.0 dBW	ND	017W59 66N32 160 km	308.0000 kHz	463	

REQUIREMENTS FOR MARITIME RADIOBEACONS
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IFRB NO.	COU ADM	TRANSMITTING-STATION COORDINATES	CL. NAT. IDENTIFIC.	OP-HOURS	EMISSION	POWER ANT-GAIN	AZIMUTH BEAM-WIDTH	SERVICE AREA	FREQUENCY-IN-USE PREFERRED-BAND	REMARK	COORDINATED OPER. WITH
70368	ISL	HORNBJARG 022W23 66N25	NL RC HO	0000-2400	1K30A2A	Y 50.0 dBW	ND	022W23 66N25 160 km	298.8000 kHz	463	
70367	ISL	MALARRIF 023W48 64N44	NL RC MA	0000-2400	1K50A2A	Y 50.0 dBW	ND	023W48 64N44 160 km	303.4000 kHz	463	
70366	ISL	RAUFARHOEFN 015W57 66N27	NL RC RG	0000-2400	1K40A2A	Y 50.0 dBW	ND	015W57 66N27 160 km	301.1000 kHz	463	
70365	ISL	REYKJANES 022W43 63N49	NL RC RN	0000-2400	1K20A2A	Y 50.0 dBW	ND	022W43 63N49 160 km	291.9000 kHz	463	
70364	ISL	SKAGATA 020W21 66N07	NL RC SM	0000-2400	2K00A2A	Y 51.1 dBW	ND	020W21 66N07 160 km	312.6000 kHz	463	
70363	ISL	SKARDSFJARA 017W59 63N31	NL RC SF	0000-2400	2K00A2A	Y 50.0 dBW	ND	017W59 63N31 160 km	312.6000 kHz	463	
70362	ISL	STRANDHOEFN 014W39 65N55	NL RC SK	0000-2400	1K40A2A	Y 50.0 dBW	ND	014W39 65N55 160 km	314.5000 kHz	463	

JOR

Jordanie (Royaume hachémite de)
Jordan (Hashemite Kingdom of)
Jordania (Reino Hachemita de)

IFRB NO.	COU ADM	TRANSMITTING-STATION COORDINATES	CL. NAT. IDENTIFIC.	OP-HOURS	EMISSION	POWER ANT-GAIN	AZIMUTH BEAM-WIDTH	SERVICE AREA	FREQUENCY-IN-USE PREFERRED-BAND	REMARK	COORDINATED OPER. WITH
70002	JOR	AQABA RADIO 034E59 29N33	NL RC JYO	0000-2400	2K00A2A	Y 20.0 dBW	ND	034E59 29N33 300 km			

MDR

Madère
Madeira
Madera

IFRB NO.	COU ADM	TRANSMITTING-STATION COORDINATES	CL. NAT. IDENTIFIC.	OP-HOURS	EMISSION	POWER ANT-GAIN	AZIMUTH BEAM-WIDTH	SERVICE AREA	FREQUENCY-IN-USE PREFERRED-BAND	REMARK	COORDINATED OPER. WITH
70293	MDR POR	ILHEU DE CIMA 016W17 33N03	NL RC IC	0000-2400	304HF1B	X 26.0 dBW	ND	016W17 33N03 370 km		18	
70295	MDR POR	PONTA DO PARGO 017W16 32N49	NL RC PA	0000-2400	304HF1B	X 26.0 dBW	ND	017W16 32N49 370 km		22	
70294	MDR POR	SELVAGEM 015W52 30N09	NL RC SG	0000-2400	304HF1B	X 26.0 dBW	ND	015W52 30N09 370 km		19	

REQUIREMENTS FOR MARITIME RADIOBEACONS
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IFRB NO.	COU ADM	TRANSMITTING-STATION COORDINATES	CL. NAT. IDENTIFIC.	OP-HOURS	EMISSION	POWER ANT-GAIN	AZIMUTH BEAM-WIDTH	SERVICE AREA	FREQUENCY-IN-USE PREFERRED-BAND	REMARK	COORDINATED OPER. WITH
MLT						**Malte (République de)** **Malta (Republic of)** **Malta (República de)**					
70376	MLT	MALTA RADIO 014E32 35N49	NL RC 9HD	0000-2400	100HA2AAN	Y 35.0 dBW	ND	014E24 35N49 800 km			
MRC						**Maroc (Royaume du)** **Morocco (Kingdom of)** **Marruecos (Reino de)**					
70129	MRC	BOUJDOUR 014W29 26N08	NL RC BJ	0000-2400	960HA2A	Y 26.0 dBW	ND	014W29 26N08 200 km	291.9000 kHz	348	
70126	MRC	CAP SPARTEL 005W56 35N47	NL RC SP	0000-2400	100HA1A	X 33.0 dBW	ND	005W56 35N47 380 km	312.6000 kHz	346	
70127	MRC	EL HANK 007W29 33N37	NL RC HA	0000-2400	846HA2A	Y 26.0 dBW	ND	007W29 33N37 200 km	301.1000 kHz	346	
70128	MRC	OUKACHA 007W34 33N37	NL RC AK	0000-2400	950HA2A	Y 18.0 dBW	ND	007W34 33N37 50 km	305.7000 kHz	347	
NOR						**Norvège** **Norway** **Noruega**					
70426	NOR	ANDENES 016E07 69N19	NL RC AN	0000-2400	100HA1A	Y 20.0 dBW	ND	016E07 69N19 92 km			
70416	NOR	BJOERNSUND 006E48 62N53	NL RC BJ	0000-2400	100HA1A	Y 20.0 dBW	ND	006E48 62N53 92 km			
70433	NOR	BOEKFJORD 030E10 69N52	NL RC BOE	0000-2400	100HA1A	Y 20.0 dBW	ND	030E10 69N52 92 km			

REQUIREMENTS FOR MARITIME RADIOBEACONS
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IFRB NO.	COU ADM	TRANSMITTING-STATION COORDINATES	CL. NAT. IDENTIFIC.	OP-HOURS	EMISSION	POWER ANT-GAIN	AZIMUTH BEAM-WIDTH	SERVICE AREA	FREQUENCY-IN-USE PREFERRED-BAND	REMARK	COORDINATED OPER. WITH
70419	NOR	BUHOLMSRAASA 010E27 64N24	NL RC BU	0000-2400	100HA1A	Y 20.0 dBW	ND	010E27 64N24 37 km			
70399	NOR	FAERDER 010E31 59N01	NL RC FR	0000-2400	100HA1A	Y 20.0 dBW	ND	010E31 59N01 129 km			
70405	NOR	FEISTEIN 005E30 58N49	NL RC FN	0000-2400	100HA1A	Y 20.0 dBW	ND	005E30 58N49 92 km			
70429	NOR	FRUHOLMEN 023E59 71N05	NL RC FH	0000-2400	100HA1A	Y 20.0 dBW	ND	023E59 71N05 92 km			
70398	NOR	FULEHUK 010E36 59N10	NL RC FU	0000-2400	100HA1A	Y 20.0 dBW	ND	010E36 59N10 18 km			
70406	NOR	GEITUNGANE 005E14 59N07	NL RC GU	0000-2400	100HA1A	Y 20.0 dBW	ND	005E14 59N07 92 km			
70415	NOR	GRASOEYANE 005E45 62N25	NL RC GY	0000-2400	100HA1A	Y 20.0 dBW	ND	005E45 62N25 37 km			
70420	NOR	GRINNA 010E58 64N45	NL RC GA	0000-2400	100HA1A	Y 20.0 dBW	ND	010E58 64N45 27 km			
70417	NOR	GRIP 007E36 63N14	NL RC RP	0000-2400	100HA1A	Y 20.0 dBW	ND	007E36 63N14 92 km			
70418	NOR	HALTEN 009E24 64N10	NL RC HA	0000-2400	100HA1A	Y 20.0 dBW	ND	009E24 64N10 92 km			
70427	NOR	HEKKINGEN 017E49 69N36	NL RC HK	0000-2400	100HA1A	Y 20.0 dBW	ND	017E49 69N36 92 km			
70430	NOR	HELNES 026E13 71N03	NL RC HS	0000-2400	100HA1A	Y 20.0 dBW	ND	026E13 71N03 92 km			
70413	NOR	HENDANES 005E02 61N57	NL RC HD	0000-2400	100HA1A	Y 20.0 dBW	ND	005E02 61N57 18 km			
70411	NOR	HOLMENGRAA 004E39 60N50	NL RC HG	0000-2400	100HA1A	Y 20.0 dBW	ND	004E39 60N50 37 km			
70423	NOR	LANDEGODE 014E22 67N26	NL RC LG	0000-2400	100HA1A	Y 20.0 dBW	ND	014E22 67N26 18 km			
70400	NOR	LANGOEYTANGEN 009E45 58N59	NL RC LN	0000-2400	100HA1A	Y 20.0 dBW	ND	009E45 58N59 37 km			
70403	NOR	LISTA 006E34 58N06	NL RC LA	0000-2400	100HA1A	Y 20.0 dBW	ND	006E34 58N06 129 km			
70410	NOR	MARSTEIN 005E00 60N07	NL RC MA	0000-2400	100HA1A	Y 20.0 dBW	ND	005E00 60N07 92 km			

REQUIREMENTS FOR MARITIME RADIOBEACONS
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IFRB NO.	COU ADM	TRANSMITTING-STATION COORDINATES	CL. NAT. IDENTIFIC.	OP-HOURS	EMISSION	POWER ANT-GAIN	AZIMUTH BEAM-WIDTH	SERVICE AREA	FREQUENCY-IN-USE PREFERRED-BAND	REMARK	COORDINATED OPER. WITH
70402	NOR	OKSOEY 008E03 58N04	NL RC KY	0000-2400	100HA1A	Y 20.0 dBW	ND	008E03 58N04 92 km			
70404	NOR	SKARVOEY 005E59 58N24	NL RC GE	0000-2400	100HA1A	Y 20.0 dBW	ND	005E59 58N24 18 km			
70421	NOR	SKLINNA 010E59 65N12	NL RC KL	0000-2400	100HA1A	Y 20.0 dBW	ND	010E59 65N12 185 km			
70424	NOR	SKOMVAER 011E52 67N24	NL RC SK	0000-2400	100HA1A	Y 20.0 dBW	ND	011E52 67N24 185 km			
70425	NOR	SKROVA 014E38 67N09	NL RC KN	0000-2400	100HA1A	Y 20.0 dBW	ND	014E38 67N09 185 km			
70409	NOR	SLAATTEROEY 005E04 59N54	NL RC SL	0000-2400	100HA1A	Y 20.0 dBW	ND	005E04 59N54 18 km			
70431	NOR	SLETNES 028E13 71N05	NL RC SN	0000-2400	100HA1A	Y 20.0 dBW	ND	028E13 71N05 92 km			
70414	NOR	SVINOEY 005E16 62N19	NL RC SY	0000-2400	100HA1A	Y 20.0 dBW	ND	005E16 62N19 185 km			
70422	NOR	TENNHOLMEN 013E30 67N18	NL RC HO	0000-2400	100HA1A	Y 20.0 dBW	ND	013E30 65N18 92 km			
70428	NOR	TORSVAAG 019E30 70N14	NL RC TG	0000-2400	100HA1A	Y 20.0 dBW	ND	019E30 70N14 92 km			
70401	NOR	TORUNGEN 008E47 58N23	NL RC TO	0000-2400	100HA1A	Y 20.0 dBW	ND	008E47 58N23 92 km			
70407	NOR	TRESVIKPYNTEN 005E19 59N16	NL RC TN	0000-2400	100HA1A	Y 20.0 dBW	ND	005E19 59N16 18 km			
70408	NOR	UTSIRA 004E52 59N18	NL RC UT	0000-2400	100HA1A	Y 20.0 dBW	ND	004E52 59N18 129 km			
70412	NOR	UTVAER 004E30 61N02	NL RC VR	0000-2400	100HA1A	Y 20.0 dBW	ND	004E30 61N02 18 km			
70432	NOR	VARDOE 031E09 70N23	NL RC VD	0000-2400	100HA1A	Y 20.0 dBW	ND	031E09 70N23 129 km			

REQUIREMENTS FOR MARITIME RADIOBEACONS
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IFRB NO.	COU ADM	TRANSMITTING-STATION COORDINATES	CL. NAT. IDENTIFIC.	OP-HOURS	EMISSION	POWER ANT-GAIN	AZIMUTH BEAM-WIDTH	SERVICE AREA	FREQUENCY-IN-USE PREFERRED-BAND	REMARK	COORDINATED OPER. WITH
		POL				**Pologne (République populaire de) Poland (People's Republic of) Polonia (República Popular de)**					
70513	POL	HEL 018E49 54N36	NL RC HL	0000-2400	700HA2AAN	Y 17.0 dBW	ND	018E49 54N36 90 km	310.3000 kHz		
70516	POL	JAROSLAHIEC 016E33 54N33	NL RC JA	0000-2400	700HA2AAN	Y 17.0 dBW	ND	016E33 54N33 90 km	287.3000 kHz		
70515	POL	KOLOBRZEG 015E33 54N11	NL RC KB	0000-2400	700HA2AAN	Y 17.0 dBW	ND	015E33 54N11 90 km	287.3000 kHz		
70512	POL	KRYNICA MORSKA 018E27 54N23	NL RC KM	0000-2400	700HA2AAN	Y 17.0 dBW	ND	018E27 54N23 90 km	310.3000 kHz		
70518	POL	LEBA 017E33 54N46	NL RC LE	0000-2400	700HA2AAN	Y 17.0 dBW	ND	017E33 54N46 90 km	287.3000 kHz		
70517	POL	ROZEWIE 018E20 54N50	NL RC RO	0000-2400	700HA2AAN	Y 17.0 dBW	ND	018E20 54N50 90 km	287.3000 kHz		
70514	POL	SWINOUJSCIE 014E17 53N55	NL RC OD	0000-2400	700HA2AAN	Y 17.0 dBW	ND	014E17 53N55 90 km	287.3000 kHz		
		POR				**Portugal**					
70302	POR	AVEIRO 008W45 40N38	NL RC AV	0000-2400	304HF1B	X 14.0 dBW	ND	008W45 40N38 93 km	291.9000 kHz	7	
70305	POR	BERLENGA 009W30 39N25	NL RC IB	0000-2400	304HF1B	X 26.0 dBW	ND	009W30 39N25 370 km	287.3000 kHz	15	
70307	POR	C CARVOEIRO 009W24 39N22	NL RC CV	0000-2400	304HF1B	X 14.0 dBW	ND	009W24 39N22 93 km	287.3000 kHz	17	
70296	POR	C ESPICHEL 009W13 38N25	NL RC PI	0000-2400	304HF1B	X 14.0 dBW	ND	009W13 38N25 93 km	308.0000 kHz	1	
70306	POR	C MONDEGO 008W54 40N11	NL RC MD	0000-2400	304HF1B	X 14.0 dBW	ND	008W54 40N11 93 km	287.3000 kHz	16	

REQUIREMENTS FOR MARITIME RADIOBEACONS
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IFRB NO.	COU ADM	TRANSMITTING-STATION COORDINATES	CL. NAT. IDENTIFIC.	OP-HOURS	EMISSION	POWER ANT-GAIN	AZIMUTH BEAM-WIDTH	SERVICE AREA	FREQUENCY-IN-USE PREFERRED-BAND	REMARK	COORDINATED OPER. WITH
70297	POR	C ROCA 009W24 38N47	NL RC RC	0000-2400	304HF1B	X 20.0 dBW	ND	009W24 38N47 185 km	308.0000 kHz	2	
70300	POR	C S MARIA 007W52 36N58	NL RC SM	0000-2400	304HF1B	X 14.0 dBW	ND	007W52 36N58 93 km	303.4000 kHz	5	
70301	POR	C S VICENTE 009W00 37N01	NL RC VC	0000-2400	304HF1B	X 26.0 dBW	ND	009W00 37N01 370 km	303.4000 kHz	6	
70298	POR	C SINES 008W53 37N57	NL RC SN	0000-2400	304HF1B	X 14.0 dBW	ND	008W53 37N57 93 km	308.0000 kHz	3	
70304	POR	LECA 008W43 41N12	NL RC LC	0000-2400	304HF1B	X 20.0 dBW	ND	008W43 41N12 185 km	291.9000 kHz	14	
70303	POR	MONTEDOR 008W52 41N45	NL RC MR	0000-2400	304HF1B	X 14.0 dBW	ND	008W52 41N45 93 km	291.9000 kHz	8	
70299	POR	VILA REAL S ANTONIO 007W25 37N11	NL RC VR	0000-2400	304HF1B	X 14.0 dBW	ND	007W25 37N11 93 km	303.4000 kHz	4	

ROU

Roumanie (République socialiste de)
Romania (Socialist Republic of)
Rumania (República Socialista de)

70247	ROU	CONSTANTA 028E40 44N10	NL RC CTA	0000-2400	2K00A2AAN	Y 27.0 dBW	ND	028E40 44N10 200 km			
70245	ROU	MANGALIA 028E36 43N40	NL RC MGL	0000-2400	2K00A2AAN	Y 27.0 dBW	ND	028E36 43N40 200 km			
70249	ROU	SFINTU GHEORGHE 029E36 44N54	NL RC SGH	0000-2400	2K00A2AAN	Y 27.0 dBW	ND	029E36 44N54 200 km			
70248	ROU	SULINA 029E40 45N10	NL RC SLN	0000-2400	2K00A2AAN	Y 27.0 dBW	ND	029E40 45N10 200 km			
70246	ROU	TUZLA 028E39 44N01	NL RC TZL	0000-2400	2K00A2AAN	Y 27.0 dBW	ND	028E39 44N01 200 km			

REQUIREMENTS FOR MARITIME RADIOBEACONS
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S

Suède
Sweden
Suecia

IFRB NO.	COU ADM	TRANSMITTING-STATION COORDINATES	CL. NAT. IDENTIFIC.	OP-HOURS	EMISSION	POWER ANT-GAIN	AZIMUTH BEAM-WIDTH	SERVICE AREA	FREQUENCY-IN-USE PREFERRED-BAND	REMARK	COORDINATED OPER. WITH
70333	S	ALMAGRUNDET 019E10 59N09	NL RC AL	0000-2400	30H0A1A	X 18.0 dBW	ND	019E10 59N09 80 km	294.2000 kHz	434	
70317	S	BJUROEKLUBB 021E35 64N29	NL RC BB	0000-2400	30H0A1A	X 22.0 dBW	ND	021E35 64N29 130 km	298.8000 kHz	427	FNL
70325	S	BRAEMOEN 017E45 62N13	NL RC BM	0000-2400	30H0A1A	X 21.0 dBW	ND	017E45 62N13 100 km	308.0000 kHz	431	
70327	S	EGGEGRUND 017E34 60N44	NL RC GG	0000-2400	30H0A1A	X 21.0 dBW	ND	017E34 60N44 100 km	301.1000 kHz	429	
70338	S	FAAROE 019E21 57N58	NL RC FA	0000-2400	30H0A1A	X 22.0 dBW	ND	019E21 57N58 100 km	294.2000 kHz	423	
70349	S	FALSTERBOREV 012E40 55N19	NL RC FV	0000-2400	30H0A1A	X 18.7 dBW	ND	012E40 55N19 80 km	289.6000 kHz	435	
70315	S	FARSTUGRUNDEN 022E45 65N20	NL RC FA	0000-2400	30H0A1A	X 20.0 dBW	ND	022E45 65N20 100 km	298.8000 kHz	428	
70354	S	GOETEBORG 011E59 57N42	NL RC	0000-2400	30H0A1A	X 17.0 dBW	ND	011E59 57N42 6 km	313.5000 kHz	439	
70337	S	GOTSKA SANDOEN 019E12 58N24	NL RC GS	0000-2400	30H0A1A	X 20.0 dBW	ND	019E12 58N24 100 km	395.0000 kHz	423	
70329	S	GRUNDKALLEN 018E51 60N30	NL RC DD	0000-2400	30H0A1A	X 19.0 dBW	ND	018E51 60N30 60 km	314.5000 kHz	437	FNL
70335	S	GUSTAF DALEN 017E28 58N36	NL RC GD	0000-2400	30H0A1A	X 18.0 dBW	ND	017E28 58N36 80 km	294.2000 kHz	434	
70356	S	HAALLOE 011E13 58N20	NL RC LL	0000-2400	30H0A1A	X 20.0 dBW	ND	011E13 58N20 100 km	305.7000 kHz	430	NOR
70326	S	HAELLGRUND 017E24 61N17	NL RC HD	0000-2400	30H0A1A	X 18.0 dBW	ND	017E24 61N17 60 km	406.0000 kHz	429	
70355	S	HAETTEBERGET 011E28 57N52	NL RC BG	0000-2400	30H0A1A	X 18.7 dBW	ND	011E28 57N52 100 km	301.1000 kHz	432	DNK
70324	S	HEMSOE 018E08 62N43	NL RC WA	0000-2400	30H0A1A	X 21.0 dBW	ND	018E08 62N43 120 km	308.0000 kHz	431	

REQUIREMENTS FOR MARITIME RADIOBEACONS
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IFRB NO.	COU ADM	TRANSMITTING-STATION COORDINATES	CL. NAT. IDENTIFIC.	OP-HOURS	EMISSION	POWER ANT-GAIN	AZIMUTH BEAM-WIDTH	SERVICE AREA	FREQUENCY-IN-USE PREFERRED-BAND	REMARK	COORDINATED OPER. WITH
70341	S	HOBURG 018E09 56N55	NL RC OB	0000-2400	30H0A1A	X 20.0 dBW	ND	018E09 56N55 130 km	298.8000 kHz	421	
70320	S	HOLMOEGADD 020E45 63N36	NL RC HG	0000-2400	30H0A1A	X 20.0 dBW	ND	020E45 63N36 120 km	291.9000 kHz	433	FNL
70351	S	KULLEN 012E27 56N18	NL RC KL	0000-2400	30H0A1A	X 20.0 dBW	ND	012E27 56N18 100 km	344.0000 kHz	419	
70336	S	KUNGSGRUNDET 016E54 57N41	NL RC KT	0000-2400	30H0A1A	X 18.0 dBW	ND	016E54 57N41 60 km	294.2000 kHz	422	
70334	S	LANDSORT 017E52 58N44	NL RC LO	0000-2400	30H0A1A	X 21.7 dBW	ND	017E52 58N44 100 km	294.2000 kHz	434	
70350	S	MALMOE 012E59 55N36	NL RC WMU	0000-2400	30H0A1A	X 17.0 dBW	ND	012E59 55N36 15 km	313.5000 kHz	439	
70314	S	MALOEREN 023E34 65N32	NL RC MM	0000-2400	30H0A1A	X 20.0 dBW	ND	023E34 65N32 100 km	312.6000 kHz	428	
70352	S	NIDINGEN 011E54 57N18	NL RC NI	0000-2400	30H0A1A	X 20.0 dBW	ND	011E54 57N18 60 km	294.2000 kHz	436	DNK
70321	S	NORDVALEN 020E47 63N32	NL RC KV	0000-2400	30H0A1A	X 18.0 dBW	ND	020E47 63N32 20 km	313.5000 kHz	418	
70316	S	NORSTROEMSGRUND 022E20 65N07	NL RC ND	0000-2400	30H0A1A	X 20.0 dBW	ND	022E20 65N07 80 km	312.6000 kHz	427	FNL
70343	S	OELANDS NORRA UDDE 017E06 57N22	NL RC NO	0000-2400	30H0A1A	X 21.0 dBW	ND	017E06 57N22 130 km	298.8000 kHz	422	
70345	S	OELANDS SOEDRA GRUND 016E41 56N04	NL RC OG	0000-2400	30H0A1A	X 20.0 dBW	ND	016E41 57N04 130 km	298.8000 kHz	425	
70344	S	OELANDS SOEDRA UDDE 016E24 56N12	NL RC SO	0000-2400	30H0A1A	X 17.8 dBW	ND	016E24 56N12 40 km	308.0000 kHz	425	
70328	S	OERSKAER 018E23 60N32	NL RC OR	0000-2400	30H0A1A	X 21.0 dBW	ND	018E23 60N32 80 km	301.1000 kHz	429	
70340	S	OESTERGARN 018E59 57N27	NL RC ON	0000-2400	30H0A1A	X 21.0 dBW	ND	018E59 57N27 100 km	305.7000 kHz	423	
70318	S	RATASKAER 020E54 64N00	NL RC RA	0000-2400	30H0A1A	X 21.0 dBW	ND	020E54 64N00 80 km	303.4000 kHz	438	
70347	S	SANDHAMMAREN 014E12 55N23	NL RC SM	0000-2400	30H0A1A	X 21.0 dBW	ND	014E12 55N23 80 km	298.8000 kHz	426	DNK
70331	S	SIMPNAESKLUBB 019E05 59N54	NL RC SS	0000-2400	30H0A1A	X 20.0 dBW	ND	019E05 59N54 60 km	314.5000 kHz	424	

REQUIREMENTS FOR MARITIME RADIOBEACONS
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IFRB NO.	COU ADM	TRANSMITTING-STATION COORDINATES	CL. NAT. IDENTIFIC.	OP-HOURS	EMISSION	POWER ANT-GAIN	AZIMUTH BEAM-WIDTH	SERVICE AREA	FREQUENCY-IN-USE PREFERRED-BAND	REMARK	COORDINATED OPER. WITH
70322	S	SKAGSUDDE 019E01 63N11	NL RC SE	0000-2400	30H0A1A	X 20.0 dBW	ND	019E01 63N11 80 km	308.0000 kHz	431	
70319	S	STORA FJAEDERAEGG 021E00 63N49	NL RC SF	0000-2400	30H0A1A	X 19.0 dBW	ND	021E00 63N49 40 km	303.4000 kHz	438	
70342	S	STORA KARLSOE 017E58 57N17	NL RC KS	0000-2400	30H0A1A	X 20.9 dBW	ND	017E58 57N17 80 km	308.0000 kHz	421	
70332	S	SVENSKABJOERN 020E01 59N33	NL RC BN	0000-2400	30H0A1A	X 20.0 dBW	ND	020E01 59N33 100 km	301.1000 kHz	424	
70323	S	SYDOSTBROTTEN 020E11 63N20	NL RC VG	0000-2400	30H0A1A	X 18.0 dBW	ND	020E11 63N20 80 km	291.9000 kHz	433	FNL
70348	S	TRELLEBORG 013E09 55N22	NL RC TR	0000-2400	30H0A1A	X 20.8 dBW	ND	013E09 55N22 60 km	308.0000 kHz	435	
70353	S	TRUBADUREN 011E38 57N36	NL RC TU	0000-2400	30H0A1A	X 18.7 dBW	ND	011E38 57N36 100 km	351.0000 kHz	432	DNK
70330	S	UNDERSTEN 018E55 60N18	NL RC UN	0000-2400	30H0A1A	X 20.5 dBW	ND	018E55 60N18 130 km	301.1000 kHz	437	FNL
70346	S	UTKLIPPAN 015E42 55N57	NL RC UK	0000-2400	30H0A1A	X 21.0 dBW	ND	015E42 55N57 100 km	298.8000 kHz	425	
70339	S	VISBY 018E17 57N38	NL RC VY	0000-2400	30H0A1A	X 17.8 dBW	ND	018E17 57N38 20 km	406.0000 kHz	420	

TUN

Tunisie
Tunisia
Túnez

70311	TUN	CAP BLANC 009E50 37N19	NL RC BC	0000-2400	850HA2AAN	Y 23.0 dBW	ND	009E50 37N19 185 km	310.3000 kHz		
70394	TUN	CAP BON 011E03 37N04	NL RC BN	0000-2400	100HA1AAN	X 26.0 dBW	ND	011E03 37N04 370 km	313.5000 kHz		ALG F

REQUIREMENTS FOR MARITIME RADIOBEACONS
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IFRB NO.	COU ADM	TRANSMITTING-STATION COORDINATES	CL. NAT. IDENTIFIC.	OP-HOURS	EMISSION	POWER ANT-GAIN	AZIMUTH BEAM-WIDTH	SERVICE AREA	FREQUENCY-IN-USE PREFERRED-BAND	REMARK	COORDINATED OPER. WITH
						Turquie					
TUR						**Turkey**					
						Turquía					
70392	TUR	AKINCI BURNU 035E47 36N19	NL RC AB	0000-2400	2K10A2AAN	Y 20.9 dBW	ND	035E47 36N19 185 km		1132	
70380	TUR	BAFRA BURNU 035E56 41N43	NL RC BB	0000-2400	2K10A2AAN	Y 20.9 dBW	ND	035E56 41N43 185 km		1132	
70387	TUR	FENERBAHCE 029E01 40N58	NL RC FB	0000-2400	2K10A2AAN	Y 20.9 dBW	ND	029E01 40N58 185 km		1132	
70390	TUR	FINIKE 030E09 36N16	NL RC FR	0000-2400	2K10A2AAN	Y 24.7 dBW	ND	030E09 36N16 556 km	303.4000 kHz	1133	
70377	TUR	HOPA 041E20 41N22	NL RC HP	0000-2400	2K10A2AAN	Y 20.9 dBW	ND	041E20 41N22 185 km		1132	
70378	TUR	IGNE ADA 028E03 41N53	NL RC IA	0000-2400	2K10A2AAN	Y 20.9 dBW	ND	028E03 41N53 185 km		1132	
70389	TUR	IZMIR KARABURUN 026E31 38N39	NL RC IK	0000-2400	2K10A2AAN	Y 20.9 dBW	ND	026E31 38N39 185 km		1132	
70384	TUR	KEFREN ADA 030E17 41N13	NL RC KF	0000-2400	2K10A2AAN	Y 22.4 dBW	ND	030E17 41N13 278 km	301.1000 kHz	1133	
70382	TUR	KEREMPE BURNU 033E20 42N01	NL RC KB	0000-2400	2K10A2AAN	Y 20.9 dBW	ND	033E20 42N01 185 km		1132	
70386	TUR	MARMARA EREGLISI 027E57 40N58	NL RC ME	0000-2400	2K10A2AAN	Y 20.9 dBW	ND	027E57 40N58 185 km		1132	
70388	TUR	MEHMETCIK BURNU 026E10 40N02	NL RC MB	0000-2400	2K10A2AAN	Y 20.9 dBW	ND	026E10 40N02 185 km		1132	
70391	TUR	MERSIN 034E37 36N47	NL RC MR	0000-2400	2K10A2AAN	Y 20.9 dBW	ND	034E37 36N47 185 km		1132	
70383	TUR	OLUCE BURNU 031E24 41N18	NL RC OB	0000-2400	2K10A2AAN	Y 20.9 dBW	ND	031E24 41N18 185 km		1132	
70385	TUR	RUMELI BURNU 029E06 41N13	NL RC RB	0000-2400	2K10A2AAN	Y 26.9 dBW	ND	029E06 41N13 278 km	301.1000 kHz	1133	
70393	TUR	RUMELI FENER 029E06 41N13	NL RT TCT	0000-2400	2K10A2AAN	Y 20.9 dBW	ROT	029E06 41N13 278 km	318.5000 kHz	1134	

REQUIREMENTS FOR MARITIME RADIOBEACONS
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IFRB NO.	COU ADM	TRANSMITTING-STATION COORDINATES	CL. NAT. IDENTIFIC.	OP-HOURS	EMISSION		POWER ANT-GAIN	AZIMUTH BEAM-WIDTH	SERVICE AREA		FREQUENCY-IN-USE PREFERRED-BAND	REMARK	COORDINATED OPER. WITH
70381	TUR	SINOP INCEBURUN 034E56 42N06	NL RC SI	0000-2400	2K10A2AAN	Y	20.9 dBW	ND	034E56 42N06	185 km		1132	
70379	TUR	YASUN BURNU 037E41 41N08	NL RC YB	0000-2400	2K10A2AAN	Y	20.9 dBW	ND	037E41 41N08	185 km		1132	

UKR

République socialiste soviétique d'Ukraine
Ukrainian Soviet Socialist Republic
República Socialista Soviética de Ucrania

70240	UKR URS	AYTODORSKIY 034E07 44N26	NL RC AT	0000-2400	2K10A2AAN	Y	24.0 dBW	ND	034E07 44N26	280 km	315.5000 kHz	218	
70243	UKR URS	BELOSARAYSKIY 037E20 46N53	NL RC BS	0000-2400	2K10A2AAN	Y	24.0 dBW	ND	037E20 46N53	280 km	300.5000 kHz	216	
70244	UKR URS	BERDYANSKIY NIZHNIY 036E46 46N38	NL RC NB	0000-2400	2K10A2AAN	Y	24.0 dBW	ND	036E46 46N38	280 km	300.5000 kHz	216	
70234	UKR URS	BEREZAN OSTROV 031E25 46N36	NL RC BZ	0000-2400	100HA1BAN	Y	17.0 dBW	ND	031E25 46N36	28 km	321.5000 kHz	220	
70236	UKR URS	BUROVAJA VYSHKA NO 2 031E43 45N41	NL RC KZ	0000-2400	100HA1BAN	Y	17.0 dBW	ND	031E43 45N41	28 km	318.5000 kHz	219	
70238	UKR URS	EVPATORIYSKIY 033E16 45N09	NL RC EA	0000-2400	2K10A2AAN	Y	24.0 dBW	ND	033E16 45N09	280 km	309.5000 kHz	217	
70231	UKR URS	ILJICHEVSKIY 030E41 46N19	NL RC IO	0000-2400	100HA1BAN	Y	20.0 dBW	ND	030E41 46N19	46 km	318.5000 kHz	219	
70241	UKR URS	ILJINSKIY 035E25 45N01	NL RC IL	0000-2400	2K10A2AAN	Y	24.0 dBW	ND	035E25 45N01	280 km	315.5000 kHz	218	
70239	UKR URS	KHERSONESSKIY 033E23 44N35	NL RC SW	0000-2400	2K10A2AAN	Y	24.0 dBW	ND	033E23 44N35	280 km	309.5000 kHz	217	
70242	UKR URS	KYZ-AULSKIY 036E22 45N04	NL RC KA	0000-2400	2K10A2AAN	Y	24.0 dBW	ND	036E22 45N04	280 km	315.5000 kHz	218	
70232	UKR URS	ODESSKIY 030E45 46N23	NL RC OD	0000-2400	2K10A2AAN	Y	24.0 dBW	ND	030E45 46N23	280 km	309.5000 kHz	217	
70237	UKR URS	TARKHANKUTSKIY 032E30 45N21	NL RC TR	0000-2400	2K10A2AAN	Y	24.0 dBW	ND	032E30 45N21	280 km	309.5000 kHz	217	
70235	UKR URS	TENDROVSKIY 031E31 46N19	NL RC TD	0000-2400	2K10A2AAN	Y	24.0 dBW	ND	031E31 46N19	280 km	309.5000 kHz	217	

REQUIREMENTS FOR MARITIME RADIOBEACONS
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IFRB NO.	COU ADM	TRANSMITTING-STATION COORDINATES	CL. NAT. IDENTIFIC.	OP-HOURS	EMISSION		POWER ANT-GAIN	AZIMUTH BEAM-WIDTH	SERVICE AREA		FREQUENCY-IN-USE PREFERRED-BAND	REMARK	COORDINATED OPER. WITH
70233	UKR URS	VORONTSOVSKIY 030E46 46N30	NL RC WR	0000-2400	2K10A2AAN	Y	24.0 dBW	ND	030E46 46N30	185 km	309.5000 kHz	217	
70230	UKR URS	ZMEINYY OSTROV 030E12 45N15	NL RC ZM	0000-2400	2K10A2AAN	Y	24.0 dBW	ND	030E12 45N15	185 km	294.5000 kHz	215	

URS

Union des Républiques socialistes soviétiques
Union of Soviet Socialist Republics
Unión de Repúblicas Socialistas Soviéticas

70210	URS	ABRAMOVSKIY 043E16 66N25	NL RC AB	0000-2400	100HA1BAN	Y	20.0 dBW	ND	043E16 66N25	55 km	291.5000 kHz	155	
70193	URS	AKHILLEONSKIY 036E47 45N26	NL RC AN	0000-2400	100HA1BAN	Y	17.0 dBW	ND	036E47 45N26	47 km	300.5000 kHz	158	
70194	URS	AKHTARSKIY 038E11 46N06	NL RC AH	0000-2400	2K10A2AAN	Y	24.0 dBW	ND	038E11 46N06	185 km	300.5000 kHz	158	
70186	URS	AKMENRAGS 021E04 56N50	NL RC AK	0000-2400	100HA1BAN	Y	24.0 dBW	ND	021E04 56N50	185 km	312.5000 kHz	163	
70196	URS	ANAPSKIY 037E18 44N53	NL RC AP	0000-2400	100HA1BAN	Y	17.0 dBW	ND	037E18 44N53	28 km	315.5000 kHz	164	
70191	URS	BALTIYSK 019E54 54N38	NL RC BK	0000-2400	100HA1AAN	Y	23.0 dBW	ND	019E54 54N38	150 km	312.5000 kHz	163	
70203	URS	BATUMSKIY 041E39 41N39	NL RC BT	0000-2400	2K10A2AAN	Y	24.0 dBW	ND	041E39 41N39	280 km	297.5000 kHz	157	
70226	URS	CHESHSKIY 048E36 67N55	NL RC TJ	0000-2400	2K10A2AAN	Y	24.0 dBW	ND	048E36 67N55	280 km	294.5000 kHz	156	
70218	URS	CHESMENSKIY 036E32 64N43	NL RC NM	0000-2400	100HA1BAN	Y	20.0 dBW	ND	036E32 64N43	55 km	300.5000 kHz	158	
70197	URS	DOOBSKIY 037E55 44N38	NL RC DB	0000-2400	2K10A2AAN	Y	24.0 dBW	ND	037E55 44N38	280 km	315.5000 kHz	164	
70205	URS	GORODETSKIY 040E59 67N42	NL RC GD	0000-2400	2K10A2AAN	Y	24.0 dBW	ND	040E59 67N42	180 km	312.5000 kHz	163	
70181	URS	IRBENSKIY 021E37 57N51	NL RC PM	0000-2400	100HA1BAN	Y	20.0 dBW	ND	021E37 57N51	28 km	309.5000 kHz	162	
70204	URS	KANINSKIY 043E17 68N39	NL RC KS	0000-2400	2K10A2AAN	Y	24.0 dBW	ND	043E17 68N39	280 km	312.5000 kHz	163	

REQUIREMENTS FOR MARITIME RADIOBEACONS
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IFRB NO.	COU ADM	TRANSMITTING-STATION COORDINATES	CL. NAT. IDENTIFIC.	OP-HOURS	EMISSION		POWER ANT-GAIN	AZIMUTH BEAM-WIDTH	SERVICE AREA		FREQUENCY-IN-USE PREFERRED-BAND	REMARK	COORDINATED OPER. WITH
70215	URS	KASHKARANSKIY 036E01 66N20	NL RC KC	0000-2400	2K10A2AAN	Y	24.0 dBW	ND	036E01 66N20	190 km	315.5000 kHz	164	
70170	URS	KAYBOLOYO 028E02 59N44	NL RC KA	0000-2400	2K10A2AAN	Y	24.0 dBW	ND	028E02 59N44	130 km	294.5000 kHz	156	
70224	URS	KHARLOVSKIY 037E20 68N49	NL RC OH	0000-2400	2K10A2AAN	Y	24.0 dBW	ND	037E20 68N49	280 km	318.5000 kHz	165	
70229	URS	KHODOVARIKHA 053E46 68N56	NL RC HR	0000-2400	2K10A2AAN	Y	24.0 dBW	ND	053E46 68N56	280 km	294.5000 kHz	156	
70188	URS	KLAYPEDA 021E06 55N44	NL RC KA	0000-2400	100HA1BAN	Y	24.0 dBW	ND	021E06 55N44	225 km	312.5000 kHz	163	
70198	URS	KODOSHSKIY 039E02 44N06	NL RC KD	0000-2400	2K10A2AAN	Y	24.0 dBW	ND	039E02 44N06	280 km	297.5000 kHz	157	
70227	URS	KOLGUYEV YUZNY 048E40 68N42	NL RC DG	0000-2400	100HA1BAN	Y	20.0 dBW	ND	048E40 68N42	65 km	303.5000 kHz	160	
70228	URS	KOLGUYEVSKIY 049E07 69N30	NL RC OK	0000-2400	2K10A2AAN	Y	24.0 dBW	ND	049E07 69N30	280 km	294.5000 kHz	156	
70182	URS	KOLKASRAGS 022E36 57N45	NL RC KL	0000-2400	2K10A2AAN	Y	24.0 dBW	ND	022E36 57N45	185 km	318.5000 kHz	165	
70207	URS	KONUSHINSKIY 043E47 67N12	NL RC KO	0000-2400	100HA1BAN	Y	20.0 dBW	ND	043E47 67N12	47 km	303.5000 kHz	160	
70177	URS	KUBASSAARE 023E18 58N26	NL RC KR	0000-2400	2K10A2AAN	Y	24.0 dBW	ND	023E18 58N26	180 km	318.5000 kHz	165	
70187	URS	LIEPAIA 021E00 56N31	NL RC LB	0000-2400	100HA1BAN	Y	24.0 dBW	ND	021E00 56N31	225 km	312.5000 kHz	163	
70183	URS	MERSRAGS 023E07 57N22	NL RC MR	0000-2400	100HA1BAN	Y	20.0 dBW	ND	023E07 57N22	28 km	291.5000 kHz	155	
70184	URS	MIKELBAKA 021E59 57N36	NL RC MB	0000-2400	100HA1BAN	Y	17.0 dBW	ND	021E59 57N36	35 km	302.5000 kHz	159	
70225	URS	MIKULKIN 046E41 67N48	NL RC MK	0000-2400	100HA1BAN	Y	20.0 dBW	ND	046E41 67N48	95 km	297.5000 kHz	157	
70172	URS	MOKHNI 025E48 59N41	NL RC MH	0000-2400	2K10A2AAN	Y	24.0 dBW	ND	025E48 59N41	130 km	294.5000 kHz	156	
70209	URS	MORZHOVSKIY 042E28 66N43	NL RC MV	0000-2400	2K10A2AAN	Y	23.0 dBW	ND	042E28 66N43	110 km	306.5000 kHz	161	
70217	URS	MUDYUGSKIY 040E14 64N55	NL RC MU	0000-2400	2K10A2AAN	Y	24.0 dBW	ND	040E14 64N55	180 km	315.5000 kHz	164	

REQUIREMENTS FOR MARITIME RADIOBEACONS
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IFRB NO.	COU ADM	TRANSMITTING-STATION COORDINATES	CL. NAT. IDENTIFIC.	OP-HOURS	EMISSION	POWER ANT-GAIN	AZIMUTH BEAM-WIDTH	SERVICE AREA	FREQUENCY-IN-USE PREFERRED-BAND	REMARK	COORDINATED OPER. WITH
70174	URS	NAYSSAAR 024E31 59N36	NL RC NG	0000-2400	2K10A2AAN	Y 24.0 dBW	ND	024E31 59N36 130 km	294.5000 kHz	156	
70189	URS	NIDDEN 021E00 55N18	NL RC ND	0000-2400	100HA1AAN	Y 17.0 dBW	ND	021E00 55N18 37 km	315.5000 kHz	164	
70213	URS	NIKODIMSKIY 039E06 66N06	NL RC NI	0000-2400	2K10A2AAN	Y 24.0 dBW	ND	039E06 66N06 180 km	315.5000 kHz	164	
70176	URS	OSMUSSAAR OSTROV 023E22 59N18	NL RC OR	0000-2400	2K10A2AAN	Y 24.0 dBW	ND	023E22 59N18 150 km	318.5000 kHz	165	
70175	URS	PAKRI 024E02 59N23	NL RC PA	0000-2400	2K10A2AAN	Y 24.0 dBW	ND	024E02 59N23 150 km	294.5000 kHz	156	
70200	URS	PITSUNDSKIY 040E21 43N09	NL RC PC	0000-2400	2K10A2AAN	Y 24.0 dBW	ND	040E21 43N09 280 km	297.5000 kHz	157	
70202	URS	POTIYSKIY 041E40 42N08	NL RC PT	0000-2400	2K10A2AAN	Y 24.0 dBW	ND	041E40 42N08 280 km	297.5000 kHz	157	
70178	URS	RISTNA 022E03 58N56	NL RC RS	0000-2400	2K10A2AAN	Y 24.0 dBW	ND	022E03 58N56 180 km	318.5000 kHz	165	
70375	URS	RUSSKIY 036E22 69N06	NL RC OR	0000-2400	2K10A2AAN	Y 20.0 dBW	ND	036E22 69N06 280 km	318.5000 kHz	165	
70222	URS	SETNAVOLOKSKIY 033E30 69N24	NL RC SN	0000-2400	2K10A2AAN	Y 24.0 dBW	ND	033E30 69N24 280 km	318.5000 kHz	165	
70206	URS	SHOYNA 044E08 67N53	NL RC CHN	0000-2400	2K10A2AAN	Y 24.0 dBW	ND	044E08 67N53 280 km	312.5000 kHz	163	
70199	URS	SOCHINSKIY 039E43 43N35	NL RC SO	0000-2400	2K10A2AAN	Y 24.0 dBW	ND	039E43 43N35 280 km	297.5000 kHz	157	
70212	URS	SOSNOVETSKIY 040E41 66N29	NL RC SC	0000-2400	2K10A2AAN	Y 23.0 dBW	ND	040E41 66N29 130 km	306.5000 kHz	161	
70201	URS	SUKHUMSKIY 040E58 42N59	NL RC SM	0000-2400	2K10A2AAN	Y 24.0 dBW	ND	040E58 42N59 280 km	297.5000 kHz	157	
70180	URS	SYRVE 022E03 57N55	NL RC SY	0000-2400	2K10A2AAN	Y 24.0 dBW	ND	022E03 57N55 180 km	318.5000 kHz	165	
70173	URS	TALLINN 024E44 59N43	NL RC TN	0000-2400	2K10A2AAN	Y 24.0 dBW	ND	024E44 59N43 47 km	300.5000 kHz	158	
70190	URS	TARAN 019E59 54N58	NL RC BT	0000-2400	100HA1BAN	Y 24.0 dBW	ND	019E59 54N58 225 km	312.5000 kHz	163	
70223	URS	TERIBERSKIY 035E10 69N15	NL RC TB	0000-2400	2K10A2AAN	Y 24.0 dBW	ND	035E10 69N15 290 km	318.5000 kHz	165	

REQUIREMENTS FOR MARITIME RADIOBEACONS
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IFRB NO.	COU ADM	TRANSMITTING-STATION COORDINATES	CL. NAT. IDENTIFIC.	OP-HOURS	EMISSION	POWER ANT-GAIN	AZIMUTH BEAM-WIDTH	SERVICE AREA	FREQUENCY-IN-USE PREFERRED-BAND	REMARK	COORDINATED OPER. WITH
70208	URS	TERSKO-ORLOVSKIY 041E20 67N12	NL RC TO	0000-2400	2K10A2AAN	Y 23.0 dBW	ND	041E20 67N12 140 km	306.5000 kHz	161	
70221	URS	TSYPNAVOLOKSKIY 033E06 69N44	NL RC CK	0000-2400	2K10A2AAN	Y 24.0 dBW	ND	033E06 69N44 280 km	318.5000 kHz	165	
70171	URS	UZNY GOGLAND 027E01 60N01	NL RC UG	0000-2400	2K10A2AAN	Y 24.0 dBW	ND	027E01 60N01 90 km	294.5000 kHz	156	
70220	URS	VAYDAGUBSKIY 031E57 69N57	NL RC WD	0000-2400	2K10A2AAN	Y 24.0 dBW	ND	031E57 69N57 280 km	318.5000 kHz	165	
70185	URS	VENTSPILS 021E33 57N24	NL RC WW	0000-2400	100HA1BAN	Y 24.0 dBW	ND	021E53 57N24 185 km	312.5000 kHz	163	
70216	URS	VEPREVSKIY 039E53 65N38	NL RC WP	0000-2400	2K10A2AAN	Y 24.0 dBW	ND	039E53 65N38 180 km	315.5000 kHz	164	
70179	URS	VILSANDI 021E49 58N23	NL RC WD	0000-2400	2K10A2AAN	Y 24.0 dBW	ND	021E49 58N23 90 km	318.5000 kHz	165	
70211	URS	VORONOVSKIY 042E14 66N30	NL RC WR	0000-2400	2K10A2AAN	Y 24.0 dBW	ND	042E14 66N30 280 km	306.5000 kHz	161	
70192	URS	YENIKALSKIY 036E38 45N23	NL RC EN	0000-2400	2K10A2AAN	Y 24.0 dBW	ND	036E38 45N23 280 km	300.5000 kHz	158	
70195	URS	ZHELEZNYY ROG 036E44 45N07	NL RC VR	0000-2400	100HA1BAN	Y 20.0 dBW	ND	036E44 45N07 47 km	315.5000 kHz	164	
70214	URS	ZHIZHGINSKIY 036E49 65N12	NL RC VG	0000-2400	2K10A2AAN	Y 24.0 dBW	ND	036E49 65N12 280 km	315.5000 kHz	164	
70219	URS	ZHUZHMUYSKIY 035E34 64N41	NL RC BR	0000-2400	100HA1BAN	Y 17.0 dBW	ND	035E34 64N41 37 km	309.5000 kHz	162	

REQUIREMENTS FOR MARITIME RADIOBEACONS
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YUG

Yougoslavie (République socialiste fédérative de)
Yugoslavia (Socialist Federal Republic of)
Yugoslavia (República Socialista Federativa de)

IFRB NO.	COU ADM	TRANSMITTING-STATION	COORDINATES	CL. NAT. IDENTIFIC.	OP-HOURS	EMISSION		POWER ANT-GAIN	AZIMUTH BEAM-WIDTH	SERVICE AREA		FREQUENCY-IN-USE PREFERRED-BAND	REMARK	COORDINATED OPER. WITH
70397	YUG	BAR	019E06 42N06	NL RC YB	0000-2400	2K10A2A	Y	20.0 dBW	ND	019E06 42N06	185 km			
70258	YUG	KAMENJAK	014E55 44N47	NL RC YP	0000-2400	2K10A2A	Y	20.0 dBW	ND	014E55 44N47	182 km	298.8000 kHz		I
70260	YUG	MOLUNAT	018E26 42N27	NL RC YC	0000-2400	2K10A2A	Y	20.0 dBW	ND	018E26 42N27	185 km	305.7000 kHz		I
70259	YUG	MOVAR	015E58 43N30	NL RC YV	0000-2400	2K10A2A	Y	20.0 dBW	ND	015E58 43N30	185 km	289.6000 kHz		I
70261	YUG	RIJEKA	014E25 45N20	NL RC YUR	0000-2400	100HA1A	Y	17.0 dBW	ND	014E25 45N20	10 km	312.6000 kHz	324	
70262	YUG	SPLIT	016E29 43N30	NL RC YUS	0000-2400	100HA1A	Y	17.0 dBW	ND	016E29 43N30	10 km	312.6000 kHz	324	
70396	YUG	STONCICA	016E15 43N04	NL RC YS	0000-2400	2K10A2A	Y	20.0 dBW	ND	016E15 43N04	185 km			
70395	YUG	VELI RAT	014E49 44N09	NL RC YR	0000-2400	2K10A2A	Y	20.0 dBW	ND	014E49 44N09	185 km			

ANNEX 3

REMARKS

Supplied by the Administrations in relation to their requirements

1 a) The frequency 308.0 kHz, in use at present, is to be retained.
b) Future radiobeacon which will operate in accordance with IALA* proposal and as a standard radiobeacon grouped with C. SINES and C. ROCA.
c) Designation of emission : 304HF1B and 100HA1A .

2 a) The frequency 308.0 kHz, in use at present, is to be retained.
b) Future radiobeacon which will operate in accordance with IALA proposal and as a standard radiobeacon grouped with C. SINES and C. ESPICHEL.
c) Designation of emission : 304HF1B and 100HA1A.

3 a) The frequency 308.0 kHz, in use at present, is to be retained.
b) Future radiobeacon which will operate in accordance with IALA proposal and as a standard radiobeacon grouped with C. ROCA and C. ESPICHEL.
c) Designation of emission : 304HF1B and 100HA1A.

4 a) The frequency 303.4 kHz, in use at present, is to be retained.
b) Future radiobeacon which will operate in accordance with IALA proposal and as a standard radiobeacon grouped with C.S. VICENTE and C.S. MARIA.
c) Designation of emission : 304HF1B and 100HA1A.

5 a) The frequency 303.4 kHz, in use at present, is to be retained.
b) Future radiobeacon which will operate in accordance with IALA proposal and as a standard radiobeacon grouped with VILA REAL S. ANTONIO and C.S.VICENTE.
c) Designation of emission : 304HF1B and 100HA1A.

6 a) The frequency 303.4 kHz, in use at present, is to be retained.
Future radiobeacon which will operate in accordance with IALA proposal and as a standard radiobeacon grouped with VILA REAL S. ANTONIO and C.S.MARIA.
c) Designation of emission : 304HF1B and 100HA1A.

7 a) The frequency 291.9 kHz, in use at present, is to be retained.
b) Future radiobeacon which will operate in accordance with IALA proposal and as a standard radiobeacon grouped with LEÇA and MONTEDOR.
c) Designation of emission : 304HF1B and 100HA1A.

8 a) The frequency 291.9 kHz, in use at present, is to be retained.
b) Future radiobeacon which will operate in accordance with IALA proposal and as a standard radiobeacon grouped with LEÇA and AVEIRO.
c) Designation of emission : 304HF1B and 100HA1A.

14 a) The frequency 291.9 kHz, in use at present, is to be retained.
b) Future radiobeacon which will operate in accordance with IALA proposal and as a standard radiobeacon grouped with MONTEDOR and AVEIRO.
c) Designation of emission : 304HF1B and 100HA1A.

15 a) The frequency 287.3 kHz, in use at present, is to be retained.
b) Future radiobeacon which will operate in accordance with IALA proposal and as a standard radiobeacon grouped with C. CARVOEIRO and C. MONDEGO.
c) Designation of emission : 304HF1B and 100HA1A.

* IALA: International Association of Lighthouse Authorities

16 a) The frequency 287.3 kHz, in use at present, is to be retained.
b) Future radiobeacon which will operate in accordance with IALA proposal and as a standard radiobeacon grouped with C. CARVOEIRO and BERLENGA.
c) Designation of emission : 304HF1B and 100HA1A.

17 a) The frequency 287.3 kHz, in use at present, is to be retained.
b) Future radiobeacon which will operate in accordance with IALA proposal and as a standard radiobeacon grouped with C. MONDEGO and BERLENGA.
c) Designation of emission : 304HF1B and 100HA1A.

18 a) Future radiobeacon which will operate in accordance with IALA proposal and as a standard radiobeacon grouped with PONTA DO PARGO and SELVAGEM.
b) Designation of emission : 304HF1B and 100HA1A.

19 a) Future radiobeacon which will operate in accordance with IALA proposal and as a standard radiobeacon grouped with ILHEU DE CIMA and PONTA DO PARGO.
b) Designation of emission : 304HF1B and 100HA1A.

22 a) Future radiobeacon which will operate in accordance with IALA proposal and as a standard radiobeacon grouped with ILHEU DE CIMA and SELVAGEM.
b) Designation of emission : 304HF1B and 100HA1A.

25 a) Future radiobeacon which will operate in accordance with IALA proposal and as a standard radiobeacon grouped with RIBEIRINHA and ALBARNAZ.
b) Designation of emission : 304HF1B and 100HA1A.

26 a) Future radiobeacon which will operate in accordance with IALA proposal and as a standard radiobeacon grouped with PONTA DA BARCA and ALBARNAZ.
b) Designation of emission : 304HF1B and 100HA1A.

27 a) Future radiobeacon which will operate in accordance with IALA proposal and as a standard radiobeacon grouped with PONTA DA BARCA and RIBEIRINHA.
b) Designation of emission : 304HF1B and 100HA1A.

28 a) Future radiobeacon which will operate in accordance with IALA proposal and as a standard radiobeacon grouped with GONÇALO VELHO and ARNEL.
b) Designation of emission : 304HF1B and 100HA1A.

33 a) Future radiobeacon which will operate in accordance with IALA proposal and as a standard radiobeacon grouped with ARNEL and CONTENDAS.
b) Designation of emission : 304HF1B and 100HA1A.

34 a) Future radiobeacon which will operate in accordance with IALA proposal and as a standard radiobeacon grouped with CONÇALO VELHO and CONTENDAS.
b) Designation of emission : 304HF1B and 100HA1A.

146 Station equipped with maritime radionavigation system RANA P.17 operating in hyperbolic mode on a bandwidth of 0.1 Hertz with maximum effective radiated power of 1 Watt. The corresponding frequency assignment has been recorded in the Master International Frequency Register for more than six months and has not given rise to any complaint of interference from other administrations.

155 Proposed frequency 291.5 kHz.

156 Proposed frequency 294.5 kHz.

157 Proposed frequency 297.5 kHz.

158 Proposed frequency 300.5 kHz.

159 Proposed frequency 302.5 kHz.

160 Proposed frequency 303.5 kHz.

161 Proposed frequency 306.5 kHz.

162 Proposed frequency 309.5 kHz.

163 Proposed frequency 312.5 kHz.

164 Proposed frequency 315.5 kHz.

165 Proposed frequency 318.5 kHz.

215 Proposed frequency 294.5 kHz.

216 Proposed frequency 300.5 kHz.

217 Proposed frequency 309.5 kHz.

218 Proposed frequency 315.5 kHz.

219 Proposed frequency 318.5 kHz.

220 Proposed frequency 321.5 kHz.

324 Operating on request (for calibrating).

326 Grouping of Beacons:

a) Radiobeacons Operating Singly:
Brighton Marina,
Channel LSTN,
Chichester Bar,
Cloch Point,
Hartland Point,
Inchkeith,
Nab Tower,
Newhaven,
Number LSTN,
Point Lynas (Calibration Station),
Poole Harbour,
St. Helier,
St. Peter Port,
Scarweather LSTN,
Souter Point (Calibration Station),
Sunk LSTN.

b) Radiobeacons Operating in Groups of Two:
Cap D'Alprech (F)* / Dungeness,
Cap Frehal (F)* / La Corbiere,
Girdle Ness / Fife Ness,
Lundy South / Flatholm,
Mizen Head (IRL)* / Round Island,
Oigh Sgeir / Eilean Glas.

c) Radiobeacons Operating in Groups of Three:
Altacarry Head / Pladda / Rinns of Islay,
Bara Head / Tory Island (IRL)* / Eagle Island (IRL)*,
Bressay / North Ronaldsay / Muckle Flugga,
Cape Wrath / Butt of Lewis / Sule Skerry,
Cregneish / Point of Ayre / Mew Island,
Hough / Flamborough Head / Spurn LSTN,
Longstone / Isle of May / Souter Point,
North Foreland / South Foreland / Falls LSTN,
Outer Gabbard LSTN / Goerree (HOL)* / North Hinder LSTN (HOL)*,
Penlee Point / Ile Vierge (F)* / Lizard,
Portland Bill / St. Catherines Point / Barfleur (F)*,
Roches Douvres (F)* / Start Point / Casquets,
Royal Sovereign / Bassurelle (F)* / Pointe D'Ailly (F)*,
Skerries / Wicklow Head (IRL)* / Rockabill (IRL)*,
Smiths Knoll / Cromer / Dudgeon LSTN,
Stroma / Kinnaird Head / Sumburgh Head,
Tuskar Rock (IRL)* / South Bishop / Bardsey,
Walney Island / Point Lynas / Douglas.

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* Where radiobeacons in France, the Netherlands or the Republic of Ireland have been included this is simply to show the proposed grouping with related radiobeacons in the United Kingdom.

327 Calibration station.
See also Remark No. 326.

330 a) Calibration beacons at Ballycotton, Kish and Mizen Head (IFRB Nos. 70093, 70097 and 70100) should be assigned frequencies as close to 300 kHz as possible.
b) As calibration facilities are achieved at Kish by reducing the power of the main beacon (IFRB Nos. 70096 and 70097) these beacons should also be assigned a frequency close to 300 kHz if possible.
c) Existing emission designations have been listed in each instance. Should the Conference decide on different emission modes as expected from IALA plans the Administration of Ireland would adopt the new modes subject to satisfactory implementation timescales.
d) Stations at Rockabill and Hook Point are new stations and are only required if the new IALA plan is implemented.

Present Grouping Arrangments	Proposed Grouping Arrangements
Barra Head (G)	Barra Head (G)
Tory Island (IRL)	Tory Island (IRL)
Eagle Island (IRL)	Eagle Island (IRL)
Mizen Head (IRL)	--------
Round Island (G)	Mizen Head (IRL)
Creach D'Ouessant (F)	Round Island (G)
--------	Creach D'Ouessant (F)
Slyne Head (IRL)	--------
Loop Head (IRL)	Slyne Head (IRL)
--------	Loop Head (IRL)
Ballycotton (IRL)	--------
Old Head Kinsale (IRL)	Old Head Kinsale (IRL)
Lundy Island (G)	Ballycotton (IRL)
Flat Holm (G)	*Hook Point (IRL)
South Bishop (G)	--------
Tuskar Rock (IRL)	Tuskar Rock (IRL)
--------	South Bishop (G)
Skerries (G)	Bardsey (G)
Bardsey (G)	--------
Wicklow Head (IRL)	Lundy Island (G)
--------	Flat Holm (G)
Gregneish (G)	--------
Point of Ayre (G)	Wicklow Head (IRL)
South Rock LV (G)	Skerries (G)
--------	*Rockabill (IRL)
Kish Bank (IRL)	--------
	Gregneish (G)
	Point of Ayre (G)
	Mew Island (G)
* New Stations	--------
	Kish Bank (IRL)
	South Rock LV (G)

331 In misty weather every three minutes starting at H + 02 every hour. In clear weather at H + 02, H + 05, H + 08, H + 11, H + 32, H + 35, H + 38 and H + 41 minutes every hour.
Radiobeacon grouped with Pantelleria and Cozzo Spadaro.

332 In misty weather every three minutes starting at H + 02 every hour.
In clear weather at H + 08, H + 11, H + 14, H + 17, H + 38, H + 41, H + 44 and H + 47 minutes every hour.
Radiobeacon grouped with Civitavecchia and Genova.

333 In misty weather every three minutes starting at H + 02 every hour.
In clear weather at H + 14, H + 17, H + 20, H + 23, H + 44, H + 47, H + 50 and H + 53 minutes every hour.
Radiobeacon grouped with San Vito Lo Capo and Punta Carena.

334 In misty weather every three minutes starting at H + 00 every hour.
In clear weather at H + 06, H + 09, H + 12, H + 15, H + 36, H + 39, H + 42 and H + 45 minutes every hour.
Radiobeacon grouped with Genova and Capo Ferro.

335 In misty weather every three minutes starting at H + 01 every hour.
In clear weather at H + 01, H + 04, H + 07, H + 10, H + 31, H + 34, H + 37 and H + 40 minutes every hour.
Radiobeacon grouped with Pantelleria and Augusta Dromogiggia.

336 In misty weather every three minutes starting at H + 01 every hour.
In clear weather H + 07, H + 10, H + 13, H + 16, H + 37, H + 40, H + 43 and H + 46 minutes every hour.
Radiobeacon grouped with Civitavecchia and Capo Ferro.

337 In misty weather every three minutes starting at H + 00 every hour.
In clear weather at H + 00, H + 03, H + 06, H + 09, H + 30, H + 33, H + 36 and H + 39 minutes every hour.
Radiobeacon grouped with Cozzo Spadaro and Augusta Dromogiggia.

338 In misty weather every three minutes starting at H + 00 every hour.
In clear weather at H + 12, H + 15, H + 18, H + 21, H + 42, H + 45, H + 48 and H + 51 minutes every hour.
Radiobeacon grouped with S. Vito Lo Capo and Capo Vaticano.

339 In misty weather every three minutes starting at H + 02 every hour.
In clear weather at H + 20, H + 23, H + 26, H + 29, H + 50, H + 53, H + 56 and H + 59 minutes every hour.
Radiobeacon grouped with Senigallia and Kamenjak (YUG).

340 In misty weather every three minutes starting at H + 00 every hour.
In clear weather at H + 12, H + 15, H + 18, H + 21, H + 42, H + 45, H + 48 and H + 51 minutes every hour.
Radiobeacon grouped with San Benedetto del Tronto and Movar (YUG).

341 In misty weather every three minutes starting at H + 00 every hour. In clear weather at H + 06, H + 09, H + 12, H + 15, H + 36, H + 39, H + 42 and H + 45 minutes every hour.
Radiobeacon grouped with Vieste and Molunat (YUG).

342 In misty weather every three minutes starting at H + 01 every hour. In clear weather at H + 13, H + 16, H + 19, H + 22, H + 43, H + 46, H + 49 and H + 52 minutes every hour.
Radiobeacon grouped with Punta Carena and Capo Vaticano.

343 In misty weather every three minutes starting at H + 01 every hour. In clear weather at H + 13, H + 16, H + 19, H + 22, H + 43, H + 46, H + 49 and H + 52 minutes every hour.
Radiobeacon grouped with Punta Penna and Movar (YUG).

344 In misty weather every three minutes starting at H + 00 every hour. In clear weather at H + 18, H + 21, H + 24, H + 27, H + 48, H + 51, H + 54 and H + 57 minutes every hour.
Radiobeacon grouped with Punta della Maestra and Kamenjak (YUG).

345 In misty weather every three minutes starting at H + 01 every hour. In clear weather at H + 07, H + 10, H + 13, H + 16, H + 37, H + 40, H + 43 and H + 46 minutes every hour.
Radiobeacon grouped with Santa Maria di Leuca and Molunat (YUG).

346 Date of bringing into operation: 1940.

347 Date of bringing into operation: 1965.

348 Date of bringing into operation: 1976.

350 The information in boxes 08 (operation on a time-sharing basis) and 09 (coordinated operation) refers to its current operation.
There are no objections to its appearing in the Plan on a time-sharing basis with F.

351 The information in boxes 08 (operation on a time-sharing basis) and 09 (coordinated operation) refers to its current operation. It should appear in the Plan with unshared operation.

352 The information in boxes 09 (coordinated operation) refers to its current operation. It should appear in the Plan in association only with the radiobeacons of MESA DE ROLDAN and C. DE LAS HUERTAS.

353 The information in boxes 08 (operation on a time-sharing basis) and 09 (coordinated operation) refers to its current operation. There are no objections to its appearing in the Plan on a time-sharing basis with F.

354 Currently operating grouped with C. VILLANO and C. SILLEIRO. It should appear in the Plan with unshared operation.

355 Currently operating grouped with C. TRAFALGAR and ROTA. The same grouping should be maintained in the Plan.

356 Currently operating grouped with TARIFA and ROTA. The same grouping should be maintained in the Plan.

357 Currently operating grouped with C. TRAFALGAR and TARIFA. The same grouping should be maintained in the Plan.

358 To be grouped in the Plan with ROMPIDO.

359 Currently operating grouped with MAHON and C. SAN SEBASTIAN. Same grouping to be maintained in the Plan.

360 Currently operating grouped with PNT LLOBREGAT and C. SAN SEBASTIAN. Same grouping to be maintained in the Plan.

361 Currently operating grouped with PNT LLOBREGAT and MAHON. Same grouping to be maintained in the Plan.

362 Currently operating grouped with C. SALOU and CALA FIGUERA. To be grouped in the Plan with C. BLANCO and FAVARITX.

363 Currently operating grouped with CASTELLON and C. SALOU. To be grouped in the Plan with C. DE LA NAO and C. SALOU.

364 Currently operating grouped with CASTELLON and CALA FIGUERA. To be grouped in the Plan with C. DE LA NAO and CALA FIGUERA.

365 The information in box 09 (coordinated operation) refers to the forecasts of the 1951 Paris Plan. It should appear in the new Plan grouped with PNT CARNERO and ADRA.

366 The information in box 09 (coordinated operation) refers to the forecasts of the 1951 Paris Plan. It should appear in the new Plan grouped with SACRATIF and, if the MRC Administration has no objection, with B. THLETA MADARI (formerly C. TRES FORCAS).

367 Currently operating grouped with C. PEÑAS and ESTACA DE BARES. To be grouped in the Plan with C. PEÑAS and LUARCA.

368 Currently operating grouped with LLANES and ESTACA DE BARES. To be grouped in the Plan with LLANES and LUARCA.

369 Currently operating grouped with LLANES and C. PEÑAS. To be grouped in the Plan with ISLA TAPIA and TORRE DE HERCULES.

370 Currently operating grouped with TORRE DE HERCULES. To be grouped in the Plan with C. VILLANO and C. SILLEIRO.

371 Currently operating grouped with C. PRIORIÑO CHICO. To be grouped in the Plan with ISLA TAPIA and ESTACA DE BARES.

372 Currently operating grouped with C. VILLANO and C. FINISTERRE. To be grouped in the Plan with C. PRIORIÑO CHICO and C. VILLANO.

373 Currently operating grouped with C. FINISTERRE and C. SILLEIRO. To be grouped in the Plan with C. PRIORIÑO CHICO and C. SILLEIRO.

374 To appear in the Plan grouped with CASTRO URDIALES and PNT SILLA.

375 To appear in the Plan grouped with SENOCOZULUA and PNT SILLA.

376 To appear in the Plan grouped with CASTRO URDIALES and SENOCOZULUA.

377 To appear in the Plan grouped with LLANES and C. PEÑAS.

378 To appear in the Plan grouped with C. DE GATA and, if the MRC Administration has no objection, with B. THLETA MADARI (formerly C. TRES FORCAS).

379 To appear in the Plan grouped with ESTACA DE BARES and TORRE DE HERCULES.

380 To appear in the Plan grouped with CHIPIONA.

381 To appear in the Plan grouped with MALAGA and ADRA.

382 To appear in the Plan grouped with MALAGA and PNT CARNERO.

383 To appear in the Plan grouped with CASTELLON and FAVARITX.

384 To appear in the Plan grouped with CASTELLON and C. BLANCO.

385 To appear in the Plan grouped with C. DE LAS HUERTAS and, if the ALG Administration has no objection, with C. DE L'AIGUILLE.

386 To appear in the Plan grouped with MESA DE ROLDAN and, if the ALG Administration has no objection, with C. DE L'AIGUILLE.

387 a) Will also be used for 100HF1B.
b) To be grouped with Hoek van Holland phare and Ijmuiden phare.

388 a) Will also be used for 100HF1B.
b) To be grouped with Texel BF phare and Ijmuiden phare.

389 a) Will also be used for 100HF1B.
b) To be grouped with Texel BF phare and Hoek van Holland phare.

390 a) Will also be used for 100HF1B.
b) To be grouped with No Hinder BF phare and Outer Gabbard lightvessel (G).

391 a) Will also be used for 100HF1B.
b) To be grouped with Gofree lightplatform and Outer Gabbard lightvessel (G).

392 Will also be used for 100HF1B.

393 a) Will also be used for 100HF1B.
b) To be grouped with Vlieland phare and Borkum Little phare (D).

394 a) Will also be used for 100HF1B.
b) To be grouped with Ameland phare and Borkum Little phare (D).

416 Occasional use, operation on request for DF calibration purposes.

418 IALA: 284.6 kHz.

419 IALA: 285.2 kHz. See also Remark No. 440.

420 IALA: 289.2 kHz.

421 IALA: 290.0 kHz.

422 IALA: 291.2 kHz.

423 IALA: 292.4 kHz.

424 IALA: 294.8 kHz. See also Remark No. 440.

425 IALA: 298.4 kHz.

426 IALA: 303.0 kHz.

427 IALA: 303.2 kHz.

428 IALA: 304.4 kHz. See also Remark No. 440.

429 IALA: 305.4 kHz.

430 IALA: 307.0 kHz.

431 IALA: 310.6 kHz. See also Remark No. 440.

432 IALA: 311.4 kHz.

433 IALA: 311.8 kHz. See also Remark No. 440.

434 IALA: 312.6 kHz. See also Remark No. 440.

435 IALA: 312.8 kHz.

436 IALA: 313.2 kHz.

437 IALA: 313.8 kHz.

438 IALA: 314.2 kHz.

439 Calibration station.

440 With reference to Item 2.2 of the agenda of the Conference the Swedish Telecommunications Administration encloses the following list of existing frequency assignments to which it wishes the Conference to afford appropriate protection.

285 kHz	Linkoeping/Malmen	15E30	58N22	LC	AL	RC	1K00A2A	0000-2400	28 km
295 kHz	Ludvika	15E07	60N09	LH	AL	RC	1K00A2A	0000-2400	28 km
300 kHz	Linkoeping/Saab	15E33	58N26	SC	AL	RC	1K00A2A	0000-2400	28 km
304 kHz	Nicky	16E56	58N47	NIC	AL	RC	100HA1A	0000-2400	93 km
309 kHz	Saatenaes	12E43	58N27	LG	AL	RC	1K00A2A	0000-2400	28 km
310 kHz	Gaellivare	20E51	67N08	A	AL	RC	1K00A2A	0000-2400	28 km
312 kHz	Karlsborg	14E23	58N29	KBG	AL	RC	1K00A2A	0000-2400	93 km

463 Aeronautical Radiobeacons are operated on the frequencies 283.5 kHz and 294.2 kHz at Hornafjoerdur and Akureyri respectively. Forms for these frequencies are not enclosed.

1132 This station is being planned.

1133 This station is working.

1134 This station is not in use today.

1196 IALA: 305.6 kHz.

1197 IALA: 309.2 kHz.

1198 IALA: 311.6 kHz.

1199 IALA: 310.4 kHz.

1200 IALA: 308.0 kHz.

1202 IALA: 303.2 kHz.

1203 IALA: 313.8 kHz.

1207 IALA: 311.8 kHz.

1224 Radio alignment.

1225 Transmits information Omega system phase modulation of the carrier during the long dash (Class G3D).

1226 One frequency is requested: 294.2 kHz or 313.8 kHz.

1292 IALA: 295.6 kHz.

1293 IALA: 300.4 kHz.

1294 IALA: 302.8 kHz.

1295 IALA: 294.4 kHz.

1296 IALA: 289.2 kHz.

1297 IALA: 287.0 kHz.

1298 IALA: 301.6 kHz.

1299 IALA: 293.2 kHz.

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document 1007-E
18 December 1984
Original: English

Note by the Secretary-General

IALA RECOMMENDATIONS

I herewith transmit to the Conference, at the request of the Secretary-General of the International Association of Lighthouse Authorities (IALA), a synopsis and the conclusions of the studies conducted by that organization on the use by maritime radiobeacons of frequencies in the band 283.5 - 315 kHz.

The IALA states that it has recommended its Members to invite their national telecommunication authorities to take into account the results of this study when preparing the Conference and in the negotiations that take place during the Conference.

R.E. BUTLER
Secretary-General

Annex mentioned

ANNEX

Synopsis and Conclusions of the Studies by IALA

Radio direction finding is one of the oldest methods of radio navigation and has been in use in marine navigation since the twenties. The convention for Safety of Life at Sea (Solas 1974) requires all ships over 1600 gross registered tons, on international voyages, to be fitted with receiving equipment for radio direction finding. Some national authorities require their vessels of 300 gross registered tons and above to carry such equipment.

There have been a number of ITU regional agreements in the field of radio direction finding for the European area. The Regional Arrangements of Paris in July 1933 and Stockholm in October 1933 replaced the arrangements drawn up in London in April 1931 and Stockholm in May 1932. In the Regional Arrangement of Bordeaux in 1934 the range of validity was extended to the South to Rio de Oro in Africa including the islands of Azores, Madeira, Canaries and the Cape Verde Group. In the Mediterranean the region was extended to the Adriatic sea and Cyrenica.

The Regional Agreement, Paris 1951 combined the preceding arrangements and took into account the changes in political frontiers in the Region and the changes in frequency allocation.

It is now 32 years since this agreement was drawn up and clearly the many changes that have taken place during this period urgently necessitate a further revision.

The main reasons for such a revision are:

1. The Paris Plan is widely based on the geographical location of Radiobeacons as in existence before 1939 and the behaviour of shipping at that time.

2. In the Protocol to the Regional Arrangement concerning Maritime Radiobeacons in the European area of Region I it is stated, that ".... it has not been possible to apply the fundamental principles adopted for the preparation of the List in Annex 3 of the said arrangement to the organisation of the maritime radiobeacons of the Baltic Sea ....", and that the list may be revised for this part of Region I. Such revision would be decided in conference by the interested administrations. The nominal range

of radiobeacons in the eastern part of the Baltic and the associated interference problems are one reason why such a revision should be undertaken.

3. A number of amendments to radiobeacons systems have been introduced by bilateral or multilateral agreements so that the present situation is no longer in keeping with the Paris Plan.

Traffic separation schemes have been established and studies have been carried out, particularly in Germany and United Kingdom, which show that the present grouping of radiobeacons is not entirely satisfactory.

In order to obtain the desired level of safety, a regrouping is necessary.

4. Since the Paris Plan was adopted, the Radio Regulations have been amended and therefore allow changes in the Plan to be made.

5. The Paris Plan is based on the use of radiobeacons in conjunction with aural null receivers. Now direction finders are provided which use the carrier frequency and do not rely upon modulation to discriminate between stations on the same frequency i.e. the A1A mode.

6. The use of radiobeacons for special purposes, for example the transmission of Differential Omega Corrections, Differential Satellite Navigation Corrections, and Weather information also need to be considered.

7. The present arrangement of radiobeacons does not make adequate provision for monitoring transmissions, either locally or off-air, and as a result interference problems occur throughout Region 1.

The studies by IALA have confirmed that a revision is necessary to overcome the shortcomings of the present system. This could be achieved by decreasing the existing channel spacing so as to make provisions for a radionavigation system which could display a position in latitude and longitude, or a bearing, on the vessel automatically. Such a system would need to be accurate and reliable and have minimum cost implications.

The annexes to this synopsis contain recommendations on possible means of overcoming the problems experienced with the present arrangement of radiobeacon and, in particular:

Annex 1 recommends a Plan of maritime radiobeacons for the European Maritime Area of Region 1;

Annex 2 recommends a possible structure of the radiobeacon signal;

Annex 3 recommends minimum technical characteristics for maritime radiobeacons in the band 283.5-315 kHz;

Annex 4 recommends minimum technical characteristics for radio direction-finders working on frequencies in the band 283.5-315 kHz;

Annex 5 recommends technical criteria for the maritime radiobeacon service in the European Maritime Area of Region 1.

Note by the General Secretariat - For reasons of economy, Annexes 1-5 mentioned above - which are identical to Annexes A-E to the proposals by France (see pages 17-66 of Document 1005) - are not attached.

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document 1008-E
18 January 1985
Original: English

PLENARY MEETING

Sweden

REVISION OF MARITIME RADIOBEACON CHARACTERISTICS

1. INTRODUCTION

Radio direction finding is one of the oldest methods of radio navigation and has been in use in marine navigation since the twenties. The International Convention for Safety of Life at Sea 1974 requires ships of 1600 tons gross tonnage and over, on international voyages, to be fitted with receiving equipment for radio direction finding.

There have been a number of ITU regional agreements in the field of radio direction finding for the European area. The last one , Paris 1951 combined the preceeding arrangements and took into account the changes in political frontiers in the Region and the changes in frequency allocation.

It is now 32 years since this agreement was drawn up and clearly the many changes that have taken place during this period urgently necessitate a further revision.

Over the past few years a series of studies have been carried out with a view to revising the Paris Plan. The studies confirm that a revision is necessary to overcome the shortcomings of the present system. The revised system could use a decreased channel spacing and provide the user with a system which is more suitable for an automatic receiver for display of bearing or of vessel position in latitude and longitude.
This system has to be accurate, reliable and to have minimum cost implications.

The studies have concerned themselves with improvements to the present radiobeacon system based on establishing a position by obtaining bearings. However, there is the possibility that the system could be used in The Hyperbolic Mode and any future revision of the Paris Plan should make due allowance for this mode of operation since it could enable high accuracy radionavigation in narrow fairways. Such a system is not available today.
The revision should also make provision to allow a future elimination of the present time-sharing arrangement thereby enabling a radical improvement in position up-dating for the user and also reducing the running costs for the administrations by eliminating equipment timing devices etc.

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The revised plan recommended in this paper includes two parts to the beacon signal format comprising a normal signal for current receivers and a short data signal for future automatic receivers displaying a position or bearing.
Administrations can therefore provide a beacon service using either or both modes of operation.

The advantage to administrations controlling their own accurate and automatic radionavigation service cannot be overlooked, especially when the system is less costly to provide and operate than other available systems.

2. SIGNAL CHARACTERISTICS

2.1 Audio tones.

The Paris Plan of 1951 was based on the use of aural null method in direction finding receivers.
A survey of direction finding receivers currently available has shown that a BFO facility is almost always fitted and this fact coupled with an increase in receiver selectivity and the trend away from use of audio modulation would indicate that in the future audio tones are no longer required.

2.2 Type of emission.

The proposed new format calls for a two-part transmission, the first element of the format being designed for use by automatic and manual receivers and the second part being an optional transmission of data for use by future automatic receivers.

S/1008/1 For the first part of the revised format A1A emission is recommended for the following reasons:
- Audio tones are no longer required.
- Necessary bandwidth is reduced to some tens of Hertz.
- The number of channels available in the radiobeacon band is increased.
- The transformation to A1A emission is simple and inexpensive

S/1008/2 For the data transmission a narrow band form of frequency shift keying (F1B) is recommended for the following reasons:
- The rather low amount of data (about 150 bits in 4 seconds) should be transmitted over a correspondingly narrow channel.
- The need for co-channel frequency assignments is reduced.
- System management is facilitated by allowing greater flexibility in obtaining frequency assignments
- Skywave interference problems are reduced because less transmitters use the same channel.
- Increased signal to noise ratio is provided due to narrower receiver bandwidth which would reduce bit error rate.
- Future use of continuous radiobeacons could be allowed.

S/1008/3 Of different types of modulation being studied the Minimum Shift Keying modulation (MSK) is recommended for its very good spectral economy coupled with simplicity in implementation.

S/1008/4 With the above mentioned signal characteristics a frequency allocation based on 500 Hz separation is proposed. When allocating frequencies consideration has to be taken to existing D/F receivers.

3. PROTECTION RATIO

In the Paris Plan the co-channel interference is limited due to the Protection Distance which accounts for 14 dB and the use of audio modulation which contributes 16 dB.

Since audio tones are not generally used nowadays the additional protection so provided is largely lost. Therefore in Region I a protection ratio of 14 dB has effectively been used for many years. Also, an analyses of radiobeacon direction finder error in presence of co-channel interference was carried out by the US Coast Guard and this showed that with a protection ratio of 15 dB and with the interfering station in the worst case position, the average bearing error will be approximately 1 degree provided that the frequency of the transmitters differ by at least 5 Hz.

F1B to F1B transmissions require a protection ratio of about 7 dB (CCIR REC 240-3).

S/1008/5 In the light of the foregoing therefore it is proposed that a protection ratio of 15 dB should be used for the new radiobeacon system.

S/1008/6 Nominal range.
The nominal range of a radio beacon shall be based on a field strength RMS value of.
50 uV/m for beacons north of 43 degree latitude North
75 uV/m for beacons south of 43 degree latitude North

Receiver selectivity.
S/1008/7 For the A1A class of emission, the overall RF and IF selectivity of the direction finder should be:
- bandwidth of at least 190 Hz for 6 dB attenuation
- bandwidth less than 460 Hz for 30 dB attenuation
- bandwidth less than 960 Hz for 60 dB attenuation.

The adjacent channel protection ratio would then be:

at 500 Hz separation: -48 dB

at 1000 Hz separation: -80 dB

The image frequency rejection ratio should be 80 dB or higher. The IF protection ratio should be 80 dB or higher.

S/1008/8 For the F1B class of emission, the overall RF and IF selectivity of the receiver should be:

- bandwidth of at least 100 Hz for 6 dB attenuation
- bandwidth less than 180 Hz for 30 dB attenuation
- bandwidth less than 340 Hz for 60 dB attenuation.

The adjacent channel protection ratio in this case is:

at 500 Hz separation: -80 dB

The image frequency rejection ratio should be 80 dB or higher.
The IF protection ratio should be 80 dB or higher.

S/1008/9 4. NEW SIGNAL FORMAT

This paper considers changing from six to three station groups to allow faster up-dating and/or data transmissions.

It may be possible to allocate independent frequencies for each station and use scanning receivers or hyperbolic mode transmissions which give a faster update and a more flexible system for user and planning purposes. This can be carried out if the required number of channels are created initially.

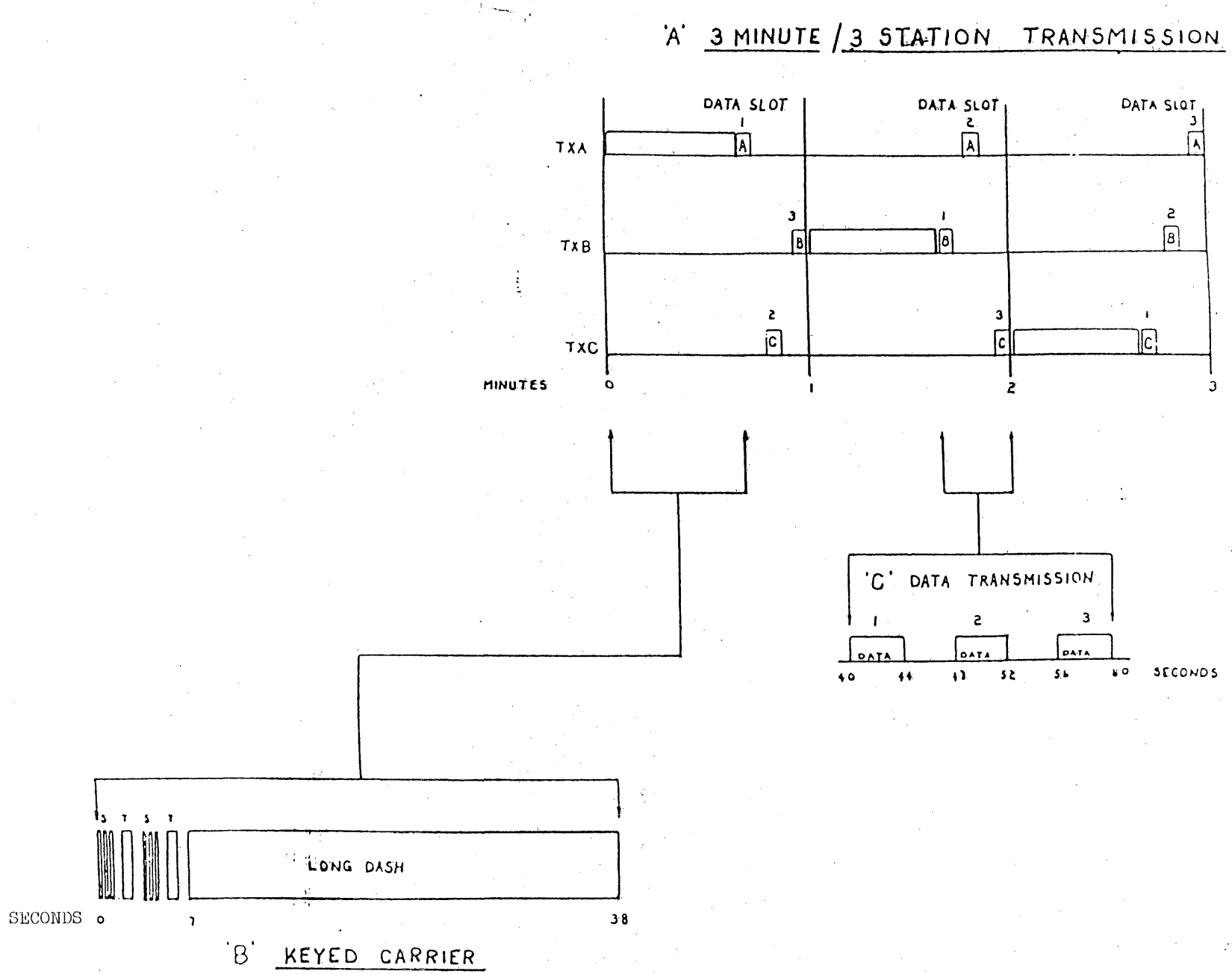
It is necessary that the new format for the radiobeacon transmissions should contain information capable of being used by existing D/F receivers together with data capable of being used to improve the navigational use of the radiobeacon service.

To this end, the proposed transmission format is made up of two parts, a keyed carrier portion (Fig 1B) and an optional data transmission portion (Fig 1C).

The keyed carrier portion of the transmission will use A1A emission and is intended for use by existing and future D/F receivers designed to produce only bearing information from the system. It comprises two transmissions of the station Morse identity plus a long dash. The Morse identity is sent at a speed of 6-10 words per minute and occupies the first seven seconds of the format. The long dash lasts for 32 seconds which is an increase of 7 seconds over the present arrangement.

The period of the Morse identification may be increased to allow a Morse speed of six words per minute. In this case the long dash should be shortened proportionally. However, it should not be less than 25 seconds.

The final 20 seconds of the transmission is reserved primarily for sending data sequentially from each of the three radiobeacons in the group. Where data is not being sent this period can be used to extend the long dash. Each station data slot occupies 4 seconds with a 4 second space between slots. The first and last data slots are separated from the preceding and following keyed carrier transmission by a one second gap.



S/1008/10

FIGURE 1

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document 1009-E
21 January 1985
Original: French

REGION 1

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE MARITIME MOBILE SERVICE AND THE AERONAUTICAL RADIONAVIGATION SERVICE IN CERTAIN PARTS OF THE MF BAND IN REGION 1
GENEVA, FEBRUARY/MARCH 1985

Document 18-E
21 January 1985
Original: French

PLENARY MEETING

Note by the Secretary-General

FINAL ACTS OF THE CONFERENCES

Resolution 83 (amended) of the Administrative Council lays down the following with regard to publication of the Final Acts of the conferences or meetings :

E. Publication of the Final Acts of conferences or meetings

18. In principle,the Final Acts of conferences or meetings, whatever their method of reproduction, shall be published by the General Secretariat in their usual place of publication and with the minimum of cost;

19. however, this rule may be disregarded in recognized cases of urgency and at the special request of the conference or meeting;

20. in this connection :

20.1 if a conference or meeting prints, for its own use, documents of which 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;

20.2 when this is not so, the printing costs of the Final Acts shall, in principe, be posted to the printed matter account, but the conference or meeting may decide, in special circumstances, to subsidize these costs;

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20.3 the percentage of the composition cost mentioned in 20.1 above, or the subsidy mentioned in 20.2 above, shall be decided by the Plenary Meeting of the conference or meeting;

21. apart from the Final Acts distributed to the persons concerned as a conference document, no copy shall be supplied free of charge to participants in the conference or meeting.

It will be possible to use for final printing some of the texts constituting the Final Acts of the two Conferences which will be submitted for signature by Delegations.

It is up to the Plenary Meeting of the two Conferences to determine the percentage of the cost of preparing these texts to be charged to the budget of the two Conferences and the supplementary publications budget respectively.

The budget of the two Conferences makes provision in Article V, item 20.451, for one third of the cost of preparing the manuscripts estimated at 63,000 Swiss francs, i.e. 21,000 Swiss francs, to be charged to the two Conferences accounts.

It is agreed that the printing costs of the different readings of the Final Acts during the two Conferences as well as the translation cost into Russian and Arabic will be entirely charged to the two Conferences.

The Budget Control Committee is requested to submit a proposal to the Plenary Meeting on this matter.

R.E. BUTLER
Secretary-General

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document 1010-E
21 January 1985
Original: French

REGION 1

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE MARITIME MOBILE SERVICE AND THE AERONAUTICAL RADIONAVIGATION SERVICE IN CERTAIN PARTS OF THE MF BAND IN REGION 1
GENEVA, FEBRUARY/MARCH 1985

Document 19-E
21 January 1985
Original: French

PLENARY MEETING

Note by the Secretary-General

BUDGET OF THE

REGIONAL ADMINISTRATIVE RADIO CONFERENCE FOR THE MARITIME MOBILE SERVICE AND THE AERONAUTICAL RADIONAVIGATION SERVICE IN CERTAIN PARTS OF THE MF BAND IN REGION 1

AND OF THE

REGIONAL ADMINISTRATIVE RADIO CONFERENCE FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA

The Administrative Council has decided to convene in 1985 concurrently in Geneva :

- The Regional Administrative Radio Conference for the Maritime Mobile Service and the Aeronautical Radionavigation Service in Certain Parts of the MF Band in Region 1 (25 February to 15 March 1985) (MM-R1)

- The Regional Administrative Radio Conference for the Planning of Frequencies for Maritime Radiobeacons in the European Maritime Area (4 to 13 March 1985) (EMA).

Since these two Conferences are held concurrently in Geneva, the related secretariat staff requirements have been grouped in order to obtain greater efficiency and lower costs than if the Conferences had been held separately.

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.

The budget of these two Conferences, based on a single meeting in Geneva from 25 February to 15 March 1985, as approved by the Administrative Council of the Union at its 39th Session (1984), is annexed hereto for the information of the Budget Control Committee.

The costs of this meeting will be allocated as follows :

2/3 to be charged to the RARC MM-R1
1/3 to be charged to the RARC EMA

It is emphasized that the estimated expenditure of these regional Conferences do not form part of the ordinary budget of the Union. Under No. 115 of Article 15 of the International Telecommunication Convention, Nairobi, 1982, expenses shall be borne by Members of Region 1 in the case of the RARC MM-R1 and by Members of the European Maritime Area in the case of RARC EMA, in accordance with their unit classification, and, on the same basis, by any Members of other Regions which would have participated to these two Conferences.

R.E. BUTLER
Secretary-General

Annex : 1

ANNEX

Section 20.4 Regional Administrative Conferences MM-R1 and EMA Items		Budget 1985 - Swiss francs -
Subhead I	Staff expenses	
20.401	Salaries and related expenses of the conference secretariat staff	968,000
20.402	Salaries and related expenses of the translation, typing and reproduction services staff	508,000
20.403	Travel (recruitement)	80,000
20.403	Insurance	77,000
		1,633,000
Subhead II	Travel expenses	-
Subhead III	Premises and equipment	
20.431	Premises, furniture, machines	32,000
20.432	Document production	142,000
20.433	Office supplies and overheads	20,000
20.434	Postage, telephone calls, telegrams	30,000
20.435	Technical installations	5,000
20.436	Sundry and unforeseen	10,000
		239,000
Subhead IV	Other expenses	
20.441	Interest credited to the ordinary budget	35,000
Subhead V	Final Acts	
20.451	Final Acts of the two Conferences	86,000
	Total, Section 20.4	1,993,000

No.	Section 20.4 Regional Administrative Conferences MM-R1 and EMA	Budget 1985 - Swiss francs -

Salaries and related expenses of the conference secretariat staff

It has been foreseen that for the proper functioning of the Conference it would be necessary to set up a secretariat comprising the staff shown in the table below (for language service, typing and reprography services and draughtsmen, see following page).

	Work before and after the Conference		Work during the Conference		
	Days	Sw. frs.	Number	Days	Sw. frs.
Chairman's secretary	10	1,790	2	29	5,191
Executive Secretariat	60	9,060	2	38	5,738
Common services					
- Interpretation (3 teams/4 teams)	-	-	56	938	562,000
- Minute-writers	100	28,440	18	338	94,553
- Language reference service	63	10,353	3	57	9,367
- Meeting room service	10	1,350	2	38	5,130
- Registration of delegates	14	1,806	2	38	4,902
- Documents control	14	2,191	3	57	8,284
- Documents distribution	-	-	6	114	11,552
- Messengers	7	861	9	190	17,993
- Security guards	-	-	4	76	7,904
- Telephonists	-	-	2	38	4,256
- Sick bay	-	-	1	19	2,565
Personnel/Finance	90	12,150	2	38	5,130
Editorial Committee	-	-	4	48	10,248
Additional staff CCIR/IFRB	-	20,000	-	-	20,000
Additional staff GS	-	20,000	-	-	20,000
		108,001			794,813
Provision for payment of overtime to General Services staff		15,000			50,000
Total		123,001			844,813
Rounded off to		123,000			845,000
			968,000		

No.	Section 20.4 Regional Administrative Conference, MM-R1 and EMA	Budget 1985 - Swiss francs -

Salaries and related expenses for the translation, typing and reproduction services

Provision is made for the following expenses for language, typing, reproduction and draughtsmen's services.

A. Preparatory work (1984 and 1985)

	Volume of work in pages	Days of work	Calendar days	Sw. frs.
Translation				
Translators	)	100	140	57,000
Revisers	) 750	42	58	26,400
Typists	)	63	88	9,900
Typing				
Typists	2,175	181	254	28,400
Reproduction				
Offset operators	)		20	2,500
Assemblers	)1,050,000		72	8,000
Draughtsmen			12	1,600
Total A			Rounded off to	133,800 134,000

B. Conference (19 days)

	Volume of work in pages	Number	Calendar days	Sw. frs.
Language Service				
Translators		16	289	117,000
Revisers		6	120	54,600
Typists	1,550	9	181	20,000
Typing				
Typists	)	38	738	82,700
Heads of team	) 6,325	3	57	8,500
Heads of section	)	7	133	18,000
Reprography				
G.4	)1,950,000	4	76	9,300
G.3	)	2	38	4,300
G.2	)	10	190	19,800
Draughtsmen G.5		2	38	5,100
Total B			Rounded off to	339,300 339,000

No.	Section 20.4 Regional Administrative Conferences MM-R1 and EMA		Budget 1985 - Swiss francs -
	Total A + B	473,000	
	Provision for payment of overtime to General Services staff	35,000	508,000
	Travel expenses (recruitment)		
	Travel expenses entailed by recruitment of non-local supernumerary staff have been estimated at		80,000
	Insurance		
	Accident and sickness insurance expenses for supernumerary staff recruited specifically for the work of the Conference are estimated at	37,000	
	Provision has also been made for covering the expenses entailed by the affiliation of a category of supernumerary staff to the United Nations Joint Staff Pension Fund	40,000	77,000
	Premises, furniture, machines		
	Meeting rooms at the CICG have to be reserved for 19 days + 2 days for preparation and 2 days for clearing = 23 days (free of charge)	-	
	Use of simultaneous interpretation equipment	12,000	
	Maintenance of meeting rooms, security at night and weekends	12,000	
	Rental of furniture and machines	8,000	32,000
	Document production		
	The volume of documentation is expected to amount to 3,000,000 pages. The cost of producing this documentation outside the Union workshops has been estimated at		142,000
	Supplies and overheads		20,000

No.	Section 20.4 Regional Administrative Conferences MM-R1 and EMA	Budget 1985 - Swiss francs -
	PTT	
	Mainly the cost of postage for dispatch of documents	30,000
	Technical installations	5,000
	Sundry and unforeseen	10,000
	Interest credited to the ordinary budget	
	Under Article 44.1.iii) of the Financial Regulations, and on the basis of an interest rate of 4% per annum for amounts advanced from the ordinary account over a period of 6 months, the interest credited to the Union budget has been estimated at	35,000
	Final Acts	
	It has been estimated that the Final Acts of the two Conferences would number 250 pages and that 300 copies would be printed in French, 600 in English and 100 in Spanish. Accordingly, the following production costs have been foreseen :	
	a) Cost of printing the "Blues", "Pinks" and "Whites", charged entirely to the budget of the Conferences	15,000
	b) Translation into Russian and Arabic :	
	250 pages at 100 Swiss francs per page (x 2)	50,000
	c) Data capture for the storage of the texts in first reading ("Blues"), correction for the texts in second reading ("Pinks") and correction for the final texts ("Whites")	

No.	Section 20.4 Regional Administrative Conferences MM-R1 and EMA	Budget 1985 - Swiss francs -

Under paragraph 20 of Annex 2 to the Financial Regulations of the Union, it will be for the Plenary Meetings of the two Conferences to decide on the percentage of the composition costs to be borne by the Conference budgets and the supplementary publications budget respectively. On the basis of the experience of earlier conferences, it is proposed to charge 1/3 of the composition costs to the Conference budgets and 2/3 to the supplementary publications budget.

If the Conferences were to follow this procedure, the share to be covered under Section 20.4 would amount to 1/3 of 63,000 Swiss francs, or	21,000
Total	86,000

No.	Section 35 Income	Income 1983	Budget 1984	Budget 1985
		- Swiss francs -		

Contributions by Members of the Union towards defraying the expenses of the Regional Administrative Radio Conference for the Maritime Mobile Service and the Aeronautical Radionavigation Service in certain parts of the MF band in Region 1.

Under No. 115 of the Nairobi Convention, expenses incurred by regional administrative conferences shall be borne in accordance with their unit classification by all the Members of the Region concerned and, where appropriate, on the same basis by any Members of other Regions which have participated in such Conferences.

