PART A

IONOSPHERIC DATA

ISSUED
MARCH 1958

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

CRPL-F163
PART A

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Issued
24 Mar. 1958

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CONTENTS

SYMBOLS, TERMINOLOGY, CONVENTIONS

Beginning with data reported for January 1952, and continuing through December 1956, 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 1957, the symbols used are given in NBS Report 5033, "Summary of Changes in Ionospheric Vertical Soundings, Observing and Scaling Procedures - Effective 1 January 1957," which draws upon the First Report of the Special Committee on World-Wide Ionospheric Soundings (URSI/AGI), Brussels, Sept. 2, 1956. A list of these symbols is available upon request.

In the Second Report of the Special Committee on World-Wide Ionospheric Soundings of the URSI/AGI Committee, May 1957, a new descriptive letter was introduced:

M Measurement questionable because the ordinary and extraordinary components are not distinguishable.

There was an expansion in meaning of the following:

Z (1) (qualifying letter) Measurement deduced from the third magnetoionic component.
(2) (descriptive letter) Third magnetoionic component present.

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 above.

a. For all ionospheric characteristics:

Values missing because of A, C, F, H, L, N or R 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'F (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 descriptive 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 are counted as equal to or less than the median foE, or equal to or less than the lower frequency limit of the recorder.

B for fEs is counted on the low side when there is a numerical value of a higher layer critical frequency; otherwise it is omitted from the median count.

S for fEs is counted on the low side at night; during the day it is omitted from the median count (beginning with data for November 1957).

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, h'F or foEs, 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. A count of at least 5 is considered sufficient for an h'Es median.

3. For all layers, if more than half of the data used to compute the medians 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.

Ordinarily, a blank space in the fEs or foEs 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'F2 or 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.

d. The tables may contain median values of either foEs or fEs. The graph of median Es corresponds to the table. Percentage curves of fEs are estimated from values of foEs when necessary.

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										
	1958	1957	1956	1955	1954	1953	1952	1951	1950	1949	1948
December		150*	150	42	11	15	33	53	86	108	114
November		150*	147	35	10	16	38	52	87	112	115
October		150*	135	31	10	17	43	52	90	114	116
September		150*	119	30	8	18	46	54	91	115	117
August	150*	150*	105	27	8	18	49	57	96	111	123
July	150*	150*	95	22	8	20	51	60	101	108	125
June	150*	150*	89	18	9	21	52	63	103	108	129
May	150*	150*	77	16	10	22	52	68	102	108	130
April	150*	150*	68	13	10	24	52	74	101	109	133
March	150*	150*	60	14	11	27	52	78	103	111	133
February	150*	150*	53	14	12	29	51	82	103	113	133
January	150*	150*	48	12	14	30	53	85	105	112	130

*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 beginning with the minimum of April 1954. Final numbers are listed through June 1957.

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	73	81
1956	89	98	109	119	127	137	146	150	151	156	160	164
1957	170	172	174	181	186	188	191	194				

WORLD-WIDE SOURCES OF IONOSPHERIC DATA

The ionospheric data given here in tables 1 to 72 and figures 1 to 144 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:

Commonwealth of Australia, Ionospheric Prediction Service of the Commonwealth Observatory:
- Brisbane, Australia
- Hobart, Tasmania

Australian Department of Supply and Shipping, Bureau of Mineral Resources, Geology and Geophysics:
- Watheroo, Western Australia

Escola Politecnica, University of Sao Paulo:
- Sao Paulo, Brazil

British Department of Scientific and Industrial Research, Radio Research Board:
- Falkland Is.
- Inverness, Scotland
- Singapore, British Malaya

Defence Research Board, Canada:
- Baker Lake, Canada
- Ottawa, Canada
- Resolute Bay, Canada
- Victoria, Canada
- Winnipeg, Canada

Danish National Committee of URSI:
- Godhavn, Greenland

The Finnish Academy of Sciences and Letters:
- Sodankyla, Finland

National Laboratory of Radio-Electricity (French Ionospheric Bureau):
- Casablanca, Morocco
- Poitiers, France

Heinrich Hertz Institute, German Academy of Sciences, Berlin:
- Juliusruh/Rügen, Germany

Institute for Ionospheric Research, Lindau Uber Northeim, Hannover, Germany:
- Lindau/Harz, Germany

The Royal Netherlands Meteorological Institute:
De Bilt, Holland

Central Institute of Meteorology, Budapest, Hungary:
Budapest, Hungary

Icelandic Post and Telegraph Administration:
Reykjavik, Iceland

Indian Council of Scientific and Industrial Research, Radio Research Committee, New Delhi, India:
Ahmedabad (Physical Research Laboratory)
Bombay (All India Radio)
Calcutta (Institute of Radio Physics and Electronics)
Delhi (All India Radio)
Madras (All India Radio)
Tiruchy (All India Radio)

Ministry of Postal Services, Radio Research Laboratories, Tokyo, Japan:
Akita, Japan
Tokyo (Kokubunji), Japan
Wakkanai, Japan
Yamagawa, Japan

Christchurch Geophysical Observatory, New Zealand Department of Scientific and Industrial Research:
Campbell I.
Christchurch, New Zealand
Rarotonga, Cook Is.
Scott Base

Norwegian Defence Research Establishment, Kjeller per Lillestrom, Norway:
Tromso, Norway

Manila Observatory:
Baguio, P. I.

Institute of Terrestrial Magnetism, Ionosphere and Radio Propagation, Moscow, U.S.S.R.:
Moscow

South African Council for Scientific and Industrial Research:
Capetown, Union of South Africa
Johannesburg, Union of South Africa

United States Army Signal Corps:
Adak, Alaska
Grand Bahama I.
Okinawa I.
White Sands, New Mexico

National Bureau of Standards (Central Radio Propagation Laboratory):
Anchorage, Alaska
Fairbanks, Alaska (Geophysical Institute of the University of Alaska)
Huancayo, Peru (Instituto Geofisico de Huancayo)
Point Barrow, Alaska
Talara, Peru (Instituto Geofisico de Huancayo)
Washington, D. C.

ERRATA

1. CRPL-F162 (A), p.52, fig. 119: The value of foE indicated for the 19th hour (150°E) should be <1.70.

2. CRPL-F162 (A), p.46, fig. 95: The values of foEs indicated for hours 22 through 02 (30°E) should read <1.5.

3. CRPL-F162 (A), p.20, table 60: In foF2 column at 22nd and 23rd hours, values should be >7.0 and >7.7, respectively.

4. CRPL-F160, -161, -162, -163 (A): (M3000)F2 data from Rarotonga I. and Scott Base for the months of July through September 1957 as listed and graphed are in error.

EXAMPLE OF IONOSPHERIC VERTICAL SOUNDINGS
Talara; September 29, 1957
(Geomagnetic Latitude 7°N)

The following ionograms were obtained at the Talara vertical sounding station operated by Instituto Geofisico de Huancayo. 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. Medians as found in the Tables of Ionospheric Data are calculated using hourly values taken from the f-plot or directly from the ionogram.

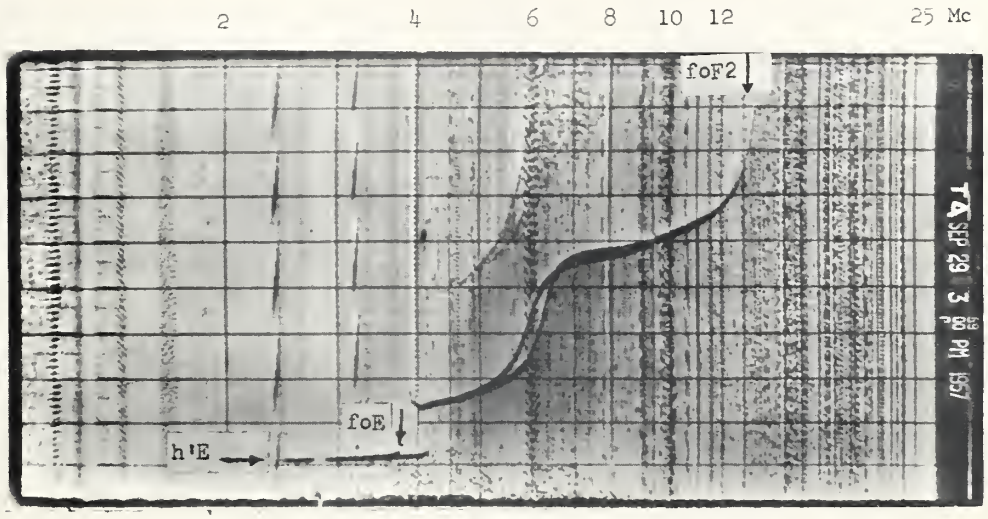


Fig. A. Talara, September 29, 1957, 1500 hours, 75°W time.

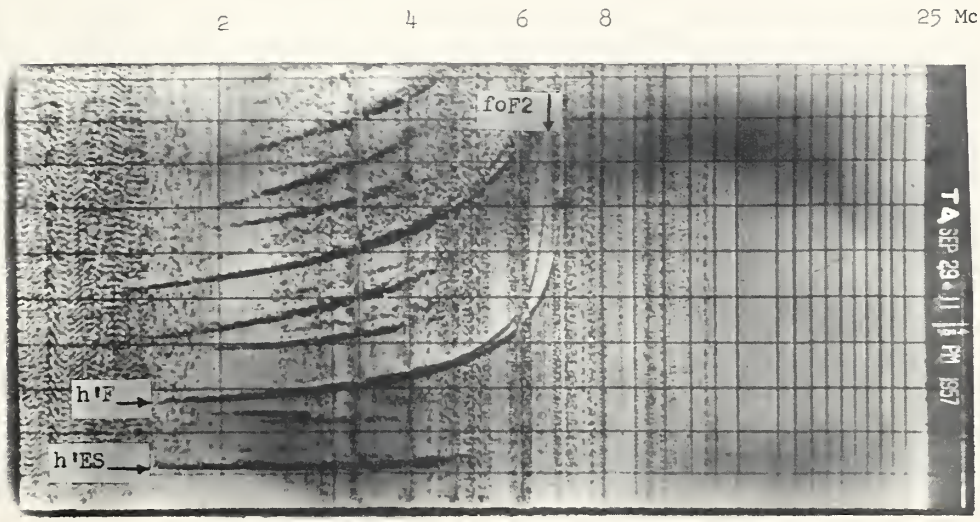
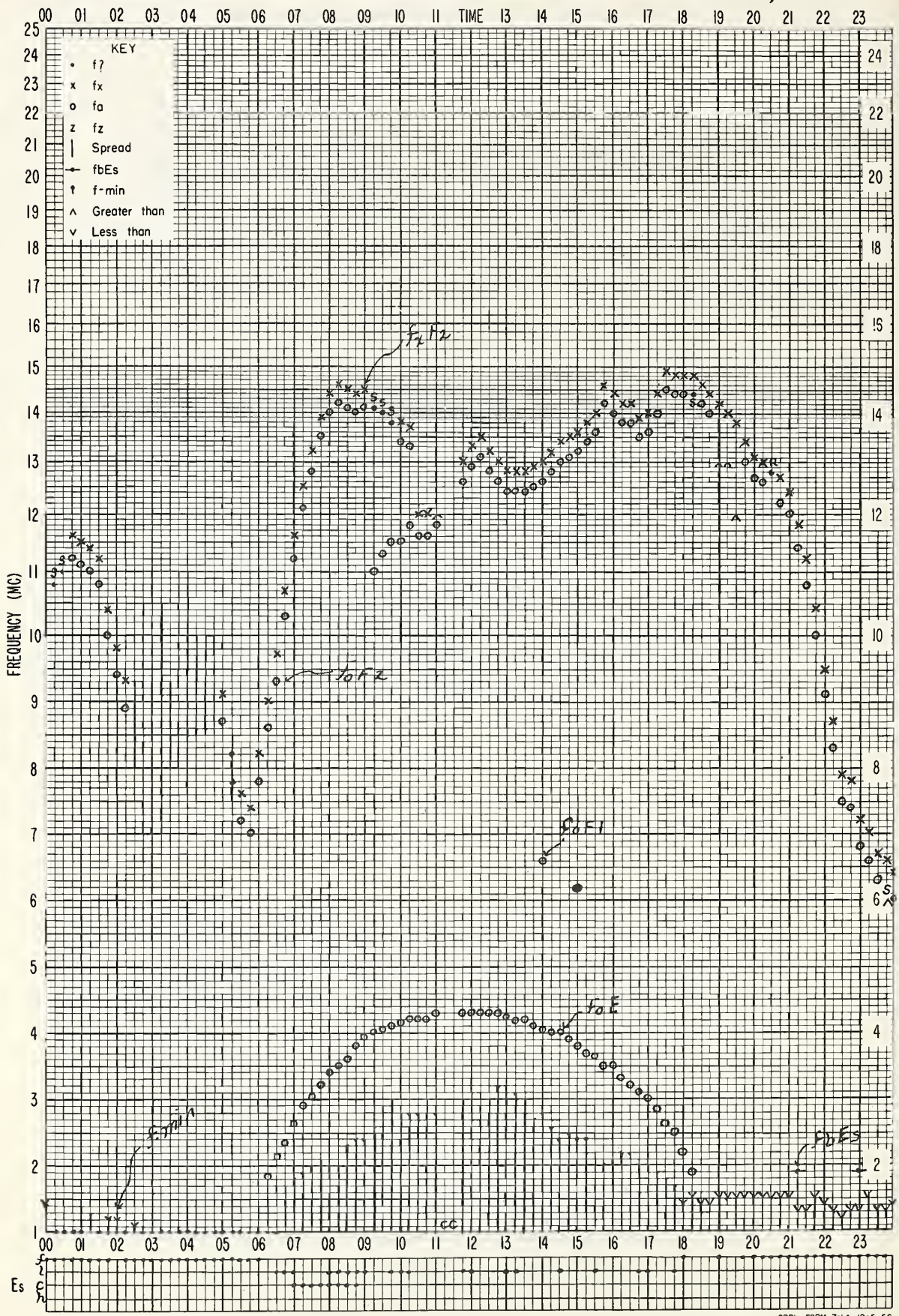


Fig. B. Talara, September 29, 1957, 2315 hours, 75°W time.

Talara, Peru

STATION IONTA f-PLOT OF IONOSPHERIC DATA DATE 29 Sept. 1957



SCALED BY G.F.C.

CRPL FORM 7-L3 10-5-56

Commerce-Standards-Boulder, Colo.

TABLES OF IONOSPHERIC DATA

DECEMBER 1957 - MARCH 1958

Table 1

Washington, D. C. (38.7°N, 77.1°W) — December 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.5	270					2.65
01		6.7	280					2.65
02		6.5	275					2.65
03		6.0	270					2.60
04		5.7	275					2.60
05		5.7	270					2.60
06		5.5	260					2.70
07		6.3	260		---	----		2.80
08		9.6	240		119	2.45		3.00
09	---	12.3	230		117	3.00		3.00
10	---	13.5	230		113	3.35		2.90
11	---	13.7	230		111	3.50		2.80
12	---	13.8	230		115	3.60		2.70
13		13.5	230		(115)	3.60		2.65
14		13.5	235		115	3.35		2.60
15		12.8	235		115	3.00		2.60
16		12.6	240		119	2.45		2.65
17		12.2	245					2.70
18		11.0	250					2.70
19		9.7	250					2.70
20		8.7	250					2.75
21		7.8	250					2.65
22		7.2	260					2.70
23		6.9	270					2.70

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

Table 2

Tromso, Norway (69.7°N, 19.0°E) — November 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(6.6)	(380)				4.3	----
01		(5.8)	(360)				4.0	(2.40)
02		(6.4)	325				4.0	----
03		(6.6)	315		---	----	4.0	(2.20)
04		(6.8)	300		---	----	3.1	(2.50)
05		(6.7)	300		---	----	2.9	(2.55)
06		6.0	300		---	----	2.3	2.35
07		5.9	300		---	----		2.40
08		7.2	280		---	1.70		2.55
09		9.6	260		---	2.00		2.65
10	(255)	11.8	250		---	2.05		2.70
11	(245)	13.2	250		---	2.15		2.70
12	245	14.2	250		---	2.10		2.70
13	(245)	14.0	245		---	2.00		2.70
14		12.6	245		---	1.75		2.70
15		9.7	250		---	1.25	2.0	2.70
16		7.0	250		---	----	2.7	2.70
17		5.6	250		---	----	3.0	2.55
18		(5.6)	255				3.9	(2.55)
19		(5.9)	(320)				3.6	----
20		(6.6)	(305)				4.0	----
21		(5.4)	---				>3.8	----
22		(5.8)	(370)				3.5	----
23		(6.4)	340				4.0	

Time: 15.0°E.
Sweep: 0.7 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 3

Anchorage, Alaska (61.2°N, 149.9°W) — November 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		4.2						2.55
01		4.2					3.2	2.30
02		4.4					2.4	2.30
03		4.9					3.0	2.30
04		5.0						2.30
05		5.0						2.30
06		4.8						2.40
07		4.8						2.40
08		6.7			---	----		2.70
09		8.9			116	(2.15)		2.90
10		10.9			120	2.50		2.95
11		12.5			125	2.60		2.90
12		13.4			123	2.70		2.90
13		13.6			123	2.50		2.90
14		13.8			125	2.30		2.90
15		13.3			<155	2.10		2.85
16		12.8			---	----		2.80
17		11.4						2.80
18		9.4						2.80
19		7.0						2.80
20		6.0						2.80
21		5.4						2.70
22		4.8						2.50
23		(4.4)					2.6	2.50

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

Table 4

Washington, D. C. (38.7°N, 77.1°W) — November 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		7.6	270					2.70
01		7.4	270					2.65
02		7.2	270					2.65
03		7.0	265					2.70
04		6.5	260					2.60
05		6.1	250					2.65
06		5.9	265					2.60
07		8.3	250		119	2.10		2.90
08	---	11.7	235		111	2.70		3.00
09	---	13.7	230		109	3.20		2.90
10	---	14.4	230		109	3.50		2.80
11	---	14.7	230		109	3.70		2.70
12	---	14.3	230		111	3.75		2.70
13	---	14.2	230		111	3.70		2.60
14		13.8	235		111	3.50		2.60
15		13.6	235		111	3.10		2.60
16		13.2	240		119	2.50		2.65
17		12.5	245		---	----		2.65
18		11.3	240					2.65
19		10.0	245					2.70
20		9.3	250					2.70
21		8.7	260					2.70
22		8.0	250					2.65
23		7.8	270					2.60

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

Table 5

Resolute Bay, Canada (74.7°N, 94.9°W) — October 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		6.0	280		---	---	<2.0	(2.5)
01		6.0	280		---	---	2.3	(2.5)
02		5.8	280		---	---	<1.2	2.5
03		6.0	270		---	---	3.0	(2.4)
04		5.2	280		---	---	3.8	(2.5)
05		5.4	280		---	1.3	<2.6	(2.45)
06		6.0	280		---	1.3	1.6	(2.5)
07		6.5	270		130	1.8	3.6	---
08	---	7.0	270		130	1.9		(2.65)
09	---	7.9	270	---	120	2.1		2.6
10	---	7.8	270	---	120	2.2		2.7
11	(400)	8.0	260	---	120	2.4		2.6
12	(320)	8.7	270	(3.9)	110	2.4		2.5
13	(320)	8.0	270	(3.9)	120	2.4		2.5
14	(350)	7.8	270	---	120	2.3		2.6
15	---	8.0	280	---	110	2.0		2.55
16	---	7.0	280	---	120	1.8		(2.6)
17		7.2	280		140	1.8	1.8	(2.5)
18		7.2	280		---	1.5	1.6	---
19		7.0	290		---	1.4		(2.5)
20		6.6	290		---	1.1	<1.4	(2.5)
21		6.2	300		---	---	<1.2	---
22		6.2	300		---	---	<1.4	---
23		6.6	280		---	---	<1.1	---

Time: 90.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 6

Point Barrow, Alaska (71.3°N, 156.8°W) — October 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(5.2)	<300				4.8	2.50
01		(5.6)	310		---	----	3.6	(2.50)
02		6.4	<300				3.5	(2.35)
03		(4.8)	305				3.4	(2.40)
04		5.2	315		---	----	2.1	(2.35)
05		5.0	340		---	----	2.6	(2.35)
06		(6.0)	320		125	2.30		(2.60)
07		(6.3)	330		127	(2.20)	2.5	(2.70)
08		(6.8)	310		122	2.30		2.70
09		7.5	280		125	2.55		2.80
10		8.3	270		126	2.60		2.85
11		8.4	<265		124	2.65		2.80
12		9.1	255		123	2.80		2.80
13		9.0	260		123	2.80		2.85
14	---	10.4	250		125	2.60		2.80
15		11.0	255		125	2.45		2.80
16		11.0	255		125	2.30		2.75
17		10.5	260		121	2.00		2.80
18		9.4	265		---	----		2.75
19		5.9	280					2.70
20		5.4	305				2.9	2.70
21		5.2	310		---	----	2.7	2.70
22		(5.2)	315		---	----	3.0	2.60
23		(5.3)	290		---	----	3.0	(2.60)

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

Table 7

Tromso, Norway (69.7°N, 19.0°E) October 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	fɒEs	(M3000)F2
00		(6.1)	340				4.0	----
01		(5.7)	350				3.9	----
02		5.7	(315)		---	----	4.0	(2.20)
03		(4.5)	340		---	----	3.2	----
04		5.9	310		---	----	3.2	(2.25)
05		(5.7)	295		---	----	2.9	(2.30)
06		6.2	290		---	1.50	2.4	2.50
07		7.6	270		110	1.95		2.60
08	---	9.2	260		120	2.25		2.70
09	250	10.7	255		125	2.60		2.70
10	250	12.0	250		130	2.70		2.70
11	250	12.5	250	---	130	2.75		2.70
12	245	13.0	245		115	2.70		2.70
13	245	12.8	245		135	2.70		2.70
14	245	12.7	250		125	2.55		2.70
15	---	11.7	250		120	2.20		2.70
16		10.0	250		140	1.90	2.0	2.70
17		(7.0)	250		135	1.75	2.8	(2.60)
18		(5.9)	280		---	----	2.9	(2.55)
19		(5.8)	300		---	----	3.2	(2.45)
20		(6.5)	300		---	----	3.6	(2.40)
21		(6.0)	320		---	----	4.0	----
22		(6.2)	300		---	----	4.2	----
23		(6.6)	345		---	----	4.0	----

Time: 15.0°E.
Sweep: 0.7 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 8

Fairbanks, Alaska (64.9°N, 147.8°W) October 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(4.6)					3.8	(2.55)
01		(5.0)					4.8	(2.45)
02		(5.0)					3.9	(2.40)
03		(5.2)					3.9	(2.50)
04		(5.1)					3.0	(2.50)
05		(5.7)					2.3	(2.50)
06		5.5			---	----	2.2	(2.60)
07		(6.5)			---	----		2.75
08		8.1		---	121	2.40		2.90
09		9.2		---	114	2.70		2.90
10		9.8		---	111	2.90		2.85
11		10.3		---	113	3.00		2.80
12		11.0		---	113	3.00		2.80
13		11.5			115	2.90		2.75
14		11.6			121	2.80		2.80
15		11.8			123	2.50		2.80
16		11.1			<141	2.15		2.80
17		11.0			---	----		2.80
18		10.0						2.80
19		8.5						2.85
20		6.6						2.85
21		5.8					2.3	2.85
22		(5.0)					2.8	2.80
23		(4.4)					3.2	(2.70)

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

Table 9

Baker Lake, Canada (64.3°N, 96.0°W) October 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		6.0	290		---	---	5.3	
01		6.0	290		---	---	5.2	
02		5.7	300		---	---	5.0	
03		4.9	300		---	---	4.5	
04		5.0	300		---	1.6	4.8	
05		4.7	300		145	1.7	4.5	
06		5.0	300		130	1.6	4.7	
07		6.0	300		120	2.0	4.0	
08	---	6.2	300	---	115	2.4	4.0	
09	---	7.0	280	---	110	2.7	<3.9	---
10	---	8.2	260	4.6	110	3.0		(2.9)
11	(400)	9.0	260	4.6	110	3.0		(2.75)
12	(400)	10.1	250	4.6	110	3.1		2.8
13	(390)	11.2	260	4.7	110	3.1		2.7
14	(390)	11.0	260	4.8	110	3.0		(2.7)
15	(370)	8.6	270	4.6	110	2.7		---
16	---	8.0	280	3.9	120	2.4	<3.8	---
17		7.1	300	---	120	2.2	4.2	---
18		7.0	300		130	2.0	4.6	
19		6.2	300		125	2.0	4.0	
20		6.0	300		125	(1.9)	5.1	
21		6.2	300		---	1.8	6.5	
22		6.1	300		---	---	6.5	
23		6.0	280		---	---	6.0	

Time: 90.0°W.
Sweep: 1.0 Mc to 16.0 Mc in 16 seconds.

Table 10

Reykjavik, Iceland (64.1°N, 21.8°W) October 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		---					3.4	----
01		---					3.4	----
02		---					3.2	----
03		---					3.0	----
04		(6.0)					2.6	(2.55)
05		(5.7)						(2.55)
06		5.6						(2.55)
07		6.0			---	----		2.70
00		7.8			119	2.25		2.80
09		9.0		---	117	(2.65)		2.80
10		9.8		---	116	2.80		2.75
11		>10.8		---	111	3.00		2.75
12		>11.2		---	116	3.00		2.70
13		>11.5		---	117	3.00		2.70
14		>11.4			111	2.90		(2.70)
15		11.3			117	2.70		2.75
16		10.9			121	(2.50)		2.80
17		8.8			<134	----		(2.75)
18		8.1			---	----		(2.80)
19		>7.8					3.6	(2.30)
20		---					3.2	----
21		---					3.7	----
22		---					4.0	----
23		---					3.6	----

Time: 15.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 16.2 seconds.

Table 11

Anchorage, Alaska (61.2°N, 149.9°W) October 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		4.4					2.3	2.45
01		4.0					3.5	2.35
02		(4.1)					3.6	2.35
03		4.6					3.4	2.35
04		(5.1)					3.4	2.30
05		(4.4)					2.5	2.35
06		(5.0)			---	----	2.8	2.50
07		6.3			126	(2.10)		2.65
08		8.2		---	121	2.50		2.90
09		10.0		---	117	2.80		2.90
10		11.0		---	113	3.00		2.80
11		11.9		---	111	3.10		2.75
12		12.4		---	113	3.10		2.75
13		12.0			112	3.05		2.75
14		12.0			116	2.90		2.70
15		11.8			116	2.70		2.75
16		11.5			123	2.30		2.75
17		11.0			<150	(1.80)		2.80
18		10.0						2.75
19		8.7						2.75
20		7.0						2.80
21		5.6						2.75
22		4.7						2.70
23		4.4					3.1	2.55

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

Table 12

Oe Bilt, Holland (52.1°N, 5.2°E) October 1957

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	320	6.4						2.45
01	320	6.0						2.50
02	320	5.4						2.50
03	300	5.3						2.50
04	270	5.0						2.55
05	260	4.7						2.60
06	250	6.1			---	1.6		2.90
07	230	9.4			120	2.5		3.00
08	220	11.6	---	---	110	3.0		3.00
09	220	12.8	---	---	110	3.3	3.5	2.95
10	220	13.5	---	---	110	3.6	3.8	2.90
11	220	13.3	220	---	110	3.7		2.90
12	220	>13.0	---	---	105	3.6		2.90
13	220	>13.0	---	---	110	3.6		2.85
14	225	12.6	220	---	110	3.3		2.80
15	230	12.6	---	---	110	3.0		2.85
16	230	>12.0	---	---	120	2.5		2.90
17	230	11.8			---	E		2.90
18	230	10.8						2.90
19	230	9.0						2.80
20	250	8.2						2.70
21	260	7.1						2.60
22	290	7.0						2.60
23	300	6.6						2.50

Time: 0.0°.
Sweep: 1.4 Mc to 16.0 Mc in 40 seconds.

Table 13

Adak, Alaska (51.9°N, 176.6°W) October 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		4.4	335					2.35
01		4.3	340					2.35
02		4.2	340					2.30
03		4.1	<340				1.2	2.35
04		4.2	325				1.4	2.35
05		4.0	335				1.4	2.35
06		5.9	275		120	(1.40)	1.6	2.45
07	---	8.9	240	---	119	2.35		2.95
08	---	11.8	235	---	115	2.80	2.9	2.95
09	---	12.7	235	---	115	3.20	3.4	2.90
10	---	13.6	230	---	111	3.40	3.6	2.80
11	---	13.5	230	---	112	3.50		2.75
12		13.0	235		111	3.50		2.65
13		12.9	240		111	3.40	3.5	2.60
14		12.6	245		115	3.20		2.65
15		12.3	245		119	2.85		2.65
16		11.5	240		119	2.45		2.75
17		11.0	245		135	1.80		2.75
18		9.5	240				1.6	2.75
19		8.1	240				1.5	2.70
20		6.8	250				1.6	2.70
21		5.6	255				1.4	2.70
22		4.9	<280				1.2	2.50
23		4.4	300					2.45

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

Table 14

Winnipeg, Canada (49.9°N, 97.4°W) October 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		6.0	290				<1.6	
01		5.4	300				<1.6	
02		5.1	320				<1.7	
03		5.0	320				<1.9	
04		4.9	320				<1.7	
05		4.8	320				<1.7	
06		4.8	300				<1.6	
07		6.2	290		125	2.0		
08	---	9.0	250		110	2.7		
09	280	10.4	240		110	3.1		
10	290	11.4	240		105	3.3		
11	320	12.2	240		110	3.5		
12	300	12.7	240		105	3.8		
13	340	12.8	240		100	3.8		
14	330	12.8	240		100	3.6		
15	310	12.5	240		105	3.3		
16	290	12.2	250		110	2.9		
17		12.0	260		120	2.5		
18		11.4	240		---	1.8		
19		10.0	260				<1.8	
20		9.0	260				<1.8	
21		8.0	260				<1.6	
22		7.2	280				<1.6	
23		6.8	280				<1.6	

Time: 90.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 15

White Sands, New Mexico (32.3°N, 106.5°W) October 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.3	280				(3.4)	2.60
01		6.1	<290				2.8	2.55
02		6.1	285				(2.8)	2.60
03		5.7	275				(3.0)	2.60
04		5.6	270				(3.1)	2.55
05		5.5	275				(3.2)	2.55
06		6.7	290		---	----	1.8	2.70
07		10.2	245		<119	2.55	2.7	3.00
08		12.2	240		113	3.20	3.3	2.95
09		13.5	230		111	3.70	3.7	2.85
10		13.6	230		<111	3.95		2.75
11	---	13.8	230		111	4.00		2.60
12		13.6	235		109	4.00		2.55
13		13.4	240	---	109	4.00		2.50
14		13.3	240	---	112	3.90		2.50
15		13.0	245		113	3.55		2.50
16		12.8	245		115	(3.00)	3.2	2.55
17		12.3	255		119	2.40	2.6	2.60
18		11.3	240				3.0	2.65
19		9.8	<245				2.4	2.65
20		8.7	250				2.5	2.65
21		8.0	260				2.2	2.65
22		7.4	265					2.70
23		6.8	<270					2.65

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

Table 16

Grand Bahama I. (26.6°N, 78.2°W) October 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		7.7	260				(2.9)	2.70
01		7.4	260				(3.6)	2.70
02		6.8	260				3.0	2.75
03		6.4	250				2.4	2.70
04		6.0	<255				(3.0)	2.60
05		5.8	280				3.7	2.60
06		6.8	270				2.2	2.80
07		10.0	240		111	2.55		3.05
08		12.0	230		109	3.20		2.95
09		13.5	225		105	3.60		2.85
10		13.7	230		108	3.95		2.70
11	---	13.5	230	---	109	4.10	4.1	2.60
12	---	13.4	230	---	109	4.15	4.3	2.50
13	---	13.3	230	---	109	4.10	4.4	2.50
14	---	12.9	235	---	109	4.00	4.2	2.45
15	---	12.6	235	---	111	3.75	4.0	2.45
16		12.2	240		111	3.30	3.8	2.50
17		12.0	250		117	(2.50)	3.0	2.55
18		11.2	250				3.7	2.60
19		10.2	250				3.0	2.60
20		9.5	265				3.0	2.65
21		9.0	260				(3.1)	2.65
22		8.3	260				(2.3)	2.65
23		8.0	270				(2.8)	2.70

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

Table 17

Okinawa I. (26.3°N, 127.8°E) October 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(14.5)	250				(3.1)	2.90
01		13.0	235				(2.7)	2.90
02		11.1	240					2.85
03		9.3	235				(2.4)	3.00
04		7.5	230				(2.3)	2.75
05		6.3	240					2.70
06		6.7	270					2.60
07		10.6	255		(125)	(2.40)		3.00
08		13.0	240		115	(3.20)	3.4	2.95
09		14.0	230		111	3.65	3.9	2.85
10		14.7	235		113	(3.95)	4.3	2.75
11		14.6	230		<115	(4.10)	4.3	2.60
12	420	15.3	230	7.5	115	(4.20)	4.4	2.50
13	410	15.4	230	---	115	(4.20)	4.6	2.50
14	410	15.6	240	7.6	115	4.05	4.4	2.45
15	410	15.3	240	---	<115	3.80	4.1	2.45
16	(395)	15.0	245		113	3.45	4.1	2.45
17		14.4	260		115	(2.85)	3.7	2.55
18		14.4	280				4.0	2.60
19		14.6	290				4.2	2.60
20		(16.6)	290				3.6	(2.55)
21		>17.5	270				3.1	2.65
22		(17.5)	250				(3.2)	(2.75)
23		>16.5	250					2.80

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

Table 18

Baguio, P.I. (16.4°N, 120.6°E) October 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(13.0)	255				2.5	2.70
01		12.0	250				2.0	2.80
02		10.7	235					2.80
03		9.0	250				1.9	2.70
04		7.6	250				2.2	2.60
05		7.2	260				2.0	2.75
06		8.6	300		147	(1.90)	2.1	2.70
07		12.2	280		126	(2.90)	3.2	2.75
08		14.8	270		121	(3.50)	4.0	2.60
09		15.0	250		121	(3.90)	4.4	2.45
10		15.5	250		121	(4.05)	4.3	2.30
11	---	15.0	245	---	121	(4.20)		2.15
12	---	14.2	245	---	121	(4.25)		2.10
13	---	14.0	245	---	121	(4.15)		2.05
14	---	14.2	250	---	121	(4.00)	4.0	2.15
15	---	14.5	260		121	3.75		2.15
16		14.5	280		123	(3.20)	4.2	2.20
17		(14.0)	300		129	(2.40)	3.3	(2.15)
18		(13.9)	370				3.2	(2.05)
19		(12.2)	460				2.1	(2.00)
20		>12.5	(410)				2.7	(2.30)
21		>13.0	330				3.0	----
22		(13.5)	300				4.0	(2.65)
23		13.6	265				2.4	2.70

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

Table 19

Hobart, Tasmania (42.9°S, 147.2°E) October 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.7	320					2.35
01		6.1	320					2.35
02		5.8	320					2.35
03		5.4	330					2.30
04		5.2	330					2.40
05		5.4	320		160	1.75		2.45
06		6.5	280		130	2.50		2.65
07		6.8	260		130	3.10		2.70
00	(570)	7.2	250	5.5	120	3.50		2.55
09	610	>7.5	240	5.6	120	3.70		2.45
10	550	8.0	240	6.0	120	3.90	4.0	2.50
11	540	9.0	240	6.2	120	4.00		2.40
12	530	9.2	240	6.3	120	4.00		2.35
13	550	9.1	230	6.3	120	4.00		2.35
14	570	9.2	230	6.1	110	3.90		2.35
15	550	9.2	240	5.7	120	3.80		2.35
16	(540)	9.0	240	---	120	3.50		2.40
17		>9.1	260		120	3.00		2.45
18		9.0	280		130	2.50		2.50
19		>8.8	300					2.45
20		>8.1	300					2.50
21		>7.9	300					(2.45)
22		7.4	300					2.40
23		7.1	300					2.40

Time: 150.0°E.
Sweep: 1.0 Mc to 13.0 Mc in 1 minute 55 seconds.

Table 20

Resolute Bay, Canada (74.7°N, 94.9°W) September 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		5.6	280		---	---	<2.4	----
01		5.5	270		---	---	<2.5	----
02		6.0	260		---	---	3.6	----
03		5.6	270		---	1.2	<2.4	----
04		5.4	280		140	1.5	<2.8	----
05		6.0	280		130	1.8	2.6	(2.7)
06	---	6.0	270	---	120	2.0	<2.4	----
07	---	6.3	270	---	120	2.3	<2.8	2.75
08	(400)	6.4	260	3.8	110	2.6	<2.8	(2.75)
09	(380)	6.7	250	4.0	110	2.8		(2.6)
10	380	7.0	250	4.3	105	3.0		(2.5)
11	380	7.0	250	4.4	110	3.0		(2.5)
12	410	6.6	250	4.5	110	3.0		(2.5)
13	420	6.6	260	4.3	110	3.0		(2.5)
14	400	7.2	260	4.2	110	3.0		(2.5)
15	380	7.2	250	4.2	110	2.8		(2.6)
16	410	6.8	260	4.1	110	2.7		(2.4)
17	(380)	7.0	280	4.0	120	2.5		----
18	---	7.0	280	---	120	2.2		(2.7)
19	---	7.3	280		130	1.9	<2.1	(2.8)
20	---	6.5	280		130	1.6	<2.0	----
21		6.1	270		---	1.4	<1.8	(2.5)
22		5.8	280		---	1.2	<1.7	----
23		5.9	270		---	---	<2.0	----

Time: 90.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 21

Sodankyla, Finland (67.4°N, 26.6°E) September 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		---					4.1	----
01		(4.8)					3.9	----
02		(4.8)					3.9	----
03		(5.2)					3.5	----
04		(4.4)					3.3	----
05		(4.8)				----	3.7	----
06		5.8				2.00	3.9	2.75
07		6.6		---		2.60	4.0	2.85
00		7.0		---		2.80	4.0	2.80
09		6.8		---		3.10	3.9	2.80
10		8.0		4.6		3.30	3.8	2.75
11		8.9		---		3.30	3.9	2.80
12		8.8		---		3.35	3.9	2.75
13		8.6		---		3.30	4.0	2.80
14		9.2		---		3.20	4.2	2.85
15		9.0		---		3.05	3.8	2.85
16		8.6		---		2.90	3.7	2.90
17		8.0		---		2.75	3.9	2.95
18		8.3				2.25	3.7	3.00
19		8.2				1.80	3.4	2.05
20		7.9				----	2.9	(2.80)
21		(6.7)					3.5	(2.80)
22		(5.4)					3.8	----
23		(7.0)					3.9	----

Time: 30.0°E.
Sweep: 1.4 Mc to 22.6 Mc in 8 minutes, automatic operation.

Table 22

Baker Lake, Canada (64.3°N, 96.0°W) September 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		5.5	290				4.8	
01		6.0	280				5.1	
02		5.0	300				5.0	
03		4.7	290		---	---	5.0	
04		4.4	310		---	---	4.2	
05		4.2	300		125	1.7	3.0	
06	---	5.0	300	---	120	2.0		
07	---	5.7	280	---	110	2.4		----
08	(360)	5.8	260	4.2	110	2.8		----
09	360	6.1	250	4.6	110	3.1		----
10	410	6.2	250	5.0	110	3.5		G
11	400	7.0	240	4.8	105	3.6		(2.55)
12	380	6.9	240	4.5	110	3.6		(2.55)
13	380	8.5	240	4.9	110	3.5		(2.6)
14	340	9.0	250	4.7	105	3.5		(2.7)
15	380	8.1	260	4.4	110	3.2		----
16	---	8.1	270	4.5	110	3.1		----
17	---	8.0	270	---	110	2.8		----
18		7.8	280		120	2.5		
19		7.4	280		120	2.0	<4.6	----
20		6.6	290		115	1.8	6.5	
21		6.2	280		---	---	6.0	
22		5.6	290				6.0	
23		5.0	290				4.8	

Time: 90.0°W.
Sweep: 1.0 Mc to 16.0 Mc in 16 seconds.

Table 23

Inverness, Scotland (57.4°N, 4.2°W) September 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.3	310				<1.4	2.70
01		5.7	315				<1.4	2.75
02		5.2	330				<1.4	2.75
03		4.8	320				<1.4	2.75
04		4.6	320				<1.5	2.85
05		4.6	305		130	----	<1.4	2.95
06		5.5	285		125	2.00		3.20
07	(740)	6.6	260	---	120	2.60		3.20
00	(490)	7.5	250	4.4	110	3.00		3.25
09	390	8.3	250	4.8	110	3.30		3.20
10	(395)	8.6	250	5.0	110	3.50		3.10
11	(410)	9.5	240	5.0	110	3.65		3.10
12	(510)	9.5	240	5.2	110	3.70		3.00
13	(400)	9.8	245	5.4	110	3.70		3.00
14	(420)	9.3	245	5.3	110	3.60		3.00
15	(455)	9.4	245	5.2	110	3.40		3.05
16	(400)	9.3	250	4.7	110	3.15		3.05
17	(490)	9.1	250	---	110	2.75		3.10
18		8.8	255		125	2.30		3.15
19		9.2	255		130	1.70	2.2	3.20
20		>7.6	250				<1.6	3.00
21		>7.8	250				<1.6	2.95
22		7.4	265				<1.6	2.80
23		6.8	300				<1.4	2.80

Time: 0.0°.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 24

Juliusruh/Rügen, Germany (54.6°N, 13.4°E) September 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.5						2.50
01		6.3						2.55
02		6.0						2.55
03		5.4				----	1.0	2.50
04		5.1				----		2.55
05		4.7				1.30		2.70
06		5.5		---		2.00		2.90
07		6.8		---		2.55		2.95
08		7.7		---		3.00		2.90
09		9.2		---		3.30		2.85
10		9.8		---		3.55	3.7	2.80
11		9.8		---		3.60	3.9	2.80
12		10.2		5.0		3.70	3.8	2.75
13		9.8		5.2		3.60	3.8	2.70
14		9.6		---		3.40	3.8	2.70
15		9.6		---		3.20		2.75
16		8.8		---		3.00		2.75
17		9.6		---		2.50		2.85
18		9.6				2.10		2.80
19		9.6				----		2.85
20		8.6						2.70
21		7.8						2.75
22		7.2						2.65
23		6.9						2.60

Time: 15.0°E.
Sweep: 0.5 Mc to 20.0 Mc in 20 seconds.

Table 25

De Bilt, Holland (52.1°N, 5.2°E) September 1957

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	6.2						2.60
01	280	5.7						2.65
02	290	5.4						2.60
03	295	4.9						2.55
04	290	4.2						2.60
05	260	4.6			---	1.8		2.90
06	245	6.4	---	---	125	2.6		3.05
07	240	7.6	245	4.2	115	3.0		3.00
08	260	8.2	230	4.5	110	3.3		2.95
09	270	9.6	230	5.0	105	3.8	3.8	2.90
10	440	9.8	230	5.0	105	4.0		2.85
11	330	10.4	220	5.5	105	4.0		2.80
12	335	10.4	225	5.2	110	4.0		2.80
13	355	10.4	225	5.6	105	3.9		2.75
14	415	10.2	230	5.2	105	3.8		2.80
15	390	10.0	230	4.8	105	3.5		2.80
16	240	10.0	240	---	110	3.1		2.85
17	240	10.0	---	---	120	2.7	2.8	2.90
18	240	9.4			---	2.0	2.0	2.95
19	245	8.8					1.9	2.90
20	245	7.9						2.90
21	250	7.0						2.75
22	265	6.9						2.70
23	280	6.4						2.70

Time: 0.0°.
Sweep: 1.4 Mc to 16.0 Mc in 40 seconds.

