DNC 14(AU) NON-REGISTERED

UNCLASSIFIED

RECOMMENDED FREQUENCY BANDS

AND

FREQUENCY GUIDE

DNC 14(AU)

DEPARTMENT OF THE NAVY

OFFICE OF THE CHIEF OF NAVAL OPERATIONS

UNCLASSIFIED

DEPARTMENT OF THE NAVY
OFFICE OF THE CHIEF OF NAVAL OPERATIONS
WASHINGTON 25, D. C.

30 Nov 1953

LETTER OF PROMULGATION

1. DNC 14(AU), RECOMMENDED FREQUENCY BANDS AND FREQUENCY GUIDE, is an unclassified, nonregistered communication publication issued to the U. S. Naval Service, containing tables of recommended radio frequencies and a frequency guide for operating personnel.

2. This publication is EFFECTIVE for use during the month of March 1954. It is distributed within the U. S. Navy through the facilities of the Registered Publication System in accordance with the allowances contained in the effective edition of the Registered Publication Allowance Tables.

3. This publication may be retained for reference purposes or destroyed after the period covered by the predictions is ended. No report of destruction is required.

W. B. AMMON
Rear Admiral, U. S. Navy
Director, Naval Communications
By direction

TABLE OF CONTENTS

Basic data used in the compilation of the Tables and Guide contained herein are furnished by Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D. C.

RECOMMENDED FREQUENCY BANDS FOR SHIPS AND AIRCRAFT IN THE ATLANTIC AND PACIFIC - - - - - - MARCH 1954

These tables show frequency bands recommended for use under normal conditions for communication to and from certain bases, for distances between 250 and 2,500 nautical miles from the base for all bases listed, and, in addition, up to 5,000 nautical miles for the bases Pearl Harbor, San Francisco, Guam and Manila. (One nautical mile = 1.152 ordinary or "statute" miles = 1.853 kilometers). The frequency bands listed as 2, 3, 4, 5, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24 and 26 megacycles in the table cover frequencies approximately as follows:

Designated band	Frequencies
2	2.0 to 2.9 Mc
3	3.0 3.9 Mc
4	4.0 4.9 Mc
5	5.0 5.9 Mc
6	6.0 7.9 Mc
8	8.0 9.9 Mc
10	10.0 to 11.9 Mc
12	12.0 to 13.9 Mc
14	14.0 to 15.9 Mc
16	16.0 to 17.9 Mc
18	18.0 to 19.9 Mc
20	20.0 to 21.9 Mc
22	22.0 to 23.9 Mc
24	24.0 to 25.9 Mc
26	26.0 to 27.9 Mc

Separate tables are attached for communication with each base as follows:

Atlantic

Argentia, N.F.
Balboa, C.Z.
Guantanamo Bay, Cuba
Port Lyautey, Morocco
San Juan, P.R.
Washington, D.C.

Persian Gulf

Bahrein Is.

Pacific

Adak, Alaska
Kodiak, Alaska
Seattle, Wash.
Guam, Marianas Is.
Pearl Harbor, T.H.
San Francisco, Calif.
Manila, P.I.
Yokosuka, Japan

European Area

Bremerhaven
Trieste

The tables herewith are for March; tables for subsequent months will be forwarded periodically. The tables are for each hour of the day, GCT, for the four principal directions (North, East, South, West) of the base from the ship or other mobile unit, and for distances of the ship or other mobile unit from the base between 250 and 2,500 nautical miles, for all bases listed, and for bearings of the base from the ship at intervals of 30°, and for distances up to 5,000 nautical miles, for the bases Pearl Harbor, San Francisco, Guam and Manila. When any frequency band shown in the table is not available, preference should be given to the next lower of the available bands.

INSTRUCTIONS FOR USE

A. When time of use does not coincide with exact hour:

The frequency listed for a given hour GCT is usable within a half hour of the given time.

Example: A frequency listed for 0900 GCT will be usable from 0830 to 0930 GCT; before 0830 GCT the 0800 GCT value should be used, and after 0930 GCT the 1000 GCT value should be used.

B. When direction of base is not exactly that of the bearings given in the tables:

The direction given in the column headings, N, E, S, W are the bearings of the base from the ship, not the ship from the base. For directions of transmission in the quadrants between any two of the cardinal points given, the frequency used should be the lower of the two.

Examples:

(a) Ship 1,700 nautical miles southeast of Argentia, Newfoundland, at 1100 GCT, March - - 1954. Transmission is to the northwest. From the table, the frequency for transmission to the west is 8 Mc and for transmission to the north is 10 Mc. The frequency to be used is thus in the 8 Mc band.

(b) Ship at 3,300 miles from Pearl Harbor, T.H., at 0800 GCT March - -1954, bearing of Pearl Harbor from ship 110° (south of east). From the table the frequency of transmission for distances between 3,000 and 3,500 nautical miles toward the east (90° bearings) is 16 Mc and for a bearing of 120° (south of east) is 8 Mc. The frequency to be used is thus in the 8 Mc band.

C. General example of use:

Ship 2,400 nautical miles northeast of Guam Island, at 1300 GCT March -- 1954. Transmission is to be southwest. 2,400 miles is between 2,000 and 2,500 nautical miles. From the table, the frequency for this distance is 6 Mc for transmission south and 18 Mc for transmission west at 1300 GCT. The frequency to be used is thus in the 6 Mc band.

D. Upon receipt of an Ionospheric Disturbance Warning:

During a period of disturbed ionospheric conditions (magnetic disturbances), it may be expected that the higher frequencies will be affected first, so that it is often necessary to lower the frequency to keep in communication. Relays should be attempted through points within 35 degrees of the equator. (Note: The warnings apply only to the North Atlantic, Alaska, and the Aleutian Areas).

Sudden Ionospheric Disturbances (SID) are not forecast. During SID, the lower frequencies are absorbed first and recover last. During SID of low intensity, transmissions may continue to be possible on the higher frequencies. SID occur only in the daylight hemisphere and are characterized by approximately simultaneous fadeouts on a large range of the useful high frequencies.

Frequency bands, in megacycles, recommended for radio communication with:

ARGENTIA, N. F.

MARCH 1954

GCT	Distance in Nautical Miles and Direction of Base from Ship																GCT
	250 - 500				500 - 1,000				1,000 - 1,500				1,500 - 2,000				2,000 - 2,500				
	N	E	S	W	N	E	S	W	N	E	S	W	N	E	S	W	N	E	S	W	
00	2	2	2	2	3	3	3	2	5	5	16	4	6	6	5	5	6	6	6	5	00
01	2	2	2	2	2	2	2	2	4	5	16	3	5	6	5	5	6	6	5	5	01
02	2	2	2	2	2	2	2	2	4	4	18	3	5	5	5	4	6	6	5	5	02
03	2	2	2	2	2	2	2	2	4	3	18	3	5	5	5	4	6	5	5	5	03
04	2	2	2	2	2	2	2	2	3	3	20	2	5	4	5	4	6	5	5	5	04
05	2	2	2	2	2	2	2	2	3	3	20	2	5	4	4	4	8	5	5	5	05
06	2	2	2	2	2	2	2	2	3	2	20	2	5	4	4	4	6	5	5	5	06
07	2	2	2	2	2	2	2	2	3	2	20	2	5	4	4	4	6	5	5	5	07
08	2	2	2	2	2	2	2	2	2	2	18	2	4	4	4	4	5	5	5	5	08
09	2	2	2	2	2	2	2	2	3	2	16	4	5	4	5	5	5	5	5	6	09
10	2	2	2	2	3	2	3	4	5	2	5	6	6	4	5	8	10	5	5	8	10
11	3	3	3	3	5	5	5	5	8	5	6	8	10	5	6	8	14	5	6	8	11
12	3	3	3	3	6	6	6	6	10	8	8	10	12	6	8	10	14	6	8	10	12
13	4	4	4	4	6	6	6	6	10	8	10	10	12	8	8	10	14	8	8	10	13
14	4	4	4	4	8	6	6	6	12	10	10	10	12	10	10	10	14	8	8	10	14
15	4	4	4	4	8	6	6	6	12	10	10	12	12	10	10	10	16	10	10	10	15
16	4	4	4	4	8	6	6	6	12	10	10	10	14	10	10	10	18	10	10	10	16
17	4	4	4	4	8	6	6	6	12	12	10	10	14	10	10	10	18	10	10	10	17
18	4	4	4	4	6	6	6	6	12	10	10	10	14	10	10	10	18	10	8	10	18
19	4	4	4	4	6	6	6	6	10	10	8	8	14	10	8	10	18	10	8	10	19
20	4	4	4	4	6	6	5	5	10	8	8	6	14	10	8	8	18	10	8	8	20
21	4	4	3	4	5	5	5	5	8	8	6	6	12	10	8	8	16	10	8	8	21
22	3	3	3	3	5	4	4	4	8	6	5	6	12	8	6	6	14	10	8	6	22
23	3	3	2	2	4	4	3	3	6	6	5	5	8	8	6	6	10	8	6	6	23

BALBOA, C.Z.

MARCH 1954

GCT	Distance in Nautical Miles and Direction of Base from Ship																GCT
	250 - 500				500 - 1,000				1,000 - 1,500				1,500 - 2,000				2,000 - 2,500				
	N	E	S	W	N	E	S	W	N	E	S	W	N	E	S	W	N	E	S	W	
00	6	6	6	6	8	8	6	6	18	16	10	12	24	22	14	14	22	26	14	14	00
01	5	5	5	5	6	6	5	5	14	12	8	8	22	16	10	10	22	20	10	10	01
02	4	4	3	4	5	5	4	4	12	8	5	6	18	12	6	8	20	16	6	8	02
03	3	3	2	3	5	4	3	4	10	6	5	5	16	10	6	6	20	12	6	8	03
04	3	3	2	3	4	3	3	4	8	6	5	6	14	6	6	8	20	8	6	8	04
05	2	3	3	3	4	4	4	4	8	6	5	6	14	8	8	8	18	8	8	8	05
06	3	3	3	3	4	4	4	4	6	6	6	6	12	8	8	8	16	8	8	8	06
07	3	3	3	3	4	4	4	3	6	6	6	5	10	8	8	6	12	10	8	6	07
08	2	2	2	2	3	3	3	2	5	5	6	4	8	8	8	5	10	8	8	5	08
09	2	2	2	2	2	2	2	2	4	4	5	4	6	5	8	5	8	6	8	5	09
10	2	2	2	2	2	2	2	2	4	4	4	4	5	5	6	5	6	5	6	6	10
11	2	2	2	2	2	2	2	3	4	4	4	6	5	5	6	10	5	5	6	14	11
12	4	4	4	5	5	5	5	5	14	5	8	10	14	6	12	14	16	5	12	16	12
13	5	5	5	5	6	6	6	6	18	10	10	12	18	12	14	16	20	12	14	18	13
14	6	5	6	6	8	6	8	8	22	10	12	14	20	14	14	18	22	16	16	20	14
15	6	6	6	6	8	8	8	8	24	12	12	14	20	16	14	20	20	18	16	22	15
16	6	6	6	6	12	8	8	8	26	14	14	16	20	18	16	22	20	20	16	24	16
17	8	6	6	8	12	8	8	10	26	16	14	16	20	20	18	22	18	22	18	26	17
18	8	8	8	8	12	10	10	10	26	16	16	18	20	22	20	24	18	24	20	26	18
19	8	8	8	8	10	10	10	10	24	18	16	20	22	24	20	26	20	26	20	26	19
20	10	8	8	10	12	10	10	12	22	20	18	20	22	24	20	26	22	26	20	26	20
21	10	10	8	10	12	12	10	12	20	20	16	20	24	26	20	26	22	26	20	26	21
22	10	10	8	8	12	12	10	10	22	22	14	18	24	26	18	22	24	26	18	24	22
23	8	8	6	8	10	10	8	8	22	18	12	14	26	24	16	18	24	26	16	20	23

Frequency bands, in megacycles, recommended for radio communication with:

GUANTANAMO BAY, CUBA

MARCH 1954

GCT	Distance in Nautical Miles and Direction of Base from Ship																GCT
	250 - 500				500 - 1,000				1,000 - 1,500				1,500 - 2,000				2,000 - 2,500				
	N	E	S	W	N	E	S	W	N	E	S	W	N	E	S	W	N	E	S	W	
00	5	5	5	5	6	6	5	5	12	10	8	8	18	16	10	8	24	16	12	8	00
01	3	4	3	3	5	5	4	3	8	8	6	5	14	12	8	6	18	14	8	6	01
02	2	2	2	2	3	3	3	3	6	5	5	5	10	8	6	6	16	10	6	6	02
03	2	2	2	2	3	3	3	3	5	5	5	5	8	6	5	6	12	6	6	8	03
04	2	2	2	2	3	3	3	3	5	5	5	5	8	6	5	8	12	6	5	8	04
05	3	3	3	3	4	3	3	3	6	5	5	5	8	6	6	8	10	6	5	8	05
06	3	3	3	3	4	4	4	4	6	6	5	6	8	8	6	8	10	8	5	10	06
07	3	3	3	3	4	4	4	4	5	6	5	6	6	8	5	8	8	8	5	8	07
08	3	3	3	3	3	4	4	3	5	6	5	5	5	8	5	8	6	10	5	8	08
09	2	2	2	2	2	3	3	3	4	5	5	5	5	8	5	6	5	10	5	6	09
10	2	2	2	2	2	2	2	2	4	5	4	4	5	6	5	6	5	8	5	8	10
11	2	2	2	2	3	2	3	4	5	4	5	8	6	5	6	12	6	6	5	14	11
12	5	5	5	5	5	5	5	6	8	6	8	10	12	6	10	14	14	6	10	16	12
13	5	5	5	5	6	6	6	6	10	10	10	12	14	12	12	14	18	14	12	16	13
14	5	5	5	5	8	6	8	8	12	10	12	12	18	14	12	16	20	16	12	16	14
15	6	5	5	5	8	8	8	8	14	12	12	12	20	14	12	16	22	16	12	18	15
16	6	6	6	6	8	8	8	8	14	12	12	14	20	16	12	18	22	16	12	20	16
17	6	6	6	6	8	8	8	8	16	14	12	14	22	16	14	20	24	18	14	22	17
18	6	6	6	6	10	8	8	8	18	14	12	16	24	20	14	22	26	20	14	22	18
19	8	8	6	8	10	8	8	8	18	16	12	16	26	20	16	20	26	22	16	22	19
20	8	6	6	6	10	8	8	8	20	16	12	14	26	22	16	18	26	22	16	20	20
21	6	6	6	6	10	8	8	8	20	16	12	14	26	20	14	18	26	22	16	18	21
22	6	6	6	6	8	8	6	6	18	14	12	12	26	18	14	16	26	20	14	16	22
23	6	5	5	5	8	6	6	6	16	12	10	10	24	16	12	12	26	18	12	12	23

PORT LYAUTEY, MOROCCO

MARCH 1954

GCT	Distance in Nautical Miles and Direction of Base from Ship																GCT
	250 - 500				500 - 1,000				1,000 - 1,500				1,500 - 2,000				2,000 - 2,500				
	N	E	S	W	N	E	S	W	N	E	S	W	N	E	S	W	N	E	S	W	
00	2	2	2	2	2	3	2	2	5	5	5	5	6	5	5	6	12	5	5	6	00
01	2	2	2	2	2	2	2	2	5	5	5	5	6	5	5	6	10	5	5	6	01
02	2	2	2	2	2	2	2	2	5	5	5	5	6	4	5	6	8	5	5	6	02
03	2	2	2	2	2	2	2	2	4	5	5	5	5	4	5	6	6	5	5	6	03
04	2	2	2	2	2	2	2	2	4	5	4	4	5	4	5	5	8	4	5	6	04
05	2	2	2	2	2	2	2	2	3	5	4	4	4	3	5	5	6	4	4	6	05
06	2	2	2	2	2	2	2	3	3	4	4	5	4	3	5	8	5	4	4	12	06
07	4	3	3	4	5	3	4	5	8	5	6	8	10	4	6	12	12	4	6	12	07
08	5	4	4	5	6	5	5	6	8	8	8	10	14	6	10	12	16	5	10	14	08
09	5	5	5	5	6	6	6	6	10	8	10	10	16	10	10	12	20	8	12	14	09
10	5	5	5	5	8	6	6	8	12	10	10	12	18	10	12	14	22	10	12	14	10
11	5	5	5	5	8	8	8	8	14	12	12	12	20	10	12	14	24	10	12	16	11
12	6	5	5	5	8	8	8	8	14	12	12	12	24	12	12	16	26	12	12	16	12
13	6	5	5	5	8	8	8	8	18	12	12	12	24	12	12	16	26	12	14	16	13
14	6	5	5	5	8	8	8	8	18	12	12	12	26	12	12	16	26	12	14	16	14
15	6	5	5	5	8	8	6	6	18	12	10	12	26	12	12	16	26	12	14	16	15
16	5	5	5	5	8	6	6	6	16	12	10	12	26	14	12	14	26	14	14	16	16
17	5	5	5	5	6	6	6	6	14	12	10	10	22	14	12	14	26	14	14	14	17
18	5	5	5	5	6	6	6	6	12	10	10	10	18	12	12	12	26	14	14	12	18
19	4	5	5	4	5	5	5	5	8	10	8	6	14	12	12	10	20	12	14	10	19
20	3	3	3	3	4	4	4	4	6	8	6	6	10	10	10	8	16	12	12	8	20
21	2	3	3	3	3	4	4	3	5	6	6	5	10	8	8	6	14	10	8	8	21
22	2	2	2	2	2	3	3	3	5	5	5	5	8	6	6	6	14	8	6	6	22
23	2	2	2	2	2	3	3	3	5	5	5	5	6	5	5	6	12	6	5	6	23

Frequency bands, in megacycles, recommended for radio communication with:

SAN JUAN, P. R.

