PART A

IONOSPHERIC DATA

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U. S. DEPARTMENT OF COMMERCE
NATIONAL BUREAU OF STANDARDS
CENTRAL RADIO PROPAGATION LABORATORY
BOULDER, COLORADO

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PART A

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CONTENTS

SYMBOLS, TERMINOLOGY, CONVENTIONS

Beginning with data reported for January 1952, the symbols, terminology, and conventions for the determination of median values used in this report (CRPL-F series) conform as far as practicable to those adopted at the Sixth Meeting of the International Radio Consultative Committee (C.C.I.R.) in Geneva, 1951. Excerpts concerning symbols and terminology from Document No. 626-E of this Meeting are given on pages 2-7 of the report CRPL-F89, "Ionospheric Data," issued January 1952. Reprints of these pages are available upon request.

Beginning with data for January 1945, median values are published wherever possible. Where averages are reported, they are, at any hour, the average for all the days during the month for which numerical data exist.

The following conventions are used in determining the medians for hours when no measured values are given because of equipment limitations and ionospheric irregularities. Symbols used are those given in Document No. 626-E referred to above, plus an additional symbol, R: "Scaling of characteristic is influenced or prevented by absorption in the neighborhood of the critical frequency," (May 1955). Also, beginning with January 1956, additional meanings are assigned to T: A smoothed value which better fits the observations, replacing a doubtful or clearly inconsistent observed value; and to U: foF2 minus foF1 is 0.5 Mc or less (used with (M3000)F2).

a. For all ionospheric characteristics:

Values missing because of A, C, F, L, M, N, Q, R, S, or T are omitted from the median count.

b. For critical frequencies and virtual heights:

Values of foF2 (and foE near sunrise and sunset) missing because of E are counted as equal to or less than the lower limit of the recorder. Values of h'F2 (and h'E near sunrise and sunset) missing for this reason are counted usually as equal to or greater than the median. Other characteristics missing because of E are omitted from the median count.

Values missing because of G are counted:

1. For foF2, as equal to or less than foF1.
2. For h'F2, as equal to or greater than the median.

The symbol W is included in the median count only when it replaces a height characteristic; the symbol D, only when it replaces a frequency characteristic.

Values missing for any other reason are omitted from the median count.

c. For MUF factor (M-factors):

Values missing because of G or W are counted as equal to or less than the median.

Values missing for any other reason are omitted from the median count.

d. For sporadic E (Es):

Values of fEs missing because of E or G (and B when applied to the daytime E region only) are counted as equal to or less than the median foE, or equal to or less than the lower frequency limit of the recorder.

At night B for fEs is counted on the low side when there is a numerical value of foF2; otherwise it is omitted from the median count.

Values of fEs missing for any other reason, and values of h'Es missing for any reason at all are omitted from the median count.

Beginning with data for November 1945, doubtful monthly median values for ionospheric observations at Washington, D. C., are indicated by parentheses, in accordance with the practice already in use for doubtful hourly values. The following are the conventions used to determine whether or not a median value is doubtful:

1. If the count is four or less, the data are considered insufficient and no median value is computed.

2. For the F2 layer or sporadic E, if the count is from five to nine, the median is considered doubtful. The E and F1 layers are so regular in their characteristics that, as long as the count is at least five, the median is not considered doubtful.

3. For all layers, if more than half of the data used to compute the median are doubtful (either doubtful or interpolated), the median is considered doubtful.

The same conventions are used by the CRPL in computing the medians from tabulations of daily and hourly data for stations other than Washington, beginning with the tables in IRPL-F18.

The tables and graphs of ionospheric data are correct for the values reported to the CRPL, but, because of variations in practice

in the interpretation of records and scaling and manner of reporting of values, may at times give an erroneous conception of typical ionospheric characteristics at the station. Some of the errors are due to:

a. Differences in scaling records when spread echoes are present.

b. Omission of values when foF2 is less than or equal to foF1, leading to erroneously high values of monthly averages or median values.

c. Omission of values when critical frequencies are less than the lower frequency limit of the recorder, also leading to erroneously high values of monthly average or median values.

These effects were discussed on pages 6 and 7 of the previous F-series report IRPL-F5.

Ordinarily, a blank space in the fEs column of a table is the result of the fact that a majority of the readings for the month are below the lower limit of the recorder or less than the corresponding values of foE. Blank spaces at the beginning and end of columns of h'F1, foF1, h'E, and foE are usually the result of diurnal variation in these characteristics. Complete absence of medians of h'F1 and foF1 is usually the result of seasonal effects.

The dashed-line prediction curves of the graphs of ionospheric data are obtained from the predicted zero-muf contour charts of the CRPL-D series publications. The following points are worthy of note:

a. Predictions for individual stations used to construct the charts may be more accurate than the values read from the charts since some smoothing of the contours is necessary to allow for the longitude effect within a zone. Thus, inasmuch as the predicted contours are for the center of each zone, part of the discrepancy between the predicted and observed values as given in the F series may be caused by the fact that the station is not centrally located within the zone.

b. The final presentation of the predictions is dependent upon the latest available ionospheric and radio propagation data, as well as upon predicted sunspot number.

c. There is no indication on the graphs of the relative reliability of the data; it is necessary to consult the tables for such information.

PREDICTED AND OBSERVED SUNSPOT NUMBERS

The following predicted smoothed 12-month running-average Zürich sunspot numbers were used in constructing the contour charts:

Month	Predicted Sunspot Number										
	1957	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947
December		150	42	11	15	33	53	86	108	114	126
November		147	35	10	16	38	52	87	112	115	124
October		135	31	10	17	43	52	90	114	116	119
September		119	30	8	18	46	54	91	115	117	121
August		105	27	8	18	49	57	96	111	123	122
July		95	22	8	20	51	60	101	103	125	116
June		89	18	9	21	52	63	103	108	129	112
May		77	16	10	22	52	68	102	108	130	109
April	150*	68	13	10	24	52	74	101	109	133	107
March	150*	60	14	11	27	52	78	103	111	133	105
February	150*	53	14	12	29	51	82	103	113	133	90
January	150*	48	12	14	30	53	85	105	112	130	88

*This number is believed representative of solar activity at a maximum portion of the current sunspot cycle.

The latest available information follows concerning the corresponding observed Zürich numbers (some of which may be subject to minor change) beginning with the minimum of April 1954.

Observed Sunspot Number

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1954				3	4	4	5	7	8	8	9	12
1955	14	16	19	23	29	35	40	46	55	64	72	80
1956	88	97	108	119								

WORLD-WIDE SOURCES OF IONOSPHERIC DATA

The ionospheric data given here in tables 1 to 40 and figures 1 to 80 were assembled by the Central Radio Propagation Laboratory for analysis and correlation, incidental to CRPL prediction of radio propagation conditions. The data are median values unless otherwise indicated. The following are the sources of the data in this issue:

Meteorological Service of the Belgian Congo and Ruanda-Urundi:
Leopoldville, Belgian Congo

British Department of Scientific and Industrial Research, Radio Research Board:
Falkland Is.
Ibadan, Nigeria (University College of Ibadan)
Inverness, Scotland
Singapore, British Malaya
Slough, England

Radio Wave Research Laboratories, National Taiwan University, Taipeh, Formosa, China:
Formosa, China

Danish National Committee of URSI:
Godhavn, Greenland

French National Center for Telecommunications Studies:
Djibouti, French Somaliland
Tananarive, Madagascar

Christchurch Geophysical Observatory, New Zealand Department of Scientific and Industrial Research:
Christchurch, New Zealand

Research Institute of National Defence, Stockholm, Sweden:
Upsala, Sweden

Royal Board of Swedish Telegraphs, Radio Department, Stockholm, Sweden:
Lulea, Sweden

United States Army Signal Corps:
Adak, Alaska
Ft. Monmouth, New Jersey
Okinawa I.
Thule, Greenland
White Sands, New Mexico

National Bureau of Standards (Central Radio Propagation Laboratory):
Fairbanks, Alaska (Geophysical Institute of the University of Alaska)
Maui, Hawaii
Narsarssuak, Greenland
Panama Canal Zone
Point Barrow, Alaska
Puerto Rico, W. I.
San Francisco, California (Stanford University)
Washington, D. C.

HOURLY IONOSPHERIC DATA AT WASHINGTON, D. C.

The data given in tables 41 through 51 follow the scaling practices given in the report IRPL-C61, "Report of International Radio Propagation Conference," pages 36 to 39, and the median values are determined by the conventions given above under "Symbols, Terminology, Conventions." Beginning with September 1949, the data are taken at Ft. Belvoir, Virginia.

The interpretation of a cell is as follows: U F
32

The U is a weight meaning doubtful. Other weights are I, interpolated, D, greater than, and E, less than. Absence of a letter in the upper left position means full weight is given to the observation.

Symbols such as F above are given in the upper right position.

There should be no difficulty in the placing of the decimal point. For the time being, a final zero will be found in each value of foF1 and foE. Thus at a later date it will be possible to register more closely scaled values of these characteristics, whenever such are reported.

ERRATUM

CRPL-F146, p. 49, fig. 69: At 1743, fEs reading should have been <3.0.

EXAMPLES OF IONOSPHERIC VERTICAL SOUNDINGS
BARROW, ALASKA; SEPT. 7, 1956

The following ionograms were obtained at the NBS Barrow, Alaska vertical sounding station. They are typical of day and night conditions for September at this geomagnetic latitude. Ionospheric data are scaled directly from these records onto the daily f-plot, a graph of frequency characteristics vs. time. The f-plot for the day represented by these soundings is found on the following page.

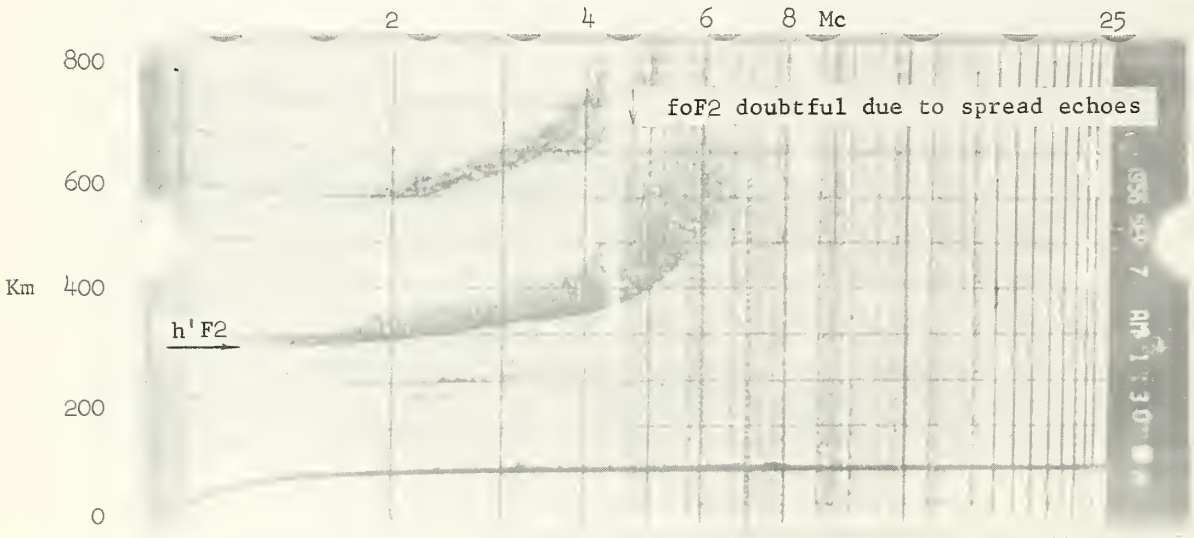


Fig. A. Barrow, Alaska, Sept. 7, 1956, 0130 hours, 150°W time.

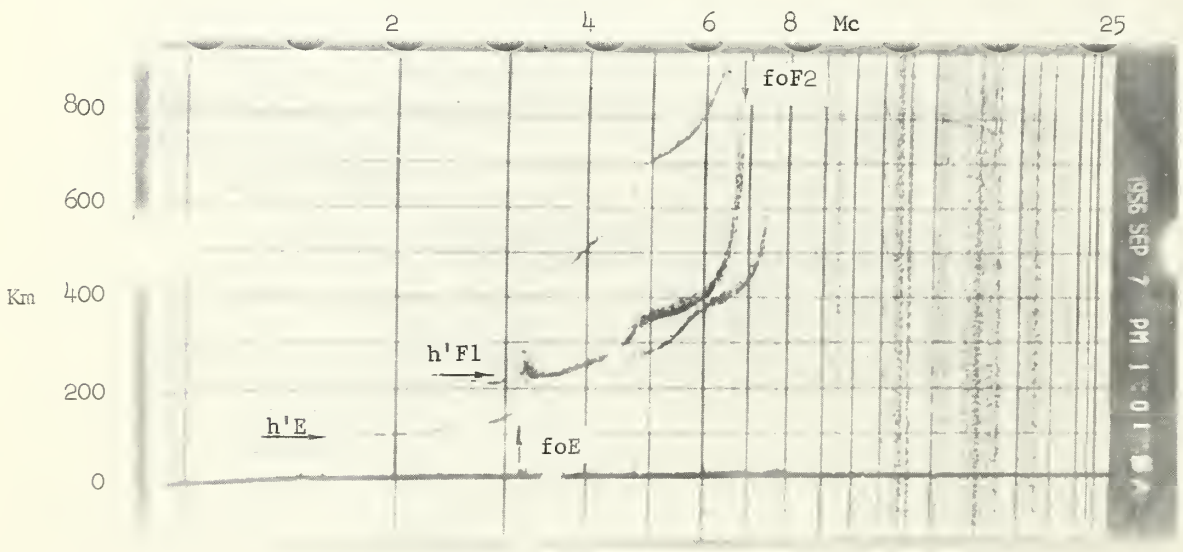
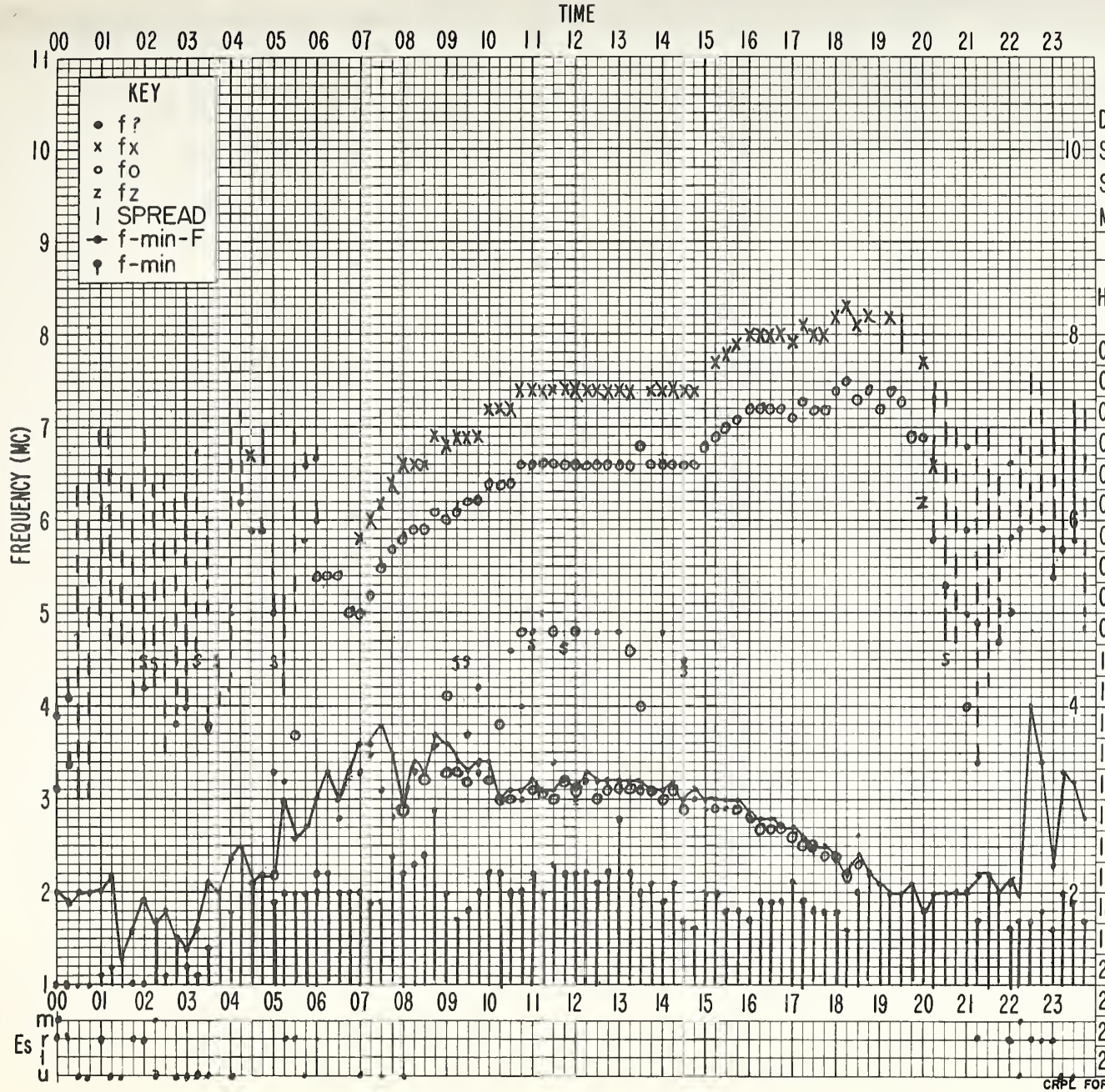


Fig. B. Barrow, Alaska, Sept. 7, 1956, 1301 hours, 150°W time.



f-PLOT OF IONOSPHERIC DATA

DATE SEPTEMBER 7, 1956

STATION BARROW, ALASKA

SCALED BY WCW – JJS

MERIDIAN TIME 150°W.

UNPLOTTED HOURLY VALUES

HR	F2 M3000	WT	SYM	F1 M3000	WT	SYM	h'E	WT	SYM	fEs	SYM
00	285	2	F							031	
01			F							049	
02			F							042	
03			F							031	
04			F							030	
05			F			F	111	1			G
06	270	1				Q	135	5	B		G
07	265	1				Q	105	1		035	
08	280	1				L	119	1		031	
09	280	1		370	1		111	5	B		G
10	285	1				L	111	1			G
11	280	1				1/3	101	1			G
12	275	1		345	1		109	1			G
13	275	1		355	2	L	105	1			G
14	275	1		360	2	L	101	1			G
15	280	1				L	101	1			G
16	285	1				L	101	1			G
17	295	1				L	115	5	B		G
18	290	1				L	119	1			G
19	300	1				Q			B		B
20	300	1									B
21	290	1									B
22	276	2	F							080	H
23			F							088	H

CRPL FORM 7-L 10-23-55

Table 1

Washington, D. C. (38.7°N, 77.1°W) October 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	6.7						2.80
01	270	6.4					(2.5)	2.85
02	260	6.1					(3.0)	2.85
03	250	5.8					(2.5)	2.85
04	250	5.5						2.80
05	260	4.9						2.80
06	260	5.5						2.95
07	240	8.6	---	---	119	2.2		3.20
08	240	10.7	230	---	109	2.8		3.20
09	240	12.0	220	---	109	3.1	3.1	3.10
10	240	12.5	215	---	105	3.3		3.00
11	250	12.7	215	---	105	3.4		2.90
12	250	12.9	220	---	109	3.5		2.90
13	(250)	13.0	220	---	109	3.5		2.80
14	260	12.8	225	---	109	3.4		2.80
15	250	12.6	230	---	109	3.2		2.80
16	250	12.5	240	---	111	2.7		2.85
17	230	11.8	235	---	119	2.2		2.95
18	220	10.8					2.3	2.95
19	230	9.2					(3.3)	2.90
20	240	8.3					(3.0)	2.85
21	250	7.6						2.90
22	250	7.1						2.80
23	260	7.0					(2.7)	2.85

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 2

Narsarssuak, Greenland (61.2°N, 45.4°W) 5eptember 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00							4.8	
01							3.8	
02							3.6	
03		---					3.6	----
04		---			---	---	3.6	----
05		(4.9)			---	---	2.6	(2.90)
06		(5.8)			151	2.2		(3.00)
07		6.6		---	117	2.4		3.05
08		6.9		---	115	2.7		2.90
09		7.4		---	113	3.0		2.90
10		8.2		(4.9)	109	3.2		2.85
11		8.2		(5.0)	111	(3.2)		2.80
12		8.6		4.8	111	(3.3)		2.75
13		8.5		(5.0)	109	3.2		2.75
14		8.2		(4.8)	111	3.2		2.75
15		7.8		4.6	111	3.0		2.80
16		8.3		---	115	2.8		2.80
17		7.1		---	125	2.6		2.80
18		(7.0)			129	2.4		(2.85)
19		(7.4)			---	---	3.8	(2.80)
20		---			---	---	4.6	----
21		---			---	---	3.9	----
22		---			---	---	4.6	----
23		---					4.2	----

Time: 45.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 3

Upsala, Sweden (59.8°N, 17.6°E) 5eptember 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	325	4.8					2.7	2.7
01	315	4.6					2.7	2.7
02	325	4.4					2.9	2.7
03	325	3.8					2.8	2.7
04	320	3.4			---	E	2.9	2.7
05	285	4.2	---	----	---	E	2.4	2.9
06	275	5.4	260	(3.40)	130	1.90	2.4	3.0
07	260	6.5	250	4.00	115	2.50	3.0	3.0
08	290	7.2	240	4.60	110	2.80	3.8	2.9
09	310	8.0	240	4.80	110	3.00	4.4	2.9
10	295	8.4	235	5.00	105	3.20	4.7	2.9
11	310	8.6	225	5.20	105	3.30	4.1	2.8
12	300	8.9	230	5.25	105	3.30	3.4	2.8
13	300	9.1	240	5.20	105	3.35		2.9
14	290	9.2	240	5.20	105	3.20		2.9
15	290	8.6	240	4.80	110	3.00		2.9
16	275	8.8	245	4.45	110	2.70		2.9
17	260	9.0	260	3.70	120	2.20	2.6	2.9
18	245	8.5	---	----	---	1.50	2.8	3.0
19	245	8.2			---	E	2.6	3.0
20	240	7.1			---	----	2.6	2.9
21	250	6.3					2.4	2.9
22	270	5.6					2.6	2.8
23	310	5.0					2.4	2.7

Time: 15.0°E.
Sweep: 1.4 Mc to 17.0 Mc in 6 minutes, automatic operation.

Table 4

Adak, Alaska (51.9°N, 176.6°W) 5eptember 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	320	4.6						2.50
01	330	4.2						2.50
02	330	4.4						2.50
03	340	4.0						2.45
04	340	3.9						2.40
05	330	4.0	---	---	---	---		2.55
06	260	5.6	275	---	129	---	2.2	2.85
07	240	7.4	240	4.1	115	(2.7)	2.9	2.90
08	240	8.8	230	---	109	(3.1)		2.90
09	270	9.7	225	4.8	109	(3.4)	3.6	2.90
10	290	9.8	220	5.1	105	(3.5)	3.6	2.85
11	320	10.2	220	---	105	(3.6)	3.7	2.80
12	310	10.4	215	---	109	(3.5)	3.6	2.80
13	260	10.1	220	---	110	(3.5)	3.5	2.80
14	240	9.9	225	---	109	(3.4)	3.4	2.80
15	240	9.8	230	---	109	(3.2)	3.2	2.85
16	240	9.8	240	---	111	(2.9)		2.90
17	240	9.3	---	---	119	(2.5)	3.0	2.95
18	240	8.9	---	---	---	---	2.2	3.00
19	240	8.0						2.95
20	240	6.8					2.4	2.90
21	260	6.0					2.2	2.85
22	270	5.3						2.70
23	300	4.8						2.60

Time: 180.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 27 seconds.

Table 5

Ft. Monmouth, New Jersey (40.3°N, 74.1°W) 5eptember 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	6.5					(2.7)	2.65
01	280	6.2						2.60
02	270	6.2					(2.5)	2.65
03	280	5.9					(1.8)	2.60
04	270	(5.6)					(2.7)	2.65
05	260	(4.8)					(2.5)	(2.80)
06	250	6.2	---	---	<130	(2.1)		3.10
07	240	8.0	240	---	111	2.7	2.7	3.10
08	250	9.0	220	---	111	3.2		3.10
09	250	9.8	220	4.5	109	3.6		3.00
10	280	10.2	215	5.4	109	(3.7)		2.85
11	260	10.5	205	5.0	109	3.8		2.80
12	280	10.8	210	5.4	109	3.8		2.80
13	280	10.8	215	5.5	109	3.8		2.75
14	310	10.8	220	5.4	109	3.7		2.75
15	300	10.7	230	5.2	109	3.5		2.80
16	250	10.7	230	---	109	3.2		2.80
17	240	10.2	<250	---	111	2.6		2.80
18	240	9.9			---	---		2.85
19	240	9.2					3.5	2.80
20	240	8.3					(2.8)	2.80
21	260	7.7						2.70
22	270	7.4						2.70
23	290	7.0						2.60

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 6

White Sands, New Mexico (32.3°N, 106.5°W) 5eptember 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	6.0					2.3	2.60
01	290	5.8					1.3	2.65
02	280	5.6					2.5	2.65
03	270	5.4					(2.2)	2.70
04	270	5.4					3.8	2.60
05	(270)	5.3					2.6	2.65
06	260	6.4	---	---	---	---	2.9	3.00
07	240	8.7	240	---	109	(2.7)	3.2	3.10
08	250	9.7	230	---	109	(3.3)	4.0	3.05
09	260	10.4	220	---	107	(3.5)	3.6	2.90
10	280	10.9	210	---	107	(3.8)		2.75
11	310	11.4	210	---	108	(4.0)		2.75
12	320	11.8	215	5.7	109	(4.0)		2.75
13	330	11.9	220	---	(111)	(4.0)		2.75
14	320	11.8	220	---	(111)	(3.9)		2.70
15	310	11.6	230	---	109	(3.6)		2.75
16	260	11.4	230	---	109	(3.2)	3.3	2.80
17	250	11.0	240	---	112	(2.6)	3.7	2.85
18	230	10.0	---	---	---	---	3.0	2.95
19	220	8.7					2.5	2.90
20	230	7.4					2.8	2.80
21	250	6.4					2.7	2.75
22	(270)	6.3					3.3	2.70
23	280	6.2					2.6	2.60

Time: 105.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 7

Okinawa I. (26.3°N, 127.8°E) September 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	13.0					2.7	2.90
01	240	12.4					2.9	2.90
02	250	11.2					3.2	2.90
03	240	9.6					2.0	2.90
04	240	7.8					1.6	2.80
05	240	6.6					2.0	2.90
06	270	7.0					2.2	2.90
07	240	10.0	240	---	(117)	---	4.1	3.30
08	230	11.0	230	---	(111)	(3.0)	4.9	3.20
09	---	11.2	220	---	110	(3.4)	5.0	3.00
10	---	11.8	215	---	(111)	(3.8)	5.2	2.70
11	---	13.1	210	---	111	(4.0)	5.4	2.70
12	(350)	14.4	220	---	111	(4.2)	5.3	2.70
13	350	15.3	220	---	111	(4.1)	5.3	2.65
14	360	16.3	225	---	111	(4.0)	5.2	2.65
15	350	16.3	230	---	111	(3.8)	4.9	2.70
16	330	16.3	240	---	111	(3.5)	5.0	2.75
17	(300)	15.9	250	---	111	(3.1)	5.6	2.80
18	260	15.0	260	---	---	---	5.0	2.85
19	260	14.8					5.4	2.80
20	260	16.5					5.0	2.70
21	260	16.3					4.2	2.70
22	270	15.0					3.6	2.80
23	260	13.6					3.2	2.90

Time: 135.0°E.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 8

Formosa, China (25.0°N, 121.5°E) September 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	(12.7)					2.6	(2.8)
01	260	11.2					2.6	2.9
02	260	9.6					2.6	2.85
03	260	9.2					2.4	2.8
04	250	(8.8)					2.4	(2.8)
05	260	8.9					2.8	2.9
06	260	8.6			---	---	3.0	3.0
07	240	(10.1)	---	---	---	---	3.6	(3.1)
08	240	11.2	220	---	120	3.4	4.1	3.0
09	(240)	11.8	220	---	120	(3.6)	4.0	2.8
10	(260)	13.1	220	(5.2)	120	4.0	4.5	2.6
11	---	14.8	220	---	---	---		2.6
12	---	16.4	---	---	---	---		2.5
13	---	17.1	---	---	---	---	5.0	2.55
14	---	17.8	230	---	---	---	3.1	2.6
15	---	(18.5)	240	---	---	---	4.0	(2.6)
16	(290)	>18.5	240	---	120	3.4	4.2	(2.7)
17	270	(17.4)	240	---	---	---	3.9	(2.7)
18	280	>17.0					3.0	(2.8)
19	280	>16.4					2.9	(2.75)
20	280	(17.5)					(2.8)	(2.8)
21	280	>17.5					(2.8)	(2.8)
22	280	(18.0)					(2.9)	(2.8)
23	280	(16.1)					2.9	(2.8)

Time: 120.0°E.
Sweep: 1.1 Mc to 19.5 Mc in 15 minutes, manual operation.