Table 26

Winnipeg, Canada (49.9°N, 97.4°W) 5eptember 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		4.9	300				3.5	
01		4.6	340				3.2	
02		4.4	340				3.4	
03		4.3	340				3.5	
04		4.5	330				3.0	
05		4.3	320				3.0	
06		4.6	300		---	1.8	2.8	
07	(300)	6.0	270		120	2.5		
08	300	6.8	240	4.5	110	3.0		
09	340	7.3	240	4.8	105	3.3		
10	340	8.0	230	4.9	100	3.7		
11	340	8.2	230	5.0	100	3.9		
12	360	8.8	240	5.0	100	3.9		
13	380	8.9	240	5.0	100	3.9		
14	360	9.1	240	5.1	100	3.8		
15	380	9.0	240	5.0	100	3.6		
16	340	8.8	250	5.0	110	3.2		
17	340	7.9	260	---	110	2.9		
18	---	8.0	280		120	2.4		
19		7.5	270		---	1.8		
20		7.0	280				<1.7	
21		6.2	290				<1.8	
22		6.0	300				<1.7	
23		5.3	300				3.0	

Time: 90.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 27

Victoria, Canada (48.4°N, 123.4°W) 5eptember 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		4.5	300					
01		4.4	310					
02		4.4	310					
03		4.1	320					
04		3.9	350					
05		4.0	340					
06		5.0	280	---	---	2.2		
07	---	6.0	240	4.0	100	2.7		
08	G	6.6	220	4.4	100	3.2		
09	520	7.2	210	4.8	100	3.5		
10	450	7.7	210	5.2	100	3.8		
11	440	8.2	210	5.4	100	3.9		
12	500	7.8	220	5.2	100	4.0		
13	640	7.8	220	5.0	100	4.0		
14	400	8.2	220	5.2	100	3.8		
15	(560)	8.1	230	5.0	100	3.6		
16	---	8.0	230	4.7	100	3.3		
17		8.0	240		100	2.9		
18		7.7	240		---	2.3		
19		7.2	240					
20		6.8	230					
21		6.1	240					
22		5.5	260					
23		4.9	280					

Time: 120.0°W.
5weep: 1.6 Mc to 20.0 Mc in 15 seconds.

Table 28

Ottawa, Canada (45.4°N, 75.9°W) 5eptember 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		6.0	300				<1.7	2.6
01		5.4	320				2.4	2.6
02		5.0	300				<1.7	2.7
03		4.8	300				<1.6	2.6
04		4.7	300				<2.0	2.6
05		4.5	290				<1.6	2.7
06	---	5.4	270	---	110	2.0		3.0
07	(430)	7.2	250	---	110	2.8		3.0
08	350	8.5	240	4.5	110	3.3		2.95
09	300	9.0	240	5.0	110	3.7		2.9
10	310	9.0	230	5.0	110	3.9		2.9
11	360	9.3	220	5.0	110	4.0		2.8
12	350	9.6	220	5.1	110	4.0		2.7
13	350	10.0	230	5.2	110	3.9		2.7
14	360	9.8	230	5.0	110	3.8		2.7
15	350	9.9	240	5.0	110	3.7		2.7
16	360	10.0	240	4.8	110	3.3		2.7
17	(430)	10.1	260	---	115	2.8		2.7
18		10.1	250		120	2.0		2.8
19		9.2	250		---	---	<1.6	2.8
20		8.5	250				<1.6	2.8
21		7.6	260				<1.6	2.7
22		7.1	270				<1.7	2.7
23		6.8	290				<1.7	2.6

Time: 75.0°W.
5weep: 1.0 Mc to 16.0 Mc in 16 seconds.

Table 29

Wakkanai, Japan (45.4°N, 141.7°E) 5eptember 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.7	320				2.3	2.50
01		6.5	320				2.3	2.45
02		6.1	320				3.0	2.40
03		5.8	305				2.4	2.50
04		5.8	315				2.4	2.45
05		6.2	290			1.75		2.60
06		8.0	250			2.35	2.5	2.95
07	---	9.5	250	---		3.00	3.4	3.00
08	---	9.8	240	---		3.40	3.6	2.90
09	---	10.2	235	---		3.50	4.0	2.90
10	(440)	10.4	230	5.7		3.60	4.1	2.75
11	---	10.5	230	5.8		3.70		2.70
12	---	10.1	230	---		3.60	4.0	2.70
13	(380)	10.1	235	6.0		3.70		2.70
14	---	9.8	240	---		3.55		2.70
15		9.8	250			3.45	3.5	2.70
16		9.7	255			3.00	3.5	2.75
17		9.3	260			2.40	3.5	2.80
18		9.5	260				3.5	2.80
19		8.3	265				3.4	2.75
20		8.0	270				3.0	2.65
21		7.3	275				2.4	2.60
22		7.2	300					2.50
23		7.0	310					2.45

Time: 135.0°E.
Sweep: 1.0 Mc to 20.7 Mc in 1 minute.

Table 30

Akita, Japan (39.7°N, 140.1°E) 5eptember 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		7.2	305				2.4	2.55
01		6.8	300				2.4	2.50
02		6.6	300				2.4	2.50
03		6.2	295				2.4	2.50
04		6.0	300				2.5	2.50
05	---	6.4	300			----	2.2	2.60
06	---	9.0	250			2.25	2.8	3.00
07	(290)	10.0	245	---		3.00	3.5	3.05
08	250	10.6	240	---		3.40	3.9	2.95
09	250	11.1	240	5.3		3.65	4.2	2.85
10	290	10.9	235	5.4		3.80	4.1	2.75
11	280	11.3	240	5.9		3.85	4.2	2.70
12	315	11.2	240	6.3		3.85	4.2	2.70
13	340	10.8	240	6.0		3.90		2.70
14	320	11.0	245	5.9		3.75		2.70
15	300	10.8	250	5.8		3.50		2.70
16	(290)	10.5	250			3.10	3.5	2.75
17	---	10.0	260			2.50	3.5	2.85
18		9.8	250				3.5	2.90
19		8.4	260				3.0	2.75
20		8.1	285				3.0	2.70
21		7.7	300				2.9	2.60
22		7.5	300				2.8	2.60
23		7.3	300				2.4	2.60

Time: 135.0°E.
5weep: 0.85 Mc to 22.0 Mc in 2 minutes.

Table 31

Tokyo, Japan (35.7°N, 139.5°E) — September 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		7.7	330					2.55
01		7.3	330					2.45
02		6.9	325					2.50
03		6.6	320					2.45
04		6.3	345					2.45
05		6.4	325			----		2.50
06		9.2	265			----	2.5	2.95
07	(280)	10.9	250	---		3.00	3.3	3.00
00	290	11.2	250	---		3.40	3.7	2.90
09	305	11.5	250	6.2		----	4.3	2.80
10	360	11.8	250	6.2		----		2.65
11	340	12.1	250	6.2		----		2.60
12	350	12.3	250	6.2		----		2.60
13	360	12.2	255	6.4		----		2.55
14	350	11.8	255	6.2		----		2.55
15	340	11.9	260	5.7		----		2.60
16	330	11.3	260	---		3.15	3.4	2.65
17	(300)	10.7	280			2.55	3.6	2.75
18	---	10.8	275				3.5	2.80
19		9.2	275				3.3	2.65
20		8.5	300				2.5	2.50
21		8.3	310				2.2	2.50
22		7.9	320					2.50
23		7.9	330					2.50

Time: 135.0°E.
Sweep: 2.0 Mc to 20.0 Mc in 20 seconds.

Table 32

Yamagawa, Japan (31.2°N, 130.6°E) — September 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(8.9)	290				3.1	(2.60)
01		8.6	270				2.9	2.70
02		8.1	260				2.5	2.75
03		7.5	250				2.4	2.70
04		6.8	260				2.2	2.70
05		6.4	270				2.8	2.75
06	---	7.7	270	---		----	2.8	2.90
07	---	10.4	240	---		2.60	3.1	3.20
08	---	11.1	225	---		3.30	4.0	3.20
09	---	11.6	220	---		3.70	4.4	3.00
10	---	12.4	225	---		3.95	5.0	2.85
11	---	13.2	215	---		4.05	4.6	2.75
12	---	13.6	220	---		4.00	4.6	2.75
13	(350)	13.9	230	---		4.10	5.1	2.70
14	350	13.9	230	---		4.05	5.0	2.70
15	(340)	13.8	240	---		3.90	4.3	2.70
16	(315)	13.1	245	---		3.50	3.6	2.75
17	(290)	12.7	250			3.00	3.6	2.80
18		12.6	255			2.20	3.6	2.90
19		11.5	250				3.9	2.90
20		10.1	250				3.3	2.70
21		9.5	275				3.2	2.60
22		(9.6)	280				3.0	(2.65)
23		9.3	290				3.0	2.65

Time: 135.0°E.
Sweep: 1.0 Mc to 20.0 Mc in 1 minute.

Table 33

Singapore, British Malaya (1.3°N, 103.8°E) — September 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		11.2	235				<1.6	2.70
01		10.3	245				2.1	2.65
02		9.2	250				1.6	2.70
03		9.0	250				2.2	2.85
04		7.8	245				2.3	2.90
05		6.5	235				2.4	3.05
06		7.0	275			<1.80	2.2	2.95
07		11.0	255		125	2.90	<3.2	2.90
08		13.0	245		120	3.60	3.9	2.65
09		14.2	230		115	4.00	4.4	2.40
10		14.0	225		110	4.30	4.8	2.15
11		14.4	<210		115	4.45	<4.9	1.90
12		13.3	<220		120	(4.40)	<5.0	1.85
13		12.6	<210		120	4.40	4.7	1.95
14		12.8	215		120	4.25	4.3	1.90
15		13.0	235		110	4.00	<4.6	1.90
16		13.4	250		110	3.45	3.7	1.95
17		13.3	260		115	2.80	3.0	2.00
18		13.2	300			1.70	<2.4	2.00
19		13.0	380				<1.4	2.10
20		>12.8	345				<1.5	----
21		(13.4)	290				1.5	(2.45)
22		13.8	240				<1.6	(2.70)
23		12.1	225				<1.9	2.65

Time: 105.0°E.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 34

Talara, Peru (4.6°S, 81.3°W) — September 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		10.8	230				4.4	2.75
01		10.3	230				3.2	2.80
02		9.4	250				4.3	2.95
03		8.5	240				2.6	2.95
04		7.9	240				4.1	3.00
05		6.6	250				3.8	2.90
06		6.0	265		---	----	4.4	2.70
07		9.5	260		123	2.60	3.4	2.90
00		11.8	250		115	3.40	3.6	2.70
09		12.9	230		111	3.85	4.0	2.50
10		13.6	220		111	4.15		2.35
11	---	13.7	215		111	4.30		2.15
12	---	13.7	215		111	4.40		2.10
13	---	13.3	210		111	4.35		2.00
14	---	13.6	210	---	111	4.20		2.00
15	---	13.2	215	---	109	4.00		2.00
16		12.6	230		111	3.60		2.00
17		12.2	255		114	3.10		2.05
18		(11.5)	280		<141	2.30	3.7	(2.10)
19		(11.2)	370				4.2	(2.10)
20		>10.8	410				(3.2)	(2.10)
21		(11.4)	340				2.4	(2.30)
22		11.3	265				3.2	2.70
23		(12.2)	240				4.0	2.80

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

Table 35

Rarotonga I. (21.2°S, 159.8°W) — September 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		8.5	250					3.00
01		(8.7)	250					(3.00)
02		8.2	250					3.20
03		7.2	250					2.90
04		7.0	<290					2.90
05		6.4	290					2.90
06	---	6.4	300	---				2.90
07	---	(8.0)	270	---	---	2.0	2.8	3.20
00	(250)	(12.7)	250	---	110	3.0		3.30
09	(250)	(13.2)	240	---	110	3.7		3.30
10	---	(13.8)	240	---	110	4.0		3.20
11	(280)	14.0	230	---	110	4.1		3.10
12	(280)	13.5	230	---	110	4.2		3.00
13	(390)	13.2	220	7.2	110	4.2	4.6	2.90
14	---	13.0	230	7.0	110	4.1	4.7	2.90
15	400	(12.9)	230	6.8	110	4.0	4.5	(2.80)
16	---	(12.4)	240	---	110	3.7	4.2	2.80
17	---	(12.5)	250		100	3.2	3.7	2.90
18		(12.8)	280		110	---	3.1	(2.90)
19		(12.4)	300		---	---	2.9	(2.90)
20		----	290				2.8	----
21		(9.6)	280				2.6	(2.80)
22		----	<270				<1.3	----
23		(8.7)	250				<1.2	(3.10)

Time: 150.0°W.
Sweep: 1.5 Mc to 20.0 Mc in 5 minutes, manual operation.

Table 36

Sao Paulo, Brazil (23.5°S, 46.5°W) — September 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		15.0	220				<2.2	3.20
01		14.0	220				<2.2	3.15
02		11.6	220				<2.2	3.20
03		8.9	240				<2.2	2.90
04		7.6	250				<2.1	2.90
05		6.8	250				<2.2	2.90
06		7.3	260				<2.2	2.85
07		10.1	240			2.65		3.10
08		11.7	240			3.15		3.00
09		12.6	230			3.80		2.85
10		13.3	<230			----		2.75
11		13.4	(220)			----		2.70
12		13.6	(215)			----		2.65
13		13.8	---			----		2.60
14		14.0	(220)			----		2.65
15		14.0	235			----		2.65
16		>14.0	245			----	4.2	2.65
17		14.0	260			----		2.65
18		(14.4)	280			----	<2.5	(2.70)
19		(14.5)	320				<2.2	(2.55)
20		(14.4)	320				<2.2	(2.50)
21		14.0	270				<2.2	2.65
22		14.6	250				<2.2	2.75
23		14.4	240				<2.1	3.10

Time: 45.0°W.
Sweep: 1.75 Mc to 20.0 Mc in 2 minutes 30 seconds.

Table 37

Johannesburg, Union of S. Africa (26.2°S, 28.0°E) September 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		5.8	250				<1.6	2.80
01		5.5	<265				<1.7	2.00
02		4.7	265				<1.6	2.75
03		4.4	260				<1.6	2.70
04		4.0	255				<1.6	2.75
05		3.9	260				<1.6	2.75
06		5.8	260			<1.8	<2.0	2.90
07	---	0.9	230	---		2.8		3.20
08	(250)	11.2	230	---		3.4		3.05
09	(250)	12.0	230	---		3.8		2.95
10	(250)	12.4	220	---		4.0		2.80
11	(270)	12.8	220	---		4.0		2.75
12	(315)	12.8	210	---		---		2.65
13	(360)	12.6	215	---		---		2.60
14	(370)	12.6	225	6.8		4.0		2.60
15	(355)	12.2	230	---		3.8		2.55
16	---	11.9	240			3.5		2.60
17		11.9	250			2.8	2.9	2.65
18		11.6	250			<2.0		2.75
19		10.7	245				<1.8	2.80
20		9.7	240				<1.8	2.85
21		8.6	245				<1.8	2.80
22		8.1	250				<1.8	2.90
23		>6.6	250				<1.8	2.85

Time: 30.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 7 seconds.

Table 38

Brisbane, Australia (27.5°S, 152.9°E) September 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		7.4	260					2.60
01		7.0	265					2.60
02		6.5	260					2.50
03		6.3	270					2.50
04		6.2	300		---	----		2.50
05		6.4	290		---	E		2.60
06	---	8.4	250	---	130	2.35		2.05
07	---	11.2	250	---	120	3.00		2.95
00	---	12.8	240	---	120	3.55		2.90
09	---	12.7	230	---	110	3.85		2.85
10	---	12.2	230	---	110	3.90		2.75
11	---	11.9	220	5.6	110	(4.00)		2.65
12	(290)	11.8	220	5.4	110	4.00		2.60
13	(350)	11.2	230	4.9	120	3.95		2.60
14	(410)	11.0	240	6.1	120	3.85		2.55
15	---	10.6	235	---	120	3.80		2.55
16	---	10.6	250	---	120	3.25		2.55
17		9.9	250		130	2.50		2.65
18		9.5	260		---	E		2.60
19		9.2	270		---	E		2.65
20		9.0	270					2.65
21		8.9	270					2.65
22		8.5	265					2.65
23		8.0	260					2.60

Time: 150.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

Table 39

Watheroo, W. Australia (30.3°S, 115.9°E) September 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.7	250		---	----		3.05
01		6.4	250		---	----		3.00
02		6.2	255		---	----		3.00
03		5.7	250		---	----		3.00
04		5.8	260		---	----		(2.95)
05		5.0	280		---	----		2.95
06		5.7	270		165	1.60		3.10
07		8.4	240		110	2.65		<3.45
08	---	10.2	235		110	3.20		3.50
09	---	>10.4	(235)	---	105	3.50		<3.30
10	G	>10.9	---	---	105	----		<3.15
11	G	>10.8	---	(6.2)	100	----		3.00
12	(420)	11.0	---	(6.6)	105	----		<2.95
13	(300)	11.0	---	6.7	105	----		<2.90
14	---	11.4	---	(6.7)	110	----		2.90
15	---	11.4	---	(6.6)	110	----		2.85
16	---	10.6	(230)	---	110	3.45		2.90
17		>10.0	250	---	110	2.90		3.00
18		>7.3	250	---	120	2.10		(3.25)
19		(6.8)	240		---	----		----
20		>7.0	240		---	----		(2.90)
21		>7.0	250		---	----		<3.05
22		6.8	250		---	----		3.00
23		>6.6	250		---	----		3.05

Time: 120.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 1 minute 45 seconds.

Table 40

Capetown, Union of S. Africa (34.1°S, 18.3°E) September 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		4.7	<255				<1.6	2.75
01		4.4	<270				<1.5	2.70
02		4.2	270				<1.6	2.70
03		4.1	255				<1.5	2.70
04		4.0	<270				<1.4	2.70
05		3.8	<280				<1.4	2.70
06		4.0	<290			<1.4	<1.4	2.65
07	---	7.0	250	---		2.1		3.05
00	---	9.7	245	---		2.9		3.10
09	(250)	10.8	240	---		3.4		2.95
10	---	11.9	230	---		(3.6)		2.85
11	---	12.6	230	---		---		2.70
12	(260)	12.8	225	---		---		2.65
13	(270)	12.9	225	---		---		2.60
14	(305)	12.8	230	---		---		2.60
15	(310)	12.4	240	---		(3.9)		2.55
16	---	12.0	245	---		3.6		2.55
17	---	12.1	250			3.1		2.60
18		11.8	250			2.4		2.70
19		10.8	240			<1.6	<1.6	2.80
20		9.6	240				<1.6	2.85
21		8.6	240				<1.6	2.85
22		7.0	240				<1.6	2.90
23		5.4	<245				<1.6	2.85

Time: 30.0°E.
Sweep: 1.0 Mc to 17.0 Mc in 7 seconds.

Table 41

Hobart, Tasmania (42.9°S, 147.2°E) September 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		5.8	300					2.55
01		6.2	300					2.60
02		5.8	300					2.55
03		5.2	280					2.50
04		>4.4	290					2.45
05		4.2	300					2.50
06		4.8	300					2.70
07		>6.0	260		130	2.70		2.90
08		7.4	250		120	3.10		2.90
09		8.3	240		120	3.50		2.90
10		9.4	240		120	3.60		2.85
11		10.3	230		120	3.80		2.80
12		10.3	240		120	3.90		2.70
13		10.2	240		120	3.90		2.70
14		10.0	230		120	3.80		2.65
15		9.8	240		120	3.60		2.65
16		9.5	250		120	3.25		2.65
17		>9.0	250		130	2.75		2.70
18		9.2	260					2.70
19		>8.0	250					2.60
20		7.9	270					2.55
21		7.6	280					2.60
22		7.0	300					2.60
23		7.0	300					2.60

Time: 150.0°E.
Sweep: 1.0 Mc to 13.0 Mc in 1 minute 55 seconds.

Table 42

Christchurch, New Zealand (43.6°S, 172.8°E) September 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.7	290				<1.5	2.55
01		6.0	300				<1.7	2.50
02		5.8	290				<1.2	2.50
03		5.4	290				<1.1	2.50
04		5.0	270				<1.2	2.50
05		4.6	280		---	---		2.55
06		4.3	290		---	1.5		2.60
07		6.0	250		120	2.3		2.90
08	---	7.4	250	---	110	2.9		3.00
09	G	8.8	250	4.8	110	3.3		2.90
10	G	9.2	250	4.8	110	3.7		2.80
11	(550)	10.0	240	5.0	110	3.9		2.80
12	520	10.4	240	5.2	110	3.9		2.80
13	(510)	9.9	240	5.1	110	4.0		2.75
14	(530)	10.0	240	5.2	100	3.9		2.70
15	(520)	9.6	240	5.3	110	3.7		2.70
16	(500)	9.4	250	4.8	110	3.3		2.70
17	---	9.4	250	---	110	2.9		2.75
18		9.0	250		130	2.2		2.70
19		8.5	250				<1.5	2.65
20		8.0	260				<1.5	2.60
21		7.7	270				<1.6	2.65
22		7.8	300				<1.6	2.60
23		7.1	300				<1.6	2.55

Time: 180.0°E.
Sweep: 1.0 Mc to 13.0 Mc in 1 minute 55 seconds.

Table 43

Campbell I. (52.5°S, 169.2°E) September 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(6.1)	(290)				2.3	(2.7)
01		(5.8)	300				3.0	(2.65)
02		(3.7)	(300)				2.6	----
03		(3.2)	(300)				2.6	(2.8)
04		(3.2)	(300)				<1.5	(2.8)
05		(3.9)	(280)		---	---	<1.5	(2.7)
06		(4.2)	(250)		---	---		(2.65)
07		(5.1)	(250)		---	2.5		(2.9)
08	---	(6.9)	(240)		120	2.9		(3.0)
09	---	(7.2)	240	---	120	3.2		(3.0)
10	---	(6.7)	(240)	---	---	---		(2.9)
11	---	(7.3)	(230)	---	110	3.5		(2.8)
12	---	(9.0)	(240)	---	---	---		(2.7)
13	---	(8.3)	220	---	115	3.5		(2.7)
14	---	(7.8)	(240)	---	120	3.2		(2.7)
15	---	(7.3)	(240)	---	120	3.1		(2.75)
16	---	---	(240)		125	2.9		----
17		(6.7)	(250)		---	1.9		(2.85)
18		---	(270)		---	---	<1.5	----
19		---	---				(4.6)	----
20		---	<290				<2.8	----
21		(6.3)	<280				3.4	(2.6)
22		(6.0)	(280)				3.8	(2.6)
23		(6.2)	<280				3.3	(2.65)

Time: 165.0°E.
Sweep: 1.0 Mc to 15.0 Mc in 5 minutes, manual operation.

Table 44

Scott Base (77.8°S, 166.8°E) September 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		5.2	320		---	---	<1.9	2.85
01		(5.2)	290		---	---	<2.4	----
02		4.7	300		---	---	<2.0	(3.00)
03		3.8	300		---	---	<2.0	(2.80)
04		4.3	290		---	---	<2.1	(3.10)
05		4.6	300		---	---	<2.2	3.10
06		5.6	280		---	1.5	<2.7	3.20
07		6.1	260		150	1.8	2.4	3.20
00		7.0	260		130	2.2	<2.3	3.20
09		7.6	250		130	2.4	<2.8	3.20
10		8.0	260		120	2.6		3.20
11		8.2	250		130	2.6		3.00
12		8.4	260		130	2.7	.	3.05
13		8.0	250		120	2.6	2.8	3.10
14		8.0	260		140	2.5	<2.7	3.10
15		8.8	270		140	2.4	<2.6	3.10
16		8.9	280		140	2.3		3.00
17		8.8	280		140	1.9	<2.4	3.00
18		8.4	280		---	1.6	<2.1	3.00
19		8.5	270		---	---	<2.1	2.90
20		7.3	270		---	---	<1.9	3.00
21		6.0	280		---	---	<1.9	3.00
22		6.9	280		---	---	<1.7	3.00
23		5.4	290		---	---	<1.6	2.70

Time: 165.0°E.

Table 45

Inverness, Scotland (57.4°N, 4.2°W) August 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		5.9	310				2.2	2.80
01		5.5	315				2.4	2.75
02		5.5	310				2.4	2.75
03		4.9	305				2.4	2.80
04		4.8	290		140	----	<1.4	2.90
05	400	5.3	275	---	130	1.90		3.15
06	410	5.9	255	---	115	2.40	2.6	3.20
07	410	6.3	245	4.4	110	2.80	3.2	3.20
00	420	6.9	240	4.8	105	3.15	3.4	3.05
09	350	7.2	240	5.0	105	3.35	3.7	3.15
10	370	7.6	230	5.3	105	3.50	3.7	3.00
11	355	8.0	220	5.3	105	3.80		3.05
12	390	7.7	225	5.5	105	3.80	3.9	2.95
13	370	7.6	220	5.6	105	3.80		2.95
14	370	7.6	225	5.5	105	3.70		3.00
15	360	7.6	230	5.3	105	3.60		3.00
16	360	7.6	240	5.2	105	3.40		3.05
17	345	7.8	250	4.7	105	3.10		3.10
18	355	7.7	255	---	110	2.60	2.8	3.10
19		7.8	265		120	2.15		3.10
20		7.2	260		150	1.80	2.2	3.05
21		7.2	260				<1.6	3.00
22		6.9	275				<1.6	2.90
23		6.2	300				2.4	2.80

Time: 0.0°.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 46

Juliusruh/Rügen, Germany (54.6°N, 13.4°E) August 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.0				E		2.30
01		5.8				E		2.35
02		5.5				E		2.30
03		5.2				E	1.0	2.35
04		4.7				1.20		2.40
05		5.4				1.55	2.0	2.60
06		6.2		---		2.20	2.4	2.70
07		7.0		---		2.65	3.2	2.55
00		7.2		4.9		2.95	3.5	2.60
09		8.2		5.4		3.30	3.9	2.55
10		8.2		5.3		3.60	4.0	2.55
11		8.4		5.3		3.70	4.0	2.50
12		8.5		5.6		3.80	4.0	2.45
13		8.2		5.6		3.70	3.9	2.50
14		7.9		5.4		3.65		2.50
15		7.9		(5.3)		3.45		2.50
16		7.8		5.2		3.35		2.50
17		8.0				3.00	3.3	2.55
18		8.0				2.50	3.1	2.60
19		7.6				1.95	2.7	2.60
20		7.6				----		2.50
21		6.9						2.45
22		6.6						2.40
23		6.7						2.35

Time: 15.0°E.
Sweep: 0.5 Mc to 20.0 Mc in 20 seconds.

Table 47

Victoria, Canada (48.4°N, 123.4°W) August 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		4.6	300					(2.55)
01		4.3	300					(2.6)
02		4.1	310				3.0	(2.6)
03		4.0	310				3.0	---
04		3.6	300					---
05		4.1	290				3.0	(2.8)
06	---	5.4	250	3.9	105	2.4	3.4	2.9
07	420	6.1	220	4.4	100	2.9	4.0	2.7
08	420	6.8	210	4.9	100	3.2	4.5	2.7
09	400	7.3	200	5.1	100	3.5	4.8	2.7
10	400	7.8	200	5.2	100	3.8		2.6
11	400	8.1	200	5.4	100	4.0		2.6
12	400	8.0	210	5.5	100	4.0		2.6
13	420	8.0	200	5.5	100	4.0		2.5
14	400	7.9	210	5.4	100	3.9		2.6
15	400	7.6	210	5.2	100	3.8		2.6
16	400	7.4	210	5.0	100	3.5		2.6
17	360	7.6	220	5.0	100	3.1		2.75
18	---	7.1	240	---	100	2.7		2.9
19		6.8	250		100	2.0		2.9
20		6.8	240					2.9
21		6.4	240				3.1	(2.85)
22		5.5	260					(2.7)
23		5.0	290					(2.7)

Time: 120.0°W.
Sweep: 1.6 Mc to 20.0 Mc in 15 seconds.

Table 48

Talara, Peru (4.6°S, 81.3°W) August 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		10.2	220				(3.0)	3.00
01		9.2	225				(3.2)	3.00
02		9.0	235					3.10
03		7.5	230					3.10
04		6.4	235				1.6	3.15
05		5.0	230				2.1	3.10
06		4.2	245		---	----	3.2	2.80
07		7.0	260		128	2.20	4.0	2.90
08		9.0	240		112	3.00	4.6	2.80
09		9.8	220		109	3.50	5.2	2.50
10		10.7	215		109	3.80	3.9	2.30
11		11.0	210		109	4.05	4.2	2.20
12	---	11.4	205	---	109	4.15	4.2	2.10
13	---	11.5	200	---	109	4.10	4.3	2.05
14	---	11.3	200	---	107	4.05		2.10
15	---	11.2	200	---	109	3.80		2.10
16		11.0	210	---	109	3.50	3.7	2.10
17		10.8	240		110	3.00	3.5	2.10
18		10.5	270		121	2.30	4.5	2.15
19		10.0	340				3.2	2.15
20		10.1	370				(2.5)	2.15
21		10.5	310				2.9	2.30
22		10.8	255				2.6	2.70
23		(10.7)	230				4.2	(2.85)

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

Table 49

Huancayo, Peru (12.0°S, 75.3°W) August 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		8.1	220					3.00
01		7.8	225					3.10
02		6.8	225					3.15
03		5.9	235					3.10
04		5.1	235					3.15
05		4.4	245					3.10
06		4.8	265		---	E	2.7	2.90
07		8.5	250		115	2.50	5.9	3.05
08		10.5	230		107	3.20	7.4	2.85
09		11.5	220		107	----	9.0	2.60
10	---	11.5	205		---	----	9.2	2.45
11	---	11.3	200		---	----	11.0	2.25
12	---	10.6	<200	---	---	----	11.0	2.20
13		10.4	195		---	----	10.0	2.25
14		10.3	190		---	----	9.0	2.20
15		10.2	200		---	----	9.0	2.20
16		10.0	220		---	----	9.0	2.20
17		9.7	250		109	----	7.1	2.25
18		9.4	290		149	1.60	4.3	2.30
19		8.5	375					2.20
20		8.2	(355)					2.35
21		8.5	275				3.2	2.60
22		8.5	220				3.2	2.85
23		8.4	220				3.4	2.90

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

Table 50

Falkland Is. (51.7°S, 57.8°W) August 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		4.0	320				<1.2	2.40
01		4.1	330					2.45
02		4.0	315					2.45
03		3.9	310					2.40
04		3.7	305					2.45
05		3.7	305					2.50
06		3.6	290					2.70
07		6.2	245		155	1.7		(3.20)
08		8.2	225		130	2.3	2.4	3.35
09		9.5	225		115	2.7	3.0	3.25
10		10.3	230		115	3.0	3.5	3.25
11		10.6	225		110	3.2	3.7	3.20
12		11.0	235		110	3.3	3.4	3.25
13		9.9	230		110	3.3	3.4	3.20
14		9.5	235		110	3.0	3.6	3.20
15		8.9	235		120	2.7	3.4	3.30
16		8.1	235		125	2.1	3.1	3.25
17		7.1	230			1.7	2.6	3.20
18		5.4	220				2.8	3.20
19		4.7	235				<1.4	3.00
20		4.0	245				<1.4	2.80
21		4.0	<300				2.0	2.50
22		3.9	<330				<1.5	2.45
23		4.0	<350				<1.4	2.40

Time: 60.0°W.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 51

Juliusruh/Rügen, Germany (54.6°N, 13.4°E) July 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		7.0				----		2.40
01		6.6				----		2.45
02		6.2				E	1.2	2.45
03		5.9		1.2		E	1.3	2.50
04		5.8		---		1.30	1.5	2.50
05		6.2		---		2.00	2.2	2.60
06		6.8		---		2.65	3.2	2.50
07		7.1		4.8		3.05	3.5	2.55
08		7.6		5.1		3.35	3.9	2.60
09		7.8		5.4		3.50	4.0	2.60
10		7.6		5.4		3.60	4.1	2.50
11		7.8		5.5		3.65	4.1	2.55
12		7.8		5.5		3.60	4.1	2.55
13		7.8		5.5		3.60	4.0	2.55
14		7.7		5.6		3.60	3.8	2.50
15		7.7		5.5		3.50		2.55
16		7.4		5.3		3.45	3.7	2.60
17		7.5		5.1		3.20	3.6	2.65
18		7.5		---		2.80	3.7	2.65
19		7.8		---		2.25	3.0	2.70
20		7.6				1.70	2.7	2.70
21		7.6					1.6	2.60
22		7.7						2.55
23		7.2						2.45

Time: 15.0°E.
Sweep: 0.5 Mc to 20.0 Mc in 20 seconds.

Table 52

Lindau/Harz, Germany (51.6°N, 10.1°E) July 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		7.28	302				2.5	2.49
01		6.87	298				2.8	2.52
02		6.56	292				2.4	2.50
03		6.16	300		---	----	2.4	2.50
04		6.17	299		---	E	2.9	2.56
05	---	6.17	266	----	108	----	3.1	2.64
06	(488)	6.80	250	4.30	106	2.62	3.7	2.65
07	455	7.05	232	4.70	106	3.00	4.3	2.66
08	448	7.64	228	5.04	105	3.41	4.6	2.68
09	431	7.81	220	5.25	106	3.60	5.0	2.60
10	405	8.05	223	5.43	105	3.70	5.4	2.58
11	434	8.30	215	5.65	103	3.82	5.3	2.60
12	458	8.07	209	5.65	103	3.90	5.3	2.55
13	423	8.20	218	5.70	102	3.86	5.2	2.52
14	430	7.96	217	5.80	102	3.82	5.7	2.60
15	408	7.95	220	5.68	105	3.75	5.1	2.60
16	408	7.73	222	5.45	105	3.63	4.9	2.65
17	430	7.80	230	5.20	106	3.34	4.6	2.65
18	---	7.83	246	----	106	3.04	4.1	2.70
19		8.18	265		108	2.54	4.6	2.75
20		7.99	270		110	1.92	3.7	2.75
21		7.76	269		---	----	3.3	2.67
22		7.92	282				3.2	2.55
23		7.55	286				3.2	2.55

Time: 15.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 4 minutes, automatic operation.

Table 53

Wakkanai, Japan (45.4°N, 141.7°E) July 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		8.2	305				4.6	2.55
01		8.0	300				4.7	2.55
02		7.6	290				3.5	2.50
03		7.0	290			----	3.5	2.55
04		7.1	300			1.50	3.5	2.55
05	(400)	8.0	265	3.8		2.35	3.5	2.60
06	350	8.8	250	4.5		3.00	3.8	2.65
07	350	8.4	240	4.8		3.35	5.8	2.65
08	365	8.4	250	5.3		3.50	6.4	2.55
09	430	7.9	(250)	5.4		3.70	7.7	2.60
10	445	8.2	235	5.7		3.75	6.6	2.60
11	460	7.6	220	5.6		3.75	7.5	2.50
12	425	7.8	250	5.7		3.70	5.9	2.60
13	440	8.0	250	5.7		3.80	6.0	2.55
14	430	7.6	240	5.7		3.80	5.5	2.60
15	410	7.9	240	5.5		3.65	5.0	2.60
16	390	8.0	250	5.3		3.50	4.3	2.65
17	350	7.8	250	(4.7)		3.00	4.3	2.70
18	---	7.9	260			2.40	4.6	2.75
19		8.0	290			----	4.8	2.70
20		8.3	290				5.0	2.65
21		8.0	290				5.0	2.50
22		8.4	305				4.4	2.55
23		8.2	305				5.6	2.50

Time: 135.0°E.
Sweep: 1.0 Mc to 20.7 Mc in 1 minute.

Table 54

Akita, Japan (39.7°N, 140.1°E) July 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		8.6	310				4.6	2.55
01		8.2	300				4.2	2.60
02		7.9	300				4.2	2.60
03		7.5	300				3.5	2.55
04	---	7.5	310				3.0	2.55
05	340	8.0	270	---		2.00	3.5	2.65
06	300	8.8	250	4.5		2.80	3.6	2.70
07	310	8.9	245	5.1		3.25	5.1	2.80
08	340	8.9	245	5.5		3.50	6.0	2.70
09	400	8.7	240	5.6		3.75	6.6	2.60
10	400	8.8	240	5.8		3.90	6.8	2.50
11	410	8.6	225	5.9		4.00	6.3	2.50
12	400	8.9	230	5.9		4.00	6.1	2.55
13	400	9.0	225	5.9		4.00	6.4	2.55
14	390	9.1	240	5.6		3.90	5.0	2.60
15	390	8.8	240	5.5		3.80	5.2	2.65
16	370	8.8	250	5.5		3.50	4.7	2.70
17	340	8.8	250	5.0		3.05	4.6	2.70
18	300	8.8	280	---		2.45	4.8	2.75
19	---	8.2	290				4.7	2.70
20		8.1	300				4.4	2.60
21		8.3	310				4.0	2.50
22		8.2	330				3.8	2.55
23		8.4	330				4.5	2.50

Time: 135.0°E.
Sweep: 0.85 Mc to 22.0 Mc in 2 minutes.

Table 55

Tokyo, Japan (35.7°N, 139.5°E) July 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		9.1	345				3.8	2.50
01		8.7	320				3.1	2.60
02		8.4	310				3.0	2.60
03		7.9	325				3.0	2.55
04		7.7	330				2.4	2.50
05	---	7.9	295			----		2.65
06	310	9.0	260	---		2.70	3.0	2.75
07	310	9.2	260	5.0		3.20	3.9	2.65
08	335	9.0	250	(5.6)		3.60	4.9	2.60
09	410	8.9	255	6.0		(3.95)	6.0	2.45
10	440	9.0	275	6.0		----	6.3	2.40
11	440	9.2	255	6.2		----	5.7	2.45
12	430	9.4	260	6.1		4.15	5.9	2.45
13	420	9.9	250	5.9		3.95	5.6	2.50
14	405	10.1	250	5.8		3.90	5.1	2.50
15	400	9.7	255	5.6		3.80	4.9	2.50
16	360	9.7	255	5.4		(3.50)	5.0	2.55
17	350	9.5	280	5.2		3.00	4.8	2.65
18	320	9.4	300			2.30	5.0	2.70
19		8.6	300				3.9	2.60
20		8.4	330				4.9	2.40
21		8.7	350				3.9	2.40
22		8.8	355				4.2	2.40
23		9.0	355				3.9	2.45

Time: 135.0°E.
Sweep: 1.0 Mc to 20.0 Mc in 20 seconds.

Table 56

Yamagawa, Japan (31.2°N, 130.6°E) July 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		9.5	300				3.7	2.65
01		9.4	295				3.5	2.70
02		9.1	280				3.6	2.80
03		8.5	280				3.3	2.70
04		7.8	290				3.2	2.70
05	---	7.6	280	---		----	3.2	2.75
06	---	8.5	250	---		2.10	3.2	2.95
07	265	9.3	240	---		2.85	3.8	3.00
00	(250)	9.0	235	---		3.40	5.4	2.90
09	(420)	8.9	235	5.7		3.80	5.7	2.70
10	405	9.2	230	6.2		4.00	5.6	2.60
11	390	9.7	230	6.2		4.10	5.4	2.55
12	400	10.2	230	6.2		4.20	5.3	2.55
13	390	10.6	225	6.2		4.10	5.2	2.60
14	385	11.0	230	6.1		4.10	5.5	2.65
15	380	11.0	240	5.9		4.00	5.2	2.65
16	355	11.0	250	5.8		3.70	4.9	2.70
17	340	11.1	250	5.4		3.35	4.9	2.75
18	295	10.4	255	---		2.75	5.9	2.80
19		9.5	275			1.85	4.3	2.75
20		9.0	300				4.1	2.55
21		9.2	320				3.5	2.45
22		9.2	325				3.2	2.50
23		9.3	320				3.2	2.55

Time: 135.0°E.
Sweep: 1.0 Mc to 20.0 Mc in 1 minute.

Table 57

Talara, Peru (4.6°S, 81.3°W) July 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		9.8	225					2.85
01		9.0	235					2.90
02		9.2	235					3.00
03		8.5	240					3.15
04		7.0	230					3.25
05		5.4	230				2.6	3.10
06		4.4	<240		---	----	>3.1	3.00
07		7.0	270		125	2.15	4.3	2.95
00		8.6	245		109	3.00	4.5	2.80
09		9.5	225		107	3.45	5.0	2.50
10		9.9	220	---	105	3.80	4.3	2.30
11	---	10.0	210	---	107	4.00	4.2	2.20
12	---	10.5	210	---	106	4.05		2.15
13	---	10.5	210	---	106	4.10		2.10
14	---	10.8	210	---	105	4.00		2.10
15	---	10.8	210	---	105	3.80		2.10
16	---	10.5	215	---	105	3.40		2.10
17		10.3	235	---	109	3.00		2.10
18		10.3	275		123	2.20	3.2	2.10
19		10.0	340				3.2	2.15
20		10.0	340				3.0	2.20
21		10.2	300				3.1	2.35
22		10.7	270				(3.0)	2.60
23		10.4	235					2.85

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

Table 50

Falkland Is. (51.7°S, 57.8°W) July 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		3.4	350					2.45
01		3.4	350					2.45
02		3.5	350					2.45
03		3.4	335					2.45
04		3.4	335					2.45
05		3.2	300					2.70
06		3.0	255			----		2.75
07		4.0	250		165	(1.40)		----
08		6.9	220		150	2.00		3.35
09		8.4	220		125	2.30	2.9	3.35
10		10.1	230		120	2.70	3.3	3.40
11		10.6	230		115	2.90	3.5	3.30
12		10.4	235		115	3.00	3.6	3.35
13		9.6	230		110	3.00	3.2	3.20
14		9.3	230		115	2.75	3.0	3.35
15		8.6	230		120	2.40	2.8	3.30
16		7.5	225			2.00	(2.7)	3.30
17		5.7	220				(2.2)	3.20
18		4.7	240					3.05
19		4.4	235				(2.2)	(3.25)
20		3.2	250				(1.7)	3.10
21		3.1	300				(1.9)	2.65
22		3.3	335					2.50
23		3.3	350				(1.7)	2.45

Time: 60.0°W.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 59

Moscow, U.S.S.R. (55.5°N, 37.3°E) June 1957

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	320	7.0			---	---		2.45
01	320	6.8			---	E		2.46
02	320	6.6	---	---	130	1.0		2.47
03	360	6.7	310	3.1	110	1.6		2.47
04	330	7.0	280	3.7	110	2.2		2.54
05	360	7.6	260	4.6	110	2.7		2.52
06	400	7.6	240	4.9	110	3.1		2.50
07	440	7.8	250	5.3	110	3.4		2.42
08	470	7.4	240	5.6	105	3.6		2.45
09	470	7.4	230	5.6	100	3.7		2.44
10	480	7.8	230	5.6	100	3.8		2.40
11	480	7.6	240	5.7	105	3.8		2.39
12	460	7.8	240	5.7	105	3.8		2.45
13	460	7.6	250	5.6	110	3.8		2.46
14	460	7.4	240	5.6	100	3.7		2.45
15	460	7.2	240	5.5	110	3.6		2.43
16	440	7.1	240	5.3	110	3.4		2.53
17	390	7.0	260	5.0	110	3.1		2.59
18	370	7.2	260	4.5	110	2.7		2.64
19	310	7.0	280	3.7	110	2.2		2.70
20	290	7.2	---	---	110	1.4		2.67
21	300	7.3			---	E		2.60
22	300	7.2			---	---		2.55
23	310	7.2			---	---		2.50

Time: 30.0°E.
Sweep: 0.5 Mc to 20.0 Mc in 10 to 30 seconds.