The recapitulation of credits appearing in Section 20.4 shows that the expenditure to be borne by the Members of Region 1(i.e. 2/3 of the total Conference expenditure) would amount to 1.329.000 Swiss francs-

The Members of Region 1 are as follows :

		Contributory units
1.	Albania (Socialist People's Republic of)	1/4
2.	Algeria (Algerian Democratic and Popular Republic)	1
3.	Germany (Federal Republic of)	30
4.	Angola (People's Republic of)	1/4
5.	Saudi Arabia (Kingdom of)	10
6.	Austria	1
7.	Bahrain (State of)	1/2
8.	Belgium	5
9.	Benin (People's Republic of)	1/4
10.	Byelorussian Soviet Socialist Republic	1/2
11.	Botswana (Republic of)	1/2
12.	Bulgaria (People's Republic of)	1
13.	Burkina Faso	1/8
14.	Burundi (Republic of)	1/8
15.	Cameroon (United Republic of)	1/2

No.	Section 35 Income	Income 1983	Budget 1984	Budget 1985
		- Swiss francs -		

		Contributory units
16.	Cape Verde (Republic of)	1/8
17.	Central African Republic	1/8
18.	Cyprus (Republic of)	1/4
19.	Vatican City State	1/4
20.	Comoros (Federal and Islamic Republic of the)	1/8
21.	Congo (People's Republic of the)	1/2
22.	Ivory Coast (Republic of the)	1
23.	Denmark	5
24.	Djibouti (Republic of)	1/8
25.	Egypt (Arab Republic of)	1
26.	United Arab Emirates	1
27.	Spain	3
28.	Ethiopia	1/8
29.	Finland	5
30.	France	30
31.	Gabonese Republic	1/2
32.	Gambia (Republic of the)	1/8
33.	Ghana	1/4
34.	Greece	1
35.	Guinea (Revolutionary People's Republic of)	1/8
36.	Guinea-Bissau (Republic of)	1/8
37.	Equatorial Guinea (Republic of)	1/8
38.	Hungarian People's Republic	1
39.	Iraq (Republic of)	1/4
40.	Ireland	2
41.	Iceland	1/4
42.	Israel (State of)	1
43.	Italy	10
44.	Jordan (Hashemite Kingdom of)	1/2
45.	Kenya (Republic of)	1/4
46.	Kuwait (State of)	1
47.	Lesotho (Kingdom of)	1/8
48.	Lebanon	1/4
49.	Liberia (Republic of)	1/4
50.	Libya (Socialist People's Libyan Arab Jamahiriya)	1½
51.	Liechtenstein (Principality of)	1/2
52.	Luxembourg	1/2
53.	Madagascar (Democratic Republic of)	1/4
54.	Malawi	1/8
55.	Mali (Republic of)	1/8
56.	Malta (Republic of)	1/4
57.	Morocco (Kingdom of)	1
58.	Mauritius	1/4
59.	Mauritania (Islamic Republic of)	1/4
60.	Monaco	1/4

No.	Section 35 Income	Income 1983	Budget 1984	Budget 1985
		- Swiss francs -		

		Contributory units
61.	Mongolian People's Republic	1/4
62.	Mozambique (People's Republic of)	1/4
63.	Namibia	-
64.	Niger (Republic of the)	1/8
65.	Nigeria (Federal Republic of)	2
66.	Norway	5
67.	Oman (Sultanate of)	1/2
68.	Uganda (Republic of)	1/8
69.	Netherlands (Kingdom of the)	10
70.	Poland (People's Republic of)	2
71.	Portugal	1
72.	Qatar (State of)	1/2
73.	Syrian Arab Republic	1/2
74.	German Democratic Republic	3
75.	Ukrainian Soviet Socialist Republic	1
76.	Romania (Socialist Republic of)	1/2
77.	United Kingdom of Great Britain and Northern Ireland	30
78.	Rwanda (Republic of)	1/8
79.	San Marino (Republic of)	1/4
80.	Sao Tome and Principe (Democratic Republic of)	1/8
81.	Senegal (Republic of the)	1
82.	Sierra Leone	1/8
83.	Somali Democratic Republic	1/8
84.	Sudan (Democratic Republic of the)	1/8
85.	Sweden	10
86.	Switzerland (Confederation of)	10
87.	Swaziland (Kingdom of)	1/4
88.	Tanzania (United Republic of)	1/8
89.	Chad (Republic of the)	1/8
90.	Czechoslovak Socialist Republic	2
91.	Togolese Republic	1/4
92.	Tunisia	1
93.	Turkey	1
94.	Union of Soviet Socialist Republics	30
95.	Yemen Arab Republic	1/4
96.	Yemen (People's Democratic Republic of)	1/8
97.	Yugoslavia (Socialist Federal Republic of)	1
98.	Zaire (Republic of)	1/2
99.	Zambia (Republic of)	1/4
100.	Zimbabwe (Republic of)	1/2
	Total	238 3/4

The amount of the contributory unit for this Conference is therefore estimated at:

$$\frac{1,329,000}{238.750} = 5,560 \text{ Swiss francs. Rounded off to } \underline{5,600 \text{ Swiss francs}}$$

No.	Section 35 Income	Income 1983	Budget 1984	Budget 1985
		- Swiss francs -		

Contributions by Members of the Union towards defraying the expenses of the Regional Administrative Radio Conference for the Planning of Frequencies for Maritime Radiobeacons in the European Maritime Area

According to the particulars given in Section 20.4, the expenditure to be borne by Members belonging to the European Maritime Area (i.e. 1/3 of the total Conference expenditure) is expected to amount to 664,000 Swiss francs.

The Members of the European Maritime Area are as follows :

		Contributory units
1.	Albania (Socialist People's Republic of)	1/4
2.	Algeria (People's Democratic Republic of)	1
3.	Germany (Federal Republic of)	30
4.	Austria	1
5.	Belgium	5
6.	Byelorussian Soviet Socialist Republic	1/2
7.	Bulgaria (People's Republic of)	1
8.	Cyprus (Republic of)	1/4
9.	Vatican City State	1/4
10.	Denmark	5
11.	Egypt (Arab Republic of)	1
12.	Spain	3
13.	Finland	5
14.	France	30
15.	Greece	1
16.	Hungarian People's Republic	1
17.	Iraq (Republic of)	1/4
18.	Ireland	2
19.	Iceland	1/4
20.	Israel (State of)	1
21.	Italy	10
22.	Jordan (Hashemite Kingdom of)	1/2
23.	Lebanon	1/4
24.	Libya (Socialist People's Libyan Arab Jamahiriya)	1 ½
25.	Liechtenstein (Principality of)	1/2

No.	Section 35 Income	Income 1983	Budget 1984	Budget 1985
		- Swiss francs -		
				Contributory units
26.	Luxembourg			1/2
27.	Malta (Republic of)			1/4
28.	Morocco (Kingdom of)			1
29.	Monaco			1/4
30.	Norway			5
31.	Netherlands (Kingdom of the)			10
32.	Poland (People's Republic of)			2
33.	Portugal			1
34.	Syrian Arab Republic			1/2
35.	German Democratic Republic			3
36.	Ukrainian Soviet Socialist Republic			1
37.	Romania (Socialist Republic of)			1/2
38.	United Kingdom of Great Britain and Northern Ireland			30
39.	San Marino (Republic of)			1/4
40.	Sweden			10
41.	Switzerland (Confederation of)			10
42.	Czechoslovak Sovialist Republic			2
43.	Tunisia			1
44.	Turkey			1
45.	Union of Soviet Socialist Republics			30
46.	Yugoslavia (Socialist Federal Republic of)			1
	Total			211 3/4

The amount of the contributory unit for this Conference is therefore estimated at :

$$\frac{664,000}{211.750} = 3,136 \text{ Swiss francs rounded off to } 3,100 \text{ Swiss francs.}$$

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document 1011-E
21 January 1985
Original: French

REGION 1

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE MARITIME MOBILE SERVICE AND THE AERONAUTICAL RADIONAVIGATION SERVICE IN CERTAIN PARTS OF THE MF BAND IN REGION 1
GENEVA, FEBRUARY/MARCH 1985

Document 20-E
21 January 1985
Original: French

PLENARY MEETING

Note by the Secretary-General

FINANCIAL RESPONSIBILITIES OF ADMINISTRATIVE CONFERENCES

The Conference may wish to keep in mind the relevant decisions of the Plenipotentiary Conference (Nairobi, 1982) now embodied in Article 80 of the Convention, as well as Resolution No. 48 of that Conference. Copies of the relevant provisions of the Convention and the Resolution in full are attached for reference.

R.E. BUTLER
Secretary-General

Annexes: 2

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ANNEX 1

ARTICLE 80

Financial Responsibilities of Administrative Conferences and Plenary Assemblies of the CCIs

627 1. 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.

628 2. No decision of an administrative conference or of a Plenary Assembly of an International Consultative Committee shall be put into effect if it will result in a direct or indirect increase in the expenses beyond the credits that the Administrative Council is empowered to authorize.

ANNEX 2

RESOLUTION No. 48

Impact on the Budget of the Union of Certain Decisions of Administrative Conferences and Plenary Assemblies of the International Consultative Committees

The Plenipotentiary Conference of the International Telecommunication Union (Nairobi, 1982),

noting

a) the need for effective financial management on the part of the Union and its Members, necessitating close control over all demands upon the annual budgets;

b) that administrative conferences and Plenary Assemblies of the CCIs have taken decisions or adopted resolutions or recommendations with financial implications including additional and unforeseen demands upon the annual budgets of the Union;

c) that the financial resources of the Union need therefore to be taken into account by all administrative conferences and by all Plenary Assemblies of the CCIs;

recognizing

that the decisions, resolutions or recommendations mentioned above may be crucial to the successful outcome of individual administrative conferences or Plenary Assemblies of the CCIs;

recognizing also

that the Administrative Council in reviewing and approving the annual budgets of the Union, is bound by the financial limitations of Additional Protocol I and may not of its own authority be able to satisfy all the demands made upon the budgets;

recognizing further

that the provisions of Articles 7, 69, 77 and 80 of the Convention reflect the importance of effective financial management;

resolves

1. that before adopting resolutions or taking decisions which are likely to result in additional and unforeseen demands upon the budgets of the Union, future administrative conferences and Plenary Assemblies of the CCIs, 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 an 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;

2. that the Administrative Council shall take all such statements, estimates and priorities into account when reviewing, approving and deciding on the implementation of such resolutions and decisions within the limits of the budget of the Union.

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP

Document 1012-E
4 February 1985
Original: French

France

PROPOSAL FOR THE WORK OF THE CONFERENCE

The French Administration submitted an initial contribution (Document 1005 dated 20 November 1984) emphasizing the need, when preparing the new plan for radiobeacons in the band 283.5 - 315 kHz, to allow for the use of differential and hyperbolic systems in the same band.

In that respect it considers that:

F/1012/1 - these systems should, as far as possible, use the frequencies of the future plan for radiobeacons;

F/1012/2 - the Conference should, for obvious economic reasons, take into account the need to preserve the exclusivity of, and provide protection for the existing or planned frequencies of the hyperbolic system in France. These frequencies, which are listed in the annex, are programmed (wired) on the receivers of a large number of vessels and also form the basis of established and widely circulated charts which are essential to the users of hyperbolic systems.

Annex: 1

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ANNEX

Frequencies of the radionavigation chain

(operating in hyperbolic mode)

1. Sequential frequencies

- 285.4 kHz)
- 285.6 kHz)
- 286.0 kHz)
- 300.6 kHz)
- 306.8 kHz)(1)
- 311.2 kHz)
- 313.0 kHz)
- 314.4 kHz)

2. Permanent frequencies

The hyperbolic radionavigation chain comprises not more than 18 stations, each of which must transmit continuously on a specific frequency. The band occupied by these frequencies together is centred on 285 500 kHz. The transmitting frequency of each station is obtained, and linked to that of the other stations, by the formula:

$$Fp(Hz) = 285\ 500.00 \pm 6.25\ N$$

where N is a whole number from 1 to 9, producing the following result for each station:

Station No.	N	Fp(Hz)	Remarks
1	9	285 443.50	(1)
2	8	285 450.00	
3	7	285 456.25	
4	6	285 462.50	(1)
5	5	285 468.75	
6	4	285 475.00	(1)
7	3	285 481.25	
8	2	285 487.50	(1)
9	1	285 493.75	
	The frequency 285 000 Hz is not suitable		
11	1	285 506.25	(1)
12	2	285 512.50	(1)
13	3	285 518.75	
14	4	285 525.00	
15	5	285 531.25	(1)
16	6	285 537.50	
17	7	285 543.75	(1)
18	8	285 550.00	(1)
19	9	285 556.25	

Footnote 1 - These frequencies are given in Document 1006 (see Remark 146 in Annex 3 to that document)

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document 1013-E
13 February 1985
Original: English

REGION 1

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE MARITIME MOBILE SERVICE AND THE AERONAUTICAL RADIONAVIGATION SERVICE IN CERTAIN PARTS OF THE MF BAND IN REGION 1
GENEVA, FEBRUARY/MARCH 1985

Document 24-E
13 February 1985
Original: English

PLENARY MEETING

Sweden

PROPOSALS FOR THE WORK OF THE CONFERENCES

In the preparatory work for the two regional administrative radio conferences (maritime mobile and aeronautical radionavigation services in Region 1 and maritime radiobeacons in the European Maritime Area) the Swedish Administration has used a computer program, originally developped for frequency planning for aeronautical and maritime radiobeacons. This program has also been used for preparatory test planning within ICAO, CEPT and Nordtel.

The experiences of the use of the computer program are positive. The possibilities to run either in an automatic mode or a "manual" interactive mode give some flexibility in the frequency planning.

On request by the IFRB we have informed the Board, and after informal contacts with the IFRB secretariat some modifications to the program have been made. The program has also been tested on ITU hardware.

The Swedish Administration hereby proposes that the computer program as described in Annex 1 be used by the Conference.

The description is based on values for the technical planning parameters as proposed in other documents submitted by Sweden.

In Annex 2 there are some proposals concerning the organisation of the work.

Annex 1: "Computer program for frequency assignments to aeronautical and maritime beacons and to coast stations in the band 283.5 - 1800 kHz"

Annex 2: "Proposals concerning the organisation of the work etc."

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ANNEX 1

S/1013/1
S/24/1

Computer program for frequency assignments to aeronautical and maritime beacons and to coast stations in the band 283.5 - 1 800 kHz

Abstract

The computerprogram was originaly created for frequency assignments to aeronautical radiobeacons (NDB) and to beacons in the maritime radio-navigation service but the program can also be used for frequency planning in the maritime mobile service. The program has been used for frequency planning within ICAO/FCB.

The ground wave propagation calculations based on the curves in CCIR Rec 368 are made for propagation over both land and sea. By using these results together with map studies manual estimations can be done consering mixed path propagation.

The sky wave propagation is calculated by using the curves in CCIR Rec. 435-4 for 50° geomagnetic latitude in the nothern hemisphere and for 30° in the southern.

It is estimated that the neccessary accuracy, including the data of the effective radiated power of the transmitters, is not high enough to make a more sofisticated method of calculations including a record of coastlines neccessary. Consequently the program was originaly not made for automatical frequency assignments but should be a tool for the frequency planner. Later on an automatical mode has been added, but this shall be used with caution.

The program needs a frequency register in frequency order including all present stations that have to be dealt with in the frequency planning work.

CONTENTS

Abstract

1. Frequency bands to be planned

2. Planning criteria

3. Receiver selectivity

4. Channelling

5. Field strength calculations

6. Calculations of the neccessary frequency separation

7. A Short description of the program

8. Miscellaneous

Appendix 1. Propagation curves

Appendix 2. Blocked frequencies

1. Frequency bands to be planned

The computer program has been designed for planning in the following frequency bands:

Fq-band (kHz)	Service
283,5 -315	MRN
415 -435	ARN, /MMO/
435 -495	MMO
505 -526,5	MMO, /ARN/
1606,5-1625	MMO x)
1635 -1800	MMO x)

ARN = Aeronautical radionavigation service (RR 44)
MRN = Maritime "- (RR 42)
MMO = Maritime mobile service (RR 30)
FX = Fixed service (RR 21)
ML = Land mobile service (RR 28)

When the assignments to the primary service have been done frequencies can be assigned to permitted services.

2. Planning criteria

The following values concerning protected fieldstrength at the service range and protection ratios are used. They can be changed to other values as decided by the Conference.

Maritime beacons

Minimum fieldstrength: 34 dB μ V/m, north of 43° N
37 dB μ V/m, south of 43° N
Protection ratio: 15 dB

Aeronautical beacons

Minimum fieldstrength: 37 dB μ V/m
Protection ratio: 15 dB

Fixed services

J3E	Minimum fieldstrength:	39 dB μ V/m
	Protection ratio:	20 dB
AIA/FIB	Minimum fieldstrength:	16 dB μ V/m
	Protection ratio:	8 dB

---

x) Stations in the fixed and land mobile service can be taken into account.

Maritime mobile services

Around 500 kHz

AIA/FIB	Minimum fieldstrength:	25 dB µV/m, north of 30° N
		45 dB µV/m, south of 30° N
	Protection ratio:	8 dB

Around 2 MHz

AIA/FIB	Minimum fieldstrength:	16 dB µV/m, north of 30° N
		36 dB µV/m, south of 30° N
	Protection ratio:	8 dB
J3E	Minimum fieldstrength:	34 dB µV/m, north 30° N
		54 dB µV/m, south 30° N
	Protection ratio:	20 dB

3. Receiver selectivity

For receiver selectivity the program uses values according to the selectivity curves see figure 1.

Consequently, in the program it is assumed that no interferences will occur if the frequency separation is greater than 6 kHz.

4. Channelling

Wanted cannneling is pointed out on the "question card" in the requirement file under the headline "step-length", see para. 7.2.

For the time being the following channelling is assumed:

Maritime	beacons:	0,5 kHz
Aeronautical	-"-	1 kHz
MMO:	J3E	3 kHz
	AIA/FIB	0,5 kHz

For J3E stations in MMO the program is using the "assigned frequency" e.g:
1636.4; 1639,4; 1642,4.

5. Field strength calculations

The fieldstrength calculations are based on the ground-wave propagation curves given in CCIR Rec 368 with the following propagation characteristics.

Land path: $\gamma = 10^{-2}$ S/m, $\varepsilon = 30$
Sea path: $\gamma = 5$ S/m, $\varepsilon = 70$

Four curves are used:

300 kHz, for transmitters in the band	283.5 -350	kHz
400 "-	350 -435	kHz
500 "-	435 -526,5	kHz
2 MHz	1606,5-1800	kHz

The sky wave propagation curve is in accordance with CCIR Rec. 435-4 for 50°N and for 30°S. The latter value is used for stations situated south of 30° North.

Propagation curves see Appendix 1.

Using these curves the fieldstrength (E, dB μV/m) from a transmitter with 1 kW ERP can be calculated as follows:

$E = 104 - 20 \log N - F \qquad N \geq 0{,}54$ NM

F = the difference between the straight line (104 - 20 log N) and the real fieldstrength, see Appendix 1.

N = the distance from the transmitter in NM.

The value of F as a function of N is tabulated for:

land path propagation	F_L
sea " "	F_s
skywave "	F_R

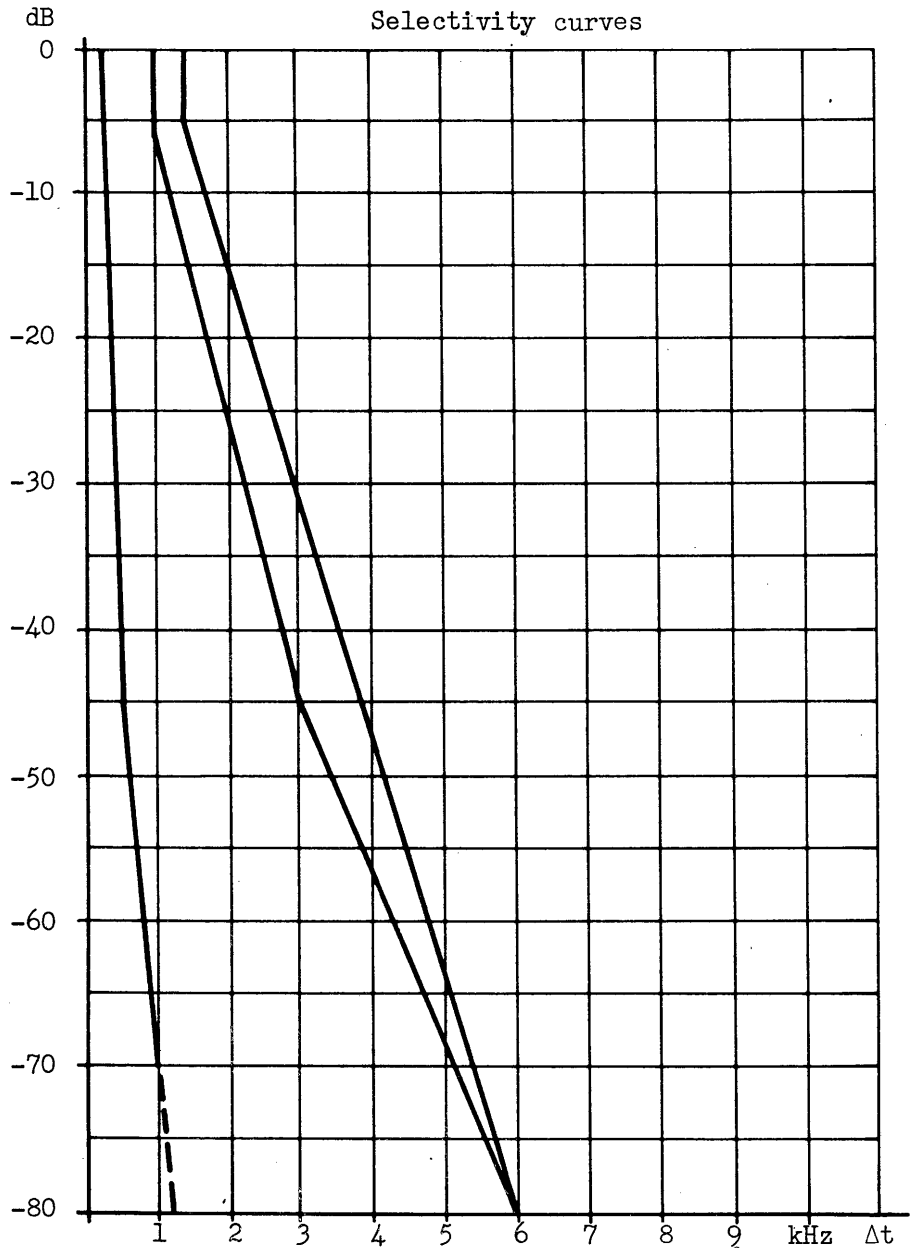


FIGURE 1

A = ARN	37 dB µV/m,	Prot. 15 dB,	propagation:	land
C = MMO, AIA/FIB ca 500 kHz,	25 dB µV/m,	Prot. 8 dB,	propagation:	sea
	45 "		:	sea
P = MMO, AIA/FIB ca 2 MHz,	16 dB µV/m,	Prot. 8 dB,	propagation:	sea
	36 "		:	sea
S = MMO, J3E ca 2 MHz,	34 dB µV/m,	Prot. 20 dB,	propagation:	sea
	54 "		:	sea
M = MRN, ca 300 kHz	34 dB µV/m,	Prot. 15 dB,	propagation:	sea
	37 "		:	sea
X = FX, ML J3E,	39 dB µV/m,	Prot. 20 dB,	propagation:	land
D = FX, ML AIA/FIB,	16 dB µV/m,	Prot. 8 dB,	propagation:	land

(See para 7.1)

In the interference calculations it is neccessary to estimate the field strength (Eo) at a distance of 1 NM or, alternativly 1 km from the transmitting antenna. The data in the IFL may be inaccurate or are incomplete e.g transmitter power, antenna efficiency, soil constants. Therefore in the program Eo is calculated with the assumption that the transmitter gives a correct "neccessary fieldstrength" on its service range. Futhermore it is assumed that all aeronautical beacons and all stations in the fixed and land mobile services are dimensioned for coverage over land (even if they are located on the coast) and that all maritime beacons and coast stations are dimensioned for coverage over sea, and that all frequency requirements are given for ground wave propagation.

The calculation of Eo for present stations that claim protection is a problem depending on the fact that their service ranges in IFL in many cases are valid for sky wave propagation only. Therefore in the calculations of Eo the following rules are used;

2 MHz: sea path, $N \geq 210$ NM, sky wave propagation
land path, $N \geq 30$ NM, "-

500 kHz: sea path, $N \geq 310$ NM, "-
land path, $N \geq 100$ NM, "-

300 kHz: sea path, $N \geq 400$ NM, "-
land path, $N \geq 200$ NM "-

ARN, ~ 400 kHz, does not claim night protection.

Calculations of Eo

$E = Eo - 20 \log N - F = Ep$

Ep = protected field strength at the service range (N) in NM.

$Eo = Ep + 20 \log N + F$ (dB, μV/m)

Eo is also used for calculations of the highest interfering field-strength against a receiver situated close to the transmitter. As the shortest interfering distance the following values are used:

1 km for aeronautical beacons, and
10 NM for coast stations and maritime beacons

These values can be chosen between 0,54 and 20 NM.

6. Calculations of the neccessary frequency separation

This description is made for aeronautical beacons but the same principles are used also in the calculations for the other services.

When assigning a frequency to a new beacon it is neccessary to check that the reception from the new beacon will not be interfered and that the new beacon transmitter will not disturb the reception of the old beacons.

Thus for each new frequency (f) the risk of mutual interferences must be calculated against all old stations within a distance of Dmax (NM) from the new beacon and within a frequency range of (f+/-6) kHz (see para 3).

The program calculates the neccessary frequency separation (Δ fe) taking into account the service ranges (radiated power), the geografical separation (D) and the receiver selectivity and compares (Δ fe) with the real frequency separation (Δ f).

In principle the calculations are made in the following steps, see figure 2.

1) Calculate: $\Delta f = (f_o - f)$ — if $\Delta f \geq 6$ kHz take next frequency; if $\Delta f < 6$ kHz go to 2

2) Calculate: D — if D > Dmax take next station; if D $\leq$ Dmax go to 3

3) Calculate: D/U for the worst case

4) Calculate: (D/U)e = D/U - P;
P = protection

5) Calculate: neccessary frequency separation (Δf_e) for (D/U)e from actual receiver curve in figure 1.

6) Compare: (Δf_e) with Δ f. — if $\Delta f_e \leq \Delta f$ OK; if $\Delta f_e > \Delta f$ assignment impossible

7) Print out

The results of the program shows for each new beacon a number of useable frequencies (max 15) as well as the calculated D/U-value for each frequency against the five most dangerous old stations. Two series of D/U-values are reported, one for propagation over land and one for propagation over sea.

We have a frequency we shall check if free, and we know which old NDB-beacon we shall check this frequency against.

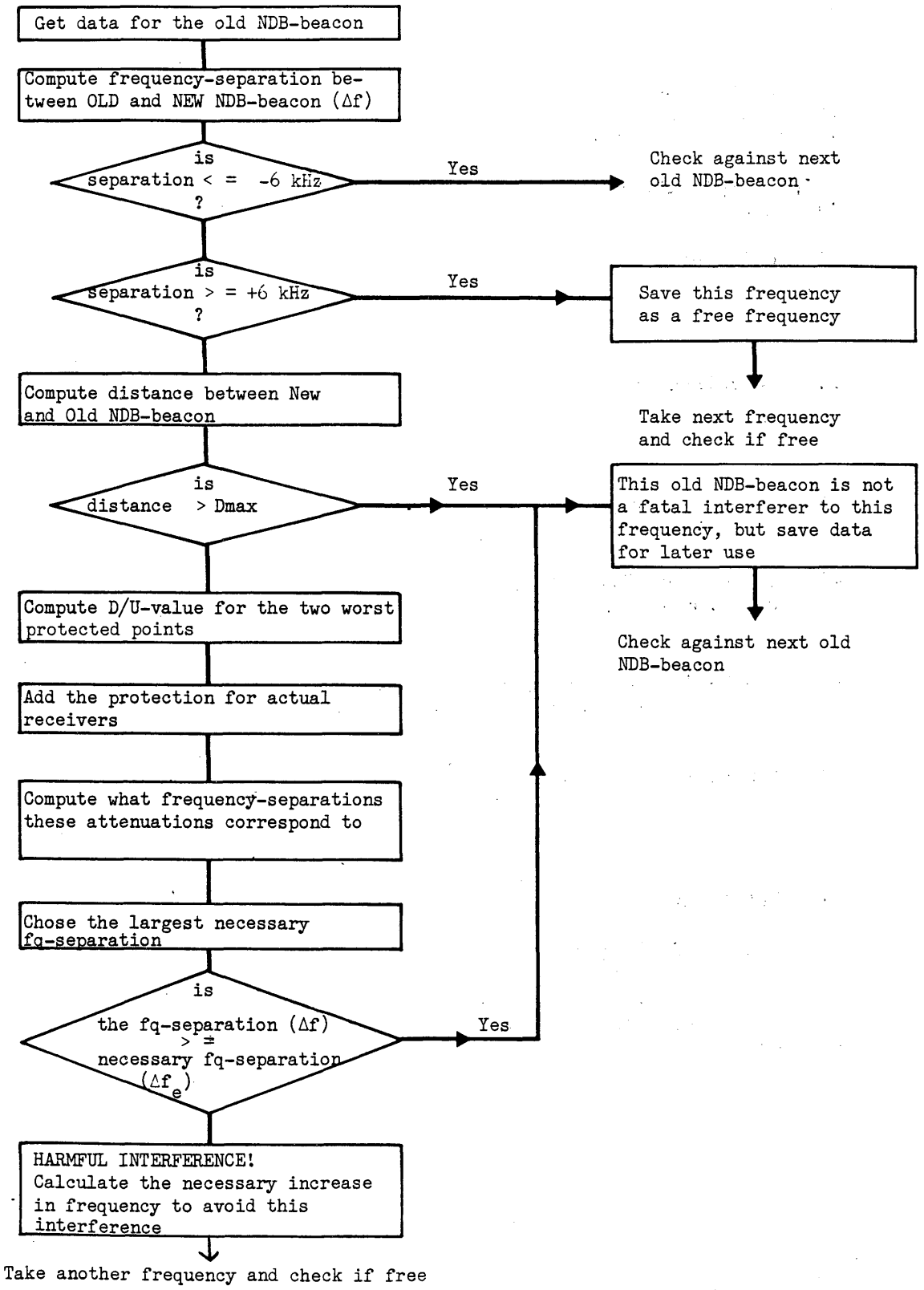


FIGURE 2

6.1 Calculate (D)

On a spheric earth the distance (D) between two beacons is:

$CV = \sin X_1 \sin X_2 + \cos X_1 \cos X_2 \cos/Y_1 - Y_2/$

$A = \text{acos } CV$ (radian)

$D = \frac{A \cdot 180 \cdot 60}{\pi}$ (NM)

X,Y = The geographical position of the beacons in latitud and longitud (degrees and minutes) with their signs. (North positive, South negative, East positive, West negative).

6.2 Calculate D/U

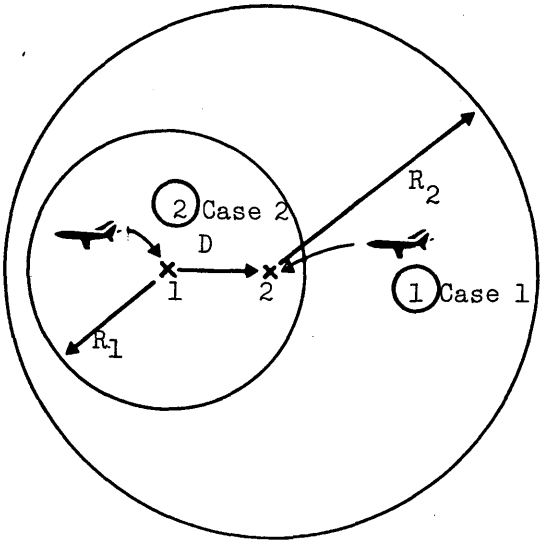
With regard to the distance (D) the calculations can be divided into a number of different cases described below.

In the explantions below it is assumed that the two beacons have different service ranges.

$D \leq R_1$

The big beacon (2) is situated within or at the edge of the service range of the small beacon.

Case 1: the receiver is situated over No 2 listening to No 1 (and is intended for reception from beacon No 1). Transmitter No 2 is interfering.



Calculate:

$$E_{o2} = E_{p2} + 20 \log R_2 + F_2$$

$$E_u = E_{o2} - 20 \log R_{min} - F_{Rmin}$$

$$E_{o1} = E_{p1} + 20 \log R_1 + F_1$$

$$E_D = E_{o1} - 20 \log (D - R_{min}) - F_{(D-Rmin)}$$

$$D/U = E_D - E_u$$

E_{p1} = protected fieldstrength at the service range (R_1), see page 2

E_{p2} = "- (R_2), "-

E_{01} = radiated fieldstrength from 1

E_{02} = "- 2

E_u = unwanted fieldstrength from 2 at R_{min}

E_D = desired fieldstrength from 1 at ($D-R_{min}$)

D/U = desired to undesired fieldstrength ratio (dB)

R_{min} = shortest interfering distance (NM) to beacon 2
(0,54 for ARN, 10 for MRN and MMO)

F = the propagation factor, see page 4

The calculations are made for propagation over both land and sea.

In the calculations of E_o the range dependent factor F is chosen as a function of:

- the frequency band,
  see page 3 and Appendix 1

- type of service (land- or sea propagation),
  see page 4

- sky-wave propagation or not, rangedependent,
  see page 7.

Whether the receiver shall have night protection or not is pointed out in the frequency register and on the "question cards" in the "Range" column
by a letter "N" (blank = day protection only). The following rules are being applied by checking this position (see addendum 1 to doc 15);

N - N	Sky wave propagation
N - blank	Ground wave propagation
blank - N	"-
blank - blank	"-

Case 2: The receiver is situated over No 1 and is listening to No 2.

The calculations are made in the same way as in case 1.

$R_1 < D \leq R_2$

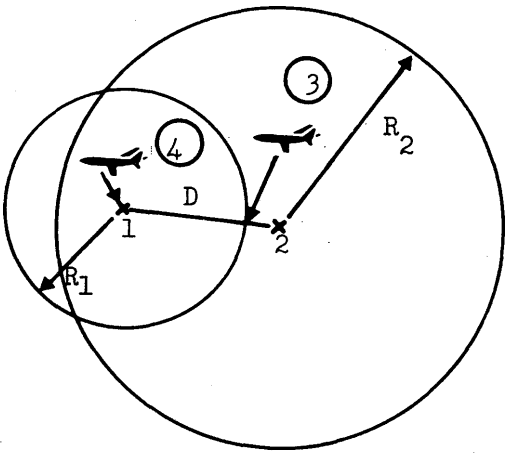
Case 3: beacon No 2 interferes the reception from No 1 at its service range (R_1)

Calculate: $E_D = E_{o1} - 20 \log R_1 - F_1$

$E_U = E_{o2} - 20\log(D-R_1) - F_{(D-R1)}$

$D/U = E_D - E_U$

Case 4: beacon No 1 interferes the reception from No 2.



Calculate: $E_D = E_{o2} - 20\log(R_2-D) - F_{(R2-D)}$

$E_u = E_{o1} - 20\log R_1 - F_1$

$D/U = E_D - E_U$

$D > R_2$

The distance between the two beacons is larger than the service range of the big beacon.

Case 5: beacon No 2 interferes the reception from No 1 at its service range (R_1)

Calculate: $E_D = E_{o1} - 20 \log R_1 - F_1$

$E_u = E_{o2} - 20 \log (D-R_1) - F_{(D-R1)}$

$D/U = E_D - E_u$

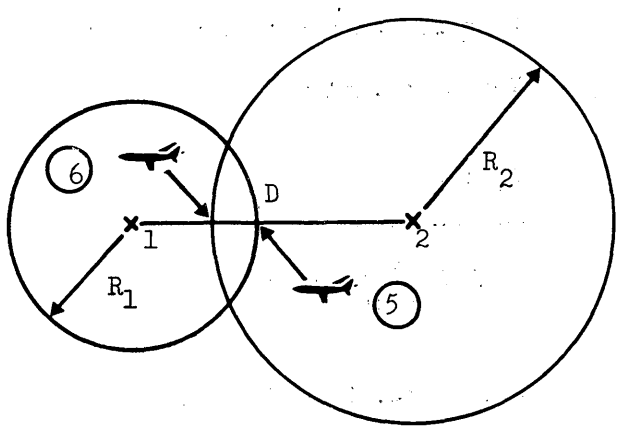
Case 6: beacon No 1 interferes the reception from No 2

Calculate:

$E_D = E_{o2} - 20 \log R_2 - F_2$

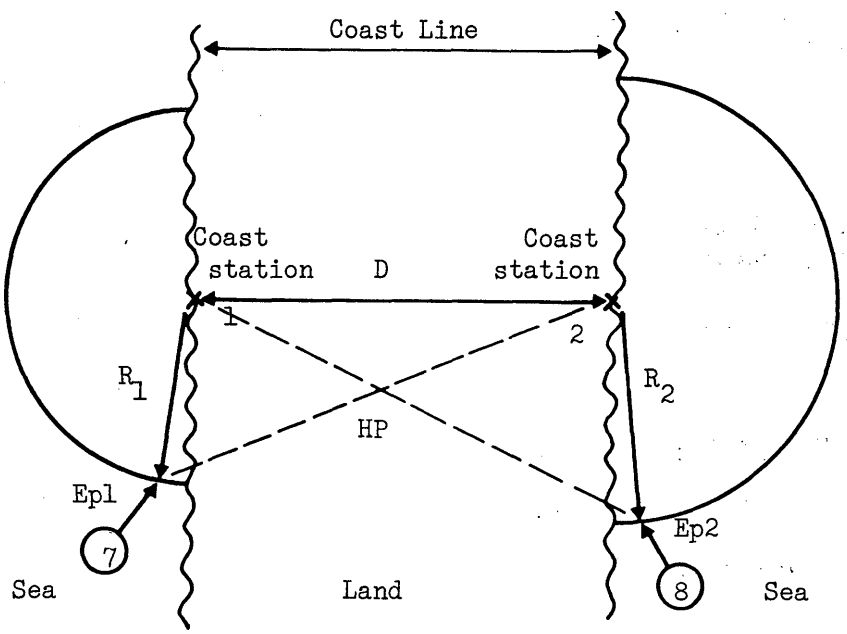
$E_U = E_{o1} - 20 \log (D-R_2) - F_{(D-R2)}$

$D/U = E_D - E_U$



When the calculations are made for coast stations with a large land area between the two transmitters the calculations for land path propagation will give a wrong and misleading result. In order to have some guidance also in this case the following two special cases can be used. In the program it is called calculation "box 2". The result is still sorted in D/U order for sea path propagation.

Situation:



The two coastlines are assumed to be parallel.

Case 7: the receiver is situated at point 7 listening to No 1, on the service range (worst case). Transmitter No 2 is interfering.

Calculate: $E_D = E_{p1}$

$E_U = E_{o2} - 20 \log HD - F_{HD}$

$D/U = E_D - E_U$

$HD = \sqrt{D^2 + R_1^2}$

When HD is larger than 210 NM (at 2 MHz) the value of F_{HD} is chosen for skywave propagation if night protection is required.

Case 8: the receiver is situated at point 8 listening to No 2, on the service range. Transmitter No 1 is interfering.

Calculate: $E_D = E_{p2}$

$E_U = E_{o1} - 20 \log HD - F_{HD}$

$D/U = E_D - E_U$

$HD = \sqrt{D^2 + R_2^2}$

In case 7 and 8 the result must be inspected manually using a map.

Saving computertime in the calculations

In order to speed up the calculations the largest neccessary separation distance in NM between two transmitters in the same service and with a maximum range of 300 NM have been calculated see table 1.

Service		North 30°N		South 30°N	
		Sea path	Sky wave	Sea path	Sky wave
SSB/FIB/AIA	2 MHz	800	1 250	800	1 700
FIB/AIB	500 kHz	700	850	700	1 000
ARN	400 kHz	650	-	650	-
Maritime beacons	300 kHz	850	950	850	1 400

Table 1: Maximum neccessary separation distance (Dmax) between two transmitters in the same service.

If the distance is larger than the one given in table 1, no interference calculations will be made.

6.3 Calculate: (D/U)e = (D/U-P)

The neccessary protection (P) is given in paragraf 2 "sharing criteria".

However, in areas with a high density of stations it may be impossible to find a frequency for a new transmitter. Thus in order to be in the position of studying the influence of the protection ratio the wanted protection (P) is made a variable and has to be read in before running the program.

6.4 Calculate: Neccessary frequency separation (Δ f)e

The neccessary frequency separation (Δ f)e for the calculated (D/U)e value is given by the selectivity curves in figure 1.

The selectivity curves are inserted in the program and can be changed if neccessary by reprogramming.

7. A short description of the program

The work with the frequency register and the running of the program is controlled from a video display terminal.

7.1 The frequency register

The program needs a frequency register in frequency order including present assignments claiming protection. Each register record consists of the following fields:

1. Frequency (kHz)
2. Name
3. Country
4. ID-signal
5. Equipment
6. Coordinates (North and West/south)
7. Category (I or N) - International or National use
8. Service range (NM)
9. Night protection (N)
10. Power (not used in the program)
11. Remarks (" " " " ")

The latitude (....Nor S) and longitude (.....E or W) coordinates are given in degrees and minutes.

"Type" means:

M = maritime radio beacon, receiver selectivety curve M, Eo calculates for sea path propagation, protection see para. 2 and 3.

A = aeronautical beacon (NDB), receiver selectivity curve A, Eo calculates for land path propagation, protection see para. 2 and 3.

C = MMO, AIA/FIB, ~ 500 kHz, receiver selectivety curve C, Eo calculates for sea path propagation, protection see para. 2 and 3.

P = MMO, AIA/FIB, ~ 2 MHz, receiver selectivety curve P, Eo calculates for sea path propagation, protection see para. 2 and 3.

S = MMO, J3E, receiver selectivety curve S, Eo calculates for sea path propagation, protection see para. 2 and 3.

X = FX, ML, J3E, receiver selectivety curve X, Eo calculates for land path propagation, protection see para. 2 and 3.

D = FX, ML, AIA/FIB, receiver selectivety curve D, Eo calculates for land path propagation, protection see para. 2 and 3.

7.2 "Question cards"

By running the program in a manual, interactive mode a maximum of 21 new assignments can be made in each run. An automatic mode can also be used.

The question cards have the same fields as the frequency register with the exceptions that these cards have got a registration number and that there is no frequency indication. Instead of a frequency the frequency interval is pointed out by assigning:

- o lower frequency boundary
- o upper "-
- o step length - channelling (for the time being 0,2; 0,4; 0,5; 1,0; 2,3 and 3 kHz)

The question cards are stored in a requirement file for the Conference produced by IFRB. The remark column shows the IFRB identification number.

Wanted question cards for each run can be selected from the file by using a special program "select".

Corrections and amendments in the requirement file can be done by a special program.

7.3 The program

The program system is developed for IBM/470 (Amdahl) system GUTS and is written in FORTRAN 77.

The system layout and the programming has been done by the Senior Research Engeneer Gunnar Norell, OPIAB.

The system consists of the following main programs dealing with:

- technical, basic data
- blocked frequencies (see Appendix 2)
- the basic frequency register
- updating of the basic register
- the requirement file (questioncards)
- selection of question cards from the requirement file
- search of free frequencies
- test assignments
- updating of the basic frequency register with the new assignments.

The development of programs to handle the registers is depending on the computer systems on hand and has to be done individually. In Sweden a system with direct access is used.

The description below of the working order follows an example of a test run.

7.4 Working order and results

The work is controlled by successive questions on the screen or by manual starts of the different programs (see Appendix 3).

7.4.1 Read in and list the question cards

Listing can be done as well on the screen as on the printer.

Headline: New beacons to be assigned.

Example:

```
482-CCHGG*** PAGE      1
    DATE 85.01.24     TIME 16:03:33
                         NEW BEACONS TO BE ASSIGNED
                         ==========================
KARD FQ-INTERV.   STEP  NAME................ COUN ID. USE COORDINATES CAT RANGE
  1  415.0- 435.0 1.0   ARVIKA                S    R   NDB 5940N 1238E  N   50
  2  415.0- 435.0 1.0   GREBBESTAD            S    GRE NDB 5842N 1115E  N   50A
  3  415.0- 435.0 1.0   LUDVIKA               S    N   NDB 6006N 1505E  N   30AN
```

Check the list carefully!

7.4.2 Run "Search for free frequencies"

o Answer the question: Wich protection shall be used?

Result: for each question a list showing usable frequencies in difficulty order. Maximum 15 frequencies. The worst case is shown first i.e the frequency with the lowest D/U-value. In the automatic mode this frequency is chosen in order to have the tightest packing of the frequency band.

Headline: List of free frequencies.

Example (extract):

484-CCHGG*** PAGE 1
DATE 85.01.24 TIME 16:08:12
LIST OF FREE FREQUENCIES

NEW NDB: 1

FQ-INTERVAL	STEP	NAME	COUN	COORDINATES	RANGE
415.00 - 435.00	1.0	ARVIKA	S	5940N 1238E	50

FQNEW	G-D/U	MODE	S-D/U	FQOLD	RANGE	NAME	COUN	DIS
430.00	21.3	5	19.7	428.00	25	*SATENAS	S	77.
	29.5	5	20.7	429.00	25	*KRISTINESMINDE	DNK	222.
	31.8	5	22.2	431.00	25	*ROSKILDE	DNK	242.
	41.8	5	27.1	430.00	30	*OFFSHORE MC	G	398.
	45.5	5	36.3	432.00	25	*KARUP	DNK	232.
434.00	22.3	5	15.9	434.00	25	*TIRSTRUP	DNK	212.
	42.9	5	27.6	434.00	25	*SHAULAY	URS	406.
	45.5	5	36.3	432.00	25	*KARUP	DNK	232.
	57.7	5	40.4	435.00	55	STRZELIN	POL	522.
	60.1	5	40.4	434.00	50	GORKA	URS	594.
423.00	24.3	5	22.1	425.00	30	*ORUST	S	93.
	28.4	5	24.0	421.00	15	*BORLANGE	S	96.
	28.6	5	18.1	423.00	25	*ODENSE	DNK	265.
	31.8	6 5	32.5	420.00	15	KARLSKOGA	S	60.
	33.0	5	27.2	421.00	15	*LINKOPING/SAAB	S	122.
432.00	24.7	5	15.5	432.00	25	*KARUP	DNK	232.
	31.8	5	22.2	431.00	25	*ROSKILDE	DNK	242.
	39.5	5	26.5	432.00	50	KALININGRAD	URS	393.
	43.1	5	34.7	434.00	25	*TIRSTRUP	DNK	212.
	43.5	5	28.1	432.00	25	*LEMWERDER	D	413.
431.00	25.8	5	16.2	431.00	25	*ROSKILDE	DNK	242.
	30.7	5	21.5	432.00	25	*KARUP	DNK	232.
	36.1	5	34.5	428.00	25	*SATENAS	S	77.
	43.3	5	27.6	431.00	20	*UNST	G	406.
	44.3	5	35.5	429.00	25	*KRISTINESMINDE	DNK	222.
433.00	28.3	5	19.9	434.00	25	*TIRSTRUP	DNK	212.
	30.7	5	21.5	432.00	25	*KARUP	DNK	232.
	45.5	5	32.8	432.00	50	KALININGRAD	URS	393.
	46.6	5	37.0	431.00	25	*ROSKILDE	DNK	242.
	48.9	5	33.6	434.00	25	*SHAULAY	URS	406.
435.00	28.3	5	19.9	434.00	25	*TIRSTRUP	DNK	212.
	48.9	5	33.6	434.00	25	*SHAULAY	URS	406.
	51.7	5	34.4	435.00	55	STRZELIN	POL	522.
	55.1	5	37.9	436.00	30	*REINSDORF	DDR	465.
	60.3	5	51.1	432.00	25	*KARUP	DNK	232.

NEW NDB: 2

FQ-INTERVAL	STEP	NAME	COUN	COORDINATES	RANGE
415.00 - 435.00	1.0	GREBBESTAD	S	5842N 1115E	50

FQNEW	G-D/U	MODE	S-D/U	FQOLD	RANGE	NAME	COUN	DIS
432.00	15.1	4	18.4	428.00	25	SATENAS	S	49.
	16.2	5	9.5	432.00	25	*KARUP	DNK	161.
	[illegible]	5	17.7	431.00	25	*ROSKILDE	DNK	186.

Description of the result:

First line: a copy of the question card

FQNEW: Usable frequencies.

For each usable frequency the calculated D/U-value against the five most dangerous interferer are shown. Only frequencies with D/U≥P by land path propagation are printed out.
The interferer are sorted in D/U order for propagation over land if the program deals with ARN and for propagation over sea in the other cases.

G-D/U = Calculated D/U-value with land path propagation.

MODE: Interfering case, see paragraf 6.2.
Odd number: the "small" beacon is interfered.
Even number: the "big" beacon is interfered.
When two figures apear the left one shows the interfering case with land path propagation and the right one with sea path propagation.

S-D/U = Calculated D/U-value with sea path calculations.

FQOLD: The frequency of the old station.

RANGE: The service range, type and Night/Day protection of the old station

NAME: The Name of the old station. An "asterisk" before the name shows that it is interfered by the new station

COUN: The country

DIST: The distance between the new and the old station (NM)

The list is concluded by a tableau showing the usable frequencies for all the "question cards".

Head line: FREE FREQUENCIES

Example:

```
KARD    FREE FREQUENCIES
  1      430.0  434.0  423.0  432.0  431.0  433.0  435.0
  2      432.0  433.0  435.0
  3      426.0  428.0  425.0  427.0  429.0  434.0  431.0  430.0  432.0  433.0
```

7.4.3 Run "TEST ASSIGNMENT"

- o Study the list of available free frequencies and choose a frequency for each new station taking into account the real propagation path (land-, sea or mixed).

In order to pack the frequency band in a proper way it is desirable to assign the frequency with the lowest D/U-value (squeeze in the new station).

- o Decide in which order the question cards should be dealt with. As a general rule the cards should be handled in order of difficulty that is take the card with the lowest number of free frequencies first.

The chosen frequencies are entered as successive answers to the questions on the screen:

- o which station number is to be assigned a frequency, and after that

- o which frequency do you choose (only a frequency shown on the screen can be chosen)

After each frequency decision the program shows the impact on the choise of usable frequencies for the other new stations.

Example:

```
*****************************************************************************

480-CCHGG*** PAGE     1

 432.00 kHz for station   2  BLOCKES          free frequencies for station   1
  430.00    434.00    432.00   431.00    433.00

 432.00 kHz for station   2  INTERFERE with free frequencies for station   1
  435.00

 432.00 kHz for station   2  BLOCKES          free frequencies for station   3
  432.00

 432.00 kHz for station   2  INTERFERE with free frequencies for station   3
  429.00    434.00    431.00   430.00    433.00    435.00

 423.00 kHz for station   1  INTERFERE with free frequencies for station   3
  426.00    425.00    427.00
```

Break the procedure by pushing "Return" after the question "which station number is to be assigned a frequency". Start again at "Run test assignment".

After the last station in the file "New beacons to be assigned" has been assigned a frequency the program runs to an end automatically. As a result there will be a print out of a new list of free frequencies but now the impact of the new assignments is shown as well.

Headline "The result of the test assignment".

Example (extract):

THE RESULT OF THE TEST-ASSIGNMENT

NEW NO: 1

FQ-INTERVAL	STEP	NAME	COUN	COORDINATES	RANGE
423.00 - 423.00	1.0	ARVIKA	S	5940N 1238E	50

FQNEW	G-D/U	MODE	S-D/U	FQOLD	RANGE	NAME	COUN	DIS
423.00	24.3	5	22.1	425.00	30	*ORUST	S	93.
	28.4	5	24.0	421.00	15	*FORLANGE	S	96.
	28.5	5	18.1	423.00	20	*ODENSE	DNK	265.
	31.8	6 5	32.5	420.00	10	KARLSKOGA	S	60.
	33.0	5	27.2	421.00	15	*LINKOPING/SAAB	S	122.
439.00	26.3	5	37.9	432.00	50	GREBBESTAD	S	71.
	28.3	5	19.9	434.00	25	*TIRSTRUP	DNK	212.
	48.9	5	33.6	434.00	25	*SHAULAY	URS	406.
	51.7	5	34.4	435.00	55	STRZELIN	POL	522.
	55.1	5	37.9	436.00	30	*REINSDORF	DDR	465.

NEW NOB: 2

FQ-INTERVAL	STEP	NAME	COUN	COORDINATES	RANGE
432.00 - 432.00	1.0	GREBBESTAD	S	5842N 1115E	50

FQNEW	G-D/U	MODE	S-D/U	FQOLD	RANGE	NAME	COUN	DIS
432.00	15.1	4	18.4	428.00	25	SATENAS	S	49.
	16.2	5	9.8	432.00	25	*KARUP	DNK	161.
	24.3	5	17.7	431.00	25	*ROSKILDE	DNK	186.
	34.9	5	29.1	434.00	25	*TIRSTRUP	DNK	145.
	37.3	5	23.6	432.00	25	*LEMWERDER	D	345.
433.00	20.1	5	14.3	434.00	25	*TIRSTRUP	DNK	145.
	22.2	5	15.8	432.00	25	*KARUP	DNK	161.
	29.9	4	33.2	428.00	25	SATENAS	S	49.
	39.7	5	32.5	431.00	25	*ROSKILDE	DNK	186.
	43.3	5	29.6	432.00	25	*LEMWERDER	D	345.
435.00	20.1	5	14.3	434.00	25	*TIRSTRUP	DNK	145.
	47.8	5	31.8	435.00	55	STRZELIN	POL	484.
	48.8	5	33.8	436.00	30	*REINSDORF	DDR	409.
	50.7	5	34.8	434.00	25	*SHAULAY	URS	422.
	51.8	5	45.4	432.00	25	*KARUP	DNK	161.

Another result list will also be produced as a summary named "Test assigned stations".

Example:

```
481-CCHGG*** PAGE      1

          TEST-ASSIGNED STATIONS
          ======================
KARD      FREQUENCY       NAME......... COUN ID. USE COORDINATES CAT RANGE
  1         423.00        ARVIKA        S    R    NDS 5940N 1239E  N   50
  2         432.00        GREBBESTAD    S    GRE  NDB 5842N 1115E  N   50
  3         426.00        LUDVIKA       S    N    NDB 6006N 1505E  N   30

          NOT ASSIGNED STATIONS
          --- ==========
KARD   FQ-INTERV.    STEP   NAME ..........COUN  ID.  USE  COORDINATES   CAT RANGE
```

All stations were assigned a frequency.

Study the list carefully! If the results are satisfactory go to next step "Update the frequency register" if not, make a new test assignment. The test assignment can be repeated as many times as you wish.

7.4.4 Update the frequency register

The frequency register is updated by a special command through which the list "test assigned stations " is added to the main register.

8. Miscellaneous

The program can also be used to test an old assignment or a special frequency. In this case read in one frequency on the question card (i.e the same frequency on both band limits) and a very low protection ratio, for example -99dB.

Example: test the assignment of 351 kHz to Visby.
(Visby is already to be found in the frequency register at 351 kHz)

```
1916-CCHGG*** PAGE      1
     DATE 83. 6.28     TIME 16:15:34
                          NEW BEACONS TO BE ASSIGNED
                          ==========================
   RD FC-INTERV.   STEP  NAME                COUN SIG USE COORDINATES CAT FAN
   1 351.00-351.00 1.0   VISBY               S    CV  L   N5744 E1824  I    2


   ?-CCHGG*** PAGE      1
                    DATE 83. 6.29          TIME 12:53:41
                          LIST OF FREE FREQUENCIES
                          ========================

  NEW NDB:    1
   FQ-INTERVAL    STEP     NAME                  COUN     COORDINATES    RANGE
 351.00 - 351.00   1.0     VISBY                 S        N5744 E1824      25

 FQNEW     G-D/O   MODE S-D/O     FQOLD    RANGE NAME                COUN    D
 351.00      0.0    1     0.0     351.00     25  VISBY               S       (
            25.0    5    17.1     351.00     30M TRUBADUREN          S      21
            30.6    6    21.7     351.00     15  MALMO/STURUP        S      20
            34.9    6    24.5     351.00     15  HUDIKSVALL          S      24
            38.4    6    26.7     360.00     50  VESI                FNL    30

 KARD    FREE FREQUENCIES
   1      351.0
```

The first line in the "list of free frequencies" shows the calculated D/U value against Visby itself (D/U=0).

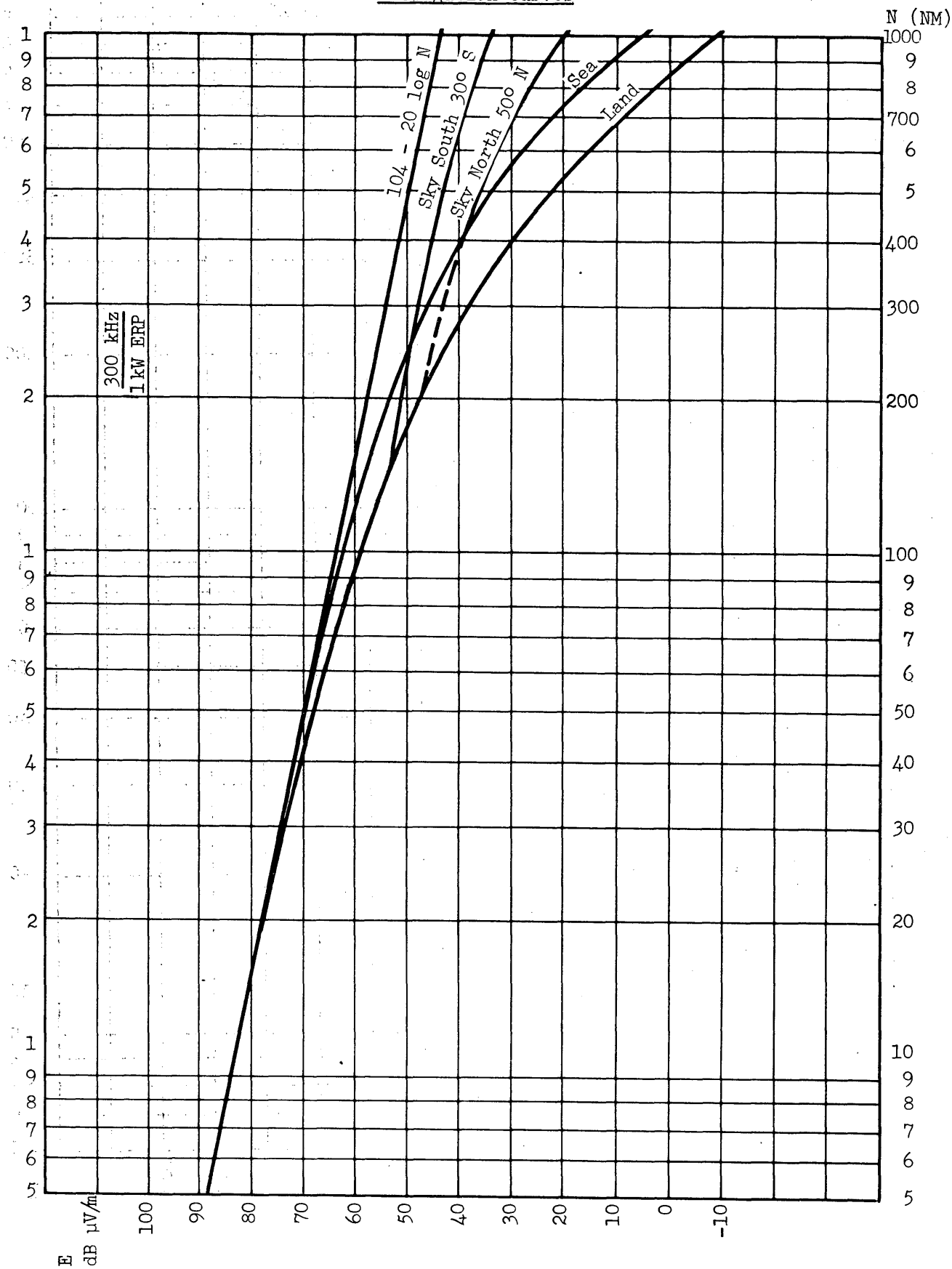
Against the other beacons with frequencies in the interval (351+/-6) kHz it can be seen that D/U > 15 dB for both land and sea path propagation.

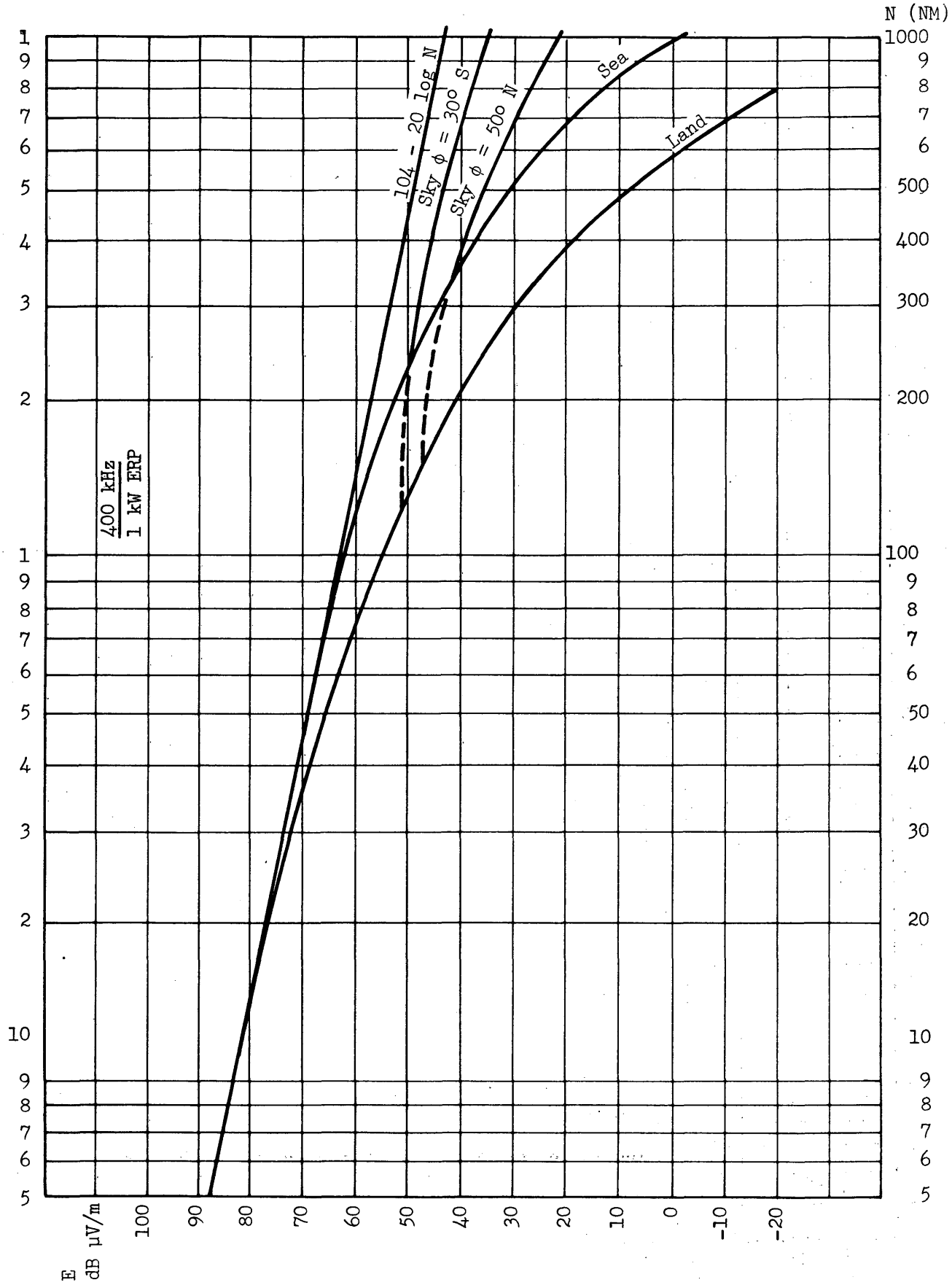
In the list there is a maritime beacon named Trubaduren. This beacon is located on the west coast of Sweden, the main part of the propagation path is over land.

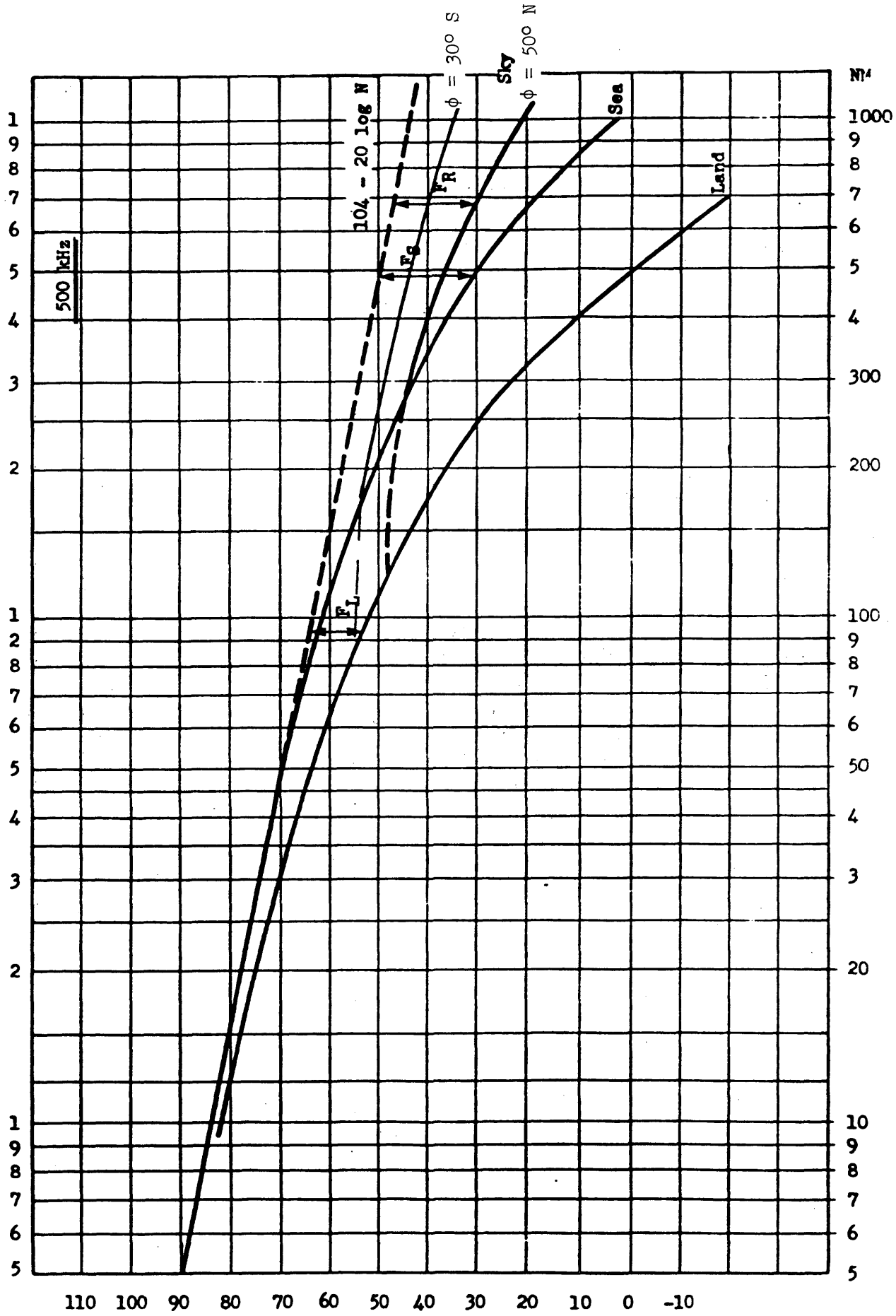
Test results: the assignment is excellent.

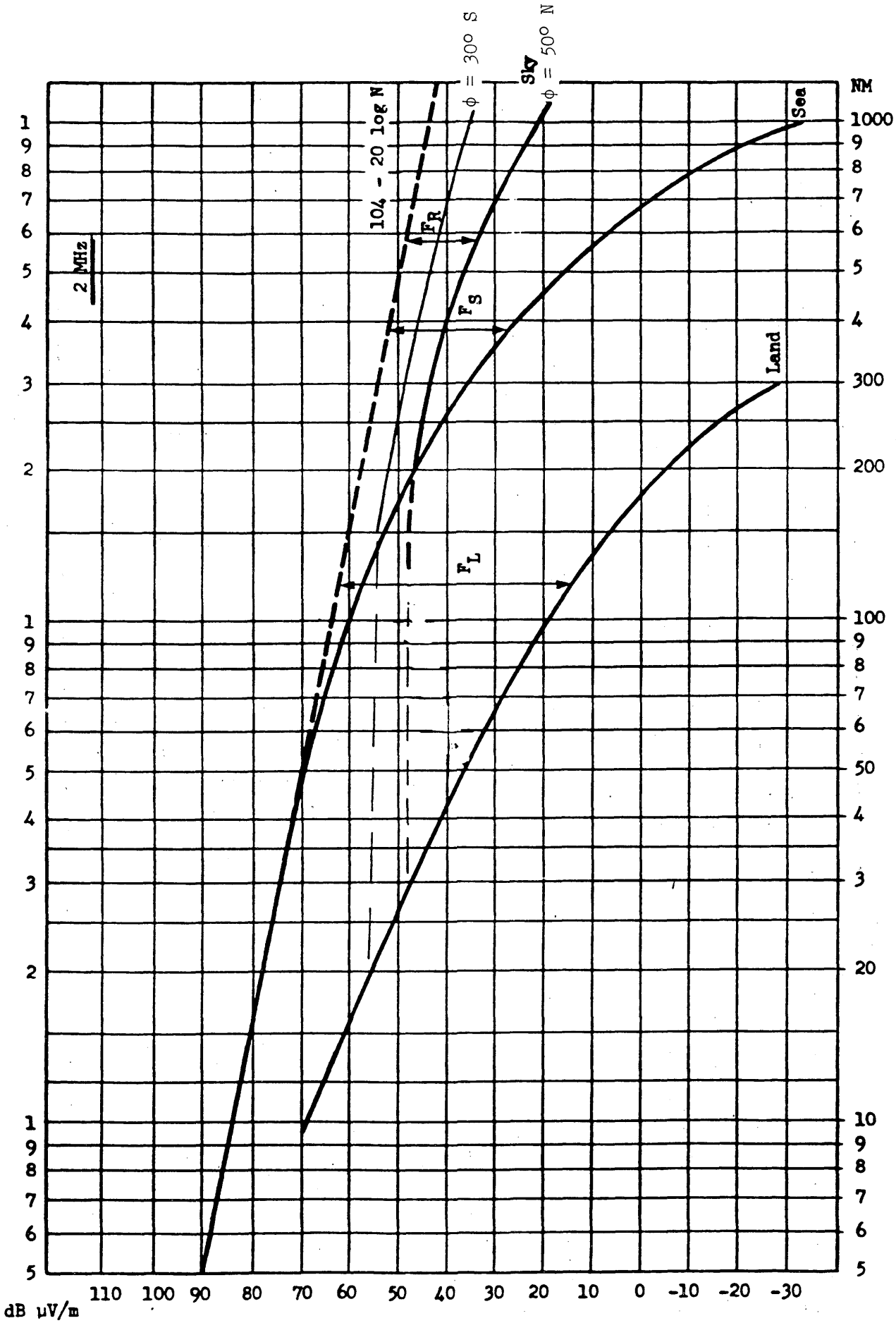
Appendix 1

Propagation curves




N (NM)
1000
500
400
300
200
100
50
40
30
20
10
104 - 20 log N
Sky φ = 30° S
Sky φ = 50° N
Sea
Land
400 kHz / 1 kW ERP
E dB µV/m
100
90
80
70
60
50
40
30
20
10
0
-10
-20


φ = 30° S
Sky
φ = 50° N
Sea
Land
104 - 20 log N
500 kHz
F_R
F_S
F_L
NM
1000
300
200
100
50
20
10
110 100 90 80 70 60 50 40 30 20 10 0 -10


φ = 30° S
Sky
φ = 50° N
NM
Sea
Land
104 - 20 log N
F_R
F_S
F_L
2 MHz
1000
300
200
100
50
20
10
110 100 90 80 70 60 50 40 30 20 10 0 -10 -20 -30
dB µV/m

Appendix 2

Sida 1 (1)

Blocked frequencies

Blocked frequency = a not assignable frequency.

The blocked frequencies are entered through a separate program: "LOCKFQ".

For the time being the following frequencies are blocked.

283.5 - 315,0 kHz, MRN

283,5	Band edge
315,0	"-

415 - 435 kHz, ARN

415,0	Band edge
435,0	"-

After that the plan for ARN (NDB) has been established, frequencies for MMO may be assigned.

435 - 526,5 kHz, MMO

435,0	Band edge
450 - 490	Shipstations
490 - 510	WARC 83, Res 206, 704, RR 3018, 471
512,0	Reserved for special purpose
517,5 - 518,5	"-
526,5	Band edge

After that the plan for MMO has been established, frequencies for ARN may be assigned in the band 510 (505) - 526,5 kHz.

1606,5 - 1625,0 kHz, MMO (AIA, FIB)

1606,5	Band edge
1625,0	"-

1636,4 - 1798,4 kHz, MMO (J3E)

No blocked frequencies.

The underlined band limits shall be indicaded on the question cards in the field "FQ-INTERVAL".

Additional frequencies may be blocked according to decisions by the Conference.

ANNEX 2

Proposals concerning the organization of the work etc.

S/1013/2
S/24/2

1. **Preparations**

Before the planning excercise can start the Conference has to decide upon the planning criteria presented in Doc. 15 but also upon how to treat:

- **stations with different requirement concerning "day- and night" protection (see page 11)**

- **present assignments to permitted services. Shall these assignments be protected? If so it will hamper the possibilities to assign frequencies to the primary services considerably.**

  The "basic" frequency register should be examined carefully and updated consequential to the decisions taken.

S/1013/3
S/24/3

2. Organisation of the work

The planning work chould be done in three planning groups, one for each of the following frequency bands:

EMA Conference: 283,5 - 315 kHz. Maritime beacons
Region 1 Conference:
Group 1. 415 - 526,5 kHz. ARN and MMO.

This group should start with the MMO in the band 435 - 526,5 kHz. In the next step the group has to plan the ARN in the band 415 - 435 kHz. Proposed frequencies in accordance with the ICAO FCB plan can be entered after tests.Thereafter the group can assign frequencies to ARN in the maritime band and vice versa.

Group 2. 1606,5 - 1625.0 kHz. MMO (AIA/FIB)

1635 - 1800 kHz. MMO (J3E)

Check the present assignments concerning assigned frequency and range!

Each group should dispose one terminal with access to the computersystem containing the basic, technical data file and the blocked frequencies. The groups should also have:

- **a basic frequency register containing present assignments that shall be protected (on a file and on a printout).**

- **the "question cards", a requirement file and a print out. The question cards have got registration numbers.**

- **a map**

In each group the following working order should be applied.

S/1013/4
S/24/4

3. Working order

1) Check the basic frequency register - assigned frequencies, service ranges, types.

Update the basic register: RUN BBUPD

2) Check the question cards - fq-interval, service range, type

Update the requirement file: RUN BBFRKUPD

3) Establish a strategy for the planning work (see doc. 15 para 2.8.2).

4) Decide upon how to treat requirements with a proposed frequency.

It has been observed that for some coast stations about 20 frequency assignments are proposed.

5) Update the basic fq-register with the question cards that have proposed frequencies accepted by the Conference.

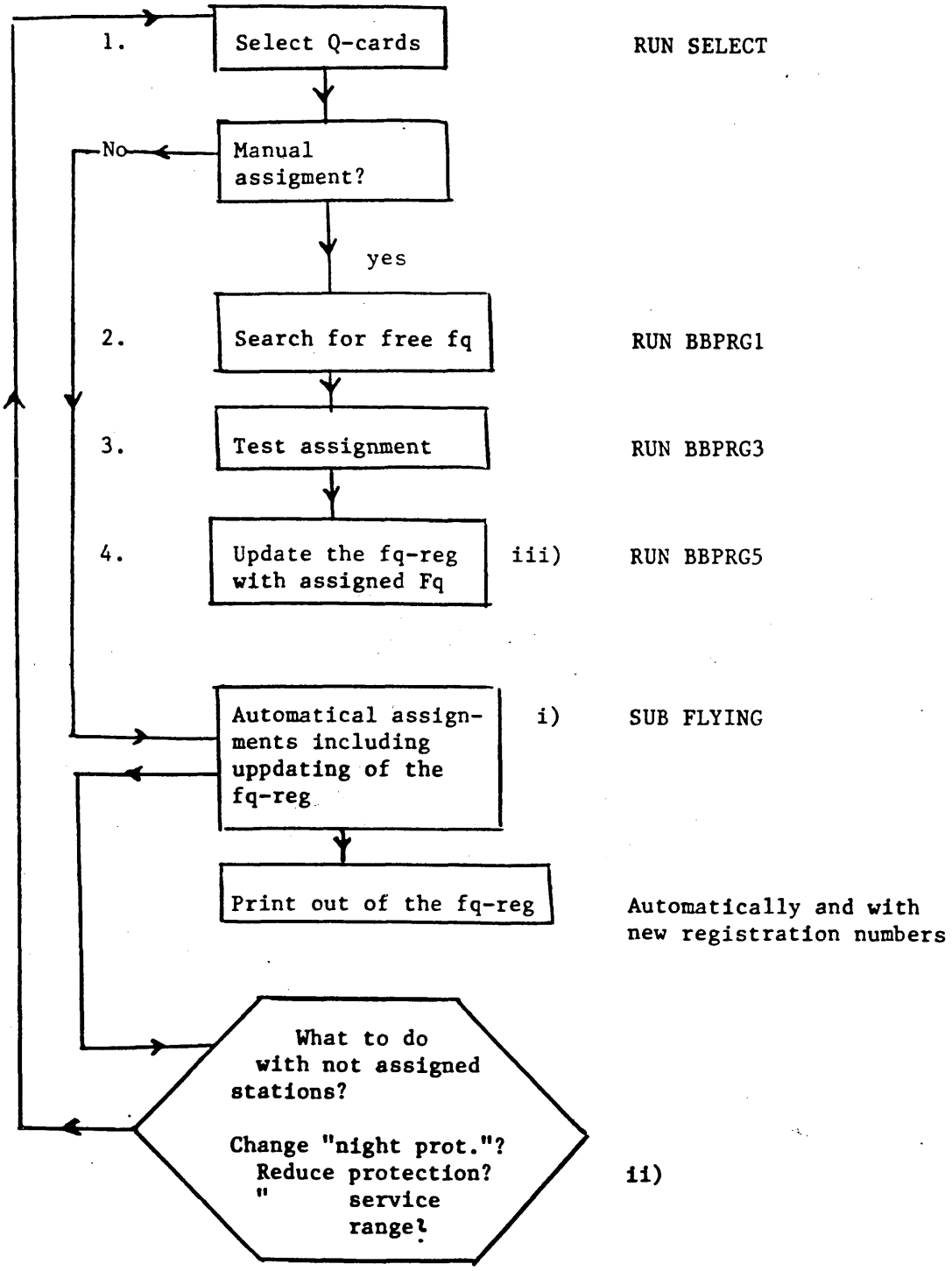
Program: RUN SELECT, and
RUN FLYING with

reduced protection or call for help.

6) Since it is unpractical to run the program with all requirements for the whole area entered, it is neccessary to divide the question-cards into batches, one for each run by noting their registration numbers. Use the printout. The devision depends on the strategy chosen in point 3 above.

It is suggested that the first run in each area should use the automatic mode. When problems occur the following runs can be done manually (max 21 cards)

7) Running procedure



i) see next page
ii) "-
iii) "-

Common programs

Manual updating of the basic fq-register	RUN BBUPD
Manual updating of the Q-cards	RUN BBFRKUPD
Print out of the fq-reg, in wanted order (frequency or country)	SUB LSTFQ or SUB LSTCUN

---

i) As a result of the automatic assignment program there will be two lists one showing assigned station and one showing not assigned stations. For "not assigned stations" the frequency 00,00 is inserted in the basic register. This entry has to be changed manually if the station gets a frequency later on.

ii) If the night protection or the service range has to be altered the Q-card has to be changed manually before the next run. A reduced protection (D/U-value for all stations of the same type is orderd by an answer to a question in the program "Search for free frequencies."

iii) Not assigned stations will remain in the requirement file. Run the program once again with e.g reduced protection for these stations (service)..

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document 1014-E
13 February 1985
Original : French

REGION 1

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE MARITIME MOBILE SERVICE AND THE AERONAUTICAL RADIONAVIGATION SERVICE IN CERTAIN PARTS OF THE MF BAND IN REGION 1
GENEVA, FEBRUARY/MARCH 1985

Document 25-E
13 February 1985
Original : French

BUDGET CONTROL COMMITTEE

Note by the Secretary-General

CONTRIBUTIONS OF RECOGNIZED PRIVATE OPERATING

AGENCIES AND NON-EXEMPT INTERNATIONAL ORGANIZATIONS

No. 623 of the International Telecommunication Convention, Nairobi, 1982 provides that :

> ..."The amount of the contribution per unit payable towards the expenses of administrative conferences by recognized private operating agencies which participate in accordance with No. 358 and by participating international organizations shall be fixed by dividing the total amount of the budget of the conference in question by the total number of units contributed by Members as their share of Union expenses ... They (the contributions) shall bear interest from the sixtieth day following the day on which accounts are sent out, at the rates fixed in No. 614".

The budget of the two Conferences totals 1,993,000 Swiss francs, 2/3 i.e. 1,329,000 Swiss francs being charged to the Regional Administrative Radio Conference for the Maritime Mobile and the Aeronautical Radionavigation Service in Certain Parts of the MF Band in Region 1, and 1/3 i.e. 664,000 Swiss francs to the Regional Administrative Radio Conference for the Planning of Frequencies for Maritime Radiobeacons in the European Maritime Area.

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.

The amount of the contributory unit for recognized private operating agencies and international organizations which are not exempt under the provisions of Administrative Council Resolution No. 574 is expected to be :

5,567 Swiss francs for the Regional Administrative Radio Conference for the Maritime Mobile Service and the Aeronautical Radionavigation Service in Certain Parts of the MF Band in Region 1 (the contributory units of the Members of Region 1 totalling 238 3/4).

3,316 Swiss francs for the Regional Administrative Radio Conference for the Planning of Frequencies for Maritime Radiobeacons in the European Maritime Area (the contributory units of the Members of the European Maritime Area totalling 211 3/4). These figures will have to be adjusted to take into account the changes in the United Nations common system of staff salaries and allowances which have affected the budget of the two Conferences.

A list of the non-exempt recognized private operating agencies and international organizations participating in the work of the Conferences, with the number of contributory units chosen by them, will be published later.

R. E. BUTLER
Secretary-General

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document 1015-E
15 February 1985
Original : English

REGION 1

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE MARITIME MOBILE SERVICE AND THE AERONAUTICAL RADIONAVIGATION SERVICE IN CERTAIN PARTS OF THE MF BAND IN REGION 1
GENEVA, FEBRUARY/MARCH 1985

Document 22-E
15 February 1985
Original : English

PLENARY MEETING

Note by the Secretary-General

NOTE BY THE IFRB ON THE STATUS OF THE PRIMARY AND PERMITTED SERVICES IN CONNECTION WITH PLANNING AND NOTIFICATIONS

At the request of the International Frequency Registration Board, I transmit the attached IFRB Note for the information of the Conference.

R.E. BUTLER
Secretary-General

Annex : 1

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.

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NOTE BY THE IFRB

on the status of the primary and permitted services in connection with planning and notifications

1. Introduction

On several occasions the Board's views were requested with respect to the interpretation to be given to the relationship between primary and permitted services when planning one of these services.

As both Conferences (RARC-EMA-R1 and RARC-MM-R1) concern planning in bands allocated to primary and permitted services, the Board will have to develop rules of procedure to be applied after the entry into force of the Final Acts of these Conferences when examining notices of frequency assignments in the services concerned, mainly when considering provisions of RR1245 of Article 12 of the Radio Regulations. These rules of procedure should take account of the manner in which the Conferences will treat the assignments pertaining to non-planned services and recorded in the Master Register. For this reason the Board has prepared this document to inform the Conference of the interpretation it gives to RR419 in relation to the agenda of the Conferences and to recommend actions with respect to non-planned services within and outside the planned area.

2. Considerations applicable to all services and bands

The Regional Administrative Conference for FM Sound Broadcasting (CARR-1), Geneva, 1984, requested the Board to prepare a document on this subject. The part of the document (Doc. No. CARR-1(2)/60) which refers to considerations applicable to all services and bands is reproduced below:

"The definition of a permitted service is contained in No. 419 of the Radio Regulations.

> "419 (3) Permitted and primary services have equal rights, except that, in the preparation of frequency plans, the primary service, as compared with the permitted service, shall have prior choice of frequencies."

RR419 (3) basically states that "permitted and primary services have equal rights", with one exception, i.e., "in the preparation of frequency plans". However, the use of these words implies that prior to and subsequent to such preparation the two categories of service have equal rights.

The preparation of a plan by a Conference is carried out by the Conference during its session. Subsequent additions to, modifications of and deletions from the plan which generally take place after the entry into force of the Final Acts of the Conference, cannot be considered as part of the "preparation". After the Conference therefore, the two categories of service will have equal rights.

It may be argued that because No. 419 refers to "frequency plans" the exception to "equal rights", giving prior choice of frequencies to the primary service, only applies if both primary and permitted services are being planned. This argument can be dismissed since it would mean that when the primary service only is being planned the exception, i.e., "prior choice of frequencies" does not apply and only if both services are being planned at the same time will the exception apply. Clearly the term "frequency plans", while in the plural, embraces the singular."

3. Situation prevailing in the bands to be planned

3.1 From the date of adoption of RR419 (ex No. 138 of the Radio Regulations of 1959) until today only one conference had to deal with planning a primary service in a band allocated also to a permitted service; it was the Regional Administrative Conference for FM Sound Broadcasting (CARR-1), Geneva, 1984. It is, however, to be noted that the allocation to the permitted service in that case was generally for a limited time duration and the resolution of the problem was found in multilateral arrangements among the administrations concerned, the results of which were not included in the Final Acts of the Conference.

3.2 It may be assumed that the Administrative Council was aware of the situation which may exist between primary and permitted services and for this reason included in the agenda of both Conferences the items intended to protect services other than the planned ones. Paragraph 2.2 of Resolution No. 898 and paragraph 2.3 of Resolution No. 897 stipulate "to afford appropriate protection to frequency assignments to stations of other services to which the bands are also allocated, when establishing the Plan(s)". In addition, Resolution No. 897 refers to "a compatible development of other services to which the bands are allocated".

3.3 As for the protection of other services, the situation differs from one band to another. For a better understanding of the situation prevailing in each case, the following table summarizes the possible cases:

Frequency Allocations in Region 1 kHz	Service(s) to be Planned	Protection to be Afforded to Other Services in Region 1	Protection to be Afforded to Services in Regions 2 and 3
283.5 - 315 MARITIME RADIONAV. /AERONAUTICAL RADIONAVIGATION/	MAR. RADIONAV. (in European Maritime Area)	/AERO.RADIONAV./ in EMA and MAR. and AERO.RADIONAV. outside EMA	MARITIME RADIONAVIGATION AERONAUTICAL RADIONAVIGATION
415 - 435 AERONAUTICAL RADIONAVIGATION /MARITIME MOBILE/	AERONAUTICAL RADIONAVIGATION /MARITIME MOBILE/	RR419 applies between AERO. RADIONAV. and /MAR.MOB./	MARITIME MOBILE
435 - 495 MARITIME MOBILE aero. radionav.	MARITIME MOBILE	-	MARITIME MOBILE
505 - 526.5 MARITIME MOBILE /AERONAUTICAL RADIONAVIGATION/	MARITIME MOBILE /AERONAUTICAL RADIONAVIGATION/	RR419 applies between MARITIME MOBILE and /AERO.RADIONAV./	MOBILE *), MARITIME MOBILE *), AERO.RADIONAV. *)
1 606.5 - 1 625: 1 635 - 1 800: 2 045 - 2 160: MARITIME MOBILE /FIXED/ /LAND MOBILE/	MARITIME MOBILE	/FIXED/ /LAND MOBILE/ Note RR483	BROADCASTING *) FIXED *) MOBILE *) RADIOLOCATION *) AERO.RADIONAV. *) RADIONAVIGATION *)

*) Note: The allocations to the services mentioned above in Regions 2 and 3 have different band limits than those in Region 1.

4. Considerations applicable to the bands where both primary and permitted services are to be planned (415 - 435 kHz, 505 - 526.5 kHz)

In the light of the above, the position of the primary and permitted services in Region 1 is as follows:

4.1 Prior to be the Conference both primary and permitted services have equal rights, i.e. both may be considered as primary;

4.2 During the Conference (i.e., period of preparation of plans) the primary service has "prior choice of frequencies". This Conference when assigning frequencies to stations of one service should decide on the manner of how to satisfy and protect the requirements of the other service;

4.3 Modifications to the Plan: Since the two categories of service, primary and permitted, regain equal rights after the Conference, the procedure of modification of the Plan to be developed by this Conference should take this situation into account.

4.4 Notification of frequency assignments to the IFRB: At the notification stage, in accordance with Article 12 of the Radio Regulations, the Board will examine the frequency assignment notices to stations of the planned services in the following way:

a) In accordance with RR1240, the Board examines the conformity of the frequency assignment with respect to the provisions of the Radio Regulations, other than those relating to the probability of harmful interference, in which no other station than the one under consideration is taken into account; (Findings are given in Column 13A1);

b) In accordance with RR1245, the Board does not examine the notice under RR1241 with respect to assignments of countries party to the Agreement; the examination is limited to the conformity of the frequency assignment with respect to the Regional Agreement and the Plan annexed thereto or modified subsequently in accordance with the Agreement; (Findings are given in Column 13A2).

c) The Board examines the notice under RR1241 vis-à-vis the frequency assignments recorded, at the time of the receipt of the notice, in the Master Register on behalf of countries non-party to the Agreement. (Findings are given in Column 13A3.)

5. Considerations applicable to the bands where only the primary service is to be planned (283.5 - 315 kHz, bands above 1 606.5 kHz)

5.1 Prior to the Conference both primary and permitted services have equal rights;

5.2 During the Conference, when assigning frequencies to the primary service to be included in the Plan, this Conference should, in accordance with its agenda, afford appropriate protection to frequency assignments of the other services. (N.B. The required extracts from the MIFR are being made available to the Conference.)

5.3 Modifications to the Plan:

5.3.1 Since after the Conference the primary and permitted services regain equal rights this Conference should, in accordance with its agenda adopt procedures "permitting a compatible development of the other services to which the bands are allocated". This implies that the Conference should adopt procedures governing the relationship between planned and non-planned services which would lead to procedures applicable to the non-planned services.

5.3.2 As this Conference should, in accordance with its agenda, afford appropriate protection to frequency assignments to stations of other services, modifications to the Plan should be examined from the view point of the probability of harmful interference being caused to the assignments of the permitted services recorded in the MIFR at the date of the modification.

5.3.3 As a counterpart to the above, this Conference should adopt provisions applicable to parties to the Agreement permitting the protection of assignments in the Plan which have not yet been brought into use. In the absence of such provisions, a frequency assignment of a permitted service, notified just after the Conference and capable of causing harmful interference to planned assignments not in use will receive a favourable finding. Their recording in the MIFR will give them the right to international protection. Such situations may greatly reduce the efficiency of the Plan. A possible solution to this may consist in adopting provisions in the Agreement that will request the Board to examine assignments in the other services to which the band is allocated vis-à-vis all the assignments appearing in the Plan, the examination not being limited to those recorded in the MIFR as stated in RR1241. The Board considers that this Conference is entitled to take such a decision for the following reasons:

a) the agenda of the Conference contains the need to protect the assignment of other services and to permit their future development;

b) without planning these other services, the countries party to the agreement may coordinate the use of the band by all the services, this coordination being carried out:

- during the Conference by protecting the existing assignments of these other services during the planning process as well as in the modification procedures, and

- after the Conference, by requesting the Board to examine future notifications in these services with respect to all assignments appearing in the Plan.

5.4 Notification of frequency assignments to the IFRB

In addition to the examination of the conformity with the Radio Regulations and the conformity with the Regional Agreements (described in paragraphs a) and b) of point 4.4 above) the Board examines the notice with respect to the probability of harmful interference vis-à-vis the assignments recorded, at the time of the receipt of the notice, in the Master Register on behalf of administrations non-party to the Agreement.

6. Relations with non-parties to the Agreement in the three Regions

6.1 Irrespective of their category of allocation (primary or permitted), assignments notified by countries non-party to the Agreement in Region 1, 2 or 3 will be examined by the Board only with respect to those assignments which are recorded in the Master Register and not with respect to those assignments appearing in the Plan which are not recorded in the Master Register.

6.2 Similarly, assignments in the Plan, when notified, will be examined with respect to assignments of countries non-party to the Agreement in Region 1, 2 or 3 which are recorded in the MIFR. As they may run the risk of receiving an unfavourable finding, the Board recommends that the planning process take account of assignments already recorded; extracts will be made available to this effect.

6.3 Situations similar to that described in paragraph 5.3.3 above may occur when countries non-party to the Agreement notify assignments after the Conference. There exists no possibility for the Board to protect the Plan in such situations except if a world administration conference, with this matter on its agenda, adopts provisions to this effect.

7. Particular comments on footnotes to the Frequency Allocation Table

7.1 RR458

It is to be noted that the change of the band limit from 285 kHz to 283.5 kHz (decided by the WARC-79) shall take place only on 1 February 1990.

7.2 RR471

When planning the portion of the band 505 - 510 kHz for the aeronautical radionavigation service measures should be taken to consider the provisions RR471, RR3018 and Resolution No. 206(MOB-83). (For FC see Resolution No. 704(MOB-83).)

7.3 RR483

It is to be noted that the fixed and land-mobile services are primary services for the countries and frequency bands mentioned in footnote RR483.

7.4 RR488

Footnote RR488 stipulates that the countries mentioned therein may allocate up to 200 kHz to their amateur service in the bands 1 715 - 1 800 kHz and 1 850 - 2 000 kHz subject to prior consultation with neighbouring countries.

The first band referred to above takes part of the frequency bands to be planned by the Conference. While no administration has notified the IFRB of such allocation, the Conference should be informed by the interested administrations of their position regarding this allocation and the measures they consider necessary in order to afford protection to their amateur service.

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document 1016-E
25 February 1985
Original: English

PLENARY MEETING

Note by the Secretary-General

IALA REPORT

In its Report to the Conference (Document 1003), CCIR Study Group 8 indicated that International Association of Lighthouse Authorities were conducting trials using Minimum Shift Keying with Maritime Radiobeacons and that results of these trials would be available for the Conference.

I herewith transmit to the Conference the said Report.

R.E. BUTLER
Secretary-General

Annex: 1

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.

R E P O R T

TO THE REGIONAL ADMINISTRATIVE RADIO CONFERENCE FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA

SUBMITTED BY

INTERNATIONAL ASSOCIATION OF LIGHTHOUSE AUTHORITIES (IALA)

FEBRUARY 1985

Recommendation No 602 (MOB-83) of the World Administrative Radio Conference for Mobile Services, Geneva 1983, relating to the planning of frequencies in the band 283.5 - 315 KHz used by Maritime Radiobeacons in the European Maritime Area, requested the CCIR to establish the technical bases needed for the work of the Conference.

CCIR Study Group 8, at its Interim Meeting held in 17 May - 6 June 1984, studied this question and prepared a report to the Conference and requested IALA to submit a report of Field Trials of F1B emission using a transmission frequency in the above band.

This report contains details of trials carried out, the cost implications of modifying transmitters and advantages of operating radiobeacons singly.

TABLE OF CONTENTS

1. Introduction

2. Field Tests on MSK Modulation of a Radiobeacon Transmitter in Sweden

3. Laboratory Tests on Amplidan Radiobeacon with Narrow-band F1B Modulation

4. Cost Implications of Converting Amplidan Radiobeacon from A2A to A1A/F1B

5. Single Station Working

1. INTRODUCTION

CCIR Study Group 8, Interim Meeting in Geneva 1984, requested IALA to carry out Field Tests of a marine radiobeacon transmission using MSK emissions. These tasks were carried out in two parts as follow:-

a. Field tests using an existing radiobeacon in Sweden modified for MSK emission.

b. Laboratory tests to establish that a radiobeacon modified for MSK emission meets the requirements of the Radio Regulations concerning harmonics and spurious emission.

The field trials were carried out by the National Swedish Administration of Shipping and Navigation and the laboratory tests at the University College of North Wales, Bangor, North Wales.

The details and results of the trial and tests are presented in this report.

Also contained in this report are the cost implications of modifying the transmitters to transmit MSK data and the advantages of operating radio beacons singly.

2. FIELD TESTS ON MSK MODULATION OF A RADIOBEACON TRANSMITTER IN SWEDEN

A. Introduction

IALA has been requested by the ITU to study technical characteristics of maritime radiobeacons and to submit a proposal to the Regional Administrative Radio Conference for the Planning of Frequencies for Maritime Radiobeacons in the European Maritime Area (Geneva - March 1985). This proposal was submitted by IALA in April 1984 and the main elements of the proposal are:

- removal of the audio modulation (replaced by A1A morse code signalling).
- reduction of the timesharing arrangement from groups of six to groups of three or less.

As an optional feature aiming at simplification of the design and operation of automatic receivers, transmission of a short data sequence is also suggested. This sequence consists of identification data for the radiobeacon, its geographical position and other possible information.

Future aspects of the use of the radiobeacons system have also been considered, indicating the possibility of a complete removal of the grouping, which would result in continuous updating of the position for the user and reduced running costs for the administration. Also the possibility of establishing short-range hyperbolic chains has been considered.

These future applications for the radiobeacon system will however require a larger number of frequency channels and it is therefore important to be conservative with the available frequency band. To this effect an efficient modulation method for the optional data sequence was sought. It should have a high modulation efficiency and low implementation costs, both at the transmitter and receiver.

This Paper details field tests of a suitable method of modulation using Minimum Shift Keying (MSK) which is characterised as follows:-

- 40 Bd ($\pm$10 Hz).
- constant envelope.
- phase continuity.

The MSK modulation has been used in several applications in the LF and MF frequency band but not in a maritime radiobeacon application.

It was therefore considered important to perform actual tests on a radiobeacon channel under different conditions to establish the properties of the modulation in the proposed application.

This report describes tests performed in Sweden with a radiobeacon during the period October 1984 to February 1985.

B. Transmitter

The radiobeacon transmitter at the Gustaf Dalen Lighthouse has been modified by replacing the existing carrier frequency crystal oscillator with an F1B modulator, which gives the desired carrier frequency and modulation according to the IALA proposal. Fig 1 shows the radiobeacon group of which Gustaf Dalen is a member; Fig 2 is an extract from Tables of Lights giving the basic data for the radiobeacon.

The F1B data were transmitted for most of the transmission minute as a sequence of blocks, each of 4 seconds' duration, in order to maximise the amount of data received. Each block contained data as specified in the IALA recommendation (Figs 3 and 4). The data rate was 40 bit/s and the frequency shift consequently $\pm$10 Hz.

The modulator employed a frequency switching technique; an alternative way of generating MSK modulation is by summing the in-phase and the quadrature-phase components of a single carrier frequency. The power spectral density curve of the modulator when transmitting a pseudo-random bit pattern can be seen in Fig 5.

The radiobeacon at Gustav Dalen is of the AGA NAFS-607 type. It was modified by disconnecting the normal crystal oscillator and predriver stage and connecting the output from the F1B modulator unit to the driver stage. The timer and the normal A2A keyer remained intact. The carrier keying time was used to reset the data counter in the modulator.

C. Receiver

The test receiver used is a double superheterodyne with two crystal-controlled local oscillators. A block diagram of the receiver and selectivity curve of its IF-stage are shown in Figs 6 and 8.

The demodulator used is based on a standard FSK demodulator integrated circuit. The output of the demodulator is followed by an adaptive compensating reference network to take care of long-term drift in either the transmitter frequency or the receiver local oscillators. This is necessary since the frequency shift is comparatively small, $\pm$10 Hz. The demodulator was of an exceptionally simple, low-cost design, chosen specifically to illustrate what could be obtained using standard circuits. No post-demodulator processing was used.

The demodulator output was fed to a standard RS-232 serial channel connected to the microcomputer which was used for checking and recording the received data. The receiver was also provided with test-points for monitoring the signal level and the frequency offset. Monitoring the signal level gives an idea of the signal-to-noise ratio in the channel and the frequency offset measurement checks that the demodulator is operating over its correct voltage range.

D. Test Arrangements

The test arrangements are shown in Fig 7. The received data in each block (Fig 4) were compared to the expected data stored in the computer. Each block contains 11 characters, each represented by one byte of data.

An error counter was incremented for each faulty character received. The contents of the error counter were then divided by the total number of characters received, resulting in a character error rate. In each transmission minute 8 such blocks of data were received. The significance of the measurement of character error rate will be explained in the next section.