MARCH 1954

GCT	Distance in Nautical Miles and Direction of Base from Ship																GCT
	250 - 500				500 - 1,000				1,000 - 1,500				1,500 - 2,000				2,000 - 2,500				
	N	E	S	W	N	E	S	W	N	E	S	W	N	E	S	W	N	E	S	W	
00	4	4	4	4	5	5	5	4	10	10	6	6	16	14	8	6	22	16	10	8	00
01	2	2	2	2	4	4	3	3	8	6	5	5	12	10	6	6	18	12	6	6	01
02	2	2	2	2	3	3	3	3	6	5	5	5	10	6	5	6	14	8	6	8	02
03	2	2	2	2	3	3	3	3	5	5	5	5	8	6	5	6	12	6	6	8	03
04	3	3	3	3	3	3	3	3	6	5	5	5	8	6	6	8	12	6	5	8	04
05	3	3	3	3	4	4	4	4	6	6	5	6	8	8	6	8	10	8	5	10	05
06	3	3	3	3	4	4	4	4	6	6	6	6	8	8	6	8	10	8	5	10	06
07	3	3	3	3	3	4	4	4	5	6	6	5	6	8	6	8	8	10	5	8	07
08	2	2	3	2	2	3	3	3	4	6	5	5	5	8	5	6	6	10	5	6	08
09	2	2	2	2	2	2	3	2	4	5	5	4	5	6	5	5	5	8	5	6	09
10	2	2	2	2	2	2	2	3	4	4	4	6	5	5	5	10	5	6	5	14	10
11	4	4	4	5	5	4	5	5	8	5	8	10	10	6	8	14	12	6	8	16	11
12	5	5	5	5	6	6	6	6	10	10	8	10	14	12	12	14	18	12	12	16	12
13	5	5	5	5	6	6	6	8	12	10	10	12	18	14	12	16	20	16	12	18	13
14	6	5	5	5	8	8	8	8	14	12	12	12	20	14	12	16	22	16	12	18	14
15	6	6	5	6	8	8	8	8	14	12	12	14	20	16	12	18	22	18	12	20	15
16	6	6	6	6	8	8	8	8	16	14	12	14	22	16	14	20	24	18	14	22	16
17	6	6	6	6	10	8	8	8	18	14	12	16	24	20	16	22	26	20	16	24	17
18	8	8	6	8	10	10	8	10	18	16	12	16	24	20	16	22	26	22	16	24	18
19	8	8	8	8	10	10	8	10	20	16	12	16	26	22	16	20	26	24	16	22	19
20	8	6	6	6	10	10	8	8	20	16	12	14	26	22	16	18	26	24	16	20	20
21	6	6	6	6	10	8	8	8	18	16	12	12	26	20	14	16	26	24	16	18	21
22	6	6	6	6	8	8	6	6	16	14	10	12	24	18	14	14	26	20	14	16	22
23	5	5	5	5	6	6	6	6	14	12	8	8	22	16	12	12	26	18	12	12	23

WASHINGTON, D. C.

MARCH 1954

GCT	Distance in Nautical Miles and Direction of Base from Ship																GCT
	250 - 500				500 - 1,000				1,000 - 1,500				1,500 - 2,000				2,000 - 2,500				
	N	E	S	W	N	E	S	W	N	E	S	W	N	E	S	W	N	E	S	W	
00	4	4	4	4	5	5	4	4	8	8	6	6	12	10	8	6	14	12	8	8	00
01	3	3	3	3	4	4	4	3	6	6	5	5	8	8	6	5	10	10	6	6	01
02	2	2	2	2	2	3	2	2	5	5	5	4	6	8	5	5	6	8	6	5	02
03	2	2	2	2	2	2	2	2	5	4	4	4	6	6	5	5	6	6	5	5	03
04	2	2	2	2	2	2	2	2	5	4	3	3	6	5	4	4	8	5	5	5	04
05	2	2	2	2	2	2	2	2	5	3	3	3	6	5	4	4	8	5	5	5	05
06	2	2	2	2	2	2	2	2	5	3	2	3	8	4	4	3	8	5	5	4	06
07	2	2	2	2	2	2	2	2	5	3	2	2	8	4	4	3	10	5	5	4	07
08	2	2	2	2	2	2	2	2	5	3	2	2	8	3	4	3	10	4	5	4	08
09	2	2	2	2	2	2	2	2	4	2	2	2	6	3	4	3	8	4	5	4	09
10	2	2	2	2	2	2	2	2	4	2	2	2	5	3	4	4	6	4	5	5	10
11	2	2	2	2	2	2	2	3	5	2	3	5	6	3	4	8	8	4	5	8	11
12	3	3	3	3	5	4	5	5	8	4	6	8	10	4	6	8	14	4	6	10	12
13	4	4	3	4	6	5	6	6	10	8	8	10	14	6	8	10	16	6	8	10	13
14	4	4	4	4	6	6	6	6	10	8	10	10	14	8	10	10	16	8	8	10	14
15	4	4	4	4	8	6	6	8	12	10	10	12	14	10	10	12	16	10	10	12	15
16	4	4	4	4	8	8	8	8	12	12	10	12	14	10	10	12	18	10	10	12	16
17	5	5	4	4	8	8	8	8	12	12	12	12	16	12	10	12	20	10	10	12	17
18	5	5	4	5	8	8	8	8	12	12	12	12	18	12	10	12	22	12	10	12	18
19	5	5	5	5	8	8	6	6	12	12	10	10	18	12	10	12	22	12	10	12	19
20	5	5	5	5	6	6	6	6	12	12	10	10	18	12	10	12	22	12	10	12	20
21	5	5	5	5	6	6	6	6	12	10	8	10	16	12	10	12	20	12	10	12	21
22	5	5	5	5	6	6	5	5	10	10	8	8	16	12	10	10	18	12	10	10	22
23	4	4	4	4	5	5	5	5	10	8	6	6	14	12	8	8	16	12	8	8	23

Frequency bands, in megacycles, recommended for radio communication with:

BAHREIN ISLAND, PERSIAN GULF

MARCH 1954

GCT	Distance in Nautical Miles and Direction of Base from Ship																GCT
	250 - 500				500 - 1,000				1,000 - 1,500				1,500 - 2,000				2,000 - 2,500				
	N	E	S	W	N	E	S	W	N	E	S	W	N	E	S	W	N	E	S	W	
00	2	2	2	2	3	3	3	3	6	4	5	5	6	5	6	5	8	6	6	5	00
01	2	2	2	2	2	2	2	2	4	4	5	3	5	5	6	4	6	6	6	5	01
02	2	2	2	2	2	2	2	2	3	3	4	5	4	5	5	8	5	5	6	12	02
03	4	3	4	4	5	3	5	5	8	3	6	10	10	5	8	14	12	5	10	16	03
04	5	5	5	5	12	6	6	6	12	8	10	12	16	8	12	16	18	8	14	18	04
05	6	6	6	6	14	6	6	8	14	10	12	14	18	12	14	18	20	12	16	22	05
06	8	6	6	6	14	8	8	8	20	12	12	14	18	14	16	20	18	14	18	22	06
07	8	6	6	6	16	8	8	10	26	12	14	18	16	16	16	24	14	16	18	26	07
08	8	8	8	8	16	12	10	12	26	14	14	20	14	16	18	26	14	18	18	26	08
09	10	10	10	10	16	12	10	12	26	16	16	22	14	20	20	26	14	20	20	26	09
10	12	12	10	12	14	14	12	16	18	18	16	26	16	20	20	26	14	22	20	26	10
11	14	14	12	14	14	16	12	16	20	18	16	26	18	22	18	26	16	24	18	26	11
12	14	14	12	14	16	16	12	16	22	18	14	24	20	22	16	26	20	22	18	24	12
13	14	12	10	12	16	14	10	14	22	16	14	20	22	20	16	22	20	22	18	20	13
14	12	12	8	10	16	12	8	10	22	14	12	16	22	18	14	18	20	20	16	18	14
15	10	8	6	8	14	10	6	8	22	12	10	14	22	16	12	16	18	18	14	14	15
16	8	6	6	6	10	8	5	6	22	6	6	10	22	12	8	10	18	14	10	8	16
17	6	5	4	5	8	6	4	5	18	6	5	6	22	10	8	8	18	8	8	6	17
18	5	3	3	3	8	5	3	3	16	5	5	5	22	6	6	6	20	8	8	6	18
19	3	2	2	2	5	3	3	3	12	5	5	5	20	6	6	6	18	6	8	6	19
20	3	2	2	2	5	3	2	3	10	5	5	5	18	6	6	6	18	6	6	6	20
21	3	2	2	2	4	3	3	3	8	5	5	5	14	6	6	6	16	6	6	6	21
22	3	2	2	2	4	3	3	3	8	5	5	5	14	6	6	6	14	6	6	6	22
23	3	2	2	2	4	3	3	3	8	4	5	5	12	5	6	6	10	6	6	6	23

BREMERHAVEN

MARCH 1954

GCT	Distance in Nautical Miles and Direction of Base from Ship																GCT
	250 - 500				500 - 1,000				1,000 - 1,500				1,500 - 2,000				2,000 - 2,500				
	N	E	S	W	N	E	S	W	N	E	S	W	N	E	S	W	N	E	S	W	
00	2	2	2	2	2	2	2	2	4	3	3	3	6	4	5	3	6	5	5	5	00
01	2	2	2	2	2	2	2	2	4	3	3	3	6	4	4	3	6	5	5	5	01
02	2	2	2	2	2	2	2	2	4	3	3	3	5	3	4	3	6	5	5	5	02
03	2	2	2	2	2	2	2	2	4	3	3	3	5	3	4	3	6	5	5	5	03
04	2	2	2	2	2	2	2	2	4	3	3	3	5	3	4	4	6	4	5	6	04
05	2	2	2	2	2	2	2	2	3	3	3	5	5	3	4	6	6	4	5	6	05
06	2	2	2	2	4	3	4	5	6	3	5	6	8	3	5	8	10	5	6	8	06
07	3	3	3	3	5	5	5	5	8	5	6	8	10	5	6	8	12	5	6	10	07
08	4	3	3	4	6	5	6	6	10	8	8	10	12	6	8	8	14	6	8	10	08
09	4	4	4	4	6	6	6	6	10	8	8	10	12	8	8	10	14	8	8	10	09
10	4	4	4	4	6	6	6	6	10	10	10	10	12	8	8	10	16	8	8	10	10
11	4	4	4	4	6	6	6	6	12	10	10	10	14	10	10	10	16	8	10	10	11
12	5	4	4	4	6	6	6	6	12	10	10	10	14	10	10	10	18	10	10	12	12
13	5	4	4	4	6	6	6	6	12	10	10	10	14	10	8	10	18	10	10	12	13
14	5	4	4	4	6	6	6	6	10	10	8	8	14	10	8	10	18	10	8	12	14
15	5	4	4	4	6	6	6	5	10	10	8	8	14	10	8	10	18	10	8	10	15
16	5	4	4	4	5	5	5	5	10	8	6	6	14	10	8	8	16	10	8	10	16
17	5	4	4	4	5	5	5	5	10	8	6	6	14	10	8	6	16	10	8	8	17
18	4	4	3	4	5	5	4	4	8	6	6	6	12	8	6	6	12	8	8	6	18
19	3	3	3	3	5	4	3	3	6	6	5	5	10	8	5	5	10	8	6	6	19
20	3	2	2	2	4	3	3	2	6	6	4	4	8	6	5	4	8	6	6	6	20
21	2	2	2	2	3	2	2	2	5	4	3	3	6	6	5	4	8	5	5	5	21
22	2	2	2	2	2	2	2	2	5	3	3	3	6	5	5	3	6	5	5	5	22
23	2	2	2	2	2	2	2	2	4	3	3	3	6	4	4	3	6	5	5	5	23

Frequency bands, in megacycles, recommended for radio communication with:

TRIESTE

MARCH 1954

GCT	Distance in Nautical Miles and Direction of Base from Ship																GCT
	250 - 500				500 - 1,000				1,000 - 1,500				1,500 - 2,000				2,000 - 2,500				
	N	E	S	W	N	E	S	W	N	E	S	W	N	E	S	W	N	E	S	W	
00	2	2	2	2	2	2	2	2	5	4	3	4	6	5	3	5	6	4	4	5	00
01	2	2	2	2	2	2	2	2	5	4	3	4	6	5	3	5	6	4	4	5	01
02	2	2	2	2	2	2	2	2	5	4	3	4	6	5	3	4	6	4	4	5	02
03	2	2	2	2	2	2	2	2	5	4	3	3	5	5	3	3	5	4	4	5	03
04	2	2	2	2	2	2	2	2	4	3	3	3	5	4	3	5	5	3	4	6	04
05	2	2	2	2	2	2	2	3	5	3	3	5	6	3	3	8	6	3	4	10	05
06	3	3	3	3	5	3	4	5	8	4	5	8	10	4	6	10	12	3	6	12	06
07	4	4	4	4	6	5	5	6	8	6	8	10	12	6	8	10	14	6	8	12	07
08	5	4	4	4	6	6	6	6	10	8	8	10	12	8	8	10	14	8	8	14	08
09	5	5	4	5	6	6	6	6	12	10	10	10	14	10	10	12	18	10	10	14	09
10	5	5	5	5	8	6	6	6	12	10	10	12	16	10	10	12	18	12	10	14	10
11	5	5	5	5	8	6	6	8	12	10	10	12	16	12	10	12	20	12	10	14	11
12	5	5	5	5	8	8	6	6	12	12	10	10	18	12	10	12	22	12	10	14	12
13	5	5	5	5	8	6	6	6	12	10	10	10	16	12	10	12	22	12	12	14	13
14	5	5	5	5	6	6	6	6	12	10	10	10	16	12	10	12	22	12	10	14	14
15	5	5	5	5	6	6	6	6	12	10	8	10	16	12	10	12	20	12	10	14	15
16	5	5	5	5	6	5	5	5	10	10	8	8	16	12	10	10	18	12	10	12	16
17	5	5	5	5	5	5	5	5	10	8	8	8	14	12	10	10	16	12	10	10	17
18	5	5	5	4	5	5	5	5	8	8	6	6	10	10	8	8	10	12	8	10	18
19	3	4	4	3	4	5	4	4	6	8	6	6	8	10	6	6	8	12	6	8	19
20	3	3	3	3	4	4	3	4	5	6	5	5	6	10	5	5	6	10	5	6	20
21	2	3	2	2	3	3	2	3	5	6	4	4	6	6	4	5	6	8	5	5	21
22	2	2	2	2	3	3	2	2	5	5	4	4	6	5	4	5	6	4	5	5	22
23	2	2	2	2	2	2	2	2	5	4	3	4	6	5	3	5	6	5	4	5	23

ADAK, ALASKA

MARCH 1954

GCT	Distance in Nautical Miles and Direction of Base from Ship																GCT
	250 - 500				500 - 1,000				1,000 - 1,500				1,500 - 2,000				2,000 - 2,500				
	N	E	S	W	N	E	S	W	N	E	S	W	N	E	S	W	N	E	S	W	
00	5	5	5	4	6	6	6	6	12	10	10	10	14	12	10	10	18	12	10	10	00
01	5	5	5	5	6	6	6	6	12	10	10	10	14	12	10	10	18	12	10	10	01
02	5	5	5	5	6	6	6	6	10	10	10	10	14	12	10	10	18	12	12	10	02
03	5	5	5	5	6	6	6	6	10	10	8	8	14	12	10	10	18	12	12	10	03
04	5	5	5	5	6	6	5	5	10	10	8	8	14	12	10	10	18	12	12	10	04
05	5	5	5	5	5	5	5	5	10	10	8	8	14	12	10	8	16	12	10	8	05
06	5	5	4	4	5	5	5	5	10	8	6	6	12	12	8	6	14	12	8	6	06
07	4	4	4	3	5	5	5	4	8	8	6	5	10	10	8	6	10	10	8	5	07
08	3	3	3	3	4	5	4	3	6	6	5	4	8	10	6	5	8	10	6	5	08
09	2	3	2	2	3	4	3	2	6	6	5	4	6	8	5	4	8	8	6	5	09
10	2	2	2	2	3	3	3	2	5	5	4	3	6	6	5	4	6	6	6	5	10
11	2	2	2	2	2	3	2	2	5	5	4	3	6	6	5	3	6	6	6	5	11
12	2	2	2	2	2	2	2	2	5	4	4	3	6	5	5	3	6	5	5	4	12
13	2	2	2	2	2	2	2	2	5	4	4	3	6	5	5	3	6	5	5	4	13
14	2	2	2	2	2	2	2	2	4	4	4	3	6	5	5	3	6	5	5	4	14
15	2	2	2	2	2	2	2	2	4	4	4	3	6	5	5	3	6	5	5	4	15
16	2	2	2	2	2	2	2	2	4	4	4	3	5	5	5	3	6	5	5	4	16
17	2	2	2	2	2	2	2	2	4	4	4	4	5	5	5	5	5	5	5	6	17
18	2	2	2	2	3	2	3	4	5	4	5	6	6	5	5	6	8	5	6	6	18
19	3	4	4	3	5	4	5	5	8	5	6	8	10	5	6	8	12	5	8	8	19
20	4	4	4	4	6	5	5	6	8	6	8	10	12	6	8	10	14	8	8	10	20
21	4	5	5	4	6	6	6	6	10	8	8	10	12	10	8	10	14	10	8	10	21
22	4	5	5	4	6	6	6	6	10	10	10	10	14	12	10	10	16	10	10	10	22
23	5	5	5	4	6	6	6	6	12	10	10	10	14	12	10	10	18	10	10	10	23