Table 60

Godhavn, Greenland (69.2°N, 53.5°W) May 1957

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00		(5.6)			144	----		2.65
01		(5.3)			<140	----		2.65
02		(5.3)			134	----		(2.65)
03		(5.2)		---	131	(1.90)		2.60
04		(5.3)		---	117	(2.20)		2.70
05		(5.0)		3.9	113	(2.40)		(2.80)
06		(5.0)		(4.1)	111	2.70		2.70
07		(5.0)		4.3	109	3.00		G
08		(5.4)		(4.4)	109	3.20		G
09		(6.3)		(4.6)	105	(3.30)		(2.65)
10		(6.6)		(4.9)	105	(3.40)		2.65
11		6.8		5.0	105	(3.50)		2.55
12		(6.8)		4.9	105	(3.50)		(2.55)
13		(6.4)		5.0	105	(3.50)		(2.50)
14		(6.2)		5.0	102	(3.40)		----
15		(6.3)		4.9	106	(3.35)		(2.45)
16		(6.1)		4.8	107	(3.20)		2.50
17		(6.2)		4.7	107	3.10		2.50
18		(6.2)		4.5	109	(2.90)		2.60
19		(6.4)		(4.3)	109	(2.75)		2.60
20		(6.3)		(4.0)	112	2.50		2.60
21		(6.2)		(3.8)	119	(2.20)		2.65
22		(6.0)			<139	(2.10)		2.75
23		(5.9)			135	(1.80)		2.70

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

Table 61

Moscow, U.S.S.R. (55.5°N, 37.3°E) May 1957

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	6.7			---	---		2.50
01	310	6.5			---	---		2.48
02	310	6.3			---	E		2.46
03	320	6.1	---	---	120	1.3		2.50
04	320	6.7	280	3.6	110	1.9		2.61
05	320	7.3	260	4.5	110	2.5		2.63
06	340	7.7	250	4.9	110	2.9		2.63
07	380	7.8	240	5.2	110	3.3		2.56
08	420	7.7	240	5.6	110	3.5		2.47
09	410	8.1	230	5.5	110	3.6		2.52
10	420	8.6	230	5.7	110	3.7		2.50
11	410	8.7	230	5.8	110	3.7		2.50
12	400	8.7	230	5.8	110	3.7		2.53
13	390	8.6	230	5.8	110	3.7		2.55
14	390	8.5	230	5.8	110	3.6		2.53
15	370	8.4	240	5.6	110	3.5		2.59
16	340	8.1	240	5.1	110	3.3		2.64
17	320	8.1	250	4.8	110	2.9		2.70
18	290	8.1	260	4.1	110	2.4		2.72
19	280	8.1	---	(3.5)	110	1.7		2.75
20	280	7.8	---	---	(120)	1.3		2.70
21	280	7.7	---	---	---	E		2.60
22	280	7.4			---	---		2.55
23	290	7.1			---	---		2.51

Time: 30.0°E.
Sweep: 0.5 Mc to 20.0 Mc in 10 to 30 seconds.

Table 62

Poitiers, France (46.6°N, 0.3°E) 5september 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	295	6.4					1.7	(2.60)
01	300	6.2					1.6	(2.50)
02	300	5.8						(2.55)
03	<305	5.4						2.50
04	<290	5.2						2.55
05	275	4.7			---	E		2.75
06	260	6.3	250	2.4	---	1.9		3.05
07	270	7.9	250	4.2	110	2.7	2.8	(2.95)
08	255	>8.4	235	4.6	105	3.1	3.4	(3.00)
09	260	9.3	230	5.0	105	3.3	3.8	(2.95)
10	280	9.5	230	5.4	100	3.6	4.5	(2.95)
11	300	9.9	230	5.5	100	3.6	4.4	2.80
12	320	10.5	235	6.0	100	3.5	4.0	2.60
13	320	11.3	230	5.8	100	3.4	4.2	(2.60)
14	305	10.4	235	5.6	105	3.4	3.8	----
15	290	10.4	240	5.5	105	3.3	3.6	(2.70)
16	280	(8.6)	245	4.8	110	3.0	3.4	----
17	265	8.5	255	4.1	115	2.6	2.9	----
18	250	(7.6)	---	---	---	E	2.6	
19	240	(7.6)			---	E	2.7	
20	250	(7.0)					2.2	
21	250	6.9					2.3	----
22	270	6.6					2.0	----
23	280	6.6					1.4	----

Time: 0.0°.
Sweep: 1.6 Mc to 16.8 Mc in 1 minute.

Table 63

Casablanca, Morocco (33.6°N, 7.6°W) 5september 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	<300	9.00					2.3	2.60
01	<300	>8.80					2.3	2.60
02	<300	8.35					1.9	2.60
03	<290	7.85						2.60
04	<280	7.10					1.9	2.60
05	<290	6.75					2.1	2.60
06	260	6.70	---	----	---	----	2.4	2.90
07	245	8.35	235	----	125	2.30	3.1	3.20
08	250	9.65	240	4.00	115	3.00	3.5	3.20
09	250	10.55	230	(4.90)	110	3.35	3.8	3.10
10	280	10.30	230	----	110	3.60	4.0	2.90
11	(330)	11.45	---	----	110	3.60	3.9	2.80
12	(340)	11.80	(250)	----	110	----		2.70
13	350	12.20	---	6.60	110	(3.60)		2.60
14	345	>12.10	---	----	110	(3.60)		2.65
15	330	>12.30	(245)	----	110	(3.50)		2.70
16	(300)	12.00	250	----	115	3.35		2.70
17	(300)	>11.90	250	----	115	3.00	3.7	(2.80)
18	275	11.60	260	----	130	2.20	3.6	2.85
19	255	>10.80	---	----			3.4	(2.90)
20	<250	>9.00					3.2	2.70
21	<275	>9.00					3.2	2.50
22	<285	>9.10					3.0	2.60
23	<300	>9.00					2.3	2.60

Time: 0.0°.
Sweep: 1.6 Mc to 16.0 Mc in 1 minute 15 seconds.

Table 64

Budapest, Hungary (47.4°N, 19.2°E) July 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	315	6.3					2.7	
01	310	6.3						
02	300	5.9					2.4	
03	295	5.5			---	---	2.6	
04	260	6.0	---	---	125	2.3	3.3	
05	300	6.8	245	4.3	120	2.8	4.0	
06	330	7.0	235	4.9	115	3.2	4.8	
07	335	7.2	230	5.1	110	3.3	5.2	
08	345	7.6	225	5.2	110	3.5	5.4	
09	360	7.9	220	5.3	110	3.5	5.6	
10	360	8.2	220	5.4	110	3.5	5.1	
11	370	8.1	220	5.4	110	3.5	4.6	
12	355	8.0	220	5.3	110	3.4	4.4	
13	360	7.8	230	5.4	110	3.4	4.9	
14	360	7.8	230	5.2	110	3.3	4.8	
15	340	7.4	240	5.0	115	3.2	4.3	
16	300	7.3	240	4.6	115	3.0	3.6	
17	300	7.7	255	3.9	120	2.5	3.7	
18	280	8.1			---	---	3.9	
19	270	8.2					3.6	
20	280	7.0					3.7	
21	300	6.9					3.1	
22	310	6.9					2.8	
23	310	6.8					2.6	

Time: 0.0°.
Sweep: 1.0 Mc to 20.0 Mc in 35 seconds.

Table 65

Delhi, India (28.6°N, 77.1°E) April 1956

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	320	9.3						3.00
01	320	>8.9						3.00
02	---	---						----
03								
04	320	6.9						3.00
05	300	7.0						3.10
06	280	8.5						3.25
07	260	10.0						3.40
08	280	11.1						3.25
09	320	11.8						3.00
10	360	12.8						2.80
11	360	14.2						2.80
12	340	14.7						2.90
13	360	15.2						2.80
14	360	15.7						2.80
15	320	15.2						3.00
16	320	>14.8						3.00
17	320	14.5						3.00
18	310	13.9						3.05
19	320	12.9						3.00
20	320	11.7						3.00
21	360	10.4						2.80
22	320	10.0						3.00
23	320	9.5						3.00

Time: 75.0°E.
Sweep: 1.5 Mc to 18.0 Mc in 5 minutes, manual operation.
*Height at 0.83 foF2.

Table 66

Ahmedabad, India (23.0°N, 72.6°E) April 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	12.8						2.85
01	265	11.6						2.90
02	250	10.1						3.05
03	245	7.4						2.85
04	250	6.8						2.70
05	260	7.0						2.80
06	250	8.0			---	---		3.00
07	250	10.2	240	4.4	110	2.7	4.0	3.05
08	250	11.3	225	4.7	110	3.2	4.0	2.95
09	260	11.8	220	5.0	107	3.5	4.2	2.60
10	325	12.8	235	5.2	105	3.7		2.55
11	375	14.2	240	5.3	105	3.8		2.60
12	390	15.2	245	5.5	105	3.9		2.60
13	380	15.6	230	5.4	105	3.8		2.60
14	350	15.6	230	5.2	105	3.7		2.70
15	340	15.7	230	5.0	107	3.6		2.75
16	320	15.8	240	4.7	110	3.3		2.75
17	270	>15.2	245	4.5	110	2.7		2.70
18	260	14.9	---	---	---	---		2.75
19	280	13.9					2.0	2.65
20	290	13.9					2.0	2.55
21	300	13.4						2.65
22	300	13.0						2.65
23	290	>13.0					2.1	2.80

Time: 75.0°E.
Sweep: 0.6 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 67

Calcutta, India (22.9°N, 88.5°E) April 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	11.5					2.1	3.4
01	250	11.5					2.1	3.55
02	230	11.0						3.55
03	230	7.5					1.6	3.1
04	240	7.0					2.0	3.1
05	250	5.9					2.1	3.0
06	250	7.5			120	1.9	2.1	3.1
07	250	10.2	240	---	110	2.8	4.0	3.3
08	250	11.5	230	4.7	100	3.3	4.4	3.1
09	265	11.6	220	5.0	100	3.5	4.4	2.95
10	300	12.0	220	5.1	100	3.5		2.8
11	320	12.2	210	5.3	100	3.7		2.8
12	360	12.3	215	5.5	100	3.7		2.8
13	360	12.5	220	5.5	100	3.8		3.0
14	340	12.5	225	5.3	100	3.6		2.95
15	330	12.5	220	5.0	100	3.5		3.0
16	300	12.2	230	4.8	100	3.4	3.6	3.1
17	300	12.0	250	5.0	100	3.0	3.6	3.1
18	270	12.0			100	2.0	3.3	3.2
19	295	11.7					3.8	3.0
20	300	11.5					3.0	3.1
21	270	11.5					2.0	3.2
22	275	11.5					2.1	3.3
23	265	11.5					2.1	3.4

Time: 90.0°E.
Sweep: 1.0 Mc to 13.0 Mc in 1 minute 55 seconds.

Table 60

Bombay, India (19.0°N, 73.0°E) April 1956

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06	360	6.5						2.80
07	390	7.9						2.65
08:30	420	9.5						2.55
09	420	10.2						2.55
10	480	10.9						2.30
11	540	11.8						2.15
12	600	12.5						2.00
13	600	12.8						2.00
14	600	12.9						2.00
15	570	12.2						2.05
16	520	11.4						2.20
17	480	11.0						2.35
18	420	10.6						2.55
19	390	9.7						2.65
20	360	8.7						2.80
21	360	7.5						2.80
22	330	6.4						2.95
23								

Time: 75.0°E.
Sweep: 1.5 Mc to 18.0 Mc in 5 minutes, manual operation.
*Height at 0.83 foF2.

Table 69

Madras, India (13.0°N, 80.2°E) April 1956

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06	280	9.4						3.25
07	360	11.7						2.80
08	440	12.4						2.50
09	480	12.6						2.30
10	520	12.4						2.20
11	520	11.9						2.20
12	520	12.0						2.20
13	520	12.2						2.20
14	520	13.0						2.20
15	520	13.4						2.20
16	520	13.6						2.20
17	480	13.5						2.30
18	480	13.2						2.30
19	460	12.5						2.40
20	440	12.1						2.50
21	(440)	13.1						(2.45)
22	---	----						----
23								

Time: 75.0°E.
Sweep: 1.5 Mc to 18.0 Mc in 5 minutes, manual operation.
*Height at 0.83 foF2.

Table 70

Tiruchy, India (10.8°N, 78.8°E) April 1956

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06	320	8.3						3.00
07	400	10.7						2.60
08	440	11.2						2.50
09	480	11.5						2.30
10	480	11.2						2.30
11	480	11.2						2.30
12	480	11.5						2.30
13	480	11.5						2.30
14	480	11.6						2.30
15	480	11.2						2.30
16	480	11.0						2.30
17	480	10.4						2.30
18	480	10.0						2.30
19	480	9.8						2.30
20	(480)	(9.2)						(2.30)
21	(480)	(9.0)						(2.30)
21:30	---	---						----
23								

Time: 75.0°E.
Sweep: 1.5 Mc to 18.0 Mc in 5 minutes, manual operation.
*Height at 0.83 foF2.

Table 71

Delhi, India (28.6°N, 77.1°E) March 1956

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	>7.3						3.10
01	280	6.9						3.25
02	(300)	(7.6)						(3.10)
03								
04	320	5.0						3.00
05	320	4.8						3.00
06	280	6.0						3.25
07	240	8.9						3.60
08	280	10.9						3.25
09	280	12.2						3.25
10	310	13.2						3.05
11	320	14.0						3.00
12	320	14.7						3.00
13	320	15.2						3.00
14	360	>15.0						2.80
15	320	>15.2						3.00
16	320	>15.4						3.00
17	280	15.0						3.25
18	280	>15.2						3.25
19	280	14.6						3.25
20	280	13.5						3.25
21	280	11.4						3.25
22	320	9.5						3.00
23	320	8.7						3.00

Time: 75.0°E.
Sweep: 1.5 Mc to 18.0 Mc in 5 minutes, manual operation.
*Height at 0.83 foF2.

Table 72

Ahmedabad, India (23.0°N, 72.6°E) March 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	11.4						2.80
01	250	11.3						3.05
02	240	10.4						3.15
03	230	8.0						3.20
04	240	6.2						2.90
05	255	5.0						2.85
06	275	5.3			---	---	1.9	2.85
07	245	9.2	---	---	115	2.2	3.7	3.20
08	250	10.9	230	4.4	110	2.9	3.8	3.15
09	255	12.5	225	4.7	107	3.3	3.8	2.90
10	275	13.6	225	5.1	107	3.6		2.80
11	280	15.1	215	5.2	105	3.8		2.80
12	335	15.4	215	5.3	106	3.9		2.70
13	350	15.4	230	5.3	107	3.8		<2.70
14	350	15.4	235	5.2	107	3.8		2.65
15	335	15.5	230	5.1	110	3.6		2.70
16	290	15.6	240	5.0	110	3.2		2.75
17	265	>15.3	250	4.6	115	2.6		<2.75
18	255	15.0	---	---	---	---		2.80
19	270	>15.0						<2.75
20	260	>15.0						<2.80
21	230	14.8						2.85
22	250	14.8						2.80
23	260	12.8						2.90

Time: 75.0°E.
Sweep: 0.6 Mc to 25.0 Mc in 5 minutes, automatic operation.