Table 9

Maui, Hawaii (20.8°N, 156.5°W) September 1956

Time	h'F2	foF2	b'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	10.6						3.00
01	250	9.6						3.00
02	240	8.4						3.05
03	240	6.9						3.00
04	260	5.8						2.65
05	270	5.0						2.75
06	300	5.1						2.80
07	250	8.2	---	---	121	2.4		3.10
08	250	9.9	235	---	113	3.1	4.4	3.00
09	(270)	11.0	230	---	111	3.5	4.6	2.80
10	(330)	12.2	225	---	111	3.8	4.6	2.70
11	350	13.0	220	6.4	111	4.0	4.6	2.70
12	360	14.0	220	6.6	111	4.1	4.7	2.70
13	360	14.5	230	6.8	111	4.1	4.4	2.70
14	350	14.5	230	(6.9)	111	4.0	4.2	2.75
15	340	14.5	230	---	111	3.8	4.1	2.80
16	320	14.0	230	---	111	3.4	4.1	2.85
17	280	13.2	250	---	117	2.8	4.6	2.90
18	260	13.0	---	---	125	2.0	3.5	3.00
19	250	12.6					3.8	3.00
20	260	12.2					3.0	2.90
21	270	11.8					3.0	2.90
22	270	11.4					2.7	3.00
23	260	10.8						3.05

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 10

Puerto Rico, W. I. (18.5°N, 67.2°W) September 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	9.0					(3.8)	2.80
01	270	8.6					(2.9)	2.90
02	250	8.0					(2.8)	3.00
03	230	6.9					(3.0)	2.90
04	250	6.4					(2.9)	2.70
05	260	5.9					(3.4)	2.80
06	260	5.8					(2.4)	2.85
07	240	8.6	---	---	(119)	2.3		3.20
08	230	10.0	230	---	109	3.1	3.5	3.10
09	---	10.8	225	---	109	3.5	3.6	3.00
10	(290)	11.6	220	---	109	3.8		2.85
11	(290)	12.5	220	5.6	109	4.0	4.1	2.80
12	330	12.8	215	5.7	108	4.1	4.2	2.80
13	330	13.0	220	5.9	108	4.1		2.75
14	330	12.9	230	5.8	109	4.0	5.2	2.75
15	320	12.9	230	5.5	109	3.8	5.3	2.75
16	---	12.4	230	---	109	3.5	4.8	2.80
17	250	11.6	240	---	111	3.0	4.6	2.80
18	250	11.1	---	---	---	<2.2	3.4	2.80
19	240	10.3					3.2	2.80
20	250	9.4					3.5	2.75
21	270	9.2					3.2	2.70
22	280	9.1					(3.6)	2.70
23	280	9.0					(4.0)	2.75

Time: 60.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 11

Panama Canal Zone (9.4°N, 79.9°W) September 1956

Time	h'F2	foF2	b'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	10.0						3.05
01	230	9.0					2.2	3.10
02	230	6.8					1.9	3.10
03	230	6.2						2.80
04	250	5.4						2.90
05	260	4.5					2.7	2.75
06	280	5.1					3.2	2.80
07	240	8.6	---	---	112	2.6	3.6	3.10
08	230	10.2	230	---	109	3.2	4.4	2.90
09	(280)	12.0	225	---	105	3.7	4.6	2.80
10	(310)	13.0	220	---	107	4.0	4.6	2.75
11	340	13.8	220	---	105	4.1	4.4	2.70
12	360	14.3	220	---	107	4.2	4.9	2.65
13	370	14.5	220	---	109	4.2		2.70
14	360	14.8	230	---	107	4.1	5.4	2.65
15	350	14.5	235	---	105	3.9	5.5	2.70
16	330	14.0	230	---	107	3.4	5.4	2.70
17	310	13.1	240	---	110	2.8	4.8	2.75
18	260	13.0			---	---	4.1	2.75
19	270	12.3					4.4	2.80
20	260	12.3					3.6	2.80
21	250	11.8					3.1	2.80
22	250	10.8					2.8	2.80
23	260	10.6						2.90

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 12

Thule, Greenland (77.0°N, 69.0°W) August 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00		(5.6)			---	---		2.80
01		5.6			<131	(2.0)		2.80
02		5.8			131	2.1		2.80
03		5.3		---	121	2.2		2.85
04		5.6		---	120	2.4		2.85
05		5.5		(3.9)	115	2.5		2.70
06		5.6		4.0	111	2.7		2.85
07		5.8		4.2	110	2.9		2.80
08		5.6		(4.3)	111	3.0		2.65
09		5.8		4.5	110	3.0	3.6	2.65
10		5.7		4.5	105	3.1		2.45
11		6.0		4.5	105	3.1		2.65
12		5.6		4.6	109	3.2		2.60
13		5.8		4.6	105	3.1	3.3	2.60
14		5.8		4.4	105	3.1		2.60
15		5.9		(4.4)	107	3.0		2.70
16		6.0		(4.4)	107	2.9		2.65
17		5.8		4.2	111	2.8		2.60
18		6.0		(4.0)	115	2.6		2.75
19		5.8		(3.8)	119	2.5		2.70
20		6.0		---	<129	2.2		2.75
21		5.8			<137	2.0		2.75
22		5.8			<136	2.0		2.95
23		5.6			<140	2.0		2.85

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 13

Narsarssuak, Greenland (61.2°N, 45.4°W) August 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00		(5.1)					4.8	(2.80)
01		---					4.5	----
02		---					4.3	----
03		(4.1)					4.0	(2.70)
04		4.5			---	---	3.9	2.90
05		5.2			121	2.0	4.0	3.00
06		5.8		---	112	2.6		3.00
07		6.1		---	111	2.9		3.00
08		6.4		4.6	109	3.2		2.95
09		6.7		(4.8)	108	(3.3)		2.90
10		6.5		5.0	103	3.3		2.80
11		6.8		5.0	107	3.5		2.70
12		7.0		5.2	109	3.5		2.70
13		7.0		5.1	104	(3.5)		2.65
14		7.2		5.0	109	(3.3)		2.75
15		7.2		4.9	109	3.3		2.70
16		6.8		4.8	111	3.2		2.75
17		6.5		4.5	111	3.0		2.85
18		(6.2)		4.2	117	2.0		(2.85)
19		(6.0)		---	121	2.8	2.9	(2.05)
20		(5.4)			---	---	4.5	(2.85)
21		(4.8)					7.0	(2.80)
22		---					4.6	
23		---					4.6	----

Time: 45.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 14

Upsala, Sweden (59.8°N, 17.6°E) August 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	295	5.5					2.7	2.7
01	305	5.2					3.1	2.7
02	305	4.8					3.0	2.7
03	305	4.6			---	E	2.9	2.8
04	300	4.8	290	2.80	---	E	2.7	2.9
05	295	5.4	255	(3.30)	130	1.95	3.1	2.9
06	310	6.0	245	4.00	115	2.50	4.4	2.9
07	320	6.5	240	4.60	110	2.90	5.0	2.9
08	340	7.2	240	4.80	105	3.10	5.6	2.8
09	340	7.3	230	5.10	105	3.30	5.6	2.9
10	345	7.6	230	5.20	105	3.40	6.0	2.85
11	360	7.6	220	5.30	105	3.50	4.7	2.9
12	350	7.8	220	5.30	105	3.50	5.7	2.8
13	350	7.8	225	5.30	105	3.50	4.6	2.9
14	345	7.5	225	5.20	105	3.50	4.6	2.9
15	360	7.4	230	5.20	105	3.30	4.0	2.8
16	340	7.3	240	4.95	105	3.10	3.7	2.9
17	300	7.4	245	4.50	110	2.85	3.6	2.9
18	290	7.6	250	(3.80)	115	2.40	3.9	2.9
19	260	7.6	260	(3.30)	135	1.80	3.4	2.9
20	255	7.5			---	E	3.4	2.9
21	260	7.1			---	E	2.9	2.9
22	265	6.8					2.5	2.8
23	290	6.0					2.5	2.7

Time: 15.0°E.
Sweep: 1.4 Mc to 17.0 Mc in 6 minutes, automatic operation.

Table 15

Adak, Alaska (51.9°N, 176.6°W) August 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	<300	5.6						2.65
01	<310	(5.3)						(2.60)
02	320	5.0						(2.55)
03	320	4.1						2.50
04	320	4.2					1.1	2.55
05	<330	5.2	270	---	130	---	2.2	2.60
06	400	6.0	250	3.9	113	(2.5)	3.0	2.60
07	380	6.8	230	4.3	109	(2.9)	3.9	2.60
08	360	7.4	220	4.7	107	---	4.4	2.70
09	390	7.6	220	4.9	105	---	4.3	2.70
10	410	7.4	220	5.0	104	---	4.1	2.70
11	380	7.0	<220	5.2	(107)	---	4.4	2.70
12	<390	7.2	210	5.4	111	---	4.3	2.70
13	390	7.3	220	5.4	112	3.7	4.0	2.65
14	390	7.3	220	5.2	111	3.7	3.8	2.80
15	400	7.4	220	5.0	107	(3.5)		2.80
16	350	7.5	230	---	107	(3.2)		2.90
17	320	7.2	240	---	110	2.8	3.3	2.90
18	260	7.3	250	---	121	(2.2)	3.7	2.95
19	260	7.4					3.6	2.95
20	260	7.1					2.7	2.90
21	260	6.6					2.5	2.80
22	270	6.4					2.5	2.75
23	<290	5.9						2.70

Time: 180.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 27 seconds.

Table 16

San Francisco, California (37.4°N, 122.2°W) August 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	<300	5.2					3.0	2.60
01	280	(5.1)					2.6	(2.60)
02	280	5.0					3.0	2.60
03	(280)	4.9					2.9	(2.60)
04	<280	4.6					2.8	2.60
05	300	4.3					3.1	2.65
06	270	5.5	260	---	(115)	(2.2)	3.5	2.80
07	320	6.8	235	(4.3)	(107)	(2.8)	4.0	2.80
08	340	7.3	220	(4.9)	(105)	(3.2)	4.4	2.65
09	360	8.6	<210	(5.1)	(105)	(3.4)	4.6	2.65
10	360	8.6	205	(5.3)	(105)	(3.6)	4.4	2.60
11	360	9.2	210	(5.6)	(105)	(3.8)	4.2	2.60
12	360	9.4	200	(5.6)	(107)	(3.9)	4.0	2.60
13	360	9.6	210	(5.6)	(107)	(3.9)	3.9	2.60
14	350	9.4	220	(5.5)	(107)	(3.8)		2.65
15	340	9.0	220	(5.3)	(105)	(3.6)	4.4	2.70
16	330	8.7	220	(5.1)	(105)	(3.3)	4.1	2.75
17	320	8.2	230	(4.7)	(109)	(3.0)	4.1	2.85
18	260	7.8	245	---	(111)	(2.3)	3.5	2.90
19	250	7.4			---	---	3.1	2.95
20	240	6.8					3.0	2.80
21	250	6.2					3.0	2.80
22	260	5.8					3.7	2.75
23	270	5.4					3.3	2.60

Time: 120.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 17

Maui, Hawaii (20.8°N, 156.5°W) August 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	9.1						2.80
01	280	8.5						2.85
02	250	8.1						3.00
03	250	6.7						2.90
04	250	6.0						2.90
05	260	5.4						2.80
06	290	5.4	---	---			2.0	2.70
07	260	7.0	240	---	116	2.5	3.3	3.00
08	250	8.0	225	---	109	3.1	3.8	2.95
09	340	8.9	210	(5.4)	109	3.5	4.4	2.60
10	390	10.0	210	5.8	109	3.8	4.5	2.45
11	400	10.8	210	5.8	110	4.0	4.6	2.50
12	390	11.5	215	6.0	111	4.0	4.5	2.60
13	380	11.8	220	5.9	111	4.1	4.3	2.70
14	370	12.4	220	5.8	111	4.0	4.4	2.70
15	350	12.6	220	5.6	111	3.8	4.4	2.75
16	320	12.6	230	5.4	111	3.5	5.0	2.85
17	300	12.2	240	4.9	110	3.1	4.6	2.90
18	260	11.4	245	---	117	2.4	4.8	2.95
19	260	10.5					4.1	2.90
20	270	10.0					4.5	2.80
21	280	9.9					2.8	2.75
22	280	9.6					2.4	2.70
23	300	9.4					2.5	2.75

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 18

Fairbanks, Alaska (64.9°N, 147.8°W) July 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00		(5.0)					4.7	(2.90)
01		(5.0)					4.4	(2.70)
02		(4.9)			116	---	4.3	(2.80)
03		(5.1)		---	109	---	5.6	(2.70)
04		(5.2)		(3.6)	109	2.2	4.6	(2.75)
05		(5.6)		4.0	105	2.6	5.2	(2.60)
06		(6.0)		4.2	102	2.8	4.5	(2.65)
07		(5.8)		4.4	101	(3.0)	4.5	2.60
08		5.8		4.5	101	(3.2)	3.9	2.60
09		6.1		4.6	101	(3.3)	4.0	2.60
10		5.8		4.6	101	(3.4)	3.9	2.55
11		5.8		4.7	101	3.4	3.7	2.55
12		5.8		4.8	102	(3.4)	3.9	2.50
13		6.0		4.8	103	3.4	4.1	2.60
14		6.0		4.8	103	3.4	3.6	2.55
15		5.8		4.6	103	3.3	3.8	2.65
16		5.8		4.7	103	(3.2)		2.65
17		5.8		(4.5)	105	3.0	3.7	2.75
18		5.8		(4.2)	111	2.7	3.2	2.80
19		(5.9)		---	111	2.5	3.5	(2.90)
20		(5.5)		---	119	(2.2)	4.1	3.00
21		(5.0)			122	---	4.0	(3.00)
22		(5.0)			---	---	4.0	(2.95)
23		(5.0)					4.3	(2.95)

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 19

San Francisco, California (37.4°N, 122.2°W) July 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	<300	5.2					3.8	2.60
01	---	(5.0)					3.8	(2.55)
02	---	(4.9)					3.1	(2.60)
03	<280	(4.8)					3.3	(2.65)
04	<280	(4.6)					3.0	(2.60)
05	<290	4.6	300	---	---	---	3.0	2.70
06	340	5.5	250	(3.6)	<115	(2.3)	3.8	2.75
07	410	6.4	230	(4.3)	(105)	(2.8)	4.1	2.70
08	400	7.2	215	(4.8)	(105)	(3.2)	4.4	2.55
09	400	7.6	<210	(4.9)	(105)	(3.5)	4.6	2.55
10	400	7.8	200	(5.0)	(105)	(3.6)	4.3	2.50
11	400	8.0	205	(5.1)	(105)	(3.8)	4.8	2.55
12	400	7.8	200	(5.2)	(107)	(3.8)	4.4	2.60
13	390	8.2	<215	(5.2)	<107	(3.8)	4.8	2.60
14	380	8.0	215	(5.1)	(105)	(3.7)	4.3	2.65
15	380	7.7	220	(5.0)	(105)	(3.6)	4.4	2.70
16	380	7.4	220	(4.8)	(107)	(3.4)	4.1	2.70
17	340	7.0	(225)	(4.6)	(109)	(3.1)	4.2	2.80
18	300	7.0	<240	(4.1)	(109)	(2.5)	4.0	2.85
19	<270	6.9	(260)	---	---	---	3.6	2.95
20	240	6.9					4.2	(2.90)
21	(250)	6.4					3.6	2.80
22	<260	5.6					4.4	2.75
23	---	5.2					3.7	2.65

Time: 120.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 20

Point Barrow, Alaska (71.3°N, 156.8°W) June 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00		5.2		---	---	---	4.1	2.85
01		5.4		---	---	---	5.2	2.80
02		(5.0)		---	---	---	3.4	(2.75)
03		(4.8)		---	---	---	4.3	(2.80)
04		4.8		(3.9)	101	2.2	3.7	(2.70)
05		(4.7)		(3.7)	101	2.5	3.0	(2.55)
06		(4.8)		(4.0)	101	2.7	3.3	(2.50)
07		(4.9)		(4.0)	101	3.1	3.4	----
08		(5.4)		(4.4)	---	---	3.8	----
09		(5.1)		(4.3)	---	---	4.0	(2.50)
10		(5.5)		(4.6)	---	---	3.8	(2.50)
11		(5.6)		(4.5)	---	---	2.9	(2.50)
12		(5.8)		(4.6)	---	---		(2.55)
13		(5.7)		4.7	99	---		2.50
14		(6.0)		4.8	---	---		(2.50)
15		(6.0)		(4.7)	101	---		2.70
16		5.9		(4.6)	101	(3.2)		2.55
17		5.9		(4.5)	101	3.0		2.65
18		5.8		(4.3)	101	2.9		2.60
19		5.4		4.1	101	2.7		2.65
20		5.5		---	103	2.6		2.75
21		5.4		---	110	2.2	3.2	2.85
22		5.6			---	---	3.9	2.85
23		5.4			---	---	4.0	2.80

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 21

Upsala, Sweden (59.8°N, 17.6°E) June 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	5.9					2.4	2.7
01	290	5.7					2.5	2.7
02	300	5.6	---	----	---	E	2.8	2.7
03	330	5.6	280	2.90	---	1.60	3.0	2.7
04	340	5.8	250	3.60	115	2.05	3.1	2.7
05	370	5.8	240	4.00	110	2.45	3.6	2.7
06	385	6.0	230	4.50	105	2.80	5.0	2.7
07	390	6.4	225	4.70	105	3.00	4.6	2.7
08	380	6.8	220	4.85	100	3.20	5.2	2.8
09	390	6.8	215	5.00	100	3.35	5.6	2.7
10	380	6.9	215	5.10	100	3.40	5.6	2.7
11	390	6.9	210	5.20	100	3.45	5.1	2.7
12	405	6.8	210	5.20	100	3.50	5.6	2.7
13	410	6.6	210	5.15	100	3.45	4.3	2.7
14	395	6.6	210	5.15	100	3.45	3.6	2.7
15	390	6.7	215	5.00	100	3.40	4.3	2.8
16	380	6.6	220	5.00	105	3.20	3.7	2.7
17	355	6.6	240	4.70	105	3.00	3.8	2.8
18	320	6.7	240	4.30	105	2.70	4.0	2.9
19	290	6.6	250	3.75	110	2.35	3.8	2.9
20	275	6.7	260	3.20	130	1.90	3.0	2.9
21	270	6.6			---	E	2.4	2.9
22	275	6.8			---	E	2.4	2.8
23	285	6.1					2.2	2.75

Time: 15.0°E.
Sweep: 1.4 Mc to 17.0 Mc in 6 minutes, automatic operation.

Table 22

Godhavn, Greenland (69.2°N, 53.5°W) May 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00		(5.1)			---	---		(2.80)
01		(5.2)		---	---	---		(2.70)
02		(5.2)		---	119	---		(2.80)
03		(4.5)		(2.9)	(123)	---		(2.70)
04		(4.4)		3.3	117	(1.9)		(2.55)
05		(5.1)		(3.6)	109	2.2		(2.75)
06		(4.8)		3.8	109	2.5		(2.60)
07		(5.0)		4.0	107	2.8		(2.50)
08		(5.4)		(4.3)	105	3.0		2.60
09		(5.8)		(4.5)	105	3.2		(2.60)
10		(6.2)		4.6	104	3.3		(2.70)
11		(6.4)		4.6	103	3.3		(2.55)
12		(6.6)		(4.6)	103	3.3		(2.65)
13		(6.4)		(4.6)	102	3.3		2.65
14		(5.8)		(4.6)	103	3.2		(2.65)
15		(5.8)		4.6	103	3.2	3.3	2.60
16		5.8		(4.5)	105	3.0	3.4	2.70
17		(5.7)		4.4	107	2.9	3.9	(2.65)
18		(6.1)		4.2	107	2.7	3.9	2.70
19		(5.9)		3.8	109	2.4	2.7	(2.70)
20		5.7		3.6	109	2.1	2.7	2.80
21		5.6		---	115	1.9		2.80
22		5.6		---	113	(1.5)		2.75
23		(5.2)			---	---		2.75

Time: 45.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 16.2 seconds.

Table 23

Godhavn, Greenland (69.2°N, 53.5°W) April 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00		(5.4)						(2.60)
01		(4.9)						(2.60)
02		(4.3)						(2.60)
03		4.0						(2.55)
04		4.0		---	---	---		2.60
05		(4.2)		---	---	---		2.80
06		(4.6)		3.2	113	(2.2)		2.90
07		(4.8)		(3.5)	109	2.5		(3.00)
08		(6.0)		(4.0)	109	(2.7)		----
09		(6.0)		4.2	109	3.0		(2.70)
10		6.5		(4.4)	109	(3.2)		2.50
11		(7.2)		(4.5)	109	3.2		(2.60)
12		(6.9)		(4.6)	109	3.2		(2.50)
13		(6.6)		4.6	109	3.2		(2.50)
14		(6.5)		4.5	109	3.1		2.55
15		(6.6)		4.3	109	3.0		(2.60)
16		(6.2)		4.3	109	2.8		(2.70)
17		(6.4)		4.2	111	2.6	3.3	2.70
18		6.6		3.8	111	2.4	2.7	2.70
19		(6.4)		---	116	2.1	2.2	(2.70)
20		(6.1)			---	1.8	2.0	2.70
21		(5.8)			---	---		2.70
22		(5.6)						(2.70)
23		5.6						2.70

Time: 45.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 16.2 seconds.

Table 24

Christchurch, New Zealand (43.6°S, 172.8°E) April 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(280)	5.8						2.7
01	280	5.8						2.65
02	280	5.7						2.7
03	280	5.5						2.7
04	270	5.0						2.75
05	260	4.9					1.2	2.8
06	260	4.8					1.6	2.9
07	250	6.6	---	---		1.8		3.1
08	240	9.1	250	---		2.5		3.2
09	250	10.6	230	4.3		2.9		3.2
10	260	11.4	230	4.7		3.2		3.1
11	250	12.0	220	4.7		3.4		3.15
12	250	12.1	230	4.8		3.5		3.0
13	250	11.9	230	4.7		3.4		3.0
14	250	11.8	230	4.7		3.3		3.0
15	260	11.6	240	4.2		3.0		3.0
16	250	11.3	250	3.7		2.6		3.0
17	240	10.6	---	---		1.8		2.9
18	240	9.6						2.9
19	240	8.8						2.8
20	260	7.8						2.7
21	260	7.2						2.7
22	280	6.7						2.8
23	280	6.2						2.7

Time: 172.5°E.
Sweep: 1.0 Mc to 13.0 Mc in 1 minute 55 seconds.

Table 25*

Falkland Is. (51.7°S, 57.8°W) April 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	350	5.1					2.2	2.3
01	350	5.0					2.2	2.3
02	350	4.8					3.1	2.3
03	345	4.8					1.8	2.3
04	340	4.6					2.0	2.3
05	345	4.5						2.4
06	320	4.8						2.6
07	245	7.1			150	1.8		3.0
08	225	9.2	(250)		125	2.3	3.2	3.1
09	230	11.8	235		115	2.8	4.3	3.1
10	230	13.0	235		110	3.0	4.9	3.1
11	250	13.3	225		105	3.1	4.9	3.1
12	245	12.9	230		110	3.2	4.8	3.1
13	235	11.9	230		105	3.1	4.0	3.1
14	230	11.8	230		110	3.0	4.8	3.1
15	230	10.8			120	2.7	4.7	3.1
16	235	10.3			130	2.4	4.6	3.2
17	230	9.2				(1.8)	3.4	3.2
18	230	8.0					3.0	3.2
19	230	6.0					2.1	3.1
20	250	5.4						2.9
21	275	4.8					2.1	2.7
22	335	4.9						2.4
23	350	5.1						2.4

Time: 60.0°W.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes.
*Average values except foF2 and fEs, which are median values.

Table 26

Godhavn, Greenland (69.2°N, 53.5°W) March 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00		(5.1)						(2.70)
01		(4.7)						(2.85)
02		(4.6)						(2.70)
03		(4.3)						(2.75)
04		(3.7)						(2.70)
05		(3.7)						(2.70)
06		(3.8)			---	---		(2.80)
07		(4.3)		---	115	1.9		(2.90)
08		(4.7)		(3.3)	117	2.2		(3.00)
09		(6.0)		---	115	2.5		(3.00)
10		(6.3)		3.8	113	2.7		(2.90)
11		(7.2)		4.1	112	2.8		(2.80)
12		(7.7)		(4.1)	111	2.9		(2.75)
13		(7.8)		(4.0)	113	2.9		(3.00)
14		(6.8)		4.2	113	2.8		(2.90)
15		(6.8)		4.0	113	2.7		(2.80)
16		(6.8)		3.9	114	2.4		(2.85)
17		(6.5)		---	119	2.2		(3.00)
18		(6.1)		---	123	(2.2)		(2.90)
19		(6.7)			---	---		(2.85)
20		(7.0)			---	---		(2.70)
21		(6.0)						(2.75)
22		(6.5)						(2.80)
23		(5.6)						(2.70)

Time: 45.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 16.2 seconds.

Table 27*

Inverness, Scotland (57.4°N, 4.2°W) March 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	335	4.7						(2.4)
01	335	(4.4)						(2.5)
02	330	(4.7)						(2.5)
03	335	4.4						(2.5)
04	315	4.0						(2.5)
05	305	3.6						(2.5)
06	285	4.2			(135)	(1.5)		2.7
07	260	5.2			135	1.9		2.9
08	250	6.0			120	2.3		2.9
09	245	7.3	(230)		115	2.7		2.9
10	245	7.9	225	(3.7)	110	2.9		2.9
11	245	8.1	220	3.7	110	3.0		2.9
12	255	8.9	220	(3.8)	110	3.1		2.9
13	245	9.8	230		110	3.2		2.8
14	250	10.0	230		110	3.1		2.9
15	245	9.8	(240)		110	3.0		2.9
16	245	9.6			115	2.7		2.9
17	245	9.6			120	2.3		2.9
18	245	8.7			140	1.8		2.9
19	245	7.7						2.8
20	260	6.8						2.7
21	275	6.2						2.7
22	310	5.0						(2.5)
23	345	4.9						(2.5)

Time: 0.0°.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes.
*Average values except foF2 and fEs, which are median values.

Table 28

Slough, England (51.5°N, 0.6°W) March 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	330	5.0						2.45
01	320	4.9					2.2	2.45
02	325	4.7					2.4	2.45
03	315	4.4					2.4	2.5
04	300	4.2					2.3	2.55
05	290	3.6					2.5	2.6
06	280	4.4			155	1.6	2.9	2.75
07	270	6.4	255	3.7	130	2.1	3.2	3.0
08	265	7.7	235	4.1	120	2.6	3.2	2.95
09	270	9.0	230	4.2	115	3.0	3.0	2.90
10	265	9.9	230	4.4	115	3.2	2.6	3.0
11	265	10.5	225	4.6	115	3.4		2.8
12	265	10.8	225	4.7	115	3.5		2.8
13	270	10.8	225	4.7	115	3.5		2.85
14	255	10.7	230	4.4	115	3.4		2.85
15	250	10.2	235	4.2	115	3.2		2.85
16	250	10.0	240	3.9	120	2.9	2.5	2.9
17	245	9.6	245	4.1	125	2.3	3.2	2.95
18	240	9.3			135	1.8	2.6	2.9
19	240	8.5						2.8
20	250	7.4						2.75
21	270	6.5						2.6
22	290	6.0						2.45
23	330	5.4						2.4

Time: 0.0°.
Sweep: 0.55 Mc to 16.5 Mc in 5 minutes.
*Average values except foF2 and fEs, which are median values.

Table 29

San Francisco, California (37.4°N, 122.2°W) March 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	<280	4.9					(2.4)	2.60
01	<280	(4.8)					2.4	(2.60)
02	<280	(4.5)					2.2	(2.60)
03	<270	(4.6)					(2.2)	(2.65)
04	<280	(4.4)					2.4	(2.65)
05	<270	(4.2)						(2.60)
06	<280	(4.8)					(2.8)	(2.80)
07	240	7.2	235	---	117	(2.2)	2.7	(3.15)
08	240	(9.0)	225	(3.5)	109	(2.7)	3.4	(3.10)
09	240	10.0	215	(4.5)	107	(3.0)	3.3	3.00
10	250	10.6	210	(4.5)	107	(3.3)	3.5	2.90
11	270	11.1	205	(4.8)	108	(3.3)	3.4	2.90
12	270	11.6	210	(5.0)	111	(3.6)	3.7	2.90
13	280	12.0	<220	(4.9)	111	(3.6)		2.80
14	270	11.6	215	(4.9)	111	(3.5)		2.80
15	260	11.6	225	(4.6)	109	(3.4)		2.80
16	240	11.4	230	---	111	(3.1)	3.3	2.85
17	240	(11.0)	240	---	111	(2.5)	2.9	(2.90)
18	230	10.2	---	---	---	---	2.0	3.00
19	220	8.5					2.4	3.00
20	220	(7.3)					(2.3)	(2.95)
21	230	5.9					2.6	2.90
22	240	(5.2)					2.6	(2.80)
23	260	(4.7)					2.4	(2.60)

Time: 120.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 30*

Singapore, British Malaya (1.3°N, 103.8°E) March 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	215	11.0						(2.8)
01	230	9.5						2.8
02	245	9.0						2.9
03	240	8.4						3.0
04	230	7.3						3.0
05	230	5.4					1.6	3.1
06	260	5.2			(135)	1.2	2.4	2.8
07	250	9.0			135	2.5	3.4	3.0
08		11.1	245		115	3.2	4.0	2.8
09		12.5	230		110	3.6	4.4	2.5
10		12.6	215		110	3.8	3.9	2.3
11		12.8	210		110	4.0	4.2	2.1
12		12.7	205		110	4.1		2.1
13		12.9	205		110	4.0		2.2
14		12.9	215		110	3.9	4.2	2.2
15		13.1	215		110	3.7	4.4	2.1
16		13.6	230		110	3.3	4.5	2.2
17	250	13.7			115	2.8	4.4	2.2
18	280	13.6			(140)	2.0	3.4	(2.2)
19	360	(12.6)					2.8	---
20	355	>12.1						---
21	280	(12.0)					2.2	---
22	240	(12.6)					2.9	---
23	220	(12.0)						(2.9)

Time: 105.0°E.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes.
*Average values except foF2 and fEs, which are median values.

Table 31

Christchurch, New Zealand (43.6°S, 172.8°E) March 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	6.2						2.6
01	280	6.0					2.4	2.6
02	290	5.7					1.8	2.6
03	290	5.5						2.6
04	280	4.9						2.7
05	280	4.3					1.7	2.7
06	270	4.8	---	---		1.7		2.95
07	250	6.6	250	---		2.2		3.0
08	280	7.9	240	4.4		2.8		3.0
09	260	8.7	240	4.5		3.1		3.1
10	280	10.0	230	4.8		3.3		2.9
11	(270)	10.7	230	5.0		3.4		2.9
12	(310)	10.8	230	5.2		3.5		2.9
13	300	10.4	230	5.0		3.5		2.9
14	300	10.4	240	5.0		3.5		2.85
15	(280)	9.8	240	4.6		3.3		2.9
16	280	9.9	250	4.5		2.9		2.9
17	260	9.7	260	---		2.5		2.9
18	260	9.5	---	---		1.8		2.9
19	250	9.0				---		2.9
20	270	8.3						2.8
21	270	7.8						2.7
22	280	7.1						2.65
23	280	6.6						2.6

Time: 172.5°E.
Sweep: 1.0 Mc to 13.0 Mc in 1 minute 55 seconds.

Table 32

Godhavn, Greenland (69.2°N, 53.5°W) February 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00		(3.7)						(2.80)
01		(3.7)						(2.90)
02		(3.4)						(2.90)
03		(3.5)						(2.85)
04		(3.5)						(2.95)
05		(3.4)					2.0	----
06		(3.4)					1.7	----
07		---					3.0	----
08		---					2.5	----
09		(4.7)		---	---			----
10		(6.3)		---	---	----		----
11		(6.5)		---	119	(2.20)		(3.20)
12		(6.5)		---	---	(2.30)		(3.10)
13		5.9		---	---	(2.50)		----
14		(5.8)		---	(125)	(2.40)		(3.00)
15		(6.0)		---	---	----		(2.90)
16		(5.8)			---	----		(3.10)
17		(5.5)			---	----		(3.10)
18		(4.9)						(3.00)
19		(5.5)						(2.90)
20		(4.5)						(2.90)
21		(5.2)						(2.90)
22		(5.0)						(2.85)
23		(4.6)						(2.90)

Time: 45.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 16.2 seconds.

Table 33

Godhavn, Greenland (69.2°N, 53.5°W) January 1956

Time	h'F2	foF2	b'F1	foF1	h'E	foE	fEs	(M3000)F2
00		(3.2)					2.7	(3.10)
01		(2.8)					2.9	(2.85)
02		(2.8)					3.3	(2.90)
03		(2.7)					3.1	----
04		(3.0)					3.1	----
05		---					3.5	----
06		---					3.4	----
07		---					4.0	----
08		(3.2)						----
09		(3.3)					3.4	----
10		(4.7)			---	---	2.9	
11		(5.5)			---	---	2.5	----
12		(4.6)			---	---	3.1	----
13		(5.1)			---	---	3.3	----
14		(5.1)			---	---	2.0	(3.00)
15		(4.4)			---	---	3.3	(3.00)
16		(4.3)			---	---	4.6	----
17		(4.4)					3.4	----
18		(4.5)					3.5	----
19		(4.6)					4.0	(3.00)
20		(4.3)					4.0	----
21		(4.2)					4.5	----
22		(3.5)					3.9	----
23		(3.6)					3.5	----

Time: 45.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 16.2 seconds.