The assessment of the data is enabled by an internal clock in the microcomputer which allows data to be accepted during the transmission minute of the Gustaf Dalen radiobeacon only. This synchronisation allowed the silent 5 seconds at the end of the transmission to be identified so that the noise level could be measured immediately the transmission ceased. The signal level, in contrast, was measured and averaged over the full transmission period.

A tape recorder was used to store the values of the total number of characters, the number of errors recorded and the signal levels. The accumulated data were later transferred to a minicomputer on which further processing was done.

In order to study the effects of interference on the receiver, some laboratory tests were carried out in which an interfering signal was injected into the receiver and the error rate was measured for various levels of interference. An F1B modulated signal of the same type as that emitted by the Gustaf Dalen transmitter was used as the interfering signal.

Field strength measurements were taken at intervals, using an independent calibrated field-strength meter, to keep track of the radiobeacon operation.

The receiver was operated at three different sites. Two of the sites were in Norrkoping, approximately 40M from the transmitter, and one was at Krakelund, about 75M from the transmitter. The test equipment was also installed on a pilot boat and sea trials were performed in two different areas. One of these (Fig 1) was quite close to the transmitter and the other well outside the nominal range.

E. Test Results

Fig 9 shows the variation of character error rate with time of day; this presentation should enable any significant variations in error rate between day- and night-time conditions to be observed.

Fig 10 shows the variation of character error rate with signal-to-noise ratio (Eb/No). Since the results from test sites 1 and 2 were substantially similar to one another, the data from these sites have been combined.

Fig 12 shows the results of the interference test.

The records of the tests at sea are printed out in Tables 1 and 2. The number of characters received is quite small, however, so there is little point in compiling an error rate curve with so few samples.

The land-based test sites were at time subject to very strong interfering signals thought to emanate from video terminals and other computer equipment in the vicinity of the receiver. The data corresponding to these periods of interference were easily identifiable in the recordings and have been removed from the record as being untypical of the receiving conditions with which this report is concerned.

It should be noted that the 'character error rate' used in this report differs significantly from the commonly-used 'bit error rate (BER)'. It is important to note that one faulty bit causes one whole character (ie 12 bits including start, stop and parity bits) to be rejected; the resulting character error rate may approach 12 times the corresponding BER. Furthermore, if the reception of data gets out of synchronisation due to a faulty start bit in one character, then the rest of the data in the whole block are regarded as faulty, thereby further increasing the apparent error rate.

One observation made during the tests is that errors are quite often caused by short, transient spikes. These spikes are not recorded by the test receiver which measures and averages the noise level during the silent 5 seconds at the end of the transmission minute. Therefore the error rate curves (Figs 10 and 11) indicate a higher error rate than could be expected for the average signal-to-noise ratios shown.

F. Conclusion

Having regard to the high degree of redundancy in the data transmissions, the results indicate that a receiver employing conventional practices for error handling will provide a reliable service with this form of data transmission in the maritime radiobeacon frequency band.

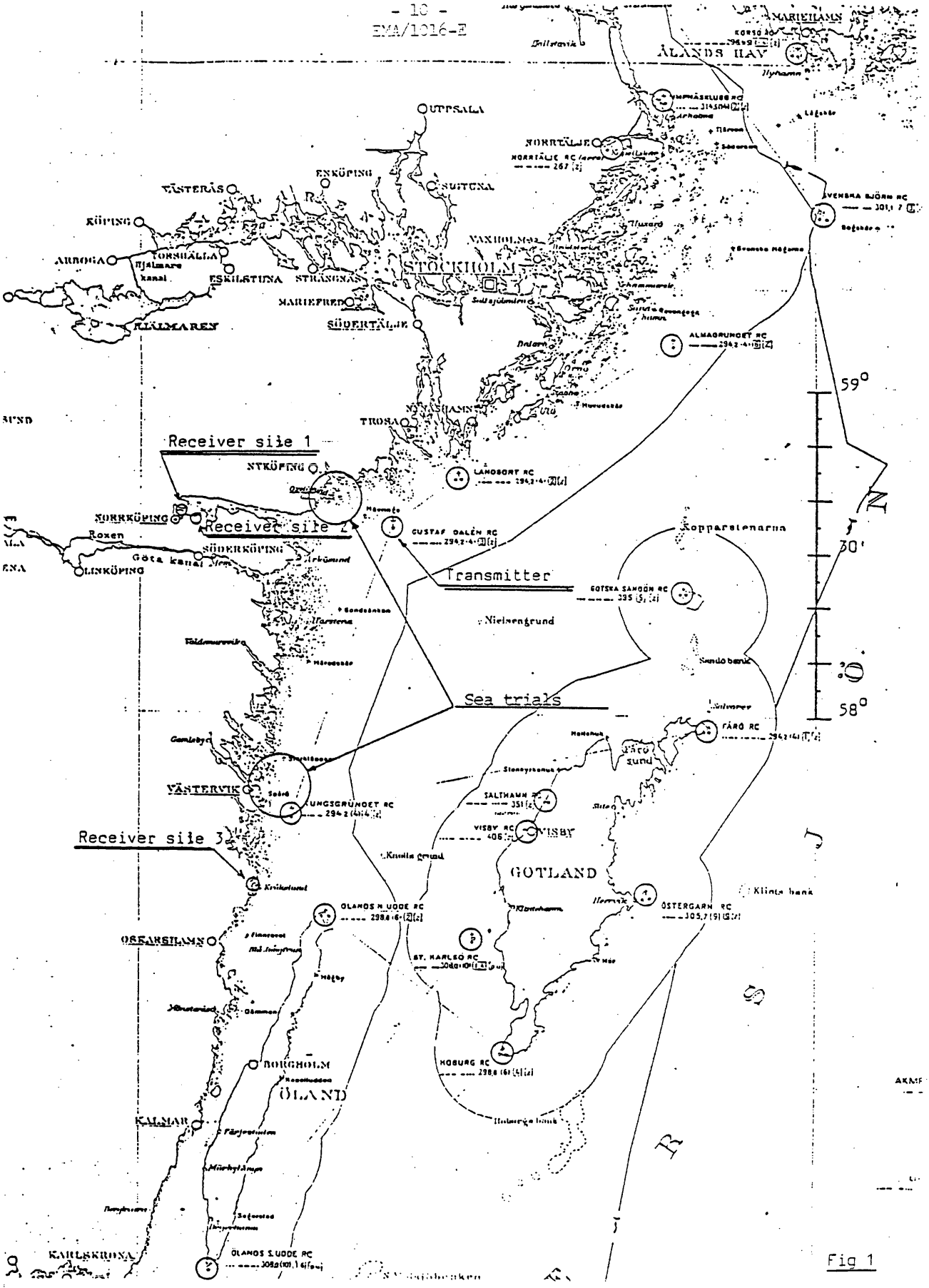
ÅLANDS HAV
MARIEHAMN
UPPSALA
NORRTÄLJE
ENKÖPING
SIGTUNA
VÄSTERÅS
KÖPING
ARBOGA
TORSHÄLLA
ESKILSTUNA
STRÄNGNÄS
STOCKHOLM
VAXHOLM
MARIEFRED
SÖDERTÄLJE
KJÄLMAREN
ALMAGRUNDET RC
59°
TROSA
Receiver site 1
NYKÖPING
LANDSORT RC
NORRKÖPING
Receiver site 2
GUSTAF DALÉN RC
Roxen
SÖDERKÖPING
Göta kanal
LINKÖPING
Transmitter
Kopparstenarna
GOTSKA SANDÖN RC
Nielsengrund
30'
Sea trials
58°
FÅRÖ RC
VÄSTERVIK
KUNGSGRUNDET RC
SALTHAMN RC
VISBY RC
VISBY
Receiver site 3
GOTLAND
ÖLANDS N.UDDE RC
ÖSTERGARN RC
OSKARSHAMN
ST. KARLSÖ RC
BORGHOLM
ÖLAND
HOBURG RC
KALMAR
KARLSKRONA
ÖLANDS S.UDDE RC

Fig 1

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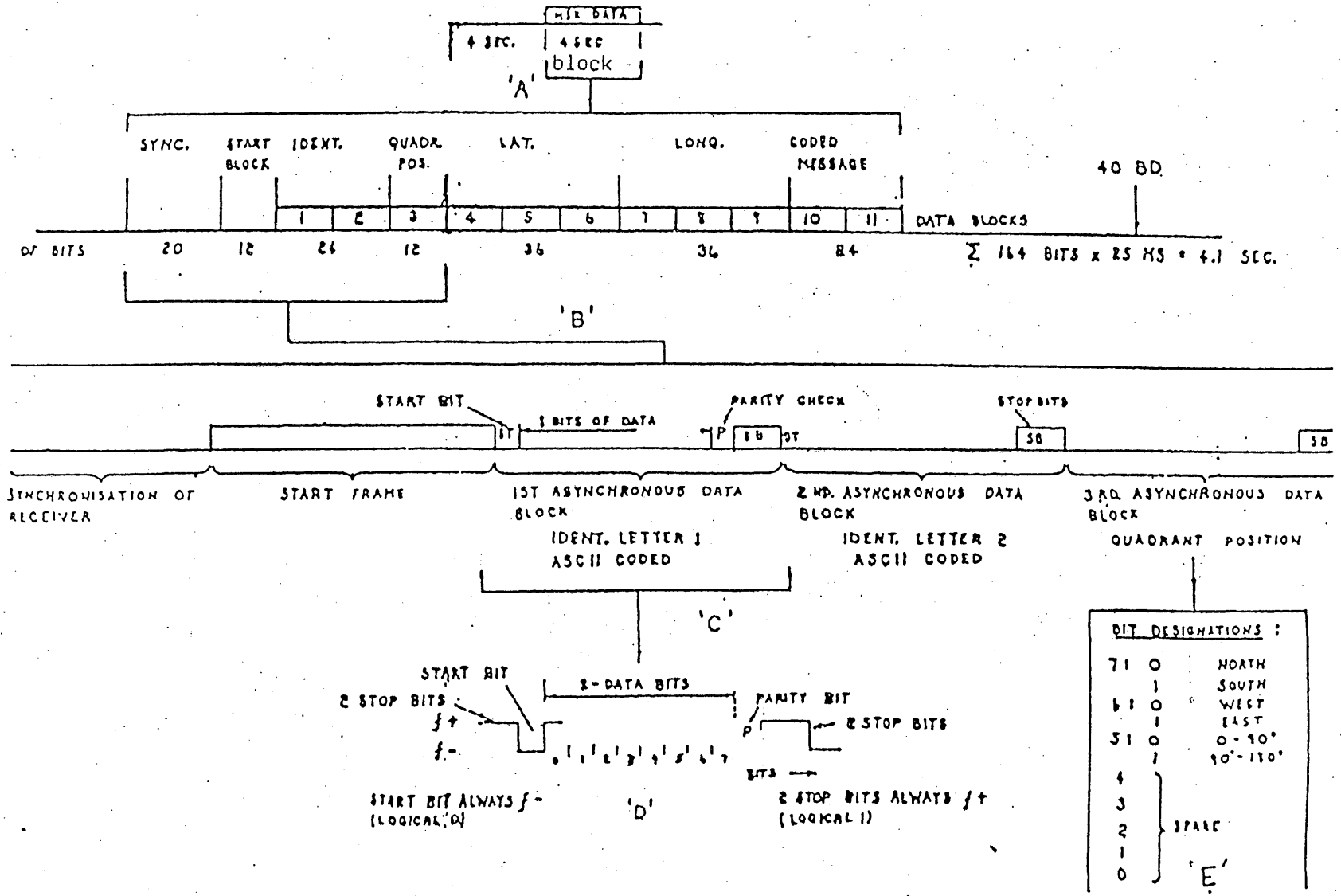
Nr	Namn	Läge N	Läge O	Kanal-nr. Radio-frekvens kHz	Modu-lations-(Ton-) frek-vens Hz	Våg-typ	Räck-vidd M	Igenkännings-signal	Sändningstider Tjocka: Sändningsföljd inom varje 6-minuters-period	Sändningstider Klarväder: Som i tjocka men begränsat till följande minuter av varje timme	Anmärkningar
RC 101	Norströmsgrund	65 07	22 20	12/312,6	846	A0/A2	40	ND _.-..	1.3.5.	Som i tjocka	
RC 103	Malören	65 32	23 34	12/312,6	846	A0/A2	30	MM -- --	2.4.6.	Som i tjocka	
RC 105	Ajos	65 40	24 35	6/298,8	846	A0/A2	60	AJ .- .---	1.	Som i tjocka	Finsk radiofyr
RC 110	Farstugrunden	65 20	22 45	6/298,8	846	A0/A2	60	FA ..- ..-	2.	Som i tjocka	
RC 113	Marjaniemi	65 02	24 34	6/298,8	846	A0/A2	60	MI -- ..	3.	Som i tjocka	Finsk radiofyr
RC 114	Kallan	63 45	22 32	6/298,8	1 052	A0/A2	60	KN -.- -.	4.	Som i tjocka	Finsk radiofyr
RC 121	Bjuröklubb	64 29	21 35	6/298,8	846	A0/A2	70	BB -... -...	5.	Som i tjocka	
RC 131	Stora Fjäderägg	63 49	21 00	8/303,4	444	A0/A2	20	SF ... ..-.	1.3.5.	Som i tjocka	
RC 134	Rataskär	64 00	20 54	8/303,4	444	A0/A2	40	RÄ .-. .-.-	2.4.6.	Som i tjocka	
RC 141	Holmögadd	63 36	20 45	3/291,9	752	A0/A2	60	HG .... --.	1.4.	Som i tjocka	
RC 143	Sydostbrotten	63 20	20 11	3/291,9	752	A0/A2	40	VG ...- --.	2.5.	Som i tjocka	
RC 144	Norrskär	63 14	20 36	3/291,9	752	A0/A2	60	NS -. ...	3.6.	2–14, 32–44	Finsk radiofyr
RC 147	Nordvalen	63 32	20 47	13/313,5		A1	10	KV -.- ...-	Kontinuerligt	Ingen sändning	
RC 151	Skagsudde	63 11	19 01	10/308,0	846	A0/A2	40	SE	1.	Som i tjocka	
RC 157	Hemsö	62 43	18 08	10/308,0	846	A0/A2	60	WA .-- .-	3.	Som i tjocka	
RC 161	Mäntyluoto	61 36	21 28	10/308,0	444	A0/A2	60	MÄ -- .-.-	4.	Som i tjocka	Finsk radiofyr
RC 162	Brämön	62 13	17 45	10/308,0	846	A0/A2	50	BM -... --	5.	Som i tjocka	
RC 165	Kylmäpihlaja (Raumo)	61 09	21 18	10/308,0	444	A0/A2	60	KP -.- .--.	6.	05–17, 35–47	Finsk radiofyr
RC 167	Hällgrund	61 17	17 24	406		A1	30	HD .... -..	Kontinuerligt	Ingen sändning	
RC 168	Enskär (Isokari)	60 43	21 01	413	600	A0/A2	60	IK .. -.-	Kontinuerligt	Ingen sändning	Finsk radiofyr
RC 170	Understen	60 17	18 55	7/301,1	752	A0/A2	70	UN ..- -.	1.4.	Som i tjocka	
RC 181	Svenska Björn	59 33	20 01	7/301,1	752	A0/A2	50	BN -... -.	3.	Som i tjocka	
RC 190	Eggegrund	60 44	17 34	7/301,1	752	A0/A2	50	GG --. --.	5.	Som i tjocka	
RC 195	Örskär	60 32	18 23	7/301,1	752	A0/A2	40	ÖR ---. .-.	6.	Som i tjocka	
RC 201	Grundkallen	60 30	18 51	14/314,5		A1	30	DD -.. -..	1.3.5.	Som i tjocka	
RC 202	Simpnäsklubb	59 54	19 05	14/314,5		A1	30	SS	2.4.6.	Som i tjocka	
RC 220	Korsö	60 02	19 54	5/296,5	498	A0/A2	60	KO -.- ---	1.4.	Som i tjocka	Finsk radiofyr
RC 234	Fårö	57 58	19 21	4/294,2	545	A0/A2	50	FÅ ..-. .--.-	1.	Som i tjocka	
RC 236	Landsort	58 44	17 52	4/294,2	545	A0/A2	50	LO .-.. ---	2.	Som i tjocka	
RC 238	Gustaf Dalén	58 36	17 28	4/294,2	545	A0/A2	40	GD --. -..	3.	Som i tjocka	
RC 241	Kungsgrundet	57 41	16 54	4/294,2	545	A0/A2	30	KT -.- -	4.	Som i tjocka	
RC 245	Almagrundet	59 09	19 08	4/294,2	545	A0/A2	40	AL .- .-..	6.	Som i tjocka	
RC 247	Gotska Sandön	58 24	19 12	395	400	A0/A2	100	SDN ... -.. -.	Kontinuerligt	Som i tjocka	Sjö- och luftfartsrac
RC 249	Visby	57 38	18 17	406	752	A0/A2	10	VY ...- -.--	Kontinuerligt	Som i tjocka	
RC 251	Stora Karlsö	57 17	17,58	10/308,0	498	A0/A2	40	KS -.- ...	1.4.	Som i tjocka	
RC 252	Ölands Södra Udde	56 12	16 24	10/308,0	498	A0/A2	20	SÖ ... ---.	3.6.	Som i tjocka	
RC 262	Utklippan	55 57	15 42	6/298,8	354	A0/A2	50	UK ..- -.-	1.	Som i tjocka	
RC 266	Ölands Norra Udde	57 22	17 06	6/298,8	354	A0/A2	70	NO -. ---	2.	Som i tjocka	
RC 268	Hammerodde	55 18	14 46	6/298,8	354		50	MN -- -.	3.	Som i tjocka	Dansk radiofyr
RC 270	Hoburg	56 55	18 09	6/298,8	354	A0/A2	70	OB --- -...	4.	Som i tjocka	
RC 272	Sandhammaren	55 23	14 12	6/298,8	354	A0/A2	40	SM ... --	5.	Som i tjocka	
RC 273	Ölands Södra Grund	56 04	16 41	6/298,8	354	A0/A2	70	ÖG ---. --.	6.	Som i tjocka	
RC 275	Rönne	55 06	14 42	406	500		10	RÖ .-. ---.	Kontinuerligt	Ingen sändning	Dansk radiofyr
RC 281	Östergarn	57 27	18 59	9/305,7	498	A0/A2	50	ÖN ---. -.	5.6.	Som i tjocka	
RC 283	Utö	59 47	21 22	1/287,3	950	A0/A2	60	UÖ ..- ---.	1.2.	Som i tjocka	Finsk radiofyr

Fig 2



Data format as proposed by IALA

Fig. 3

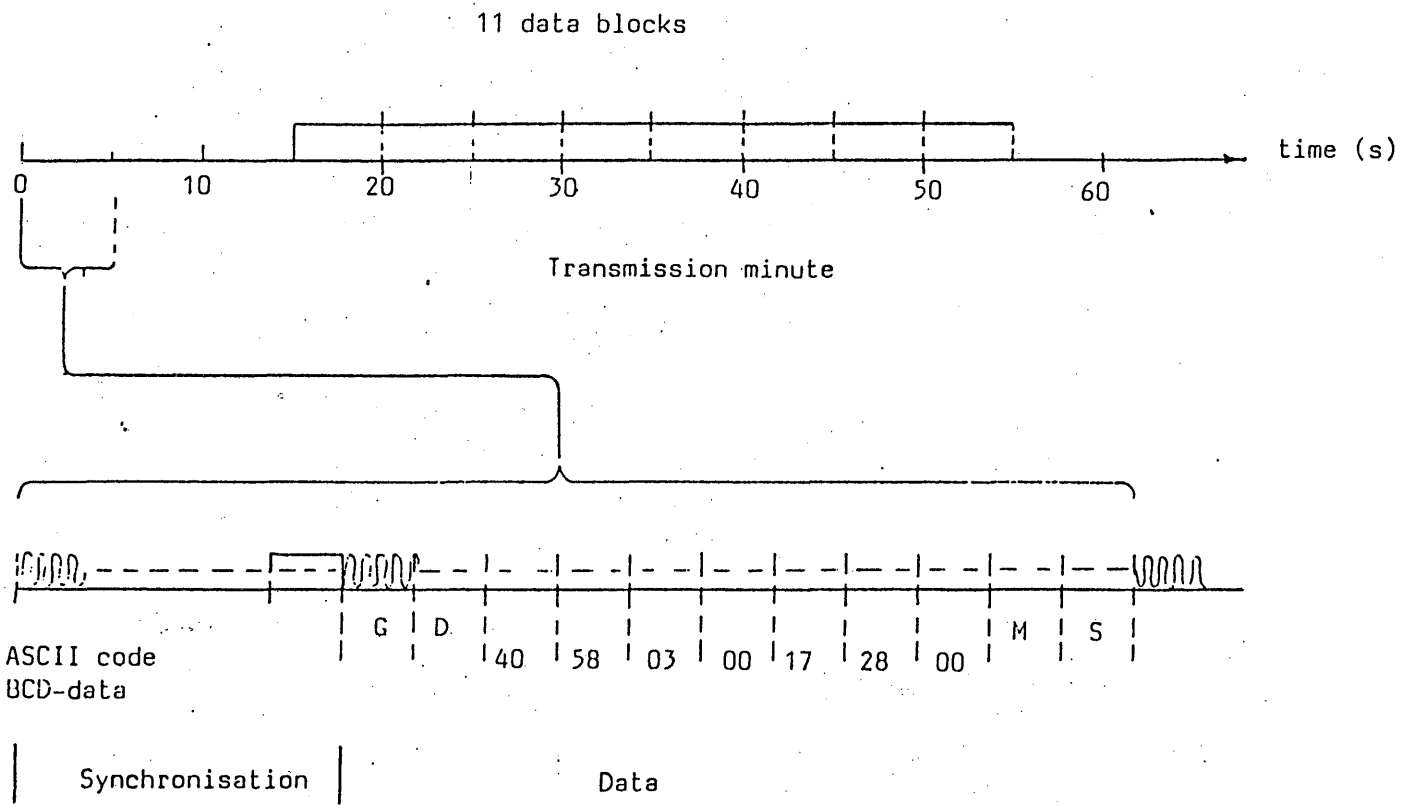


Fig. 4 Dataformat used in tests

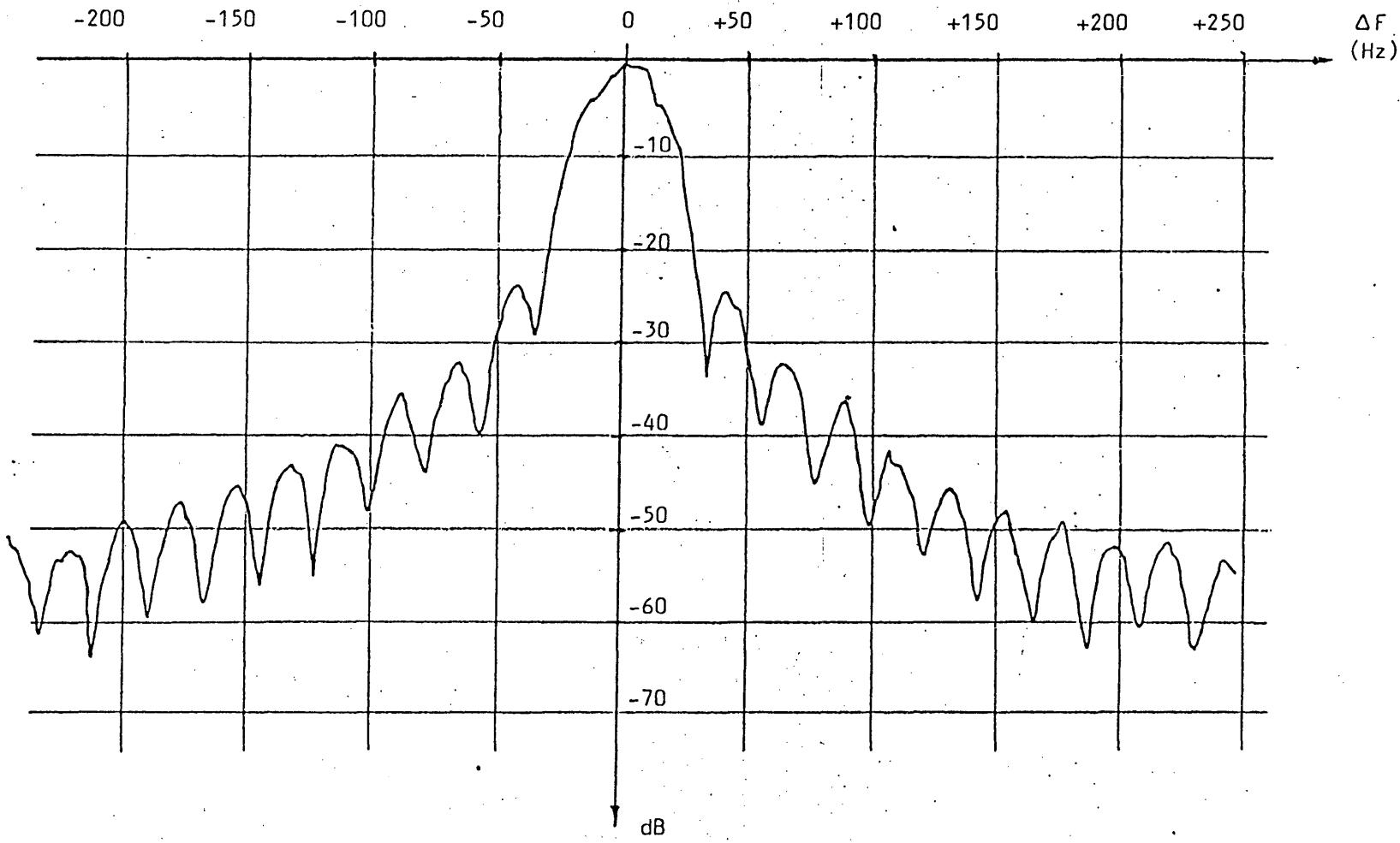


Fig. 5 Power spectral density curve

Pseudo random bit pattern used.

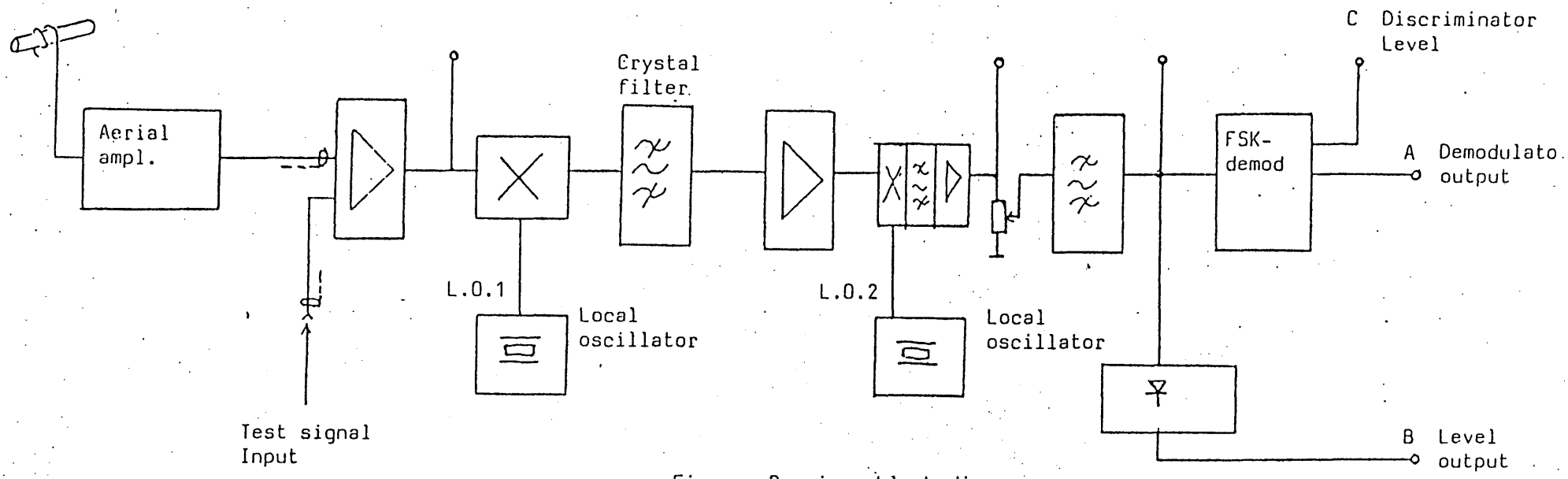


Fig. 6 Receiver block diagram

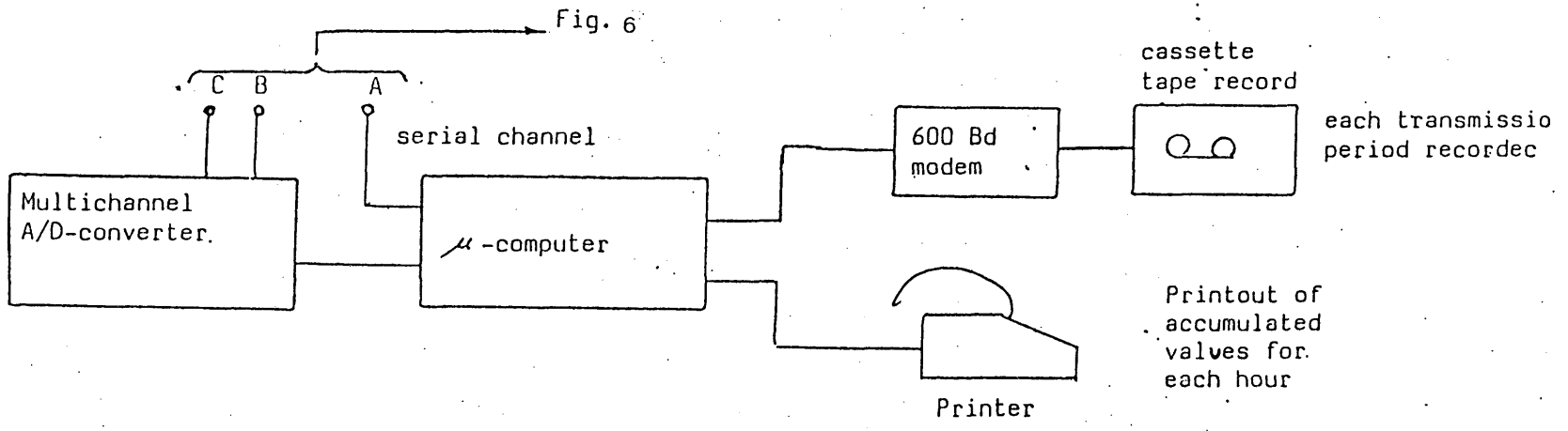


Fig. 7 Test arrangement.

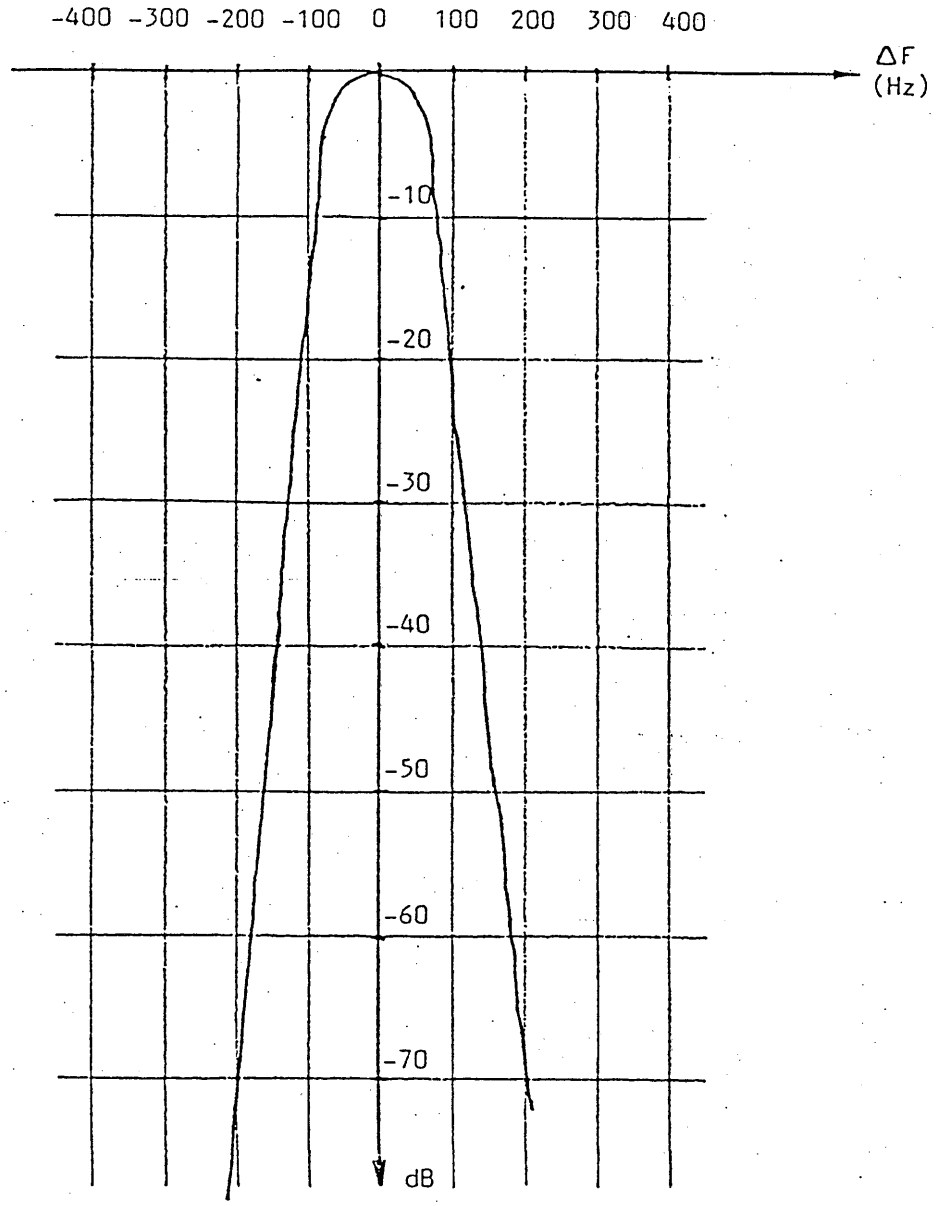
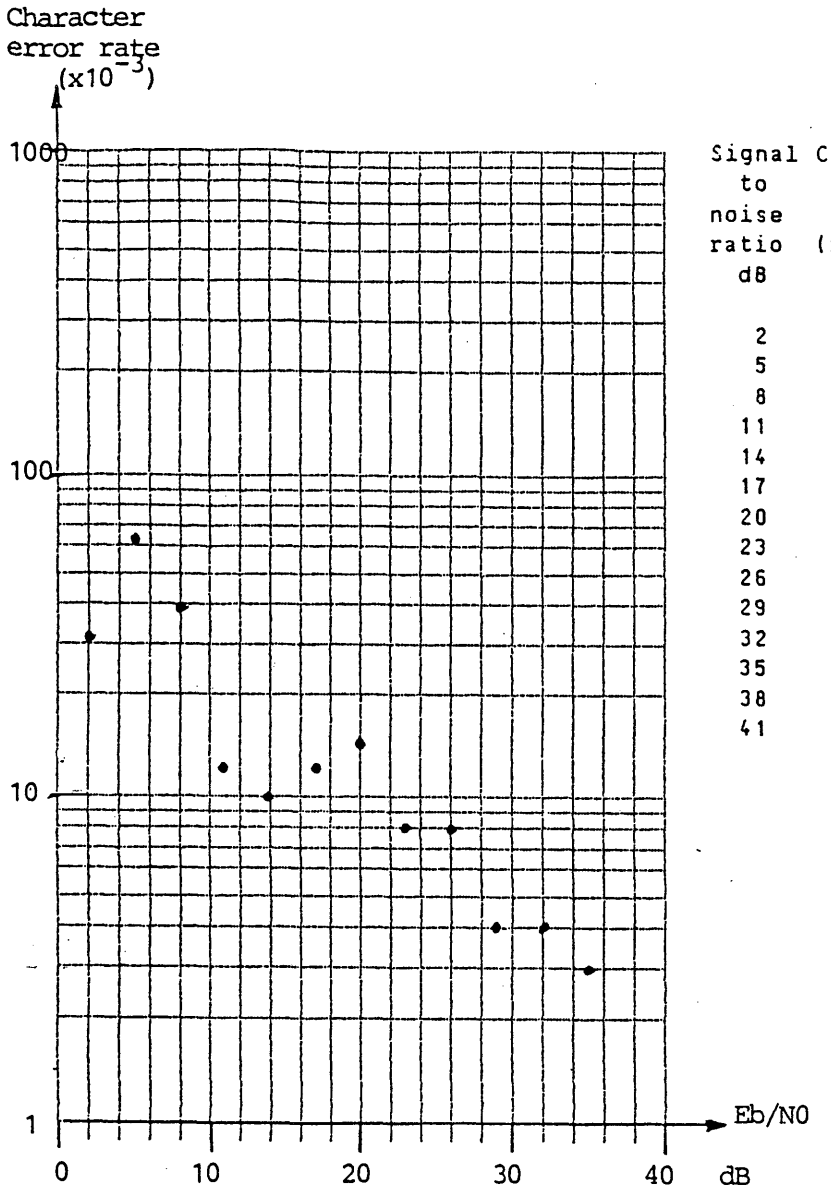


Fig. 8 Receiver IF-filter

Time of day	0 10 20 30	Character error rate $\times 10^{-3}$	Number of characters received
0	**********	11.	45133.
1	*********	10.	47036.
2	*******	8.	47751.
3	******	6.	48862.
4	****	4.	49984.
5	***	4.	49544.
6	****	5.	48565.
7	********	8.	47410.
8	*******	8.	43054.
9	**********	11.	43736.
10	********	8.	42317.
11	**********	12.	43285.
12	**********	15.	43373.
13	**********	14.	40590.
14	**********	10.	39347.
15	**********	13.	40821.
16	**********	12.	41855.
17	**********	14.	42999.
18	*********	10.	46706.
19	******	7.	43670.
20	*********	10.	46244.
21	**********	13.	44077.
22	**********	13.	43406.
23	**********	13.	45012.

Distribution of error intensity with time.

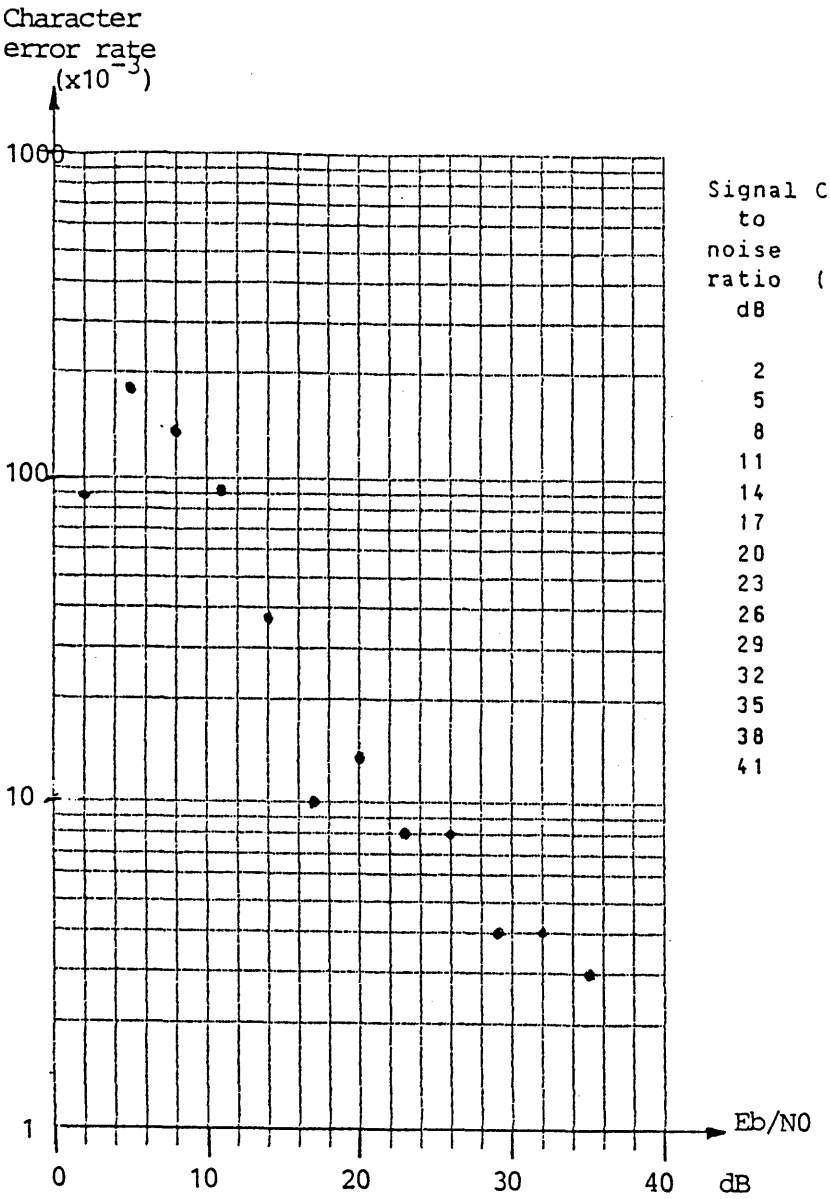
FIG 9



Signal to noise ratio dB	Character error rate (x10^{-3})	Number of errors	Number of chars received
2	32.	483.	15202.
5	63.	368.	5819.
8	39.	957.	24739.
11	12.	669.	57706.
14	10.	1455.	141174.
17	12.	1205.	104093.
20	15.	1735.	118833.
23	8.	952.	121220.
26	8.	1438.	189244.
29	4.	817.	204611.
32	4.	311.	70081.
35	3.	33.	12210.
38	9.	45.	5049.
41	9.	47.	5245.

Character error rate as a function of signal to noise ratio. (No additional interference introduced).

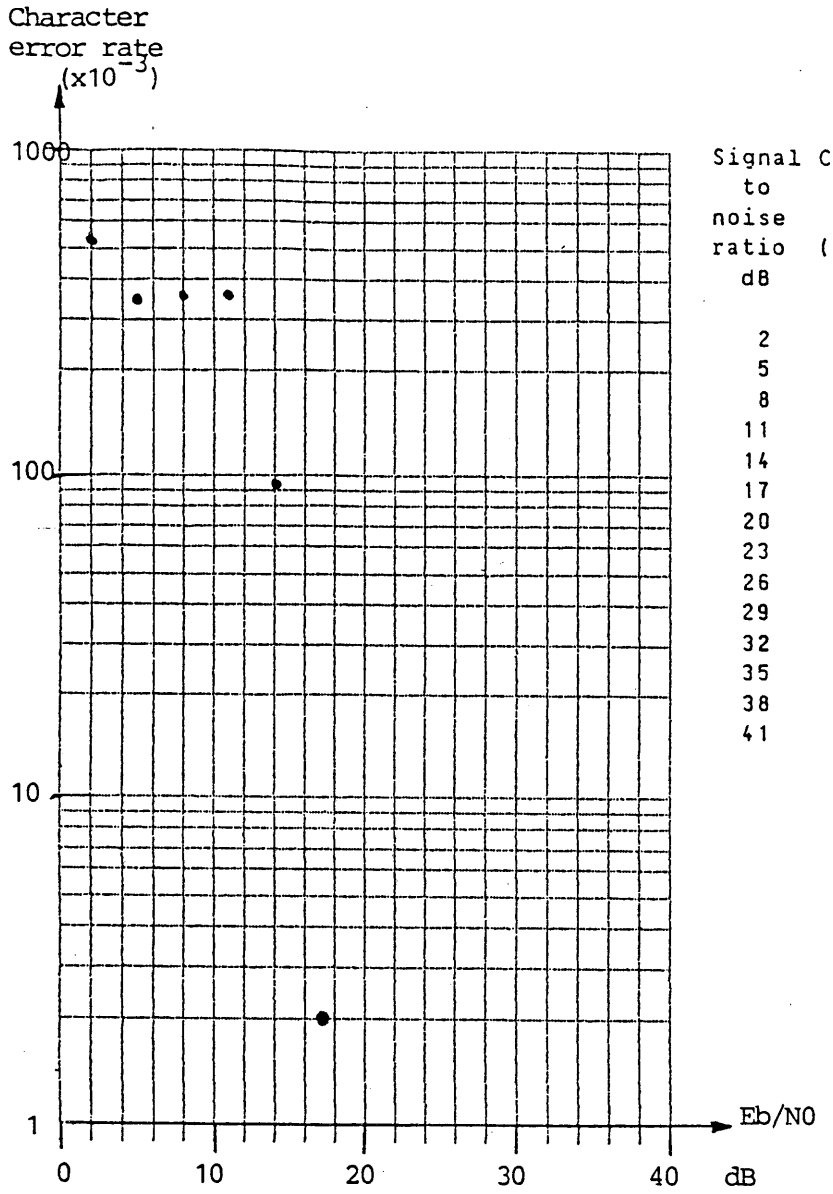
Fig 10



Signal to noise ratio dB	Character error rate (x10^{-3})	Number of errors	Number of chars received
2	87.	1510.	17402.
5	177.	1715.	9669.
8	132.	5047.	38313.
11	92.	8458.	91817.
14	37.	7716.	210342.
17	10.	1272.	131318.
20	14.	1735.	120593.
23	8.	952.	122012.
26	8.	1438.	189244.
29	4.	817.	204611.
32	4.	311.	70081.
35	3.	33.	12210.
38	9.	45.	5049.
41	8.	47.	6090.

Character error rate as a function of signal to noise ratio. (All available data included).

Fig 11



Signal to noise ratio dB	Character error rate (x10^{-3})	Number of errors	Number of chars received
2	527.	307.	583.
5	340.	213.	627.
8	344.	499.	1452.
11	349.	2243.	6435.
14	93.	5310.	57090.
17	2.	67.	27225.
20	0.	0.	1760.
23	0.	0.	792.
26	0.	0.	0.
29	0.	0.	0.
32	0.	0.	0.
35	0.	0.	0.
38	0.	0.	0.
41	0.	0.	307.

Character error rate as a function of signal to noise ratio with an additional F1B transmission introduced on the same frequency.

Fig 12

Day	Time	Nmb of chars.	Nmb of errors	Error rate	Signal to noise ratio dB
018	11:08	77	0	0.000	21.63
018	11:14	154	0	0.000	25.01
018	11:20	231	0	0.000	20.39
018	11:26	308	0	0.000	27.14
018	11:32	385	0	0.000	24.84
018	11:38	462	0	0.000	25.41
018	11:44	539	0	0.000	24.14
018	11:50	616	0	0.000	23.72
018	11:56	693	0	0.000	23.01
018	12:08	847	0	0.000	21.58
018	12:14	924	0	0.000	23.60
018	12:20	1001	0	0.000	23.48
018	12:26	1078	0	0.000	23.31
018	12:32	1155	0	0.000	22.49
018	12:38	1232	0	0.000	18.79
018	12:56	1463	0	0.000	19.95
018	13:02	1540	0	0.000	25.51
018	13:08	1617	0	0.000	24.30
018	13:14	1694	0	0.000	20.05
018	13:20	1771	0	0.000	22.40
018	13:26	1848	0	0.000	24.61
018	13:32	1925	0	0.000	24.04
018	13:38	2002	0	0.000	22.02
018	13:44	2079	0	0.000	21.40

Recordings at Oxelösund
with receiver onboard a pilotboat.

TABLE 1.

Day	Time	Nmb of chars.	Nmb of errors	Error rate	Signal to noise ratio dB
023	12:26	88	0	0.00000	21.63
023	12:32	176	0	0.00000	23.87
023	12:38	264	0	0.00000	28.86
023	12:44	319	3	.00940	15.50
023	12:50	341	10	.02933	12.52
023	12:56	418	28	.06699	14.98
023	13:02	506	33	.06522	15.98
023	13:08	550	35	.06364	20.85
023	13:14	627	37	.05901	15.42
023	13:20	715	39	.05455	16.22
023	13:26	781	49	.06274	15.73
023	13:32	858	51	.05944	17.93
023	13:38	946	51	.05391	23.02
023	13:44	1034	52	.05029	22.28
023	13:50	1100	62	.05636	15.70
023	13:56	1111	66	.05941	5.52
023	14:02	1199	66	.05505	30.10
023	14:08	1287	66	.05128	30.20
023	14:14	1375	66	.04800	30.36
023	14:20	1463	66	.04511	27.76
023	14:26	1551	66	.04255	29.07
023	14:32	1639	66	.04027	29.26
023	14:38	1727	66	.03822	27.39
023	14:44	1815	66	.03636	29.12
023	14:50	1903	66	.03468	29.44
023	14:56	1991	66	.03315	30.93
023	15:02	2079	66	.03175	27.64
023	15:08	2167	66	.03046	29.18
023	15:14	2255	66	.02927	28.79
023	15:20	2343	66	.02817	24.90
023	15:26	2431	66	.02715	25.61
023	15:32	2497	93	.03724	11.92
023	15:38	2519	99	.03930	10.26
023	15:44	2552	111	.04350	13.02
023	15:50	2640	111	.04205	21.73

Recordings at Västervik
with receiver in a pilotboat.

TABLE 2.

3. TESTS ON AMPLIDAN RADIO BEACON WITH MSK MODULATION

The Exciter unit of a standard Amplidan Radiobeacon has been replaced by an experimental Exciter so that the beacon transmits a data test signal using F1B modulation keyed at 40 Baud (±10 Hz frequency shift), the standard proposed by IALA for marine radiobeacon use.

Equipment

Beacon: Amplidan (Denmark) type 15770 with Aerial Tuning Unit type 005165

Output power: 100 W
Frequency: 294.2 kHz

Exciter: Experimental unit constructed by Comnet Sys AB (Sweden) F1B, the data being stored in an EPROM.

Interconnection: The 294.2 kHz output signal of the F1B Exciter is connected to the input circuit of the 50 ohm output driver stage of the transmitter Exciter unit (Type 16001) in place of the conventional A2A signal.

Tests

Sideband spectrum: The EPROM of the F1B Exciter was programmed to give 01 reversals. The transmitter was adjusted to give 100 W output power and connected via the aerial tuning unit to a dummy load consisting of a 9 ohm resistor in series with a 400 pF capacitor. Using the equipment illustrated in Fig 13, the spectrum of the signal was measured via a probe capacitatively coupled to the aerial terminal.

The sideband spectrum of the signal is shown in Fig 14. Its power spectral distribution is plotted in Fig 15 which is derived from Fig 14. From the additional points plotted in Fig 15 which show the output spectrum of the F1B Exciter, it is clear that the transmitter causes no significant modification of the frequency spectrum of the signal. The sideband energy levels at the frequencies of various possible adjacent channels are as follow:

Frequency offset from carrier (± Hz)	Level with with respect to carrier (dB)
100	38
200	49
300	56
400	60
500	63

Harmonics and spurious products: The equipment shown in Fig 13 was used to measure the levels of harmonic and other spurious signals over the frequency range 0-500 MHz. The levels of all spurious signals were below that of the second harmonic which was -68 dB with respect to carrier. No spurious product exceeded the maximum level specified in Appendix 8 of the International Telecommunications Union Radio Regulations (Geneva, 1983).

Effect of F1B signal on automatic direction finding receivers: A low-power signal was radiated from the output of the F1B Exciter in close proximity to the aerials of two Marconi Lodestar automatic direction-finding receivers (one type 2464A, the other type IIID). The Exciter data came from an EPROM programmed to give periods of F1B data alternating with periods of unmodulated carrier. Although the F1B modulation could be heard on the audio output of the receiver, it had negligible effect on the bearings measured which remained stable to better than 0.5 degrees.

In a further test using a Seafix 2000 hand-held direction-finding receiver, the F1B transmission was observed to have no effect on the ease with which bearings could be measured.

EQUIPMENT ARRANGEMENT FOR SPECTRUM ANALYSIS OF RADIO BEACON SIGNALS WITH MSK MODULATION

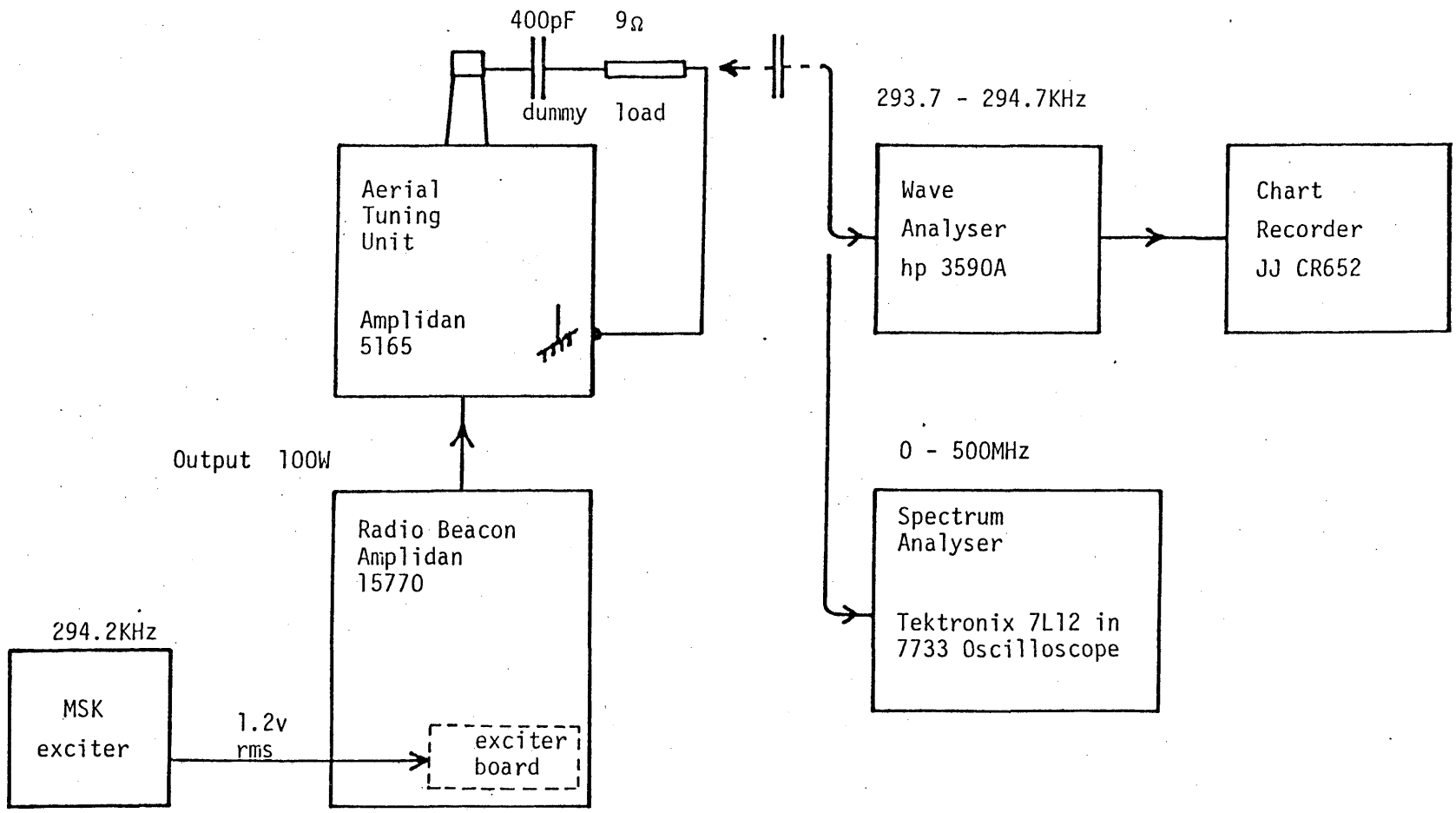


Figure 13

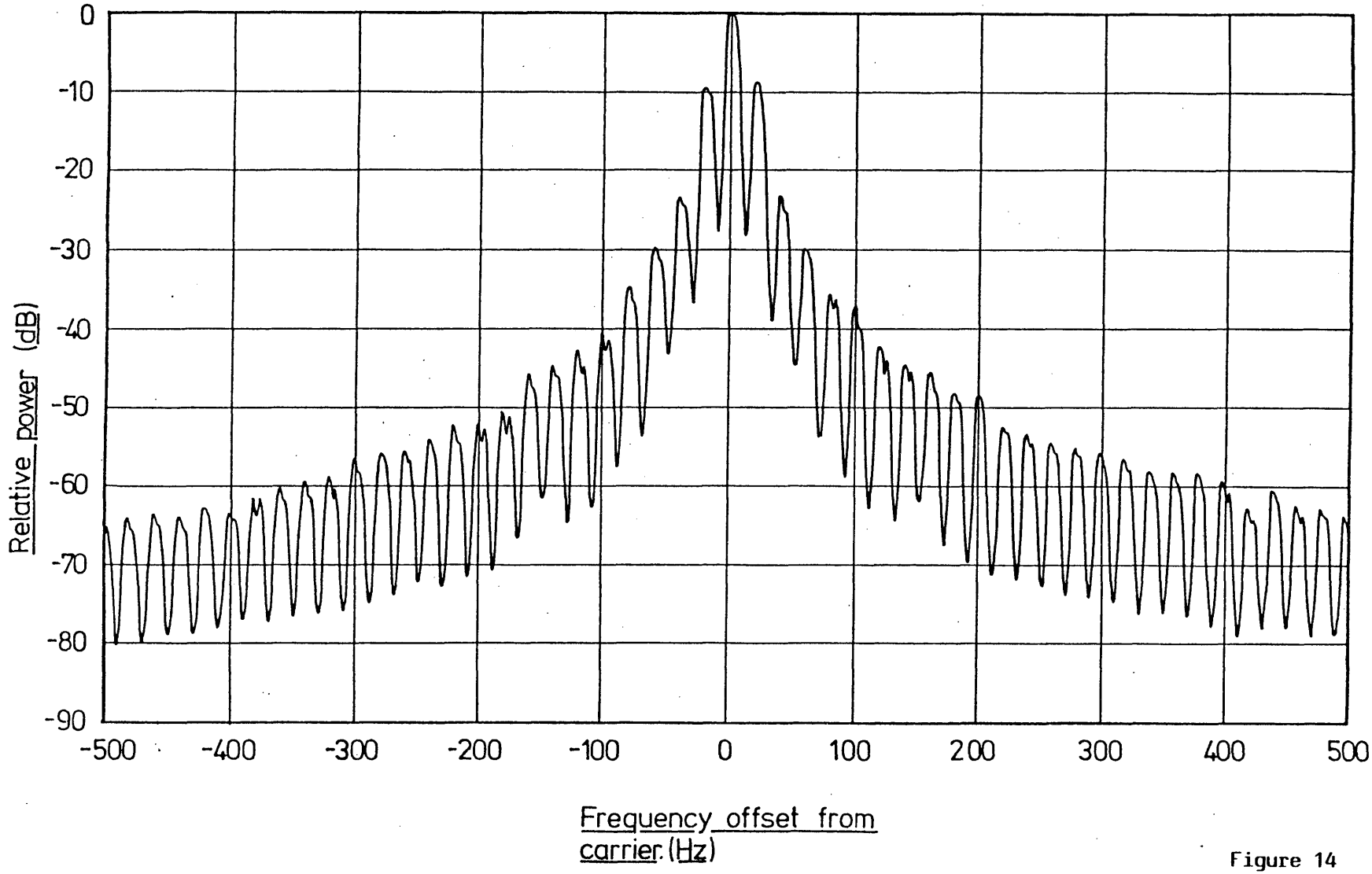

0
-10
-20
-30
-40
-50
-60
-70
-80
-90
Relative power (dB)
-500
-400
-300
-200
-100
0
100
200
300
400
500
Frequency offset from carrier (Hz)

Figure 14

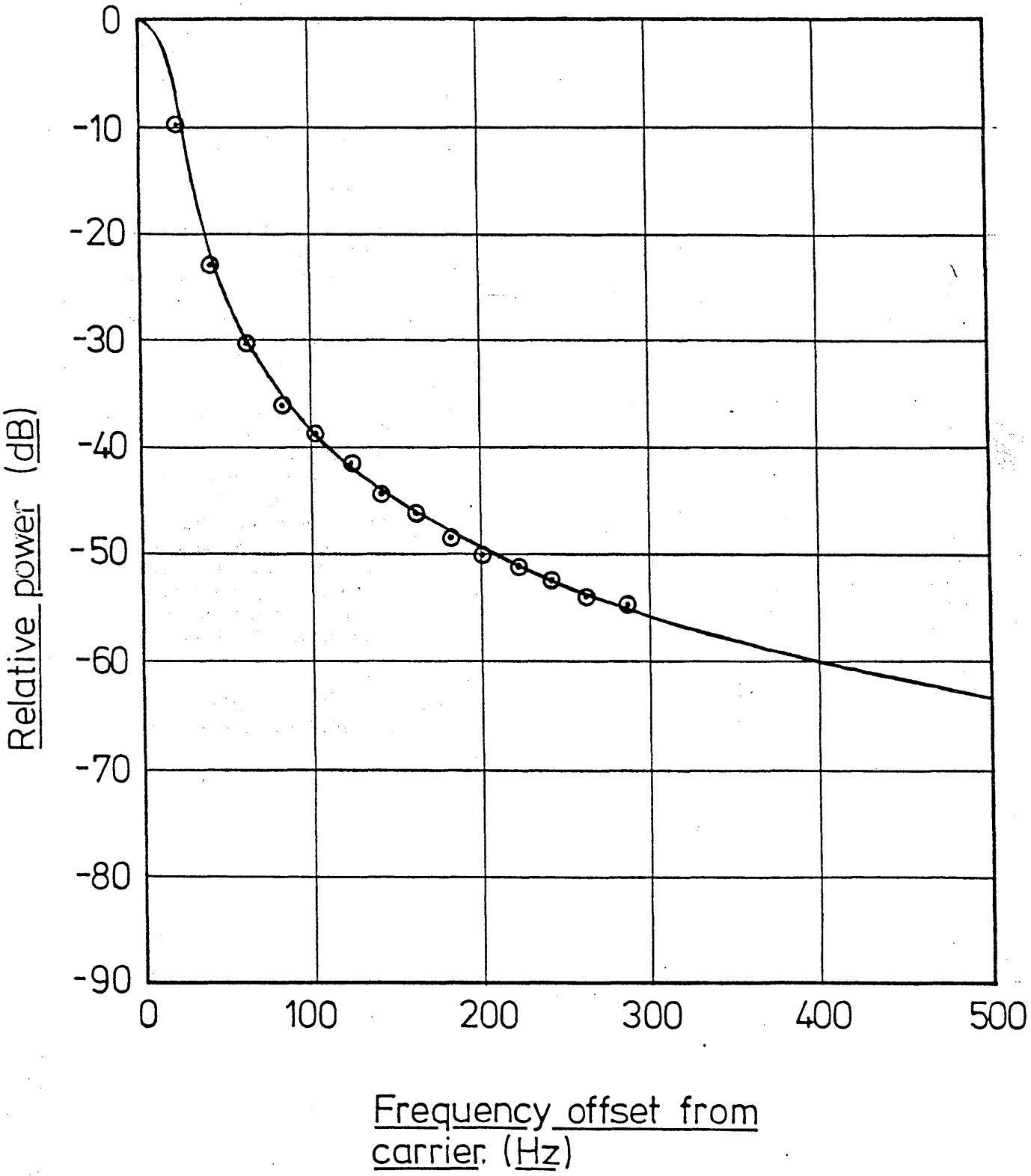

0
-10
-20
-30
-40
-50
-60
-70
-80
-90
Relative power (dB)
0
100
200
300
400
500
Frequency offset from carrier (Hz)

Figure 15

4. COST IMPLICATIONS OF CONVERTING AMPLIDAN RADIOBEACONS FROM A2A TO A1A/F1B OPERATION

A. The Amplidan type 15770 radiobeacon in its marine version employs an A2A Exciter board type 16001, the modulation of which is keyed in Morse code by an Electronic Keyer type 16175.

B. It is assumed that the new transmissions will be modulated by both A1A Morse code for identification and F1B frequency-shift keying of the carrier (FSK or MSK) for transmission of the fast data sequence which includes identification, position and other information.

C. Although the characteristics of the new transmissions will not be known until after the March 1985 Regional Adminstrative Radio Conference, it appears highly probable that either the present marine Electronic Keyer, or its aeronautical counterpart, will be capable of generating the Morse code signals. It is not anticipated, therefore, that any significant cost changes would be involved, although it may be necessary to modify some existing beacons.

D. Adopting the F1B transmissions will necessitate the replacement of the present A2A modulation generator section of the Exciter by an F1B generator. The A2A generator represents approximately 50% of the complexity of the 16001 Exciter. The complexity of the replacement F1B generator section is estimated as between 100% and 300% of that of the A2A generator, depending on the form of F1B modulation chosen and the method of generation. The resulting Exciter board, therefore, would not be less complex than the present board but should not have more than twice its complexity. The cost of the present board is approximately £160 so the additional cost of the Exciter board should not, other things being equal, exceed £160. All present beacons would need to be modified on changing over to the new standard.

E. These changes in the board cost of the radiobeacons are likely to be negligible in comparison with the cost of labour needed to effect the changeover.

5. SINGLE STATION WORKING

IALA have noted that Administrations have recommended that radiobeacons may be operated singly or in groups of 2, 3 or 6 radiobeacons. Studies have shown that all Region 1 radiobeacons may be operated singly if Administrations so desire.

The advantages of radiobeacons operating singly are as follow:

A. Radiobeacon transmits continuously and there is no delay in obtaining a bearing as found with time-shared beacons.

B. Scanning receivers can be used to advantage, together with receivers which simultaneously obtain bearings from two transmitters.

C. Differential data, eg. Omega, Loran C, GPS, can be transmitted from a single station.

D. Can be used by aeronautical users.

E. Number of radiobeacons may be reduced, or ranges reduced if co-siting exists with aeronautical radiobeacons.

F. The initial cost of the radiobeacon is reduced by approximately 30% as timing units are no longer required. This will in turn reduce initial cost of providing remote control and monitoring facilities together with maintenance cost.

Administrations may wish to note the advantages listed above when considering their channel requirements.

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document 1017-E
25 February 1985
Original: English

REGION 1

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE MARITIME MOBILE SERVICE AND THE AERONAUTICAL RADIONAVIGATION SERVICE IN CERTAIN PARTS OF THE MF BAND IN REGION 1
GENEVA, FEBRUARY/MARCH 1985

Document 31-E
25 February 1985
Original: English

Note by the Secretary-General

SOFTWARE FOR RARC-MM-R1 AND RARC-EMA

At the request of the International Frequency Registration Board, I transmit the attached IFRB Report for the information of the Conferences.

R.E. BUTLER
Secretary-General

Annex: 1

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.

ANNEX 1

Report by the IFRB on

Software for RARC-MM-R1 and RARC-EMA-R1

1. INTRODUCTION

1.1 In its preliminary preparations for the RARC-MM-R1 and RARC-EMA-R1 Conferences, the Board decided that, while the most important planning criteria to be used by these conferences had been considered within the Conference preparation activities as foreseen by Resolution No. 704 (MOB-83) and Recommendation No. 602 (Rev. MOB-83), no planning methods had been developed to allow the establishment of frequency assignment plans on the basis of input requirements.

1.2 The Board therefore requested all the administrations of Region 1 to inform the Board of computer programs developed for this purpose. Only one administration provided the required programs which it subsequently proposed to the conferences.

1.3 The Board carried out its preparatory work using this planning method and developed associated programs and interfaces to permit the operation of the program developed by the Swedish Administration on the Siemens computer. The Board also revised it own Technical Standards to incorporate the latest available information.

1.4 The purpose of this document is to describe the resulting software system components that are available for use during the two conferences RARC-MM-R1 and RARC-EMA-R1. Fig. 1 gives an overview of the system. The three main components of the system are the data capture program, the planning program and the incompatibility analysis program. It is to be noted that the data capture program and the incompatibility analysis program which were developed by the IFRB, can work independently from the planning program.

2. DATA CAPTURE PROGRAM

The purpose of the data capture program is to update the requirement file. The Siemens utility IFG is used to create formatted screens on standard Siemens terminals. The utility programs to print the requirements file or extracts of it also belong to the data capture program although they are batch programs.

3. EXTRACTS OF ASSIGNMENTS FROM THE MRF

Assignments in the MRF that are to be taken into account when constructing the plan are extracted in a flat file by means of software which is part of the Frequency Management System of the IFRB (FMS). This file is processed through a program TEX16 which is part of the standard IFRB technical examination programs. TEX16 decodes the class of emission and finds suitable reception points for zones.

4. INCOMPATIBILITY ANALYSIS PROGRAM

4.1 The incompatibility analysis program is based on the IFRB technical examination program, which was modified to permit two-way interference calculations This program is described in Annex 1.

4.2 The output file of TEX16 is transformed into calculation files for the analysis program and for the planning program by the two programs MM17 and MM27 respectively. During the run of these two programs it is possible to exclude from the calculation file assignments that for one reason or another are not to be taken into account. E.g. assignments that are to be replaced by assignments in conformity with the new plan. The selection criteria are based on frequency band, class of station, region and country.

4.3 The interfaces between the incompatibility analysis program and the rest of the software are described in 4.4 and shown in Fig. 1.

4.4 Before running the analysis program, the requirements file should be updated with the frequencies assigned during the planning exercise (see 5.3). The program MM19 transforms the requirements file into a calculation file suitable for the analysis program for those requirements that have been assigned a frequency. The format of this calculation file is identical to the format of the calculation file for MRF assignments.

4.5 A run of the analysis program with the calculation file of requirements and the calculation file of MRF assignments as input will identify the incompatibilities between these two groups of assignments.

4.6 A run of the analysis program with only the calculation file of requirements as input will identify the incompatibilities between assignments in the plan.

5. PLANNING PROGRAM

5.1 A description of the planning program is given in Docs 24 and 1013 of the Swedish Administration. On the understanding that the Conferences will adopt this planning program the Board developed the necessary interfaces between this program and the rest of the software. Should the conferences decide to modify the planning method, account should be taken of the time needed by the IFRB to develop modified software.

5.2 The requirements file is transformed into a question card file by the program MM28. There is a selection program within the planning system which can be used to pick a group of requirements for which frequencies are to be found during a particular run of the program in batch mode or in interactive mode.

5.3 When a frequency has been found for a requirement, the planning program updates the file of existing assignments (EXI27 in Fig. 1) so that station is taken into account when a frequency is to be found for another requirement later. The information on found frequencies in the file EXI27 is also used to update the requirements file by means of the program MM29. The purpose of this update is twofold, to make it possible to print the plan with the planned frequencies in the same format as was used to publish the requirements and to create a calculation file from the requirements file which can be used in the analysis program.

6. RESULTS OF THE INCOMPATIBILITY ANALYSIS PROGRAM

The results of the incompatibility analysis program will be presented in three different lists:

a) List of assignments in the plan which are interfered by assignments recorded in the Master International Frequency Register (MIFR). The list will provide the results on the interference caused to stations appearing in the plan. If the plan is not modified in order to eliminate this interference the Board will consider the interference as having been accepted by the administrations concerned. Special attention will need to be given to the assignments in the plan of administrations not present at the conferences.

b) List of assignments in the MIFR receiving interference from assignments in the plan. The assignments in the plan will be identified with the understanding that at the time of their Notification they may receive an unfavourable finding.

c) List of incompatibilities between assignments in the plan.

7. IFRB TECHNICAL STANDARDS

The Board has recently carried out studies with a view to revising the IFRB Technical Standards on the basis of the latest available information. As a result of these studies it maintained TSA-3 (Receiver discrimination) and adopted modifications to TSA-1 (RF Protection Ratio), TSA-2 (Minimum field strength to be protected) and TSA-5 (Field strength values in the bands between 9 kHz and 3 900 kHz) to be applied on an interim basis until CCIR completes its work on related matters and provides the IFRB with the necessary data to enable the Board to continue its studies on the Technical Standards review.

The revised Technical Standards which concern the bands and services to be considered by the Conference are reproduced in Annex 2 to this document.

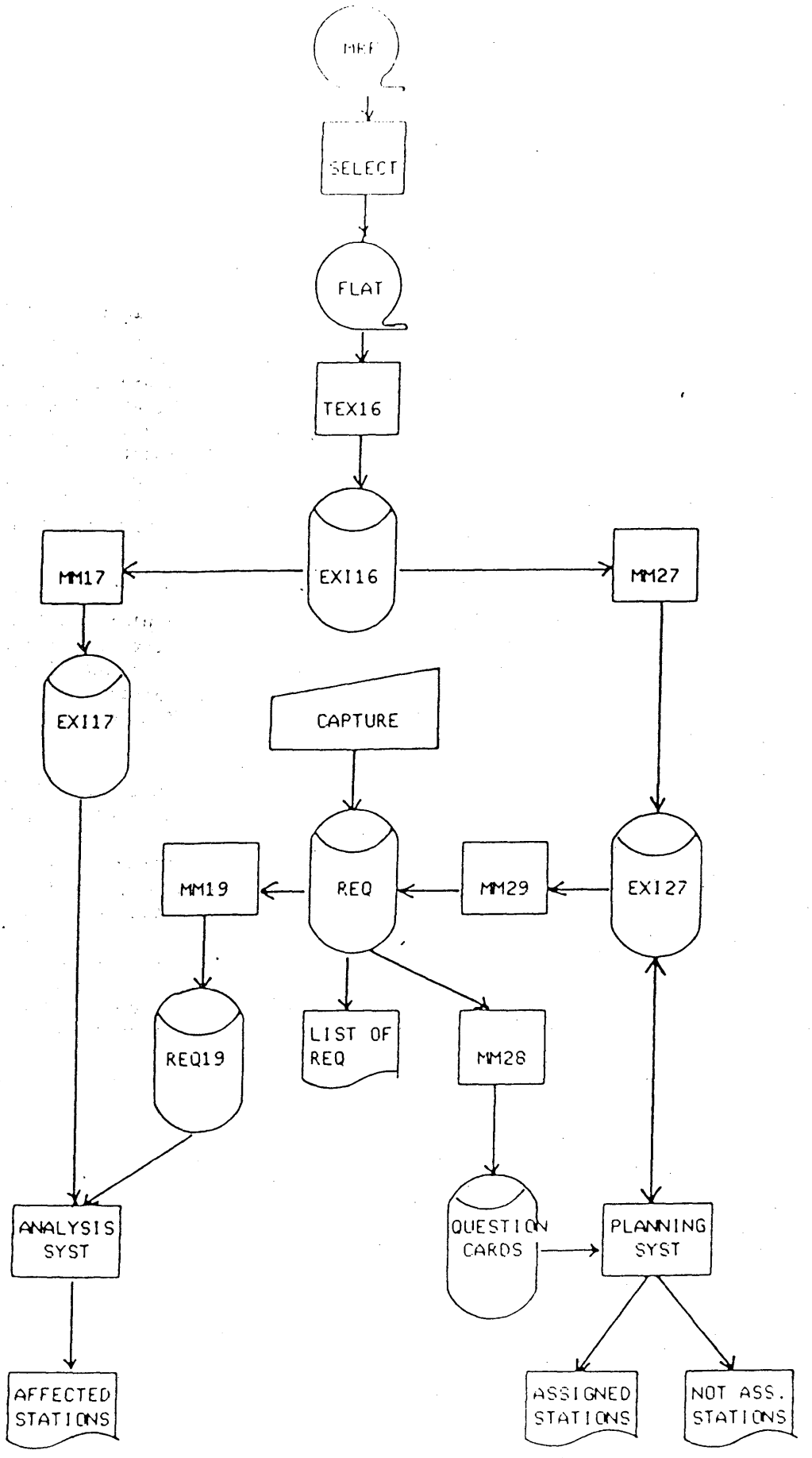

MKF
SELECT
FLAT
TEX16
EXI16
MM17
MM27
EXI17
CAPTURE
MM19
REQ
MM29
EXI27
REQ19
LIST OF REQ
MM28
ANALYSIS SYST
QUESTION CARDS
PLANNING SYST
AFFECTED STATIONS
ASSIGNED STATIONS
NOT ASS. STATIONS

Fig. 1

ANNEX 1

MM51 ANALYSIS PROGRAM

1. PURPOSE OF THE PROGRAM

The purpose of the program MM51 is to analyse incompatibilities between frequency assignments to requirements to be entered in the plans of the conferences RARC-MM-R1 and RARC-EMA-R1 on the one hand and assignments in the Master Register MRF, which are to be taken into account under RR 1241 or 1242, on the other hand. These two groups of assignments will hereafter, for the sake of convenience be called Plan assignments and MRF assignments respectively. The program is capable of analysing incompatibilities between plan assignments in the plan using the technical criteria adopted by the conference, which may be different from those used by the Board. This can be done only if the conference adopts these criteria at a very early stage.

2. SELECTION OF MRF ASSIGNMENTS TO BE PROTECTED

The selection of MRF assignments to be protected takes place in two stages. In the first stage all assignments in the Master Register in the frequency bands to be planned are extracted and converted to the so-called flat file format. This is the format used by the Technical Examination Programs. At this stage a list of all selected assignments in the IFL columnar format can be produced.

The second stage selection takes place at the time of creation of the calculation file of existing assignments. In the second stage it is possible to make a selection based on frequency, country, class of station and region. In the final selection the program uses a steering file. Each record specifies inclusion or exclusion of a particular category of assignments. Selection of categories are defined by specifying the frequency interval, the class of station, the ITU Region and the country. If a country is specified it takes precedence over the specification of a region. It is, for example, possible to exclude assignments of a permitted service in Region 1 but to include assignments of that service in countries where it is defined as primary by a footnote to the table of frequency allocations.

3. METHOD OF CALCULATION

3.1 Technical Standards

The program is based of the IFRB Rules of Procedure for technical examination and the IFRB Technical Standards A-1, A-2, A-3 and A-5 (1985 version).

3.2 Determination of reception points for MRF assignments

One of the most impqrtant steps in the calculation of incompatibilities is the determination of appropriate reception points at which the wanted and interference field strengths are to be calculated. For the assignments in the Master Register there are five different ways to describe the reception point or zone. The way the program deals with these different cases is described below.

3.2.1 Fixed point

This is the case of a point-to-point communication in the fixed service. The program calculates the wanted field strength during day and during night at the fixed reception point and compares it with the minimum field strength as given by the Technical Standard A-2. The signal to interference ratio for day and night is calculated only if the wanted field strength during the period is greater than the minimum field strength for the same period.

3.2.2 Networks of the Fixed Service of the zone (ZN) type

This is the case where a group of stations in one country works on one frequency and communicates among themselves. The program uses the transmitter coordinates of up to five other stations in the network as representative of the reception points of any station in the network. The program treats these points in exactly the same way as other fixed points (see 3.2.1).

3.2.3. Circular zones

The zone is defined by the centre and the radius of a circle. In order to calculate the protection ratio the program determines the coordinates of a point on the periphery of the circle and in the direction of the interfering transmitter. This is of course the most exposed point. For beacons in the frequency band 130-535 kHz the program assumes that the wanted field at that point is equal to the minimum field strength as given by the provisions of RR2857, RR2858, and RR2862-2864. For other stations the program calculates the wanted field strength during day and during night at that point and

compares it with the minimum field strength. If the wanted field strength is below the minimum field strength the radius is reduced until the wanted field becomes equal to the minimum field. This is done separately for day and for night. The interfering field strength is calculated for day and for night at the reception points that were found for day and for night respectively. In most cases the centre of the circle coincides with the site of the transmitter but it is not always the case. If it is not the case and the station is a beacon in the frequency band 130-535 kHz, the program calculates an effective range as the sum of the distance between the transmitter and the centre of the circle. The reason for this is that for such stations the calculation is based on the range and not on the notified power. (In such cases the effective range is identified by an * in the printed results).

3.2.4 Standard Defined Areas

There exists a number of standard defined areas like e.g. the maritime zones. For all areas which are used in the bands below 28 MHz, a number of test points has been determined and stored in a file. If the minimum field condition is not fulfilled at a test point, the program calculates the coordinates of a point in the same direction but at a shorter distance so that the wanted field at the test point is equal to the minimum field. This implies that a different test point may be used during day and during night. The program calculates the interfering field at the test points determined in this way.

3.2.5 Zones defined by up to six points

Zones defined by up to six points are treated in almost the same way as the standard defined areas. The only difference is that there is no need to search for the test points in a separate file, since the points defining the zone can be used directly.

3.3 Determination of reception points for Plan assignments

For plan assignments there are only two ways to describe the reception zone namely as a circular zone or as a zone defined by up to six points. The treatment is the same as for MRF assignments.

3.4 Field strength calculation

The program calculates the wanted and unwanted field strengths at noon and at midnight by interpolation in the TSA-5 tables. The calculated signal to interference ratio is compared with the protection ratio (lower TSA-1 limit) to determine whether the results should be printed.

ANNEX 2

1. TSA-1

Partial Review of TSA-1 (RF Protection Ratio)
for application in the IFRB preparatory activities to
RARC-MM-R1 and RARC-EMA-R1

For the purpose of interference calculations to be undertaken within the IFRB activities related to the RARC-MM-R1, 1985 and RARC-EMA-R1, 1985, the following RF Protection Ratio values (dB, p.e.p. *)) shall be used:

Transmission type			Frequency band (kHz)	
			283.5-526.5	1 606.5 - 2 160
Telegraphy, aural reception			8 (3 - 7)	11 (5 - 10)
Telegraphy, aural reception Meteo, Press			9 (3 - 8)	13 (5 - 12)
Telegraphy, automatic reception, without error correction			11 (6 - 10)	17 (10 - 16)
Telegraphy, automatic reception, with error correction			8 (6 - 7)	12 (7 - 11)
Phototelegraphy, facsimile			19 (14 - 18)	24 (16 - 23)
Telephony	not for connection to public network	DSB and SSB full carrier (CO)	18 (15 - 17)	21 (17 - 20)
		SSB, reduced or suppresed carrier, ISB (CO)	12 (9 - 11)	15 (11 - 14)
	for connection to public network	DSB and SSB full carrier (CP)	31 (26 - 30)	34 (28 - 33)
		SSB, reduced or suppresed carrier, ISB (CP)	25 (20 - 24)	28 (22 - 27)
Radiobeacons			15	15

*) Note 1: Attachment to TSA-1 contains conversion factors for powers notified as mean or carrier powers.

ANNEX 2 (cont'd)

Attachment to TSA-1

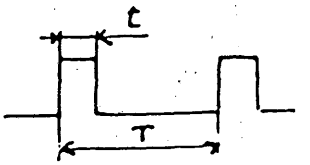
CONVERSION FACTORS FOR DIFFERENT NOTIFIED POWER TYPES

Class of emission	Notified power type	Conversion *) mean to p.e.p.	Conversion *) p.e.p. to mean
NON	Z	0	0
A1A	X	-	-3
A1B	X	-	-3
A1C	X	-	-3
A2A	Y	+4	-
A2B	Y	+4	-
A2N	Y	+4	-
H2A	Y	+3	-
H2B	Y	+3	-
H2N	Y	+3	-
D2A	Y	+3	-
R2B	X	-	-3
J2B	X	-	-3
A3E(BC)	Z	+6	0
A3E	Y	+4 (4-6)	-
H3E	Y	+4 (3-6)	-
R3E	X	-	-4 (4-10)
J3E	X	-	-4 (4-10)
A3C	Y	+4	-
R3C	X	-	0
J3C	X	-	0
A7B	Y	+4	-
H7B	Y	+4	-
R7C	X	-	-4 (3 -6)
J7C	X	-	-4 (3 -6)
B7B	X	-	-4
B8E	X	-	-4 (3-13)
B8C	X	-	0
AXX	Y	+6	-
BXX	X	-	-4 (3-10)
JXX	X	-	-4 (3-10)
B9W	X	-	-4
F,G/1,2,3,7, X/B,C,D,X	Y	0	-
P,L,M,X/-any	X	-	10 log $\frac{t}{T}$ **)
K2B	X	-	10 log $\frac{t}{T}$
K3E	X	-	10 log $\frac{t}{T}$

Notes:

*) In the cases where, in brackets, more than one figure is given, these figures refer to different modulating signal conditions (e.g. smoothly read text instead of sinusoidal modulating signal at 100 % carrier modulation) (see CCIR Rec. 326-4).

**) In the case of pulse modulation:



ANNEX 2 (cont'd)

2. TSA-2

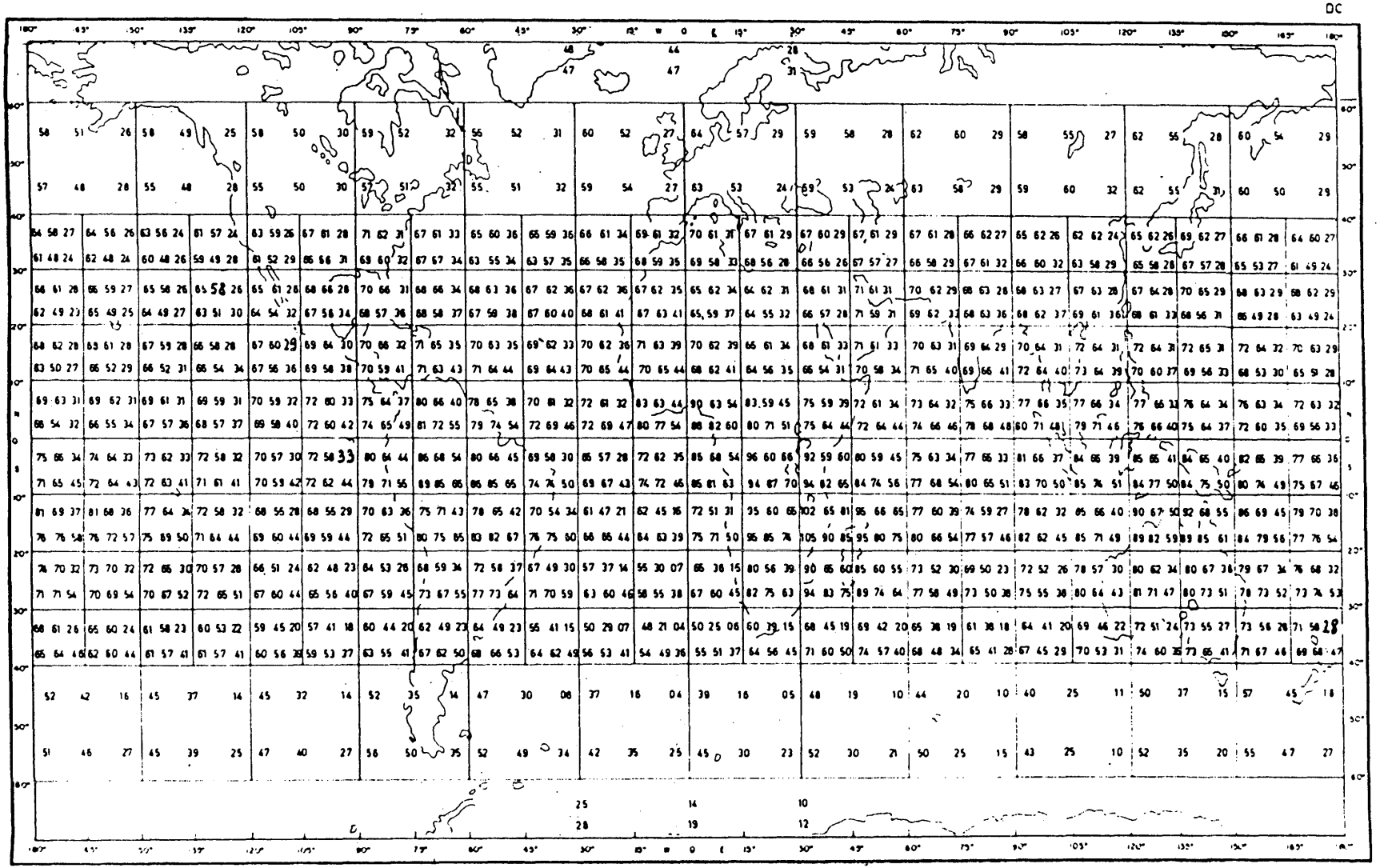
TSA-2(1984)

VALEUR DU DEGRE DE BRUIT EN FONCTION DE LA LATITUDE ET DE LA LONGITUDE DU LIEU DE RECEPTION
NOISE GRADE FIGURES ACCORDING TO LATITUDE AND LONGITUDE OF RECEIVING POINT
VALORES DEL GRADO DE RUIDO EN FUNCION DE LA LATITUD Y DE LA LONGITUD DEL LUGAR DE RECEPCION

période : DECEMBRE - JANVIER - FEVRIER
period : DECEMBER - JANUARY - FEBRUARY
periodo : DICIEMBRE - ENERO - FEBRERO
} DC

1

DC



ANNEX 2 (cont'd)

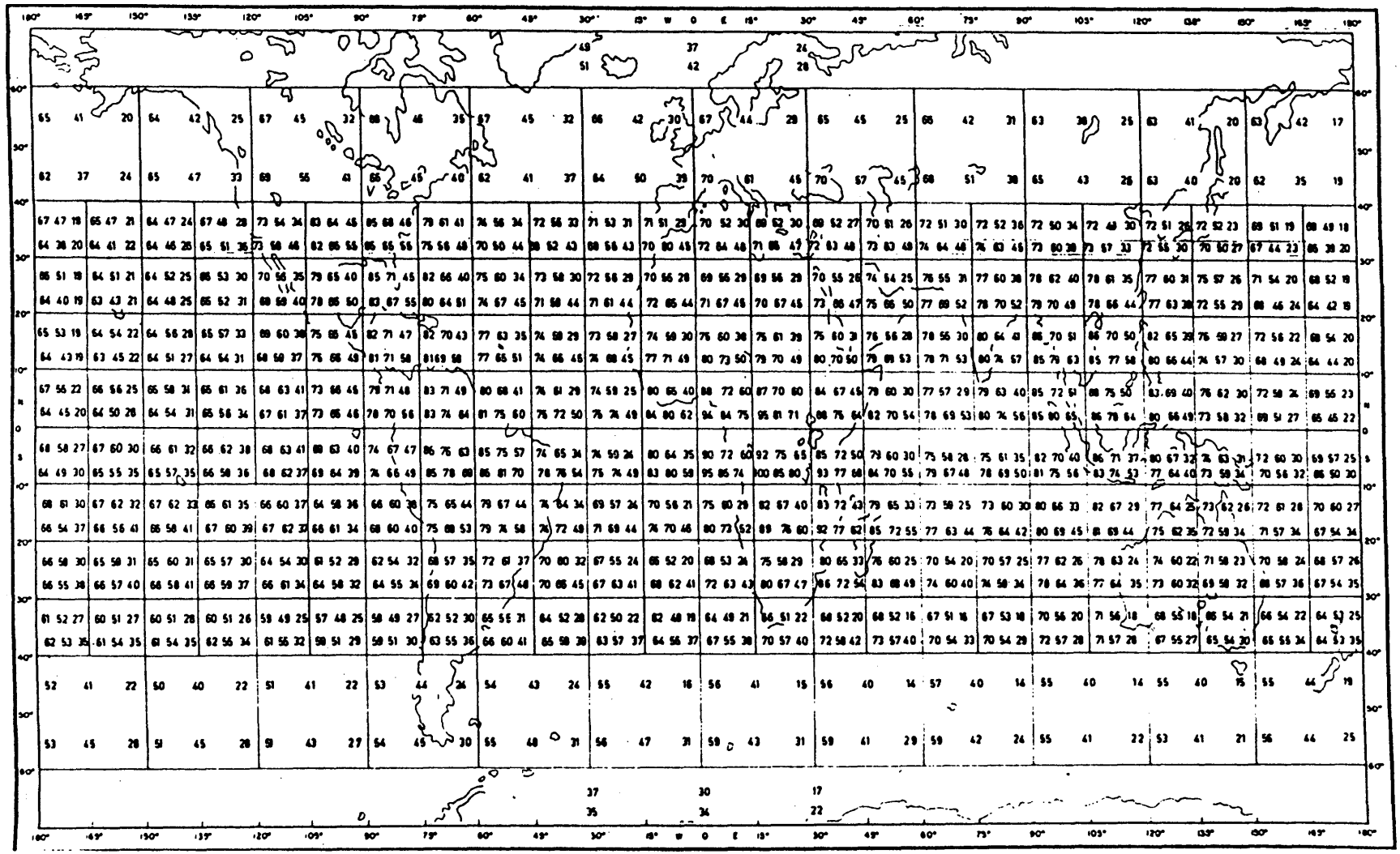
TSA-2(1984)

VALEUR DU DEGRE DE BRUIT EN FONCTION DE LA LATITUDE ET DE LA LONGITUDE DU LIEU DE RECEPTION
NOISE GRADE FIGURES ACCORDING TO LATITUDE AND LONGITUDE OF RECEIVING POINT
VALORES DEL GRADO DE RUIDO EN FUNCION DE LA LATITUD Y DE LA LONGITUD DEL LUGAR DE RECEPCION

période : MARS - AVRIL - MAI
period : MARCH - APRIL - MAY
periodo : MARZO - ABRIL - MAYO
} MR

2

MR



ANNEX 2 (cont'd)

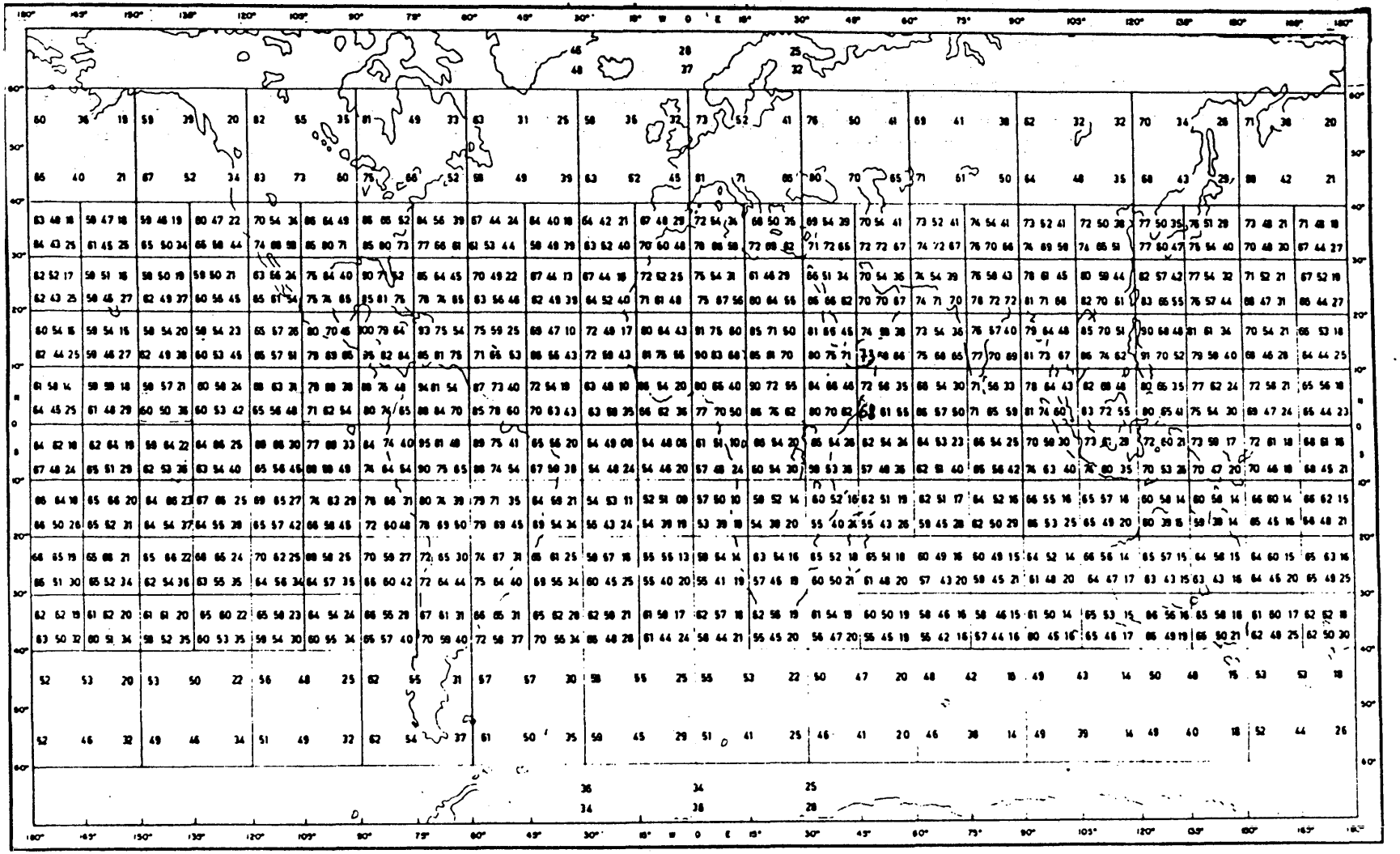
TSA-2(1984)

VALEUR DU DEGRE DE BRUIT EN FONCTION DE LA LATITUDE ET DE LA LONGITUDE DU LIEU DE RECEPTION
NOISE GRADE FIGURES ACCORDING TO LATITUDE AND LONGITUDE OF RECEIVING POINT
VALORES DEL GRADO DE RUIDO EN FUNCION DE LA LATITUD Y DE LA LONGITUD DEL LUGAR DE RECEPCION

période : JUIN - JUILLET - AOUT
period : JUNE - JULY - AUGUST
periodo : JUNIO - JULIO - AGOSTO
} JN

3

JN



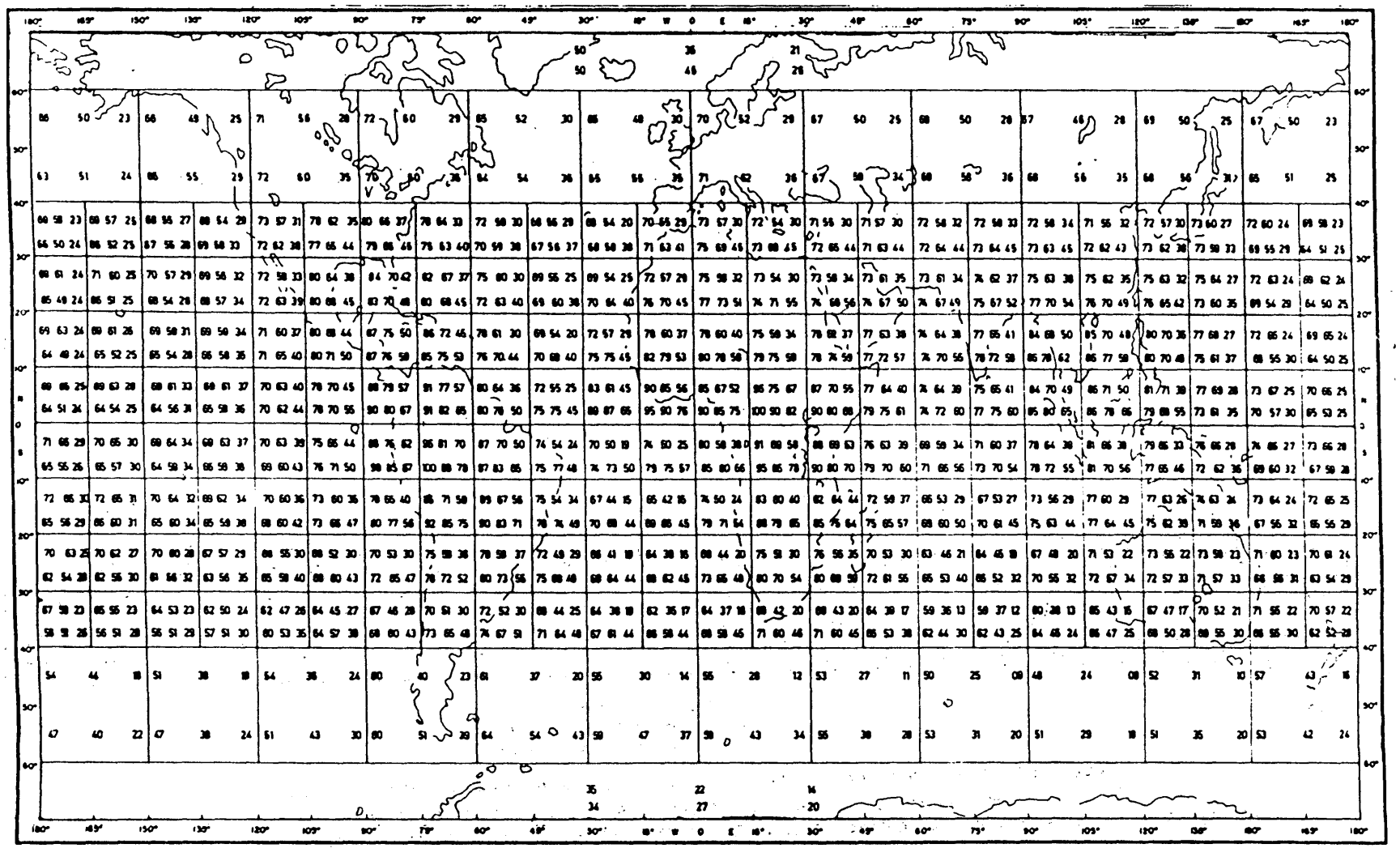
ANNEX 2 (cont'd)

VALEUR DU DEGRE DE BRUIT EN FONCTION DE LA LATITUDE ET DE LA LONGITUDE DU LIEU DE RECEPTION TSA-2(1984)
NOISE GRADE FIGURES ACCORDING TO LATITUDE AND LONGITUDE OF RECEIVING POINT
VALORES DEL GRADO DE RUIDO EN FUNCION DE LA LATITUD Y DE LA LONGITUD DEL LUGAR DE RECEPCION

période : SEPTEMBRE - OCTOBRE - NOVEMBRE
period : SEPTEMBER - OCTOBER - NOVEMBER
periodo : SEPTIEMBRE - OCTUBRE - NOVIEMBRE
} SE

4

SE



Intensité minimum du champ à protéger (exprimée en dB par rapport à 1 μV/m)
Minimum field strength to be protected (expressed in dB relative to 1 μV/m)
Intensidad de campo mínima a proteger (expresada en dB con relación a 1 μV/m)

Type de transmission: Télégraphie, réception auditive
Type of transmission: Telegraphy, aural reception
Tipo de transmisión: Telegrafía, recepción auditiva
(B > 0.5 kHz)

5A

DEGRE DE BRUIT / NOISE GRADE / GRADO DE RUIDO	kHz																	
	10			20			50			100			200			500		
	N2 / N1	T1 / T2	J1 / J2	N2 / N1	T1 / T2	J1 / J2	N2 / N1	T1 / T2	J1 / J2	N2 / N1	T1 / T2	J1 / J2	N2 / N1	T1 / T2	J1 / J2	N2 / N1	T1 / T2	J1 / J2
100	72	72	74	70	72	81	68	70	85	65	68	85	62	65	78	57	59	67
	72	74	77	71	75	81	68	74	83	65	73	84	62	70	80	56	63	68
90	69	69	72	67	69	77	63	65	78	59	61	73	54	57	69	48	50	57
	70	71	74	67	71	77	62	68	77	58	65	73	53	60	70	47	53	57
80	66	66	69	63	65	73	58	59	72	52	54	67	46	49	60	38	40	46
	67	68	71	63	66	72	57	61	71	51	57	67	45	51	60	37	43	46
70	64	63	66	60	61	68	53	54	66	46	48	59	38	40	50	28	30	35
	64	65	68	59	61	68	52	55	63	45	49	58	37	42	50	26	32	36
60	61	60	64	57	57	64	49	49	59	40	42	51	30	32	42	18	21	25
	61	61	66	56	56	63	47	48	57	39	40	49	29	32	40	18	22	26
50	58	57	61	53	53	60	44	44	52	33	35	43	22	24	32	8	14	15
	58	58	63	52	52	59	43	41	50	32	32	41	21	23	30	8	12	16
40	55	55	58	49	50	56	38	39	46	26	28	35	14	16	22	7		
	55	55	60	49	47	55	38	35	43	26	24	32	14	14	20			
30	52	52	56	46	47	52	33	34	40	19	22	27	14	14	13	7		
	52	51	58	45	42	50	32	28	36	20	16	24	14	14	14			
20	50	49	54	43	42	48	28	28	33	12	15	20	-11	14	14	7		
	49	48	55	40	37	46	27	20	30	14	8	15	-11	-11	-11			
10	48	46	51	40	39	44	22	23	28	5	8	11	-11	-11	-11	7		
	47	45	53	35	32	42	21	14	21	8	1	6	-11	-11	-11			
0	45	43	48	36	35	40	17	18	22	2	2	3	-11	-11	-11	7		
	44	41	50	31	27	37	16	7	14	3	2	2	-11	-11	-11			

DEGRE DE BRUIT / NOISE GRADE / GRADO DE RUIDO	MHz																	
	1			1,5			2			3			4					
	N2 / N1	T1 / T2	J1 / J2	N2 / N1	T1 / T2	J1 / J2	N2 / N1	T1 / T2	J1 / J2	N2 / N1	T1 / T2	J1 / J2	N2 / N1	T1 / T2	J1 / J2			
100	52	54	52	47	50	41	44	47	34	38	42	23	34	38	16			
	51	55	54	47	49	43	42	45	36	36	39	27	32	35	22			
90	42	44	42	38	40	32	35	38	26	31	34	17	28	31	11			
	41	45	44	37	40	33	34	36	28	30	31	20	27	28	15			
80	32	34	32	28	31	23	27	29	18	24	27	10	22	25	5			
	31	35	34	28	30	25	26	28	20	23	24	13	21	22	9			
70	22	24	22	19	22	14	18	20	10	17	19	3	16	18	1			
	21	25	24	19	22	16	18	20	12	16	18	6	15	16	4			
60	12	14	12	10	12	6	10	12	2	10	12	-4	10	12	-4			
	11	15	14	9	12	7	9	11	4	9	11	0	9	10	-4			
50	4	4	4	3	3	-3	2	3	-2	3	4	-4	4	5	-4			
	4	5	4	3	3	-3	2	3	2	2	3	-4	4	4	-4			
40	4			3			2			-1			-1					
30	4			3			2			-1			-1					
20	4			3			2			-1			-1					
10	4			3			2			-1			-1					
0	4			3			2			-1			-1					

Constants to be added to obtain other types of emissions			
Narrow band TG (B<0.5 kHz)			- 5
Telegraphy aut. (B>0.5 kHz)			4
Phototelegraphy			16
Telephony	CO	J3E R3E B8E	14
		H3E	20
		A3E	23
	CP	J3E R3E B8E	25
		H3E	31
		A3E	34
Broadcast.	LF/MF		49
	BC Trop		46

ANNEX 2 (cont'd)

TSA-2(1984)

Intensité minimum du champ à protéger (exprimée en dB par rapport à 1 µV/m)
Minimum field strength to be protected (expressed in dB relative to 1 µV/m)
Intensidad de campo mínima a proteger (expresada en dB con relación a 1 µV/m)

Type de transmission: Télégraphie, réception auditive
Type of transmission: Telegraphy, aural reception
Tipo de transmisión: Telegrafía, recepción auditiva
(B > 0.5 kHz)

5B

Degré de bruit / Noise grade / Grado de ruido	MHz 4			5			6			7			8			10			12			15			20			30		
	N2 / N1	T1 / T2	J1 / J2	N2 / N1	T1 / T2	J1 / J2	N2 / N1	T1 / T2	J1 / J2	N2 / N1	T1 / T2	J1 / J2	N2 / N1	T1 / T2	J1 / J2	N2 / N1	T1 / T2	J1 / J2	N2 / N1	T1 / T2	J1 / J2	N2 / N1	T1 / T2	J1 / J2	N2 / N1	T1 / T2	J1 / J2	N2 / N1	T1 / T2	J1 / J2
100	34 32	38 35	16 22	31 30	34 32	12 17	28 28	31 30	11 15	25 26	28 29	11 14	25 24	25 28	11 13	18 21	21 26	12 14	14 19	17 25	13 15	7 14	11 22	13 15	-3 7	4 17	10 14	-4 -4	-12 0	-3 2
90	28 27	31 28	11 15	26 25	28 26	8 12	25 25	25 25	8 11	21 21	23 24	9 11	18 20	21 23	9 11	14 17	16 22	10 12	9 14	12 21	11 13	2 9	6 18	11 13	-9 0	-2 11	8 12	-7		-7 -5
80	22 21	25 22	5 9	20 19	23 21	4 8	18 18	21 20	5 8	16 16	18 19	6 9	14 15	16 19	7 9	9 12	13 18	8 10	4 9	8 17	9 11	-4 3	1 13	9 11	-14 -7	-7 5	5 9	-7		
70	16 15	18 16	1 4	15 14	17 15	1 3	13 13	16 15	2 4	11 12	14 14	3 6	9 11	13 14	4 7	4 8	9 14	6 8	-1 4	4 13	7 9	-9 -3	-3 9	7 9	-4 -4	-4 -1	2 6	-7		
60	10 9	12 10	-1 -1	9 9	12 10	-3 -1	9 9	11 10	-1 1	7 8	10 10	1 3	5 7	9 10	2 4	0 3	5 10	4 6	-5 -1	0 9	5 7	-5 -5	-5 4	5 7	-4 -4	-4 -6	-2 2	-7		
50	4 4	5 4	-1 -1	4 5	6 5	-3 -3	4 5	6 5	-3 -2	2 4	6 5	-2 -1	0 3	5 6	0 1	-3 -1	1 6	2 4	-5 -5	-4 9	3 5	-5 -5	-5 0	2 5	-7		-5 -2	-7		
40	-1			-1 -1	0 -1	-3 -3	-3			-3 -3	1 1	-3 -3	-3 -3	0 2	-3 -3	-5 -5	-3 2	0 2	-5 -5	-5 1	1 3	-5		0 2	-7		-4 -6	-7		
30	-1			-3			-3			-3			-3			-5 -5	-5 -2	-2 0	-5		0 1	-5		-2 -1	-7			-7		
20	-1			-3			-3			-3			-3			-5		-4 -2	-5		-2 -1	-5		-4 -4	-7			-7		
10	-1			-3			-3			-3			-3			-5		- -4	-5		-4 -3	-5			-7			-7		
0	-1			-3			-3			-3			-3			-5			-5			-5			-7			-7		

Constants to be added to obtain other types of emissions			
Narrow band TG (B<0.5 kHz)			-5
Telegraphy aut. (B>0.5 kHz)			4
Phototelegraphy			16
Telephony	CO	J3E R3E B8E	14
		H3E	20
		A3E	23
	CP	J3E R3E B8E	25
		H3E	31
		A3E	34
Broadcast.		LF/MF	49
		BC Trop	46

3. TSA-3

ANNEX 2 (cont'd)

Discrimination du récepteur (dB) - Receiver discrimination (dB) - Discriminación del receptor (dB)

Emission brouilleuse - Interfering emission - Emisión interferente

K	Telegraphy 100HA1A	Telegraphy 500HA1A 500HA1B	Telegraphy 1K00A1B	Telegraphy A2A, A2B, A2N H2A, H2B, H2N	Other telegraphy (TG)	Telephony SSB - CP ISB -CO-CP (with privacy device)	Telephony DSB - CP (with privacy device) SSB - CO (without privacy dev.)	Telephony DSB - CO (without privacy dev.
0	0	0	0	0	0	0	0	0
0,1	0	0	0	6	0	0	0	0
0,2	0	0	3	6	0	0	0	0
0,3	0	5	6	6	0	0	0	3
0,4	0	7	9	6	0	0	3	9
0,5	0	9	11	6	0	3	9	15
0,6	0	11	14	6	0	9	15	21
0,7	7	13	16	6	0	13	19	25
0,8	8	14	18	6	3	17	23	29
0,9	9	15	20	6	6	19	25	31
1	10	17	22	6	10	21	27	33
1,2	11	20	26	24	21	23	29	35
1,4	12	23	30	39	30	25	31	37
1,6	13	26	31,5	50	38	26	32	38
1,8	14	29	38	58	44	27	33	39
2	15	32	42	64	50	28	34	40
2,2	16	35	46		57	29	35	41
2,4	17	38	49		60	30	36	42
2,6	18	42	53		63	30,5	36,5	42,5
2,8	19	45	56		66	31	37	43
3	20	48	59		69	32	38	44
4	25	59	64		78	35	41	47
5	30	64				38	44	50
6	34	69				40	46	52
7	39					42	48	54
8	44					44	50	56
9	49					46	52	58
10	55					47	53	59
12	62					49	55	61
15	70							
$K = \frac{\Delta f - 0,5\ Bva}{0,5\ Bvi}$					$K = \Delta f - (0,5\ Bva + 0,5\ Bvi) + 1$			

K : Facteur de discrimination du récepteur - Receiver discrimination factor - Factor de discriminación del receptor

Bvi : Largeur de bande de l'émission brouilleuse - Bandwidth of interfering emission - Anchura de banda de la emisión interferente

Bva : Bande passante du récepteur de l'émission désirée - Pass-band of receiver of wanted emission - Banda pasante del receptor de la emisión deseed.