USCOMM-NBS-BL

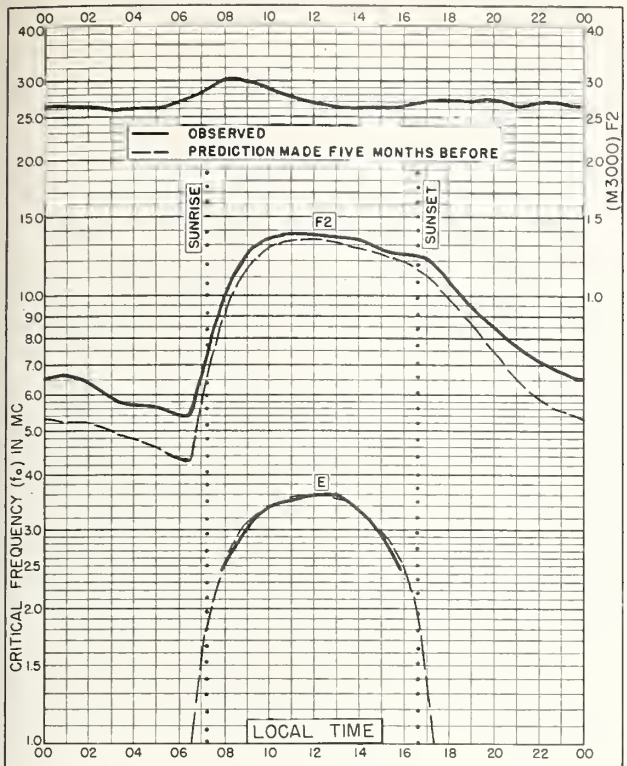


Fig. 1. WASHINGTON, D.C.
38.7°N, 77.1°W DECEMBER 1957

NBS 503

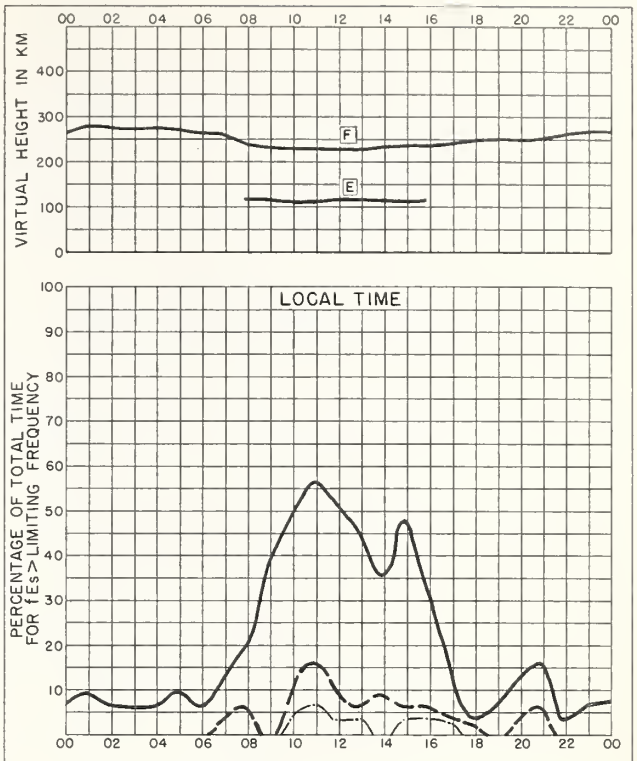


Fig. 2. WASHINGTON, D.C. DECEMBER 1957

NBS 490

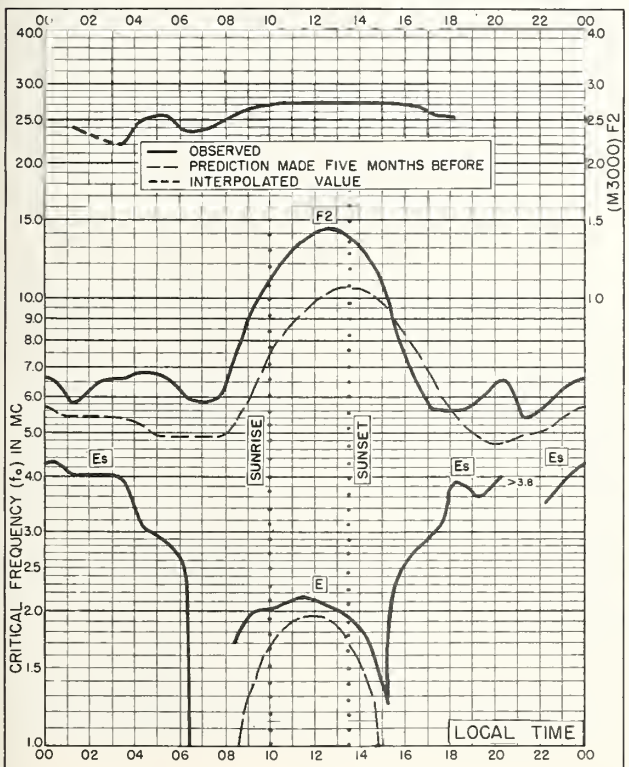


Fig. 3. TROMSO, NORWAY
69.7°N, 19.0°E NOVEMBER 1957

NBS 503

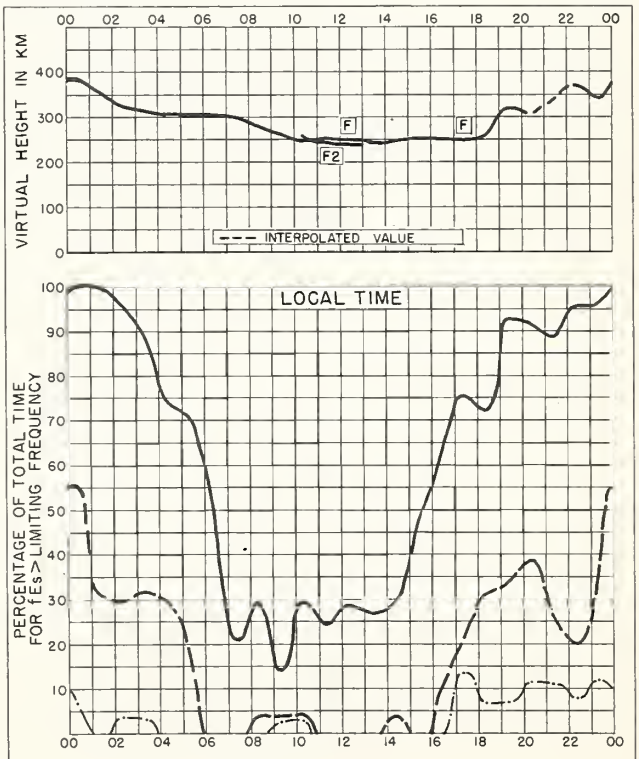


Fig. 4. TROMSO, NORWAY NOVEMBER 1957

NBS 490

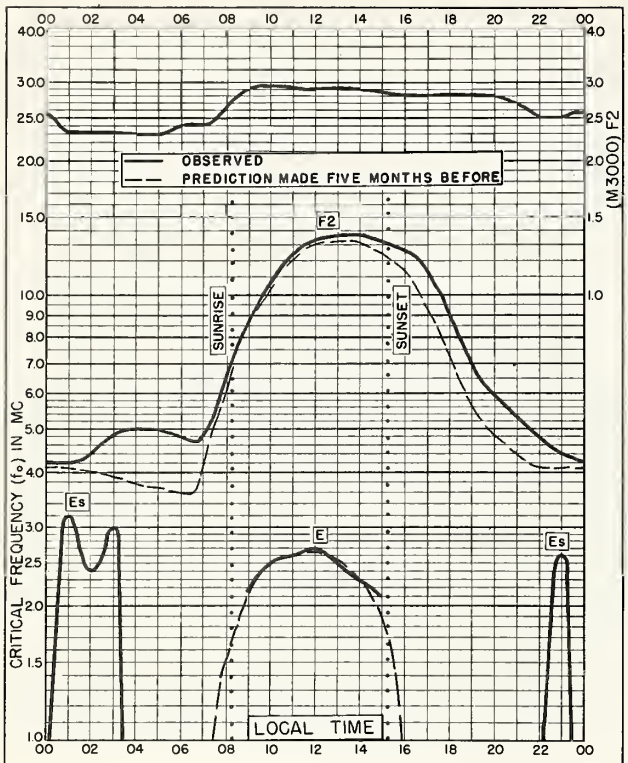


Fig. 5. ANCHORAGE, ALASKA
61.2°N, 149.9° W NOVEMBER 1957

NBS 503

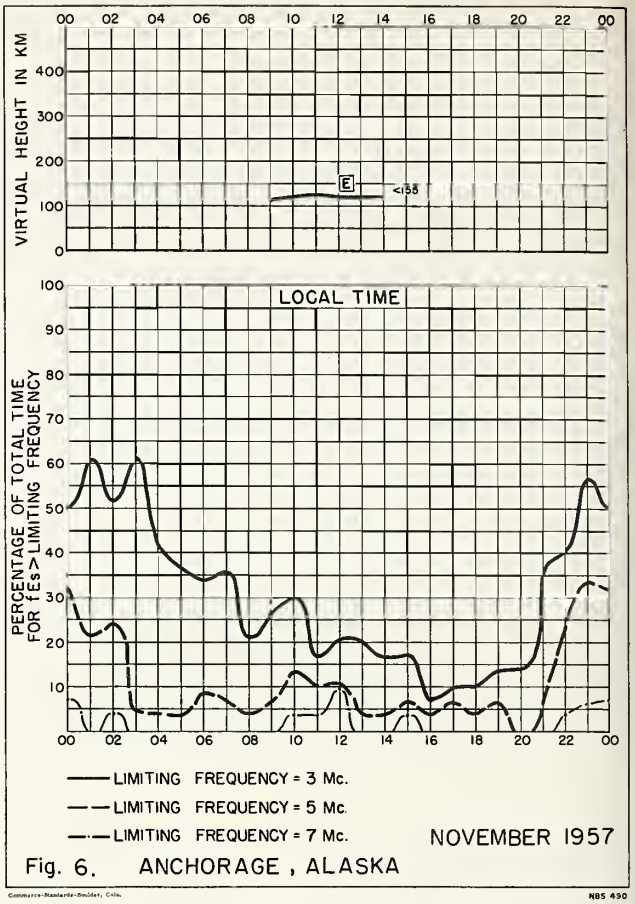


Fig. 6. ANCHORAGE, ALASKA NOVEMBER 1957

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NBS 490

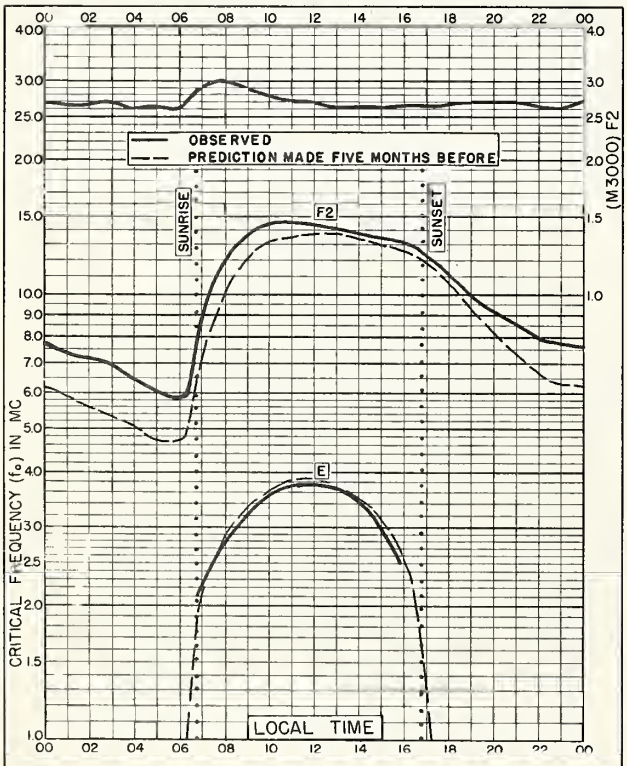

Fig. 7. WASHINGTON, D.C.
38.7°N, 77.1° W NOVEMBER 1957

NBS 503

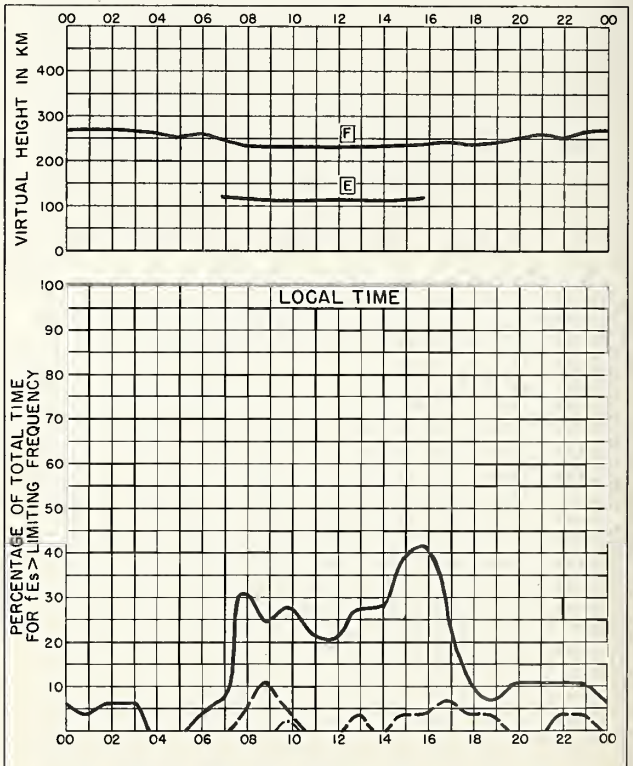

Fig. 8. WASHINGTON, D.C. NOVEMBER 1957

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NBS 490

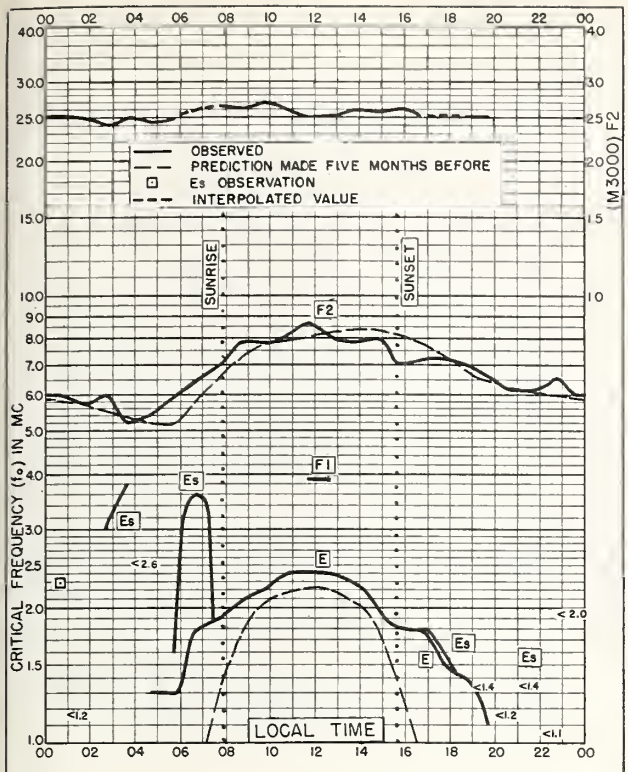


Fig. 9. RESOLUTE BAY, CANADA
74.7°N, 94.9°W OCTOBER 1957

NBS 503

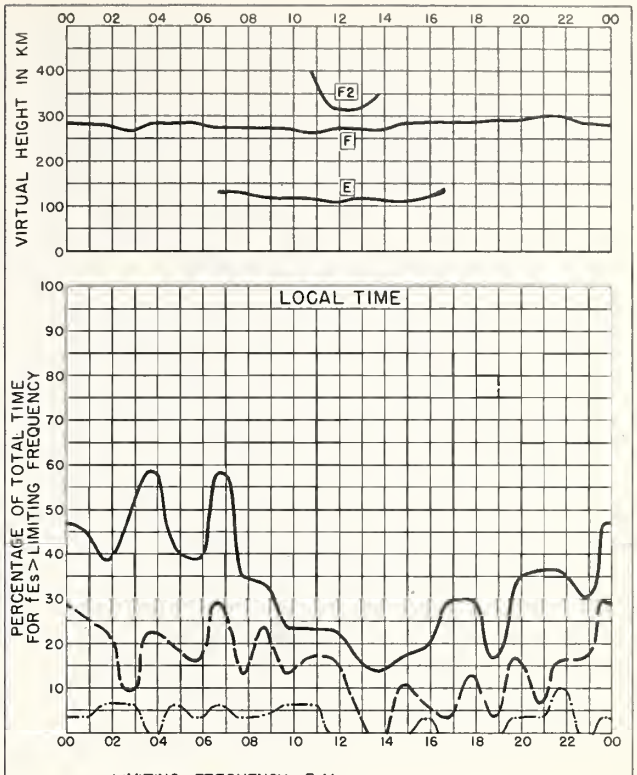


Fig. 10. RESOLUTE BAY, CANADA OCTOBER 1957

NBS 490

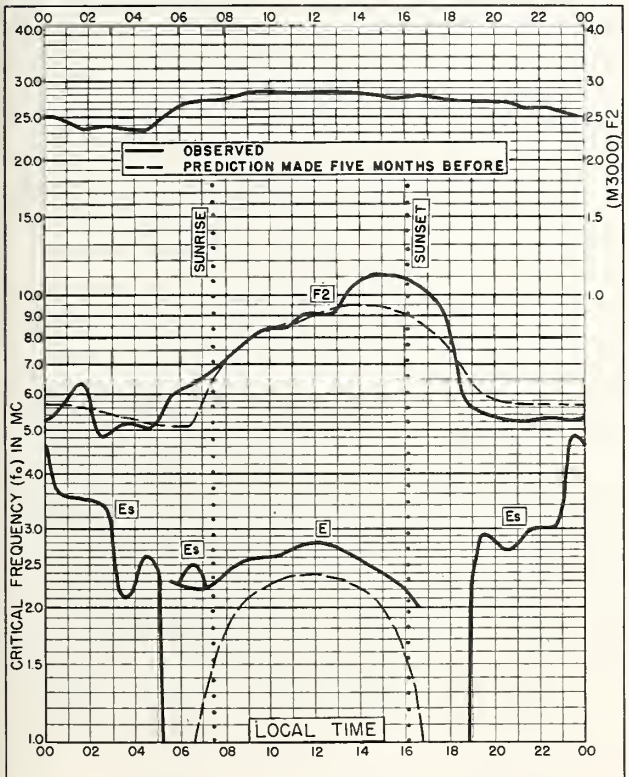


Fig. 11. POINT BARROW, ALASKA
71.3°N, 156.8°W OCTOBER 1957

NBS 503

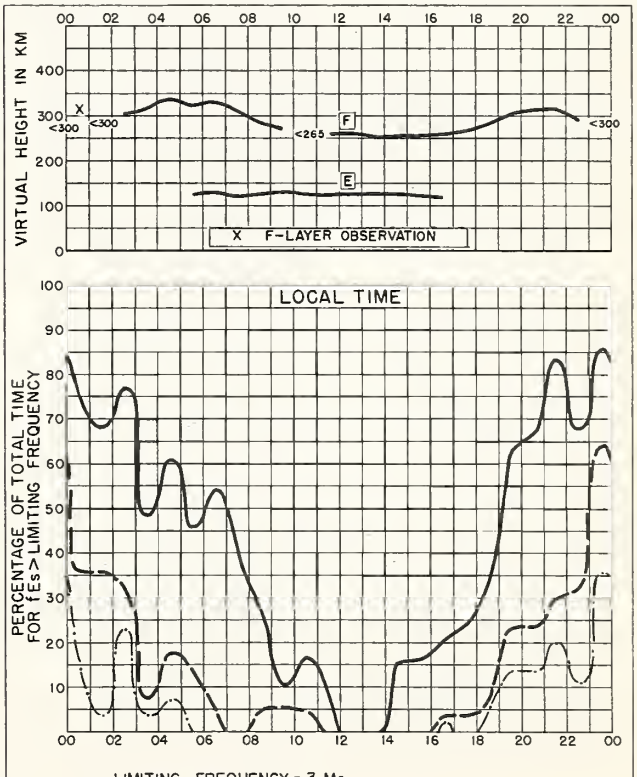


Fig. 12. POINT BARROW, ALASKA OCTOBER 1957

NBS 490

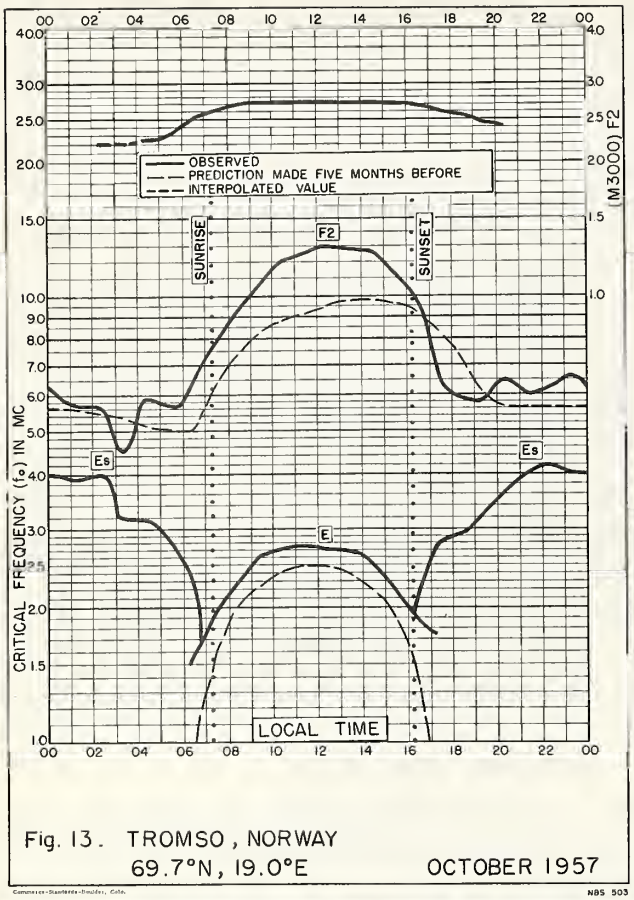


Fig. 13. TROMSO, NORWAY
69.7°N, 19.0°E OCTOBER 1957

NBS 503

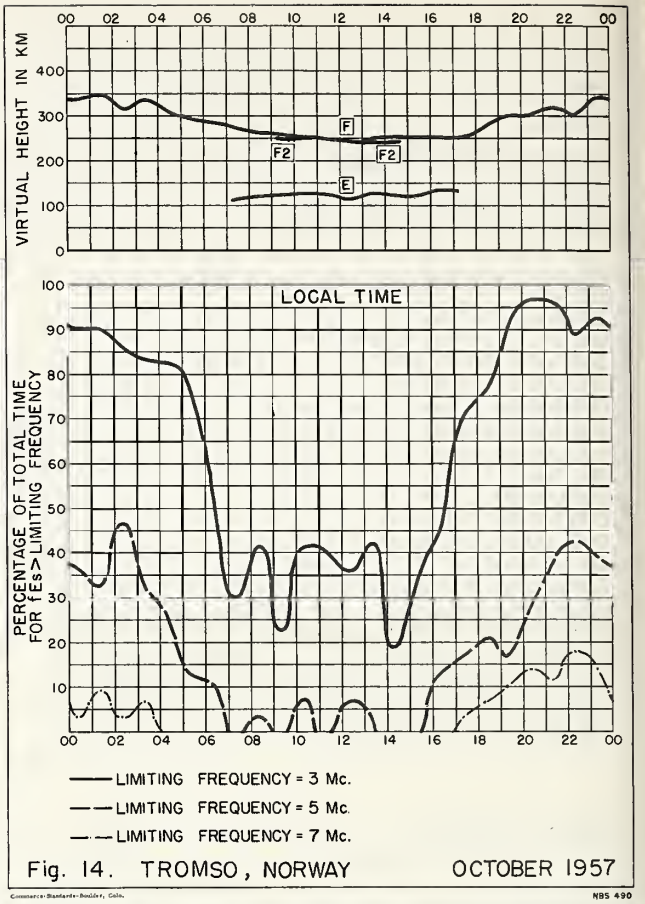


Fig. 14. TROMSO, NORWAY OCTOBER 1957

NBS 490

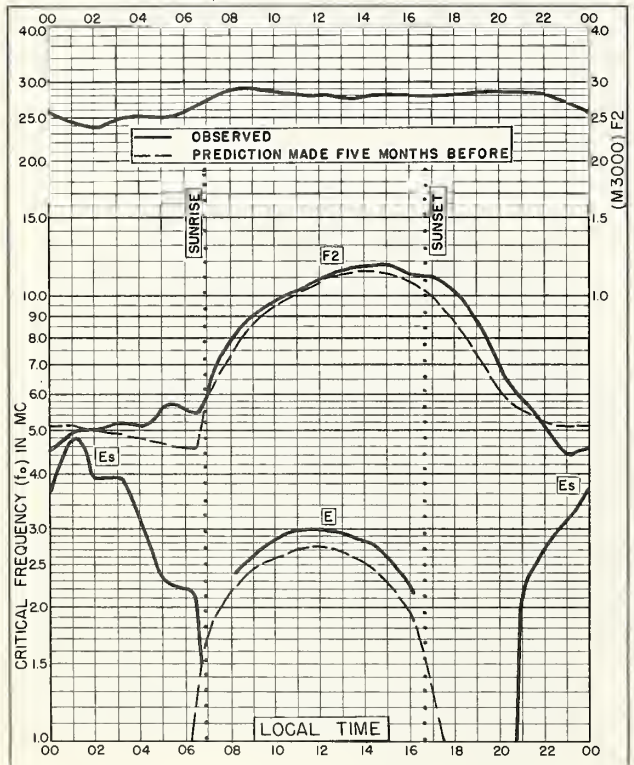


Fig. 15. FAIRBANKS, ALASKA
64.9°N, 147.8°W OCTOBER 1957

NBS 503

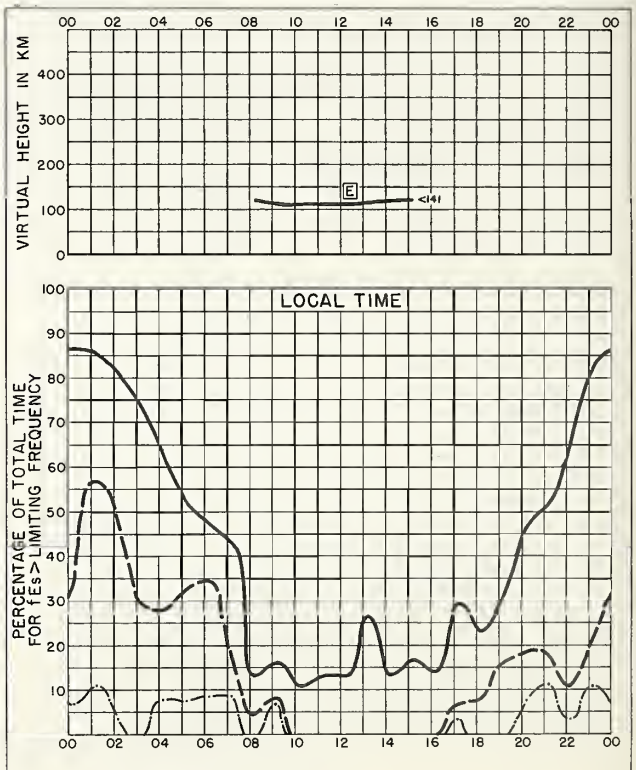


Fig. 16. FAIRBANKS, ALASKA OCTOBER 1957

NBS 490

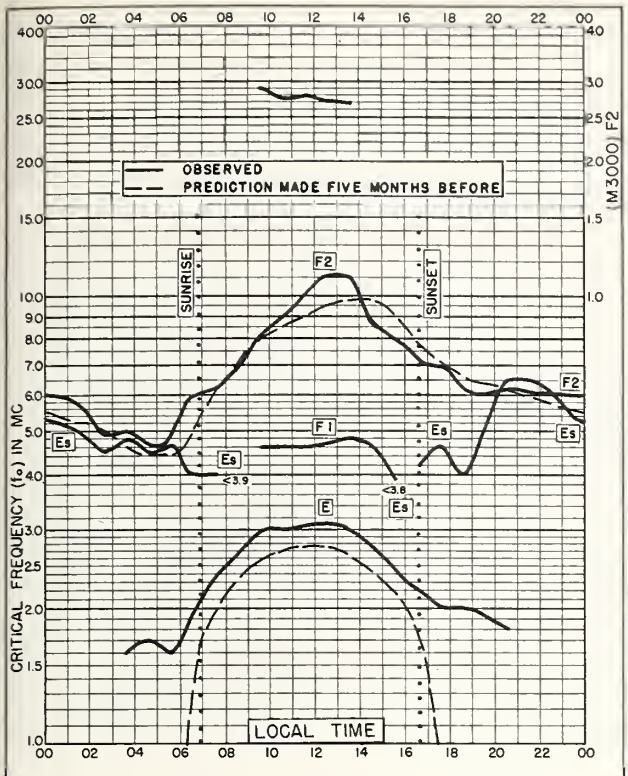


Fig. 17. BAKER LAKE, CANADA
64.3°N, 96.0°W OCTOBER 1957

NBS 503

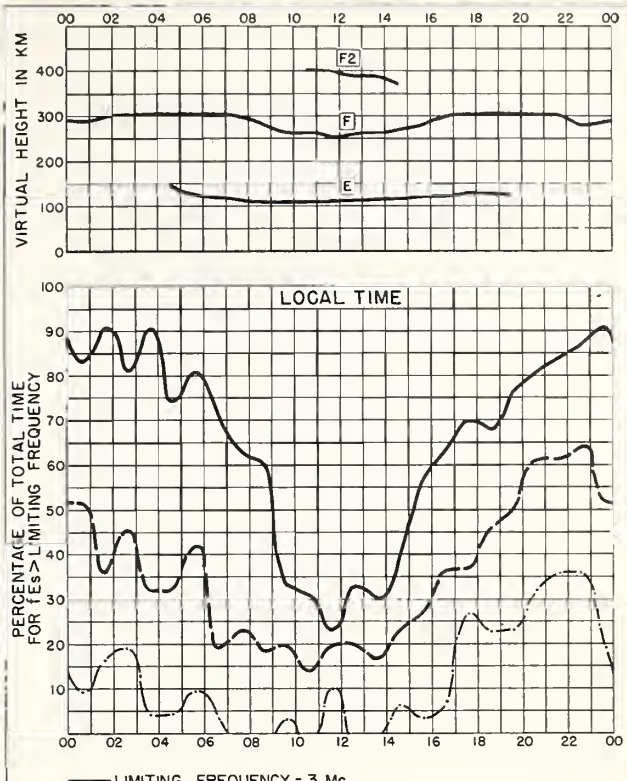


Fig. 18. BAKER LAKE, CANADA OCTOBER 1957

NBS 490

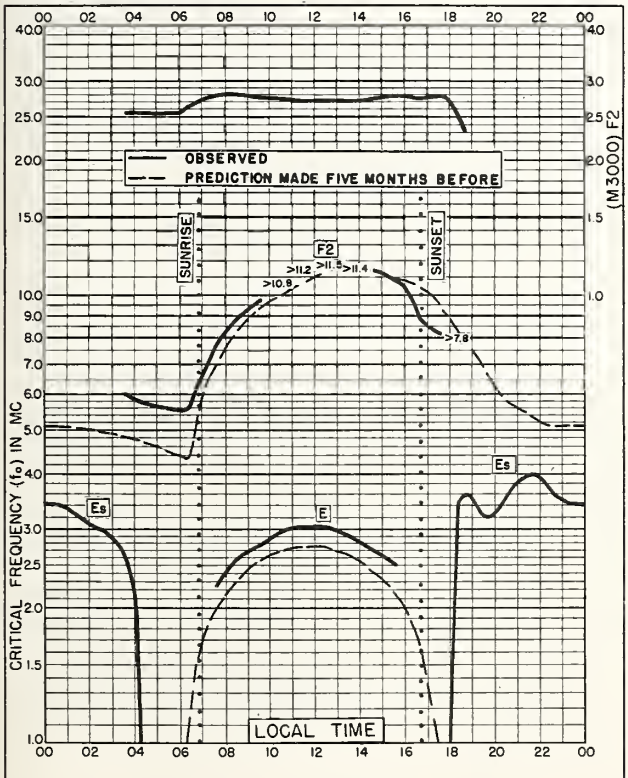


Fig. 19. REYKJAVIK, ICELAND
64.1°N, 21.8°W OCTOBER 1957

NBS 503

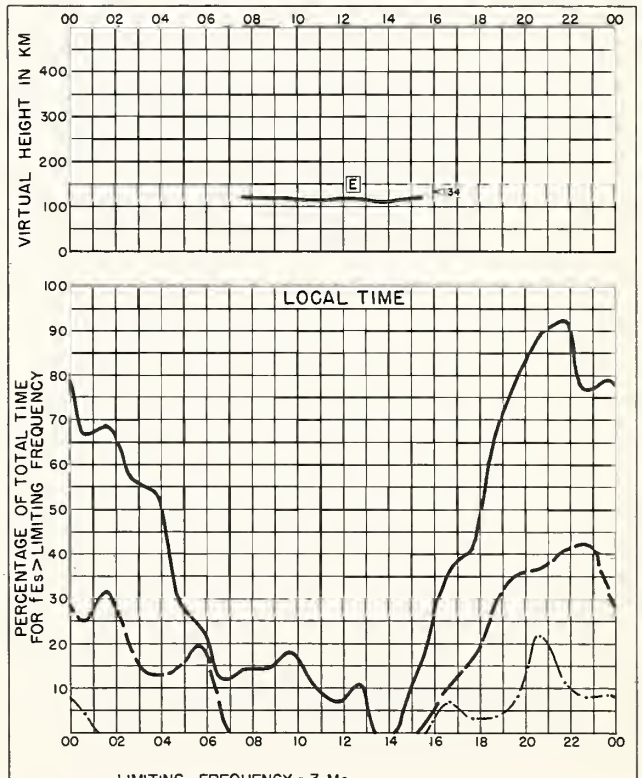


Fig. 20. REYKJAVIK, ICELAND OCTOBER 1957

NBS 490

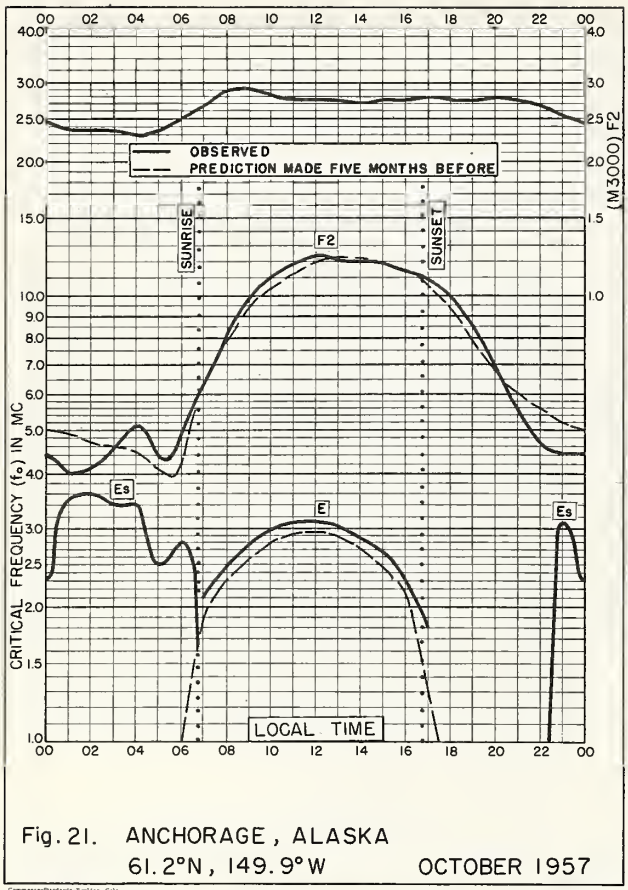


Fig. 21. ANCHORAGE, ALASKA
61.2°N, 149.9°W OCTOBER 1957

NBS 503

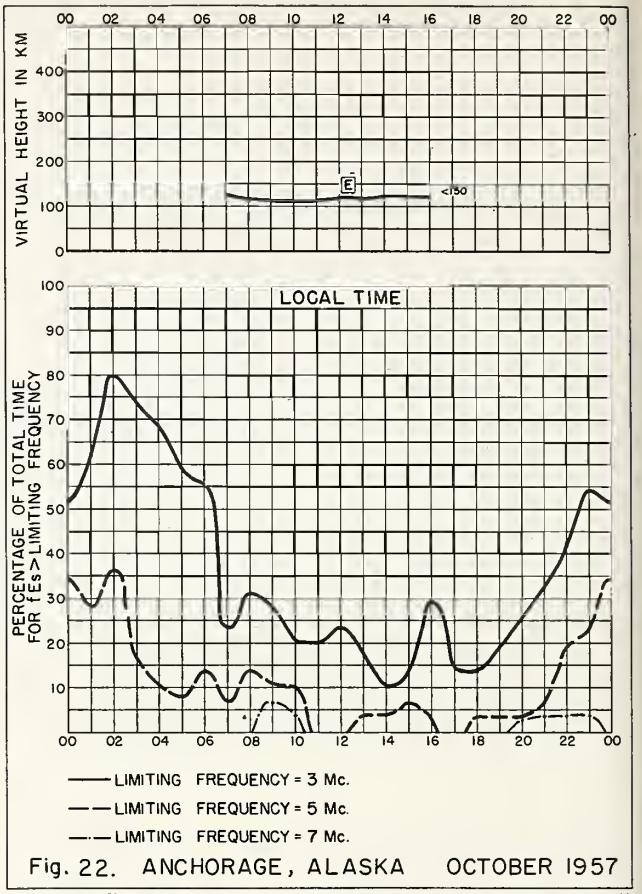


Fig. 22. ANCHORAGE, ALASKA OCTOBER 1957

NBS 490

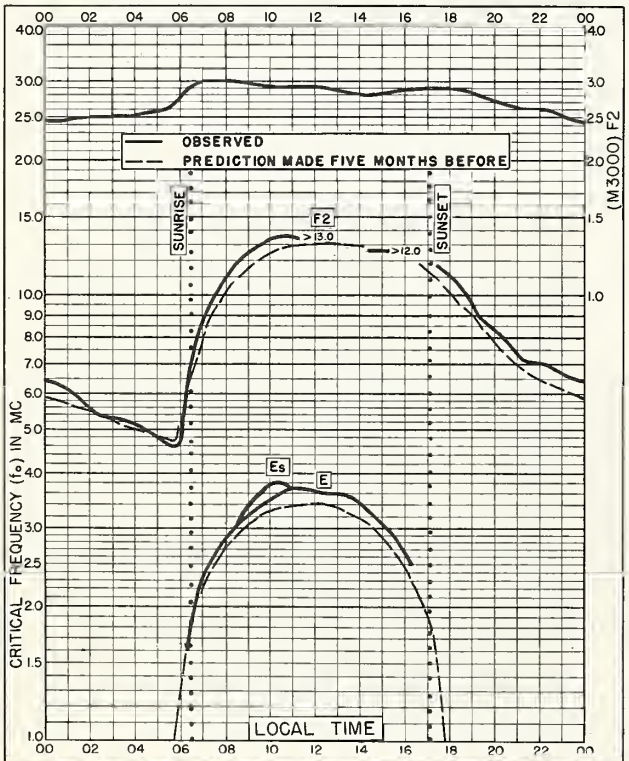


Fig. 23. De BILT, HOLLAND
52.1°N, 5.2°E OCTOBER 1957

NBS 503

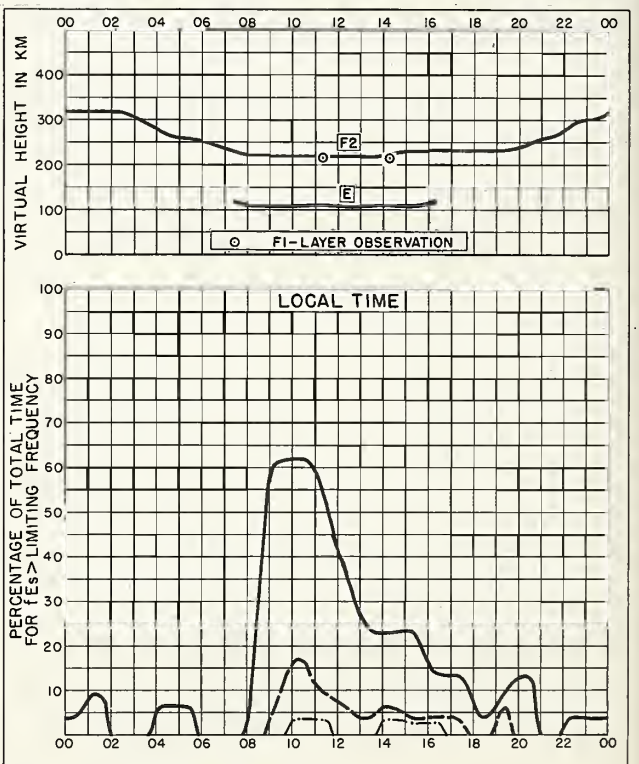


Fig. 24. De BILT, HOLLAND OCTOBER 1957

NBS 490

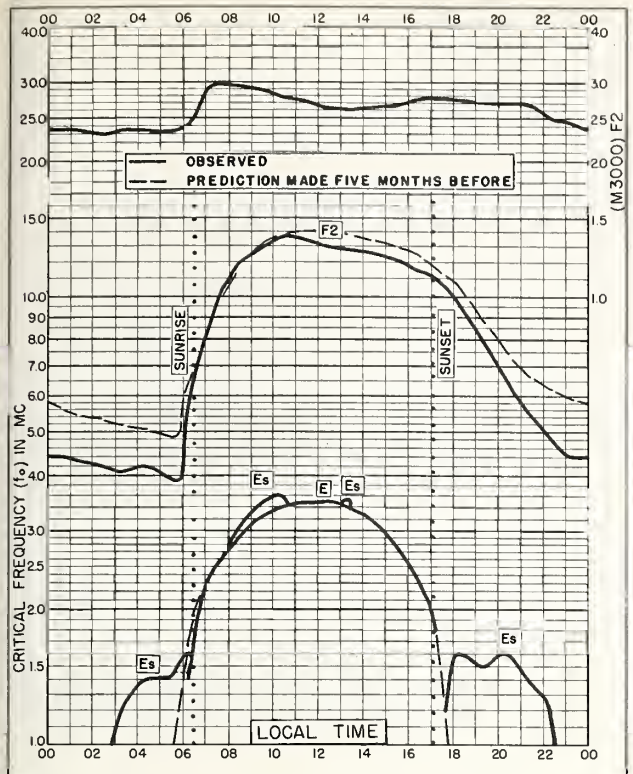


Fig. 25. ADAK, ALASKA
51.9°N, 176.6°W OCTOBER 1957

Commerce-Standards-Boulder, Colo. NBS 503

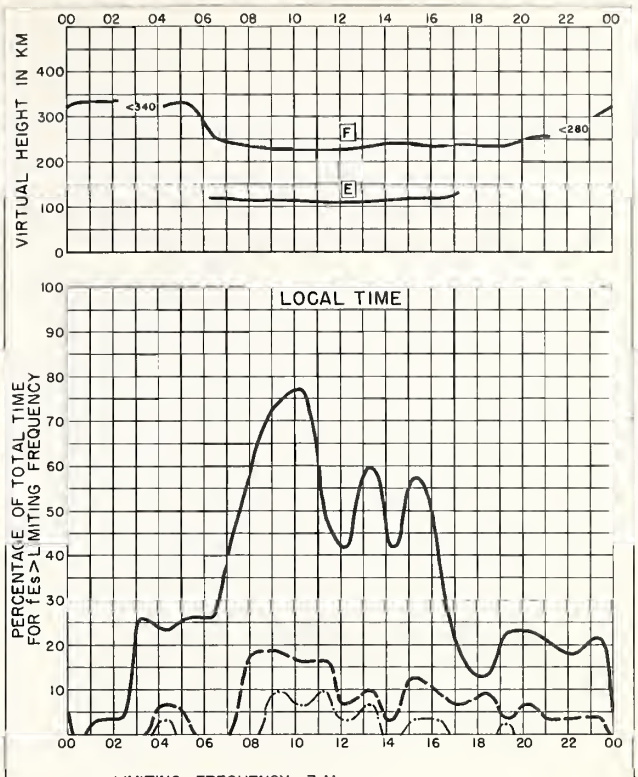


Fig. 26. ADAK, ALASKA OCTOBER 1957

Commerce-Standards-Boulder, Colo. NBS 490

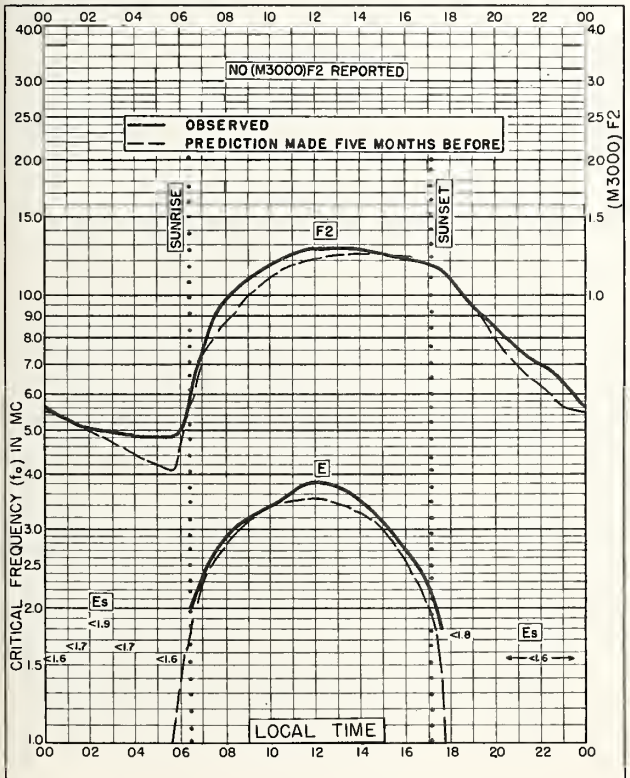


Fig. 27. WINNIPEG, CANADA
49.9°N, 97.4°W OCTOBER 1957

Commerce-Standards-Boulder, Colo. NBS 503

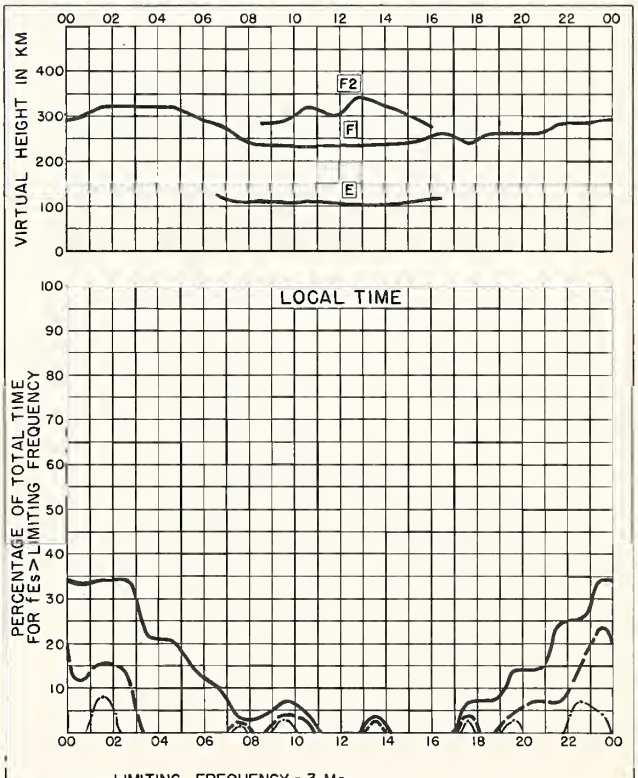


Fig. 28. WINNIPEG, CANADA OCTOBER 1957

Commerce-Standards-Boulder, Colo. NBS 490

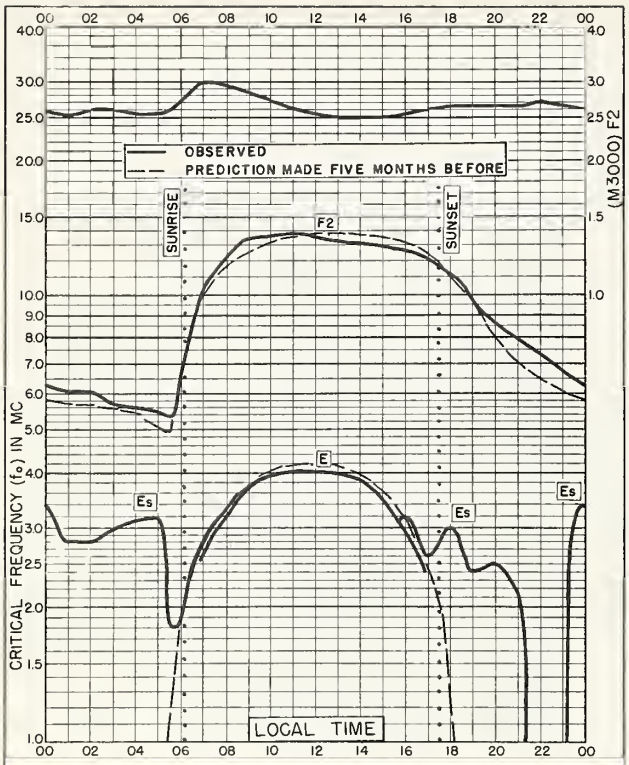


Fig. 29. WHITE SANDS, NEW MEXICO
32.3°N, 106.5°W OCTOBER 1957

NBS 503

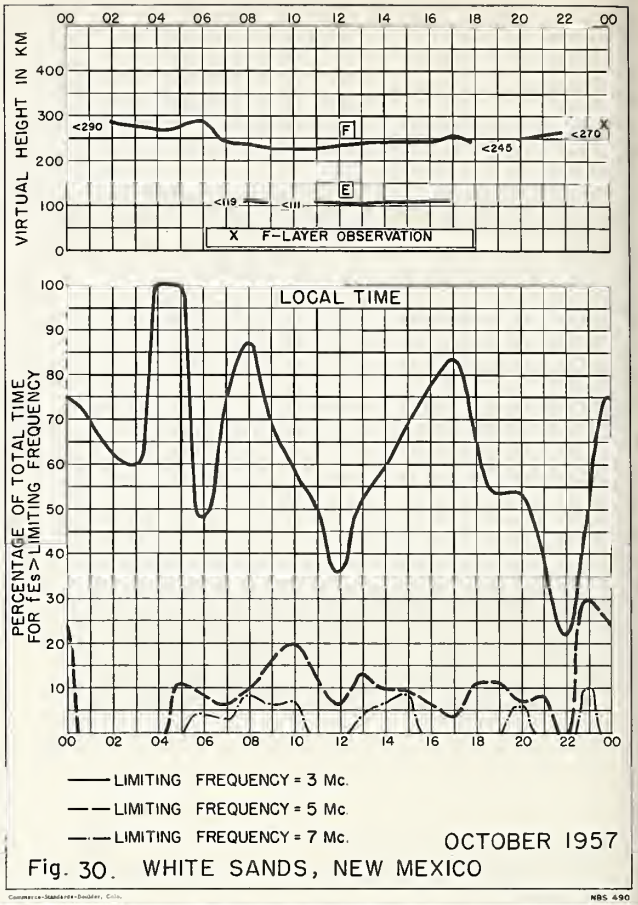


Fig. 30. WHITE SANDS, NEW MEXICO OCTOBER 1957

Commerce-Standards-Boulder, Colo.

NBS 490

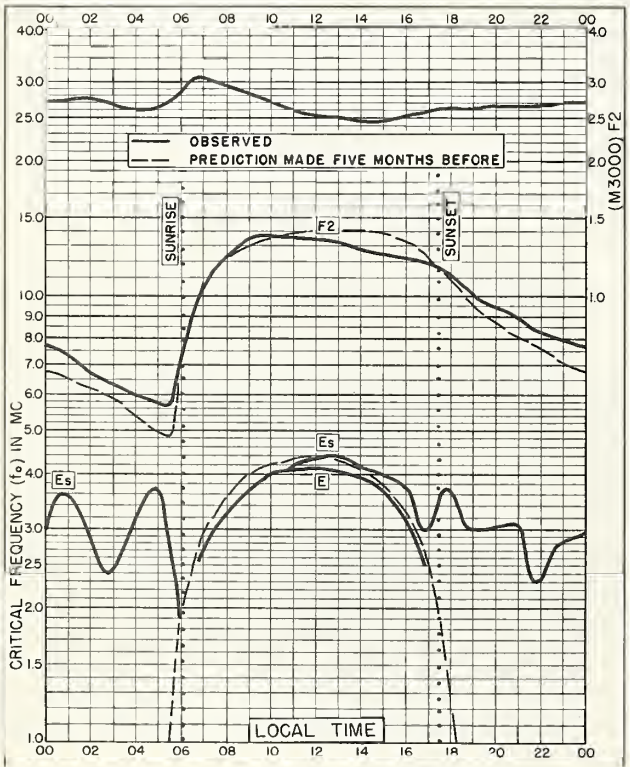


Fig. 31. GRAND BAHAMA I.
26.6°N, 78.2°W OCTOBER 1957

NBS 503

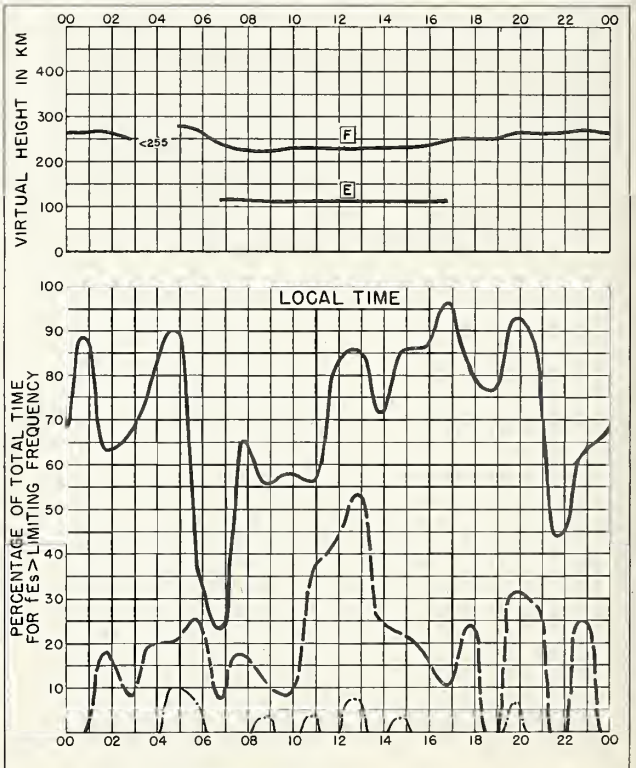


Fig. 32. GRAND BAHAMA I. OCTOBER 1957

Commerce-Standards-Boulder, Colo.