Frequency bands, in megacycles, recommended for radio communication with:

KODIAK, ALASKA

MARCH 1954

GCT	Distance in Nautical Miles and Direction of Base from Ship																GCT
	250 - 500				500 - 1,000				1,000 - 1,500				1,500 - 2,000				2,000 - 2,500				
	N	E	S	W	N	E	S	W	N	E	S	W	N	E	S	W	N	E	S	W	
00	4	4	4	4	6	6	6	6	10	10	8	8	14	10	10	8	16	10	8	8	00
01	4	4	4	4	6	6	6	6	10	10	8	8	14	10	10	8	16	10	8	8	01
02	4	4	4	4	6	6	5	5	8	8	8	6	12	10	8	8	16	10	8	8	02
03	4	4	4	4	5	5	5	5	8	8	6	6	12	10	8	8	16	10	8	8	03
04	4	4	3	4	5	5	4	5	8	6	6	6	12	10	8	6	14	10	8	8	04
05	3	3	3	3	5	5	4	4	8	6	5	5	12	10	8	6	12	10	8	6	05
06	3	3	2	2	4	4	3	3	6	6	4	4	10	8	5	5	10	8	6	6	06
07	2	2	2	2	3	3	2	2	6	5	16	3	8	6	5	4	8	8	6	6	07
08	2	2	2	2	2	2	2	2	5	4	18	3	6	6	5	4	8	6	6	5	08
09	2	2	2	2	2	2	2	2	4	3	18	3	6	5	5	4	6	6	6	5	09
10	2	2	2	2	2	2	2	2	4	3	18	3	5	5	5	4	6	6	6	5	10
11	2	2	2	2	2	2	2	2	4	3	18	3	5	5	5	4	6	6	6	5	11
12	2	2	2	2	2	2	2	2	4	3	20	3	5	5	5	4	6	6	5	5	12
13	2	2	2	2	2	2	2	2	4	3	20	3	5	5	5	4	6	6	5	5	13
14	2	2	2	2	2	2	2	2	3	3	20	3	5	5	5	4	6	5	5	5	14
15	2	2	2	2	2	2	2	2	3	3	20	3	5	5	5	5	6	6	5	5	15
16	2	2	2	2	2	2	2	3	3	3	18	5	5	5	5	6	6	6	6	5	16
17	2	2	2	2	4	3	4	5	5	3	5	6	8	5	5	6	10	6	6	6	17
18	3	3	3	3	5	4	5	5	8	5	6	8	10	5	6	8	12	6	6	8	18
19	3	3	3	3	6	5	5	6	10	6	8	8	10	6	6	8	14	8	8	8	19
20	4	3	3	4	6	6	6	6	10	8	8	10	12	8	8	8	14	8	8	8	20
21	4	4	4	4	6	6	6	6	10	8	8	10	12	8	8	8	14	8	8	8	21
22	4	4	4	4	6	6	6	6	12	10	10	10	12	10	8	8	16	10	8	10	22
23	4	4	4	4	6	6	6	6	10	10	10	10	14	10	10	8	16	10	8	8	23

SEATTLE, WASH.

MARCH 1954

GCT	Distance in Nautical Miles and Direction of Base from Ship																GCT
	250 - 500				500 - 1,000				1,000 - 1,500				1,500 - 2,000				2,000 - 2,500				
	N	E	S	W	N	E	S	W	N	E	S	W	N	E	S	W	N	E	S	W	
00	5	5	5	5	6	6	6	6	10	10	8	8	16	12	10	8	18	12	10	10	00
01	5	5	5	5	6	5	5	5	10	8	8	6	16	12	10	8	16	12	10	8	01
02	5	5	5	5	5	5	5	4	10	8	8	6	14	12	8	6	14	12	8	6	02
03	5	5	4	4	5	5	5	4	8	8	6	5	10	10	8	6	12	12	8	6	03
04	4	4	3	3	5	5	4	3	6	8	6	5	8	10	6	5	10	10	6	5	04
05	3	3	3	3	4	4	3	2	6	6	5	4	6	8	5	5	6	10	5	5	05
06	3	2	2	2	3	3	2	2	5	5	4	3	6	6	4	4	6	6	5	5	06
07	2	2	2	2	3	2	2	2	5	4	3	3	6	5	4	4	6	5	5	5	07
08	2	2	2	2	2	2	2	2	5	4	3	3	6	5	3	4	6	5	5	5	08
09	2	2	2	2	2	2	2	2	5	4	3	2	6	5	3	4	6	4	5	5	09
10	2	2	2	2	2	2	2	2	5	4	3	2	6	5	3	4	6	4	4	5	10
11	2	2	2	2	2	2	2	2	5	4	3	2	6	5	3	4	6	4	4	5	11
12	2	2	2	2	2	2	2	2	5	4	3	2	6	4	3	4	6	3	4	5	12
13	2	2	2	2	2	2	2	2	4	3	3	2	5	3	3	5	5	3	4	5	13
14	2	2	2	2	2	2	2	3	4	3	3	5	5	3	3	6	5	3	4	6	14
15	3	3	3	3	4	3	4	5	6	4	5	8	10	3	6	8	12	3	6	8	15
16	4	4	4	4	5	5	5	6	8	6	8	8	12	6	6	8	14	5	6	8	16
17	4	4	4	4	6	6	6	6	10	8	8	10	12	8	8	10	14	8	8	10	17
18	5	4	4	5	6	6	6	6	12	10	10	10	14	10	8	10	14	10	10	10	18
19	5	5	5	5	8	6	6	6	12	10	10	10	14	10	10	10	14	10	10	10	19
20	5	5	5	5	8	6	6	6	12	10	10	12	16	10	10	10	16	12	10	10	20
21	5	5	5	5	8	6	6	6	12	12	10	10	16	12	10	10	16	12	10	10	21
22	5	5	5	5	8	6	6	6	12	10	10	10	16	12	10	10	18	12	10	10	22
23	5	5	5	5	6	6	6	6	12	10	10	8	16	12	10	10	18	12	10	10	23

Frequency bands, in megacycles, recommended for radio communication with:

GUAM ISLAND

MARCH 1954

GCT	Distance in Nautical Miles and Direction of Base from Ship																GCT
	250 - 500				500 - 1,000				1,000 - 1,500				1,500 - 2,000				2,000 - 2,500				
	N	E	S	W	N	E	S	W	N	E	S	W	N	E	S	W	N	E	S	W	
00	12	8	8	8	26	16	16	18	22	20	22	26	16	18	20	18	20	20	20	20	00
01	12	10	8	10	26	18	18	20	24	26	24	26	16	18	22	16	22	20	22	18	01
02	12	10	10	10	26	20	18	20	24	26	26	26	16	16	24	16	22	20	26	18	02
03	12	10	8	10	26	18	16	18	22	26	26	22	16	16	26	18	26	18	26	20	03
04	12	8	6	8	24	16	14	12	22	22	22	20	18	16	26	22	26	18	26	24	04
05	10	6	8	6	20	12	10	10	20	20	26	18	20	18	26	24	26	20	26	24	05
06	10	8	10	8	16	10	12	10	20	18	26	18	22	22	26	24	26	22	24	26	06
07	8	8	10	8	14	10	14	10	18	18	26	18	22	24	26	24	26	24	22	26	07
08	8	8	10	8	10	10	14	10	12	18	26	18	20	24	22	26	26	26	20	26	08
09	8	8	10	8	8	12	14	10	12	18	20	18	18	24	20	24	24	26	18	26	09
10	6	8	8	8	8	10	12	10	12	18	16	16	18	26	16	24	24	26	12	24	10
11	6	8	8	8	8	8	10	8	14	18	12	16	20	24	10	22	24	26	8	22	11
12	6	6	6	6	8	8	8	8	14	16	10	14	20	24	8	18	22	24	6	20	12
13	6	6	6	6	6	8	6	8	10	14	6	12	18	20	6	16	20	24	6	18	13
14	5	5	5	5	6	6	6	6	12	16	8	12	14	18	6	16	18	20	6	16	14
15	5	5	5	5	6	6	5	6	8	10	6	10	12	14	6	14	16	16	6	14	15
16	5	5	5	5	5	5	5	5	6	10	6	8	8	14	6	12	12	16	6	12	16
17	4	4	4	4	4	5	5	5	5	8	6	6	6	12	6	6	8	14	6	6	17
18	2	2	2	2	3	3	3	2	5	6	5	4	6	10	6	5	8	12	6	5	18
19	2	2	2	2	2	2	2	2	4	5	3	3	5	5	5	4	6	8	5	5	19
20	2	2	2	2	2	2	2	2	3	3	3	6	5	5	4	10	5	5	5	14	20
21	5	4	5	5	5	5	5	5	8	5	16	12	12	5	12	16	14	5	12	20	21
22	10	5	6	6	14	6	8	10	16	10	18	18	16	12	16	18	18	12	16	20	22
23	10	8	6	8	18	10	12	12	22	14	22	22	18	16	18	18	20	18	18	20	23

MARCH 1954

GCT	Distance in Nautical Miles and Direction of Base from Ship																				GCT
	2,500 - 3,000												3,000 - 3,500								
	0°	30°	60°	90°	120°	150°	180°	210°	240°	270°	300°	330°	0°	30°	60°	90°	120°	150°	180°	210°	
00	18	18	18	18	16	16	16	18	22	24	16	20	16	16	18	14	14	14	14	16	00
01	20	20	16	20	18	18	18	18	22	26	18	20	18	18	16	20	16	14	14	16	01
02	22	20	16	20	18	18	18	20	22	26	20	20	18	18	14	20	18	16	14	16	02
03	24	20	14	18	20	18	18	20	22	26	22	22	18	20	14	18	18	16	16	16	03
04	26	22	14	18	22	20	18	18	20	26	24	22	20	20	14	18	18	16	16	16	04
05	26	24	16	20	22	20	18	18	18	26	26	24	20	22	16	20	20	16	16	16	05
06	26	24	18	22	22	18	18	18	18	24	26	24	20	22	18	22	20	16	14	14	06
07	24	24	20	24	22	18	16	16	14	20	26	24	18	22	20	24	18	16	14	14	07
08	20	24	20	26	18	18	16	12	8	18	26	20	18	22	20	26	18	14	14	12	08
09	18	24	18	26	18	16	14	10	8	14	24	16	14	18	18	26	18	14	12	10	09
10	14	20	18	26	16	12	10	8	6	14	22	14	12	16	18	26	16	12	10	10	10
11	12	18	18	26	12	10	8	8	6	14	20	12	10	12	18	26	12	10	8	8	11
12	12	14	20	24	8	8	6	6	6	14	18	12	8	12	20	24	10	8	6	6	12
13	10	12	20	24	8	6	6	6	6	14	16	12	8	10	20	22	8	6	6	6	13
14	10	12	18	20	6	6	6	6	6	10	12	12	8	8	18	20	8	6	6	6	14
15	10	12	14	14	6	6	6	6	6	8	10	10	8	8	14	12	6	6	6	6	15
16	8	12	14	14	6	6	6	6	6	8	8	8	8	8	14	12	6	6	6	6	16
17	8	10	12	14	6	6	6	6	6	5	6	6	8	8	12	10	6	6	5	6	17
18	6	8	8	12	6	6	6	6	5	5	6	6	6	8	8	12	6	6	5	5	18
19	6	6	6	8	6	6	5	5	5	6	6	5	6	6	6	8	6	6	5	5	19
20	5	5	6	5	5	5	5	8	12	14	12	8	5	5	6	5	5	5	5	8	20
21	12	6	5	5	5	6	10	14	18	20	18	18	12	6	5	5	5	6	8	12	21
22	16	12	5	5	6	12	14	16	18	20	18	18	14	10	5	5	6	10	12	14	22
23	18	16	14	12	14	14	16	18	20	22	18	20	16	14	10	5	10	12	12	14	23

Frequency bands, in megacycles, recommended for radio communication with:

GUAM ISLAND

MARCH 1954

GCT	Distance in Nautical Miles and Direction of Base from Ship																			GCT
	3,000 - 3,500				3,500 - 4,000												4,000 - 4,500			
	240°	270°	300°	330°	0°	30°	60°	90°	120°	150°	180°	210°	240°	270°	300°	330°	0°	30°	60°	90°	
00	20	24	16	18	14	14	14	10	10	10	10	12	16	24	18	16	12	12	12	5	00
01	20	26	18	20	14	14	16	16	12	12	12	12	16	26	18	18	12	12	14	12	01
02	20	26	20	20	16	16	16	20	14	12	12	12	16	26	20	20	12	14	16	16	02
03	18	26	22	22	16	16	14	18	14	12	12	14	16	24	20	20	14	14	14	18	03
04	18	26	24	22	16	18	14	18	16	12	12	14	14	20	24	20	14	14	14	18	04
05	18	22	26	22	16	18	16	20	16	14	12	12	14	18	26	20	14	14	16	20	05
06	16	18	26	20	16	18	18	24	16	14	12	12	12	10	26	18	14	14	18	22	06
07	12	12	26	18	16	18	20	24	16	12	12	12	12	8	26	16	14	14	20	24	07
08	10	10	26	14	16	18	20	26	16	12	12	10	10	6	24	12	14	14	20	26	08
09	8	8	24	12	14	16	18	26	14	12	10	8	8	6	22	8	12	14	18	26	09
10	8	8	24	10	12	14	18	26	14	10	8	6	6	6	20	6	10	14	18	24	10
11	8	8	22	10	8	12	18	26	12	10	6	6	6	6	18	6	8	12	18	20	11
12	6	8	20	8	8	10	20	24	10	8	6	5	6	6	18	6	6	10	16	18	12
13	6	8	20	8	8	8	18	20	10	6	5	5	6	6	18	6	6	8	12	16	13
14	6	6	14	8	6	8	14	16	8	5	5	5	6	5	12	6	5	6	12	10	14
15	6	5	10	8	8	8	12	8	6	5	5	5	6	5	10	6	5	6	8	6	15
16	6	5	8	8	6	8	14	8	6	5	5	5	5	5	8	6	5	6	8	6	16
17	6	5	6	6	6	8	12	8	6	5	5	5	5	6	6	5	5	6	8	6	17
18	5	6	6	6	6	8	8	8	6	5	5	5	5	6	6	5	4	6	8	6	18
19	5	6	6	5	5	6	6	8	6	5	5	5	5	6	6	6	4	5	6	6	19
20	12	14	12	8	5	5	6	5	5	5	5	8	12	14	12	10	4	5	6	5	20
21	16	20	20	16	10	6	5	5	5	5	6	10	14	20	20	16	8	5	5	5	21
22	18	20	20	16	12	8	5	5	5	6	8	10	14	20	20	16	10	6	6	6	22
23	18	22	18	18	14	12	6	5	8	10	10	12	16	22	18	16	12	10	6	5	23

MARCH 1954

GCT	Distance in Nautical Miles and Direction of Base from Ship																GCT
	4,000 - 4,500							4,500 - 5,000									
	120°	150°	180°	210°	240°	270°	300°	330°	0°	30°	60°	90°	120°	150°	180°	210°	240°	270°	300°	330°	
00	8	8	8	10	12	22	18	16	12	10	10	5	8	10	10	10	10	12	18	14	00
01	10	8	10	10	12	22	18	16	12	12	12	6	10	10	10	10	10	12	18	14	01
02	10	10	10	10	12	20	20	16	12	12	14	10	10	10	10	10	10	12	20	14	02
03	10	10	10	10	12	18	20	16	12	12	14	12	10	10	10	10	10	12	20	14	03
04	10	10	10	10	12	16	24	16	12	12	14	12	10	10	10	10	10	12	18	14	04
05	12	10	10	10	12	12	22	16	12	12	16	14	10	10	10	10	10	10	16	14	05
06	12	10	10	10	10	8	20	16	12	12	16	14	10	10	10	10	10	8	12	14	06
07	12	10	10	10	8	8	16	16	12	14	18	14	10	10	10	10	10	6	8	14	07
08	12	10	10	8	8	6	14	14	12	12	18	14	10	10	10	10	8	5	8	12	08
09	12	10	8	6	6	6	12	12	10	12	18	16	10	10	10	10	8	5	6	12	09
10	12	8	8	6	5	6	10	10	10	12	18	14	10	10	8	8	8	5	6	10	10
11	10	6	6	6	5	6	10	8	8	10	16	14	10	8	8	8	8	5	6	8	11
12	8	6	6	6	5	6	10	8	6	10	14	14	8	8	6	6	8	5	6	8	12
13	8	6	6	6	5	6	10	8	5	8	12	12	6	6	6	6	6	5	6	8	13
14	6	6	6	6	5	5	8	6	5	5	10	10	8	6	6	6	6	3	6	6	14
15	5	6	6	5	5	5	6	6	5	5	8	6	6	6	6	6	6	3	5	6	15
16	5	6	5	5	5	5	5	6	5	5	8	6	6	6	6	6	6	5	5	5	16
17	5	5	5	5	5	8	6	5	4	5	8	6	6	6	6	6	6	8	6	5	17
18	5	5	5	5	5	6	6	5	4	4	8	6	6	6	6	6	5	6	6	5	18
19	5	5	5	5	5	6	6	6	4	4	6	5	6	6	5	5	5	6	6	5	19
20	5	5	5	6	10	14	12	10	4	4	6	5	5	5	5	8	8	12	12	8	20
21	5	6	6	8	10	18	20	12	6	4	5	5	5	6	8	8	8	12	16	10	21
22	5	6	8	8	10	18	20	14	8	6	6	5	6	8	8	8	10	12	18	12	22
23	6	8	8	8	12	20	18	16	10	8	6	5	8	8	10	10	10	12	18	12	23

Frequency bands, in megacycles, recommended for radio communication with:

PEARL HARBOR, T. H.