Δf : Décalage entre les fréquences assignées - Frequency separation between assigned frequencies - Separación entre las frecuencias asignadas

ANNEX 2 (cont'd)

4. TSA-5

Technical Standard A-5 (Field strength values in the bands 9 to 3900 kHz) for application in the technical examinations (RR1241)

Intensité de champ (exprimée en dB par rapport à 1 µV/m)
Field strength (expressed in dB relative to 1 µV/m)
Intensidad de campo (expresada en dB con relación a 1 µV/m)

9 kHz-535 kHz

TSA-5(Rev.84)

1A

Distance en km / Distance in km / Distancia en km	Onde de sol : mer / Ground wave : sea / Onda de superficie : mar										Onde ionosphérique de nuit / Sky wave at night / Onda ionosférica de noche							Onde de sol : terre / Ground wave : land / Onda de superficie : tierra									Distance en km / Distance in km / Distancia en km
	Fréquence en kHz - Frequency in kc/s - Frecuencia en kc/s																										
	10	30	60	100	150	200	300	400	500		10 -100	150	200	300	400	500		10	30	60	100	150	200	300	400	500	
10	87	87	87	87	87	87	87	87	87									87	87	87	87	87	87	87	87	87	10
50	72	72	72	72	72	72	72	72	72									72	72	72	72	72	72	72	72	71	50
100	66	66	66	66	66	66	66	66	66					43	43	43		66	66	66	66	66	66	65	64	62	100
200	60	60	60	60	60	60	60	59	59					44	44	44		60	60	60	60	60	59	57	54	50	200
300	57	56	56	56	56	55	55	57	57					44	44	44		57	56	56	56	55	56	50	47	42	300
400	55	54	53	53	52	51	50	50	49		45	45	44	44	44	43		55	54	53	53	52	50	45	40	35	400
500	52	51	50	50	48	47	47	46	45		44	44	43	43	43	42		52	51	50	50	48	45	40	34	27	500
600	50	49	48	47	45	44	43	42	41		43	43	43	42	42	41		50	49	48	47	45	42	35	27	21	600
700	48	46	45	43	42	41	39	38	37		42	42	42	41	41	40		48	46	45	43	42	39	31	22	15	700
800	46	44	43	41	39	38	37	35	33		41	41	41	40	40	39		46	44	43	41	39	35	27	17	7	800
900	45	42	40	38	37	35	33	31	30		40	40	39	39	38	38		45	43	40	38	37	32	22	12	2	900
1000	43	40	38	36	33	32	30	28	26		39	39	38	38	37	37		43	40	38	36	33	29	18	7	-4	1000
1100	42	38	36	33	31	29	27	25	22		38	37	37	37	36	35		42	38	36	33	30	25	14	2	-10	1100
1200	40	37	34	31	29	27	24	21	18		38	36	36	35	35	34		40	37	34	31	27	22	9	-3	-15	1200
1300	39	35	32	29	26	24	21	17	15		36	35	35	34	33	33		39	35	32	29	24	19	6	-8	-21	1300
1400	38	33	29	26	23	21	17	14	12		36	34	34	33	32	32		38	33	29	27	22	16	2	-14		1400
1500	36	32	27	22	21	18	14	11	8		35	33	33	32	31	30		36	32	27	24	19	13	-3	-18		1500
1600	35	29	25	22	18	15	11	7	5		34	32	32	31	30	29		35	30	25	22	16	10	-7	-23		1600
1700	34	28	23	19	15	12	8	4	1		33	32	31	30	29	28		34	28	23	20	13	7	-10			1700
1800	32	26	20	17	13	10	5	1	-3		32	31	31	29	28	27		32	26	20	18	10	4	-14			1800
1900	31	24	19	15	10	7	2	-3	-6		31	30	30	28	27	26		31	24	19	15	8	1	-18			1900
2000	29	23	17	12	8	4	-1	-5	-9		31	29	29	27	26	25		29	23	17	13	6	-3	-21			2000
2200	27	19	13	7	3	-1	-7	-12	-16		29	28	27	25	24	23		27	19	13	7	0	-8				2200
2400	25	16	9	2	-2	-6	-13	-18	-23		28	27	26	24	23	21		25	16	9	2	-5	-14				2400
2600	22	13	5	-1	-7	-11	-18	-24			27	26	25	23	21	20		22	13	5	-1	-10	-20				2600
2800	20	9	2	-5	-11	-16	-24				26	25	23	21	20	18		20	9	2	-5	-15					2800
3000	18	7	-3	-10	-17	-22					25	23	22	20	18	17		18	7	-3	-10	-21					3000
3200	15	4	-5	-14	-21						25	23	21	19	17	15		15	4	-5	-14						3200
3400	13	0	-10	-18							24	22	20	18	16	14		13	0	-10	-18						3400
3600	10	-3	-13	-23							24	21	20	17	15	13		10	-3	-13	-23						3600
3800	9	-5	-16								23	21	19	16	14	12		9	-5	-16							3800
4000	7	-9	-20								23	20	18	15	13	11		7	-9	-20							4000
5000	-5	-24									23	20	17	14	10	8		-5	-24								5000
6000	-15										23	20	17	14	8	6		-15									6000
7000											22	19	16	13	8	5											7000
	MOD										(MOD)							MOD									

ANNEX 2 (cont'd)

Antenna efficiency (correction) factor TSA-5 (1984) 1B

Classe de station	Correction	Class of station	Correction	Clase de estación	Corrección
Stations fixes, stations terrestres et stations terrestres de radionavigation entre 10 et 70 kHz :		Fixed, Land and Radionavigation Land stations between 10 and 70 kHz :		Estaciones fijas, terrestres y terrestres de radionavegación entre 10 y 70 kHz :	
- puissance supérieure à 1 kW	-10 dB	- power above 1 kW	-10 dB	- potencia superior a 1 kW	-10 dB
- puissance égale à 1 kW	-12 dB	- power equal to 1 kW	-12 dB	- potencia igual a 1 kW	-12 dB
- puissance inférieure à 1 kW	-15 dB	- power below 1 kW	-15 dB	- potencia inferior a 1 kW	-15 dB
Stations fixes, stations terrestres et stations terrestres de radionavigation entre 70 et 150 kHz :		Fixed, Land and Radionavigation Land stations between 70 and 150 kHz :		Estaciones fijas, terrestres y terrestres de radionavegación entre 70 y 150 kHz	
- puissance supérieure à 1 kW	-7 dB	- power above 1 kW	-7 dB	- potencia superior a 1 kW	-7 dB
- puissance égale à 1 kW	-9 dB	- power equal to 1 kW	-9 dB	- potencia igual a 1 kW	-9 dB
- puissance inférieure à 1 kW	-12 dB	- power below 1 kW	-12 dB	- potencia inferior a 1 kW	-12 dB
Stations fixes, stations terrestres et stations terrestres de radionavigation (à l'exception des radiophares sans effet directif) entre 150 kHz et 535 kHz		Fixed, Land and Radionavigation Land stations (except non-directional radio-beacons) between 150 kHz and 535 kHz		Estaciones fijas, terrestres y terrestres de radionavegación (excepto los radiofaros no direccionales) entre 150 kHz y 535 kHz	
- puissance supérieure à 1 kW	-2 dB	- power above 1 kW	-2 dB	- potencia superior a 1 kW	-2 dB
- puissance égale à 1 kW	-4 dB	- power equal to 1 kW	-4 dB	- potencia igual a 1 kW	-4 dB
- puissance inférieure à 1 kW	-7 dB	- power below 1 kW	-7 dB	- potencia inferior a 1 kW	-7 dB

NOC

ANNEX 2 (cont'd)

TSA-5(Rev.84)

2

MER-SEA-MAR

Intensité de champ (exprimée en dB par rapport à 1 µV/m)
Field strength (expressed in dB relative to 1 µV/m)
Intensidad de campo (expresada en dB con relación a 1 µV/m)

Distance en km / Distance in km / Distancia en km	1605 - 2300 kHz							2300 - 2850 kHz							Distance en km / Distance in km / Distancia en km
	Onde de sol / Ground wave / Onda de superficie	Onde ionosphérique -- Sky wave - Onda ionosférica						Onde de sol / Ground wave / Onda de superficie	Onde ionosphérique - Sky wave - Onda ionosférica						
		midi (activité solaire faible) / noon (low solar activity) / mediodía (actividad solar baja)					nuit / night / noche		midi (activité solaire faible) / noon (low solar activity) / mediodía (actividad solar baja)					nuit / night / noche	
		latitude - latitud							latitude - latitud						
		0°	30°	40°	50°	60°			0°	30°	40°	50°	60°		
10	86							86							10
50	72							72							50
100	65							65							100
200	57							57							200
300	50							50							300
400	43						41	43						43	400
500	38						41	37						43	500
600	32						41	30						43	600
700	27						41	24						43	700
800	22						41	18						43	800
900	16						40	12					1	42	900
1000	11						39	7				-9	-1	41	1000
1100	6				-12	-7	39	2			-13	-10	-3	41	1100
1200	0			-15	-13	-8	38	-3	-15	-15	-14	-11	-4	40	1200
1300	-5	-17	-17	-16	-14	-9	37	-9	-16	-16	-15	-12	-6	39	1300
1400	-10	-18	-18	-17	-15	-10	36	-16	-18	-17	-16	-14	-7	38	1400
1500	-15	-20	-20	-19	-16	-12	35		-19	-19	-18	-15	-9	37	1500
1600		-21	-21	-20	-17	-13	34		-20	-20	-19	-16	-10	36	1600
1700							33							36	1700
1800							33							35	1800
1900							32							34	1900
2000							32							34	2000
2200							31							33	2200
2400							30							32	2400
2600							29							31	2600
2800							28							30	2800
3000							27							29	3000
3200							26							27	3200
3400							25							26	3400
3600							23							24	3600
3800							21							22	3800
4000							19							20	4000
4500							15							16	4500
5000							10							11	5000
	MOD	NOC						MOD	NOC						

Les intensités de champ de l'onde ionosphérique n'ont pas été indiquées dans les cas où elles sont inférieures à celles de l'onde de sol, sauf dans quelques cas où l'interpolation s'en trouve facilitée.

The values for sky wave field strength have not been included when they are less than the ground wave, except when they make the interpolation easier.

No se han indicado las intensidades de campo de la onda ionosférica cuando son inferiores a las de la onda de superficie, salvo en algunos casos en que ello facilita la interpolación.

ANNEX 2 (cont'd)

Intensité de champ (exprimée en dB par rapport à 1 µV/m)
Field strength (expressed in dB relative to 1 µV/m)
Intensidad de campo (expresada en dB con relación a 1 µV/m)

TSA-5(Rev.84)

3

MER-SEA-MAR

Distance en km / Distance in km / Distancia en km	2850 - 3500 kHz: Onde de sol / Ground wave / Onda de superficie	Onde ionosphérique - Sky wave - Onda ionosférica: midi (activité solaire faible) / noon (low solar activity) / mediodía (actividad solar baja) — latitude - latitud 0°	30°	40°	50°	60°	nuit / night / noche
10	86						
50	72						
100	65						
200	56						
300	48						44
400	41						44
500	35						44
600	29						44
700	22					12	44
800	16				-3	10	44
900	10				-5	6	44
1000	4			-10	-6	2	43
1100	-3	-14	-13	-12	-8	0	43
1200	-8	-15	-14	-13	-10	-1	42
1300	-13	-16	-15	-14	-12	-3	41
1400		-18	-17	-16	-13	-4	40
1500		-19	-19	-18	-14	-6	39
1600		-20	-20	-19	-15	-7	38
1700							38
1800							37
1900							36
2000							35
2200							34
2400							33
2600							32
2800							31
3000							30
3200							28
3400							27
3600							25
3800							23
4000							21
4500							16
5000							11

Distance en km / Distance in km / Distancia en km	3500 - 3900 kHz: Onde de sol / Ground wave / Onda de superficie	Onde ionosphérique - Sky wave - Onda ionosférica: midi (activité solaire faible) / noon (low solar activity) / mediodía (actividad solar baja) — latitude - latitud 0°	10°	20°	30°	40°	50°	60°	nuit / night / noche
10	86								
50	72								47
100	65	27	28	29	30	31	35	40	47
200	55	24	25	26	27	29	32	37	47
300	47	19	20	21	22	25	29	34	47
400	40	14	15	16	17	21	26	32	47
500	33	5	8	11	14	19	24	30	47
600	26	0	1	6	11	16	21	28	46
700	19	-2	-1	1	5	12	17	26	46
800	12	-5	-4	-3	-2	8	13	24	45
900	6	-8	-6	-5	-4	4	12	21	44
1000	-1	-10	-8	-6	-5	-2	10	18	43
1100	-7				-8	-5	5	16	42
1200					-9	-5	1	14	42
1300						-7	-1	11	41
1400						-9	-3	8	40
1500							-4	7	39
1600							-5	5	38
1700									38
1800									37
1900									36
2000									35
2200									34
2400									33
2600									32
2800									31
3000									30
3200									28
3400									27
3600									25
3800									23
4000									21
4500									16
5000									11

Les intensités de champ de l'onde ionosphérique n'ont pas été indiquées dans les cas où elles sont inférieures à celles de l'onde de sol, sauf dans quelques cas où l'interpolation s'en trouve facilitée.

The values for sky wave field strength have not been included when they are less than the ground wave, except when they make the interpolation easier.

Se se han indicado las intensidades de campo de la onda ionosférica cuando son inferiores a las de la onda de superficie, salvo en algunos casos en que ello facilita la interpolación.

MOD NOC MOD NOC

ANNEX 2 (cont'd)

Intensité de champ (exprimée en dB par rapport à 1 µV/m)
Field strength (expressed in dB relative to 1 µV/m)
Intensidad de campo (expresada en dB con relación a 1 µV/m)

TSA-5(Rev.84)

4

TERRE - LAND - TIERRA

Distance en km / Distance in km / Distancia en km	1605 - 2300 kHz							2300 - 2850 kHz							Distance en km / Distance in km / Distancia en km
	Onde de sol / Ground wave / Onda de superficie	Onde ionosphérique - Sky wave - Onda ionosférica						Onde de sol / Ground wave / Onda de superficie	Onde ionosphérique - Sky wave - Onda ionosférica						
		midi (activité solaire faible) / noon (low solar activity) / mediodía (actividad solar baja)					nuit / night / noche		midi (activité solaire faible) / noon (low solar activity) / mediodía (actividad solar baja)					nuit / night / noche	
		latitude - latitud							latitude - latitud						
		0°	30°	40°	50°	60°			0°	30°	40°	50°	60°		
10	78							75							10
20	48						46	45						46	50
100	34					30	43	21			25	27	31	44	100
200	17			10	15	21	41	13	12	13	16	20	25	43	200
300	5	2	3	4	8	16	41	-1	6	7	10	14	22	43	300
400	-8	-4	-3	-2	2	10	41		-1	0	2	9	16	43	400
500		-7	-6	-5	-1	6	41		-5	-4	-2	5	12	43	500
600		-9	-9	-8	-4	2	41		-8	-7	-5	0	8	43	600
700		-11	-11	-10	-6	-1	41		-10	-9	-7	-3	6	43	700
800		-12	-12	-11	-9	-3	41		-11	-10	-9	-6	4	43	800
900		-13	-13	-12	-10	-4	40		-12	-11	-10	-8	3	42	900
1000		-14	-14	-13	-11	-5	39		-13	-12	-11	-9	-1	41	1000
1100		-15	-15	-14	-12	-7	39		-14	-14	-13	-10	-3	41	1100
1200		-16	-16	-15	-13	-8	38		-15	-15	-14	-11	-4	40	1200
1300		-17	-17	-16	-14	-9	37		-16	-16	-15	-12	-6	39	1300
1400		-18	-18	-17	-15	-10	36		-18	-17	-16	-14	-7	38	1400
1500		-20	-20	-19	-16	-12	35		-19	-19	-18	-15	-9	37	1500
1600		-21	-21	-20	-17	-13	34		-20	-20	-19	-16	-10	36	1600
1700							33							36	1700
1800							33							35	1800
1900							32							34	1900
2000							32							34	2000
2200							31							33	2200
2400							30							32	2400
2600							29							31	2600
2800							28							30	2800
3000							27							29	3000
3200							26							27	3200
3400							25							26	3400
3600							23							24	3600
3800							21							22	3800
4000							19							20	4000
4500							15							16	4500
5000							10							11	5000
	MOD	NOC						MOD	NOC						

Les intensités de champ de l'onde ionosphérique n'ont pas été indiquées dans les cas où elles sont inférieures à celles de l'onde de sol, sauf dans quelques cas où l'interpolation s'en trouve facilitée.

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No se han indicado las intensidades de campo de la onda ionosférica cuando son inferiores a las de la onda de superficie, salvo en algunos casos en que ello facilita la interpolación.

Intensité de champ (exprimée en dB par rapport à 1 µV/m)
Field strength (expressed in dB relative to 1 µV/m)
Intensidad de campo (expresada en dB con relación a 1 µV/m)

TSA-5(Rev.84) 5

TERRE - LAND - TIERRA

Distance en km / Distance in km / Distancia en km	2850 - 3500 kHz							3500 - 3900 kHz									Distance en km / Distance in km / Distancia en km
	Onde de sol / Ground wave / Onda de superficie	Onde ionosphérique - Sky wave - Onda ionosférica						Onde de sol / Ground wave / Onda de superficie	Onde ionosphérique - Sky wave - Onda ionosférica								
		midi (activité solaire faible) / noon (low solar activity) / mediodía (actividad solar baja)					nuit / night / noche		midi (activité solaire faible) / noon (low solar activity) / mediodía (actividad solar baja)							nuit / night / noche	
		latitude - latitud							latitude - latitud								
		0°	30°	40°	50°	60°			0°	10°	20°	30°	40°	50°	60°		
10	71							67									10
50	41						45	37								47	50
100	27	26	27	28	28	32	44	23	27	28	29	30	31	35	40	47	100
200	14	17	18	22	25	28	44	4	24	25	26	27	29	32	37	47	200
300		9	10	15	20	27	44		19	20	21	22	25	29	34	47	300
400		2	3	5	15	21	44		14	15	16	17	21	26	32	47	400
500		-3	-2	1	11	17	44		5	8	11	14	19	24	30	47	500
600		-6	-5	-3	3	14	44		0	1	6	11	16	21	28	46	600
700		-8	-7	-5	0	12	44		-2	-1	1	5	12	17	26	46	700
800		-10	-9	-8	-3	10	44		-5	-4	-3	-2	8	13	24	45	800
900		-11	-10	-9	-5	6	44		-8	-6	-5	-4	4	12	21	44	900
1000		-12	-11	-10	-6	2	43		-10	-8	-6	-5	-2	10	18	43	1000
1100		-14	-13	-12	-8	0	43					-8	-3	5	16	42	1100
1200		-15	-14	-13	-10	-1	42					-9	-5	1	14	42	1200
1300		-16	-15	-14	-11	-3	41						-7	-1	11	41	1300
1400		-18	-17	-16	-13	-4	40						-9	-3	8	40	1400
1500		-19	-19	-18	-14	-6	39							-4	7	39	1500
1600		-20	-20	-19	-15	-7	38							-5	5	38	1600
1700							38									38	1700
1800							37									37	1800
1900							36									36	1900
2000							35									35	2000
2200							34									34	2200
2400							33									33	2400
2600							32									32	2600
2800							31									31	2800
3000							30									30	3000
3200							28									28	3200
3400							27									27	3400
3600							25									26	3600
3800							23									25	3800
4000							21									23	4000
4500							16									18	4500
5000							11									13	5000

MOD NOC MOD NOC

Les intensités de champ de l'onde ionosphérique n'ont pas été indiquées dans les cas où elles sont inférieures à celles de l'onde de sol, sauf dans quelques cas où l'interpolation s'en trouve facilitée.

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No se han indicado las intensidades de campo de la onda ionosférica cuando son inferiores a las de la onda de superficie, salvo en algunos casos en que ello facilita la interpolación.

ANNEX 2 (cont'd)

UNION INTERNATIONALE DES TÉLÉCOMMUNICATIONS
CARR POUR LA PLANIFICATION DES FRÉQUENCES UTILISÉES PAR LES RADIOPHARES MARITIMES DANS LA ZONE EUROPÉENNE MARITIME
GENÈVE, MARS 1985

EUROP.

Corrigendum 1 au
Document 1018-F/E/S
1 mars 1985

Note du Doyen de la Conférence

Sous le point 1, lire :

Président : M. Touko HAHKIO (Finlande)

Note by the Dean of the Conference

Under paragraph 1 read :

Chairman : Mr. Touko HAHKIO (Finland)

Nota del Decano de la Conferencia

En el punto 1, léase:

Presidente: Sr. Touko HAHKIO (Finlandia)

Pour des raisons d'économie, ce document n'a été tiré qu'en un nombre restreint d'exemplaires. Les participants sont donc priés de bien vouloir apporter à la réunion leurs documents avec eux, car il n'y aura pas d'exemplaires supplémentaires disponibles.

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document 1018-E
26 February 1985
Original: French

PLENARY MEETING

Note by the Dean of the Conference

At the meeting of Heads of Delegations held on Monday, 25 February, it was agreed to submit to the First Plenary Meeting the following proposals concerning the organization of the Conference and the designation of the chairmen and vice-chairmen of the Conference and of its Committees.

1. Chairman and Vice-Chairmen of the Conference

Chairman : Mr. Toukio HAHKIO (Finland)

Vice-Chairmen : Mr. Mohamed S. BCHINI (Tunisia)
Mr. Dimitar STAMATOV (People's Republic of Bulgaria)

2. Conference Structure : as shown in Annex 1 to this document (DT/1001).

3. Steering Committee : as shown in Annex 2 to this document (and related Conference appointments).

G.J. BALESTIBEAU
Dean of the Conference

Annexes : 2

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.

ANNEX 1

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document DT/1001-E
25 February 1985

PLENARY MEETING

Draft

Note by the Secretary-General

**STRUCTURE OF THE
REGIONAL ADMINISTRATIVE RADIO CONFERENCE
FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS
IN THE EUROPEAN MARITIME AREA
Geneva, 1985**

The agenda of the Conference appears in Resolution No. 898 which was adopted by the Administrative Council at its 38th Session (Geneva, 1983). This Resolution is reproduced in the annex to Document No. 1001 of the Conference.

Bearing in mind Nos. 464 to 479 inclusive of the International Telecommunication Convention, Nairobi, 1982, the following committees with their terms of reference are suggested. These terms of reference have been drawn up within the framework of the Convention, the Conference Agenda and in the light of experience at previous conferences.

Committe 1 - Steering Committee

Terms of Reference :

To coordinate all matters connected with the smooth execution of work and to plan the order and number of meetings, avoiding overlapping wherever possible in view of the limited number of members of some delegations (Nos. 468 and 469 of the International Telecommunication Convention, Nairobi, 1982).

Committee 2 - Credentials Committee

Terms of Reference :

To verify the credentials of delegations and to report on its conclusions to the Plenary Meeting within the time specified by the latter (Nos. 390 and 471 of the International Telecommunication Convention, Nairobi, 1982).

Committee 3 - Budget Control Committee

Terms of Reference :

To determine the organization and the facilities available to the delegates, to examine and approve the accounts of expenditure incurred throughout the duration of the Conference and to report to the Plenary Meeting the estimated total expenditure of the Conference as well as the estimated costs entailed by the execution of the decisions of the Conference (Nos. 476 to 479 inclusive and No. 627 of the International Telecommunication Convention, Nairobi, 1982 and Nairobi Resolution No. 48).

Committee 4 - Technical and Planning Committee

Terms of Reference

To establish the technical parameters to be used for planning of frequencies in the band 283.5 - 315 kHz used by maritime radiobeacons in the European Maritime Area taking into account the Report of CCIR Study Group 8 (item 2.1 of the Agenda).

To prepare a frequency assignment plan for the maritime radionavigation service (radiobeacons) in the European Maritime Area in the band 283.5 - 315 kHz intended to replace the "Regional Arrangement concerning Maritime Radiobeacons in the European Area of Region 1", Paris, 1951 (item 2.1 of the Agenda).

To afford appropriate protection to frequency assignments to stations of other services to which this band is also allocated when establishing the Plan for the maritime radionavigation service (item 2.2 of the Agenda).

To elaborate the technical parameters to be taken into consideration for the establisment of procedures intended for the future modifications of the Plan and permitting a compatible development of the other services to which the band is allocated (item 2.3 of the Agenda).

Committee 5 - Procedures and Agreement Committee

Terms of Reference :

To prepare an agreement for the maritime radionavigation service (radiobeacons) in the European maritime area in the band 283.5 - 315 kHz intended to replace the "Regional Arrangement concerning Maritime Radiobeacons in the European Area of Region 1", Paris, 1951 (item 2.1 of the Agenda).

To establish procedures intended for the future modifications of the Plan and permitting a compatible development of the other services to which the band is allocated (item 2.3 of the Agenda).

Committee 6 - Editorial Committee

Terms of Reference

To perfect the form of the texts prepared in the various committees of the Conference, without altering the sense, for submission to the Plenary Meeting (Nos. 473 and 474 of the International Telecommunication Convention, Nairobi, 1982).

ANNEX 2

Steering Committee

Chairman of the Conference	:	Mr. T. HAHKIO (Finland)
Vice-Chairmen of the Conference	:	Mr. M. BCHINI (Tunisia) Mr. D. STAMATOV (Bulgaria)
Committee 1 Steering Committee	:	(composed of the Chairman and Vice-Chairmen of the Conference and of the Chairmen and Vice-Chairmen of the other Committees)
Committee 2 Credentials Committee	:	Chairman : Mr. J.F. PATRICIO (Portugal) Vice-Chairman : Mr. J. BARTOLO (Malta)
Committee 3 Budget Control Committee	:	Chairman : Mr. P. CAREY (Ireland) Vice-Chairman : Mr. F. HORVATH (Hungary)
Committee 4 Technical and Planning Committee	:	Chairman : Mr. L.W. BARCLAY (United Kingdom) Vice-Chairman : Mr. V. SCEPOTIN (USSR)
Committee 5 Agreement and Procedures Committee	:	Chairman : Mr. R. BISNER (France) Vice-Chairman: Mr. I. GOKSEL (Turkey)
Committee 6 Editorial Committee	:	Chairman : Mr. J.L. BLANC (France) Vice-Chairmen : Mr. M.P. DAVIES (United Kingdom) Mr. F. PITERA-CALVET (Spain)

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document 1019-E
1st March 1985
Original : English
French
Spanish

PLENARY MEETING

Note by the Secretary-General

PARTICIPATION REQUESTS SUBMITTED BY INTERNATIONAL ORGANIZATIONS

1. In agreement with the Administrative Council and in application of Nos. 349 and 372 of the Convention, those international organizations which seemed likely to be interested in the work of the Conference were notified that the Conference was to be held.

2. Formal applications for admission to the Conference have been received from :

- International Association of Lighthouse Authorities (IALA)
- International Maritime Radio Association (CIRM)
- International Electrotechnical Commission (IEC)
- International Amateur Radio Union (IARU)

3. Pursuant to No. 351 of the Convention, the Conference is requested to decide whether these organizations are to be allowed to participate in an advisory capacity.

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.

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document 1020-E
28 February 1985
Original : English

Note by the Secretary-General

INVITATIONS

1. Members of the Union

On 4 April 1984 invitations to send delegations to the Conference were sent to the Members belonging to the European Maritime Area. That same day the other Members were informed that the Conference was to be held.

The Annex to this document lists the replies received to date.

2. United Nations, specialized agencies

On 3 May 1984, invitations to send observers to the Conference were sent to the United Nations*) and to the following specialized agencies :

- International Civil Aviation Organization (ICAO)**)
- International Maritime Organization (IMO)**)

World Meteorological Organization (WMO)*)

3. Regional telecommunication organizations (Article 32 of the Convention)

On 3 May 1984, invitations to send observers to the Conference were sent to the following regional telecommunication organizations :

- African Postal and Telecommunications Union (UAPT)
- Arab Telecommunication Union (ATU)
- Panafrican Telecommunication Union (PATU)

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*) Has replied that it would not be able to send an observer.
**) Has accepted the invitation

R.E. BUTLER
Secretary-General

Annex : 1

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ANNEX

COUNTRIES WHICH HAVE ANNOUNCED THEIR PARTICIPATION IN THE CONFERENCE

(in French alphabetical order)

(position on 28 February 1985)

Albania (Socialist People's Republic of)

Algeria (People's Democratic Republic of)

Germany (Federal Republic of)

Austria

Belgium

Bulgaria (People's Republic of)

Cyprus (Republic of)

Denmark

Spain

Finland

France

Greece

Hungarian People's Republic

Ireland

Iceland

Israel (State of)

Italy

Libya (Socialist People's Libyan Arab Jamahiriya)

Malta (Republic of)

Morocco (Kingdom of)

Monaco

Norway

Netherlands (Kingdom of the)

Poland (People's Republic of)

Portugal

German Democratic Republic

Romania (Socialist Republic of)

United Kingdom of Great Britain and Northern Ireland

Sweden

Czechoslovak Socialist Republic

Tunisia

Turkey

Union of Soviet Socialist Republics

Yugoslavia (Socialist Federal Republic of)

Document 1021-E
1 March 1985

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Note by the Secretary-General

SECRETARIAT OF THE CONFERENCE

Secretary of the Conference	:	Mr. R.E. Butler, Secretary-General
Executive Secretary	:	Mr. R. Macheret
Technical Secretary	:	Mr. M. Harbi
Administrative Secretary	:	Mr. J. Escudero
Plenary Meeting and Committee 1 (Steering)	:	Mr. A.B. Maclennan
Committee 2 (Credentials)	:	Mr. R. Macheret
Committee 3 (Budget Control)	:	Mr. R. Prélaz
Committee 4 (Technical and Planning)	:	Mr. G. Kovacs
Committee 5 (Procedures and Agreement)	:	Mr. J. Balfroid
Committee 6 (Editorial)	:	Mr. P.A. Traub
Operational support for Computer Services	:	Mr. H. Allebroeck

These officials will be assisted as necessary by others seconded from ITU Headquarters.

R.E. BUTLER
Secretary-General

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INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document 1022-E
28 February 1985
Original: English/ French/ Spanish

STEERING COMMITTEE

GENERAL SCHEDULE OF THE WORK OF THE CONFERENCE

1st week (4-8 March)

Organization and commencement of the work

Wednesday 6 : It is absolutely necessary that the decisions relating to the technical criteria, planning method and other issues concerning the planning process be completed on that date.

Friday 8 : end of the work of the Procedures and Agreement Committee

2nd week (11 - 13 March)

Monday 11 : end of the work of the Technical and Planning Committee

Report of the Credentials Committee

Tuesday 12 : First and Second readings by PL of the last texts of the Final Acts

Report of the Budget Control Committee

Wednesday 13 : Signing ceremony and closing

Note : Due to the short duration of this Conference there will not be sufficient time to establish and utilise the traditional structure with Working Groups included. Hence the draft schedule makes no mention of Working Groups of Committees; it is anticipated that all work will be undertaken at Committee level or, if necessary, within ad hoc Working Groups.

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INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document 1023-E
1 March 1985
Original: French

COMMITTEE 4

France

FURTHER PROPOSAL FOR THE WORK OF THE CONFERENCE

This proposal is a variation of the proposal contained in Document 1012.

Attention has been drawn to the advantages of a hyperbolic radiobeacon system in CCIR Report 913 (MOD I), the work of the IALA and the contribution of the Swedish Administration (Document 1008).

This system affords a high degree of accuracy in the extensive coverage area allowed by medium-wave propagation conditions, provided that it uses narrow-band (1 Hz) operation and exclusive frequencies.

The latter may be allocated, using multiples of 200 Hz, in the intervals between frequencies of the radiobeacon plan, apart from a single "permanent" frequency required for station identification.

These frequencies are as follows:

285.4

285.5

285.6

285.8

300.6

306.8

311.2

313.2

314.4

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INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document 1024-E
4 March 1985
Original: English

COMMITTEE 4

Note by the Secretary-General

INFORMATION ON RELEVANT RECOMMENDATIONS AND REQUIREMENTS
ADOPTED BY IMO ON THE USE OF FREQUENCIES BY THE
MARITIME RADIOBEACON SERVICE
IN THE BAND 283.5 - 315 kHz

At the request of the International Maritime Organization (IMO), I transmit, hereby, a document for the information of the Conference.

R.E. BUTLER
Secretary-General

Annex: 1

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ANNEX

INTERNATIONAL MARITIME ORGANIZATION (IMO)

INFORMATION ON RELEVANT RECOMMENDATIONS AND REQUIREMENTS ADOPTED BY IMO ON THE USE OF FREQUENCIES BY THE MARITIME RADIOBEACON SERVICE IN THE BAND 283.5 - 315 kHz

1 The following IMO recommendation concerning Recommendation 602 was brought to the attention of the World Administrative Radio Conference for the Mobile Services, 1983 (Mob-83):

"Recommendation 602 Related to Maritime Radiobeacons

.1 To enable greater use to be made of the maritime radiobeacon service the technical characteristics of the beacons should, in addition to current equipment, be suitable for use with automated receiving equipment which could, where radiobeacons are arranged in groups, display the position of the receiving station.

.2 The rate of up-date of lines of bearing, or position, should be compatible with the up-dating rate deemed necessary for position fixing in the particular area being navigated. A frequent rapid transmission cycle of the radiobeacons for use by automated receivers might be considered in some areas where radiobeacons are arranged in groups.

.3 The transmission from maritime radiobeacons should be suitable for use by all properly equipped ships and small craft and should be compatible with direction finders conforming with resolution A.223(VII) (see Annex 1).

.4 Maritime radiobeacons should be compatible with the use of the techniques and modulation methods recommended in resolution A.425(XI) (see Annex 1 to EMA-R1/1005) for the transmission of differential Omega corrections."

2 At its twenty-ninth session (18-22 June 1984) the IMO Sub-Committee on Safety of Navigation gave further consideration to Recommendation No. 602 of the ITU WARC (Mob-83) and noted that a Regional Administrative Radio Conference was being convened in March 1985 to prepare a plan of maritime radiobeacons in the European maritime area. The Sub-Committee recognized that the future significance of MF maritime radiobeacons for commercial shipping was linked with the continuing requirement for the carriage of direction finders and recommended that if the Regional Administrative Radio Conference revises the radiobeacon arrangements, changes should be made in such a manner that existing equipment, both shore based and shipborne, could continue to be used.

3 For the information of the Conference an extract of the 1974 SOLAS Convention as amended in 1981 is attached hereto at Annex 2. These requirements as well as the performance standards given in Annex 1 must be complied with by ships to which the 1974 SOLAS Convention applies.

***

ANNEX 1

IMO ASSEMBLY RESOLUTIONS RELATED TO DIRECTION-FINDERS

RESOLUTION A.223(VII)

Adopted on 12 October 1971

PERFORMANCE STANDARDS FOR RADIO DIRECTION-FINDING SYSTEMS

The Assembly,

NOTING Article 16(i) of the Convention on the Inter-Governmental Maritime Consultative Organization concerning the functions of the Assembly,

BEARING IN MIND the provisions of Regulation 11* of Chapter IV of the International Convention for the Safety of Life at Sea, 1960, as amended,

TAKING INTO ACCOUNT Recommendation 44 of the International Conference on Safety of Life at Sea, 1960, relating to electronic aids to navigation,

HAVING CONSIDERED the Report of the Maritime Safety Committee on its twenty-fourth session,

ENDORSES the Committee's Recommendation on performance standards for radio direction-finding systems,

RECOMMENDS Administrations to ensure that shipborne radio direction-finding systems conform to performance standards not inferior to those shown at Annex to this Resolution.

---

* Regulation 12 of Chapter IV of the 1974 SOLAS Convention

ANNEX

RECOMMENDATION ON PERFORMANCE STANDARDS FOR RADIO DIRECTION-FINDING SYSTEMS

1 INTRODUCTION

1.1 The direction-finding equipment required by Regulation 12 of Chapter V is to indicate both bearing and sense of radio transmissions in the frequency bands specified in paragraph 2 of this Recommendation.

1.2 In addition to the provisions of Regulation 11* of Chapter IV, as amended, the equipment should comply with the following minimum performance requirements.

2 FREQUENCY RANGES AND CLASSES OF EMISSION

The equipment should be capable of receiving signals of classes of emission A1, A2 and A2H in the frequency range 255 to 525 kHz and A1, A2, A2H, A3 and A3H in the frequency range 2167 to 2197 kHz.

3 SELECTIVITY

The selectivity should be such as to allow a bearing to be taken readily without interference from other radio transmissions on frequencies more than 2 kHz from the desired signal.

4 SIGNAL IDENTIFICATION

4.1 Means of audio-monitoring should be provided regardless of the method used for direction-finding.

4.2 The equipment should be suitable for use with headphones. A loudspeaker, if provided, should be capable of being rendered inoperative by simple means.

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* Regulation IV/12 of the 1974 SOLAS Convention

5 BEARING INDICATION

Means should be provided to indicate the bearing of the desired transmission. Such indication should be capable of being easily, rapidly and precisely resolved within 0.25 degrees.

6 BEARING ACCURACY

6.1 The instrumental accuracy in taking relative bearings should be within $\pm 1^{\circ}$. This requirement should be met at all frequencies in the frequency bands specified in paragraph 2 of this Recommendation and throughout the whole 360 degrees of azimuth at field strength values between 50 uV/m and 50mV/m.

NOTE

The instrumental accuracy referred to above does not include the operational accuracy attainable in service, which should be determines for each installation taking into account paragraphs (a) (iv), (a) (v) and (a) (vii) of Regulation 11* of Chapter IV, as amended. In particular the operational accuracies in the 2 MHz band should be sufficient for homing purposes.

6.2 Pre-set facilities to correct the quadrantal error should normally be provided for the frequency band 255-525 kHz.

7 MANUAL CONTROLS AND THEIR OPERATION

7.1 A tuning scale or indicator should be provided, calibrated to indicate directly the carrier frequency of the signal to which the equipment is intended to be tuned.

---

* Regulation IV/12 of the 1974 SOLAS Convention

7.2 (a) If a tuning scale is provided, at all points in its range, 1 mm should correspond to not more than 2.5 kHz in the frequency range 255-525 kHz.

(b) The maritime distress frequencies should be prominently marked.

(c) Where other means of frequency indication are provided, the resolution should be at least 1 kHz.

7.3 All controls should be of such size and location as to permit normal adjustments to be easily performed, and should be easy to identify and use.

7.4 The sense switch, if fitted, should be of a non-locking type.

8 OPERATIONAL AVAILABILITY

The equipment should be ready for operation within 60 seconds of switching on.

9 POWER SUPPLY

9.1 If provision is made for operating the equipment from more than one source of electrical energy arrangements for rapid changeover should be provided.

9.2 Means should be incorporated for the protection of the equipment from excessive voltages, transients and accidental reversal of power supply polarity.

9.3 The equipment should be capable of operating in accordance with the requirements of this Recommendation in the presence of such variations of the power supply as are normally expected in a vessel.

10 DURABILITY AND RESISTANCE TO EFFECTS OF CLIMATE

The equipment should be capable of continuous operation under the conditions of vibration, humidity and change of temperature likely to be experienced in the vessel in which it is installed.

11 SPECIAL REQUIREMENTS FOR DIFFERENT METHODS OF DIRECTION-FINDING

11.1 Aural minimum method

(a) With a field strength sufficient to ensure a signal/noise ratio of at least 50 dB, a change in the setting of the bearing indicator of 5° in either direction from the position of minimum output should cause the audio-frequency output to increase by not less than 18 dB. Similarly, a change of 90° in either direction should cause an increase of not less than 35 dB.

(b) The equipment should be provided with a minimum-clearing control giving a noticeable minimum of the output at all settings.

(c) The sense should be determined with reference to the lower output.

(d) The sense ratio in the frequency range 255-525 kHz and 2167-2197 kHz should be 15 dB and 10 dB, respectively.

(e) The automatic gain control, if provided, should be rendered inoperative automatically when the equipment is used for bearing determination.

11.2 Other Methods

(a) There should be means of indicating that the receiver gain and signal strength are sufficient to enable a correct bearing to be taken.

(b) With a field strength of 1 mV/m the indicated bearing should not change by more than 1° when the receiver is detuned to a point where the indication referred to in sub-paragraph (a) above shows that the signal strength is just sufficient to take a bearing.

(c) For any signal of strength sufficient to give a bearing indication, there should be no observable change of indicated bearing when the beat frequency oscillator is switched on.

(d) Fluctuations of the indicated bearing caused by any servo mechanism should not exceed $\pm$ 0.5° from the mean value.

(e) If, after identifying a station the bearing of which is required, it is necessary to check or alter the adjustment of any control as part of the process of direction-finding, this check and adjustment should be capable of being made within 10 seconds.

12 MISCELLANEOUS

12.1 The equipment should be protected from excessive voltages induced in the aerials.

12.2 The equipment should be clearly marked with the minimum safe distance at which it may be installed from a standard or a steering magnetic compass.

12.3 The equipment should be provided with an indication of manufacturer, type and/or number.

12.4 (a) The equipment should be so constructed that it is readily accessible for maintenance purposes.

(b) Information should be provided to enable competent members of a ship's staff to operate and maintain the equipment efficiently.

ANNEX 2

EXTRACTS OF THE INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE AT SEA, 1974 AS AMENDED IN 1981 CONCERNING RADIO DIRECTION-FINDERS

CARRIAGE REQUIREMENTS

CHAPTER V

SAFETY OF NAVIGATION

Regulation 12

Shipborne navigational equipment

(p) When engaged on international voyages ships of 1,600 tons gross tonnage and upwards shall be fitted with a radio direction-finding apparatus complying with the provisions of Regulation IV/12(a). The Administration may, in areas where it considers it unreasonable or unnecessary for such apparatus to be carried, exempt any ship of less than 5,000 tons gross tonnage from this requirement, due regard being had to the fact that radio direction-finding apparatus is of value both as a navigational instrument and as an aid to locating ships, aircraft or survival craft.

(q) When engaged on international voyages ships of 1,600 tons gross tonnage and upwards constructed on or after 25 May 1980 shall be fitted with radio equipment for homing on the radiotelephone distress frequency, complying with the relevant provisions of Regulation IV/12(b).

(r) All equipment fitted in compliance with this Regulation shall be of a type approved by the Administration. Equipment installed on board ships on or after 1 September 1984 shall conform to appropriate performance standards not inferior to those adopted by the Organization. Equipment fitted prior to the adoption of related performance standards may be exempted from full compliance with those standards at the discretion of the Administration, having due regard to the recommended criteria which the Organization might adopt in connexion with the standards concerned.

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* See Annex 1

CHAPTER IV

RADIOTELEGRAPHY AND RADIOTELEPHONY

Regulation 12

Direction-Finders

(a) (i) The direction-finding apparatus required by Regulation 12 of Chapter V shall be efficient and capable of receiving signals with the minimum of receiver noise and of taking bearings from which the true bearing and direction may be determined.

(ii) It shall be capable of receiving signals on the radiotelegraph frequencies assigned by the Radio Regulations for the purposes of distress and direction-finding and for maritime radio beacons.

(iii) In the absence of interference the direction-finding apparatus shall have a sensitivity sufficient to permit accurate bearings being taken on a signal having a field strength as low as 50 microvolts per metre.

(iv) As far as is practicable, the direction-finding apparatus shall be so located that as little inteference as possible from mechanical or other noise will be caused to the efficient determination of bearings.

(v) As far as is practicable, the direction-finding antenna system shall be erected in such a manner that the efficient determination of bearings will be hindered as little as possible by the close proximity of other antennae, derricks, wire halyards or other large metal objects.

(vi) An efficient two-way means of calling and voice communication shall be provided between the direction-finder and the bridge.

(vii) All direction-finders shall be calibrated to the satisfaction of the Administration on first installation. The calibration shall be verified by check bearings or by a further calibration whenever any changes are made in the position of any antennae or of any structures on deck which might affect appreciably the accuracy of the direction-finder. The calibration particulars shall be checked at yearly intervals, or as near thereto as possible. A record shall be kept of the calibrations and of any checks made of their accuracy.

(b) (i) Radio equipment for homing on the radiotelephone distress frequency shall be capable of taking direction-finding bearings on that frequency without ambiguity of sense within an arc of 30 degrees on either side of the bow.

(ii) When installing and testing the equipment referred to in this paragraph due regard should be given to the relevant recommendation of the International Radio Consultative Committee (CCIR).

(iii) All reasonable steps shall be taken to ensure the homing capability required by this paragraph. In cases where due to technical difficulties the homing capability cannot be achieved, Administrations may grant to individual ships exemptions from the requirements of this paragraph.

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP. Document 1025-E
4 March 1985
Original: French

REGION 1
INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE MARITIME MOBILE SERVICE AND THE AERONAUTICAL RADIONAVIGATION SERVICE IN CERTAIN PARTS OF THE MF BAND IN REGION 1
GENEVA, FEBRUARY/MARCH 1985

Document 71-E
4 March 1985
Original: French

BUDGET CONTROL COMMITTEE

Note by the Secretary-General

POSITION OF THE CONFERENCE ACCOUNTS
at 28 February 1985

I hereby submit an estimate of the Conference expenses at 28 February 1985 for the consideration of the Budget Control Committees.

The statement shows a surplus of 142,500 Swiss francs over the budget approved by the Administrative Council and adjusted to take account of changes in the common system of salaries and allowances.

R.E. BUTLER
Secretary-General

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ANNEX

Item No.	Heading	Approved budget	Adjusted budget	Credit transfers: item to item	Credit transfers: subhead to subhead	Available credits	Expenditure as at 28 February 1985: actual	committed	estimated	total
1	2	3	4	5	6	7	8	9	10	11
	I. Staff expenses									
20.401	Secretariat salaries, etc.	968,000	1,046,500			1,046,500	18,161	774,607	172,232	965,000
20.402	Common services salaries, etc.	508,000	554,500			554,500	33,606	472,755	48,139	554,500
20.403	Travel (recruitment)	80,000	80,000			80,000	6,788	41,865	11,347	60,000
20.404	Insurance	77,000	77,000			77,000	1,694	-	58,306	60,000
		1,633,000	1,758,000			1,758,000	60,249	1,289,227	290,024	1,639,500
	II. Travel expenses	-	-							
	III. Premises and equipment									
20.431	Premises, furniture, machines	32,000	32,000	+8,000		40,000	-	39,600	400	40,000
20.432	Document production	142,000	142,000	-8,000		134,000	8,677	1,647	109,676	120,000
20.433	Office supplies and overheads	20,000	20,000			20,000	4,053	-	15,947	20,000
20.434	Postage, telephone calls, telegrams	30,000	30,000			30,000	668	-	29,332	30,000
20.435	Technical installations	5,000	5,000			5,000	-	-	-	-
20.436	Sundry and unforeseen	10,000	10,000			10,000	-	-	10,000	10,000
		239,000	239,000			239,000	13,398	41,247	165,355	220,000
	IV. Other expenses									
20.441	Interest credited to the ordinary budget	35,000	35,000			35,000	-	-	30,000	30,000
	V. Final Acts									
20.451	Final Acts of the two Conferences	86,000	86,000			86,000	-	-	86,000	86,000
	Total	1,993,000	2,118,000	-	-	2,118,000	73,647	1,330,474	571,379	1,975,500

1) Budget including additional credits to take account of changes in the common system of staff salaries of the United Nations.

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document No. 1026-E
4 March 1985
Original: English

Note by the Secretary-General

STRUCTURE OF THE CONFERENCE

(approved during the 1st Plenary Meeting)

The agenda of the Conference appears in Resolution No. 898 which was adopted by the Administrative Council at its 38th Session (Geneva, 1983). This Resolution is reproduced in the annex to Document No. 1001 of the Conference.

Bearing in mind Nos. 464 to 479 inclusive of the International Telecommunication Convention, Nairobi, 1982, the following committees with their terms of reference are suggested. These terms of reference have been drawn up within the framework of the Convention, the Conference Agenda and in the light of experience at previous conferences.

Committe 1 - Steering Committee

Terms of Reference :

To coordinate all matters connected with the smooth execution of work and to plan the order and number of meetings, avoiding overlapping wherever possible in view of the limited number of members of some delegations (Nos. 468 and 469 of the International Telecommunication Convention, Nairobi, 1982).

Committee 2 - Credentials Committee

Terms of Reference :

To verify the credentials of delegations and to report on its conclusions to the Plenary Meeting within the time specified by the latter (Nos. 390 and 471 of the International Telecommunication Convention, Nairobi, 1982).

Committee 3 - Budget Control Committee

Terms of Reference :

To determine the organization and the facilities available to the delegates, to examine and approve the accounts of expenditure incurred throughout the duration of the Conference and to report to the Plenary Meeting the estimated total expenditure of the Conference as well as the estimated costs entailed by the execution of the decisions of the Conference (Nos. 476 to 479 inclusive and No. 627 of the International Telecommunication Convention, Nairobi, 1982 and Nairobi Resolution No. 48).

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Committee 4 - Technical and Planning Committee

Terms of Reference

To establish the technical parameters to be used for planning of frequencies in the band 283.5 - 315 kHz used by maritime radiobeacons in the European Maritime Area taking into account the Report of CCIR Study Group 8 (item 2.1 of the Agenda).

To prepare a frequency assignment plan for the maritime radionavigation service (radiobeacons) in the European Maritime Area in the band 283.5 - 315 kHz intended to replace the "Regional Arrangement concerning Maritime Radiobeacons in the European Area of Region 1", Paris, 1951 (item 2.1 of the Agenda).

To afford appropriate protection to frequency assignments to stations of other services to which this band is also allocated when establishing the Plan for the maritime radionavigation service (item 2.2 of the Agenda).

To elaborate the technical parameters to be taken into consideration for the establisment of procedures intended for the future modifications of the Plan and permitting a compatible development of the other services to which the band is allocated (item 2.3 of the Agenda).

Committee 5 - Procedures and Agreement Committee

Terms of Reference :

To prepare an agreement for the maritime radionavigation service (radiobeacons) in the European maritime area in the band 283.5 - 315 kHz intended to replace the "Regional Arrangement concerning Maritime Radiobeacons in the European Area of Region 1", Paris, 1951 (item 2.1 of the Agenda).

To establish procedures intended for the future modifications of the Plan and permitting a compatible development of the other services to which the band is allocated (item 2.3 of the Agenda).

Committee 6 - Editorial Committee

Terms of Reference

To perfect the form of the texts prepared in the various committees of the Conference, without altering the sense, for submission to the Plenary Meeting (Nos. 473 and 474 of the International Telecommunication Convention, Nairobi, 1982).

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document 1027-E
4 March 1985
Original : French

CONFERENCE CHAIRMANSHIP

(as established by the First Plenary Meeting)

Chairman of the Conference	:	Mr. T. HAHKIO (Finland)
Vice-Chairmen of the Conference	:	Mr. M. BCHINI (Tunisia) Mr. D. STAMATOV (Bulgaria)
Committee 1 Steering Committee	:	(composed of the Chairman and Vice-Chairmen of the Conference and of the Chairmen and Vice-Chairmen of the other Committees)
Committee 2 Credentials Committee	:	Chairman : Mr. J.F. PATRICIO (Portugal) Vice-Chairman : Mr. J. BARTOLO (Malta)
Committee 3 Budget Control Committee	:	Chairman : Mr. P. CAREY (Ireland) Vice-Chairman : Mr. F. HORVATH (Hungary)
Committee 4 Technical and Planning Committee	:	Chairman : Mr. L.W. BARCLAY (United Kingdom) Vice-Chairman : Mr. V. SCEPOTIN (USSR)
Committee 5 Agreement and Procedures Committee	:	Chairman : Mr. R. BISNER (France) Vice-Chairman: Mr. I. GOKSEL (Turkey)
Committee 6 Editorial Committee	:	Chairman : Mr. J.L. BLANC (France) Vice-Chairmen : Mr. M.P. DAVIES (United Kingdom) Mr. F. PITERA-CALVET (Spain)

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UNION INTERNATIONALE DES TÉLÉCOMMUNICATIONS
CARR POUR LA PLANIFICATION DES FRÉQUENCES UTILISÉES PAR LES RADIOPHARES MARITIMES DANS LA ZONE EUROPÉENNE MARITIME
GENÈVE, MARS 1985

EUROP.

Document 1028-F/E/S
4 mars 1985
Original: français
anglais
espagnol

Note du Secrétaire général / Note by the Secretary-General / Nota del Secretario General

ATTRIBUTION DES DOCUMENTS / ALLOCATION OF DOCUMENTS / ATRIBUCIÓN DE LOS DOCUMENTOS

(approuvé au cours de la 1ère séance plénière/
approved during the 1st plenary meeting/
aprobado durante la primera sesión plenaria)

Plenière Plenary Plenaria	: 1001, 1018, 1019
C2 - Pouvoirs Credentials Credenciales	: 1002
C3 - Budget Presupuesto	: 1009, 1010, 1011, 1014
C4 - Technique et de planification Technical and Planning Técnica y de planificación	: 1003, 1004(Rev.1), 1005, 1006 + Add.1, 1007, 1008, 1012, 1013, 1015, 1016, 1017, 1023
C5 - Procédures et accord Procedures and Agreement Procedimientos y acuerdo	: 1004(Rev.1), 1005

R.E. BUTLER
Secrétaire général

Pour des raisons d'économie, ce document n'a été tiré qu'en un nombre restreint d'exemplaires. Les participants sont donc priés de bien vouloir apporter à la réunion leurs documents avec eux, car il n'y aura pas d'exemplaires supplémentaires disponibles.

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document 1029-E
5 March 1985
Original: English

PLENARY MEETING

MINUTES

OF THE

FIRST PLENARY MEETING

Monday, 4 March 1985, at 0900 hrs

Chairman: Mr. G.J. BALESTIBEAU (France)

later: Mr. T. HAHKIO (Finland)

Subjects discussed:		Document
1.	Opening of the Conference by the Dean	-
2.	Election of the Chairman of the Conference	1018
3.	Election of the Vice-Chairmen of the Conference	
4.	Conference structure	
5.	Election of the Chairmen and Vice-Chairmen of the Committees	
6.	Composition of the Conference Secretariat	1021
7.	Allocation of documents to Committees	DT/1002
8.	Participation requests submitted by international organizations	1019
9.	Date by which the Credentials Committee must submit its conclusions	1022
10.	Deadline for the modification of requirements	-
11.	Consideration of requirements for maritime radiobeacons outside the European maritime area (EMA)	-

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1. Opening of the Conference by the Dean

1.1 The Chairman said that he hoped that the present Conference would demonstrate a far-reaching vision, making allowances for the use of new technologies, similar to that which had undoubtedly permitted the arrangements adopted at the Paris Conference in 1951 to remain in force for such a long time.

Both he and his country were honoured by the invitation to open the Conference which, he hoped, would produce an agreement as long-lived as the preceding one.

2. Election of the Chairman of the Conference

2.1 The Deputy Secretary-General said that the meeting of Heads of Delegation had agreed unanimously to put forward the name of Mr. Touko Hahkio (Finland) as Chairman of the Conference.

Mr. Hahkio was elected Chairman of the Conference by acclamation.

2.2 The Chairman congratulated Mr. Hahkio on his election and invited him to take the chair.

2.3 The Chairman of the Conference said that he was greatly honoured at his election and would do his utmost to serve the Conference efficiently. The bases for its agenda had been laid down by the Plenipotentiary Conference in 1982 and World Administrative Radio Conferences in 1979 and 1983 and he wished participants every success in their work.

3. Election of the Vice-Chairmen of the Conference

3.1 The Deputy Secretary-General said that, following discussions, Heads of Delegation were unanimous in recommending that there should be two Vice-Chairmen of the Conference, namely Mr. M.S. Bchini (Tunisia) and Mr. D. Stamatov (Bulgaria).

Mr. Bchini and Mr. Stamatov were elected as Vice-Chairmen of the Conference.

4. Conference structure

4.1 The Deputy Secretary-General drew attention to the structure of the Conference as set out in Document 1018, Annex 1.

Document 1018, Annex 1 was approved.

5. Election of the Chairmen and Vice-Chairmen of the Committees

5.1 The Deputy Secretary-General said that, following discussions, Heads of Delegation had been unanimous in making the Recommendations set out in Annex 2 to Document 1018.

The Recommendations were approved.

6. Composition of the Conference Secretariat

6.1 The Deputy Secretary-General said that the composition of the Conference Secretariat was set out in Document 1021.

Document 1021 was noted.

7. Allocation of documents to Committees

The draft allocation of documents to Committees (Document DT/1002) was approved.

7.1 The Chairman of the Conference said that further documents, as available, would be allocated to the appropriate Committees.

8. Participation requests submitted by international organizations

8.1 The Deputy Secretary-General said that formal applications for admission to the Conference had been received from the organizations listed in Document 1019. The Conference was requested to agree to their participation in an advisory capacity.

It was so decided.

9. Date by which the Credentials Committee must submit its conclusions

9.1 The Deputy Secretary-General proposed that the date by which the Credentials Committee must submit its conclusions should coincide with that fixed by Region 1, namely Monday, 11 March 1985.

It was so decided.

10. Deadline for the modification of requirements

10.1 The delegate of Sweden urged that, in view of the very brief time available, an early deadline should be set for any modification of requirements by administrations and that the range be kept as small as possible to permit all beacons to be accommodated in the Plan. He suggested Tuesday, 5 March, at 1800 hours as the limit for submissions.

It was so agreed.

10.2 The Deputy Secretary-General reminded the meeting that absent Members would have to be notified by telegram so that they could submit their modification. Appropriate action was needed.

It was so agreed.

10.3 The representative of the IFRB drew the attention of delegations to the blue form provided for submitting modifications to their requirements.

10.4 The delegate of Algeria asked whether modifications could be submitted after the deadline, during the present Conference, on condition that the details had been duly coordinated by the administrations concerned and were not detrimental to other administrations' requirements or prejudicial to the Plan being prepared. Some flexibility would thus be ensured.

10.5 The delegate of Sweden, supported by the delegate of Finland, pointed out that such modifications should be dealt with in the Planning Groups if initial planning made it clear that such adjustments were in the interests of the administrations concerned.

It was so decided.

11. Consideration of requirements for maritime radiobeacons outside the European maritime area (EMA)

11.1 The representative of the IFRB drew attention to Document 1006, Annex 2, pages 1 and 25 where the lists of the requirements for the Azores and for Morocco were included. In both cases, the stations concerned were outside the European maritime area and the Conference should decide whether it should include them in planning.

11.2 The delegate of Spain urged that the Conference should restrict itself to the EMA. It was for that reason that his country had not included requirements for radiobeacons in the Canary Islands.

11.3 The delegate of Portugal said that he believed the Azores radiobeacon referred to came within the EMA.

11.4 The delegate of the Netherlands, supported by the delegate of France, drew attention to the agenda of the Conference, set out in Document 1001, which limited its work to the EMA. Furthermore, that area was clearly defined in the Radio Regulations. The mandate of the Conference was therefore perfectly clear.

He proposed that requirements submitted for areas outside the EMA should be taken into account when carrying out the computer planning exercise so that they could be included in the Master Frequency List with a note that they had been coordinated with the Plan established by the Conference.

That view was supported by the delegate of France.

11.5 The Chairman of the Conference suggested following that procedure. He confirmed that the requirements in question would not be included in the Plan for the EMA.

It was so decided.

The meeting rose at 1000 hours.

For the Secretary: The Chairman:

J. JIPGUEP T. HAHKIO

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document 1030-E
4 March 1985
Original: English

REGION 1

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE MARITIME MOBILE SERVICE AND THE AERONAUTICAL RADIONAVIGATION SERVICE IN CERTAIN PARTS OF THE MF BAND IN REGION 1
GENEVA, FEBRUARY/MARCH 1985

Document 74-E
4 March 1985
Original: English

COMMITTEE 3

Note by the Secretary-General

STATEMENT OF EXPENSES INCURRED FOR THE PREPARATORY WORK BY THE IFRB FOR RARC-MM-R1 AND RARC-EMA

At the request of the International Frequency Registration Board, I transmit the attached IFRB report for consideration by Committee 3.

R.E. BUTLER
Secretary-General

Annex: 1

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.

ANNEX

Statement on expenses incurred for the preparatory work by the IFRB for RARC-MM-R1 and RARC-EMA

Documents No. MM-R1/14, MM-R1/14 (Add.1), EMA-R1/1006 and EMA-R1/1006 (Add.1) indicate the requirements submitted by administrations in response to IFRB Circular-letters Nos. 544 and 545, both of 8 September 1983. Document No. MM-R1/31/EMA/1017 explains the software developed by the IFRB for use by the two Conferences.

2. As was stated verbally by the representative of the IFRB in the first meeting of Committee 3, the first task, namely collection of requirements and their publication, was itself voluminous and needed the use of computerized methods of data capture. The second task, relating to the development of software programmes for planning and incompatibility analyses, was not foreseen to be carried out by the Board in the Agendas of the two Conferences. However, they were developed by the IFRB since it became apparent to the Board that the Conferences would find themselves in a difficult situation if the software programmes were not developed in advance.

3. Both of these tasks involved investment of important efforts (human and material) in the IFRB preparatory work which the Board had to find from the sources available to it from Sections 2 and 3 of the ITU budget relating to the regular staff at the ITU headquarters.

4. Taking account of the fact that Committee 5 of RARC-MM-R1 has accepted the use of the software package developed by the IFRB for its work, Committee 3 of the RARC-MM-R1 is requested to give due consideration to the inclusion of a token sum of Sw.Frs.30,000.- in the budget of the Conference, which could be considered as representing rental of some terminals for data capture and purchase of one microcomputer with hard disk and printer.

5. If RARC-EMA finds that the software package developed by the IFRB is useful to that Conference, then the expenses mentioned above could be shared in the proportion suggested in the Document No. MM-R1/19/EMA/1010.

6. The Board wishes to emphasize the fact that this Note represents expenses already incurred and does not constitute a reply to Document No. MM-R1/58 as to the budgetary impact of the activities relating to the implementation of the decisions of the Conferences.

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document 1031-E
6 March 1985
Original: English

COMMITTEE 5

SUMMARY RECORD

OF THE

FIRST MEETING OF COMMITTEE 5

(PROCEDURES AND AGREEMENT)

Monday, 4 March 1985, at 1030 hrs

Chairman: Mr. R.J.-M. BISNER (France)

Subjects discussed:		Documents
1.	Consideration of the Committee's terms of reference	1018
2.	Organization of the Committee's work	-
3.	Consideration of proposals for the draft agreement	1004(Rev.1) 1005

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.

1. Consideration of the Committee's terms of reference (Document 1018)

1.1 The Chairman invited the Committee to consider its terms of reference as set out on page 3 of Document 1018.

The terms of reference of the Committee were approved.

2. Organization of the Committee's work

2.1 The Chairman said that it was not proposed to establish Working Groups unless they proved to be necessary. Documents 1004(Rev.1) and 1005 containing proposals from the United Kingdom and France respectively had been allocated as a basis for the Committee's deliberations (Document DT/1002). The Committee might also benefit from the work of its counterpart in the RARC for the maritime mobile service and the aeronautical radionavigation service in certain parts of the MF band in Region 1. A Drafting Group would be established to draw up a draft regional agreement for the Committee along the lines of that contained in the Region 1 Conference Document DT/13.

3. Consideration or proposals for the draft agreement (Documents 1004(Rev.1) and 1005)

3.1 The Chairman invited the delegates of the United Kingdom and France to introduce their Administrations' respective proposals.

3.2 The delegate of the United Kingdom said that Document 1004(Rev.1) took the form of a draft agreement which the Conference could adopt as it stood, if it so wished. Only the draft Articles themselves (proposals Nos. 0-33) were relevant to the Committee. Possible amendments to those proposals were indicated by work already done for the Agreement and Procedures Committee of the Region 1 Conference and set out in its Document DT/13. In addition, the Committee might wish to amend the proposed procedure for modifications to the plan (Article 4, proposals Nos. 6-22) to include provision for the protection of permitted services. The other draft Articles were essentially standard texts drawn from existing agreements.

3.3 The delegate of France said that his Administration's proposals in Document 1005 had been broadly agreed with other Region 1 countries concerned and were very similar to those of the United Kingdom, but the introduction to the document particularly emphasized the need to modernize the use of the band in question and to develop new systems compatible with radiobeacons, notably the hyperbolic radionavigation and differential correction transmission systems. The French proposals also differed in mentioning the provisions of the Paris Plan concerning low power transmitters with a range of less than 10 nautical miles.

3.4 The Chairman proposed that the Committee should take Document 1004(Rev.1) as the basis of its work and consider the United Kingdom proposals in the light of the other two documents mentioned (Document 1005 and Region 1 Conference Document DT/13).

It was so decided.

3.5 The Chairman suggested that the title proposed by the United Kingdom should be amended to read:

"Proposal for a Regional Agreement concerning Maritime Radiobeacons in the European Maritime Area, Geneva, 1985"

It was so agreed.

3.6 The Chairman said that consideration of the Contents page must obviously be deferred. So far as the Definitions contained in Article 1 were concerned (proposal G/1004/1), those defining the terms Convention and Radio Regulations should incorporate the additions which appeared in Region 1 Conference Document DT/13. Similarly, the definition of an Assignment in conformity with the Agreement which appeared in that document should be added to the Committee's draft list.

3.7 The Chairman said that consideration of Article 2, dealing with the Frequency Band (proposal G/1004/2), should perhaps await the result of the Technical and Planning Committee's deliberations on the subject, which he had asked to have as soon as possible.

3.8 The delegate of the USSR proposed that draft Article 2 be amended to specify that the provisions of the Agreement only applied to the frequency band between 283.5 kHz and 315 kHz allocated to the maritime radionavigation service in the European Maritime Area. Otherwise, he agreed that the Committee should not consider Article 2 in detail pending the result of Committee 4's work.

It was so agreed.

3.9 The delegate of Finland said that the Technical and Planning Committee might wish to suggest additions to Article 3, dealing with Execution of the Agreement (porposal G/1004/3), depending on the result of its consideration of the treatment of permitted services. A provision along the lines of paragraph 6 of Region 1 Conference Document DT/13 might need to be added, but it was perhaps too early to decide.

3.10 The representative of the IFRB said that, as a matter of principle, it was for the Committee to decide such questions concerning procedure after the agreement's entry into force.

3.11 The delegate of the Netherlands, supported by the delegate of the United Kingdom, proposed that a suitably amended version of paragraph 6 in Region 1 Conference Document DT/13 should be incorporated into Article 3 of the document to be prepared by the Committee's Drafting Group.

It was so agreed.

3.12 The delegate of the USSR reminded the Committee that the text appearing in proposal G/1004/6 (Article 4) had been amended by a Working Group of Committee 6 of the MM-R1 Conference on the lines of paragraph 1 of proposal F/1005/11.

It was agreed that the Committee's Drafting Group should take account of the amendments made to that paragraph by the Working Group.

3.13 The Chairman noted that the text of proposal G/1004/7 had earlier been transferred by the Committee to Article 1 (Definitions) and should therefore be deleted from Article 4.

He further noted that a Working Group of Committee 6 of the MM-R1 Conference had decided to delete the text of proposal G/1004/7 since it was already covered by the terms of proposal G/1004/6 as amended.

Those deletions were approved.

3.14 The representative of the IFRB noted that proposal G/1004/9 had been amended by a Working Group of Committee 6 of the MM-R1 Conference.

3.15 The delegate of the USSR suggested that consideration of that proposal should be deferred until the amended text was available in writing.

3.16 The delegate of Finland supported that suggestion but proposed further that, to save time, the amended text should be inserted directly in the draft agreement, but placed in square brackets for discussion by the next meeting of Committee 5.

It was so agreed.

3.17 The delegate of the USSR said that the procedure for bringing additional assignments into use that was being discussed by a Working Group of Committee 6 of the MM-R1 Conference might not be appropriate for the agreement to be prepared by the EMA Conference, the former case being more complicated as more services were using the bands concerned.

3.18 The representative of the IFRB agreed that it might not be necessary for the EMA agreement to provide for a waiting period for the receipt of comments from other administrations on proposed additional assignments under that agreement, in view of the fact that during such a waiting period, assignments in the bands concerned could be applied for and received under the provisions of Article 12 of the Radio Regulations by countries outside the EMA. However, further consideration would need to be given to the matter and a decision on the point should be deferred for the present.

3.19 The delegate of the Netherlands, supported by the delegate of France, proposed that further discussion of Article 4 should be deferred until the results of the discussions on the subject by the Working Groups of Committee 6 of the MM-R1 Conference were available. In addition he proposed that the Chairman and the Committee's Drafting Group should be authorized by Committee 5 to prepare a draft text for Article 4 on the basis of the above results as they applied to the special conditions of the EMA Plan and on the basis of the proposals in Document 1004(Rev.1).

It was so agreed.

3.20 The delegate of the Netherlands, supported by the delegate of France, suggested that the above proposal should also apply to Article 5.

It was so agreed.

3.21 It was agreed that the text of Article 6 would provisionally be that of paragraph 7 of Document MM-R1/DT/13.

3.22 The delegate of France drew attention to the additional flexibility that would be provided in Article 6 by including the second paragraph of proposal F/1005/13.

3.23 The representative of the IFRB suggested it would be preferable to place that provision in Article 4 as it concerned an exception to the procedures set out there.

It was so agreed.

3.24 It was agreed that the text of Article 7 would provisionally be that of paragraphs 38 and 39 of Document MM-R1/DT/13.

3.25 It was agreed that the text of Article 8 would provisionally be that of paragraph 40 of Document MM-R1/DT/13.

3.26 In reply to a query by the delegate of the Netherlands as to the need to include the words "the competent authorities" which appeared in that text, the representative of the IFRB noted that the term was in general use in the ITU and was employed in all regional agreements. Furthermore, it already appeared in the Preamble and the concluding paragraph of the present proposed draft agreement. The reference to "competent authorities" in no way implied any interference by the ITU in the designation of such authorities, which was the sole prerogative of the country concerned.

3.27 The delegate of the USSR, supported by the delegates of the United Kingdom and France, proposed that the term in question should be retained.

It was so agreed.

3.28 It was agreed that the text of Article 9 would provisionally be that in paragraph 41 of Document MM-R1/DT/13.

3.29 The delegate of the USSR having proposed that the square brackets be removed from the word "thirtieth" on the penultimate line of the text, the representative of the IFRB noted that the question of a waiting period was in suspense pending an enquiry into how such a situation was at present governed by the Convention. The adoption of a delay in no way implied that any objection could be made to accession to the agreement by any country, whether in the area concerned or not, that was prepared to respect all the terms of the agreement concerned.

3.30 The delegate of the United Kingdom proposed that, since the issue was still under debate in a Working Group of Committee 6 or the MM-R1 Conference, a decision on the removal or not of the square brackets should be deferred until the results of the work of that Working Group were available.

It was so agreed.

3.31 The delegate of the United Kingdom, supported by the delegate of the Netherlands, proposed that the relevant texts of Articles 10, 11 and 12, be prepared by the Drafting Group on the basis of the texts proposed in Document 1004(Rev.1) and Document 1005 and of any relevant changes made by Committee 6 of the MM-R1 Conference in the draft agreement for that Conference.

It was so agreed.

3.32 The Chairman proposed that the Committee's Drafting Group should be made up of the delegates of France, Portugal, the Netherlands and the United Kingdom and representatives of the IFRB.

It was so agreed.

The meeting rose at 1210 hours.

The Secretary: J. BALFROID

The Chairman: R.J.-M. BISNER

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document 1032-E
6 March 1985
Original : English

COMMITTEE 2

SUMMARY RECORD

OF THE

FIRST MEETING OF COMMITTEE 2

(CREDENTIALS)

Tuesday, 5 March 1985, at 9.00 hrs.

Chairman : Mr. J.F. PATRICIO (Portugal)

Subjects discussed:	Documents
1. Terms of reference of the Committee	1002, 1018
2. Organization of the Committee's work	-

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.

1. Terms of reference of the Committee (Documents 1002 and 1018)

The participants took note of the terms of reference set out in Documents 1002 and 1018.

2. Organization of the Committee's work

After recalling that the Committee's report to the Plenary Meeting was to be submitted on Monday, 11 March 1985, the Chairman proposed that the Committee set up a small Working Group under his chairmanship to examine the credentials received by the Secretariat and to submit a report on its conclusions to the Committee.

It was decided that the Working Group should comprise the following delegates in addition to the Chairman and the Vice-Chairman of the Committee : one delegate from the Czechoslovak Socialist Republic and one delegate from the Socialist Federal Republic of Yugoslavia. It would be convened at the appropriate time.

The meeting rose at 9.30 hours.

The Secretary :

R. MACHERET

The Chairman :

J.F. PATRICIO

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document 1033-E
6 February 1985
Original : English

COMMITTEE 2

First Report by Working Group C2-A to Committee 2

The Working Group of Committee 2 (Credentials) met on 5 March 1985. It examined the credentials of the following delegations *:

ALBANIA (Socialist People's Republic of)
GERMANY (Federal Republic of)
BELGIUM
BULGARIA (People's Republic of)
CYPRUS (Republic of)
DENMARK
SPAIN
FINLAND
FRANCE
HUNGARIAN PEOPLE'S REPUBLIC
ISRAEL (State of)
ITALY
LIBYA (Socialist People's Libyan Arab Jamahiriya)
MALTA (Republic of)
NORWAY
NETHERLANDS (Kingdom of the)
POLAND (People's Republic of)
PORTUGAL
ROMANIA (Socialist Republic of)
UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND
SWEDEN
CZECHOSLOVAK SOCIALIST REPUBLIC
TUNISIA
TURKEY
UNION OF SOVIET SOCIALIST REPUBLICS
YUGOSLAVIA (Socialist Federal Republic of)

These credentials are all in order.

J.F. PATRICIO
Chairman of the Working Group C2-A

*In the alphabetical order of the French version of the country names.

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INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document 1034-E
5 March 1985
Original: English

PLENARY MEETING

FIRST REPORT BY THE CHAIRMAN OF COMMITTEE 4
TO THE PLENARY

Annex 1 contains the decisions of Committee 4 concerning the technical parameters necessary for the establishment of a frequency plan for maritime radiobeacons in the frequency band 283.5 to 315 kHz within the European Maritime Area.

Annex 2 contains the decisions of Committee 4 concerning some of the planning principles to be taken into account.

L.W. BARCLAY
Chairman of Committee 4

Annexes: 2

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ANNEX 1

Technical characteristics for use in planning

1. Modulation method

A combination of A1A and F1B will be utilized.

Further details have still to be specified.

2. The minimum usable field strength

50 μV/m north of latitude 43°N

75 μV/m from the southern boundary of the EMA to latitude 43°N

3. Channel spacing

500 Hz

4. Co-channel protection ratio

15 dB

5. Adjacent channel protection ratio

±500 Hz -39 dB

±1 kHz -60

±1.5 kHz -60

The protection ratio need not be considered for greater frequency separations.

6. Propagation characteristics

Ground-wave propagation over sea should be assumed, using the curve given in CCIR Recommendation 368 for 300 kHz, $\sigma = 5$ S/m, $\varepsilon = 70$.

Note 1 - It is 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 may be taken into account in assessing adjustments to the draft plan.

Note 2 - 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 nm (280 km). With this limitation it is not necessary to consider the sky-wave field strength.

7. Radiated power

The radiated power shall be kept to the value necessary to give the desired field strength at the specified service range. If necessary, the radiated power should be indicated in terms of the effective monopole radiated power (e.m.r.p.).

ANNEX 2

Principles to be used in planning

1. The technical characteristics indicated in Annex 1 shall be used in preparing the draft plan for maritime radiobeacons.

2. Where administrations have indicated a requirement for co-channel operation of a group of beacons, this shall be included in the draft plan.

3. Where administrations have indicated to the IFRB the desirability of retaining operations of existing radiobeacons on the currently used frequencies, these shall be included in the draft plan.

4. The IFRB will look after the interests of administrations within the EMA which have not submitted requirements but which have maritime radiobeacons recorded in the MIFR.

5. Stations of the permitted service, already included in the MIFR, shall be afforded protection based upon the IFRB standards.

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP. Document 1035-E
6 March 1985
Original : French

COMMITTEES 4 AND 5

NOTE BY THE CHAIRMAN OF COMMITTEE 3
TO THE CHAIRMEN OF COMMITTEES 4 AND 5

At its first meeting, Committee 3 took note of Article 80 of the Convention and Resolution 48 of the Nairobi Conference, reproduced in Document 1011 by the Secretary-General. The Committee recognized that under these provisions of the Convention, conferences were required inter alia, before adopting Resolutions or taking decisions which are likely to result in additional and unforeseen demands upon the budgets of the Union :

1) to prepare and take into account estimates of the additional demands made on the budgets of the Union ;

2) where two or more proposals are involved, to arrange them in an order of priority ;

3) to 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.

Consequently, Committee 3 recommends that, in their work and in making proposals to the Plenary, Committees 4 and 5 should :

1) take account of paragraphs 1), 2) and 3) above when identifying activities resulting from this Conference which will have a budgetary impact ;

2) in the event that decisions are taken which may have a budgetary impact, send an information note to Committee 3 at the earliest opportunity describing the nature of the decision and if possible, with the assistance of the permanent organs of the Union concerned, providing an outline of the estimated cost of implementing the decision.

P. CAREY
Chairman of Committee 3

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INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document 1036-E
12 March 1985
Original: English

COMMITTEE 4

SUMMARY RECORD

OF THE

FIRST MEETING OF COMMITTEE 4

(TECHNICAL AND PLANNING)

Monday, 4 March 1985, at 1400 hrs

Chairman: Mr. L.W. BARCLAY (United Kingdom)

Subjects discussed:		Documents
1.	Terms of reference of the Committee and organization of the work	1018, 1022
2.	Identification and consideration of the main topics needing urgent decisions	-
2.1	Technical parameters to be taken into account in the planning process	1003, 1004, 1005, 1007, 1008, 1016, 1012, 1023, DL/1003
2.12	Status of the primary and permitted service, protection of the non-planned services	1015

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.

1. Terms of reference of the Committee and organization of the work (Documents 1018, 1022)

1.1 The Chairman drew attention to the terms of reference of the Committee and organization of work and stressed that everything of concern to the computer part of the planning had to be concluded by Wednesday, 6 March. The Committee's work had to be completed by Monday, 11 March and no formal Working Groups would be set up, although ad hoc Groups could be established as needed.

The terms of reference of the Committee and organization of the work were approved.

2. Identification and consideration of the main topics needing urgent decisions

2.1 Technical parameters to be taken into account in the planning process (Documents 1003, 1004, 1005, 1007, 1008, 1016, 1012, 1023, DL/1003).

The Chairman drew attention to the list of technical parameters to be taken into account during the preparation of the frequency plan and suggested that the Committee follow the order of the list in Document DL/1003. He noted that in many cases there was concordance between the various proposals and some of the items might not be controversial.

It was so agreed.

2.2 Modulation method

The Chairman said that all proposals agreed that the radionavigation signal should comprise an A1A, Morse part, a signal for measuring the bearing and a data message in F1B. For the moment there was no need to discuss the exact format of the F1B.

It was so agreed.

2.3 Minimum usable field strength

The Chairman said that the proposals were in accordance with the Radio Regulations, and the minimum usable field strength was specified as 50 μV/m north of latitude 43°N and 75 μV/m at 43°N and southwards. There had been no dissension on that point.

The figures were agreed.

2.4 Co-channel protection ratio

The Chairman said that the co-channel protection ratio had been specified as 15 dB, which he understood would apply to the whole of the signal.

It was so agreed.

2.5 Channel spacing

2.5.1 The Chairman said that the general view seemed to be that the channel spacing should be at 500 Hz. Despite a suggestion in the CCIR document that a minimum of 400 Hz might be useful in some circumstances, that figure did not occur in the input contributions. He therefore suggested that 500 Hz would be a satisfactory figure for channel spacing for planning.

2.5.2 The delegate of France said that his Administration had originally been in favour of 200 Hz, which would keep most channels open. However, it was prepared to accept 500 kHz, which would leave room for the introduction of more modern systems.

2.5.3 The representative of the IALA said that he too would have wished for 400 Hz, but would support the French position.

The figure of 500 Hz for channel spacing was agreed.

2.6 Adjacent channel protection ratio

2.6.1 The Chairman said that proposals had been made for the format to be used for F1B: it would be either FSK or MSK, which had different requirements. Interpreting the figures given by the CCIR in Document 1003, section 6.3 ii), he had arrived at a selectivity of -54 dB at 500 Hz separation, which, together with the 15 dB protection ratio, would give an adjacent channel protection ratio of -39 dB.

If MSK were to be adopted for the F1B part of the transmission, according to the CCIR it would be the A1A part of the modulation that determined the adjacent channel selectivity. In section 6.3 i) A1A selectivity was given at ±480 Hz at -60 dB. In his view it would be unwise to extrapolate beyond -60 dB. He therefore assumed that 480 Hz would apply equally at 500 Hz, giving a selectivity of -60 dB at 500 Hz and, together with the 15 dB protection ratio, an adjacent channel protection ratio for that case of -45 dB.

If that argument was valid there would be 6 dB difference between the two alternative modulation systems at the adjacent channel; -39 dB for FSK and -45 dB for MSK.

For the initial computer planning he suggested that the value of -39 dB be adopted, which would allow either kind of F1B modulation; and if MSK were to be adopted it would provide a little extra margin against adjacent channel interference.

Further to suggestions by the delegates of the Federal Republic of Germany and Sweden, he put forward figures for 1 kHz and 1.5 kHz separation, namely -60 dB.

2.6.2 The delegate of France asked what protection was envisaged for multiples of 100 Hz less than 1 kHz. The Chairman replied that that matter could be considered at a later stage in conjunction with the French proposals in Document 1012.

2.6.3 The delegate of Finland proposed that for frequency separation of 2 kHz or more, no consideration of adjacent channel signals needed to be made in the Plan.

2.6.4 The Chairman said that he took it that for planning purposes the Committee would use -39 dB for the first adjacent channel at 500 kHz, -60 dB at 1 kHz, -60 dB at 1.5 kHz and that there would be statement that beyond 1.5 kHz more distant channels need not be considered.

It was so agreed.

2.6.5 The delegate of Sweden suggested that it would be useful for the computer programme to have the bandwidth at -6 dB attenuation. Moreover, the question of other services in the band claiming protection also needed consideration.

2.6.6 After a short discussion, the Chairman suggested that the Committee return to that matter when it discussed the status of the primary and permitted service and protection of the non-planned services.

It was so agreed.

2.7 Propagation characteristics

2.7.1 The Chairman said that in view of the discussions at the Region 1 Conference held the previous week, the Committee would have to consider for ground-wave propagation the over sea case at a nominal frequency of 300 kHz. There seemed to be no possibility of having a more complicated propagation calculation procedure to take account of mixed paths.

2.7.2 The representative of the IALA, supported by the delegate of France, asked whether it would not be possible to consider a situation where a land path only was involved.

2.7.3 The Chairman asked the delegate of Sweden whether it would be possible to take account of differing conductivity for different azimuths or different stations in the computer planning process.

2.7.4 The delegate of Sweden replied that that would not be possible. The same ground constants were being used for the northern part of Europe as for the whole. In the planning, calculations were being made for sea path propagation. Indications concerning land path propagations would be included, but that information required manual inspection.

2.7.5 The Chairman invited comments on whether sky-wave propagation should be taken into account.

2.7.6 The delegates of Finland and the Federal Republic of Germany said that in view of the relatively low frequencies of maritime radiobeacons, their normal service ranges and the fact that only their daylight service range was referred to in RR 2861, there was no need to take sky-wave propagation into account. Endorsing that view, the delegate of Sweden said that sky-wave propagation was never strong enough to overcome the protection ratio on an adjacent channel and the delegate of the Netherlands pointed out that it had been agreed to take only ground-wave propagation into account for aeronautical radionavigation beacons, one reason being that at long service ranges the use of sky-wave propagation made direction-finders so erratic that they were practically useless.

2.7.7 The representative of the IALA and the delegate of France considered that it was important to take sky-wave propagation into account, particularly in the southern part of the Region.

2.7.8 The delegate of the Federal Republic of Germany suggested that the first version of the Plan might be based on using sky-wave propagation to assess interference and that the Committee should reconsider the situation if that method resulted in an inability to accommodate requirements. He further pointed out that sky-wave propagation could be used for assessing co-channel interference only.

2.7.9 The Chairman of the IFRB said that, in view of the short duration of the Conference, there would be time for only one computer run.

2.7.10 In reply to a question by the Chairman, the delegate of Sweden drew attention to the propagation curves in Appendix 1 to his delegation's proposals (Document 1013), from which it would be seen that, whereas there was no difference between the curves for sky-wave and ground-wave propagation at separation distances below 400 nm, the difference at longer distances was 10 dB or even more. It might therefore be concluded that sky-wave propagation made a considerable difference for radiobeacons with a large service range.

2.7.11 The representative of the IALA said that, according to the CCIR sky-wave and ground-wave propagation curves, with the agreed protection ratio of 15 dB, protection at night could not be guaranteed for certain radiobeacons operating at ranges in excess of 150 nm, since they would suffer their own sky-wave propagation with respect to their wanted ground-wave signals. They were therefore not usable for satisfactory navigation at night, and would interfere with other beacons; that was why it had been proposed to take sky-wave propagation into account. On the other hand, that propagation could be ignored and ground-wave propagation only taken into account if the administrations operating the radiobeacons concerned would agree to reduce the range at night to below 150 nm.

2.7.12 The delegates of France and the United Kingdom supported that suggestion, which was approved.

2.7.13 The Chairman of the IFRB said that that decision should be reflected in the Final Acts of the Conference, perhaps as a night-time power restriction in the technical annex.

2.8 Radiated power

2.8.1 The Chairman drew attention to No. 2860 of the Radio Regulations, and suggested that at the present stage the Committee needed to do no more than to indicate that it should assume an appropriate e.m.r.p. in the Plan which would give the desired field strength at the service range.

It was so decided.

2.9 The Chairman, in reply to a point raised by the delegate of France concerning his proposal on monitoring standards for maritime radiobeacons contained in Annex C to Document 1005, said that a number of similar proposals had been put forward. The best procedure would be for a Drafting Group to collate the various proposals, which could then be discussed under the heading "Technical specifications for maritime radiobeacons".

It was so decided.

2.10 The delegate of Sweden said that Document 1006 showed that there were a large number of beacons with ranges of over 300 km, which would create considerable interference in surrounding areas. He wondered whether it would be possible to indicate a maximum range for such beacons.

It was agreed to take up that point also during the discussion of technical requirements at a later stage.

2.11 The number of beacons in a co-channel group

2.11.1 The representative of the IALA suggested that the number of beacons might be fixed at 3 or less, in view of the many advantages of not grouping beacons, particularly from the economic point of view, since the initial and maintenance costs of timing devices could thus be eliminated. Since in fact all the radiobeacons in Region 1 could if necessary be operated in the single beacon mode, the planning exercise should perhaps be based in the first instance on assigning an individual frequency to each radiobeacon.

2.11.2 The delegate of Finland said that the need for grouping should be considered primarily from the operational point of view, taking geographical situations into account. It might be wise to establish a maximum number, on the understanding that a smaller number would probably be needed, thanks to the development of more selective receivers and narrower necessary bandwidths.

2.11.3 In reply to a question by the Chairman, the delegate of Sweden said that, from the point of view of the computer planning program, the course suggested by the representative of IALA would be the most expeditious, since an individual frequency for each radiobeacon could be found automatically. If grouping was taken into account, assignments to each group would have to be found manually for interactive computer treatment, which was time consuming.

2.11.4 The delegate of the USSR said that groups of six radiobeacons were used successfully in his country, although the intention was gradually to reduce that number. For the time being, however, he did not think it wise to lay down any rule that would compel an administration to change the location and equipment of its radiobeacons without any real reason for doing so. What was easiest for the computer to process could not be taken as a basis for a decision, for each administration must determine for itself whether it should change the existing assignments, abandon grouping of radiobeacons or maintain the status quo. He asked whether the computer program provided for the retention of the existing assignments, which were in fact contained in most of the requirements submitted.

2.11.5 The delegate of Sweden said that the program was based on the Master Register, provided by the IFRB, from which all existing assignments to maritime radiobeacons had been removed. The IFRB had also supplied a list of all the requirements submitted, in which the existing assignments appeared. If those assignments were to be taken into consideration, those of every country having grouped radiobeacons would have to be tested manually against the Master Register; if the frequencies were unacceptable, new ones would have to be found for the whole group, in interactive working with the computer.

2.11.6 The delegate of the USSR said he would have thought that the actual situation of navigation and of the use of radiobeacons should be a preponderant factor in any computer planning program, particularly since the number of new requirements was relatively small. The interactive working referred to by the Swedish delegate should be brought into operation, to avoid unnecessary changes in equipment by countries with grouped radiobeacons. The delegate of the United Kingdom added that, if the Conference was to achieve equitable results, all requirements should be taken into account as expressed by the administrations, including those which saw an operational advantage in using grouped radiobeacons.