NBS 490

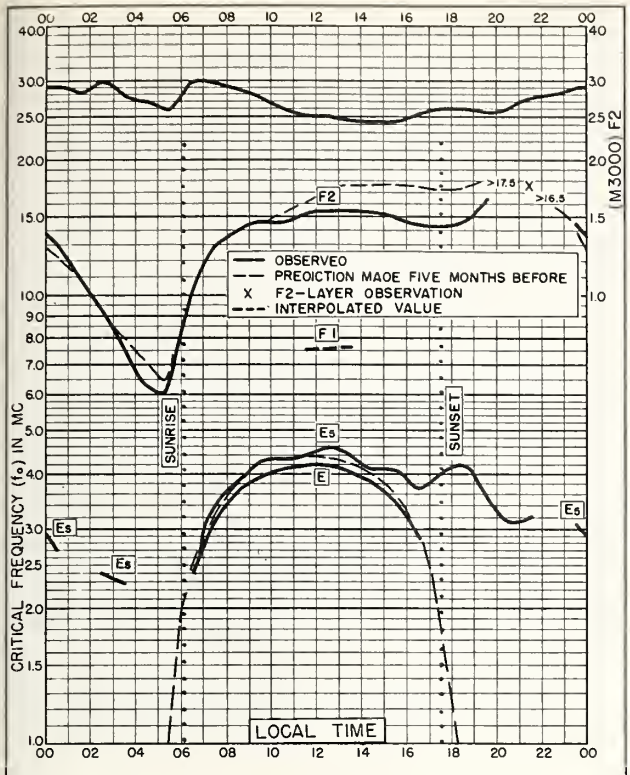


Fig. 33. OKINAWA I.
26.3°N, 127.8°E OCTOBER 1957

NBS 503

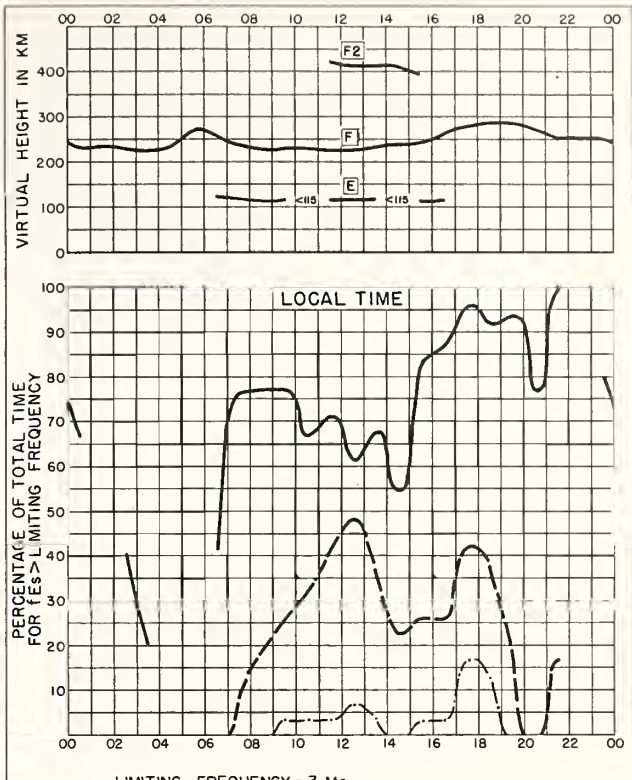


Fig. 34. OKINAWA I. OCTOBER 1957

Commerce-Standards-Boulder, Colo. NBS 490

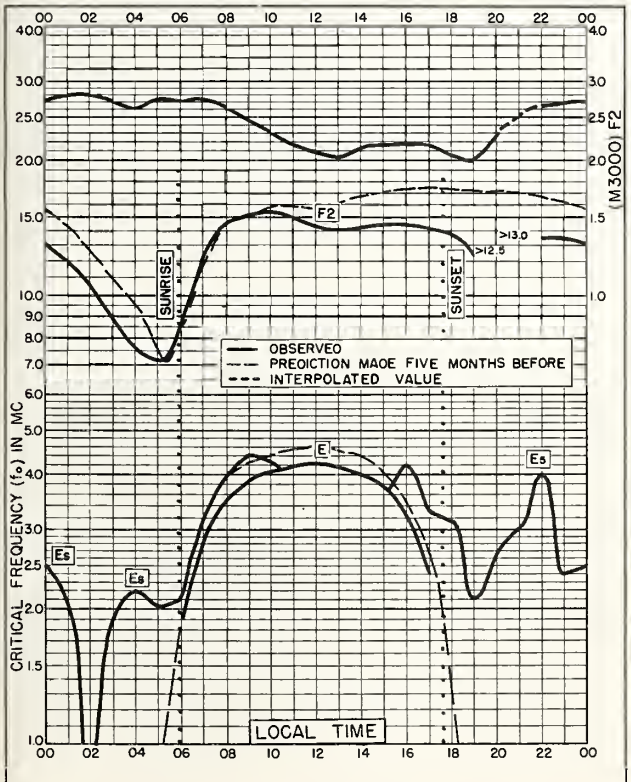


Fig. 35. BAGUIO, P.I.
16.4°N, 120.6°E OCTOBER 1957

NBS 503

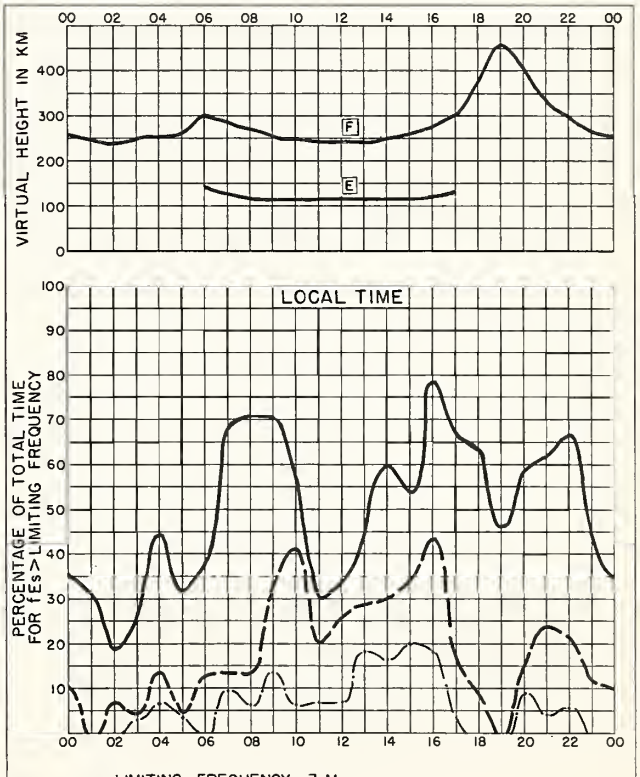


Fig. 36. BAGUIO, P.I. OCTOBER 1957

Commerce-Standards-Boulder, Colo. NBS 490

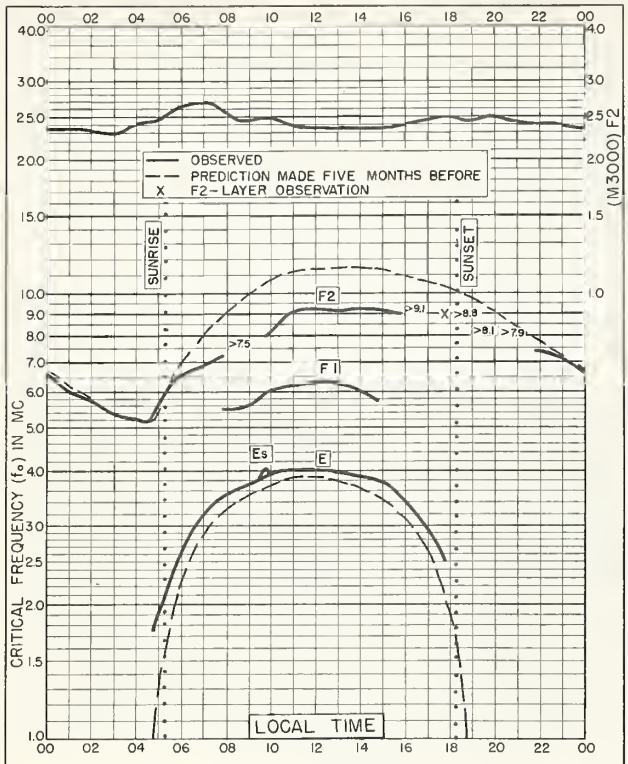


Fig. 37. HOBART, TASMANIA
42.9°S, 147.2°E OCTOBER 1957

NBS 503

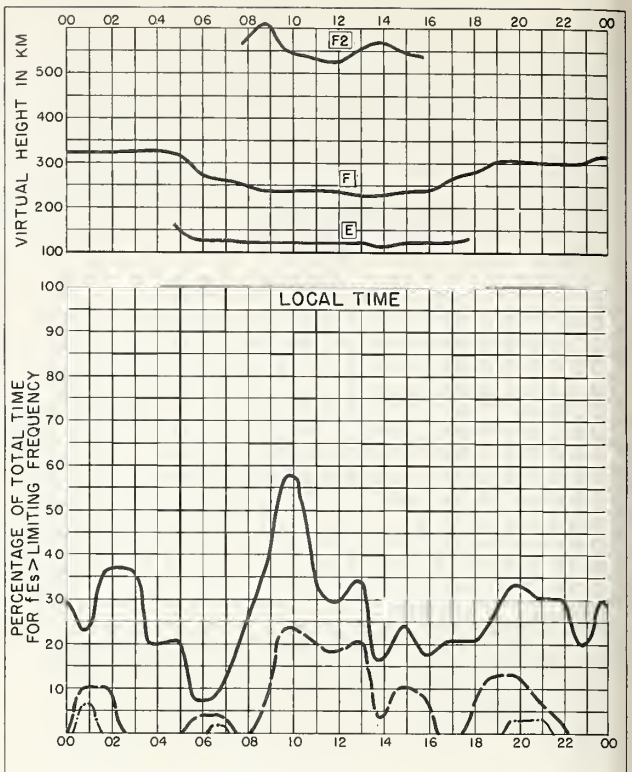


Fig. 38. HOBART, TASMANIA OCTOBER 1957

NBS 490

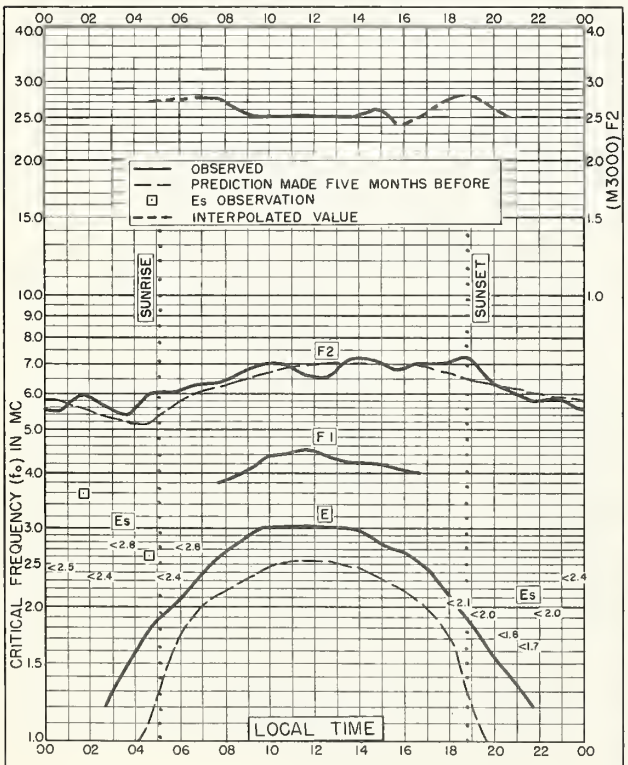


Fig. 39. RESOLUTE BAY, CANADA
74.7°N, 94.9°W SEPTEMBER 1957

NBS 503

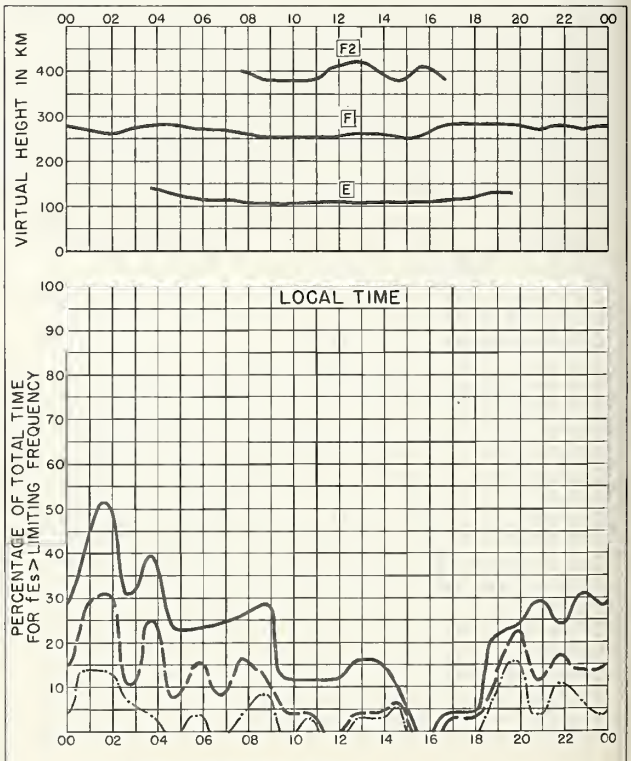


Fig. 40. RESOLUTE BAY, CANADA SEPTEMBER 1957

NBS 490

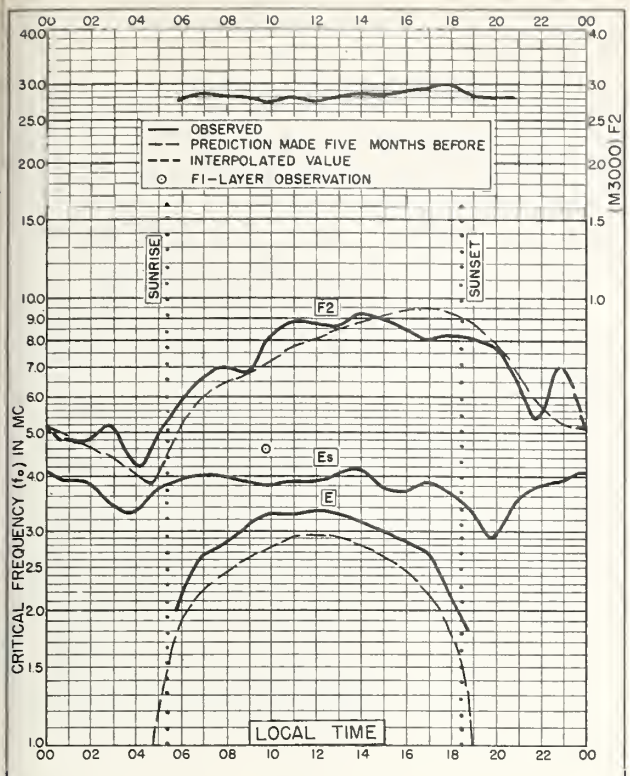


Fig. 41. SODANKYLA, FINLAND
67.4°N, 26.6°E SEPTEMBER 1957

NBS 503

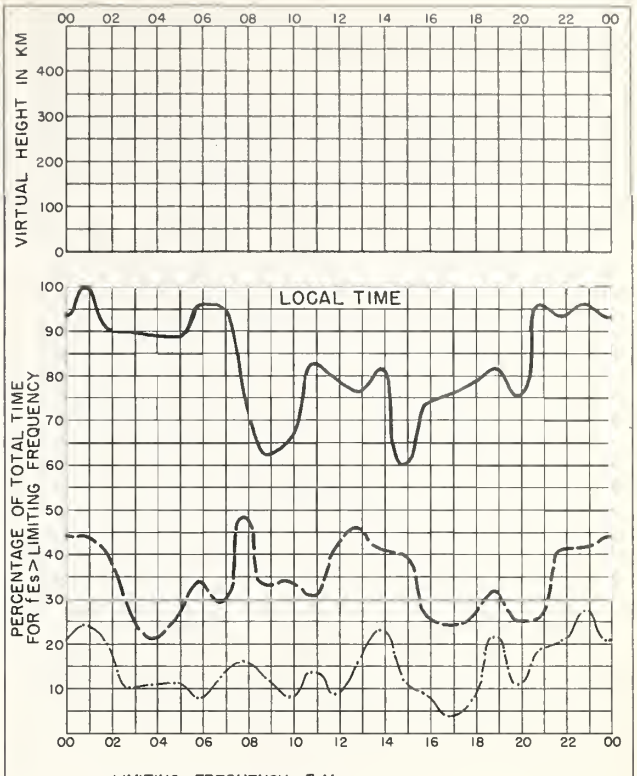


Fig. 42. SODANKYLA, FINLAND SEPTEMBER 1957

NBS 490

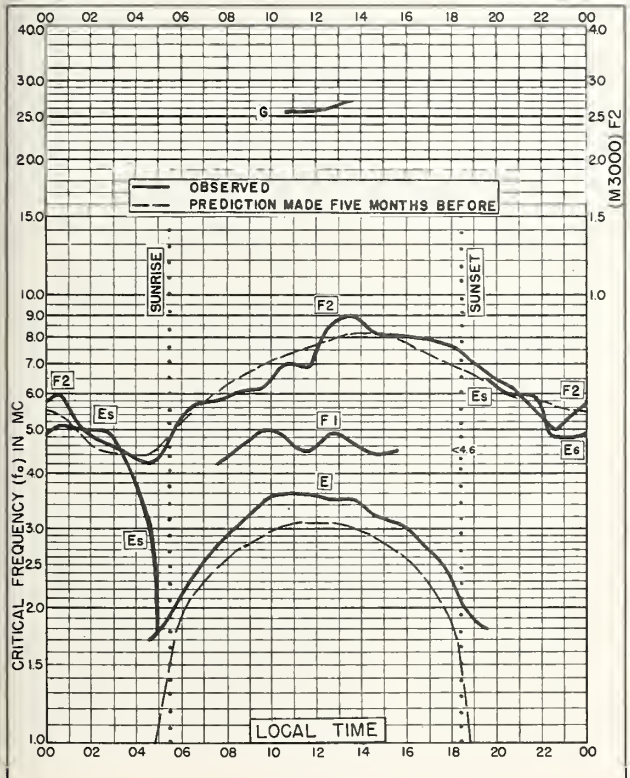


Fig. 43. BAKER LAKE, CANADA
64.3°N, 96.0°W SEPTEMBER 1957

NBS 503

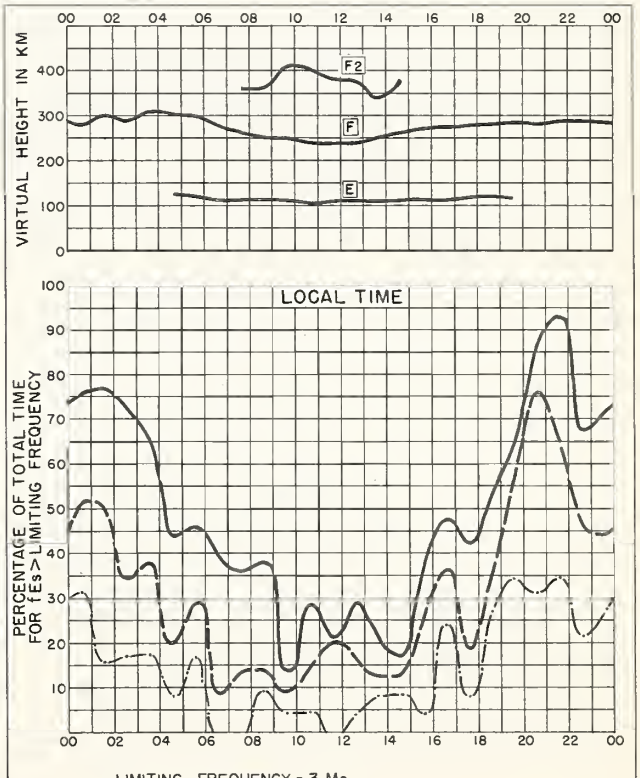


Fig. 44. BAKER LAKE, CANADA SEPTEMBER 1957

NBS 490

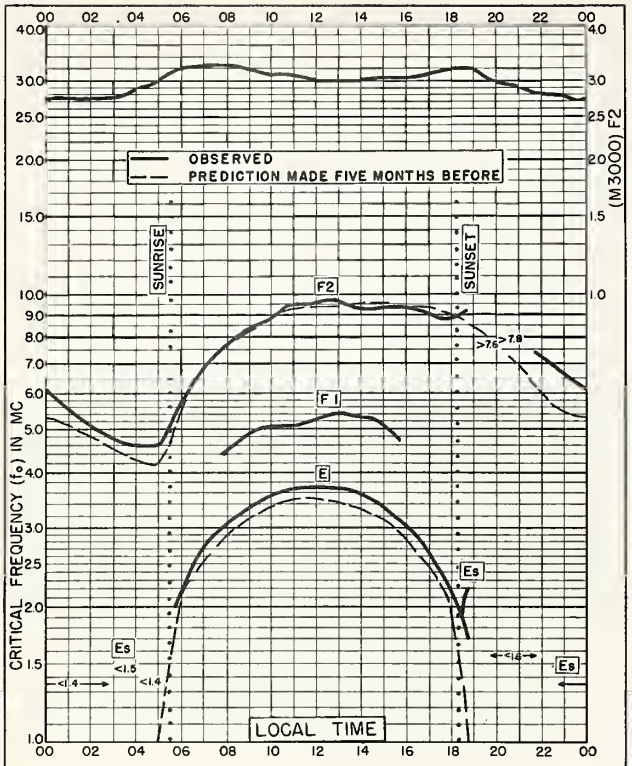
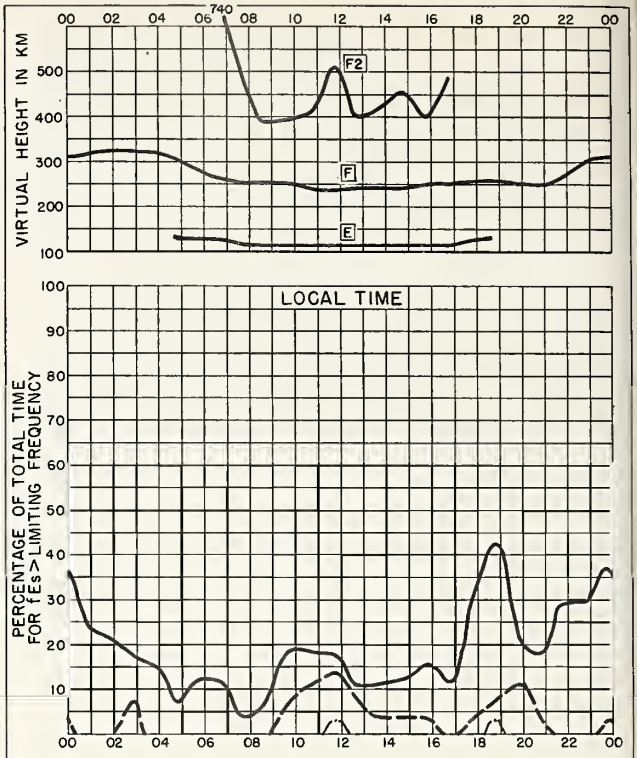


Fig. 45. INVERNESS, SCOTLAND
57.4°N, 4.2°W SEPTEMBER 1957

NBS 503



SEPTEMBER 1957

Fig. 46. INVERNESS, SCOTLAND

NBS 490

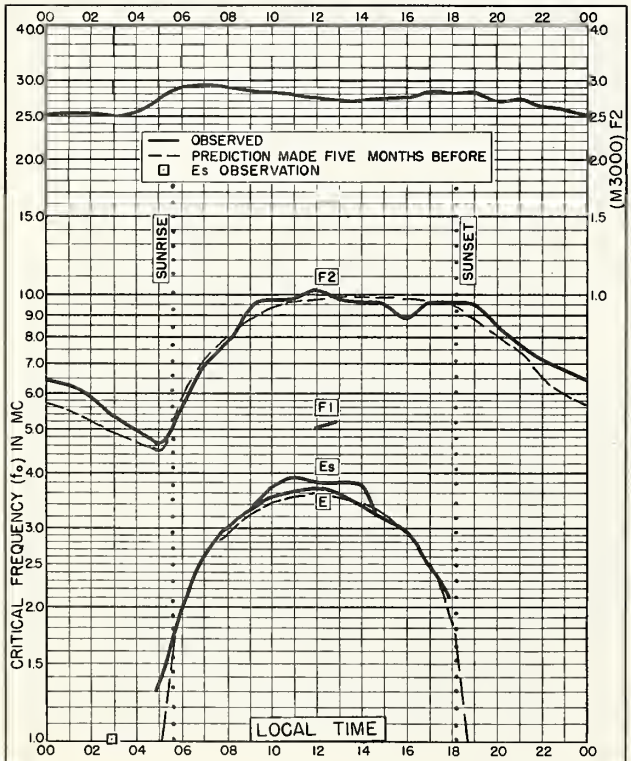
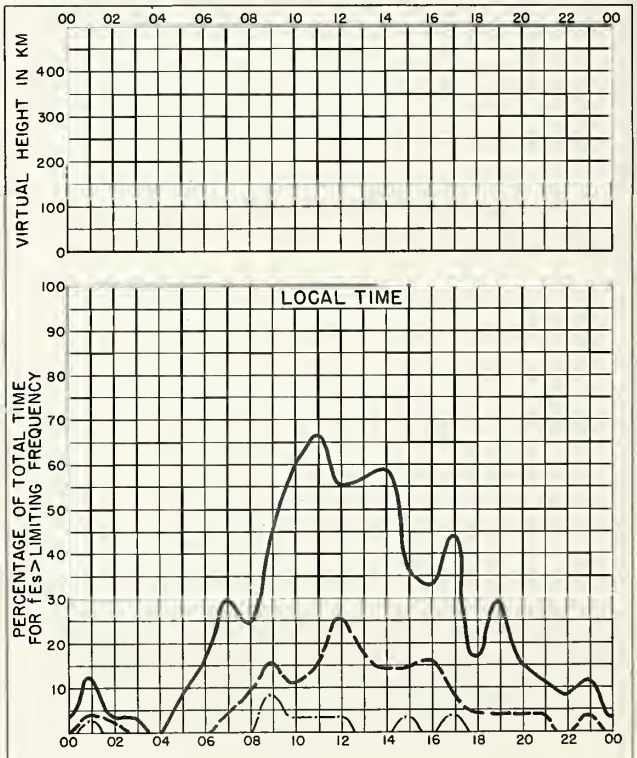


Fig. 47. JULIUSRUH/RÜGEN, GERMANY
54.6°N, 13.4°E SEPTEMBER 1957

NBS 503



SEPTEMBER 1957

Fig. 48. JULIUSRUH/RÜGEN, GERMANY

NBS 490

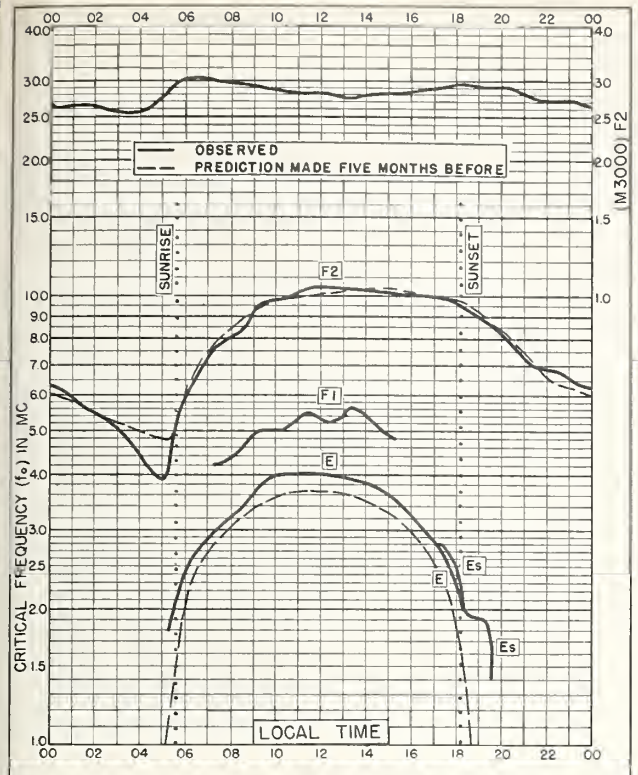


Fig. 49. De BILT, HOLLAND
52.1°N, 5.2°E SEPTEMBER 1957

NBS 503

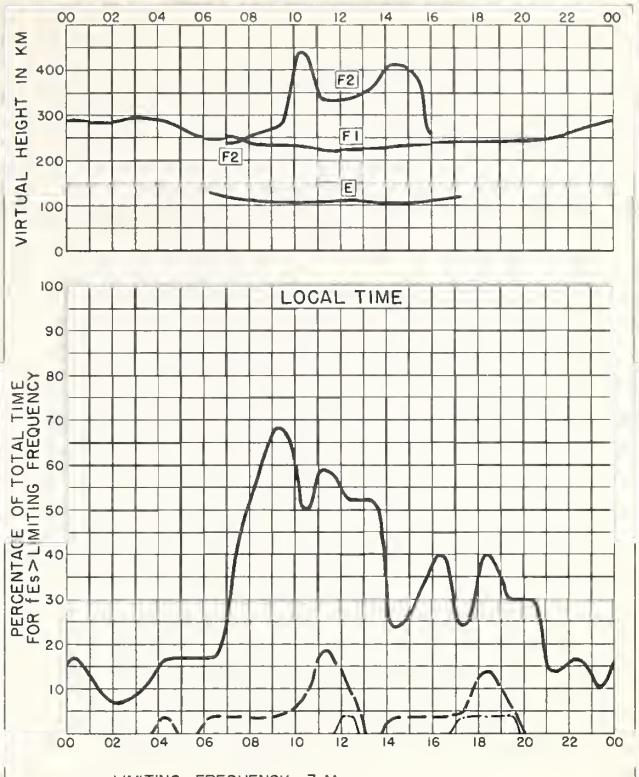


Fig. 50. De BILT, HOLLAND SEPTEMBER 1957

NBS 490

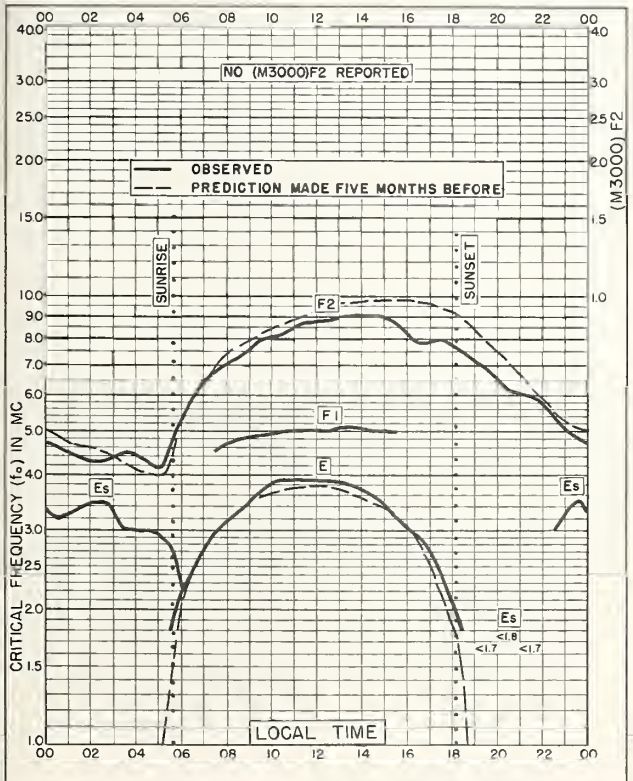


Fig. 51. WINNIPEG, CANADA
49.9°N, 97.4°W SEPTEMBER 1957

NBS 503

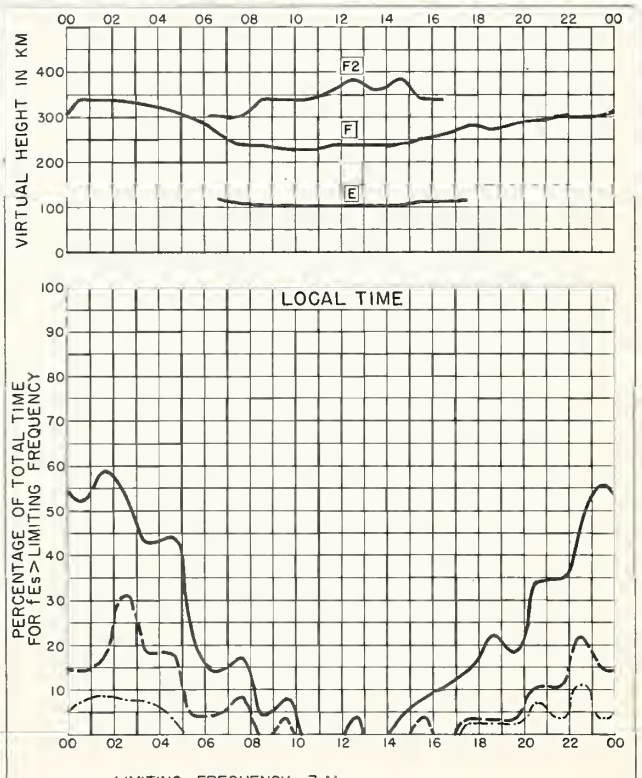


Fig. 52. WINNIPEG, CANADA SEPTEMBER 1957

NBS 490

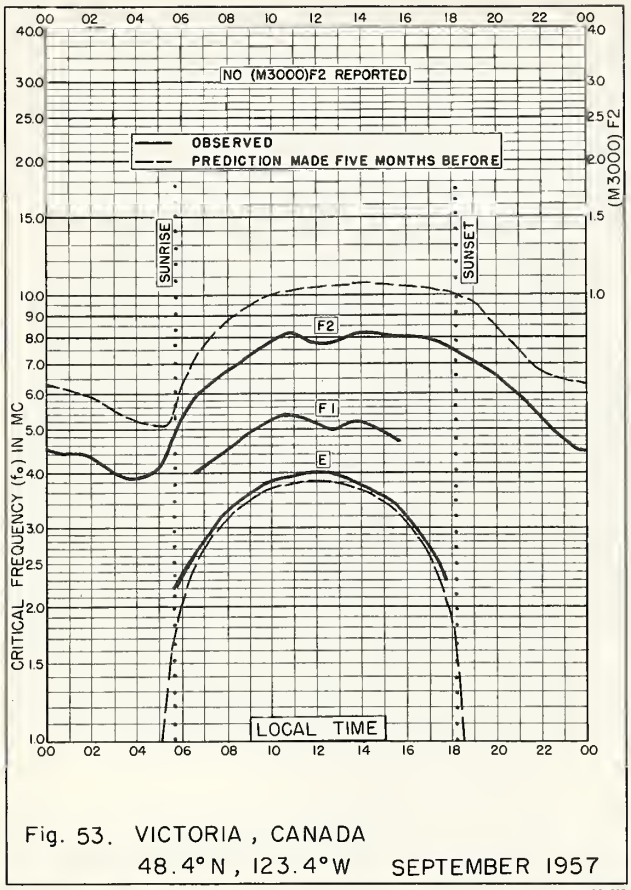


Fig. 53. VICTORIA, CANADA
48.4° N, 123.4° W SEPTEMBER 1957

NBS 503

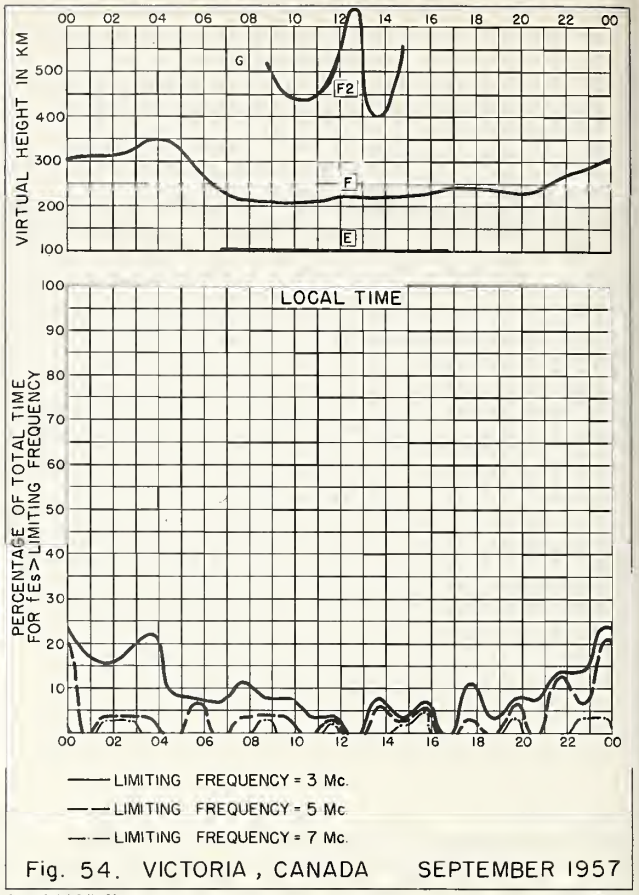


Fig. 54. VICTORIA, CANADA SEPTEMBER 1957

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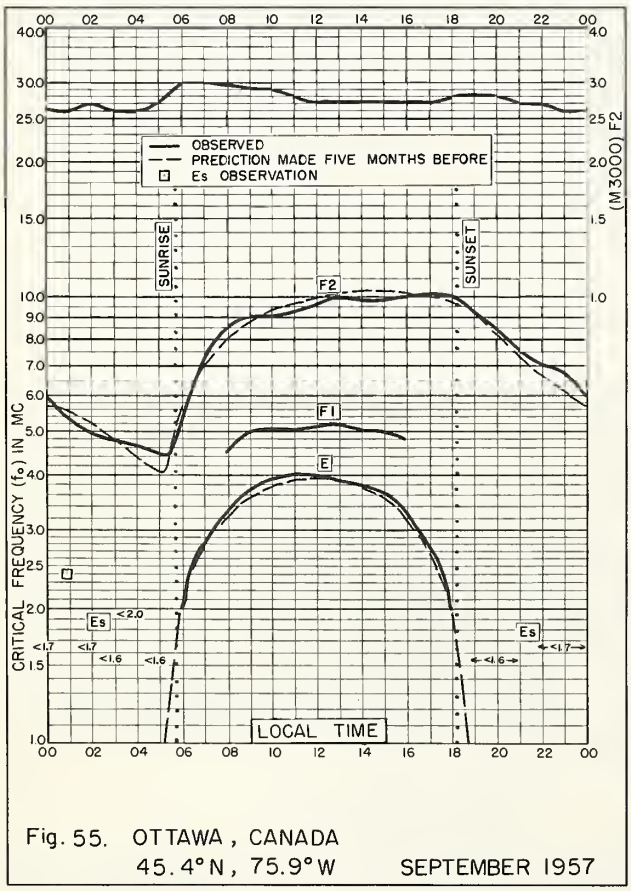

Fig. 55. OTTAWA, CANADA
45.4° N, 75.9° W SEPTEMBER 1957

NBS 503

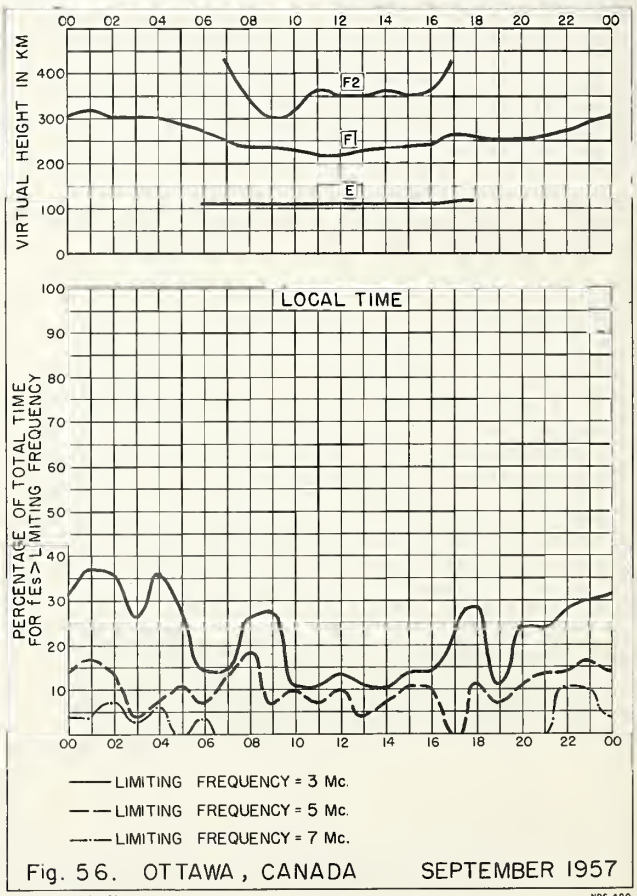

Fig. 56. OTTAWA, CANADA SEPTEMBER 1957

Commerce-Standards-Boulder, Colo.

NBS 490

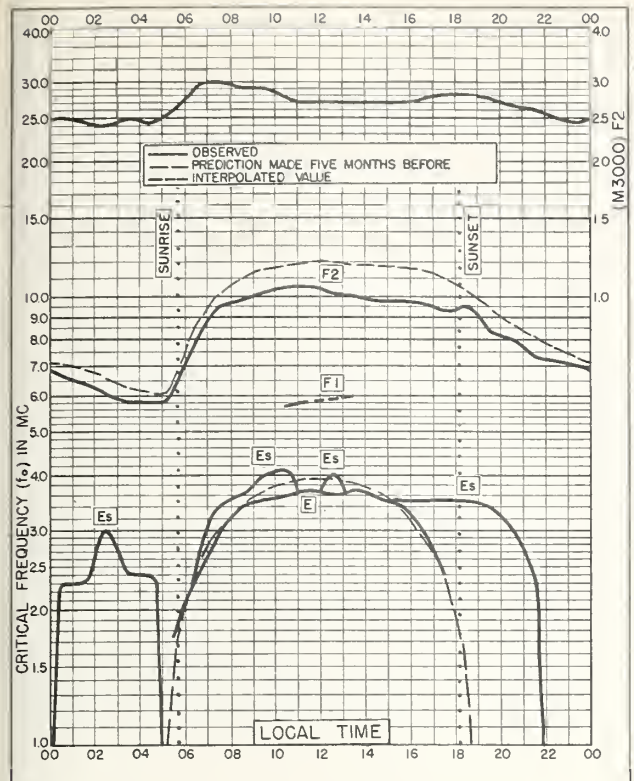

Fig. 57. WAKKANAI, JAPAN
45.4°N, 141.7°E SEPTEMBER 1957

NBS 503

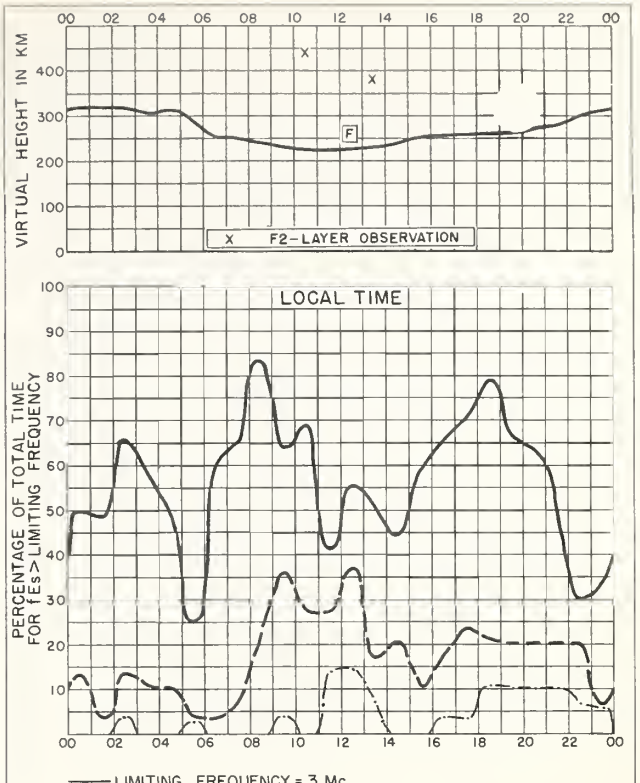

Fig. 58. WAKKANAI, JAPAN SEPTEMBER 1957

NBS 490

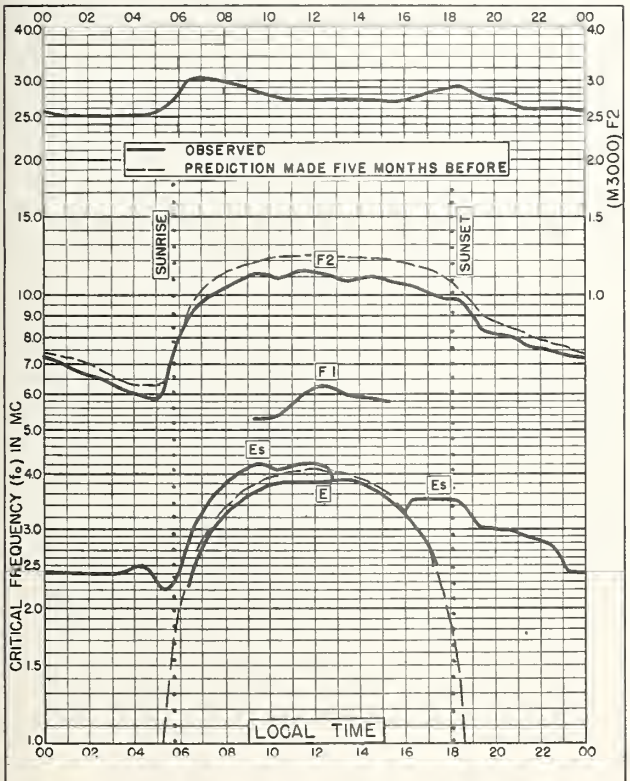

Fig. 59. AKITA, JAPAN
39.7°N, 140.1°E SEPTEMBER 1957

NBS 503

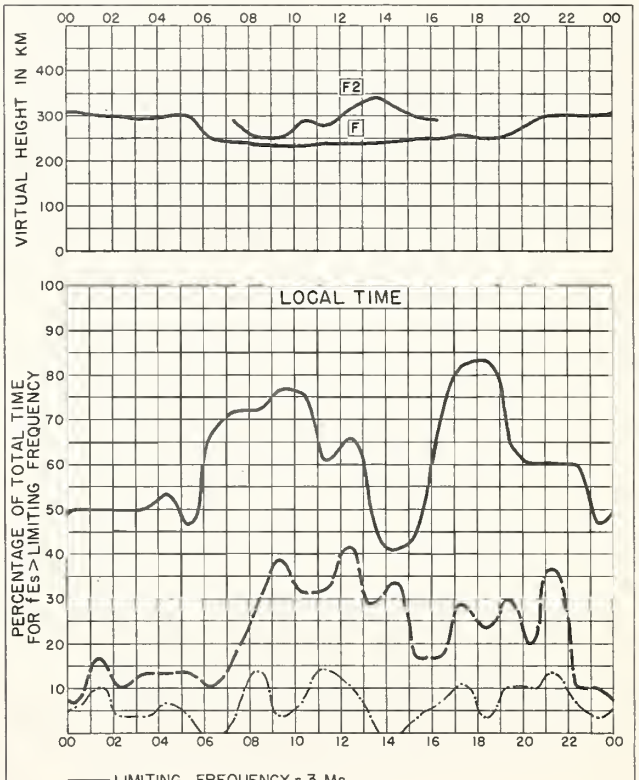

Fig. 60. AKITA, JAPAN SEPTEMBER 1957

NBS 490

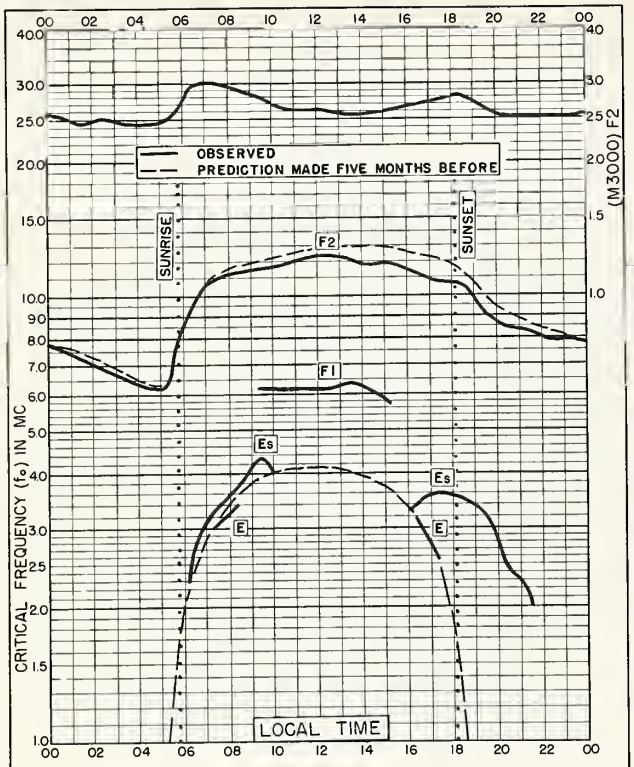

Fig. 61. TOKYO, JAPAN
35.7°N, 139.5°E SEPTEMBER 1957

NBS 503

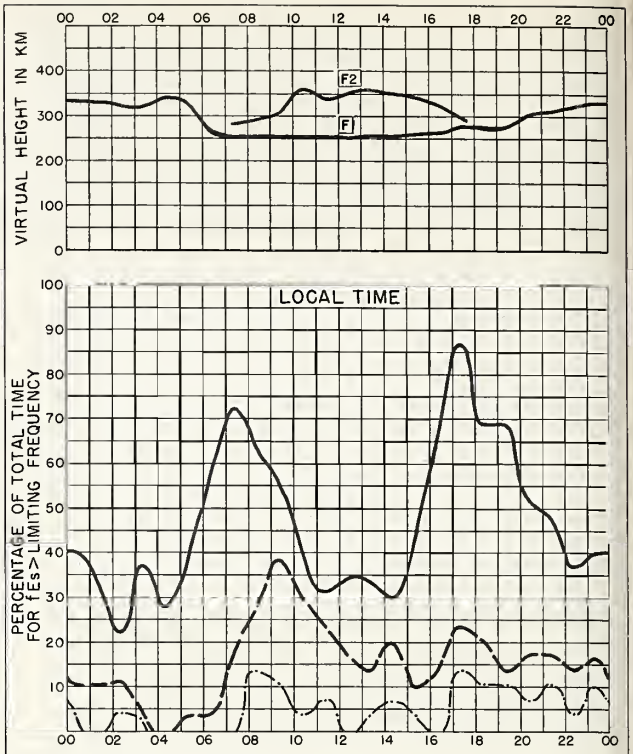

Fig. 62. TOKYO, JAPAN SEPTEMBER 1957

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NBS 490

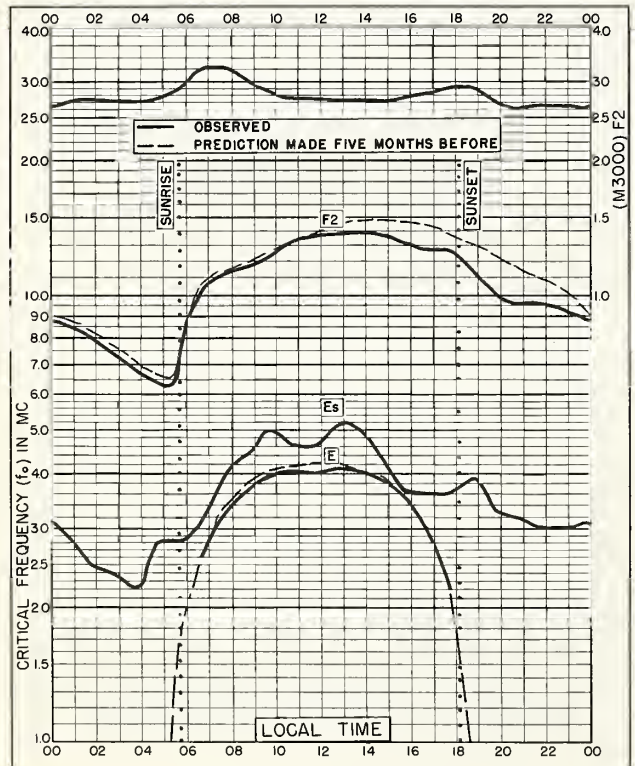

Fig. 63. YAMAGAWA, JAPAN
31.2°N, 130.6°E SEPTEMBER 1957

NBS 503

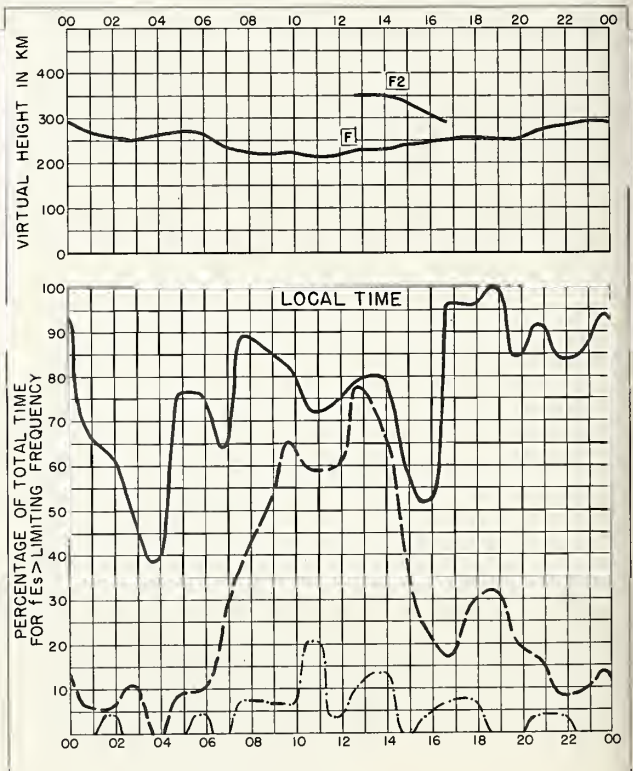

Fig. 64. YAMAGAWA, JAPAN SEPTEMBER 1957

Commerce-Standards-Boulder, Colo.