MARCH 1954

GCT	Distance in Nautical Miles and Direction of Base from Ship																				GCT
	250 - 500				500 - 1,000				1,000 - 1,500				1,500 - 2,000				2,000 - 2,500				
	N	E	S	W	N	E	S	W	N	E	S	W	N	E	S	W	N	E	S	W	
00	10	10	8	10	12	12	10	12	20	20	14	20	22	24	16	26	20	26	18	26	00
01	10	10	8	10	14	12	10	12	22	20	14	20	24	26	16	24	22	26	18	26	01
02	10	10	8	8	14	12	10	12	24	20	14	18	26	24	16	22	24	26	16	22	02
03	10	8	6	8	12	10	8	10	24	20	12	16	26	24	16	18	26	26	16	18	03
04	8	6	6	6	10	8	6	8	22	16	12	12	26	20	14	14	26	24	16	14	04
05	6	6	5	5	8	6	5	5	20	14	8	8	26	16	12	10	26	20	14	8	05
06	5	4	3	4	6	5	4	4	18	8	6	6	26	12	10	10	24	16	10	8	06
07	4	3	3	3	6	4	3	4	18	6	5	6	24	10	8	6	22	10	8	6	07
08	4	3	2	2	6	3	2	3	16	6	5	5	24	8	6	6	24	8	8	6	08
09	4	2	2	2	6	2	2	2	14	5	5	5	22	6	6	6	22	6	8	6	09
10	3	2	2	2	6	3	2	3	14	5	5	5	20	6	6	6	26	6	6	6	10
11	3	2	2	2	5	2	2	2	14	5	5	5	18	6	6	6	18	6	6	6	11
12	3	2	2	2	5	2	2	2	12	5	5	5	16	6	6	5	16	6	6	5	12
13	3	2	2	2	5	2	2	2	12	5	5	4	14	6	6	5	12	6	6	5	13
14	2	2	2	2	4	2	2	2	8	4	4	3	8	5	6	4	8	5	6	5	14
15	2	2	2	2	2	2	2	2	6	4	4	3	6	5	5	4	6	5	6	5	15
16	2	2	2	2	2	2	2	2	4	3	3	5	5	4	5	8	6	5	6	12	16
17	4	3	4	4	5	3	4	5	8	4	6	8	10	4	8	12	12	5	8	14	17
18	5	5	5	5	6	5	5	6	16	8	8	10	18	10	12	16	18	10	12	16	18
19	6	5	5	5	8	6	6	8	18	10	10	12	18	14	12	16	20	14	14	18	19
20	6	6	6	6	8	8	8	8	20	12	12	14	18	16	14	18	18	16	14	20	20
21	6	6	6	6	8	8	8	8	22	14	12	16	18	16	14	22	16	18	14	24	21
22	8	8	8	8	10	10	8	10	24	16	14	18	18	20	16	24	18	20	16	26	22
23	10	8	8	8	12	10	10	12	22	18	14	20	20	22	16	24	18	22	16	26	23

MARCH 1954

GCT	Distance in Nautical Miles and Direction of Base from Ship																		GCT
	2,500 - 3,000											3,000 - 3,500							
	0°	30°	60°	90°	120°	150°	180°	210°	240°	270°	300°	330°	0°	30°	60°	90°	120°	150°	180°	210°	
00	20	20	18	24	18	14	12	14	14	18	26	24	20	20	16	20	14	12	12	12	00
01	22	22	20	26	18	14	12	14	14	16	22	26	22	22	16	22	16	12	12	10	01
02	26	26	22	26	18	14	12	14	14	16	26	26	24	26	18	24	16	14	10	10	02
03	26	26	24	26	18	14	12	14	14	12	22	26	24	26	18	24	16	12	10	10	03
04	26	26	26	26	18	14	12	12	12	10	18	26	24	26	20	24	16	12	10	8	04
05	26	26	26	26	18	14	12	12	10	6	14	26	22	26	22	22	14	12	8	8	05
06	24	26	26	22	16	12	10	10	8	6	10	24	20	26	20	20	14	10	8	5	06
07	24	26	24	20	10	10	8	6	6	6	8	24	18	26	20	18	10	8	5	5	07
08	24	24	22	18	8	8	6	5	6	6	8	24	16	24	20	16	8	8	5	5	08
09	22	24	18	12	6	6	5	5	6	6	8	22	14	22	20	10	6	6	5	4	09
10	20	22	18	8	6	5	5	5	6	8	8	20	14	20	22	8	6	6	4	4	10
11	18	20	20	6	6	5	5	5	6	8	6	16	14	18	14	6	6	5	4	4	11
12	16	18	20	6	6	5	5	5	6	6	5	12	12	18	14	6	6	5	4	4	12
13	12	16	16	6	6	5	4	4	5	6	5	8	10	14	14	6	6	5	4	4	13
14	8	10	16	6	6	5	4	4	5	6	5	6	8	10	14	6	6	5	4	3	14
15	6	8	12	6	6	4	3	4	5	6	5	6	6	8	10	6	6	5	4	3	15
16	6	6	8	5	6	3	3	6	8	12	12	8	6	6	6	5	5	5	4	5	16
17	12	6	6	5	5	4	6	8	12	14	16	16	12	6	5	5	5	5	5	6	17
18	18	16	6	5	6	6	8	12	14	14	18	20	18	12	6	6	5	6	6	8	18
19	20	20	12	6	10	8	10	12	14	16	18	20	20	20	5	5	6	8	8	10	19
20	18	20	18	14	12	12	12	12	14	16	20	18	18	20	16	12	10	10	10	10	20
21	16	18	20	18	16	12	12	12	14	18	22	18	16	18	20	14	12	12	10	10	21
22	18	18	20	20	16	12	12	14	16	18	24	20	18	18	20	18	14	12	10	12	22
23	18	20	18	22	18	12	12	14	16	18	26	22	18	20	18	18	14	12	12	12	23

Frequency bands, in megacycles, recommended for radio communication with:

PEARL HARBOR, T. H.

MARCH 1954

GCT	Distance in Nautical Miles and Direction of Base from Ship																	GCT
	3,000 - 3,500				3,500 - 4,000										4,000 - 4,500			
	240°	270°	300°	330°	0°	30°	60°	90°	120°	150°	180°	210°	240°	270°	300°	330°	0°	30°	60°	90°	
00	12	16	26	22	20	20	18	18	10	10	10	10	12	14	26	26	18	18	18	10	00
01	12	14	26	26	20	22	18	18	12	10	10	10	12	12	26	26	18	20	18	12	01
02	12	12	26	26	20	24	20	18	12	10	10	10	10	10	26	26	18	20	20	12	02
03	12	10	22	26	20	24	22	20	12	12	10	10	10	8	22	26	18	20	22	12	03
04	10	6	20	26	20	24	24	20	12	10	10	8	8	6	18	26	16	20	24	12	04
05	8	6	14	24	16	22	26	18	12	10	8	8	6	5	14	18	14	18	26	12	05
06	5	6	10	22	10	20	26	18	12	8	8	6	6	5	10	16	12	18	26	12	06
07	5	6	8	20	8	18	24	18	10	8	6	6	5	5	8	12	10	12	24	12	07
08	5	6	8	18	6	16	24	16	8	6	6	6	5	5	8	10	8	10	24	12	08
09	5	6	8	18	6	12	22	12	6	6	6	6	5	5	8	10	8	8	22	10	09
10	5	6	8	18	6	10	22	8	6	6	6	6	5	4	8	10	6	6	22	8	10
11	4	5	6	14	6	10	16	6	5	6	6	5	5	4	6	10	6	6	16	5	11
12	3	5	5	12	6	10	16	6	5	6	5	5	5	4	5	8	6	6	16	5	12
13	3	5	5	8	6	10	16	6	5	5	5	5	5	5	5	6	6	6	16	5	13
14	4	6	5	6	6	10	14	6	5	5	5	5	5	6	5	5	5	6	14	5	14
15	5	6	5	6	5	8	8	6	5	5	5	6	5	6	5	5	5	6	8	5	15
16	8	12	12	8	5	6	6	5	5	5	6	6	8	10	12	6	5	5	6	5	16
17	12	12	16	18	10	5	5	5	5	5	5	6	8	12	16	14	8	5	5	5	17
18	12	14	18	20	14	6	6	6	5	6	8	8	10	12	18	18	12	5	6	5	18
19	12	14	18	20	16	14	5	6	5	6	8	8	10	12	18	20	14	10	5	5	19
20	12	16	20	18	16	18	12	6	8	8	8	10	12	12	20	22	16	14	6	5	20
21	12	16	22	18	16	18	18	12	8	8	8	10	12	14	22	24	16	16	14	6	21
22	12	16	24	20	18	18	20	14	10	10	10	10	12	14	24	24	18	16	18	8	22
23	12	16	26	22	18	18	18	16	10	10	10	10	12	14	26	26	18	18	18	10	23

MARCH 1954

GCT	Distance in Nautical Miles and Direction of Base from Ship																	GCT
	4,000 - 4,500							4,500 - 5,000										
	120°	150°	180°	210°	240°	270°	300°	330°	0°	30°	60°	90°	120°	150°	180°	210°	240°	270°	300°	330°	
00	10	10	10	10	10	8	24	26	16	16	18							22	20		00
01	10	10	10	10	10	8	26	26	14	16	18							22	20		01
02	10	10	10	10	10	6	24	26	14	16	20							20	20		02
03	10	10	10	10	10	6	20	24	14	16	22							20	18		03
04	10	10	10	10	10	5	18	18	14	16	24							18	16		04
05	10	10	10	10	8	5	14	14	14	16	26							14	14		05
06	10	10	8	8	8	5	10	12	14	16	26							10	12		06
07	10	8	8	8	6	5	8	12	12	14	26							8	8		07
08	8	8	8	6	6	5	8	10	10	12	24							8	8		08
09	6	6	6	6	6	5	8	8	8	12	22							8	8		09
10	6	6	6	6	6	5	8	8	8	10	22							8	8		10
11	6	6	6	6	6	5	6	8	6	6	16							6	8		11
12	6	6	6	6	6	5	5	8	6	6	16							6	6		12
13	6	6	6	6	6	5	6	6	6	6	16							6	6		13
14	6	6	6	6	6	6	5	5	5	6	14							5	5		14
15	6	6	6	6	5	6	5	5	5	6	8							5	5		15
16	6	6	6	8	8	8	12	6	5	5	6							12	6		16
17	5	8	8	8	8	8	16	14	8	5	5							16	14		17
18	8	8	8	8	10	10	18	16	10	5	8							18	16		18
19	8	8	8	10	10	10	18	20	12	8	6							18	18		19
20	8	10	10	10	10	10	20	22	12	12	5							18	22		20
21	8	10	10	10	10	10	22	24	14	12	12							22	24		21
22	10	10	10	10	10	10	22	24	14	14	18							20	22		22
23	10	10	10	10	10	8	24	26	14	16	18							22	22		23

Frequency bands, in megacycles, recommended for radio communication with:

SAN FRANCISCO, CALIF.

MARCH 1954

GCT	*Distance in Nautical Miles and Direction of Base from Ship*																GCT
	250 - 500				500 - 1,000				1,000 - 1,500				1,500 - 2,000				2,000 - 2,500				
	N	E	S	W	N	E	S	W	N	E	S	W	N	E	S	W	N	E	S	W	
00	5	5	5	5	6	6	6	6	12	12	10	10	18	14	12	12	22	16	12	12	00
01	5	5	5	5	6	6	6	5	10	10	10	8	16	14	12	10	20	14	12	10	01
02	5	5	5	4	5	6	5	5	10	10	10	8	14	14	10	10	18	14	12	10	02
03	4	4	4	4	5	5	5	5	8	10	8	6	12	14	10	8	14	14	12	8	03
04	3	3	3	3	4	4	4	3	6	8	6	5	8	12	8	6	10	14	10	6	04
05	2	3	3	2	2	4	4	2	5	6	6	4	6	10	6	5	6	12	6	5	05
06	2	2	2	2	2	3	3	2	5	6	5	4	6	8	5	5	6	10	5	5	06
07	2	2	2	2	2	3	3	2	5	5	4	3	6	6	5	4	8	8	5	5	07
08	2	2	2	2	2	2	2	2	5	5	4	4	6	6	5	4	8	6	5	5	08
09	2	2	2	2	2	2	2	2	5	5	4	3	8	6	5	4	10	6	5	4	09
10	2	2	2	2	2	2	2	2	5	5	4	3	8	6	5	3	10	6	4	4	10
11	2	2	2	2	2	2	2	2	5	5	4	3	8	6	5	3	10	6	4	4	11
12	2	2	2	2	2	2	2	2	5	5	4	3	6	5	4	3	8	6	3	4	12
13	2	2	2	2	2	2	2	2	4	4	3	3	6	5	3	4	6	6	3	5	13
14	2	2	2	2	2	2	2	3	5	4	4	5	6	5	4	8	6	5	4	8	14
15	3	4	4	3	5	4	4	5	8	5	6	8	12	5	6	8	14	5	6	10	15
16	4	4	4	4	6	5	6	6	10	8	8	10	14	8	8	10	16	8	8	10	16
17	4	5	5	4	6	6	6	6	12	8	10	10	14	10	10	10	16	12	12	10	17
18	4	5	5	4	8	6	6	8	12	10	10	12	14	12	10	12	18	12	12	12	18
19	5	5	5	4	8	8	8	8	12	12	12	12	14	12	12	12	18	14	12	12	19
20	5	5	5	5	8	8	8	8	12	12	12	12	16	12	12	12	20	14	12	12	20
21	5	5	5	5	8	8	8	8	12	12	12	12	18	14	12	12	22	14	12	12	21
22	5	5	5	5	8	8	8	8	12	12	10	12	18	14	12	12	24	14	12	12	22
23	5	5	5	5	6	6	6	6	12	12	10	10	18	14	12	12	24	16	12	14	23

MARCH 1954

GCT	*Distance in Nautical Miles and Direction of Base from Ship*																				GCT
	2,500 - 3,000												3,000 - 3,500								
	0°	30°	60°	90°	120°	150°	180°	210°	240°	270°	300°	330°	0°	30°	60°	90°	120°	150°	180°	210°	
00	22	26	20	14	10	10	8	8	8	8	14	18	22	20	20	10	10	10	10	10	00
01	20	26	18	12	10	8	8	8	8	6	12	18	20	24	18	10	10	10	10	10	01
02	18	22	18	14	10	8	8	8	6	6	8	14	18	22	18	10	10	10	10	10	02
03	16	18	16	14	8	8	6	6	6	5	6	12	16	18	16	10	10	10	10	10	03
04	12	12	12	14	8	6	6	6	5	5	6	8	12	12	12	10	10	10	8	8	04
05	8	8	8	12	8	6	6	5	5	5	6	6	8	8	8	10	8	8	8	8	05
06	6	6	8	10	5	5	5	5	5	5	6	6	6	6	8	10	8	8	8	6	06
07	8	6	6	8	5	5	5	5	5	5	6	8	8	6	6	8	8	6	6	6	07
08	8	6	6	6	6	5	5	5	5	5	5	6	8	6	6	6	6	6	6	6	08
09	8	6	6	5	5	5	5	5	4	4	6	8	10	6	6	6	6	6	6	6	09
10	8	6	6	5	5	5	5	5	4	4	5	6	10	6	6	6	6	6	6	6	10
11	6	6	6	5	5	5	4	4	4	4	5	5	10	6	6	6	6	6	5	6	11
12	5	5	6	5	5	4	3	3	4	4	5	5	6	5	6	6	6	6	5	5	12
13	5	5	6	5	4	3	3	3	4	5	6	6	5	5	6	6	6	5	5	5	13
14	5	5	5	4	4	3	3	5	6	8	12	10	5	5	5	6	6	5	5	6	14
15	12	5	5	3	5	5	6	6	8	10	12	14	14	5	5	6	6	8	8	8	15
16	16	12	5	3	5	6	6	8	8	10	12	16	16	8	5	6	8	8	8	8	16
17	16	16	8	5	6	6	8	8	8	10	14	16	16	16	5	6	8	8	10	10	17
18	18	18	14	8	6	8	8	8	10	10	14	16	18	18	10	6	10	10	10	10	18
19	18	20	14	10	8	8	8	10	10	10	16	18	18	18	14	8	10	10	10	10	19
20	20	20	16	12	8	8	10	10	8	10	16	20	20	16	14	8	10	10	10	10	20
21	22	20	18	12	10	10	10	10	8	10	16	22	22	16	16	8	10	10	10	10	21
22	24	22	20	12	10	10	10	10	8	10	16	22	24	18	18	10	10	10	10	10	22
23	24	24	20	12	10	10	8	8	8	10	16	20	24	18	20	10	10	10	10	10	23

Frequency bands, in megacycles, recommended for radio communication with:

SAN FRANCISCO, CALIF.

