PART A

IONOSPHERIC DATA

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

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PART A

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CONTENTS

SYMBOLS, TERMINOLOGY, CONVENTIONS

Beginning with data reported for January 1952, 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*	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 1956.

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	145	148	149	154	157	162
1957	169	171	174	181	186	188	192					

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
- Canberra, Australia
- Hobart, Tasmania
- Townsville, Australia

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

Belgian Royal Meteorological Institute:
- Dourbes, Belgium

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

British Department of Scientific and Industrial Research, Radio Research Board:
- Slough, England

Defence Research Board, Canada:
- Baker Lake, Canada
- Winnipeg, Canada

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

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

The Royal Netherlands Meteorological Institute:
- Paramaribo, Surinam

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

Icelandic Post and Telegraph Administration:
Reykjavik, Iceland

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.
Cape Hallett (Adare)
Christchurch, New Zealand
Rarotonga, Cook Is.
Scott Base

Manila Observatory:
Baguio, P.I.

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

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

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

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

United States Army Signal Corps:
Adak, Alaska
Fletchers Ice I.
Ft. Monmouth, New Jersey
Grand Bahama I.
Okinawa I.
St. John's, Newfoundland
Thule, Greenland
White Sands, New Mexico

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

ERRATUM

Rarotonga data for May 1957 and April 1957 were taken on 157.5°W time, and for July 1957 and June 1957 on 150°W time. Please make appropriate corrections to tables and graphs in CRPL-F158, -F160, and -F161.

EXAMPLES OF IONOSPHERIC VERTICAL SOUNDINGS
MAUI, HAWAII, OCT. 16, 1957
(Geomagnetic Latitude 21°N)

The following ionograms were obtained at the NBS Maui, T. I., vertical sounding station. They are typical of day and night conditions for October 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 or the ionogram 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.

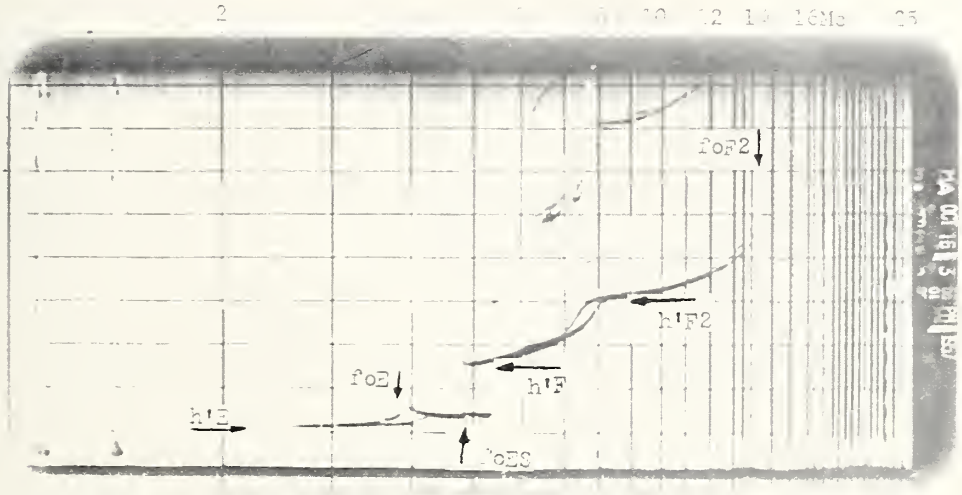

Fig. A. Maui, T.I., Oct. 16, 1957, 1500 hours, 150°W time.

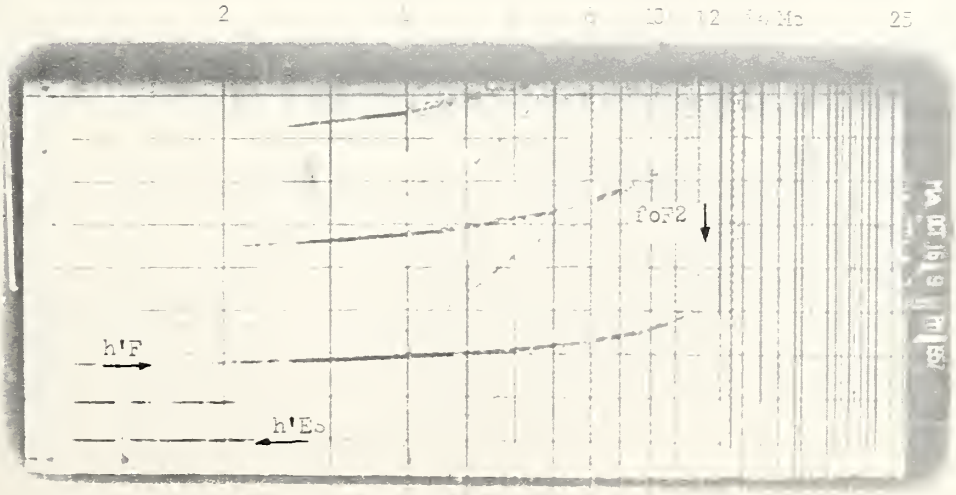

Fig. B. Maui, T.I., Oct. 16, 1957, 2130 hours, 150°W time.

Maui, Hawaii

STATION IONMA

f-PLOT OF IONOSPHERIC DATA

DATE OCT. 16, 1957

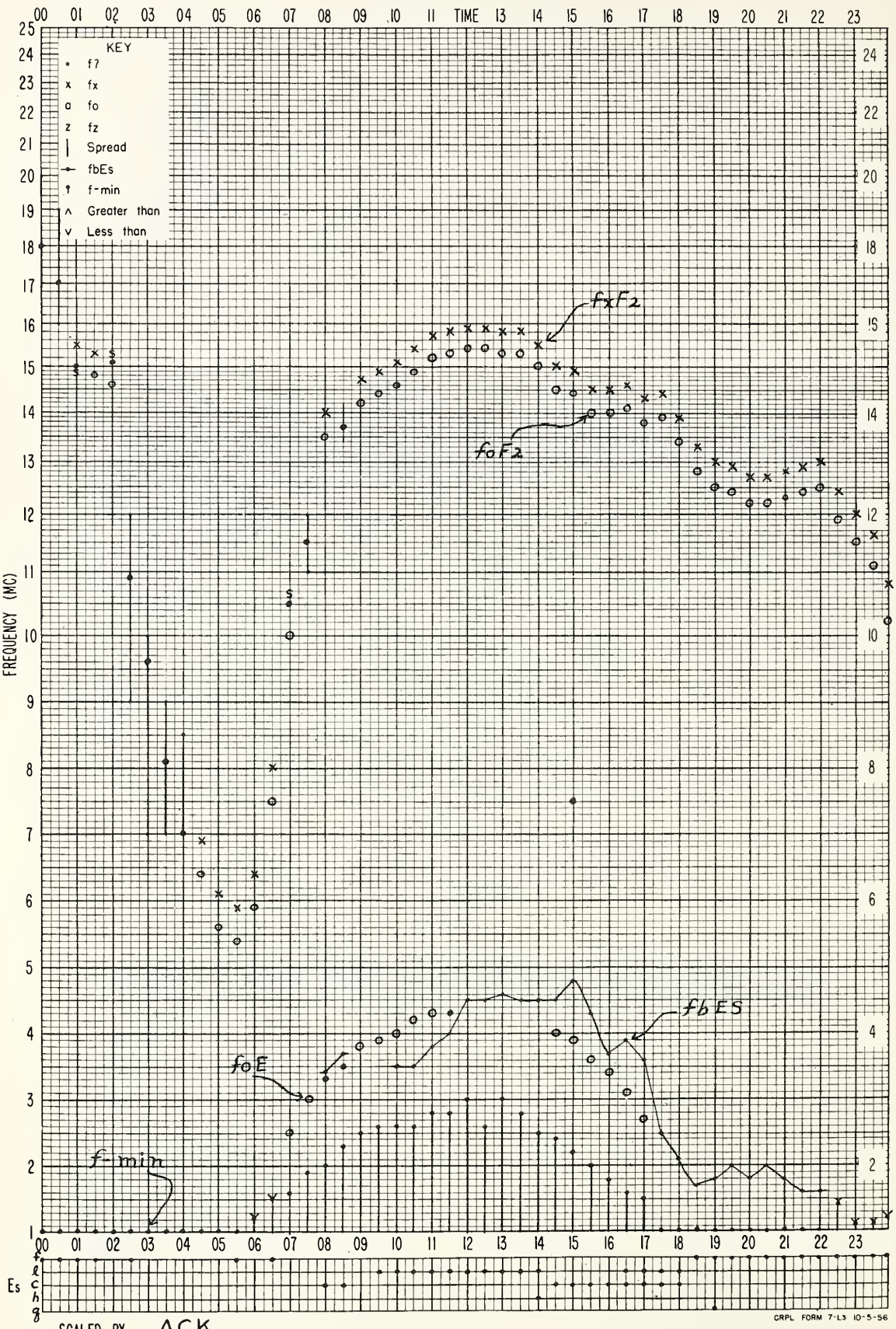

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Table 1

Lycksele, Sweden (64.6°N, 18.8°E) November 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		6.0	340				2.7	2.4
01		5.8	335				2.3	2.4
02		5.7	325				2.0	2.4
03		6.0	315				2.2	2.4
04		5.8	295				1.6	2.4
05		5.8	270					2.6
06		5.4	260					2.5
07		5.6	270		---	E		2.6
08		7.6	255		---	E		2.8
09		10.2	245		110	1.95		2.9
10		12.0	235		105	2.25		3.0
11		14.0	230		105	2.20		3.0
12		14.2	230		105	----		3.0
13		14.3	230		105	2.10		3.0
14		13.7	230		105	1.95		3.0
15		13.2	225		---	E		3.0
16		11.6	230		---	E		3.0
17		9.4	230		---	----		2.9
18		6.7	245					2.75
19		5.5	290					2.5
20		5.6	340				2.2	2.3
21		5.6	335				2.2	2.4
22		5.8	350				2.4	2.4
23		5.8	360				2.6	2.4

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

Table 2

Formosa, China (25.0°N, 121.5°E) November 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		14.0	240					2.80
01		13.0	240					2.80
02		11.2	230					2.80
03		8.6	230					2.85
04		7.0	<240					2.65
05		6.3	260					2.60
06		8.6	280					2.75
07		12.8	250			(2.5)		3.00
08		14.5	240			(3.3)	3.5	2.90
09		15.3	240			3.8	4.1	2.80
10		15.6	240			(4.0)	4.2	2.65
11		15.9	230	---		(4.2)	4.4	2.55
12	---	16.3	230	---		(4.2)	4.2	2.45
13	(420)	16.8	230	(7.4)		4.2	4.4	2.40
14	410	16.8	240	(7.3)		(4.0)	4.2	2.45
15	---	16.6	240			3.6	4.0	2.45
16		16.6	250			3.0	3.5	2.45
17		16.4	270			(2.2)	2.2	2.50
18		>17.0	280				2.6	2.55
19		18.4	300				2.4	2.50
20		>19.0	280					2.65
21		>18.5	240					2.75
22		(16.9)	230					(2.70)
23		15.0	240					2.75

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

Table 3

Fletchers Ice I, (82.0°N, 104.4°W) October 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		7.2	280					2.65
01		7.8	265					2.55
02		6.8	275		---	----		2.60
03		7.0	265		---	----		2.65
04		6.2	260		---	----		2.60
05		(7.6)	260		---	----		(2.70)
06		7.2	255		---	----		2.65
07		6.8	250		---	----		2.70
08		6.2	260		---	----		2.75
09		7.2	255		---	----		2.70
10		8.0	260		131	----		2.75
11		7.6	255		122	1.65		2.80
12		8.4	265		117	1.95		2.75
13		7.7	260		121	(1.90)		2.75
14	---	8.4	255	---	126	1.95		2.70
15		8.3	250		122	(1.95)		2.80
16		7.2	270		121	(1.70)		2.70
17	---	7.8	270	---	147	(1.80)		2.70
18		7.2	270		125	(1.55)		2.70
19		7.6	260		---	----		2.80
20		6.8	265		---	----		2.70
21		7.8	265		---	----		2.70
22		6.2	265		---	----		2.65
23		6.2	270					2.60

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

Table 4

Thule, Greenland (76.6°N, 68.7°W) October 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.4	280					2.50
01		(6.5)	270					(2.60)
02		(6.0)	280					(2.50)
03		(4.8)	280					(2.60)
04		---	270					----
05		(6.0)	270					(2.60)
06		5.6	270					2.70
07		6.2	265		138	----		2.75
00		6.4	270		139	----		2.80
09		8.1	270		122	(2.10)		2.80
10	---	8.0	270	---	120	(2.25)		2.70
11	---	8.2	270	---	127	(2.35)		2.65
12	---	7.2	265	---	119	(2.40)		2.65
13	---	8.0	270	---	119	(2.30)		2.70
14	---	8.2	270		125	(2.20)		2.60
15		7.4	275		131	----		2.70
16		8.1	265		---	----		2.55
17		(7.4)	280					(2.50)
18		8.6	270					2.60
19		(6.9)	275					(2.60)
20		(5.8)	270					(2.45)
21		6.6	270					2.40
22		(6.9)	275					(2.55)
23		(5.5)	280					(2.50)

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

Table 5

St. John's, Newfoundland (47.6°N, 52.7°W) October 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(6.2)	300					(2.60)
01		(6.0)	300					(2.50)
02		(5.2)	290					(2.55)
03		(5.0)	290					(2.50)
04		(5.2)	290					(2.50)
05		(5.0)	270					(2.60)
06		7.1	260		145	----		2.90
07		10.2	240		119	2.60		3.05
08		12.1	230		115	3.00		3.00
09		12.6	225		111	3.40		2.90
10	---	12.6	220		109	3.50		2.80
11		13.0	220		111	3.70		2.75
12		13.0	225		111	3.70		2.70
13		12.9	230		115	3.60		2.60
14		12.9	235		119	3.35		2.65
15		12.8	240		119	3.00		2.70
16		12.4	240		125	2.50		2.70
17		11.6	250		---	----		2.75
18		10.0	250					2.70
19		8.9	250					2.60
20		7.7	270					2.60
21		7.5	280				1.9	2.60
22		6.8	295					2.55
23		(6.6)	300					2.55

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

Table 6

Ft. Monmouth, New Jersey (40.3°N, 74.1°W) October 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		7.6	<270				(2.6)	2.65
01		7.2	<270				3.7	2.60
02		6.8	265				(2.5)	2.60
03		6.4	265				(2.5)	2.55
04		6.2	265				(3.5)	2.50
05		5.9	250					2.60
06		6.8	260		---	----	(2.0)	2.80
07		10.0	235		111	2.50		3.00
08		12.5	230		109	3.10		3.00
09		13.4	225		107	3.50		2.90
10		13.7	220		107	3.70		2.80
11		13.8	220		107	3.85		2.70
12		13.5	225		107	3.90		2.65
13		13.3	230		107	3.90		2.60
14		13.0	235		109	3.65		2.55
15		12.8	235		111	3.35		2.60
16		12.5	240		113	2.75		2.65
17		12.0	250		<124	2.10		2.70
18		11.2	245				(2.0)	2.70
19		10.0	250				(2.3)	2.65
20		9.2	250					2.65
21		8.5	260					2.70
22		8.0	265				(2.2)	2.60
23		7.8	270				(1.8)	2.60

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

Table 7

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

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		7.4	275				2.4	2.65
01		7.2	275					2.65
02		6.9	270				(2.4)	2.60
03		6.5	270				(1.8)	2.60
04		6.3	270					2.65
05		6.0	265				(2.5)	2.60
06		6.5	270		---	----		2.75
07		9.6	240		117	2.45		3.00
08		12.2	230		109	3.00		2.95
09	---	13.5	230		109	3.40		2.85
10	---	13.6	230		109	(3.70)		2.75
11	---	13.7	220		109	3.90		2.65
12	---	13.6	230		109	3.95		2.60
13	---	13.3	230		109	3.95		2.55
14		13.2	235		109	3.75		2.55
15		13.0	240		110	3.40		2.55
16		12.6	240		111	3.00		2.55
17		12.0	250		119	2.25		2.65
18		11.3	250					2.65
19		10.1	240				2.9	2.65
20		9.3	250				3.6	2.65
21		8.6	260				(2.7)	2.65
22		8.0	270				(1.6)	2.60
23		7.7	270					2.60

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

Table 8

Maui, Hawaii (20.8°N, 156.5°W) October 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		13.4	235					2.90
01		11.2	230					2.90
02		9.3	230					2.85
03		7.2	230					2.80
04		6.2	270					2.60
05		5.6	290					2.60
06		6.2	305		---	----	1.7	2.60
07		10.0	260		121	2.50		3.00
00		12.8	240		114	3.30	3.4	2.90
09		14.2	235		111	3.80	3.9	2.80
10	---	14.7	230		111	4.10	4.2	2.65
11	(405)	15.3	225	---	111	4.30	4.3	2.55
12	420	15.4	230	8.0	111	4.40		2.50
13	420	15.9	235	7.6	111	4.30		2.45
14	420	16.0	240	7.6	111	4.20	4.3	2.45
15	410	15.6	240	7.2	111	3.90	4.5	2.40
16	(395)	15.0	245	---	111	3.40	4.0	2.45
17	(280)	14.4	250		115	2.75	4.5	2.55
18		14.1	275		---	----	4.9	2.60
19		14.2	270				4.4	2.65
20		15.5	280				4.4	2.65
21		16.5	275				4.0	2.70
22		16.5	250				2.9	2.80
23		(14.8)	235				2.2	(2.85)

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

Table 9

Puerto Rico, W.I. (18.5°N, 67.2°W) October 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		9.0	260					2.75
01		8.4	250					2.90
02		7.4	240					2.95
03		6.3	240					2.80
04		5.7	250					2.50
05		5.4	290					2.55
06		6.2	270				2.6	2.70
07		9.6	240		122	2.50		3.05
08		12.1	235		109	3.20		3.00
09		13.4	235		109	3.70		2.85
10		13.6	230		109	4.00		2.80
11	---	13.5	225		109	(4.20)		2.65
12	---	13.2	225	---	109	(4.20)	4.5	2.55
13	400	13.0	230	(7.4)	111	(4.20)	4.5	2.50
14	(420)	13.0	230	(7.1)	111	(4.00)	4.4	2.45
15	---	12.6	235	---	113	(3.85)	4.3	2.45
16		12.2	240		113	3.50	4.0	2.45
17		11.8	250		117	(2.90)	3.4	2.50
18		11.6	265				2.5	2.55
19		10.7	270				2.6	2.60
20		10.3	270					2.60
21		9.8	280					2.65
22		9.9	275					2.70
23		9.4	265					2.75

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

Table 10

Panama Canal Zone (9.4°N, 79.9°W) October 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		10.4	235					2.90
01		8.8	225					2.95
02		6.8	220					2.85
03		5.6	235					2.70
04		5.3	245				1.8	2.65
05		4.8	260				2.2	2.60
06		6.4	300		---	----	2.0	2.65
07		10.9	250		117	2.75		2.95
00		13.0	240		111	3.50		2.90
09	---	14.0	230		109	4.00		2.80
10	---	14.0	225		109	4.20		2.70
11	(395)	14.0	225		109	4.40		2.55
12	435	13.9	220	7.6	107	4.40		2.50
13	450	14.0	220	7.2	108	4.40	4.5	2.45
14	450	14.0	230	6.9	107	(4.20)	4.5	2.40
15	440	13.5	240	---	107	(3.95)	4.7	2.40
16	420	13.3	245		109	(3.50)	4.7	2.45
17		13.0	260		111	(2.80)	4.4	2.50
18		13.0	280				4.3	2.60
19		13.0	280				4.2	2.65
20		(13.0)	275				(3.5)	(2.65)
21		(12.8)	245				(3.1)	(2.70)
22		(12.6)	250				(3.1)	(2.75)
23		11.7	240				(3.5)	2.85

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

Table 11

Bunia, Belgian Congo (1.5°N, 30.2°E) October 1957

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	12.0					1.6	2.52
01	250	11.7						2.54
02	230	11.0					1.6	2.74
03	220	9.4					1.6	2.86
04	250	9.1			130	---	3.0	2.76
05	250	11.0	245	---	115	3.1	4.0	2.70
06	---	12.0	240	---	110	3.7	4.2	2.42
07	---	13.0	230	---	110	4.0		2.18
08	---	13.9	230	---	110	4.1		2.11
09	(510)	14.1	230	---	110	---		2.01
10	545	14.5	230	---	110	---		1.94
11	(550)	14.5	240	---	110	---		1.89
12	550	14.2	225	---	110	---		1.88
13	580	14.0	240	---	110	3.9		1.86
14	(570)	14.0	250	---	110	3.5		1.86
15	---	14.0	270	---	120	2.8	2.8	1.87
16	(330)	13.6	305	---	---	---		1.83
17	410	>13.0						1.76
18	350	----						----
19	300	----					1.4	----
20	250	----					2.0	----
21	230	----						----
22	240	(11.5)						2.32
23	265	11.7						2.38

Time: 0.0°.
Sweep: 1.0 Mc to 20.0 Mc in 7 seconds.