NBS 490

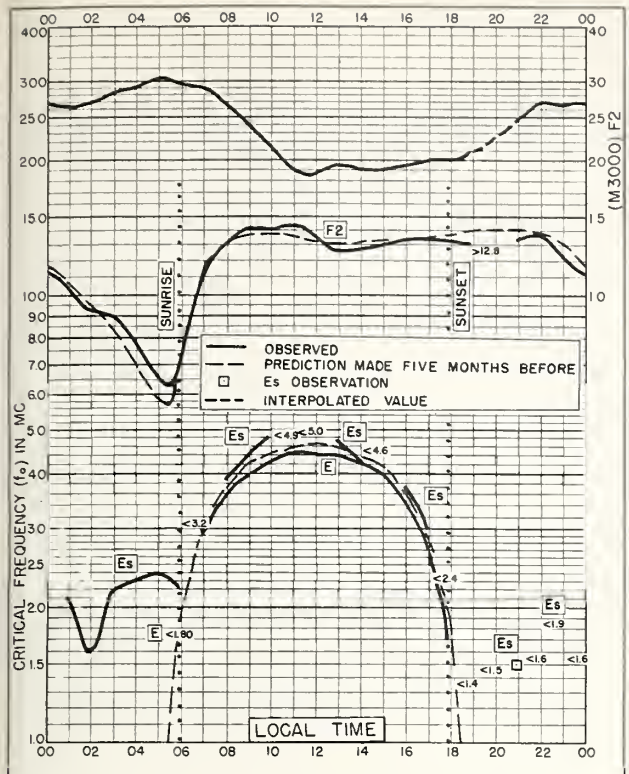

Fig. 65. SINGAPORE, BRITISH MALAYA
1.3°N, 103.8°E SEPTEMBER 1957

NBS 503

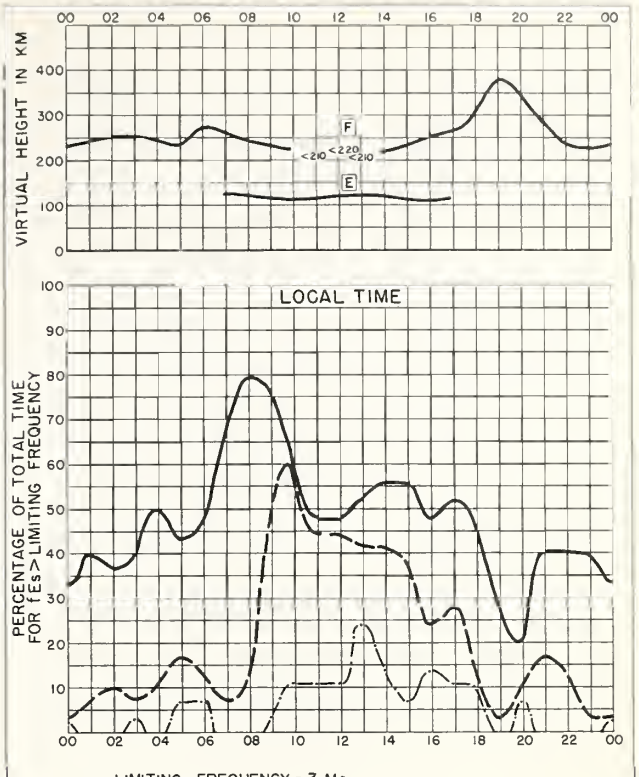

Fig. 66. SINGAPORE, BRITISH MALAYA SEPTEMBER 1957

NBS 490

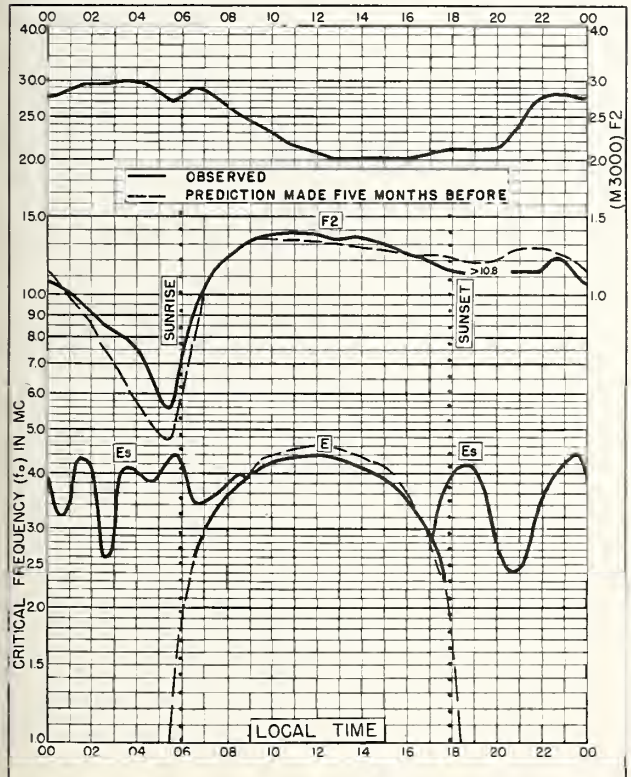

Fig. 67. TALARA, PERU
4.6°S, 81.3°W SEPTEMBER 1957

NBS 503

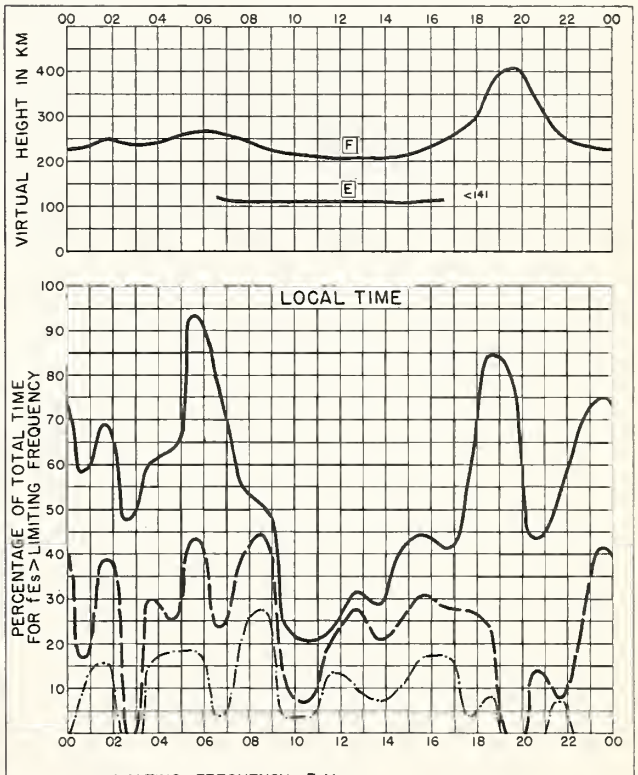

Fig. 68. TALARA, PERU SEPTEMBER 1957

NBS 490

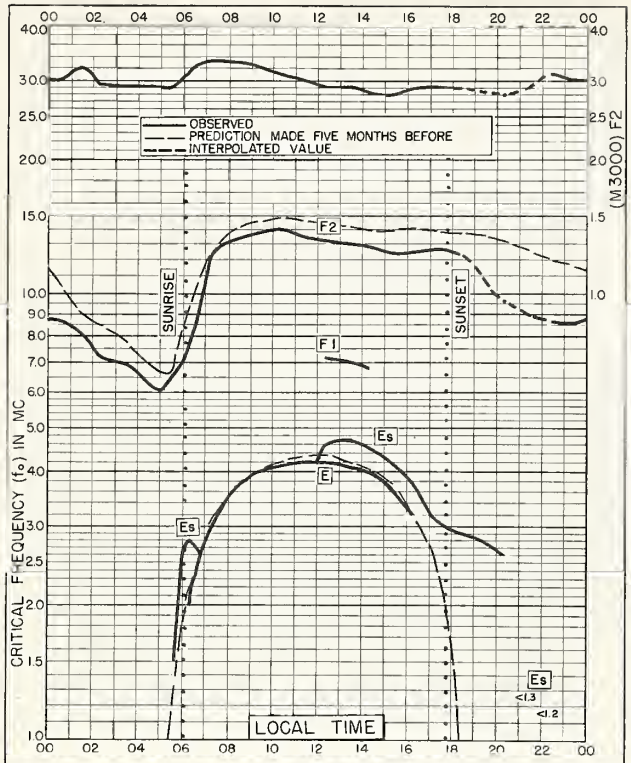

Fig. 69. RAROTONGA I.
21.2°S, 159.8°W SEPTEMBER 1957

NBS 503

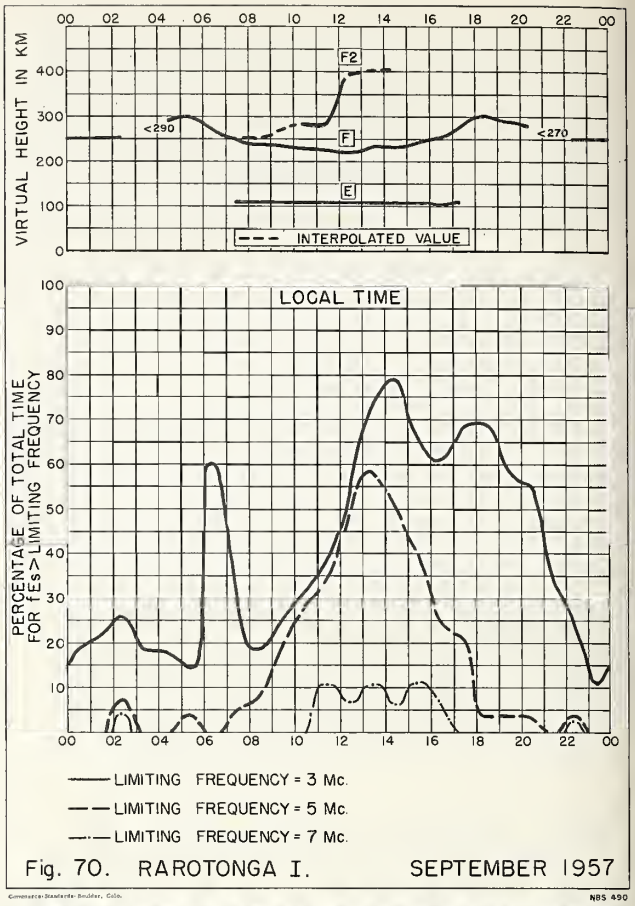

Fig. 70. RAROTONGA I. SEPTEMBER 1957

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NBS 490

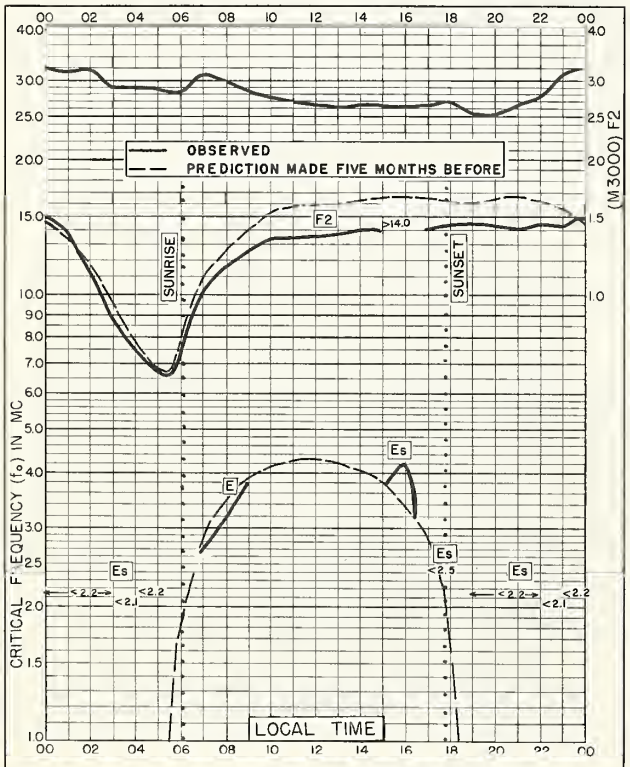


Fig. 71. SAO PAULO, BRAZIL
23.5°S, 46.5°W SEPTEMBER 1957

NBS 503

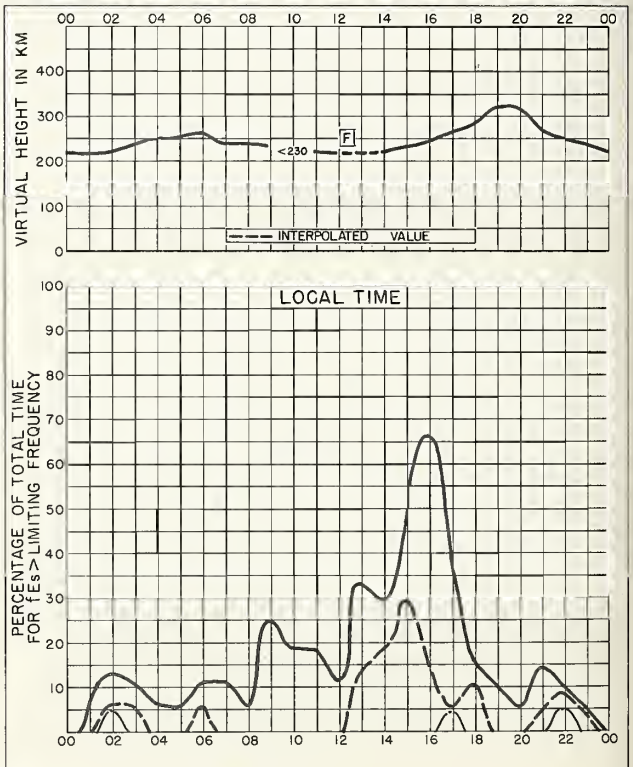


Fig 72. SAO PAULO, BRAZIL SEPTEMBER 1957

Commerce-Stanfords-Boulder, Colo.

NBS 490

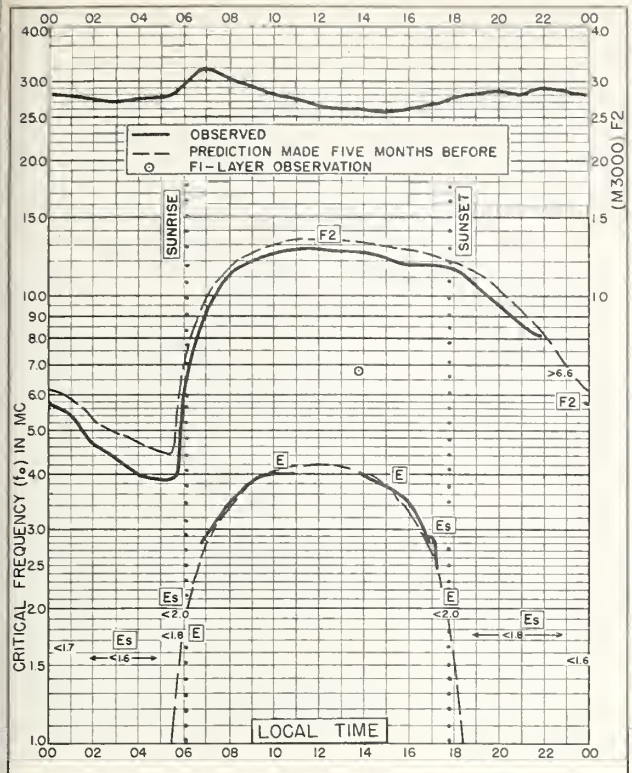
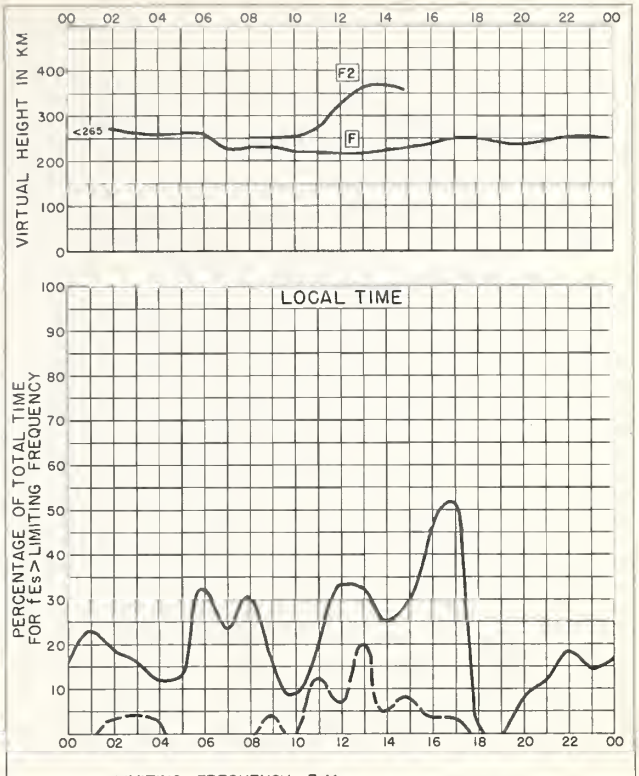


Fig. 73. JOHANNESBURG, UNION OF S. AFRICA
26.2°S, 28.0°E SEPTEMBER 1957

NBS 503



SEPTEMBER 1957

Fig. 74. JOHANNESBURG, UNION OF S. AFRICA

NBS 490

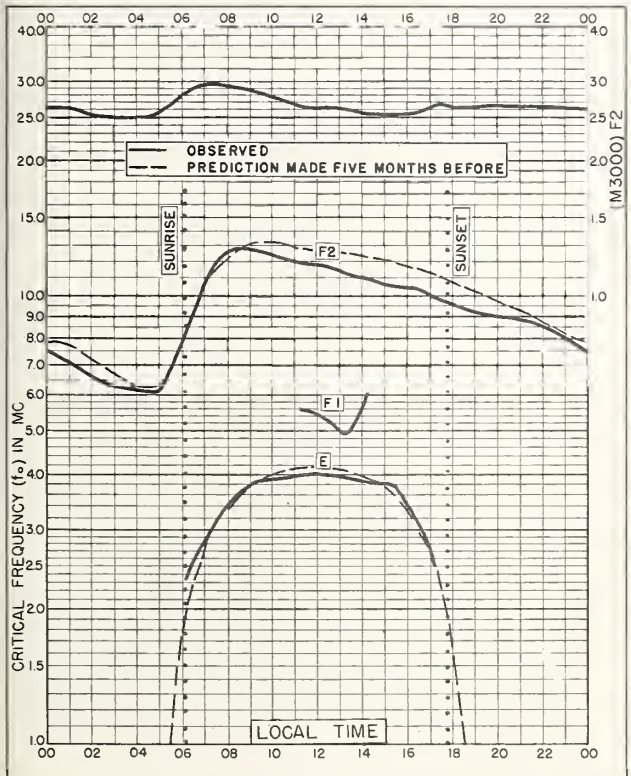
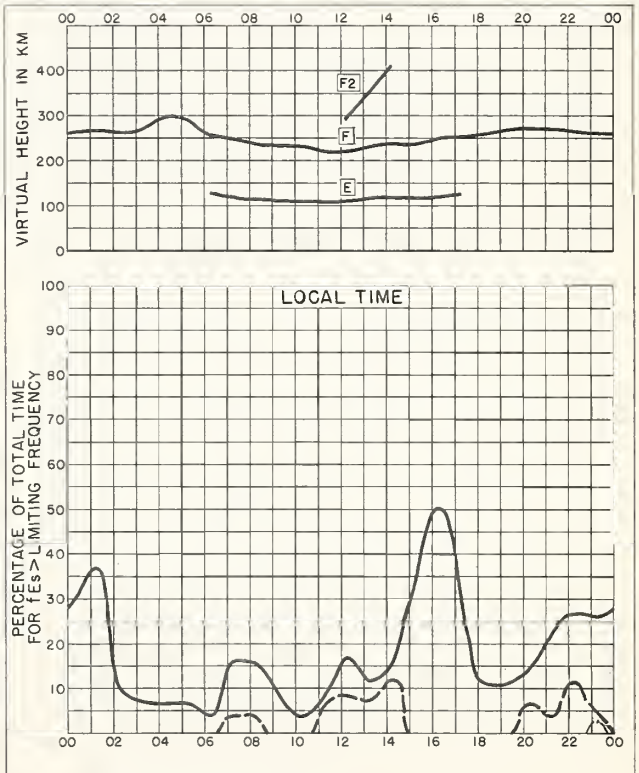


Fig. 75. BRISBANE, AUSTRALIA
27.5°S, 152.9°E SEPTEMBER 1957

NBS 503



SEPTEMBER 1957

Fig. 76. BRISBANE, AUSTRALIA

NBS 490

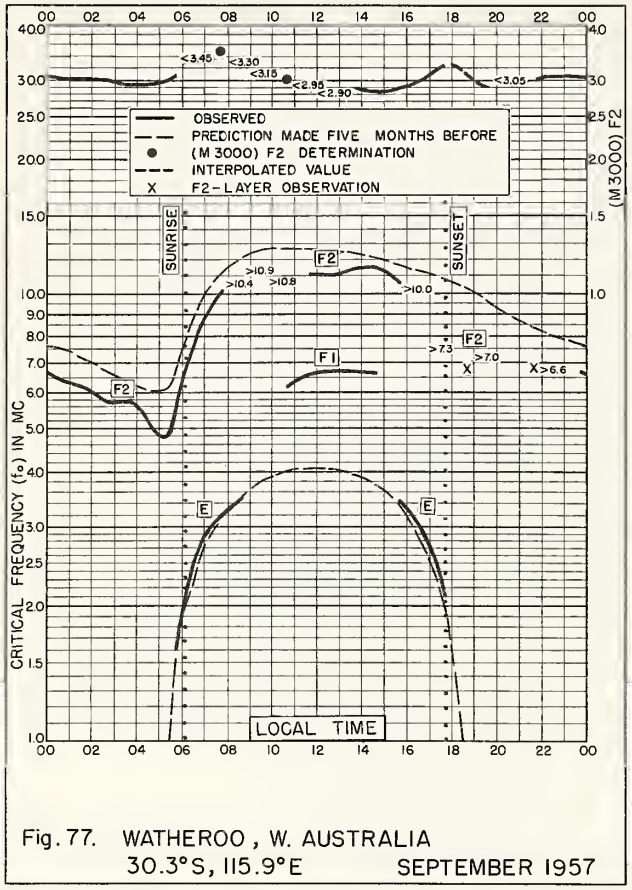


Fig. 77. WATHEROO, W. AUSTRALIA
30.3°S, 115.9°E SEPTEMBER 1957

NBS 503

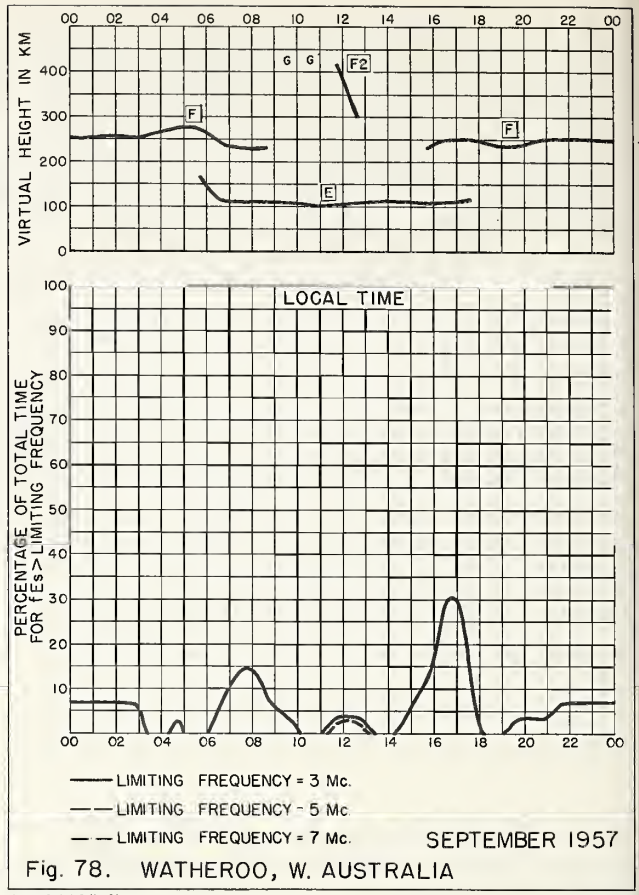


Fig. 78. WATHEROO, W. AUSTRALIA SEPTEMBER 1957

NBS 490

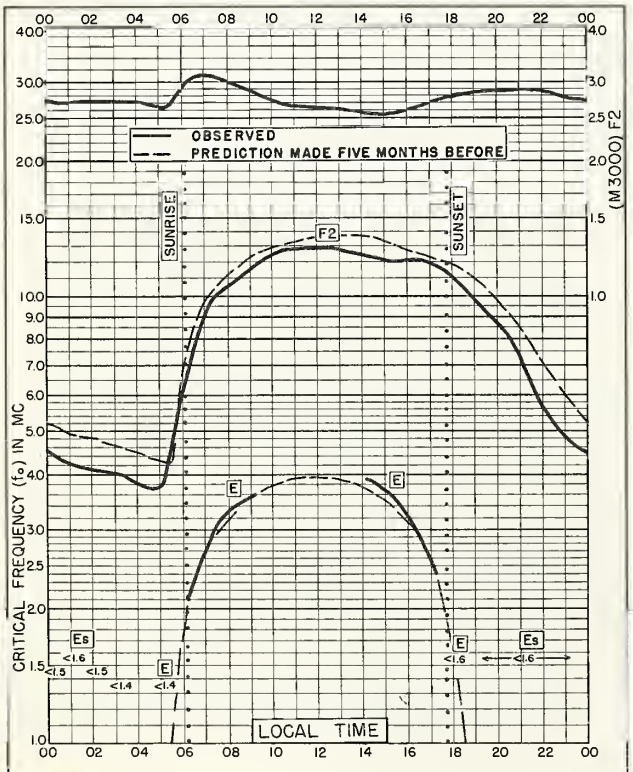


Fig. 79. CAPETOWN, UNION OF S. AFRICA
34.1°S, 18.3°E SEPTEMBER 1957

NBS 503

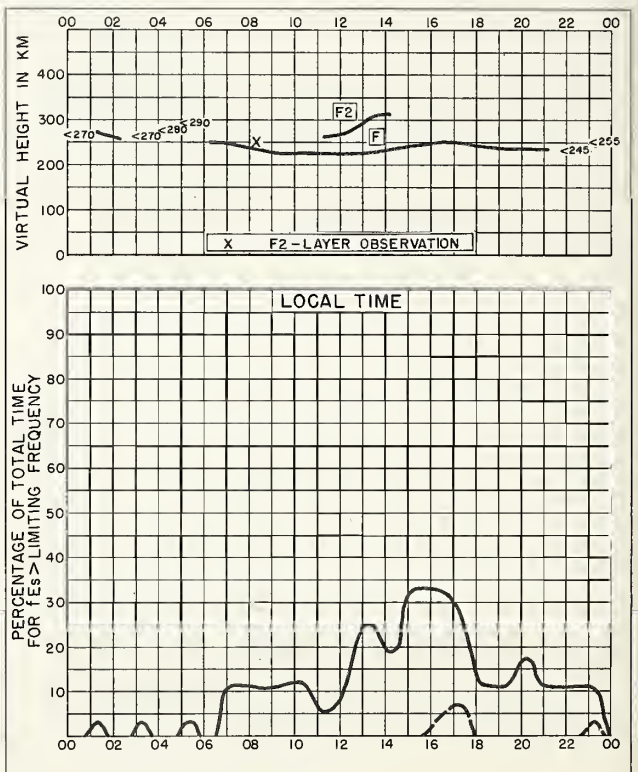


Fig. 80. CAPETOWN, UNION OF S. AFRICA SEPTEMBER 1957

NBS 490

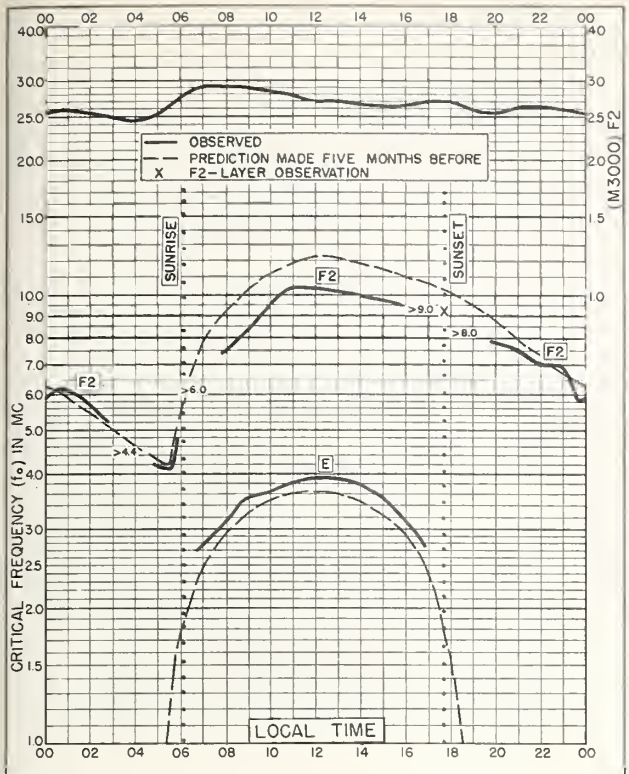


Fig. 81. HOBART, TASMANIA
42.9°S, 147.2°E SEPTEMBER 1957

NBS 503

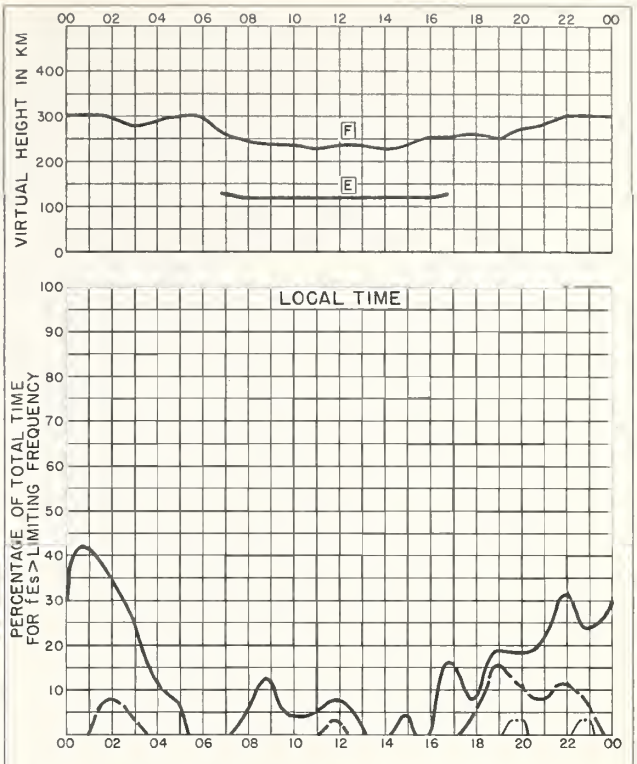


Fig. 82. HOBART, TASMANIA SEPTEMBER 1957

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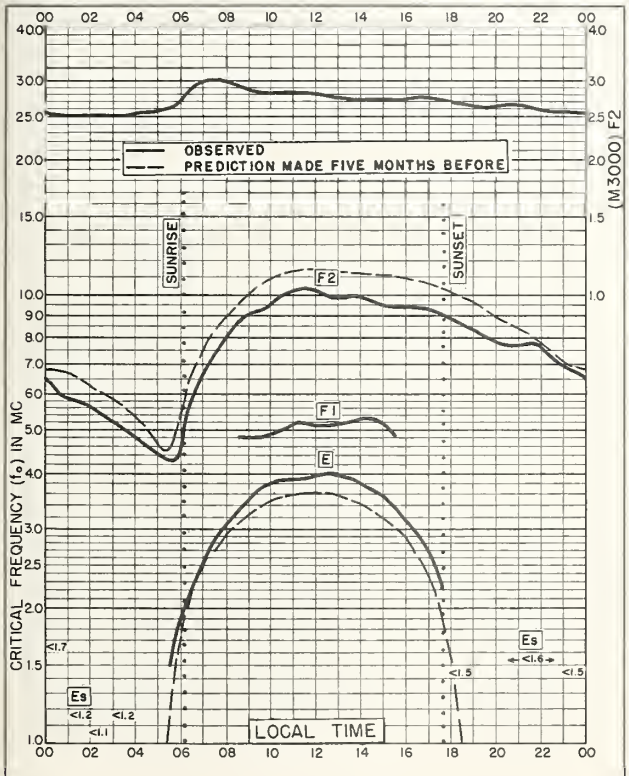