Table 34*

Ibadan, Nigeria (7.4°N, 4.0°E) December 1955

Time	h'F2	foF2	b'F1	foF1	h'E	foE	fEs	(M3000)F2
00	246	8.5					2.4	(3.0)
01	252	7.7					3.0	(3.0)
02	260	(7.2)					1.7	3.0
03	252	6.5					1.7	(3.0)
04	238	(5.4)					1.3	(3.1)
05	227	4.5					3.8	(3.3)
06	253	(5.6)	---	----	135	(1.64)	4.3	---
07	263	8.7	233	----	125	2.23	6.8	2.9
08	290	9.8	222	----	118	2.95	10.2	2.5
09	311	10.0	210	----	112	3.27	10.9	2.4
10	(319)	9.9	206	----	111	3.50	13.4	2.3
11	340	9.7	203	(5.23)	110	3.58	13.7	2.3
12	356	9.6	201	(5.15)	110	3.59	13.4	2.2
13	344	10.1	202	(5.04)	111	3.60	13.4	2.2
14	348	10.2	199	----	111	3.50	13.3	2.2
15	(338)	10.2	205	----	113	3.24	12.0	2.2
16		10.1	216	----	113	2.94	10.1	2.2
17	277	9.9	(237)	----	119	(2.33)	6.7	2.2
18	305	9.6	---	----	---	----	3.8	2.2
19	354	8.8					2.5	2.2
20	366	(8.0)					1.4	(2.2)
21	308	(9.0)					3.5	---
22	285	(9.6)					2.3	(2.5)
23	260	(9.6)					3.0	---

Time: 0.0°.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes.
*Average values except foF2 and fEs, which are median values.

Table 35*

Ibadan, Nigeria (7.4°N, 4.0°E) November 1955

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	246	(8.9)					6.6	(3.1)
01	246	(7.6)					4.0	---
02	243	(7.2)					4.8	---
03	244	6.2					4.8	---
04	236	(4.8)					4.0	(3.2)
05	238	3.4					4.1	(3.2)
06	250	6.7	---	---	132	1.9	4.8	(3.1)
07	---	9.1	227	---	118	2.7	8.8	3.0
08	---	10.2	212	---	116	3.1	10.4	2.7
09	---	10.2	210	---	110	3.3	11.2	2.5
10	---	9.5	207	---	111	3.5	11.2	2.4
11	---	9.5	205	---	111	3.6	11.2	2.5
12	---	9.6	202	---	111	3.6	11.2	2.5
13	---	10.0	198	---	111	3.5	10.9	2.4
14	---	10.4	202	---	111	3.3	10.9	2.4
15	---	10.5	205	---	113	3.1	10.9	2.4
16	---	10.4	223	---	120	2.6	10.7	2.4
17	265	(10.4)	---	---	132	2.0	8.8	---
18	335	9.2	---	---	---	---	5.2	2.2
19	341	8.6					4.0	(2.3)
20	312	9.2					4.3	(2.6)
21	265	(10.1)					4.6	---
22	252	(8.8)					6.5	---
23	244	(9.2)					6.0	---

Time: 0.0°.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes.
*Average values except foF2 and fEs, which are median values.

Table 36

Lulea, Sweden (65.6°N, 22.1°E) May 1955

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	---						
01								
02	260	(3.1)					2.0	
03								
04	245	3.8	220	3.4	110	1.8	2.5	
05								
06	310	4.5	210	3.7	100	2.3		
07								
08	325	5.1	200	4.0	100	2.6		
09								
10	335	5.3	215	4.1	100	2.5		
11								
12	330	5.4	210	4.3	100	2.6		
13								
14	320	5.0	200	4.2	100	2.5		
15								
16	310	5.0	210	3.8	100	2.6		
17								
18	270	5.0	230	3.5	110	2.2		
19								
20	240	(4.8)			---	1.6	2.0	
21								
22	260	---						
23								

Time: 15.0°E.
Sweep: 1.5 Mc to 10.0 Mc in 6 minutes, automatic operation.

Table 37

Tananarive, Madagascar (18.8°S, 47.8°E) September 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	220	3.5					1.6	3.34
01	215	3.1					1.8	3.39
02	205	2.5					1.6	3.42
03	<250	2.1					1.8	2.96
04	260	2.1					2.0	3.00
05	260	2.2					2.6	3.04
06	235	3.4			<141	1.40	2.0	3.28
07	250	4.9	230	----	111	2.00	2.8	3.47
08	285	5.8	230	3.95	105	2.60		3.28
09	295	6.6	220	4.15	105	2.95		3.18
10	280	7.9	210	4.30	104	3.15		3.24
11	265	8.0	210	4.35	103	3.20		3.26
12	270	7.2	200	4.40	101	3.25		3.36
13	280	6.8	195	4.30	103	3.20		3.30
14	275	6.5	195	4.20	103	3.10		3.31
15	270	6.2	200	4.00	103	2.90		3.32
16	250	5.7	210	3.75	104	2.60	3.0	3.41
17	240	5.4	230	----	113	2.15	3.1	3.39
18	230	4.7			---	1.35	2.6	3.30
19	230	4.4					2.6	3.16
20	230	4.0					1.8	3.15
21	240	3.5					1.7	3.08
22	260	3.4					1.6	3.00
23	240	3.5					1.7	3.16

Time: Local.
Sweep: 1.25 Mc to 20.0 Mc in 10 minutes, automatic operation.

Table 38

Tananarive, Madagascar (18.8°S, 47.8°E) August 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	225	3.0					1.7	3.27
01	220	2.7					3.2	3.38
02	230	2.5					2.4	3.26
03	<220	2.3					2.7	3.29
04	<240	1.8					1.8	3.16
05	<260	1.9					2.6	3.10
06	245	2.4			152	1.05	1.7	3.20
07	---	4.4	235	----	125	1.75	1.9	3.53
08	255	5.0	235	3.80	109	2.40	3.0	3.50
09	285	5.3	220	4.00	106	2.75	3.2	3.34
10	285	5.7	220	4.15	105	2.95	3.4	3.34
11	280	5.9	200	4.25	105	3.15	3.5	3.34
12	290	6.0	210	4.30	105	3.20	3.5	3.37
13	280	5.7	205	4.25	105	3.15	3.5	3.44
14	290	5.7	200	4.10	105	3.05	3.1	3.43
15	270	5.4	210	3.90	105	2.90	3.0	3.44
16	250	5.4	220	3.55	105	2.55	3.2	3.53
17	230	4.9			119	2.05	3.0	3.56
18	220	4.2			---	----	3.1	3.43
19	220	3.8					2.0	3.30
20	225	3.2					1.9	3.23
21	240	3.1					2.3	3.10
22	245	3.3					1.8	3.17
23	240	3.1					1.8	3.22

Time: Local.
Sweep: 1.25 Mc to 20.0 Mc in 10 minutes, automatic operation.

Table 39

Djibouti, French Somaliland (11.5°N, 43.1°E) September 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	315	4.4					2.0	2.74
01	280	4.2						2.98
02	270	4.0						3.13
03	250	3.6						3.34
04	245	2.6						3.30
05	260	2.4						3.09
06	(250)	6.3	235	----	132	2.20	3.1	3.46
07	280	7.4	230	----	117	2.70	3.7	3.26
08	320	8.0	215	4.45	111	3.05	4.2	2.91
09	340	8.2	220	4.55	---	3.40	6.6	2.60
10	350	7.8	210	4.60	---	----	6.7	2.54
11	360	8.0	200	----	---	3.50	6.7	2.54
12	370	8.3	210	4.60	---	3.50	6.6	2.62
13	350	9.1	220	4.55	---	3.45	5.6	2.66
14	335	10.0	220	4.50	---	3.30	4.0	2.80
15	315	10.7	220	4.40	---	3.00	4.0	2.86
16	290	10.8	230	----	---	2.60	4.2	(3.07)
17	(265)	>10.0	250	----	---	----	3.8	3.02
18	250	9.6					2.8	3.03
19	255	8.6						2.86
20	260	7.6						2.99
21	260	6.8					2.7	2.95
22	305	5.7					2.7	2.74
23	335	4.8					2.1	2.66

Time: 35.6°E.
Sweep: 1.25 Mc to 20.0 Mc in 10 minutes, automatic operation.

Table 40

Leopoldville, Belgian Congo (4.4°S, 15.2°E) September 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M2000)F2
00	235	4.7					2.0	2.3
01	250	4.3					2.1	2.2
02	260	4.0					1.8	2.2
03	250	3.3					1.8	2.4
04	230	2.8					2.0	2.6
05	240	4.7	240	---	---	---	2.6	2.7
06	240	6.6	230	---	115	2.4	3.4	2.7
07	270	7.9	220	---	110	3.0	4.0	2.6
08	280	8.1	220	4.4	110	3.2	4.4	2.5
09	300	9.0	210	4.6	110	3.4	4.7	2.4
10	320	9.4	210	4.7	110	3.6	4.7	2.2
11	330	10.2	200	4.7	110	3.6	4.6	2.1
12	330	11.2	200	4.8	110	3.6	4.0	2.1
13	350	11.5	225	4.4	110	3.3	4.2	2.1
14	350	12.0	250	4.4	110	3.1	4.0	<2.1
15	325	12.3	240	---	110	2.8	3.4	2.1
16	300	12.8	250	---	115	2.2	3.0	2.2
17	250	>13.3					2.6	2.3
18	240	13.2					2.6	<2.4
19	230	>13.0					2.2	<2.5
20	210	12.2						2.6
21	205	9.0						2.6
22	205	7.9						2.5
23	220	6.7						2.4

Time: 0.0°.
Sweep: 1.0 Mc to 16.0 Mc in 7 seconds.

TABLE 41
IONOSPHERIC DATA

foF2, 0.1 Mc, Oct. 1956 — 75° W Mean Time

Station: Washington, D.C. Lat. 38.7°N Long. 77.1° W Sweep 1.0 Mc to 25.0 Mc in 13.5 sec. Manual ☐ Automatic ☒

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
01	F 67	F 68	70	67	58	53	58	84	102	111	120	119	120	125	125	118	111	112	100	91	82	76	U S 76	76
02	77	67	56	49	45	40	F 55	86	107	U S 102	117	117	125	127	119	115	109	110	106	92	76	71	U F 71	F 71
03	F 68	F 63	F 57	56	F 47	45	54	90	107	115	125	122	125	125	124	126	126	122	106	90	85	75	70	72
04	71	68	61	F 53	49	47	58	91	114	115	124	121	125	125	122	121	124	118	113	95	85	76	71	70
05	70	F 68	68	55	U F 43	U F 37	51	86	106	115	H 116	120	128	127	126	120	118	118	110	93	76	U F 74	U F 74	U F 71
06	F 70	72	73	65	59	55	60	86	114	120	120	120	129	133	128	116	120	120	106	94	85	81	69	F 70
07	70	F 67	F 67	F 60	59	54	58	88	103	113	120	120	125	126	120	121	118	117	113	93	83	75	70	72
08	67	61	57	59	57	56	F 61	86	96	107	117	119	119	116	115	115	110	107	98	91	76	68	68	U F 64
09	U F 63	U F 62	U F 60	U F 55	F 44	U F 42	U F 49	85	91	108	115	116	123	123	123	123	120	115	108	93	84	72	70	F 69
10	F 69	F 68	F 61	F 57	F 53	F 49	F 58	90	107	115	124	127	130	125	126	125	120	116	108	90	86	84	70	70
11	63	64	F 65	F 60	F 54	F 48	F 54	87	112	115	118	128	125	126	124	125	123	115	F 108	U F 86	F 84	F 80	U F 76	U F 72
12	F 68	U F 67	64	F 62	F 58	55	58	84	I C 110	120	125	126	125	125	126	126	126	120	110	92	86	80	U S 79	71
13	F 64	F 64	F 61	F 58	F 56	F 56	F 59	91	112	121	129	130	129	130	130	129	126	122	110	92	86	78	77	74
14	70	67	64	F 64	60	55	F 60	90	110	119	128	130	128	130	128	130	128	119	107	95	88	82	75	70
15	68	68	64	56	52	49	53	90	112	H 119	123	124	125	125	125	126	125	118	109	90	87	80	76	72
16	70	72	66	59	55	51	58	92	113	125	126	125	126	133	130	129	130	121	108	90	84	80	72	72
17	66	F 66	66	66	63	55	56	86	104	118	126	130	134	132	130	130	129	122	113	95	79	F 75	F 67	F 61
18	U F 60	U F 61	U F 63	F 63	F 62	F 58	F 55	87	112	124	130	130	133	135	I C 131	128	130	124	U S 94	90	J 81	79	76	F 72
19	63	63	F 61	62	63	62	65	90	112	126	130	135	133	133	133	133	132	120	109	95	87	79	72	72
20	F 66	U F 62	U F 55	U F 54	U F 56	F 49	F 51	F 72	92	98	109	125	125	125	130	130	131	128	U S 115	96	90	76	73	74
21	75	70	70	64	56	56	56	75	114	129	133	130	125	120	118	120	113	108	U S 100	86	71	65	56	F 50
22	U F 58	F 56	F 56	F 47	F 38	F 36	F 42	80	107	122	125	130	135	135	135	I C 132	125	118	U S 105	93	90	F 83	U S 78	71
23	69	71	69	F 66	66	62	F 58	I C 82	105	124	135	135	136	140	136	134	126	118	104	94	83	86	I C 77	66
24	59	59	F 60	F 55	F 52	F 49	F 43	78	107	125	130	130	135	130	133	128	127	117	105	90	76	U S 72	69	63
25	64	60	60	F 52	F 50	U F 45	U F 48	78	110	123	127	130	I C 130	131	128	125	123	114	96	88	77	69	65	F 64
26	F 63	64	F 60	60	58	53	49	80	110	126	123	123	130	125	124	119	119	116	110	95	78	F 68	72	U P 60
27	68	F 68	70	70	63	F 55	U P 54	82	105	130	142	145	140	140	136	133	130	125	115	89	75	70	66	63
28	F 63	U F 59	F 50	F 48	F 43	F 47	U F 42	70	94	105	115	127	134	130	128	125	120	118	107	96	79	68	58	57
29	57	58	56	51	48	42	42	72	102	122	126	132	132	130	133	128	128	120	108	92	80	76	70	63
30	63	61	58	53	49	48	50	88	103	122	126	135	136	130	134	130	128	120	108	96	80	69	64	60
31	59	55	56	52	49	44	44	76	105	122	130	131	130	130	130	130	124	116	105	90	77	76	74	73
MED	67	64	61	58	55	49	55	86	107	120	125	127	129	130	128	126	125	118	108	92	83	76	71	70
NO	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31

CENTRAL RADIO PROPAGATION LABORATORY, NATIONAL BUREAU OF STANDARDS, BOULDER, COLO.

TABLE 42
IONOSPHERIC DATA

foF2, 0.1 Mc, Oct. 1956 — 75° W Mean Time

Station: Washington, D.C. Lat. 38.7°N Lang. 77.1° W Sweep 1.0 Mc to 25.0 Mc in 13.5 sec. Manual ☐ Automatic ☒

	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130	1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330
01	70	69	70	63	55	50	69	98	107	118	120	118	125	125	123	115	110	110	97	84	78	76	73	78
02	74	57	54	47	43	F 42	65	105	H 102	113	108	125	127	120	115	111	113	110	98	82	68	F 71	71	F 71
03	F 71	F 63	F 56	49	F 44	F 47	76	100	117	122	120	122	130	125	123	126	125	117	94	88	77	72	72	72
04	68	64	58	50	47	49	76	110	116	117	U 121	125	126	127	121	121	120	115	105	88	83	76	71	70
05	68	69	64	U F 48	U F 38	U F 44	68	99	115	115	120	124	127	126	124	118	120	112	103	86	75	U F 72	U F 72	U F 72
06	72	74	72	63	58	54	74	100	120	120	125	127	133	130	U S 124	121	120	116	100	88	84	71	F 68	F 73
07	F 69	F 66	63	62	56	53	70	98	110	119	119	120	126	125	123	123	118	114	99	89	77	69	70	71
08	62	59	58	59	55	F 53	75	94	102	111	118	118	118	115	116	114	107	105	96	82	72	69	68	U F 64
09	F 62	U F 62	U F 58	U F 50	F 44	U F 42	70	96	103	114	118	122	123	130	125	121	120	113	100	87	80	70	F 72	F 69
10	68	F 62	F 59	F 55	F 50	F 49	72	106	111	120	126	128	127	125	126	122	120	113	96	90	86	76	72	67
11	60	64	F 63	F 57	F 48	F 47	F 70	104	115	118	123	127	125	125	125	123	120	112	U F 96	F 86	U F 84	U S 76	U F 74	F 72
12	F 68	I C 66	F 62	F 62	56	F 52	72	100	120	125	119	123	126	136	125	128	125	116	96	90	83	J 82	77	F 69
13	F 65	64	60	F 56	56	50	77	102	118	126	127	130	129	129	129	127	127	119	100	90	84	69	71	72
14	69	66	F 63	62	59	54	77	103	120	120	127	125	130	130	130	130	125	116	U S 94	95	83	79	70	70
15	68	64	63	53	49	48	69	105	114	120	125	125	129	125	127	125	125	117	96	92	84	80	72	70
16	72	F 71	60	57	50	52	73	103	123	125	120	129	133	130	128	130	126	120	96	87	84	U S 76	70	69
17	F 66	66	65	67	57	52	68	95	114	122	129	130	133	132	133	129	127	118	103	88	77	F 69	F 64	F 58
18	U F 62	F 62	F 62	F 63	F 62	F 52	70	100	118	125	131	130	134	134	132	130	130	114	92	85	J 81	78	74	68
19	62	61	62	64	63	59	76	104	118	I C 128	135	134	132	133	133	134	124	114	98	90	80	78	74	F 70
20	62	F 55	U F 55	F 53	F 57	F 49	F 63	83	102	109	118	127	125	128	127	132	I C 130	118	105	97	84	F 74	77	75
21	74	69	68	61	58	52	66	98	124	130	133	130	122	118	120	117	114	106	94	78	69	58	55	U F 50
22	F 55	58	F 50	F 40	F 37	F 33	58	99	113	124	130	135	135	135	134	130	I C 121	116	F 104	94	87	82	74	I C 70
23	I C 70	70	67	66	65	60	I C 79	98	114	142	136	138	140	140	140	133	123	112	98	84	85	82	72	F 66
24	I C 58	F 59	59	U J 55	F 50	F 42	F 60	96	115	130	136	133	J 137	132	133	127	130	107	98	80	70	69	67	63
25	60	60	60	I C 52	U F 45	U F 44	I C 62	95	121	127	126	128	I C 130	131	125	123	121	106	90	83	73	69	64	64
26	64	F 60	58	59	56	50	63	99	116	134	120	125	125	125	122	119	119	117	105	93	U F 72	J 72	U J 60	60
27	69	71	72	64	62	60	63	96	121	140	144	142	140	136	133	131	133	120	103	82	72	F 67	67	F 58
28	F 59	U F 56	U F 52	F 44	F 45	F 43	F 58	80	98	112	120	135	133	130	125	125	106	113	99	82	72	62	59	57
29	57	57	55	48	45	38	54	90	112	128	130	H 130	132	130	125	130	125	116	98	85	78	74	64	62
30	64	60	57	50	48	47	63	100	121	128	128	135	138	135	133	132	125	115	102	90	73	67	64	60
31	58	57	53	50	47	42	58	94	115	126	125	131	130	130	130	126	118	113	U P 94	87	77	72	74	68
MED	66	63	60	56	50	49	69	99	115	122	125	128	130	130	125	126	121	114	98	87	78	72	71	69
NO	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31

CENTRAL RADIO PROPAGATION LABORATORY, NATIONAL BUREAU OF STANDARDS, BOULDER, COLO.

TABLE 43
IONOSPHERIC DATA

foF1, 0.1 Mc, Oct. 1956 — 75° W Meon Time

Station: Woshington, D.C. Lat. 38.7°N Long. 77.1° W Sweep 1.0 Mc to 25.0 Mc in 13.5 sec. Monuol ☐ Automatic ☒

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
01								Q	L	L	L	L	L	L	L	L	L	L						
02								Q	L	L	L	L	L	L	L	L	L	Q						
03								Q	L	L	L	L	L	L	L	L	L	L						
04								Q	Q	L	L	L	L	L	L	L	L	L						
05								Q	L	L	L	L	L	L	L	L	L	Q						
06								L	L	L	L	L	L	L	L	L	L	Q						
07								Q	Q	L	L	L	L	L	L	L	L	Q						
08								Q	L	L	L	L	L	L	L	L	Q	Q						
09								Q	L	L	L	L	L	L	L	L	L	Q						
10								Q	L	L	L	L	L	L	L	L	L	L						
11								Q	L	L	L	L	L	L	L	L	L	L						
12								Q	L	L	L	L	L	L	L	L	L	Q						
13								Q	L	L	L	L	L	L	L	L	L	Q						
14								L	L	L	L	L	L	L	L	L	L	L						
15								Q	L	L	L	L	L	L	L	L	L	Q						
16								Q	Q	L	L	L	L	L	L	L	L	Q						
17								Q	L	L	L	L	L	L	L	L	L	Q						
18								Q	L	L	L	L	L	L	C	L	L	Q						
19								Q	L	L	L	L	L	L	L	L	Q	Q						
20								Q	L	L	L	L	L	L	L	L	L	L						
21								L	L	L	L	L	L	L	L	L	L	Q						
22								Q	Q	L	L	L	L	L	L	C	L	Q						
23								C	Q	L	L	L	L	L	L	L	Q	Q						
24								Q	L	L	L	L	L	L	L	L	Q	Q						
25								Q	L	L	L	L	C	L	L	L	L	Q						
26								L	L	L	L	L	L	L	L	L	L	Q						
27								Q	L	L	L	L	L	L	L	L	Q	Q						
28								Q	L	L	L	L	L	L	L	L	L	Q						
29								Q	L	L	L	L	L	L	L	L	Q	Q						
30								Q	Q	Q	L	L	L	L	L	L	L	Q						
31								Q	L	L	L	L	L	L	L	L	Q	Q						
MED																								
NO																								

CENTRAL RADIO PROPAGATION LABORATORY, NATIONAL BUREAU OF STANDARDS, BOULDER, COLO.

TABLE 44
IONOSPHERIC DATA

foE, 0.1 Mc, Oct. 1956 — 75° W Mean Time

Station: Washington, D.C. Lat. 38.7°N Long. 77.1° W Sweep 1.0 Mc to 25.0 Mc in 13.5 sec. Manual ☐ Automatic ☒

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
01								220	290	330	350	U R 350	360	370	350	H 340	290	220						
02								R 280		310	350	350	U P 350	H 350	H 350	H 330	300	230						
03								A	A	U A 310	I R 330	350	370	370	350	330	290	A						
04								B	300	320	I B 320	330	340	H 370	H 350	340	310	220						
05								H 240	H 290	330	330	360	U R 340	340	H 350	H 330	290	220						
06								H 220	270	A	A	330	H 360	H 360	H 340	I A 320	300	H 240						
07								230	290	H 330	340	340	330	350	340	330	290	220						
08								U B 220	I A 260	300	320	350	I A 340	H 340	350	330	280	220						
09								U B 220	280	H 320	I A 340	H 350	350	360	360	320	280	220						
10								B	H 280	H 330	H 350	H 360	H 370	360	350	330	H 290	210						
11								230	R	R	B	360	I A 360	370	350	320	280	A						
12								220	I C 280	310	320	H 350	A	360	350	330	H 280	H 220						
13								H 220	H 290	H 320	340	H 340	H 360	H 360	H 360	H 320	H 280	B						
14								U P 210	280	H 320	A	A	340	340	H 340	320	I A 250	180						
15								200	H 290	H 320	A	A	H 340	H 330	330	320	260	U B 200						
16								B	H 260	H 320	340	A	A	350	340	310	I A 260	200						
17								A	250	H 290	A	A	350	I A 340	340	310	270	A						
18								U B 190	250	290	A	A	360	H 360	I C 340	320	270	R						
19								R	280	A	A	A	350	360	I A 340	H 320	270	A						
20								190	260	290	U P 320	H 330	H 340	U P 340	330	H 320	260	170						
21								R	260	310	U P 320	H 340	H 360	350	330	310	H 270	H 190						
22								A	A	H 320	U S 340	350	U P 360	U A 340	H 330	I C 320	250	B						
23								C	A	H 310	330	350	350	350	330	310	A	B						
24								B	A	A	H 320	H 330	I A 340	H 350	A	A	H 260	B						
25								180	U H 270	H 300	330	A	C	350	330	310	A	B						
26								U P 180	280	300	H 340	H 350	H 350	350	330	310	H 240	170						
27								210	H 270	H 290	320	330	350	360	340	U A 310	A	A						
28								R	B	300	I A 320	340	350	330	H 340	H 300	250	A						
29								B	A	310	I A 320	H 340	350	340	340	300	260	R						
30								B	U B 250	H 320	340	F 340	350	H 360	H 340	310	250	B						
31								B	U B 260	H 310	320	330	U B 320	340	H 330	U R 300	H 250	B						
MED								220	280	310	330	340	350	350	340	320	270	220						
NO								16	24	27	24	24	28	31	30	30	28	16						

CENTRAL RADIO PROPAGATION LABORATORY, NATIONAL BUREAU OF STANDARDS, BOULDER, COLO.

TABLE 45

IONOSPHERIC DATA

fEs, 0.1 Mc, Oct. 1956 — 75° W Mean Time

Station: Washington, D.C. Lat. 38.7°N Long. 77.1° W Sweep 1.0 Mc to 25.0 Mc in 13.5 sec. Manual ☐ Automatic ☒

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
01	S	S	S	25	S	28	27	G	G	G	G	G	G	40	G	50	30	24	S	S	30	B	B	S
02	S	S	S	S	27	S	B	G	G	43	37	G	76	G	G	G	G	39	30	47	S	S	S	S
03	S	S	S	S	S	S	B	28	32	41	G	G	G	G	G	G	G	34	S	S	S	S	S	S
04	S	S	S	S	B	B	29	23	31	33	35	35	G	39	38	G	G	23	B	S	S	S	B	S
05	S	S	S	S	S	S	B	G	G	G	G	G	G	G	G	G	G	G	S	S	S	S	S	S
06	S	S	S	S	S	S	S	G	S 36	38	33	37	G	G	40	39	G	G	26	29	S	S	S	S
07	S	S	S	30	S	S	S	24	G	G	35	35	34	G	G	G	G	G	B	S	S	37	B	27
08	S	S	S	S	S	S	B	21	45	33	34	H 33	33	G	G	G	G	24	S	S	44	S	27	S
09	S	S	S	S	S	S	S	G	G	G	45	32	G	G	G	G	G	28	30	S	S	S	S	23
10	S	S	S	S	S	S	S	B	G	G	G	G	40	G	G	G	G	25	S	36	S	S	S	S
11	S	S	S	25	S	25	S	G	G	G	G	G	38	31	29	29	G	22	S	S	S	S	S	S
12	S	S	S	S	S	S	26	G	C	Y 56	G	39	39	34	G	G	G	G	S	33	S	S	S	S
13	25	31	30	S 26	25	S	S	13	35	G	35	G	G	G	G	G	29	20	S	S	S	26	S	S
14	S	S	60	S	S	S	S	G	G	34	39	36	G	37	36	35	37	20	S	S	S	S	S	40
15	S	S	S	S	S	S	S	G	27	39	33	41	G	G	G	38	G	G	S	S	S	S	S	S
16	S	S	S	S	S	S	S	G	G	31	35	38	33	G	G	33	35	G	S	S	S	S	26	S
17	S	24	25	S	S	S	41	21	30	31	33	42	G	36	37	42	40	21	38	53	28	S	S	42
18	39	46	44	S	S	S	S	20	28	31	40	41	40	G	C	23	G	G	S	S	47	S	S	S
19	S	S	S	32	B	B	S	G	G	H 74	64	72	40	34	54	38	26	H 35	20	S	S	S	S	S
20	S	26	34	S	S	S	S	G	G	49	G	G	G	G	G	G	80	G	S	S	S	S	S	S
21	S	S	29	S	S	S	S	G	G	G	G	G	G	68	34	33	G	G	S	S	S	S	26	S
22	S	E	S	S	S	S	S	42	30	G	36	G	G	35	35	C	G	B	S	S	S	S	S	S
23	S	S	S	S	S	S	S	C	43	36	G	G	G	36	45	33	25	B	S	S	S	S	C	S
24	24	S	S	E	S	S	S	B	40	31	G	G	60	G	34	30	25	B	B	B	S	S	S	S
25	S	S	S	S	S	S	S	G	G	G	26	63	C	21	G	42	26	S	31	S	S	S	S	S
26	S	S	S	S	S	S	S	G	G	G	G	G	37	37	G	G	26	G	S	S	S	S	S	33
27	S	S	S	S	32	S	S	G	G	G	G	G	G	G	35	44	42	31	B	S	S	S	S	S
28	S	S	S	35	S	S	B	G	G	G	32	G	G	G	G	G	G	38	S	S	S	S	S	S
29	S	S	S	S	S	S	S	B	25	Y 56	40	G	G	G	G	G	G	G	S	S	S	S	S	S
30	S	S	S	B	B	S	S	B	G	29	G	G	40	27	25	34	19	B	S	B	B	S	B	B
31	B	B	B	B	B	B	B	B	G	G	G	G	G	G	G	31	G	B	S	S	S	B	B	B
MED		U 25	U 30	U 25						31									23	U 33	U 30			U 27
NO	4	6	7	9	7	5	10	30	30	31	31	31	30	31	30	30	31	30	10	7	5	4	8	7

CENTRAL RADIO PROPAGATION LABORATORY, NATIONAL BUREAU OF STANDARDS, BOULDER, COLO.