2.11.7 The representative of the International Maritime Organization (IMO) said he hoped that running the computer program on the basis of a separate frequency for each radiobeacon would not preclude grouping, for which there was a definite need in some areas. In the absence of grouping, the frequency would have to be changed every time a bearing was taken; it took time to identify a station in each case, to take a bearing and then switch to another frequency, particularly since three bearings were really needed for reasonably satisfactory navigational accuracy.

2.11.8 The Chairman said that further discussion with those responsible for the computer program would be needed before a decision could be reached on the matter.

2.11.9 The delegate of Finland pointed out that decisions on the status of the primary and permitted service would have a significant effect on existing stations in the band under consideration. A large number of services were allocated on a permitted basis, and administrations might require replacement frequencies for some of those services unless protection was given. In order to facilitate the planning task of the Conference dealing simultaneously with aeronautical radionavigation beacons, he suggested that that item be taken up immediately.

It was so agreed.

2.12 Status of the primary and permitted service, protection of the non-planned services (Document 1015)

2.12.1 The Chairman of the IFRB introduced Document 1015, drawing particular attention to paragraph 5 (Considerations applicable to the bands where only the primary service is to be planned).

2.12.2 The delegate of the USSR stressed that where the permitted services were concerned, the introduction of major changes in the Plan was to be avoided.

2.12.3 The Chairman pointed out that paragraph 5.2 of Document 1015 made clear that the Conference should afford appropriate protection to frequency assignments of the other services; assignments which were recorded and in operation should continue to provide the expected service. He asked whether the IFRB could suggest criteria for deciding on such "appropriate protection".

2.12.4 The Chairman of the IFRB said the criteria to be used would be those currently adopted by the Board itself in its examination procedures for protection of one service against another.

2.12.5 The delegate of Sweden suggested a pragmatic approach. In preparing the Plan, existing assignments of the permitted service should be used as a basis; if, once the Plan was drawn up, there were still outstanding requirements for maritime beacons, the computer program should be operated manually to ensure compatibility between aeronautical and maritime beacons. Some rearrangement of existing assignments for aeronautical beacons should not be ruled out.

2.12.6 The Chairman pointed out that the Conference had no authority to make any changes to assignments for aeronautical radiobeacons; however, there could be negotiations between administrations where specific cases were concerned.

2.12.7 The delegate of Finland said that in the interests of successful planning the Conference should not refrain from some rearrangement of permitted service assignments if it were competent to do so.

2.12.8 The Chairman of the IFRB confirmed that, according to Article 12 of the Radio Regulations, any change in frequency to a permitted service would have to be notified to the Board by the responsible administration. Any agreement reached between administrations through coordination during the Conference would likewise have to be notified to the Board.

2.12.9 After a further exchange of views in which the delegates of the USSR, Sweden and the Federal Republic of Germany took part, the Chairman, summarizing the position, said it was to be assumed that the Conference wished to see a draft plan which took account not only of the primary service, but also of current assignments for the permitted service. It would only be in cases where the Planning Group was unable to resolve incompatibilities between the two sets of requirements that adjustments would be necessary. However, the Committee should start from the viewpoint that in principle assignments to the permitted service already in operation were not to be changed, although there could be flexibility in cases where particular administrations needed to solve specific problems.

It was so agreed.

2.12.10 The Chairman of IFRB proposed that, should there be any countries in the European Maritime Area not represented at the Conference, the Board, in accordance with normal practice, should represent their interests. He further proposed that, for administrations not present at the Conference which had not submitted requirements, the entries of such administrations in the Master Register should be used as a basis for planning.

It was so agreed.

The meeting rose at 1700 hours.

The Secretary: The Chairman:

G. KOVACS L.W. BARCLAY

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document 1037-E
7 March 1985
Original: English

COMMITTEE 5

NOTE BY THE CHAIRMAN OF COMMITTEE 4

TO THE CHAIRMAN OF COMMITTEE 5

Committee 4 has considered the need to replace transmitters of radiobeacon stations and receivers utilizing radiobeacon transmissions, when the Plan comes into use.

The Committee concludes:

1) that it is an easy matter to switch off the A2A modulation of the transmitter leaving the transmitter operating with A1A emission;

2) that it is an easy matter to change the frequency of a radiobeacon transmitter within the band (e.g. by substituting a new frequency determining crystal and by retuning);

3) that the recommended transmitter specification is unlikely to require modifications to existing equipment in most cases;

4) thus, unless the radiobeacon station intends to implement the use of an F1B data message, no substantial modifications are likely to be required.

In addition:

5) according to the Paris Agreement, that receivers already have the facility for direction-finding operation using A1A emissions;

6) that, apart from a consideration of receiver selectivity and adjacent channel protection, no receiver changes are required unless it is intended to use the F1B data message.

The Committee notes that the selectivity of some current receivers is wider than that adopted as a technical criterion. This is being taken into account in the preparation of the draft Plan where, if possible, additional adjacent channel protection margins will be provided. It is however assumed that later modifications to the Plan may use the agreed technical criteria to the full extent.

In this regard, administrations are asked to note, and to inform equipment manufacturers, that in some cases future receivers will require improved selectivity in accordance with the technical criteria.

L.W. BARCLAY
Chairman of Committee 4

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INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document 1038-E
6 March 1985
Original: French

PLENARY MEETING

FIRST REPORT OF COMMITTEE EMA-5 TO THE PLENARY MEETING

In accordance with the terms of reference it received from the Plenary Meeting, Committee EMA-5 examined the proposals relating to the draft Regional Agreement Concerning Maritime Radiobeacons in the European Maritime Area in the band 283.5 - 315 kHz.

The Committee unanimously adopted the texts of the draft Agreement which were transmitted to the Editorial Committee (see Document 1039).

The question of the date of entry into force of the Agreement and the date of implementation of the Plan is referred to the Plenary Meeting.

R. BISNER
Chairman of Committee EMA-5

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INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document 1039-E
7 March 1985
Original: French

Source: Document EMA/DT/1004

COMMITTEE 6

FIRST SERIES OF TEXTS SUBMITTED BY COMMITTEE EMA-5
TO THE EDITORIAL COMMITTEE

The texts in the annex hereto were adopted by Committee 5 and are submitted to the Editorial Committee.

R. BISNER
Chairman of Committee EMA-5

Annex: 1

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.

ANNEX

DRAFT

Regional Agreement concerning maritime radiobeacons in the European Maritime Area

(Geneva, 1985)

Preamble

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

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 (radiobeacon) service in the European Maritime Area.

ARTICLE 1

Definitions

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

Union: The International Telecommunication Union;

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

IFRB: The International Frequency Registration Board;

CCIR: The International Radio Consultative Committee;

Convention: The International Telecommunication Convention, Nairobi, 1982;

Radio Regulations: The Radio Regulations, Geneva 1979, annexed to the Convention;

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

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

Plan: The Plan forming the Annex [ ] to this Agreement and its Appendices;

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

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

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. 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 (radiobeacon) service 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. The Contracting Members shall adopt, for their radiobeacon stations in 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 in the Annex and its Appendices.

4. 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 Article 4 of this Agreement.

5. 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 the Agreement or for which the modification procedure contained in Article 4 has been initiated.

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

ARTICLE 4

Procedure for modifications to the Plan

SECTION A - GENERAL

7. 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

8. 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.

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

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

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 Annex [ ].

10. An administration proposing to modify the characteristics of an assignment or to bring a new assignment into use shall so inform the IFRB not earlier than 90 days before the date of bringing into use and shall furnish the characteristics listed in Appendix 1 to the Radio Regulations, and shall also indicate to the IFRB 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.

11. 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.

12. 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 of this Article,
- of the Aeronautical Radionavigation Service recorded in the Master Register on behalf of Contracting Members. It shall inform the administration proposing the modification of the results of its examination.

13. 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 shall notify the Board of the results of its efforts.

14. Following the examination carried out in accordance with paragraph 12 above, the Board shall record the assignment in the Master Register indicating the names of those administrations whose agreement has to be obtained. It shall inform the administration concerned that the entry has been made subject to the proviso that no harmful interference will be caused to the assignments of administrations whose agreement must be obtained.

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

SECTION C - CANCELLATION OF ASSIGNMENTS

16. 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

17. 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 procedures of this Article, the addition of new assignments in conformity with this Agreement, and any cancellations of which the Board has been notified.

18. 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

19. 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.

20. 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 adminstrations, Parties to the Agreement.

21. In relations between Contracting Members all frequency assignments in conformity with this Agreement, recorded in the Master Register and having obtained the agreement of the administrations concerned, shall be considered to have the same status irrespective of the date or dates entered in Column 2 for such assignments.

ARTICLE 6

Procedure applicable to new assignments of the Aeronautical Radionavigation Service

22. 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.

23. 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 IFRB circular in accordance with paragraph 4 of Article 4.

24. In the event of the finding being unfavourable with respect to a frequency assignment described in paragraphs 2 c) or 2 d), 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 that assignment is brought into service.

25. For the purpose of these examinations the Board shall apply the technical criteria contained in Annex [ ] to the Agreement.

ARTICLE 7

Special Arrangements

26. In addition to the procedures provided for in Article 4 of this Agreement and to facilitate their 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

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

28. 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

29. 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

30. 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 modified 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. This Agreement shall enter into force for each Member acceding to this Agreement after the date of its entry 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

31. 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.

32. 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.

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

ARTICLE 12

Revision of the Agreement

34. 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 of the Regional Arrangement concerning maritime radiobeacons in the European Area of Region 1 (Paris, 1951)

35. This Agreement and the annexed Plan abrogate the Regional Arrangement concerning Maritime Radiobeacons in the European Area of Region 1 (Paris, 1951).

ARTICLE 14

Effective Date of this Agreement

36. This Agreement shall enter into force on [1 January 1987] at 0001 hours UTC.

The date of implementation of the Plan will be [1 June 1994] 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 French, English 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, ... March, 1985.

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document 1040-E
6 March 1985
Original: French

COMMITTEE 4

NOTE BY THE CHAIRMAN OF COMMITTEE 5 TO THE
CHAIRMAN OF COMMITTEE 4

At its second meeting on 6 March 1985, Committee 5 instructed me to request Committee 4, through you, to indicate the particular conditions to be observed by radiobeacon stations of the maritime radionavigation service to be brought into use before the date of entry into force of the Plan as regards compatibility with existing services.

R. BISNER
Chairman of Committee 5

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INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document 1041-E
7 March 1985
Original: French

REGION 1

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE MARITIME MOBILE SERVICE AND THE AERONAUTICAL RADIONAVIGATION SERVICE IN CERTAIN PARTS OF THE MF BAND IN REGION 1
GENEVA, FEBRUARY/MARCH 1985

Document 86-E
7 March 1985
Original: French

COMMITTEE 7 (MM)
COMMITTEE 6 (EMA)

SUMMARY RECORD

OF THE

FIRST MEETINGS OF THE EDITORIAL COMMITTEE

FOR RARC-MM-R1 AND RARC-EMA-R1

Friday, 1 March 1985, at 1400 hrs - RARC-MM-R1
Tuesday, 5 March 1985, at 1100 hrs - RARC-EMA-R1

Chairman: Mr. J.L. BLANC (France)

Subjects discussed:

1. Terms of reference of the Editorial Committee
2. Membership of the Committee
3. Method of work
4. Other business

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1. Terms of reference of the Editorial Committee

The Chairman drew the attention of participants to the provisions of Nos. 473 and 474 of the International Telecommunication Convention (Nairobi, 1982) which specify the terms of reference of the Committee.

2. Membership of the Committee (preparation of the list of participants)

Participants were invited to designate members to participate in the work of the Editorial Committee and cover each working language of the Union. A list was prepared on the basis of information provided by the delegates of France, Spain and the United Kingdom.

3. Method of work

Some details were given on the methods of work envisaged, including the possibility of setting up two teams which would work simultaneously if necessary.

4. Other business

It was agreed that, in accordance with the practice followed at previous conferences, abbreviated titles should be used if possible for the Final Acts and Regional Agreements to facilitate future reference to those documents. Questions of simplification and economy also were raised in that connection.

The Secretary:
P.-A. TRAUB

The Chairman:
J.L. BLANC

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document 1042-E
12 March 1985
Original: English

COMMITTEE 4

SUMMARY RECORD

OF THE

SECOND MEETING OF COMMITTEE 4

(TECHNICAL AND PLANNING)

Tuesday, 5 March 1985, at 0915 hrs

Chairman: Mr. L.W. BARCLAY (United Kingdom)

Subjects discussed:	Documents
1. Technical parameters to be taken into account in the planning process (continued)	DL/1003, 1003, 1004, 1005, 1007, 1008, 1016, 1012, 1023
2. Planning method (computer program offered by Sweden and conditions of its use), IFRB incompatibility analysis program	1013, 1017
3. Requirements submitted to the Conference	1006 + Add.1

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1. Technical parameters to be taken into account in the planning process (continued) (Documents DL/1003, 1003, 1004, 1005, 1007, 1008, 1016, 1012, 1023)

1.1 The Chairman, referring to sub-section 1.8 of Document DL/1003 (the number of beacons in a co-channel group), recalled that it had been said the previous day that the inclusion of groupings of beacons would make the input of data into the computer more difficult, although not impossible. The only reasonable solution, therefore, was that, where administrations had indicated in their requirements that for operational purposes they wished to have groups on the same channel, operated on a time-sharing basis, they should be included in the first draft of the Plan. Since some groups involved beacon stations for more than one administration, he took it that those administrations had agreed between themselves that they wished to maintain those groupings, as shown in Document 1006.

It was so agreed.

1.2 Referring to the point raised the previous day by the delegate of the USSR, that the frequencies at present in use should be retained, the Chairman said that there were some difficulties with that method of procedure: many of the frequencies were not at 500 Hz intervals and, while they would be planned for, it had been pointed out that in making the Plan and evenly spacing the frequencies, space should be left for additional requirements and changes, which would be more difficult with offset frequencies. He therefore proposed that the Planning Group be requested, in making the first draft of the Plan, to utilize the preferred frequency assignments where possible, and to move off-channel frequencies to a nearby on-channel frequency.

1.3 The delegate of Sweden suggested that it might be possible for administrations to make it clear which frequencies, among those they had indicated, were to be maintained, and which need not be maintained, since two entries had been possible in the column "frequency-in-use, preferred-bands".

1.4 After a brief discussion in which the delegates of the USSR, Algeria, the Netherlands and the United Kingdom took part, the Chairman suggested that only those administrations having definite operational requirements with frequencies on the 500 Hz spaced channels, should so indicate to the Board in the course of the day. It would be assumed that all other administrations were prepared to consider the additional cost and operational inconvenience and allow small changes of frequencies to be made in the interests of an efficient Plan.

It was so agreed.

1.5 The Chairman said that a document summarizing the Committee's conclusions on section 1 of Document DL/1003 would be issued the following day.

1.6 The delegate of Finland asked whether, in the light of the decision taken the previous day, the assignments for permitted services with a date in column 2b would be taken into account.

1.7 The Chairman of the IFRB confirmed that those assignments were in the Master Register and would be protected.

Other maritime navigational information and systems:

Differential Omega corrections

1.8 The delegate of France introduced the proposals in Document 1005 on differential Omega operations which his Administration considered useful, since it was an area in which considerable progress was possible in the use of radiobeacons, particularly as they were now subject to two IMO recommendations. Such operations did not present any particular problem, and the French proposals fully satisfied the requirements of the system. Furthermore, the aim to have as continuous an emission as possible with good reception and signal processing was fully in line with the IALA recommendations.

1.9 The Chairman said he understood that information on differential Omega corrections should be included on phase modulated sub-carriers with a frequency not exceeding 30 Hz, the information being superimposed on the long dash signal for DF purposes. He took it that the normal DF requirements were not affected and that no additional protection was required. One approach might therefore be to say that since the additional information did not affect other kinds of operation, any administration could be allowed to add that information at any beacon if it so desired.

1.10 In reply to questions, the delegate of France said that no particular additional protection was required other than that for a normal radiobeacon and that there should be no interference from any other radiobeacon to the differential Omega receiver in view of the latter's high selectivity.

1.11 At the suggestion of the Chairman, it was agreed to set up a small Drafting Group comprising Mr. Renoux (France) and Mr. Gillman (United Kingdom) to prepare an annex indicating the additional procedure (based on Annex 1 of Document 1005) and to report back to the Committee as soon as possible.

Hyperbolic systems

1.12 The delegate of France commented on the French proposals with respect to hyperbolic systems (Documents 1005, 1012 and 1023), which his Administration considered very promising, and replied to a number of questions.

1.13 Following a lengthy exchange of views between the Chairman, the delegates of France, Sweden, the Netherlands, the Federal Republic of Germany and Spain, the representatives of the IFRB and of IALA, the Chairman suggested that an ad hoc Group should be set up to consider whether the French proposal fell within the scope of the radiobeacon service and, if so, what protection ratios should be established both to and from the new service and how those different requirements could be included in the planning process. If, however, the ad hoc Group decided that the French proposal did not constitute a radiobeacon service, it would have to consider what could be done in order to include the requirements on a non-interference basis. Since decisions relating to the technical criteria had to be adopted not later than on Wednesday, 6 March, the proposed ad hoc Group should meet at 1900 hours on 5 March and report its conclusions orally to the Committee at its next meeting, to be held at 0900 hours on 6 March.

It was so decided.

It was agreed that the delegations of the Netherlands, the United Kingdom, France, Ireland, Spain and Sweden plus the representative of IALA would take part and that Mr. Van Erkel of the Netherlands should act as Chairman.

1.14 The representative of IALA, referring to a decision taken at the previous meeting, raised the question of existing radionavigation receivers under the proposed Plan. The technical criteria adopted in that respect were perfectly appropriate with regard to new receivers, but certain incompatibilities existed in the case of receivers already in existence, some of which offered as little as 10 dB attenuation at the adjacent channel. He suggested that in certain geographical areas the adjacent channel signal should not be allowed to exceed 5 dB above the wanted signal. If that were done, the new system could enter into operation at an early date without prejudicing the interests of the users of many existing receivers.

1.15 The representative of IMO drew attention to paragraph 2, page 3 of Document 1024 containing the recommendation that, if the Conference revised the radiobeacon arrangements, changes should be made in such a manner that existing equipment, both shore-based and shipborne, could continue to be used.

1.16 The Chairman said that the point raised by the representative of IALA could be considered by Committee 5 in connection with the implementation date of the Plan.

1.17 The representative of the International Maritime Radio Association (CIRM), referring to section 2, Annex D, of the French proposal (Document 1005), said that it might be inadvisable to adopt a bandwidth of at least 190 Hz for 6 dB attenuation as the overall selectivity for radio direction-finders. It would be more appropriate to specify that the adjacent channel signal should not interfere with the wanted signal by more than one or two degrees in the direction-finding mode. That would allow receivers already in service to be used within the new system without interference from the adjacent signal.

1.18 The Chairman said that when the Committee took up item 3.5 of the list of technical parameters appearing in Document DL/1003, he intended to suggest the establishment of an ad hoc Drafting Group, which the representative of CIRM would be welcome to join. The point just made would then receive appropriate consideration.

2. Planning method (computer program offered by Sweden and conditions of its use), IFRB incompatibility analysis program (Documents 1013, 1017)

2.1 The delegate of Sweden introduced the proposals contained in Document 1013.

2.2 The representative of the IFRB introduced the report contained in Document 1017. As delegates were no doubt aware, MM-R1 had decided not to use the IFRB incompatibility analysis program in the case of the list of incompatibilities between assignments in the Plan, since that was covered by the Swedish program based on technical criteria adopted by the Conference. In view of the shortage of time, he suggested that EMA-R1 should adopt the same approach.

2.3 The Chairman said that the programs described in Documents 1013 and 1017 would form the basis of the planning method used by the Conference.

3. Requirements submitted to the Conference (Document 1006 + Add.1)

3.1 The representative of the IFRB, introducing the report contained in Documents 1006 + Add.1, pointed out that the requirements listed therein were those submitted by administrations in response to IFRB Circular-letter No. 555.

3.2 The Chairman said that a second addendum would be circulated listing modifications to requirements and any new requirements submitted by 1800 hours on 5 March in accordance with the decision taken by the Plenary. So far as the mechanics of the planning process were concerned, he suggested that the Committee should follow the precedent established in MM-R1 by establishing an ad hoc Planning Group to undertake a review of the requirements and to oversee the preparation of the draft Plan, including the integration of the Swedish part of the planning process and the assessment of the IFRB part dealing with incompatibilities. As already pointed out, the computer would not be able to handle the whole of the work, and some manual intervention would be required in order to complete the draft Plan. The Planning Group should also be asked to bear in mind the point raised by the representative of IALA with regard to existing radionavigation receivers.

Those suggestions were adopted.

It was agreed that the ad hoc Planning Group should be composed of the delegations of Sweden, France, Spain, Algeria, the United Kingdom, Finland, Federal Republic of Germany and the USSR, the delegate of Sweden acting as Chairman.

3.3 In reply to the delegate of Sweden, the Chairman said that the Planning Group would begin its work only when all the technical criteria had been agreed upon, i.e. after the ad hoc Group set up to consider the French proposal had reported its conclusions to the Committee. Replying to the delegate of France, he confirmed that the Committee had decided at its previous meeting that the range at night would be reduced to below 150 nm.

The meeting rose at 1200 hours.

The Secretary: The Chairman:

G. KOVACS L.W. BARCLAY

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document 1043(Rev.1)-E
8 March 1985
Original: French

COMMITTEE 4

France

DRAFT RECOMMENDATION No. COM 4/... (EMA)

For the use of maritime radionavigation hyperbolic system

The Regional Administrative Conference for the Planning of the Maritime Radionavigation Service (Radiobeacons) in the European Area (Region 1) (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 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 undertake the revision of the relevant articles of the Radio Regulations and the allocations given in the table contained in Article 8 of the Radio Regulations;

invites the Administrative Council

to include 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 these requirements;

requests the Secretary-General

to bring this Recommendation to the attention of administrations so that they may submit contributions.

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.

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document 1043-E
6 March 1985
Original: French

COMMITTEE 4

France

DRAFT RECOMMENDATION COM4/..(EMA)

The Regional Administrative Conference for the Planning of the Maritime Radionavigation Service (Radiobeacons) in the European Area (Region 1) (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 current CCIR studies indicate a trend in maritime radionavigation techniques towards hyperbolic radiobeacon systems,

recommends

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

2. that a future world administrative radio conference should undertake the revision of the relevant articles of the Radio Regulations and the allocations given in the table contained in Article 8 of the Radio Regulations,

invites the Administrative Council

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

requests the Secretary-General

to bring this Recommendation to the attention of administrations so that they may submit contributions.

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INTERNATIONAL TELECOMMUNICATION UNION

RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA

GENEVA, MARCH 1985

EUROP.

Document 1044-E
7 March 1985
Original: English

COMMITTEE 5

NOTE BY THE CHAIRMAN OF COMMITTEE 4

TO THE CHAIRMAN OF COMMITTEE 5

In response to the request given in Document 1040 Committee 4 recommends:

1. that radiobeacon stations brought into use before the date of entry into force of the Plan Agreement, should conform to the technical specifications and technical criteria agreed or recommended at this Conference;

2. that since a frequency assignment to be used in the interim period may not be that given in the Plan, the transmitters used should have the facility to change readily to the frequency within the Plan at the date of entry into force of the Agreement;

3. when selecting frequency assignments for use in the interim period that administrations should take into account the wider selectivity characteristics of some receivers currently in use;

4. so far as compatibility of stations of the permitted service and between those stations and maritime radiobeacon stations is concerned, that the IFRB standards should apply.

L.W. BARCLAY
Chairman of Committee 4

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INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document 1045-E
7 March 1985

B.1 (EMA) PLENARY MEETING

1st SERIES OF TEXTS SUBMITTED BY THE
EDITORIAL COMMITTEE TO THE PLENARY MEETING

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

Source	Document	Title
COM.5	1039	Regional Agreement (Articles 1 to 14)

J.-L. BLANC
Chairman of the Editorial Committee

Annex: 10 pages

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B.1/1 (EMA)

FINAL ACTS

OF THE
REGIONAL ADMINISTRATIVE CONFERENCE
FOR THE PLANNING OF THE MARITIME
RADIONAVIGATION SERVICE (RADIOBEACONS)
IN THE EUROPEAN MARITIME AREA

GENEVA, 1985

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Regional Agreement concerning maritime radiobeacons in the European Maritime Area

(Geneva, 1985)

Preamble

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

[list of countries]

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 (radiobeacon) service in the European Maritime Area.

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ARTICLE 1

Definitions

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

Union: The International Telecommunication Union;

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

IFRB: The International Frequency Registration Board (the Board);

CCIR: The International Radio Consultative Committee;

Convention: The International Telecommunication Convention, Nairobi, 1982;

Radio Regulations: The Radio Regulations, Geneva 1979, annexed to the Convention;

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

Agreement: The whole of this Agreement including its Annex[es] and Appendices;

Plan: The Plan forming the Annex [ ] to this Agreement and its Appendices;

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

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

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.

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ARTICLE 2

Frequency Bands

2. 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 (radiobeacon) service 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. The Contracting Members shall adopt, for their radiobeacon stations in 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 in the Annex and its Appendices.

4. 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 Article 4 of this Agreement.

5. 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.

6. 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

7. 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

8. 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.

9. 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 Annex [ ] to this Agreement;

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 Annex [ ].

10. An administration proposing to modify the characteristics of an assignment or to bring a new assignment into use shall so inform the IFRB not earlier than 90 days before the date of bringing into use and shall furnish the characteristics listed in Appendix 1 to the Radio Regulations, and shall also indicate to the IFRB 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.

11. 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.

12. 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 10 above;
- of the aeronautical radionavigation service recorded in the Master Register on behalf of Contracting Members. It shall inform the administration proposing the modification of the results of its examination.

13. 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 shall notify the Board of the results of its efforts.

14. Following the examination carried out in accordance with paragraph 12 above, the Board shall record the assignment in the Master Register indicating the names of those administrations whose agreement has to be obtained. It shall inform the administration concerned that the entry has been made subject to the proviso that no harmful interference will be caused to the assignments of administrations whose agreement must be obtained.

15. 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.

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SECTION C - CANCELLATION OF ASSIGNMENTS

16. 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

17. 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.

18. 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

19. 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.

20. 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.

21. 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

22. 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.

23. 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 10 (Article 4).

24. In the event of the finding being unfavourable with respect to a frequency assignment described in paragraphs 23 c) or 23 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 that assignment is brought into service.

25. For the purpose of these examinations the Board shall apply the technical criteria contained in Annex [ ] to this Agreement.

ARTICLE 7

Special Arrangements

26. 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.

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ARTICLE 8

Scope of Application of this Agreement

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

28. 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

29. 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

30. 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 day of the deposit by such a Member of its instrument of accession.

ARTICLE 11

Termination of Participation in this Agreement

31. 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.

32. 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.

33. 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.

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ARTICLE 12

Revision of the Agreement

34. 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 of the Regional Arrangement concerning maritime radiobeacons in the European Area of Region 1 (Paris, 1951)

35. This Agreement and the annexed Plan abrogate the Regional Arrangement concerning Maritime Radiobeacons in the European Area of Region 1 (Paris, 1951).

ARTICLE 14

Effective Date of this Agreement

36. This Agreement shall enter into force on [1 January 1987] at 0001 hours UTC.

[The date of implementation of the Plan will be [1 June 1994] 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, [...] March, 1985.

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document 1046-E
11 March 1985
Original : French

REGION 1

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE MARITIME MOBILE SERVICE AND THE AERONAUTICAL RADIONAVIGATION SERVICE IN CERTAIN PARTS OF THE MF BAND IN REGION 1
GENEVA, FEBRUARY/MARCH 1985

Document 97-E
11 March 1985
Original : French

COMMITTEE 3

SUMMARY RECORD
OF THE
SECOND MEETING OF RARC MM-R1 COMMITTEE 3
AND
FIRST MEETING OF RARC EMA COMMITTEE 3

Tuesday, 5 March 1985, at 1000 hours

Co-Chairmen : Mr. S.S. EL BASHEER (Saudi Arabia) (MM-R1)
Mr. P. CAREY (Ireland) (EMA)

Subjects discussed :

		Document
1.	Summary record of the first meeting of RARC MM-R1 Committee 3	66
2.	Final Acts of the two Conferences	18 - 1009
3.	Position of accounts of the two Conferences	71 - 1025
4.	Other business	

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.

1. Summary record of the first meeting of RARC MM-R1 Committee 3 (Document 66)

1.1 Document 66 was adopted without comment.

1.2 However, the Secretary of the Committee drew the attention of delegates to Document DT/1002, whereby Documents 1009, 1010, 1011 and 1014 were assigned to the Committee, and said that the documents in question had been examined at the first meeting of Committee 3 under Nos. 19, 20, 25 and 33.

2. Finals Acts of the two Conferences (Document 18 - 1009)

2.1 The Secretary presented Document 18 - 1009 which, he said, pointed out that it was for the Plenary Meetings to determine the share of expenditure to be borne by the supplementary publications budget and by the Conferences budget respectively, and for the Budget Control Committee to submit a proposal on the matter .

2.2 The Chairman said that those proposals would be embodied in the final report of Committee 3 to the two Plenary Meetings.

3. Position of accounts of the two Conferences (Document 71 - 1025)

3.1 The Secretary said that the position as regards expenditure at 28 February 1985 revealed a surplus of 142,500 Swiss francs over the budget approved by the Administrative Council, as adjusted.

3.2 The credits adopted would be sufficient to meet the cost of both Conferences and the final surplus should be greater.

3.3 Moreover, the next statement of accounts would the changes introduced in the United Nations common system of salaries and allowances with effect from 1 March 1985.

3.4 The Chairman noted with satisfaction the savings made in the expenditure for the two Conferences.

3.5 The Committee noted Document 71 - 1025.

4. Statement of expenses incurred for the preparatory work by the IFRB for RARC MM-R1 and RARC EMA (Document 74 - 1030)

4.1 Document 74 - 1030 was examined following a question raised by the United Kingdom delegate.

4.2 The Chairman of the IFRB said that it had been impossible to identify IFRB requirements during preparations for the two Conferences. The IFRB was seeking a token contribution of 30,000 Swiss francs from the Conference budget to offset part of its equipment purchasing costs.

4.3 The United Kingdom delegate asked whether that amount was to cover costs incurred over and above those estimated by the IFRB for the two Conferences.

4.4 The Chairman of the IFRB explained that no credits had been included in the Conference budget for preparatory work by the IFRB ; that was why the IFRB was requesting an allocation of 30,000 Swiss francs.

4.5 The Secretary proposed that, in view of the credits available, that amount should be charged to the budget of the two Conferences and credited as unforeseen income in the accounts for 1985.

4.6 The Secretary's proposal was approved. The request by the IFRB in Document 1030 was accepted.

5. Other business

5.1 The Secretary pointed out that, during the consideration at the first meeting of Committee 3 of Document 20 concerning the financial responsibilities of Administrative Conferences, the Chairman of Committee 3 had been requested to send a note to the Chairmen of Committees 4 and 5 drawing their attention to the possible financial implications of the decisions taken.

He asked the Chairman of RARC-EMA Committee 3 whether such a note should also be addressed to the Chairmen of RARC-EMA Committees 4 and 5.

The Chairman said that a similar note should also be sent to the Chairmen of both those Committees.

5.2 The Secretary pointed out that four international organizations had applied to participate in the work of RARC-EMA (Document 1019). Since one of those organizations, namely the International Association of Lighthouse Authorities (IALA) was not exempted, it had been requested to state its class of contribution.

The meeting rose at 1035 hours.

The Secretary :

R. PRELAZ

The Chairmen :

S.S. AL-BASHEER (RARC MM-R1)

P. CAREY (RARC EMA)

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document 1047-E
8 March 1985
Original: French

REGION 1

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE MARITIME MOBILE SERVICE AND THE AERONAUTICAL RADIONAVIGATION SERVICE IN CERTAIN PARTS OF THE MF BAND IN REGION 1
GENEVA, FEBRUARY/MARCH 1985

Document 106-E
8 March 1985
Original: French

BUDGET CONTROL COMMITTEE

Note by the Secretary-General

POSITION OF THE CONFERENCE ACCOUNTS

at 8 March 1985

I hereby submit an estimate of the Conference expenses at 8 March 1985 for the consideration of the Budget Control Committees.

The statement shows a surplus of 242,500.- Swiss francs over the budget approved by the Administrative Council and adjusted to take account of changes in the common system of salaries and allowances.

R.E. BUTLER
Secretary-General

Annex: 1

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.

ANNEX

Item No.	Heading	Approved budget	Adjusted budget	Credit transfers		Available credits	Expenditure as at 8 March 1985			
				item to item	subhead to subhead		actual	committed	estimated	total
1	2	3	4	5	6	7	8	9	10	11
	I. Staff expenses									
20.401	Secretariat salaries, etc.	968,000	1,051,500		- 25,000	1,026,500	18,161	743,496	123,343	885,000
20.402	Common services salaries, etc.	508,000	562,500			562,500	32,183	481,561	48,756	562,500
20.403	Travel (recruitment)	80,000	80,000			80,000	9,450	37,380	3,170	50,000
20.404	Insurance	77,000	77,000			77,000	1,694	-	58,306	60,000
		1,633,000	1,771,000	-	- 25,000	1,746,000	61,488	1,262,437	233,575	1,557,500
	II. Travel expenses	-	-			-				-
	III. Premises and equipment									
20.431	Premises, furniture, machines	32,000	32,000	+8,000		40,000	-	39,600	400	40,000
20.432	Document production	142,000	142,000			142,000	8,678	1,647	79,675	90,000
20.433	Office supplies and overheads	20,000	20,000			20,000	4,053	-	15,947	20,000
20.434	Postage, telephone calls, telegrams	30,000	30,000	-5,000		25,000	668	-	24,332	25,000
20.435	Technical installations	5,000	5,000	-3,000		2,000	-	-	-	-
20.436	Sundry and unforeseen	10,000	10,000			10,000	-	-	10,000	10,000
		239,000	239,000	-	-	239,000	13,399	41,247	130,354	185,000
	IV. Other expenses									
20.441	Interest credited to the ordinary budget	35,000	35,000	-5,000		30,000	-	-	30,000	30,000
20.442	IFRB preparatory work	-	-	+5,000	+25,000	30,000	30,000	-	-	30,000
		35,000	35,000	-	+25,000	60,000	30,000	-	30,000	60,000
	V. Final Acts									
20.451	Final Acts of the two Conferences	86,000	86,000			86,000	-	-	86,000	86,000
	Total	1,993,000	2,131,000	-	-	2,131,000	104,887	1,303,684	479,929	1,888,500

1) Budget including additional credits to take account of changes in the common system of staff salaries of the United Nations.

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document 1048-E
12 March 1985
Original: English

COMMITTEE 5

SUMMARY RECORD

OF THE

SECOND MEETING OF COMMITTEE 5

(PROCEDURES AND AGREEMENT)

Wednesday, 6 March 1985, at 1400 hrs

Chairman: Mr. R. BISNER (France)

Subject discussed:	Documents
1. Consideration of the draft report of Committee 5 to the Plenary Meeting	DT/1004, 1035

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1. Consideration of the draft report of Committee 5 to the Plenary Meeting (Documents DT/1004, 1035)

1.1 The Chairman invited the Committee to consider Document DT/1004, page by page.

The Preamble and Articles 1, 2, 3 and 6 were approved subject to minor editorial changes.

1.2 In reply to a point raised by the representative of the International Maritime Organization (IMO), the delegate of the United Kingdom said that the provision in the second paragraph of Article 7 could not be construed to interfere in any way with a State's obligations under any other international agreement.

1.3 The representative of the IFRB corroborated that view.

Articles 7 to 11 were approved.

1.4 Replying to a point raised by the representative of IMO in connection with Article 12, the representative of the IFRB said that while from the strictly legal point of view the Agreement applied only to its contracting members, for practical purposes it should be considered to apply to all countries in the Region unless they expressly indicated that they did not accept its provisions.

1.5 The delegate of the Federal Republic of Germany, supported by the delegate of the Netherlands, proposed that the date "1 June 1990" should be inserted between square brackets in Article 13. An earlier date could not be chosen in view of footnote 458 to Article 8 of the Radio Regulations. For operational reasons, a date in early summer or early spring was preferable to one in winter.

1.6 The delegate of France said that the changes introduced by the Conference involved fundamental changes in shipborne receivers and at least ten years should be allowed for the depreciation of existing equipment. Accordingly, he proposed that the date for the entry into force of the Agreement should be some time in 1995.

1.7 The delegates of the USSR and Spain and the representative of IMO supported that proposal.

1.8 The delegate of Yugoslavia expressed a preference for 1997 as the date of entry into force.

1.9 The representative of the IFRB said that it was normal practice for an agreement to enter into force within a period of one to two years afters its adoption. A date of ten or twelve years ahead would give rise to serious problems with regard to provisional procedures to be applied during the interim period. The solution might be to adopt a reasonably early date for the entry into force of the Agreement and a different date or series of dates in the more remote future for the actual implementation of the Plan.

1.10 The representative of the International Association of Lighthouse Authorities (IALA) said that he failed to see the need for delaying the implementation of the Plan since he understood it to be the aim of the Conference to produce a plan which was comptible with existing equipment.

1.11 The delegate of the Federal Republic of Germany, supported by the delegate of the United Kingdom, suggested that the Committee should propose 1 January 1987 as the date for the entry into force of the Agreement and 1 June 1994 as the date for the implementation of the Plan.

It was so agreed.

1.12 The Chairman added that those dates would appear in square brackets since it was for the Plenary to make the final decision.

It was so agreed.

1.13 The delegate of Yugoslavia entered a reservation as to the date of implementation of the Plan.

Articles 12 and 13 were approved on that understanding.

Article 4

1.14 The delegate of France suggested that the word "new" should be substituted for "additional" in the first and third paragraphs of section B.

It was so agreed.

1.15 In reply to the delegate of the USSR, the representative of the IFRB said that the procedure set out in section B had been simplifed as much as possible.

1.16 The representative of the IFRB suggested that the words "in the Plan" in sub-paragraph (a) in the second paragraph of section B should be replaced by "in conformity with the Agreement".

It was so agreed.

Article 4 was approved, subject to the above and a number of other editorial amendments.

Article 5

1.17 It was agreed:

- to delete paragraph 3, since its provisions appeared in Article 4;
- to insert the words "and having obtained the agreement of the administrations concerned" in the last paragraph after "Master Register".

1.18 The delegate of France suggested that a new article should be inserted in the report to take account of other navigational systems. The Chairman asked him to prepare a draft for the following meeting.

1.19 The Chairman agreed with the delegate of the USSR and the representative of the IFRB that no draft Resolution would be prepared until Committee 4 had concluded its work.

1.20 Replying to a question put by the Chairman, the representative of the IFRB said that it was for Committee 4 to decide whether or not to accept a request in the form of a Recommendation for a modification to the Frequency Table under Article 8 of the Radio Regulations, as any such request would be based on technical or planning requirements which fell outside the terms of reference of Committee 5.

The meeting rose at 1700 hours.

The Secretary: The Chairman:

J. BALFROID R.J.-M. BISNER

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document 1049(Rev.1)-E
12 March 1985
Original: French

REGION 1

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE MARITIME MOBILE SERVICE AND THE AERONAUTICAL RADIONAVIGATION SERVICE IN CERTAIN PARTS OF THE MF BAND IN REGION 1
GENEVA, FEBRUARY/MARCH 1985

Document 107(Rev.1)-E
12 March 1985
Original: French

PLENARY MEETINGS

REPORT OF THE BUDGET CONTROL COMMITTEE TO THE PLENARY MEETINGS OF THE TWO CONFERENCES

The Budget Control Committee held three meetings during the Conferences 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.

1. Determination of the organization and facilities available to delegates

As there were no comments by delegations on the subject, Committee 3 concluded that the organization and the facilities available to delegates were adequate.

2. Budget of the Conferences

At its 39th session (1984) the Administrative Council decided that the two Regional Conferences should be held simultaneously at Geneva with a single secretariat in order to enhance efficiency and reduce costs. It therefore approved a single budget covering both Conferences. This joint budget, amounting to 1,993,000 Swiss francs, was examined by the Budget Control Committee.

The Committee noted that the budget of the Conferences had been adjusted by 138,000 Swiss francs 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.

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3. Final Acts of the Conferences

Under the terms of Administrative Council Resolution No. 83 (amended):

"... if a conference 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 cost mentioned in the above paragraph ... shall be decided by the Plenary Meeting of the Conference.".

Parts of the texts making up the Final Acts of the Conferences which are to be signed by delegations can be used for the final printing.

The Plenary Meetings of the Conferences must decide what share of the cost of preparing these texts should be borne, respectively, by the budget of the Conferences and the supplementary publications budget.

Taking into account decisions adopted by previous conferences and by the Administrative Council when it approved the budget of the Conferences, the Budget Control Committee proposes that these costs be distributed as follows:

1/3 to be charged to the budget of the Conferences;

2/3 to be charged to the supplementary publications budget.

The estimate of expenditure given in Annex 1 takes account of a 1/3 - 2/3 distribution.

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 Conferences.

Accordingly, Annex 1 contains a statement showing the budget of the Conferences, together with a breakdown of credits among the budget subheads and items, as well as the actual expenditure incurred as at 8 March 1985. There is also an indication of the expenditure committed up to that date and an estimate of expenditure up to the date of closure of the Conferences.

Credits transferred from subhead to subhead in accordance with Article 15, paragraph 3, of the Financial Regulations of the Union are also given in Annex 1.

The statement shows that total expenditure is estimated at 1,888,500 Swiss francs i.e. 242,500 Swiss francs less than the budget approved by the Administrative Council and adjusted in accordance with its Resolution No. 647.

5. Recognized private operating agencies and international organizations taking part in the Conferences

No recognized private operating agency is taking part in the Conferences. The international organizations participating in the work of both Conferences are listed in Annex 2 to this report.

6. Sharing of conference expenditure

RARC MM-R1 and RARC EMA are to be considered as regional conferences within the meaning of No. 50 in Article 7 of the Nairobi Convention (1982), and the expenditure arising from them must be borne by all the Members of the respective Regions according to the class of contribution they have chosen pursuant to No. 115 in Article 15 of the Convention.

It should be noted in this respect that, in approving the budget of the two Conferences, the Administrative Council decided that their total cost should be shared as follows:

2/3 to be borne by RARC MM-R1

1/3 to be borne by RARC EMA.

A list of the Members which must bear the costs of the two Conferences is given in Annexes 3.1 and 3.2.

According to the statement of account in Annex 1, total expenditure is estimated at 1,888,500 Swiss francs. On the basis of the number of contributory units of the Members required to bear the cost of the Conferences, the amount of the contributory units may be estimated at:

- for RARC MM-R1: 5,250 Swiss francs
- for RARC EMA: 2,975 Swiss francs

Under Article 28 of the Financial Regulations of the Union, interest is payable on regional conference accounts after a period of 60 days from the date of their despatch. Since invoices can probably be sent to participants at the end of May 1985, they should be settled not later than 31 July 1985. From 1 August 1985 they will be subject to interest at 3% for the first 180 days and at 6% thereafter.

7. Additional expenditure to be envisaged for implementation of the decisions of the two Conferences

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 Conferences. 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 Nairobi Conference provides:

"that before adopting resolutions or taking decisions which are likely to result in additional and unforeseen demands upon the budgets of the Union, future 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 an 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;".

The financial implications of the decisions taken at the two Conferences were the subject of a note by the Chairman of the IFRB and a memorandum by the Director of the CCIR.

The Budget Control Committee therefore appends to this report Annexes 4 and 5 concerning the expenditure that might be entailed by implementation of the decisions of the two Conferences.

* * *

In accordance with No. 479 of the Convention, this report will be transmitted to the Secretary-General, together with any comments by the Plenary Meetings, for referral to the Administrative Council at its next annual session.

* * *

The Plenary Meetings are requested to approve this report.

Chairman of the Budget
Control Committee

of RARC MM-R1 S.S. AL-BASHEER

of RARC EMA P. CAREY

Annexes: 5

ANNEX 1

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	II. Travel expenses	-	-			-				-
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20.435	Technical installations	5,000	5,000	-3,000		2,000	-	-	-	-
20.436	Sundry and unforeseen	10,000	10,000			10,000	-	-	10,000	10,000
		239,000	239,000	-	-	239,000	13,399	41,247	130,354	185,000
	IV. Other expenses									
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20.442	IFRB preparatory work	-	-	+5,000	+25,000	30,000	30,000	-	-	30,000
		35,000	35,000	-	+25,000	60,000	30,000	-	30,000	60,000
	V. Final Acts									
20.451	Final Acts of the two Conferences	86,000	86,000			86,000	-	-	86,000	86,000
	Total	1,993,000	2,131,000	-	-	2,131,000	104,887	1,303,684	479,929	1,888,500

1) Budget including additional credits to take account of changes in the common system of staff salaries of the United Nations.

ANNEX 2

Recognized private operating agencies and international organizations taking part in the Conferences

	Number of contributory units	
	RARC MM-R1	RARC EMA
1. Recognized private operating agencies		
None		
2. International organizations		
- International Association of Lighthouse Authorities (IALA)		½
- International Air Transport Association (IATA)	*	
- International Marine Radio Association (CIRM)	*	*
- International Electrotechnical Commission (IEC)	*	*
- International Transport Workers' Federation (ITF)	**	
- International Amateur Radio Union (IARU)	*	*

* International organization exempt from any contribution under the provisions of Administrative Council Resolution No. 574.

** The class of contribution has not yet been notified.

ANNEX 3.1

Contributions by Members of the Union
towards defraying the expenses of RARC MM-R1

Under No. 115 of the International Telecommunication Convention (Nairobi, 1982), expenses incurred by regional administrative conferences are borne by the Members of the regions concerned. These are as follows:

Members of Region 1

		Contributory units
1.	Albania (Socialist People's Republic of)	1/4
2.	Algeria (People's Democratic Republic of)	1
3.	Germany (Federal Republic of)	30
4.	Angola (People's Republic of)	1/4
5.	Saudi Arabia (Kingdom of)	10
6.	Austria	1
7.	Bahrain (State of)	1/2
8.	Belgium	5
9.	Benin (People's Republic of)	1/4
10.	Byelorussian Soviet Socialist Republic	1/2
11.	Botswana (Republic of)	1/2
12.	Bulgaria (People's Republic of)	1
13.	Burkina Faso	1/8
14.	Burundi (Republic of)	1/8
15.	Cameroon (Republic of)	1/2
16.	Cape Verde (Republic of)	1/8
17.	Central African Republic	1/8
18.	Cyprus (Republic of)	1/4
19.	Vatican City State	1/4
20.	Comoros (Islamic Federal Republic of the)	1/8
21.	Congo (People's Republic of the)	1/2
22.	Ivory Coast (Republic of the)	1
23.	Denmark	5
24.	Djibouti (Republic of)	1/8
25.	Egypt (Arab Republic of)	1
26.	United Arab Emirates	1
27.	Spain	3
28.	Ethiopia	1/8
29.	Finland	5
30.	France	30
31.	Gabonese Republic	1/2
32.	Gambia (Republic of the)	1/8
33.	Ghana	1/4
34.	Greece	1
35.	Guinea (Republic of)	1/8
36.	Guinea-Bissau (Republic of)	1/8
37.	Equatorial Guinea (Republic of)	1/8
38.	Hungarian People's Republic	1
39.	Iraq (Republic of)	1/4
40.	Ireland	2

		Contributory units
41.	Iceland	1/4
42.	Israel (State of)	1
43.	Italy	10
44.	Jordan (Hashemite Kingdom of)	1/2
45.	Kenya (Republic of)	1/4
46.	Kuwait (State of)	1
47.	Lesotho (Kingdom of)	1/8
48.	Lebanon	1/4
49.	Liberia (Republic of)	1/4
50.	Libya (Socialist People's Libyan Arab Jamahiriya)	1½
51.	Liechtenstein (Principality of)	1/2
52.	Luxembourg	1/2
53.	Madagascar (Democratic Republic of)	1/4
54.	Malawi	1/8
55.	Mali (Republic of)	1/8
56.	Malta (Republic of)	1/4
57.	Morocco (Kingdom of)	1
58.	Mauritius	1/4
59.	Mauritania (Islamic Republic of)	1/4
60.	Monaco	1/4
61.	Mongolian People's Republic	1/4
62.	Mozambique (People's Republic of)	1/4
63.	Namibia	-
64.	Niger (Republic of the)	1/8
65.	Nigeria (Federal Republic of)	2
66.	Norway	5
67.	Oman (Sultanate of)	1/2
68.	Uganda (Republic of)	1/8
69.	Netherlands (Kingdom of the)	10
70.	Poland (People's Republic of)	2
71.	Portugal	1
72.	Qatar (State of)	1/2
73.	Syrian Arab Republic	1/2
74.	German Democratic Republic	3
75.	Ukrainian Soviet Socialist Republic	1
76.	Romania (Socialist Republic of)	1/2
77.	United Kingdom of Great Britain and Northern Ireland	30
78.	Rwandese Republic	1/8
79.	San Marino (Republic of)	1/4
80.	Sao Tome and Principe (Democratic Republic of)	1/8
81.	Senegal (Republic of)	1
82.	Sierra Leone	1/8
83.	Somali Democratic Republic	1/8
84.	Sudan (Democratic Republic of the)	1/8
85.	South Africa (Republic of)	1
86.	Sweden	10
87.	Switzerland (Confederation of)	10
88.	Swaziland (Kingdom of)	1/4
89.	Tanzania (United Republic of)	1/8
90.	Chad (Republic of)	1/8

		Contributory units
91.	Czechoslovak Socialist Republic	2
92.	Togolese Republic	1/4
93.	Tunisia	1
94.	Turkey	1
95.	Union of Soviet Socialist Republics	30
96.	Yemen Arab Republic	1/4
97.	Yemen (People's Democratic Republic of)	1/8
98.	Yugoslavia (Socialist Federal Republic of)	1
99.	Zaire (Republic of)	1/2
100.	Zambia (Republic of)	1/4
101.	Zimbabwe (Republic of)	1/2
	Total	239 3/4

ANNEX 3.2

Contributions by Members of the Union
towards defraying the expenses of RARC EMA

Under No. 115 of the International Telecommunication Convention (Nairobi, 1982), expenses incurred by regional administrative conferences are borne by the Members of the regions concerned. These are as follows:

Members of the European Maritime Area:

	Contributory units
1. Albania (Socialist People's Republic of)	1/4
2. Algeria (People's Democratic Republic of)	1
3. Germany (Federal Republic of)	30
4. Austria	1
5. Belgium	5
6. Byelorussian Soviet Socialist Republic	1/2
7. Bulgaria (People's Republic of)	1
8. Cyprus (Republic of)	1/4
9. Vatican City State	1/4
10. Denmark	5
11. Egypt (Arab Republic of)	1
12. Spain	3
13. Finland	5
14. France	30
15. Greece	1
16. Hungarian People's Republic	1
17. Iraq (Republic of)	1/4
18. Ireland	2
19. Iceland	1/4
20. Israel (State of)	1
21. Italy	10
22. Jordan (Hashemite Kingdom of)	1/2
23. Lebanon	1/4
24. Libya (Socialist People's Libyan Arab Jamahiriya)	1 ½
25. Liechtenstein (Principality of)	1/2

	Contributory units
26. Luxembourg	1/2
27. Malta (Republic of)	1/4
28. Morocco (Kingdom of)	1
29. Monaco	1/4
30. Norway	5
31. Netherlands (Kingdom of the)	10
32. Poland (People's Republic of)	2
33. Portugal	1
34. Syrian Arab Republic	1/2
35. German Democratic Republic	3
36. Ukrainian Soviet Socialist Republic	1
37. Romania (Socialist Republic of)	1/2
38. United Kingdom of Great Britain and Northern Ireland	30
39. San Marino (Republic of)	1/4
40. Sweden	10
41. Switzerland (Confederation of)	10
42. Czechoslovak Socialist Republic	2
43. Tunisia	1
44. Turkey	1
45. Union of Soviet Socialist Republics	30
46. Yugoslavia (Socialist Federal Republic of)	1
Total	211 3/4

ANNEX 4

NOTE BY THE CHAIRMAN, IFRB
TO THE CHAIRMEN OF COMMITTEE 3, EMA AND MM CONFERENCES

PROVISIONAL ESTIMATES OF THE IFRB REQUIREMENTS FOR IMMEDIATE POST-CONFERENCE WORK

Both the Conferences, namely RARC Region 1 and the RARC EMA are in the last stages of their work but have not yet completed the consideration of the texts presented by their respective Committees. On the assumption that the texts presented by the Committees would be accepted by the Plenary Sessions of the respective Conferences, the IFRB has made a provisional estimate for carrying out the immediate post-conference work as equivalent to the following staff for a period of 12 months

1 P4 System Analyst and 1 G4 Assistant

The financial repercussions of this requirement can be provided by the Finance Department of the General Secretariat.

A document based on a more detailed analysis of the results of the two Conferences will be prepared by the Board for consideration by the 40th Session of the Administrative Council due to be held in July 1985.

G.C. Brooks
Chairman

ANNEX 5

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.)

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EMA-R1/6

12 March, 1985

MEMORANDUM

To : Mr. P. CAREY, Chairman Committee 3
of Regional Administrative Radio Conference for the planning of frequencies for maritime radiobeacons in the European Maritime Area

From : Mr. Richard C. KIRBY, Director CCIR

Subject: Draft Resolution No. COM 4/1 (EMA).

Committee 4 adopted on 11 March 1985 Draft Resolution No. COM 4/1 (EMA). By this Resolution, the CCIR is invited to carry out certain studies in preparation of the WARC/MOB-87. It may be necessary to set up an Interim Working Party of Study Group 8 to carry out this work, and one or two meetings would then be required.

Could you please foresee SF 50,000 to this effect in the budgetary provisions of the Conference.

c.c. Mr. T. Hahkio, Chairman of the Conference EMA-R1,
Mr. R. E. Butler, Secretary General ITU.

CS/dvt

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document 1049-E
8 March 1985
Original: French

REGION 1

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE MARITIME MOBILE SERVICE AND THE AERONAUTICAL RADIONAVIGATION SERVICE IN CERTAIN PARTS OF THE MF BAND IN REGION 1
GENEVA, FEBRUARY/MARCH 1985

Document 107-E
8 March 1985
Original: French

PLENARY MEETINGS

REPORT OF THE BUDGET CONTROL COMMITTEE TO THE PLENARY MEETINGS OF THE TWO CONFERENCES

The Budget Control Committee held three meetings during the Conferences 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.

1. Determination of the organization and facilities available to delegates

As there were no comments by delegations on the subject, Committee 3 concluded that the organization and the facilities available to delegates were adequate.

2. Budget of the Conferences

At its 39th session (1984) the Administrative Council decided that the two Regional Conferences should be held simultaneously at Geneva with a single secretariat in order to enhance efficiency and reduce costs. It therefore approved a single budget covering both Conferences. This joint budget, amounting to 1,993,000 Swiss francs, was examined by the Budget Control Committee.

The Committee noted that the budget of the Conferences had been adjusted by Swiss francs 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.

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.

3. Final Acts of the Conferences

Under the terms of Administrative Council Resolution No. 83 (amended):

"... if a conference 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 cost mentioned in the above paragraph ... shall be decided by the Plenary Meeting of the Conference.".

Parts of the texts making up the Final Acts of the Conferences which are to be signed by delegations can be used for the final printing.

The Plenary Meetings of the Conferences must decide what share of the cost of preparing these texts should be borne, respectively, by the budget of the Conferences and the supplementary publications budget.

Taking into account decisions adopted by previous conferences and by the Administrative Council when it approved the budget of the Conferences, the Budget Control Committee proposes that these costs be distributed as follows:

1/3 to be charged to the budget of the Conferences;

2/3 to be charged to the supplementary publications budget.

The estimate of expenditure given in Annex 1 takes account of a 1/3 - 2/3 distribution.

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 Conferences.

Accordingly, Annex 1 contains a statement showing the budget of the Conferences, together with a breakdown of credits among the budget subheads and items, as well as the actual expenditure incurred as at 8 March 1985. There is also an indication of the expenditure committed up to that date and an estimate of expenditure up to the date of closure of the Conferences.

Credits transferred from subhead to subhead in accordance with Article 15, paragraph 3, of the Financial Regulations of the Union are also given in Annex 1.

The statement shows that total expenditure is estimated at Swiss francs i.e. Swiss francs less than the amount approved by the Administrative Council and adjusted in accordance with its Resolution No. 647.

5. Recognized private operating agencies and international organizations taking part in the Conferences

No recognized private operating agency is taking part in the Conferences. The international organizations participating in the work of both Conferences are listed in Annex 2 to this report.

6. Sharing of conference expenditure

RARC MM-R1 and RARC EMA are to be considered as regional conferences within the meaning of No. 50 in Article 7 of the Nairobi Convention (1982), and the expenditure arising from them must be borne by all the Members of the respective Regions according to the class of contribution they have chosen pursuant to No. 115 in Article 15 of the Convention.

It should be noted in this respect that, in approving the budget of the two Conferences, the Administrative Council decided that their total cost should be shared as follows:

2/3 to be borne by RARC MM-R1

1/3 to be borne by RARC EMA.

A list of the Members which must bear the costs of the two Conferences is given in Annexes 3.1 and 3.2.

According to the statement of account in Annex 1, total expenditure is estimated at Swiss francs. On the basis of the number of contributory units of the Members required to bear the cost of the Conferences, the amount of the contributory units may be estimated at:

- for RARC MM-R1:

- for RARC EMA:

Under Article 28 of the Financial Regulations of the Union, interest is payable on regional conference accounts after a period of 60 days from the date of their despatch. Since invoices can probably be sent to participants at the end of May 1985, they should be settled not later than 31 July 1985. From 1 August 1985 they will be subject to interest at 3% for the first 180 days and at 6% thereafter.

7. Additional expenditure to be envisaged for implementation of the decisions of the two Conferences

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 Conferences. 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 Nairobi Conference provides:**

"that before adopting resolutions or taking decisions which are likely to result in additional and unforeseen demands upon the budgets of the Union, future 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 an 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;".

The financial implications of the decisions taken at the two Conferences were the subject of reports.

The Budget Control Committee therefore appends to this report Annexes concerning the expenditure that might be entailed by implementation of the decisions of the two Conferences.

* * *

In accordance with No. 479 of the Convention, this report will be transmitted to the Secretary-General, together with any comments by the Plenary Meetings, for referral to the Administrative Council at its next annual session.

* * *

The Plenary Meetings are requested to approve this report.

Chairman of the Budget
Control Committee

of RARC MM-R1 S.S. AL-BASHEER

of RARC EMA P. CAREY

Annexes:

ANNEX 1

Position of the accounts of the two Conferences
at 8 March 1985

To be added subsequently.

ANNEX 2

Recognized private operating agencies
and international organizations
taking part in the Conferences

	Number of contributory units	
	RARC MM-R1	RARC EMA
1. Recognized private operating agencies		
None		
2. International organizations		
- International Association of Lighthouse Authorities (IALA)		**
- International Air Transport Association (IATA)	*	
- International Marine Radio Association (CIRM)	*	*
- International Electrotechnical Commission (IEC)	*	*
- International Transport Workers' Federation (ITF)	**	
- International Amateur Radio Union (IARU)	*	*

* International organization exempt from any contribution under the provisions of Administrative Council Resolution No. 574.

** The class of contribution has not yet been notified.

ANNEX 3.1

Contributions by Members of the Union
towards defraying the expenses of RARC MM-R1

Under No. 115 of the International Telecommunication Convention (Nairobi, 1982), expenses incurred by regional administrative conferences are borne by the Members of the regions concerned. These are as follows:

Members of Region 1

		Contributory units
1.	Albania (Socialist People's Republic of)	1/4
2.	Algeria (People's Democratic Republic of)	1
3.	Germany (Federal Republic of)	30
4.	Angola (People's Republic of)	1/4
5.	Saudi Arabia (Kingdom of)	10
6.	Austria	1
7.	Bahrain (State of)	1/2
8.	Belgium	5
9.	Benin (People's Republic of)	1/4
10.	Byelorussian Soviet Socialist Republic	1/2
11.	Botswana (Republic of)	1/2
12.	Bulgaria (People's Republic of)	1
13.	Burkina Faso	1/8
14.	Burundi (Republic of)	1/8
15.	Cameroon (Republic of)	1/2
16.	Cape Verde (Republic of)	1/8
17.	Central African Republic	1/8
18.	Cyprus (Republic of)	1/4
19.	Vatican City State	1/4
20.	Comoros (Islamic Federal Republic of the)	1/8
21.	Congo (People's Republic of the)	1/2
22.	Ivory Coast (Republic of the)	1
23.	Denmark	5
24.	Djibouti (Republic of)	1/8
25.	Egypt (Arab Republic of)	1
26.	United Arab Emirates	1
27.	Spain	3
28.	Ethiopia	1/8
29.	Finland	5
30.	France	30
31.	Gabonese Republic	1/2
32.	Gambia (Republic of the)	1/8
33.	Ghana	1/4
34.	Greece	1
35.	Guinea (Republic of)	1/8
36.	Guinea-Bissau (Republic of)	1/8
37.	Equatorial Guinea (Republic of)	1/8
38.	Hungarian People's Republic	1
39.	Iraq (Republic of)	1/4
40.	Ireland	2

		Contributory units
41.	Iceland	1/4
42.	Israel (State of)	1
43.	Italy	10
44.	Jordan (Hashemite Kingdom of)	1/2
45.	Kenya (Republic of)	1/4
46.	Kuwait (State of)	1
47.	Lesotho (Kingdom of)	1/8
48.	Lebanon	1/4
49.	Liberia (Republic of)	1/4
50.	Libya (Socialist People's Libyan Arab Jamahiriya)	1½
51.	Liechtenstein (Principality of)	1/2
52.	Luxembourg	1/2
53.	Madagascar (Democratic Republic of)	1/4
54.	Malawi	1/8
55.	Mali (Republic of)	1/8
56.	Malta (Republic of)	1/4
57.	Morocco (Kingdom of)	1
58.	Mauritius	1/4
59.	Mauritania (Islamic Republic of)	1/4
60.	Monaco	1/4
61.	Mongolian People's Republic	1/4
62.	Mozambique (People's Republic of)	1/4
63.	Namibia	-
64.	Niger (Republic of the)	1/8
65.	Nigeria (Federal Republic of)	2
66.	Norway	5
67.	Oman (Sultanate of)	1/2
68.	Uganda (Republic of)	1/8
69.	Netherlands (Kingdom of the)	10
70.	Poland (People's Republic of)	2
71.	Portugal	1
72.	Qatar (State of)	1/2
73.	Syrian Arab Republic	1/2
74.	German Democratic Republic	3
75.	Ukrainian Soviet Socialist Republic	1
76.	Romania (Socialist Republic of)	1/2
77.	United Kingdom of Great Britain and Northern Ireland	30
78.	Rwandese Republic	1/8
79.	San Marino (Republic of)	1/4
80.	Sao Tome and Principe (Democratic Republic of)	1/8
81.	Senegal (Republic of)	1
82.	Sierra Leone	1/8
83.	Somali Democratic Republic	1/8
84.	Sudan (Democratic Republic of the)	1/8
85.	South Africa (Republic of)	1
86.	Sweden	10
87.	Switzerland (Confederation of)	10
88.	Swaziland (Kingdom of)	1/4
89.	Tanzania (United Republic of)	1/8
90.	Chad (Republic of)	1/8

		Contributory units
91.	Czechoslovak Socialist Republic	2
92.	Togolese Republic	1/4
93.	Tunisia	1
94.	Turkey	1
95.	Union of Soviet Socialist Republics	30
96.	Yemen Arab Republic	1/4
97.	Yemen (People's Democratic Republic of)	1/8
98.	Yugoslavia (Socialist Federal Republic of)	1
99.	Zaire (Republic of)	1/2
100.	Zambia (Republic of)	1/4
101.	Zimbabwe (Republic of)	1/2
	Total	239 3/4

ANNEX 3.2

Contributions by Members of the Union
towards defraying the expenses of RARC EMA

Under No. 115 of the International Telecommunication Convention (Nairobi, 1982), expenses incurred by regional administrative conferences are borne by the Members of the regions concerned. These are as follows:

Members of the European Maritime Area:

	Contributory units
1. Albania (Socialist People's Republic of)	1/4
2. Algeria (People's Democratic Republic of)	1
3. Germany (Federal Republic of)	30
4. Austria	1
5. Belgium	5
6. Byelorussian Soviet Socialist Republic	1/2
7. Bulgaria (People's Republic of)	1
8. Cyprus (Republic of)	1/4
9. Vatican City State	1/4
10. Denmark	5
11. Egypt (Arab Republic of)	1
12. Spain	3
13. Finland	5
14. France	30
15. Greece	1
16. Hungarian People's Republic	1
17. Iraq (Republic of)	1/4
18. Ireland	2
19. Iceland	1/4
20. Israel (State of)	1
21. Italy	10
22. Jordan (Hashemite Kingdom of)	1/2
23. Lebanon	1/4
24. Libya (Socialist People's Libyan Arab Jamahiriya)	1 ½
25. Liechtenstein (Principality of)	1/2

	Contributory units
26. Luxembourg	1/2
27. Malta (Republic of)	1/4
28. Morocco (Kingdom of)	1
29. Monaco	1/4
30. Norway	5
31. Netherlands (Kingdom of the)	10
32. Poland (People's Republic of)	2
33. Portugal	1
34. Syrian Arab Republic	1/2
35. German Democratic Republic	3
36. Ukrainian Soviet Socialist Republic	1
37. Romania (Socialist Republic of)	1/2
38. United Kingdom of Great Britain and Northern Ireland	30
39. San Marino (Republic of)	1/4
40. Sweden	10
41. Switzerland (Confederation of)	10
42. Czechoslovak Socialist Republic	2
43. Tunisia	1
44. Turkey	1
45. Union of Soviet Socialist Republics	30
46. Yugoslavia (Socialist Federal Republic of)	1
Total	211 3/4

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document 1050-E
11 March 1985

PL = Plenary
C = Committee
WG = Working Group

LIST OF DOCUMENTS
(1001 - 1050)

No.	Origin	Title	Destination
1001	SG	Agenda of the Conference	PL
1002	SG	Credentials of delegations	C.2
1003	SG	Report by the CCIR to the Conference	C.4
1004(Rev.1)	G	Proposal for a regional Agreement	C.4, C.5
1005	F	Proposals	C.4, C.5
1006 + Add.1, 2 + Corr.1/Add.2	SG	Report by the IFRB to the Conference	C.4
1007	SG	IALA recommandations	C.4
1008	S	Revision of maritime radiobeacon characteristics	C.4
1009	SG	Final Acts of the Conference	C.3
1010	SG	Budget of the Conference	C.3
1011	SG	Financial responsibilities of administrative conferences	C.3
1012	F	Proposals	C.4
1013	S	Proposals	C.4
1014	SG	Contributions of recognized private operating agencies and non-exempt international organizations	C.3
1015	SG	Note by the IFRB on the status of the primary and permitted services in connection with planning and notifications	C.4
1016	SG	IALA report	C.4
1017	SG	Report by the IFRB - Software for RARC-MM-R1 and RARC-EMA	C.4
1018 + Corr.1	Dean	Note by the Dean of the Conference	PL

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ARCHIVES U.I.T. GENÈVE

No.	Origin	Title	Destination
1019	SG	Participation requests submitted by international organizations	PL
1020	SG	Invitations	-
1021	SG	Secretariat of the Conference	-
1022	C.1	General schedule of the work of the Conference	-
1023	F	Further proposal	C.4
1024	SG	Information on relevant recommendations and requirements adopted by IMO	C.4
1025	SG	Position of the Conference accounts at 28 February 1985	C.3
1026	PL	Structure of the Conference	-
1027	PL	Conference Chairmanship	-
1028	PL	Allocation of documents	-
1029	PL	Minutes of the 1st Plenary Meeting	PL
1020	SG	Statement of expenses incurred for the preparatory work by the IFRB for RARC-MM-R1 and RARC-EMA	C.3
1031	C.5	Summary Record of the 1st meeting of Committee 5	C.5
1032	C.2	Summary Record of the 1st meeting of Committee 2	C.2
1033	WG 2A	First report by Working Group 2A	C.2
1034	C.4	First report by the Chairman of Committee 4 to the Plenary	PL
1035	C.3	Note by the Chairman of Committee 3 to the Chairmen of Committees 4 and 5	C.4, C.5
1036	C.4	Summary Record of the 1st meeting of Committee 4	C.4

No.	Origin	Title	Destination
1037	C.4	Note by the Chairman of Committee 4 to the Chairman of Committee 5	C.5
1038	C.5	First report of Committee 5 to the Plenary Meeting	PL
1039	C.5	1st series of texts submitted by Committee 5	C.6
1040	C.5	Note by the Chairman of Committee 5 to the Chairman of Committee 4	C.4
1041	C.6	Summary Record of the 1st meetings of the Editorial Committee (MM & EMA)	C.6
1042	C.4	Summary Record of the 2nd meeting of Committee 4	C.4
1043(Rev.1)	F	Draft recommendation for the use of maritime radionavigation hyperbolic system	C.4
1044	C.4	Note by the Chairman of Committee 4 to the Chairman of Committee 5	C.5
1045	C.6	B.1	PL
1046	C.3	Summary Record of the 2nd meeting of Committee 3	C.3
1047	SG	Position of the conference accounts at 8 March 1985	C.3
1048	C.5	Summary Record of the 2nd meeting of Committee 5	C.5
1049	C.3	Report of the Budget Control Committee (MM & EMA)	PL
1050	SG	List of documents	-

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Addendum No. 1
Document 1051-F/E/S/
11 mars 1985
Original: français/
anglais/
espagnol

COMMISSION EMA-4
COMMITTEE EMA-4
COMISIÓN EMA-4

PROJET DE PLAN D'ASSIGNATIONS DE FREQUENCE AUX STATIONS DE SERVICE DE RADIONAVIGATION (RADIOPHARES) POUR LA ZONE EUROPEENNE MARITIME DANS LA BANDE 283,5 - 315 kHz

DRAFT FREQUENCY ASSIGNMENT PLAN FOR STATIONS IN THE RADIONAVIGATION SERVICE (RADIOBEACONS) FOR THE EUROPEAN MARITIME AREA IN THE BAND 283.5 - 315 kHz

PROYECTO DE PLAN DE ASIGNACIONES DE FRECUENCIA A ESTACIONES PARA EL SERVICIO DE RADIONAVEGACIÓN (RADIOFAROS) PARA LA ZONA MARÍTIMA EUROPEA EN LA BANDA 283,5 - 315 kHz

Annexe*/Annex/Anexo: 1

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* Les assignations figurant en Annexe sont à inclure dans le projet de Plan
The assignments appearing in Annex are to be included in the Plan
Las asignaciones que figuran en Anexo deberan ser incluidas en el proyecto del Plan

Pour des raisons d'économie, ce document n'a été tiré qu'en un nombre restreint d'exemplaires. Les participants sont donc priés de bien vouloir apporter à la réunion leurs documents avec eux, car il n'y aura pas d'exemplaires supplémentaires disponibles.

0	1	3	4	5	6		7		8	9	10	11	12	13
70665	286.00	LBY	TOBRUCK	LBY	024E00	32N02	024E00	32N02	111	RC	2K10A2A	ND	0000 2400	
70673	287.00	LBY	KHOMS	LBY	014E15	32N48	014E15	32N48	19	RC	2K10A2A	ND	0000 2400	
70674	294.00	LBY	MESURATA	LBY	015E13	32N22	015E13	32N22	92	RC	2K10A2A	ND	0000 2400	
70691	295.50	MRC	ARBOUA	MRC	005W55	34N54	005W55	34N54	278	RC	846HA2A	ND	0000 2400	
70667	298.00	LBY	TARABULUS	LBY	013E12	32N53	013E12	32N53	111	RC	2K10A2A	ND	0000 2400	
70669	300.50	LBY	EZWETINA	LBY	020E08	30N57	020E08	30N57	92	RC	2K10A2A	ND	0000 2400	
70666	302.00	LBY	RASLANAUF	LBY	018E32	30N31	018E32	30N31	92	RC	2K10A2A	ND	0000 2400	
70670	303.50	LBY	ELBREGA	LBY	019E33	30N25	019E33	30N25	92	RC	2K10A2A	ND	0000 2400	
70692	304.50	MRC	CAP GHIR	MRC	009W53	30N38	009W53	30N38	278	RC	846HA2A	ND	0000 2400	
70690	307.50	MRC	TETOUAN	MRC	005W17	35N37	005W17	35N37	278	RC	846HA2A	ND	0000 2400	
70668	310.50	LBY	ESSIDERA	LBY	018E22	30N38	018E22	30N38	130	RC	2K10A2A	ND	0000 2400	
70675	314.50	LBY	ZUARA	LBY	012E26	32N49	012E26	32N49	92	RC	2K10A2A	ND	0000 2400	

UNION INTERNATIONALE DES TÉLÉCOMMUNICATIONS

CARR POUR LA PLANIFICATION DES FRÉQUENCES UTILISÉES PAR LES RADIOPHARES MARITIMES DANS LA ZONE EUROPÉENNE MARITIME

GENÈVE, MARS 1985

EUROP.

Document 1051-F/E/S
11 mars 1985
Original: francais/
anglais/
espagnol

COMMISSION EMA-4
COMMITTEE EMA-4
COMISION EMA-4

PROJET DE PLAN D'ASSIGNATIONS DE FREQUENCE AUX STATIONS DU SERVICE DE RADIONAVIGATION (RADIOPHARES) POUR LA ZONE EUROPEENNE MARITIME DANS LA BANDE 283,5 - 315 kHz

DRAFT FREQUENCY ASSIGNMENT PLAN FOR STATIONS IN THE RADIONAVIGATION SERVICE (RADIOBEACONS) FOR THE EUROPEAN MARITIME AREA IN THE BAND 283.5 - 315 kHz

PROYECTO DE PLAN DE ASIGNACIONES DE FRECUENCIA A ESTACIONES PARA EL SERVICIO DE RADIONAVEGACION (RADIOFAROS) PARA LA ZONA MARITIMA EUROPEA EN LA BANDA 283,5 - 315 kHz

Annexe/Annex/Anexo: 1

Renseignements inclus dans le Plan pour le service de radionavigation (radiophares) pour la Zone européenne maritime dans la bande 283,5 - 315 kHz

Colonne	
0	Numéro de série de l'IFRB
1	Fréquence assignée (kHz)
2	Numéro de canal
3	Symbole de pays
4	Nom de la station d'émission
5	Symbole du pays ou de la zone géographique dans laquelle se situe la station d'émission (voir le Tableau 1 de la préface de la Liste internationale des fréquences)
6	Longitude et latitude de la station d'émission (en degrés et minutes)
7	Zone de service: longitude et latitude (en degrés et minutes) du centre et rayon (km) de la zone de service circulaire (prise en considération dans les conditions de propagation par onde de sol)[1]
8	Nature du service
9	Largeur de bande nécessaire et classe d'émission
10	Puissance apparente rayonnée nécessaire sur antenne verticale courte (p.a.r.v.)[2] (dBW) (valeur calculée sur la base du champ minimal à protéger et de la portée de service dans les conditions de propagation par onde de sol)
11	Caractéristiques de l'antenne (ND)
12	Horaire régulier de fonctionnement (UTC) de l'assignation de fréquence
13	Observations

---

[1] Note 1 - La propagation de l'onde ionosphérique se produit la nuit, ce qui provoque des erreurs de relèvement aux grandes distances. De ce fait, la portée de service nocturne devrait, le cas échéant, être ajustée de sorte que la portée maximale ne dépasse pas 150 nautiques (280 km). En raison de cette restriction, il n'est pas nécessaire de tenir compte du champ de l'onde ionosphérique dans la planification.

[2] Note 2 - Le type de puissance à notifier au titre de l'article 12 du Règlement des radiocommunications est la puissance de crête déterminée par l'émission A1A de la fonction primaire du radiophare.

Information included in the Plan for the radionavigation service (radiobeacons) for the European maritime area in the band 283.5 - 315 kHz

Column	
0	IFRB serial number
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	Service area: longitude and latitude (in degrees and minutes) of the centre and 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
10	Necessary Effective Monopole Radiated Power (e.m.r.p.) (dBW)[2] (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] Note 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 nm (280 km). With this limitation it is not necessary to consider the sky-wave field strength for planning purposes.

[2] Note 2 - 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.

Información incluida en el Plan para el servicio de radionavegación (radiofaros) para la Zona Marítima Europea en la banda 283,5 - 315 kHz

Columna	
0	Número de serie de la IFRB
1	Frecuencia asignada (kHz)
2	Número de canal
3	Símbolo de país
4	Nombre de la estación transmisora
5	Símbolos del país o la zona geográfica en la que está emplazada la estación transmisora (véase el Cuadro 1 del Prefacio a la Lista Internacional de Frecuencias)
6	Longitud y latitud (en grados y minutos) de la estación transmisora
7	Zona de servicio: longitud y latitud (en grados y minutos) del centro y radio (km) de la zona de servicio circular (a efectos de determinar las condiciones de propagación por onda de superficie)[1]
8	Naturaleza del servicio
9	Anchura de banda necesaria y clase de emisión
10	Potencia radiada aparente necesaria referida a una antena vertical corta (p.r.a.v.) (dBW)[2] (valor calculado sobre la base de la intensidad de campo mínima a proteger y del alcance de servicio para condiciones de propagación por onda de superficie)
11	Características de la antena (ND)
12	Horas normales de funcionamiento (UTC) de la asignación de frecuencia
13	Observaciones

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[1] Nota 1 - La propagación por onda ionosférica se produce en horas de la noche, lo que causará errores de marcación a largas distancias. Por consiguiente, el alcance del servicio nocturno debe ajustarse, en caso necesario, a fin de que el alcance máximo no rebase 150 mn (280 km). Con esta limitación no es necesario considerar la intensidad de campo de la onda ionosférica a efectos de la planificación.

[2] Nota 2 - El tipo de potencia que ha de notificarse conforme al Artículo 12 del Reglamento de Radiocomunicaciones será la potencia en la cresta de la envolvente determinada por la emisión A1A de la función primaria del

Dispositions* des canaux pour les radiophares maritimes dans la bande 283,5 - 315 kHz
Channelling* arrangement for the maritime radiobeacon in the band 283,5 - 315 kHz
Disposición* de canales para los radiofaros marítimos en la banda 283,5 - 315 kHz

Canal/ Channel/ Canal N°	Fréquence/ Frequency/ Frecuencia (kHz)	Canal/ Channel/ Canal N°	Fréquence/ Frequency/ Frecuencia (kHz)	Canal/ Channel/ Canal N°	Fréquence/ Frequency/ Frecuencia (kHz)
1	284,0	21	294,0	41	304,0
2	284,5	22	294,5	42	304,5
3	285,0	23	295,0	43	305,0
4	285,5	24	295,5	44	305,5
5	286,0	25	296,0	45	306,0
6	286,5	26	296,5	46	306,5
7	287,0	27	297,0	47	307,0
8	287,5	28	297,5	48	307,5
9	288,0	29	298,0	49	308,0
10	288,5	30	298,5	50	308,5
11	289,0	31	299,0	51	309,0
12	289,5	32	299,5	52	309,5
13	290,0	33	300,0	53	310,0
14	290,5	34	300,5	54	310,5
15	291,0	35	301,0	55	311,0
16	291,5	36	301,5	56	311,5
17	292,0	37	302,0	57	312,0
18	292,5	38	302,5	58	312,5
19	293,0	39	303,0	59	313,0
20	293,5	40	303,5	60	313,5
				61	314,0
				62	314,5

* Un système de radionavigation à frèquences multiple utilisant des radiophares maritimes a besoin d'utiliser des frèquences qui toutes, sauf une, ne soient pas des multiples entiers de 500 Hz.

En l'absence de protection gèographique, la seule frèquence (285,5 kHz), qui soit un multiple entier de 500 Hz, doit être affectée à l'utilisation exclusive de ce système.

* 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 geographical protection exists, the one frequency (285.5 kHz) which is an integer multiple of 500 Hz, should be designated for exclusive use of this system.

* Los sistemas de navegación multifrecuencia que utilizan radiofaros marítimos necesitan utilizar frecuencias que, con excepción de una, no sean múltiplos enteros de 500 kHz.

Si no existe protección geográfica, la frecuencia (285,5 kHz) que es múltiplo entero de 500 Hz, debe designarse para uso exclusivo de este sistema.

0	1	2	3	5	4	6		7		8	9	10	11	12	13
70613	284.00	ALG		CAP DE FER	ALG	007E10	37N04	007E10	37N04	277	RC 2K10A2A		ND	0000 2400	
70159	284.00	E		PNT SILLA	E	004W24	43N24	004W24	43N24	90	RC 600HA2A		ND	0000 2400	
70449	284.00	F		GATTEVILLE PHARE	F	001W16	49N42	001W16	49N42	130	RC 1K30A1AAN		ND	0000 2400	
70475	284.00	F		PNT DE GRAVE LH	F	001W04	45N34	001W04	45N34	10	RC 900HA1AAN		ND	0000 2400	
70051	284.00	G		PORTLAND BILL LSTN	G	002W27	50N30	002W27	50N30	50	RC 100HA1A		ND	0000 2400	
70055	284.00	G		ST CATHERINES POINT	G	001W17	50N34	001W17	50N34	92	RC 100HA1A		ND	0000 2400	
70111	284.00	I		CAPO VATICANO	I	015E49	38N37	015E49	38N37	130	RC 120HA1A		ND	0000 2400	
70337	284.00	S		GOTSKA SANDOEN	S	019E12	58N24	019E12	58N24	100	RC 30H0A1A		ND	0000 2400	
70321	284.00	S		NORDVALEN	S	020E47	63N32	020E47	63N32	20	RC 30H0A1A		ND	0000 2400	
70134	284.50	E		C MACHICHACO	E	002W45	43N27	002W45	43N27	185	RC 600HA2A		ND	0000 2400	
70078	284.50	FNL		HARMAJA	FNL	024E59	60N06	024E59	60N06	90	RC 200HA1A		ND	0000 2400	
70014	284.50	G		CROMER LSTN	G	001E19	52N55	001E19	52N55	92	RC 100HA1A		ND	0000 2400	
70017	284.50	G		DUDGEON LSTN	G	001E13	53N15	001E13	53N15	92	RC 100HA1A		ND	0000 2400	
70060	284.50	G		SMITHS KNOLL LSTN	G	002E18	52N43	002E18	52N43	92	RC 100HA1A		ND	0000 2400	
70655	284.50	YUG		BAR	YUG	019E09	42N01	019E09	42N01	10	RC 100HA1A		ND	0000 2400	
70488	285.00	BEL		NIEUWPOORT PHARE	BEL	002E43	51N09	002E43	51N09	10	RC 1K50A2A		ND	0000 2400	
70133	285.00	E		C DE LA NAO	E	000E14	38N44	000E14	38N44	90	RC 600HA2A		ND	0000 2400	
70022	285.00	G		FIFE NESS	G	002W03	57N08	002W03	57N08	92	RC 100HA1A		ND	0000 2400	
70025	285.00	G		GIRDLE NESS	G	002W03	57N08	002W03	57N08	92	RC 100HA1A		ND	0000 2400	
70409	285.00	NOR		SLAATTEROEY	NOR	005E04	59N54	005E04	59N54	18	RC 100HA1A		ND	0000 2400	
70331	285.00	S		SIMPNAESKLUBB	S	019E05	59N54	019E05	59N54	60	RC 30H0A1A		ND	0000 2400	
70059	286.00	G		SKERRIES	G	004W36	53N25	004W36	53N25	92	RC 100HA1A		ND	0000 2400	
70102	286.00	IRL		ROCKABILL LSTN	IRL	006W00	53N36	006W00	53N36	93	RC 2K30A2A		ND	0000 2400	
70106	286.00	IRL		WICKLOW HEAD LSTN	IRL	006W00	52N58	006W00	52N58	130	RC 2K30A2A		ND	0000 2400	
70412	286.00	NOR		UTVAER	NOR	004E30	61N02	004E30	61N02	18	RC 100HA1A		ND	0000 2400	
70145	286.50	E		CALA FIGUERA	E	002E31	39N27	002E31	39N27	90	RC 600HA2A		ND	0000 2400	
70470	286.50	F		FREHEL PHARE	F	002W19	48N41	002W19	48N41	40	RC 1K70A1AAN		ND	0000 2400	
70472	286.50	F		LA CHIAPPA PHARE	F	009E22	41N36	009E22	41N36	185	RC 1K50A1AAN		ND	0000 2400	
70087	286.50	FNL		NORRSKAR	FNL	020E36	63N14	020E36	63N14	90	RC 200HA1A		ND	0000 2400	
70003	286.50	G		ALTACARRY HEAD LSTN	G	006W10	55N18	006W10	55N18	92	RC 100HA1A		ND	0000 2400	
70032	286.50	G		LA CORBIERE	G	002W14	49N10	002W14	49N10	37	RC 100HA1A		ND	0000 2400	
70046	286.50	G		PLADDA	G	005W07	55N25	005W07	55N25	92	RC 100HA1A		ND	0000 2400	
70052	286.50	G		RINNS OF ISLAY	G	006W31	55N40	006W31	55N40	127	RC 100HA1A		ND	0000 2400	
70113	286.50	I		COZZO SPADARO	I	015E08	36N41	015E08	36N41	130	RC 120HA1A		ND	0000 2400	
70687	286.50	URS		DAUGAVGRIVA	URS	024W01	57N04	024W01	57N04	60	RC 2K10A2AAN		ND	0000 2400	
70397	286.50	YUG		BAR	YUG	019E06	42N06	019E06	42N06	185	RC 2K10A2A		ND	0000 2400	
70609	287.00	ALG		CAP CAXINE	ALG	002E57	36N48	002E57	36N48	370	RC 2K10A2A		ND	0000 2400	
70127	287.00	MRC		EL HANK	MRC	007W29	33N37	007W29	33N37	200	RC 846HA2A		ND	0000 2400	
70606	287.50	ALG		ILE RACHGOUN	ALG	001W28	35N19	001W28	35N19	92	RC 2K10A2A		ND	0000 2400	
70075	287.50	DDR		STUBBENKAMMER	DDR	013E38	54N35	013E38	54N35	90	RC 2K10A2N		ND	0000 2400	

0	1	2	3	5	4	6	7	8	9	10	11	12	13
70477	287.50	F		ALPRECH PHARE	F	001E34 50N42	001E34 50N42	40	RC 1K50A1AAN		ND	0000 2400	
70436	287.50	F		LA PALLICE	F	001W14 46N10	001W14 46N10	10	RC 900HA1AAN		ND	0000 2400	
70457	287.50	F		ROSEDO PHARE	F	003W00 48N51	003W00 48N51	20	RC 700HA1AAN		ND	0000 2400	
70439	287.50	F		SETE MT S CLAIR LH	F	003E41 43N24	003E41 43N24	100	RC 1K20A1AAN		ND	0000 2400	
70018	287.50	G		DUNGENESS LSTN	G	000E58 50N54	000E58 50N54	92	RC 100HA1A		ND	0000 2400	
70026	287.50	G		HARTLAND POINT LSTN	G	004W31 51N01	004W31 51N01	10	RC 100HA1A		ND	0000 2400	
70120	287.50	I		SANTA MARIA DI LEUCA	I	018E22 39N48	018E22 39N48	185	RC 120HA1A		ND	0000 2400	
70399	287.50	NOR		FAERDER	NOR	010E31 59N01	010E31 59N01	129	RC 100HA1A		ND	0000 2400	
70516	287.50	POL		JAROSLAHIEC	POL	016E33 54N33	016E33 54N33	90	RC 700HA2AAN		ND	0000 2400	
70515	287.50	POL		KOLOBRZEG	POL	015E33 54N11	015E33 54N11	90	RC 700HA2AAN		ND	0000 2400	
70518	287.50	POL		LEBA	POL	017E33 54N46	017E33 54N46	90	RC 700HA2AAN		ND	0000 2400	
70517	287.50	POL		ROZEWIE	POL	018E20 54N50	018E20 54N50	90	RC 700HA2AAN		ND	0000 2400	
70514	287.50	POL		SWINOUJSCIE	POL	014E17 53N55	014E17 53N55	90	RC 700HA2AAN		ND	0000 2400	
70305	287.50	POR		BERLENGA	POR	009W30 39N25	009W30 39N25	370	RC 304HF1B		ND	0000 2400	
70307	287.50	POR		C CARVOEIRO	POR	009W24 39N22	009W24 39N22	93	RC 304HF1B		ND	0000 2400	
70306	287.50	POR		C MONDEGO	POR	008W54 40N11	008W54 40N11	93	RC 304HF1B		ND	0000 2400	
70325	287.50	S		BRAEMOEN	S	017E45 62N13	017E45 62N13	100	RC 30H0A1A		ND	0000 2400	
70486	288.00	BEL		ZEEBRUGGEPHARE	BEL	003E12 51N20	003E12 51N20	10	RC 1K50A2A		ND	0000 2400	
70275	288.00	DNK		SJAELLANOS REV	DNK	011E12 56N06	011E12 56N06	90	RC 100HA1A		ND	0000 2400	
70165	288.00	E		ADRA	E	003W02 36N45	003W02 36N45	90	RC 600HA2A		ND	0000 2400	
70076	288.00	FNL		AJOS	FNL	024E35 65N40	024E35 65N40	90	RC 200HA1A		ND	0000 2400	
70091	288.00	FNL		UTO	FNL	021E22 59N47	021E22 59N47	90	RC 200HA1A		ND	0000 2400	
70421	288.00	NOR		SKLINNA	NOR	010E59 65N12	010E59 65N12	185	RC 100HA1A		ND	0000 2400	
70432	288.00	NOR		VARDOE	NOR	031E09 70N23	031E09 70N23	129	RC 100HA1A		ND	0000 2400	
70615	288.50	ALG		CAP DE GARDE	ALG	007E47 36N58	007E47 36N58	92	RC 2K10A2A		ND	0000 2400	
70509	288.50	BUL		NOS KALIAKRA	BUL	028E30 43N21	028E30 43N21	100	RC 100HA2A		ND	0000 2400	
70495	288.50	D		ROTE KLIFF	D	008E21 54N57	008E21 54N57	92	RC 50H0A1A		ND	0000 2400	
70136	288.50	E		C FINISTERRE	E	009W16 42N53	009W16 42N53	185	RC 600HA2A		ND	0000 2400	
70146	288.50	E		C SALOU	E	001E10 41N03	001E10 41N03	90	RC 600HA2A		ND	0000 2400	
70443	288.50	F		COMBRIT PHARE	F	004W07 47N52	004W07 47N52	40	RC 2K10A1AAN		ND	0000 2400	
70456	288.50	F		LA REVELLATA PHARE	F	008E44 42N35	008E44 42N35	185	RC 1K70A1AAN		ND	0000 2400	
70011	288.50	G		CHICHESTER BAR	G	000W56 50N45	000W56 50N45	19	RC 100HA1A		ND	0000 2400	
70583	288.50	GRC		THESSALONIKI	GRC	022E57 40N36	022E57 40N36	20	RD 1K00A2A		ND	0000 2400	
70345	288.50	S		OELANDS SOEDRA GRUND	S	016E41 56N04	016E41 56N04	130	RC 30H0A1A		ND	0000 2400	
70323	288.50	S		SYDOSTBROTTEN	S	020E11 63N20	020E11 63N20	80	RC 30H0A1A		ND	0000 2400	
70661	288.50	TUN		RAS TURGENESS	TUN	011E02 33N49	011E02 33N49	100	RC 100HA1A		ND	0000 2400	
70498	289.00	D		MARIENLEUCHTE	D	011E14 54N30	011E14 54N30	92	RC 50H0A1A		ND	0000 2400	
70168	289.00	E		MESA DE ROLDAN	E	001W54 36N56	001W54 36N56	90	RC 600HA2A		ND	0000 2400	
70442	289.00	F		C S MATHIEU PHARE	F	004W46 48N20	004W46 48N20	100	RC 2K10A1AAN		ND	0000 2400	
70031	289.00	G		KINNAIRD HEAD	G	002W00 57N42	002W00 57N42	182	RC 100HA1A		ND	0000 2400	

0	1	2	3	5	4	6		7		8	9	10	11	12	13
70068	289.00	G		STROMA	G	003W07	58N42	003W07	58N42	92	RC	100HA1A	ND	0000 2400	
70072	289.00	G		SUMBURGH HEAD	G	001W16	59N51	001W16	59N51	127	RC	100HA1A	ND	0000 2400	
70100	289.00	IRL		MIZEN HEAD LSTN	IRL	009W49	51N27	009W49	51N27	09	RC	2K30A2A	ND	0900 1800	
70682	289.00	SYR		HASSAKEH	SYR	040E45	36N30	040E45	36N30	80	RC	2K04A2A	ND	0000 2400	
70491	289.50	DNK		DROGDEN	DNK	012E43	55N32	012E43	55N32	90	RC	100HA1A	ND	0000 2400	
70465	289.50	F		I DE SEIN PHARE	F	004W52	48N03	004W52	48N03	130	RC	1K30A1AAN	ND	0000 2400	
70053	289.50	G		ROUND ISLAND LSTN	G	006W19	49N58	006W19	49N58	372	RC	100HA1A	ND	0000 2400	
70117	289.50	I		PUNTA CARENA	I	014E12	40N32	014E12	40N32	185	RC	120HA1A	ND	0000 2400	
70099	289.50	IRL		MIZEN HEAD LSTN	IRL	009W49	51N27	009W49	51N27	370	RC	2K30A2A	ND	0000 2400	
70672	289.50	LBY		DERNA	LBY	022E40	32N46	022E40	32N46	185	RC	2K10A2A	ND	0000 2400	
70334	289.50	S		LANDSORT	S	017E52	58N44	017E52	58N44	100	RC	30H0A1A	ND	0000 2400	
70662	289.50	TUN		MAHDIA	TUN	009E12	35N51	009E12	35N51	100	RC	100HA1A	ND	0000 2400	
70268	290.00	DNK		STEVNS KLINT	DNK	012E28	55N18	012E28	55N18	90	RC	100HA1A	ND	0000 2400	
70484	290.00	F		PT EN BESSIN PHARE	F	000W46	49N21	000W46	49N21	10	RC	1K10A1AAN	ND	0000 2400	
70084	290.00	FNL		KYLMAPIHLAJA	FNL	021E18	61N09	021E18	61N09	90	RC	200HA1A	ND	0000 2400	
70367	290.00	ISL		MALARRIF	ISL	023W48	64N44	023W48	64N44	160	RC	1K50A2A	ND	0000 2400	
70302	290.00	POR		AVEIRO	POR	008W45	40N38	008W45	40N38	93	RC	304HF1B	ND	0000 2400	
70304	290.00	POR		LECA	POR	008W43	41N12	008W43	41N12	185	RC	304HF1B	ND	0000 2400	
70303	290.00	POR		MONTEDOR	POR	008W52	41N45	008W52	41N45	93	RC	304HF1B	ND	0000 2400	
70156	290.50	E		C VILLANO	E	009W13	43N10	009W13	43N10	185	RC	600HA2A	ND	0000 2400	
70461	290.50	F		LE PILIER PHARE	F	002W22	47N03	002W22	47N03	20	RC	800HA1AAN	ND	0000 2400	
70010	290.50	G		CHANNEL LSTN	G	002W53	49N54	002W53	49N54	19	RC	100HA1A	ND	0000 2400	
70417	290.50	NOR		GRIP	NOR	007E36	63N14	007E36	63N14	92	RC	100HA1A	ND	0000 2400	
70324	290.50	S		HEMSOE	S	018E08	62N43	018E08	62N43	120	RC	30H0A1A	ND	0000 2400	
70351	290.50	S		KULLEN	S	012E27	56N18	012E27	56N18	100	RC	30H0A1A	ND	0000 2400	
70339	290.50	S		VISBY	S	018E17	57N38	018E17	57N38	20	RC	30H0A1A	ND	0000 2400	
70281	291.00	DNK		HIRTSHALS HAVN	DNK	009E58	57N36	009E58	57N36	90	RC	100HA1A	ND	0000 2400	
70143	291.00	E		C SAN SEBASTIAN	E	003E12	41N53	003E12	41N53	90	RC	600HA2A	ND	0000 2400	
70108	291.00	I		CAPO FERRO	I	009E31	41N09	009E31	41N09	130	RC	120HA1A	ND	0000 2400	
70292	291.00	POR		ARNEL	AZR	025W08	37N49	025W08	37N49	185	RC	304HF1B	ND	0000 2400	
70290	291.00	POR		CONTENDAS	AZR	027W05	38N39	027W05	38N39	185	RC	304HF1B	ND	0000 2400	
70291	291.00	POR		GONZALO VELHO	AZR	025W01	36N57	025W01	36N57	370	RC	304HF1B	ND	0000 2400	
70612	291.50	ALG		CAP MATIFOU	ALG	003E14	36N48	003E14	36N48	92	RC	2K10A2A	ND	0000 2400	
70689	291.50	G		SOUTH ROCK LSTN	G	005W22	54N24	005W22	54N24	93	RC	2K30A2A	ND	0000 2400	
70096	291.50	IRL		KISH BANK LSTN	IRL	005W55	53N19	005W55	53N19	19	RC	2K30A2A	ND	0000 2400	
70370	291.50	ISL		GOELTUR	ISL	023W34	66N10	023W34	66N10	160	RC	2K00A2A	ND	0000 2400	
70406	291.50	NOR		GEITUNGANE	NOR	005E14	59N07	005E14	59N07	92	RC	100HA1A	ND	0000 2400	
70428	291.50	NOR		TORSVAAG	NOR	019E30	70N14	019E30	70N14	92	RC	100HA1A	ND	0000 2400	
70315	291.50	S		FARSTUGRUNDEN	S	022E45	65N20	022E45	65N20	100	RC	30H0A1A	ND	0000 2400	
70380	291.50	TUR		BAFRA BURNU	TUR	035E56	41N43	035E56	41N43	185	RC	2K10A2AAN	ND	0000 2400	

0	1	2	3	5	4	6		7		8	9	10	11	12	13
70382	291.50	TUR	KEREMPE BURNU	TUR	033E20	42N01	033E20	42N01	185	RC	2K10A2AAN		ND	0000 2400	
70381	291.50	TUR	SINOP INCEBURUN	TUR	034E56	42N06	034E56	42N06	185	RC	2K10A2AAN		ND	0000 2400	
70379	291.50	TUR	YASUN BURNU	TUR	037E41	41N08	037E41	41N08	185	RC	2K10A2AAN		ND	0000 2400	
70210	291.50	URS	ABRAMOVSKIY	URS	043E16	66N25	043E16	66N25	55	RC	100HA1AAN		ND	0000 2400	
70686	291.50	URS	GULJAEVSKOII KOSCHKI	URS	055E32	68N54	055E32	68N54	15	RC	100HA1AAN		ND	0000 2400	
70183	291.50	URS	MERSRAGS	URS	023E07	57N22	023E07	57N22	28	RC	100HA1AAN		ND	0000 2400	
70310	292.00	CYP	PERA BEACON	CYP	033E17	35N03	033E17	35N03	200	RC	100HA1A		ND	0000 2400	
70142	292.00	E	MAHON	E	004E18	39N52	004E18	39N52	185	RC	600HA2A		ND	0000 2400	
70466	292.00	F	LA COUBRE	F	001W14	45N42	001W14	45N42	185	RC	1K30A1AAN		ND	0000 2400	
70006	292.00	G	BRESSAY	G	001W07	60N07	001W07	60N07	92	RC	100HA1A		ND	0000 2400	
70037	292.00	G	MUCKLE FLUGGA	G	000W53	60N51	000W53	60N51	276	RC	100HA1A		ND	0000 2400	
70042	292.00	G	NORTH RONALDSAY	G	002W23	59N23	002W23	59N23	182	RC	100HA1A		ND	0000 2400	
70121	292.00	I	SAN VITO LO CAPO	I	012E44	38N11	012E44	38N11	185	RC	120HA1A		ND	0000 2400	
70448	292.50	F	BY LH LE HAVRE	F	000W09	49N32	000W09	49N32	40	RC	1K30A1AAN		ND	0000 2400	
70376	292.50	MLT	MALTA RADIO	MLT	014E24	35N52	014E24	35N49	370	RC	100HA2AAN		ND	0000 2400	
70652	292.50	ROU	CONSTANTA	ROU	028E38	44N10	028E38	44N10	185	RC	100HA1A		ND	0000 2400	
70683	292.50	TUR	TEKIR FENERI	TUR	027E22	36N41	027E22	36N41	185	RC	2K10A2AAN		ND	0000 2400	
70262	292.50	YUG	SPLIT	YUG	016E29	43N30	016E29	43N30	10	RC	100HA1A		ND	0000 2400	
70510	293.00	BUL	NOS EMINE	BUL	027E54	42N41	027E54	42N41	100	RC	100HA2A		ND	0000 2400	
70157	293.00	E	SENOCOZULUA	E	001W56	43N20	001W56	43N20	90	RC	600HA2A		ND	0000 2400	
70293	293.00	POR	ILHEU DE CIMA	MDR	016W17	33N03	016W17	33N03	370	RC	304HF1B		ND	0000 2400	
70295	293.00	POR	PONTA DO PARGO	MDR	017W16	32N49	017W16	32N49	370	RC	304HF1B		ND	0000 2400	
70294	293.00	POR	SELVAGEM	MDR	015W52	30N09	015W52	30N09	370	RC	304HF1B		ND	0000 2400	
70593	293.50	ALG	CAP IVI	ALG	000E13	36N06	000E13	36N06	92	RC	2K10A2A		ND	0000 2400	
70505	293.50	D	GROSSER VOGELSAND	D	008E29	54N00	008E29	54N00	92	RC	50H0A1A		ND	0000 2400	
70155	293.50	E	C SILLEIRO	E	008W54	42N06	008W54	42N06	185	RC	600HA2A		ND	0000 2400	
70004	293.50	G	BARDSEY LSTN	G	004W47	52N44	004W47	52N44	92	RC	100HA1A		ND	0000 2400	
70063	293.50	G	SOUTH BISHOP LSTN	G	005W24	51N51	005W24	51N51	92	RC	100HA1A		ND	0000 2400	
70105	293.50	IRL	TUSKAR ROCK LSTN	IRL	006W12	52N12	006W12	52N12	93	RC	2K30A2A		ND	0000 2400	
70355	293.50	S	HAETTEBERGET	S	011E28	57N52	011E28	57N52	100	RC	30H0A1A		ND	0000 2400	
70500	294.00	D	BORKUMRIFF	D	006E22	53N47	006E22	53N47	37	RC	50H0A1A		ND	0000 2400	
70266	294.00	DNK	ANHOLT KNOB	DNK	011E53	56N45	011E53	56N45	90	RC	100HA1A		ND	0000 2400	
70167	294.00	E	FAVARITX	E	004E16	40N00	004E16	40N00	90	RC	600HA2A		ND	0000 2400	
70453	294.00	F	BY LH DUNKERQUE	F	001E52	51N03	001E52	51N03	20	RC	1K20A1AAN		ND	0000 2400	
70437	294.00	F	LAVEZZI PHARE	F	009E16	41N20	009E16	41N20	60	RC	1K70A1AAN		ND	0000 2400	
70107	294.00	I	AUGUSTA DROMOGIGGIA	I	015E09	37N12	015E09	37N12	130	RC	120HA1A		ND	0000 2400	
70002	294.00	JOR	AQABA RADIO	JOR	034E59	29N33	034E59	29N33	300	RC	2K00A2A		ND	0000 2400	
70423	294.00	NOR	LANDEGODE	NOR	014E22	67N26	014E22	67N26	18	RC	100HA1A		ND	0000 2400	
70317	294.00	S	BJUROEKLUBB	S	021E35	64N29	021E35	64N29	130	RC	30H0A1A		ND	0000 2400	
70395	294.00	YUG	VELI RAT	YUG	014E49	44N09	014E49	44N09	185	RC	2K10A2A		ND	0000 2400	