Table 12

Leopoldville, Belgian Congo (4.4°S, 15.2°E) October 1957

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	265	13.3						2.41
01	255	11.4						2.52
02	240	10.6						2.62
03	230	8.8						2.62
04	215	6.9					1.7	2.71
05	250	8.4	250	---	125	2.2	3.0	2.64
06	260	10.6	240	---	115	3.1	3.8	2.60
07	280	11.6	235	---	110	3.8	4.4	2.34
08	380	12.6	230	---	110	4.0	4.4	2.17
09	415	13.2	235	---	110	4.2		2.10
10	480	13.7	230	---	110	4.2		2.00
11	495	14.0	240	---	110	---		1.99
12	500	14.9	240	---	110	4.2		1.93
13	495	15.0	240	---	110	4.1		1.97
14	490	15.0	245	---	110	3.9		1.96
15	485	15.0	250	---	110	3.4	4.0	1.97
16	445	>15.0	270	---	115	2.7	3.1	1.99
17	400	15.0	330	---			3.0	1.99
18	390	15.0						1.98
19	315	(16.5)						(2.27)
20	250	16.4						2.42
21	240	16.5						2.46
22	230	14.9						2.45
23	240	14.1						2.41

Time: 0.0°.
Sweep: 1.0 Mc to 20.0 Mc in 7 seconds.

Table 13

Elisabethville, Belgian Congo (11.6°S, 27.5°E) October 1957

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	9.0						2.38
01	270	8.4						2.47
02	255	7.3						2.49
03	255	6.3					1.6	2.43
04	255	8.4			145	2.0	2.5	2.59
05	240	10.6	240	---	110	3.0		2.62
06	255	11.6	235	---	105	3.6	3.9	2.48
07	(305)	12.1	235	---	110	3.9		2.30
08	400	12.7	235	---	110	4.0		2.19
09	430	12.8	240	---	105	4.1		2.12
10	450	13.0	245	6.8	105	4.2		2.07
11	455	13.1	240	6.6	110	4.1		2.07
12	450	13.3	245	6.5	110	4.0		2.06
13	450	13.3	250	6.2	110	3.9	4.4	2.07
14	430	13.0	250	---	115	3.6	4.3	2.07
15	385	13.0	270	---	120	3.0	4.0	2.10
16	320	13.3	300	---			3.3	2.16
17	315	13.6					2.9	2.28
18	290	14.0					2.8	2.34
19	255	14.2						2.40
20	240	13.2						2.40
21	240	12.4						2.37
22	250	10.6						2.40
23	265	9.8						2.32

Time: 0.0°.
Sweep: 1.0 Mc to 20.0 Mc in 7 seconds.

Table 14

Thule, Greenland (76.6°N, 68.7°W) 5September 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(6.2)	265					(2.70)
01		5.8	270					2.70
02		(7.0)	270					(2.70)
03		(4.1)	275					(2.55)
04		(6.2)	270					(2.80)
05		6.4	270		---	----		2.75
06	---	6.8	270	---	<120	(2.40)		2.70
07	---	(7.0)	260	---	115	(2.50)		(2.80)
08	---	6.8	255	---	111	2.70		2.80
09	---	6.7	245	---	111	2.70		2.80
10	(555)	6.2	250	---	111	(2.90)		2.65
11	(680)	6.2	250	4.0	107	2.90		2.60
12	440	6.4	250	4.0	109	2.90		2.60
13	(540)	7.2	<250	4.1	107	2.90		2.60
14	(530)	6.6	255	3.9	115	2.80		2.60
15	(540)	7.0	260	3.9	<113	2.70		2.65
16	(540)	5.8	265	---	113	2.55		2.50
17	---	6.4	270	---	123	2.30		2.65
18	---	(7.8)	270		---	----		(2.65)
19	---	(6.9)	270		---	----		(2.65)
20	---	6.2	275		---	----		2.70
21		(6.0)	265					(2.70)
22		(6.0)	280					(2.60)
23		(5.8)	270					(2.60)

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

Table 15

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

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		5.4	280				2.6	(2.65)
01		(4.8)	290				2.2	(2.70)
02		4.5	300					2.60
03		(4.7)	295				4.0	(2.85)
04		(4.6)	290		---	----		(2.70)
05		(5.6)	(300)		---	----		(2.65)
06	---	(5.4)	(315)	---	---	----		(2.75)
07	---	(5.2)	(275)	---	---	----		(2.70)
08	(480)	(5.4)	(275)	4.2	111	2.90		(2.65)
09	---	6.2	(260)	---	109	2.90		2.80
10	---	6.8	(255)	---	101	3.25		2.80
11	(405)	6.5	245	---	105	(3.05)		2.80
12	---	6.7	240	---	---	----		2.80
13	---	6.8	240	---	109	(3.00)		2.80
14	(395)	7.0	240	4.5	109	2.95		2.80
15	---	7.1	240	---	109	2.90		2.85
16	---	7.2	250	---	112	2.70		2.80
17	---	6.6	250	---	112	2.45		2.90
18	---	6.4	260	---	---	----		2.80
19	---	5.2	255		---	----		2.90
20		5.2	270		---	----		2.90
21		4.4	300		---	----	3.0	(2.80)
22		4.8	300		---	----	2.8	2.85
23		4.4	290		---	----	2.4	(3.00)

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

Table 16

Godhavn, Greenland (69.2°N, 53.5°W) 5September 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(5.4)						2.55
01		(4.8)						(2.50)
02		(4.9)						----
03		(3.8)						(2.35)
04		(4.1)						(2.50)
05		(4.2)						----
06		(5.0)		---	---	----		----
07		(5.6)		---	127	(2.30)		(2.45)
08		(6.2)		(3.8)	117	(2.55)		----
09		(6.9)		---	117	(2.90)		2.75
10		7.1		---	113	3.10		2.70
11		8.1		(4.6)	117	3.20		2.65
12		(7.2)		(4.5)	115	3.20		2.60
13		(7.2)		(4.2)	111	3.20		(2.40)
14		7.1		4.2	113	3.10		2.50
15		(6.8)		(4.2)	115	3.00		(2.55)
16		(7.0)		(4.2)	117	(2.90)		2.70
17		6.8		3.8	119	2.60		2.65
18		6.8		---	125	2.25		2.70
19		6.8		---	---	----	2.3	2.60
20		(6.8)						2.60
21		(6.6)						(2.65)
22		(6.4)						(2.55)
23		(5.2)						(2.60)

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

Table 17

Fairbanks, Alaska (64.9°N, 147.8°W) 5September 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(4.9)					3.7	(2.75)
01		(4.3)					4.0	(2.70)
02		(4.6)					4.4	(2.70)
03		(4.7)					3.8	(2.65)
04		(4.6)					4.5	(2.70)
05		(4.4)			---	----	3.5	(2.80)
06		(5.4)		---	121	----		(2.90)
07		5.9		---	108	2.60		2.80
08		6.2		(4.0)	104	2.95		2.80
09		6.3		(4.5)	105	3.20		2.70
10		7.0		(4.6)	107	3.30		2.80
11		6.5		(4.8)	109	3.40		2.70
12		6.7		4.8	108	3.40		2.60
13		7.0		(4.9)	108	3.35		2.70
14		7.0		(4.8)	110	3.25		2.75
15		7.2		---	110	3.00		2.80
16		7.1		---	109	2.70		2.80
17		6.8		---	111	2.45		2.90
18		7.4			127	(2.00)		2.95
19		(5.4)			---	----		(2.90)
20		(5.6)					2.8	(2.90)
21		(5.7)					2.8	(2.90)
22		(5.0)					3.1	(2.80)
23		(4.8)					3.5	(2.80)

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

Table 18

Reykjavik, Iceland (64.1°N, 21.8°W) 5September 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		---					3.4	----
01		---					3.0	----
02		---			---	----	3.0	----
03		---			---	----	2.9	----
04		---			---	----	3.4	----
05		(5.0)			---	----		----
06		5.7			---	----		2.80
07		6.4			---	----		2.90
08		6.9			117	2.80		2.85
09		7.2		---	115	3.10		2.80
10		8.0		---	119	(3.30)		2.75
11		8.2		---	111	(3.30)		2.70
12		8.4		---	109	3.50		2.65
13		8.1		4.8	111	3.40		2.70
14		8.2		4.7	111	3.35		2.70
15		8.0		---	117	(3.20)		2.70
16		7.9		---	114	(3.00)		2.75
17		7.4			119	2.80		2.75
18		(7.7)			(135)	2.80		2.75
19		(5.8)			---	----		(2.70)
20		(5.7)			---	----	2.8	----
21		---			---	----	3.5	----
22		---					3.2	----
23		---					3.9	----

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

Table 19

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

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		4.4					2.8	2.40
01		(4.3)					2.2	2.40
02		4.5					1.6	2.35
03		4.4					2.5	2.40
04		4.3						2.35
05		4.4			---	----	1.7	2.50
06		5.1		---	111	1.90		2.65
07		6.0		3.9	111	2.50		2.65
08		6.1		4.3	112	2.90		2.65
09		6.6		4.5	112	3.10		2.50
10		7.0		(4.7)	109	3.30		2.50
11		6.8		4.8	109	3.40		2.50
12		7.0		5.0	111	(3.50)		2.50
13		7.4		5.0	113	3.50		2.50
14		7.6		4.8	113	3.30		2.60
15		7.8		4.6	113	3.10		2.65
16		7.4		---	117	2.80		2.70
17		7.1		---	119	2.45		2.75
18		7.3			121	2.00		2.80
19		7.0						2.70
20		5.6						2.65
21		5.2					2.2	2.75
22		4.9					2.6	2.65
23		(4.4)					3.1	2.60

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

Table 20

Adak, Alaska (51.9°N, 176.6°W) 5eptember 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(4.5)	330		---	----		(2.45)
01		(4.0)	340		---	----		2.40
02		(3.9)	<340		---	----		2.40
03		3.7	340		---	----		2.40
04		(3.7)	350		---	----		(2.50)
05	---	4.0	310	---	191	E		2.55
06	G	5.4	270	3.2	110	(2.25)		2.75
07	G	6.0	250	3.8	109	2.85		2.80
00	G	6.9	240	4.3	111	3.20	3.2	2.85
09	G	7.6	235	4.5	109	3.50		2.80
10	G	8.6	230	4.7	111	(3.60)		2.80
11	G	8.8	230	4.8	108	(3.75)		2.75
12	470	9.2	230	5.0	111	(3.75)		2.75
13	(680)	9.4	235	4.8	111	(3.60)		2.80
14	(555)	9.1	240	4.6	111	(3.50)		2.70
15	---	8.8	240	---	109	3.20		2.80
16	---	8.5	250	---	111	(2.90)		2.85
17	---	8.6	250	---	114	(2.50)		2.85
18	---	7.8	255		135	----		2.85
19		7.4	250		---	----		2.80
20		6.7	255		---	----		2.80
21		6.0	260		---	----		2.80
22		5.3	270		---	----		2.65
23		(4.8)	290		---	----		2.55

Time: 180.0°W.
5weep: 1.0 Mc to 25.0 Mc in 27 seconds.

Table 21

Ft. Monmouth, New Jersey (40.3°N, 74.1°W) 5eptember 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.8	270					2.60
01		6.1	275					2.60
02		5.8	<270				(3.2)	2.65
03		5.4	<270				(2.2)	2.60
04		5.2	<260				(3.7)	2.70
05		4.8	<260					2.70
06		6.4	250		<115	2.10		3.00
07	---	8.3	240	---	111	2.85		3.05
08	G	9.4	230	---	109	3.40		3.05
09	---	9.7	220	4.5	107	3.70		2.95
10	---	10.2	220	---	109	3.90		2.85
11	(630)	10.2	220	5.0	109	4.00		2.75
12	(665)	10.2	220	5.0	109	4.00		2.70
13	(500)	10.3	225	5.0	105	4.00		2.70
14	490	10.2	230	5.0	107	3.85		2.65
15	(545)	10.2	235	4.8	109	3.60		2.70
16	(550)	10.2	240	---	109	3.20		2.70
17	---	10.2	245	---	114	2.60		2.80
18	---	10.0	245		---	----		2.85
19		9.4	235				(3.6)	2.80
20		8.3	<245				(3.3)	2.70
21		7.7	<250				(3.2)	2.70
22		7.0	<270				(3.9)	2.70
23		6.8	<280					2.65

Time: 75.0°W.
5weep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 22

White 5ands, New Mexico (32.3°N, 106.5°W) 5eptember 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		5.7	300					2.50
01		5.7	300				(3.7)	2.60
02		5.6	<315				(3.0)	2.55
03		5.4	<300					2.60
04		5.4	280				(2.7)	2.55
05		5.0	280				(3.2)	2.60
06		6.2	280		115	----		2.85
07	---	8.7	250	---	111	2.80		3.00
00	---	9.7	240	---	110	(3.30)		3.00
09	(460)	10.2	230	---	<111	3.80		2.85
10	---	11.0	230	---	111	4.00		2.70
11	(490)	11.1	230	---	109	4.00		2.65
12	380	11.3	230	---	109	4.10		2.60
13	380	11.3	230	---	111	4.10		2.60
14	(365)	11.4	235	---	111	4.00		2.60
15	(525)	10.8	240	4.8	111	3.80		2.60
16	(470)	10.6	240	4.5	<111	(3.35)		2.65
17	---	10.2	255	---	113	2.85	2.9	2.75
18		9.8	250		119	----	2.0	2.80
19		8.6	<240				3.0	2.80
20		7.0	<245				2.8	2.65
21		6.6	<275					2.65
22		6.3	(275)					2.60
23		6.1	280				(3.2)	2.60

Time: 105.0°W.
5weep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 23

Grand Bahama I. (26.6°N, 78.2°W) 5eptember 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		7.4	290					2.65
01		7.0	290					2.60
02		6.9	275				(2.6)	2.70
03		6.4	255				(2.3)	2.70
04		6.0	270				(2.2)	2.65
05		5.7	270				(2.5)	2.70
06		6.5	265		115	1.85		2.80
07	---	9.0	235	---	110	2.70		3.00
00	---	10.4	230	---	109	3.50		3.00
09	---	11.8	220	---	103	3.75		2.85
10	---	12.0	215	---	105	4.00		2.75
11	(400)	12.3	225	---	109	4.20		2.70
12	(420)	12.2	220	6.1	109	4.25		2.70
13	(355)	12.2	220	6.5	109	4.20		2.60
14	(345)	12.0	230	---	109	4.10		2.60
15	---	11.7	230	---	109	3.85		2.65
16		11.5	235		109	3.50	3.8	2.70
17		11.0	250		109	3.00	3.2	2.70
18		10.5	245		111	2.00	2.1	2.75
19		9.3	230				(4.0)	2.75
20		8.2	250				(3.3)	2.70
21		8.0	260				2.6	2.70
22		7.8	270				3.1	2.65
23		7.4	290				(3.6)	2.65

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

Table 24

Okinawa I. (26.3°N, 127.8°E) 5eptember 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		13.3	265				3.1	2.85
01		12.2	265				3.1	2.80
02		11.1	250				3.2	3.00
03		9.3	230				(2.7)	2.90
04		7.6	235				(2.8)	2.75
05		>6.8	(240)				(2.8)	2.80
06		7.4	280				3.1	2.80
07		10.0	240		(121)	2.65	2.8	3.20
08		11.2	230		113	(3.30)	3.6	3.10
09		11.9	230		111	3.70	4.3	2.90
10		12.6	225		111	(3.95)	4.9	2.70
11	---	13.8	<230		(111)	(4.10)	4.8	2.65
12	(375)	14.6	225	---	(111)	4.20	4.8	2.65
13	375	15.5	230	---	(113)	(4.20)	4.9	2.60
14	380	16.0	230	6.8	(115)	(4.10)	4.9	2.60
15	365	15.6	240	---	111	3.95	4.4	2.65
16	345	15.0	<245		113	3.65	4.3	2.65
17	---	14.6	250		113	3.15	4.4	2.70
18		14.5	265		(119)	(2.25)	4.4	2.75
19		>14.5	260				3.6	2.70
20		>14.8	270				3.8	2.65
21		(16.8)	260				3.4	(2.60)
22		>15.3	275				3.9	(2.65)
23		14.0	270				3.1	(2.75)

Time: 135.0°E.
5weep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 25

Puerto Rico, W.I. (18.5°N, 67.2°W) September 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		8.9	285				(3.1)	2.70
01		8.6	270				(2.8)	2.80
02		8.2	270				(2.7)	2.75
03		7.1	250				(2.5)	2.75
04		6.5	245				(2.1)	2.80
05		6.0	270				2.2	2.65
06		6.4	285		---	----	(2.4)	2.80
07	---	8.8	240	----	115	(2.55)		3.15
08	---	10.0	235	---	110	3.25	3.4	3.05
09	---	11.4	230	---	111	(3.65)	3.9	2.90
10	---	12.2	230	---	111	(4.00)	4.1	2.80
11	(340)	12.9	225	---	109	(4.20)		2.70
12	350	13.0	225	(6.4)	109	4.35		2.65
13	370	13.0	230	6.8	111	(4.30)		2.60
14	375	13.0	230	6.8	111	(4.20)	4.6	2.60
15	370	12.7	240	(6.8)	111	(4.00)	4.5	2.60
16	(315)	12.3	240	---	111	(3.70)	4.5	2.65
17	---	11.6	245		114	(3.10)	4.2	2.65
18		11.2	260		<121	(2.15)	3.2	2.70
19		10.4	255				3.1	2.70
20		9.6	260				3.3	2.65
21		9.4	275				3.2	2.60
22		9.1	285				3.1	2.65
23		9.1	280				(4.8)	2.70

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

Table 26

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

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		13.2	270					2.90
01		13.2	260					3.00
02		10.4	240					2.90
03		8.2	250				2.3	2.80
04		7.8	260				2.6	2.80
05		6.9	260				2.9	2.85
06		8.0	290		145	(2.00)	2.6	2.80
07		10.5	270		125	(2.05)	3.6	2.05
00		12.0	260		121	(3.40)	4.8	2.50
09		13.2	250		121	(3.85)	4.8	2.40
10		13.8	250		121	(4.05)	5.0	2.25
11	---	14.0	<245		122	(4.15)	4.0	2.15
12	---	13.4	245		121	(4.25)		2.10
13	---	13.4	250		121	4.20		2.15
14	---	14.0	250	---	123	(4.05)		2.20
15		14.0	255		125	(3.85)		2.20
16		14.0	270		121	3.40	5.0	2.20
17		13.6	290		129	(2.75)	4.0	2.15
18		12.8	<330		---	----	4.0	2.20
19		12.3	420				3.0	2.10
20		12.0	370				2.3	2.35
21		(12.2)	320				2.8	(2.50)
22		12.8	295				3.5	2.60
23		13.5	280				2.0	2.80

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

Table 27

Canberra, Australia (35.3°S, 149.0°E) September 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.7	275					2.70
01		6.4	270					2.70
02		6.0	275					2.75
03		5.7	270					2.60
04		5.2	290					2.60
05		5.0	290		---	----		2.65
06	---	5.5	275		120	1.90		2.90
07	(630)	>8.2	245	---	110	2.70		3.05
08	(460)	10.0	240	4.4	105	3.20		3.10
09	(330)	11.0	230	4.8	105	3.50		3.00
10	(290)	11.2	225	(5.0)	105	3.75		2.90
11	(325)	>11.2	220	5.6	105	3.85		2.85
12	(320)	11.2	220	---	105	4.00		2.80
13	(290)	11.1	220	---	110	4.00		2.70
14	(330)	10.6	225	5.0	105	3.80		2.70
15	---	10.3	230	---	110	3.60		2.65
16	---	10.0	240	---	110	3.30		2.75
17	---	9.5	245	---	115	2.70		2.80
18		8.7	245	---	140	1.80		2.80
19		>8.6	250					2.70
20		>7.9	260					2.70
21		>7.5	260					2.75
22		>7.0	270					2.80
23		6.8	275					2.70

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

Table 28

Fletchers Ice I. (82.0°N, 101.0°W) August 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	---	5.6	270	---	<115	2.20		2.70
01	---	5.7	265	---	124	2.20		2.75
02	(400)	5.7	275	3.6	119	(2.20)		2.65
03	<390	5.5	260	3.6	121	2.20		2.75
04	---	5.5	260	---	119	2.30		2.80
05	(480)	5.5	255	(3.9)	118	(2.30)		2.75
06	(490)	5.6	255	4.0	113	----		2.70
07	350	5.8	<250	4.0	111	2.50		2.75
08	(400)	5.9	250	4.1	112	2.60		2.75
09	375	5.8	240	4.2	109	----		2.70
10	<400	5.6	235	4.2	104	(2.70)		2.65
11	400	6.0	240	4.4	105	2.85		2.65
12	400	5.8	230	4.4	103	----		2.65
13	420	5.6	220	4.3	103	----		2.60
14	445	5.5	225	4.3	104	----		2.50
15	465	5.3	<225	4.3	103	(2.70)		2.55
16	435	5.6	<235	4.2	103	2.85		2.50
17	400	5.5	240	4.2	105	2.85		2.55
18	470	5.3	250	4.2	109	----		2.45
19	420	5.2	<250	4.0	111	----		2.60
20	450	5.3	<255	4.1	112	----		2.55
21	440	5.5	255	3.8	111	(2.55)		2.65
22	(400)	5.8	260	3.7	111	(2.30)		2.65
23	(420)	5.8	260	3.7	119	2.30		2.75

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

Table 29

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

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(7.2)				----	3.6	(2.65)
01		(7.0)				----	3.6	(2.65)
02		(6.5)				----	3.9	(2.60)
03		(6.0)				----	3.3	(2.60)
04		6.0				1.60	3.8	(2.70)
05		6.2		---		2.05	3.7	2.80
06		6.4		---		2.60	4.2	2.75
07		6.7		---		2.90	4.4	2.75
08		7.1		---		3.10	4.4	2.80
09		6.8		4.7		3.30	4.4	2.75
10		7.0		4.9		3.40	4.2	2.65
11		7.1		5.0		3.45	4.6	2.65
12		7.1		5.0		3.50	4.3	2.65
13		7.0		4.9		3.50	4.4	2.70
14		7.0		4.9		3.45	4.4	2.75
15		7.0		4.9		3.40	4.3	2.75
16		7.0		---		3.25	4.3	2.75
17		7.4				3.00	3.9	2.85
18		7.1				2.85	4.0	2.05
19		6.9				2.50	3.6	2.90
20		6.4				2.15	3.3	2.85
21		6.4				1.65	3.3	2.85
22		7.0				1.60	3.5	2.80
23		6.9				E	3.4	(2.70)

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

Table 30

Lulea, Swedeo (65.6°N, 22.1°E) August 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		>6.0	300				<2.5	
01		>7.0	310				<1.7	
02		(7.0)	300		---	---	<1.9	
03		(6.6)	310		---	---	<1.7	
04	<430	(6.0)	270	>3.4	---	1.8	1.8	
05	<310	>6.0	250	---	120	2.5	2.7	---
06	(380)	6.6	240	4.2	110	3.0	3.0	---
07	(360)	7.2	240	4.6	110	3.2	3.5	---
00	370	7.4	230	5.0	105	3.5	3.7	(2.8)
09	390	7.6	225	5.2	110	3.5	3.8	---
10	(380)	7.5	220	5.3	105	3.6	3.8	(2.7)
11	360	>7.5	210	5.3	100	3.6	3.8	---
12	390	7.5	210	5.5	110	3.6	3.8	---
13	340	7.4	210	5.2	105	3.6		---
14	---	7.3	225	---	110	3.5	<3.6	(2.8)
15	<310	7.3	225	5.0	110	3.5		---
16	---	7.4	230	---	110	3.3		---
17	---	7.3	240	---	115	3.0	<3.2	---
18	---	7.2	250		120	2.6	3.5	
19		>7.2	260		130	2.2	2.8	
20		>6.7	260		140	1.8	<2.2	
21		>6.0	260		---	---	<2.4	
22		>6.0	270				2.1	
23		>6.6	(275)				<2.0	

Time: 15.0°E.
Sweep: 1.5 Mc to 10.0 Mc in 9 minutes, automatic operation.