MARCH 1954

GCT	Distance in Nautical Miles and Direction of Base from Ship																GCT
	3,000 - 3,500				3,500 - 4,000									4,000 - 4,500			
	240°	270°	300°	330°	0°	30°	60°	90°	120°	150°	180°	210°	240°	270°	300°	330°	0°	30°	60°	90°	
00	10	8	12	18	22	26	24							10	18		22	26	18		00
01	10	6	8	18	20	26	22							6	18		20	26	20		01
02	10	6	6	14	18	22	20							6	14		18	22	20		02
03	10	6	6	12	16	18	18							6	12		16	18	18		03
04	8	6	6	6	12	12	16							6	6		12	12	16		04
05	8	5	6	6	8	8	10							6	6		8	8	10		05
06	6	5	6	6	6	6	8							6	6		6	6	8		06
07	6	5	6	8	8	6	6							6	8		8	6	6		07
08	6	5	6	8	8	6	6							6	8		8	6	6		08
09	6	4	6	8	10	6	6							5	8		10	6	6		09
10	6	4	5	6	10	6	6							5	8		10	6	6		10
11	6	4	5	5	10	6	6							5	5		10	6	6		11
12	6	4	5	5	8	5	6							5	5		8	5	6		12
13	5	5	6	6	6	5	6							6	6		6	5	6		13
14	8	8	12	10	6	5	6							12	10		6	5	6		14
15	8	8	12	14	14	5	5							12	14		14	5	5		15
16	8	8	12	16	16	8	6							12	16		16	6	6		16
17	10	8	14	16	16	16	5							14	16		16	16	6		17
18	10	8	14	16	18	18	5							14	16		18	18	6		18
19	10	8	16	18	18	20	14							16	18		18	20	6		19
20	10	8	16	20	16	20	18							16	20		20	20	12		20
21	10	8	16	22	16	20	18							16	22		22	24	14		21
22	10	8	16	22	18	22	22							16	22		24	26	18		22
23	10	8	14	20	20	24	24							12	20		24	26	18		23

MARCH 1954

GCT	Distance in Nautical Miles and Direction of Base from Ship																GCT
	4,000 - 4,500							4,500 - 5,000									
	120°	150°	180°	210°	240°	270°	300°	330°	0°	30°	60°	30°	120°	150°	180°	210°	240°	270°	300°	330°	
00							6	18	22	26										18	00
01							6	18	20	26										18	01
02							5	16	18	22										16	02
03							5	12	16	18										12	03
04							5	6	12	12										6	04
05							5	6	8	8										6	05
06							5	6	6	6										6	06
07							5	8	8	6										8	07
08							5	8	8	6										8	08
09							5	8	10	6										8	09
10							5	8	8	6										8	10
11							5	6	8	6										6	11
12							5	6	8	5										6	12
13							6	6	6	5										6	13
14							12	10	6	5										10	14
15							12	14	14	5										14	15
16							12	16	16	6										16	16
17							14	16	16	12										16	17
18							14	16	18	13										16	18
19							16	16	18	20										18	19
20							14	18	20	20										20	20
21							12	20	22	24										22	21
22							12	22	24	26										22	22
23							8	20	24	26										20	23

Frequency bands, in megacycles, recommended for radio communication with:

MANILA, P. I.

MARCH 1954

GCT	Distance in Nautical Miles and Direction of Base from Ship																GCT
	250 - 500				500 - 1,000				1,000 - 1,500				1,500 - 2,000				2,000 - 2,500				
	N	E	S	W	N	E	S	W	N	E	S	W	N	E	S	W	N	E	S	W	
00	8	6	6	6	14	6	8	8	20	12	18	18	18	14	16	20	20	14	18	22	00
01	10	6	6	8	20	10	14	12	24	14	20	22	18	18	18	20	20	20	18	22	01
02	10	8	8	8	24	18	18	18	26	20	22	26	16	20	20	18	20	22	20	22	02
03	10	10	8	10	26	18	18	18	26	26	22	26	14	20	22	18	20	22	24	22	03
04	10	10	8	10	24	18	18	18	26	26	24	24	14	18	26	18	22	22	26	24	04
05	10	8	8	8	24	16	16	14	26	26	22	20	16	18	26	22	24	22	26	26	05
06	8	6	8	6	20	10	14	10	26	26	26	18	16	20	26	26	24	22	26	26	06
07	8	6	10	8	14	10	12	10	26	18	26	18	18	24	26	26	26	24	24	26	07
08	8	8	10	8	10	10	14	10	22	18	26	20	20	26	26	26	26	26	24	26	08
09	8	10	10	10	10	12	14	12	20	20	26	20	20	26	24	26	26	26	20	26	09
10	8	10	10	10	10	12	14	12	12	20	22	20	18	26	20	26	24	26	18	26	10
11	8	10	10	8	8	12	14	10	12	20	18	18	16	26	18	26	24	26	14	26	11
12	8	8	8	8	8	10	10	10	12	18	14	18	18	26	12	24	24	26	10	22	12
13	6	8	8	8	8	10	8	8	12	18	10	16	18	24	8	20	22	26	8	20	13
14	6	6	6	6	8	8	8	8	12	16	8	14	18	22	6	18	22	24	6	16	14
15	6	6	5	6	6	8	6	6	10	14	6	12	16	18	6	14	20	20	6	14	15
16	5	5	5	5	6	6	5	6	10	12	6	12	14	16	6	14	18	18	6	12	16
17	5	5	5	5	5	6	5	6	8	10	6	10	10	14	6	12	14	14	6	12	17
18	5	5	5	5	5	5	5	5	6	10	6	8	8	12	6	10	12	14	6	10	18
19	3	4	4	3	4	5	4	4	5	8	5	5	6	12	6	6	8	12	6	6	19
20	2	2	2	2	2	3	3	2	5	6	5	4	6	10	6	4	6	12	6	5	20
21	2	2	2	2	2	2	2	2	4	4	3	3	5	5	4	5	5	6	5	8	21
22	2	2	2	2	2	2	2	4	5	3	5	8	6	4	6	14	8	5	6	16	22
23	5	5	5	5	6	5	8	6	12	8	16	12	16	6	14	18	16	5	14	20	23

MARCH 1954

GCT	Distance in Nautical Miles and Direction of Base from Ship																				GCT
	2,500 - 3,000				3,000 - 3,500				3,500 - 4,000				4,000 - 4,500				4,500 - 5,000				
	30°	60°	90°	120°	30°	60°	90°	120°	30°	60°	90°	120°	30°	60°	90°	120°	30°	60°	90°	120°	
00	14	8	5	8	12	5	5	8	10	5	5	5	8	6	6	5	8	6	5	8	00
01	18	18	14	14	16	14	8	12	14	10	5	8	10	8	6	6	10	6	5	8	01
02	20	18	20	16	16	18	16	14	14	16	12	12	12	12	8	8	12	10	6	8	02
03	18	14	20	18	18	14	20	16	16	14	18	12	14	14	14	10	12	14	6	10	03
04	18	14	20	18	18	14	20	18	16	14	20	14	14	14	16	10	12	14	8	10	04
05	20	14	18	20	20	14	18	18	16	14	20	14	14	14	18	10	12	14	8	10	05
06	22	14	20	22	22	14	20	20	18	14	18	16	14	14	18	12	12	14	10	10	06
07	22	16	22	22	22	16	22	20	18	16	22	16	16	16	20	12	14	16	10	10	07
08	24	18	24	22	22	18	24	20	18	18	24	16	16	18	22	12	14	18	10	10	08
09	22	20	26	20	22	20	26	18	18	20	26	16	14	20	22	12	14	18	10	10	09
10	22	20	26	18	22	20	26	18	18	20	26	16	14	20	22	12	12	18	12	10	10
11	22	18	26	18	18	18	26	18	16	18	26	14	14	18	20	12	12	18	12	10	11
12	18	18	26	16	16	18	26	16	14	18	26	14	14	18	18	10	12	18	12	10	12
13	16	18	26	10	12	18	26	12	12	18	24	12	12	18	18	10	10	16	10	10	13
14	12	18	24	8	10	20	24	10	8	18	20	10	10	14	16	8	8	14	10	8	14
15	12	18	22	8	10	18	22	8	8	16	16	8	8	12	12	6	6	12	8	8	15
16	12	16	18	6	8	16	18	8	8	14	10	8	6	10	8	6	5	8	6	8	16
17	12	16	12	6	8	16	10	6	8	12	6	6	6	10	6	5	5	8	6	8	17
18	12	14	12	6	8	14	10	6	8	12	6	6	6	10	6	5	5	8	6	8	18
19	8	10	12	6	8	10	10	6	8	12	6	6	6	10	6	5	5	8	6	6	19
20	6	8	12	6	6	8	10	6	6	8	8	6	6	8	6	5	4	8	6	6	20
21	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	5	4	6	5	6	21
22	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	4	5	5	5	22
23	8	5	5	6	6	6	5	6	6	6	5	5	5	6	6	5	4	6	5	6	23

Frequency bands, in megacycles, recommended for radio communication with:

YOKOSUKA, JAPAN

MARCH 1954

GCT	Distance in Nautical Miles and Direction of Base from Ship																GCT
	250 - 500				500 - 1,000				1,000 - 1,500				1,500 - 2,000				2,000 - 2,500				
	N	E	S	W	N	E	S	W	N	E	S	W	N	E	S	W	N	E	S	W	
00	6	5	5	6	14	8	8	8	14	12	10	12	20	14	14	16	22	14	14	18	00
01	6	6	6	6	16	8	8	10	14	12	12	14	20	16	14	18	22	16	14	20	01
02	6	6	6	6	16	12	10	12	18	14	12	14	24	16	14	20	24	18	16	20	02
03	8	6	6	6	16	12	10	12	20	14	12	16	26	18	16	20	24	18	16	20	03
04	8	6	6	6	16	12	12	16	22	14	12	14	26	20	14	18	26	20	16	20	04
05	8	6	6	6	16	16	12	16	26	14	12	14	26	20	16	16	26	20	16	18	05
06	6	6	6	6	14	16	12	16	24	14	12	12	26	18	16	16	26	20	16	18	06
07	6	6	6	6	16	16	10	14	22	14	12	12	26	16	14	16	26	18	16	16	07
08	6	5	5	5	16	14	8	10	18	12	10	10	26	16	14	14	26	18	14	12	08
09	5	5	5	5	14	10	6	8	14	12	10	8	24	14	12	8	26	18	14	10	09
10	4	4	3	3	10	8	6	8	12	8	6	6	22	12	10	8	26	16	12	8	10
11	3	3	3	2	8	6	4	5	8	6	6	5	18	8	10	6	24	12	10	8	11
12	2	2	2	2	8	5	3	4	5	5	6	5	12	8	8	6	20	10	8	8	12
13	2	2	2	2	6	3	3	3	5	5	5	5	10	6	6	6	18	8	6	6	13
14	2	2	2	2	5	3	2	3	5	5	5	5	8	6	6	6	14	8	6	6	14
15	2	2	2	2	4	3	3	3	5	5	5	5	8	6	6	6	12	6	6	6	15
16	2	2	2	2	5	3	3	3	5	5	5	5	8	6	6	6	12	6	6	6	16
17	2	2	2	2	5	3	3	3	5	5	5	5	8	6	6	6	12	6	6	6	17
18	2	2	2	2	4	3	3	3	5	5	5	5	6	6	6	6	10	6	6	6	18
19	2	2	2	2	2	3	2	2	4	5	5	4	5	6	6	6	5	6	5	6	19
20	2	2	2	2	2	2	2	2	3	5	5	5	4	6	5	8	5	6	5	10	20
21	3	2	3	3	4	2	4	5	6	4	6	8	8	5	6	12	8	6	8	14	21
22	5	5	5	5	12	5	6	6	10	8	8	10	14	8	10	14	18	8	10	16	22
23	5	5	5	5	14	6	6	8	12	10	10	12	18	12	12	16	20	12	12	18	23

FREQUENCY GUIDE FOR OPERATING PERSONNEL MARCH 1954

The nomograms given herewith are intended for use as a rough guide for radio operators in the choice of suitable frequencies for radio communication over distances up to 2,200 nautical miles. (One nautical mile = 1.152 ordinary or "statute" miles = 1.853 kilometers). By their use, the operator can determine approximately the best frequency for any given communication and also the approximate upper and lower limits of the band of frequencies on which the communication is possible.

For transmission over very long paths, or for other purposes where information of greater precision than that of these nomograms is needed, the methods outlined in reports of the DNC 13() Series should be used.

USE OF NOMOGRAMS

A. To find the recommended frequency:

1. Locate the midpoint of the transmission path on the map, figure 17, noting its latitude and zone (East, West, Intermediate). Roughly, and in most cases, to a sufficiently good approximation, the latitude of the midpoint is the average of the latitudes of the two stations.

2. Determine the local time at the midpoint of the transmission path. Likewise, this will roughly be the average of the local times at the two stations.

3. Select the nomogram for the appropriate month and latitude from figures 1 through 14. Each nomogram is usable within roughly five degrees on either side of the designated latitude (i.e., the nomogram for 20°N. will be usable between 15°N. and 25°N.). For greater precision interpolate linearly between values obtained from nomograms for the next higher and lower latitudes.

4. Place a straightedge on the nomogram, connecting the local time on the left-hand scale for the appropriate zone (E, I, or W), with the transmission distance (distance between the two stations) on the right-hand scale for the same zone. Then read off the recommended frequency from the central scale.

Example: Month of MARCH 1954
Latitude of midpoint of transmission path = 40°N
Longitude of midpoint of transmission path = 60°W
Local time at midpoint of transmission path = 0700
Transmission distance = 800 nautical miles.

Figure 17 indicates that this location lies in the W zone. Using the nomogram, figure 5 the value of recommended frequency 7.6 Mc.

B. Bands of useful frequencies:

Usually the exact recommended frequency, determined from the nomograms of figure 1 through 14, is not available for use. In this case use the next lower frequency which is available. There is some danger that a frequency higher than that recommended will be unreliable. The use of too low a frequency, however, will result in signals too weak to be satisfactory.

The nomogram of figure 15 serves as a guide to the band of useful frequencies corresponding to a given recommended frequency. This gives the approximate range of frequencies within which the most satisfactory transmission may be expected, for a radiated power of 0.5 kilowatt (CW or radiotelegraphy), which is the average power of a ship's transmitter. The dashed line example shows the method of using this nomogram. On the average, communication will be possible on any frequency within the limits found from this nomogram. The closer the operating frequency is to the recommended frequency, the better the communication will be. If the operating frequency is above the recommended frequency, there is danger of failure of communication because of the waves not being reflected to the receiving station; if the operating frequency is much below the recommended frequency, the signals will be too weak.

C. Variations of radiated power:

The power of the transmitter does not affect either the recommended frequency or the upper limit of the useful frequency band. It does, however, affect the lower limit of the useful frequency band; lower frequencies can be used, the higher the radiated power. The nomogram of figure 16 can be used to find the lower limit of the band of useful frequencies for any radiated power, when the limit for 0.5 kilowatt (CW or radiotelegraphy) is known. The lower limit of frequency is about the same for a given power CW as for 100 times that power for radiotelephony.

Note that an increase in radiated power from 0.5 kilowatt (CW to 100 kilowatts (CW) lowers the lower limit of frequency range (lower limit of useful frequency) from 10 Mc to 7.8 Mc. Thus a large increase in radiated power has a relatively small effect in lowering the lower limit of frequency range. The effect is larger, however, at the lower frequencies.