0	1	2	3	5	4	6	7	8	9	10	11	12	13
70485	294.50	ALB		DURRES NAVIGATION	ALB	019E26 41N27	019E26 41N27	100	RC 2K10A2AAN		ND	0000 2400	
70680	294.50	ALB		VLORA NAVIGATION	ALB	019E29 40N27	019E29 40N27	100	RC 2K10A2AAN		ND	0000 2400	
70073	294.50	G		SUNK LSTN	G	001E35 51N51	001E35 51N51	19	RC 100HA1A		ND	0000 2400	
70431	294.50	NOR		SLETNES	NOR	028E13 71N05	028E13 71N05	92	RC 100HA1A		ND	0000 2400	
70230	294.50	URS		ZMEINYY OSTROV	UKR	030E12 45N15	030E12 45N15	185	RC 2K10A2AAN		ND	0000 2400	
70226	294.50	URS		CHESHSKIY	URS	048E36 67N55	048E36 67N55	280	RC 2K10A2AAN		ND	0000 2400	
70170	294.50	URS		KAYBOLOYO	URS	028E02 59N44	028E02 59N44	130	RC 2K10A2AAN		ND	0000 2400	
70229	294.50	URS		KHODOVARIKHA	URS	053E46 68N56	053E46 68N56	280	RC 2K10A2AAN		ND	0000 2400	
70228	294.50	URS		KOLGUYEVSKIY	URS	049E07 69N30	049E07 69N30	280	RC 2K10A2AAN		ND	0000 2400	
70679	294.50	URS		MATVEEV	URS	058W30 69N28	058W30 69N28	150	RC 2K10A2AAN		ND	0000 2400	
70172	294.50	URS		MOKHNI	URS	025E48 59N41	025E48 59N41	130	RC 2K10A2AAN		ND	0000 2400	
70174	294.50	URS		NAYSSAAR	URS	024E31 59N36	024E31 59N36	130	RC 2K10A2AAN		ND	0000 2400	
70175	294.50	URS		PAKRI	URS	024E02 59N23	024E02 59N23	150	RC 2K10A2AAN		ND	0000 2400	
70171	294.50	URS		UZNY GOGLAND	URS	027E01 60N01	027E01 60N01	90	RC 2K10A2AAN		ND	0000 2400	
70086	295.00	FNL		MARJANIEMI	FNL	024E34 65N02	024E34 65N02	90	RC 200HA1A		ND	0000 2400	
70008	295.00	G		BUTT OF LEWIS	G	006W16 58N31	006W16 58N31	273	RC 100HA1A		ND	0000 2400	
70015	295.00	G		CAPE WRATH	G	005W00 58N38	005W00 58N38	92	RC 100HA1A		ND	0000 2400	
70028	295.00	G		HUMBER LSTN	G	000E21 53N36	000E21 53N36	10	RC 100HA1A		ND	0000 2400	
70039	295.00	G		NEWHAVEN	G	000W03 50N46	000W03 50N46	19	RC 100HA1A		ND	0000 2400	
70071	295.00	G		SULE SKERRY	G	004W24 59N05	004W24 59N05	182	RC 100HA1A		ND	0000 2400	
70419	295.00	NOR		BUHOLMSRAASA	NOR	010E27 64N24	010E27 64N24	37	RC 100HA1A		ND	0000 2400	
70338	295.00	S		FAAROE	S	019E21 57N58	019E21 57N58	100	RC 30H0A1A		ND	0000 2400	
70160	295.50	E		LUARCA	E	006W32 43N33	006W32 43N33	90	RC 600HA2A		ND	0000 2400	
70469	295.50	F		C COURONNE PHARE	F	005E03 43N20	005E03 43N20	100	RC 1K00A1AAN		ND	0000 2400	
70450	295.50	F		LA ROCHELLE	F	001W10 46N09	001W48 46N30	10	RC 1K00A1AAN		ND	0000 2400	
70285	296.00	DNK		BLAAVANOSHUK	DNK	008E05 55N34	008E05 55N34	90	RC 100HA1A		ND	0000 2400	
70044	296.00	G		OUTER GABBARD LSTN	G	002E04 51N59	002E04 51N59	92	RC 100HA1A		ND	0000 2400	
70253	296.00	HOL		GOEREE LIGHTPLATFORM	HOL	003E40 51N56	003E40 51N56	90	RC 100HA1AAN		ND	0000 2400	
70254	296.00	HOL		NO HINDER BF PHARE	HOL	002E51 52N00	002E51 52N00	90	RC 100HA1AAN		ND	0000 2400	
70400	296.00	NOR		LANGOEYTANGEN	NOR	009E45 58N59	009E45 58N59	37	RC 100HA1A		ND	0000 2400	
70425	296.00	NOR		SKROVA	NOR	014E38 67N09	014E38 67N09	185	RC 100HA1A		ND	0000 2400	
70329	296.00	S		GRUNDKALLEN	S	018E51 60N30	018E51 60N30	60	RC 30H0A1A		ND	0000 2400	
70377	296.00	TUR		HOPA	TUR	041E20 41N22	041E20 41N22	185	RC 2K10A2AAN		ND	0000 2400	
70654	296.00	YUG		DUBROVNIK	YUG	018E07 42N38	018E07 42N38	10	RC 100HA1A		ND	0000 2400	
70599	296.50	ALG		PHARE DE L'AIGUILLE	ALG	000W29 35N52	000W29 35N52	277	RC 2K10A2A		ND	0000 2400	
70489	296.50	BEL		WESTHINDER BF PHARE	BEL	002E26 51N23	002E43 51N09	40	RC 1K50A2A		ND	0000 2400	
70506	296.50	D		WANGEROOGE	D	007E51 53N47	007E51 53N47	92	RC 50H0A1A		ND	0000 2400	
70628	296.50	EGY		HURGADA	EGY	033E50 27N15	033E50 27N15	150	RC 850HA1A		ND	0000 2400	
70629	296.50	EGY		SAFAGA	EGY	033E57 26N45	033E57 26N45	150	RC 850HA1A		ND	0000 2400	
70459	296.50	F		C FERRET	F	001W15 44N39	001W15 44N39	185	RC 1K90A1AAN		ND	0000 2400	

0	1	2	3	5	4	6		7		8	9	10	11	12		13
70361	296.50		ISL	BJARGTANGAR	ISL	024W32	65N30	024W32	65N30	160	RC	1K50A2A		ND	0000 2400	
70656	296.50		POL	GDYNIA	POL	018E34	54N32	018E34	54N32	19	RC	900HA2AAN		ND	0000 2400	
70658	296.50		POL	KOLOBRZEG	POL	015E33	54N11	015E33	54N11	08	RC	1K10A2AAN		ND	0000 2400	
70659	296.50		POL	SWINOUJSCIE	POL	014E17	53N55	014E17	53N55	19	RC	1K44A2AAN		ND	0000 2400	
70352	296.50		S	NIDINGEN	S	011E54	57N18	011E54	57N18	60	RC	30H0A1A		ND	0000 2400	
70332	296.50		S	SVENSKABJOERN	S	020E01	59N33	020E01	59N33	100	RC	30H0A1A		ND	0000 2400	
70394	296.50		TUN	CAP BON	TUN	011E03	37N04	011E03	37N04	370	RC	100HA1AAN		ND	0000 2400	
70508	297.00		D	DAMESHOEVED	D	011E00	54N12	011E00	54N12	92	RC	50H0A1A		ND	0000 2400	
70138	297.00		E	C TRAFALGAR	E	006W02	36N11	006W02	36N11	90	RC	600HA2A		ND	0000 2400	
70080	297.00		FNL	ISOKARI	FNL	021E01	60N43	021E01	60N43	90	RC	200HA1A		ND	0000 2400	
70112	297.00		I	CIVITAVECCHIA	I	011E49	42N05	011E49	42N05	130	RC	120HA1A		ND	0000 2400	
70411	297.00		NOR	HOLMENGRAA	NOR	004E39	60N50	004E39	60N50	37	RC	100HA1A		ND	0000 2400	
70289	297.00		POR	ALBARNAZ	AZR	031W14	39N31	031W14	39N31	370	RC	304HF1B		ND	0000 2400	
70287	297.00		POR	PONTA DA BARCA	AZR	028W03	39N06	028W03	39N06	370	RC	304HF1B		ND	0000 2400	
70288	297.00		POR	RIBEIRINHA	AZR	028W36	38N36	028W36	38N36	370	RC	304HF1B		ND	0000 2400	
70356	297.00		S	HAALLOE	S	011E13	58N20	011E13	58N20	100	RC	30H0A1A		ND	0000 2400	
70274	297.50		DNK	SLETTERHAGE	DNK	010E31	56N06	010E31	56N06	90	RC	100HA1A		ND	0000 2400	
70150	297.50		E	C PENAS	E	005W51	43N39	005W51	43N39	90	RC	600HA2A		ND	0000 2400	
70033	297.50		G	LIZARD LSTN	G	005W12	49N57	005W12	49N57	92	RC	100HA1A		ND	0000 2400	
70045	297.50		G	PENLEE POINT LSTN	G	004W11	50N19	004W11	50N19	92	RC	100HA1A		ND	0000 2400	
70681	297.50		LBN	SAIDA	LBN	035E21	33N30	035E21	33N30	370	RC	1K70A2A		ND	0000 2400	
70203	297.50		URS	BATUMSKIY	URS	041E39	41N39	041E39	41N39	280	RC	2K10A2AAN		ND	0000 2400	
70198	297.50		URS	KODOSHSKIY	URS	039E02	44N06	039E02	44N06	280	RC	2K10A2AAN		ND	0000 2400	
70225	297.50		URS	MIKULKIN	URS	046E41	67N48	046E41	67N48	95	RC	100HA1AAN		ND	0000 2400	
70200	297.50		URS	PITSUNDSKIY	URS	040E21	43N09	040E21	43N09	280	RC	2K10A2AAN		ND	0000 2400	
70202	297.50		URS	POTIYSKIY	URS	041E40	42N08	041E40	42N08	280	RC	2K10A2AAN		ND	0000 2400	
70199	297.50		URS	SOCHINSKIY	URS	039E43	43N35	039E43	43N35	280	RC	2K10A2AAN		ND	0000 2400	
70201	297.50		URS	SUKHUMSKIY	URS	040E58	42N59	040E58	42N59	280	RC	2K10A2AAN		ND	0000 2400	
70501	298.00		D	ELBE 1 FS	D	008E07	54N00	008E07	54N00	37	RC	50H0A1A		ND	0000 2400	
70148	298.00		E	C DE GATA	E	002W11	36N43	002W11	36N43	90	RC	600HA2A		ND	0000 2400	
70441	298.00		F	I DE GROIX PEN MEN	F	003W31	47N39	003W31	47N39	100	RC	2K10A1AAN		ND	0000 2400	
70116	298.00		I	ISOLA TINO	I	009E51	44N02	009E51	44N02	130	RC	120HA1A		ND	0000 2400	
70347	298.00		S	SANDHAMMAREN	S	014E12	55N23	014E12	55N23	80	RC	30H0A1A		ND	0000 2400	
70263	298.50		DNK	SKAGEN	DNK	010E35	57N44	010E35	57N44	90	RC	100HA1A		ND	0000 2400	
70162	298.50		E	ISLA TAPIA	E	006W57	43N34	006W57	43N34	90	RC	600HA2A		ND	0000 2400	
70474	298.50		F	PERTUSATO PHARE	F	009E11	41N22	009E11	41N22	185	RC	1K50A1AAN		ND	0000 2400	
70024	298.50		G	FLATHOLM LSTN	G	003W07	51N22	003W07	51N22	92	RC	100HA1A		ND	0000 2400	
70035	298.50		G	LUNDY SOUTH	G	004W39	51N09	004W39	51N09	92	RC	100HA1A		ND	0000 2400	
70365	298.50		ISL	REYKJANES	ISL	022W43	63N49	022W43	63N49	160	RC	1K20A2A		ND	0000 2400	
70407	298.50		NOR	TRESVIKPYNTEN	NOR	005E19	59N16	005E19	59N16	18	RC	100HA1A		ND	0000 2400	

0	1	2	3	5	4	6	7	8	9	10	11	12	13
70335	298.50	S	GUSTAF DALEN	S	017E28 58N36	017E28 58N36	80	RC	30H0A1A		ND	0000 2400	
70632	298.50	TUN	EL ATTAYA	TUN	011E18 34N44	011E18 34N44	185	RC	850HA2AAN		ND	0000 2400	
70496	299.00	D	BORKUM	D	006E40 53N35	006E40 53N35	92	RC	50H0A1A		ND	0000 2400	
70278	299.00	DNK	HALS BARRE	DNK	010E26 56N57	010E26 56N57	90	RC	100HA1A		ND	0000 2400	
70137	299.00	E	TARIFA	E	005W36 36N00	005W36 36N00	90	RC	600HA2A		ND	0000 2400	
70256	299.00	HOL	AMELAND PHARE	HOL	005E38 53N27	005E38 53N27	90	RC	100HA1AAN		ND	0000 2400	
70257	299.00	HOL	VLIELAND PHARE	HOL	005E04 53N18	005E04 53N18	90	RC	100HA1AAN		ND	0000 2400	
70110	299.00	I	CAPO SAN VITO TARANT	I	017E12 40N25	017E12 40N25	130	RC	120HA1A		ND	0000 2400	
70124	299.00	I	TRIESTE	I	013E45 45N40	013E45 45N40	130	RC	120HA1A		ND	0000 2400	
70366	299.00	ISL	RAUFARHOEFN	ISL	015W57 66N27	015W57 66N27	160	RC	1K40A2A		ND	0000 2400	
70344	299.00	S	OELANDS SOEDRA UDDE	S	016E24 56N12	016E24 56N12	40	RC	30H0A1A		ND	0000 2400	
70330	299.00	S	UNDERSTEN	S	018E55 60N18	018E55 60N18	130	RC	30H0A1A		ND	0000 2400	
70685	299.00	TUR	ANAMUR BURNU	TUR	032E48 36N01	032E48 36N01	185	RC	2K10A2AAN		ND	0000 2400	
70494	299.50	D	WESTERHEVERSAND	D	008E38 54N22	008E38 54N22	92	RC	50H0A1A		ND	0000 2400	
70478	299.50	F	GRIS NEZ PHARE	F	001E35 50N52	001E35 50N52	60	RC	1K50A1AAN		ND	0000 2400	
70083	299.50	FNL	KORSO	FNL	019E54 60N02	019E54 60N02	90	RC	200HA1A		ND	0000 2400	
70090	299.50	FNL	ULKOKALLA	FNL	023E27 64N20	023E27 64N20	90	RC	200HA1A		ND	0000 2400	
70118	299.50	I	PUNTA DELLA MAESTRA	I	012E36 44N58	012E36 44N58	185	RC	120HA1A		ND	0000 2400	
70424	299.50	NOR	SKOMVAER	NOR	011E52 67N24	011E52 67N24	185	RC	100HA1A		ND	0000 2400	
70280	300.00	DNK	FREDERIKSHAVN	DNK	010E33 57N26	010E33 57N26	18	RC	100HA1A		ND	0000 2400	
70269	300.00	DNK	HAMMERODDE	DNK	014E46 55N18	014E46 55N18	90	RC	100HA1A		ND	0000 2400	
70476	300.00	F	AILLY PHARE	F	000E57 49N55	000E57 49N55	100	RC	1K50A1AAN		ND	0000 2400	
70479	300.00	F	LSH LA BASSURELLE	F	000W58 50N34	000W58 50N34	100	RC	1K50A1AAN		ND	0000 2400	
70012	300.00	G	CLOCH POINT	G	004W53 55N57	004W53 55N57	13	RC	2K30H3E		ND	0000 2400	
70049	300.00	G	POINT LYNAS	G	004W17 53N24	004W17 53N24	10	RC	100HA1A		ND	0000 2400	
70054	300.00	G	ROYAL SOVEREIGN LSTN	G	000E26 50N43	000E26 50N43	92	RC	100HA1A		ND	0000 2400	
70062	300.00	G	SOUTER POINT LSTN	G	001W21 54N58	001W21 54N58	10	RC	100HA1A		ND	0000 2400	
70103	300.00	IRL	SLYNE HEAD LSTN	IRL	010W14 53N24	010W14 53N24	93	RC	2K30A2A		ND	0000 2400	
70364	300.00	ISL	SKAGATA	ISL	020W21 66N07	020W21 66N07	160	RC	2K00A2A		ND	0000 2400	
70258	300.00	YUG	KAMENJAK	YUG	014E55 44N47	014E55 44N47	182	RC	2K10A2A		ND	0000 2400	
70507	300.50	D	TRAVEMUENDE	D	010E53 53N58	010E53 53N58	92	RC	50H0A1A		ND	0000 2400	
70166	300.50	E	C BLANCO	E	002E47 39N22	002E47 39N22	90	RC	600HA2A		ND	0000 2400	
70416	300.50	NOR	BJOERNSUND	NOR	006E48 62N53	006E48 62N53	92	RC	100HA1A		ND	0000 2400	
70403	300.50	NOR	LISTA	NOR	006E34 58N06	006E34 58N06	129	RC	100HA1A		ND	0000 2400	
70320	300.50	S	HOLMOEGADD	S	020E45 63N36	020E45 63N36	120	RC	30H0A1A		ND	0000 2400	
70243	300.50	URS	BELOSARAYSKIY	UKR	037E20 46N53	037E20 46N53	280	RC	2K10A2AAN		ND	0000 2400	
70244	300.50	URS	BERDYANSKIY NIZHNIY	UKR	036E46 46N38	036E46 46N38	280	RC	2K10A2AAN		ND	0000 2400	
70193	300.50	URS	AKHILLEONSKIY	URS	036E47 45N26	036E47 45N26	47	RC	100HA1AAN		ND	0000 2400	
70194	300.50	URS	AKHTARSKIY	URS	038E11 46N06	038E11 46N06	185	RC	2K10A2AAN		ND	0000 2400	
70218	300.50	URS	CHESMENSKIY	URS	036E32 64N43	036E32 64N43	55	RC	100HA1AAN		ND	0000 2400	

0	1	2	3	5	4	6	7	8	9	10	11	12	13
70173	300.50	URS		TALLINN	URS	024E44 59N43	024E44 59N43	47	RC 2K10A2AAN		ND	0000 2400	
70192	300.50	URS		YENIKALSKIY	URS	036E38 45N23	036E38 45N23	280	RC 2K10A2AAN		ND	0000 2400	
70594	301.00	ALG		PORT DE MOSTAGANEM	ALG	000W04 35N56	000W04 35N56	28	RC 2K10A2A		ND	0000 2400	
70267	301.00	DNK		NAKKEHOVED	DNK	012E21 56N07	012E21 56N07	90	RC 100HA1A		ND	0000 2400	
70164	301.00	E		PNT CARNERO	E	005W26 36N05	005W26 36N05	90	RC 600HA2A		ND	0000 2400	
70482	301.00	F		CALAIS PT	F	001E51 50N28	001E51 50N28	10	RC 800HA1AAN		ND	0000 2400	
70471	301.00	F		CREAC'H OUESSANT LH	F	005W08 48N28	005W08 48N28	185	RC 2K10A1AAN		ND	0000 2400	
70463	301.00	F		S GERVAIS	F	004E50 43N26	004E50 43N26	40	RC 1K10A1AAN		ND	0000 2400	
70255	301.00	HOL		EIERLAND PHARE	HOL	004E52 53N11	004E52 53N11	90	RC 100HA1AAN		ND	0000 2400	
70362	301.00	ISL		STRANDHOEFN	ISL	014W39 65N55	014W39 65N55	160	RC 1K40A2A		ND	0000 2400	
70398	301.00	NOR		FULEHUK	NOR	010E36 59N10	010E36 59N10	18	RC 100HA1A		ND	0000 2400	
70684	301.00	TUR		INCEKUM BURNU	TUR	033E57 36N14	033E57 36N14	185	RC 2K10A2AAN		ND	0000 2400	
70511	301.50	BUL		MASLEN NOS	BUL	027E50 42N18	027E50 42N18	100	RC 100HA2A		ND	0000 2400	
70499	301.50	D		NEULAND	D	010E36 54N22	010E36 54N22	92	RC 50H0A1A		ND	0000 2400	
70154	301.50	E		TORRE DE HERCULES	E	008W24 43N23	008W24 43N23	90	RC 600HA2A		ND	0000 2400	
70038	301.50	G		NAB TOWER	G	000W57 50N40	000W57 50N40	37	RC 100HA1A		ND	0000 2400	
70341	301.50	S		HOBURG	S	018E09 56N55	018E09 56N55	130	RC 30H0A1A		ND	0000 2400	
70480	302.00	F		CHERBOURG FT W LH	F	001W39 49N41	001W39 49N41	40	RC 2K10A1AAN		ND	0000 2400	
70445	302.00	F		GIRONDE BATEAU BXA	F	001W29 45N40	001W29 45N40	10	RC 1K00A1AAN		ND	0000 2400	
70584	302.00	GRC		AXIOS	GRC	022E44 40N30	022E44 40N30	20	RD 700HA2AA		ND	0000 2400	
70353	302.00	S		TRUBADUREN	S	011E38 57N36	011E38 57N36	100	RC 30H0A1A		ND	0000 2400	
70664	302.00	TUN		LA GALITE	TUN	008E56 37N31	008E56 37N31	100	RC 100HA1A		ND	0000 2400	
70493	302.50	D		KIEL	D	010E16 54N30	010E16 54N30	92	RC 50H0A1A		ND	0000 2400	
70467	302.50	F		LES BALEINES PHARE	F	001W34 46N15	001W34 46N15	100	RC 1K35A1AAN		ND	0000 2400	
70251	302.50	HOL		HOEKVAN HOLLANDPHARE	HOL	004E07 51N59	004E07 51N59	90	RC 100HA1AAN		ND	0000 2400	
70252	302.50	HOL		IJMUIDEN PHARE	HOL	004E35 52N28	004E35 52N28	90	RC 100HA1AAN		ND	0000 2400	
70250	302.50	HOL		TEXEL BF PHARE	HOL	004E07 52N47	004E07 52N47	90	RC 100HA1AAN		ND	0000 2400	
70115	302.50	I		ISOLA PANTELLERIA	I	011E57 36N50	011E57 36N50	185	RC 120HA1A		ND	0000 2400	
70401	302.50	NOR		TORUNGEN	NOR	008E47 58N23	008E47 58N23	92	RC 100HA1A		ND	0000 2400	
70653	302.50	ROU		SFINTU GHEORGHE	ROU	029E36 45N00	029E36 45N00	365	RC 100HA1A		ND	0000 2400	
70327	302.50	S		EGGEGRUND	S	017E34 60N44	017E34 60N44	100	RC 30H0A1A		ND	0000 2400	
70184	302.50	URS		MIKELBAKA	URS	021E59 57N36	021E59 57N36	35	RC 100HA1AAN		ND	0000 2400	
70139	303.00	E		ROTA	E	006W23 36N38	006W23 36N38	148	RC 600HA2A		ND	0000 2400	
70481	303.00	F		I D'YEU PHARE	F	002W23 46N43	002W23 46N43	186	RC 1K00A1AAN		ND	0000 2400	
70079	303.00	FNL		HELSINKI	FNL	024E56 59N57	024E56 59N57	90	RC 200HA1A		ND	0000 2400	
70019	303.00	G		EILEAN GLAS	G	006W38 57N51	006W38 57N51	92	RC 100HA1A		ND	0000 2400	
70043	303.00	G		OIGH SGEIR	G	006W41 56N58	006W41 56N58	92	RC 100HA1A		ND	0000 2400	
70313	303.00	HOL		SCHEVENINGEN PHARE	HOL	004E16 52N06	004E16 52N06	10	RC 100HA1AAN		ND	0700 1600	
70092	303.00	IRL		BALLYCOTTON LSTN	IRL	007W59 51N50	007W59 51N50	93	RC 2K30A2A		ND	0000 2400	
70349	303.00	S		FALSTERBOREV	S	012E40 55N19	012E40 55N19	80	RC 30H0A1A		ND	0000 2400	

0	1	2	3	5	4	6		7		8	9	10	11	12		13
70619	303.50	ALG	CAP COBELLIN	ALG	004E25	36N54	004E25	36N54	92	RC	2K10A2A		ND	0000	2400	
70074	303.50	DDR	WARNEMUENDE	DDR	012E05	54N11	012E05	54N11	35	RC	2K10A2N		ND	0000	2400	
70149	303.50	E	LLANES	E	004W45	43N25	004W45	43N25	90	RC	600HA2A		ND	0000	2400	
70141	303.50	E	PNT LLOBREGAT	E	002E09	41N19	002E09	41N19	90	RC	600HA2A		ND	0000	2400	
70622	303.50	EGY	ALEXANDRIA	EGY	029E50	31N13	029E50	31N13	150	RC	850HA1A		ND	0000	2400	
70623	303.50	EGY	ROSETTA	EGY	030E21	31N30	030E21	31N30	150	RC	850HA1A		ND	0000	2400	
70626	303.50	EGY	TOR	EGY	033E35	28N15	033E35	28N15	80	RC	850HA1A		ND	0000	2400	
70050	303.50	G	POOLE HARBOUR	G	001W55	50N40	001W55	50N40	19	RC	100HA1A		ND	0000	2400	
70634	303.50	MLT	XLOKK RADIO	MLT	014E32	35N49	014E24	35N49	200	RC	100HA2AAN		ND	0000	2400	
70405	303.50	NOR	FEISTEIN	NOR	005E30	58N49	005E30	58N49	92	RC	100HA1A		ND	0000	2400	
70415	303.50	NOR	GRASOEYANE	NOR	005E45	62N25	005E45	62N25	37	RC	100HA1A		ND	0000	2400	
70392	303.50	TUR	AKINCI BURNU	TUR	035E47	36N19	035E47	36N19	185	RC	2K10A2AAN		ND	0000	2400	
70389	303.50	TUR	IZMIR KARABURUN	TUR	026E31	38N39	026E31	38N39	185	RC	2K10A2AAN		ND	0000	2400	
70391	303.50	TUR	MERSIN	TUR	034E37	36N47	034E37	36N47	185	RC	2K10A2AAN		ND	0000	2400	
70227	303.50	URS	KOLGUYEV YUZNY	URS	048E40	68N42	048E40	68N42	65	RC	100HA1AAN		ND	0000	2400	
70207	303.50	URS	KONUSHINSKIY	URS	043E47	67N12	043E47	67N12	47	RC	100HA1AAN		ND	0000	2400	
70259	303.50	YUG	MOVAR	YUG	015E58	43N30	015E58	43N30	185	RC	2K10A2A		ND	0000	2400	
70497	304.00	D	FEHMARNBELT	D	011E09	54N36	011E09	54N36	37	RC	50H0A1A		ND	0000	2400	
70276	304.00	DNK	AARHUS	DNK	010E13	56N10	010E13	56N10	18	RC	100HA1A		ND	0000	2400	
70088	304.00	FNL	ORRENGRUND	FNL	026E27	60N17	026E27	60N17	90	RC	200HA1A		ND	0000	2400	
70029	304.00	G	INCHKEITH	G	003W08	56N02	003W08	56N02	19	RC	100HA1A		ND	0000	2400	
70125	304.00	I	VIESTE	I	016E11	41N53	016E11	41N53	130	RC	120HA1A		ND	0000	2400	
70093	304.00	IRL	BALLYCOTTON LSTN	IRL	007W59	51N50	007W59	51N50	09	RC	2K30A2A		ND	0900	1800	
70095	304.00	IRL	HOOK POINT LSTN	IRL	006W56	52N07	006W56	52N07	93	RC	2K30A2A		ND	0000	2400	
70101	304.00	IRL	OLD HD KINSALE LSTN	IRL	008W32	51N36	008W32	51N36	93	RC	2K30A2A		ND	0000	2400	
70363	304.00	ISL	SKARDSFJARA	ISL	017W59	63N31	017W59	63N31	160	RC	2K00A2A		ND	0000	2400	
70316	304.00	S	NORSTROEMSGRUND	S	022E20	65N07	022E20	65N07	80	RC	30H0A1A		ND	0000	2400	
70131	304.50	E	C MAYOR	E	003W47	43N29	003W47	43N29	90	RC	600HA2A		ND	0000	2400	
70434	304.50	F	BLOSCON	F	003W58	48N43	003W58	48N43	20	RC	1K10A1AAN		ND	0000	2400	
70057	304.50	G	ST PETER PORT	G	002W31	49N27	002W31	49N27	19	RC	100HA1A		ND	0000	2400	
70277	305.00	DNK	FORNAES	DNK	010E56	56N25	010E56	56N25	90	RC	100HA1A		ND	0000	2400	
70153	305.00	E	C PRIORINO CHICO	E	008W20	43N27	008W20	43N27	90	RC	600HA2A		ND	0000	2400	
70147	305.00	E	MALAGA	E	004W25	36N43	004W25	36N43	90	RC	600HA2A		ND	0000	2400	
70473	305.00	F	LA GIRAGLIA PHARE	F	009E24	43N02	009E24	43N02	185	RC	1K50A1AAN		ND	0000	2400	
70082	305.00	FNL	KALLAN	FNL	022E32	63N45	022E32	63N45	90	RC	200HA1A		ND	0000	2400	
70030	305.00	G	ISLE OF MAY	G	002W33	56N11	002W33	56N11	182	RC	100HA1A		ND	0000	2400	
70034	305.00	G	LONGSTONE LSTN	G	001W36	55N38	001W36	55N38	92	RC	100HA1A		ND	0000	2400	
70061	305.00	G	SOUTER POINT	G	001W24	55N00	001W24	55N00	92	RC	100HA1A		ND	0000	2400	
70404	305.00	NOR	SKARVOEY	NOR	005E59	58N24	005E59	58N24	18	RC	100HA1A		ND	0000	2400	
70447	305.50	F	ANTIFER PHARE	F	000E10	49N41	000E10	49N41	100	RC	1K30A1AAN		ND	0000	2400	

0	1	2	3	5	4	6	7	8	9	10	11	12	13
70300	305.50	POR	C S MARIA	POR	007W52 36N58	007W52 36N58	93	RC	304HF1B		ND	0000 2400	
70301	305.50	POR	C S VICENTE	POR	009W00 37N01	009W00 37N01	370	RC	304HF1B		ND	0000 2400	
70299	305.50	POR	VILA REAL S ANTONIO	POR	007W25 37N11	007W25 37N11	93	RC	304HF1B		ND	0000 2400	
70319	305.50	S	STORA FJAEDERAEGG	S	021E00 63N49	021E00 63N49	40	RC	30H0A1A		ND	0000 2400	
70348	305.50	S	TRELLEBORG	S	013E09 55N22	013E09 55N22	60	RC	30H0A1A		ND	0000 2400	
70283	306.00	DNK	THYBOROEN	DNK	008E13 56N43	008E13 56N43	180	RC	100HA1A		ND	0000 2400	
70169	306.00	E	C DE LAS HUERTAS	E	000W24 38N21	000W24 38N21	185	RC	600HA2A		ND	0000 2400	
70089	306.00	FNL	PORKKALA	FNL	024E18 59N52	024E18 59N52	90	RC	200HA1A		ND	0000 2400	
70056	306.00	G	ST HELIER HARBOUR	G	002W07 49N10	002W07 49N10	19	RC	100HA1A		ND	0000 2400	
70369	306.00	ISL	GRIMSEY	ISL	017W59 66N32	017W59 66N32	160	RC	1K40A2A		ND	0000 2400	
70322	306.00	S	SKAGSUDDE	S	019E01 63N11	019E01 63N11	80	RC	30H0A1A		ND	0000 2400	
70279	306.50	DNK	LAESOE RENDE	DNK	010E49 57N13	010E49 57N13	90	RC	100HA1A		ND	0000 2400	
70454	306.50	F	GR JARDIN PHARE	F	002W05 48N40	002W05 48N40	20	RC	700HA1AAN		ND	0000 2400	
70126	306.50	MRC	CAP SPARTEL	MRC	005W56 35N47	005W56 35N47	380	RC	100HA1A		ND	0000 2400	
70430	306.50	NOR	HELNES	NOR	026E13 71N03	026E13 71N03	92	RC	100HA1A		ND	0000 2400	
70414	306.50	NOR	SVINOEY	NOR	005E16 62N19	005E16 62N19	185	RC	100HA1A		ND	0000 2400	
70657	306.50	POL	HEL	POL	018E49 54N36	018E49 54N36	19	RC	1K30A2AAN		ND	0000 2400	
70660	306.50	POL	USTKA	POL	016E51 54N35	016E51 54N35	20	RC	1K90A2AAN		ND	0000 2400	
70209	306.50	URS	MORZHOVSKIY	URS	042E28 66N43	042E28 66N43	110	RC	2K10A2AAN		ND	0000 2400	
70212	306.50	URS	SOSNOVETSKIY	URS	040E41 66N29	040E41 66N29	130	RC	2K10A2AAN		ND	0000 2400	
70208	306.50	URS	TERSKO-ORLOVSKIY	URS	041E20 67N12	041E20 67N12	140	RC	2K10A2AAN		ND	0000 2400	
70211	306.50	URS	VORONOVSKIY	URS	042E14 66N30	042E14 66N30	280	RC	2K10A2AAN		ND	0000 2400	
70620	307.00	ALG	CAP BOUGAROUN	ALG	006E28 37N05	006E28 37N05	92	RC	2K10A2A		ND	0000 2400	
70265	307.00	DNK	HIRSHOLM	DNK	010E38 57N29	010E38 57N29	90	RC	100HA1A		ND	0000 2400	
70161	307.00	E	SACRATIF	E	003W28 36N41	003W28 36N41	185	RC	600HA2A		ND	0000 2400	
70023	307.00	G	FLAMBOROUGH HEAD	G	000W04 54N06	000W04 54N06	92	RC	100HA1A		ND	0000 2400	
70027	307.00	G	HEUGH LSTN	G	001W10 54N41	001W10 54N41	92	RC	100HA1A		ND	0000 2400	
70064	307.00	G	SPURN LSTN	G	000E07 53N34	000E07 53N34	92	RC	100HA1A		ND	0000 2400	
70410	307.00	NOR	MARSTEIN	NOR	005E00 60N07	005E00 60N07	92	RC	100HA1A		ND	0000 2400	
70318	307.00	S	RATASKAER	S	020E54 64N00	020E54 64N00	80	RC	30H0A1A		ND	0000 2400	
70342	307.00	S	STORA KARLSOE	S	017E58 57N17	017E58 57N17	80	RC	30H0A1A		ND	0000 2400	
70264	307.50	DNK	HIRTSHALS	DNK	009E57 57N35	009E57 57N35	90	RC	100HA1A		ND	0000 2400	
70451	307.50	F	LES SABLES OLONNE	F	001W48 46N30	001W48 46N30	10	RC	1K10A1AAN		ND	0000 2400	
70388	307.50	TUR	MEHMETCIK BURNU	TUR	026E10 40N02	026E10 40N02	185	RC	2K10A2AAN		ND	0000 2400	
70130	308.00	E	ALBORAN	E	003W02 35N56	003W02 35N56	50	RC	100HA1A		ND	0000 2400	
70462	308.00	F	ROCHES DOUVRES PHARE	F	002W50 49N06	002W50 49N06	130	RC	1K10A1AAN		ND	0000 2400	
70009	308.00	G	CASQUETS LSTN	G	002W22 49N43	002W22 49N43	92	RC	100HA1A		ND	0000 2400	
70067	308.00	G	START POINT LSTN	G	003W38 50N13	003W38 50N13	92	RC	100HA1A		ND	0000 2400	
70371	308.00	ISL	DJUPIVOGUR	ISL	014W17 64N39	014W17 64N39	160	RC	2K00A2A		ND	0000 2400	
70128	308.00	MRC	OUKACHA	MRC	007W34 33N37	007W34 33N37	50	RC	950HA2A		ND	0000 2400	

0	1	2	3	5	4	6	7	8	9	10	11	12	13
70296	308.00	POR	C	ESPICHEL	POR	009W13 38N25	009W13 38N25	93	RC 304HF1B		ND	0000 2400	
70297	308.00	POR	C	ROCA	POR	009W24 38N47	009W24 38N47	185	RC 304HF1B		ND	0000 2400	
70298	308.00	POR	C	SINES	POR	008W53 37N57	008W53 37N57	93	RC 304HF1B		ND	0000 2400	
70378	308.00	TUR		IGNE ADA	TUR	028E03 41N53	028E03 41N53	185	RC 2K10A2AAN		ND	0000 2400	
70140	308.50	E		CHIPIONA	E	006W26 36N44	006W26 36N44	90	RC 600HA2A		ND	0000 2400	
70446	308.50	F		S NAZAIRE S GILDAS	F	002W15 47N08	002W15 47N08	70	RC 2K10A1AAN		ND	0000 2400	
70336	308.50	S		KUNGSGRUNDET	S	016E54 57N41	016E54 57N41	60	RC 30H0A1A		ND	0000 2400	
70383	308.50	TUR		OLUCE BURNU	TUR	031E24 41N18	031E24 41N18	185	RC 2K10A2AAN		ND	0000 2400	
70502	309.00	D		ALTE WESER	D	008E08 53N52	008E08 53N52	37	RC 50H0A1A		ND	0000 2400	
70272	309.00	DNK		SVANEMOEUEN	DNK	012E35 55N42	012E35 55N42	18	RC 100HA1A		ND	0000 2400	
70016	309.00	G		DOUGLAS	G	004W28 54N09	004W28 54N09	92	RC 100HA1A		ND	0000 2400	
70048	309.00	G		POINT LYNAS LSTN	G	004W17 53N24	004W17 53N24	92	RC 100HA1A		ND	0000 2400	
70688	309.00	G		WALNEY ISLAND	G	003W10 54N02	003W10 54N02	92	RC 100HA1A		ND	0000 2400	
70122	309.00	I		S BENEDETTO TRONTO	I	013E53 42N57	013E53 42N57	185	RC 120HA1A		ND	0000 2400	
70333	309.00	S		ALMAGRUNDET	S	019E10 59N09	019E10 59N09	80	RC 30H0A1A		ND	0000 2400	
70387	309.00	TUR		FENERBAHCE	TUR	029E01 40N58	029E01 40N58	185	RC 2K10A2AAN		ND	0000 2400	
70386	309.00	TUR		MARMARA EREGLISI	TUR	027E57 40N58	027E57 40N58	185	RC 2K10A2AAN		ND	0000 2400	
70611	309.50	ALG		PORT D'ALGER	ALG	003E04 36N48	003E04 36N48	37	RC 2K10A2A		ND	0000 2400	
70273	309.50	DNK		ROENAES	DNK	010E52 55N45	010E52 55N45	90	RC 100HA1A		ND	0000 2400	
70151	309.50	E		ESTACA DE BARES	E	007W41 43N47	007W41 43N47	185	RC 600HA2A		ND	0000 2400	
70163	309.50	E		ROMPIDO	E	007W08 37N13	007W08 37N13	90	RC 600HA2A		ND	0000 2400	
70426	309.50	NOR		ANDENES	NOR	016E07 69N19	016E07 69N19	92	RC 100HA1A		ND	0000 2400	
70408	309.50	NOR		UTSIRA	NOR	004E52 59N18	004E52 59N18	129	RC 100HA1A		ND	0000 2400	
70328	309.50	S		OERSKAER	S	018E23 60N32	018E23 60N32	80	RC 30H0A1A		ND	0000 2400	
70311	309.50	TUN		CAP BLANC	TUN	009E50 37N19	009E50 37N19	185	RC 850HA2AAN		ND	0000 2400	
70238	309.50	URS		EVPATORIYSKIY	UKR	033E16 45N09	033E16 45N09	280	RC 2K10A2AAN		ND	0000 2400	
70239	309.50	URS		KHERSONESSKIY	UKR	033E23 44N35	033E23 44N35	280	RC 2K10A2AAN		ND	0000 2400	
70232	309.50	URS		ODESSKIY	UKR	030E45 46N23	030E45 46N23	280	RC 2K10A2AAN		ND	0000 2400	
70237	309.50	URS		TARKHANKUTSKIY	UKR	032E30 45N21	032E30 45N21	280	RC 2K10A2AAN		ND	0000 2400	
70235	309.50	URS		TENDROVSKIY	UKR	031E31 46N19	031E31 46N19	280	RC 2K10A2AAN		ND	0000 2400	
70233	309.50	URS		VORONTSOVSKIY	UKR	030E46 46N30	030E46 46N30	185	RC 2K10A2AAN		ND	0000 2400	
70181	309.50	URS		IRBENSKIY	URS	021E37 57N51	021E37 57N51	28	RC 100HA1AAN		ND	0000 2400	
70678	309.50	URS		SCHWEDSKII	URS	055W49 68N36	055W49 68N36	30	RC 100HA1AAN		ND	0000 2400	
70219	309.50	URS		ZHUZHMUYSKIY	URS	035E34 64N41	035E34 64N41	37	RC 100HA1AAN		ND	0000 2400	
70396	309.50	YUG		STONCICA	YUG	016E15 43N04	016E15 43N04	185	RC 2K10A2A		ND	0000 2400	
70492	310.00	D		KALKGRUND	D	009E53 54N50	009E53 54N50	92	RC 50H0A1A		ND	0000 2400	
70440	310.00	F		BOULOGNE SUR MER	F	001E36 50N44	001E36 50N44	10	RD 2K10A1AAN		ND	0000 2400	
70435	310.00	F		C BEAR	F	003E08 42N31	003E08 42N31	100	RC 1K20A1AAN		ND	0000 2400	
70452	310.00	F		VER SUR MER PHARE	F	000W31 49N20	000W31 49N20	40	RC 1K30A1AAN		ND	0000 2400	
70109	310.00	I		CAPO SANDALO	I	008E13 39N09	008E13 39N09	130	RC 120HA1A		ND	0000 2400	

0	1	2	3	5	4	6	7	8	9	10	11	12	13
70372	310.00	ISL	DALATANGI	ISL	013W35 65N16	013W35 65N16	160	RC	1K00A2A		ND	0000 2400	
70422	310.00	NOR	TENNHOLMEN	NOR	013E30 67N18	013E30 67N18	92	RC	100HA1A		ND	0000 2400	
70343	310.00	S	OELANDS NORRA UDDE	S	017E06 57N22	017E06 57N22	130	RC	30H0A1A		ND	0000 2400	
70282	310.50	DNK	HANSTHOLM	DNK	008E36 57N07	008E36 57N07	180	RC	100HA1A		ND	0000 2400	
70144	310.50	E	CASTELLON	E	000E01 39N58	000E01 39N58	90	RC	600HA2A		ND	0000 2400	
70627	310.50	EGY	ARISH	EGY	033E48 31N08	033E48 31N08	150	RC	850HA1A		ND	0000 2400	
70624	310.50	EGY	DEMIETTA	EGY	031E51 31N31	031E51 31N31	150	RC	850HA1A		ND	0000 2400	
70625	310.50	EGY	PORT-SAID	EGY	032E17 31N16	032E17 31N16	80	RC	850HA1A		ND	0000 2400	
70077	310.50	FNL	GUSTAVSVARN	FNL	022E57 59N48	022E57 59N48	90	RC	200HA1A		ND	0000 2400	
70020	310.50	G	FALLS LSTN	G	001E48 51N18	001E48 51N18	92	RC	100HA1A		ND	0000 2400	
70040	310.50	G	NORTH FORELAND LSTN	G	001E26 51N22	001E26 51N22	92	RC	100HA1A		ND	0000 2400	
70058	310.50	G	SCARWEATHER LSTN	G	003W56 51N26	003W56 51N26	10	RC	100HA1A		ND	0000 2400	
70065	310.50	G	SOUTH FORELAND	G	001E22 51N08	001E22 51N08	92	RC	304HF1B		ND	0000 2400	
70114	310.50	I	GENOVA	I	008E54 44N24	008E54 44N24	130	RC	120HA1A		ND	0000 2400	
70433	310.50	NOR	BOEKFJORD	NOR	030E10 69N52	030E10 69N52	92	RC	100HA1A		ND	0000 2400	
70513	310.50	POL	HEL	POL	018E49 54N36	018E49 54N36	90	RC	700HA2AAN		ND	0000 2400	
70512	310.50	POL	KRYNICA MORSKA	POL	018E27 54N23	018E27 54N23	90	RC	700HA2AAN		ND	0000 2400	
70261	310.50	YUG	RIJEKA	YUG	014E25 45N20	014E25 45N20	10	RC	100HA1A		ND	0000 2400	
70587	311.00	ALG	CAP SIGLI	ALG	004E45 36N53	004E45 36N53	370	RC	2K10A2A		ND	0000 2400	
70152	311.00	E	CEUTA	E	005W18 35N54	005W18 35N54	90	RC	600HA2A		ND	0000 2400	
70455	311.00	F	LA GAROUPE PHARE	F	007E08 43N34	007E08 43N34	185	RC	1K70A1AAN		ND	0000 2400	
70013	311.00	G	CREGNEISH	G	004W46 54N04	004W56 54N04	92	RC	100HA1A		ND	0000 2400	
70036	311.00	G	MEW ISLAND LSTN	G	005W31 54N42	005W31 54N42	92	RC	100HA1A		ND	0000 2400	
70047	311.00	G	POINT OF AYRE	G	004W22 54N25	004W22 54N25	92	RC	100HA1A		ND	0000 2400	
70420	311.00	NOR	GRINNA	NOR	010E58 64N45	010E58 64N45	27	RC	100HA1A		ND	0000 2400	
70346	311.00	S	UTKLIPPAN	S	015E42 55N57	015E42 55N57	100	RC	30H0A1A		ND	0000 2400	
70123	311.50	I	SENIGALLIA	I	013E13 43N43	013E13 43N43	185	RC	120HA1A		ND	0000 2400	
70487	312.00	BEL	OOSTENDE PHARE	BEL	002E55 51N14	002E55 51N14	60	RC	1K50A2A		ND	0000 2400	
70503	312.00	D	DEUTSCHE BUCHT FS	D	007E26 54N11	007E26 54N11	37	RC	50H0A1A		ND	0000 2400	
70158	312.00	E	CASTRO URDIALES	E	003W13 43N23	003W13 43N23	90	RC	600HA2A		ND	0000 2400	
70444	312.00	F	ECKMUHL PHARE	F	004W23 47N48	004W23 47N48	100	RC	2K10A1AAN		ND	0000 2400	
70458	312.00	F	SENETOSE PHARE	F	008E48 41N33	008E48 41N33	185	RC	1K70A1AAN		ND	0000 2400	
70413	312.00	NOR	HENDANES	NOR	005E02 61N57	005E02 61N57	18	RC	100HA1A		ND	0000 2400	
70135	312.50	E	C ESTAY	E	008W49 42N11	008W49 42N11	90	RC	600HA2A		ND	0000 2400	
70468	312.50	F	CALAIS PHARE	F	001E51 50N58	001E51 50N58	40	RC	1K20A1AAN		ND	0000 2400	
70671	312.50	LBY	BENGAZI	LBY	020E03 32N07	020E03 32N07	370	RC	2K10A2A		ND	0000 2400	
70429	312.50	NOR	FRUHOLMEN	NOR	023E59 71N05	023E59 71N05	92	RC	100HA1A		ND	0000 2400	
70186	312.50	URS	AKMENRAGS	URS	021E04 56N50	021E04 56N50	185	RC	100HA1AAN		ND	0000 2400	
70191	312.50	URS	BALTIYSK	URS	019E54 54N38	019E54 54N38	150	RC	100HA1AAN		ND	0000 2400	
70205	312.50	URS	GORODETSKIY	URS	040E59 67N42	040E59 67N42	180	RC	2K10A2AAN		ND	0000 2400	

0	1	2	3	5	4	6		7		8	9	10	11	12		13
70204	312.50	URS		KANINSKIY	URS	043E17	68N39	043E17	68N39	280	RC	2K10A2AAN		ND	0000	2400
70188	312.50	URS		KLAYPEDA	URS	021E06	55N44	021E06	55N44	225	RC	100HA1AAN		ND	0000	2400
70187	312.50	URS		LIEPAIA	URS	021E00	56N31	021E00	56N31	225	RC	100HA1AAN		ND	0000	2400
70676	312.50	URS		LJAMCHIN	URS	059W07	69N52	059W07	69N52	30	RC	100HA1AAN		ND	0000	2400
70206	312.50	URS		SHOYNA	URS	044E08	67N53	044E08	67N53	280	RC	2K10A2AAN		ND	0000	2400
70677	312.50	URS		SVJATONOSSKII	URS	039W45	68N09	039W45	68N09	150	RC	2K10A2AAN		ND	0000	2400
70190	312.50	URS		TARAN	URS	019E59	54N58	019E59	54N58	225	RC	100HA1AAN		ND	0000	2400
70185	312.50	URS		VENTSPILS	URS	021E33	57N24	021E33	57N24	185	RC	100HA1AAN		ND	0000	2400
70260	312.50	YUG		MOLUNAT	YUG	018E26	42N27	018E26	42N27	185	RC	2K10A2A		ND	0000	2400
70504	313.00	D		HELGOLAND	D	007E53	54N11	007E53	54N11	92	RC	50H0A1A		ND	0000	2400
70132	313.00	E		C DE PALOS	E	000W41	37N38	000W41	37N38	90	RC	600HA2A		ND	0000	2400
70464	313.00	F		BELLE ILE EN MER LH	F	003W14	47N19	003W14	47N19	185	RC	1K30A1AAN		ND	0000	2400
70438	313.00	F		PLANIER PHARE	F	005E14	43N12	005E14	43N12	185	RC	1K20A1AAN		ND	0000	2400
70418	313.00	NOR		HALTEN	NOR	009E24	64N10	009E24	64N10	92	RC	100HA1A		ND	0000	2400
70590	313.50	ALG		CAP TENES	ALG	001E20	36N33	001E20	36N33	92	RC	2K10A2A		ND	0000	2400
70271	313.50	DNK		HESTEHOVED	DNK	012E10	54N50	012E10	54N50	90	RC	100HA1A		ND	0000	2400
70085	313.50	FNL		MANTYLUOTO	FNL	021E28	61N36	021E28	61N36	90	RC	200HA1A		ND	0000	2400
70005	313.50	G		BARRA HEAD	G	007W39	56N47	007W39	56N47	364	RC	100HA1A		ND	0000	2400
70007	313.50	G		BRIGHTON MARINA LSTN	G	000W06	50N48	000W06	50N48	19	RC	100HA1A		ND	0000	2400
70094	313.50	IRL		EAGLE ISLAND LSTN	IRL	010W06	54N17	010W06	54N17	370	RC	2K30A2A		ND	0000	2400
70104	313.50	IRL		TORY ISLAND LSTN	IRL	008W15	55N16	008W15	55N16	185	RC	2K30A2A		ND	0000	2400
70402	313.50	NOR		OKSOEY	NOR	008E03	58N04	008E03	58N04	92	RC	100HA1A		ND	0000	2400
70340	313.50	S		OESTERGARN	S	018E59	57N27	018E59	57N27	100	RC	30H0A1A		ND	0000	2400
70284	314.00	DNK		LYNGVIG	DNK	008E09	56N15	008E09	56N15	180	RC	100HA1A		ND	0000	2400
70460	314.00	F		I VIERGE PHARE	F	004W34	48N38	004W34	48N38	130	RC	1K10A1AAN		ND	0000	2400
70483	314.00	F		PORQUEROLLES PHARE	F	006E12	42N59	006E12	42N59	370	RC	30H0A1AAN		ND	0000	2400
70098	314.00	IRL		LOOPHEAD LSTN	IRL	009W56	52N34	009W56	52N34	93	RC	2K30A2A		ND	0000	2400
70427	314.00	NOR		HEKKINGEN	NOR	017E49	69N36	017E49	69N36	92	RC	100HA1A		ND	0000	2400
70326	314.00	S		HAELLGRUND	S	017E24	61N17	017E24	61N17	60	RC	30H0A1A		ND	0000	2400
70314	314.00	S		MALOEREN	S	023E34	65N32	023E34	65N32	100	RC	30H0A1A		ND	0000	2400
70600	314.50	ALG		BEJAIA	ALG	005E06	36N45	005E06	36N45	18	RC	2K10A2A		ND	0000	2400
70270	314.50	DNK		MON	DNK	012E47	54N48	012E47	54N48	90	RC	100HA1A		ND	0000	2400
70081	314.50	FNL		KALBADAGRUND	FNL	025E36	59N59	025E36	59N59	90	RC	200HA1A		ND	0000	2400
70312	314.50	HOL		IJMUIDEN PHARE	HOL	004E35	52N28	004E35	52N28	10	RC	100HA1AAN		ND	0700	1600
70119	314.50	I		PUNTA PENNA	I	014E42	42N10	014E42	42N10	185	RC	120HA1A		ND	0000	2400
70368	314.50	ISL		HORNBJARG	ISL	022W23	66N25	022W23	66N25	160	RC	1K30A2A		ND	0000	2400
70663	314.50	TUN		PLATE FORME TAZARKA	TUN	011E40	36N36	011E40	36N36	70	RC	100HA1A		ND	0600	2000
70196	314.50	URS		ANAPSKIY	URS	037E18	44N53	037E18	44N53	28	RC	100HA1AAN		ND	0000	2400

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document 1052-E
9 March 1985

B.2 (EMA)

PLENARY MEETING

2nd SERIES OF TEXTS SUBMITTED BY THE
EDITORIAL COMMITTEE TO THE PLENARY MEETING

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

Source	Document	Title
COM.5	1060	Resolution No. COM 5/2 (EMA)

J.-L. BLANC
Chairman
of Editorial Committee

Annex: 1 page

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.

RESOLUTION No. COM 5/2 (EMA)

Updating of the Master International Frequency Register with regard to assignments to stations of the maritime radionavigation (radiobeacons) service in the band 283.5 - 315 kHz to permit the entry into force of the Agreement and associated Plan

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 the present Conference has adopted an Agreement and an associated Plan for the maritime radionavigation (radiobeacons) service 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.

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INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document 1053-E
9 March 1985

B.3 (EMA)

PLENARY MEETING

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

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

Source	Document No.	Title
COM.4	1057	Annex 1
COM.4	1059	Annex 2
		Annex 3 and Appendices

J.-L. BLANC
Chairman of Editorial Committee

Annex: 11 pages

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.

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.	Symbol 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.	Service area: longitude and latitude (in degrees and minutes) of the centre and 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
10.	Necessary effective monopole radiated power (e.m.r.p.) (dBW)[2] (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

Note 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.

Note 2 - 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.

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ANNEX 2

Channelling arrangement for maritime radiobeacons in the band 283.5 - 315 kHz*

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

* 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 geographical protection 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 Designation 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 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.

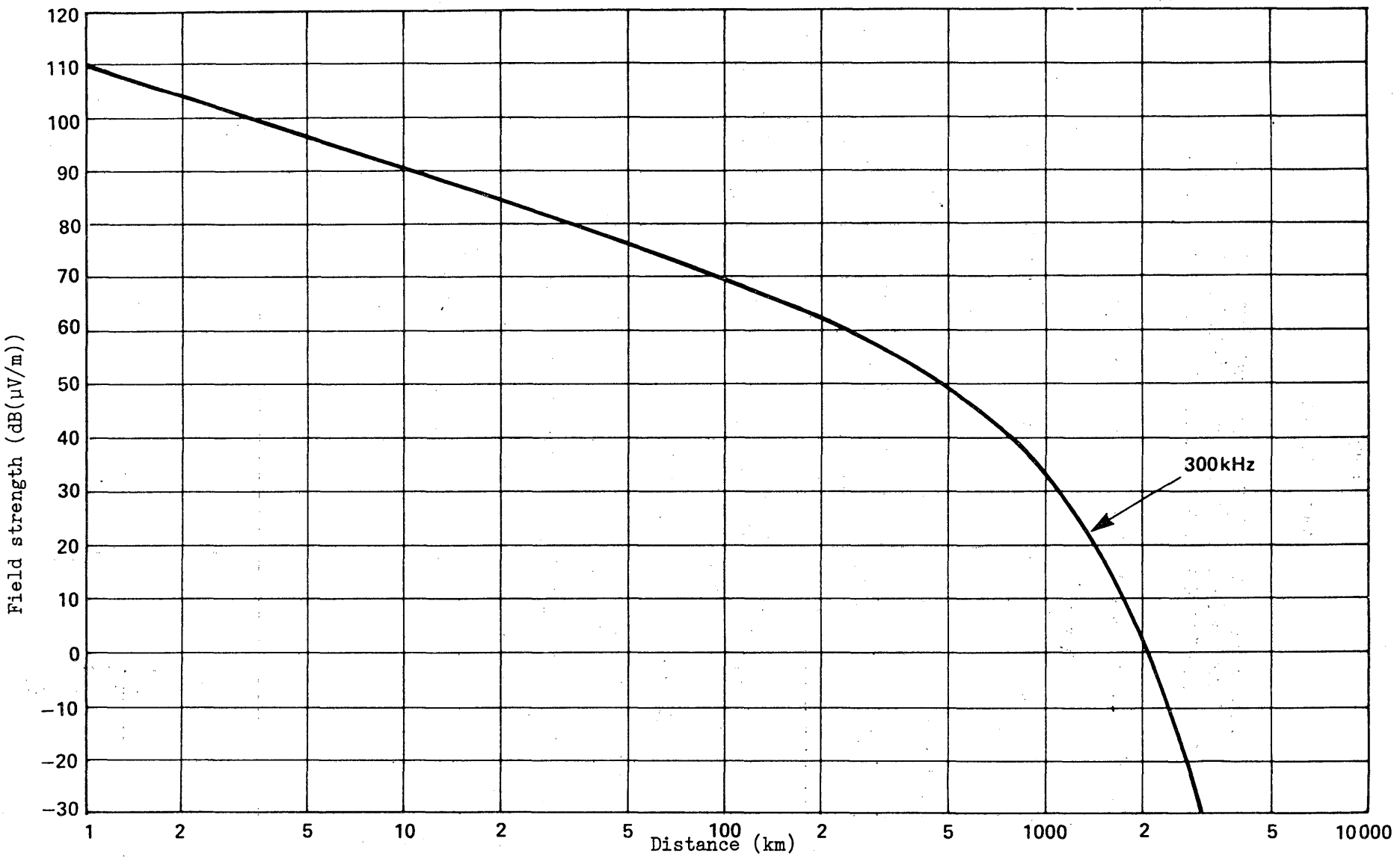

FIGURE 1

Ground-wave propagation curves; sea water, average salinity, 20°C, with $\sigma = 5$ S/m, $\varepsilon = 70$

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.

Note - Some currently used receivers have selectivity characteristics which may require additional protection. The Plan attempts to provide adjacent channel protection exceeding these values.

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 Transmitter 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. Compatibility 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.

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Appendix 1 to Annex 3

Criteria to be used in identifying administrations whose assignments are 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 are 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 an administration 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.

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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 primary function of the radiobeacon is not significantly impaired.

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Appendix 3 to Annex 3

Minimum technical characteristics for maritime radiobeacons in the band 283.5 - 315 kHz

ANTENNA AND EARTH SYSTEM

1. The antenna and earth system should be so designed as to restrict radiation of horizontally polarized waves and 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. Frequencies assigned to maritime radiobeacons shall be 500 Hz apart and on integer multiples of 100 Hz.

5. Transmitters of A1A emissions shall maintain their assigned frequency within a tolerance of ±30 Hz.

6. Transmitters of F1B emissions shall maintain their assigned frequency within a tolerance of ± 10 Hz.

7. Maximum spurious emission power levels of all transmitters shall conform to Appendix 8 of the Radio Regulations, Geneva, 1979.

Modulation

8. A beacon identity of one or two Morse letters followed by a "long dash" shall be transmitted using class of emission A1A.

9. Additional information, permitted as a further aid to navigation, may be transmitted by a radiobeacon using the class of emission F1B.

10. The structure of the radiobeacon signal shall be as given in [ ].

Accuracy of timing

11. All maritime radiobeacons operating in groups shall be controlled by a device ensuring the accuracy of the transmission schedules. The accuracy of transmission times should be maintained to within [0.25 seconds].

Field strength measurements

12. 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).

13. Such measurements shall be taken again at regular intervals not exceeding one year.

Radiobeacon transmissions

14. Each administration shall ensure that the following are carried out:

a) the field strength does not vary by more than ±3 dB from the nominal value determined in accordance with paragraph 12;

b) the transmission frequency should have a tolerance of not more than ±10 Hz for the F1B transmission and ±30 Hz for the A1A transmission;

c) the transmitted signal is correct;

d) the timing is maintained within [±0.25 seconds].

STANDBY EQUIPMENT

15. Maritime radiobeacons shall have the necessary standby equipment to prevent any stoppage due to the breakdown of the electric supply, the transmitter or the timing device.

RECOMMENDED MINIMUM TECHNICAL CHARACTERISTICS FOR MARITIME RADIO DIRECTION-FINDERS WORKING ON FREQUENCIES BETWEEN 283.5 kHz AND 315 kHz*

FREQUENCY BANDS

1. Maritime radio direction-finders shall 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 permitted to transmit as a further aid to navigation. Such transmissions should be on the radiobeacon assigned frequency and be class F1B emissions.

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* It should be noted 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.

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SELECTIVITY

3. For class of emission A1A, the overall radio frequency (r.f.) and intermediate frequency (i.f.) selectivity of the direction-finder should be:

a) bandwidth between 190 Hz and 210 Hz for 6 dB attenuation;

b) bandwidth less than 460 Hz for 30 dB attenuation;

c) bandwidth less than 960 Hz for 60 dB attenuation.

3.1 The image frequency rejection ratio should be 80 dB or higher.

3.2 The i.f. protection ratio should be 80 dB or higher.

4. For class of emission F1B, the overall r.f. and i.f. selectivity of the receiver should be:

a) bandwidth between 270 Hz and 350 Hz for 6 dB attenuation;

b) bandwidth less than 600 Hz for 30 dB attenuation;

c) bandwidth less than 1 100 Hz for 60 dB attenuation.

4.1 The image frequency rejection ratio should be 80 dB or higher.

4.2 The i.f. protection ratio should be 80 dB or higher.

SENSITIVITY

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

MISCELLANEOUS CHARACTERISTICS

6. Maritime radio direction-finders shall include means by which A1A identification signals can be recognized.

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

8. Maritime radio direction-finders shall 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 any interference which may cause a bearing to be incorrect.

RECOMMENDED TECHNICAL CONDITIONS FOR THE INSTALLATION AND CALIBRATION OF RADIO DIRECTION-FINDERS IN VESSELS*

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

2. The direction-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.

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 as to suffer as little interference as possible from mechanical or other noise.

6. A means of providing information on the ships' 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 operation and each time the position of the antennas or the conductors referred to above is changed or the superstructure of the vessel altered substantially.

8. [**] The calibration of the direction-finder should be checked at intervals not exceeding 12 months.

9. The frequency used for calibrating the radio direction-finder should be as close as possible to 300 kHz.

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

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

[** (Reservation by the Federal Republic of Germany.)]

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document 1054-E
12 March 1985
Original: English

COMMITTEE 4

SUMMARY RECORD

OF THE

THIRD MEETING OF COMMITTEE 4

(TECHNICAL AND PLANNING)

Wednesday, 6 March 1985, at 0900 hrs

Chairman: Mr. L.W. BARCLAY (United Kingdom)

Subjects discussed:	Document
1. Verbal report by the Chairman of ad hoc Group 2	-
2. Technical considerations	DL/1003

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.

1. Verbal report by the Chairman of ad hoc Group 2

1.1 The Chairman of ad hoc Group 2 recalled the Group's terms of reference as set out in Document DT/1003. The Group had faced a major difficulty in that the data made available to it in Documents 1012 and 1023 were insufficient for its task; data had however been provided verbally during the meeting by the French delegate. Opinions in the Group had been divided: one view was that since the intent of an administration to use the emissions of a given station for direction-finding amounted to the definition of that station as a radiobeacon under the terms of Radio Regulation 87, therefore stations in the hyperbolic navigation system could be considered as radiobeacons; on the other hand it was contended that since stations of the hyperbolic system did not carry identification signals, as stipulated by Radio Regulation 2064, they could not be considered as radiobeacons. Another point of contention was that the hyperbolic system required a service range (400 km) greatly in excess of the usual 130 km range for radiobeacons. Since in addition to its lack of technical data the Group also had no data on the status of existing assignments to the hyperbolic system, it had failed to arrive at a decision, despite lengthy discussion, and was compelled to refer the matter back to Committee 4.

With regard to the more specific point of the adjacent and co-channel protection to be afforded should Committee 4 decide to include the hyperbolic system in the planning process, the Group had concluded that the receiver selectivity of the hyperbolic system was such that it needed only a very narrow selectivity curve. Hence, a smoother curve than that decided on by the Committee at its previous meeting would be required. At the suggestion of the Chairman of ad hoc Group 3 (Planning), an additional value of -6 dB at ±200 Hz was therefore proposed. Furthermore, receiver selectivity was such that -100 dB protection was provided at ±20 Hz on either side of the tuning frequency, hence the system required co-channel protection only.

1.2 The delegate of France referred the Committee to a manuscript document giving technical characteristics of the hyperbolic system, which was a very simple one and provided a much better service than conventional radiobeacons. It would therefore be regrettable to put a stop to the further development of a system which other countries too might well feel it worthwhile to introduce in the future by excluding it from the radiobeacon band.

1.3 The representative of the IFRB said that as far as the status of existing frequency assignments in the Master Register for the French hyperbolic navigation system was concerned, many such assignments had received an unfavourable regulatory Finding during the period 1978-1980, principally because most of such notifications had been made as if the assignments concerned were part of the radionavigation service, thus bringing them under the provisions of Radio Regulation 342.

1.4 After a lengthy discussion, in which the delegates of France and Spain maintained that stations in the hyperbolic system should be considered as radiobeacons, the delegates of the USSR, Yugoslavia and the Netherlands considered that despite the manifest excellence of the system it could not be equated with a conventional radiobeacon and should therefore not be included in the planning process, although account could be taken of it after the Conference, and the delegate of the Federal Republic of Germany said that whatever the Committee's final decision the door should be kept open for the introduction of hyperbolic navigation systems in the

radiobeacon band, the delegate of Sweden, supported by the delegate of Ireland, proposed, as a compromise, that the frequency 285.5 should be blocked in the planning process and reserved for use by the hyperbolic navigation system as requested by France; that system would not otherwise be taken into account in the planning process.

1.5 The delegate of the Netherlands conceded that the compromise proposal would not go beyond the terms of the Conference's mandate in the way recognition of the French system as a radiobeacon system would do. From the regulatory point of view, in view of the future potential of the hyperbolic radionavigation system, it would be appropriate for the Conference to recommend that a forthcoming WARC be asked to consider the matter and possibly draw up provisions for including such systems in the Radio Regulations. Furthermore, the CCIR, IALA and IMO could also be asked to make preliminary studies on such systems for consideration by that WARC.

1.6 The Chairman said that in the light of the discussion it appeared to be acceptable to all that the hyperbolic system should, for the purposes of planning at the present Conference, be considered not as a radiobeacon system but as a radionavigation system. Furthermore, in view of the future potential of the system and the fact that it would comply with Radio Regulation 342 in not causing harmful interference to radiobeacons, it appeared to be acceptable that the Planning Group should be requested, as far as possible and especially in the western half of the EMA, to avoid assigning the frequency 285.5 to conventional radiobeacons.

It was so decided.

1.7 The Chairman said that despite the obligation laid on the hyperbolic system under Radio Regulation 342 not to cause interference to adjacent channels, with the result that such interference need not be taken into account in the computer program, the Planning Group might like to note that if it wished at any time to assess what possible adjacent channel interference the hyperbolic system might cause (in view of the fact that conventional radiobeacons could suffer from beat frequencies in multiples of 100 Hz of the frequency differences between the two systems), the adjacent channel protection ratio of -54 dB at 500 Hz decided by Committee 4 should be refined by further specifying a protection ratio of -6 dB at 200 Hz, as proposed by ad hoc Group 2 (other values to be extrapolated linearly from those values).

It was so agreed.

2. Technical considerations (Document DL/1003, Section 3)

List of additional technical parameters to be considered:
F1B emission; and Data message format

2.1 The Chairman noted that the Committee had taken action on three of the items in its terms of reference set out in Document 1018. The following day it would be discussing the technical parameters for future modifications of the Plan. In the meantime it should examine such parameters more from the standpoint of providing additional information which might, for instance, be included as annexes to Recommendations. A number of ad hoc Drafting Groups would be set up to prepare appropriate texts.

In assessing the technical characteristics for adjacent channel performance of radiobeacons, the Committee had left aside the question of the precise characteristics of the F1B part of the radiobeacon emission. Two methods of modulation for a data transmission sequence had been proposed: those of frequency shift keying (FSK) and minimum frequency shift keying (MSK). The CCIR in Document 1003, Annex II, had suggested that both options were feasible, although further study was needed on MSK. He now invited comments on the two proposed methods, so that a consensus could be reached.

2.2 The delegate of Sweden recalled that the aim was to facilitate data processing in automatic receivers. The proposed data stream could simplify and improve the design of such receivers. At the same time it would involve introducing a new service for which there was no existing equipment since at present no DF receivers used FSK demodulators; hence the service should be optional for administrations. The real asset was the frequency band, which was limited. FSK occupied a larger necessary bandwidth than MSK and its adoption would force the direction-finder manufacturers to develop receivers that were sufficiently broad-banded to receive the data message. However, those receivers would have to be protected and that might hamper the introduction of future systems for radionavigation in narrow fairways.

As far as MSK was concerned, he understood that low-cost modulators and demodulators were becoming available.

2.3 The delegate of the United Kingdom said there were two aspects to the question: the method of modulation and the type of code used. The choice of method involved a straightforward trade-off of bandwidth versus the amount of information that could be carried over the channel: the wider the width, the greater capacity in the channel. For instance, the information capacity of FSK was comparable with the trade-off in terms of bandwidth. As for the question of what to do with the extra capacity, it should be remembered that it did not have to be used for transmitting information, but could also be used to protect it. The distinction between the two methods with regard to coding capacity was that with MSK virtually all the capacity was employed in conveying the signal, whereas with FSK about 40% was used for protecting the information that was being transmitted, while a significantly larger amount of information could be carried.

2.4 The delegate of France supported the proposal of the United Kingdom, Denmark and Sweden. He felt it was essential that a choice be made between the two systems so that receivers could operate with all transmitters. MSK was in fact a variant of FSK but had the intrinsic advantage of avoiding a high level of phase discontinuity and reducing the amount of bandwidth occupied and, since the information energy was concentrated in a narrow spectrum, the operation of the system as a whole was improved.

2.5 The representative of the IALA said that his Association was strongly in favour of the principle of adding data to radiobeacon transmissions, particularly the position of the radiobeacon and its protected range, since that information would enable automatically operating receivers to determine the level of confidence with which they could use the signals of specific beacons.

In the context of radiobeacons as opposed to telex, IALA studies had shown that MSK had a number of advantages over FSK. MSK transmissions could be added to a radiobeacon without altering the latter's characteristics and moreover MSK transmissions had no significant effect on the necessary bandwidth, which was dominated by A1A transmissions. MSK also had the advantage of phase continuity and was essentially a constant amplitude system which was useful for transmitter design and allowed the radiobeacon to be used for direction-finding while radiating the MSK data signal. The same was not true of FSK. The implication was that where a radiobeacon was operating continuously, the data transmission could be made quite frequently or even continuously and the radiobeacon could still be used by both conventional and new types of receivers.

Turning to the CCIR Reports on the subject, he noted that unfortunately the CCIR had not made a direct comparison between MSK and FSK although it had compared MSK with PSK, and PSK with FSK. A number of reports, however, (Reports 177, 909, 767 and 581) indicated the superiority of MSK in various conditions.

In conclusion, he felt it was unfortunate that the two aspects of the question, namely modulation and coding, were linked in the proposals. He could accept that FSK had been shown to be associated with a more sophisticated coding option than MSK and in making the case for MSK he would like to leave open the details of the coding as well as the error detection and correction requirements of the system.

2.6 The Chairman, referring to the comments made by the IALA representative concerning bandwidths, pointed out that although for FSK the bandwidth requirements determined the overall selectivity, the width for F1B was in fact only slightly greater than the width for A1A. Since the question of the switching rate was a new one he would require clarification as to how the switching rate in direction-finding receivers of 30 Hz was compatible with a baud rate of 40. He believed that amplitude continuity would be possible with FSK as well as with MSK.

The IALA representative had indicated that direction-finding could be undertaken upon the data signal if it was by MSK, and that it might thus be possible to transmit the data signal more frequently. In that connection the requirements for the long signal for manual direction-finding purposes must be borne in mind and also the fact that in some cases it had been accepted that Omega information would be overlaid on that signal. Careful consideration would therefore have to be given to any Recommendations that might affect those previous decisions.

Since the Committee had to consider the modulation and the coding together, he suggested that an ad hoc Group be set up to provide the Committee with a concise statement on relative merits, before the discussion on the format of the A1A and F1B parts of the beacon signal, one aspect of which was the length of the data message signal.

It was agreed to establish ad hoc Group 4 consisting of the delegates of France, Sweden, the United Kingdom, the USSR and the representative of IALA, under the chairmanship of Mr. Di Fabio (Italy) which was requested to report to the Committee by Friday, 8 March 1985.

Technical specification for maritime radiobeacons
Technical specification for maritime radio direction-finders

2.7 The Chairman said he understood that the Paris Agreement contained recommendations for the characteristics of radiobeacon transmitters and for direction-finding receivers. Moreover, at the present meeting information had been provided on transmitter frequency stability, the accuracy with which the field strength at the limit of the service range could be specified and the fact that it was not necessarily the amplitude protection ratio in the receiver that determined its ability to take direction-finding bearings.

There were several very similar proposals from a number of administrations for specifications of characteristics for the transmitter and receiver.

After a short discussion, it was agreed to set up ad hoc Group 5 to draft a collated text in the form of a Recommendation. The Group, under the chairmanship of Mr. Gillman (United Kingdom), would consist of the delegates of Denmark, France, the Federal Republic of Germany, Sweden, Yugoslavia and the USSR, the representatives of CIRM, IMO and IALA and would work in close collaboration with ad hoc Group 4 and report back to the Committee on Monday, 11 March 1985.

2.8 The Chairman of the IFRB pointed out that although the Committee was dealing with the European Maritime Area, the frequency allocations to radiobeacons would apply to Region 1 as a whole and that very much the same frequency band was available in Regions 2 and 3. It should therefore be borne in mind that rigid specifications developed at the Conference might not be acceptable world-wide and that any advice should be in the form of a Recommendation to the 1987 Conference concerning standardization of arrangements.

2.9 The representative of IMO drew attention to Document 1024 submitted by his Organization, containing the requirements of the SOLAS Convention with relation to direction-finders and also the compatible requirements contained in the operational performance standard.

That document outlined the standards of the equipment already fitted on board ships and to be fitted on ships that came into the European maritime radiobeacon area from Regions 1, 2 and 3. He requested both ad hoc Groups to take account of that document.

2.10 The Chairman requested him to provide the Chairman of ad hoc Group 4 with details of the parts of Document 1024 that would affect the type of F1B emission to be used.

2.11 The delegate of the USSR supported the point made by the representative of IMO. If the Committee established stringent requirements for technical parameters in the European area it must bear in mind the requirements of vessels coming from countries not participating in the Conference.

2.12 The Chairman said that the wider implications would indeed be borne in mind and that in any case nothing more than a Recommendation was contemplated.

The meeting rose at 1150 hours.

The Secretary: G. KOVACS

The Chairman: L.W. BARCLAY

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document 1055-E
12 March 1985
Original: English

COMMITTEE EMA-4

SUMMARY RECORD

OF THE

FOURTH MEETING OF COMMITTEE 4

Thursday, 7 March 1985, at 0900 hrs

Chairman: Mr. L.W. BARCLAY (United Kingdom)

Subjects discussed:	Document
1. Progress reports from ad hoc Group 5	-
2. Technical parameters to be taken into consideration for the establishment of procedures intended for future modifications of the Plan and permitting a compatible development of the other services to which the band is allocated (item 2.3 of the Conference agenda).	1018
3. Implications of the Plan for existing equipment.	-
4. Note by the Chairman of Committee 5 to the Chairman of Committee 4 concerning the particular conditions to be observed by radiobeacon stations of the maritime radionavigation service to be brought into use before the date of entry into force of the Plan as regards compatibility with existing services.	1040

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.

1. Progress reports from ad hoc Group

1.1 The Chairman, speaking in the absence of reports from the Chairmen of ad hoc Groups, said he understood that the group preparing a text on differential Omega correction had begun its work, that those dealing with the form of the F1B part of the transmission and with transmitter and receiver specifications would be meeting later in the day, and that papers would be ready as expected on 8 or 11 March.

1.2 The delegate of France confirmed that the paper on differential Omega correction would be completed very shortly.

1.3 The Chairman said that ad hoc Group 3 (planning) had produced a computer print-out showing the characteristics of transmitter locations and ranges available, which had been checked and corrected by administrations were necessary. The results were now being fed into the computer. The Chairman of the ad hoc Group had proposed a planning procedure which the Group had approved and he hoped to have a first draft Plan available on Friday, 8 March. Those concerned with the progress of the computer work should keep in touch with the Group so as to lose no time in checking and making any necessary adjustments to the first draft Plan as soon as it became available.

2. Technical parameters to be taken into consideration for the establishment of procedures intended for future modifications of the Plan and permitting a compatible development of the other services to which the band is allocated (item 2.3 of the Conference agenda) (Document 1018)

2.1 The Chairman proposed that, as in the case of the concurrent Region 1 Conference for the maritime mobile service and aeronautical radionavigation service, the technical parameters for future modifications of the maritime radiobeacon Plan should be the same as those used in establishing it.

2.2 The representative of the IFRB said that a statement to that effect would cover planning for the maritime radionavigation service (radiobeacons), but not perhaps the point concerning the compatible development of other services. Such development of the various services vis-à-vis one another would be subject to the satisfaction of normal IFRB standards.

2.3 The Chairman said that, if there was no objection, he would prepare a statement for the Procedures and Agreement Committee to the effect that future modifications to the Plan for the maritime radionavigation service (radiobeacons) should be based on the same technical criteria as those adopted for its establishment and that IFRB standards should be used to ensure its compatible development with other permitted services.

It was so decided.

3. Implications of the Plan for existing equipment

3.1 The representative of IALA said it had become apparent that several administrations believed existing receivers and on-shore transmitters would have to be replaced before the new maritime radionavigation system could be used. But the mandate from IMO and administrations attending the CCIR was that the system should be compatible with existing on-board receivers. Existing transmitters would only require disconnection of their audiomodulators and a change of carrier-frequency crystal. No replacement of receivers would be necessary if the Plan provided some additional adjacent channel protection. New equipment would only be required if and when users wished to receive data signals.

3.2 The Chairman said he thought it was understood that implementation of the new Plan would not require equipment to be replaced unless users wished to use its data signal facilities. He had heard that the selectivity characteristics of some receivers were not compatible with the planning criteria adopted, but that was unlikely to be a problem unless it proved necessary to plan up to adjacent channel limits.

3.3 The representative of IMO said he believed that there were problems concerning adjacent channel separation for some existing receivers which met his organization's selectivity performance standard of 2 kHz. If the new system were made compatible with all existing equipment, there would be no difficulty over the date of its entry into force. In order to avoid any such difficulty, it would be best to take account of the needs of all existing receivers.

3.4 The Chairman said that that would be hard to do for lack of the necessary information. Meanwhile, the adjacent channel protection ratios required for the Plan had been agreed and fed into the computer. Since it would be difficult to change them, he proposed that a watch be kept on the draft Plan to see if closely adjacent channels were in fact being used in overlapping areas.

3.5 The representative of IALA said that the problem was only with currently available receivers installed on Convention ships, some of which met Paris Plan requirements but were not selective enough for the radionavigation system proposed. However, he could agree to the Chairman's suggestion provided that some additional adjacent channel protection was afforded.

3.6 The delegates of Sweden, Yugoslavia and the Federal Republic of Germany supported the representative of IALA and suggested that the necessary additional protection could be given by ensuring that the Plan did not allocate adjacent channels to neighbouring stations.

3.7 The delegate of the United Kingdom said he understood that the Procedures and Agreement Committee were contemplating a Plan implementation date in June 1994, to allow for the amortization of existing equipment.

3.8 The representative of IALA said it was precisely because such lengthy period was unnecessary to make the necessary transmitter changes that he had sought to ensure that implementation of the new Plan did not have to take the replacement of existing receivers into consideration.

3.9 The Chairman said that, with the Committee's agreement, he proposed to inform the Procedures and Agreement Committee, on the basis of the IALA contribution, that the adaptation of existing transmitters to the new system would be relatively simple, and that the implications of the system for existing receivers were small, apart from the adjacent channel problem. In order to meet that problem, efforts were being made to space adjacent coverages more widely that the protection criteria indicated. But the facility of using the protection criteria for making future modifications to the Plan would remain.

Meanwhile, ad hoc Group 3 (planning) should continue to work on the basis of the agreed technical criteria, while seeking to achieve the additional adjacent channel protection required.

It was so agreed.

4. Note by the Chairman of Committee 5 to the Chairman of Committee 4 concerning the particular conditions to be observed by radiobeacon stations of the maritime radionavigation service to be brought into use before the date of entry into force of the Plan as regards compatibility with existing services (Document 1040)

4.1 The Chairman proposed that the answer to the request received from Committe 5 should be that if radiobeacon stations brought into use before the date of entry into force of the Plan met the technical criteria established for the Plan, including the transmitter and receiver specifications still to be drafted, there would be no problems regarding compatibility with existing services.

4.2 The delegate of the Federal Republic of Germany said that mention should also be made of the provision that adjacent channels could not be allocated to neighbouring stations.

4.3 The Chairman suggested that the Committee's reply should state that the precise frequency of channels to be assigned before the date of entry into force of the Plan should be assessed on the basis of IFRB standards.

4.4 The representative of the IFRB said that assignments should not only meet the Plan's requirements. They must be in accordance with the Plan. So far as assignments within the Plan were concerned, the criteria established by the Conference could be applied. IFRB standards would apply in determining assignments to stations in other services.

4.5 The Chairman said it might also be necessary to indicate that any new radiobeacons brought into use should have the capability of changing their operating frequency on the date of the Plan's entry into force in case of need. A second consideration was that if the IFRB was to use the Plan criteria for assessing new assignments to radiobeacon stations before the Plan's entry into force, it should be recommended to pay regard to the adjacent channel performance of receivers as well.

4.6 The representative of the IFRB agreed with the Chairman's first point but said that the second was a matter for administrations rather than for the IFRB.

4.7 The Chairman said he would make it a further point concerning compatibility that administrations wishing to bring radiobeacon stations into operation before the Plan's entry into force should make sure that adjacent channels were not being used before indicating to the IFRB the frequencies they wished to employ. The IFRB should then verify that the point had been taken into consideration.

The meeting rose at 1000 hours.

The Secretary:
G. KOVACS

The Chairman:
L.W. BARCLAY

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Corrigendum 2 to
Document 1056-E
13 March 1985
Original: French/
English/
Spanish

AMENDMENTS TO THE

REPORT OF COMMITTEE 2 TO THE PLENARY MEETING

Following the oral report by the Vice-Chairman of Committee 2 to the 5th Plenary Meeting the following changes should be made in the Annex to Document 1056:

Section 1

Insert MOROCCO (Kingdom of)

Section 2

Delete MOROCCO (Kingdom of)

J.F. PATRICIO
Chairman of Committee 2

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INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Corrigendum 1 to
Document 1056-E
12 March 1985
Original : French

AMENDMENTS TO THE

REPORT OF COMMITTEE 2 TO THE PLENARY MEETING

Following the oral report by the Chairman of Committee 2 to the 2nd, 3rd and 4th Plenary Meetings the following changes should be made in the Annex to Document 1056 :

Section 1

Insert ALGERIA (People's Democratic Republic of)

AUSTRIA

MONACO

Section 2

Delete ALGERIA (People's Democratic Republic of)

AUSTRIA

J.F. PATRICIO
Chairman of Committee 2

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INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document 1056-E
8 March 1985
Original : French

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 1026.

2. Meetings
The Committee met twice, on 5 and 8 March 1985.

At its first meeting, it set up a Working Group consisting of the Chairman and Vice-Chairman of the Committee, one delegate from the Czechoslovak Socialist Republic and one delegate from the Socialist Federal Republic of Yugoslavia 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 authorise the Chairman and the other members of the Working Group to verify the credentials received after the date of the present Report and to report to the Plenary Meeting on the matter.

J.F. PATRICIO
Chairman of Committee 2

Annex : 1

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.

A N N E X

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

ALBANIA (Socialist People's Republic of)
GERMANY (Federal Republic of)
BELGIUM
BULGARIA (People's Republic of)
CYPRUS (Republic of)
DENMARK
SPAIN
FINLAND
FRANCE
GREECE
HUNGARIAN PEOPLE'S REPUBLIC
IRELAND
ISRAEL (State of)
ITALY
LIBYA (Socialist People's Libyan Arab Jamahiriya)
MALTA (Republic of)
NORWAY
NETHERLANDS (Kingdom of the)
POLAND (People's Republic of)
PORTUGAL
GERMAN DEMOCRATIC REPUBLIC
ROMANIA (Socialist Republic of)
UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND
SWEDEN
CZECHOSLOVAK SOCIALIST REPUBLIC
TUNISIA
TURKEY
UNION OF SOVIET SOCIALIST REPUBLICS
YUGOSLAVIA (Socialist Federal Republic of)

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

2. Delegations attending the Conference which have not deposited credentials

ALGERIA (Algerian Democratic and Popular Republic)
(credentials announced)
AUSTRIA (credentials announced)
LEBANON
MOROCCO (Kingdom of)

Conclusion : The delegations of these countries are not entitled neither to vote nor to sign the Final Acts

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Corrigendum 1 to
Document 1057-E
11 March 1985
Original: English

COMMITTEE 6

Please replace page 8 of Document 1057 by the attached page.

L.W. BARCLAY
Chairman of Committee 4

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.

RECOMMENDED TECHNICAL CONDITIONS FOR THE INSTALLATION AND CALIBRATION OF RADIO DIRECTION-FINDERS IN VESSELS*

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 electro-magnetically screened. All joints should be watertight.

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 as little interference as possible from mechanical or other noise will be caused to the efficient determination of bearings.

6. A means of providing information on the ships' 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 put into operation and each time the position of the antennas or the conductors referred to above are changed or the superstructure of the vessel 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 substantially in error.

9. When calibrating the radio direction-finder 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.

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

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document 1057-E
8 March 1985
Original: English

COMMITTEE 6

FIRST SERIES OF TEXTS
FROM COMMITTEE 4 TO THE EDITORIAL COMMITTEE

1. The attached tests in Annexes 1, 2, 3 and 4 adopted by Committee 4 are hereby submitted to the Editorial Committee.

L.W. BARCLAY
(Chairman of Committee 4)

Annexes: 4

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.

ANNEX 1

Information to be included in the Plan for the radionavigation service (radiobeacons) for the European maritime area in the band 283.5 - 315 kHz

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. Service area: longitude and latitude (in degrees and minutes) of the centre and radius (km) of the circular service area

   (considered for ground-wave propagation conditions)[2]

8. Nature of service

9. Necessary bandwidth and class of emission

10. Necessary Effective Monopole Radiated Power (e.m.r.p.) (dBW)[1]

    (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

Note 1 - 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.

Note 2 - 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 nm (280 km). With this limitation it is not necessary to consider the sky-wave field strength for planning purposes.

ANNEX 2

Channelling arrangement for the maritime radiobeacons in the band 283.5 - 315 kHz*

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

* 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 geographical protection exists, the one frequency (285.5 kHz) which is an integer multiple of 500 Hz should be designated for exclusive use of this system.

ANNEX 3

The transmission of Differential Omega Corrections

According to RR 466, it is acceptable to add information on the long dash of a radiobeacon transmission by using narrowband techniques in order to provide differential Omega corrections, provided that the primary function of the radiobeacon is not significantly degraded.

ANNEX 4

Minimum technical characteristics for maritime radiobeacons in the band 283.5 - 315 kHz

ANTENNA AND EARTH SYSTEM

1. The antenna and earth system should be so designed as to restrict radiation of horizontally polarized waves and 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 at less than 100 metres from the antenna should be underground.

TRANSMITTERS

Frequencies

4. Frequencies assigned to maritime radiobeacons shall be 500 Hz apart and on interger multiples of 100 Hz.

5. Transmitters of A1A emissions shall maintain their assigned frequency within a tolerance of ±30 Hz.

6. Transmitters of F1B emissions shall maintain their assigned frequency within a tolerance of ± 10 Hz.

7. Maximum spurious emission power levels of all transmitters shall conform to Appendix 8 of the Radio Regulations, Geneva 1979.

Modulation

8. A beacon identity of one or two Morse letters followed by a "long dash" shall be transmitted using class of emission A1A.

9. Additional information, permitted as a further aid to navigation, may be transmitted by a radiobeacon using the class of emission F1B.

10. The structure of the radiobeacon signal shall be as given in [ ].

Accuracy of Timing

11. All maritime radiobeacons arranged in groups shall be controlled by a device ensuring the accuracy of the transmission schedules. The accuracy of transmission times should be maintained to within [0.25 seconds].

Field Strength Measurements

12. When a maritime radiobeacon is put 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 readiated power to the correct values to give the nominal day ranges with a 95% probability (±3 dB).

13. Such measurements should be taken again at regular intervals not exceeding one year.

Radiobeacon Transmissions

14. Each administration should ensure that the following are carried out:

a) the field strength does not vary by more than ±3 dB from the nominal value determined in accordance with paragraph 12;

b) the transmission frequency should have a tolerance of not more than ±10 Hz for the F1B transmission and ±30 Hz for the A1A transmission;

c) the transmitted signal is correct;

d) the timing is maintained within ±0.25 seconds.

STANDBY EQUIPMENT

15. Maritime radiobeacons should have the necessary standby equipment to prevent any stoppage due to the breakdown of the electric supply, the transmitter or the timing device.

RECOMMENDED MINIMUM TECHNICAL CHARACTERISTICS FOR MARITIME RADIO DIRECTION-FINDERS WORKING ON FREQUENCIES BETWEEN 283.5 kHz AND 315 kHz*

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 permitted to transmit as a further aid to navigation. Such transmissions will be on the radiobeacon assigned frequency and be class F1B emissions.

---

* It should be noted 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.

SELECTIVITY

3. For class of emission A1A, the overall radio frequency (r.f.) and intermediate frequency (i.f.) selectivity of the direction-finder should be:

a) bandwidth between 190 Hz and 210 Hz for 6 dB attenuation;

b) bandwidth less than 460 Hz for 30 dB attenuation;

c) bandwidth less than 960 Hz for 60 dB attenuation.

3.1 The image frequency rejection ratio should be 80 dB or higher.

3.2 The i.f. protection ratio should be 80 dB or higher.

4. For class of emission F1B, the overall r.f. and i.f. selectivity of the receiver should be:

a) bandwidth between 270 Hz and 350 Hz for 6 dB attenuation;

b) bandwidth less than 600 Hz for 30 dB attenuation;

c) bandwidth less than 1 100 Hz for 60 dB attenuation.

4.1 The image frequency rejection ratio should be 80 dB or higher.

4.2 The i.f. protection ratio should be 80 dB or higher.

SENSITIVITY

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

MISCELLANEOUS CHARACTERISTICS

6. Maritime radio direction-finders shall include means by which A1A identification signals can be recognized.

7. The receivers shall 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 any interference which may cause a bearing to be incorrect.

RECOMMENDED TECHNICAL CONDITIONS FOR THE INSTALLATION AND CALIBRATION OF RADIO DIRECTION-FINDERS IN VESSELS*

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 electro-magnetically screened. All joints should be watertight.

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 as little interference as possible from mechanical or other noise will be caused to the efficient determination of bearings.

6. A means of providing information on the ships' 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 put into operation and each time the position of the antennas or the conductors referred to above are changed or the superstructure of the vessel altered substantially.

8.** The calibration of the direction-finder should be checked at intervals not exceeding 12 months.

9. When calibrating the radio direction-finder 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.

---

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

** /(Reservation by the Federal Republic of Germany.)/

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document 1058-E
8 March 1985
Original: English

COMMITTEE 4

Report of the Chairman of ad hoc Group 4, Committee 4

DRAFT RESOLUTION No. COM 4/1 (EMA)

Relating to a Choice Between the FSK and MSK Techniques for Data Transmissions from Maritime Radiobeacons

The Regional Administrative Radio Conference for the Planning of Maritime Radiobeacons in the band 283.5 - 315 kHz in the European Maritime Area, Geneva, 1985,

considering

a) that there would be operational advantages 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 the present Conference;

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

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resolves

1. to invite the CCIR to undertake further studies into the technical, operational and economic aspects of the above techniques and to report the outcome to the WARC for Mobile Services, 1987;

2. to invite administrations to participate in the CCIR studies and to arrange or participate in further operational trials and to report the outcome to the WARC for Mobile Services, 1987;

3. to invite the Administrative Council to include the matter in the agenda for the WARC for Mobile Services scheduled for 1987;

4. to invite the WARC for Mobile Services, 1987, to consider the matter and, if possible, to make the choice between the FSK and MSK techniques;

5. requests the Secretary-General to draw the attention of IMO and IALA to this Resolution and invite them to participate in the studies.

B. DI FABIO
Chairman of ad hoc Group 4, Committee 4

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document 1059-E
9 March 1985
Original : English

COMMITTEE 6

FIRST SERIES OF TEXTS SUBMITTED BY AD HOC GROUP 1 OF COMMITTEE 5

TO THE EDITORIAL COMMITTEE

The texts in Annexes A and B hereto were adopted by ad hoc group 1 of Committee 5 and in accordance with the instruction from Committee 5 they are submitted directly to the Editorial Committee.

L.W. BARCLAY
Chairman ad hoc Group 1, C.5

Annexes : 2

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.

ANNEX A

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 to 315 kHz

1. Maritime radionavigation service (radiobeacons)

1.1 Designation of emission

The Plan was established on the basis of class of emission A1A. However, the technical parameters also make provision 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, $\sigma = 5$ S/m, $\varepsilon = 70$. The curve for 300 kHz was used. This is given in Figure 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 the minimum field strength to be protected (see also Radio Regulations 2861 and 2862) 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.

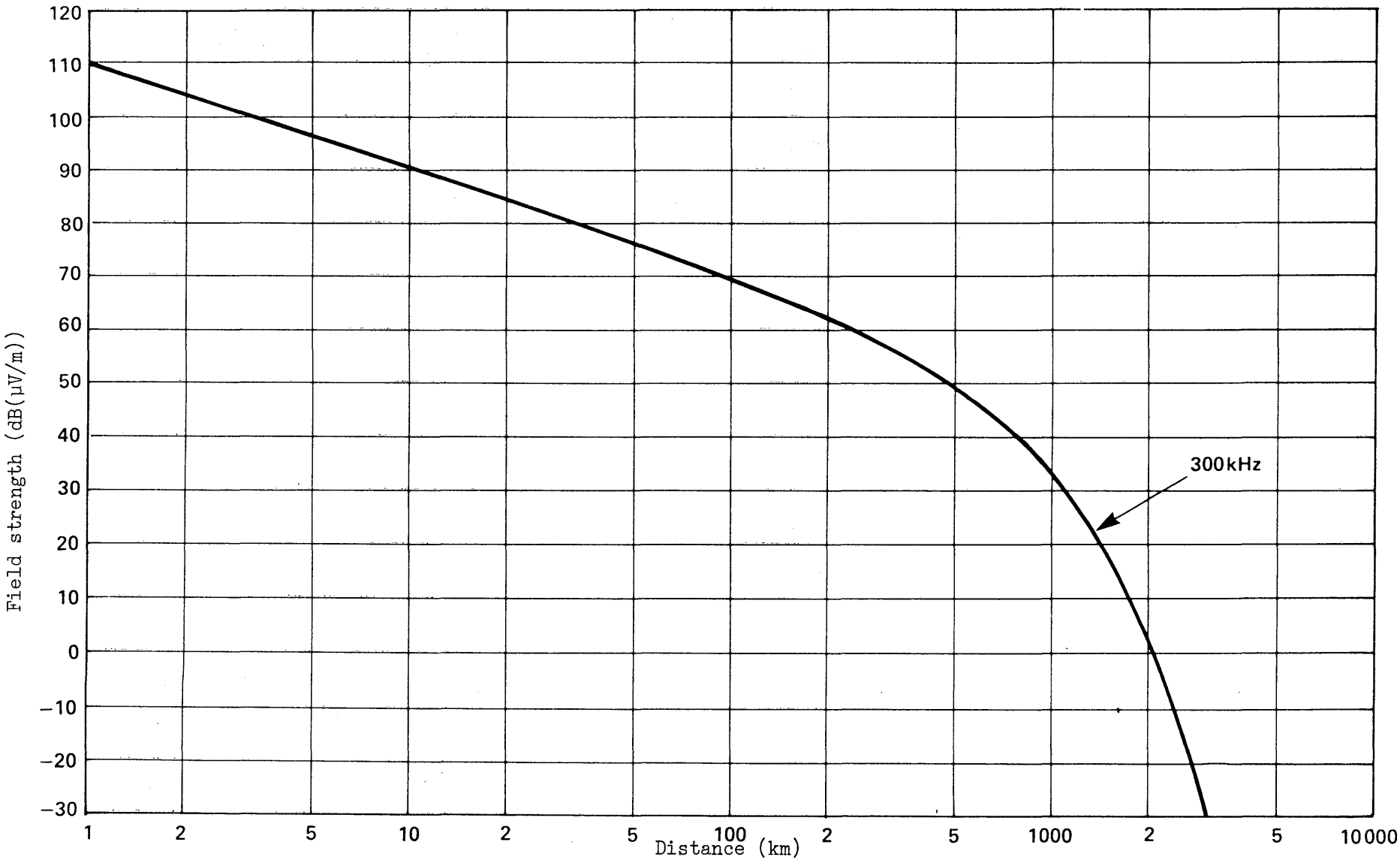

FIGURE 1

Ground-wave propagation curves; sea water, average salinity, 20°C, $\sigma = 5$ S/m, $\varepsilon = 70$

1.4 Protection ratio

The following values of protection ratio (see Radio Regulation 164) 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.