TABLE 46

IONOSPHERIC DATA

fmin, 0.1 Mc, Oct. 1956 — 75° W Mean Time

Station: Washington, D.C. Lat. 38.7°N Long. 77.1° W Sweep 1.0 Mc to 25.0 Mc in 13.5 sec. Manual ☐ Automatic ☒

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
01	E S 16	E S 14	E S 13	E S 13	E S 16	E S 16	E S 16	18	18	19	21	23	24	24	21	E S 16	20	E S 16	E S 16	E S 16	17	20	18	E S 16
02	E S 16	E S 16	E S 14	E S 13	E S 11	E S 16	20	19	20	19	20	21	24	19	20	19	E S 16	17	E S 15	E S 16	E S 16	E S 16	E S 13	E S 14
03	E S 14	E S 12	E S 11	E S 13	E S 11	E S 14	17	20	23	26	26	26	22	24	22	21	17	16	E S 16	E S 16	E S 16	E S 16	E S 14	E S 16
04	E S 14	E S 13	E S 13	E S 13	19	17	E S 16	21	21	24	34	28	24	27	24	26	20	18	17	E S 16	E S 16	E S 16	17	E S 16
05	E S 15	E S 15	E S 16	E S 15	E S 17	E S 15	21	E S 16	22	22	21	21	23	21	20	E S 16	18	E S 16	E S 17	E S 16	E S 16	E S 16	E S 16	E S 16
06	E S 16	E S 13	E S 14	E S 14	E S 16	E S 17	E S 17	E S 16	E S 17	E S 16	21	22	24	21	20	20	E S 16	E S 16	E S 15	E S 15	E S 16	E S 16	E S 16	E S 16
07	E S 16	E S 13	E S 13	E S 12	E S 14	E S 14	E S 16	E S 16	18	21	20	23	22	19	20	20	17	E S 16	18	E S 16	E S 16	E S 16	18	E S 12
08	E S 16	E S 15	E S 16	E S 12	E S 15	E S 16	18	E S 16	E S 16	21	E S 16	E S 16	21	23	22	20	E S 16	E S 16	E S 16	E S 16	E S 15	E S 16	E S 16	E S 16
09	E S 13	E S 12	E S 13	E S 11	E S 12	E S 16	E S 16	E S 16	17	19	17	21	20	19	22	18	16	20	E S 16	E S 16	E S 16	E S 16	E S 15	E S 16
10	E S 15	E S 13	E S 12	E S 13	E S 13	E S 14	E S 15	24	E S 16	22	21	20	20	18	21	18	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16
11	E S 16	E S 16	E S 13	E S 13	E S 12	E S 16	E S 16	18	23	25	42	24	22	21	E S 16	E S 16	17	20	E S 16	E S 16	E S 16	E S 15	E S 16	E S 16
12	E S 16	E S 16	E S 14	E S 14	E S 16	E S 16	E S 16	17	C	18	20	22	30	24	21	20	E S 16	17	E S 16	E S 17	E S 16	E S 16	E S 16	E S 15
13	E S 16	E S 16	E S 13	E S 13	19	E S 16	E S 16	E S 16	E S 16	E S 16	21	21	21	19	21	20	17	18	E S 16	E S 14	E S 16	E S 16	E S 16	E S 16
14	E S 13	E S 16	E S 16	E S 13	E S 11	E S 13	E S 16	19	18	20	19	20	21	22	17	20	E S 16	17	E S 15	E S 16	E S 16	E S 16	E S 16	E S 16
15	E S 13	E S 12	E S 12	E S 12	E S 13	E S 16	E S 16	E S 16	E S 16	E S 16	18	21	22	22	20	E S 16	E S 16	18	E S 16	E S 16	E S 16	E S 15	E S 16	E S 16
16	E S 16	E S 16	E S 11	E S 12	E S 13	E S 16	E S 16	17	17	17	E S 16	20	22	22	23	17	E S 16	17	E S 14	E S 16	E S 20	E S 16	19	E S 16
17	E S 16	E S 15	E S 16	E S 13	E S 14	E S 16	E S 16	E S 13	E S 16	17	20	21	23	23	21	20	E S 16	E S 16	E S 16	E S 15	E S 16	E S 16	E S 16	E S 16
18	E S 15	E S 16	E S 13	E S 13	E S 15	E S 16	E S 16	17	E S 16	20	20	21	18	19	C	E S 16	20	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16
19	E S 16	E S 16	E S 16	E S 16	18	19	E S 16	18	E S 16	E S 16	21	21	20	21	20	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16
20	E S 16	E S 16	E S 13	E S 13	E S 13	E S 16	E S 16	E S 16	E S 15	E S 16	18	22	21	21	E S 16	17	E S 16	E S 16	E S 15	E S 16	E S 16	E S 16	E S 16	E S 16
21	E S 16	E S 14	E S 16	E S 15	E S 19	E S 12	E S 16	E S 16	20	19	22	23	21	24	20	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 17	E S 14	E S 16
22	E S 14	E	E S 14	E S 12	E S 12	E S 16	E S 16	E S 16	20	E S 18	22	21	21	18	17	C	E S 16	22	E S 16	E S 11	E S 14	E S 16	E S 16	E S 20
23	E S 15	E S 13	E S 16	E S 12	E S 12	E S 16	E S 16	C	20	E S 16	19	18	21	22	20	18	E S 16	20	E S 16	E S 14	E S 17	E S 16	C	E S 16
24	E S 16	E S 16	E S 13	E	E S 16	E S 16	E S 16	23	E S 16	E S 16	21	22	24	24	22	E S 16	E S 16	21	18	25	E S 16	E S 16	E S 16	E S 16
25	E S 16	E S 16	E S 14	E S 13	E S 16	E S 16	E S 16	E S 16	18	E S 16	12	19	C	18	18	18	E S 16	21	18	E S 16	E S 16	E S 23	E S 16	E S 16
26	E S 16	E S 16	E S 16	E S 13	E S 16	E S 19	E S 16	E S 16	E S 16	E S 16	19	21	22	21	17	19	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16
27	E S 12	E S 11	E S 14	E S 15	20	E S 17	E S 16	E S 17	20	20	21	21	21	22	21	21	E S 16	E S 16	20	E S 17	E S 16	E S 16	E S 16	E S 16
28	E S 16	E S 16	E S 12	E S 14	E S 13	E S 13	18	E S 16	22	22	21	25	21	20	17	23	19	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16
29	E S 16	E S 11	E S 19	E S 12	E S 16	E S 15	E S 16	22	21	E S 16	22	19	17	21	20	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16
30	E S 16	E S 20	E S 16	20	19	E S 16	E S 16	21	21	20	21	20	20	19	E S 16	E S 16	E S 16	21	E S 16	19	18	E S 16	19	21
31	19	19	19	18	19	21	20	22	21	22	22	25	29	24	22	20	E S 16	20	E S 16	E S 16	E S 16	20	21	19
MED																								
NO																								

CENTRAL RADIO PROPAGATION LABORATORY, NATIONAL BUREAU OF STANDARDS, BOULDER, COLO.

TABLE 47
IONOSPHERIC DATA

h'F2, Km, Oct. 1956 — 75° W Meon Time

Station: Woshington, D.C. Lat. 38.7°N Long. 77.1° W Sweep 1.0 Mc to 25.0 Mc in 13.5 sec. Monual ☐ Automotic ☒

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
01	300	280	260	250	240	260	270	240	260	250	L	L	U L 290	L	280	L	250	250	230	240	260	280	280	280
02	250	250	280	260	330	360	260	230	230	240	250	250	L	L	U L 260	L	U L 280	250	230	250	270	270	280	270
03	270	250	250	240	250	U S 310	280	230	230	240	U L 250	U L 290	L	L	L	L	U L 260	250	220	230	250	260	280	290
04	270	260	250	250	290	300	270	240	240	240	L	L	L	L	L	L	L	250	230	220	230	250	260	270
05	270	280	260	260	300	240	280	240	250	240	H 230	260	320	L	L	L	270	240	240	220	250	270	280	290
06	290	280	250	240	240	250	270	250	250	240	U L 250	L	L	250	L	L	L	250	230	240	240	250	270	280
07	270	270	260	270	250	260	270	240	240	240	260	U L 260	280	270	290	250	U L 280	240	240	220	240	270	270	270
08	270	280	280	280	250	270	270	240	240	240	250	U L 260	L	L	L	L	250	250	240	220	250	260	290	280
09	270	260	260	250	230	290	270	240	230	250	250	L	L	L	L	L	L	230	230	220	240	250	270	260
10	260	250	250	250	250	260	250	230	240	230	240	L	L	U L 270	L	U L 260	250	250	230	230	240	250	250	250
11	250	280	260	250	250	250	260	230	250	240	L	L	L	L	L	L	L	L	230	220	240	250	240	250
12	250	250	250	260	250	230	240	230	I C 240	240	250	290	L	270	L	L	L	230	220	230	240	250	250	250
13	250	260	260	250	270	260	250	230	230	240	240	270	250	L	280	250	240	230	210	220	230	250	250	250
14	260	260	260	250	230	240	250	240	240	240	U L 250	U L 250	L	L	260	250	250	U L 240	210	220	230	240	240	250
15	250	240	240	230	230	240	250	230	240	H 230	240	L	L	250	L	250	260	230	220	220	230	250	240	260
16	270	250	240	240	250	300	280	230	230	230	240	L	U L 250	L	L	L	L	220	210	220	240	250	250	250
17	270	270	270	260	230	230	240	240	240	230	L	U L 240	240	U L 250	240	L	250	230	220	230	230	240	250	250
18	290	320	290	260	230	220	240	230	230	220	L	L	L	L	I C 240	250	L	220	200	220	240	250	240	250
19	270	280	290	I A 280	270	260	260	230	230	230	240	U L 240	L	L	250	250	230	220	220	230	240	250	250	260
20	F 270	300	F 350	F 320	F 280	260	230	240	240	L	L	U L 270	280	L	L	L	U L 260	U L 250	240	220	250	240	280	250
21	270	250	260	240	300	270	310	L	250	240	260	270	U L 270	L	300	L	L	230	220	230	240	250	270	280
22	300	270	250	240	260	260	250	240	230	240	230	240	240	L	L	C	L	230	220	230	240	250	270	290
23	300	270	260	240	240	250	230	I C 220	220	250	250	L	250	260	250	240	230	220	230	240	230	250	I C 240	240
24	250	270	270	250	250	240	250	230	240	230	L	250	L	L	250	U L 240	240	220	220	240	220	250	250	250
25	270	280	270	240	240	240	240	240	250	250	250	260	C	L	260	L	260	230	220	240	240	260	260	280
26	290	290	290	270	230	240	230	240	240	240	230	250	L	L	L	L	L	240	240	280	270	320	300	260
27	310	240	230	240	300	300	250	260	240	250	230	240	240	240	L	240	230	230	220	200	220	230	250	280
28	290	300	300	F 330	330	330	300	230	260	L	240	250	250	L	230	240	U L 250	230	220	230	230	240	240	270
29	290	270	270	250	250	260	270	230	230	250	L	L	250	250	L	260	230	220	220	220	220	260	250	240
30	270	270	250	260	290	290	270	240	230	230	240	250	L	L	240	U L 240	240	230	220	230	220	240	250	260
31	260	250	250	270	270	250	260	230	240	240	L	L	250	L	L	L	240	230	230	230	240	260	260	260
MED	270	270	260	250	250	260	260	240	240	240	240	250	250	U 250	260	250	250	230	220	230	240	250	250	260
NO	31	31	31	31	31	31	31	30	31	29	22	19	14	9	14	13	21	30	31	31	31	31	31	31

CENTRAL RADIO PROPAGATION LABORATORY, NATIONAL BUREAU OF STANDARDS, BOULDER, COLO.

TABLE 48
IONOSPHERIC DATA

h'F1, Km, Oct. 1956 — 75° W Mean Time

Station: Washington, D.C. Lat. 38.7°N Long. 77.1° W Sweep 1.0 Mc to 25.0 Mc in 13.5 sec. Manual ☐ Automatic ☒

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
01								Q	235	230	230	205	210	220	225	220	225	240						
02								Q	220	220	210	H 200	220	230	230	H 210	240	Q						
03								Q	230	U H 230	225	210	230	230	230	240	240	235						
04								Q	Q	230	210	220	220	230	240	245	240	235						
05								Q	235	230	220	205	235	230	230	230	240	Q						
06								230	240	H 215	H 220	H 220	205	235	220	230	240	Q						
07								Q	Q	H 230	H 215	205	210	220	230	230	240	Q						
08								Q	235	230	205	H 205	205	235	215	235	Q	Q						
09								Q	230	210	205	220	215	220	220	230	240	Q						
10								Q	230	210	205	205	210	225	225	230	230	235						
11								Q	230	230	220	230	220	H 210	230	230	230	230						
12								Q	I C 230	230	220	H 215	210	215	225	235	H 240	Q						
13								Q	225	220	220	205	215	H 220	210	220	230	Q						
14								220	220	215	210	200	220	215	230	230	240	230						
15								Q	235	220	205	H 200	230	220	215	230	230	Q						
16								Q	Q	210	200	210	220	210	225	235	240	Q						
17								Q	220	215	205	210	230	230	220	230	230	Q						
18								Q	225	215	205	220	220	225	I C 220	215	230	Q						
19								Q	235	220	220	U Z 225	220	230	230	235	Q	Q						
20								Q	230	220	215	220	230	220	230	235	245	220						
21								235	240	230	200	225	245	220	H 215	215	240	Q						
22								Q	Q	220	220	215	230	210	230	I C 235	220	Q						
23								C	Q	210	220	230	230	220	230	240	Q	Q						
24								Q	225	210	200	215	210	220	220	220	Q	Q						
25								Q	230	230	210	210	C	235	235	230	240	Q						
26								230	220	215	230	H 210	230	220	230	230	250	Q						
27								Q	220	210	210	220	220	220	220	230	Q	Q						
28								Q	230	220	220	220	220	215	220	230	230	Q						
29								Q	235	230	220	205	210	220	220	220	Q	Q						
30								Q	Q	Q	210	220	220	220	230	H 230	230	Q						
31								Q	225	220	220	215	230	230	230	230	Q	Q						
MED									230	220	215	215	220	220	225	230	240	235						
NO								4	25	30	31	31	30	31	31	31	24	7						

CENTRAL RADIO PROPAGATION LABORATORY, NATIONAL BUREAU OF STANDARDS, BOULDER, COLO.

TABLE 49
IONOSPHERIC DATA

h'E, Km, Oct. 1956 — 75° W Mean Time

Station: Washington, D.C. Lat. 38.7°N Lang. 77.1° W Sweep 1.0 Mc to 25.0 Mc in 13.5 sec. Manual ☐ Automatic ☒

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
01								129	111	107	105	109	109	105	101	H 101	111	119						
02								119	111	109	109	109	109	H 101	H 107	H 107	111	119						
03								A	A	A	111	111	109	109	111	111	111	121						
04								B	115	111	I B 113	117	111	H 111	H 109	U B 119	117	119						
05								H 111	H 111	109	109	107	109	109	H 109	H 109	111	119						
06								H 115	115	109	109	109	H 109	H 109	H 109	115	115	H 121						
07								121	109	H 109	109	109	109	109	111	111	115	129						
08								U B 111	I A 110	109	103	A	A	H 105	115	109	111	117						
09								U B 121	109	H 109	U A 105	I A 103	101	101	109	109	109	A						
10								B	H 105	H 109	H 109	H 109	H 101	109	109	109	H 109	119						
11								119	109	109	B	101	101	U A 109	U A 113	U A 119	109	A						
12								119	I C 109	109	103	103	A	A	107	109	H 109	H 129						
13								A	H 103	H 101	101	H 101	H 101	H 101	H 109	H 105	H 103	B						
14								119	109	109	101	U A 101	101	101	H 101	109	111	U B 129						
15								115	H 109	H 105	103	103	H 109	H 105	101	I A 105	109	B						
16								U B 121	H 109	H 109	101	101	109	105	109	105	111	133						
17								119	107	H 101	103	101	107	109	109	109	109	U A 111						
18								U B 127	109	101	101	101	U A 119	H 101	I C 101	U A 109	109	U R 129						
19								U R 115	105	107	105	107	I A 110	U A 113	I A 111	U A 109	115	A						
20								115	109	105	105	H 105	H 103	109	105	H 109	111	119						
21								125	111	103	109	H 109	H 109	105	109	111	H 111	S						
22								127	119	H 103	105	101	101	101	H 101	I C 109	111	B						
23								C	109	U A 109	101	103	109	109	101	109	111	B						
24								B	109	105	H 109	103	I A 102	H 101	H 107	H 101	H 101	B						
25								127	H 111	H 109	111	A	C	111	111	111	A	B						
26								129	109	105	H 101	H 101	H 109	109	109	109	H 109	S						
27								119	H 109	H 105	103	105	101	107	109	111	111	A						
28								109	U B 111	111	I A 110	109	103	103	H 101	H 111	121	A						
29								B	111	105	109	H 103	103	111	109	109	111	117						
30								B	U A 109	H 109	105	105	101	U A 109	U A 109	U A 109	U A 111	B						
31								B	H 109	H 101	105	U B 109	U B 111	109	109	111	109	B						
MED								119	109	109	105	105	109	109	109	109	111	119						
NO								22	30	30	30	29	28	30	31	31	30	16						

CENTRAL RADIO PROPAGATION LABORATORY, NATIONAL BUREAU OF STANDARDS, BOULDER, COLO.

TABLE 50
IONOSPHERIC DATA

(M3000) F2, Oct. 1956 — 75° W Meon Time

Station: Washington, D.C. Lat. 38.7°N Long. 77.1° W Sweep 1.0 Mc to 25.0 Mc in 13.5 sec. Manual ☐ Automatic ☒

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
01	F 270	F 285	270	285	290	280	285	320	305	305	300	290	290	280	290	290	290	295	295	285	280	260	U S 265	265
02	285	275	260	260	245	250	300	315	330	U S 315	305	280	280	275	285	280	275	300	290	290	265	265	U S 280	315
03	F 275	F 290	F 285	290	F 275	255	280	320	310	310	300	290	285	275	265	270	280	285	300	290	270	275	270	265
04	270	280	275	275	260	270	295	330	330	310	300	285	290	290	280	280	290	290	300	305	285	300	295	285
05	285	F 285	295	290	U F 270	U F 250	295	325	320	310	H 290	290	275	285	275	280	275	285	295	280	280	U F 275	U F 270	U F 275
06	F 280	275	290	275	275	270	285	310	305	310	285	280	275	270	280	295	275	285	290	275	270	275	270	280
07	280	F 270	F 280	F 280	280	270	285	310	315	300	300	285	275	275	275	270	275	280	295	295	280	280	270	275
08	270	265	245	265	265	270	285	320	310	300	290	290	285	275	275	275	280	280	300	280	285	270	270	U F 280
09	U F 290	U F 290	U F 290	U F 290	F 310	U F 280	U F 300	330	345	300	305	290	285	280	275	275	280	290	285	290	280	280	280	F 290
10	F 285	F 290	F 295	F 300	F 300	F 290	F 310	320	315	310	300	290	290	290	275	280	285	290	290	290	280	290	290	290
11	280	275	F 290	F 300	F 300	F 290	F 300	320	330	320	305	300	290	280	280	280	285	295	F 300	U F 290	F 290	F 295	U F 290	U F 290
12	F 290	U F 300	290	F 290	F 295	290	310	330	C	315	305	295	290	280	280	280	290	295	290	285	280	290	U P 290	290
13	F 300	F 290	F 295	F 295	F 285	F 285	F 320	330	320	315	305	295	285	285	280	280	285	290	290	285	290	290	285	285
14	290	290	290	F 305	295	295	F 310	320	315	320	295	295	290	280	290	280	285	300	300	280	295	300	295	300
15	300	300	295	310	290	295	300	310	330	H 310	300	300	290	285	285	285	295	300	300	300	290	290	300	280
16	280	300	295	285	280	265	285	285	320	320	310	295	285	290	290	290	290	300	300	300	290	290	285	290
17	280	F 285	275	275	305	285	300	330	320	320	305	295	290	290	290	290	300	300	295	300	310	F 290	F 300	F 300
18	U F 295	U F 275	U F 280	F 290	F 310	F 310	F 310	325	330	320	310	300	300	290	C	295	295	295	U S 315	295	U S 295	295	300	F 300
19	285	270	265	265	265	275	290	315	320	310	305	300	295	285	285	290	290	300	295	295	295	300	295	285
20	F 275	U F 270	U F 255	U F 265	U F 270	F 290	F 300	F 320	310	290	280	275	275	265	270	270	280	275	280	270	270	260	275	280
21	280	285	285	300	260	260	270	260	310	305	300	285	275	260	260	270	280	290	U S 310	290	285	285	270	F 280
22	U F 260	F 275	F 290	F 310	F 290	F 295	F 290	320	330	315	300	300	290	290	290	C	290	300	U S 300	300	285	F 290	U S 275	280
23	260	275	270	260	270	280	F 300	C	310	310	300	300	285	290	300	290	295	290	295	290	275	300	C	300
24	290	270	F 280	F 300	F 290	F 320	F 290	330	335	310	305	295	290	295	280	290	290	290	300	265	300	U S 300	295	290
25	280	260	285	F 305	F 310	U F 300	U F 300	335	315	330	315	305	C	300	300	290	295	305	305	300	305	295	295	F 285
26	F 280	285	F 275	280	290	290	300	320	330	315	300	290	285	270	275	270	270	280	280	260	265	255	265	U P 265
27	260	290	260	275	255	280	U S 260	300	300	305	300	300	305	290	280	285	295	300	300	300	295	290	270	260
28	F 265	U F 270	F 265	F 255	F 270	F 260	U F 265	320	330	290	300	300	300	290	290	290	290	295	290	300	295	295	280	270
29	265	285	280	300	285	270	260	310	315	310	305	290	285	280	280	285	285	295	290	295	285	290	290	270
30	270	285	290	280	270	255	280	320	310	310	290	285	295	280	275	280	290	300	290	300	295	275	280	270
31	290	285	285	285	280	290	280	270	310	310	300	290	280	280	280	285	285	290	290	285	280	280	290	285
MED	280	285	285	285	280	280	295	320	320	310	300	290	290	280	280	280	285	295	295	290	285	290	280	285
NO	31	31	31	31	31	31	31	30	30	31	31	31	30	31	30	30	31	31	31	31	31	31	30	31

CENTRAL RADIO PROPAGATION LABORATORY, NATIONAL BUREAU OF STANDARDS, BOULDER, COLO.

TABLE 5I

IONOSPHERIC DATA

(M3000) F1, Oct. 1956 — 75° W Mean Time

Station: Washington, D.C. Lat. 38.7°N Long. 77.1° W Sweep 1.0 Mc to 25.0 Mc in 13.5 sec. Manual ☐ Automatic ☒

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
01								Q	L	L	L	L	L	L	L	L	L	L						
02								Q	L	L	L	L	L	L	L	L	L	Q						
03								Q	L	L	L	L	L	L	L	L	L	L						
04								Q	Q	L	L	L	L	L	L	L	L	L						
05								Q	L	L	L	L	L	L	L	L	L	Q						
06								L	L	L	L	L	L	L	L	L	L	Q						
07								Q	Q	L	L	L	L	L	L	L	L	Q						
08								Q	L	L	L	L	L	L	L	L	Q	Q						
09								Q	L	L	L	L	L	L	L	L	L	Q						
10								Q	L	L	L	L	L	L	L	L	L	L						
11								Q	L	L	L	L	L	L	L	L	L	L						
12								Q	L	L	L	L	L	L	L	L	L	Q						
13								Q	L	L	L	L	L	L	L	L	L	Q						
14								L	L	L	L	L	L	L	L	L	L	L						
15								Q	L	L	L	L	L	L	L	L	L	Q						
16								Q	Q	L	L	L	L	L	L	L	L	Q						
17								Q	L	L	L	L	L	L	L	L	L	Q						
18								Q	L	L	L	L	L	L	C	L	L	Q						
19								Q	L	L	L	L	L	L	L	L	Q	Q						
20								Q	L	L	L	L	L	L	L	L	L	L						
21								L	L	L	L	L	L	L	L	L	L	Q						
22								Q	Q	L	L	L	L	L	L	C	L	Q						
23								C	Q	L	L	L	L	L	L	L	Q	Q						
24								Q	L	L	L	L	L	L	L	L	Q	Q						
25								Q	L	L	L	L	C	L	L	L	L	Q						
26								L	L	L	L	L	L	L	L	L	L	Q						
27								Q	L	L	L	L	L	L	L	L	Q	Q						
28								Q	L	L	L	L	L	L	L	L	L	Q						
29								Q	L	L	L	L	L	L	L	L	Q	Q						
30								Q	Q	Q	L	L	L	L	L	L	L	Q						
31								Q	L	L	L	L	L	L	L	L	Q	Q						
MED																								
NO																								

CENTRAL RADIO PROPAGATION LABORATORY, NATIONAL BUREAU OF STANDARDS, BOULDER, COLO.