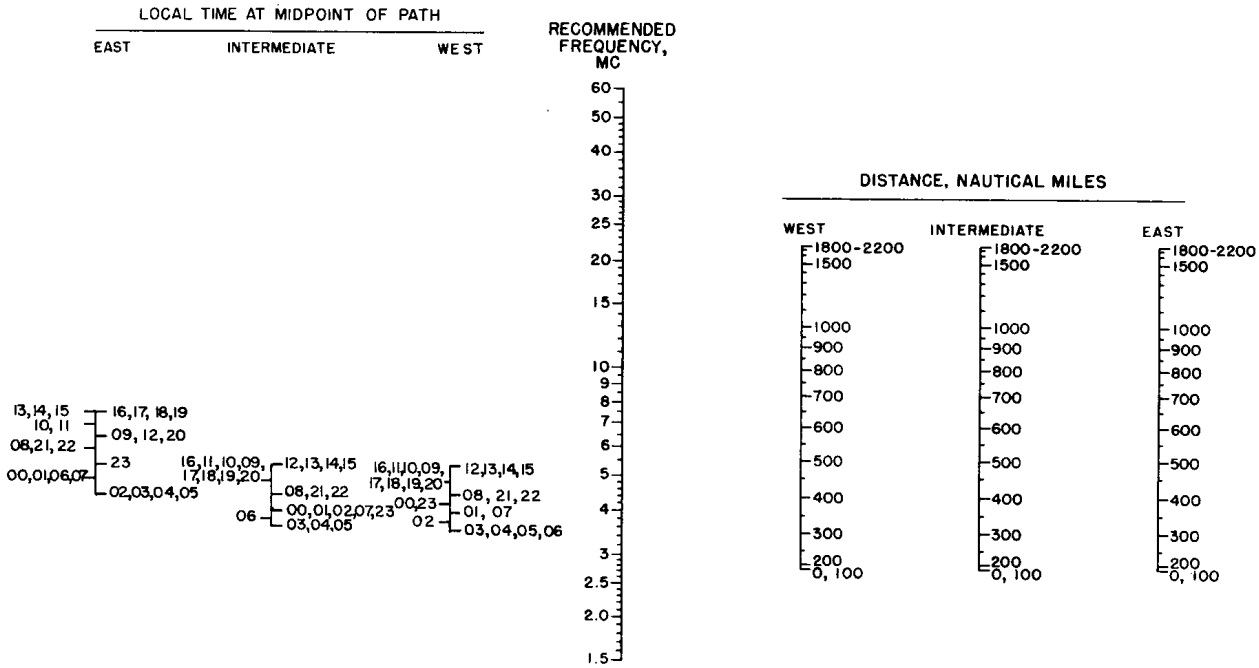

Fig. 1. LATITUDE 80°N. PREDICTED FOR MARCH, 1954

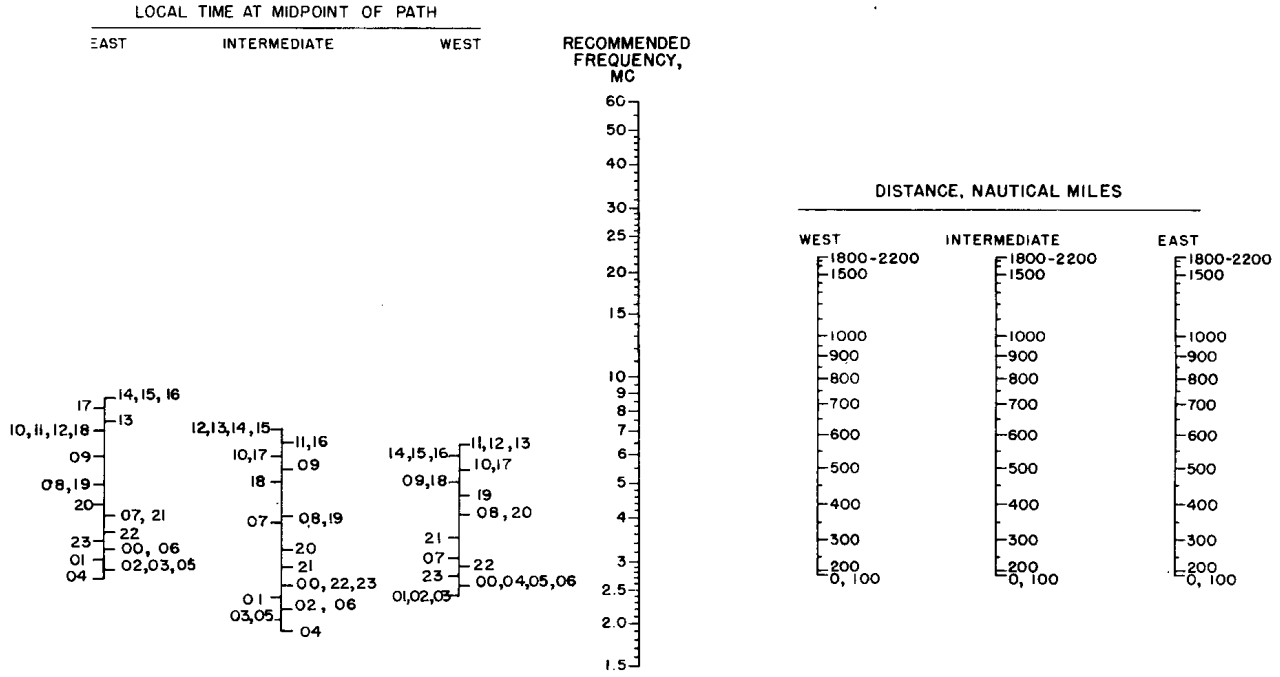

Fig. 2. LATITUDE 70°N. PREDICTED FOR MARCH, 1954

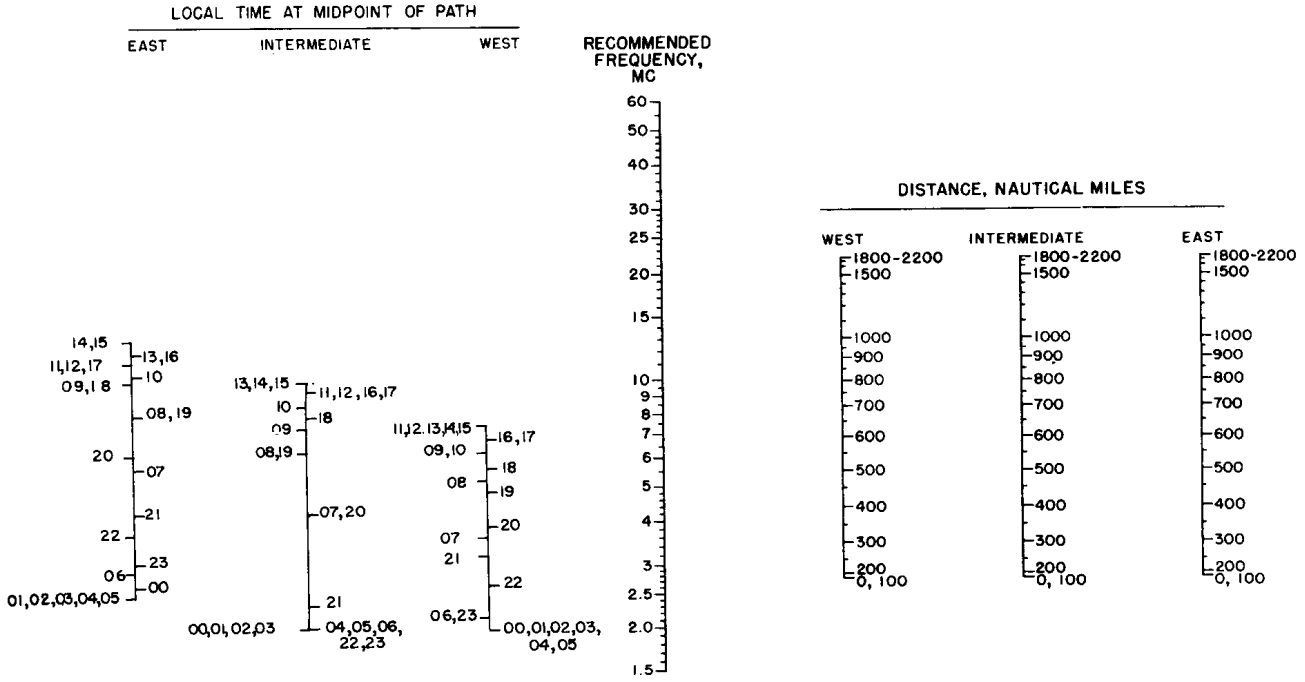

Fig. 3. LATITUDE 60°N. PREDICTED FOR MARCH, 1954

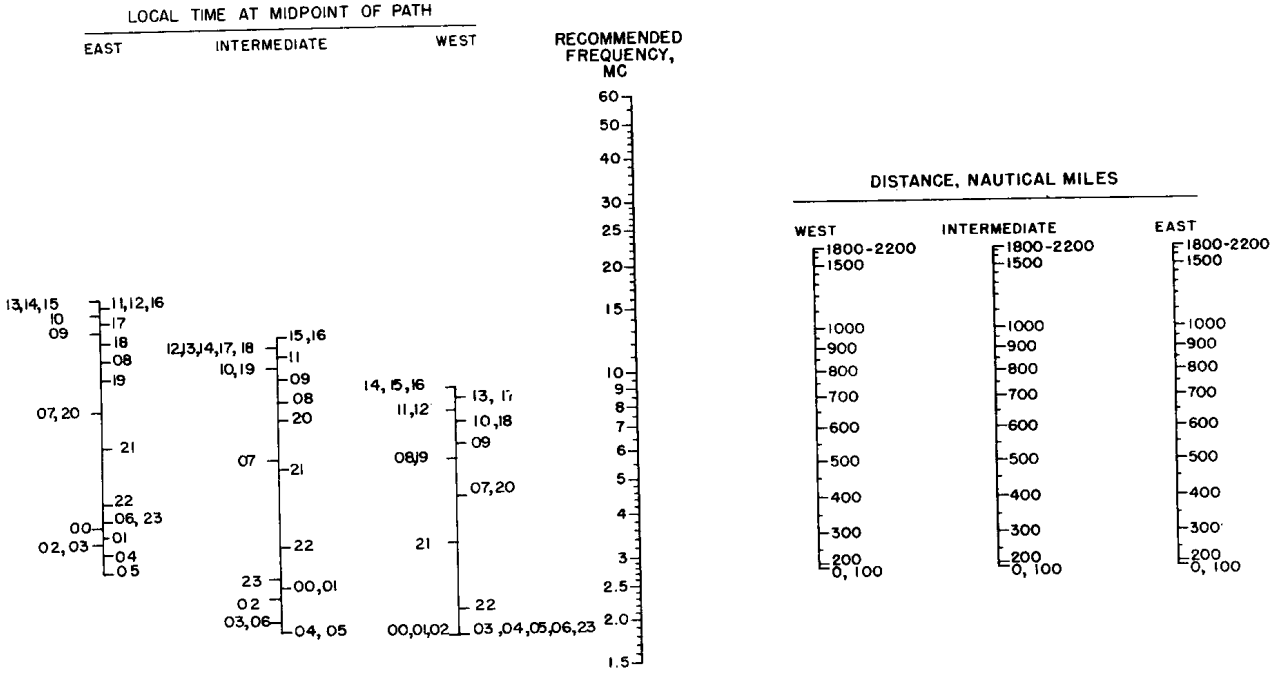

Fig. 4. LATITUDE 50°N. PREDICTED FOR MARCH, 1954

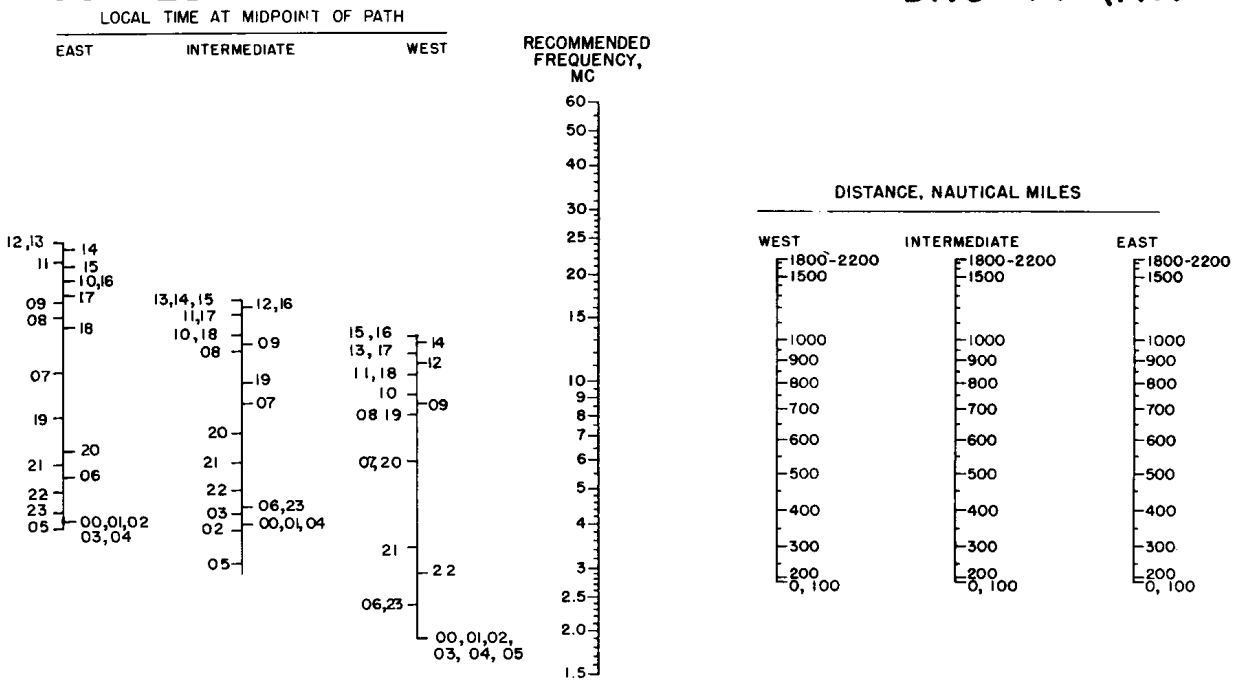

Fig. 5. LATITUDE 40°N. PREDICTED FOR MARCH, 1954

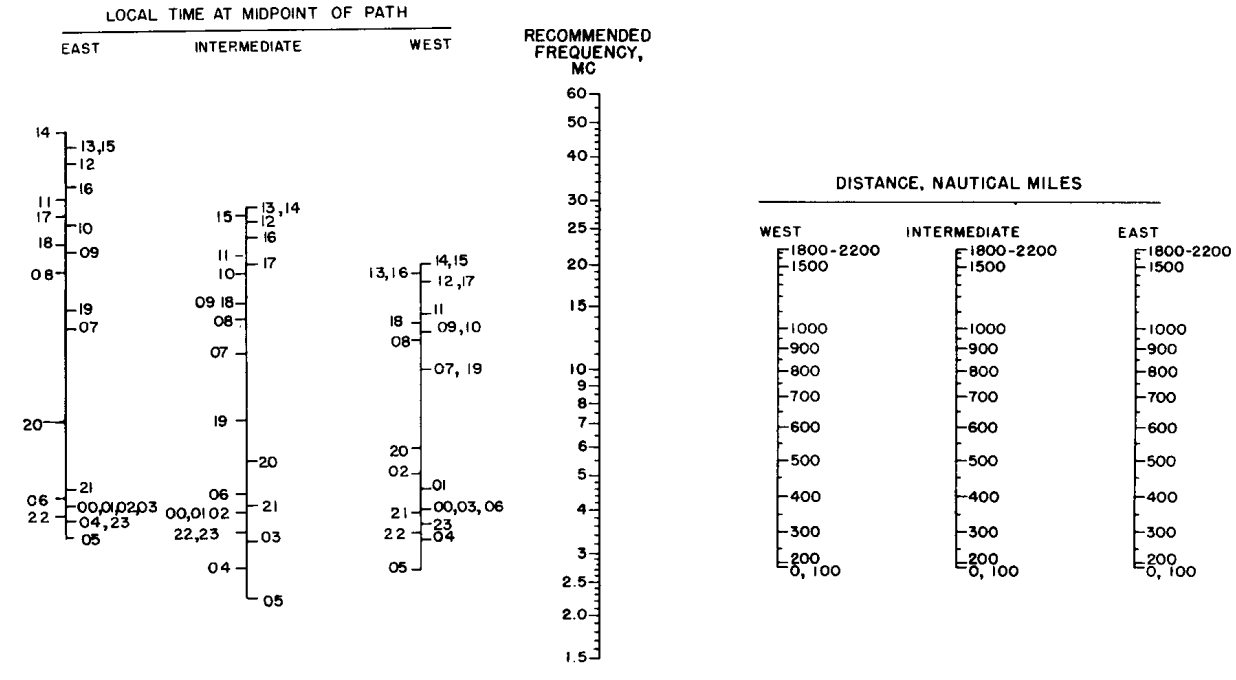

Fig. 6. LATITUDE 30°N. PREDICTED FOR MARCH, 1954

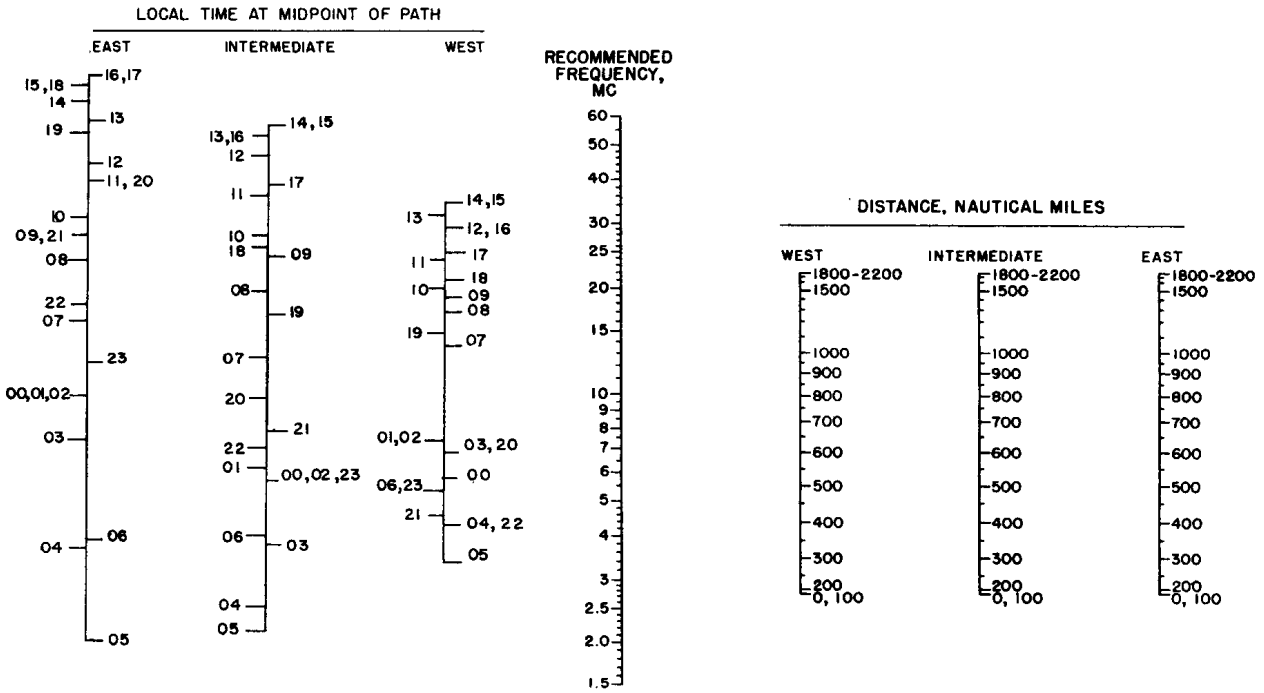