Note - Some currently used receivers have selectivity characteristics which may require additional protection. The Plan attempted to provide adjacent channel protection exceeding these values.

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 Transmitter power

The effective monopole radiated power (e.m.r.p., see Radio Regulation 157) was derived from the minimum field strength to be protected at the edge of the coverage area.

2. Compatibility 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 and definite 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.

ANNEX B

Criteria to be used to identify administrations which are affected by a modification to the Plan

The following criteria shall be used to identify administrations with which an agreement is required, because they are 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 recorded 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 (radiobeacon) of a country in the European Maritime Area

The service rendered by a station for which an assignment is in conformity with the Agreement may be affected by a modification to the Plan when the wanted-to-unwanted 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 A. The calculation of the protection ratio is based on criteria in Annex A.

2. Maritime radionavigation service (radiobeacon) of an administration outside the European Maritime Area or aeronautical radionavigation service

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

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document 1060-E
8 March 1985
Original: English

COMMITTEE EMA-6

SECOND SERIES OF TEXTS SUBMITTED BY COMMITTEE EMA-5
TO THE EDITORIAL COMMITTEE

The texts in the Annex hereto were adopted by Committee EMA-5 and are submitted to the Editorial Committee.

R. BISNER
Chairman of Committee EMA-5

Annex: 1

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.

ANNEX 1

DRAFT RESOLUTION No. COM 5/2 (EMA)

concerning the updating of the Master International Frequency Register with regard to assignments to stations of the maritime radionavigation (radiobeacons) service in the band 283.5 - 315 kHz to permit the entry into force of the Agreement and associated Plans

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 the present Conference has adopted an Agreement and a Plan for their maritime radionavigation (radiobeacons) service 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 are required to 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 a proper instrument for implementing with the least possible difficulty the Plan agreed at the present Conference;

resolves

1. that, 90 days prior to the entry into force of the Regional 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, after examining the frequency assignments notified by administrations under the terms of paragraph 4 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 Regional 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 must 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 4 above, it shall cancel the corresponding assignment in the Master Register;

invites the IFRB

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

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document 1061-E
March 1985
Original : English

REGION 1

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE MARITIME MOBILE SERVICE AND THE AERONAUTICAL RADIONAVIGATION SERVICE IN CERTAIN PARTS OF THE MF BAND IN REGION 1
GENEVA, FEBRUARY/MARCH 1985

Document 113-E
March 1985
Original : English

COMMITTEE 2

SUMMARY RECORD

OF THE

SECOND AND LAST MEETING OF COMMITTEE 2

(CREDENTIALS)

(MM-R1 - EMA)

FRIDAY, 8 MARCH 1985 AT 14.30

Chairman : Mr. J.F. PATRICIO (Portugal)

Subjects discussed :	Documents
MM-R1	
1. Summary Record of the First Meeting	46
2. First and second reports of Working Group 2A	49, 79
3. Third (oral) report by the Chairman of Working Group 2A	-
4. Draft report to the Plenary Meeting	DT/19
EMA	
5. Summary Record of the First Meeting	1032
6. First report of Working Group 2A	1033
7. Second (oral) report by the Chairman of Working Group 2A	-
8. Draft report to the Plenary Meeting	DT/1009

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.

MM.R1

1. Summary Record of the First Meeting (Document 46)

1.1 The Summary Record of the First Meeting (Document 46) was approved.

2. First and second reports of Working Group 2A (Documents 49 and 79)

2.1 The first and second reports of Working Group 2A were approved.

3. Third (oral) report by the Chairman of Working Group 2A

3.1 The Chairman, speaking as Chairman of Working Group 2A said that the Group had met to examine the credentials deposited by the delegations of the following countries : BENIN (People's Republic of); IRAQ (Republic of); IRELAND; OMAN (Sultanate of); and the GERMAN DEMOCRATIC REPUBLIC; it had found them to be in order.

4. Draft Report to the Plenary Meeting (Document DT/19)

4.1 The Chairman, introducing the Committee's draft report to the Plenary Meeting (Document DT/19), said that as a result of Working Groups 2A's third report, the above mentioned countries should be added to the countries whose credentials had been found to be in order (Annex, Section 1).

Document DT/19, as orally revised, was approved.

EMA

5. Summary Record of the First Meeting (Document 1032)

5.1 The Summary Record of the First Meeting (Document 1032) was approved.

6. First report of Working Group 2A (Document 1033)

6.1 The first report of Working Group 2A was approved.

7. Second (oral) report by the Chairman of Working Group 2A

7.1 The Chairman, speaking as Chairman of Working Group 2A said that the Group had met to examine the credentials deposited by the delegations of the following countries : GREECE; IRELAND and the GERMAN DEMOCRATIC REPUBLIC; it had found them to be in order.

8. Draft Report to the Plenary Meeting (Document DT/1009)

8.1 The Chairman, introducing the Committee's draft report to the Plenary Meeting (Document DT/1009), said that as a result of Working Groups 2A's second report, the above mentioned countries should be added to the countries whose credentials had been found to be in order (Annex Section 1).

Document DT/1009, as orally revised, was approved.

The meeting rose at 15.00 hours

The Secretary :
R. MACHERET

The Chairman :
J.F. PATRICIO

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document 1062-E
9 March 1985
Original: English

COMMITTEE 4

Note by the Chairman

THE STRUCTURE OF THE MARITIME RADIOBEACON SIGNAL

BASIC COMPOSITION OF THE MARITIME RADIOBEACON SIGNAL

1. 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 a data transmission sequence with F1B emission.

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

a)	**the identification signal transmitted twice**	**7 seconds**
b)	**a long dash lasting**	**31 seconds**
c)	**a silent period lasting**	**1 second**
d)	**a data transmission sequence lasting**	**4 seconds**
e)	**a silent period lasting**	**17 seconds**
	Total	**60 seconds**

3. **The identification signal may be increased to 12 seconds to allow a slower speed of morse transmission. In this case, the long dash should be proportionally shortened but should not be less than 25 seconds. When data is not transmitted the long dash may be extended to a maximum duration of 52 seconds.**

4. This example is for a typical duration for the data transmission sequence of four seconds. For other duration the length of the adjacent long silent period should be adjusted accordingly to give a total duration for the sequence of 60 seconds.

Composition of the Maritime Radiobeacon Signal with Grouped Radiobeacons

5. **Maritime radiobeacons may be operated singly or in groups of 2, 3 or 6 radiobeacons. When operated singly the basic signal composition described in paragraph 1 should be used. Grouping of six radiobeacons can only be used where the data transmission sequence is not required or where the length of the data transmission sequence is reduced.**

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6. The composition of the signal of maritime radiobeacons operating in groups of two is as follows:

a)	a silent period lasting	55 seconds
b)	a data transmission sequence lasting	4 seconds
c)	a silent period lasting	1 second
d)	the identification signal transmitted twice	7 seconds
e)	a long dash lasting	31 seconds
f)	a silent period lasting	1 second
g)	a data transmission sequence lasting	4 seconds
h)	a silent period lasting	17 seconds
	Total	120 seconds

/ The start of the signal by one radiobeacon shall be 60 seconds after the start of the signal by the other radiobeacon.

7. The composition of the signal of maritime radiobeacons operating in groups of three is as follows:

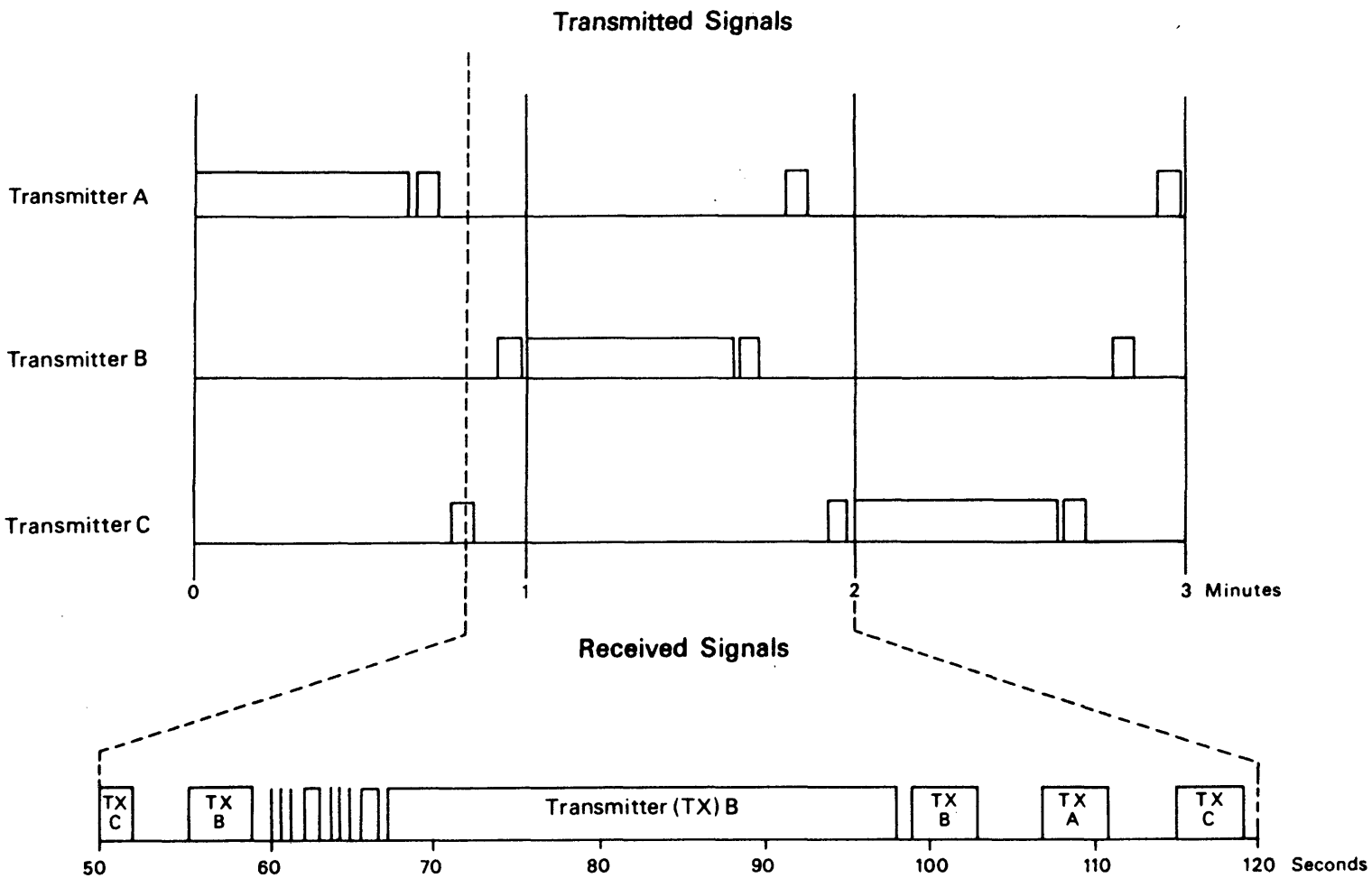
a)	a silent period lasting	55 seconds
b)	a data transmission sequence lasting	4 seconds
c)	a silent period lasting	1 second
d)	the identification signal transmitted twice	7 seconds
e)	a long dash lasting	31 seconds
f)	a silent period lasting	1 second
g)	a data transmission sequence lasting	4 seconds
h)	a silent period lasting	64 seconds
i)	a data transmission sequence lasting	4 seconds
j)	a silent period lasting	9 seconds
	Total	180 seconds

The start of the signal by one radiobeacon shall be 60 seconds after the start of the signal by the preceding radiobeacon in the group (see Figure 1).

8. The adjustments in timing indicated in 3 and 4 above, apply also to radiobeacons operating in groups.

L.W. BARCLAY
Chairman of Committee 4

Composition of the signals of maritime radiobeacons operating in groups of three with data transmission sequences



The Structure of the Radiobeacon Signal

Fig 1

UNION INTERNATIONALE DES TÉLÉCOMMUNICATIONS
CARR POUR LA PLANIFICATION DES FRÉQUENCES UTILISÉES PAR LES RADIOPHARES MARITIMES DANS LA ZONE EUROPÉENNE MARITIME
GENÈVE, MARS 1985

EUROP.

Document 1063-F/E/S/
11 mars 1985
Original: français/ anglais/ espagnol

COMMISSION EMA-4
COMMITTEE EMA-4
COMISIÓN EMA-4

SERVICE DE RADIONAVIGATION (RADIOPHARES) POUR LA ZONE EUROPEENNE MARITIME DANS LA BANDE 283,5 - 315 kHz

Liste des besoins non satisfaits

RADIONAVIGATION SERVICE (RADIOBEACONS) FOR THE EUROPEAN MARITIME AREA IN THE BAND 283.5 - 315 kHz

List of non-satisfied requirements

SERVICIO DE RADIONAVEGACIÓN (RADIOFAROS) PARA LA ZONA MARÍTIMA EUROPEA EN LA BANDA 283,5 - 315 kHz

Lista de necesidades non satisfechas

Annexe*/Annex/Anexo: 1

* Voir document 1051 pour les explications des colonnes de l'Annexe
See Document 1051 for the explanations of the columns in Annex
Véase el documento 1051 para las explicaciones de las columnas del Anexo

0	1	2	3	5	4	6	7	8	9	10	11	12	13
70630			EGY	RAS EL SHEKEIN	EGY			150	RC 850HA1A		ND	0000 2400	
70631			EGY	SHAKER ISLAND	EGY			150	RC 850HA1A		ND	0000 2400	
70519			F	JOBOURG LA HAGUE	F	001W55 49N40	001W55 49N40	400	H100N0N		ND	0000 2400	
70533			F	JOBOURG LA HAGUE	F	001W55 49N40	001W55 49N40	400	H100N0N		ND	0000 2400	
70535			F	JOBOURG LA HAGUE	F	001W55 49N40	001W55 49N40	400	H100N0N		ND	0000 2400	
70543			F	JOBOURG LA HAGUE	F	001W55 49N40	001W55 49N40	400	H100N0N		ND	0000 2400	
70551			F	JOBOURG LA HAGUE	F	001W55 49N40	001W55 49N40	400	H100N0N		ND	0000 2400	
70559			F	JOBOURG LA HAGUE	F	001W55 49N40	001W55 49N40	400	H100N0N		ND	0000 2400	
70567			F	JOBOURG LA HAGUE	F	001W55 49N40	001W55 49N40	400	H100N0N		ND	0000 2400	
70575			F	JOBOURG LA HAGUE	F	001W55 49N40	001W55 49N40	400	H100N0N		ND	0000 2400	
70635			F	JOBOURG LA HAGUE	F	001W55 49N40	001W55 49N40	400	H100N0N		ND	0000 2400	
70520			F	OLONNE SUR MER	F	001W48 46N32	001W48 46N32	400	H100N0N		ND	0000 2400	
70531			F	OLONNE SUR MER	F	001W48 46N32	001W48 46N32	400	H100N0N		ND	0000 2400	
70536			F	OLONNE SUR MER	F	001W48 46N32	001W48 46N32	400	H100N0N		ND	0000 2400	
70544			F	OLONNE SUR MER	F	001W48 46N32	001W48 46N32	400	H100N0N		ND	0000 2400	
70552			F	OLONNE SUR MER	F	001W48 46N32	001W48 46N32	400	H100N0N		ND	0000 2400	
70560			F	OLONNE SUR MER	F	001W48 46N32	001W48 46N32	400	H100N0N		ND	0000 2400	
70568			F	OLONNE SUR MER	F	001W48 46N32	001W48 46N32	400	H100N0N		ND	0000 2400	
70576			F	OLONNE SUR MER	F	001W48 46N32	001W48 46N32	400	H100N0N		ND	0000 2400	
70636			F	OLONNE SUR MER	F	001W48 46N32	001W48 46N32	400	H100N0N		ND	0000 2400	
70521			F	PLEUMEUR GAUTHIER	F	003W10 48N48	003W10 48N48	400	H100N0N		ND	0000 2400	
70528			F	PLEUMEUR GAUTHIER	F	003W10 48N48	003W10 48N48	400	H100N0N		ND	0000 2400	
70537			F	PLEUMEUR GAUTHIER	F	003W10 48N48	003W10 48N48	400	H100N0N		ND	0000 2400	
70545			F	PLEUMEUR GAUTHIER	F	003W10 48N48	003W10 48N48	400	H100N0N		ND	0000 2400	
70553			F	PLEUMEUR GAUTHIER	F	003W10 48N48	003W10 48N48	400	H100N0N		ND	0000 2400	
70561			F	PLEUMEUR GAUTHIER	F	003W10 48N48	003W10 48N48	400	H100N0N		ND	0000 2400	
70569			F	PLEUMEUR GAUTHIER	F	003W10 48N48	003W10 48N48	400	H100N0N		ND	0000 2400	
70577			F	PLEUMEUR GAUTHIER	F	003W10 48N48	003W10 48N48	400	H100N0N		ND	0000 2400	
70637			F	PLEUMEUR GAUTHIER	F	003W10 48N48	003W10 48N48	400	H100N0N		ND	0000 2400	
70522			F	PLOMEUR	F	004W21 47N50	004W21 47N50	400	H100N0N		ND	0000 2400	
70529			F	PLOMEUR	F	004W21 47N50	004W21 47N50	400	H100N0N		ND	0000 2400	
70538			F	PLOMEUR	F	004W21 47N50	004W21 47N50	400	H100N0N		ND	0000 2400	
70546			F	PLOMEUR	F	004W21 47N50	004W21 47N50	400	H100N0N		ND	0000 2400	
70554			F	PLOMEUR	F	004W21 47N50	004W21 47N50	400	H100N0N		ND	0000 2400	
70562			F	PLOMEUR	F	004W21 47N50	004W21 47N50	400	H100N0N		ND	0000 2400	
70570			F	PLOMEUR	F	004W21 47N50	004W21 47N50	400	H100N0N		ND	0000 2400	
70578			F	PLOMEUR	F	004W21 47N50	004W21 47N50	400	H100N0N		ND	0000 2400	
70638			F	PLOMEUR	F	004W21 47N50	004W21 47N50	400	H100N0N		ND	0000 2400	
70523			F	PLOUDALMEZEAU	F	004W39 48N31	004W39 48N35	400	H100N0N		ND	0000 2400	
70527			F	PLOUDALMEZEAU	F	004W39 48N31	004W39 48N31	400	H100N0N		ND	0000 2400	

0	1	2	3	5	4	6	7	8	9	10	11	12	13
70539			F	PLOUDALMEZEAU	F	004W39 48N31	004W39 48N31	400	H100N0N		ND	0000 2400	
70547			F	PLOUDALMEZEAU	F	004W39 48N31	004W39 48N31	400	H100N0N		ND	0000 2400	
70555			F	PLOUDALMEZEAU	F	004W39 48N31	004W39 48N31	400	H100N0N		ND	0000 2400	
70563			F	PLOUDALMEZEAU	F	004W39 48N31	004W39 48N31	400	H100N0N		ND	0000 2400	
70571			F	PLOUDALMEZEAU	F	004W39 48N31	004W39 48N31	400	H100N0N		ND	0000 2400	
70579			F	PLOUDALMEZEAU	F	004W39 48N31	004W39 48N31	400	H100N0N		ND	0000 2400	
70639			F	PLOUDALMEZEAU	F	004W39 48N31	004W39 48N31	400	H100N0N		ND	0000 2400	
70524			F	PLOUHARNEL	F	003W06 47N37	003W06 47N37	400	H100N0N		ND	0000 2400	
70532			F	PLOUHARNEL	F	003W06 47N37	003W06 47N37	400	H100N0N		ND	0000 2400	
70540			F	PLOUHARNEL	F	003W06 47N37	003W06 47N37	400	H100N0N		ND	0000 2400	
70548			F	PLOUHARNEL	F	003W06 47N37	003W06 47N37	400	H100N0N		ND	0000 2400	
70556			F	PLOUHARNEL	F	003W06 47N37	003W06 47N37	400	H100N0N		ND	0000 2400	
70564			F	PLOUHARNEL	F	003W06 47N37	003W06 47N37	400	H100N0N		ND	0000 2400	
70572			F	PLOUHARNEL	F	003W06 47N37	003W06 47N37	400	H100N0N		ND	0000 2400	
70580			F	PLOUHARNEL	F	003W06 47N37	003W06 47N37	400	H100N0N		ND	0000 2400	
70640			F	PLOUHARNEL	F	003W06 47N37	003W06 47N37	400	H100N0N		ND	0000 2400	
70525			F	PONT DE BUIS	F	004W05 48N18	004W05 48N18	400	H100N0N		ND	0000 2400	
70530			F	PONT DE BUIS	F	004W05 48N18	004W05 48N18	400	H100N0N		ND	0000 2400	
70541			F	PONT DE BUIS	F	004W05 48N18	004W05 48N18	400	H100N0N		ND	0000 2400	
70549			F	PONT DE BUIS	F	004W05 48N18	004W05 48N18	400	H100N0N		ND	0000 2400	
70557			F	PONT DE BUIS	F	004W05 48N18	004W05 48N18	400	H100N0N		ND	0000 2400	
70565			F	PONT DE BUIS	F	004W05 48N18	004W05 48N18	400	H100N0N		ND	0000 2400	
70573			F	PONT DE BUIS	F	004W05 48N18	004W05 48N18	400	H100N0N		ND	0000 2400	
70581			F	PONT DE BUIS	F	004W05 48N18	004W05 48N18	400	H100N0N		ND	0000 2400	
70641			F	PONT DE BUIS	F	004W05 48N18	004W05 48N18	400	H100N0N		ND	0000 2400	
70526			F	SOULAC	F	001W07 45N32	001W07 45N32	400	H100N0N		ND	0000 2400	
70534			F	SOULAC	F	001W07 45N32	001W07 45N32	400	H100N0N		ND	0000 2400	
70542			F	SOULAC	F	001W07 45N32	001W07 45N32	400	H100N0N		ND	0000 2400	
70550			F	SOULAC	F	001W07 45N32	001W07 45N32	400	H100N0N		ND	0000 2400	
70558			F	SOULAC	F	001W07 45N32	001W07 45N32	400	H100N0N		ND	0000 2400	
70566			F	SOULAC	F	001W07 45N32	001W07 45N32	400	H100N0N		ND	0000 2400	
70574			F	SOULAC	F	001W07 45N32	001W07 45N32	400	H100N0N		ND	0000 2400	
70582			F	SOULAC	F	001W07 45N32	001W07 45N32	400	H100N0N		ND	0000 2400	
70642			F	SOULAC	F	001W07 45N32	001W07 45N32	400	H100N0N		ND	0000 2400	
70643			F	TARNOS	F	001W31 43N32	001W31 43N32	400	H100N0N		ND	0000 2400	
70644			F	TARNOS	F	001W31 43N32	001W31 43N32	400	H100N0N		ND	0000 2400	
70645			F	TARNOS	F	001W31 43N32	001W31 43N32	400	H100N0N		ND	0000 2400	
70646			F	TARNOS	F	001W31 43N32	001W31 43N32	400	H100N0N		ND	0000 2400	
70647			F	TARNOS	F	001W31 43N32	001W31 43N32	400	H100N0N		ND	0000 2400	
70648			F	TARNOS	F	001W31 43N32	001W31 43N32	400	H100N0N		ND	0000 2400	

0	1	2	3	5	4	6	7	8	9	10	11	12	13
70649			F	TARNOS	F	001W31 43N32	001W31 43N32	400	H100N0N		ND	0000 2400	
70650			F	TARNOS	F	001W31 43N32	001W31 43N32	400	H100N0N		ND	0000 2400	
70651			F	TARNOS	F	001W31 43N32	001W31 43N32	400	H100N0N		ND	0000 2400	
70390			TUR	FINIKE	TUR	030E09 36N16	030E09 36N16	556	RC 2K10A2AAN		ND	0000 2400	
70384			TUR	KEFREN ADA	TUR	030E17 41N13	030E17 41N13	278	RC 2K10A2AAN		ND	0000 2400	
70385			TUR	RUMELI BURNU	TUR	029E06 41N13	029E06 41N13	278	RC 2K10A2AAN		ND	0000 2400	
70240			URS	AYTODORSKIY	UKR	034E07 44N26	034E07 44N26	280	RC 2K10A2AAN		ND	0000 2400	
70234			URS	BEREZAN OSTROV	UKR	031E25 46N36	031E25 46N36	28	RC 100HA1BAN		ND	0000 2400	
70236			URS	BUROVAJA VYSHKA NO 2	UKR	031E43 45N41	031E43 45N41	28	RC 100HA1BAN		ND	0000 2400	
70231			URS	ILJICHEVSKIY	UKR	030E41 46N19	030E41 46N19	46	RC 100HA1BAN		ND	0000 2400	
70241			URS	ILJINSKIY	UKR	035E25 45N01	035E25 45N01	280	RC 2K10A2AAN		ND	0000 2400	
70242			URS	KYZ-AULSKIY	UKR	036E22 45N04	036E22 45N04	280	RC 2K10A2AAN		ND	0000 2400	
70197			URS	DOOBSKIY	URS	037E55 44N38	037E55 44N38	280	RC 2K10A2AAN		ND	0000 2400	
70215			URS	KASHKARANSKIY	URS	036E01 66N20	036E01 66N20	190	RC 2K10A2AAN		ND	0000 2400	
70224			URS	KHARLOVSKIY	URS	037E20 68N49	037E20 68N49	280	RC 2K10A2AAN		ND	0000 2400	
70182			URS	KOLKASRAGS	URS	022E36 57N45	022E36 57N45	185	RC 2K10A2AAN		ND	0000 2400	
70177			URS	KUBASSAARE	URS	023E18 58N26	023E18 58N26	180	RC 2K10A2AAN		ND	0000 2400	
70217			URS	MUDYUGSKIY	URS	040E14 64N55	040E14 64N55	180	RC 2K10A2AAN		ND	0000 2400	
70189			URS	NIDDEN	URS	021E00 55N18	021E00 55N18	37	RC 100HA1AAN		ND	0000 2400	
70213			URS	NIKODIMSKIY	URS	039E06 66N06	039E06 66N06	180	RC 2K10A2AAN		ND	0000 2400	
70176			URS	OSMUSSAAR OSTROV	URS	023E22 59N18	023E22 59N18	150	RC 2K10A2AAN		ND	0000 2400	
70178			URS	RISTNA	URS	022E03 58N56	022E03 58N56	180	RC 2K10A2AAN		ND	0000 2400	
70375			URS	RUSSKIY	URS	036E22 69N06	036E22 69N06	280	RC 2K10A2AAN		ND	0000 2400	
70222			URS	SETNAVOLOKSKIY	URS	033E30 69N24	033E30 69N24	280	RC 2K10A2AAN		ND	0000 2400	
70180			URS	SYRVE	URS	022E03 57N55	022E03 57N55	180	RC 2K10A2AAN		ND	0000 2400	
70223			URS	TERIBERSKIY	URS	035E10 69N15	035E10 69N15	290	RC 2K10A2AAN		ND	0000 2400	
70221			URS	TSYPNAVOLOKSKIY	URS	033E06 69N44	033E06 69N44	280	RC 2K10A2AAN		ND	0000 2400	
70220			URS	VAYDAGUBSKIY	URS	031E57 69N57	031E57 69N57	280	RC 2K10A2AAN		ND	0000 2400	
70216			URS	VEPREVSKIY	URS	039E53 65N38	039E53 65N38	180	RC 2K10A2AAN		ND	0000 2400	
70179			URS	VILSANDI	URS	021E49 58N23	021E49 58N23	90	RC 2K10A2AAN		ND	0000 2400	
70195			URS	ZHELEZNYY ROG	URS	036E44 45N07	036E44 45N07	47	RC 100HA1AAN		ND	0000 2400	
70214			URS	ZHIZHGINSKIY	URS	036E49 65N12	036E49 65N12	280	RC 2K10A2AAN		ND	0000 2400	

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Corrigendum 1 to
Document 1064-E
3 April 1985
Original: English

SUMMARY RECORD

OF THE

THIRD AND LAST MEETING OF COMMITTEE 5 (EMA)

Paragraph 3.4

Replace the second sentence by the following:

"The technical annexes to the Plan could be only in the nature of Recommendations."

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INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document 1064-E
12 March 1985
Original: English

COMMITTEE 5

SUMMARY RECORD

OF THE

THIRD AND LAST MEETING OF COMMITTEE 5 (EMA)

(PROCEDURES AND AGREEMENT)

Friday, 8 March 1985, at 1600 hrs

Chairman: Mr. R. BISNER (FRANCE)

Subjects discussed:	Document
1. Summary record of the first meeting of the Committee	1031
2. Draft Resolutions relating to the period preceding the entry into force of the Agreement and the date of implementation of the Plan	DT/1008
3. Notes from the Chairman of Committee 4	1037, 1044
4. Annex on channelling arrangements	DT/1005, Annex 2
5. Completion of the work of the Committee	-

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1. Summary record of the first meeting of the Committee (Document 1031)

The summary record was approved subject to the correction of an error in paragraph 3.18 of the French and Spanish texts.

2. Draft Resolutions relating to the period preceding the entry into force of the Agreement and the date of implementation of the Plan (Document DT/1008)

2.1 The Chairman introduced the document and invited the Committee to consider it page by page.

Page 1 was approved.

Draft Resolution No. COM 5/1(EMA) appearing on page 2 was approved subject to a correction in the introductory paragraph and to the addition of the words "together with the provisions of resolves 3" to the text of resolves 2.

The Annex to Resolution No. COM 5/1(EMA) appearing on page 3 was approved.

The title, introductory paragraph and preamble of draft Resolution No. COM 5/2(EMA) appearing on pages 4 and 5 were approved subject to minor drafting changes and on the understanding that the French text of considering a) would be brought into line with the English text.

2.2 The representative of the IFRB suggested that resolves 1, 2 and 3 should be deleted because of the small number of assignments involved. Any doubt with regard to a few stations could be settled by direct contact with the administrations concerned.

After a brief discussion in which the delegates of France and the Federal Republic of Germany took part, that suggestion was adopted.

Paragraphs resolves 4, 5, 6 and 7, duly renumbered, were approved subject to the replacement of the word "Plan" in the penultimate line of resolves 6 by the word "Agreement".

Draft Resolution No. COM 5/2(EMA), as amended, was approved.

Document DT/1008, as amended, was approved.

3. Notes from the Chairman of Committee 4 (Documents 1037, 1044)

3.1 In reply to questions raised by the delegates of the USSR and France, the Chairman of Committee 4 said that the note contained in Document 1037 represented his personal attempt to summarize the conclusions reached in Committee 4 concerning the need to replace transmitters of radiobeacon stations and receivers utilizing radiobeacon transmitters when the Plan came into use. He had taken the initiative of submitting the note in the absence of a formal request by Committee 5 to that effect because the information it contained might be helpful in setting an implementation date for the Plan. Committee 5 was certainly under no obligation to take note of the document.

3.2 The delegate of the USSR, supported by the delegate of Greece, said that the conclusions referred to in paragraphs 1) and 2) of the note did not fully reflect the opinions expressed in Committee 4.

3.3 After further discussion in which the delegates of France, the Federal Republic of Germany and Spain took part, the Chairman of Committee 4 remarked that it might be more appropriate if the words "The Committee concludes" in the fourth line were changed to read "The Committee took note of the following views".

Introducing the note contained in Document 1044, he said that it had been prepared in response to the request contained in Document 1040. A difficulty might arise in connection with paragraph 2 of the document since it might not be possible to use a frequency assignment given in the Plan during the interim period.

3.4 The delegate of the USSR remarked that the purport of paragraph 1 was not wholly clear; the word "new" might perhaps be inserted between the words "that" and "radiobeacon stations". Speaking more generally, he stressed that a regional agreement had to take account of world practice, since ships from all parts of the world navigated in the European Maritime Area. The technical annexes to the Plan could not be in the nature of Recommendations. The technical requirements addressed to equipment should be strictly limited to those essential for the establishment and operation of the Plan.

3.5 The Chairman proposed the establishment of an ad hoc Group to prepare the text of paragraphs to be inserted in a Resolution taking account of the information provided in Document 1044.

It was decided to establish an ad hoc Group 2 of Committee 5, with those terms of reference, composed of the delegates of the Federal Republic of Germany, the USSR, France, Spain and Yugoslavia. The Chairman of Committee 4 would participate in the work, and the Group would be chaired by the delegate of Spain.

It was further agreed that the conclusions of ad hoc Group 2 should be presented directly to the Plenary.

4. Annex on channelling arrangements (Document DT/1005, Annex 2)

4.1 The delegate of France drew attention to a draft Recommendation (Document 1043(Rev.1)) for the use of a maritime radionavigation hyperbolic system which his delegation had submitted to Committee 4.

That information was noted.

5. Completion of the work of the Committee

5.1 The Chairman thanked the members of the Committee for their cooperation and the Secretariat staff for their assistance.

5.2 The delegate of the USSR congratulated the Chairman on his success in conducting the Committee's deliberations.

5.3 The Chairman declared the work of Committee 5 completed.

The meeting rose at 1745 hours.

The Secretary: J. BALFROID

The Chairman: R. BISNER

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document 1065-E
13 March 1985
Original: English

COMMITTEE 4

SUMMARY RECORD

OF THE

FIFTH MEETING OF COMMITTEE 4

(TECHNICAL AND PLANNING)

Friday, 8 March 1985, at 0900 hrs

Chairman: Mr. L.W. BARCLAY (United Kingdom)

Subjects discussed:	Documents
1. Progress report from ad hoc Planning Group and arrangements for weekend work	-
2. Report from ad hoc Group 1	DT/1007
3. Report from ad hoc Group 4	-
4. Report from ad hoc Group 5	DT/1006
5. Information to be included in the Plan	DT/1005
6. Composition of the radiobeacon signal	1003
7. Draft Recommendation	1043

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1. Progress report from ad hoc Planning Group and arrangements for weekend work

1.1 The representative of the IFRB said that the Planning Group had not finished its work; its task had proved more difficult than anticipated. However, a plan in printed form would be available at 0900 hours on Monday, 11 March.

2. Report from ad hoc Group 1 (Document DT/1007)

2.1 The Chairman of ad hoc Group 1 introduced Document DT/1007.

2.2 The Chairman said that paragraph 2 should be amended to read: "The total bandwidth (99% of the power)...".

Document DT/1007 provided the Committee with useful technical information regarding the system proposed by France in Document 1005 and confirmed that such a system could be introduced without placing any additional constraint or requirement on the conventional use of radiobeacons.

He suggested that the members of ad hoc Group 1 be requested to draft an additional paragraph to the effect that it was acceptable to add information onto the long-dash of the radiobeacon transmission followed by a mention of the maximum bandwidth of that additional information in order to provide corrections for differential Omega provided that such transmissions did not affect conventional operation of radiobeacons.

Such a paragraph could be inserted as a footnote to the table of frequency assignments or in some other place in the Final Acts.

2.3 The Chairman of ad hoc Group 1 read out the following text for an amended note on differential Omega:

> "According to Radio Regulation 466 it is acceptable to add information on the long dash of a radiobeacon transmission by using narrow-band techniques in order to provide differential Omega correction, provided that the primary function of the radiobeacon is not degraded."

2.2 The delegate of the Federal Republic of Germany suggested that the word "significantly" should be added in the last line before "degraded", to avoid making the provision stronger than the existing Radio Regulation 466.

The Report from ad hoc Group 1 (Document DT/1007) was approved, as amended.

3. Report from ad hoc Group 4

3.1 The Chairman of ad hoc Group 4 said that, with respect to the F1B part of the radiobeacon signal, the ad hoc Group had not been able to reach agreement on whether the modulation should be FSK or MSK, nor could agreement be reached on the other points in the Group's terms of reference.

After a discussion in which the Chairman, the delegates of the United Kingdom and Sweden and the Chairman of ad hoc Group 4 took part, it was agreed that the choice between FSK or MSK methods of modulation would not have any impact on frequency planning for radiobeacons and that the question of the format of the data message could be considered on its own.

3.2 The delegate of the United Kingdom expressed his concern that the Conference was being asked to decide issues of great technical complexity when its proper function was to prepare a frequency assignment plan. Such matters should be left to more appropriate bodies such as the CCIR and decisions on the format of the signal, FSK or MSK or the precise composition of the signal, should not be made until detailed studies and trials to test the system under adverse operational conditions in the maritime navigation service had first been carried out. He suggested that the matter should be dealt with at the Mobile Services Conference scheduled for 1987. He warned against the danger of hurriedly adopting a technique which might have implications for global shipping far outside the geographical area for which the Conference was preparing a maritime radiobeacon plan.

3.3 The delegate of the USSR, Sweden and Italy supported the views of the delegate of the United Kingdom.

3.4 The Chairman suggested that ad hoc Group 4 should prepare a draft Recommendation to the effect that the matter under discussion required detailed study and that the final decision should be left to the 1987 Conference.

3.5 The delegate of the United Kingdom said that a draft Resolution should be prepared, containing four main points:

1) the decision not to choose between the two modulation techniques;

2) a request to the Administrative Council to include the subject in the agenda of the 1987 Conference;

3) an invitation to the CCIR to undertake whatever additional technical, operational and economic studies that might be necessary to that Conference;

4) if possible, a direct request to the 1987 Conference to take a final decision in the matter.

3.6 The Chairman said that he took it that, in the absence of any objection, ad hoc Group 4 would prepare a draft Resolution along the lines suggested by the delegate of the United Kingdom.

It was so agreed.

4. Report from ad hoc Group 5 (DT/1006)

4.1 The Chairman of ad hoc Group 5 introduced the Group's report (Document DT/1006). There had been only one minor disagreement in the Group, to which attention was drawn on the last page of the report.

It was agreed to delete the square brackets in paragraphs 6 and 7.

4.2 The delegate of Italy said that the second sentence in paragraph 9 represented the United Kingdom delegation's position, which was not shared by many administrations. He therefore proposed that it be deleted.

It was so agreed.

4.3 The Chairman said that when the Committee had taken a decision on the structure of the radiobeacon signal, the Editorial Committee would remove the square brackets in paragraph 10.

It was agreed to delete the whole of paragraph 11 and to renumber the subsequent paragraphs accordingly.

4.4 Referring to paragraph 12, the delegate of Sweden, supported by the delegate of France, said that he could not accept an accuracy of 0.25 seconds if it referred to the time at which the radiobeacon commenced transmission. His Administration operated beacons with an accuracy of ±2 seconds.

It was agreed to postpone further consideration of paragraph 12 until the Committee had considered the composition of the radiobeacon signal.

4.5 To accommodate a point made by the delegate of the Federal Republic of Germany, the Chairman proposed that subparagraph 15 b) should be amended along the lines of paragraphs 5 and 6 to read:

"the transmission frequency should have a tolerance of not more than ..."

It was so agreed.

4.6 The Chairman said that the decision on whether to delete the square brackets in subparagraph 15 d) would be deferred in line with the decision on paragraph 12.

4.7 A suggestion that the word "should" should be changed to "shall" in order to make paragraph 15 mandatory upon administrations was opposed by the delegates of the USSR, Algeria and France and it was agreed to retain the word "should".

It was agreed to replace the words "standby devices" to "standby equipment" in the title and text of paragraph 16.

Subject to the above decisions, the first part of Document DT/1006 on recommended minimum technical characteristics for maritime radiobeacons in the band 283.5 - 315 kHz was approved.

Recommended minimum technical characteristics for maritime radio direction-finders working on frequencies between 283.5 kHz and 315 kHz

4.8 The representative of the International Maritime Organization (IMO) said that the Recommendation in question referred to one single frequency band for radio direction-finders whereas in fact radio direction-finders were required by international regulations to work on a number of frequencies and to use various types of emission. He therefore proposed that an asterisk should be placed after the title of the section and a footnote should be inserted reading:

"*It should be noted that direction-finders installed on 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 emission."

It was so agreed.

4.9 On a proposal by the delegate of Yugoslavia, supported by the delegate of the USSR, it was agreed to delete the whole of paragraph 8 and to renumber the remaining paragraphs accordingly.

4.10 The representative of the IMO said that the remainder of the Recommendation under discussion appeared to be dealing with factors which affected not frequency planning but operational requirements. It paraphrased to some extent the requirements contained in the 1974 SOLAS Convention and that might lead to confusion in future. He therefore proposed deletion of paragraphs 10 to 20.

4.11 The delegates of the Netherlands, Yugoslavia, Algeria and the USSR supported that proposal and the delegate of Algeria added that if it was desired to retain the technical conditions they could be incorporated in a separate Recommendation.

4.12 The delegate of the Federal Republic of Germany said that from the operational point of view paragraphs 11 to 20 were extremely important and he could not agree to their deletion.

4.13 The delegate of France endorsed that view. The Algerian delegate's proposal that the requirements should be in a separate Recommendation was an acceptable compromise but that Recommendation should form part of the Final Acts of the Conference.

4.14 The delegate of Sweden said it might be desirable to make a reference to the SOLAS Convention so that manufacturers of radio direction-finders would know where to obtain further information.

4.15 After a further discussion in which the delegates of Yugoslavia, the United Kingdom, France and the Federal Republic of Germany as well as representatives of IMO, IFRB, IALA and CCIR took part, the Chairman said it seemed clear that the duplication of the text with the SOLAS Convention was undesirable and it would be preferable to have one set of standards specified in only one place. There was also evidently a need to make provision for the case where the SOLAS Convention might be modified while the Agreement remained in force, and for that of vessels other than those bound by the Convention which would nevertheless be using the service.

It had been suggested that a new version of Document EMA/DT/1006 should be drawn up, incorporating the present paragraphs 1-7 and 9 and omitting paragraphs 8 and 10-20. That text would be followed by a note to the effect that other technical conditions were given in the SOLAS Convention. However, the text provided a useful set of criteria on the installation and calibration of all maritime radio direction-finders that would use the transmissions.

The present paragraphs 10-20 of the document would be incorporated in a separate Recommendation to be annexed to the Final Acts. That would provide a set of standards for maritime radio direction-finders that would apply irrespective of the provisions of the SOLAS Convention, and could be used by manufacturers of the equipment.

4.16 The delegate of the Federal Republic of Germany said that the verb "shall" was inappropriate for a Recommendation and would have to be replaced by "should". He also felt that the mention of values such as "80 dB or higher" in paragraphs 3 and 4 was incorrect as they could not be termed minimum specifications.

4.17 The Chairman of ad hoc Group 5, in response to a suggestion of the representative of the IFRB, said the word "identify" in the first line of paragraph 10 should be replaced by "be capable of detecting".

4.18 The Chairman said he would take those and the other comments into account in drafting a revised text, which he proposed to submit to the Committee for consideration at its next meeting.

It was so agreed.

4.19 At the request of the Chairman, the delegate of the Federal Republic of Germany explained his Administration's position regarding the reservation with regard to paragraph 18. Experience had shown that within 1-2 years alterations could occur in the radiating parts of ships that were detrimental to navigation using direction-finders and that checks on the calibration curve by ships' staff under varying conditions did not provide an adequate safeguard. It was therefore proposed to add the following sentence to the paragraph:

"In addition a recalibration should be carried out at intervals not exceeding 12 months."

4.20 The representative of the IMO and the delegates of Italy, the Netherlands and Turkey saw no reason to alter the existing requirements.

4.21 The Chairman, noting there appeared to be no support for the proposed addition, said he would be unable to include it in the revised text, while leaving open the option of the Federal Republic of Germany to enter a reservation against the paragraph.

Subject to the above decisions and comments, the second part of Document DT/1006 was approved.

5. Information to be included in the Plan (Document DT/1005)

5.1 The Chairman drew attention to a typing error in the French text.

5.2 The delegate of the Federal Republic of Germany pointed out that the term "e.m.r.p." in item 10 could refer to peak or mean envelope power; the wording should be more specific since the difference was significant from the regulatory point of view.

5.3 The representative of the IFRB proposed the addition of a footnote on that item, stating that the power for A1A should be notified in terms of peak power and that for F1B in terms of mean power.

5.4 In response to a further query by the delegate of the Federal Republic of Germany, the Chairman said that a second footnote might be inserted, indicating that the specification for e.m.r.p. should be based on peak power for the A1A part of the transmission. He would ask the Chairman of Committee 5 to prepare an appropriate text.

5.5 The delegate of France said that his Administration would like the following text to be added to the document, either as an annex or as a footnote:

> "A 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 geographical protection exists, the one frequency (285.5 kHz) which is an integer multiple of 500 Hz will be allocated for the exclusive use of this system."

5.6 The Chairman suggested replacing the phrase "will be allocated" in the second sentence by "should be designated". That change was acceptable to the delegate of France.

It was so agreed and Document DT/1005 was approved, as amended.

6. Composition of the radiobeacon signal (Document 1003)

Annex III

6.1 The Chairman noted that Annex III of the CCIR Report gave a possible structure for the radiobeacon signal and proposed that each transmitter in a group of three should send a data message consecutively. The Committee should now consider the length of those messages and the guard time between them, to ensure that they did not overlap. He invited comments on that point.

6.2 The delegate of the USSR suggested that a final conclusion concerning the structure of the composite signal could be left to the 1987 Mobile Services Conference following the CCIR study. The delegates of Spain and the Federal Republic of Germany were unable to endorse that suggestion, believing that the Mobile Services Conference was not the appropriate forum for that decision which should be taken as soon as possible.

6.3 The delegate of France, supported by the delegates of Spain and the Federal Republic of Germany, stressed that the Conference should give its views on the format for radiobeacon signals if it was intended to abrogate the Paris Agreement. If the Conference did not come to a decision, that Agreement would have to be retained in toto or in part and that was not an ideal solution.

6.4 The Chairman said that if a call sign in A1A was transmitted at reasonable speed, with a long dash of at least 25 seconds and allowance for the possibility of a data message of up to 4.6 seconds from each of three grouped stations, it would be easy to determine how much guard time and accuracy of timing were required. On that basis, he suggested that the sequence of events given in the CCIR Report could be adopted.

6.5 The delegate of the Federal Republic of Germany said it would be preferable to refer to the document submitted by the United Kingdom as it put forward a proposal with regard to a group of two stations.

6.6 The Chairman, noting that there did not appear to be consensus, said he would produce a revised text restating the position which would have to be dealt with at the next meeting or left to 1987.

It was so agreed.

7. Draft Recommendation (Document 1043)

7.1 The delegate of the Federal Republic of Germany noted that the Recommendation should have a title.

7.2 The delegate of the Netherlands considered that the wording under invites the Administrative Council should be amended to read:

> "to include the relevant modifications to the Radio Regulations in the agenda of the next competent radio conference".

7.3 The delegate of Finland felt that the reference to a trend towards hyperbolic radiobeacon systems in considering d) was not appropriate.

7.4 The representative of the IFRB noted that the implication of the Recommendation, especially in recommends 2, appeared to be that the system was not in accordance with the allocations currently in force. In view of the earlier decision to designate 285.5 kHz to the system, it seemed that the present provision might be contradictory.

7.5 The Chairman said he would take those comments into account and consult with the French delegation in order to produce a revised version for adoption at the next meeting.

The meeting rose at 1235 hours.

The Secretary:
G. KOVACS

The Chairman:
L.W. BARCLAY

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document 1066-E
11 March 1985
Original: English

COMMITTEE 6

SECOND SERIES OF TEXTS FROM COMMITTEE 4
TO THE EDITORIAL COMMITTEE

The attached texts in Annexes 1 and 2 adopted by Committee 4 are hereby submitted to the Editorial Committee.

L.W. BARCLAY
Chairman of Committee 4

Annexes: 2

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ANNEX 1

DRAFT RECOMMENDATION No. COM 4/A (EMA)

Relating to the 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 contained 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;

requests the Secretary-General

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

ANNEX 2

DRAFT RESOLUTION No. COM 4/1 (EMA)

Relating to a Choice Between the FSK and MSK Techniques for Data Transmissions from Maritime Radiobeacons

The Regional Administrative Radio Conference for the Planning of Maritime Radiobeacons in the band 283.5 - 315 kHz in the European Maritime Area, Geneva, 1985,

considering

a) that there would be operational advantages 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 the present Conference;

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

resolves

1. to invite the CCIR to undertake further studies into the technical, operational and economic aspects of the above techniques and to report the outcome to the WARC for Mobile Services, 1987;

2. to invite administrations to participate 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 WARC for Mobile Services scheduled for 1987;

4. to invite the WARC for Mobile Services, 1987, to consider the matter and, if possible, to make the choice between the FSK and MSK techniques;

5. requests the Secretary-General to draw the attention of IMO and IALA to this Resolution and invite them to participate in the studies.

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INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document 1067-E
11 March 1985

R.1 (EMA)

PLENARY MEETING

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

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

Source	Document	Title
B.1 (EMA) COM.5	1045 + 1068	Regional Agreement

J.-L. BLANC
Chairman of the Editorial Committee

Annex: 9 pages

Note by the Editorial Committee

Sections of the text which have been modified following the Plenary Meeting of 11 March are preceded by an asterisk. These texts require two readings.

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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:

[list of countries]

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.

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ARTICLE 1

Definitions

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

Union: The International Telecommunication Union;

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

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

CCIR: The International Radio Consultative Committee;

Convention: The International Telecommunication Convention, Nairobi, 1982;

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

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

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

Plan: The Plan forming the Annex 1 to this Agreement

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

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

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.

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ARTICLE 2

Frequency Bands

2. 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. 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 in the Annex and its Appendices.

4. 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 Article 4 of this Agreement.

5. 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.

6. 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.

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ARTICLE 4

Procedure for Modifications to the Plan

SECTION A - GENERAL

7. 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 services;

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

8. 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.

9. 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 Annex 3 to this Agreement;

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 Annex 3.

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*10. 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 Annex 1 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.

11. 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.

12. 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 10 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.

*13. 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, shall inform the Board of the results of its efforts, before bringing the assignment into use.

*14. Following the examination carried out in accordance with paragraph 12 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. It shall inform the administration concerned that the entry has been made subject to the proviso that no harmful interference will be caused to the assignments of administrations whose agreement must be obtained.

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*14bis 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.

15. 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

16. 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

17. 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.

18. 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

19. 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.

20. 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.

21. 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.

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ARTICLE 6

Procedure applicable to new assignments of the Aeronautical Radionavigation Service

22. 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.

23. 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 10 (Article 4).

24. In the event of the finding being unfavourable with respect to a frequency assignment described in paragraphs 23 c) or 23 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.

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

ARTICLE 7

Special Arrangements

26. 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.

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ARTICLE 8

Scope of Application of this Agreement

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

28. 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

29. 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

30. 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 day of the deposit by such a Member of its instrument of accession.

ARTICLE 11

Termination of Participation in this Agreement

31. 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.

32. 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.

33. 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.

PINK PAGES

ARTICLE 12

Revision of the Agreement

34. 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 of the Regional Arrangement Concerning Maritime Radiobeacons in the European Area of Region 1 (Paris, 1951)

35. This Agreement and the annexed Plan abrogate the Regional Arrangement concerning Maritime Radiobeacons in the European Area of Region 1 (Paris, 1951).

ARTICLE 14

Effective Date of this Agreement

36. This Agreement shall enter into force on [1 January 1987] at 0001 hours UTC.

The date of implementation of the Plan will be [1 June 1994] 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, [...] March, 1985.

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document 1068-E
11 March 1985
Original: English

NOTE FROM COMMITTEE 5 TO THE EDITORIAL COMMITTEE

In accordance with the decisions taken at the second Plenary Meeting, the text of the attached Annex (Article 4, paragraphs 10, 13, 14 and 14bis, and Article 6, paragraphs 24 and 25) is transmitted to the Editorial Committee.

The other paragraphs of Articles 4 and 6 are unchanged.

R. BISNER
Chairman of Committee 5

Annex: 1

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.

ANNEX

(ARTICLE 4)

10. 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 Annex [ ] 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.

13. 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, shall inform the Board of the results of its efforts.

14. Following the examination carried out in accordance with paragraph 12 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. It shall inform the administration concerned that the entry has been made subject to the proviso that no harmful interference will be caused to the assignments of administrations whose agreement must be obtained.

14bis 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 the agreement of an administration was not obtained, it shall request the notifying administration to cancel its recording 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 country Member the agreement of which is required is brought into use.

(ARTICLE 6)

24. In the event of the finding being unfavourable with respect to a frequency assignment described in paragraphs 23 c) or 23 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 subject of the unfavourable finding is brought into service.

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

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document 1069-E
11 March 1985

PLENARY MEETING

B.4 (EMA)

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

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

Source	Document	Title
COM.5	DL/1004*	Resolution No. COM 5/1 (EMA)
COM.4	1066	Resolution No. COM 4/1 (EMA)
COM.4	1066	Recommendation No. COM 4/A (EMA)

J.-L. BLANC
Chairman of Editorial Committee

Annex: 5 pages

* Note from the Editorial Committee

To save time, the text of this Resolution from ad hoc Group 2 of Committee 5 has been transmitted directly to the Editorial Committee before being submitted to the Plenary.

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.

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RESOLUTION No. COM 5/1 (EMA)

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

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 provisions in the Annex to this Resolution shall be applicable during the period in question.

BLUE PAGES

4. that new radiobeacon stations of the maritime radionavigation service brought into use before the date of entry into force of the Plan 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 into account that some receivers in current use are less selective than the equipment to be used in future.

BLUE PAGES

ANNEX TO RESOLUTION No. COM 5/1 (EMA)

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

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. COM 4/1 (EMA)

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 Band 283.5 - 315 kHz 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 WARC for Mobile Services, 1987, to consider the matter and, if possible, to choose between the FSK and MSK techniques;

5. requests the Secretary-General to draw the attention of IMO and IALA to this Resolution and invite them to participate in the studies.

BLUE PAGES

RECOMMENDATION No. COM 4/A (EMA)

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;

requests the Secretary-General

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

UNION INTERNATIONALE DES TÉLÉCOMMUNICATIONS

CARR POUR LA PLANIFICATION DES FRÉQUENCES UTILISÉES PAR LES RADIOPHARES MARITIMES DANS LA ZONE EUROPÉENNE MARITIME

GENÈVE, MARS 1985

EUROP.

Addendum No. 1 au
Document 1070-F/E/S
12 mars 1985
Original : français/
anglais/
espagnol

SEANCE PLENIERE
PLENARY MEETING
SESIÓN PLENARIA

Page/página 10

ADD : Après le numéro de série de l'IFRB 70322 et la fréquence 306,00 (S),
ADD : After IFRB Serial No. 70322 and frequency 306.00 (S),
ADD : Después del número de serie de la IFRB 70322 y la frecuencia 306,00 (S),

RADIOPHARES MARITIMES			*	MARITIME RADIOBEACONS			*	RADIOFAROS MARITIMOS			
1	2	3	4	5	6	7	8	9	10	11	12
306.00	TUN	LE GALITON		TUN	008E53 37N30	93	RC	100HA1A		ND	0000 2359

Pour des raisons d'économie, ce document n'a été tiré qu'en un nombre restreint d'exemplaires. Les participants sont donc priés de bien vouloir apporter à la réunion leurs documents avec eux, car il n'y aura pas d'exemplaires supplémentaires disponibles.

UNION INTERNATIONALE DES TÉLÉCOMMUNICATIONS
CARR POUR LA PLANIFICATION DES FRÉQUENCES UTILISÉES PAR LES RADIOPHARES MARITIMES DANS LA ZONE EUROPÉENNE MARITIME
GENÈVE, MARS 1985

EUROP.

Document 1070-F/E/S
11 mars 1985
Original: francais/
anglais/
espagnol

SEANCE PLENIERE
PLENARY MEETING
SESION PLENARIA

PROJET DE PLAN D'ASSIGNATIONS DE FREQUENCE AUX STATIONS DU SERVICE DE RADIONAVIGATION MARITIME (RADIOPHARES) POUR LA ZONE EUROPEENNE MARITIME DANS LA BANDE 283,5 - 315 kHz

DRAFT FREQUENCY ASSIGNMENT PLAN FOR STATIONS IN THE MARITIME RADIONAVIGATION SERVICE (RADIOBEACONS) FOR THE EUROPEAN MARITIME AREA IN THE BAND 283.5 - 315 kHz

PROYECTO DE PLAN DE ASIGNACIONES DE FRECUENCIA A ESTACIONES PARA EL SERVICIO DE RADIONAVEGACION MARITIMA (RADIOFAROS) PARA LA ZONA MARITIMA EUROPEA EN LA BANDA 283,5 - 315 kHz

Annexe/Annex/Anexo: 1

Pour des raisons d'économie, ce document n'a été tiré qu'en un nombre restreint d'exemplaires. Les participants sont donc priés de bien vouloir apporter à la réunion leurs documents avec eux, car il n'y aura pas d'exemplaires supplémentaires disponibles.

Renseignements inclus dans le Plan pour le service de radionavigation maritime (radiophares) pour la Zone européenne maritime dans la bande 283,5 - 315 kHz

Colonne	
0	Numéro de série de l'IFRB
1	Fréquence assignée (kHz)
2	Numéro de canal
3	Symbole de pays
4	Nom de la station d'émission
5	Symbole du pays ou de la zone géographique dans laquelle se situe la station d'émission (voir le Tableau 1 de la préface de la Liste internationale des fréquences)
6	Longitude et latitude de la station d'émission (en degrés et minutes)
7	Rayon (km) de la zone de service circulaire (prise en considération dans les conditions de propagation par onde de sol)[1]
8	Nature du service
9	Largeur de bande nécessaire et classe d'émission[2]
10	Puissance apparente rayonnée nécessaire sur antenne verticale courte (p.a.r.v.) (dBW)[3] (valeur calculée sur la base du champ minimal à protéger et de la portée de service dans les conditions de propagation par onde de sol)
11	Caractéristiques de l'antenne (ND)
12	Horaire régulier de fonctionnement (UTC) de l'assignation de fréquence
13	Observations

---

1 La propagation de l'onde ionosphérique se produit la nuit, ce qui provoque des erreurs de relèvement aux grandes distances. De ce fait, la portée de service nocturne devrait, le cas échéant, être ajustée de sorte que la portée maximale ne dépasse pas 150 nautiques (280 km). En raison de cette restriction, il n'est pas nécessaire de tenir compte du champ de l'onde ionosphérique dans la planification.

2 Le Plan a été établi sur la base de la classe d'émission A1A. Cependant, les paramètres techniques prévoient aussi des émissions composites utilisant à la fois A1A et F1B.

3 Le type de puissance à notifier au titre de l'article 12 du Règlement des radiocommunications est la puissance de crête déterminée par l'émission A1A de la fonction primaire du radiophare.

Information included in the Plan for the maritime radionavigation service (radiobeacons) for the European maritime area in the band 283.5 - 315 kHz

Column	
0	IFRB serial number
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 nm (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.

Información incluida en el Plan para el servicio de radionavegación marítima (radiofaros) para la Zona Marítima Europea en la banda 283,5 - 315 kHz

Columna	
0	Número de serie de la IFRB
1	Frecuencia asignada (kHz)
2	Número de canal
3	Símbolo de país
4	Nombre de la estación transmisora
5	Símbolos del país o de la zona geográfica en la que está emplazada la estación transmisora (véase el Cuadro 1 del Prefacio a la Lista Internacional de Frecuencias)
6	Longitud y latitud (en grados y minutos) de la estación transmisora
7	Radio (km) de la zona de servicio circular (a efectos de determinar las condiciones de propagación por onda de superficie)[1]
8	Naturaleza del servicio
9	Anchura de banda necesaria y clase de emisión[2]
10	Potencia radiada aparente necesaria referida a una antena vertical corta (p.r.a.v.) (dBW)[3] (valor calculado sobre la base de la intensidad de campo mínima a proteger y del alcance de servicio para condiciones de propagación por onda de superficie)
11	Características de la antena (ND)
12	Horas normales de funcionamiento (UTC) de la asignación de frecuencia
13	Observaciones

---

[1] La propagación por onda ionosférica se produce en horas de la noche, lo que causará errores de marcación a largas distancias. Por consiguiente, el alcance del servicio nocturno debe ajustarse, en caso necesario, a fin de que el alcance máximo no rebase 150 mn (280 km). Con esta limitación no es necesario considerar la intensidad de campo de la onda ionosférica a efectos de la planificación.

[2] El Plan se estableció basándose en la clase de emisión A1A. No obstante, los parámetros técnicos prevén también las emisiones que utilizan A1A y F1B al mismo tiempo.

[3] El tipo de potencia que ha de notificarse conforme al Artículo 12 del Reglamento de Radiocomunicaciones será la potencia en la cresta de la envolvente determinada por la emisión A1A de la función primaria del radiofaro.

Dispositions* des canaux pour les radiophares maritimes dans la bande 283,5 - 315 kHz
Channelling* arrangement for the maritime radiobeacon in the band 283,5 - 315 kHz
Disposición* de canales para los radiofaros marítimos en la banda 283,5 - 315 kHz

Canal/ Channel/ Canal N°	Fréquence/ Frequency/ Frecuencia (kHz)	Canal/ Channel/ Canal N°	Fréquence/ Frequency/ Frecuencia (kHz)	Canal/ Channel/ Canal N°	Fréquence/ Frequency/ Frecuencia (kHz)
1	284,0	21	294,0	41	304,0
2	284,5	22	294,5	42	304,5
3	285,0	23	295,0	43	305,0
4	285,5	24	295,5	44	305,5
5	286,0	25	296,0	45	306,0
6	286,5	26	296,5	46	306,5
7	287,0	27	297,0	47	307,0
8	287,5	28	297,5	48	307,5
9	288,0	29	298,0	49	308,0
10	288,5	30	298,5	50	308,5
11	289,0	31	299,0	51	309,0
12	289,5	32	299,5	52	309,5
13	290,0	33	300,0	53	310,0
14	290,5	34	300,5	54	310,5
15	291,0	35	301,0	55	311,0
16	291,5	36	301,5	56	311,5
17	292,0	37	302,0	57	312,0
18	292,5	38	302,5	58	312,5
19	293,0	39	303,0	59	313,0
20	293,5	40	303,5	60	313,5
				61	314,0
				62	314,5

* Un système de radionavigation à fréquences multiple utilisant des radiophares maritimes a besoin d'utiliser des fréquences qui toutes, sauf une, ne soient pas des multiples entiers de 500 Hz.

En l'absence de protection géographique, la seule fréquence (285,5 kHz), qui soit un multiple entier de 500 Hz, doit être affectée à l'utilisation exclusive de ce système.

* 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 geographical protection exists, the one frequency (285.5 kHz) which is an integer multiple of 500 Hz, should be designated for exclusive use of this system.

* Los sistemas de navegación multifrecuencia que utilizan radiofaros marítimos necesitan utilizar frecuencias que, con excepción de una, no sean múltiplos enteros de 500 kHz.

Si no existe protección geográfica, la frecuencia (285,5 kHz) que es múltiplo entero de 500 Hz, debe designarse para uso exclusivo de este sistema.

0	1	2	3	4	5	6	7	8	9	10	11	12	13
70613	284.00		ALG	CAP DE FER	ALG	007E10 37N04	277	RC	100HA1A		ND	0000 2359	
70159	284.00		E	PNT SILLA	E	004W24 43N24	90	RC	100HA1A		ND	0000 2359	
70449	284.00		F	GATTEVILLE PHARE	F	001W16 49N42	130	RC	100HA1A		ND	0000 2359	
70475	284.00		F	PNT DE GRAVE LH	F	001W04 45N34	10	RC	100HA1A		ND	0000 2359	
70051	284.00		G	PORTLAND BILL LSTN	G	002W27 50N30	92	RC	100HA1A		ND	0000 2359	
70055	284.00		G	ST CATHERINES POINT	G	001W17 50N34	92	RC	100HA1A		ND	0000 2359	
70111	284.00		I	CAPO VATICANO	I	015E49 38N37	130	RC	100HA1A		ND	0000 2359	
70096	284.00		IRL	KISH BANK LSTN	IRL	005W55 53N19	19	RC	100HA1A		ND	0000 2359	
70337	284.00		S	GOTSKA SANDOEN	S	019E12 58N24	100	RC	100HA1A		ND	0000 2359	
70321	284.00		S	NORDVALEN	S	020E47 63N32	20	RC	100HA1A		ND	0000 2359	
70134	284.50		E	C MACHICHACO	E	002W45 43N27	185	RC	100HA1A		ND	0000 2359	
70078	284.50		FNL	HARMAJA	FNL	024E59 60N06	90	RC	100HA1A		ND	0000 2359	
70014	284.50		G	CROMER LSTN	G	001E19 52N55	92	RC	100HA1A		ND	0000 2359	
70017	284.50		G	DUDGEON LSTN	G	001E13 53N15	92	RC	100HA1A		ND	0000 2359	
70060	284.50		G	SMITHS KNOLL LSTN	G	002E18 52N43	92	RC	100HA1A		ND	0000 2359	
70655	284.50		YUG	BAR	YUG	019E09 42N01	10	RC	100HA1A		ND	0000 2359	
70488	285.00		BEL	NIEUWPOORT PHARE	BEL	002E43 51N09	10	RC	100HA1A		ND	0000 2359	
70133	285.00		E	C DE LA NAO	E	000E14 38N44	90	RC	100HA1A		ND	0000 2359	
70022	285.00		G	FIFE NESS	G	002W35 56N17	92	RC	100HA1A		ND	0000 2359	
70025	285.00		G	GIRDLE NESS	G	002W03 57N08	92	RC	100HA1A		ND	0000 2359	
70409	285.00		NOR	SLAATTEROEY	NOR	005E04 59N54	18	RC	100HA1A		ND	0000 2359	
70331	285.00		S	SIMPNAESKLUBB	S	019E05 59N54	60	RC	100HA1A		ND	0000 2359	
70059	286.00		G	SKERRIES	G	004W36 53N25	92	RC	100HA1A		ND	0000 2359	
70102	286.00		IRL	ROCKABILL LSTN	IRL	006W00 53N36	93	RC	100HA1A		ND	0000 2359	
70106	286.00		IRL	WICKLOW HEAD LSTN	IRL	006W00 52N58	130	RC	100HA1A		ND	0000 2359	
70665	286.00		LBY	TOBRUCK	LBY	024E00 32N02	111	RC	100HA1A		ND	0000 2359	
70412	286.00		NOR	UTVAER	NOR	004E30 61N02	18	RC	100HA1A		ND	0000 2359	
70145	286.50		E	CALA FIGUERA	E	002E31 39N27	90	RC	100HA1A		ND	0000 2359	
70470	286.50		F	FREHEL PHARE	F	002W19 48N41	40	RC	100HA1A		ND	0000 2359	
70472	286.50		F	LA CHIAPPA PHARE	F	009E22 41N36	185	RC	100HA1A		ND	0000 2359	
70087	286.50		FNL	NORRSKAR	FNL	020E36 63N14	90	RC	100HA1A		ND	0000 2359	
70003	286.50		G	ALTACARRY HEAD LSTN	G	006W10 55N18	92	RC	100HA1A		ND	0000 2359	
70032	286.50		G	LA CORBIERE	G	002W14 49N10	37	RC	100HA1A		ND	0000 2359	
70046	286.50		G	PLADDA	G	005W07 55N25	92	RC	100HA1A		ND	0000 2359	
70052	286.50		G	RINNS OF ISLAY	G	006W31 55N40	127	RC	100HA1A		ND	0000 2359	
70113	286.50		I	COZZO SPADARO	I	015E08 36N41	130	RC	100HA1A		ND	0000 2359	
70687	286.50		URS	DAUGAVGRIVA	URS	024W01 57N04	60	RC	100HA1A		ND	0000 2359	
70397	286.50		YUG	BAR	YUG	019E06 42N06	185	RC	100HA1A		ND	0000 2359	
70609	287.00		ALG	CAP CAXINE	ALG	002E57 36N48	370	RC	100HA1A		ND	0000 2359	
70673	287.00		LBY	KHOMS	LBY	014E15 32N48	19	RC	100HA1A		ND	0000 2359	

0	1	2	3	4	5	6	7	8	9	10	11	12	13
70127	287.00	MRC	EL HANK		MRC	007W29 33N37	200	RC	100HA1A		ND	0000 2359	
70606	287.50	ALG	ILE RACHGOUN		ALG	001W28 35N19	92	RC	100HA1A		ND	0000 2359	
70075	287.50	DDR	STUBBENKAMMER		DDR	013E38 54N35	90	RC	100HA1A		ND	0000 2359	
70477	287.50	F	ALPRECH PHARE		F	001E34 50N42	40	RC	100HA1A		ND	0000 2359	
70436	287.50	F	LA PALLICE		F	001W14 46N10	10	RC	100HA1A		ND	0000 2359	
70457	287.50	F	ROSEDO PHARE		F	003W00 48N51	20	RC	100HA1A		ND	0000 2359	
70439	287.50	F	SETE MT S CLAIR LH		F	003E41 43N24	100	RC	100HA1A		ND	0000 2359	
70018	287.50	G	DUNGENESS LSTN		G	000E58 50N54	92	RC	100HA1A		ND	0000 2359	
70026	287.50	G	HARTLAND POINT LSTN		G	004W31 51N01	10	RC	100HA1A		ND	0000 2359	
70120	287.50	I	SANTA MARIA DI LEUCA		I	018E22 39N48	185	RC	100HA1A		ND	0000 2359	
70399	287.50	NOR	FAERDER		NOR	010E31 59N01	129	RC	100HA1A		ND	0000 2359	
70516	287.50	POL	JAROSLAWIEC		POL	016E33 54N33	90	RC	100HA1A		ND	0000 2359	
70515	287.50	POL	KOLOBRZEG		POL	015E33 54N11	90	RC	100HA1A		ND	0000 2359	
70518	287.50	POL	LEBA		POL	017E33 54N46	90	RC	100HA1A		ND	0000 2359	
70517	287.50	POL	ROZEWIE		POL	018E20 54N50	90	RC	100HA1A		ND	0000 2359	
70514	287.50	POL	SWINOUJSCIE		POL	014E17 53N55	90	RC	100HA1A		ND	0000 2359	
70305	287.50	POR	BERLENGA		POR	009W30 39N25	370	RC	100HA1A		ND	0000 2359	
70307	287.50	POR	C CARVOEIRO		POR	009W24 39N22	93	RC	100HA1A		ND	0000 2359	
70306	287.50	POR	C MONDEGO		POR	008W54 40N11	93	RC	100HA1A		ND	0000 2359	
70325	287.50	S	BRAEMOEN		S	017E45 62N13	100	RC	100HA1A		ND	0000 2359	
70486	288.00	BEL	ZEEBRUGGEPHARE		BEL	003E12 51N20	10	RC	100HA1A		ND	0000 2359	
70275	288.00	DNK	SJAELLANOS REV		DNK	011E12 56N06	90	RC	100HA1A		ND	0000 2359	
70165	288.00	E	ADRA		E	003W02 36N45	90	RC	100HA1A		ND	0000 2359	
70076	288.00	FNL	AJOS		FNL	024E35 65N40	90	RC	100HA1A		ND	0000 2359	
70091	288.00	FNL	UTO		FNL	021E22 59N47	90	RC	100HA1A		ND	0000 2359	
70421	288.00	NOR	SKLINNA		NOR	010E59 65N12	185	RC	100HA1A		ND	0000 2359	
70432	288.00	NOR	VARDOE		NOR	031E09 70N23	129	RC	100HA1A		ND	0000 2359	
70615	288.50	ALG	CAP DE GARDE		ALG	007E47 36N58	92	RC	100HA1A		ND	0000 2359	
70509	288.50	BUL	NOS KALIAKRA		BUL	028E30 43N21	100	RC	100HA1A		ND	0000 2359	
70495	288.50	D	ROTE KLIFF		D	008E21 54N57	92	RC	100HA1A		ND	0000 2359	
70136	288.50	E	C FINISTERRE		E	009W16 42N53	185	RC	100HA1A		ND	0000 2359	
70146	288.50	E	C SALOU		E	001E10 41N03	90	RC	100HA1A		ND	0000 2359	
70443	288.50	F	COMBRIT PHARE		F	004W07 47N52	40	RC	100HA1A		ND	0000 2359	
70456	288.50	F	LA REVELLATA PHARE		F	008E44 42N35	185	RC	100HA1A		ND	0000 2359	
70011	288.50	G	CHICHESTER BAR		G	000W56 50N45	19	RC	100HA1A		ND	0000 2359	
70583	288.50	GRC	THESSALONIKI		GRC	022E57 40N36	20	RC	100HA1A		ND	0000 2359	
70345	288.50	S	OELANDS SOEDRA GRUND		S	016E41 56N04	130	RC	100HA1A		ND	0000 2359	
70323	288.50	S	SYDOSTBROTTEN		S	020E11 63N20	80	RC	100HA1A		ND	0000 2359	
70661	288.50	TUN	RAS TURGENESS		TUN	011E02 33N49	100	RC	100HA1A		ND	0000 2359	
70498	289.00	D	MARIENLEUCHTE		D	011E14 54N30	92	RC	100HA1A		ND	0000 2359	

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70168	289.00	E		MESA DE ROLDAN	E	001W54 36N56	90	RC	100HA1A		ND	0000 2359	
70442	289.00	F		C S MATHIEU PHARE	F	004W46 48N20	100	RC	100HA1A		ND	0000 2359	
70031	289.00	G		KINNAIRD HEAD	G	002W00 57N42	182	RC	100HA1A		ND	0000 2359	
70068	289.00	G		STROMA	G	003W07 58N42	92	RC	100HA1A		ND	0000 2359	
70072	289.00	G		SUMBURGH HEAD	G	001W16 59N51	127	RC	100HA1A		ND	0000 2359	
70682	289.00	SYR		HASSAKEH	SYR	040E45 36N30	80	RC	100HA1A		ND	0000 2359	
70387	289.00	TUR		FENERBAHCE	TUR	029E01 40N58	185	RC	100HA1A		ND	0000 2359	
70386	289.00	TUR		MARMARA EREGLISI	TUR	027E57 40N58	185	RC	100HA1A		ND	0000 2359	
70465	289.50	F		I DE SEIN PHARE	F	004W52 48N03	130	RC	100HA1A		ND	0000 2359	
70053	289.50	G		ROUND ISLAND LSTN	G	006W19 49N58	372	RC	100HA1A		ND	0000 2359	
70117	289.50	I		PUNTA CARENA	I	014E12 40N32	185	RC	100HA1A		ND	0000 2359	
70099	289.50	IRL		MIZEN HEAD LSTN	IRL	009W49 51N27	370	RC	100HA1A		ND	0000 2359	
70672	289.50	LBY		DERNA	LBY	022E40 32N46	185	RC	100HA1A		ND	0000 2359	
70334	289.50	S		LANDSORT	S	017E52 58N44	100	RC	100HA1A		ND	0000 2359	
70662	289.50	TUN		MAHDIA	TUN	009E12 35N51	100	RC	100HA1A		ND	0000 2359	
70268	290.00	DNK		STEVNS	DNK	012E28 55N18	90	RC	100HA1A		ND	0000 2359	
70484	290.00	F		PT EN BESSIN PHARE	F	000W46 49N21	10	RC	100HA1A		ND	0000 2359	
70084	290.00	FNL		KYLMAPIHLAJA	FNL	021E18 61N09	90	RC	100HA1A		ND	0000 2359	
70367	290.00	ISL		MALARRIF	ISL	023W48 64N44	160	RC	100HA1A		ND	0000 2359	
70302	290.00	POR		AVEIRO	POR	008W45 40N38	93	RC	100HA1A		ND	0000 2359	
70304	290.00	POR		LECA	POR	008W43 41N12	185	RC	100HA1A		ND	0000 2359	
70303	290.00	POR		MONTEDOR	POR	008W52 41N45	93	RC	100HA1A		ND	0000 2359	
70156	290.50	E		C VILLANO	E	009W13 43N10	185	RC	100HA1A		ND	0000 2359	
70461	290.50	F		LE PILIER PHARE	F	002W22 47N03	20	RC	100HA1A		ND	0000 2359	
70010	290.50	G		CHANNEL LSTN	G	002W53 49N54	19	RC	100HA1A		ND	0000 2359	
70417	290.50	NOR		GRIP	NOR	007E36 63N14	92	RC	100HA1A		ND	0000 2359	
70324	290.50	S		HEMSOE	S	018E08 62N43	120	RC	100HA1A		ND	0000 2359	
70351	290.50	S		KULLEN	S	012E27 56N18	100	RC	100HA1A		ND	0000 2359	
70339	290.50	S		VISBY	S	018E17 57N38	20	RC	100HA1A		ND	0000 2359	
70264	291.00	DNK		HIRTSHALS	DNK	009E57 57N35	90	RC	100HA1A		ND	0000 2359	
70281	291.00	DNK		HIRTSHALS HAVN	DNK	009E58 57N36	90	RC	100HA1A		ND	0000 2359	
70143	291.00	E		C SAN SEBASTIAN	E	003E12 41N53	90	RC	100HA1A		ND	0000 2359	
70108	291.00	I		CAPO FERRO	I	009E31 41N09	130	RC	100HA1A		ND	0000 2359	
70292	291.00	POR		ARNEL	AZR	025W08 37N49	185	RC	100HA1A		ND	0000 2359	
70290	291.00	POR		CONTENDAS	AZR	027W05 38N39	185	RC	100HA1A		ND	0000 2359	
70291	291.00	POR		GONZALO VELHO	AZR	025W01 36N57	370	RC	100HA1A		ND	0000 2359	
70612	291.50	ALG		CAP MATIFOU	ALG	003E14 36N48	92	RC	100HA1A		ND	0000 2359	
70689	291.50	G		SOUTH ROCK LSTN	G	005W22 54N24	93	RC	100HA1A		ND	0000 2359	
70370	291.50	ISL		GOELTUR	ISL	023W34 66N10	160	RC	100HA1A		ND	0000 2359	
70406	291.50	NOR		GEITUNGANE	NOR	005E14 59N07	92	RC	100HA1A		ND	0000 2359	

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70428	291.50	NOR	TORSVAAG	NOR	019E30 70N14	92	RC	100HA1A		ND	0000 2359		
70315	291.50	S	FARSTUGRUNDEN	S	022E45 65N20	100	RC	100HA1A		ND	0000 2359		
70380	291.50	TUR	BAFRA BURNU	TUR	035E56 41N43	185	RC	100HA1A		ND	0000 2359		
70382	291.50	TUR	KEREMPE BURNU	TUR	033E20 42N01	185	RC	100HA1A		ND	0000 2359		
70381	291.50	TUR	SINOP INCEBURUN	TUR	034E56 42N06	185	RC	100HA1A		ND	0000 2359		
70379	291.50	TUR	YASUN BURNU	TUR	037E41 41N08	185	RC	100HA1A		ND	0000 2359		
70210	291.50	URS	ABRAMOVSKIY	URS	043E16 66N25	55	RC	100HA1A		ND	0000 2359		
70686	291.50	URS	GULJAEVSKOII KOSCHKI	URS	055E32 68N54	28	RC	100HA1A		ND	0000 2359		
70183	291.50	URS	MERSRAGS	URS	023E07 57N22	28	RC	100HA1A		ND	0000 2359		
70310	292.00	CYP	PERA BEACON	CYP	033E17 35N03	200	RC	100HA1A		ND	0000 2359		
70142	292.00	E	MAHON	E	004E18 39N52	185	RC	100HA1A		ND	0000 2359		
70466	292.00	F	LA COUBRE	F	001W14 45N42	185	RC	100HA1A		ND	0000 2359		
70006	292.00	G	BRESSAY	G	001W07 60N07	92	RC	100HA1A		ND	0000 2359		
70037	292.00	G	MUCKLE FLUGGA	G	000W53 60N51	276	RC	100HA1A		ND	0000 2359		
70042	292.00	G	NORTH RONALDSAY	G	002W23 59N23	182	RC	100HA1A		ND	0000 2359		
70121	292.00	I	SAN VITO LO CAPO	I	012E44 38N11	185	RC	100HA1A		ND	0000 2359		
70448	292.50	F	BY LH LE HAVRE	F	000W09 49N32	40	RC	100HA1A		ND	0000 2359		
70376	292.50	MLT	MALTA RADIO	MLT	014E24 35N52	370	RC	100HA1A		ND	0000 2359		
70652	292.50	ROU	CONSTANTA	ROU	028E38 44N10	185	RC	100HA1A		ND	0000 2359		
70683	292.50	TUR	TEKIR FENERI	TUR	027E22 36N41	185	RC	100HA1A		ND	0000 2359		
70262	292.50	YUG	SPLIT	YUG	016E29 43N30	10	RC	100HA1A		ND	0000 2359		
70510	293.00	BUL	NOS EMINE	BUL	027E54 42N41	100	RC	100HA1A		ND	0000 2359		
70157	293.00	E	SENOCOZULUA	E	001W56 43N20	90	RC	100HA1A		ND	0000 2359		
70414	293.00	NOR	SVINOEY	NOR	005E16 62N19	185	RC	100HA1A		ND	0000 2359		
70293	293.00	POR	ILHEU DE CIMA	MDR	016W17 33N03	370	RC	100HA1A		ND	0000 2359		
70295	293.00	POR	PONTA DO PARGO	MDR	017W16 32N49	370	RC	100HA1A		ND	0000 2359		
70294	293.00	POR	SELVAGEM	MDR	015W52 30N09	370	RC	100HA1A		ND	0000 2359		
70593	293.50	ALG	CAP IVI	ALG	000E13 36N06	92	RC	100HA1A		ND	0000 2359		
70505	293.50	D	GROSSER VOGELSAND	D	008E29 54N00	92	RC	100HA1A		ND	0000 2359		
70155	293.50	E	C SILLEIRO	E	008W54 42N06	185	RC	100HA1A		ND	0000 2359		
70004	293.50	G	BARDSEY LSTN	G	004W47 52N44	92	RC	100HA1A		ND	0000 2359		
70063	293.50	G	SOUTH BISHOP LSTN	G	005W24 51N51	92	RC	100HA1A		ND	0000 2359		
70105	293.50	IRL	TUSKAR ROCK LSTN	IRL	006W12 52N12	93	RC	100HA1A		ND	0000 2359		
70355	293.50	S	HAETTEBERGET	S	011E28 57N52	100	RC	100HA1A		ND	0000 2359		
70500	294.00	D	BORKUMRIFF	D	006E22 53N47	37	RC	100HA1A		ND	0000 2359		
70266	294.00	DNK	ANHOLT KNOB	DNK	011E53 56N45	90	RC	100HA1A		ND	0000 2359		
70167	294.00	E	FAVARITX	E	004E16 40N00	90	RC	100HA1A		ND	0000 2359		
70453	294.00	F	BY LH DUNKERQUE	F	001E52 51N03	20	RC	100HA1A		ND	0000 2359		
70437	294.00	F	LAVEZZI PHARE	F	009E16 41N20	60	RC	100HA1A		ND	0000 2359		
70107	294.00	I	AUGUSTA DROMOGIGGIA	I	015E09 37N12	130	RC	100HA1A		ND	0000 2359		

0	1	2	3	4	5	6	7	8	9	10	11	12	13
70002	294.00		JOR	AQABA RADIO	JOR	034E59 29N33	300	RC	100HA1A		ND	0000 2359	
70674	294.00		LBY	MESURATA	LBY	015E13 32N22	92	RC	100HA1A		ND	0000 2359	
70423	294.00		NOR	LANDEGODE	NOR	014E22 67N26	18	RC	100HA1A		ND	0000 2359	
70317	294.00		S	BJUROEKLUBB	S	021E35 64N29	130	RC	100HA1A		ND	0000 2359	
70395	294.00		YUG	VELI RAT	YUG	014E49 44N09	185	RC	100HA1A		ND	0000 2359	
70485	294.50		ALB	DURRES NAVIGATION	ALB	019E26 41N27	100	RC	100HA1A		ND	0000 2359	
70073	294.50		G	SUNK LSTN	G	001E35 51N51	19	RC	100HA1A		ND	0000 2359	
70431	294.50		NOR	SLETNES	NOR	028E13 71N05	92	RC	100HA1A		ND	0000 2359	
70230	294.50		URS	ZMEINYY OSTROV	UKR	030E12 45N15	185	RC	100HA1A		ND	0000 2359	
70226	294.50		URS	CHESHSKIY	URS	048E36 67N55	280	RC	100HA1A		ND	0000 2359	
70170	294.50		URS	KAYBOLOYO	URS	028E02 59N44	130	RC	100HA1A		ND	0000 2359	
70229	294.50		URS	KHODOVARIKHA	URS	053E46 68N56	280	RC	100HA1A		ND	0000 2359	
70228	294.50		URS	KOLGUYEVSKIY	URS	049E07 69N30	280	RC	100HA1A		ND	0000 2359	
70679	294.50		URS	MATVEEV	URS	058W30 69N28	150	RC	100HA1A		ND	0000 2359	
70172	294.50		URS	MOKHNI	URS	025E48 59N41	130	RC	100HA1A		ND	0000 2359	
70174	294.50		URS	NAYSSAAR	URS	024E31 59N36	130	RC	100HA1A		ND	0000 2359	
70175	294.50		URS	PAKRI	URS	024E02 59N23	150	RC	100HA1A		ND	0000 2359	
70171	294.50		URS	UZNY GOGLAND	URS	027E01 60N01	90	RC	100HA1A		ND	0000 2359	
70455	295.00		F	LA GAROUPE PHARE	F	007E08 43N34	185	RC	100HA1A		ND	0000 2359	
70086	295.00		FNL	MARJANIEMI	FNL	024E34 65N02	90	RC	100HA1A		ND	0000 2359	
70008	295.00		G	BUTT OF LEWIS	G	006W16 58N31	273	RC	100HA1A		ND	0000 2359	
70015	295.00		G	CAPE WRATH	G	005W00 58N38	92	RC	100HA1A		ND	0000 2359	
70028	295.00		G	HUMBER LSTN	G	000E21 53N36	10	RC	100HA1A		ND	0000 2359	
70039	295.00		G	NEWHAVEN	G	000W03 50N46	19	RC	100HA1A		ND	0000 2359	
70071	295.00		G	SULE SKERRY	G	004W24 59N05	182	RC	100HA1A		ND	0000 2359	
70419	295.00		NOR	BUHOLMSRAASA	NOR	010E27 64N24	37	RC	100HA1A		ND	0000 2359	
70338	295.00		S	FAAROE	S	019E21 57N58	100	RC	100HA1A		ND	0000 2359	
70160	295.50		E	LUARCA	E	006W32 43N33	90	RC	100HA1A		ND	0000 2359	
70469	295.50		F	C COURONNE PHARE	F	005E03 43N20	100	RC	100HA1A		ND	0000 2359	
70450	295.50		F	LA ROCHELLE	F	001W10 46N09	10	RC	100HA1A		ND	0000 2359	
70691	295.50		MRC	ARBOUA	MRC	005W55 34N54	278	RC	100HA1A		ND	0000 2359	
70285	296.00		DNK	BLAAVANOSHUK	DNK	008E05 55N34	90	RC	100HA1A		ND	0000 2359	
70044	296.00		G	OUTER GABBARD LSTN	G	002E04 51N59	92	RC	100HA1A		ND	0000 2359	
70253	296.00		HOL	GOEREE LIGHTPLATFORM	HOL	003E40 51N56	90	RC	100HA1A		ND	0000 2359	
70254	296.00		HOL	NO HINDER BF PHARE	HOL	002E51 52N00	90	RC	100HA1A		ND	0000 2359	
70400	296.00		NOR	LANGOEYTANGEN	NOR	009E45 58N59	37	RC	100HA1A		ND	0000 2359	
70425	296.00		NOR	SKROVA	NOR	014E38 67N09	185	RC	100HA1A		ND	0000 2359	
70329	296.00		S	GRUNDKALLEN	S	018E51 60N30	60	RC	100HA1A		ND	0000 2359	
70377	296.00		TUR	HOPA	TUR	041E20 41N22	185	RC	100HA1A		ND	0000 2359	
70654	296.00		YUG	DUBROVNIK	YUG	018E07 42N38	10	RC	100HA1A		ND	0000 2359	

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70599	296.50		ALG	PHARE DE L'AIGUILLE	ALG	000W29 35N52	277	RC	100HA1A		ND	0000 2359	
70489	296.50		BEL	WESTHINDER BF PHARE	BEL	002E26 51N23	40	RC	100HA1A		ND	0000 2359	
70506	296.50		D	WANGEROOGE	D	007E51 53N47	92	RC	100HA1A		ND	0000 2359	
70628	296.50		EGY	HURGADA	EGY	033E50 27N15	150	RC	100HA1A		ND	0000 2359	
70629	296.50		EGY	SAFAGA	EGY	033E57 26N45	150	RC	100HA1A		ND	0000 2359	
70631	296.50		EGY	SHAKER ISLAND	EGY	034E00 27N30	150	RC	100HA1A		ND	0000 2359	
70459	296.50		F	C FERRET	F	001W15 44N39	185	RC	100HA1A		ND	0000 2359	
70361	296.50		ISL	BJARGTANGAR	ISL	024W32 65N30	160	RC	100HA1A		ND	0000 2359	
70656	296.50		POL	GDYNIA	POL	018E34 54N32	19	RC	100HA1A		ND	0000 2359	
70658	296.50		POL	KOLOBRZEG	POL	015E33 54N11	08	RC	100HA1A		ND	0000 2359	
70659	296.50		POL	SWINOUJSCIE	POL	014E17 53N55	19	RC	100HA1A		ND	0000 2359	
70352	296.50		S	NIDINGEN	S	011E54 57N18	60	RC	100HA1A		ND	0000 2359	
70332	296.50		S	SVENSKABJOERN	S	020E01 59N33	100	RC	100HA1A		ND	0000 2359	
70394	296.50		TUN	CAP BON	TUN	011E03 37N04	370	RC	100HA1A		ND	0000 2359	
70508	297.00		D	DAMESHOEVED	D	011E00 54N12	92	RC	100HA1A		ND	0000 2359	
70138	297.00		E	C TRAFALGAR	E	006W02 36N11	90	RC	100HA1A		ND	0000 2359	
70080	297.00		FNL	ISOKARI	FNL	021E01 60N43	90	RC	100HA1A		ND	0000 2359	
70112	297.00		I	CIVITAVECCHIA	I	011E49 42N05	130	RC	100HA1A		ND	0000 2359	
70411	297.00		NOR	HOLMENGRAA	NOR	004E39 60N50	37	RC	100HA1A		ND	0000 2359	
70289	297.00		POR	ALBARNAZ	AZR	031W14 39N31	370	RC	100HA1A		ND	0000 2359	
70287	297.00		POR	PONTA DA BARCA	AZR	028W03 39N06	370	RC	100HA1A		ND	0000 2359	
70288	297.00		POR	RIBEIRINHA	AZR	028W36 38N36	370	RC	100HA1A		ND	0000 2359	
70356	297.00		S	HAALLOE	S	011E13 58N20	100	RC	100HA1A		ND	0000 2359	
70390	297.00		TUR	FINIKE	TUR	030E09 36N16	280	RC	100HA1A		ND	0000 2359	
70274	297.50		DNK	SLETTERHAGE	DNK	010E31 56N06	90	RC	100HA1A		ND	0000 2359	
70150	297.50		E	C PENAS	E	005W51 43N39	90	RC	100HA1A		ND	0000 2359	
70033	297.50		G	LIZARD LSTN	G	005W12 49N57	92	RC	100HA1A		ND	0000 2359	
70045	297.50		G	PENLEE POINT LSTN	G	004W11 50N19	92	RC	100HA1A		ND	0000 2359	
70681	297.50		LBN	SAIDA	LBN	035E21 33N30	370	RC	100HA1A		ND	0000 2359	
70203	297.50		URS	BATUMSKIY	URS	041E39 41N39	280	RC	100HA1A		ND	0000 2359	
70198	297.50		URS	KODOSHSKIY	URS	039E02 44N06	280	RC	100HA1A		ND	0000 2359	
70225	297.50		URS	MIKULKIN	URS	046E41 67N48	95	RC	100HA1A		ND	0000 2359	
70200	297.50		URS	PITSUNDSKIY	URS	040E21 43N09	280	RC	100HA1A		ND	0000 2359	
70202	297.50		URS	POTIYSKIY	URS	041E40 42N08	280	RC	100HA1A		ND	0000 2359	
70199	297.50		URS	SOCHINSKIY	URS	039E43 43N35	280	RC	100HA1A		ND	0000 2359	
70201	297.50		URS	SUKHUMSKIY	URS	040E58 42N59	280	RC	100HA1A		ND	0000 2359	
70501	298.00		D	ELBE 1 FS	D	008E07 54N00	37	RC	100HA1A		ND	0000 2359	
70148	298.00		E	C DE GATA	E	002W11 36N43	90	RC	100HA1A		ND	0000 2359	
70441	298.00		F	I DE GROIX PEN MEN	F	003W31 47N39	100	RC	100HA1A		ND	0000 2359	
70116	298.00		I	ISOLA TINO	I	009E51 44N02	130	RC	100HA1A		ND	0000 2359	

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70667	298.00		LBY	TARABULUS	LBY	013E12 32N53	111	RC	100HA1A		ND	0000 2359	
70347	298.00		S	SANDHAMMAREN	S	014E12 55N23	80	RC	100HA1A		ND	0000 2359	
70263	298.50		DNK	SKAGEN	DNK	010E35 57N44	90	RC	100HA1A		ND	0000 2359	
70162	298.50		E	ISLA TAPIA	E	006W57 43N34	90	RC	100HA1A		ND	0000 2359	
70474	298.50		F	PERTUSATO PHARE	F	009E11 41N22	185	RC	100HA1A		ND	0000 2359	
70024	298.50		G	FLATHOLM LSTN	G	003W07 51N22	92	RC	100HA1A		ND	0000 2359	
70035	298.50		G	LUNDY SOUTH	G	004W39 51N09	92	RC	100HA1A		ND	0000 2359	
70365	298.50		ISL	REYKJANES	ISL	022W43 63N49	160	RC	100HA1A		ND	0000 2359	
70407	298.50		NOR	TRESVIKPYNTEN	NOR	005E19 59N16	18	RC	100HA1A		ND	0000 2359	
70335	298.50		S	GUSTAF DALEN	S	017E28 58N36	80	RC	100HA1A		ND	0000 2359	
70632	298.50		TUN	EL ATTAYA	TUN	011E18 34N44	185	RC	100HA1A		ND	0000 2359	
70496	299.00		D	BORKUM	D	006E40 53N35	92	RC	100HA1A		ND	0000 2359	
70278	299.00		DNK	HALS BARRE	DNK	010E26 56N57	90	RC	100HA1A		ND	0000 2359	
70137	299.00		E	TARIFA	E	005W36 36N00	90	RC	100HA1A		ND	0000 2359	
70464	299.00		F	BELLE ILE EN MER LH	F	003W14 47N19	185	RC	100HA1A		ND	0000 2359	
70256	299.00		HOL	AMELAND PHARE	HOL	005E38 53N27	90	RC	100HA1A		ND	0000 2359	
70257	299.00		HOL	VLIELAND PHARE	HOL	005E04 53N18	90	RC	100HA1A		ND	0000 2359	
70124	299.00		I	TRIESTE	I	013E45 45N40	130	RC	100HA1A		ND	0000 2359	
70366	299.00		ISL	RAUFARHOEFN	ISL	015W57 66N27	160	RC	100HA1A		ND	0000 2359	
70344	299.00		S	OELANDS SOEDRA UDDE	S	016E24 56N12	40	RC	100HA1A		ND	0000 2359	
70330	299.00		S	UNDERSTEN	S	018E55 60N18	130	RC	100HA1A		ND	0000 2359	
70685	299.00		TUR	ANAMUR BURNU	TUR	032E48 36N01	185	RC	100HA1A		ND	0000 2359	
70494	299.50		D	WESTERHEVERSAND	D	008E38 54N22	92	RC	100HA1A		ND	0000 2359	
70478	299.50		F	GRIS NEZ PHARE	F	001E35 50N52	60	RC	100HA1A		ND	0000 2359	
70083	299.50		FNL	KORSO	FNL	019E54 60N02	90	RC	100HA1A		ND	0000 2359	
70090	299.50		FNL	ULKOKALLA	FNL	023E27 64N20	90	RC	100HA1A		ND	0000 2359	
70125	299.50		I	VIESTE	I	016E11 41N53	130	RC	100HA1A		ND	0000 2359	
70424	299.50		NOR	SKOMVAER	NOR	011E52 67N24	185	RC	100HA1A		ND	0000 2359	
70280	300.00		DNK	FREDERIKSHAVN	DNK	010E33 57N26	18	RC	100HA1A		ND	0000 2359	
70269	300.00		DNK	HAMMERODDE	DNK	014E46 55N18	90	RC	100HA1A		ND	0000 2359	
70476	300.00		F	AILLY PHARE	F	000E57 49N55	100	RC	100HA1A		ND	0000 2359	
70479	300.00		F	LSH LA BASSURELLE	F	000W58 50N34	100	RC	100HA1A		ND	0000 2359	
70012	300.00		G	CLOCH POINT	G	004W53 55N57	13	RC	100HA1A		ND	0000 2359	
70049	300.00		G	POINT LYNAS	G	004W17 53N24	10	RC	100HA1A		ND	0000 2359	
70054	300.00		G	ROYAL SOVEREIGN LSTN	G	000E26 50N43	92	RC	100HA1A		ND	0000 2359	
70062	300.00		G	SOUTER POINT LSTN	G	001W21 54N58	10	RC	100HA1A		ND	0000 2359	
70098	300.00		IRL	LOOPHEAD LSTN	IRL	009W56 52N34	93	RC	100HA1A		ND	0000 2359	
70103	300.00		IRL	SLYNE HEAD LSTN	IRL	010W14 53N24	93	RC	100HA1A		ND	0000 2359	
70364	300.00		ISL	SKAGATA	ISL	020W21 66N07	160	RC	100HA1A		ND	0000 2359	
70258	300.00		YUG	KAMENJAK	YUG	014E55 44N47	182	RC	100HA1A		ND	0000 2359	

0	1	2	3	4	5	6	7	8	9	10	11	12	13
70507	300.50	D		TRAVEMUENDE	D	010E53 53N58	92	RC	100HA1A		ND	0000 2359	
70166	300.50	E		C BLANCO	E	002E47 39N22	90	RC	100HA1A		ND	0000 2359	
70669	300.50	LBY		EZWETINA	LBY	020E08 30N57	92	RC	100HA1A		ND	0000 2359	
70416	300.50	NOR		BJOERNSUND	NOR	006E48 62N53	92	RC	100HA1A		ND	0000 2359	
70403	300.50	NOR		LISTA	NOR	006E34 58N06	129	RC	100HA1A		ND	0000 2359	
70320	300.50	S		HOLMOEGADD	S	020E45 63N36	120	RC	100HA1A		ND	0000 2359	
70243	300.50	URS		BELOSARAYSKIY	UKR	037E20 46N53	280	RC	100HA1A		ND	0000 2359	
70244	300.50	URS		BERDYANSKIY NIZHNIY	UKR	036E46 46N38	280	RC	100HA1A		ND	0000 2359	
70193	300.50	URS		AKHILLEONSKIY	URS	036E47 45N26	47	RC	100HA1A		ND	0000 2359	
70194	300.50	URS		AKHTARSKIY	URS	038E11 46N06	185	RC	100HA1A		ND	0000 2359	
70218	300.50	URS		CHESMENSKIY	URS	036E32 64N43	55	RC	100HA1A		ND	0000 2359	
70173	300.50	URS		TALLINN	URS	024E44 59N43	47	RC	100HA1A		ND	0000 2359	
70192	300.50	URS		YENIKALSKIY	URS	036E38 45N23	280	RC	100HA1A		ND	0000 2359	
70594	301.00	ALG		PORT DE MOSTAGANEM	ALG	000W04 35N56	28	RC	100HA1A		ND	0000 2359	
70267	301.00	DNK		NAKKEHOVED	DNK	012E21 56N07	90	RC	100HA1A		ND	0000 2359	
70164	301.00	E		PNT CARNERO	E	005W26 36N05	90	RC	100HA1A		ND	0000 2359	
70482	301.00	F		CALAIS PT	F	001E51 50N28	10	RC	100HA1A		ND	0000 2359	
70471	301.00	F		CREAC'H OUESSANT LH	F	005W08 48N28	185	RC	100HA1A		ND	0000 2359	
70463	301.00	F		S GERVAIS	F	004E50 43N26	40	RC	100HA1A		ND	0000 2359	
70255	301.00	HOL		EIERLAND PHARE	HOL	004E52 53N11	90	RC	100HA1A		ND	0000 2359	
70362	301.00	ISL		STRANDHOEFN	ISL	014W39 65N55	160	RC	100HA1A		ND	0000 2359	
70398	301.00	NOR		FULEHUK	NOR	010E36 59N10	18	RC	100HA1A		ND	0000 2359	
70684	301.00	TUR		INCEKUM BURNU	TUR	033E57 36N14	185	RC	100HA1A		ND	0000 2359	
70384	301.00	TUR		KEFREN ADA	TUR	030E17 41N13	185	RC	100HA1A		ND	0000 2359	
70383	301.00	TUR		OLUCE BURNU	TUR	031E24 41N18	185	RC	100HA1A		ND	0000 2359	
70385	301.00	TUR		RUMELI BURNU	TUR	029E06 41N13	185	RC	100HA1A		ND	0000 2359	
70511	301.50	BUL		MASLEN NOS	BUL	027E50 42N18	100	RC	100HA1A		ND	0000 2359	
70499	301.50	D		NEULAND	D	010E36 54N22	92	RC	100HA1A		ND	0000 2359	
70154	301.50	E		TORRE DE HERCULES	E	008W24 43N23	90	RC	100HA1A		ND	0000 2359	
70038	301.50	G		NAB TOWER	G	000W57 50N40	37	RC	100HA1A		ND	0000 2359	
70341	301.50	S		HOBURG	S	018E09 56N55	130	RC	100HA1A		ND	0000 2359	
70480	302.00	F		CHERBOURG FT W LH	F	001W39 49N41	40	RC	100HA1A		ND	0000 2359	
70445	302.00	F		GIRONDE BATEAU BXA	F	001W29 45N40	10	RC	100HA1A		ND	0000 2359	
70584	302.00	GRC		AXIOS	GRC	022E44 40N30	20	RC	100HA1A		ND	0000 2359	
70666	302.00	LBY		RASLANAUF	LBY	018E32 30N31	92	RC	100HA1A		ND	0000 2359	
70353	302.00	S		TRUBADUREN	S	011E38 57N36	100	RC	100HA1A		ND	0000 2359	
70664	302.00	TUN		LA GALITE	TUN	008E56 37N31	100	RC	100HA1A		ND	0000 2359	
70493	302.50	D		KIEL	D	010E16 54N30	92	RC	100HA1A		ND	0000 2359	
70467	302.50	F		LES BALEINES PHARE	F	001W34 46N15	100	RC	100HA1A		ND	0000 2359	
70251	302.50	HOL		HOEKVAN HOLLANDPHARE	HOL	004E07 51N59	90	RC	100HA1A		ND	0000 2359	