Fig. 83. CHRISTCHURCH, NEW ZEALAND
43.6°S, 172.8°E SEPTEMBER 1957

NBS 503

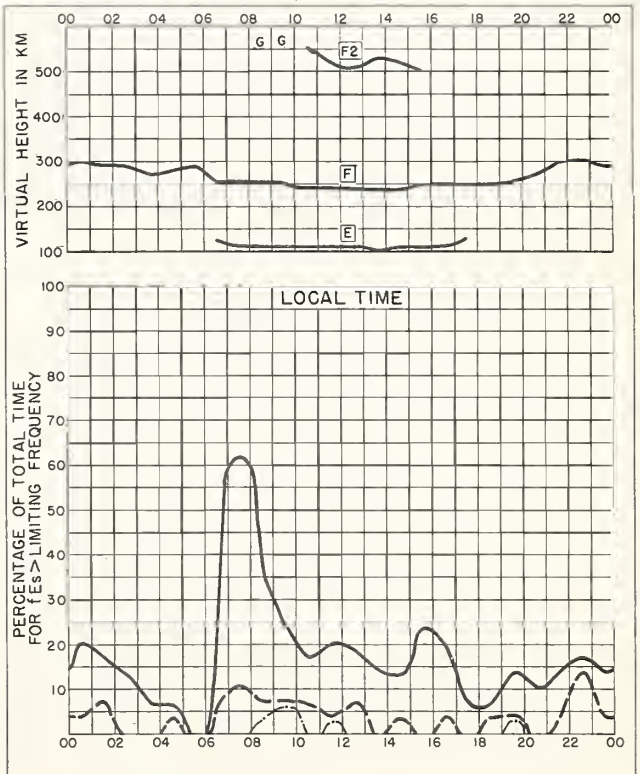

Fig. 84. CHRISTCHURCH, NEW ZEALAND SEPTEMBER 1957

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NBS 490

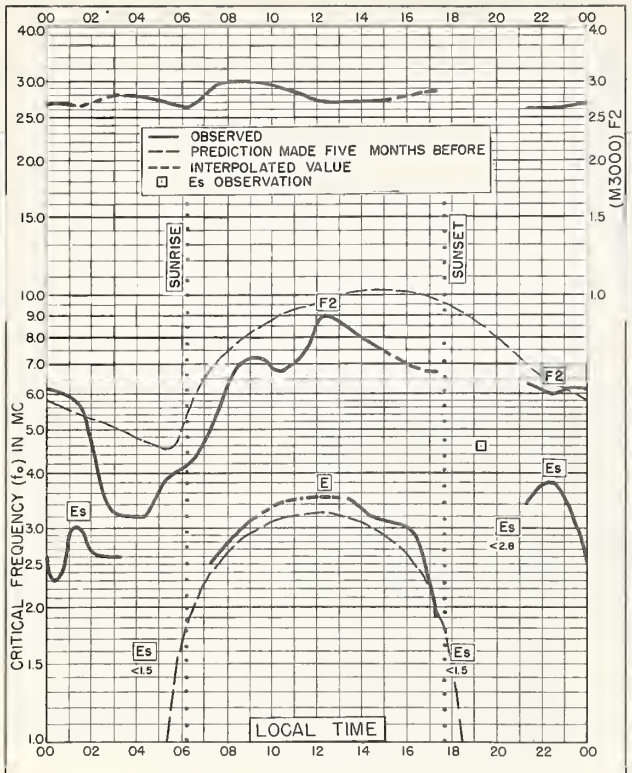


Fig. 85. CAMPBELL I.
52.5°S, 169.2°E SEPTEMBER 1957

NBS 503

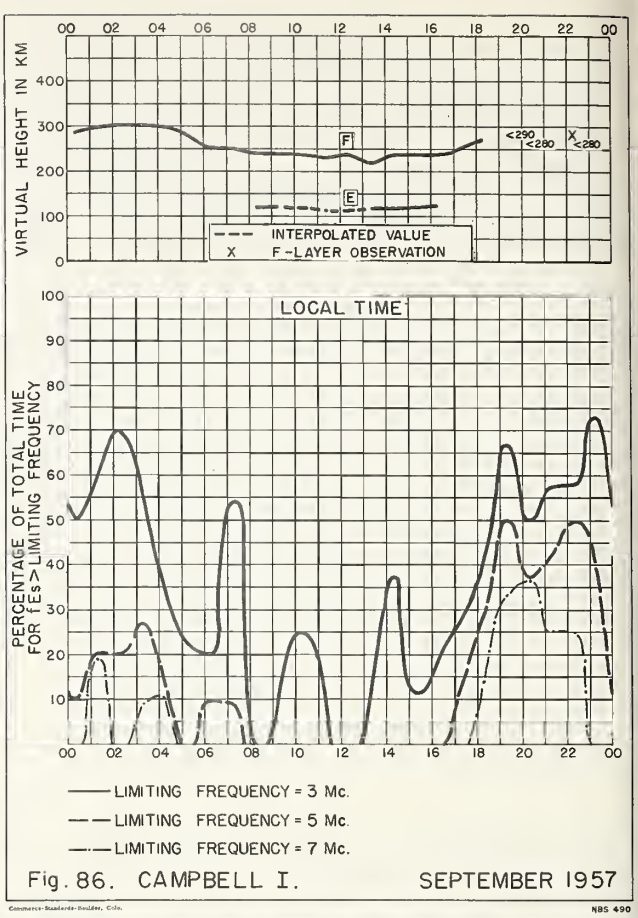


Fig. 86. CAMPBELL I. SEPTEMBER 1957

NBS 490

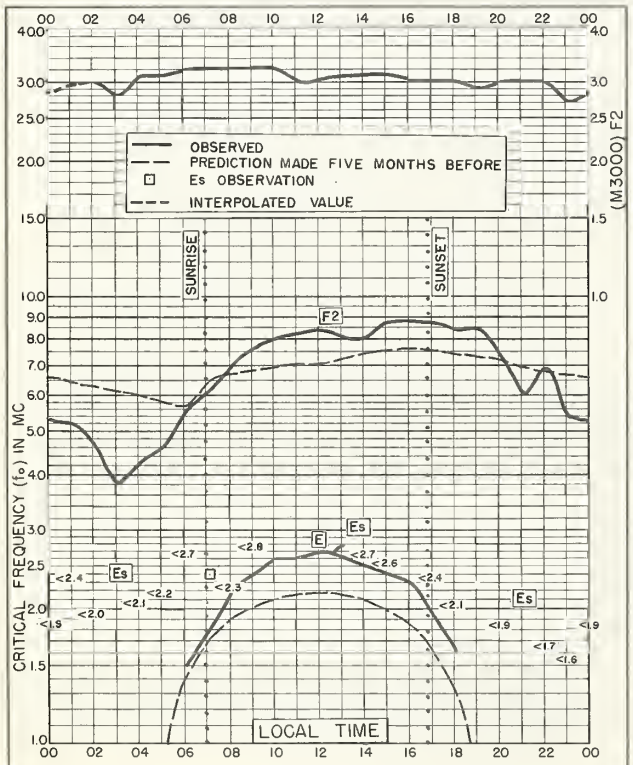


Fig. 87. SCOTT BASE
77.8°S, 166.8°E SEPTEMBER 1957

NBS 503

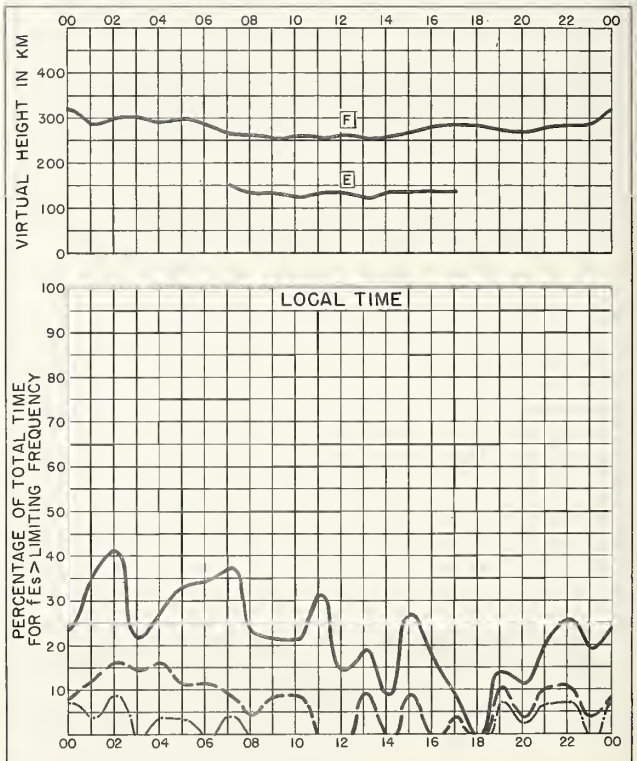


Fig. 88. SCOTT BASE SEPTEMBER 1957

NBS 490

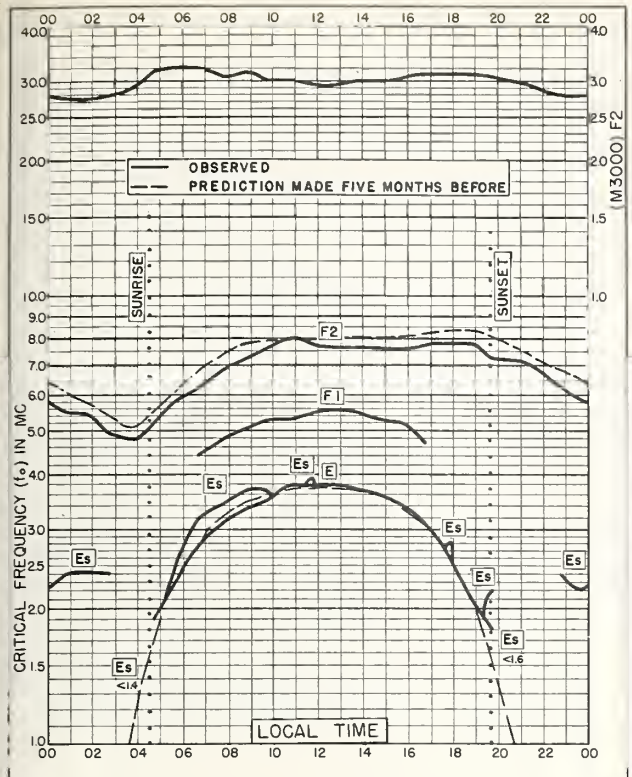


Fig. 89. INVERNESS, SCOTLAND
57.4°N, 4.2°W AUGUST 1957

NBS 503

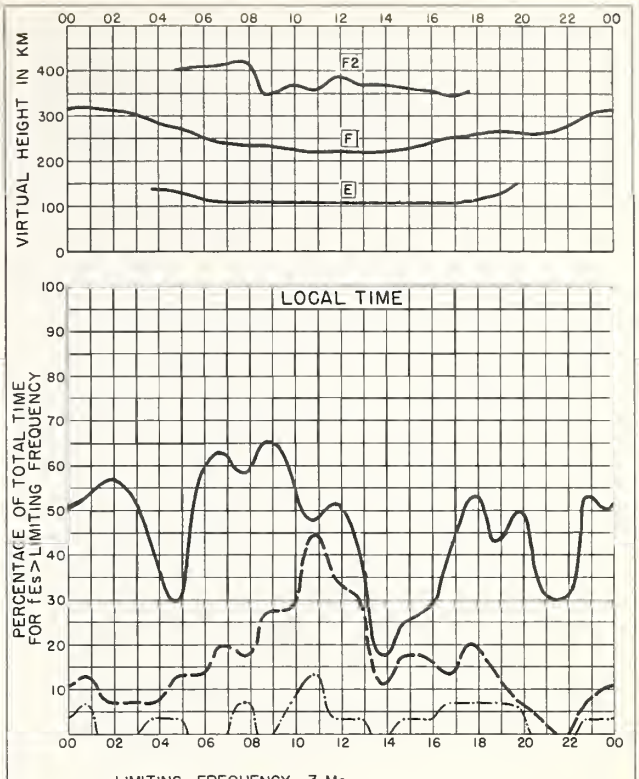


Fig. 90. INVERNESS, SCOTLAND AUGUST 1957

NBS 490

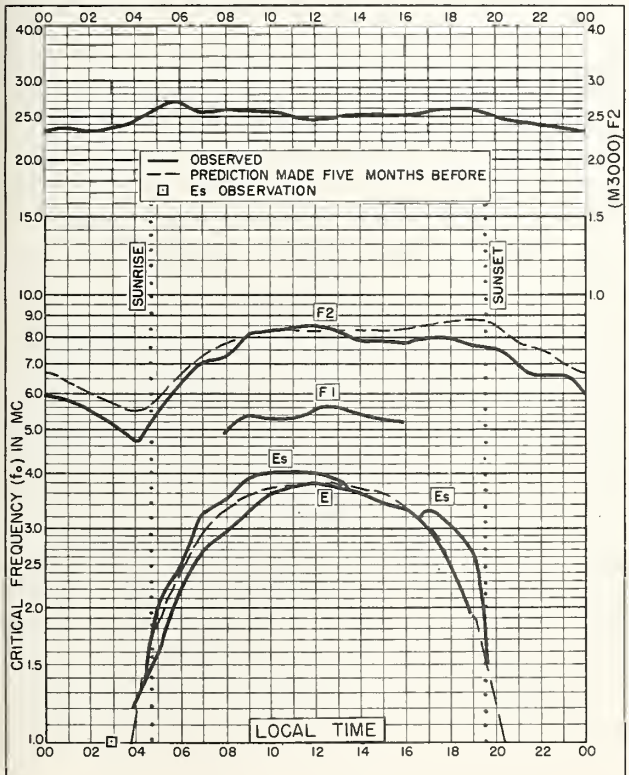


Fig. 91. JULIUSRUH/RÜGEN, GERMANY
54.6°N, 13.4°E AUGUST 1957

NBS 503

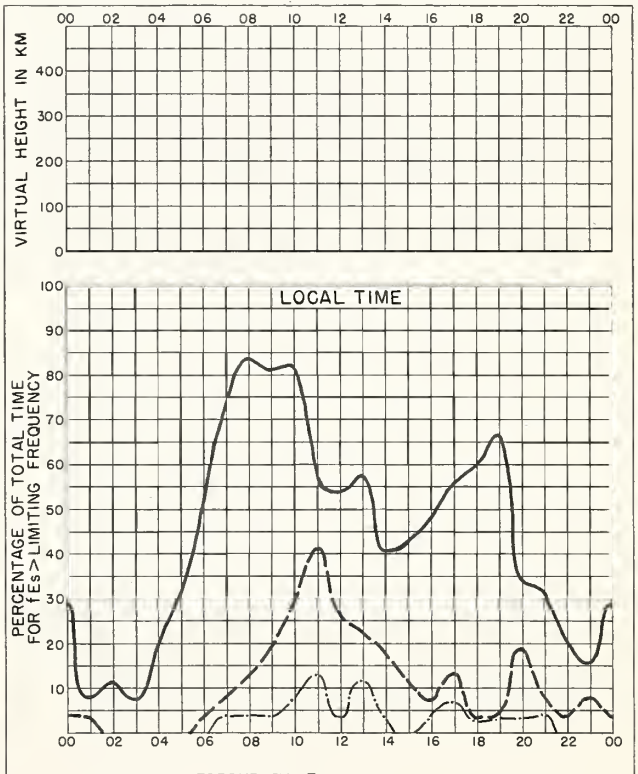


Fig. 92. JULIUSRUH/RÜGEN, GERMANY AUGUST 1957

NBS 490

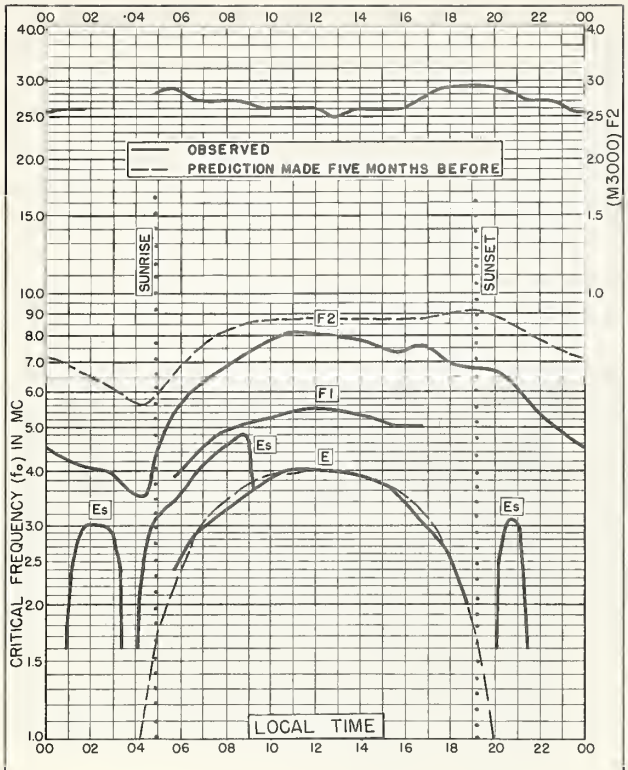


Fig. 93. VICTORIA, CANADA
48.4° N, 123.4° W AUGUST 1957

NBS 503

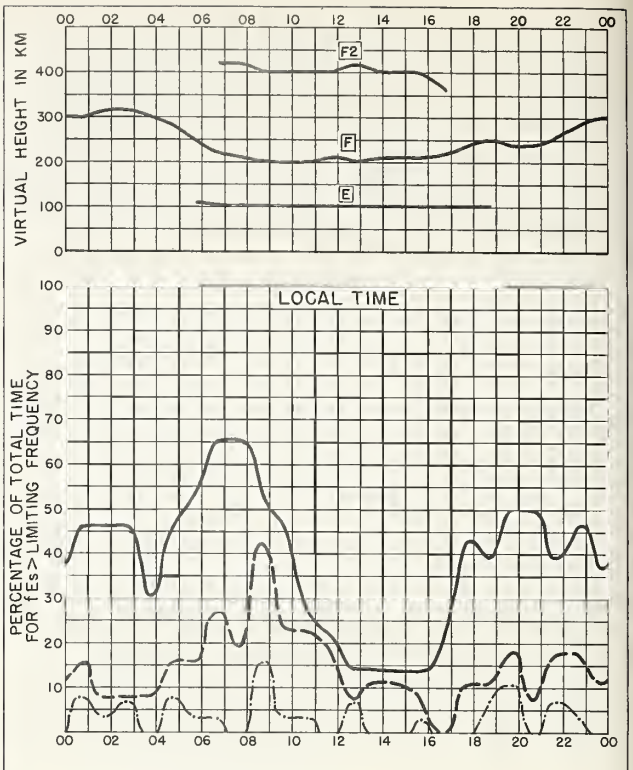


Fig. 94. VICTORIA, CANADA AUGUST 1957

NBS 490

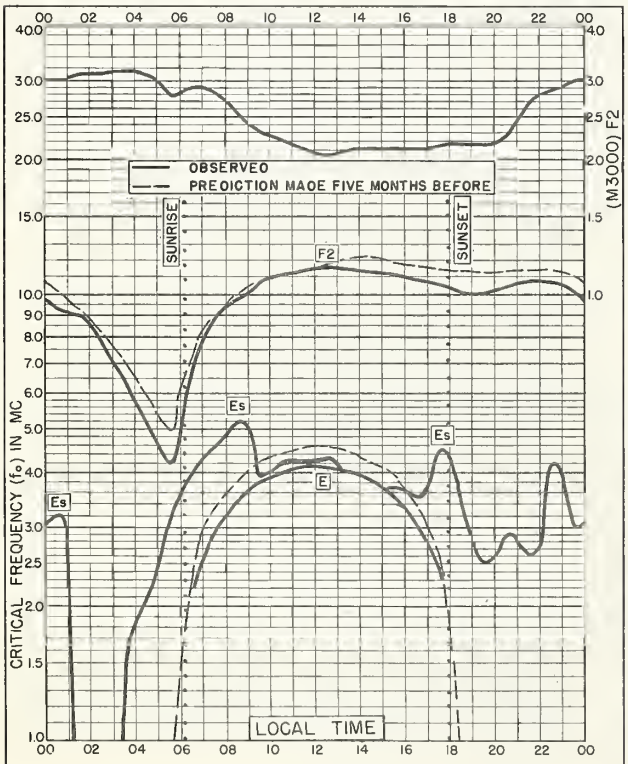


Fig. 95. TALARA, PERU
4.6° S, 81.3° W AUGUST 1957

NBS 503

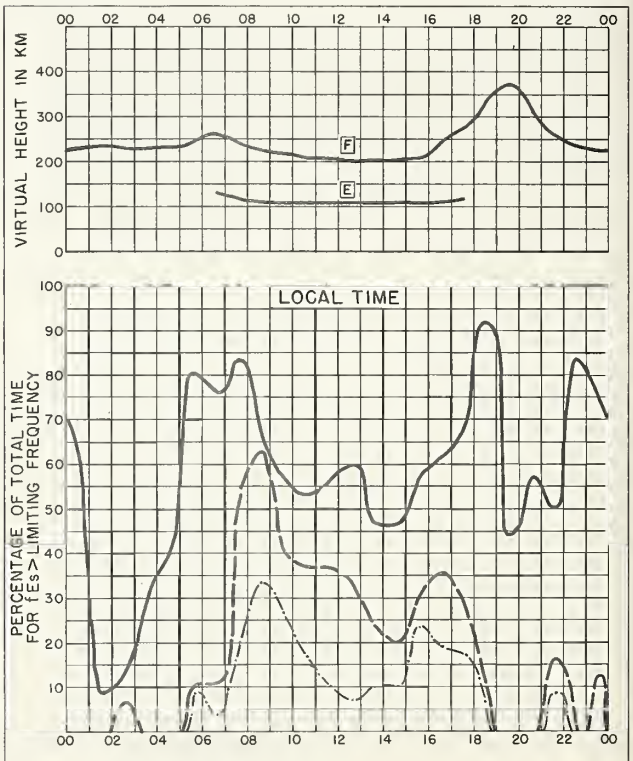


Fig. 96. TALARA, PERU AUGUST 1957

NBS 490

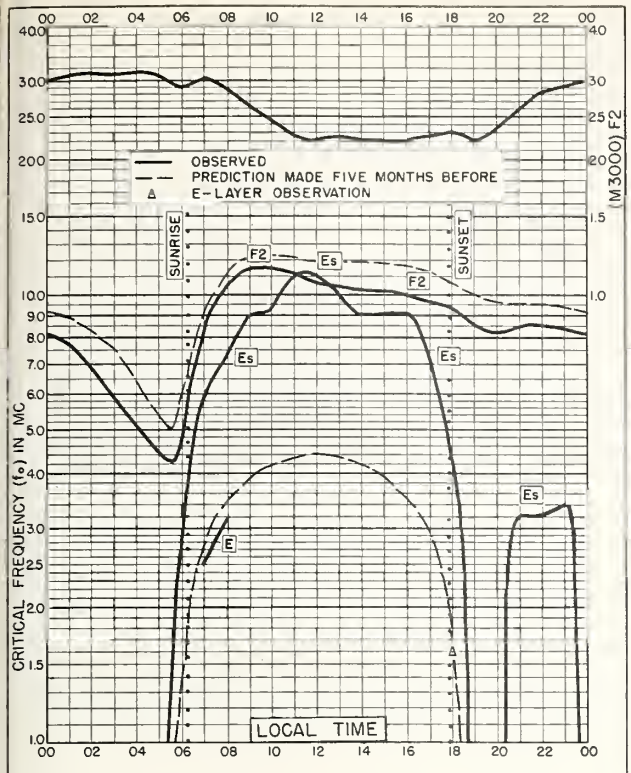


Fig. 97. HUANCAYO, PERU
12.0°S, 75.3°W AUGUST 1957

NBS 503

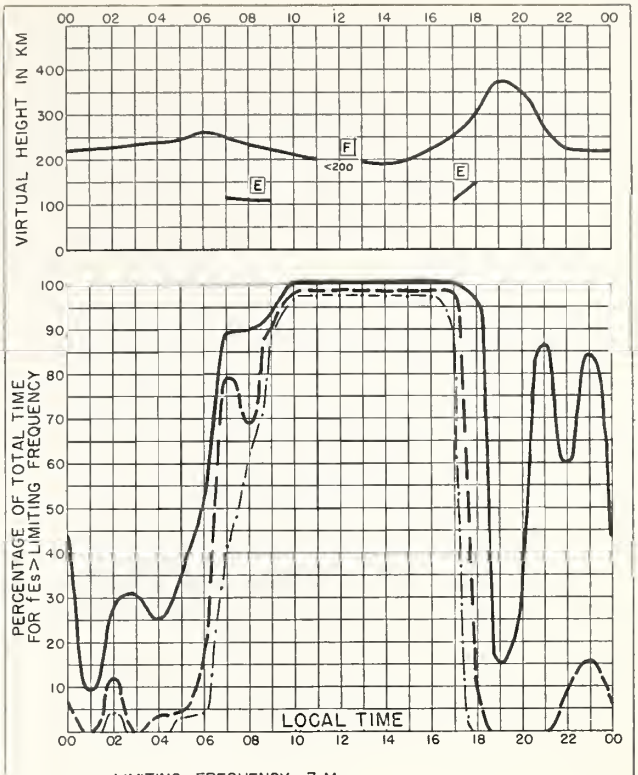


Fig. 98. HUANCAYO, PERU AUGUST 1957

NBS 490

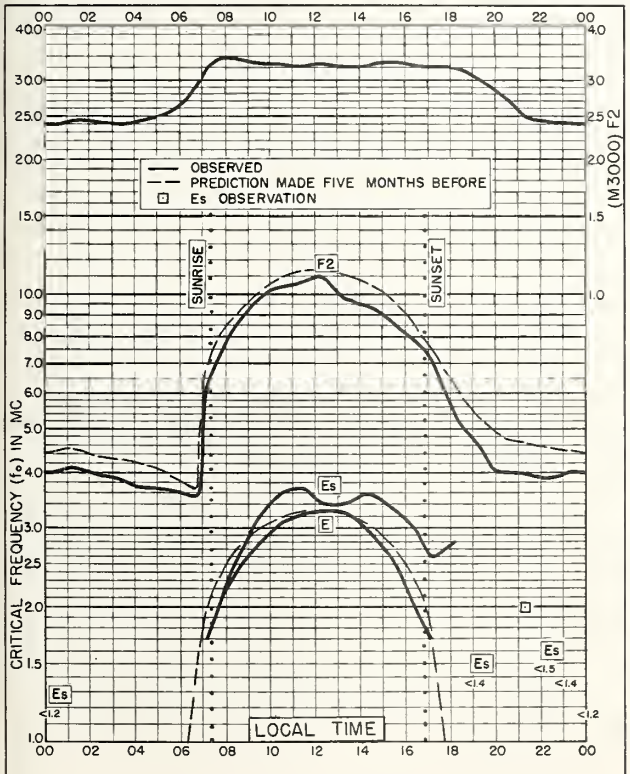


Fig. 99. FALKLAND IS.
51.7°S, 57.8°W AUGUST 1957

NBS 503

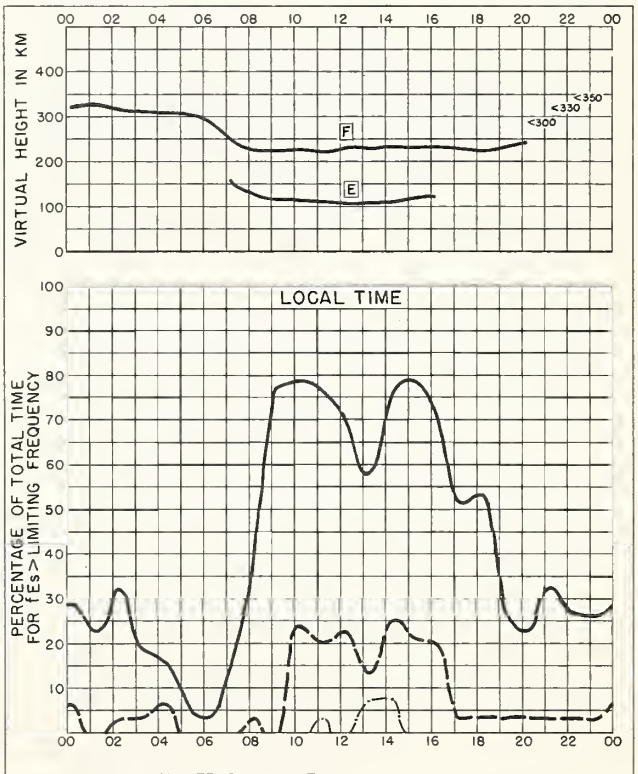


Fig. 100. FALKLAND IS. AUGUST 1957

NBS 490

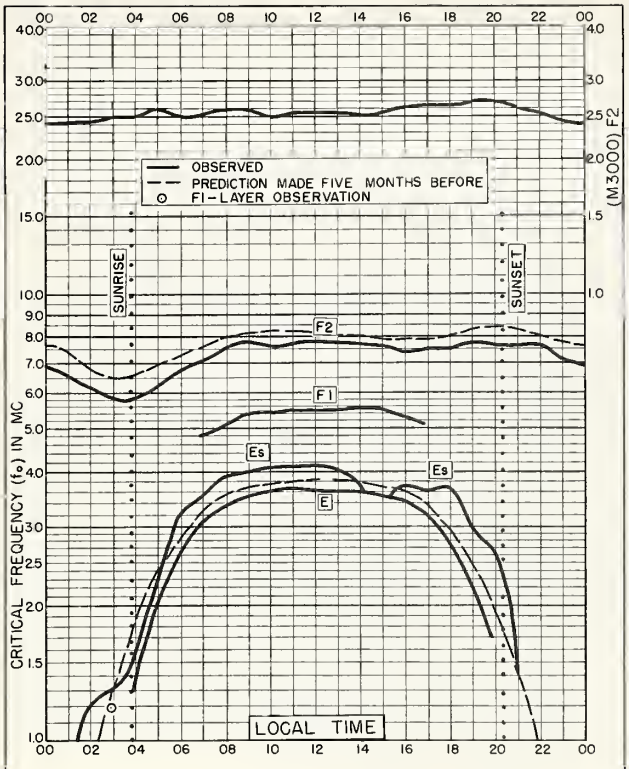
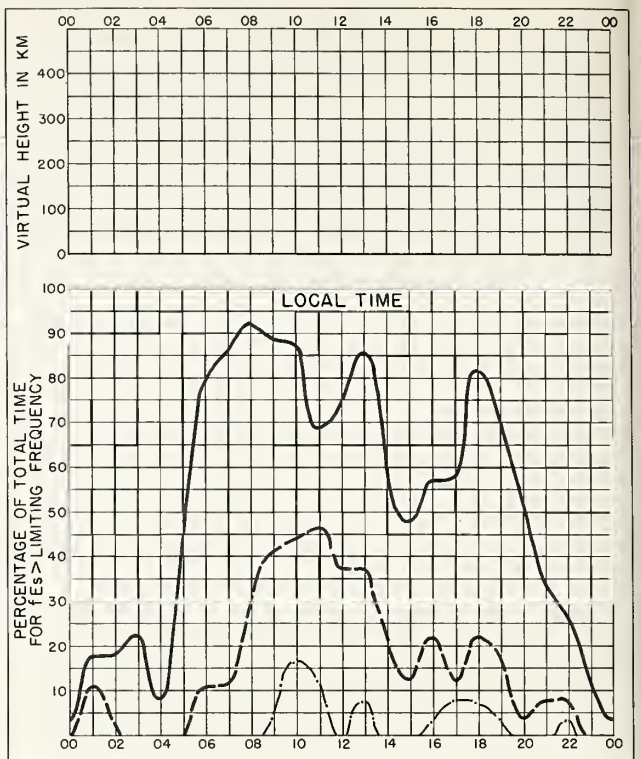


Fig. 101. JULIUSRUH/RÜGEN, GERMANY
54.6°N, 13.4°E JULY 1957

NBS 503



JULY 1957

Fig. 102. JULIUSRUH/RÜGEN, GERMANY

NBS 490

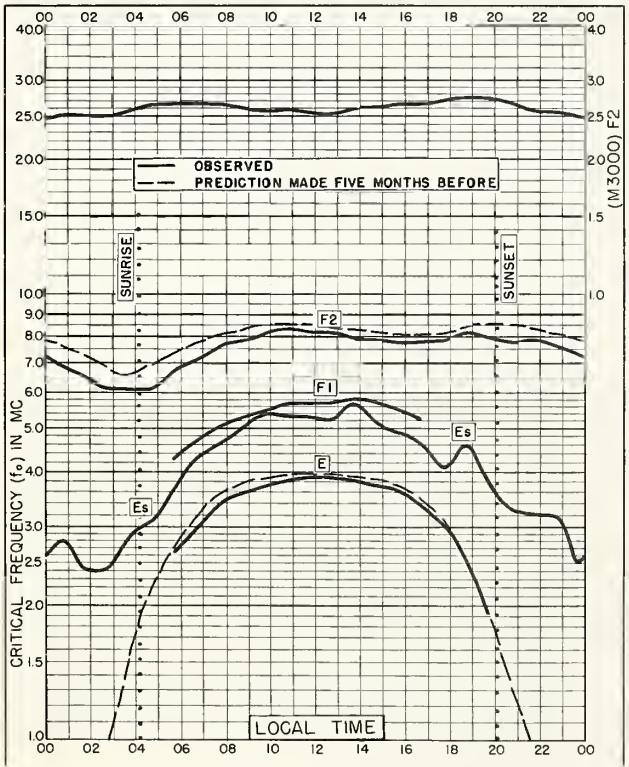


Fig. 103. LINDAU/HARZ, GERMANY
51.6°N, 10.1°E JULY 1957

NBS 503

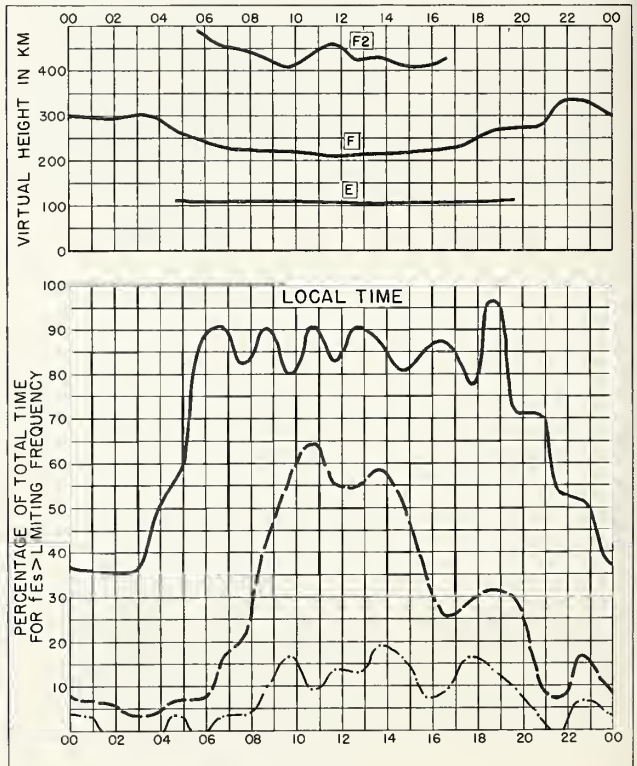


Fig. 104. LINDAU/HARZ, GERMANY JULY 1957

NBS 490

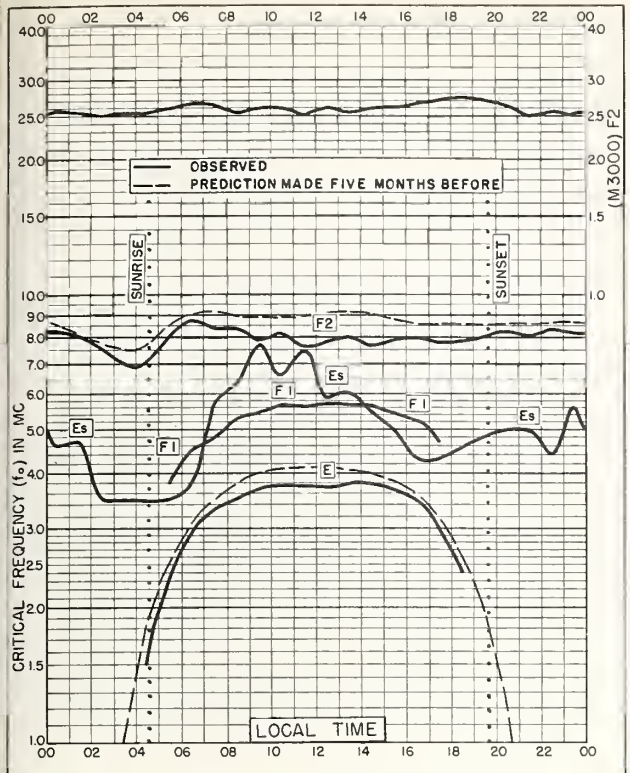


Fig. 105. WAKKANAI, JAPAN
45.4°N, 141.7°E JULY 1957

NBS 503

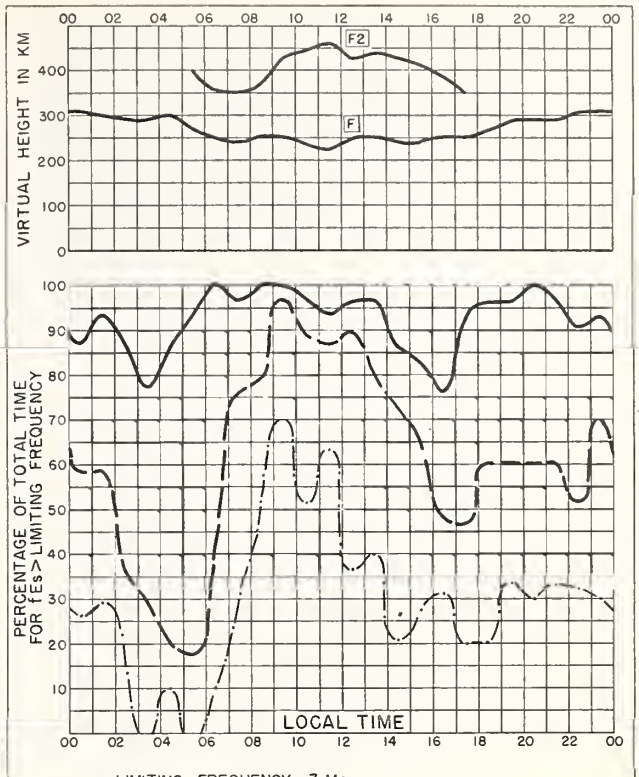


Fig. 106. WAKKANAI, JAPAN JULY 1957

NBS 490

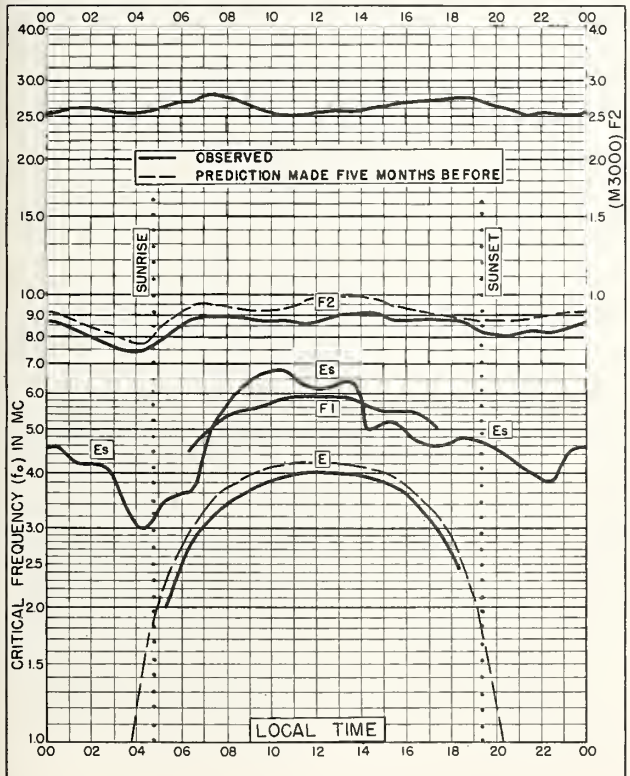


Fig. 107. AKITA, JAPAN
39.7°N, 140.1°E JULY 1957

NBS 503

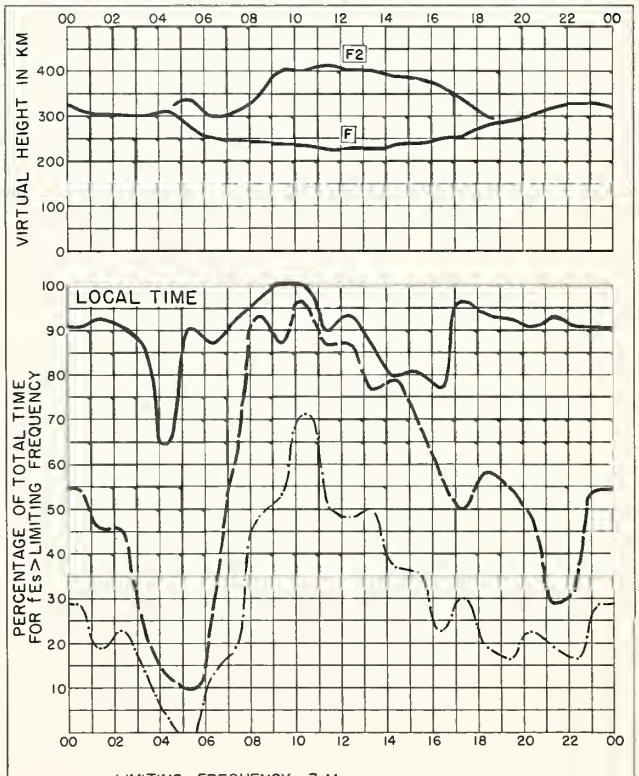


Fig. 108. AKITA, JAPAN JULY 1957

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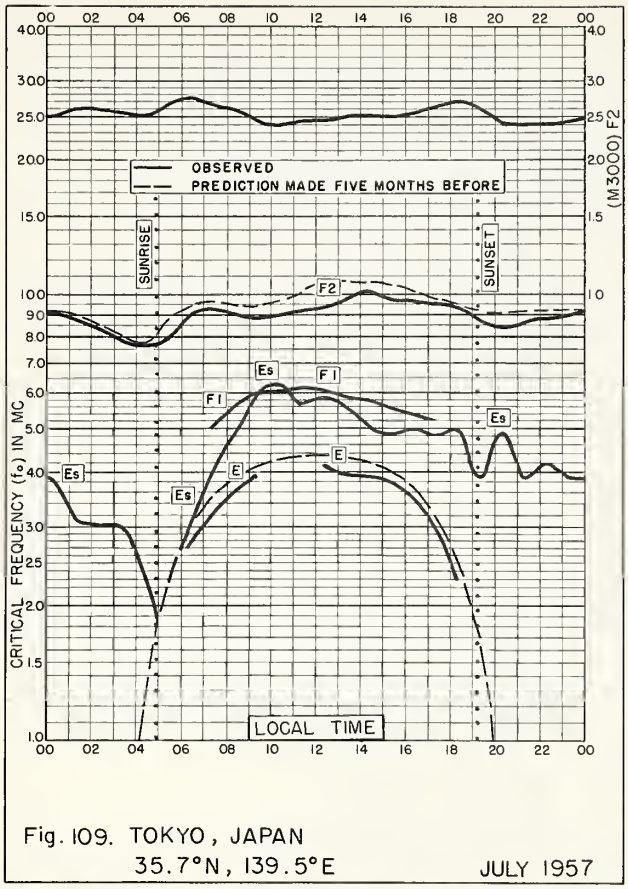

Fig. 109. TOKYO, JAPAN
35.7°N, 139.5°E JULY 1957

NBS 503

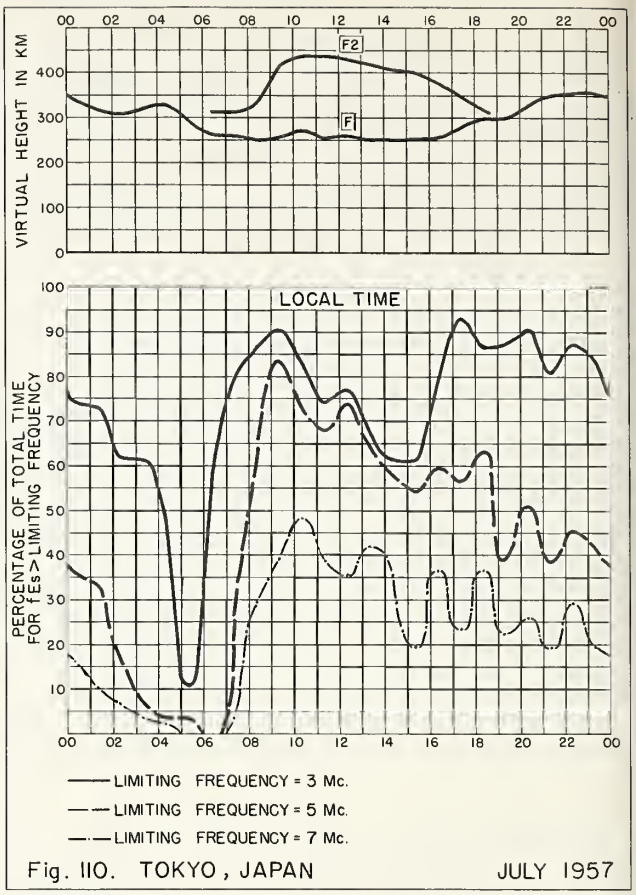

Fig. 110. TOKYO, JAPAN JULY 1957

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NBS 490

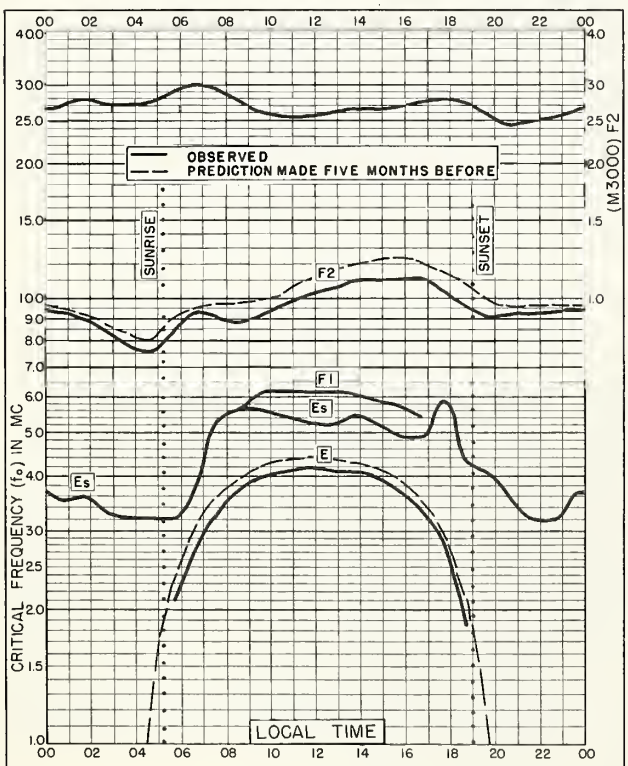

Fig. 111. YAMAGAWA, JAPAN
31.2°N, 130.6°E JULY 1957

NBS 503

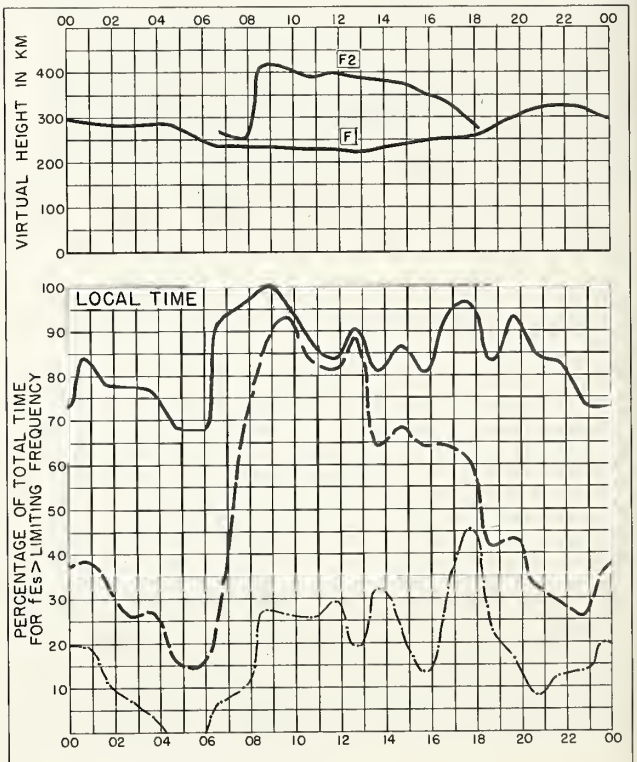

Fig. 112. YAMAGAWA, JAPAN JULY 1957

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NBS 490

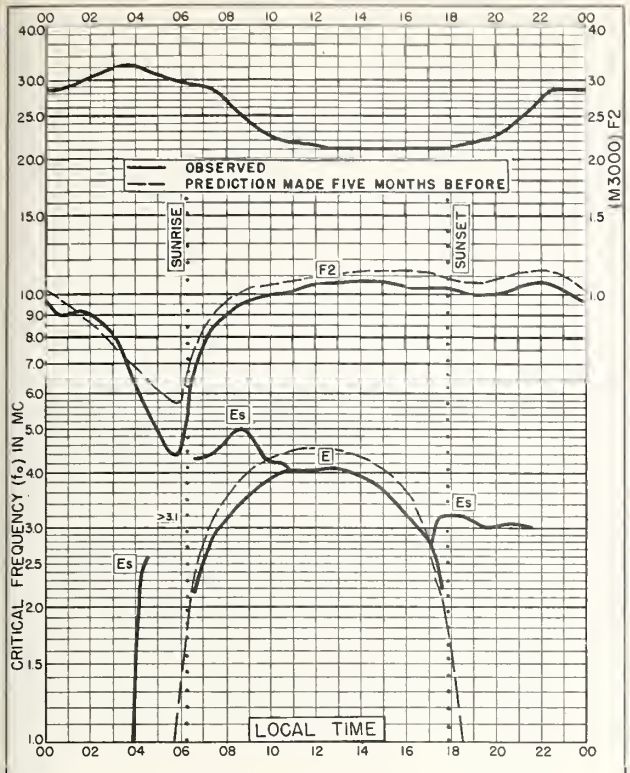

Fig. 113. TALARA, PERU
4.6°S, 81.3°W JULY 1957

NBS 503

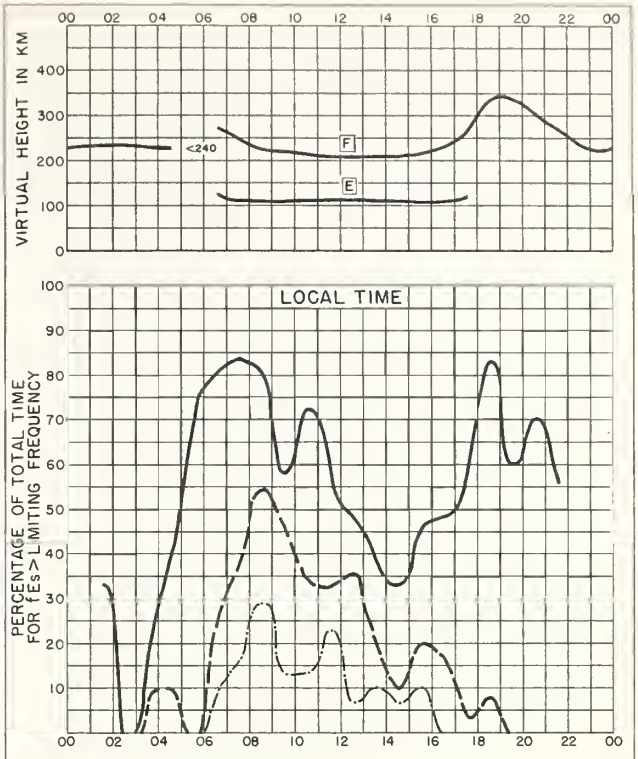

Fig. 114. TALARA, PERU JULY 1957

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NBS 490

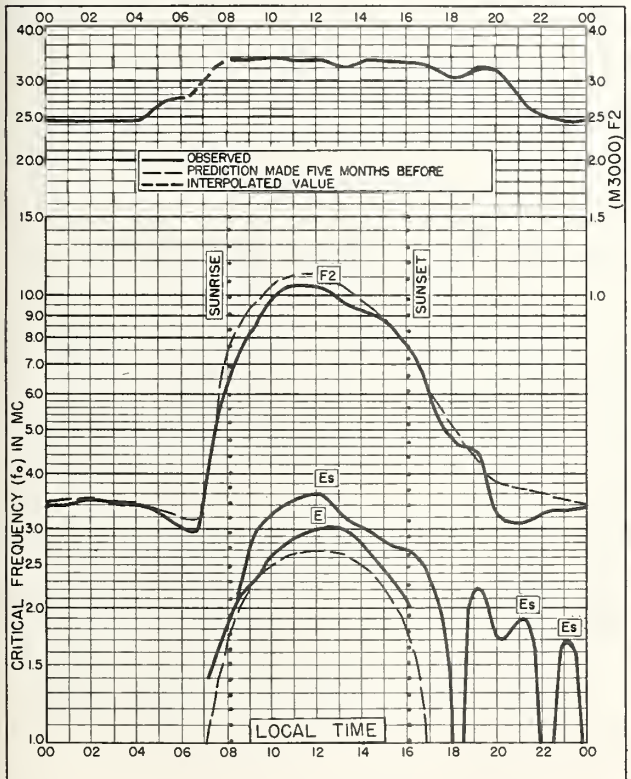

Fig. 115. FALKLAND IS.
51.7°S, 57.8°W JULY 1957

NBS 503

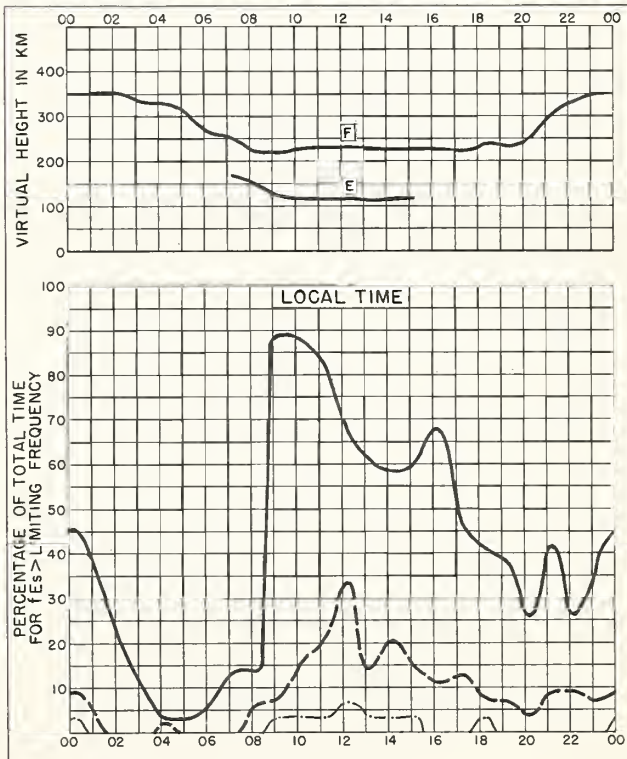

Fig. 116. FALKLAND IS. JULY 1957

Commerce-Standards-Boulder, Colo.

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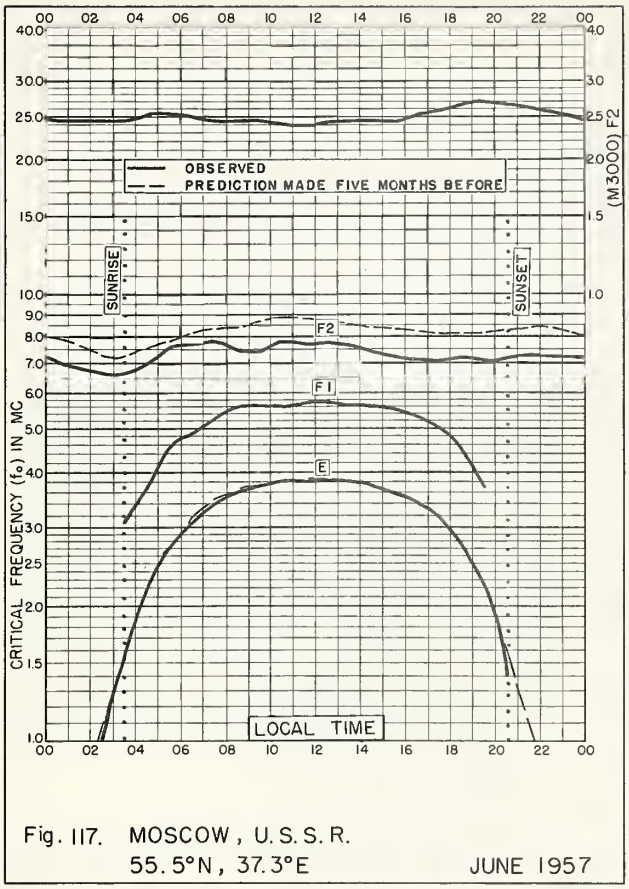

Fig. 117. MOSCOW, U.S.S.R.
55.5°N, 37.3°E JUNE 1957

NBS 503

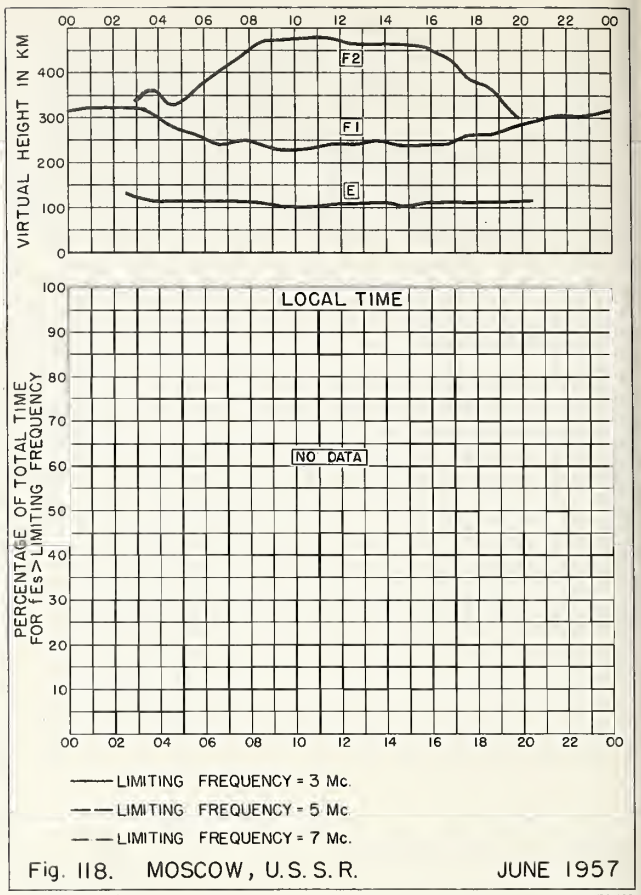

Fig. 118. MOSCOW, U.S.S.R. JUNE 1957

Commerce-Boulder, Colo.

