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POST OFFICE ENGINEERING DEPARTMENT

RADIO REPORT NO.1396

THE PREDICTION OF RADIO FREQUENCIES FOR MARINE COMMUNICATION WITH BURNHAM

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SUMMARY

The report briefly describes the scope and method of use of the first of a series of predictions of the best marine mobile bands for long-distance communication between Burnham, England, and ships in the North and South Atlantic and the Mediterranean. The predictions have been prepared in the form of tables, a sample page of which is attached. Provided that the latitude and longitude of the ship's position are known, the best marine band for communication with Burnham at any time may be ascertained directly from the tables.

CONTENTS

1./

1. INTRODUCTION

In order to assist ships' operators in the choice of high frequencies for long-distance communication with Burnham, England, predictions of the best marine mobile bands for various latitudes and longitudes have been prepared. The first set of predictions covers the North and South Atlantic, between latitudes 70°N and 50°S, and the Mediterranean, and each 2-hour period throughout the 24 hours for each month from January to June 1946.

2. SCOPE OF PREDICTIONS

The regions covered have been divided into areas bounded by five degrees each of longitude and latitude; and predictions of the best marine mobile band for use throughout each 2-hour period have been prepared for ships in any area. The bands indicated are equally suitable for transmissions to or from Burnham. The predictions take the form of tables and a sample sheet is attached at the end of the report. The various marine mobile bands are represented by round figures and the actual bands, as agreed at the International Telecommunication Conferences, Cairo, 1938, are given in an appendix for reference purposes. In general, transmissions from ships are made in the "low tolerance" portions of each band, indicated in the Appendix. The 5.5 and 11 Mc/s. bands are usually reserved for inter-ship working and for this reason have not been included in the present predictions; neither have the 22 and 25 Mc/s. bands, on account of their limited utility at the present portion of the sunspot cycle.

Each page side of the tables of predictions covers a range of five degrees of latitude and gives the appropriate marine band for every five degrees of longitude in the regions covered by the predictions, and for every 2-hour period through the 24 hours. Separate tables have been prepared for each month. Thus, at any time, an operator, knowing the latitude and longitude of the ship's position, can obtain directly from the tables the best marine mobile band for transmission to or from Burnham. The gaps in the tables correspond, of course, to areas outside the regions that have been considered, and for which no predictions have as yet been prepared.

If, at any time, abnormal transmission conditions make it difficult to establish contact when using a frequency in the predicted band, the next lower band should be tried, and failing that, the next higher band.

It is desirable to emphasise that the times given in the tables are in Greenwich Mean Time.

3. CONCLUSION

The frequency predictions described above are the first of a series that it is hoped to prepare at regular intervals and which will be issued by the General Post Office for the guidance of operators associated with the British long-distance marine radio-telegraph service.

APPENDIX/

APPENDIX

MARINE MOBILE BANDS

NOMINAL BAND	ACTUAL BAND	LOW TOLERANCE PORTION
4 Mc/s.	4000 to 4480 and 4530 to 5500 kc/s.	4115 to 4165 kc/s.
5.5 Mc/s.	5500 to 5640 kc/s.	5500 to 5550 kc/s.
6 Mc/s.	6200 to 6500 and 6600 to 6675 kc/s.	6200 to 6250 kc/s.
8 Mc/s.	8200 to 8480 and 8580 to 8900 kc/s.	8230 to 8330 kc/s.
11 Mc/s.	11000 to 11300 kc/s.	11000 to 11100 kc/s.
12 Mc/s.	12300 to 12770 and 12830 to 13350 kc/s.	12340 to 12500 kc/s.
16 Mc/s.	16400 to 17250 and 17375 to 17750 kc/s.	16460 to 16660 kc/s.
22 Mc/s.	21750 to 23200 kc/s.	22000 to 22200 kc/s.
25 Mc/s.	23380 to 25000 kc/s.	Nil

MONTH:- JUNE 1946 LATITUDE:- 10-15°S

RECOMMENDED FREQUENCY BANDS FOR COMMUNICATION WITH BURNHAM

Longitude:- Degrees WEST of Greenwich	TIME (G.M.T.)											
	00-02	02-04	04-06	06-08	08-10	10-12	12-14	14-16	16-18	18-20	20-22	22-24
0-5	8	8	8	12	16	16	16	16	16	16	12	8
5-10	8	8	8	12	16	16	16	16	16	16	12	8
10-15	8	8	8	8	16	16	16	16	16	16	16	8
15-20	8	8	8	8	16	16	16	16	16	16	16	8
20-25	8	8	8	8	12	16	16	16	16	16	16	12
25-30	8	8	8	8	12	16	16	16	16	16	16	12
30-35	8	8	8	8	12	16	16	16	16	16	16	12
35-40	8	8	8	8	12	16	16	16	16	16	16	12
40-45												
45-50												
50-55												
55-60												
60-65												
65-70												
70-75												
75-80												
80-85												
85-90												
90-95												
95-100												
100-105												
105-110												
110-115												
115-120												
120-125												
125-130												
130-135												
135-140												
140-145												
145-150												
150-155												
155-160												
160-165												
165-170												
170-175												
175-180												

Longitude:- Degrees EAST of Greenwich	TIME (G.M.T.)											
	00-02	02-04	04-06	06-08	08-10	10-12	12-14	14-16	16-18	18-20	20-22	22-24
0-5	8	8	8	12	16	16	16	16	16	16	12	8
5-10	8	8	8	12	16	16	16	16	16	16	12	8
10-15	8	8	8	12	16	16	16	16	16	16	12	8
15-20												
20-25												
25-30												
30-35												
35-40												
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115-120												
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125-130												
130-135												
135-140												
140-145												
145-150												
150-155												
155-160												
160-165												
165-170												
170-175												
175-180												

MONTH:- JUNE 1946 LATITUDE:- 15-20°S

RECOMMENDED FREQUENCY BANDS FOR COMMUNICATION WITH BURNHAM

Longitude:- Degrees WEST of Greenwich	TIME (G.M.T.).											
	00-02	02-04	04-06	06-08	08-10	10-12	12-14	14-16	16-18	18-20	20-22	22-24
0-5	8	8	8	12	16	16	16	16	16	16	16	8
5-10	8	8	8	8	16	16	16	16	16	16	16	8
10-15	8	8	8	8	16	16	16	16	16	16	16	8
15-20	8	8	8	8	16	16	16	16	16	16	16	12
20-25	8	8	8	8	16	16	16	16	16	16	16	12
25-30	8	8	8	8	12	16	16	16	16	16	16	12
30-35	8	8	8	8	12	16	16	16	16	16	16	12
35-40	8	8	8	8	12	16	16	16	16	16	16	12
40-45												
45-50												
50-55												
55-60												
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120-125												
125-130												
130-135												
135-140												
140-145												
145-150												
150-155												
155-160												
160-165												
165-170												
170-175												
175-180												

Longitude:- Degrees EAST of Greenwich	TIME (G.M.T.)											
	00-02	02-04	04-06	06-08	08-10	10-12	12-14	14-16	16-18	18-20	20-22	22-24
0-5	8	8	8	12	16	16	16	16	16	16	16	8
5-10	8	8	8	12	16	16	16	16	16	16	12	8
10-15	8	8	8	12	16	16	16	16	16	16	12	8
15-20												
20-25												
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