0	1	2	3	4	5	6	7	8	9	10	11	12	13
70252	302.50	HOL		IJMUIDEN PHARE	HOL	004E35 52N28	90	RC	100HA1A		ND	0000 2359	
70250	302.50	HOL		TEXEL BF PHARE	HOL	004E07 52N47	90	RC	100HA1A		ND	0000 2359	
70115	302.50	I		ISOLA PANTELLERIA	I	011E57 36N50	185	RC	100HA1A		ND	0000 2359	
70401	302.50	NOR		TORUNGEN	NOR	008E47 58N23	92	RC	100HA1A		ND	0000 2359	
70653	302.50	ROU		SFINTU GHEORGHE	ROU	029E36 45N00	365	RC	100HA1A		ND	0000 2359	
70327	302.50	S		EGGEGRUND	S	017E34 60N44	100	RC	100HA1A		ND	0000 2359	
70184	302.50	URS		MIKELBAKA	URS	021E59 57N36	35	RC	100HA1A		ND	0000 2359	
70139	303.00	E		ROTA	E	006W23 36N38	148	RC	100HA1A		ND	0000 2359	
70481	303.00	F		I D'YEU PHARE	F	002W23 46N43	186	RC	100HA1A		ND	0000 2359	
70079	303.00	FNL		HELSINKI	FNL	024E56 59N57	90	RC	100HA1A		ND	0000 2359	
70019	303.00	G		EILEAN GLAS	G	006W38 57N51	92	RC	100HA1A		ND	0000 2359	
70043	303.00	G		OIGH SGEIR	G	006W41 56N58	92	RC	100HA1A		ND	0000 2359	
70313	303.00	HOL		SCHEVENINGEN PHARE	HOL	004E16 52N06	10	RC	100HA1A		ND	0700 1600	
70093	303.00	IRL		BALLYCOTTON LSTN	IRL	007W59 51N50	09	RC	100HA1A		ND	0900 1800	
70349	303.00	S		FALSTERBOREV	S	012E40 55N19	80	RC	100HA1A		ND	0000 2359	
70619	303.50	ALG		CAP COBELLIN	ALG	004E25 36N54	92	RC	100HA1A		ND	0000 2359	
70074	303.50	DDR		WARNEMUENDE	DDR	012E05 54N11	35	RC	100HA1A		ND	0000 2359	
70149	303.50	E		LLANES	E	004W45 43N25	90	RC	100HA1A		ND	0000 2359	
70141	303.50	E		PNT LLOBREGAT	E	002E09 41N19	90	RC	100HA1A		ND	0000 2359	
70622	303.50	EGY		ALEXANDRIA	EGY	029E50 31N13	150	RC	100HA1A		ND	0000 2359	
70630	303.50	EGY		RAS EL SHEKEIN	EGY	028E50 30N55	150	RC	100HA1A		ND	0000 2359	
70623	303.50	EGY		ROSETTA	EGY	030E21 31N30	150	RC	100HA1A		ND	0000 2359	
70626	303.50	EGY		TOR	EGY	033E35 28N15	80	RC	100HA1A		ND	0000 2359	
70050	303.50	G		POOLE HARBOUR	G	001W55 50N40	19	RC	100HA1A		ND	0000 2359	
70670	303.50	LBY		ELBREGA	LBY	019E33 30N25	92	RC	100HA1A		ND	0000 2359	
70634	303.50	MLT		XLOKK RADIO	MLT	014E32 35N49	200	RC	100HA1A		ND	0000 2359	
70405	303.50	NOR		FEISTEIN	NOR	005E30 58N49	92	RC	100HA1A		ND	0000 2359	
70415	303.50	NOR		GRASOEYANE	NOR	005E45 62N25	37	RC	100HA1A		ND	0000 2359	
70392	303.50	TUR		AKINCI BURNU	TUR	035E47 36N19	185	RC	100HA1A		ND	0000 2359	
70391	303.50	TUR		MERSIN	TUR	034E37 36N47	185	RC	100HA1A		ND	0000 2359	
70227	303.50	URS		KOLGUYEV YUZNY	URS	048E40 68N42	65	RC	100HA1A		ND	0000 2359	
70207	303.50	URS		KONUSHINSKIY	URS	043E47 67N12	47	RC	100HA1A		ND	0000 2359	
70259	303.50	YUG		MOVAR	YUG	015E58 43N30	185	RC	100HA1A		ND	0000 2359	
70497	304.00	D		FEHMARNBELT	D	011E09 54N36	37	RC	100HA1A		ND	0000 2359	
70276	304.00	DNK		AARHUS	DNK	010E13 56N10	18	RC	100HA1A		ND	0000 2359	
70088	304.00	FNL		ORRENGRUND	FNL	026E27 60N17	90	RC	100HA1A		ND	0000 2359	
70029	304.00	G		INCHKEITH	G	003W08 56N02	19	RC	100HA1A		ND	0000 2359	
70118	304.00	I		PUNTA DELLA MAESTRA	I	012E36 44N58	185	RC	100HA1A		ND	0000 2359	
70092	304.00	IRL		BALLYCOTTON LSTN	IRL	007W59 51N50	93	RC	100HA1A		ND	0000 2359	
70095	304.00	IRL		HOOK POINT LSTN	IRL	006W56 52N07	93	RC	100HA1A		ND	0000 2359	

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70101	304.00		IRL	OLD HD KINSALE LSTN	IRL	008W32 51N36	93	RC	100HA1A		ND	0000 2359	
70363	304.00		ISL	SKARDSFJARA	ISL	017W59 63N31	160	RC	100HA1A		ND	0000 2359	
70316	304.00		S	NORSTROEMSGRUND	S	022E20 65N07	80	RC	100HA1A		ND	0000 2359	
70131	304.50		E	C MAYOR	E	003W47 43N29	90	RC	100HA1A		ND	0000 2359	
70434	304.50		F	BLOSCON	F	003W58 48N43	20	RC	100HA1A		ND	0000 2359	
70057	304.50		G	ST PETER PORT	G	002W31 49N27	19	RC	100HA1A		ND	0000 2359	
70692	304.50		MRC	CAP GHIR	MRC	009W53 30N38	278	RC	100HA1A		ND	0000 2359	
70277	305.00		DNK	FORNAES	DNK	010E56 56N25	90	RC	100HA1A		ND	0000 2359	
70153	305.00		E	C PRIORINO CHICO	E	008W20 43N27	90	RC	100HA1A		ND	0000 2359	
70147	305.00		E	MALAGA	E	004W25 36N43	90	RC	100HA1A		ND	0000 2359	
70473	305.00		F	LA GIRAGLIA PHARE	F	009E24 43N02	185	RC	100HA1A		ND	0000 2359	
70082	305.00		FNL	KALLAN	FNL	022E32 63N45	90	RC	100HA1A		ND	0000 2359	
70030	305.00		G	ISLE OF MAY	G	002W33 56N11	182	RC	100HA1A		ND	0000 2359	
70034	305.00		G	LONGSTONE LSTN	G	001W36 55N38	92	RC	100HA1A		ND	0000 2359	
70061	305.00		G	SOUTER POINT	G	001W24 55N00	92	RC	100HA1A		ND	0000 2359	
70404	305.00		NOR	SKARVOEY	NOR	005E59 58N24	18	RC	100HA1A		ND	0000 2359	
70447	305.50		F	ANTIFER PHARE	F	000E10 49N41	100	RC	100HA1A		ND	0000 2359	
70438	305.50		F	PLANIER PHARE	F	005E14 43N12	185	RC	100HA1A		ND	0000 2359	
70300	305.50		POR	C S MARIA	POR	007W52 36N58	93	RC	100HA1A		ND	0000 2359	
70301	305.50		POR	C S VICENTE	POR	009W00 37N01	370	RC	100HA1A		ND	0000 2359	
70299	305.50		POR	VILA REAL S ANTONIO	POR	007W25 37N11	93	RC	100HA1A		ND	0000 2359	
70319	305.50		S	STORA FJAEDERAEGG	S	021E00 63N49	40	RC	100HA1A		ND	0000 2359	
70348	305.50		S	TRELLEBORG	S	013E09 55N22	60	RC	100HA1A		ND	0000 2359	
70283	306.00		DNK	THYBOROEN	DNK	008E13 56N43	180	RC	100HA1A		ND	0000 2359	
70169	306.00		E	C DE LAS HUERTAS	E	000W24 38N21	185	RC	100HA1A		ND	0000 2359	
70089	306.00		FNL	PORKKALA	FNL	024E18 59N52	90	RC	100HA1A		ND	0000 2359	
70056	306.00		G	ST HELIER HARBOUR	G	002W07 49N10	19	RC	100HA1A		ND	0000 2359	
70369	306.00		ISL	GRIMSEY	ISL	017W59 66N32	160	RC	100HA1A		ND	0000 2359	
70322	306.00		S	SKAGSUDDE	S	019E01 63N11	80	RC	100HA1A		ND	0000 2359	
70279	306.50		DNK	LAESOE RENDE	DNK	010E49 57N13	90	RC	100HA1A		ND	0000 2359	
70454	306.50		F	GR JARDIN PHARE	F	002W05 48N40	20	RC	100HA1A		ND	0000 2359	
70126	306.50		MRC	CAP SPARTEL	MRC	005W56 35N47	380	RC	100HA1A		ND	0000 2359	
70430	306.50		NOR	HELNES	NOR	026E13 71N03	92	RC	100HA1A		ND	0000 2359	
70657	306.50		POL	HEL	POL	018E49 54N36	19	RC	100HA1A		ND	0000 2359	
70660	306.50		POL	USTKA	POL	016E51 54N35	20	RC	100HA1A		ND	0000 2359	
70209	306.50		URS	MORZHOVSKIY	URS	042E28 66N43	110	RC	100HA1A		ND	0000 2359	
70212	306.50		URS	SOSNOVETSKIY	URS	040E41 66N29	130	RC	100HA1A		ND	0000 2359	
70208	306.50		URS	TERSKO-ORLOVSKIY	URS	041E20 67N12	140	RC	100HA1A		ND	0000 2359	
70211	306.50		URS	VORONOVSKIY	URS	042E14 66N30	280	RC	100HA1A		ND	0000 2359	
70620	307.00		ALG	CAP BOUGAROUN	ALG	006E28 37N05	92	RC	100HA1A		ND	0000 2359	

0	1	2	3	4	5	6	7	8	9	10	11	12	13
70265	307.00	DNK	HIRSHOLM	DNK	010E38 57N29	90	RC	100HA1A		ND	0000 2359		
70161	307.00	E	SACRATIF	E	003W28 36N41	185	RC	100HA1A		ND	0000 2359		
70023	307.00	G	FLAMBOROUGH HEAD	G	000W04 54N06	92	RC	100HA1A		ND	0000 2359		
70027	307.00	G	HEUGH LSTN	G	001W10 54N41	92	RC	100HA1A		ND	0000 2359		
70064	307.00	G	SPURN LSTN	G	001E14 53N34	92	RC	100HA1A		ND	0000 2359		
70410	307.00	NOR	MARSTEIN	NOR	005E00 60N07	92	RC	100HA1A		ND	0000 2359		
70318	307.00	S	RATASKAER	S	020E54 64N00	80	RC	100HA1A		ND	0000 2359		
70342	307.00	S	STORA KARLSOE	S	017E58 57N17	80	RC	100HA1A		ND	0000 2359		
70491	307.50	DNK	DROGDEN	DNK	012E43 55N32	90	RC	100HA1A		ND	0000 2359		
70451	307.50	F	LES SABLES OLONNE	F	001W48 46N30	10	RC	100HA1A		ND	0000 2359		
70690	307.50	MRC	TETOUAN	MRC	005W17 35N37	150	RC	100HA1A		ND	0000 2359		
70389	307.50	TUR	IZMIR KARABURUN	TUR	026E31 38N39	185	RC	100HA1A		ND	0000 2359		
70388	307.50	TUR	MEHMETCIK BURNU	TUR	026E10 40N02	185	RC	100HA1A		ND	0000 2359		
70130	308.00	E	ALBORAN	E	003W02 35N56	50	RC	100HA1A		ND	0000 2359		
70462	308.00	F	ROCHES DOUVRES PHARE	F	002W50 49N06	130	RC	100HA1A		ND	0000 2359		
70009	308.00	G	CASQUETS LSTN	G	002W22 49N43	92	RC	100HA1A		ND	0000 2359		
70067	308.00	G	START POINT LSTN	G	003W38 50N13	92	RC	100HA1A		ND	0000 2359		
70371	308.00	ISL	DJUPIVOGUR	ISL	014W17 64N39	160	RC	100HA1A		ND	0000 2359		
70128	308.00	MRC	OUKACHA	MRC	007W34 33N37	50	RC	100HA1A		ND	0000 2359		
70296	308.00	POR	C ESPICHEL	POR	009W13 38N25	93	RC	100HA1A		ND	0000 2359		
70297	308.00	POR	C ROCA	POR	009W24 38N47	185	RC	100HA1A		ND	0000 2359		
70298	308.00	POR	C SINES	POR	008W53 37N57	93	RC	100HA1A		ND	0000 2359		
70378	308.00	TUR	IGNE ADA	TUR	028E03 41N53	185	RC	100HA1A		ND	0000 2359		
70140	308.50	E	CHIPIONA	E	006W26 36N44	90	RC	100HA1A		ND	0000 2359		
70446	308.50	F	S NAZAIRE S GILDAS	F	002W15 47N08	70	RC	100HA1A		ND	0000 2359		
70336	308.50	S	KUNGSGRUNDET	S	016E54 57N41	60	RC	100HA1A		ND	0000 2359		
70502	309.00	D	ALTE WESER	D	008E08 53N52	37	RC	100HA1A		ND	0000 2359		
70272	309.00	DNK	SVANEMOELLEN	DNK	012E35 55N42	18	RC	100HA1A		ND	0000 2359		
70016	309.00	G	DOUGLAS	G	004W28 54N09	92	RC	100HA1A		ND	0000 2359		
70048	309.00	G	POINT LYNAS LSTN	G	004W17 53N24	92	RC	100HA1A		ND	0000 2359		
70688	309.00	G	WALNEY ISLAND	G	003W10 54N02	92	RC	100HA1A		ND	0000 2359		
70122	309.00	I	S BENEDETTO TRONTO	I	013E53 42N57	185	RC	100HA1A		ND	0000 2359		
70333	309.00	S	ALMAGRUNDET	S	019E10 59N09	80	RC	100HA1A		ND	0000 2359		
70611	309.50	ALG	PORT D'ALGER	ALG	003E04 36N48	37	RC	100HA1A		ND	0000 2359		
70273	309.50	DNK	ROESNAES	DNK	010E52 55N45	90	RC	100HA1A		ND	0000 2359		
70151	309.50	E	ESTACA DE BARES	E	007W41 43N47	185	RC	100HA1A		ND	0000 2359		
70163	309.50	E	ROMPIDO	E	007W08 37N13	90	RC	100HA1A		ND	0000 2359		
70426	309.50	NOR	ANDENES	NOR	016E07 69N19	92	RC	100HA1A		ND	0000 2359		
70408	309.50	NOR	UTSIRA	NOR	004E52 59N18	129	RC	100HA1A		ND	0000 2359		
70328	309.50	S	OERSKAER	S	018E23 60N32	80	RC	100HA1A		ND	0000 2359		

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70311	309.50	TUN	CAP BLANC	TUN	009E50 37N19	185	RC	100HA1A		ND	0000 2359		
70238	309.50	URS	EVPATORIYSKIY	UKR	033E16 45N09	280	RC	100HA1A		ND	0000 2359		
70239	309.50	URS	KHERSONESSKIY	UKR	033E23 44N35	280	RC	100HA1A		ND	0000 2359		
70232	309.50	URS	ODESSKIY	UKR	030E45 46N23	280	RC	100HA1A		ND	0000 2359		
70237	309.50	URS	TARKHANKUTSKIY	UKR	032E30 45N21	280	RC	100HA1A		ND	0000 2359		
70235	309.50	URS	TENDROVSKIY	UKR	031E31 46N19	280	RC	100HA1A		ND	0000 2359		
70233	309.50	URS	VORONTSOVSKIY	UKR	030E46 46N30	185	RC	100HA1A		ND	0000 2359		
70181	309.50	URS	IRBENSKIY	URS	021E37 57N51	28	RC	100HA1A		ND	0000 2359		
70678	309.50	URS	SCHWEDSKII	URS	055W49 68N36	55	RC	100HA1A		ND	0000 2359		
70219	309.50	URS	ZHUZHMUYSKIY	URS	035E34 64N41	37	RC	100HA1A		ND	0000 2359		
70261	309.50	YUG	RIJEKA	YUG	014E25 45N20	10	RC	100HA1A		ND	0000 2359		
70492	310.00	D	KALKGRUND	D	009E53 54N50	92	RC	100HA1A		ND	0000 2359		
70440	310.00	F	BOULOGNE SUR MER	F	001E36 50N44	10	RC	100HA1A		ND	0000 2359		
70435	310.00	F	C BEAR	F	003E08 42N31	100	RC	100HA1A		ND	0000 2359		
70452	310.00	F	VER SUR MER PHARE	F	000W31 49N20	40	RC	100HA1A		ND	0000 2359		
70109	310.00	I	CAPO SANDALO	I	008E13 39N09	130	RC	100HA1A		ND	0000 2359		
70372	310.00	ISL	DALATANGI	ISL	013W35 65N16	160	RC	100HA1A		ND	0000 2359		
70343	310.00	S	OELANDS NORRA UDDE	S	017E06 57N22	130	RC	100HA1A		ND	0000 2359		
70282	310.50	DNK	HANSTHOLM	DNK	008E36 57N07	180	RC	100HA1A		ND	0000 2359		
70144	310.50	E	CASTELLON	E	000E01 39N58	90	RC	100HA1A		ND	0000 2359		
70627	310.50	EGY	ARISH	EGY	033E48 31N08	150	RC	100HA1A		ND	0000 2359		
70624	310.50	EGY	DEMIETTA	EGY	031E51 31N31	150	RC	100HA1A		ND	0000 2359		
70625	310.50	EGY	PORT-SAID	EGY	032E17 31N16	80	RC	100HA1A		ND	0000 2359		
70077	310.50	FNL	GUSTAVSVARN	FNL	022E57 59N48	90	RC	100HA1A		ND	0000 2359		
70020	310.50	G	FALLS LSTN	G	001E48 51N18	92	RC	100HA1A		ND	0000 2359		
70040	310.50	G	NORTH FORELAND LSTN	G	001E26 51N22	92	RC	100HA1A		ND	0000 2359		
70058	310.50	G	SCARWEATHER LSTN	G	003W56 51N26	10	RC	100HA1A		ND	0000 2359		
70065	310.50	G	SOUTH FORELAND	G	001E22 51N08	92	RC	100HA1A		ND	0000 2359		
70114	310.50	I	GENOVA	I	008E54 44N24	130	RC	100HA1A		ND	0000 2359		
70668	310.50	LBY	ESSIDERA	LBY	018E22 30N38	130	RC	100HA1A		ND	0000 2359		
70433	310.50	NOR	BOEKFJORD	NOR	030E10 69N52	92	RC	100HA1A		ND	0000 2359		
70513	310.50	POL	HEL	POL	018E49 54N36	90	RC	100HA1A		ND	0000 2359		
70512	310.50	POL	KRYNICA MORSKA	POL	018E27 54N23	90	RC	100HA1A		ND	0000 2359		
70396	310.50	YUG	STONCICA	YUG	016E15 43N04	185	RC	100HA1A		ND	0000 2359		
70152	311.00	E	CEUTA	E	005W18 35N54	90	RC	100HA1A		ND	0000 2359		
70013	311.00	G	CREGNEISH	G	004W46 54N04	92	RC	100HA1A		ND	0000 2359		
70036	311.00	G	MEW ISLAND LSTN	G	005W31 54N42	92	RC	100HA1A		ND	0000 2359		
70047	311.00	G	POINT OF AYRE	G	004W22 54N25	92	RC	100HA1A		ND	0000 2359		
70110	311.00	I	CAPO SAN VITO TARANT	I	017E12 40N25	130	RC	100HA1A		ND	0000 2359		
70100	311.00	IRL	MIZEN HEAD LSTN	IRL	009W49 51N27	09	RC	100HA1A		ND	0900 1800		

0	1	2	3	4	5	6	7	8	9	10	11	12	13
70420	311.00	NOR		GRINNA	NOR	010E58 64N45	27	RC	100HA1A		ND	0000 2359	
70346	311.00	S		UTKLIPPAN	S	015E42 55N57	100	RC	100HA1A		ND	0000 2359	
70587	311.50	ALG		CAP SIGLI	ALG	004E45 36N53	370	RC	100HA1A		ND	0000 2359	
70123	311.50	I		SENIGALLIA	I	013E13 43N43	185	RC	100HA1A		ND	0000 2359	
70487	312.00	BEL		OOSTENDE PHARE	BEL	002E55 51N14	60	RC	100HA1A		ND	0000 2359	
70503	312.00	D		DEUTSCHE BUCHT FS	D	007E26 54N11	37	RC	100HA1A		ND	0000 2359	
70158	312.00	E		CASTRO URDIALES	E	003W13 43N23	90	RC	100HA1A		ND	0000 2359	
70444	312.00	F		ECKMUHL PHARE	F	004W23 47N48	100	RC	100HA1A		ND	0000 2359	
70458	312.00	F		SENETOSE PHARE	F	008E48 41N33	185	RC	100HA1A		ND	0000 2359	
70413	312.00	NOR		HENDANES	NOR	005E02 61N57	18	RC	100HA1A		ND	0000 2359	
70422	312.00	NOR		TENNHOLMEN	NOR	013E30 67N18	92	RC	100HA1A		ND	0000 2359	
70135	312.50	E		C ESTAY	E	008W49 42N11	90	RC	100HA1A		ND	0000 2359	
70468	312.50	F		CALAIS PHARE	F	001E51 50N58	40	RC	100HA1A		ND	0000 2359	
70671	312.50	LBY		BENGAZI	LBY	020E03 32N07	370	RC	100HA1A		ND	0000 2359	
70429	312.50	NOR		FRUHOLMEN	NOR	023E59 71N05	92	RC	100HA1A		ND	0000 2359	
70186	312.50	URS		AKMENRAGS	URS	021E04 56N50	185	RC	100HA1A		ND	0000 2359	
70191	312.50	URS		BALTIYSK	URS	019E54 54N38	150	RC	100HA1A		ND	0000 2359	
70205	312.50	URS		GORODETSKIY	URS	040E59 67N42	280	RC	100HA1A		ND	0000 2359	
70204	312.50	URS		KANINSKIY	URS	043E17 68N39	280	RC	100HA1A		ND	0000 2359	
70188	312.50	URS		KLAYPEDA	URS	021E06 55N44	225	RC	100HA1A		ND	0000 2359	
70187	312.50	URS		LIEPAIA	URS	021E00 56N31	225	RC	100HA1A		ND	0000 2359	
70676	312.50	URS		LJAMCHIN	URS	059W07 69N52	55	RC	100HA1A		ND	0000 2359	
70206	312.50	URS		SHOYNA	URS	044E08 67N53	280	RC	100HA1A		ND	0000 2359	
70677	312.50	URS		SVJATONOSSKII	URS	039W45 68N09	280	RC	100HA1A		ND	0000 2359	
70190	312.50	URS		TARAN	URS	019E59 54N58	225	RC	100HA1A		ND	0000 2359	
70185	312.50	URS		VENTSPILS	URS	021E33 57N24	185	RC	100HA1A		ND	0000 2359	
70260	312.50	YUG		MOLUNAT	YUG	018E26 42N27	185	RC	100HA1A		ND	0000 2359	
70504	313.00	D		HELGOLAND	D	007E53 54N11	92	RC	100HA1A		ND	0000 2359	
70132	313.00	E		C DE PALOS	E	000W41 37N38	90	RC	100HA1A		ND	0000 2359	
70418	313.00	NOR		HALTEN	NOR	009E24 64N10	92	RC	100HA1A		ND	0000 2359	
70680	313.50	ALB		VLORA NAVIGATION	ALB	019E29 40N27	100	RC	100HA1A		ND	0000 2359	
70590	313.50	ALG		CAP TENES	ALG	001E20 36N33	92	RC	100HA1A		ND	0000 2359	
70271	313.50	DNK		HESTEHOVED	DNK	012E10 54N50	90	RC	100HA1A		ND	0000 2359	
70085	313.50	FNL		MANTYLUOTO	FNL	021E28 61N36	90	RC	100HA1A		ND	0000 2359	
70005	313.50	G		BARRA HEAD	G	007W39 56N47	364	RC	100HA1A		ND	0000 2359	
70007	313.50	G		BRIGHTON MARINA LSTN	G	000W06 50N48	19	RC	100HA1A		ND	0000 2359	
70094	313.50	IRL		EAGLE ISLAND LSTN	IRL	010W06 54N17	370	RC	100HA1A		ND	0000 2359	
70104	313.50	IRL		TORY ISLAND LSTN	IRL	008W15 55N16	185	RC	100HA1A		ND	0000 2359	
70402	313.50	NOR		OKSOEY	NOR	008E03 58N04	92	RC	100HA1A		ND	0000 2359	
70340	313.50	S		OESTERGARN	S	018E59 57N27	100	RC	100HA1A		ND	0000 2359	

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70284	314.00	DNK	LYNGVIG		DNK	008E09 56N15	180	RC	100HA1A		ND	0000 2359	
70460	314.00	F	I VIERGE PHARE		F	004W34 48N38	130	RC	100HA1A		ND	0000 2359	
70483	314.00	F	PORQUEROLLES PHARE		F	006E12 42N59	370	RC	100HA1A		ND	0000 2359	
70427	314.00	NOR	HEKKINGEN		NOR	017E49 69N36	92	RC	100HA1A		ND	0000 2359	
70326	314.00	S	HAELLGRUND		S	017E24 61N17	60	RC	100HA1A		ND	0000 2359	
70314	314.00	S	MALOEREN		S	023E34 65N32	100	RC	100HA1A		ND	0000 2359	
70600	314.50	ALG	BEJAIA		ALG	005E06 36N45	18	RC	100HA1A		ND	0000 2359	
70270	314.50	DNK	MON		DNK	012E47 54N48	90	RC	100HA1A		ND	0000 2359	
70081	314.50	FNL	KALBADAGRUND		FNL	025E36 59N59	90	RC	100HA1A		ND	0000 2359	
70312	314.50	HOL	IJMUIDEN PHARE		HOL	004E35 52N28	10	RC	100HA1A		ND	0700 1600	
70119	314.50	I	PUNTA PENNA		I	014E42 42N10	185	RC	100HA1A		ND	0000 2359	
70368	314.50	ISL	HORNBJARG		ISL	022W23 66N25	160	RC	100HA1A		ND	0000 2359	
70675	314.50	LBY	ZUARA		LBY	012E26 32N49	92	RC	100HA1A		ND	0000 2359	
70663	314.50	TUN	PLATE FORME TAZARKA		TUN	011E40 36N36	70	RC	100HA1A		ND	0600 2000	
70196	314.50	URS	ANAPSKIY		URS	037E18 44N53	280	RC	100HA1A		ND	0000 2359	
70197	314.50	URS	DOOBSKIY		URS	037E55 44N38	280	RC	100HA1A		ND	0000 2359	
70195	314.50	URS	ZHELEZNYY ROG		URS	036E44 45N07	47	RC	100HA1A		ND	0000 2359	

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document 1071-E
11 March 1985
Original: English

PLENARY MEETING

Source: Document 1062

NOTE BY THE CHAIRMAN OF COMMITTEE 4

The following text, to form part of the technical annexes, was prepared by an ad hoc group of Committee 4. The Committee agreed that this text should be forwarded directly to the Editorial Committee.

L.W. BARCLAY
Chairman of Committee 4

Annex: 1

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ANNEX

THE RECOMMENDED STRUCTURE OF THE MARITIME RADIOBEACON SIGNAL

1. 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.

2. 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 to be 38 seconds;

- optional F1B data messages transmitted from the station (or from stations in groups) in the next 22 seconds; or, if data is not transmitted, this period may be used for an extension of the long dash;

- when radiobeacons are grouped together, the stations transmit the A1A message sequentially in consecutive minutes.

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document 1072-E
12 March 1985
Original: English

PLENARY MEETING

SECOND REPORT BY THE CHAIRMAN OF COMMITTEE 4
TO THE PLENARY

The first and second series of texts adopted by Comittee 4 have been forwarded to the Editorial Committee (see Documents 1057 and 1066).

These texts will be submitted to the Plenary by the Editorial Committee.

L.W. BARCLAY
Chairman of Committee 4

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INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document 1073-E
15 March 1985
Original: English

PLENARY MEETING

MINUTES

OF THE

SECOND PLENARY MEETING

Monday, 11 March 1985, at 1125 hrs

Chairman: Mr. T. HAHKIO (Finland)

Subjects discussed:		Documents
1.	Report of Committee 2	1056
2.	First report by the Chairman of Committee 4	1034
3.	First report of Committee 5	1038
4.	First series of texts submitted by the Editorial Committee for first reading (B.1)	1045

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1. Report of Committee 2 (Document 1056)

1.1 The Chairman of Committee 2, introducing the report contained in Document 1056, requested the Plenary Meeting to authorize the Working Group of which he was Chairman, to check the credentials deposited by delegations after 8 March 1985 and to report back to Plenary.

It was so agreed.

The report of Committee 2, contained in Document 1056, was approved.

2. First report by the Chairman of Committee 4 (Document 1034)

2.1 The Chairman of Committee 4, introducing the first report contained in Document 1034, suggested that the document should be treated as an information paper, since its substantial points were contained in Document 1053 and it would save time if they were considered at the same time as that document.

It was so agreed.

3. First report of Committee 5 (Document 1038)

3.1 The Chairman of Committee 5, introducing the first report contained in Document 1038, said that the first series of texts was submitted by Committee 5 to the Editorial Committee in Document 1039. The report drew attention to the question of the date of entry into force of the Agreement and the date of implementation of the Plan. The delegate of Yugoslavia had made a reservation with regard to the latter date.

At its third and last meeting, Committee 5 had considered the documents transmitted to it by Committee 4 and had unanimously adopted a draft Resolution. Agreement could not be reached on a second draft Resolution and he had been authorized to set up an ad hoc Group to prepare a text for submission to Plenary in that connection.

4. First series of texts submitted by the Editorial Committee for first reading (B.1) (Document 1045)

4.1 The Chairman invited comments on Document 1045.

4.2 The Chairman of Committee 5 considered that all controversial passages should be placed between square brackets for study by an ad hoc Group with a view to submitting an agreed text to the next Plenary.

It was so agreed.

4.3 The delegate of Portugal suggested that in Article 1 the definition of Radio Regulations should be amended to read: "the Radio Regulations, Geneva 1979 as revised by the 1983 Mobile Services Conference, annexed to the Convention."

After a discussion in which the delegates of the USSR and Finland took part, it was so agreed.

4.4 In reply to a point raised by the Chairman of the IFRB, the Chairman of Committee 5 said that the words "and its appendices" should be deleted if in fact there were no appendices to the Plan.

4.5 The Chairman of Committee 4 said that point could not be cleared up until Committee 4 had met.

4.6 The Chairman proposed that the words in question should be placed in square brackets for the time being. That was an editorial matter which could be dealt with in due course.

It was so agreed.

4.7 The delegate of Finland said that no deadline had been set in paragraph 10 of Article 4 for the application of the procedure in question. Consequently there was a risk that a new or modified assignment might be put into service and cause harmful interference before the coordination procedure had been carried out.

4.8 The delegate of Sweden, referring to the same paragraph, wondered why the administration concerned could not inform the IFRB earlier than 90 days before the date in question.

4.9 The representative of the IFRB said that any amendment of paragraph 10 along the lines suggested by the delegates of Finland and Sweden would involve amending not only paragraph 10, but also paragraphs 13 and 14 in addition to the insertion of a new paragraph for which he had already prepared a draft.

4.10 The Chairman said that the proposed new paragraph should be transmitted to the Chairman of Committee 5. Consideration of paragraphs 10, 13 and 14 would thus be deferred. Any subsequent changes in the numbering of the paragraphs was an editorial matter.

It was so agreed.

4.11 The delegate of Sweden suggested that the last sentence in the third sub-paragraph of paragraph 12 should refer to the paragraph as a whole and should therefore be made a separate sub-paragraph in paragraph 12.

It was so agreed.

4.12 The delegate of Finland suggested that paragraph 24 under Article 6 could be made clearer by modifying the last clause to read as follows:

"... shall not start until the assignment which was the reason for the unfavourable finding is brought into service".

It was so agreed.

4.13 The delegate of the Federal Republic of Germany wished to have the text of the annex referred to in paragraph 25.

4.14 The Chairman of Committee 5 said that the matter was covered by Annex 3 and its appendices of Document 1053.

4.15 The delegate of the Federal Republic of Germany felt that another appendix needed to be added to Annex 3 to cover paragraph 25.

4.16 The delegate of Spain said that an ad hoc Group of Committee 5 had agreed on a draft paragraph 25 worded:

> "For the purpose of these examinations the Board shall apply the technical criteria contained in the Rules of the IFRB."

No annex was mentioned.

4.17 The delegate of the Federal Republic of Germany said there still remained to be solved the question of compatibility analysis criteria in respect of ground-wave propagation and sky-wave propagation. The Chairman of Committee 4 said that the Plan only considered ground-wave propagation and he understood that also applied to the IFRB standards. The representative of the IFRB suggested that, in view of the complexity of the matter, paragraph 25 should be placed in square brackets. The Chairman of Committee 5 agreed that placing the paragraph in square brackets would remove all ambiguity in the matter.

It was so agreed to deal with the point later.

4.18 The delegate of France said that Articles 13 and 14 were closely linked. The position as he understood it was that there was a legal void between the date of the abrogation of the Paris Agreement and the entry into force of the Agreement under discussion.

4.19 After a long discussion on the legal position in which the delegates of France, the United Kingdom and the Netherlands, the Chairman of Committee 5 and the representative of the IFRB took part, the Chairman proposed that a Working Group should be set up, under the chairmanship of Mr. Bisner, to study Articles 13 and 14 and, if necessary, prepare new texts for the next Plenary Meeting with particular reference to the date of entry into force of the new Agreement and the date of the expiry of the Paris Agreement.

It was so decided.

4.20 The delegate of the Netherlands said that he found inconsistencies in the text in respect of such expressions as IFRB, the Board, radiobeacons, radiobeacon stations and so forth.

4.21 The Chairman of the Editorial Committee renewed his invitation to the delegate of the Netherlands to take part in the Committee's work with a view to ironing out those inconsistencies.

4.22 The delegate of Sweden, supported by the delegates of the Federal Republic of Germany, the United Kingdom, the Netherlands, Denmark, Norway, Ireland and Italy said that there should be a single date for the entry into force of the Agreement and the implementation of the Plan.

4.23 The delegate of France, supported by the delegates of Portugal and Yugoslavia, on the other hand, said that there should be two dates.

4.24 The Chairman observed that the majority opinion was in favour of a single date and appealed to the delegates to agree on that date.

4.25 The delegates of the Federal Republic of Germany, the United Kingdom, the Netherlands, Denmark and Norway supported the Swedish suggestion that it should be 1990 at the latest.

4.26 The delegate of Italy preferred 1992, and the delegate of Turkey 1995.

4.27 The Chairman suggested that the next Plenary Meeting should choose that single date, while those who preferred two dates should enter a reservation to that effect.

It was so decided.

The meeting rose at 1240 hours.

The Secretary: The Chairman:

R.E. BUTLER T. HAHKIO

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document 1074-E
12 March 1985
Original: English

Source: Documents 1053 (B.3), 1057(Corr.1), 1066, 1071

PLENARY MEETING

NOTE FROM THE CHAIRMAN OF AD HOC GROUP 1

OF THE PLENARY TO THE PLENARY MEETING

In accordance with the decisions taken at the third Plenary Meeting, the text of the attached Recommendation is submitted by the Plenary Meeting.

L.W. BARCLAY
Chairman of ad hoc Group 1

Annex: 1

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.

ANNEX

RECOMMENDATION No. COM 4/B (EMA)

Relating to the Minimum Technical Characteristics to be Adopted for Maritime Radiobeacons in the Band 283.5 - 315 kHz

The Regional Administrative Conference for the Planning of the Maritime Radionavigation Service (Radiobeacons) in the Band 283.5 - 315 kHz 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 characteristics and the technical conditions contained in Annexes A, B and C to this Recommendation.

ANNEX A

Minimum Technical Characteristics for Maritime Radiobeacons in the Band 283.5 - 315 kHz

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. Appendix 7 of the Radio Regulations, Geneva, 1979, applies to transmitter frequency tolerance of A1A emissions.

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

6. Appendix 8 of the Radio Regulations, Geneva, 1979, applies to maximum 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 to be 38 seconds;

- optional F1B data messages transmitted from the station (or from stations in groups) in the next 22 seconds; or, if data is not transmitted, this period may be used for an extension of 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 taken again at regular intervals not exceeding one year.

Radiobeacon transmissions

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 12;

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

c) the transmitted signal is correct;

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

STANDBY EQUIPMENT

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

ANNEX B

Minimum Technical Characteristics for Maritime Radio Direction-Finders Working on Frequencies Between 283.5 kHz and 315 kHz

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 permitted to transmit as a further aid to navigation. Such transmissions should be on the radiobeacon assigned frequency and be class F1B emissions.

SELECTIVITY

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

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

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

c) for 60 dB attenuation 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, or less than, 50 μV/m should produce a signal in the headphones of a receiver with a S/N ratio of 20 dB or higher, sufficient to identify and indicate the bearing of the transmitting station with a bearing readout accuracy within ±1 degree of the correct bearing.

MISCELLANEOUS CHARACTERISTICS

6. Maritime radio direction-finders should include means by which A1A identification signals can be recognized.

7. The receivers 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 electro-magnetically screened. All joints should be watertight.

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

---

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

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

6. A means of providing information on the ships' 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 put into operation and each time the position of the antennas or the conductors referred to above are changed or the superstructure of the vessel 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 substantially in error.

9. When calibrating the radio direction-finder 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.

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document 1075-E
13 March 1985

PLENARY MEETING

FINAL PROTOCOL

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 Area (Region 1) (Geneva, 1985), the undersigned delegates take note of the following statements made by signatory delegations.

1

Original: French

For Portugal:

The delegation of Portugal to the Regional Administrative Radio Conference for the Planning of Frequencies for Maritime 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 radiocommunciation services.

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2

Original: English

For the Republic of Malta:

The Maltese Delegation to the Regional Administrative Radio Conference for the Planning of frequencies for maritime 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.

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 Radio Conference for the Planning of Frequencies for Maritime 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.

4

Original: French

For Tunisia:

In signing the Final Acts of the RARC for the Planning of Frequencies for Maritime 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 adversely affect the radiocommunication services of the Tunisian Republic.

5

Original: French

For the Kingdom of Morocco:

The towns of Sebta (Ceuta) and Melillia (Melilla) and their areas form 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.

6

Original: French

For France:

In signing the Final Acts of the Regional Administrative Radio Conference for the Planning of Frequencies for Maritime 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 or its maritime radionavigation service which uses the phase measurement multifrequency system.

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.

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.

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INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document 1076-E
12 March 1985

R.2 (EMA)

PLENARY MEETING

SECOND SERIES OF TEXTS SUBMITTED BY THE

EDITORIAL COMMITTEE TO THE PLENARY MEETING

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

Source	Document	Title
B.3	1053	Annex 1
		Annex 2
		Annex 3 and Appendices 1 and 2
B.4	1069	Res. Com. 5/1 (EMA)
B.2	1052	Res. Com. 5/2 (EMA)
B.4	1052	Res. Com. 4/1 (EMA)
B.4	1052	Rec. Com. 4/A (EMA)

J.-L. BLANC
Chairman of Editorial Committee

Annex: 13 pages

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.

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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 nm (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.

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ANNEX 2

Channelling Arrangement for Maritime Radiobeacons in the Band 283.5 - 315 kHz*

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

* 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.

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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 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.

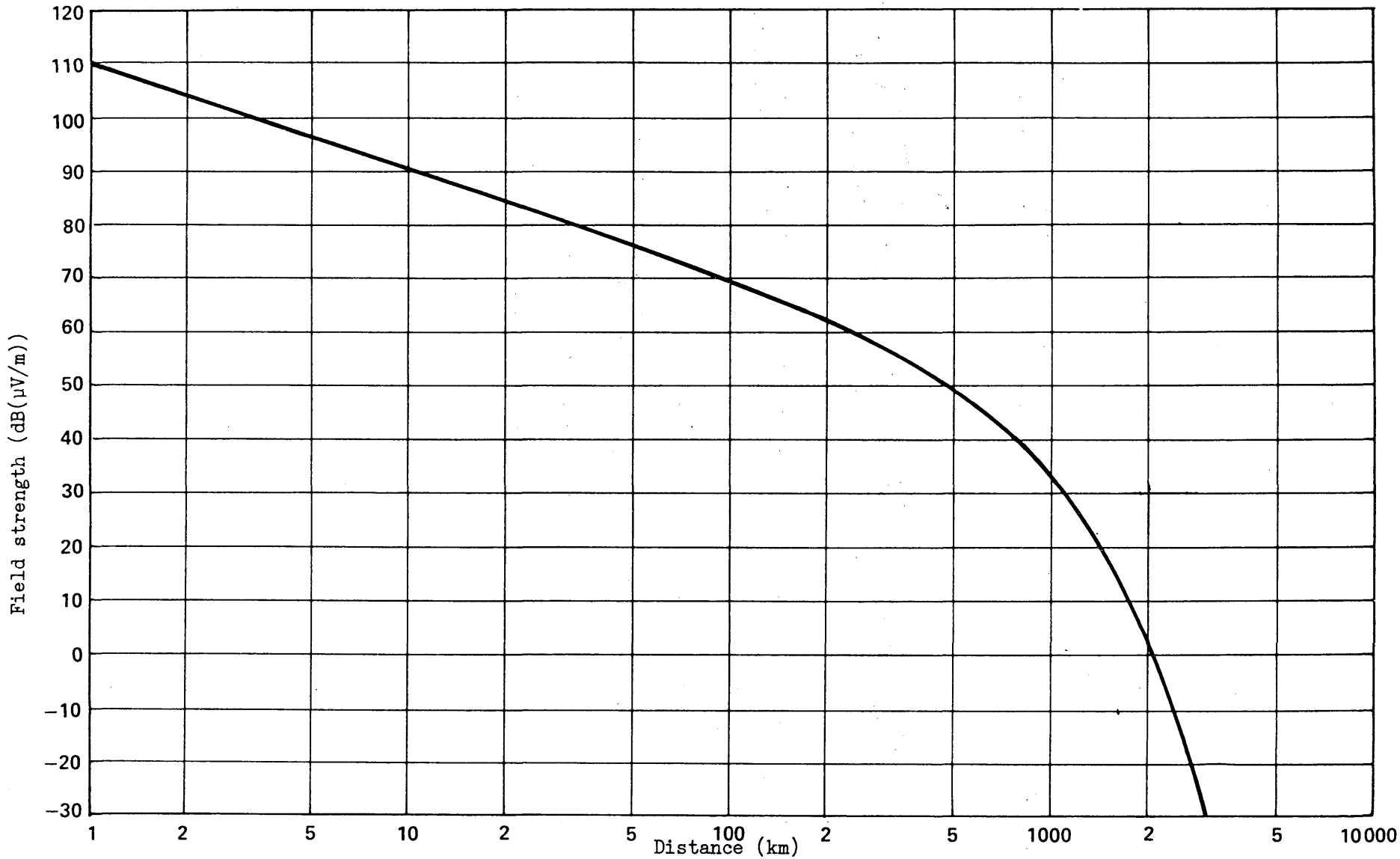

FIGURE 1

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

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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 Transmitted 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. Compatibility 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.

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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 an administration 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.

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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.

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RESOLUTION No. COM 5/1 (EMA)

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 provisions in the Annex to this Resolution shall be applicable during the period in question.

PINK PAGES

4. that new radiobeacon stations of the maritime radionavigation service brought into use before the date of entry into force of the Plan 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: 1

PINK PAGES

ANNEX TO RESOLUTION No. COM 5/1 (EMA)

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.

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RESOLUTION No. COM 5/2 (EMA)

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 for 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.

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RESOLUTION No. COM 4/1 (EMA)

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 Band 283.5 - 315 kHz 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;

5. requests 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.

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RECOMMENDATION No. COM 4/A (EMA)

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;

requests the Secretary-General

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

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INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document 1077-E
12 March 1985

B.5 (EMA) PLENARY MEETING

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

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

Source	Document	Title
GR ad hoc PL	1074	Recommendation No. COM 4/B (EMA)

J.-L. BLANC
Chairman of the Editorial Committee

Annex: 5 pages

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.

RECOMMENDATION No. COM 4/B (EMA)

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. Appendix 7 to the Radio Regulations specifies the transmitter frequency tolerance of A1A emissions.

5. Transmitters of F1B emissions should maintain their assigned frequency within 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.

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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 within 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.

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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 a 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 receivers 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.

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

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

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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 substantially 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.

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document 1078-E
14 March 1985
Original: English

COMMITTEE 4

SUMMARY RECORD

OF THE

SIXTH AND LAST MEETING OF COMMITTEE 4 (EMA)

Monday, 11 March 1985, at 1410 hrs

Chairman: Mr. L.W. BARCLAY (United Kingdom)

Subjects discussed:		Documents
1.	Draft Recommendation	1043(Rev.1)
2.	The F1B emission	DT/1010 + Add.1 1058
3.	The structure of the maritime radiobeacon signal	1062
4.	Accuracy of timing	1057, Annex 4 § 11 and § 14
5.	First series of texts submitted by ad hoc Group 1 of Committee 5 to the Editorial Committee	1059
6.	Consideration of the draft Plan	1051 + Add.1 1063
7.	Approval of the summary records of Committee 4	-
8.	Proposed amendment to Document 1053	1053
9.	Completion of the work of the Committee	

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.

1. Draft Recommendation (Document 1043(Rev.1))

1.1 The delegate of France introduced the draft Recommendation which had been amended in the light of comments at the fifth meeting.

Further drafting amendments were made by the delegates of the Federal Republic of Germany, the United Kingdom, the USSR and Finland and by the representatives of IMO and IALA, and it was agreed to add a new section following invites the CCIR, to read:

"invites the Secretary-General to draw this Recommendation to the attention of the IMO and the IALA;"

Draft Recommendation COM 4/...(EMA) was approved, as amended.

2. The F1B emission (Documents DT/1010 + Add.1 and 1058)

2.1 The Chairman of ad hoc Group 4, referring to Addendum 1 to Document DT/1010, observed that all the national administrations with the exception of Sweden were now ready to accept the IALA compromise data message format.

2.2 The delegate of Sweden explained that his Administration took the view that the IALA solution did not take sufficient account of the single beacon situation.

2.3 The Chairman, said that the Committee could either adopt the compromise solution, leaving Sweden the option to place a reservation, or adopt the draft Resolution in Document 1058 to the effect that there were still doubts on the matter and that further studies were needed.

2.4 The delegates of the USSR and Italy favoured the second alternative.

2.5 The delegate of Algeria suggested deleting the text following the word "trials" under resolves 2, since there was no obligation for administrations to report to the Mobile Services WARC. The delegate of the USSR added that the CCIR was already required to report to that Conference under resolves 1.

Draft Resolution COM 4/1 (EMA) in Document 1058 was approved, subject to that deletion.

3. The structure of the maritime radiobeacon signal (Document 1062)

3.1 The Chairman proposed to add a preamble in the form of a Recommendation, the existing text of Document 1062 then forming an Annex.

3.2 The delegate of the Federal Republic of Germany felt that the text should be somewhat more mandatory than a Recommendation and proposed including it as Appendix 3 to Annex 3 of the Plan.

3. The Chairman invited opinions on whether the data signal format should be discussed at the present Conference or at the Mobile Services WARC in 1987.

3.4 The delegate of the USSR felt that discussions at present would be pre-empting the mandate of the 1987 Conference; it would be wrong to bind other Regions on a matter of equipment which was of world-wide concern and in any case it would be premature to take a decision before the CCIR had completed its studies. The delegate of the German Democratic Republic endorsed that view.

3.5 The delegate of France stressed that it was necessary to take action without delay in order to avoid any confusion between the provisions of the Plan and those of the Paris Agreement.

3.6 The delegates of the Federal Republic of Germany, Spain and the United Kingdom felt it was essential to include information on the signal in the Agreement. The delegate of the Federal Republic of Germany supported that view and added that he considered it unlikely that the 1987 Conference would be prepared to discuss a matter of regional interest.

3.7 The delegate of the USSR said that a possible solution which had been adopted by the Maritime Mobile Services Conference in 1974 would be for the CCIR to prepare a Recommendation which would then be submitted to administrations by the Secretary-General and come into force subject to their approval. In the meantime the Conference might adopt a decision in respect of Documents 1062, 1058 and 1053 to the effect that the existing CCIR Recommendations should apply to the signal format.

3.8 The delegates of France and the Federal Republic of Germany stressed that the decision should be non-mandatory on the lines of the "in principle" requirements of the Paris Agreement. The delegate of the USSR strongly endorsed that view, believing that the decision should take the form of a guideline issued for information.

3.9 In the light of those comments as well as technical queries on the content of the document by the delegates of the USSR and Italy, the Chairman suggested that the text should be redrafted by an ad hoc Group, giving more detail concerning the composition of the signal, ensuring greater clarity and taking a more circumspect approach to the question of the F1 part of the signal. The conclusions of the Group would be submitted directly to the Editorial Committee for subsequent consideration by the Plenary. The ad hoc Drafting Group would consist of the delegates of France, the Federal Republic of Germany, Sweden, the USSR and the United Kingdom, together with representatives of the IALA and the IMO, and himself as Chairman.

It was so agreed.

4. Accuracy of timing (Document 1057, Annex 4, paragraphs 11 and 14)

4.1 The delegate of France said that an accuracy of $\pm$ 2 seconds was adequate except in the case of transmission of brief data, when accuracy should be maintained to within 0.25 seconds.

4.2 The Chairman suggested that the question of the accuracy of timing should be taken up directly in Plenary in the light of the discussion in the ad hoc Group just set up by the Committee.

It was so agreed.

5. First series of texts submitted by ad hoc Group 1 of Committee 5 to the Editorial Committee (Document 1059)

5.1 The delegate of the Federal Republic of Germany suggested that the heading of paragraph 1.7 should read "Transmitted power" instead of "Transmitter power".

It was so agreed.

5.2 In reply to a question by the delegate of the Federal Republic of Germany, the Chairman said that the IFRB incompatibility analysis had been based on both ground-wave and sky-wave propagation and that aeronautical radionavigation stations had been taken into account in the planning. Replying to a query raised by the representative of IMO with regard to the Note to paragraph 1.4, he said that the standards indicated in the paragraph would be used when the Plan was modified in the future.

6. Consideration of the draft Plan (Documents 1051 + Add.1, 1063)

6.1 The Technical Secretary pointed out that columns 4 and 5 in Documents 1051 and 1063 should be transposed. He invited delegations to indicate minor editorial changes directly to the Secretariat.

6.2 The Chairman invited the Committee to consider the explanatory text preceding the list of maritime radiobeacons.

6.3 The delegate of Sweden remarked that column 9 (Necessary bandwidth and class of emission) was somewhat confusing.

6.4 The delegates of Italy, Yugoslavia and Spain were in favour of deleting column 9 from the Plan.

6.5 The delegates of the USSR, Libya and the German Democratic Republic considered that column 9 should be retained.

6.6 The delegate of the Federal Republic of Germany suggested that the text of paragraph 1.1 of Annex 3 (Technical data) (Document 1053, page 3) should be incorporated in the text of the Plan itself.

After further discussion, the Chairman suggested that the definition of column 9 should be maintained and that the heading of column 9 in the body of the Plan should be followed by an asterisk referring to a footnote consisting of the text of the paragraph mentioned by the Federal Republic of Germany, as follows:

> "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."

He further suggested that the indication "100HA1A" should be inserted against every entry in the Plan.

It was so agreed.

6.7 The Chairman then invited the Committee to proceed to the consideration of the Plan itself page by page, bearing in mind the additional assignments listed in Addendum 1 to Document 1051.

Page 3

6.8 The delegate of Ireland requested a modification involving items 70100 and 70099.

6.9 The delegate of the United Kingdom having drawn attention to the consequences of the proposed change for item 70689, the Chairman invited the two delegations, after consultation, to contact the Chairman of the Planning Group.

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6.10 The delegates of Ireland, Yugoslavia and Italy indicated modifications involving item 70103, item 70258, and items 70110, 70124 and 70118 respectively. (See also 6.16 below.)

Page 8

6.11 The delegate of Ireland indicated a modification involving item 70092.

Page 9

6.12 The delegate of Turkey indicated a modification involving item 70389 and pointed out that four of the Turkish stations listed were very close and likely to cause mutual interference. The Chairman replied that the stations in question would be operating on A1A in future, and thus no problems should arise.

6.13 The delegate of Yugoslavia requested that an adjustment be made between items 70259 and 70125 (Italy), since the two beacons concerned were directly opposite one another. The delegate of Italy said he could support that request.

Page 10

6.14 The delegate of Norway indicated a modification to items 70414 and 70410 on page 10.

Page 11

6.15 The delegate of Yugoslavia indicated the need for an adjustment between items 70396 and 70122 (Italy). This was supported by the delegate of Italy.

Page 12

6.16 The delegate of France requested an adjustment to item 70455, which was grouped with item 70587 (Algeria). The delegate of Algeria said he would have no objection to such a change. However, if it were made, he would request a modification to item 70620 on page 7.

Page 13

6.17 The delegate of the USSR drew attention to the fact that there were two more of his Administration's stations operating in the same group as those listed.

6.18 The delegate of France indicated a modification to items 70464 and 70438.

The draft Plan for stations in the radionavigation service (radiobeacons) for the European Maritime Area in the band 283.5 - 315 kHz was approved, subject to the amendments indicated.

6.19 The delegate of the USSR, supported by the delegate of the Federal Republic of Germany, suggested that since the figures for longitude and latitude given in columns 6 and 7 were identical, one of those columns could be deleted.

6.20 The representative of the IFRB pointed out that there were in fact two French stations for which the coordinates given in the two columns were different; the first was item 70523 in Document 1063, and the second was item 70450 on page 5 of the Plan.

6.21 The delegate of France said that in the latter case (La Rochelle) the difference should not be significant, however, he would confirm the correct transmitter location.

6.22 The Chairman of the Working Group, in reply to a question from the delegate of the Federal Republic of Germany, confirmed that the parameters used for calculations in the Plan had been the coordinates of the location of the beacon and the service range.

6.23 After the representative of the IFRB had confirmed that there were four requirements listed which were for less than 24-hour continuous operation, it was agreed to retain column 12. It was also agreed to look into the possibility of deleting column 8 (RC) and column 11 (ND).

6.24 The Chairman thanked Mr. Bergman and his Group for their many hours of hard work in producing the Plan. In reply to a question from the representative of the IFRB, he suggested that the Group be given authority to submit the modifications requested direct to the Plenary. Should it not be found possible to incorporate all those modifications into the Plan, delegations concerned would either have to be satisfied with the existing Plan, or enter their requests in the list of non-satisfied requirements (Document 1063).

It was so agreed.

6.25 The Chairman called for comments on the list of non-satisfied requirements in Document 1063.

6.26 The delegate of Sweden said that Egypt's request for two frequencies which had not been met when the Plan was being drawn up because no coordinates had been available, could now be satisfied.

6.27 The Chairman pointed out that the USSR stations listed operated just outside the band which the Conference was competent to discuss, and thus could not be incorporated in the Plan.

6.28 The delegate of France said he could agree that the nine French stations listed be omitted from the list of non-satisfied requirements, since the Conference had already in great measure met his Administration's needs. In addition, the requirements in question were covered in Document 1023.

The Committee took note of Document 1063.

7. Approval of the summary records of Committee 4

7.1 The Chairman suggested that according to usual practice, the Committee authorize him to approve the summary records as they became available.

It was so agreed.

8. Withdrawal of reservation by the Federal Republic of Germany (Document 1053)

8.1 The delegate of the Federal Republic of Germany said that if the following phrase:

"...and the direction-finder should be recalibrated if the calibration curve is found to be in error".

were added after the words "12 months" in item 8 of Document 1053 (page 11), his delegation's reservation could be withdrawn.

It was so agreed.

9. Completion of the work of the Committee

After the customary exchange or courtesies, the Chairman declared that the work of Committee 4 was completed.

The meeting rose at 1710 hours.

The Secretary: G. KOVACS

The Chairman: L.W. BARCLAY

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document 1079-E
18 March 1985
Original: English

PLENARY MEETING

MINUTES

OF THE

THIRD PLENARY MEETING (EMA)

Tuesday, 12 March 1985, at 0910 hrs

Chairman: Mr. T. HAHKIO (Finland)

Subjects discussed:		Documents
1.	Tribute to the memory of Mr. H.E. Chernenko	-
2.	Note by Chairman of Committee 4	1071
3.	Second series of texts submitted by the Editorial Committee for first reading (B.2)	1052
4.	Third series of texts submitted by the Editorial Committee for first reading (B.3)	1053 Corr.1/1057
5.	Fourth series of texts submitted by the Editorial Committee for first reading (B.4)	1069
6.	First series of texts submitted by the Editorial Committee for second reading (R.1)	1067
7.	Receipt of credentials	-
8.	Draft frequency assignment plan	1070

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1. Tribute to the memory of Mr. H.E. Chernenko

On the proposal by the Chairman, the delegates observed a minute of silence in tribute to the memory of Mr. H.E. Chernenko, Secretary of the Soviet Communist Party and Chairman of the Soviet Presidium.

2. Note by the Chairman of Committee 4 (Document 1071)

2.1 The Chairman of Committee 4 introduced the text on the recommended structure of the maritime radiobeacon signal, expressing the hope that it would form part of the technical annexes.

2.2 The Chairman proposed that the substance of the matter should be dealt with when discussing the technical annexes and that a decision as to where it would be placed could be taken later.

It was so agreed.

3. Second series of texts submitted by the Editorial Committee for first reading (B.2) (Document 1052)

3.1 The Chairman of the Editorial Committee introduced draft Resolution No. COM5/2 (EMA).

3.2 The Chairman said, in reply to a query by the delegate of the Netherlands, that it had been decided the previous day that there would be a single date for the entry into force of the Agreement and the implementation of the Plan.

3.3 After a discussion in which the Chairman, the Secretary of the Conference, the Chairman of Committee 6 and the delegate of the United Kingdom took part, the Chairman proposed that the title of the Resolution should follow the same form of words as used in the title of the Regional Agreement (Document 1067) i.e. "Planning of the Maritime Radionavigation Service (Radiobeacons)...".

It was so agreed.

The second series of texts submitted by the Editorial Committee (B.2) was approved, as amended, at first reading.

4. Third series of texts submitted by the Editorial Committee for first reading (B.3) (Document 1053, Corr.1/1057)

4.1 The Chairman of the Editorial Committee introduced the three Annexes and Appendices in Document 1053.

4.2 The Chairmen of Committee 4 and Committee 6 said that changes had been made in the text and the revised version could be found in Document 1070. The decision on those changes rested with Plenary.

4.3 The delegate of Finland objected to the use of the terms "geographical protection" and "designated for the exclusive use of the system" in the last paragraph of Annex 2, since they were not standard ITU expressions.

4.4 The Chairman of Committee 4 said that "geographical protection" had not been discussed in Committee 4 but the verb "designated" had been carefully chosen.

4.5 The delegate of Finland said that such a loose term as "designated" should not be used in connection with channelling arrangements. He therefore proposed, with the support of the representative of the IFRB, that the final paragraph be deleted.

4.6 The delegate of Tunisia wondered whether the 285.5 frequency could be protected against radio interference. His question was prompted by the fact that a 2 MW station would be broadcasting on 281 kHz in Tunisia.

4.7 The Chairman of the IFRB said that the existence of two services on adjacent bands - one of them powerful and the other very sensitive - would always cause problems, but he did not have an answer to the question asked without further study.

4.8 The Chairman of the Editorial Committee said that the lack of clarity was the product of a compromise. The matter could be clarified by substituting "protection area" for "geographical protection" and by saying at the end of the paragraph: "...for the exclusive use of hyperbolic systems."

4.9 The representative of the IFRB said that it would be difficult to accept that amendment since the IFRB had found that hyperbolic systems were not in conformity with the Table of Frequencies in the band allocated to the maritime radionavigation services (radiobeacons).

4.10 After informal consultations, the delegate of Finland proposed that the text be retained with editorial amendments changing "geographical protection" to "protection area" and replacing "this system" by "hyperbolic systems", and that it be recorded in the minutes of the meeting that the IFRB did not apply that provision as a mandatory provision.

4.11 The delegate of Algeria agreed in principle with the Finnish proposal but thought that there should be a footnote to the effect that neither the IFRB nor administrations were bound by the provision. He said it was essential to avoid taking any binding decision, particularly in respect of the 285.5 kHz frequency, in order not to prejudge the decisions to be taken by the Mobile Services WARC in 1987.

After a brief procedural discussion, in which the delegates of the USSR, the United Kingdom, France and Algeria took part, it was agreed to defer a decision on the text of such a footnote pending further informal consultations.

4.12 Referring to Annex 3, the delegate of the Federal Republic of Germany said that the word "designation" in the heading of paragraph 1.1 should be replaced by "class" to bring it into line with the text of the paragraph.

It was so agreed.

4.13 Referring to the figure on page B.3/4, the representative of the CCIR said that the caption should read: "ground-wave propagation curve for 300 kHz; ..." and the mention of 300 kHz in the figure could be deleted.

It was so agreed.

4.14 The representative of the IFRB said that the note in paragraph 1.4 concerning protection ratio was unnecessary and should be deleted.

4.15 The delegate of the United Kingdom, speaking for Committee 4, and the delegates of Algeria and Finland supported that suggestion.

It was so agreed.

4.16 The delegate of Finland, supported by the delegate of the Federal Republic of Germany, said that the verb "are" should be replaced by "may be" in the title and the first paragraph of Appendix 1 to Annex 3, since those criteria did not refer to final decisions on compatibility.

4.17 Referring to Appendix 2 to Annex 3, the delegate of Algeria wondered whether the last clause was worded in conformity with the Radio Regulations.

4.18 The Chairman of the IFRB, pointed out that the term used in the Radio Regulations was "degraded" not "impaired". It would be preferable to use the same term although there was no difference in meaning.

4.19 The Chairman said that the Editorial Committee would deal with that point.

4.20 The delegate of the Federal Republic of Germany drew attention to the lack of alignment between the French and English texts of Appendix 3 to Annex 3. Moreover, the English text was not consistent since it sometimes used the word "shall" and sometimes "should", whereas clearly the latter was appropriate throughout a Recommendation.

4.21 The delegate of Finland commenting generally on the text of the Appendix, said that some of its points constituted unnecessary duplication of the technical bases for the Frequency Plan and in some cases provisions of the Radio Regulations were duplicated in an incorrect or ambiguous form. He wondered whether it was correct for the Conference to produce technical recommendations, a task which was generally undertaken by the CCIR, and he expressed doubts regarding the utility of including the Appendix.

4.22 The Chairman of Committee 4 said that the Appendix had been discussed on several occasions in various fora. In his view, Appendix 3 to Annex 3 and the Annex in Document 1071 should be included as recommendations in the technical annexes, in which case the word "should" would prevail throughout the text. A view had been expressed that the bulk of the information in Appendix 3 should be included since much of it did not appear elsewhere and it provided useful information for manufacturers of equipment. It would be easy to draft a covering Recommendation to which the remaining text could be annexed.

4.23 The delegate of the USSR said that existing IFRB technical characteristics provided sufficient information for administrations and he would be in favour of the deletion of Appendix 3. Otherwise, a small ad hoc Group might be set up to redraft the Appendix, in order to save the time of the meeting.

4.24 The delegate of the Federal Republic of Germany said he could support the establishment of such an ad hoc Group.

4.25 The delegate of the United Kingdom, supported by the delegates of the Netherlands and Italy, said it scarcely seemed necessary to set up such a Group. He considered some of the information in Appendix 3 necessary for the successful implementation of the new radiobeacon Plan but he proposed that it should be put in the form of a Recommendation by changing the title of Appendix 3 and replacing the word "shall" by "should" throughout. He would then retain the first two parts of the Appendix and delete the recommended technical conditions for the installation and calibration of radio direction-finders in vessels, particulars of which could be found in national legislation.

4.26 After a further brief discussion, the Chairman invited the delegates of the United Kingdom, Federal Republic of Germany, USSR and France and the Chairman of Committee 4 to form an ad hoc Group to consider drafting Appendix 3 as a Recommendation taking into account all the views which had been expressed in the Plenary meeting.

It was so agreed.

The meeting was suspended at 1210 hours and resumed at 1445 hours.

4.27 Returning to the subject referred to in paragraph 4.11, the Chairman said that informal discussions had resulted in acceptance of the proposal made by the delegate of Finland that "geographical protection" should be amended to read "protection area" and that no note should be added. On the understanding that the relevant discussion would be recorded in the summary record of the meeting, other delegations had agreed to withdraw their proposals.

4.28 In reply to a question from the delegate of Algeria, the representative of the IFRB stated that the Board was not in a position to apply that provision.

5. Fourth series of texts submitted by the Editorial Committee for first reading (B.4) (Document 1069)

5.1 The Chairman of the Editorial Committee presented the two draft Resolutions and the draft Recommendation contained in Document 1069.

Resolution No. COM 5/1 (EMA)

Approved.

Resolution No. COM 4/1 (EMA)

5.2 The delegate of the Federal Republic of Germany suggested that the words "shift of 85 Hz" in considering b) should be amended to read "deviation of 85 Hz".

It was so agreed.

Resolution No. COM 4/1 (EMA), as amended, was approved.

Recommendation No. COM 4/A (EMA)

Approved.

6. First series of texts submitted by the Editorial Committee for second reading (R.1) (Document 1067)

6.1 The Chairman drew attention to the paragraphs marked * of the Regional Agreement which were submitted for first reading.

6.2 The representative of the IFRB pointed out that paragraph 13 (Article 4) of the English text should read:

" ... in any case, before bringing the assignment into use, and shall inform the Board of the results of its efforts."

In addition, the last sentence of paragraph 14 beginning "it shall inform", should be deleted since the concept was now contained in paragraph 14bis.

6.3 The Secretary-General observed that in Article 13 the words "and Replacement" should be added after "Abrogation" in the heading and that paragraph 35 should be amended to read:

"This Agreement abrogates and replaces the Regional Arrangement ...".

6.4 The Chairman said that the space between square brackets in paragraph 36 (Article 14) would be left blank and the second sentence would be deleted.

Paragraphs 10, 13, 14, 14bis, 25 and Articles 13 and 14, as amended, were approved on first reading.

6.5 With regard to the date to be inserted in Article 14, the Chairman pointed out that, since under Resolution No. 500 of WARC-79 the carrier frequencies of all LF broadcasting stations would be changed by 1 February 1990, additional provisions would have to be inserted in the Agreement under discussion if it was to be brought into force before that date. He therefore proposed the date of 1 April 1990.

6.6 The delegates of the Netherlands, the Federal Republic of Germany, Sweden and Ireland supported that proposal.

6.7 The delegates of the United Kingdom, Norway, Denmark and Spain said that they too could support the Chairman's proposal, although they would have preferred an earlier date.

6.8 The delegate of France, supported by the delegates of Yugoslavia, Greece, Belgium, Portugal, Tunisia and Algeria, proposed a date in 1995.

6.9 The delegate of Italy, supported by the delegate of the USSR, proposed 1 April 1992 as a compromise solution.

6.10 The Chairman suggested that the question should be deferred pending informal consultations and invited the meeting to proceed with the second reading of the document.

Article 3

It was agreed to delete the words "in the Annex and its Appendices" at the end of paragraph 3, and to replace "Article 4" in the last line of paragraph 4 by "Articles 4 and 5".

Article 4

6.11 The representative of the IFRB said that the references to Annex 3 in subparagraphs 9 a) and 9 b) and the reference to Annex 1 in the fourth line of paragraph 10 should all be replaced by "Appendix 1 to Annex 3".

Article 13

6.12 The delegate of the Netherlands said that the words "and the annexed Plan" should be deleted.

Article 14

6.13 The delegate of Italy suggested that the title of the Article should be changed to "Date of Entry into Force". The Secretary-General endorsed that suggestion.

The first series of texts submitted by the Editorial Committee (R.1) was approved on second reading, subject to further consideration of the date of entry into force in Article 14.

6.14 After some informal consultations, the Chairman announced that, despite his attempts to convince delegations, which were pressing for a later date, that their anxiety concerning difficulties in changing on-board equipment was unfounded, they had remained adamantly opposed to his proposal for the date of 1 April 1990. The only way out of the deadlock therefore seemed to be to consider the compromise date of 1 April 1992 proposed by the Italian delegation, which would avoid the confrontation of a vote and would certainly give administrations enough time to deal with the difficulties they saw in implementing the Agreement.

6.15 The delegates of Norway and the Netherlands said that there were no technical reasons to justify such a late date of entry into force, which would largely deprive the work of the Conference of any value. Their delegations had only reluctantly accepted the proposed date of 1 April 1990.

6.16 The delegates of France and the German Democratic Republic said that, although they would have preferred a date in 1995, they could accept the compromise of 1 April 1992.

6.17 The delegate of the USSR, supported by the delegate of Algeria, proposed 1 January 1992, to meet the preoccupations of the delegates of Norway and the Netherlands.

6.18 The delegate of the United Kingdom said that January of any year was unsuitable because of winter weather conditions. His Administration could see no operational, technical or economic reasons to justify putting the date back to 1992, which was, in its opinion, almost as ridiculous as a date in 1995. In any case, the consensus that might be reached should take account of such realities as weather conditions.

6.19 The delegate of Norway associated himself with those remarks, adding that, since April and even May were still winter months in the northern part of his country, his delegation would prefer a summer date. It would submit, however, that a date in 1992 did not represent a compromise, but merely an artificial attempt to reach a consensus. Nevertheless, it could very reluctantly bow to the majority.

6.20 In response to the Chairman's suggestion that the date might be fixed at 31 August 1991, the delegate of France said that his delegation could in no circumstance accept a date prior to 1992 and asserted that there were a number of arguments in favour of a fairly distant date of entry into force.

6.21 The Chairman observed that the consensus of the meeting, although most reluctant in certain quarters, was to fix the date of the entry into force of the Agreement at 1 April 1992.

That date for insertion in Article 14 was approved on first and second readings.

7. Receipt of credentials

7.1 The Chairman of Committee 2 said that the credentials of the delegation of Monaco had been received and found to be in good and due form.

7.2 The Secretary-General announced that the credentials of the delegation of Algeria had been received and were in the course of translation from the Arabic.

8. Draft frequency assignment plan (Document 1070)

8.1 The Chairman drew attention to the footnote on page 5 in which the words "geographical protection" in the first line should be replaced by "protection area", before inviting the meeting to examine Document 1070.

8.2 The delegate of Sweden said, with reference to page 13, that the delegate of Algeria had indicated a preference for the 311.00 kHz frequency for the Cap Sigli transmitting station.

8.3 In response to a request from the delegate of Tunisia for the Le Gallican transmitting station to be assigned the frequency 306.00 kHz, the Chairman said that it would be included in the Plan.

The draft frequency assignment plan was approved, as amended at first reading.

The meeting rose at 1725 hours.

The Secretary-General: R.E. BUTLER

The Chairman: T. HAHKIO

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document 1080-E
13 March 1985

PLENARY MEETING

ADDITIONAL DECLARATIONS

9

Original: Spanish

For Spain:

The Spanish Delegation to this Conference rejects the reservation bearing the number 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. There can therefore be no question as to Spanish sovereignty over them.

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 to 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 as 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 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 Area (Region 1) (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.

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INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document 1081-E
15 April 1985
Original: English

PLENARY MEETING

MINUTES

OF THE

FOURTH PLENARY MEETING (EMA)

Tuesday, 12 March 1985, at 2100 hrs

Chairman: Mr. T. HAHKIO (Finland)

Subjects discussed:		Documents
1.	Note from the Chairman of ad hoc Group 1	1074
2.	Draft frequency assignment plan	1070 + Add.1
3.	Approval of minutes of First Plenary Meeting	1029
4.	Maritime safety	

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.

1. Note from the Chairman of ad hoc Group 1 (Document 1074)

1.1 The Chairman of Committee 4, introducing the item in the absence of the Chairman of ad hoc Group 1, said the Note contained additional technical information for the guidance of administrations in the installation and operation of radiobeacons and in the installation and calibration of direction-finders. The information was presented in the form of a Recommendation and three annexes. In Annex A it would be noted that where frequencies were concerned, reference was made to the appropriate provision in the Radio Regulations, whereas for F1B emissions, a value for frequency tolerance was recommended. In essence, the content of the Recommendation and annexes was taken from already existing documents which had met with general approval in Committee 4.

1.2 The Chairman invited comments on Recommendation No. COM 4/B (EMA).

1.2.1 The Chairman of Committee 4 proposed that the title be amended to read "Relating to the Minimum Technical Characteristics and Conditions to be adopted for Maritime Radiobeacons and Radio Direction-Finders in the Band 283.5 - 315 kHz".

1.2.2 Further amendments to the title having been proposed, the Chairman suggested that the drafting of the title be left to the Editorial Committee, in consultation with the Chairmen of Committee 4 and ad hoc Group 1. The wording of "recommends" should be aligned with that of the title.

It was so decided.

1.3 Annex A

1.3.1 The delegate of Austria suggested that the phrase "in the Band 283.5 - 315 kHz" be deleted from the title, since it already appeared in the title of the Recommendation.

It was so agreed.

1.3.2 The representative of the IFRB proposed that the second phrase of paragraph 6 be amended to read: "... specifies maximum permitted spurious emission ... etc.". Paragraph 4 would be brought into line with that wording.

It was so agreed.

1.3.3 The delegate of the United Kingdom pointed out that in paragraph 9, the timing tolerance indicated (±2 seconds) was different from that given in Document 1053 (0.25 seconds).

1.3.4 The Chairman of Committee 4 said that in discussion in ad hoc Group 1 on timing accuracy, it had been found that a figure of ±2 seconds satisfied the requirements in paragraph 8 for basic sequence of transmission.

1.3.5 The delegate of the United Kingdom said he could accept that explanation.

1.3.6 The Chairman of Committee 4 pointed out that the heading of paragraph 12 should read: "Monitoring of radiobeacon transmissions". In sub-paragraph a), "paragraph 10" should be substituted for "paragraph 12".

1.3.7 The delegate of the United Kingdom suggested "verification of radiobeacon transmissions".

It was so agreed.

1.4 Annex B

It was agreed to delete the phrase "Working on Frequencies Between 283.5 kHz and 315 kHz" from the title, and to delete the phrase "or less than" from paragraph 5.

Recommendation No. COM 4/B (EMA) together with Annexes A, B and C, as amended, was approved.

2. Draft frequency assignment plan (Document 1070 + Add.1)

2.1 The Chairman invited the Plenary to proceed to the second reading of the draft plan.

On the suggestion of the representative of the IFRB, it was agreed to delete page 5.

The plan, as amended, was approved at second reading.

2.2 The Secretary-General said that the delegate of Algeria had raised the question of the deadline for submission to the General Secretariat of notifications of changes in names of stations. With present staff resources, he did not anticipate that it would be possible to print the Final Acts of the Conference until September. Changes could therefore be submitted for incorporation in the text up to the end of June.

3. Approval of the minutes of the first Plenary Meeting (Document 1029)

On the understanding that delegates could, if they wished, submit amendments to their own interventions, the minutes were approved.

4. Maritime safety

4.1 The delegate of the United Kingdom said that for more than sixty years the Union had encouraged the growth of maritime radiocommunications, paying particular attention to safety, and the holding of the present Conference was proof that that invaluable work was still continuing. Maritime radiobeacons were generally accepted as being vital to safety at sea, particularly for small ships, for whom radio direction-finding was the only form of radionavigation available.

Although the Conference had succeeded in producing a Plan, he had serious doubts whether those present would be able to ensure that that Plan remained protected during the seven years' waiting time before implementation. He recognized that, according to No. 598 of the Convention, the texts of the Final Acts were to be considered final once they had been approved at second reading in Plenary Meeting. However, he believed that considerations of maritime safety should have precedence over procedural considerations.

He wished to propose that the question of the year of entry into force of the Agreement (and thus the question of the year of implementation of the Plan) be reopened. If that proposal were accepted, he suggested that in order not to waste time, the Chairman might call on four speakers only (two in favour of an earlier date and two in favour of a later date) who had not already expressed views. The Conference would then be able to take a better informed decision.

4.2 The Chairman indicated that the relevant provision of the Convention had been correctly quoted but he felt that if the Conference was unanimous the matter could be reopened. He requested the advice of the Secretary-General.

4.3 The Secretary-General said that unanimity was not required for decision making; however the proposal had to be supported. As he saw the matter the question was whether or not there had been a proper second reading. In addition to No. 598 of the Convention, No. 23 was declared in regard to considerations of safety to be among the purposes of the Union.

4.4 The delegate of Sweden supported the United Kingdom proposal. Discussions in the Region 1 Conference had highlighted the problems that were likely to occur as a result of the long delay before implementation of the Plan, problems which posed a threat to maritime safety.

4.5 The delegates of the Netherlands, Norway, Ireland and Denmark also supported the United Kingdom proposal.

4.6 The delegate of France said that there were no grounds for reopening the debate, since maritime safety was assured by the radiobeacons already in existence. It would not be right to put the matter to a vote when there had been no indication beforehand that it was to be included on the Plenary's agenda, and hence a number of delegations might be absent who might have wished to take part. The date agreed had represented a compromise between those who had favoured 1988 and the equal number who had favoured 1990. Furthermore, he believed that the document had been read twice and he would like to revert to the pertinent number of the Convention as correctly indicated by the delegate of the United Kingdom.

4.7 The delegate of the USSR supported the views expressed by the delegate of France. He said that radiobeacons are at present in operation and safety of navigation is ensured. It cannot be said that the Plan just approved will alone ensure the safety of maritime navigation and he considered that the debate on the year of entry into force cannot be reopened.

4.8 The delegates of Yugoslavia, the German Democratic Republic, Turkey, Italy, Greece, Poland, Cyprus, Belgium and Portugal supported the position of France.

4.9 The Chairman asked the delegate of the United Kingdom, as the author of the proposal, if he wished to reconsider the situation.

4.10 The delegate of the United Kingdom said he could not withdraw his proposal. There was in fact nothing in the Convention to prohibit the reopening of the question of date of entry into force, and no real arguments had been advanced against it. He was surprised that it should be argued either that the Plan had no connection with safety, or that its implementation would call for costly replacement of equipment; those were total misconceptions.

4.11 The Chairman, in reply to a point of order raised by the delegate of France, said it was true that date of entry into force had not initially been included on the Plenary's agenda. However the meeting was deadlocked and a decision was necessary on whether or not discussion be reopened on the year of implementation.

4.12 The delegate of Algeria, on a point of order, proposed the suspension of the debate. After some clarification by the Secretary-General, the delegate of Algeria indicated that his proposal was for suspension of the meeting under No. 516 of the Convention and that (unless agreement had first been reached between administrations) a vote should be taken at the beginning of the next Plenary Meeting.

4.13 The delegates of Italy and Tunisia supported that proposal.

It was so decided.

The meeting rose at 2310 hours.

The Secretary-General:

R.E. BUTLER

The Chairman:

T. HAHKIO

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document 1082-E
18 March 1985
Original: English

PLENARY MEETING

MINUTES

OF THE

FIFTH PLENARY MEETING (EMA)

Wednesday, 13 March 1985, at 0900 hrs

Chairman: Mr. T. HAHKIO (Finland)

Subjects discussed:	Document
1. Procedural motion of the delegation of the United Kingdom	-
2. Fifth series of texts submitted by the Editorial Committee for first and second reading (B.5)	1077
3. Second series of texts submitted by the Editorial Committee for second reading (R.2)	1076

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.

1. Procedural motion submitted by the delegation of the United Kingdom

1.1 The Chairman said that the first item before the meeting was the procedural motion submitted by the delegation of the United Kingdom that discussion of the year at which the Agreement was to enter into force should be reopened.

1.2 The delegate of the United Kingdom requested that a roll call vote be taken, under No. 548 of the Convention, to clarify the position of every delegation in that matter.

1.3 The delegate of the Netherlands supported the delegate of the United Kingdom.

1.4 The delegate of France said that the text of the Regional Agreement had been read twice and approved in Plenary. Therefore, under No. 598 of the Convention, that text was final and it would be contrary to the Convention to discuss the matter any further.

1.5 The delegate of Italy supported the delegate of France.

1.6 The delegate of the USSR pointed out that under No. 549 of the Convention a roll call vote could be taken if at least two delegations so requested but he appealed to the delegate of the United Kingdom to withdraw his motion in order not to hold up the work of the Conference.

1.7 The delegate of France, speaking on a point of order, reiterated that No. 598 of the Convention was applicable to the matter under consideration; the point at issue was in fact one of substance and not of procedure.

1.8 The delegate of the United Kingdom said that there was a clear division of opinion on the motion which the Conference was free to accept or reject. He suggested that the only way to settle the issue was to conduct the roll call vote on that purely procedural question, which had been requested under No. 548 of the Convention.

1.9 The delegate of Algeria said that it should be made clear that the vote was for or against the United Kingdom motion.

1.10 The results of the roll call vote on the United Kingdom motion were:

In favour: Austria, Denmark, Federal Republic of Germany, Ireland, Netherlands, Norway, Spain, Sweden, Turkey, United Kingdom

Against: Algeria, Belgium, Bulgaria, Cyprus, Czechoslovakia, France, German Democratic Republic, Greece, Italy, Libya, Malta, Monaco, Morocco, Poland, Romania, Tunisia, Union of Soviet Socialist Republics, Yugoslavia

Abstaining: Finland, Hungary, Portugal

The motion submitted by the United Kingdom was rejected by 18 votes to 10, with three abstentions.

1.11 The delegate of the United Kingdom said that he would bow to the clearly expressed opinion of the majority on that important matter. His delegation had currently to reconsider very carefully its attitude towards the Plan.

2. Fifth series of texts submitted by the Editorial Committee for first and second reading (B.5) (Document 1077)

2.1 The Chairman invited comment on the draft Recommendation in Document 1077.

2.2 The representative of the IFRB pointed out that the French and English texts of recommends were not aligned.

2.3 The delegate of Finland said he had understood that "technical" should refer only to "characteristics" and not to "conditions".

2.4 The delegate of Sweden, supported by the delegate of France, proposed that the text should remain unchanged in both English and French.

It was so agreed.

2.5 The delegate of Spain, referring to paragraph 4 of Annex A, said that Appendix 7 to the Radio Regulations made various references to A1A emissions and specified different tolerances. It might be preferable to give an exact figure for tolerance as was done in paragraph 5.

2.6 The delegate of Finland suggested that to cover that point paragraph 4 might be amended to read:

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

It was so agreed.

The fifth series of texts submitted by the Editorial Committee (B.5), as amended, was approved at first and second reading.

3. Second series of texts submitted by the Editorial Committee for second reading (R.2) (Document 1076)

3.1 The Chairman drew attention to the Annexes, Appendices, draft Resolutions and Recommendations contained in Document 1076.

The second series of texts submitted by the Editorial Committee (R.2) was approved at second reading.

The meeting rose at 1020 hours.

The Secretary-General: The Chairman:

R.E. BUTLER T. HAHKIO

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document 1083-E
26 March 1985
Original: English

PLENARY MEETING

MINUTES

OF THE

SIXTH PLENARY MEETING (EMA)

Wednesday, 13 March 1985, at 1735 hrs

Chairman: Mr. T. HAHKIO (Finland)

Subjects discussed:	Documents
1. Report of Committee 3	1049(Rev.1)
2. Declarations concerning the Final Acts	1075

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.

1. Report of Committee 3 (Document 1049(Rev.1))

1.1 The Chairman of the Budget Control Committee, introducing the document, drew attention to the Committee's proposal in section 3 that one-third of the cost of preparation of the Final Acts should be charged to the budget of the Conferences and two-thirds to the supplementary publications budget. Annex 1 presented the budget of the Conferences as at 8 March 1985. It could be seen that there was a credit of 242,500 Swiss francs in relation to the approved budget. As mentioned in section 6, the Administrative Council had decided that two-thirds of the cost of the Conferences should be borne by RARC MM-R1 and one-third by RARC EMA. Annex 4 contained a note by the Chairman of the IFRB setting out provisional estimates of the IFRB requirements for immediate post-Conference work, while Annex 5 reproduced a memorandum from the Director of the CCIR relating to a required budgetary provision of 50,000 Swiss francs to fund CCIR studies in prepartion for the 1987 Conference. The Committee had not considered those proposals, which should be submitted to the Administrative Council through the usual channels.

1.2 The Secretary-General, referring to the provisional estimates in Annex 4, noted that in recent years the Administrative Council had identified immediate post-Conference work with the budget of the particular Conference. He therefore suggested that the saving of 242,500 Swiss francs on the current Conference expenditure might be used to fund the immediate post-Conference work.

He noted the estimate of 50,000 Swiss francs given in the memorandum in Annex 5 (CCIR) referred only to part of the cost of the Interim Working Party meetings: the cost of document preparation might amount to an additional 20,000 Swiss francs. He would examine the proposal with the Director of CCIR and transmit it to the Administrative Council at the appropriate time.

The Report of the Budget Control Committee was approved.

2. Declarations concerning the Final Acts (Document 1075)

2.1 In response to interventions by the delegates of Israel and Algeria, the Chairman ruled that according to the usual practice of the Union, the declarations contained in the Document should be considered purely as national statements of views, which the Plenary was invited to note without discussion. Any statement on behalf of Israel would be the subject of an additional Declaration. Delegations were entitled to submit, by 1930 hours, additional Declarations pertaining to the first set of Declarations, to be noted by the next Plenary Meeting.

On that understanding, Document 1075 was noted.

The meeting rose at 1805 hours.

The Secretary-General: The Chairman:

R.E. BUTLER T. HAHKIO

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document 1084-E
25 March 1985
Original: English

PLENARY MEETING

MINUTES

OF THE

SEVENTH PLENARY MEETING (EMA)

Wednesday, 13 March 1985, at 2210 hrs

Chairman: Mr. T. HAHKIO (Finland)

Subjects discussed:	Document
1. Additional Declarations concerning the Final Acts	1080

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1. Additional Declarations concerning the Final Acts (Document 1080)

Document 1080 was noted.

The meeting rose at 2215 hours.

The Secretary-General

R.E. BUTLER:

The Chairman:

T. HAHKIO

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document 1085-E
26 March 1985
Original: English

PLENARY MEETING

MINUTES

OF THE

EIGHTH AND LAST PLENARY MEETING (EMA)

Wednesday, 13 March 1985, at 2240 hrs

Chairman: Mr. T. HAHKIO (Finland)

Subjects discussed:

1. Signing ceremony

2. Closure of the Conference

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1. Signature of the Final Acts

1.1 The Secretary-General explained the procedure for the signature of the Final Acts. The Executive Secretary then called the roll of the delegations whose credentials had been found in order.

The Final Acts and the Final Protocol were signed by the 32 countries listed in the Annex hereto.

2. Closure of the Conference

2.1 The Chairman said he wished to express his satisfaction with the successful results of the Conference as set out in the Final Acts that had just been signed. It indeed redounded to the credit of all the participants to have achieved those results in a mere ten days, particularly since some of them had had to support and assist such an inexperienced Chairman as himself: he was most grateful for the understanding that had been shown to him in his errors and had learned a great deal from the valuable advice he had been given. He was also grateful to the Vice-Chairmen for their support, to the Committee Chairmen and Vice-Chairmen and to the various Working and ad hoc Groups which had done so much important work during the Conference. Special thanks were due to the workhorses of the Conference, the frequency planning experts, particularly those of the Swedish delegation. His profound gratitude also went to the Secretary-General and his staff and to the Chairman of the IFRB, the other members of the Board and the specialized secretariat for their unfailing support and the benefit of their experience. Finally, he thanked the interpreters, the staff behind the scenes and all concerned for their contributions to what had been a memorable ten days of his life.

2.2 The delegate of France, speaking as the representative of the country which had given its name to the Regional Arrangement just abrogated by the signature of the Final Acts, expressed his delegation's gratitude to the Chairman for the excellent work done and for the guidance which had enabled the Conference to reach a consensus on some very difficult problems.

2.3 The Secretary-General thanked the Chairman for his kind words to all those who had done their best to assist the Conference. Throughout the deliberations, the Chairman had shown exemplary firmness and unfailing courtesy to all and had succeeded in relieving the tension that had sometimes arisen by characteristic flashes of humour.

2.4 The delegate of Sweden said that his delegation wished to congratulate the Chairman on the very elegant way in which he had presided over the Conference; his claim to inexperience was due to excessive modesty, for his expert knowledge of the subject of the Conference was renowned. Sweden was grateful for his kind words concerning its delegation's frequency planning experts and in turn wished to thank the ITU Computer Department for its constant cooperation.

2.5 The Chairman declared the Conference closed.

The meeting rose at 2310 hours.

The Secretary-General: R.E. BUTLER

The Chairman: T. HAHKIO

Annex: 1

ANNEX

The following delegations signed the Final Acts and the Final Protocol:

People's Democratic Republic of Alergia, 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.

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document 1086-E
8 May 1985
Original: French

REGION 1

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE MARITIME MOBILE SERVICE AND THE AERONAUTICAL RADIONAVIGATION SERVICE IN CERTAIN PARTS OF THE MF BAND IN REGION 1
GENEVA, FEBRUARY/MARCH 1985

Document 164-E
8 May 1985
Original: French

COMMITTEE 3

SUMMARY RECORD

OF THE

THIRD MEETING OF COMMITTEE 3 OF RARC MM-R1

AND

SECOND MEETING OF COMMITTEE 3 OF RARC EMA

Tuesday, 12 March 1985, at 1615 hrs

Co-Chairmen: Mr. S.S. AL-BASHEER (Saudi Arabia) (MM-R1)
Mr. P. CAREY (Ireland) (EMA)

Subjects discussed:	Documents
1. Summary record of the second meeting of Committee 3 of RARC MM-R1 and of the first meeting of Committee 3 of RARC EMA	97, 1046
2. Position of accounts of the two Conferences	106, 1047
3. Draft report of Committee 3 to the Plenary Meetings of RARC MM-R1 and RARC EMA	107, 1049
4. Other business	

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1. Summary record of the second meeting of Committee 3 of RARC MM-R1 and of the first meeting of Committee 3 of RARC EMA (Document 97/1046)

1.1 Document 97/1046 was adopted without comment.

2. Position of accounts of the two Conferences (Document 106/1047)

2.1 The Secretary presented Document 106/1047 setting out the position of accounts of the two Conferences at 8 March 1985. The position showed a margin of about 12%.

2.2 The Chairman noted with satisfaction the savings made in the Conference accounts.

2.3 The Committee noted Document 106/1047.

3. Draft report of Committee 3 to the Plenary Meetings of RARC MM-R1 and RARC EMA (Document 107/1049)

3.1 The Secretary drew attention to Document DT/1011 which stated that Document 107/1049 was a draft report which would be revised before being approved by the Plenary Meetings of the two Conferences.

3.2 The Secretary then introduced the document in question. He quoted the figures that would have to be added to the document and gave the following clarifications.

3.3 Section 2 - second paragraph - the budget had been adjusted to read "138,000 Swiss francs".

3.4 Section 4 - final paragraph - total expenditure had been estimated at "1,888,500 Swiss francs", thus leaving a margin of "242,500 Swiss francs".

3.5 Section 5 - the IALA had decided to participate in the work of the Conference in the half-unit class (see Annex 2).

3.6 Section 6 - fourth paragraph - total expenditure was estimated at "1,888,500 Swiss francs", the amount of the contributory units being estimated at:

RARC MM-R1	"5,250 Swiss francs",
RARC EMA	"2,975 Swiss francs".

3.7 Section 7 - to be completed as soon as further information became available. With the exception of a memorandum from the Director of the CCIR, no document had been forthcoming. The Secretary proposed that the memorandum be included in the report to the Plenary Meeting.

3.8 The Chairman thanked the Secretary for his clarifications concerning the draft report. The report would be published in revised form with the figures given by the Secretary, and the memorandum from the Director of the CCIR would be annexed to it.

3.9 The Chairman of the IFRB said it was difficult at the present stage to estimate what work the IFRB would have to perform after the Conference since certain decisions had yet to be taken. For the work to be done immediately after the Conference, however, the IFRB would need one P.4 and one G.4 for a period of one year. That should be regarded as a provisional estimate and the IFRB would be submitting a detailed report to the Administrative Council.

3.10 The Secretary pointed out that since the summary records of the Budget Control Committee were not transmitted to the Administrative Council, the IFRB would have to submit its comments to the Plenary Meeting.

3.11 The Chairman of the IFRB assented and said that the request would be submitted in a note which could be attached to the report.

3.12 The Chairman agreed to that procedure: the report to the Plenary Meetings would therefore be supplemented by the two annexes from the CCIR and the IFRB.

3.13 The Chairman thanked the Co-Chairman, Mr. Carey, the delegations present and the representatives of the General Secretariat, the IFRB and the CCIR for their collaboration.

The meeting rose at 1630 hours.

The Secretary:

R. PRELAZ

The Chairmen:

S.S. AL-BASHEER (RARC MM-R1)
P. CAREY (RARC EMA)

UNION INTERNATIONALE DES TÉLÉCOMMUNICATIONS
CARR POUR LA PLANIFICATION DES FRÉQUENCES UTILISÉES PAR LES RADIOPHARES MARITIMES DANS LA ZONE EUROPÉENNE MARITIME
GENÈVE, MARS 1985

EUROP

Document 1087-F/E/S
1er avril 1985

LISTE DES PARTICIPANTS - LIST OF PARTICIPANTS - LISTA DE PARTICIPANTES

Cette liste comprend les sections suivantes — This list includes the following sections — Esta lista comprende las secciones siguientes

I Membres de la Zone européenne maritime — Members of the European Maritime Area — Miembros de la Zona Marítima Europea

II Autres Membres — Other Members — Otros Miembros

III Exploitations privées reconnues — Recognized private operating agencies — Empresas privadas de explotación reconocidas

IV Organisations internationales — International Organizations — Organizaciones Internacionales

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- IV.2 Institutions spécialisées — Specialized Agencies — Instituciones especializadas
- IV.3 Organisations régionales (Art. 32 de la Convention) — Regional Organizations (Art. 32 of the Convention) — Organizaciones regionales (Art. 32 del Convenio)
- IV.4 Autres Organisations — Other Organizations — Otras Organizaciones

V Siège de l'Union — Headquarters of the Union — Sede de la Unión

VI Secrétariat de la Conférence — Secretariat of the Conference — Secretaría de la Conferencia

***

Symboles utilisés — Symbols used — Símbolos utilizados

C : Chef de délégation — Head of delegation — Jefe de delegación
CA : Chef adjoint — Deputy Head — Subjefe
D : Délégué — Delegate — Delegado
A : Conseiller — Adviser — Asesor

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IV. ORGANISATIONS INTERNATIONALES — INTERNATIONAL ORGANIZATIONS — ORGANIZACIONES INTERNACIONALES

IV.1 NATIONS UNIES — UNITED NATIONS — NACIONES UNIDAS

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M. J. Jipguep, Vice-Secrétaire général
Assistante: Mme C. Pierrard

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M. R. Prélaz, Département des finances
M. I. Uygur, Département de la coopération technique
M. J. Francis, Département des relations extérieures
M. L. Goelzer, Département de l'ordinateur
M. J.-P. Christinat, Département des conférences et services communs

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Assistante: Mme J. Fox

M. V.V. Kozlov, Vice-Président
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M. A. Berrada, Membre
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M. Y. Kurihara, Membre
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M. M. Sant, Secrétaire technique du Comité
Assistante: Mlle T. Morrissey

V.3 CCIR

M. R.C. Kirby, Directeur
Assistante: Mme D. Torrent

M. Ch. Stettler, Conseiller

V.4 CCITT

M. Th. Irmer, Directeur
Assistante: Mme C. Vigneulle

VI. SECRETARIAT DE LA CONFERENCE - SECRETARIAT OF THE CONFERENCE - SECRETARÍA DE LA CONFERENCIA

VI.1 Secrétaire de la Conférence

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

VI.2 Séances plénières et commissions

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Commission 2	:	M. R. Macheret Assistante: Mlle H. Tulloch
Commission 3	:	M. R. Prélaz Assistante: Mme P. Bertinotti
Commission 4	:	M. G. Kovacs, assisté de M. O. Villanyi
Commission 5	:	M. J. Balfroid, assisté de M. J. Bacaly
Commission 6	:	M. P.A. Traub Assistante: Mlle J. Collet

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Assistantes administratives

Mlle M.L. Arocena
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M. A. Cabrera
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Groupe RR (Opérations)

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M. S.T. Brewer
Mme S. Petter

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VI.4	Affaires de caractère légal	:	M. A. Noll Assistante: Mlle M.J. Urena

VI.5 Division "Services de la Conférence"

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Service des procès-verbalistes	:	Mlle J. Barley
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Salles	:	Mlle Ch. Clin
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Division de Reprographie	:	M. Ph. Constantin Assistant: M. J. Allinger
- Distribution des documents	:	M. G. Delaye
Secrétaire du Président de la Conférence	:	Mme R.A. Chantre
Huissiers	:	M. G. Cudré-Mauroux

INTERNATIONAL TELECOMMUNICATION UNION
RARC FOR THE PLANNING OF FREQUENCIES FOR MARITIME RADIOBEACONS IN THE EUROPEAN MARITIME AREA
GENEVA, MARCH 1985

EUROP.

Document 1088-E
24 May 1985

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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.

B. Complete list of documents in numerical order

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1006 + Add.1, 2 + Corr.1/Add.2	SG	Report by the IFRB to the Conference	C.4
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1010	SG	Budget of the Conference	C.3
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1015	SG	Note by the IFRB on the status of the primary and permitted services in connection with planning and notifications	C.4
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1021	SG	Secretariat of the Conference	-
1022	C.1	General schedule of the work of the Conference	-
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1024	SG	Information on relevant recommendations and requirements adopted by IMO	C.4
1025	SG	Position of the Conference accounts at 28 February 1985	C.3
1026	PL	Structure of the Conference	-
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1031	C.5	Summary Record of the 1st meeting of Committee 5	C.5
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1034	C.4	First report by the Chairman of Committee 4 to the Plenary	PL
1035	C.3	Note by the Chairman of Committee 3 to the Chairmen of Committees 4 and 5	C.4, C.5
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1041	C.6	Summary Record of the 1st meetings of the Editorial Committee (MM & EMA)	C.6
1042	C.4	Summary Record of the 2nd meeting of Committee 4	C.4
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1048	C.5	Summary Record of the 2nd meeting of Committee 5	C.5
1049(Rev.1)	C.3	Report of the Budget Control Committee (MM & EMA)	PL
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1052	C.6	B.2	PL

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1055	C.4	Summary Record of the fourth meeting	C.4
1056 +Corr.1 & 2	C.2	Report of Committee 2 to the Plenary	PL
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1058	ad hoc Group 4 C.4	Report of the Chairman - Draft Resolution COM 4/1	C.4
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