Table 31

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

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		5.2	290		---	---	5.0	
01		5.4	270		---	---	5.2	
02		5.0	270		130	1.2	4.6	
03		4.8	270		---	1.4	5.0	
04		5.0	280		120	1.7	4.3	
05	---	5.0	280	---	110	2.0	4.8	---
06	(360)	5.4	250	3.8	105	2.3	5.0	---
07	430	5.8	230	4.4	105	2.8	5.0	---
08	400	5.8	220	4.6	100	3.0	5.1	---
09	430	5.9	220	4.7	100	3.4	5.0	---
10	480	6.0	220	5.0	100	3.6	6.0	---
11	460	6.4	220	5.0	100	3.6	6.0	---
12	410	6.4	220	5.0	100	3.6	5.4	---
13	440	6.9	210	5.0	100	3.7	5.4	(2.6)
14	430	7.1	210	5.0	100	3.6	5.0	(2.8)
15	400	6.7	220	4.8	100	3.5		---
16	400	6.5	230	4.8	100	3.4	5.0	---
17	400	6.5	230	4.6	100	3.1	4.5	---
18	350	6.3	240	4.3	105	2.8	5.0	
19	---	6.1	280	3.8	110	2.5	5.5	
20		6.0	280		120	2.1	6.0	
21		5.0	280		120	1.6	6.3	
22		5.5	280		140	1.4	5.7	
23		5.2	200		---	---	5.0	

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

Table 32

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

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		---					4.3	
01		---			---	----	4.0	
02		---			---	----	4.0	
03		(4.2)			---	----	3.7	----
04		(4.9)			---	----	3.8	(2.75)
05		5.4			111	2.10	2.3	2.80
06		5.7			111	2.40		2.90
07		6.0		---	109	>2.70		2.80
00		6.6		4.4	109	3.00		2.80
09		6.8		4.7	103	3.25		2.85
10		7.0		4.9	106	3.40		2.85
11		7.0		5.0	108	(3.50)		2.70
12		7.0		4.9	105	(3.50)		2.65
13		7.3		5.0	103	3.55		2.70
14		7.0		5.0	105	3.50		2.70
15		7.3		4.9	109	3.45		2.70
16		7.0		(4.7)	109	3.30		2.70
17		6.6		4.5	109	3.00		2.70
18		(6.5)		---	111	2.85		(2.80)
19		6.4			120	2.90	3.4	2.80
20		(6.2)			121	3.00	3.3	----
21		---			---	----	3.7	----
22		---					4.4	----
23		---					4.2	

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

Table 33

Slough, England (51.5°N, 0.6°W) August 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.5	310				2.8	2.50
01		6.2	310				3.2	2.45
02		5.9	310			----	3.0	2.45
03		5.6	300			----	3.0	2.50
04		5.2	295		170	<1.25	3.0	2.55
05		5.4	280		130	<1.75	3.2	2.75
06	365	6.5	250	---	125	2.40	3.4	2.90
07	420	7.4	245	4.5	115	2.90	3.6	2.80
08	370	7.6	240	5.2	115	3.25	4.2	2.75
09	335	8.1	230	5.3	115	<3.60	4.4	2.75
10	340	8.4	230	5.4	110	3.70	4.7	2.75
11	365	8.3	215	5.5	110	3.80	4.6	2.65
12	365	8.6	220	5.7	110	3.90	4.8	2.65
13	390	8.3	220	5.6	110	3.80	4.8	2.70
14	380	8.2	225	5.6	110	3.80	4.2	2.65
15	360	8.2	230	5.5	110	3.70	3.8	2.65
16	360	8.3	235	5.4	110	3.40	3.6	2.75
17	315	8.1	245	---	115	3.05	3.4	2.70
18		8.3	255		120	2.60	3.6	2.75
19		8.3	270		130	1.90	3.5	2.70
20		8.2	265			<1.60	3.0	2.70
21		7.8	260			<1.60	2.3	2.60
22		7.2	285			----	2.2	2.50
23		6.9	300			----	2.8	2.50

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

Table 34

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

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		4.8	290				<1.6	2.75
01		4.4	300				<1.8	2.7
02		4.1	310				3.0	2.6
03		4.0	300				3.2	2.7
04		3.9	300				3.0	2.7
05		3.9	290		---	---		2.75
06	300	5.0	270		110	2.2		3.0
07	310	5.6	240	4.0	110	2.8		2.95
08	380	6.0	220	4.6	105	3.1		2.8
09	400	6.2	210	4.9	100	3.5		2.7
10	430	6.5	210	5.0	100	3.7		2.6
11	440	6.9	200	5.1	100	3.9		2.6
12	480	7.0	200	5.2	100	4.0		2.5
13	440	6.9	210	5.2	100	4.0		2.5
14	460	6.9	210	5.2	100	3.9		2.55
15	450	6.9	210	5.1	100	3.8		2.55
16	400	6.8	220	5.0	100	3.6		2.7
17	380	6.9	220	---	100	3.2		2.7
18	320	6.8	240	---	105	2.8		2.8
19	300	6.9	260		120	2.3		2.9
20		6.8	280		---	1.8		2.9
21		6.2	270				3.0	2.8
22		5.9	270				<1.8	2.8
23		5.0	280				<1.6	2.9

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

Table 35

Budapest, Hungary (47.4°N, 19.2°E) August 1957

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	330	6.6					3.0	2.79
01	330	6.5					2.8	2.79
02	320	6.2					2.3	2.86
03	315	5.9					2.3	2.86
04	300	5.6						2.95
05	295	5.7	---	---	---	1.9		2.97
06	265	6.6	250	4.1	130	2.4	3.2	3.16
07	275	7.6	250	4.7	125	2.9	4.0	3.10
08	315	8.2	245	5.0	120	3.3	4.4	2.86
09	315	8.8	245	5.2	120	3.4	4.8	2.86
10	340	9.4	250	5.6	120	3.6	4.8	2.74
11	360	9.2	250	5.8	120	3.8	4.7	2.65
12	365	9.4	260	5.9	120	3.9	4.6	2.63
13	360	9.0	250	5.8	120	3.9		2.65
14	360	8.8	250	5.8	120	3.8	4.0	2.65
15	355	8.5	240	5.7	120	3.5		2.69
16	335	8.4	255	5.2	120	3.2		2.77
17	295	8.4	255	4.6	125	3.0	3.2	3.00
18	280	8.2	260	4.2	130	2.5	3.4	3.06
19	275	8.3	---	---	---	---	2.8	3.10
20	275	8.0					2.5	3.10
21	290	7.5					3.0	3.00
22	290	7.2					3.0	3.00
23	315	7.0						2.86

Time: Local time.
Sweep: 1.0 Mc to 20.0 Mc in 35 seconds.

Table 36

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

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		7.3	300				3.2	2.60
01		7.0	300				3.2	2.55
02		6.8	300				3.5	2.55
03		6.7	290				2.6	2.55
04		6.5	290			----	2.8	2.60
05		7.0	265			2.00	2.4	2.75
06	---	8.0	250	---		2.60	3.4	2.80
07	---	8.7	250	---		3.10	4.8	2.90
00	(375)	8.8	230	5.4		3.40	5.3	2.90
09	310	8.4	220	5.6		3.55	5.3	2.80
10	350	8.6	220	5.6		3.60	5.4	2.75
11	380	0.8	220	5.7		3.60	5.3	2.75
12	365	8.7	250	5.6		3.70	5.0	2.75
13	365	8.5	260	5.5		3.80	4.5	2.75
14	370	8.8	270	5.7		3.60	4.8	2.70
15	345	8.5	265	5.3		3.50	4.2	2.75
16	---	8.3	250	---		3.30	4.0	2.80
17		8.3	250			2.75	4.1	2.85
18		8.3	270			2.05	4.5	2.85
19		8.5	265				4.8	2.80
20		8.2	275				4.4	2.75
21		8.0	275				3.5	2.65
22		7.6	280				3.5	2.60
23		7.3	290				3.4	2.60

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

Table 37

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

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		7.8	300				3.1	2.60
01		7.5	300				3.1	2.60
02		7.4	300				3.0	2.60
03		7.0	295				3.0	2.55
04		6.7	300				2.6	2.60
05	---	7.2	280	---		1.70	3.0	2.70
06	270	8.4	250	---		2.50	3.5	2.90
07	260	9.3	245	4.6		3.05	4.0	3.00
08	270	9.4	235	5.3		3.45	4.5	2.85
09	300	9.4	225	5.6		3.60	5.3	2.85
10	340	9.2	210	6.0		3.80	4.9	2.75
11	350	9.6	220	6.0		3.85	5.2	2.70
12	350	9.9	230	6.0		3.95	5.2	2.70
13	350	9.6	240	5.9		4.00	4.7	2.70
14	350	9.5	240	5.8		3.90	4.7	2.70
15	340	9.5	240	5.5		3.55	4.5	2.75
16	325	9.2	250	---		3.30	4.0	2.75
17	300	9.1	250	---		2.80	4.7	2.80
18	---	9.2	275			2.00	4.6	2.85
19		8.8	265				4.1	2.80
20		8.2	270				3.8	2.70
21		8.1	295				4.5	2.65
22		8.1	300				4.2	2.60
23		8.0	300				3.7	2.60

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

Table 38

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

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		8.1	330				3.2	2.50
01		8.3	325				2.5	2.50
02		7.7	310				2.4	2.60
03		7.4	300					2.55
04		7.1	310					2.50
05		7.5	300					2.60
06	(300)	8.9	260			2.50	3.0	2.90
07	280	9.7	250	---		3.10	3.6	2.90
08	290	9.6	250	5.1		3.40	4.2	2.85
09	340	9.5	250	5.7		3.75	5.2	2.70
10	360	9.6	250	5.9		3.90	5.2	2.60
11	375	10.4	260	6.1		----	5.7	2.55
12	380	11.0	250	6.0		----	4.9	2.55
13	365	10.7	250	6.0		4.00	4.7	2.55
14	375	10.6	250	5.8		3.95	4.0	2.60
15	355	10.3	255	5.6		3.70	4.2	2.65
16	355	10.2	255	5.4		3.40	4.4	2.65
17	320	10.1	275	---		2.85	5.0	2.70
18	(305)	9.9	285			2.05	4.8	2.75
19		9.5	280				4.2	2.75
20		8.5	300				4.0	2.55
21		8.6	320				3.6	2.50
22		8.6	320				3.9	2.50
23		8.4	320				4.0	2.55

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

Table 39

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

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		9.0	290				3.2	2.70
01		8.8	295				3.0	2.70
02		8.5	280				3.1	2.75
03		8.0	260				2.8	2.80
04		7.6	250				2.6	2.80
05		7.2	255				2.8	2.80
06		8.0	250			1.85	3.0	3.00
07	(250)	9.4	235			2.75	3.5	3.25
08	245	9.4	230	---		3.30	4.4	3.20
09	(245)	9.4	220	---		3.65	5.2	2.95
10	(350)	9.8	225	---		3.90	5.3	2.75
11	355	10.8	220	6.3		4.05	5.2	2.70
12	350	11.4	220	6.3		4.10	5.5	2.70
13	350	11.7	230	6.3		4.10	5.5	2.70
14	350	11.7	230	6.2		4.00	5.2	2.70
15	345	11.9	240	6.1		3.90	5.6	2.75
16	325	11.9	240	5.8		3.60	5.7	2.80
17	305	11.6	250	---		3.20	5.1	2.80
18	290	11.4	255	---		2.50	5.0	2.90
19		11.0	250				4.4	2.90
20		10.0	255				4.0	2.80
21		9.5	290				3.8	2.65
22		9.6	295				3.2	2.65
23		9.3	290				3.2	2.70

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

Table 40

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

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		13.0	310					2.70
01		13.5	280					2.90
02		11.0	255					2.95
03		9.0	245					2.80
04		7.3	260					2.80
05		6.3	260				2.8	2.85
06		7.8	300		<147	(1.95)	4.0	2.85
07		9.5	275		129	(2.95)	5.3	2.80
08		9.9	260		127	(3.40)	7.0	2.60
09		10.7	245		127	(3.80)	7.0	2.25
10		11.2	240		129	(4.00)	6.9	2.15
11		12.0	230		128	(4.15)	5.0	2.10
12		12.5	240	---	129	(4.20)	4.5	2.10
13	---	12.8	240	---	129	4.20		2.05
14	---	13.0	245	---	129	4.00		2.10
15	---	13.3	250	---	125	3.80	4.0	2.10
16	---	13.4	265	---	127	3.40	4.0	2.25
17	---	13.1	280		129	(2.90)	3.8	2.25
18		12.8	310		139	2.05	3.8	2.25
19		12.0	375				3.0	2.10
20		(11.6)	420				2.4	(2.10)
21		11.5	370				2.8	2.30
22		11.4	350				2.6	2.40
23		11.6	340				2.0	2.55

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

Table 41

Leopoldville, Belgian Congo (4.4°S, 15.2°E) August 1957

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	205	11.0						2.78
01	220	8.8					2.0	2.58
02	235	7.3					2.3	2.60
03	245	6.0					2.4	2.63
04	240	4.6					2.0	2.75
05	260	5.6	---	---	---	---	2.6	2.73
06	255	9.7	245	---	115	2.7	3.6	2.96
07	265	11.0	235	---	110	3.3	4.1	2.83
08	275	11.9	220	---	110	3.8	4.8	2.71
09	295	12.0	215	---	105	4.0	4.7	2.56
10	345	12.3	205	---	105	4.0		2.39
11	380	12.6	210	---	105	4.1		2.32
12	395	13.0	215	---	105	4.1		2.23
13	420	14.0	220	---	105	4.0		2.19
14	410	14.0	230	---	110	3.8		2.19
15	385	14.0	240	---	110	3.3	3.4	2.21
16	350	14.1	250	---	115	2.7	3.2	2.30
17	310	15.0	270	---			3.1	2.40
18	280	15.0					3.0	2.47
19	280	15.6					2.5	2.47
20	220	17.0						<2.68
21	210	15.2						2.68
22	210	15.0						2.73
23	205	13.0						2.71

Time: 0.0°.
Sweep: 1.0 Mc to 20.0 Mc in 7 seconds.

Table 42

Elisabethville, Belgian Congo (11.6°S, 27.5°E) August 1957

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	240	4.3						2.50
01	250	3.8						2.47
02	265	3.6						2.60
03	250	3.4					1.6	2.72
04	265	4.0					1.7	2.65
05	245	8.6			120	2.3	2.9	2.94
06	250	10.6	240	---	110	3.1		2.94
07	260	11.0	230	---	105	3.6	3.8	2.82
08	275	11.4	220	---	110	3.9	4.3	2.70
09	290	11.2	230	---	110	4.0		2.58
10	300	11.0	230	---	105	4.0		2.50
11	350	11.0	240	---	105	4.0	4.2	2.40
12	365	11.0	245	---	105	3.9	4.0	2.31
13	360	11.2	240	5.6	110	3.7		2.33
14	330	11.3	240	---	110	3.4	4.0	2.35
15	(305)	11.3	255	---	120	2.8	3.6	2.42
16	260	11.3	---	---			3.5	2.54
17	250	11.4					3.0	2.63
18	250	11.7					3.0	2.70
19	230	11.6					2.4	2.76
20	230	11.7					2.5	2.71
21	225	10.2					1.8	2.79
22	215	8.8						2.76
23	220	6.5						2.72

Time: 0.0°.
Sweep: 1.0 Mc to 20.0 Mc in 7 seconds.

Table 43

Townsville, Australia (19.3°S, 146.7°E) August 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		7.0	250					3.10
01		6.5	250					3.10
02		6.0	240					3.00
03		4.6	220				2.1	3.00
04		4.1	250					2.80
05		4.0	290				2.1	2.75
06		4.2	270					2.90
07		>7.5	250		140	(2.20)		(3.30)
00	---	>9.9	240		100	3.00		----
09	(250)	>11.0	230		100	3.40		----
10	(260)	12.4	220		100	3.65	3.9	3.15
11	260	12.0	220		100	3.80	4.2	3.10
12	270	11.3	205		100	3.80	4.2	3.00
13	285	>11.0	210		100	3.80	4.1	2.95
14	(335)	11.0	220		100	3.70	4.2	(2.90)
15	(300)	>11.0	210		100	3.55	3.9	2.85
16	---	>10.0	240		100	3.30	3.6	----
17		>8.4	250		115	2.70		
18		>8.0	250		130	<1.80		
19		>7.5	250		---	----		----
20		>7.0	250					(2.80)
21		>6.5	250					----
22		>6.6	250					----
23		>7.0	250					(2.90)

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

Table 44

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

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		7.6	250					3.25
01		7.4	240					3.30
02		6.2	<250					3.30
03		5.4	240					3.30
04		4.9	<250					3.25
05		4.2	250				2.0	3.20
06		4.2	<280				2.4	3.10
07		6.0	290		---	---	3.0	3.25
00	---	9.4	250		100	2.7	4.0	3.45
09	(250)	(12.1)	240		100	3.2	4.0	(3.40)
10	280	(12.9)	240		100	3.7	3.9	3.30
11	280	13.1	230	---	100	3.9		3.30
12	280	(11.4)	230	---	100	3.9		(3.30)
13	(320)	(11.7)	210	---	100	3.9		(3.20)
14	(340)	(11.3)	200	---	100	3.9		(3.10)
15	(340)	(11.8)	210	---	100	3.8	3.9	(3.10)
16	(350)	(12.2)	230	6.0	100	3.4	3.9	3.10
17	(300)	(12.9)	250		100	3.0	4.0	(3.10)
18		(13.0)	260		100	2.2	3.0	(3.30)
19		(12.9)	250				3.0	(3.30)
20		----	250				3.0	----
21		(9.0)	250				3.0	(3.10)
22		(8.6)	250				2.3	(3.30)
23		(8.3)	250					(3.15)

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

Table 45

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

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		11.0	230				<2.1	3.20
01		10.2	230				<2.1	3.20
02		9.1	230				<2.1	3.25
03		8.0	220				<2.1	3.20
04		5.8	240				<2.1	3.05
05		4.7	250				<2.1	3.00
06		4.2	270			----	<2.1	2.90
07		7.8	245			<2.30		3.20
08		9.7	240			2.90		3.20
09		11.4	230			3.30		3.00
10		13.2	220			3.60		3.00
11		13.2	215			3.80		2.90
12		13.0	210			3.90		2.80
13		13.0	215			3.90		2.70
14		13.6	210			----		2.70
15		14.0	230			3.40		2.75
16		14.0	240			3.20		2.80
17		14.2	250			2.60		3.00
18		14.0	240				<2.2	3.05
19		13.6	230				<2.1	3.15
20		12.9	240				<2.1	3.00
21		12.2	240				<2.1	3.00
22		12.5	240				<2.1	3.00
23		11.7	230				<2.1	3.10

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

Table 46

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

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		3.5	<250				<1.6	2.80
01		3.4	<280				<1.6	2.75
02		3.4	<280				<1.6	2.80
03		3.2	<240				<1.6	2.90
04		3.1	<250				<1.6	2.80
05		3.1	<280				<1.6	2.85
06		3.4	<255			<1.6	<1.6	2.90
07	---	7.2	235			2.4		3.30
00	235	9.4	230			2.9		3.30
09	250	10.7	220			3.4		3.15
10	250	11.2	220	---		3.6		3.05
11	255	11.6	210	5.5		3.8		2.95
12	270	11.2	210	5.6		3.9		2.85
13	275	11.2	210	5.4		3.8		2.80
14	260	11.2	210	4.9		3.8		2.75
15	270	10.9	225	---		3.5	3.6	2.75
16	250	10.9	230	---		3.1	3.2	2.80
17	---	10.6	240			2.6	2.7	2.85
18		10.2	230			<1.7		2.95
19		8.6	220				<1.8	3.10
20		6.8	220				2.0	3.10
21		5.8	235				<1.8	3.10
22		5.0	240				<1.8	3.10
23		4.0	240				<1.7	2.95