Fig. 7. LATITUDE 20° N. PREDICTED FOR MARCH, 1954

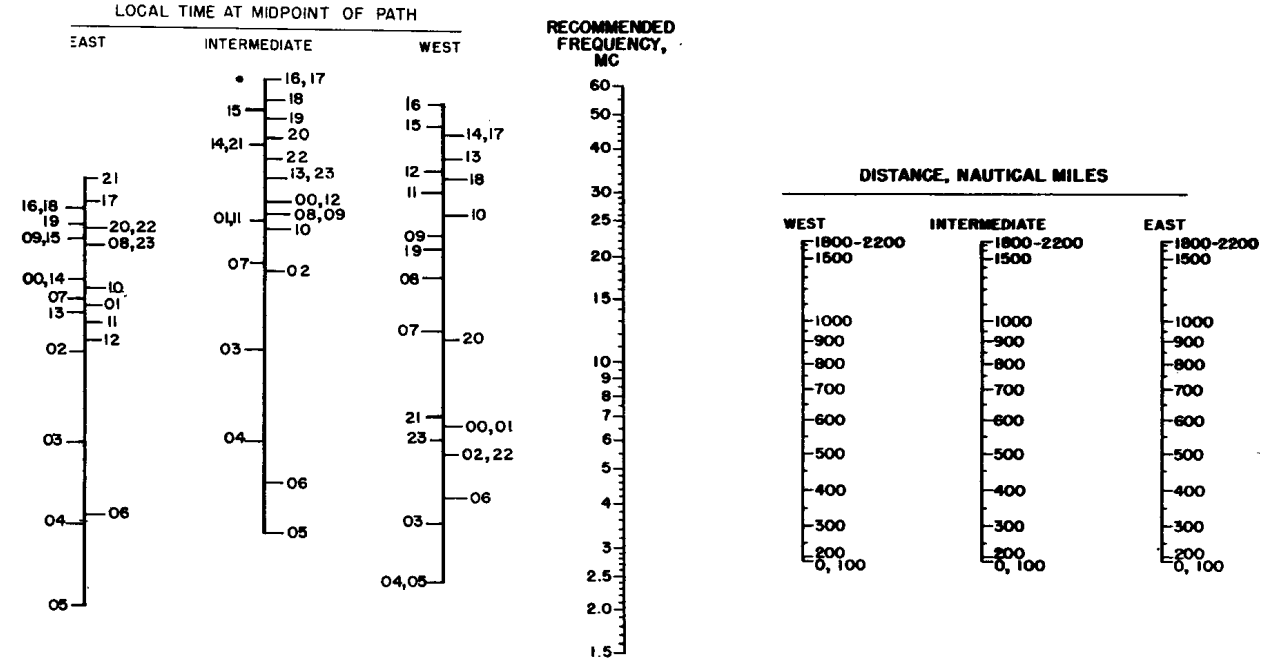

Fig. 8. LATITUDE 10°N. PREDICTED FOR MARCH, 1954

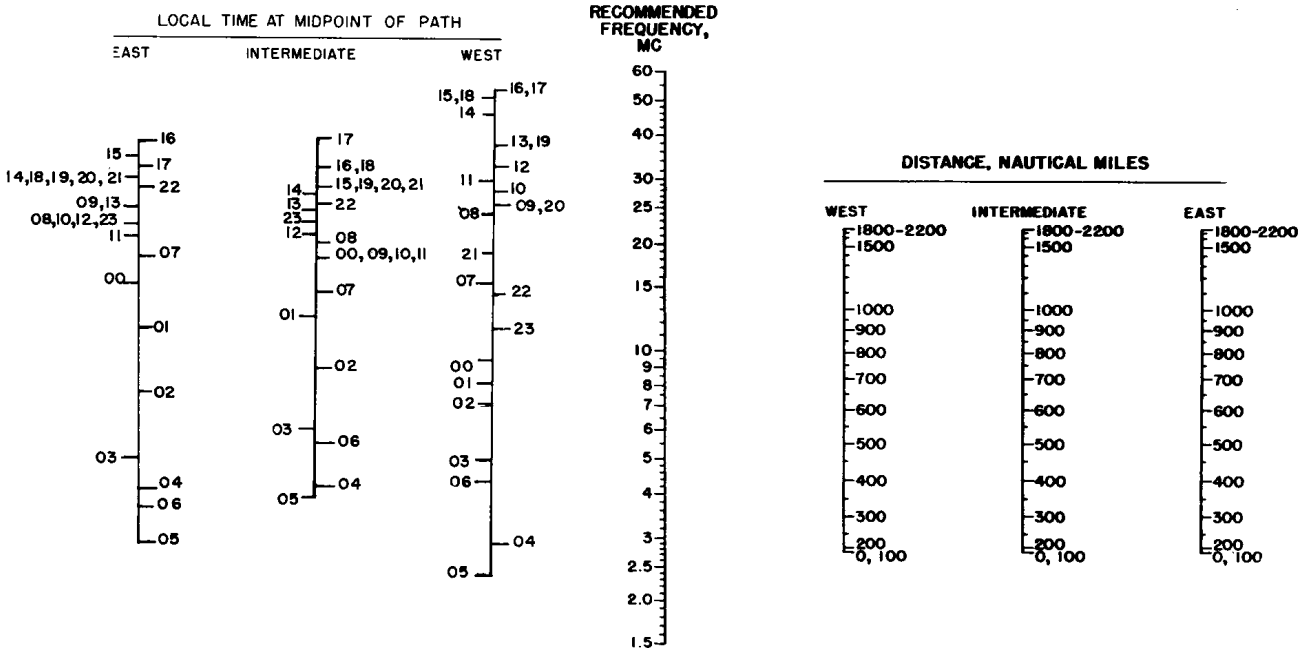

Fig. 9. LATITUDE 0° PREDICTED FOR MARCH, 1954

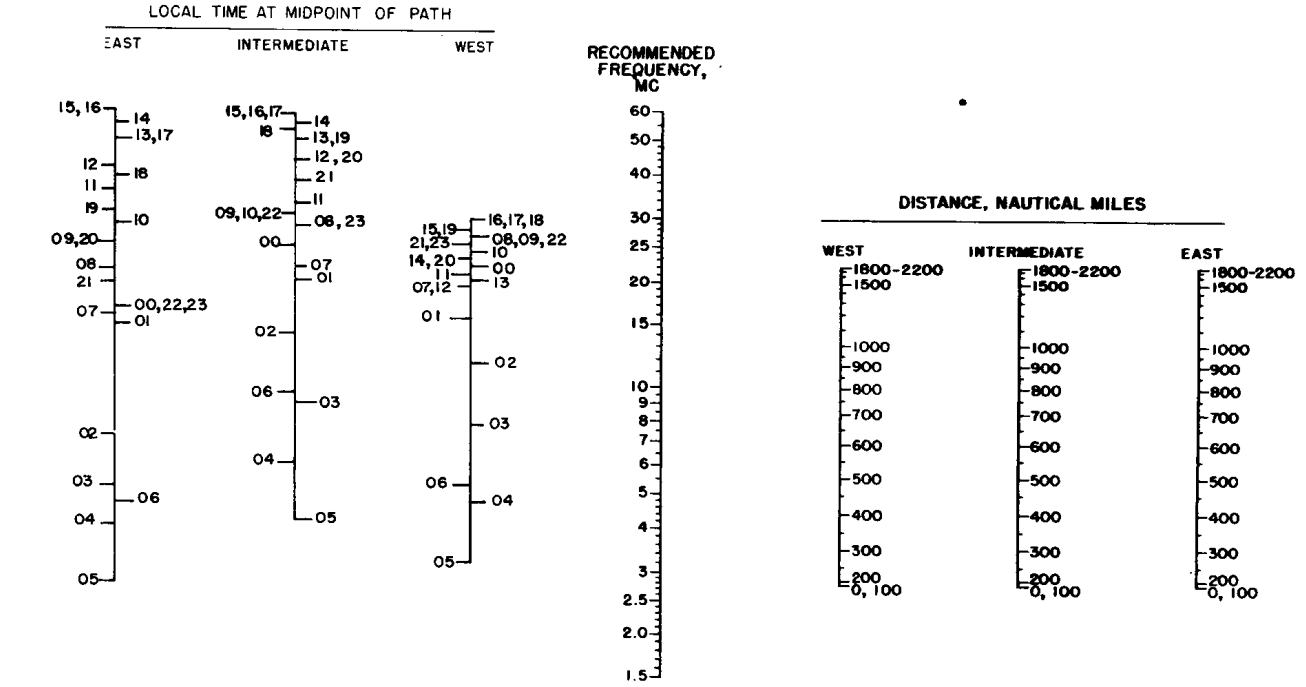

Fig. 10. LATITUDE 10° S. PREDICTED FOR MARCH, 1954

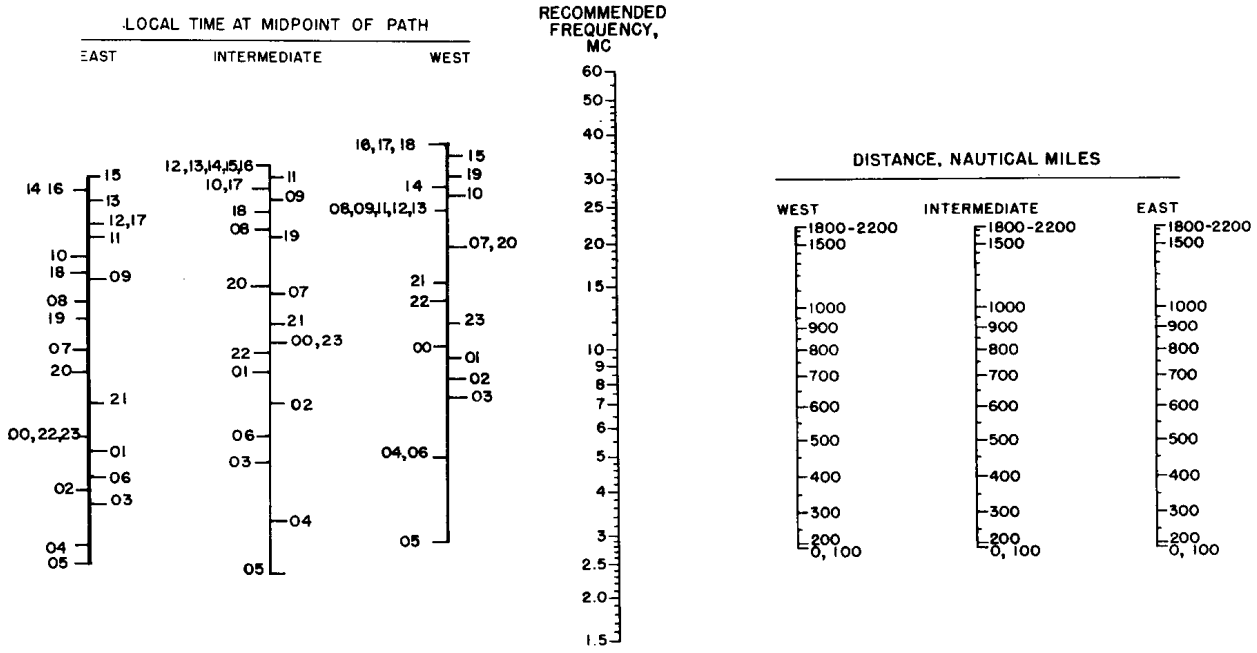

Fig. 11. LATITUDE 20° S. PREDICTED FOR MARCH . 1954

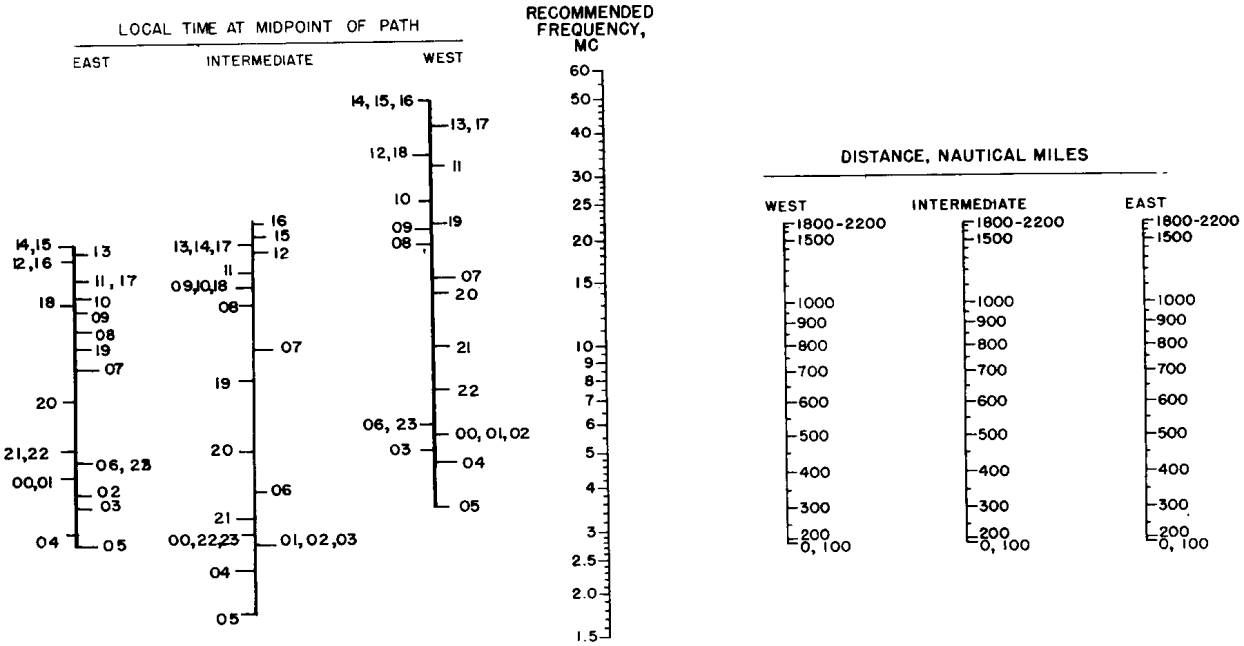

Fig. 12. LATITUDE 30° S. PREDICTED FOR MARCH, 1954

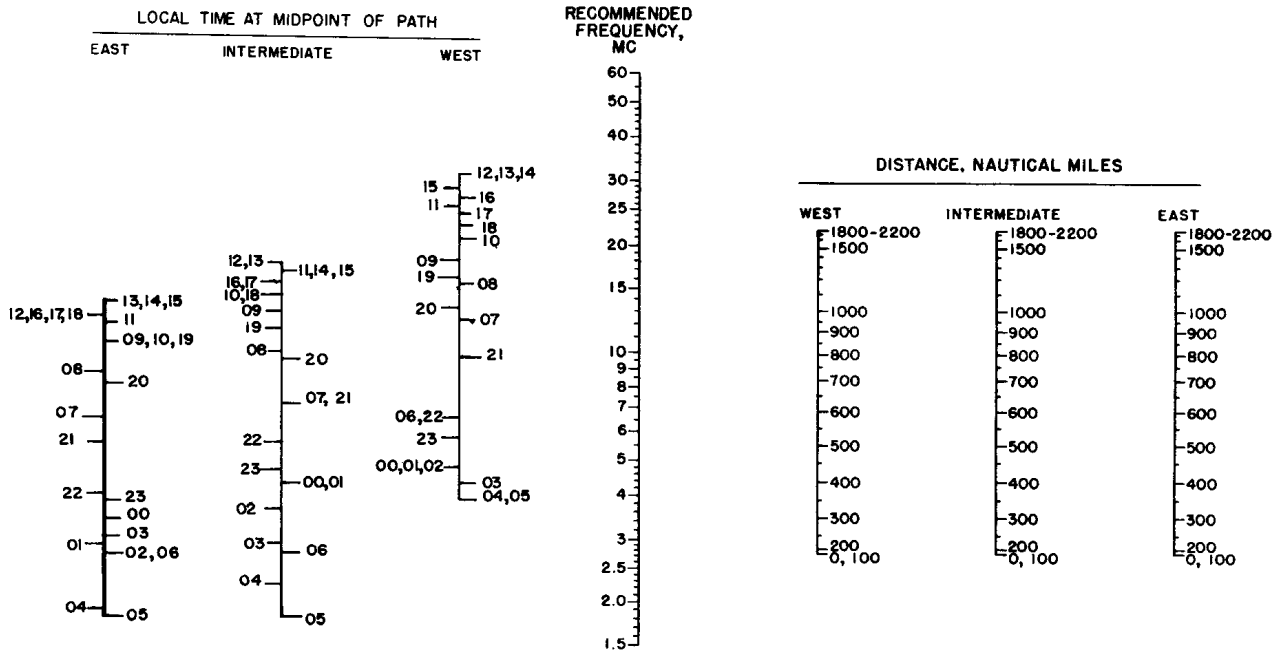

Fig. 13. LATITUDE 40° S. PREDICTED FOR MARCH, 1954