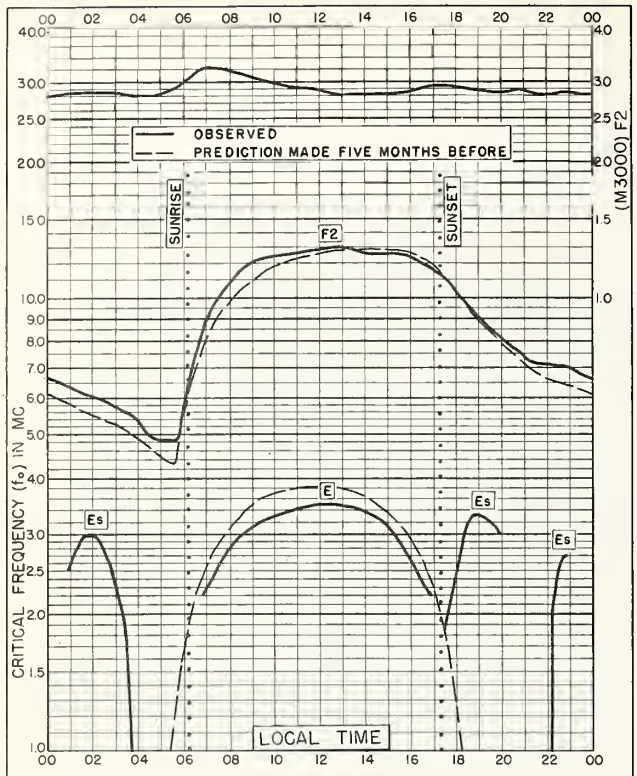


Fig. 1. WASHINGTON, D. C.
38.7°N, 77.1°W OCTOBER 1956

NBS 503

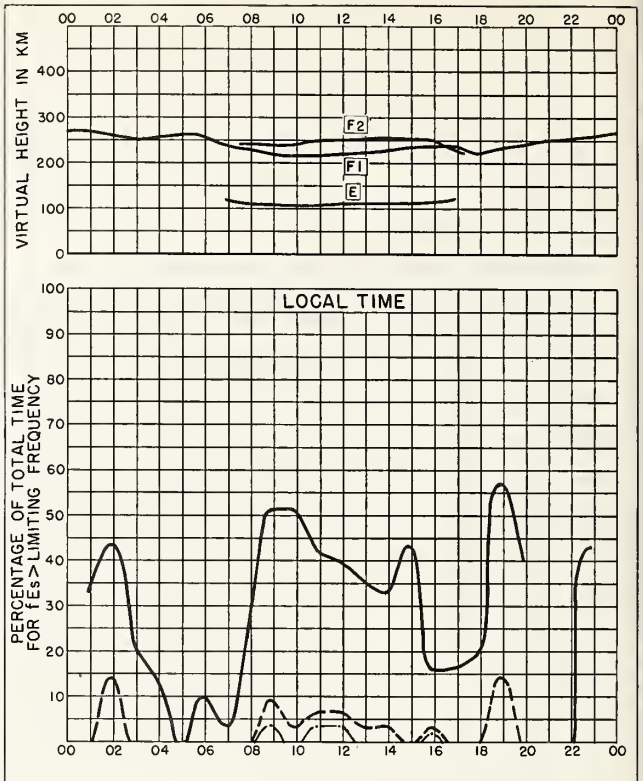


Fig. 2. WASHINGTON, D. C. OCTOBER 1956

NBS 490

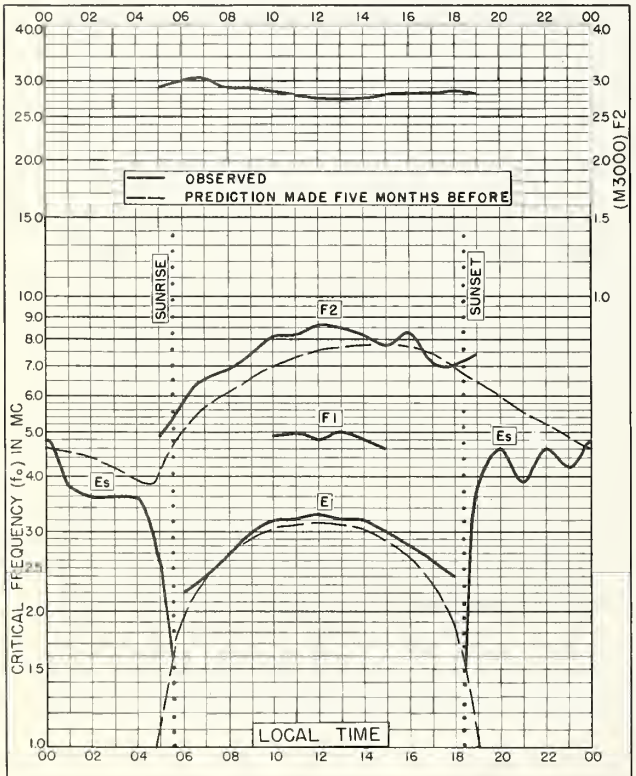


Fig. 3. NARSARSSUAK, GREENLAND
61.2°N, 45.4°W SEPTEMBER 1956

NBS 503

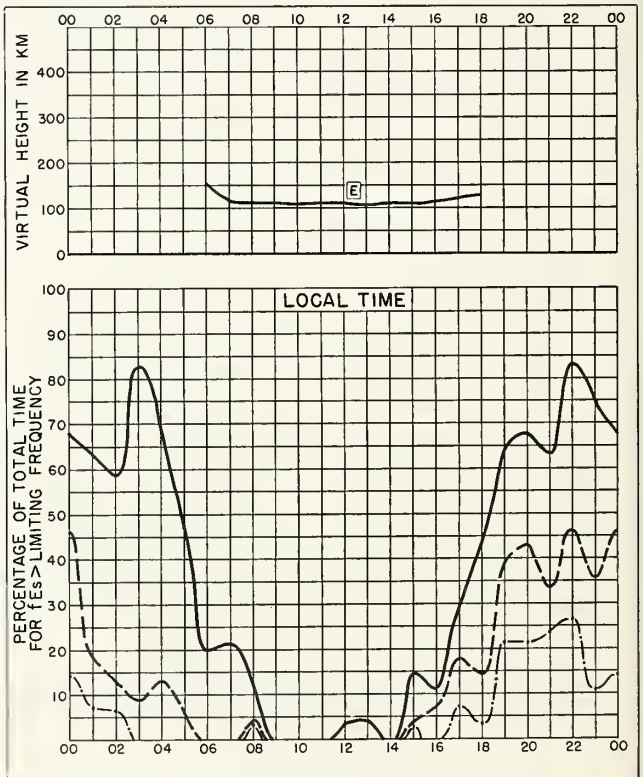


Fig. 4. NARSARSSUAK, GREENLAND SEPTEMBER 1956

NBS 490

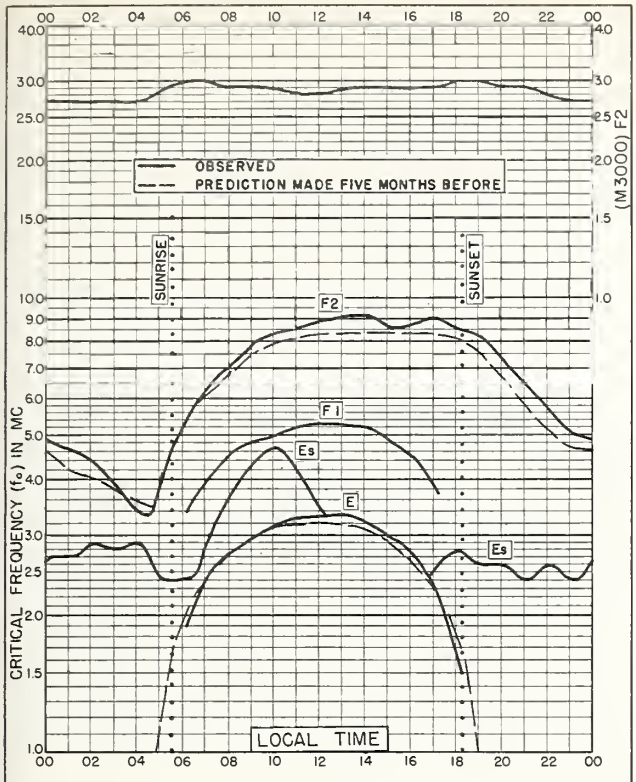


Fig. 5. UPSALA, SWEDEN
59.8°N, 17.6°E SEPTEMBER 1956

NBS 503

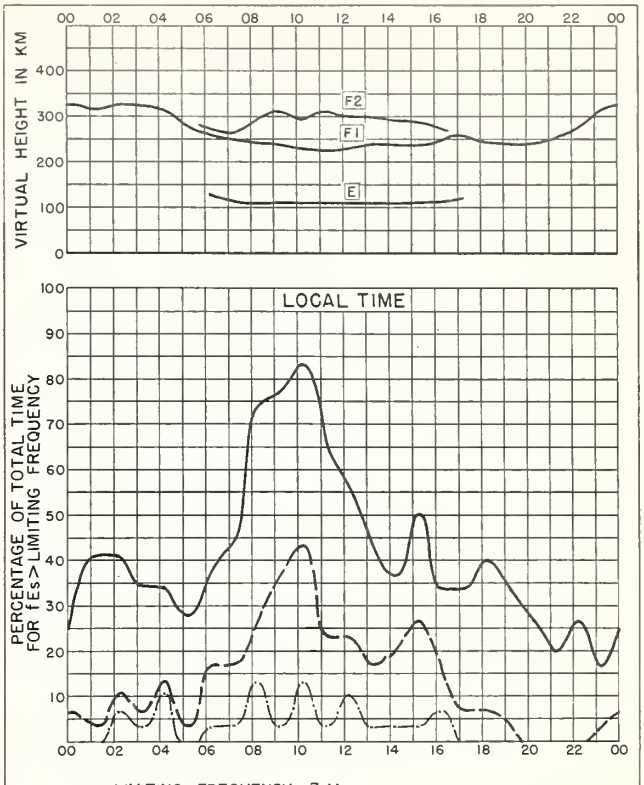


Fig. 6. UPSALA, SWEDEN SEPTEMBER 1956

NBS 490

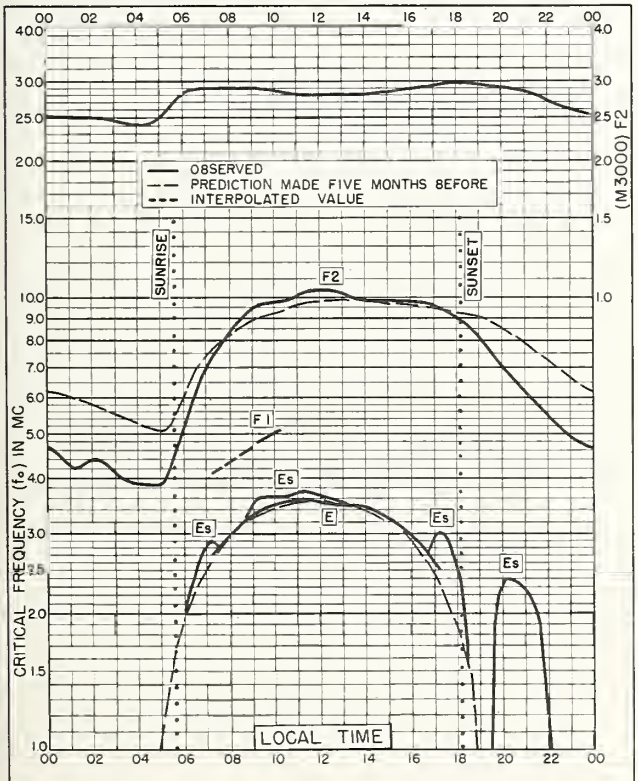


Fig. 7. ADAK, ALASKA
51.9°N, 176.6°W SEPTEMBER 1956

NBS 503

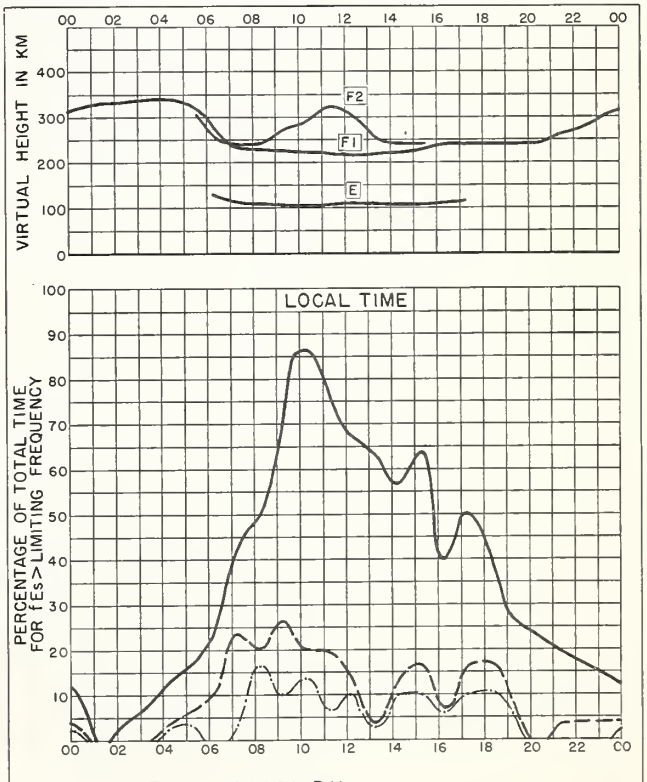


Fig. 8. ADAK, ALASKA SEPTEMBER 1956

NBS 490

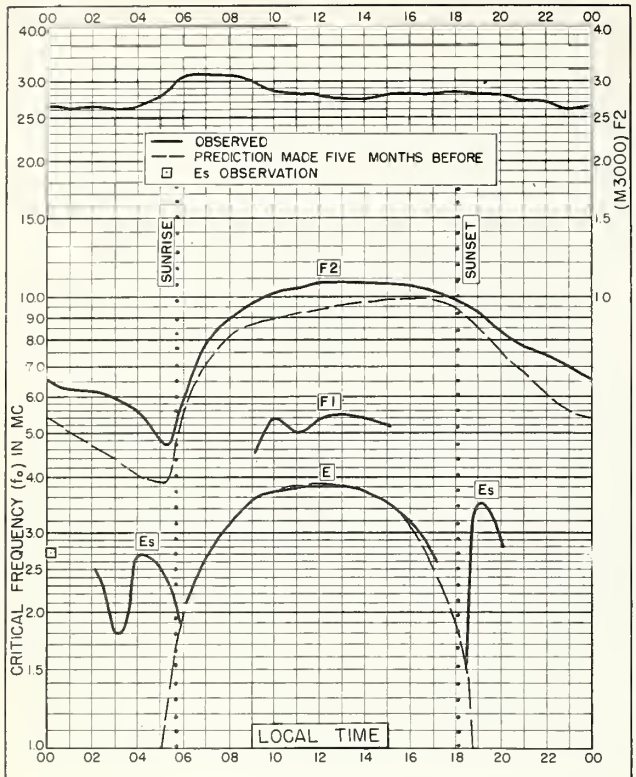
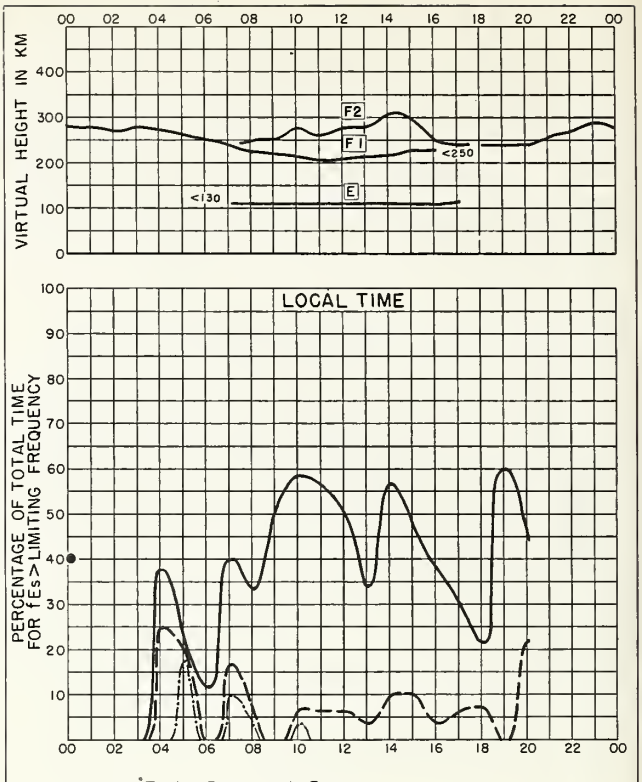


Fig. 9. FT. MONMOUTH, NEW JERSEY
40.3°N, 74.1°W SEPTEMBER 1956

NBS 503



SEPTEMBER 1956

Fig. 10. FT. MONMOUTH, NEW JERSEY

NBS 490

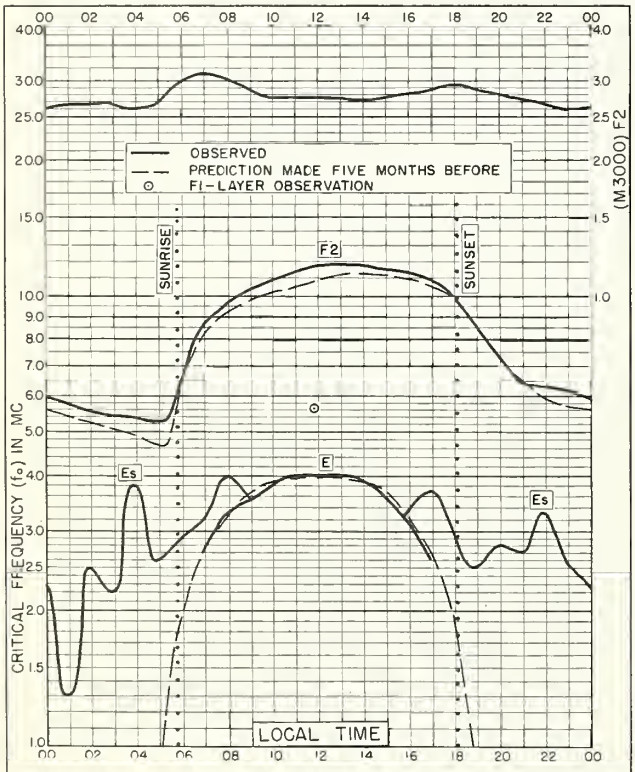
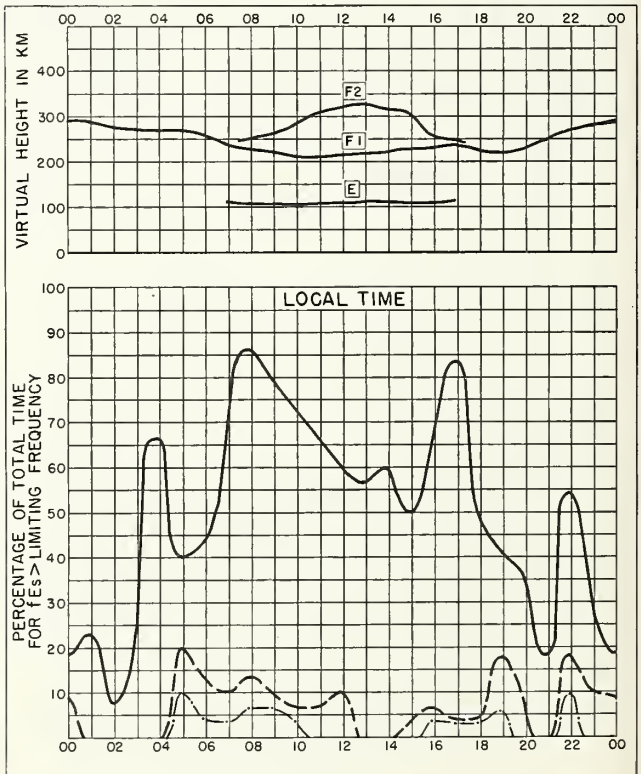


Fig 11. WHITE SANDS, NEW MEXICO
32.3°N, 106.5°W SEPTEMBER 1956

NBS 503



SEPTEMBER 1956

Fig. 12. WHITE SANDS, NEW MEXICO

NBS 490

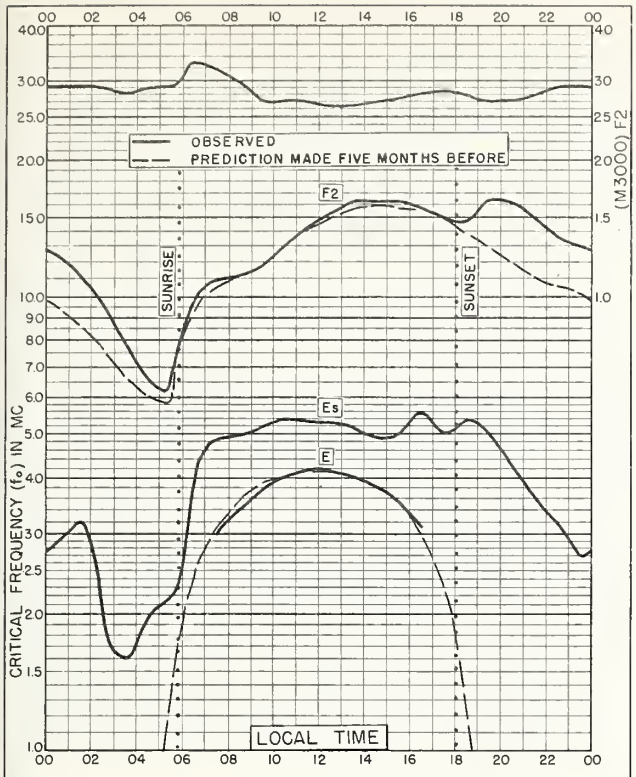


Fig. 13. OKINAWA I.
26.3°N, 127.8°E SEPTEMBER 1956

NBS 503

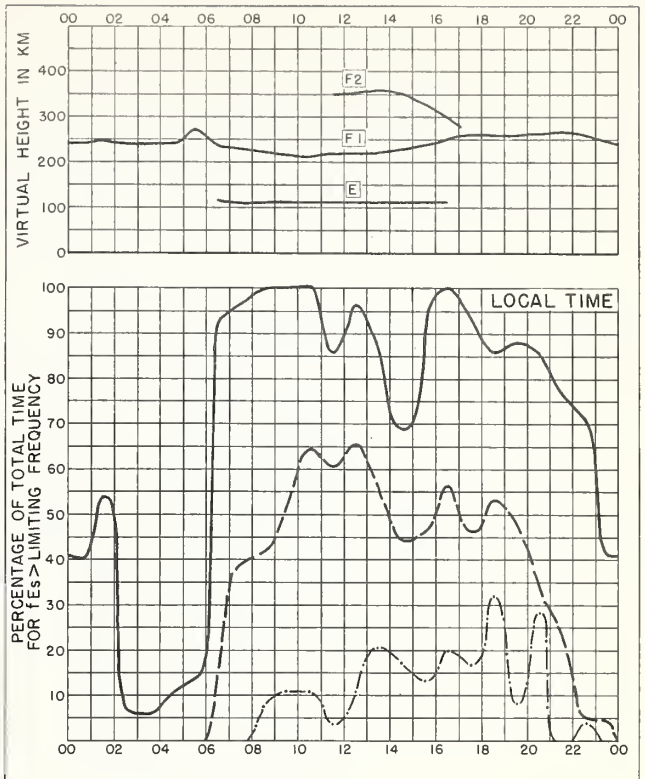


Fig. 14. OKINAWA I. SEPTEMBER 1956

NBS 490

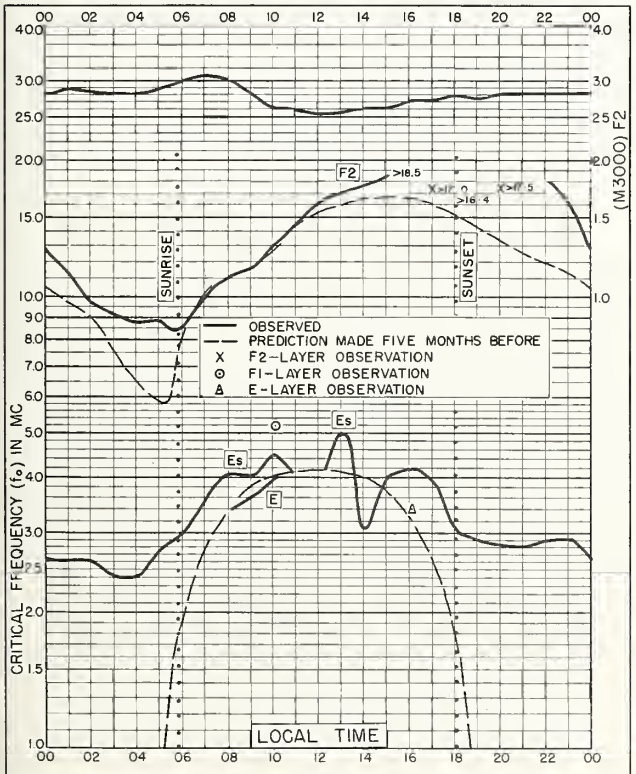


Fig. 15. FORMOSA, CHINA
25.0°N, 121.5°E SEPTEMBER 1956

NBS 503

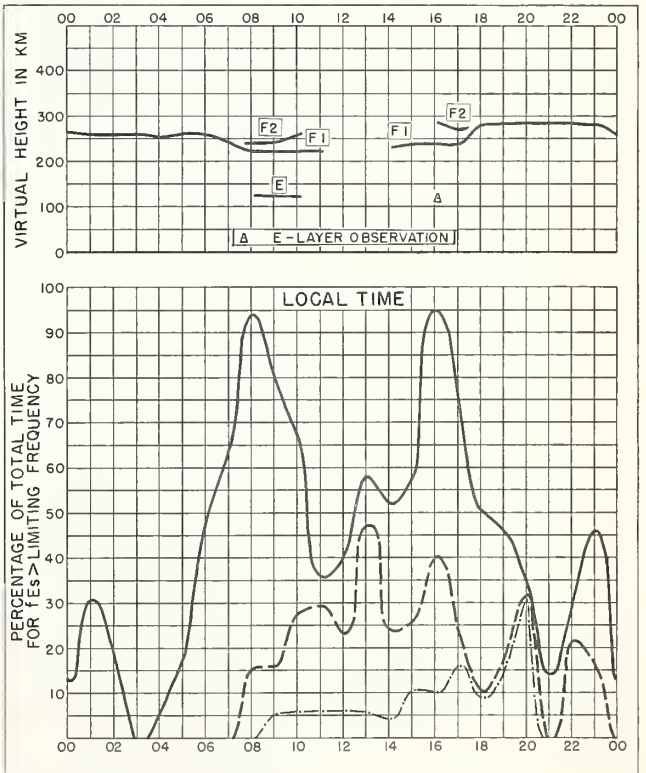


Fig. 16. FORMOSA, CHINA SEPTEMBER 1956

NBS 490

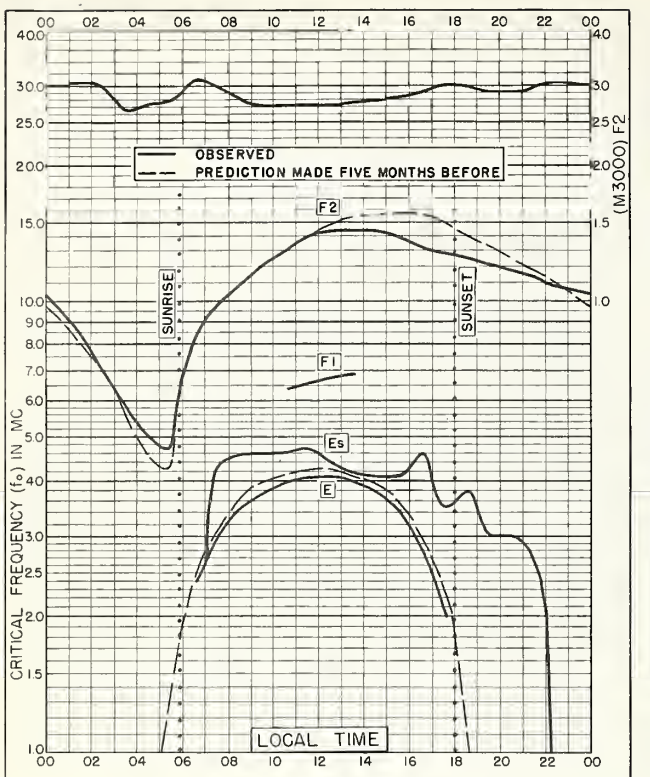


Fig. 17. MAUI, HAWAII
20.8°N, 156.5° W SEPTEMBER 1956

NBS 503

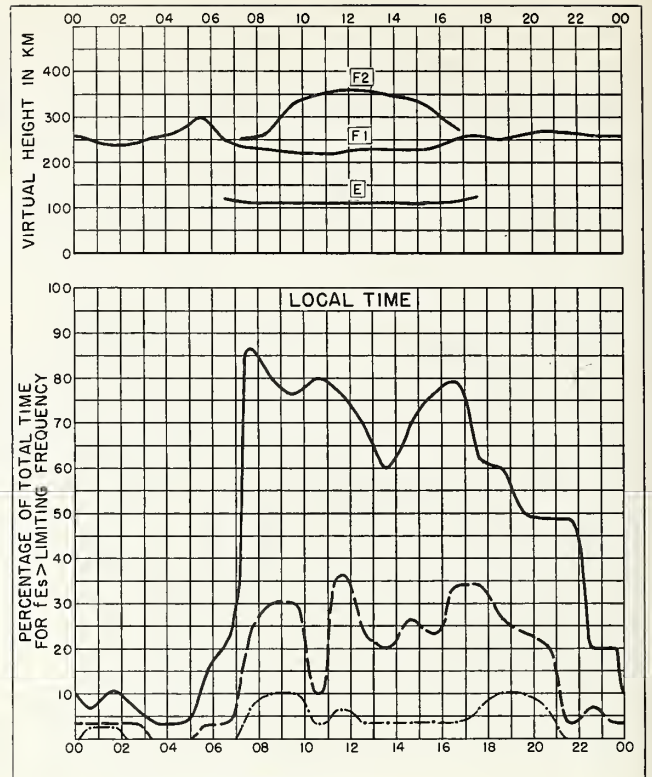


Fig. 18. MAUI, HAWAII SEPTEMBER 1956

NBS 490

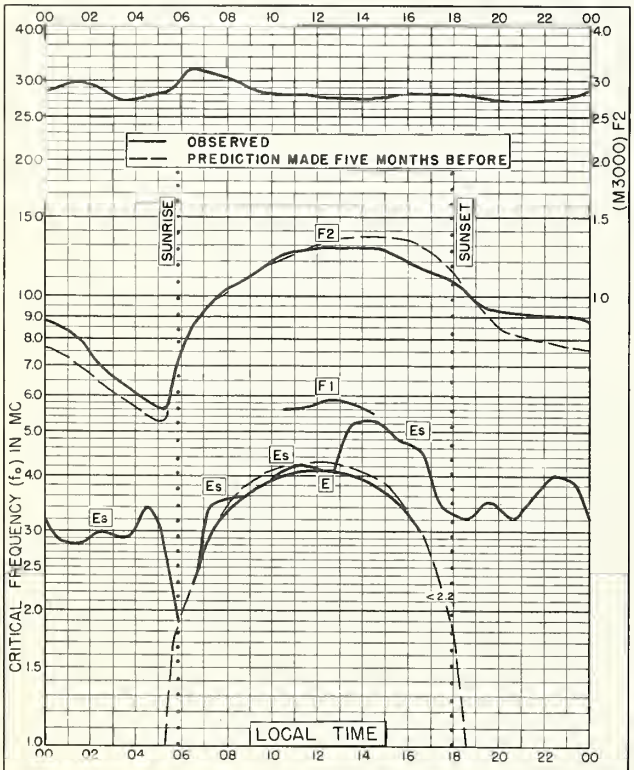


Fig. 19. PUERTO RICO, W. I.
18.5°N, 67.2° W SEPTEMBER 1956

NBS 503

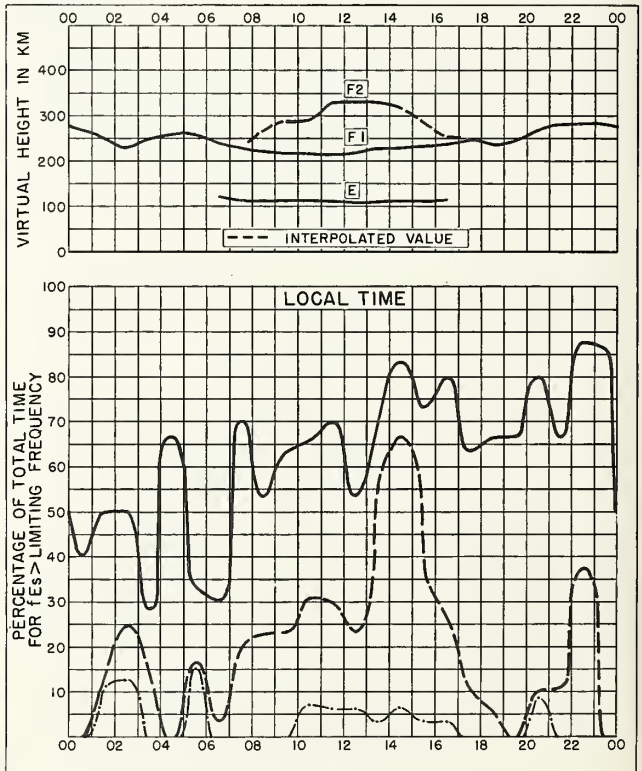


Fig. 20. PUERTO RICO, W. I. SEPTEMBER 1956

NBS 490

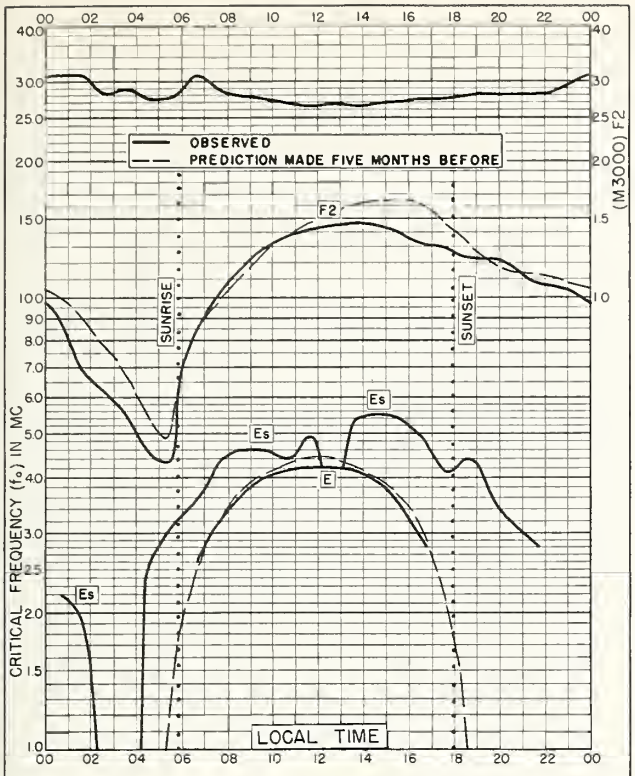


Fig. 21. PANAMA CANAL ZONE
9.4°N, 79.9°W SEPTEMBER 1956

NBS 503

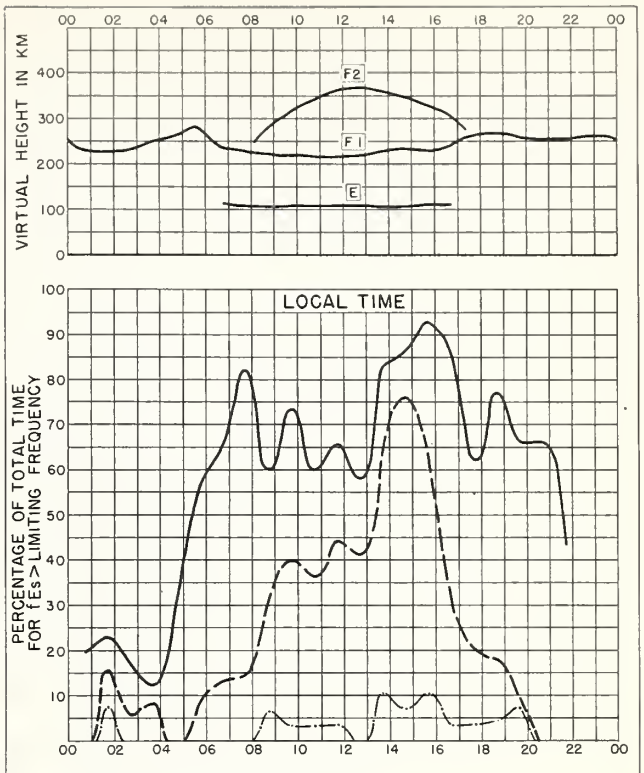


Fig. 22. PANAMA CANAL ZONE SEPTEMBER 1956

NBS 490

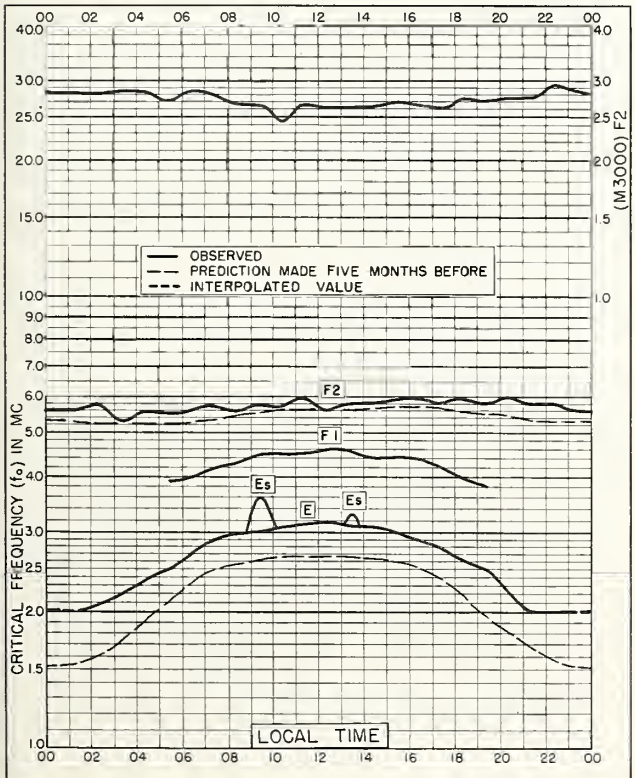


Fig. 23. THULE, GREENLAND
77.0°N, 69.0°W AUGUST 1956

NBS 503

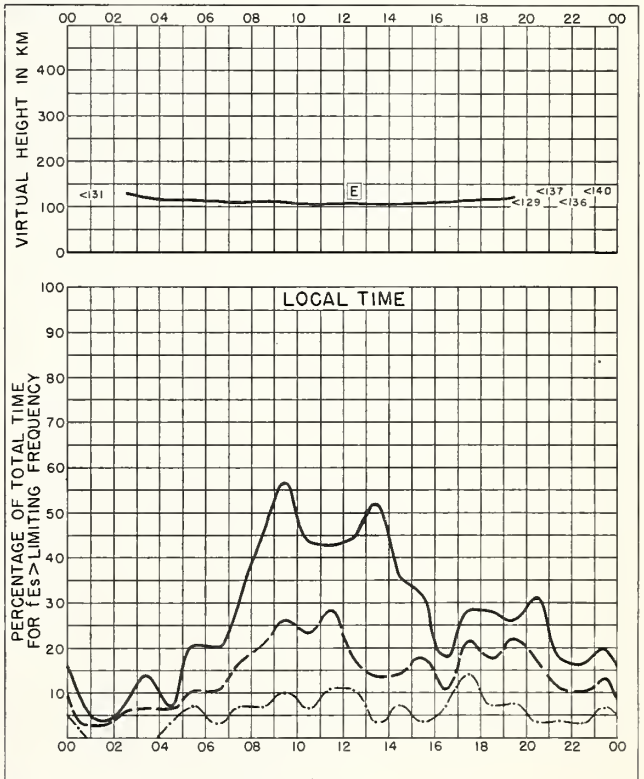


Fig. 24. THULE, GREENLAND AUGUST 1956

NBS 490

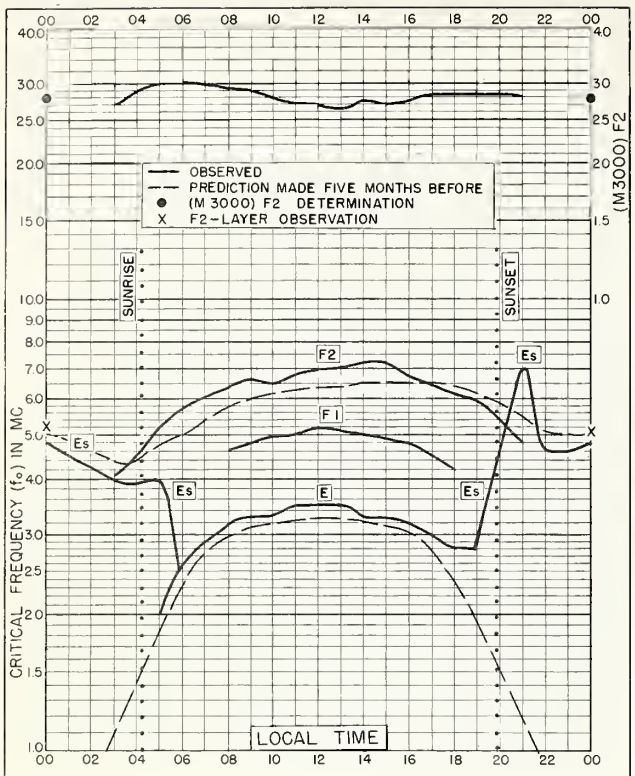
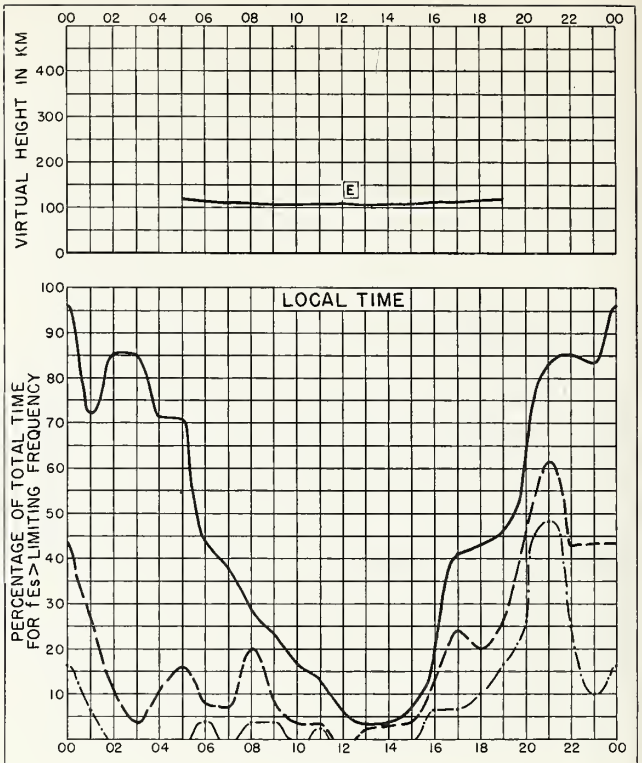