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

Table 47

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

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.2	260					2.75
01		5.8	260					2.75
02		5.8	250					2.80
03		5.2	240					2.75
04		5.0	250					2.70
05		4.8	260		---	E		2.70
06		6.0	250		---	E		2.90
07		9.0	240		120	2.60		3.15
00		10.8	230		120	3.20		3.20
09		11.8	230		110	3.50		3.10
10		11.7	220		110	3.80		3.00
11		11.0	220		110	3.80		2.95
12		10.8	220		110	3.85	4.0	2.85
13		10.5	210		110	3.80	3.8	2.80
14		10.5	220		120	>3.60	3.8	2.80
15		10.0	230		120	3.40		2.80
16		9.9	240		125	2.90		2.80
17		9.6	240		130	2.25		2.85
18		8.9	230		---	E		2.85
19		7.9	240		---	----		2.75
20		7.8	250					2.75
21		7.0	250					2.80
22		6.6	250					2.75
23		6.4	250					2.75

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

Table 48

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

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		2.9	<280				<1.5	2.80
01		2.9	<295				<1.5	2.70
02		3.0	<300				<1.5	2.75
03		3.0	<290				<1.4	2.75
04		3.0	<270				<1.4	2.85
05		2.9	<270				<1.4	2.85
06		3.0	<280				<1.5	2.80
07		3.8	<255			<1.4	<1.5	2.85
00		7.3	230			2.3		3.30
09	(250)	9.2	240			2.9		3.20
10	(250)	10.0	230			3.3		3.05
11	255	11.2	230			3.6		2.95
12	255	11.6	225	---		3.7		2.85
13	275	11.6	220	---		3.7		2.80
14	295	12.0	220	5.1		3.7		2.80
15	280	11.8	235	---		3.6		2.80
16	270	11.4	235			3.3		2.75
17	---	11.2	245			2.9		2.85
18		10.9	235			2.1		2.95
19		8.9	220				<1.5	3.05
20		6.6	225				<1.6	3.10
21		5.6	230				1.6	3.20
22		4.2	230				<1.5	3.15
23		3.1	<250				<1.5	2.95

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

Table 49

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

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		4.7	290					2.65
01		4.4	300					2.70
02		4.4	300					2.65
03		4.3	290					2.70
04		4.1	270					2.75
05		3.7	270					2.70
06		3.5	270					2.75
07		5.2	250					3.00
08		>7.7	240					3.05
09		9.4	240		---	3.10		3.10
10		>10.2	230		120	3.30		3.10
11		10.8	230		120	3.50		3.00
12		11.1	230		120	3.60		2.90
13		11.2	230		120	3.60		2.90
14		>11.0	230		120	3.50		2.85
15		>10.0	230		120	3.25		(2.80)
16		>9.0	240		---	----		
17		>7.7	240		---	----		----
18		>7.7	240					----
19		>7.7	240					2.80
20		7.3	240					2.80
21		(6.3)	250					(2.80)
22		>5.5	260					2.75
23		5.3	280					2.70

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

Table 50

Christchurch, New Zealand (43.6°S, 172.0°E) August 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		5.8	300				<1.8	2.60
01		5.9	300				<1.8	2.60
02		5.2	270				<1.8	2.60
03		5.0	280				<1.9	2.65
04		4.9	260				<1.7	2.70
05		4.3	260				<1.7	2.70
06		4.0	260				<1.9	2.70
07		4.9	260		---	1.6	<1.9	2.80
08		7.7	240		115	2.4		3.20
09		0.8	240		110	3.0		3.20
10		10.0	230		105	(3.2)	<3.4	3.15
11	---	10.6	240	---	105	3.5		3.00
12	---	10.9	230	---	---	3.7	3.8	3.10
13	---	11.0	230	---	100	3.7	<3.8	3.00
14	---	11.0	240	---	105	3.6		3.00
15	---	10.2	240		110	3.4	3.4	2.95
16	---	10.0	240		110	3.0		3.00
17		9.3	240		115	2.5	<2.6	3.00
18		8.9	240		---	(1.7)	<2.2	3.00
19		8.2	250				<2.2	2.80
20		7.4	250				<2.3	2.80
21		6.4	250				<2.2	2.70
22		6.2	260				<2.2	2.70
23		6.0	280				<2.2	2.65

Time: 100.0°E.
Sweep: 1.0 Mc to 13.0 Mc in 1 minute 55 seconds.

Table 51

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

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		4.7	<290				2.2	2.7
01		4.5	280				<1.7	2.7
02		4.2	280				2.7	2.7
03		3.9	<280				<1.5	2.7
04		3.8	<270				<1.5	2.8
05		3.7	260				<1.5	2.9
06		3.5	<260		---	---	<1.5	2.8
07		5.4	250		140	1.8		3.0
08	---	7.2	240		120	2.4		3.1
09	(250)	8.2	230	---	120	2.8		3.1
10	250	9.4	230	4.2	120	3.0		3.0
11	250	9.8	230	4.2	120	3.1		3.0
12	250	10.6	230	4.5	120	3.1		3.0
13	250	10.7	220	4.3	115	3.1		3.0
14	240	10.4	230	4.0	115	2.9		3.0
15	(250)	10.2	230	3.8	120	2.6		3.0
16		9.4	240		120	2.2		3.0
17		9.0	240		---	1.6		2.9
18		8.0	230				<1.5	2.9
19		7.2	<250				<1.5	2.8
20		6.0	250				<1.5	2.8
21		6.0	250				<1.5	2.0
22		5.5	<270				1.8	2.7
23		5.1	270				<1.5	2.75

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

Table 52

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

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(3.9)	300				<1.4	(2.85)
01		3.0	300				<2.0	(2.80)
02		3.6	300				2.0	(3.00)
03		3.5	<300				<1.2	----
04		3.5	280				<1.3	(3.00)
05		(3.7)	280				2.5	----
06		(3.6)	260		---	---	2.0	----
07		5.2	250		---	---	<1.2	----
08		(4.5)	250		---	---	<1.2	----
09		5.0	250		---	1.6	<1.8	(3.30)
10		6.2	250		170	1.7	2.2	(3.30)
11		6.9	250		150	1.7	2.8	(3.30)
12		6.6	250		<160	<1.7	2.4	3.30
13		6.6	260		140	<1.8	2.5	(3.30)
14		7.6	250		---	1.5	<2.2	3.20
15		7.0	250		---	1.4	<2.3	3.30
16		7.8	250		---	---		(3.10)
17		7.8	250				<1.2	3.20
18		0.0	250					3.00
19		7.5	250					3.05
20		7.0	250					(3.20)
21		5.9	270					3.05
22		5.4	<290					----
23		(4.3)	280				<1.1	(2.80)

Time: 165.0°E.

Table 53

Lulea, Sweden (65.6°N, 22.1°E) July 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		>6.2	300				2.9	
01		>6.4	300				2.9	
02	---	6.0	300	---	250	1.8	2.0	
03	420	(6.2)	280	(3.6)	140	2.2	2.5	
04	400	>6.3	250	(3.0)	120	>2.6	2.8	----
05	410	6.3	240	4.2	110	3.0	3.5	----
06	415	6.9	230	>4.5	110	3.2	3.6	----
07	380	7.2	235	5.2	110	3.4	3.7	
08	410	>7.3	230	>5.2	110	3.5	3.7	(2.55)
09	380	7.5	230	5.4	110	3.6	3.8	(2.6)
10	410	7.5	230	5.5	105	3.6	4.0	2.5
11	410	7.3	220	5.5	105	3.6	4.0	(2.45)
12	410	7.4	225	(5.5)	105	>3.6	3.8	(2.6)
13	400	7.3	220	>5.6	105	3.6	3.6	(2.7)
14	390	7.4	220	5.5	<110	3.6		(2.6)
15	(400)	7.2	220	5.3	110	3.5		(2.6)
16	(360)	(7.0)	220	5.2	110	3.5		(2.6)
17	---	>6.9	240	>4.0	110	3.3	3.7	----
18	---	(7.0)	245	---	110	3.1	3.6	----
19	---	>7.0	250	---	120	2.6	3.7	
20	---	(7.0)	260		130	2.3	2.9	
21		>6.5	270		145	1.9	1.9	
22		>7.0	270		---	---		
23		>6.0	280					

Time: 15.0°E.
Sweep: 1.5 Mc to 10.0 Mc in 9 minutes, automatic operation.

Table 54

Dourbes, Belgium (50.1°N, 4.6°E) July 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		7.1	320				(1.8)	2.50
01		6.0	315				<1.8	2.50
02		6.4	310				<1.6	2.50
03		6.2	310				<2.0	2.50
04	---	6.0	<300	---	---	----	<2.2	2.60
05	---	6.4	265	---	121	2.30	2.8	2.60
06	(475)	6.8	250	---	<116	2.90	3.3	2.65
07	(400)	7.4	240	---	110	3.25	3.8	2.70
08	465	7.7	<235	5.0	111	(3.50)	<4.0	2.60
09	400	7.6	230	5.4	114	(3.70)	4.2	2.65
10	400	8.0	(230)	5.6	109	(3.00)	4.6	2.60
11	455	7.9	230	5.7	(111)	(3.85)	4.3	2.55
12	410	8.2	(225)	5.7	108	(3.95)	4.4	2.65
13	420	8.2	<230	5.7	111	(3.85)	4.2	2.60
14	410	0.0	(230)	5.6	111	(3.70)	4.3	2.60
15	395	7.9	(230)	5.7	<112	3.70	4.4	2.60
16	(400)	7.6	240	5.3	117	3.50	4.0	2.70
17	---	7.0	250	---	116	3.15	3.5	2.70
18	---	0.0	255	---	113	2.70	3.4	2.70
19	---	7.8	295		---	----	3.0	2.80
20		(7.7)	280				2.5	(2.65)
21		(7.9)	300				2.0	(2.55)
22		(7.5)	(300)				<1.9	(2.50)
23		(7.4)	310				<2.2	2.50

Time: 0.0°.
Sweep: 1.0 Mc to 25.0 Mc in 30 seconds.

Table 55

Paramaribo, Surinam (5.8°N, 55.2°W) July 1957

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	370	10.8					3.2	2.40
01	320	11.8					3.2	2.50
02	300	12.2					3.1	2.65
03	280	11.7					3.0	2.75
04	265	9.9					3.0	2.75
05	280	9.1					3.0	2.75
06	280	8.8					3.0	2.80
07	260	8.7					2.8	2.85
08	250	8.2					2.9	2.85
09	250	6.7					3.1	2.95
10	245	7.7			130	2.3	3.2	3.00
11	220	8.3	---	---	105	3.0		2.95
12	220	9.1	210	---	100	3.6		2.70
13	---	10.2	210	---	100	3.9		2.50
14	(400)	11.4	210	5.8	100	4.1		2.50
15	400	11.9	210	6.1	100	4.2		2.50
16	400	12.5	210	6.0	105	4.3	4.8	2.50
17	410	12.0	210	6.2	100	4.2	4.7	2.50
18	400	12.8	210	6.2	100	4.0	5.2	2.50
19	390	12.6	220	6.0	100	3.8	5.0	2.50
20	400	12.1	220	5.7	100	3.4	5.0	2.50
21	(270)	11.6	240	---	---	3.0	5.0	2.40
22	300	11.0	---	---	---	1.9	4.8	2.40
23	370	10.7					4.2	2.40

Time: 0.0°.
Sweep: 1.4 Mc to 20.0 Mc in 40 seconds.

Table 56

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

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		4.2	290					2.70
01		4.4	300					2.65
02		4.3	300					2.65
03		4.3	300					2.70
04		4.1	280					2.70
05		3.8	260					2.85
06		3.4	260					2.85
07		3.7	270					2.85
08		7.4	240		---	----		3.10
09		9.4	240		---	----		3.30
10		10.6	240		130	3.10		3.20
11		11.3	250		130	3.30		3.10
12		>11.5	250		130	3.45		3.10
13		11.8	245		130	3.35		2.90
14		>11.5	250		130	3.20		3.00
15		11.6	240		---	3.00		3.00
16		10.6	250		---	----		3.00
17		10.5	240		---	----		2.95
18		8.8	250					(3.05)
19		>7.7	250					3.00
20		6.7	250					2.95
21		5.5	255					2.90
22		4.8	270					2.75
23		4.4	290					2.75

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

Table 57

Cape Hallett (72.3°S, 170.3°E) July 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		4.5	270		---	---	<1.4	----
01		3.7	275		---	---	<1.4	(2.55)
02		4.5	275		---	---	<1.6	(2.70)
03		4.3	270		---	---	<1.5	(2.40)
04		3.2	270		---	---	<1.5	----
05		3.1	265		---	---	<2.0	(2.25)
06		3.8	260		119	1.5		----
07		4.1	280		---	1.5		----
00		4.8	275		---	---	<1.5	----
09		5.3	250		---	---	<1.6	(2.55)
10		5.8	240		---	---	<1.7	(2.70)
11		5.8	250		113	1.7	<2.5	(2.85)
12		6.2	255		---	1.9	<2.1	----
13		6.0	260		---	1.9	<2.5	2.70
14		6.3	240		146	1.8	<1.9	(2.70)
15		6.6	260		---	---	<2.2	2.70
16		6.8	245		---	---	<2.3	2.70
17		7.1	255		---	---	<2.2	2.75
18		6.6	245		---	---	<2.3	(2.75)
19		6.6	235		---	---	<1.8	2.80
20		5.9	240		---	---	<1.4	(2.65)
21		6.0	240		---	---	<1.3	(2.50)
22		5.9	255		---	---	<1.2	(2.55)
23		4.8	250		---	---	<1.3	(2.60)

Time: 165.0°E.

Table 58

Leningrad, U.S.S.R. (59.9°N, 30.7°E) April 1957

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	6.9						2.5
01	320	6.4						2.5
02	340	6.0						2.5
03	340	5.8						2.5
04	320	5.8						2.5
05	300	6.0			100	2.0		2.6
06	280	6.5	240	2.6	100	2.2		2.7
07	280	6.8	240	4.0	120	2.6		2.7
08	300	7.6	240	4.5	100	3.0		2.7
09	320	8.2	240	5.3	100	3.4		2.7
10	320	8.4	230	5.5	100	3.7		2.6
11	360	9.2	240	5.7	100	3.9		2.6
12	360	9.8	220	5.8	100	4.0		2.6
13	380	10.0	220	5.9	100	4.0		2.6
14	320	10.0	220	5.8	100	4.0		2.6
15	300	10.5	240	5.8	100	3.9		2.6
16	300	10.5	240	5.2	100	3.8		2.7
17	300	10.5	240	5.3	100	3.5		2.7
18	260	9.1	240	5.2	100	3.2		2.7
19	260	9.1	240	4.5	100	2.7		2.8
20	260	9.1			120	2.3		2.8
21	260	8.2						2.7
22	260	7.7						2.7
23	300	7.0						2.6

Time: 30.0°E.
Sweep: 1.0 Mc to 18.0 Mc in 10 minutes, semiautomatic operation.

Table 59

Irkutsk, U.S.S.R. (52.5°N, 104.0°E) April 1957

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	(6.6)						---
01	300	(5.8)						---
02	300	(5.6)						---
03	300	(5.6)						(2.6)
04	300	(5.6)						(2.8)
05	280	(5.9)						(2.8)
06	260	(7.7)		(4.0)	110	(2.0)		(2.8)
07	250	(8.2)	220	(4.4)	110	(2.8)		2.8
08	250	(9.4)	220	(4.4)	110	(3.2)		(2.8)
09	260	(10.8)	210	(4.5)	110	(3.4)		(2.8)
10	270	11.0	210	(4.9)	110	(3.6)		2.8
11	260	11.7	210	---	110	(3.8)		2.8
12	290	11.8	210	(6.3)	110	(3.9)		2.7
13	200	11.8	210	(6.4)	110	(3.8)		2.7
14	300	11.6	210	(6.6)	110	(3.7)		2.8
15	280	11.4	210	(4.6)	110	(3.5)		2.7
16	260	11.3	220	(4.4)	110	(3.4)		2.0
17	250	(10.6)	220	(4.2)	110	(3.1)		(2.8)
18	250	(10.3)			110	(2.4)		---
19	250	(9.0)						(2.8)
20	250	(9.5)						---
21	250	(8.4)						---
22	260	(8.6)						---
23	280	(7.6)						---

Time: 105.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 1 minute.

Table 60

Townsville, Australia (19.3°S, 146.7°E) December 1956

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		>8.4	280				2.0	
01		>8.7	280				2.1	
02		>7.0	295				2.4	
03		>6.5	300					
04		>6.5	300					----
05		>6.4	310			----		----
06		>6.4	260			2.35		
07	---	9.6	240	---		3.00	3.3	(2.85)
08	---	10.0	235	---		3.50	4.1	2.75
09	---	11.0	230	---		3.85	4.2	2.60
10	(440)	11.1	230	6.2		4.00	4.6	2.50
11	410	11.9	210	6.5		4.15	4.6	2.50
12	425	12.0	220	6.5		4.20	4.7	2.50
13	420	12.0	225	6.6		4.20	5.0	2.50
14	400	12.0	220	6.3		4.10	4.5	2.50
15	400	11.8	235	6.3		3.95	4.6	2.55
16	400	11.0	250	6.1		3.70	4.4	2.60
17	---	>10.0	250	---		3.25	4.1	(2.60)
18		>8.4	270			2.30	3.4	----
19		>7.0	310			<1.70	3.0	
20		>6.5	340				3.1	
21		>6.0	340				1.9	
22		<7.0	340				2.5	
23		<7.7	305				2.5	

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

Table 61

Brisbane, Australia (27.5°S, 152.9°E) December 1956

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		9.0	290				3.7	2.60
01		0.5	290				2.4	2.55
02		0.4	290				2.5	2.45
03		8.0	300					2.40
04		7.6	300			E		2.45
05		7.9	200			1.9	2.0	2.50
06	---	8.4	250	---		2.8	3.6	2.60
07	(460)	9.2	240	5.2		3.4	4.4	2.55
08	(530)	10.0	230	5.5		3.0	5.3	2.50
09	(525)	10.1	(230)	6.0		>4.0	5.7	2.40
10	430	10.7	(220)	6.5		4.2	6.0	2.40
11	430	11.0	(230)	6.6		4.3	5.0	2.40
12	430	11.1	235	6.5		4.3	5.0	2.40
13	430	11.0	(240)	6.3		4.3	4.0	2.40
14	410	10.9	230	6.3		4.2	4.5	2.40
15	410	10.2	235	6.1		4.0	4.4	2.40
16	410	9.9	250	5.8		3.7	4.3	2.45
17	---	9.4	250	---		3.2	4.0	2.50
18		9.0	275			2.2	3.8	2.45
19		9.0	300			E	3.3	2.45
20		9.0	<330			---	2.6	2.40
21		9.1	330				3.4	2.40
22		9.5	320				3.4	2.45
23		9.6	305				3.4	2.50

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

Table 62

Hobart, Tasmania (42.9°S, 147.2°E) December 1956

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		7.3	300					2.40
01		6.8	310					2.40
02		6.0	320					2.30
03		5.6	330				1.9	2.30
04		5.5	330			1.40	1.0	2.40
05	---	6.0	280	---		1.95	2.0	2.50
06	600	6.4	250	4.4		2.75	3.5	2.55
07	440	6.9	240	5.1		3.25	3.7	2.50
00	460	7.2	240	5.6		3.60	4.2	2.45
09	500	7.6	(240)	6.0		3.90	4.6	2.45
10	500	7.4	(240)	5.9		4.00	4.9	2.40
11	500	8.2	(220)	6.0		4.00	4.5	2.30
12	500	8.0	---	6.0		3.90	4.5	2.35
13	500	8.3	(240)	6.0		3.90	4.8	2.30
14	510	7.7	(230)	5.8		3.90	4.5	2.35
15	500	8.0	230	5.8		4.00		2.35
16	470	7.8	240	5.7		3.80		2.40
17	440	7.7	240	5.4		3.50	3.7	2.40
10	(400)	7.7	250	4.8		3.00	3.4	2.50
19		7.8	290			<2.20	3.7	2.50
20		7.8	300			<2.20	3.5	2.50
21		8.5	310			----	3.5	2.45
22		8.5	310				3.5	2.40
23		8.0	320					2.40

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

Table 63

Townsville, Australia (19.3°S, 146.7°E) November 1956

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		>7.0	280					
01		>7.0	280					
02		>7.0	<300					
03		>6.8	290				1.4	
04		>7.0	280				1.6	----
05		>7.0	300			----	2.2	----
06		>7.8	250			2.30		
07	---	(10.3)	240	---		3.00	3.5	----
00	---	10.9	230	---		3.50	4.4	2.75
09	---	11.7	230	---		3.75	4.4	2.65
10	---	12.0	(220)	---		4.00	4.7	2.50
11	(410)	13.0	(220)	6.6		4.10	4.7	2.60
12	410	13.0	220	6.6		4.15		2.55
13	400	13.0	230	6.7		(4.15)	4.2	2.50
14	390	12.9	230	6.7		4.10	4.7	2.50
15	400	12.0	240	6.4		3.85	4.5	2.50
16	---	>11.4	250	---		3.50	4.6	2.60
17		>10.0	(250)			3.00	4.2	----
18		>9.5	280			(2.10)	3.8	
19		>7.0	300			----	3.1	
20		---	320				2.8	
21		>7.0	330					
22		>7.0	310					
23		>7.0	290					