NBS 490

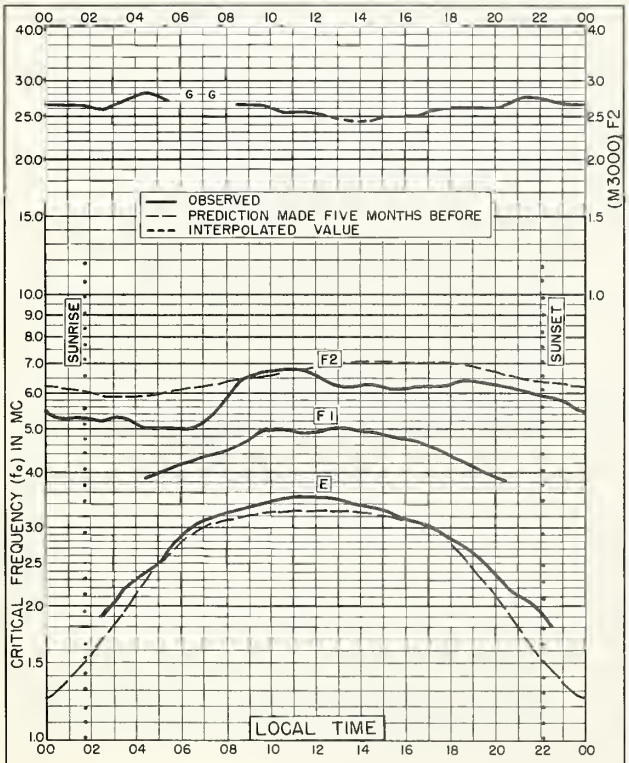

Fig. 119. GODHAVN, GREENLAND
69.2°N, 53.5°W MAY 1957

NBS 503

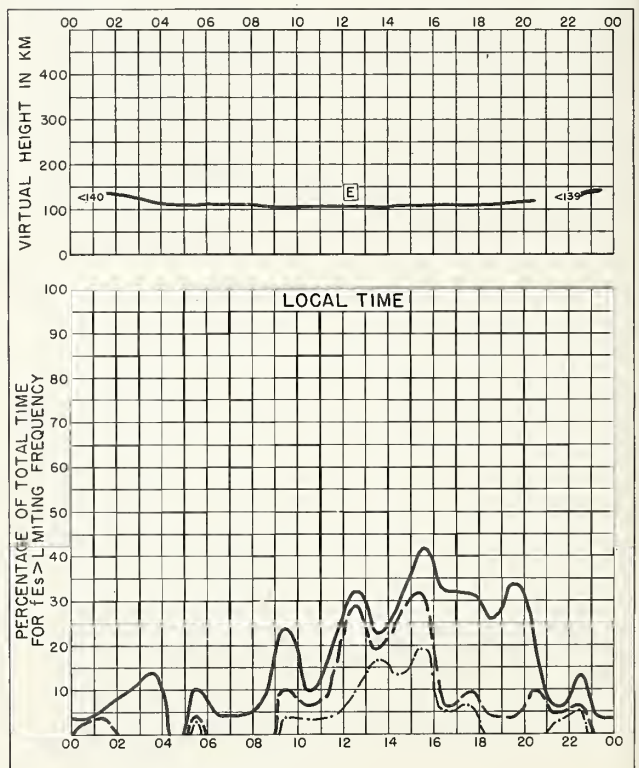

Fig. 120. GODHAVN, GREENLAND MAY 1957

Commerce-Boulder, Colo.

NBS 490

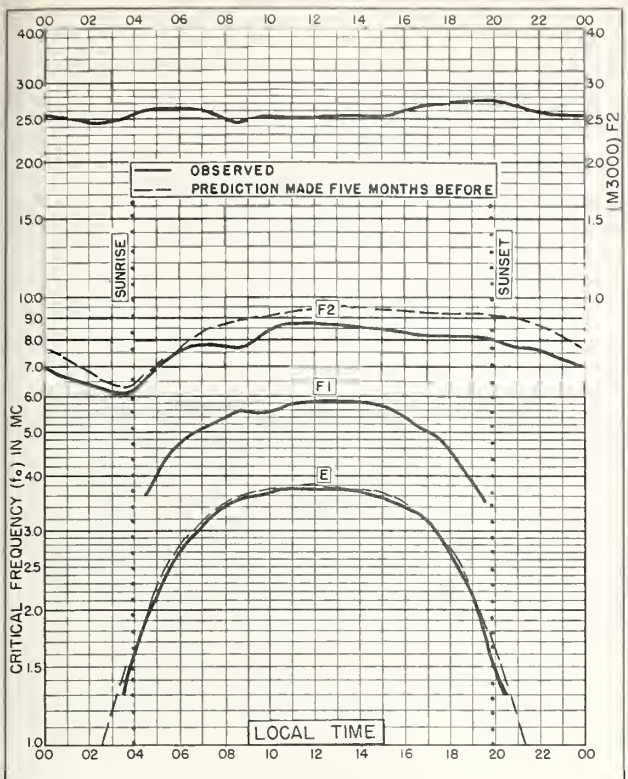

Fig. 121. MOSCOW, U.S.S.R.
55.5°N, 37.3°E MAY 1957

NBS 503

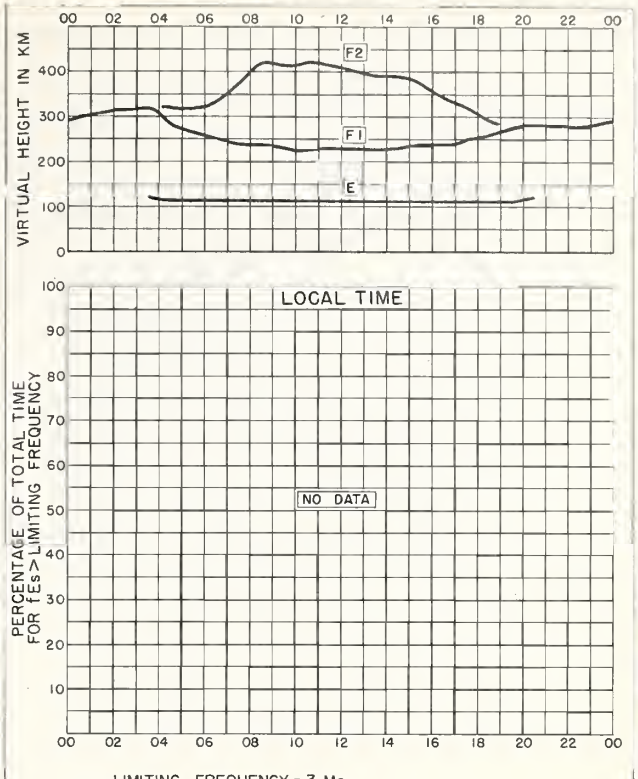

Fig. 122. MOSCOW, U.S.S.R. MAY 1957

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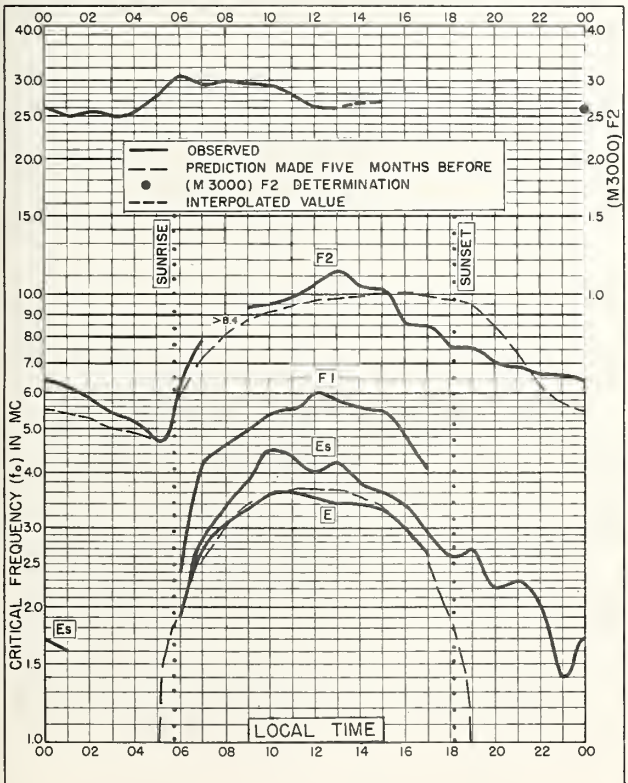

Fig. 123. POITIERS, FRANCE
46.6°N, 0.3°E SEPTEMBER 1956

NBS 503

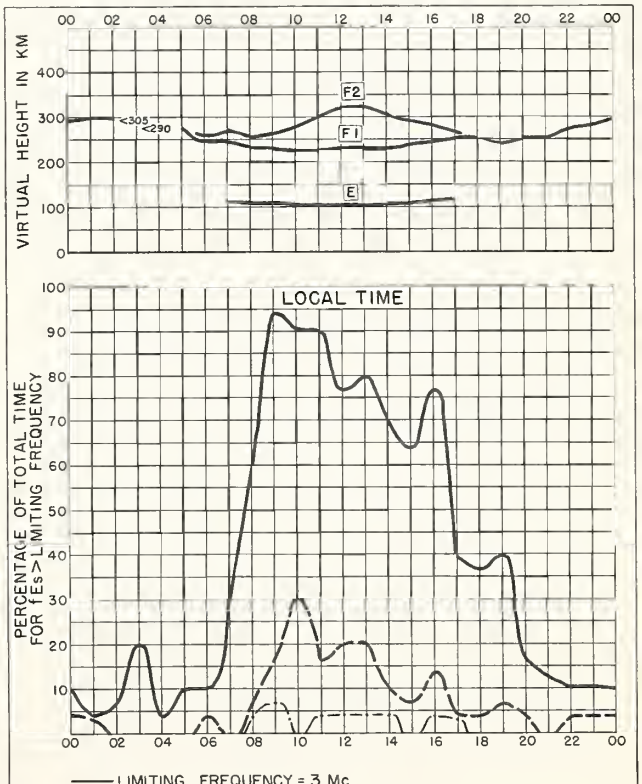

Fig. 124. POITIERS, FRANCE SEPTEMBER 1956

Commerce-Standards-Boulder, Colo.

NBS 490

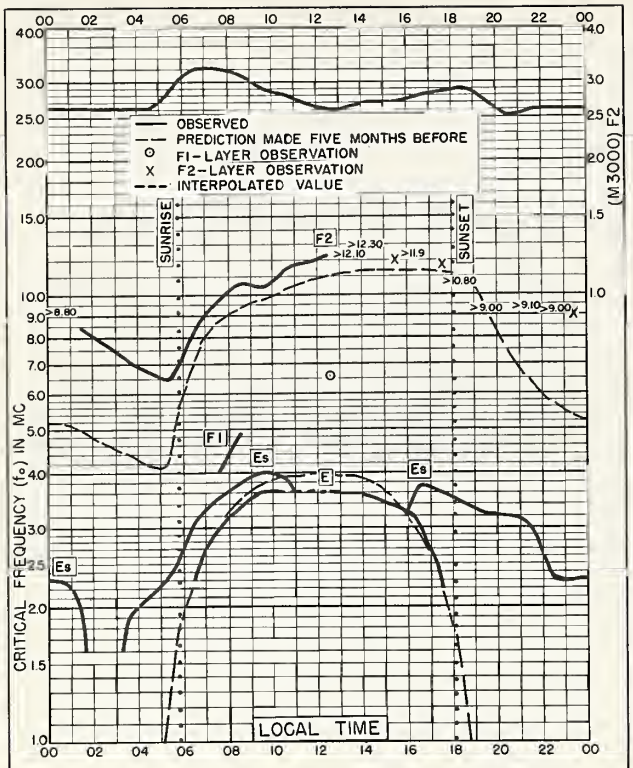

Fig. 125. CASABLANCA, MOROCCO
33.6°N, 7.6°W SEPTEMBER 1956

NBS 503

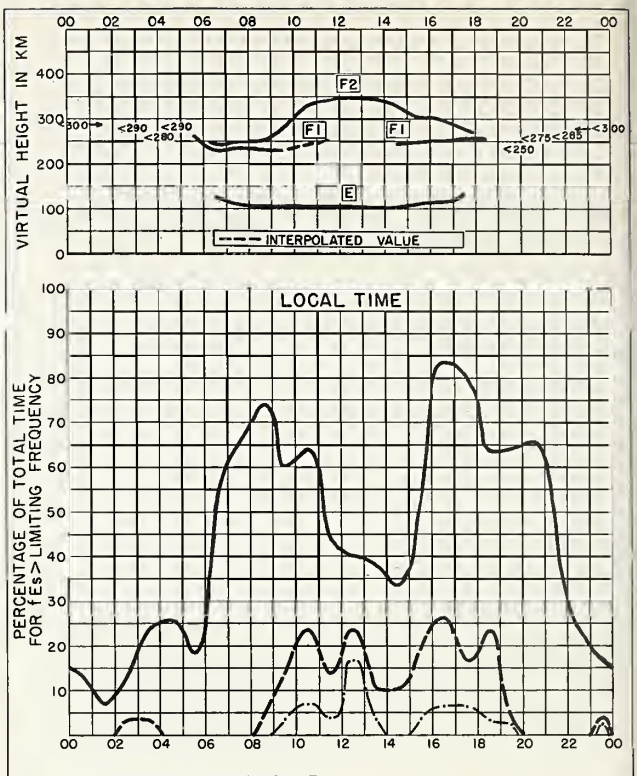

Fig. 126. CASABLANCA, MOROCCO SEPTEMBER 1956

Commerce-Standards-Boulder, Colo.

NBS 490

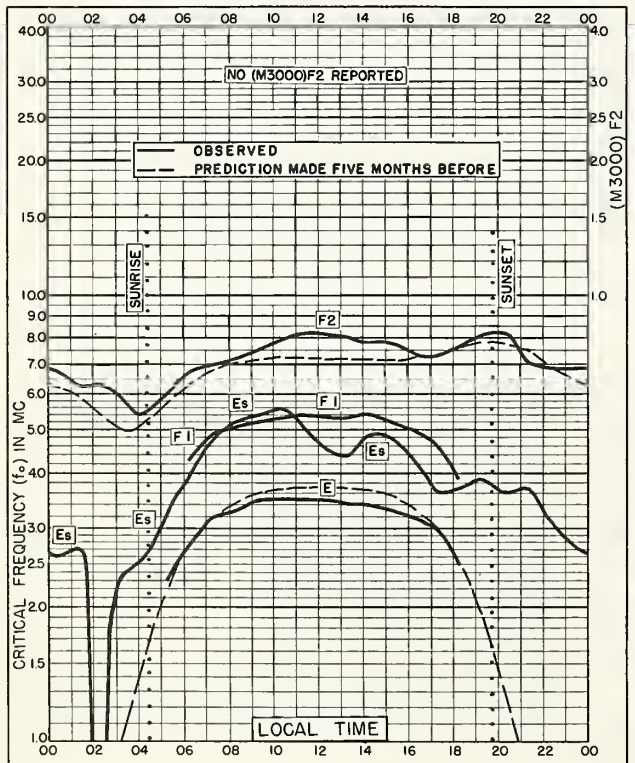

Fig. 127. BUDAPEST, HUNGARY
47.4°N, 19.2°E JULY 1956

NBS 503

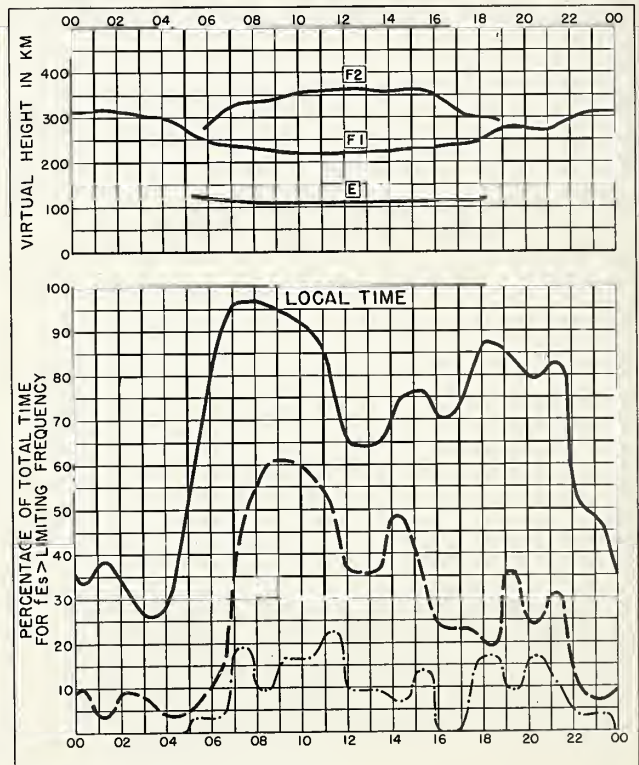

Fig. 128. BUDAPEST, HUNGARY JULY 1956

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NBS 490

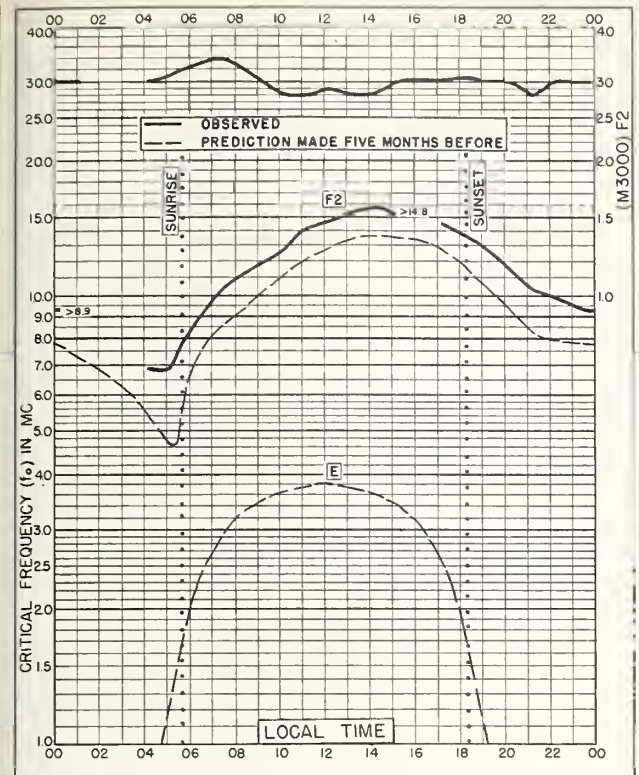

Fig. 129. DELHI, INDIA
28.6°N, 77.1°E APRIL 1956

NBS 503

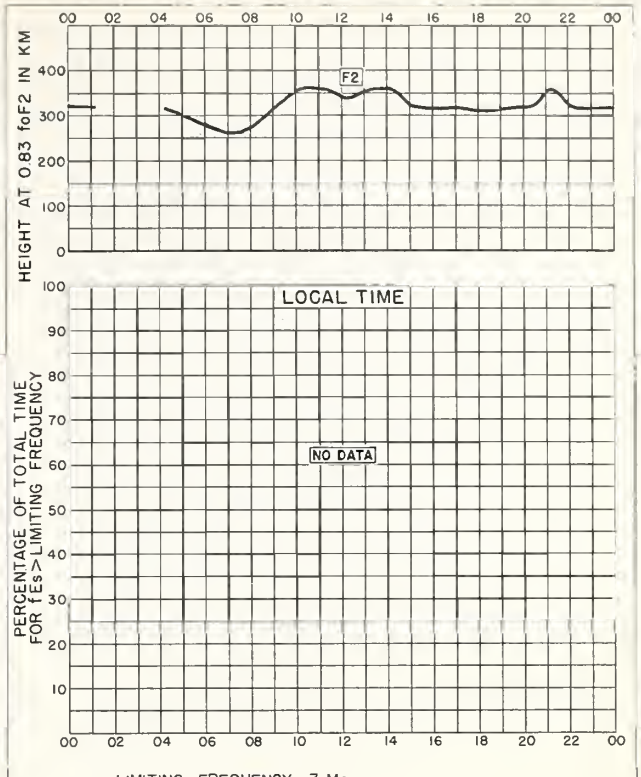

Fig. 130. DELHI, INDIA APRIL 1956

Commerce-Boulder, Colo.

NBS 490

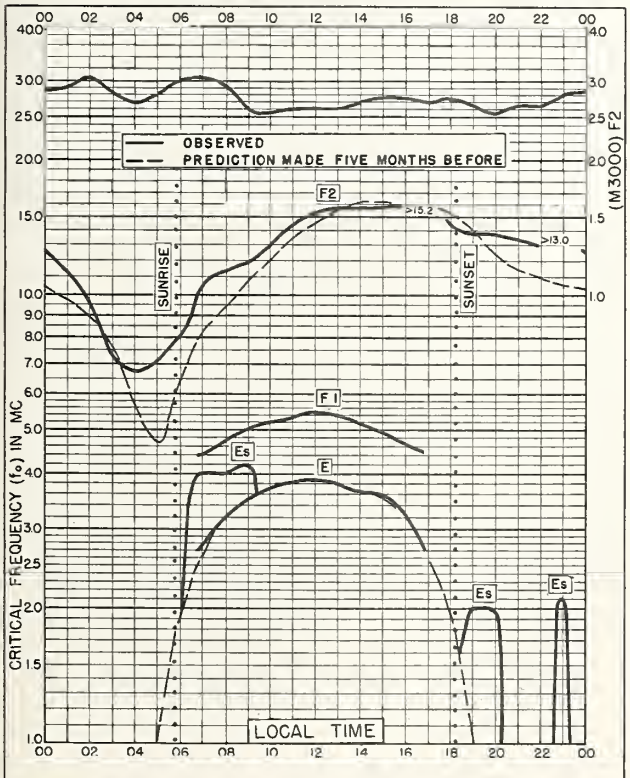

Fig. 131. AHMEDABAD, INDIA
23.0°N, 72.6°E APRIL 1956

NBS 503

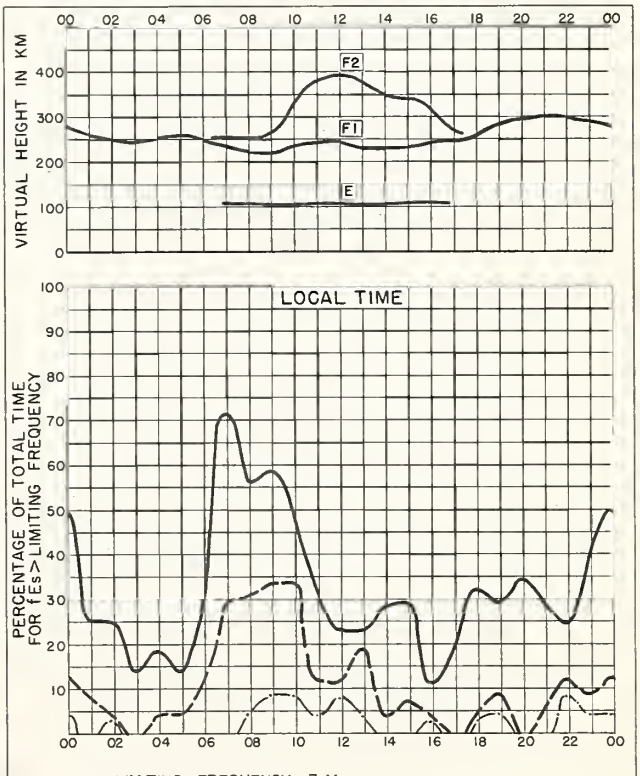

Fig. 132. AHMEDABAD, INDIA APRIL 1956

Commerce-Boulder, Colo.

NBS 490

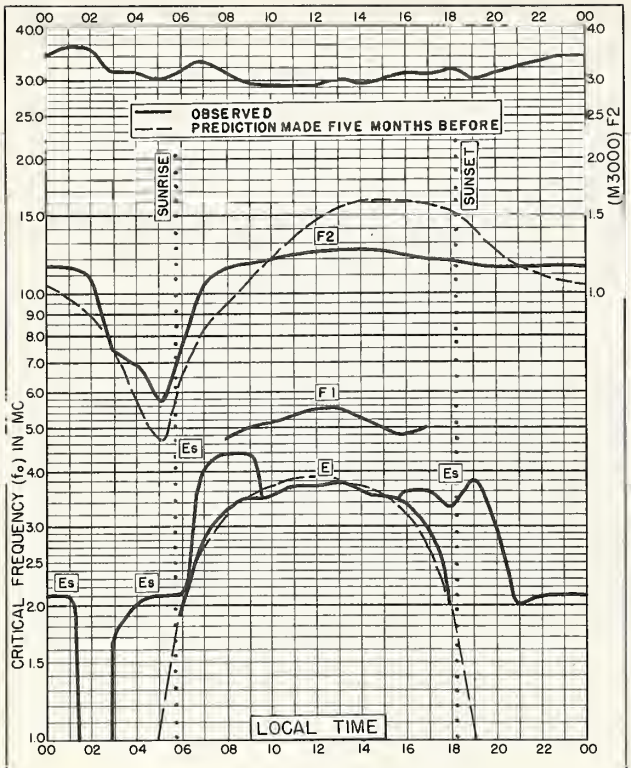

Fig. 133. CALCUTTA, INDIA
22.9°N, 88.5°E APRIL 1956

NBS 503

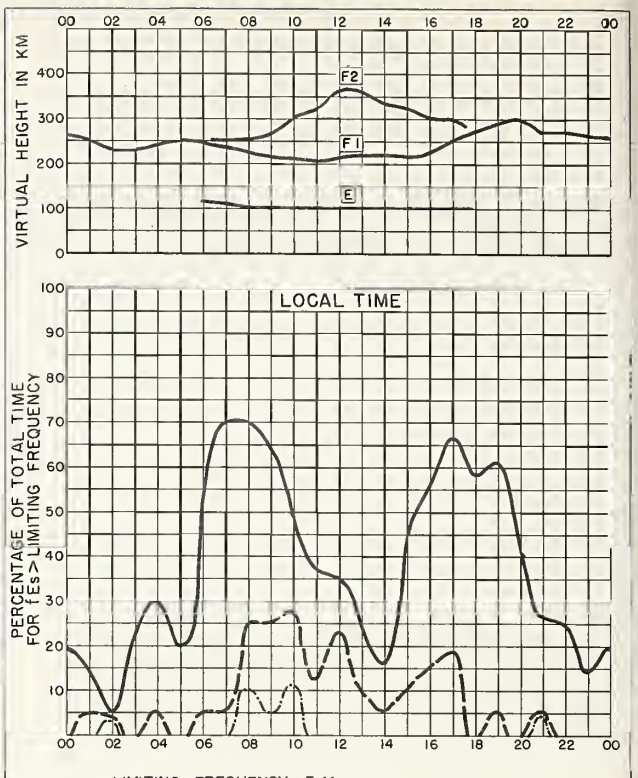

Fig. 134. CALCUTTA, INDIA APRIL 1956

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NBS 490

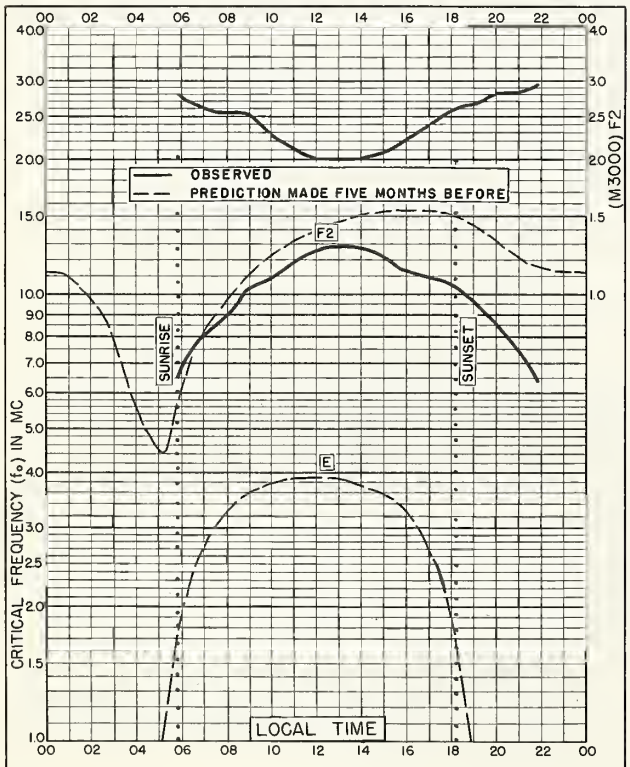

Fig. 135. BOMBAY, INDIA
19.0°N, 73.0°E APRIL 1956

NBS 503

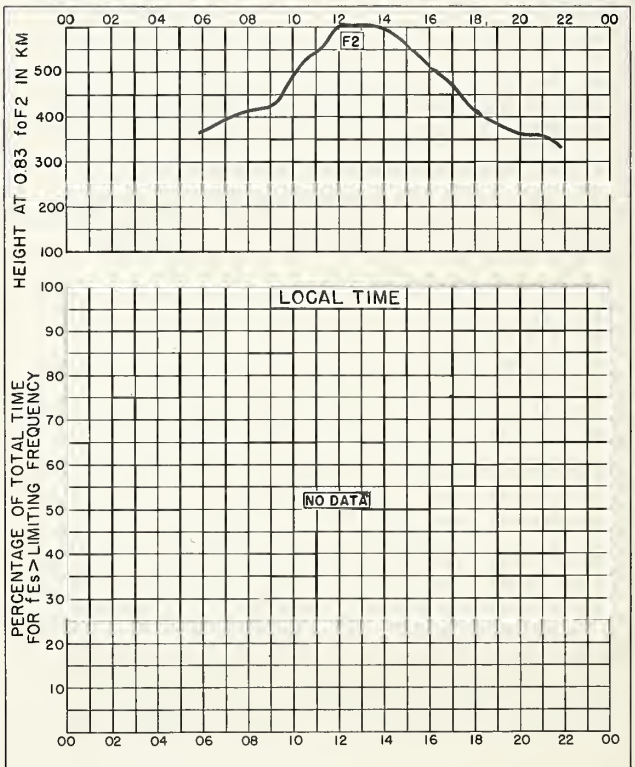

Fig. 136. BOMBAY, INDIA APRIL 1956

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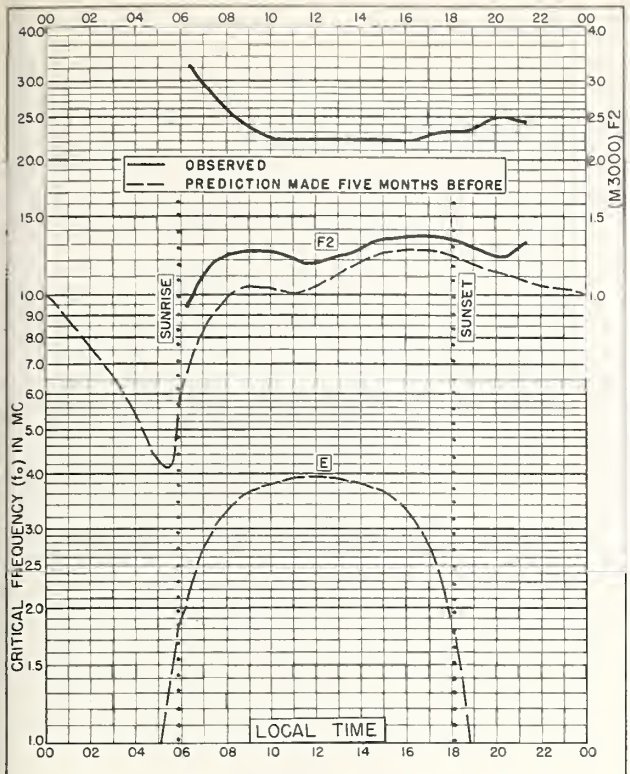

Fig. 137. MADRAS, INDIA
13.0°N, 80.2°E APRIL 1956

NBS 503

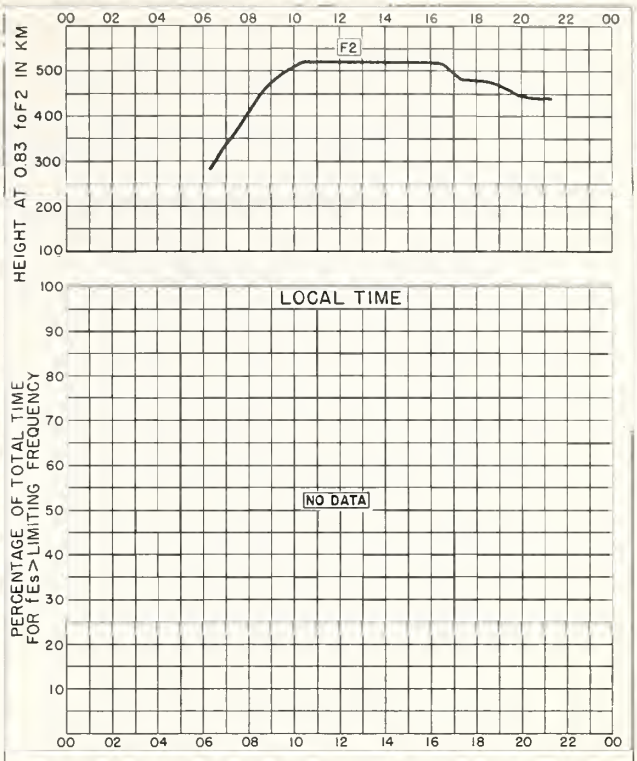

Fig. 138. MADRAS, INDIA APRIL 1956

NBS 490

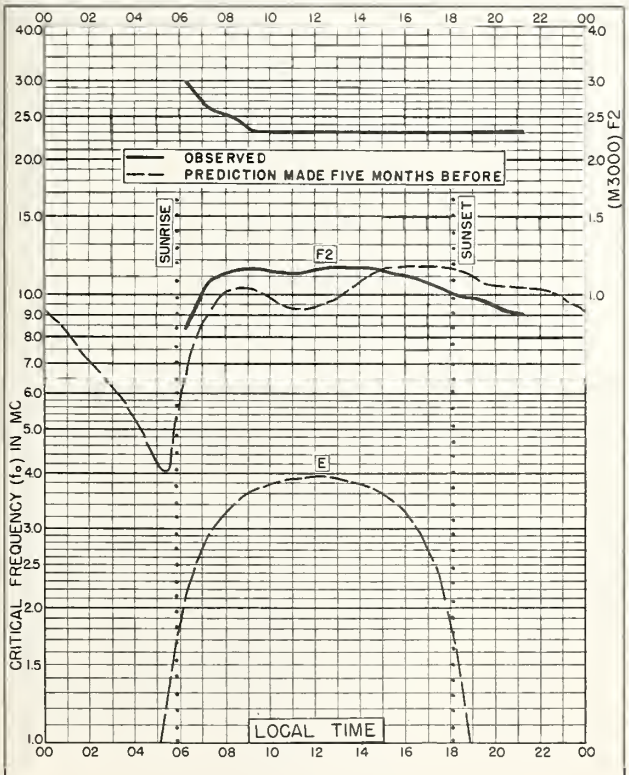

Fig. 139. TIRUCHY, INDIA
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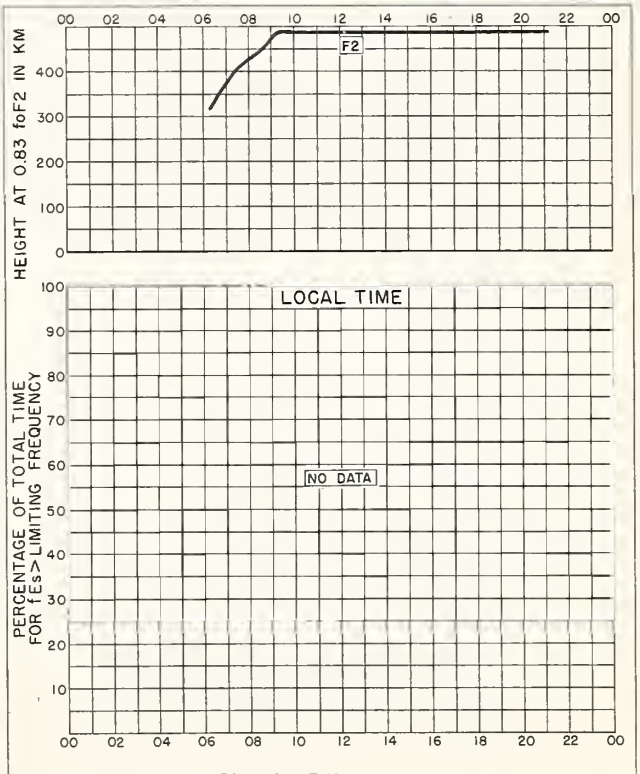
NBS 503



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NBS 490

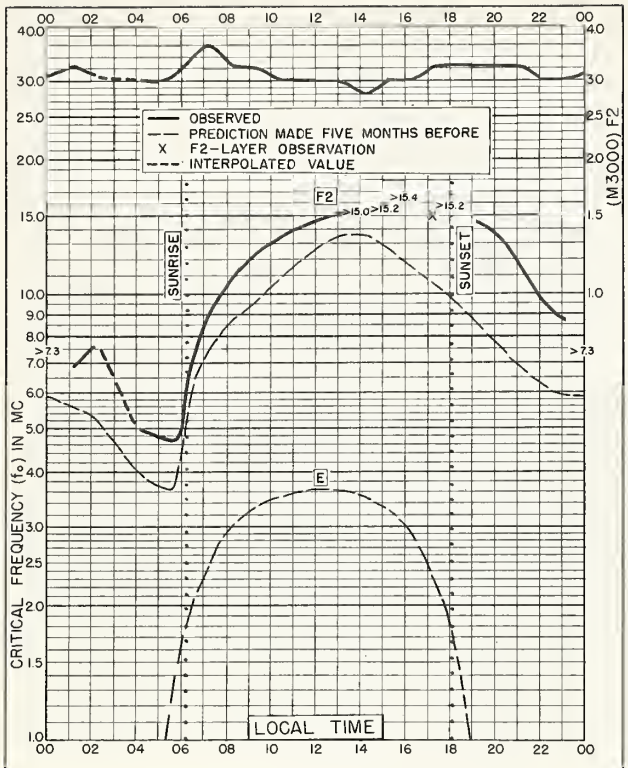

Fig. 141. DELHI, INDIA
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NBS 503

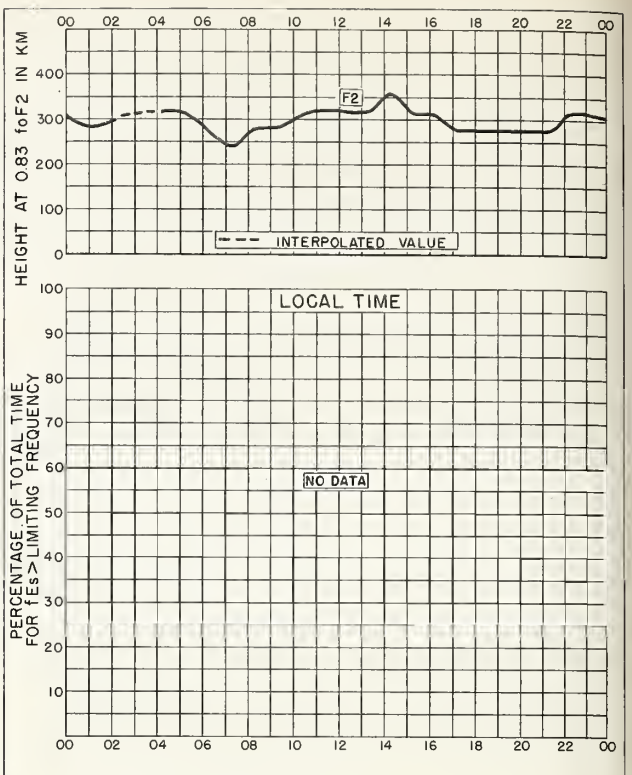

Fig. 142. DELHI, INDIA MARCH 1956

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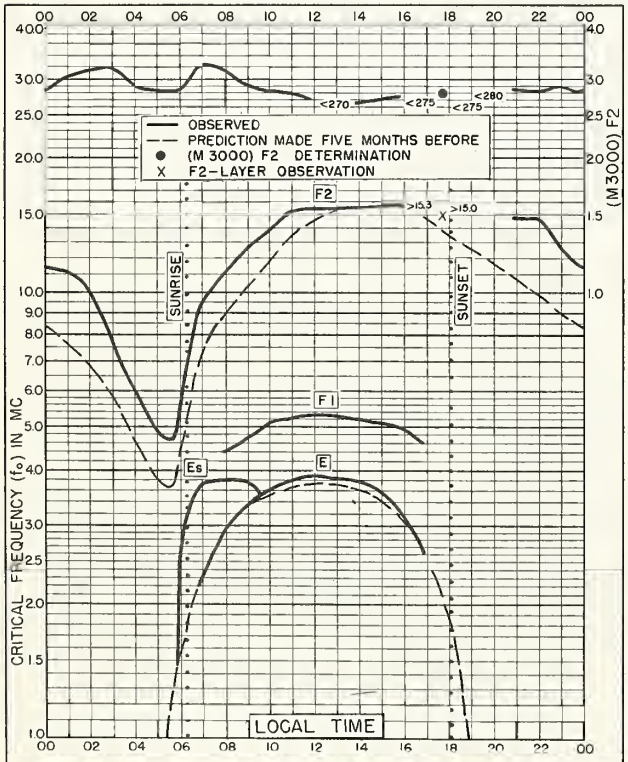

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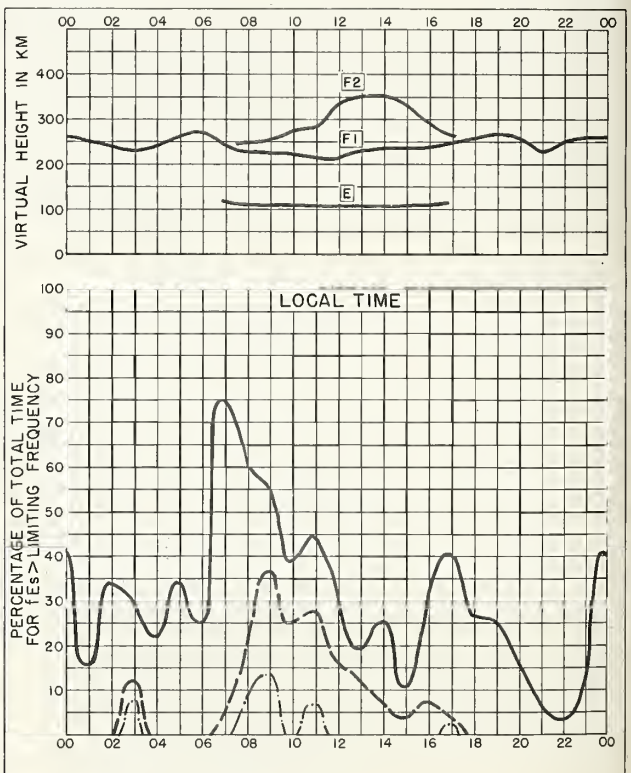
NBS 503



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