Fig. 25. NARSARSSUAK, GREENLAND
61.2°N, 45.4°W AUGUST 1956

NBS 503



AUGUST 1956

Fig. 26. NARSARSSUAK, GREENLAND

NBS 490

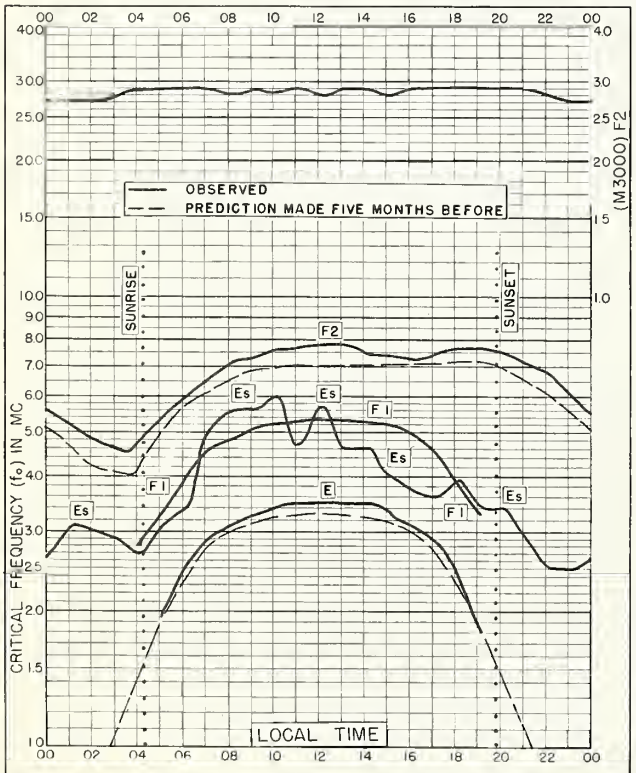
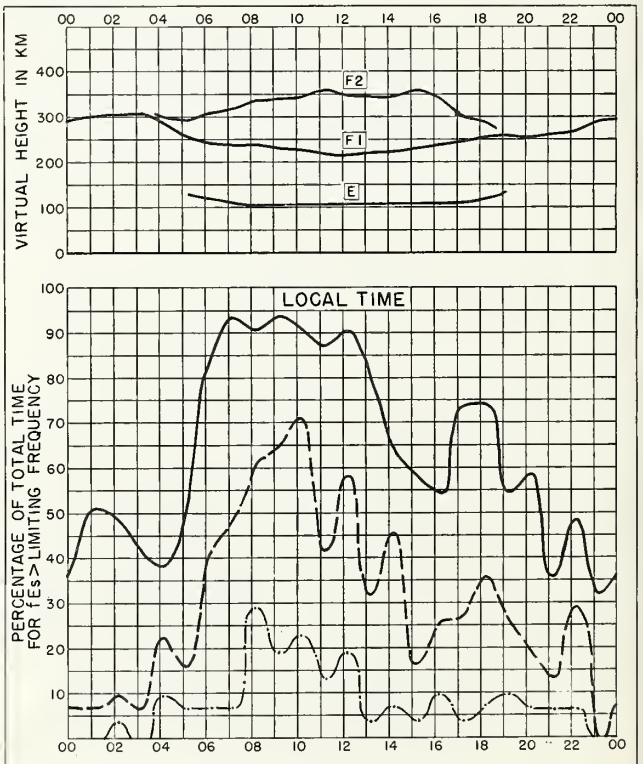