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

Table 64

Brisbane, Australia (27.5°S, 152.9°E) November 1956

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		9.0	290				2.6	2.55
01		0.5	290				2.7	2.45
02		8.4	300				2.0	2.45
03		7.8	300				1.7	2.45
04		7.9	300			E		2.40
05		0.0	290			1.9		2.50
06	---	9.0	250	---		2.7	3.0	2.70
07	---	9.5	240	---		3.4	4.0	2.60
08	(500)	10.2	230	5.5		3.7	4.4	2.50
09	(410)	11.2	230	6.0		4.0	4.6	2.50
10	420	11.8	230	6.4		<4.1	5.0	2.45
11	420	11.9	230	6.6		4.3	4.9	2.45
12	400	12.0	230	6.5		4.3	4.6	2.40
13	400	12.0	230	6.5		4.2	4.5	2.45
14	410	11.0	240	6.2		4.0	4.4	2.45
15	410	10.5	240	6.0		3.9	4.1	2.45
16	---	10.0	250	5.0		3.5	4.3	2.50
17		9.6	260			2.9	3.7	2.50
18		10.0	280			1.8	3.6	2.55
19		9.6	290			E	2.1	2.50
20		9.5	310			---		2.45
21		9.9	320					2.45
22		9.8	320					2.45
23		9.6	300				3.0	2.50

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

Table 65

Hobart, Tasmania (42.9°S, 147.2°E) November 1956

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		6.5	310					2.40
01		6.0	320					2.40
02		5.5	330					2.35
03		5.0	330					2.30
04		4.6	330					2.40
05		5.4	300			<2.0		2.55
06	---	6.0	270	---		2.6		2.60
07	G	6.3	250	4.9		3.2		2.60
08	G	7.0	240	5.0		3.5		2.60
09	530	7.4	230	5.5		3.7		2.40
10	560	7.5	230	5.8		3.9		2.30
11	530	8.0	230	6.0		4.0		2.30
12	520	8.0	230	6.2		4.0		2.30
13	520	8.2	240	6.0		4.0		2.35
14	530	8.0	230	5.9		4.0		2.30
15	500	8.5	240	5.6		3.8		2.30
16	490	8.4	240	5.3		3.6		2.40
17	(460)	8.5	250	5.0		3.2		2.40
18		8.5	260			2.6		2.50
19		8.5	300			<2.0		2.55
20		8.5	300			---	3.3	2.50
21		8.0	300					2.50
22		7.5	330					2.45
23		7.3	320					2.45

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

Table 66

Townsville, Australia (19.3°S, 146.7°E) October 1956

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		>9.0	260					
01		>8.4	245					----
02		>8.4	275					----
03		>7.4	280					----
04		>7.8	280					----
05		>7.5	280					----
06		>8.8	265			2.10		----
07		(11.5)	230			2.90	3.3	(3.10)
00		>12.4	230			3.25	3.8	(2.95)
09	---	13.0	220	---		3.65	4.6	2.95
10	---	13.6	(210)	---		3.85	5.0	2.80
11	---	13.9	220	---		(4.00)	5.0	2.75
12	(340)	14.0	210	---		4.10	5.6	2.70
13	(375)	13.8	210	---		4.05	4.6	2.70
14	---	13.5	230	---		3.90	4.6	2.65
15	---	13.0	(240)	---		3.70	4.3	2.65
16	---	>11.9	240			3.35	4.3	----
17	---	>10.4	250			2.80	(3.8)	----
18		>9.8	270			----	(3.1)	----
19		>9.5	(270)				(3.3)	
20		>9.0	290				2.2	
21		>9.0	290				(1.8)	
22		>9.0	280					----
23		>9.5	270					----

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

Table 67

Brisbane, Australia (27.5°S, 152.9°E) October 1956

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		9.0	270					2.65
01		8.5	265					2.65
02		8.0	260					2.60
03		7.9	280					2.55
04		7.7	290			E		2.55
05		8.4	300			E		2.65
06		10.1	250			2.5		2.85
07		11.4	240			3.0	3.3	2.90
08	---	12.2	230	---		3.5	4.0	2.85
09	(260)	12.5	220	4.8		3.8	4.0	2.75
10	(260)	12.6	220	5.0		3.9	4.2	2.65
11	300	12.9	210	5.5		4.0	4.2	2.60
12	(355)	13.0	215	6.4		4.1		2.55
13	350	12.5	230	6.3		4.0	4.2	2.55
14	(360)	12.0	220	6.0		3.9	4.1	2.55
15	---	11.9	230	---		3.7	4.0	2.55
16	---	11.8	240	---		3.2	3.8	2.60
17		11.0	<260			2.6	3.0	2.65
18		10.6	260			E	(2.0)	2.70
19		10.1	260			E	2.0	2.65
20		9.8	280					2.60
21		10.0	290					2.65
22		10.0	280					2.65
23		9.7	270					2.70

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

Table 68

Hobart, Tasmania (42.9°S, 147.2°E) October 1956

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		7.0	300					2.50
01		6.4	295					2.50
02		6.0	280					2.50
03		5.5	290					2.50
04		5.3	290					2.50
05		5.4	300			1.5		2.60
06		6.8	250			<2.0		2.80
07		8.3	240			2.8		2.95
08	---	9.4	230	---		3.2		2.90
09	---	10.1	230	---		3.5		2.80
10	---	10.7	220	---		3.6		2.70
11	(500)	11.0	220	5.6		3.7		2.65
12	(500)	11.0	205	5.9		3.8		2.60
13	(500)	11.3	210	5.8		3.8		2.60
14	(500)	11.3	230	5.5		3.7		2.60
15	---	11.0	230	---		3.5		2.60
16	---	10.5	230			3.3		2.65
17		10.5	240			2.7		2.70
18		10.5	250			<2.0		2.75
19		10.2	250			<2.0		2.70
20		9.3	270					2.65
21		8.1	280					2.60
22		7.6	290					2.55
23		7.3	300					2.50

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

Table 69

Poitiers, France (46.6°N, 0.3°E) July 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	295	(6.8)					2.4	----
01	295	6.9					2.3	(2.55)
02	290	6.5					2.4	----
03	285	5.9			---	---	2.4	(2.70)
04	290	5.4	---	---	---	E	2.7	2.70
05	275	5.9	255	3.3	---	1.8	2.7	2.85
06	300	6.4	240	4.2	110	2.7	3.1	2.95
07	320	6.6	225	4.7	105	3.1	3.8	(2.95)
08	340	7.0	225	5.1	100	3.4	4.2	2.85
09	350	7.2	220	5.2	100	3.6	4.3	2.80
10	345	7.6	210	5.4	100	3.7	4.6	2.95
11	355	7.4	220	5.4	100	3.7	4.5	(2.90)
12	360	7.5	225	5.6	100	3.8	4.5	2.85
13	380	7.5	215	5.5	100	3.8	4.4	2.80
14	370	7.5	225	5.3	100	3.7	4.2	2.80
15	350	7.4	225	5.4	100	3.6	3.9	2.90
16	350	7.5	235	5.2	100	3.4	4.0	2.85
17	320	7.8	230	4.8	105	3.1	3.6	----
18	300	8.0	250	4.2	110	2.7	3.3	
19	270	(8.0)	255	3.5	---	1.9	3.2	
20	250	(7.0)	---	---	---	E	3.5	
21	260	(7.0)					3.3	----
22	280	7.2					3.6	----
23	285	6.9					2.6	----

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

Table 70

Casablanca, Morocco (33.6°N, 7.6°W) July 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	<320	8.55					3.6	2.55
01	<310	8.50					3.4	(2.55)
02	<295	8.40					3.0	2.60
03	<290	7.80			---	----	2.8	2.75
04	<280	7.30			---	----	2.9	2.70
05	<275	6.60			---	----	2.9	2.70
06	255	6.60	265	----	---	1.90	3.2	2.80
07	260	7.40	240	----	115	2.70	3.7	3.00
08	300	7.80	230	(4.80)	110	3.10	4.5	3.00
09	300	8.00	230	(5.20)	110	3.50	5.0	2.90
10	350	8.10	220	(5.40)	110	(3.70)	4.9	2.80
11	365	8.70	215	5.50	110	3.80	4.8	2.70
12	365	9.00	220	5.50	110	3.90	4.8	2.70
13	370	9.40	220	5.65	110	----	4.2	2.70
14	350	9.75	220	5.60	110	(3.75)		2.70
15	360	>9.50	230	5.35	110	3.70		2.70
16	350	9.55	240	5.40	110	3.60	4.6	2.80
17	345	9.60	240	(5.00)	110	3.30	4.5	2.80
18	315	10.00	250	(4.50)	115	2.80	4.8	2.90
19	<280	(9.10)	260	----	---	1.90	3.9	(2.80)
20	<265	>8.50			---	----	3.5	2.80
21	<295	>8.35					3.4	(2.50)
22	<300	8.75					3.4	2.55
23	<320	8.65					3.6	2.55

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

Table 71

Poitiers, France (46.6°N, 0.3°E) June 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	6.9					2.3	----
01	300	6.8					2.0	(2.60)
02	290	6.6					2.3	----
03	295	6.3			---	---	2.2	2.60
04	310	6.0	305	2.5	---	E	2.8	2.65
05	315	6.4	260	3.6	<120	2.2	2.7	2.75
06	310	6.8	240	4.3	105	2.7	3.5	2.90
07	320	7.4	230	4.8	100	3.1	3.7	2.85
08	335	7.4	220	5.1	100	3.4	4.2	2.75
09	340	7.6	220	5.2	100	3.6	4.5	(2.90)
10	360	7.8	210	5.4	100	3.7	4.7	2.75
11	350	8.0	220	5.5	100	3.7	4.5	2.80
12	360	7.9	220	5.5	100	3.8	4.4	2.70
13	360	7.6	220	5.5	100	3.7	4.1	2.80
14	355	7.6	225	5.4	100	3.6	4.2	2.80
15	355	7.9	230	5.2	100	3.6	4.2	2.80
16	350	7.4	235	5.0	100	3.4	4.0	2.80
17	320	8.0	230	4.8	105	3.1	3.8	2.80
18	300	7.9	245	4.2	110	2.6	3.6	
19	270	(7.6)	260	3.3	130	2.0	3.4	
20	260	7.0	---	1.7	---	E	3.7	----
21	255	(6.9)			---	---	3.2	
22	280	(7.2)					2.7	
23	300	7.0					2.6	----

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

Table 72

Casablanca, Morocco (33.6°N, 7.6°W) June 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	<330	>8.50					4.2	2.50
01	<325	>8.50					3.7	2.50
02	<305	8.40					3.4	2.60
03	<300	8.40					2.7	2.60
04	<290	7.95					2.9	2.70
05	280	7.30					2.8	2.70
06	260	7.45	270	----	130	2.00	3.6	2.75
07	260	8.20	235	4.40	110	2.70	4.2	2.95
08	280	7.80	230	4.70	110	3.10	4.9	2.90
09	310	8.05	230	(5.30)	105	3.40	4.8	2.90
10	340	8.15	220	5.55	105	3.70	5.0	2.80
11	375	8.60	220	(5.70)	110	3.80	4.6	2.65
12	360	9.00	215	5.70	110	3.90	4.9	2.70
13	360	9.60	205	(5.60)	110	3.90		2.70
14	365	9.85	220	5.45	110	(3.75)		2.70
15	350	10.05	230	5.40	110	3.70	4.2	2.70
16	340	10.10	240	5.30	110	3.60	5.1	2.80
17	330	9.90	245	(5.00)	110	3.20	5.4	(2.90)
18	300	9.50	250	----	115	2.70	4.7	2.90
19	280	9.15	260	----	---	1.90	4.3	2.90
20	260	>8.80					3.4	2.85
21	<290	8.60					3.8	(2.60)
22	<305	>8.60					3.6	(2.50)
23	<325	>8.60					4.6	2.60