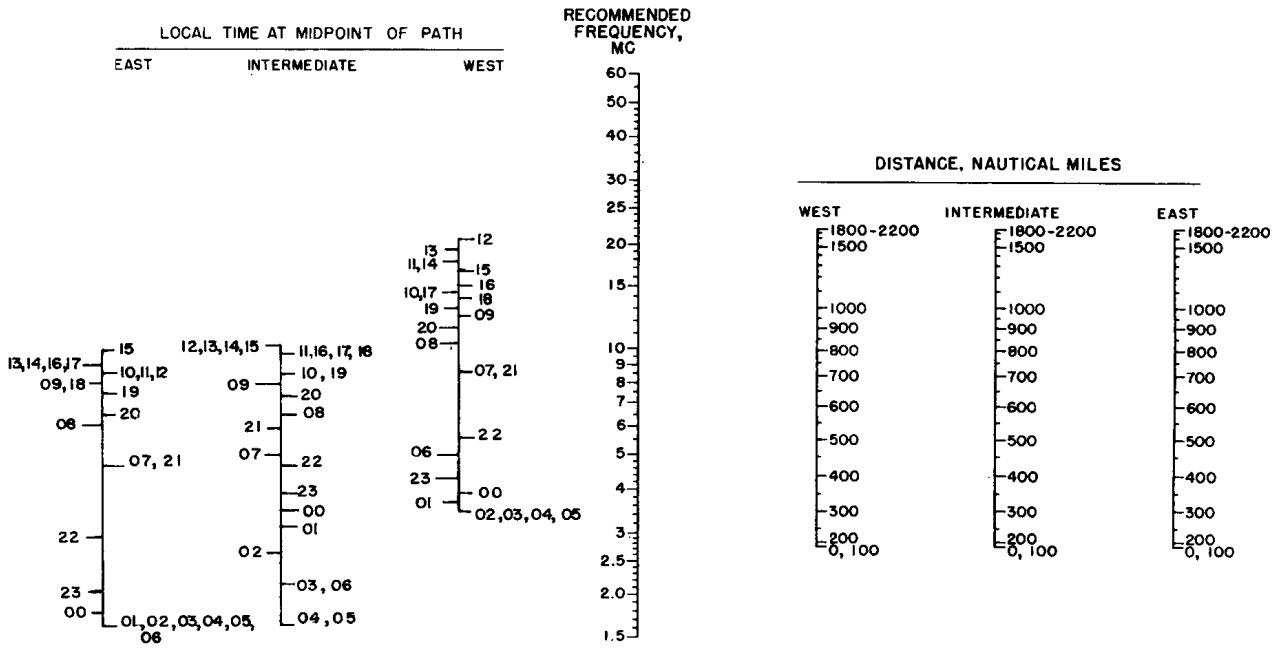

Fig. 14. LATITUDE 50° S. PREDICTED FOR MARCH, 1954

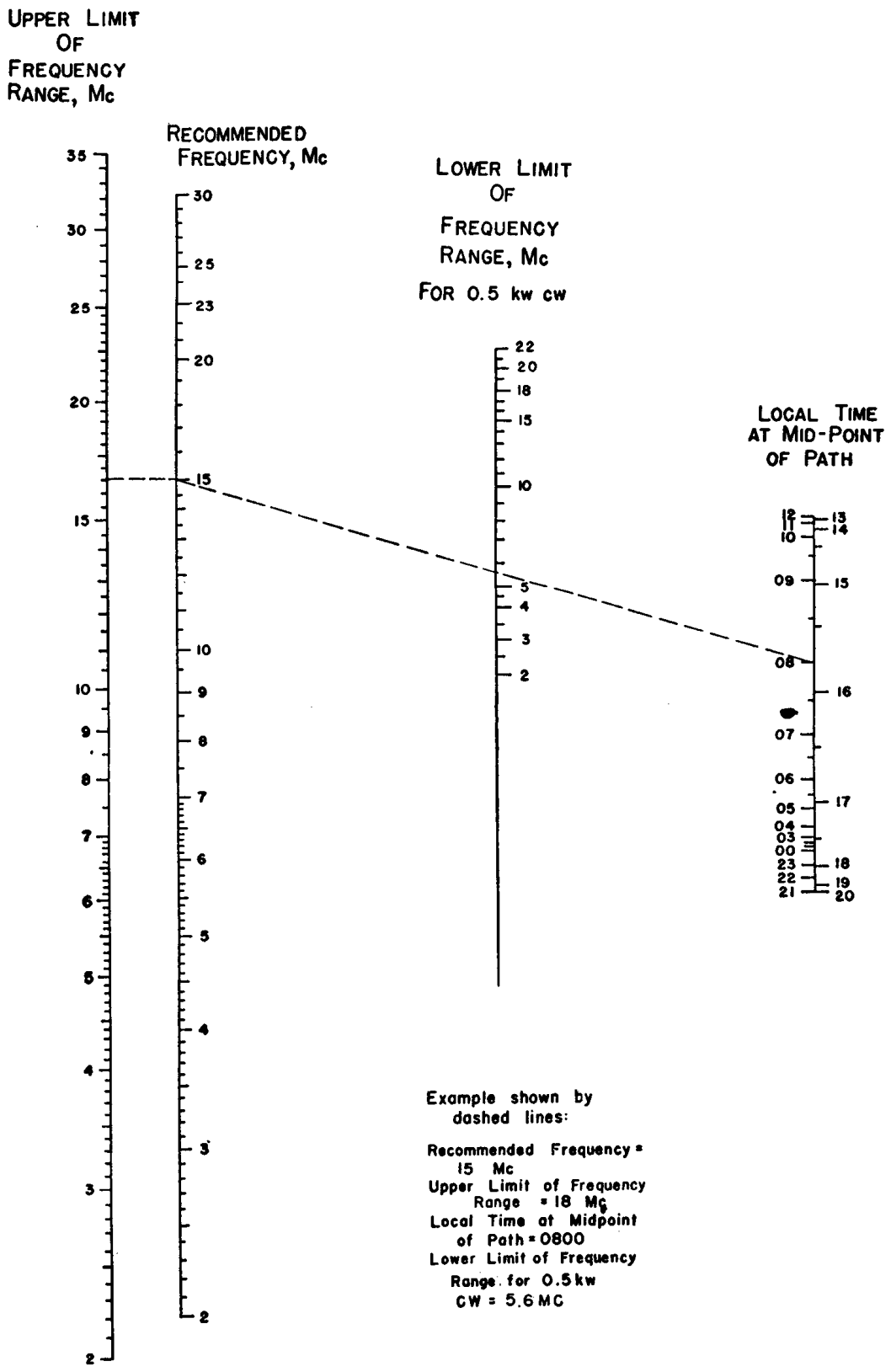

Fig. 15 Nomogram giving approximate frequency ranges most suitable for high-frequency transmission with a radiated power of 0.5 kilowatt CW, for all latitudes and seasons.

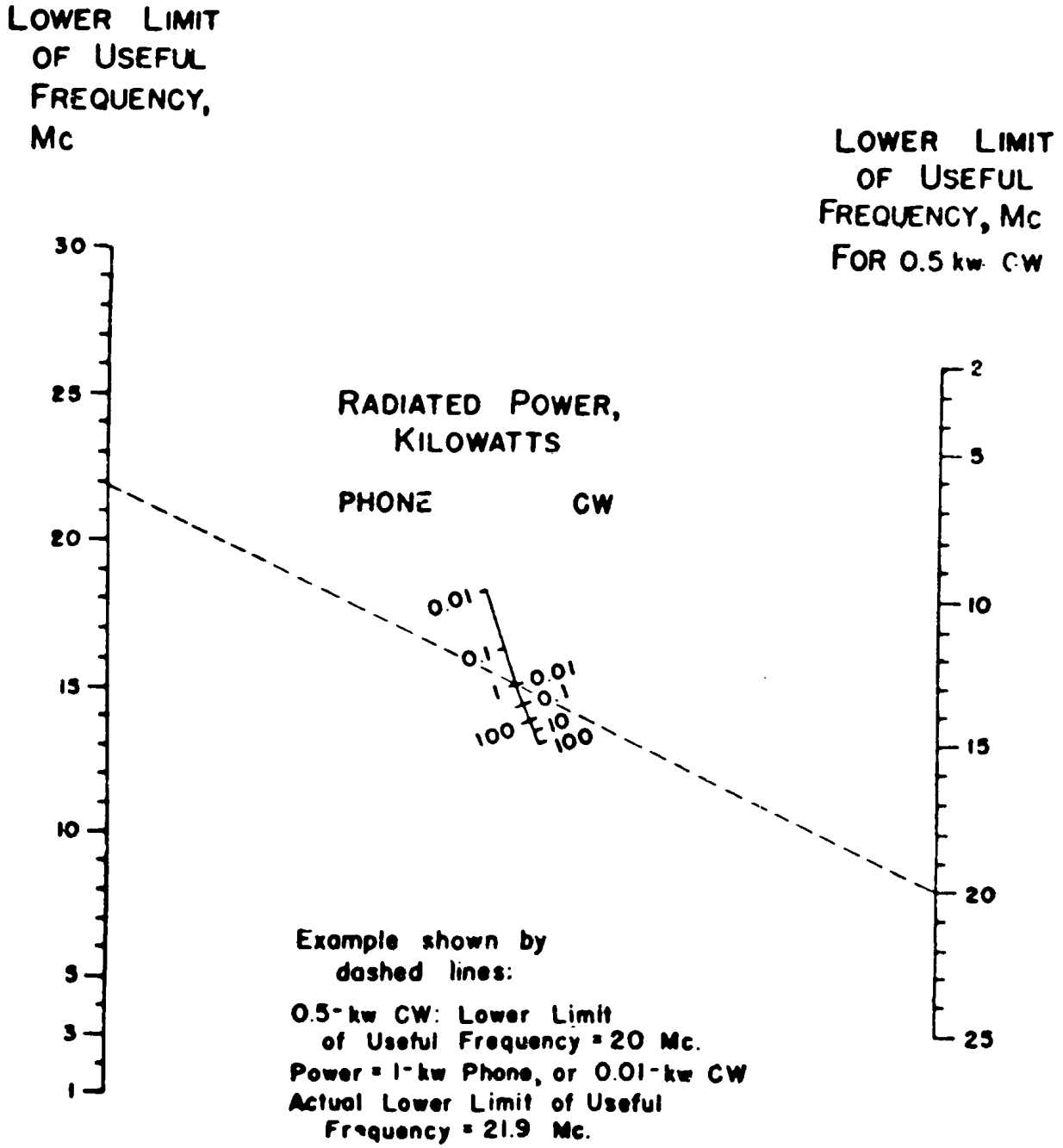

Fig. 16 Nomogram giving relation between lower limit of most suitable frequency range and radiated power of transmitter.

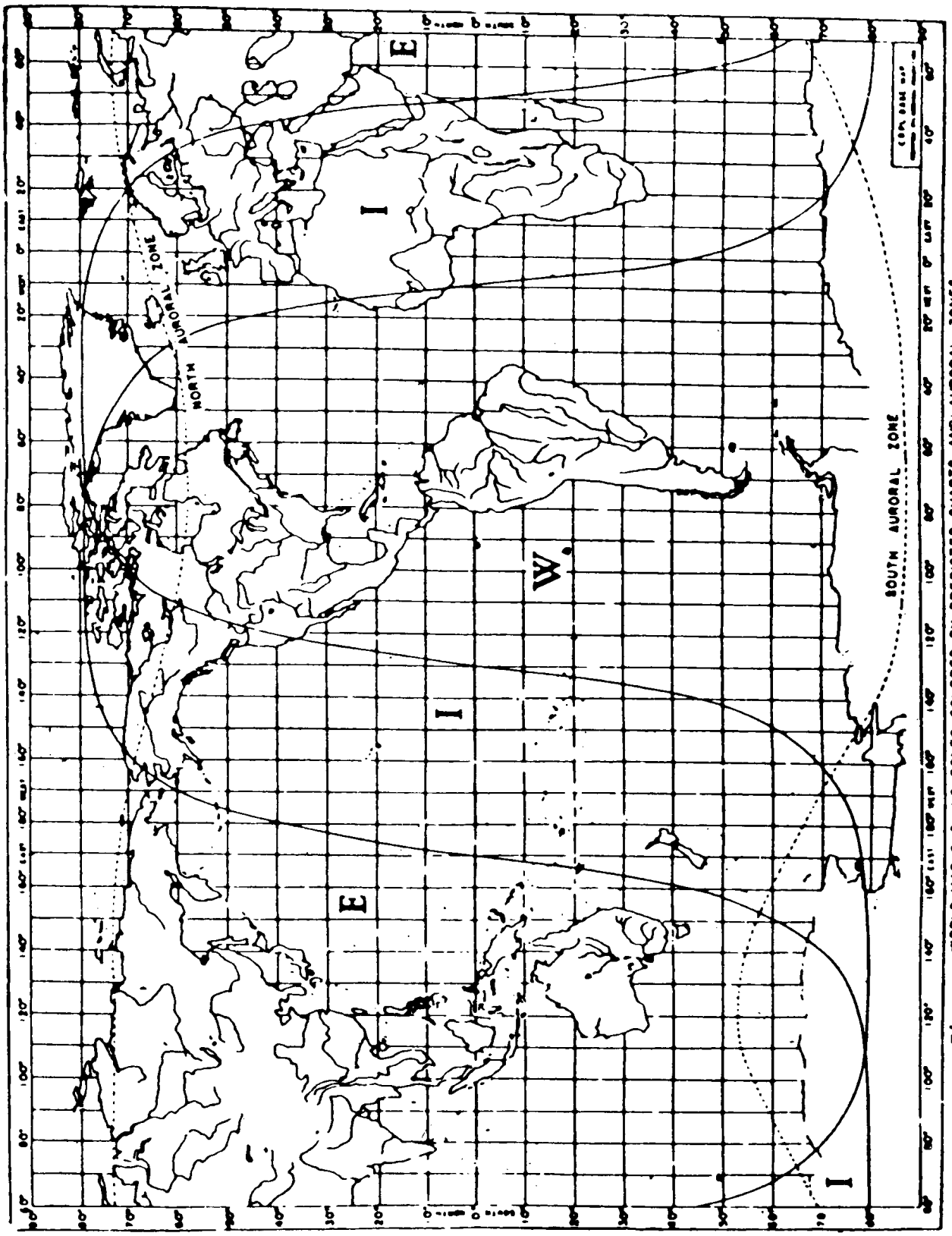

Fig.17 WORLD MAP SHOWING ZONES COVERED BY PREDICTED CHARTS AND AURORAL ZONES