Fig. 27. UPSALA, SWEDEN
59.8°N, 17.6°E AUGUST 1956

NBS 503



AUGUST 1956

Fig. 28. UPSALA, SWEDEN

NBS 490

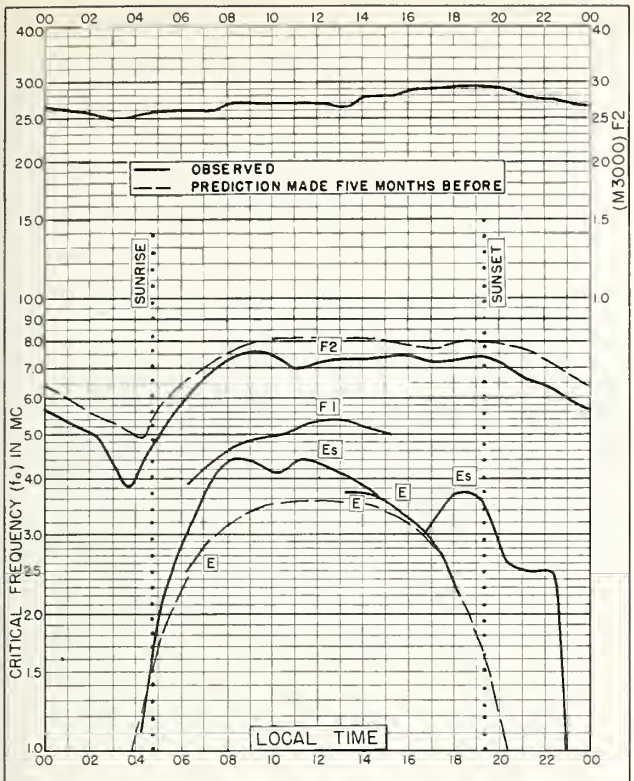


Fig. 29. ADAK, ALASKA
51.9°N, 176.6°W AUGUST 1956

NBS 503

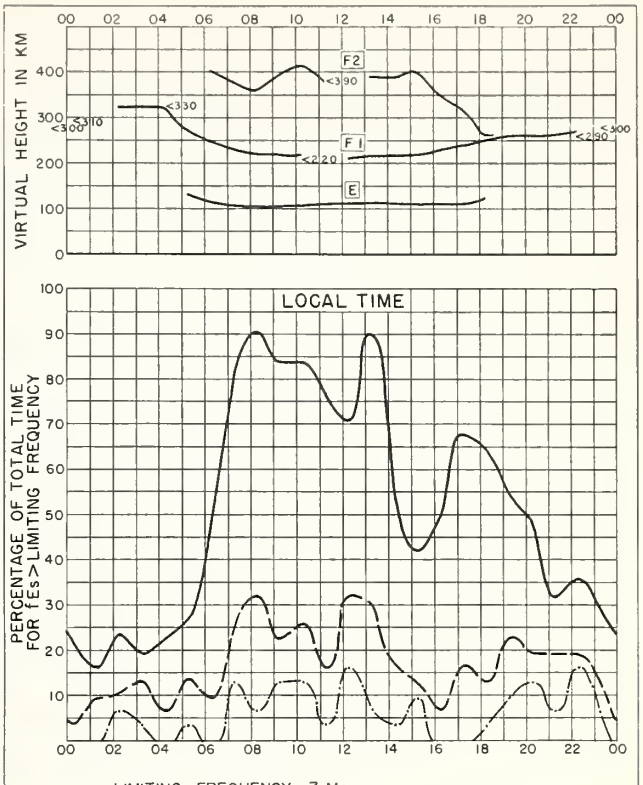


Fig. 30. ADAK, ALASKA AUGUST 1956

NBS 490

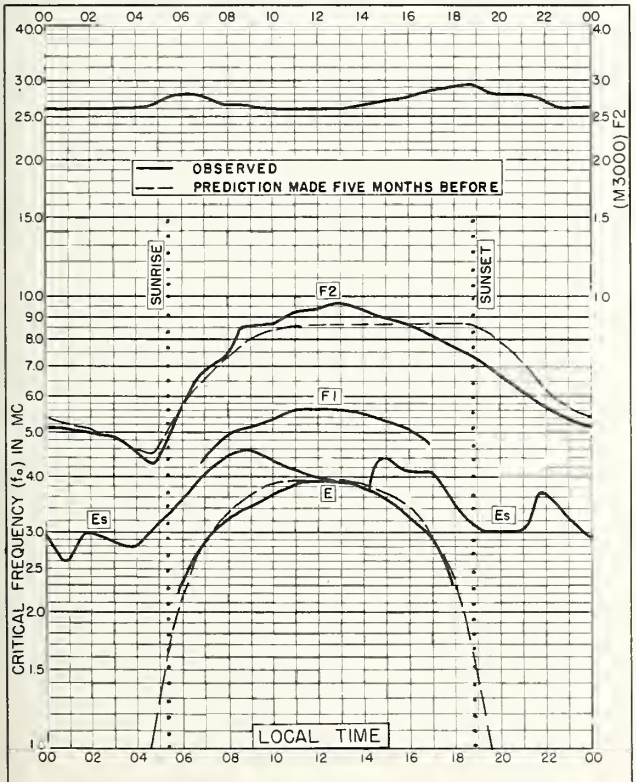


Fig. 31. SAN FRANCISCO, CALIFORNIA
37.4°N, 122.2°W AUGUST 1956

NBS 503

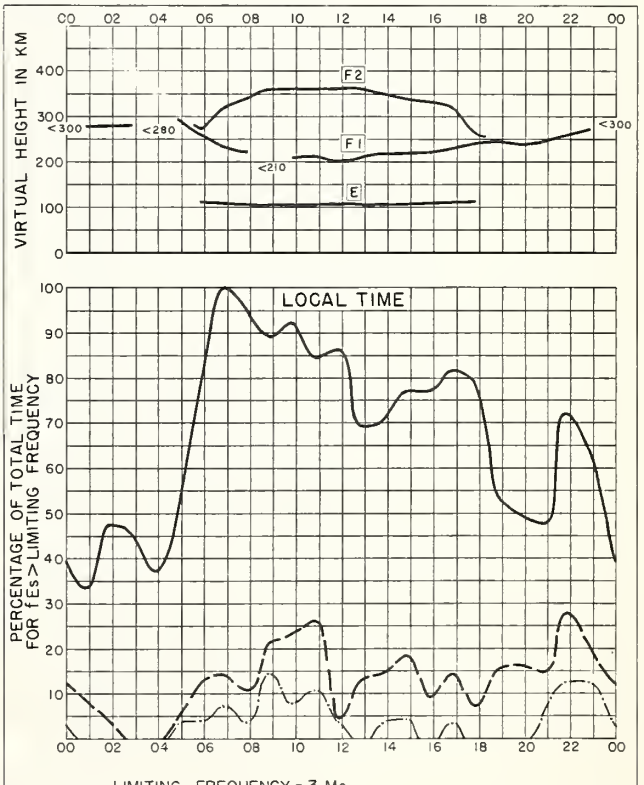


Fig. 32. SAN FRANCISCO, CALIFORNIA AUGUST 1956

NBS 490

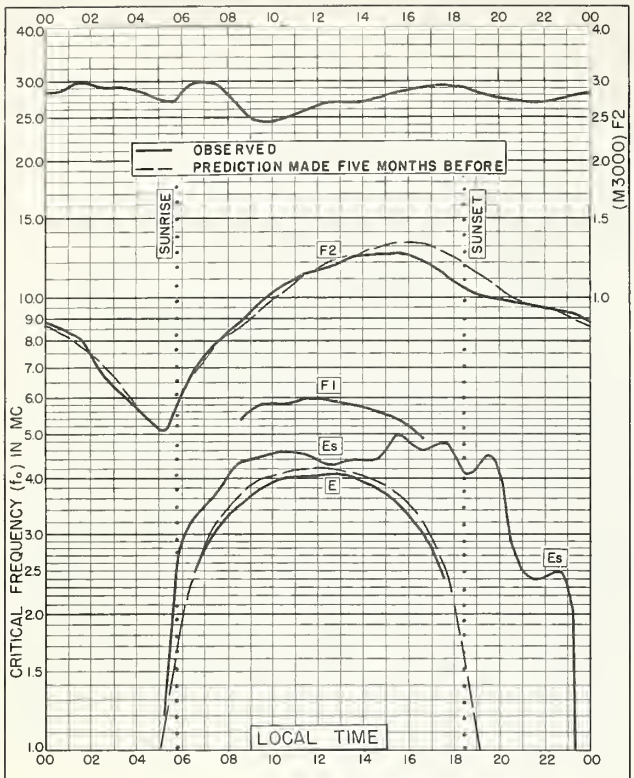


Fig. 33. MAUI, HAWAII
20.8°N, 156.5°W AUGUST 1956

NBS 503

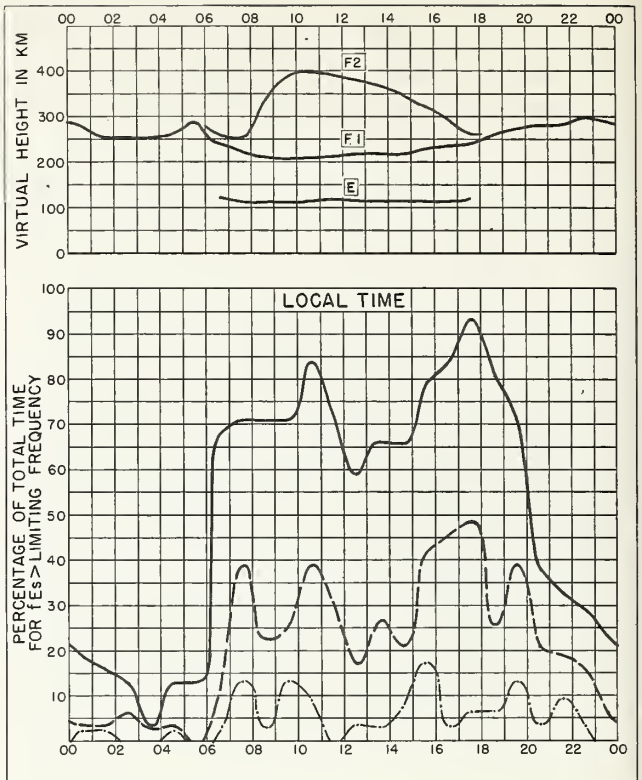


Fig. 34. MAUI, HAWAII AUGUST 1956

NBS 490

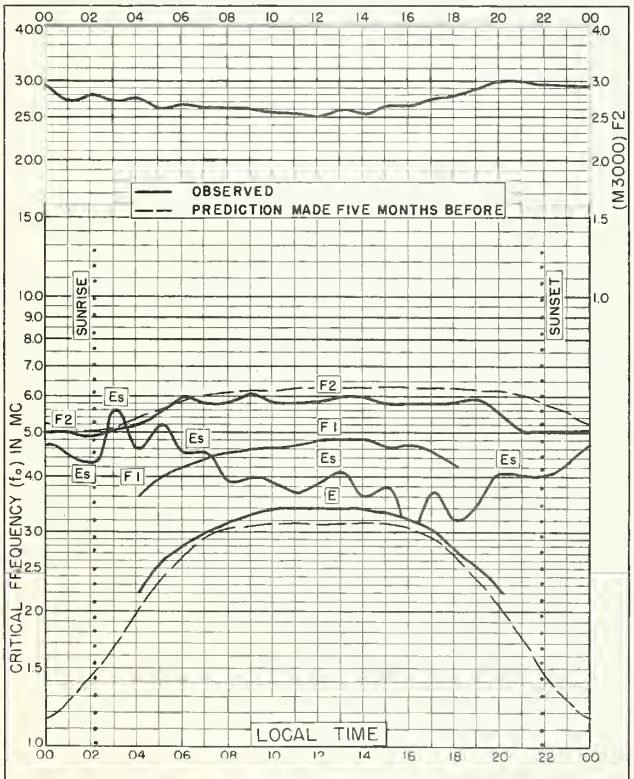


Fig. 35. FAIRBANKS, ALASKA
64.9°N, 147.8°W JULY 1956

NBS 503

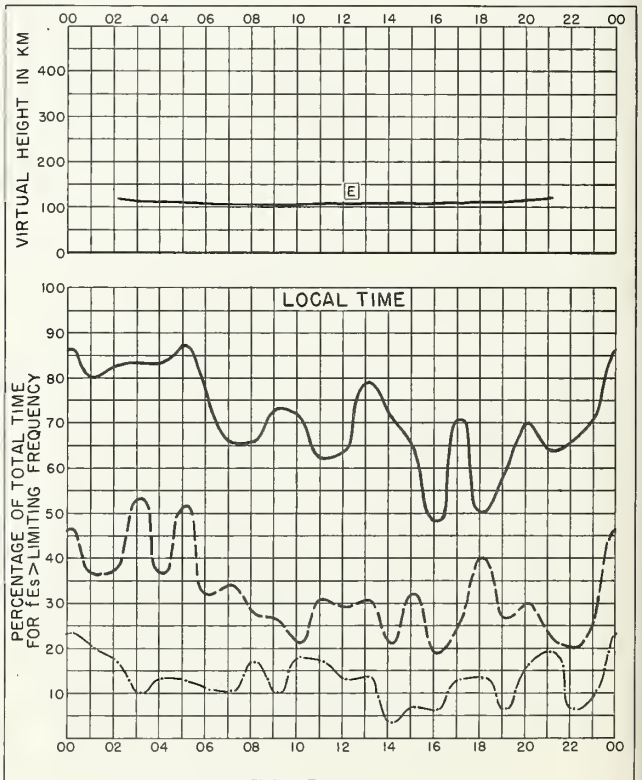


Fig. 36. FAIRBANKS, ALASKA JULY 1956

NBS 490

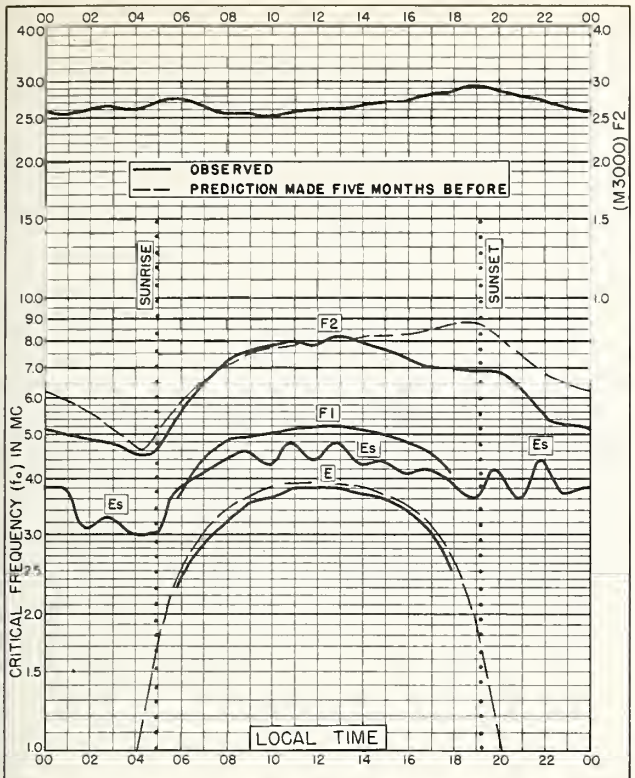


Fig. 37. SAN FRANCISCO, CALIFORNIA
37.4°N, 122.2°W JULY 1956

NBS 503

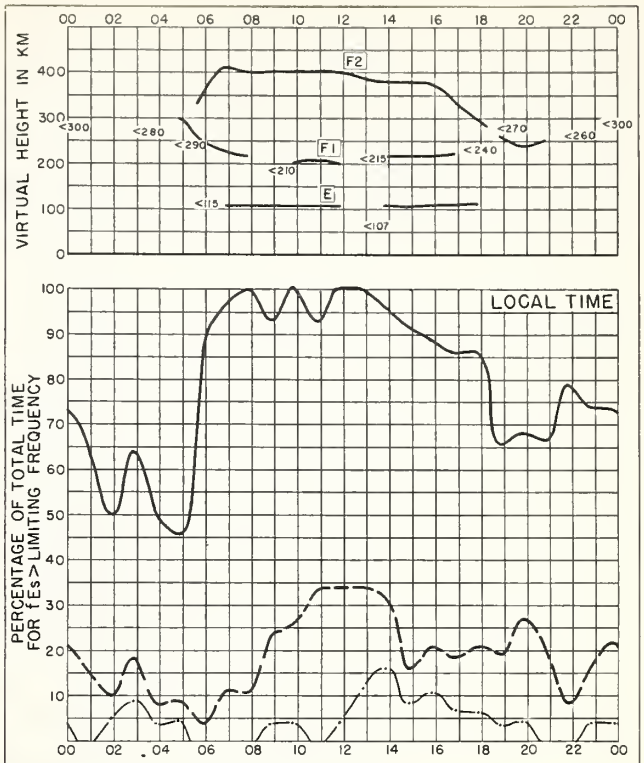


Fig. 38. SAN FRANCISCO, CALIFORNIA JULY 1956

NBS 490

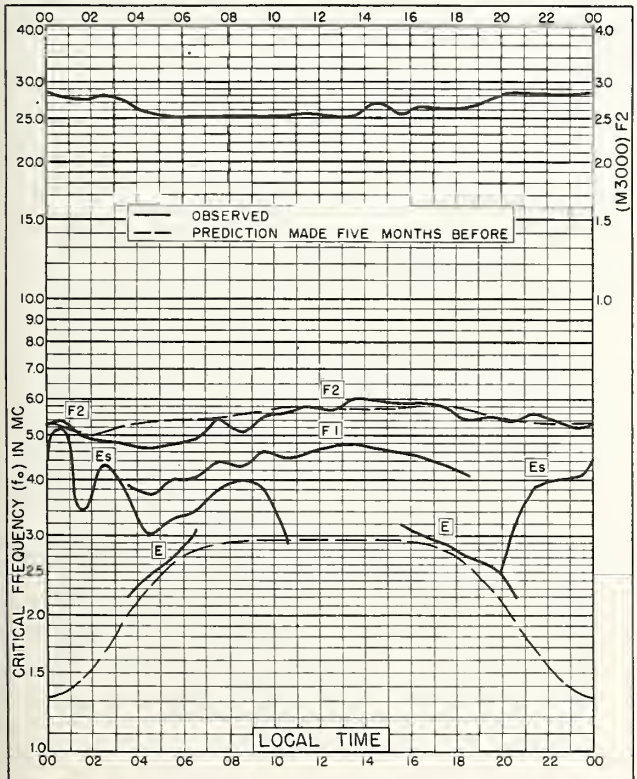


Fig. 39. POINT BARROW, ALASKA
71.3°N, 156.8°W JUNE 1956

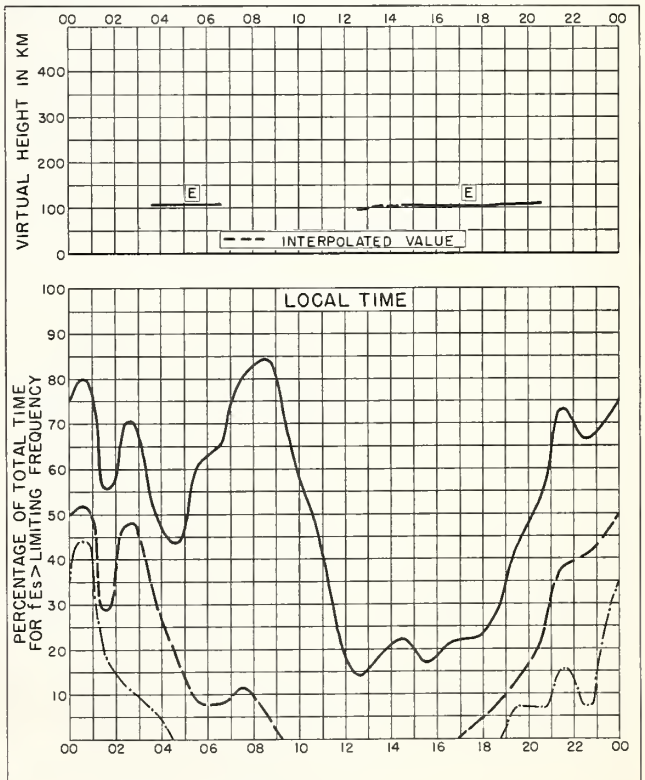


Fig. 40. POINT BARROW, ALASKA JUNE 1956

NBS 490

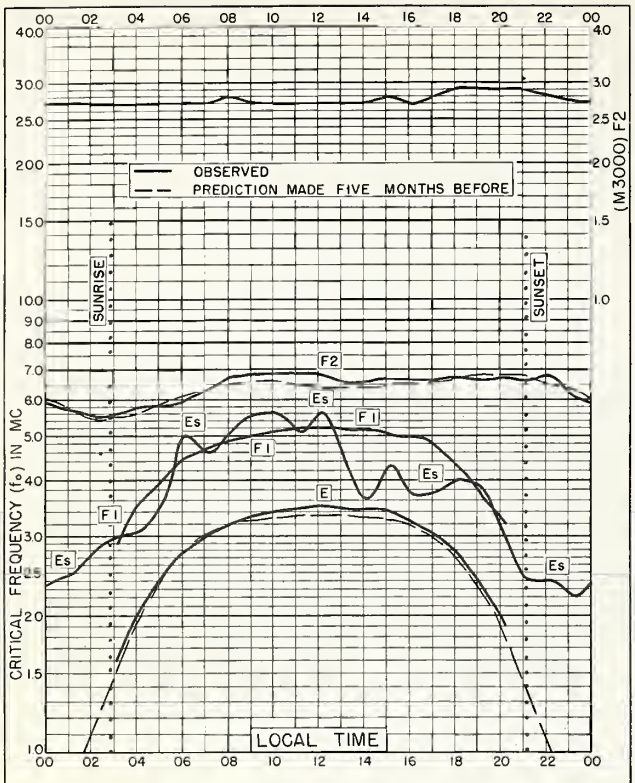


Fig. 41. UPSALA, SWEDEN
59.8°N, 17.6°E JUNE 1956

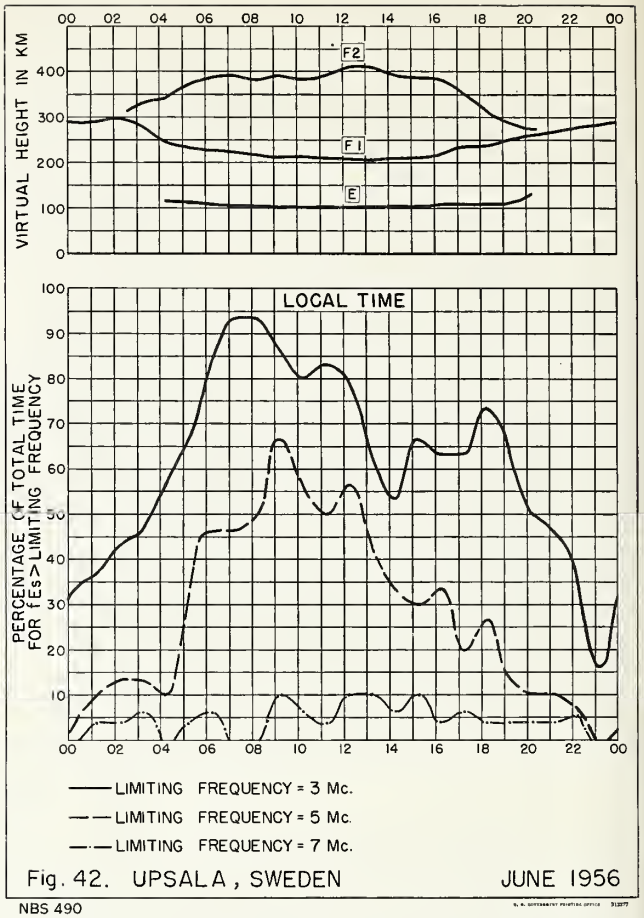


Fig. 42. UPSALA, SWEDEN JUNE 1956

NBS 490

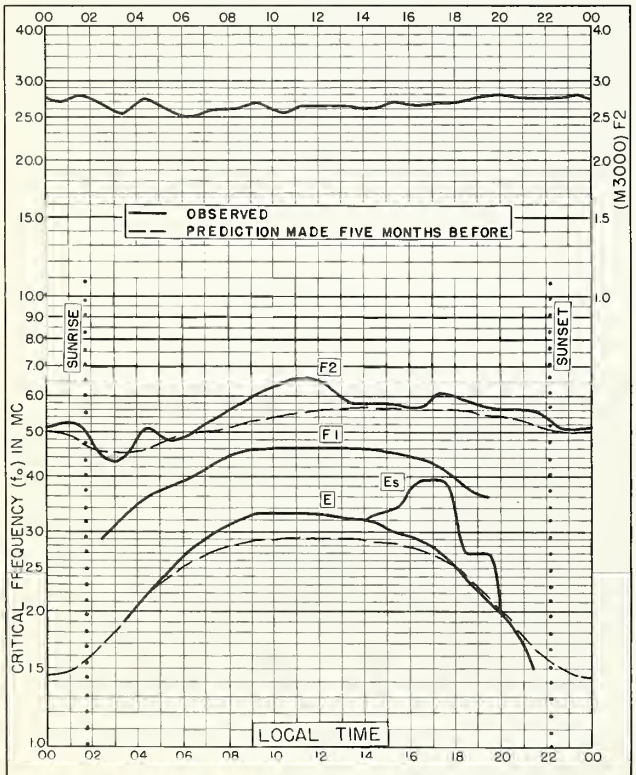


Fig. 43. GODHAVN, GREENLAND
69.2°N, 53.5°W MAY 1956

NBS 503

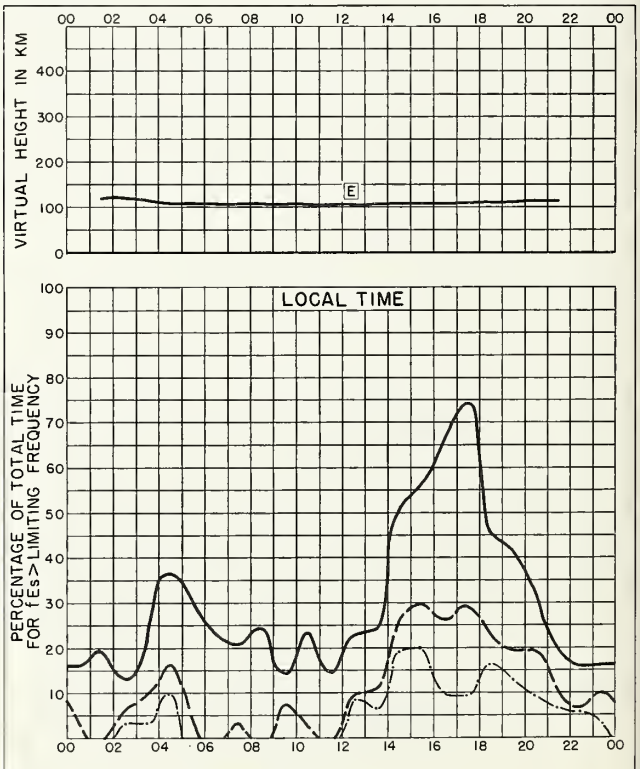


Fig. 44. GODHAVN, GREENLAND MAY 1956

NBS 490

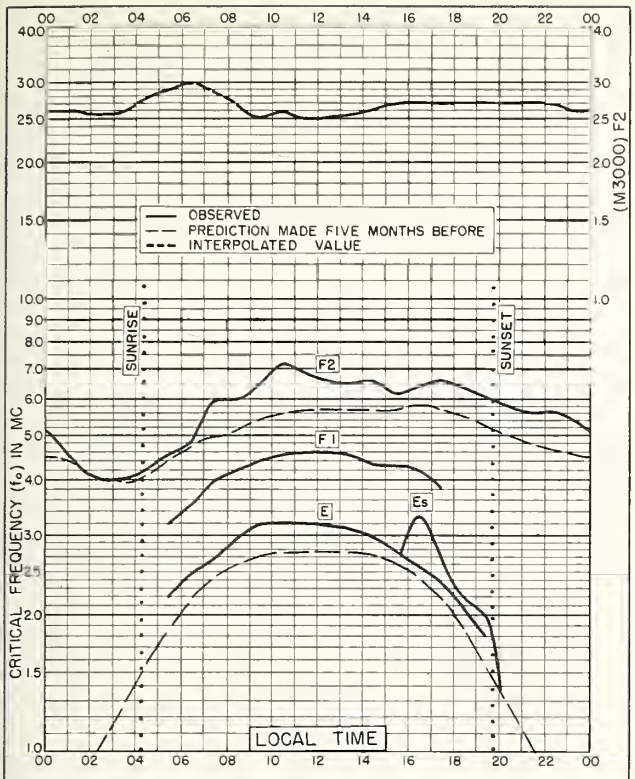


Fig. 45. GODHAVN, GREENLAND
69.2°N, 53.5°W APRIL 1956

NBS 503

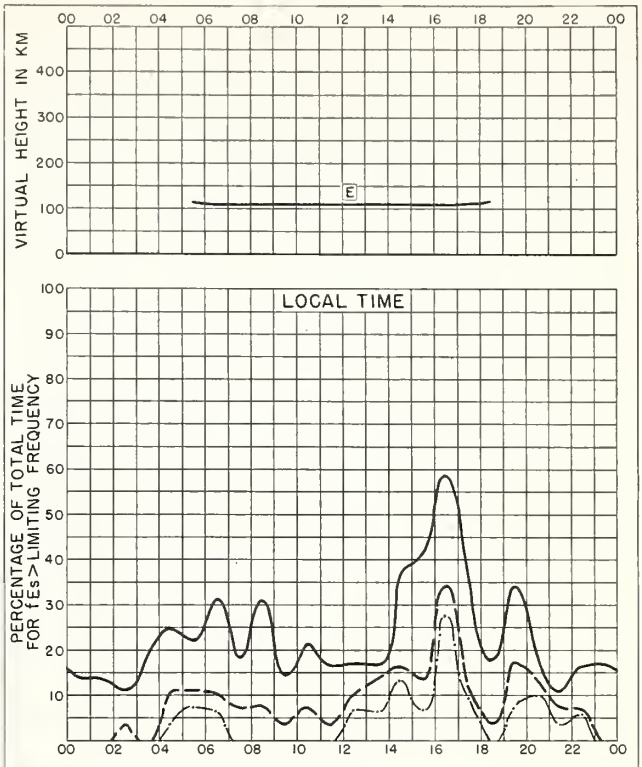


Fig. 46. GODHAVN, GREENLAND APRIL 1956

NBS 490

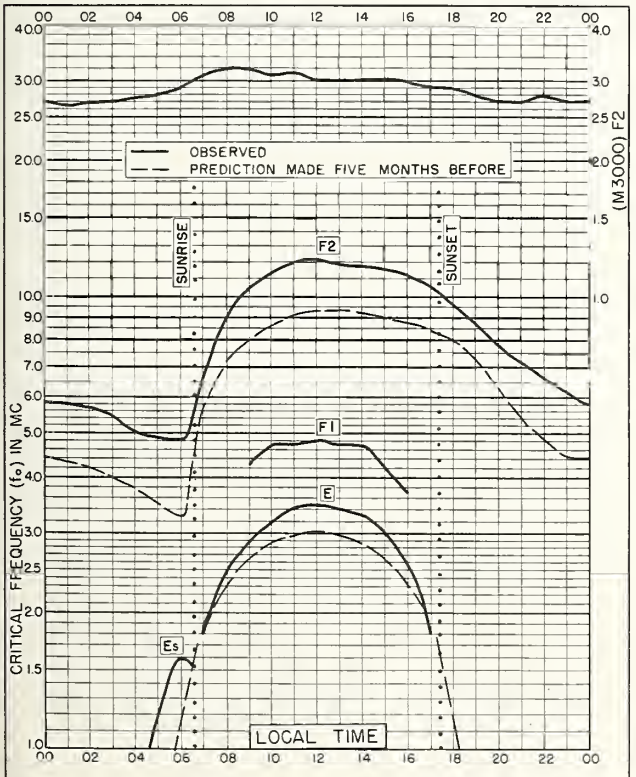


Fig. 47. CHRISTCHURCH, NEW ZEALAND
43.6°S, 172.8°E APRIL 1956

NBS 503

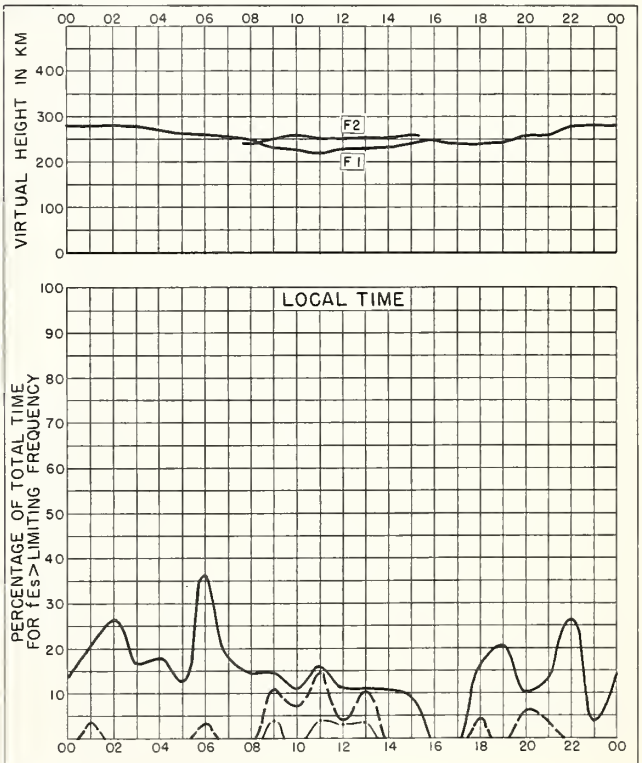


Fig. 48. CHRISTCHURCH, NEW ZEALAND APRIL 1956

NBS 490

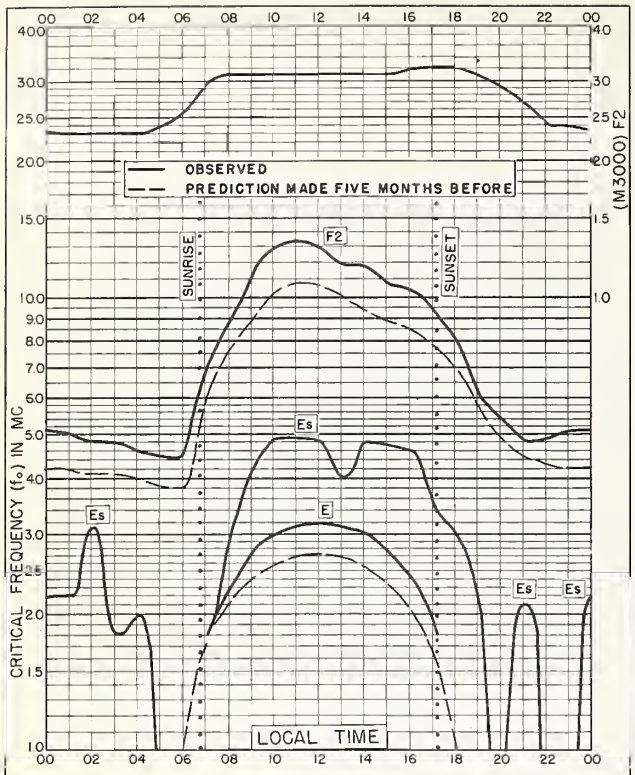


Fig. 49. FALKLAND IS.
51.7°S, 57.8°W APRIL 1956

NBS 503

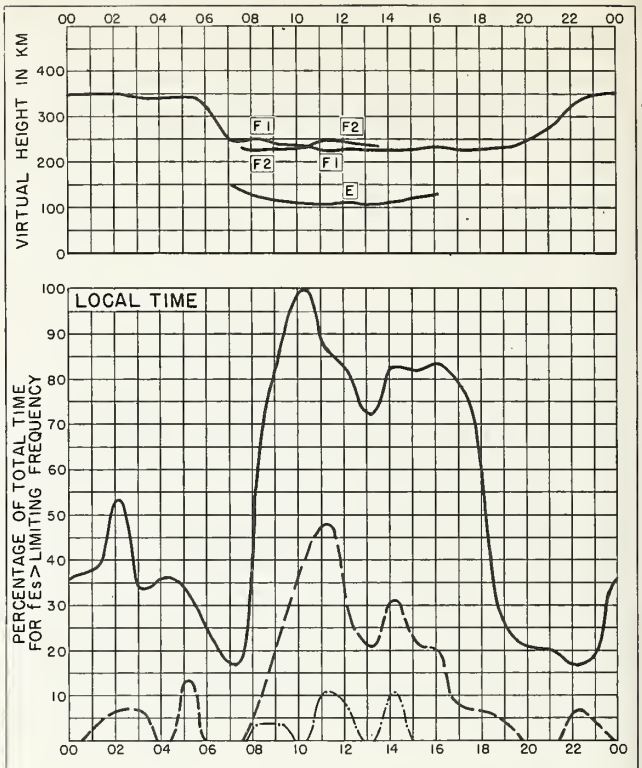


Fig. 50. FALKLAND IS. APRIL 1956

NBS 490

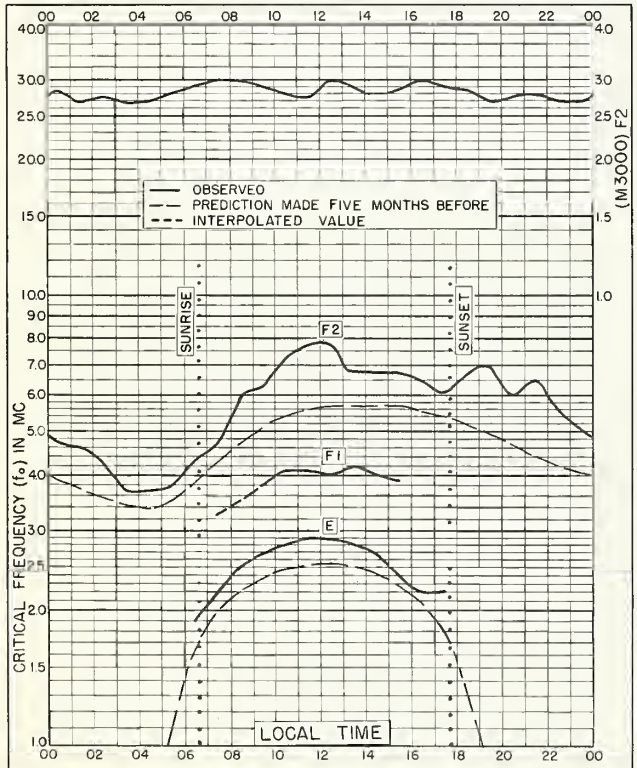


Fig. 51. GODHAVN, GREENLAND
69.2°N, 53.5°W MARCH 1956

NBS 503

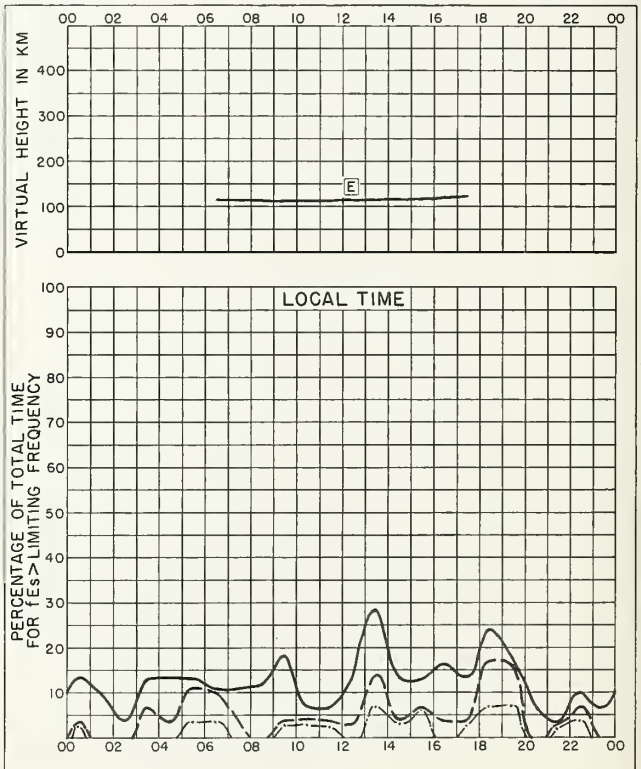


Fig. 52. GODHAVN, GREENLAND MARCH 1956

NBS 490

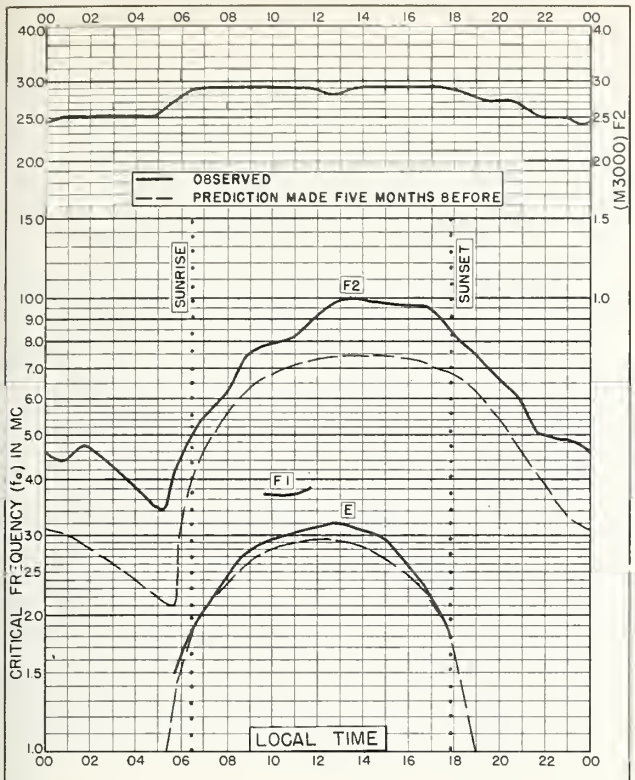


Fig. 53. INVERNESS, SCOTLAND
57.4°N, 4.2°W MARCH 1956

NBS 503

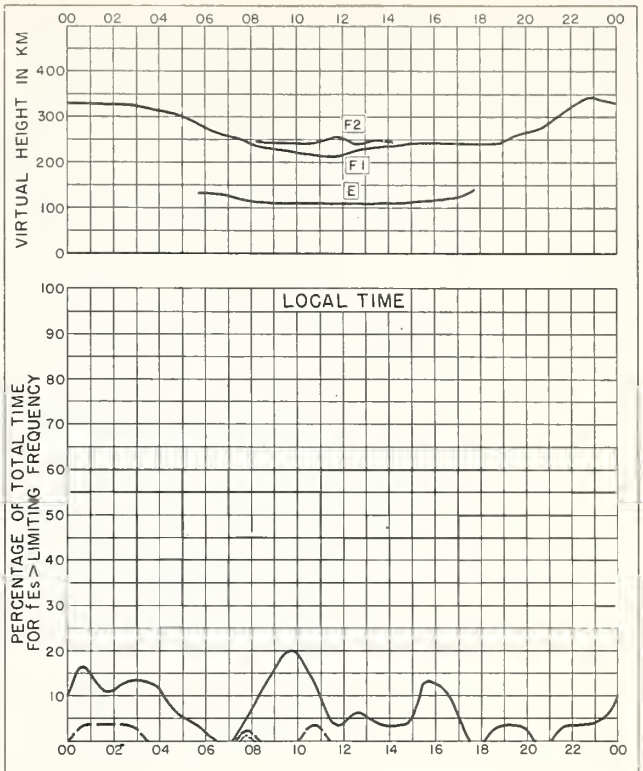


Fig. 54. INVERNESS, SCOTLAND MARCH 1956

NBS 490

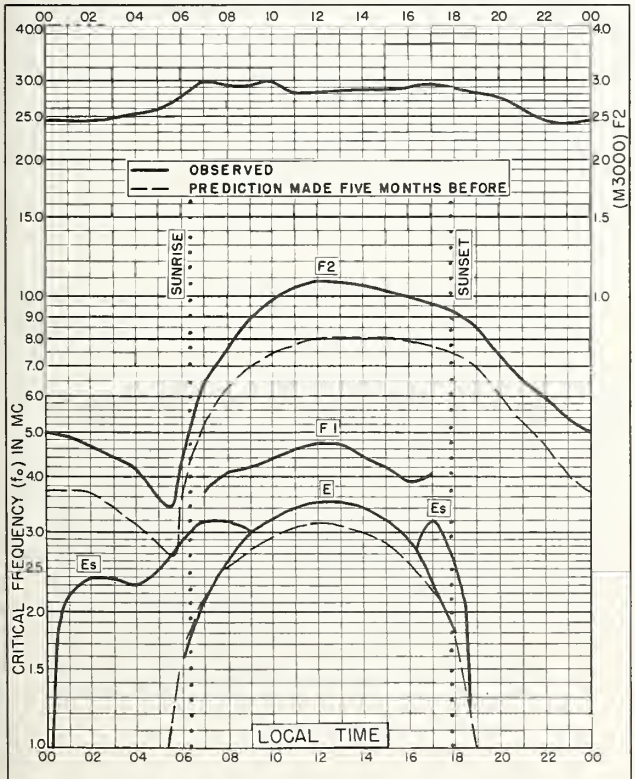


Fig. 55. SLOUGH, ENGLAND
51.5°N, 0.6°W MARCH 1956

NBS 503

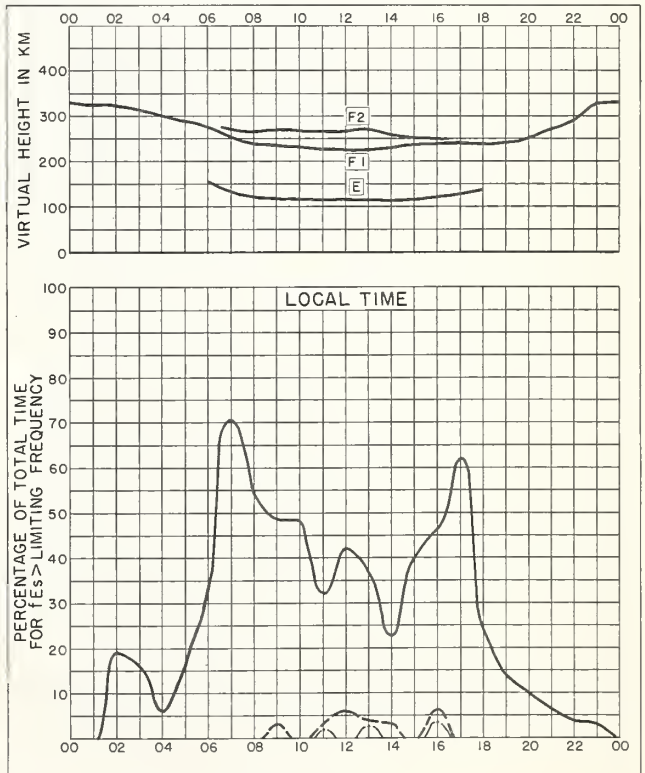


Fig. 56. SLOUGH, ENGLAND MARCH 1956

NBS 490

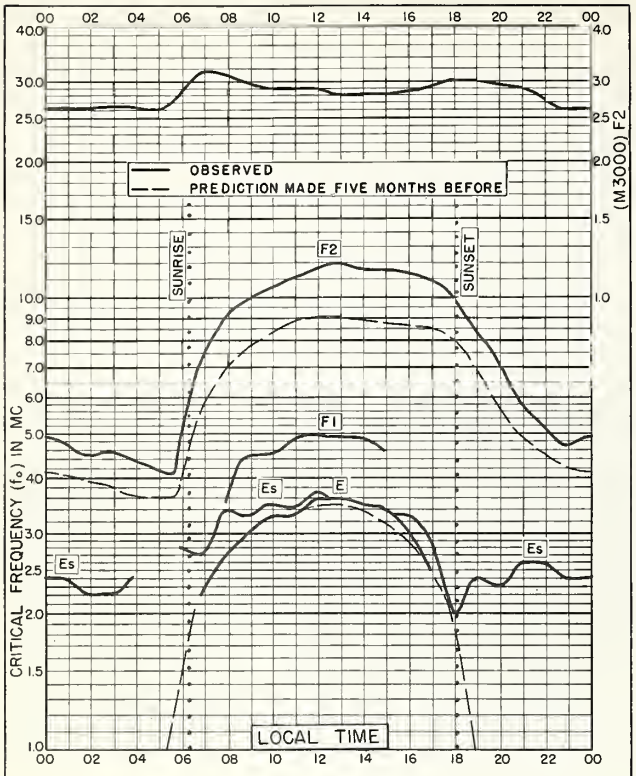
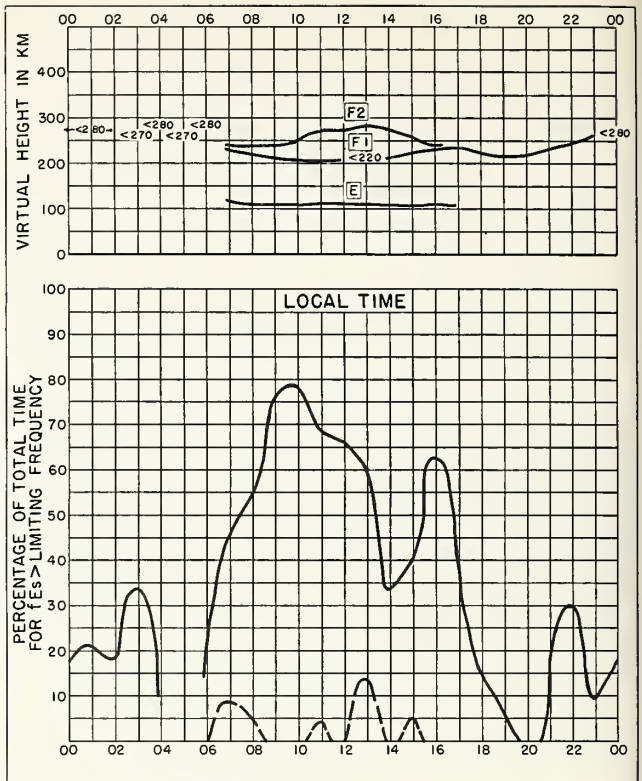


Fig. 57. SAN FRANCISCO, CALIFORNIA
37.4°N, 122.2°W MARCH 1956

NBS 503



MARCH 1956

Fig. 58. SAN FRANCISCO, CALIFORNIA

NBS 490

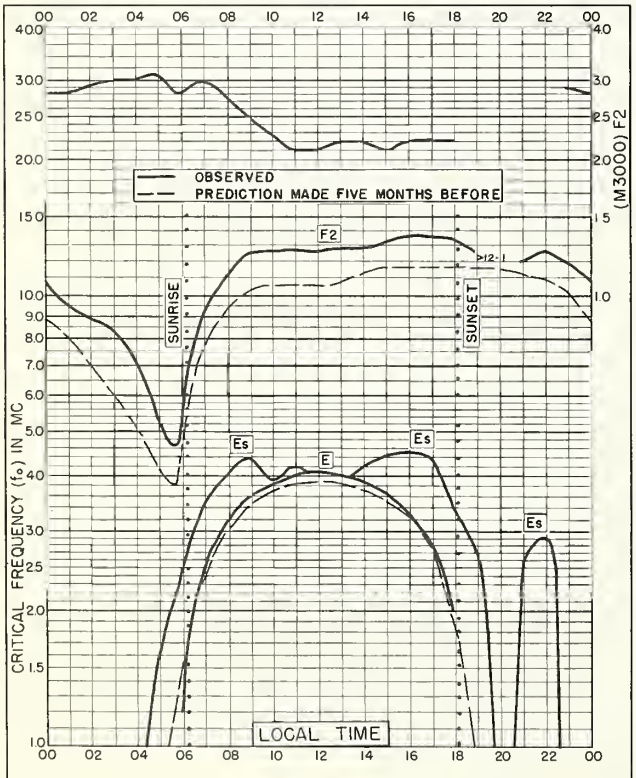
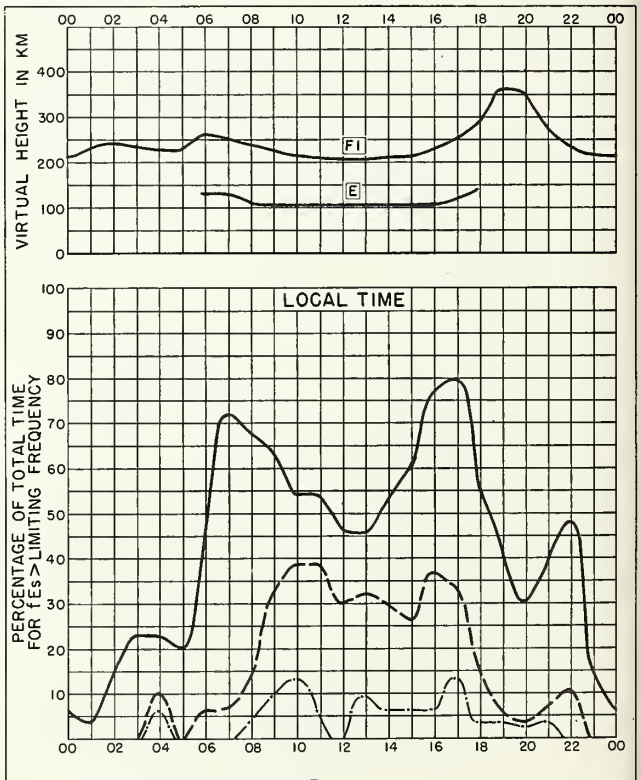


Fig. 59. SINGAPORE, BRITISH MALAYA
1.3°N, 103.8°E MARCH 1956

NBS 503



MARCH 1956

Fig. 60. SINGAPORE, BRITISH MALAYA

NBS 490

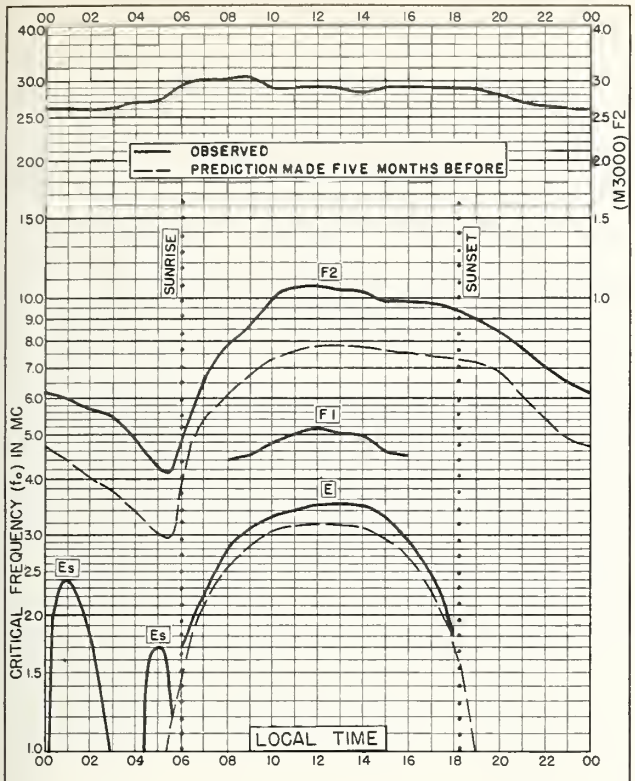
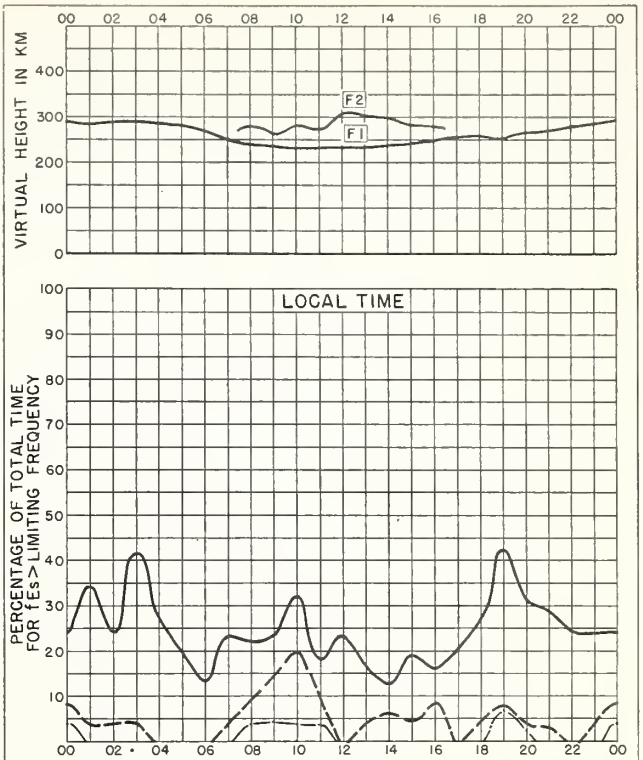