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

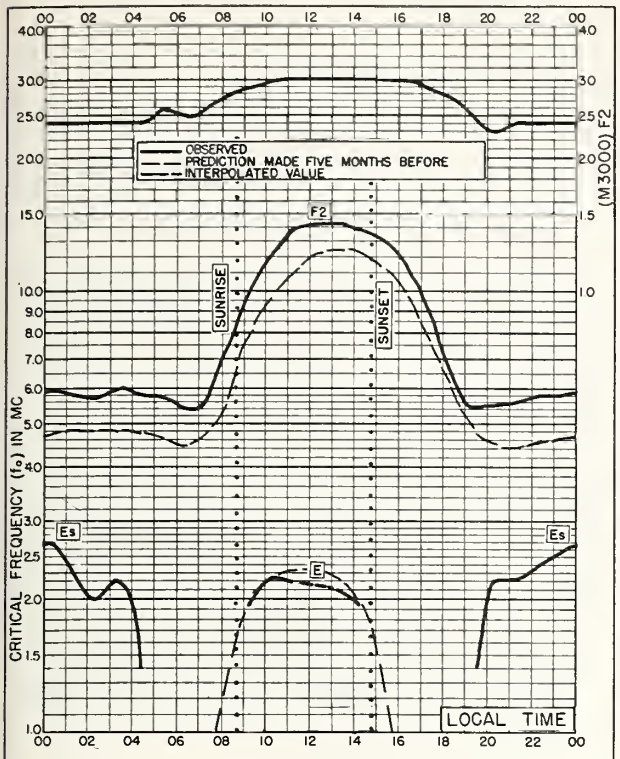


Fig. 1. LYCKSELE, SWEDEN
64.6°N, 18.8°E NOVEMBER 1957

NBS 503

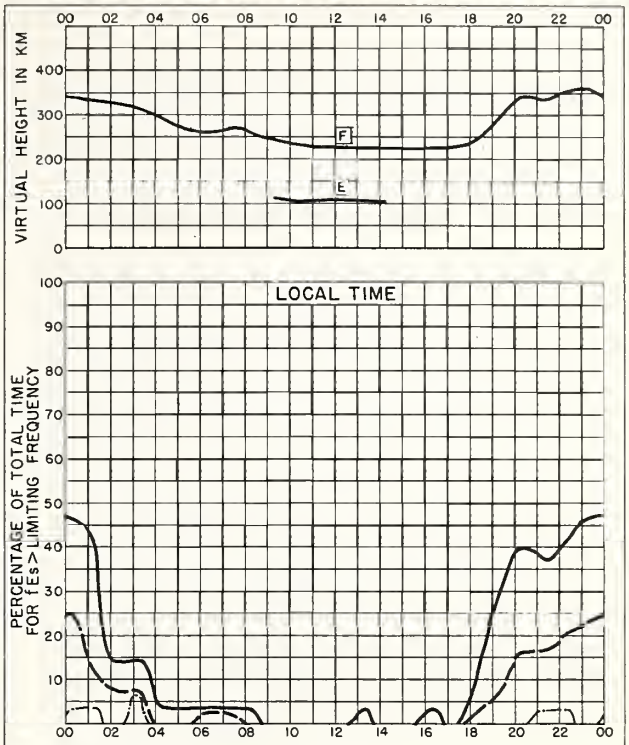


Fig. 2. LYCKSELE, SWEDEN NOVEMBER 1957

NBS 490

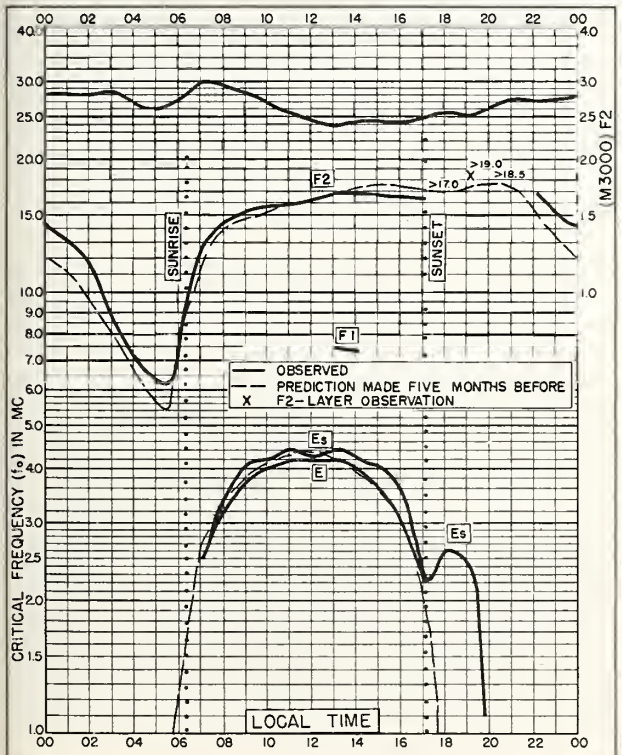


Fig. 3. FORMOSA, CHINA
25.0°N, 121.5°E NOVEMBER 1957

NBS 503

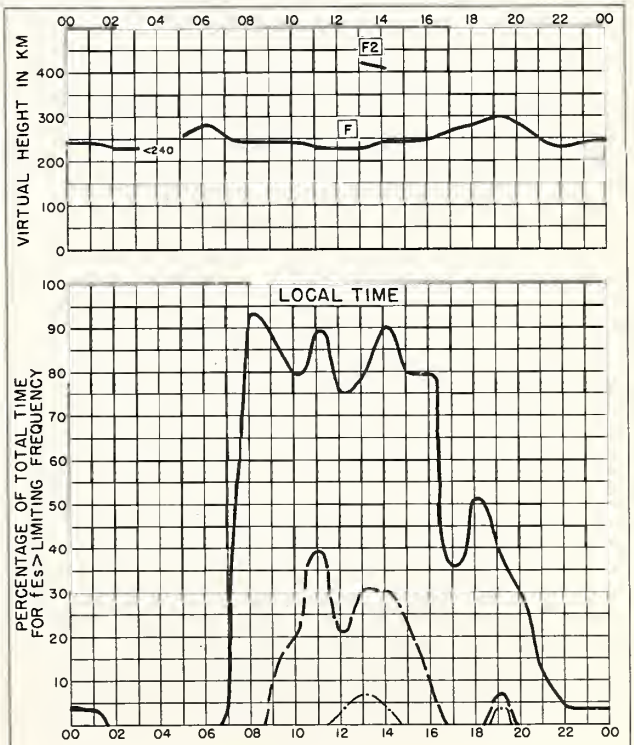


Fig. 4. FORMOSA, CHINA NOVEMBER 1957

NBS 490

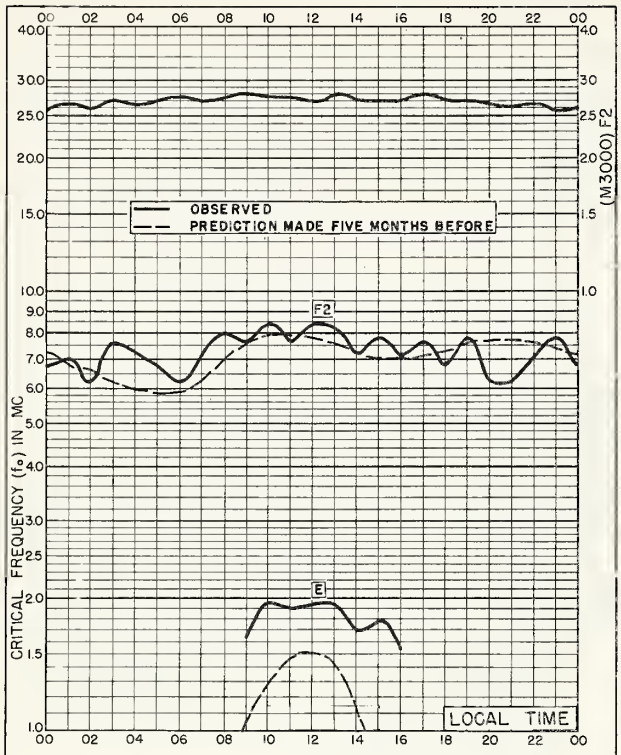


Fig. 5. FLETCHERS ICE I.
82.0°N, 101.0°W OCTOBER 1957

NBS 503

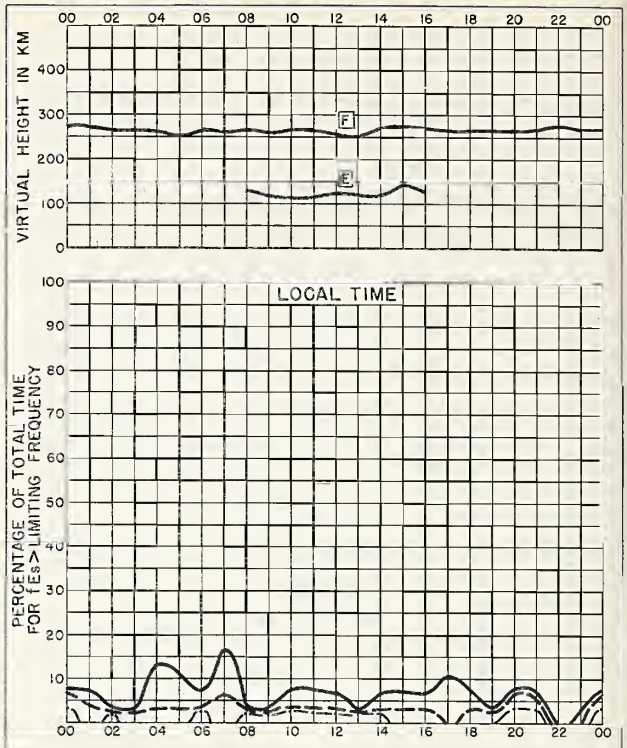


Fig. 6. FLETCHERS ICE I. OCTOBER 1957

NBS 490

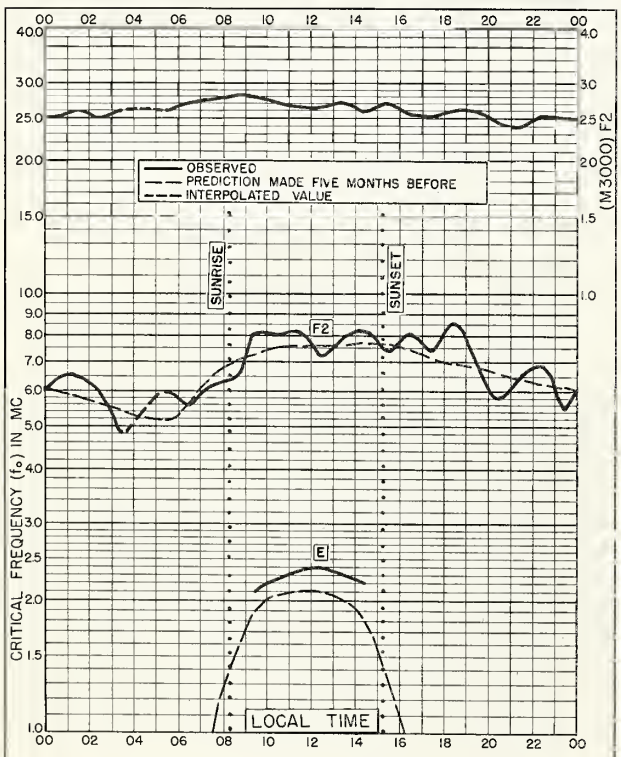


Fig. 7. THULE, GREENLAND
76.6°N, 68.7°W OCTOBER 1957

NBS 503

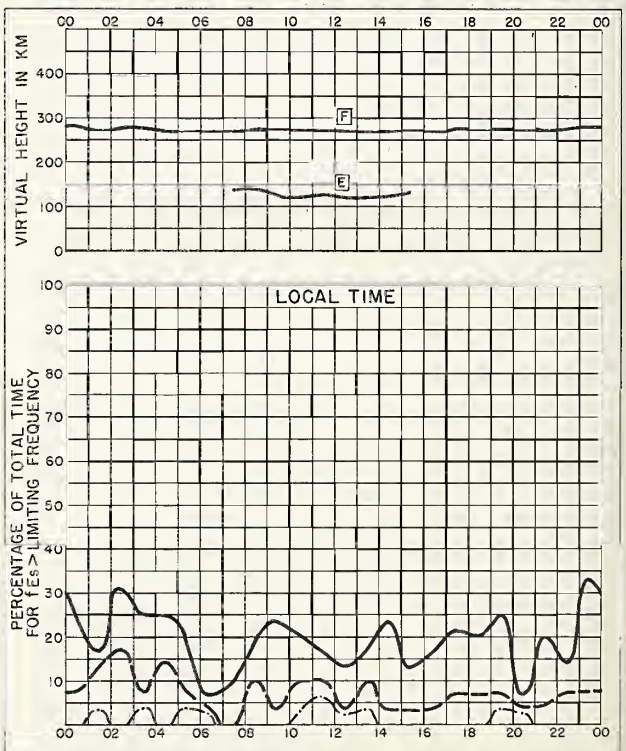


Fig. 8. THULE, GREENLAND OCTOBER 1957

NBS 490

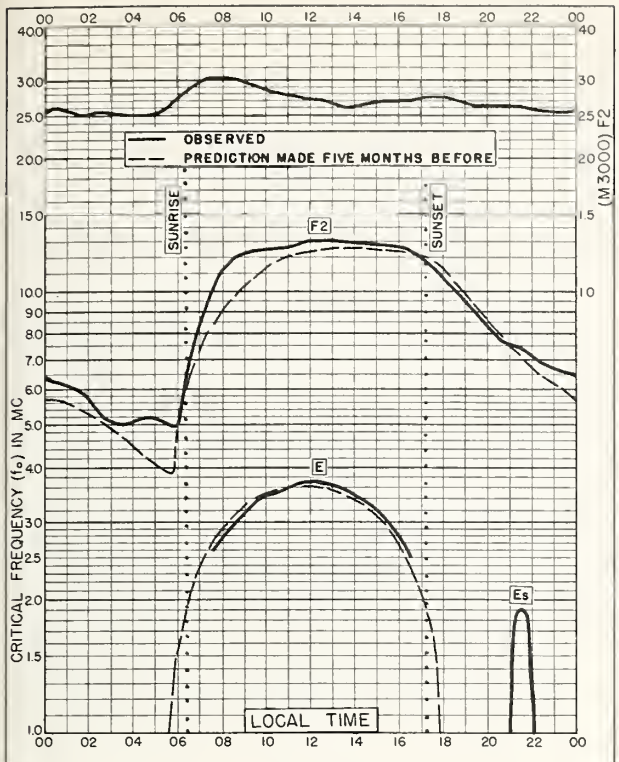


Fig. 9. ST. JOHN'S, NEWFOUNDLAND
47.6°N, 52.7°W OCTOBER 1957

NBS 503

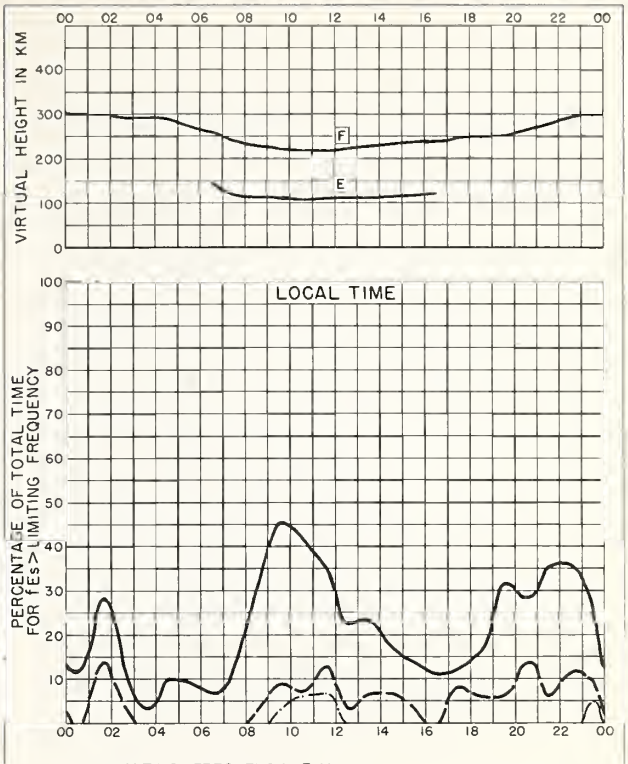


Fig. 10. ST. JOHN'S, NEWFOUNDLAND
OCTOBER 1957

NBS 490

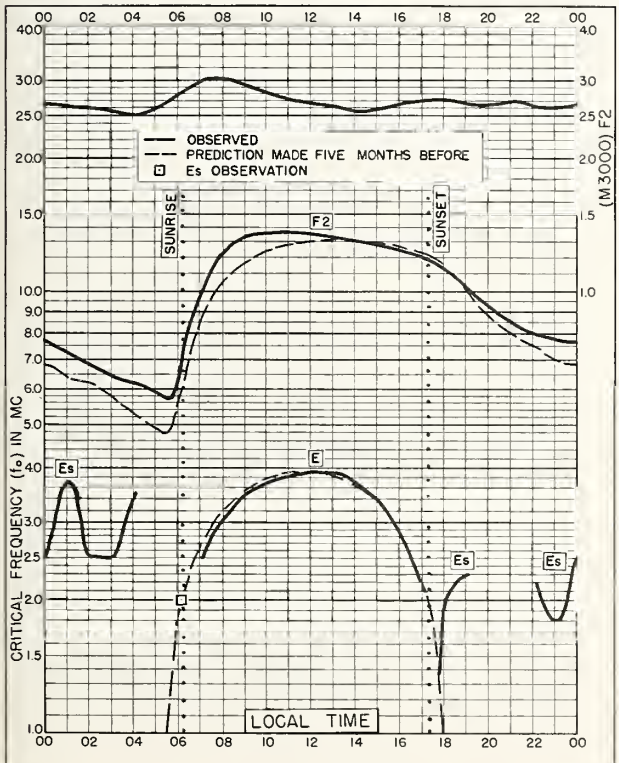


Fig. 11. FT. MONMOUTH, NEW JERSEY
40.3°N, 74.1°W OCTOBER 1957

NBS 503

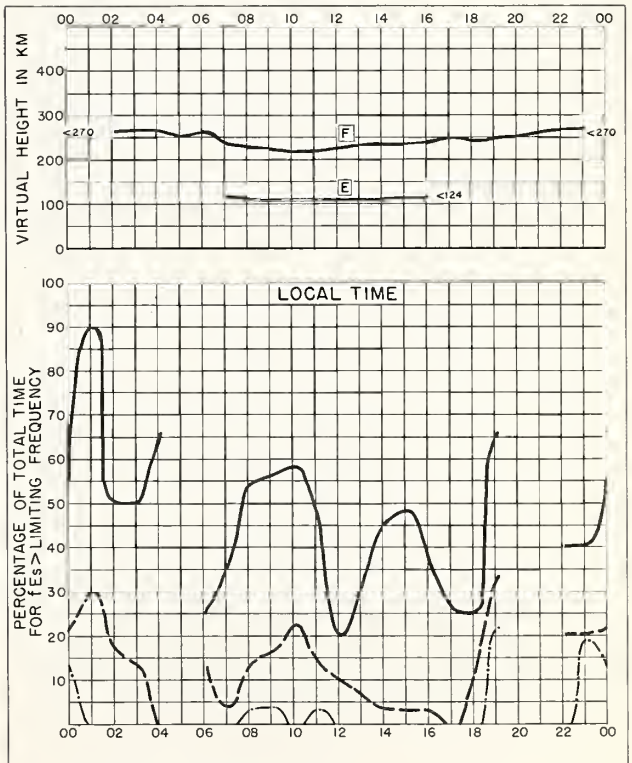


Fig. 12. FT. MONMOUTH, NEW JERSEY
OCTOBER 1957

NBS 490

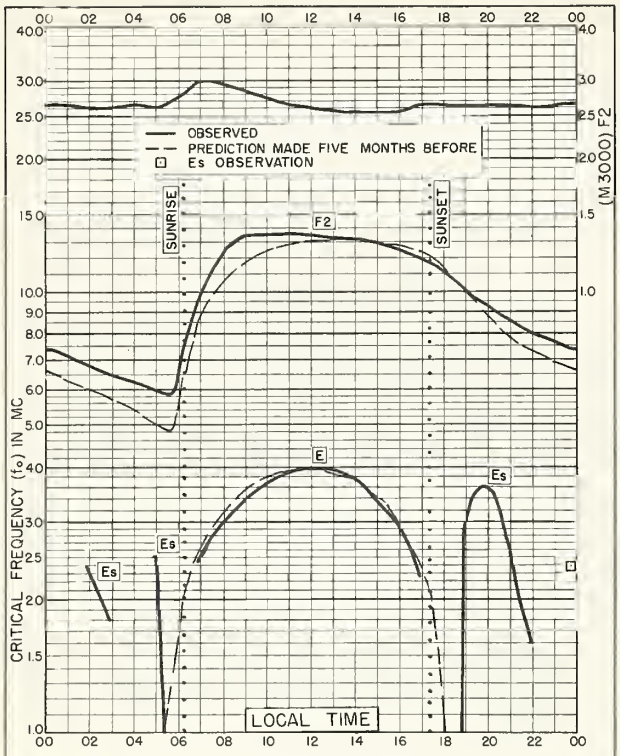


Fig. 13. WASHINGTON, D.C.
38.7°N, 77.1°W OCTOBER 1957

NBS 503

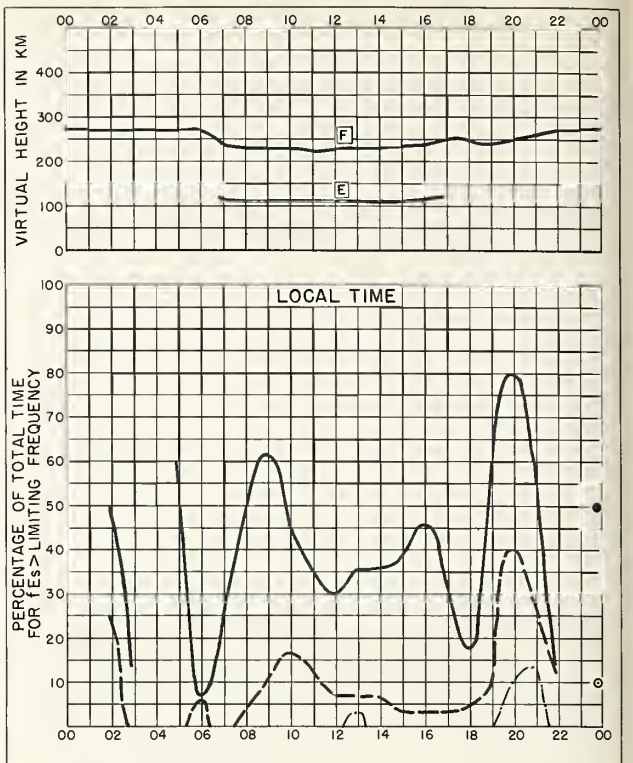


Fig. 14. WASHINGTON, D.C. OCTOBER 1957

Commerce-Standards-Boulder, Colo.

NBS 490

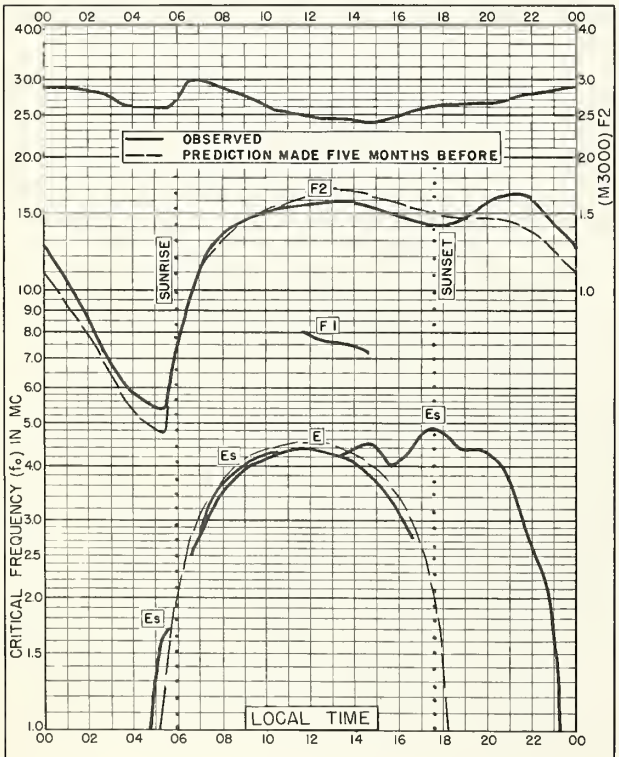


Fig. 15. MAUI, HAWAII
20.8°N, 156.5°W OCTOBER 1957

NBS 503

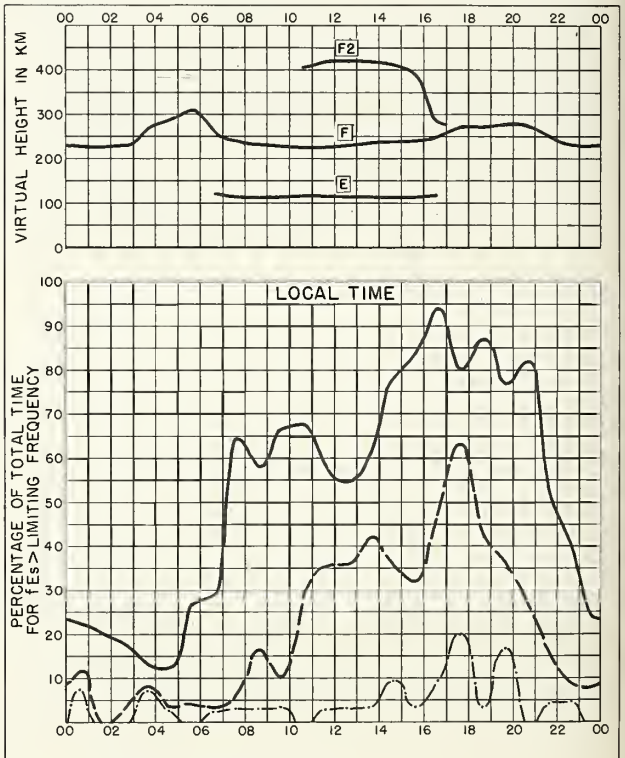


Fig. 16. MAUI, HAWAII OCTOBER 1957

Commerce-Standards-Boulder, Colo.

NBS 490

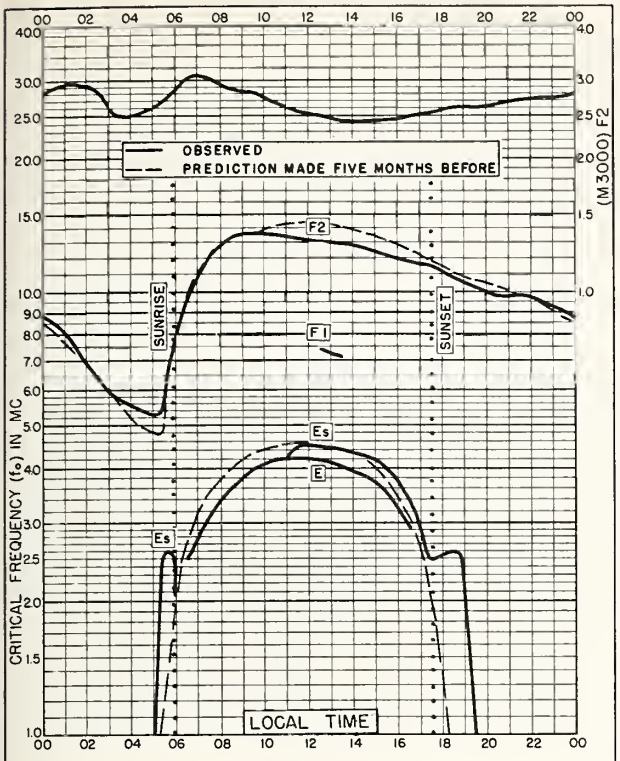


Fig. 17. PUERTO RICO, W.I.
18.5°N, 67.2°W OCTOBER 1957

NBS 503

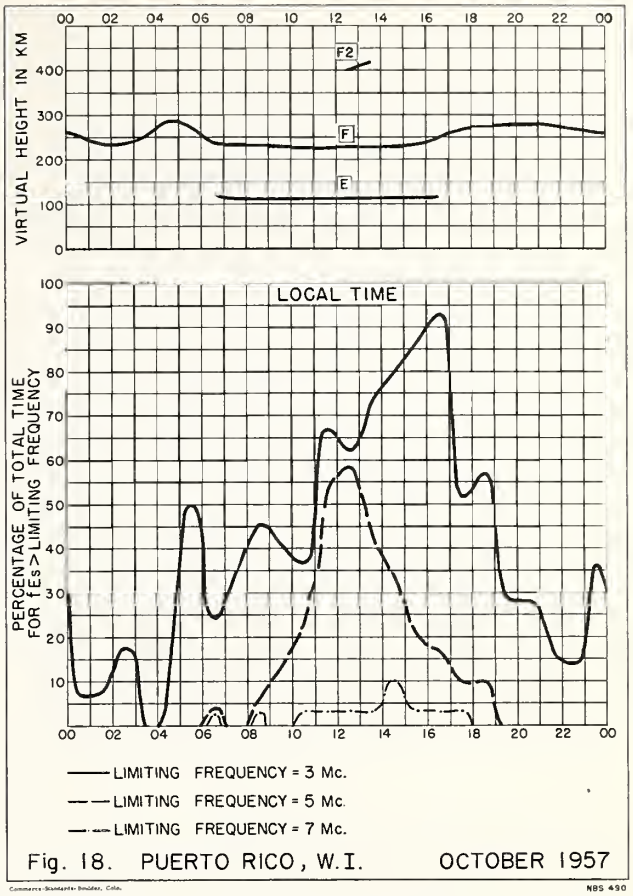


Fig. 18. PUERTO RICO, W.I. OCTOBER 1957

NBS 490

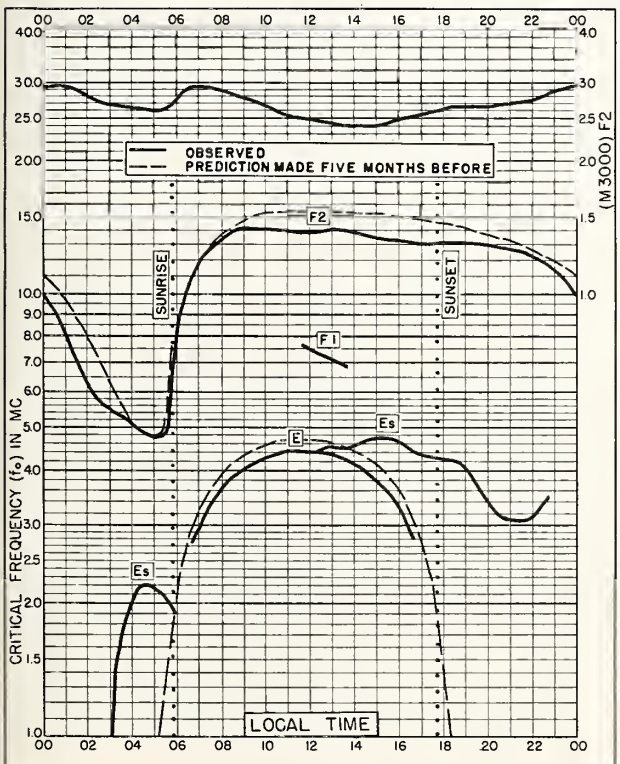


Fig. 19. PANAMA CANAL ZONE
9.4°N, 79.9°W OCTOBER 1957

NBS 503

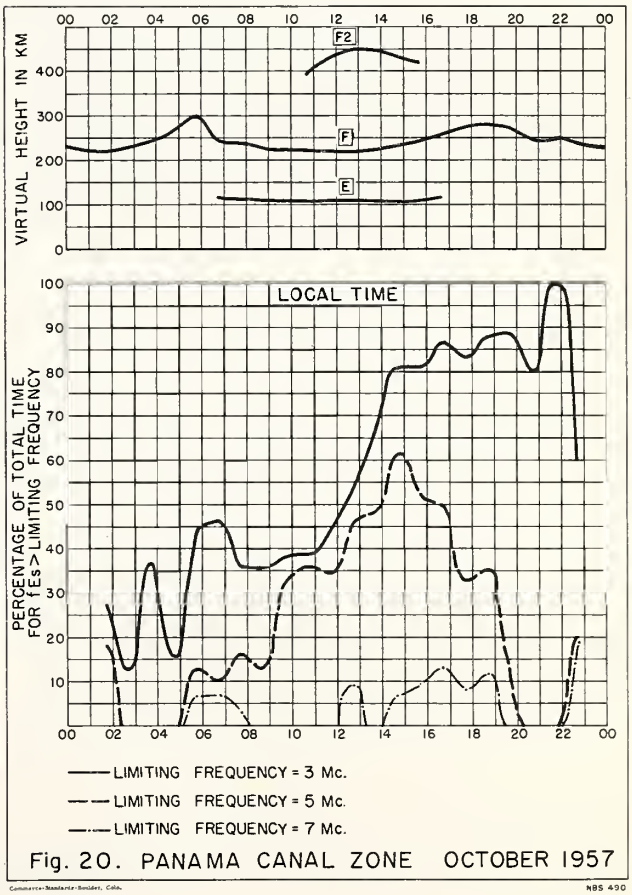


Fig. 20. PANAMA CANAL ZONE OCTOBER 1957

NBS 490

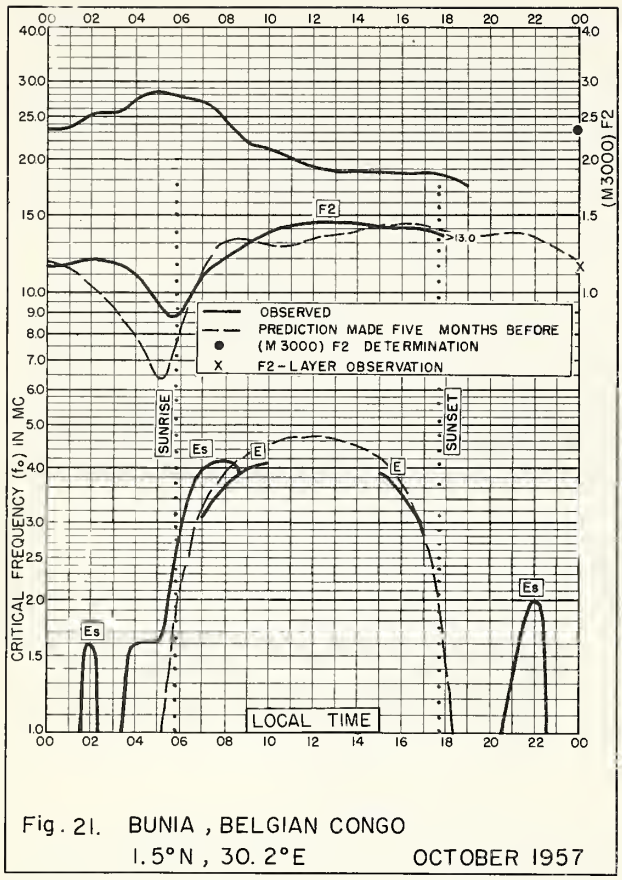


Fig. 21. BUNIA, BELGIAN CONGO
1.5°N, 30.2°E OCTOBER 1957

NBS 503

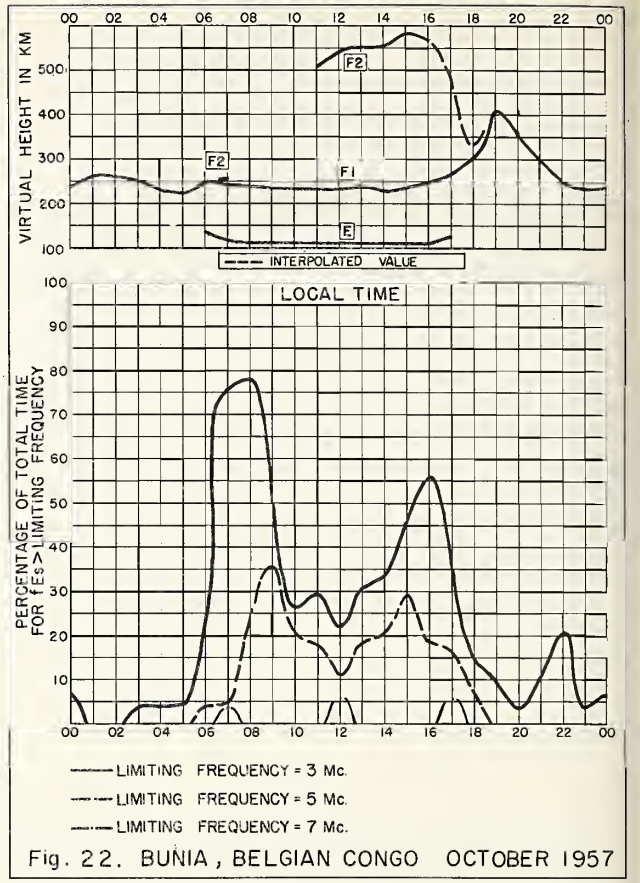


Fig. 22. BUNIA, BELGIAN CONGO OCTOBER 1957

Commerce-Standards-Boulder, Colo. NBS 490

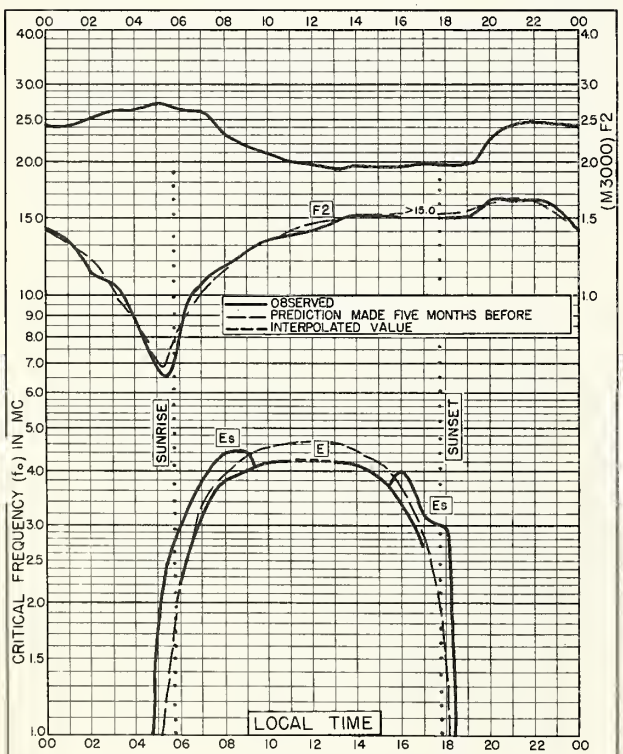


Fig. 23. LEOPOLDVILLE, BELGIAN CONGO
4.4°S, 15.2°E OCTOBER 1957

NBS 503

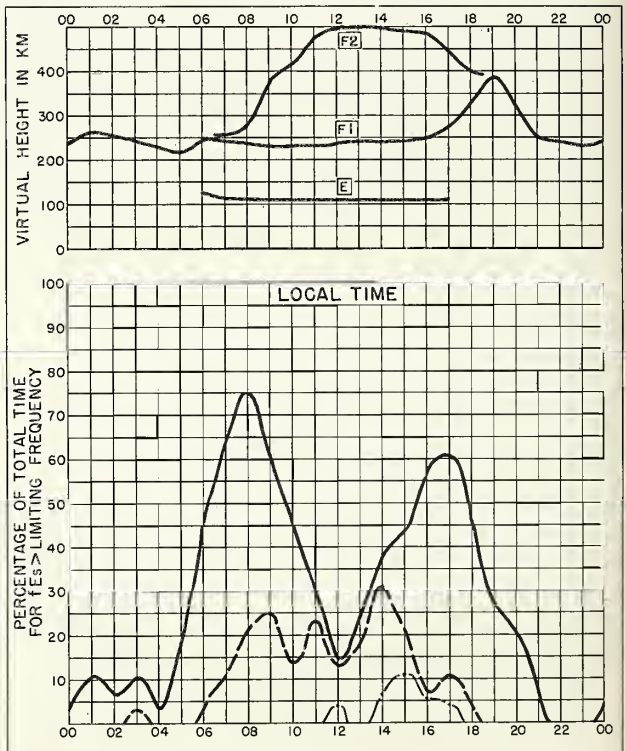


Fig. 24. LEOPOLDVILLE, BELGIAN CONGO OCTOBER 1957

Commerce-Standards-Boulder, Colo. NBS 490

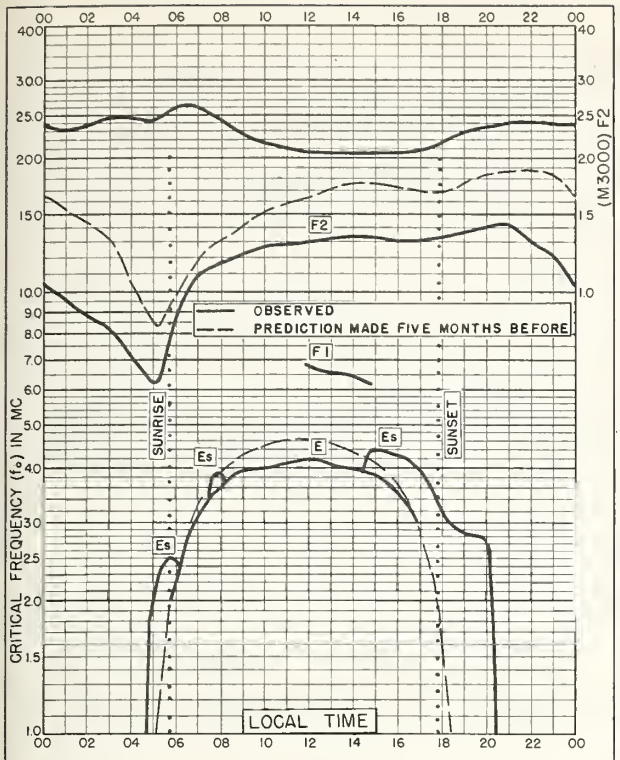
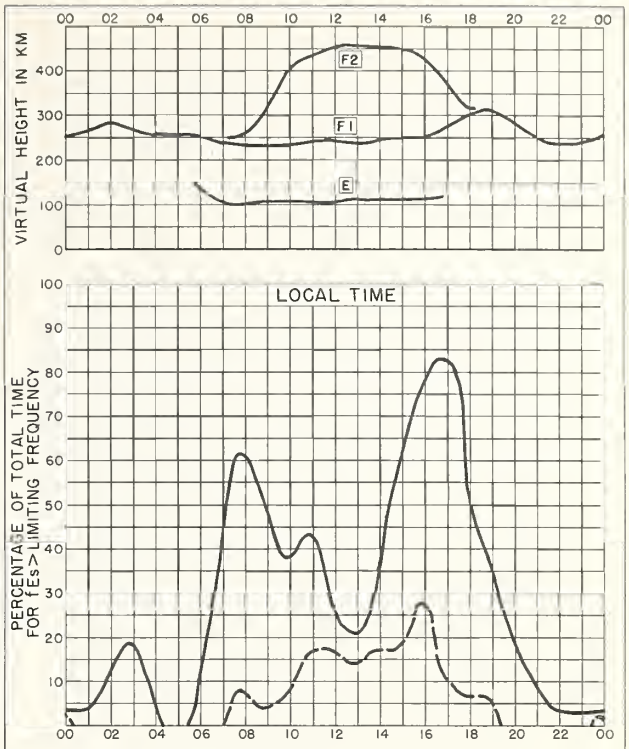


Fig. 25. ELISABETHVILLE, BELGIAN CONGO
11.6°S, 27.5°E OCTOBER 1957

NBS 503



OCTOBER 1957

Fig. 26. ELISABETHVILLE, BELGIAN CONGO

NBS 490

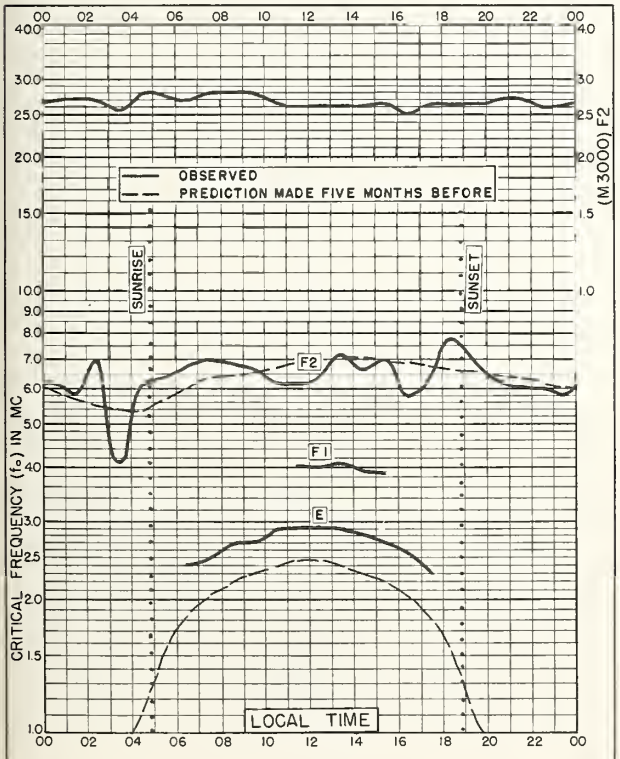
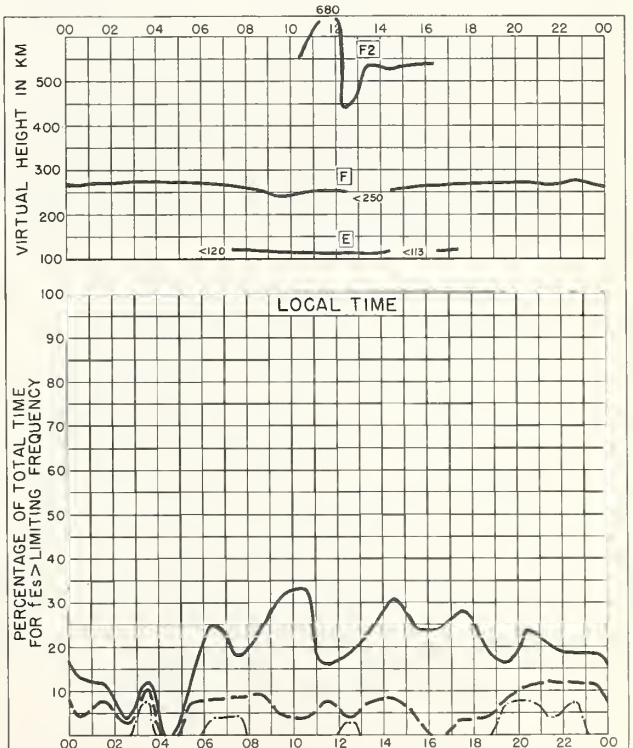


Fig. 27. THULE, GREENLAND
76.6°N, 68.7°W SEPTEMBER 1957

NBS 503



SEPTEMBER 1957

Fig. 28. THULE, GREENLAND

NBS 490

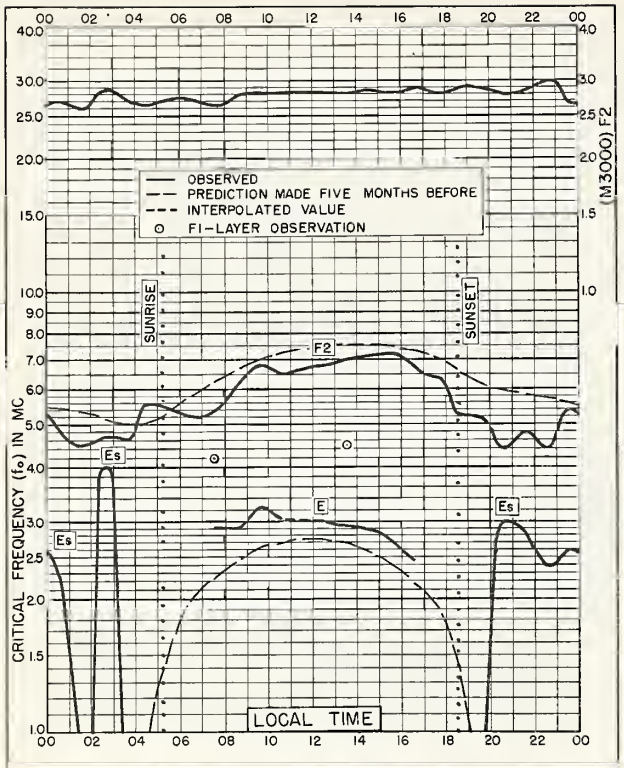
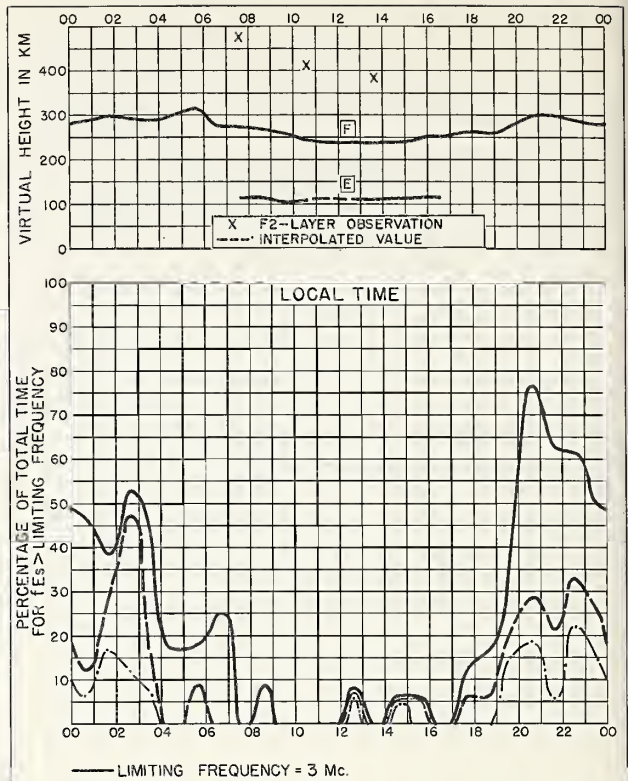


Fig. 29. POINT BARROW, ALASKA
71.3°N, 156.8°W SEPTEMBER 1957

NBS 503



SEPTEMBER 1957

Fig. 30. POINT BARROW, ALASKA

NBS 490

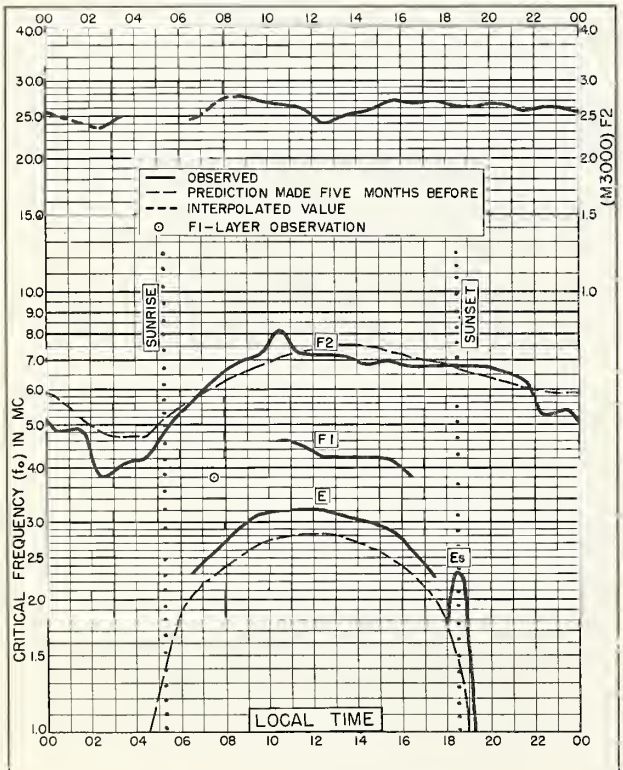
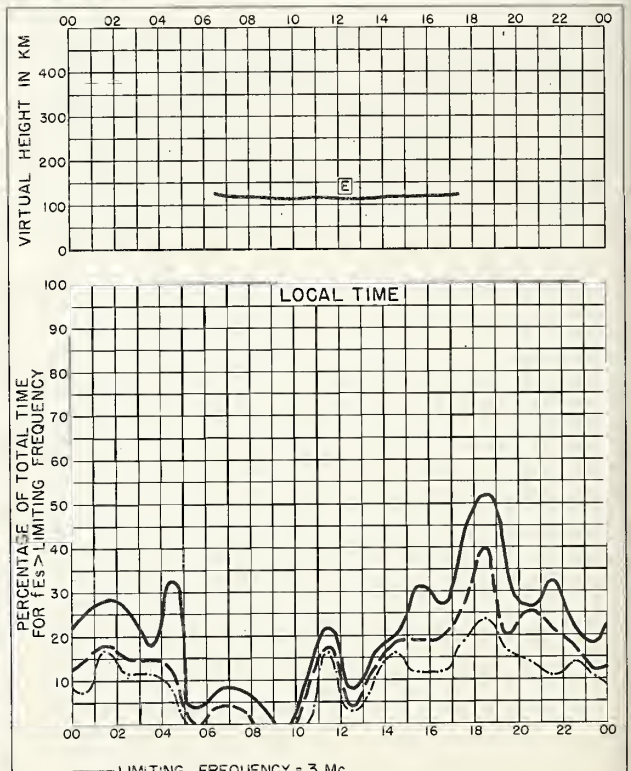