Fig. 61. CHRISTCHURCH, NEW ZEALAND
43.6°S, 172.8°E MARCH 1956

NBS 503



MARCH 1956

Fig. 62. CHRISTCHURCH, NEW ZEALAND

NBS 490

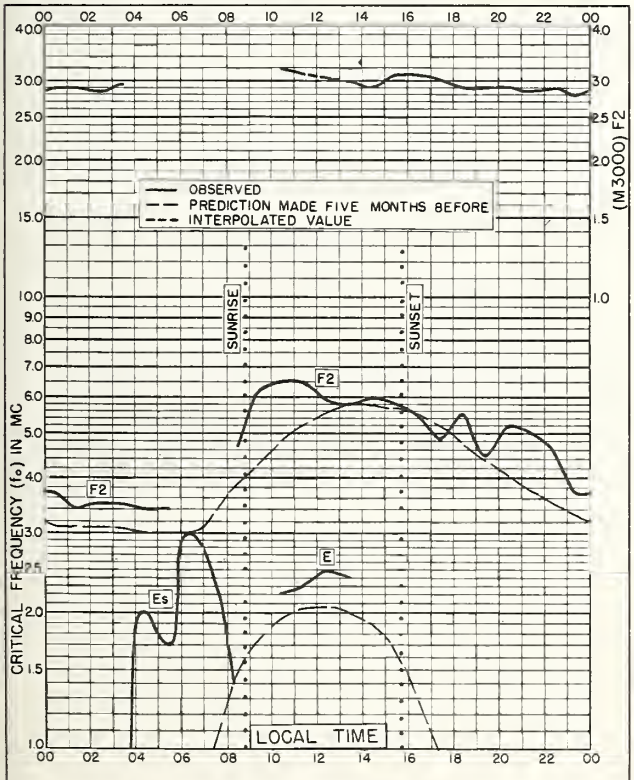


Fig. 63. GODHAVN, GREENLAND
69.2°N, 53.5°W FEBRUARY 1956

NBS 503

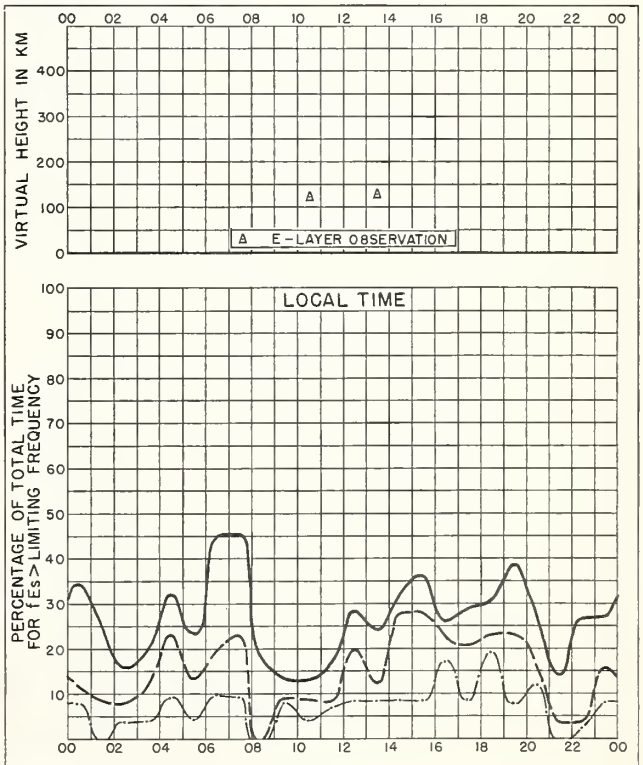


Fig. 64. GODHAVN, GREENLAND FEBRUARY 1956

NBS 490

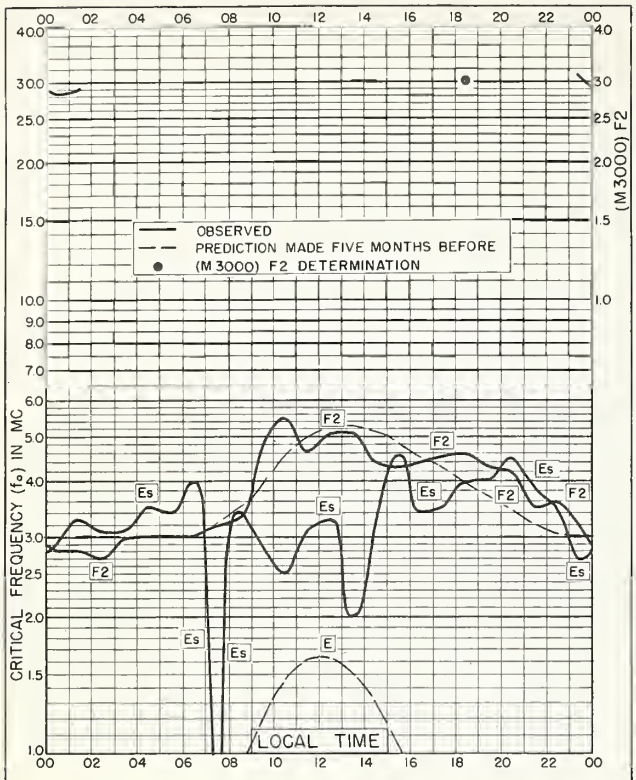


Fig. 65. GODHAVN, GREENLAND
69.2°N, 53.5°W JANUARY 1956

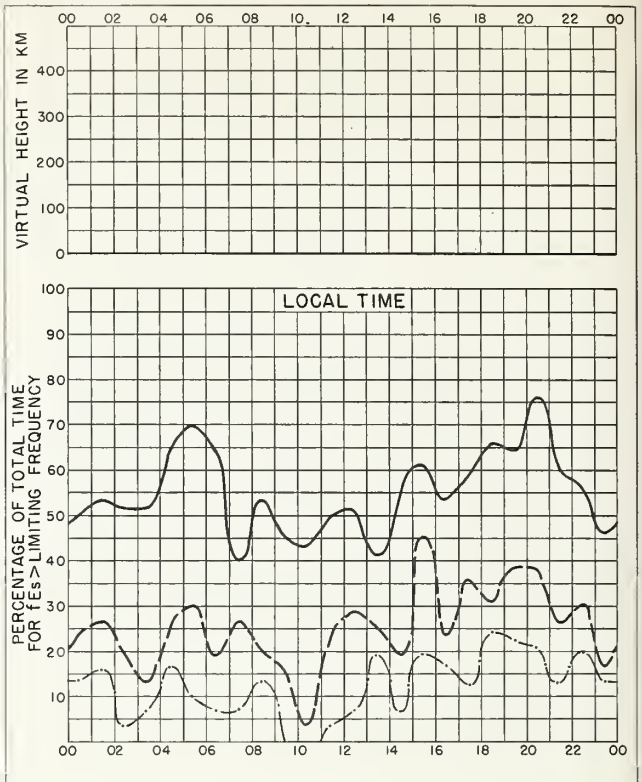


Fig. 66. GODHAVN, GREENLAND JANUARY 1956

NBS 490

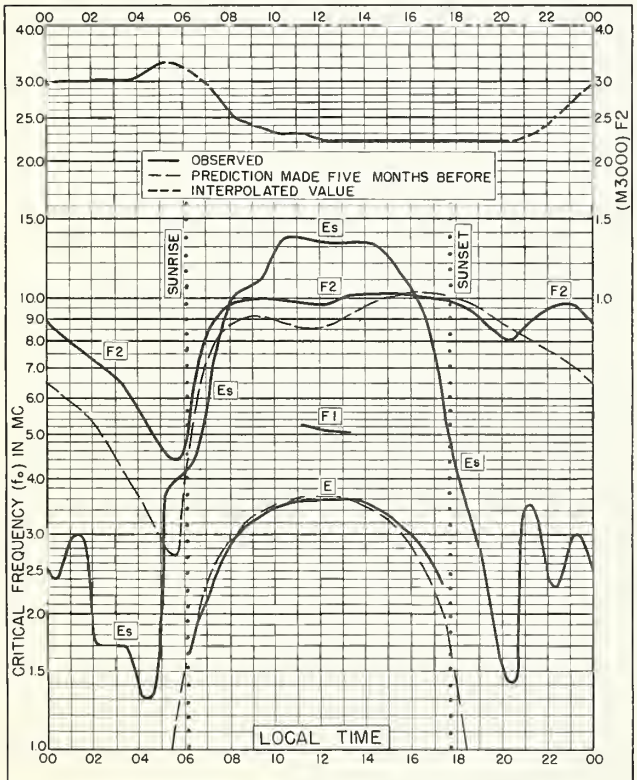


Fig. 67. IBADAN, NIGERIA
7.4°N, 4.0°E DECEMBER 1955

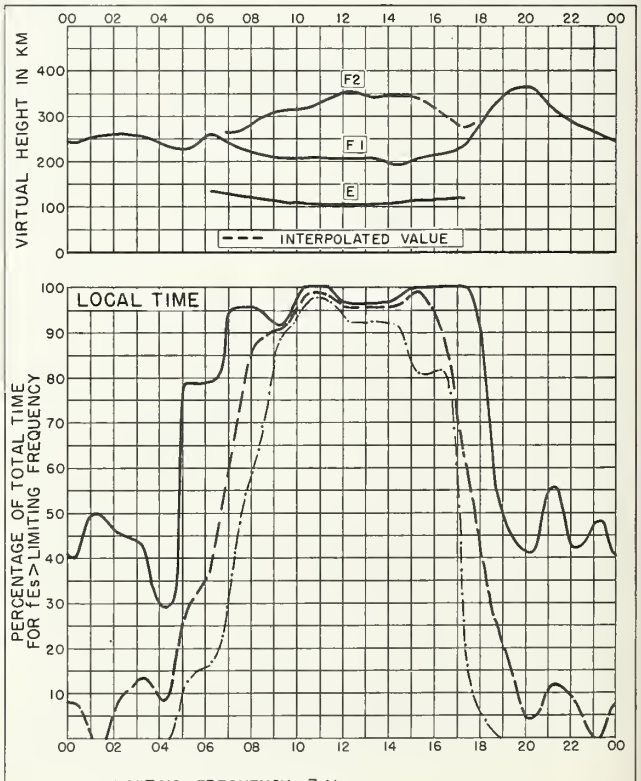


Fig. 68. IBADAN, NIGERIA DECEMBER 1955

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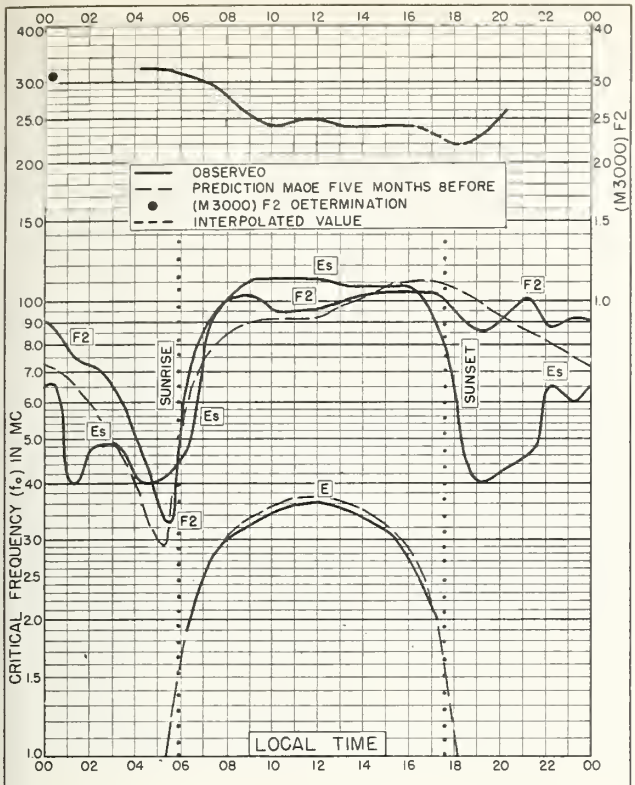


Fig. 69. IBADAN, NIGERIA
7.4°N, 4.0°E NOVEMBER 1955

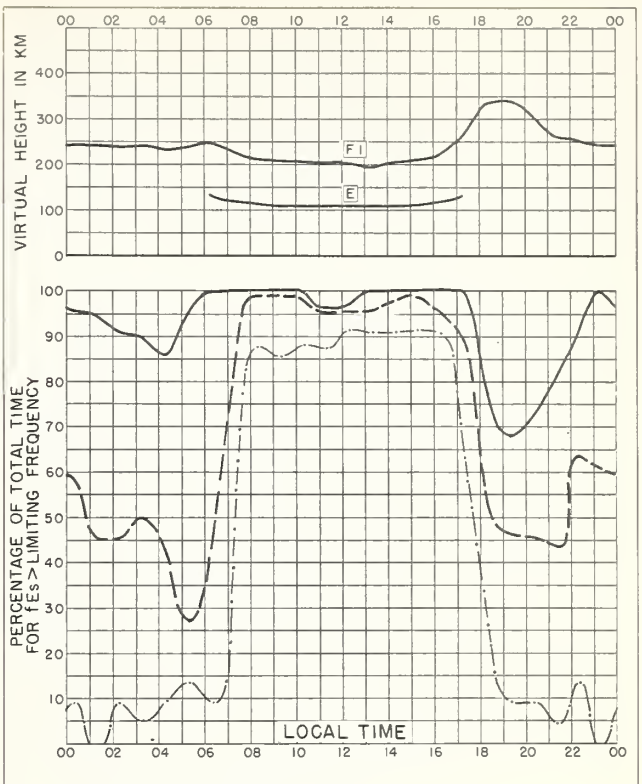


Fig. 70. IBADAN, NIGERIA NOVEMBER 1955

NBS 490

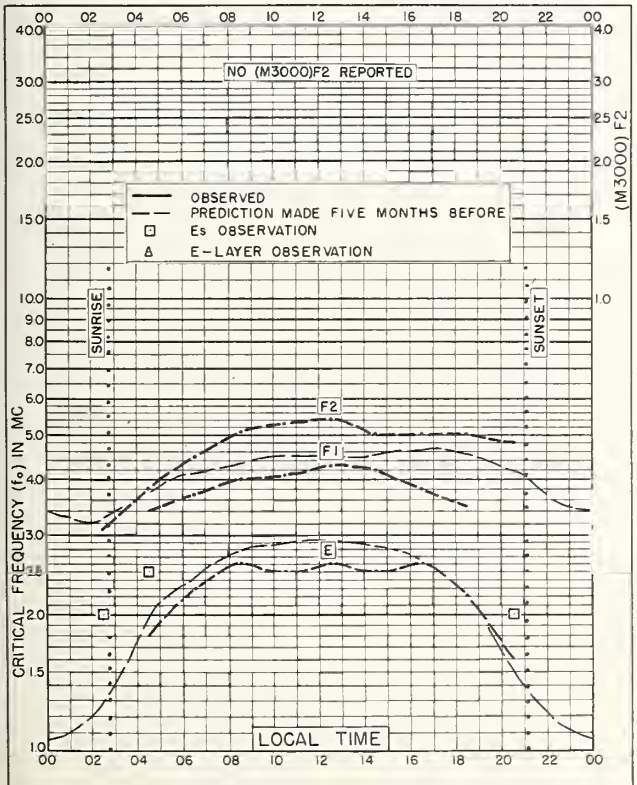


Fig. 71. LULEA, SWEDEN
65.6°N, 22.1°E MAY 1955

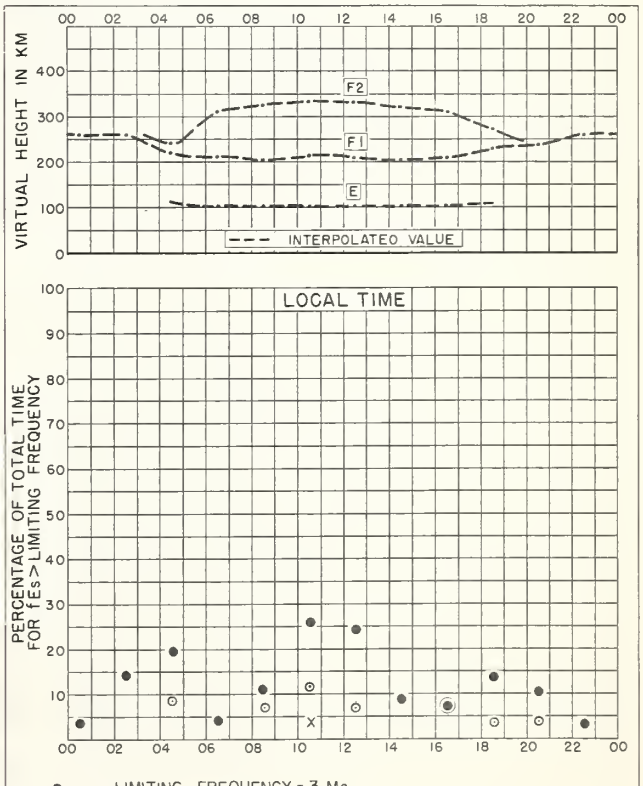


Fig. 72. LULEA, SWEDEN MAY 1955

NBS 490

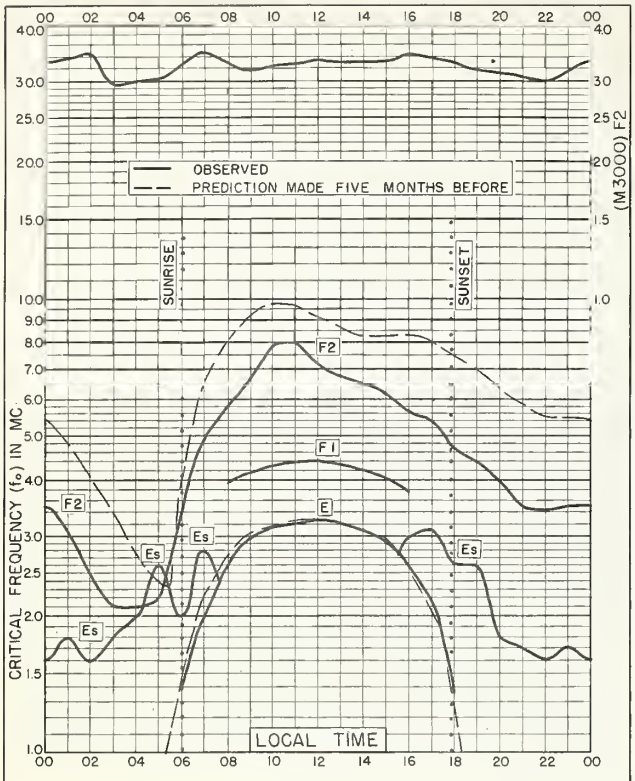
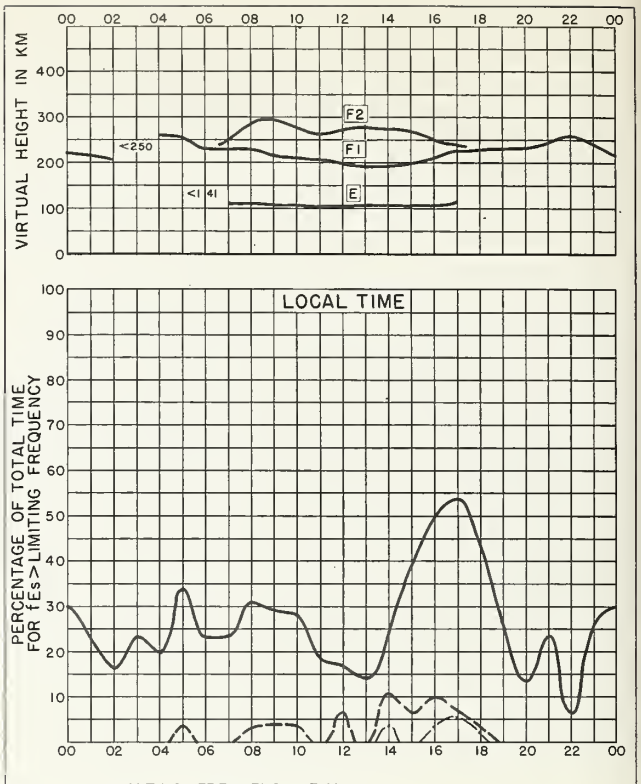


Fig. 73. TANANARIVE, MADAGASCAR
18.8°S, 47.8°E SEPTEMBER 1954



SEPTEMBER 1954

Fig. 74. TANANARIVE, MADAGASCAR

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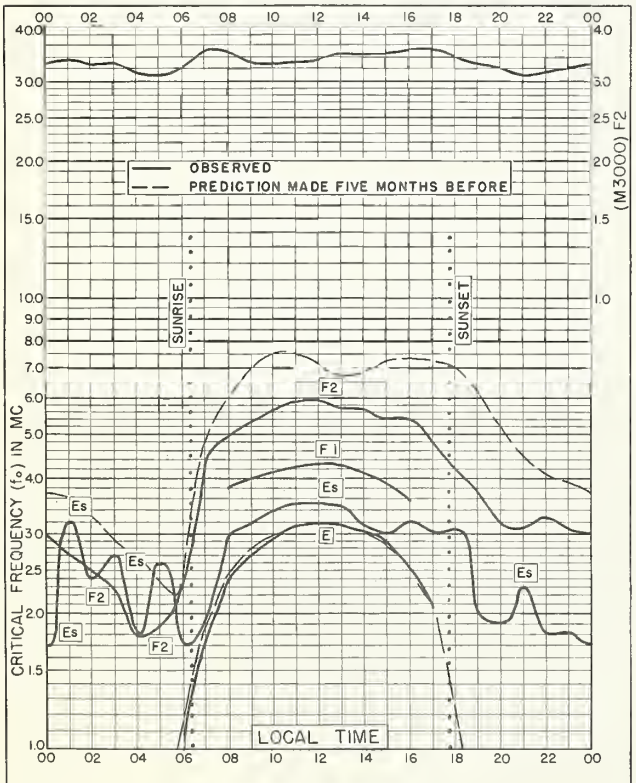
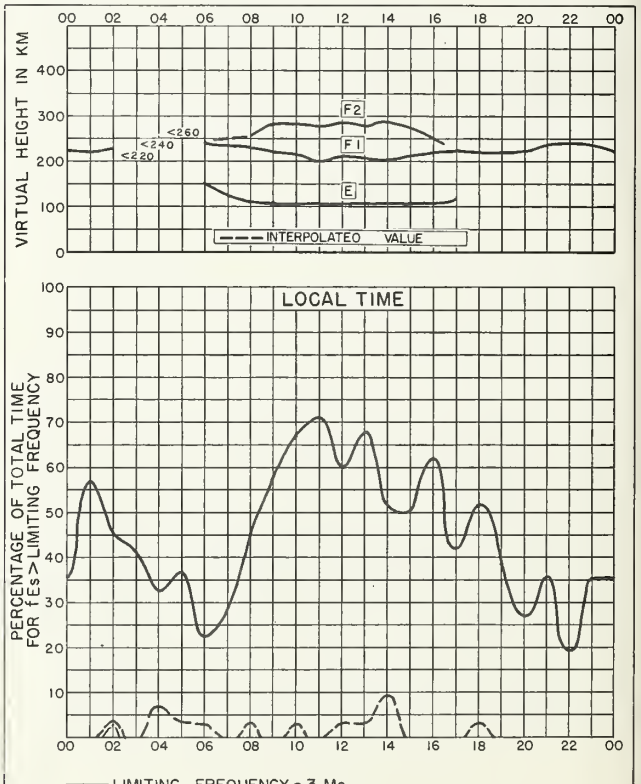


Fig. 75. TANANARIVE, MADAGASCAR
18.8°S, 47.8°E AUGUST 1954



AUGUST 1954

Fig. 76. TANANARIVE, MADAGASCAR

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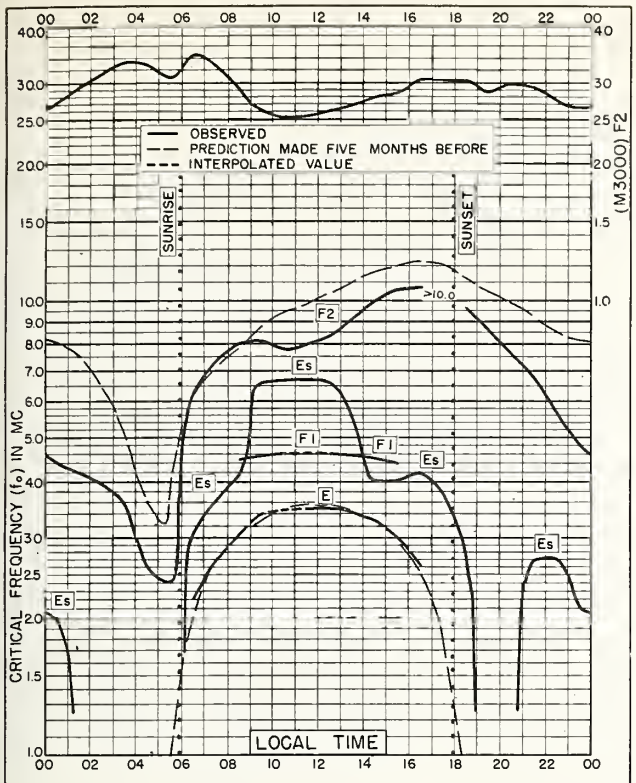

Fig. 77. DJIBOUTI, FRENCH SOMALILAND
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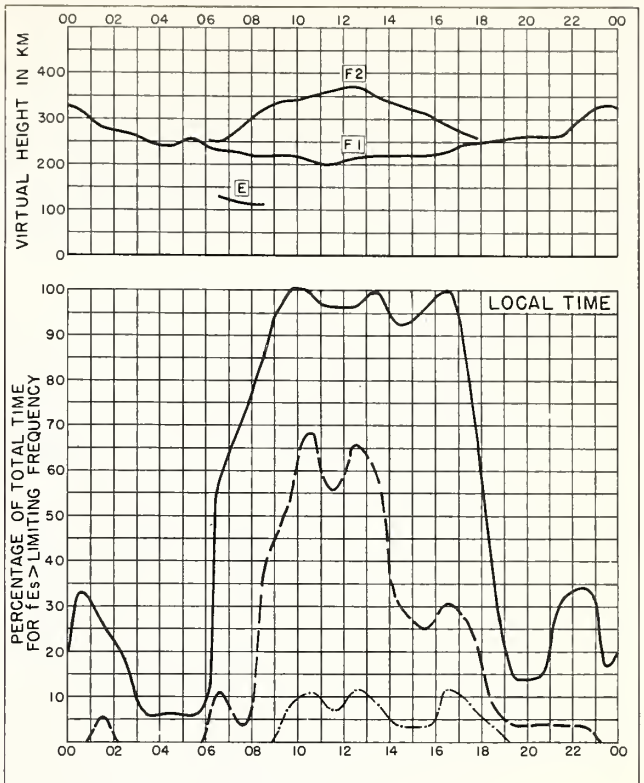

Fig. 78. DJIBOUTI, FRENCH SOMALILAND

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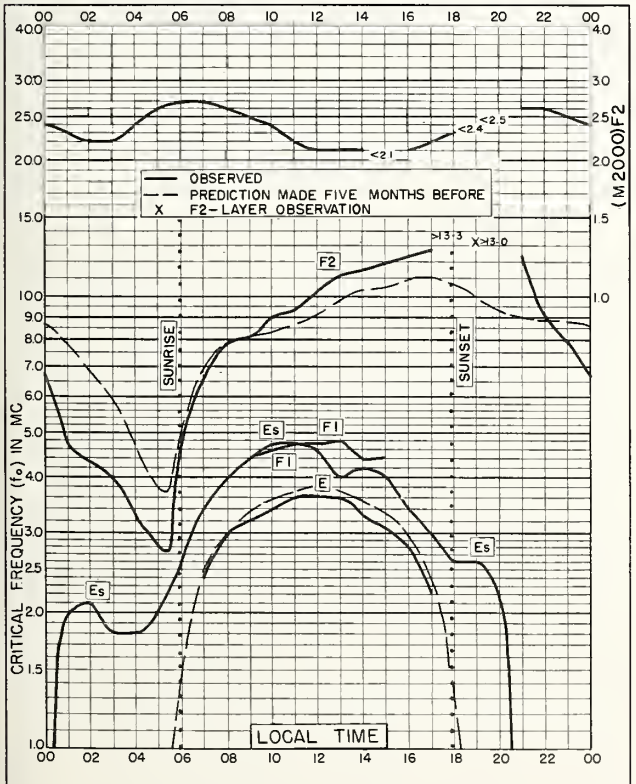

Fig. 79. LEOPOLDVILLE, BELGIAN CONGO
4.4°S, 15.2°E SEPTEMBER 1952

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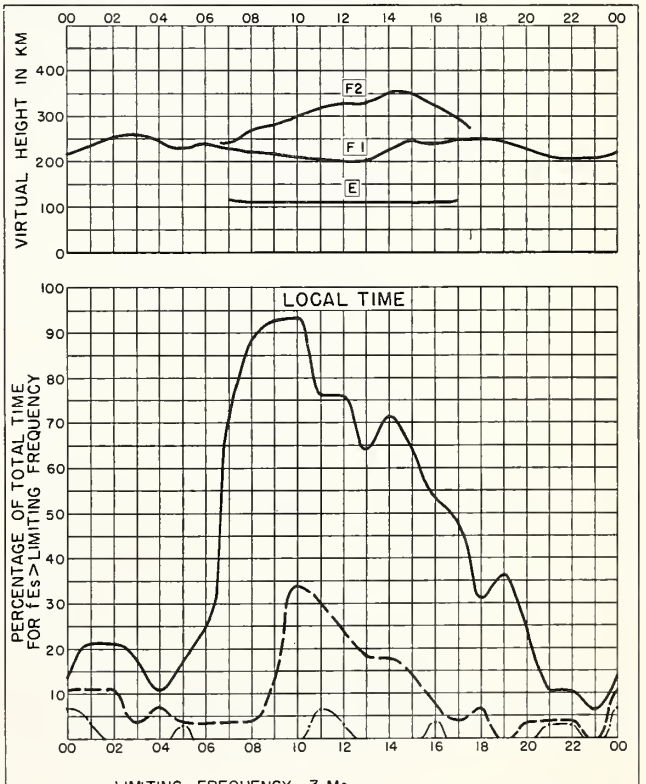

Fig. 80. LEOPOLDVILLE, BELGIAN CONGO

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(Part B). Solar-Geophysical Data.

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