Fig. 31. GODHAVN, GREENLAND
69.2°N, 53.5°W SEPTEMBER 1957

NBS 503



SEPTEMBER 1957

Fig. 32. GODHAVN, GREENLAND

NBS 490

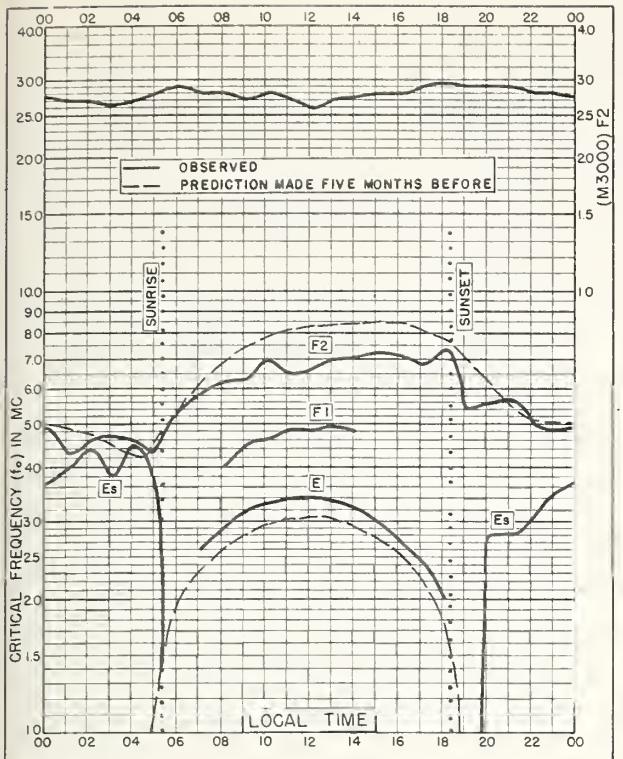


Fig. 33. FAIRBANKS, ALASKA
64.9°N, 147.8°W SEPTEMBER 1957

NBS 503

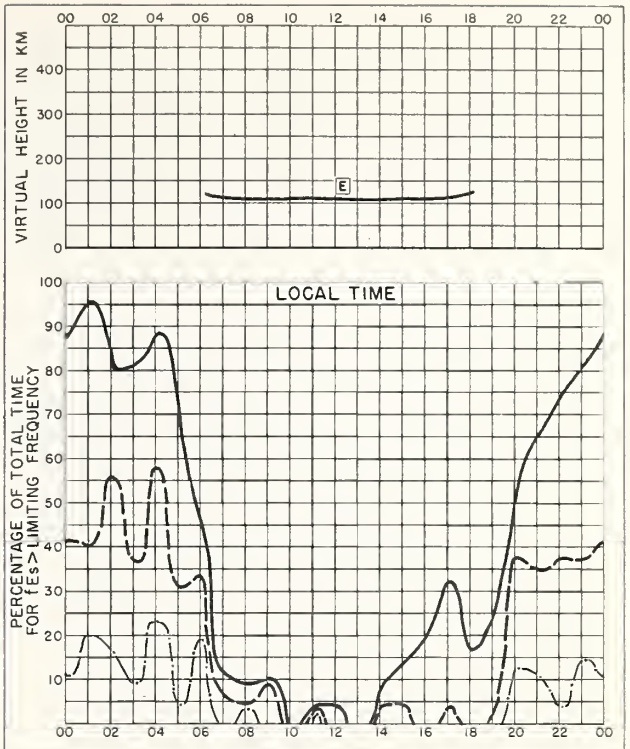


Fig. 34. FAIRBANKS, ALASKA SEPTEMBER 1957

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NBS 490

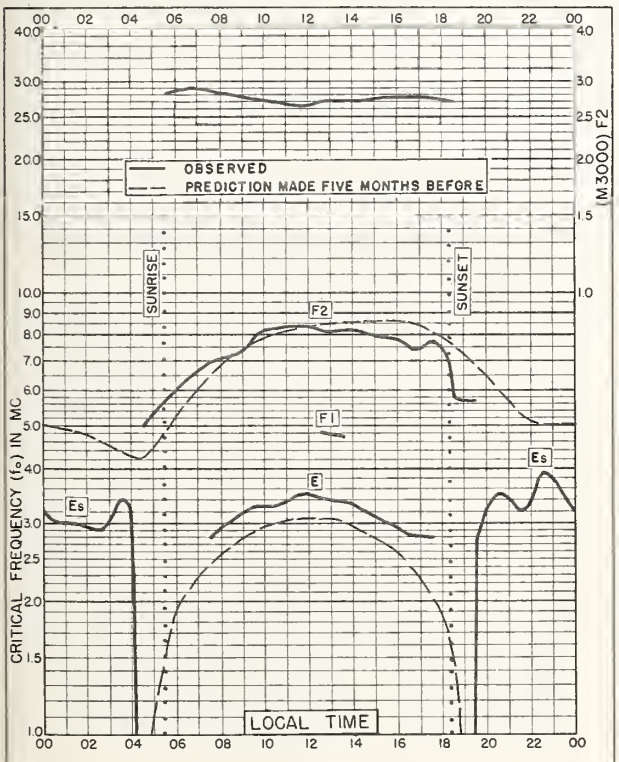


Fig. 35. REYKJAVIK, ICELAND
64.1°N, 21.8°W SEPTEMBER 1957

NBS 503

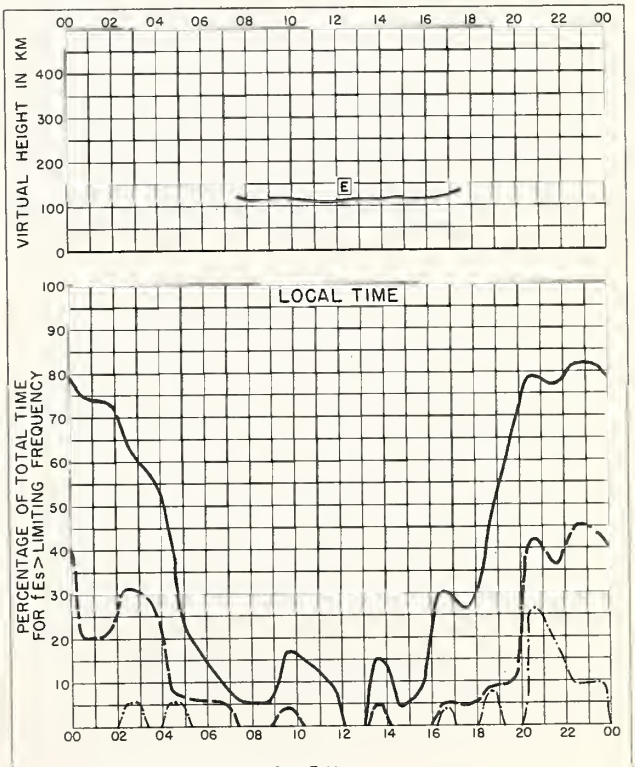


Fig. 36. REYKJAVIK, ICELAND SEPTEMBER 1957

Commerce-Standards-Boulder, Colo.

NBS 490

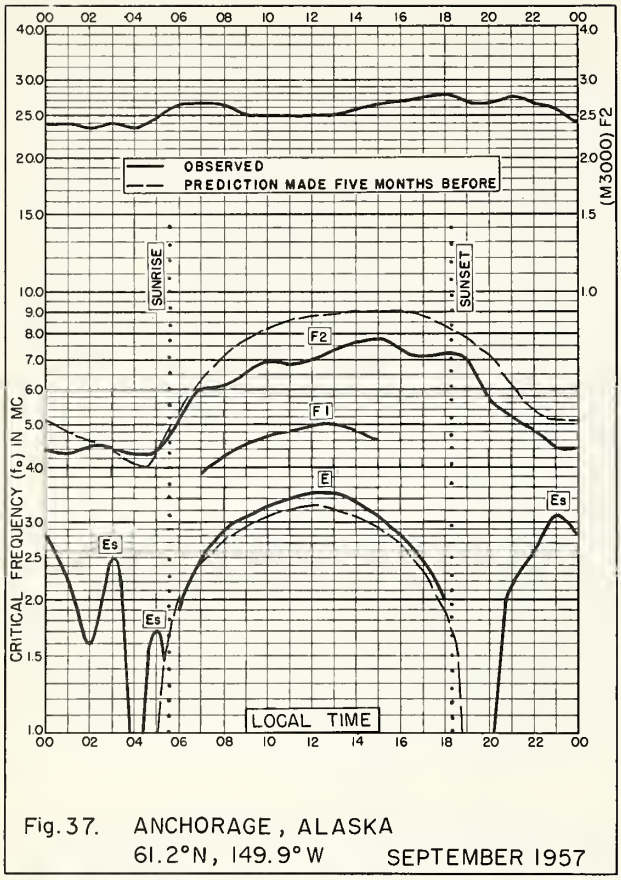


Fig. 37. ANCHORAGE, ALASKA
61.2°N, 149.9°W SEPTEMBER 1957

NBS 503

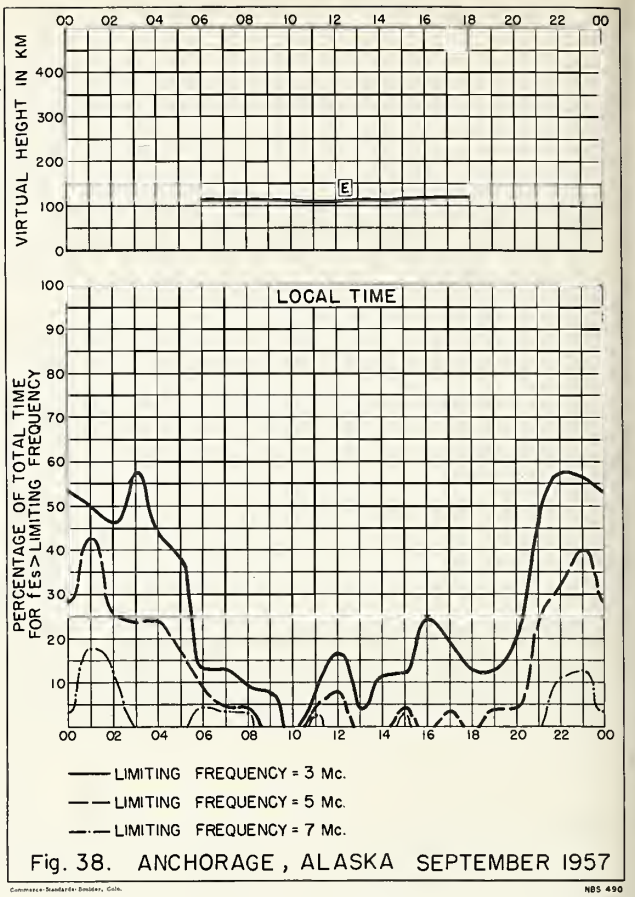


Fig. 38. ANCHORAGE, ALASKA SEPTEMBER 1957

Commerce-Standards-Boulder, Colo.

NBS 490

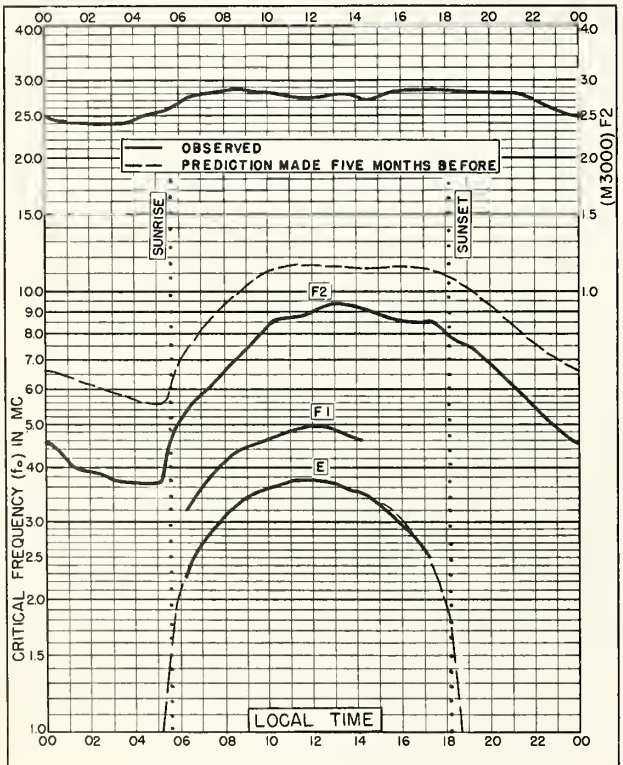


Fig. 39. ADAK, ALASKA
51.9°N, 176.6°W SEPTEMBER 1957

NBS 503

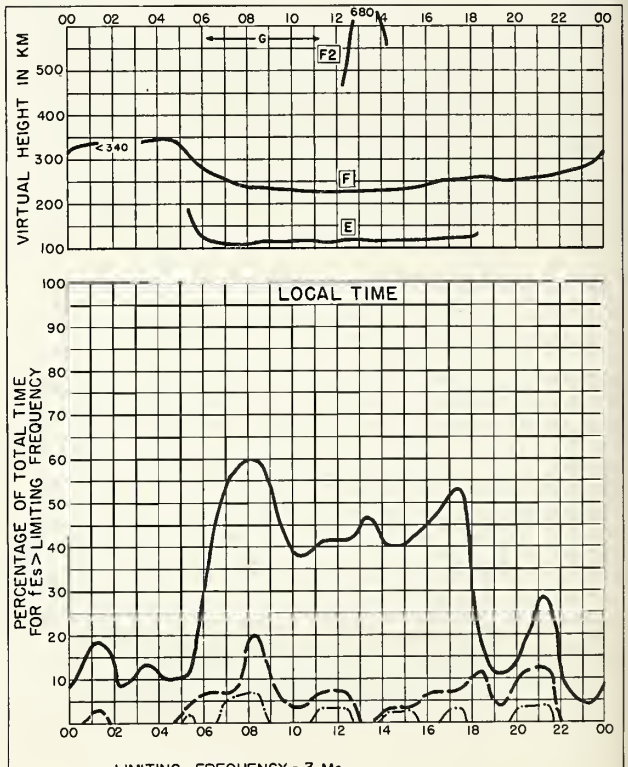


Fig. 40. ADAK, ALASKA SEPTEMBER 1957

Commerce-Standards-Boulder, Colo.

NBS 490

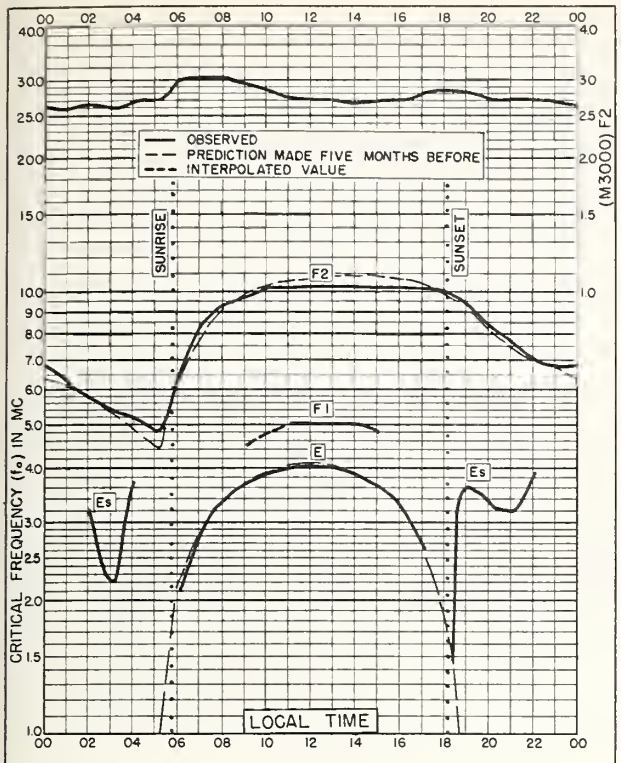
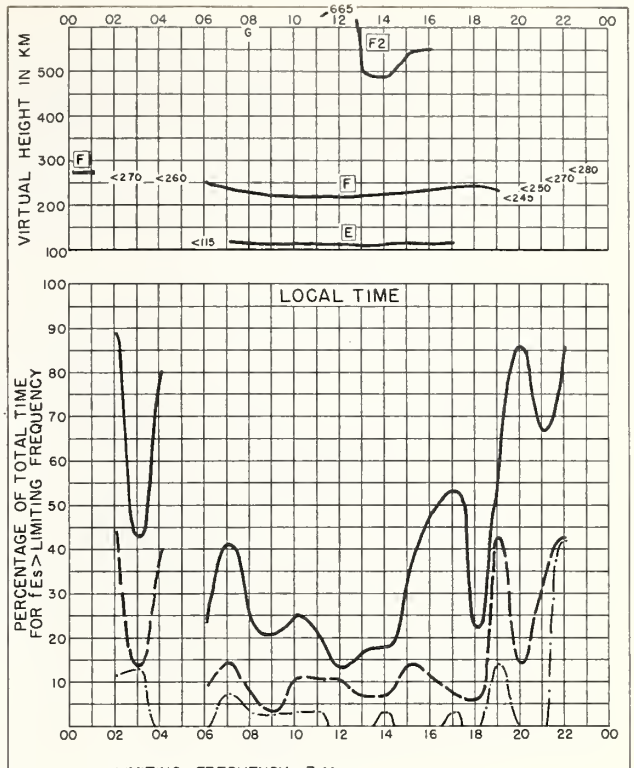


Fig. 41. FT. MONMOUTH, NEW JERSEY
40.3°N, 74.1°W SEPTEMBER 1957

NBS 503



SEPTEMBER 1957

Fig. 42. FT. MONMOUTH, NEW JERSEY

Commerce-Standards-Boulder, Colo.

NBS 490

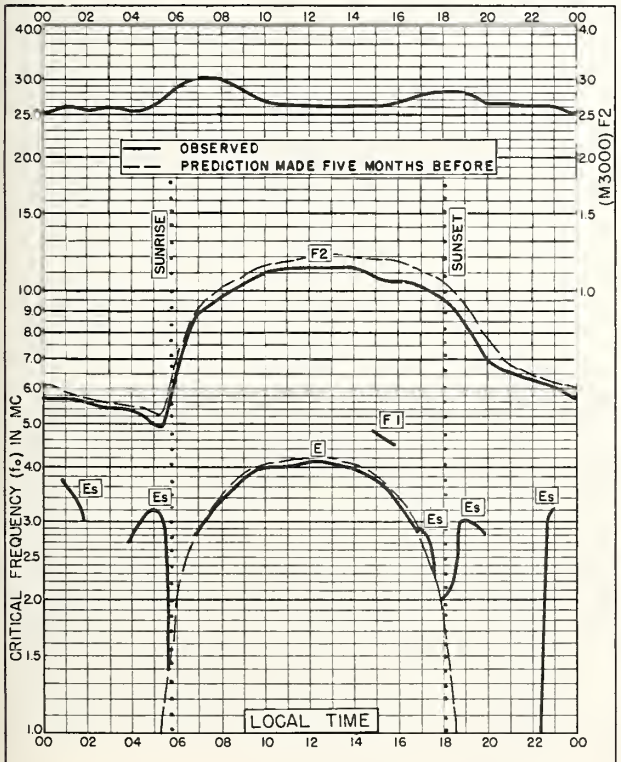
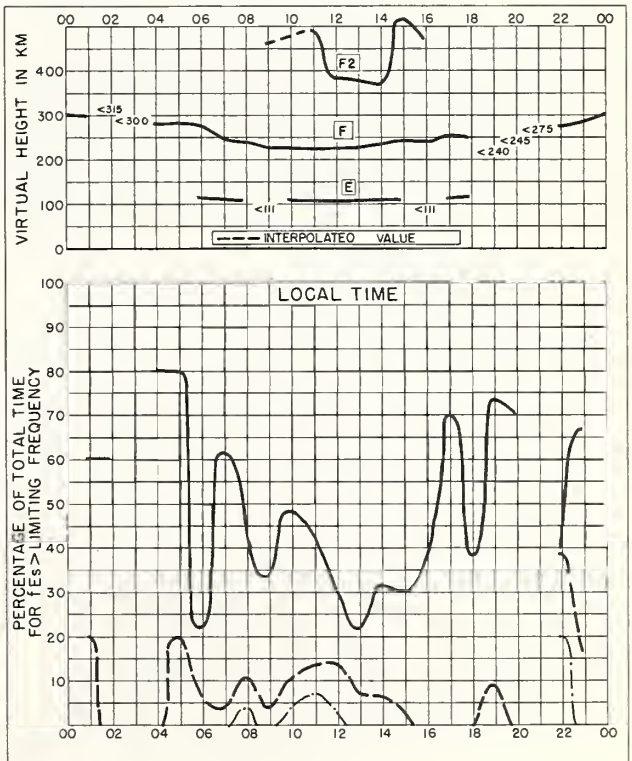


Fig. 43. WHITE SANDS, NEW MEXICO
32.3°N, 106.5°W SEPTEMBER 1957

NBS 503



SEPTEMBER 1957

Fig. 44. WHITE SANDS, NEW MEXICO

Commerce-Standards-Boulder, Colo.

NBS 490

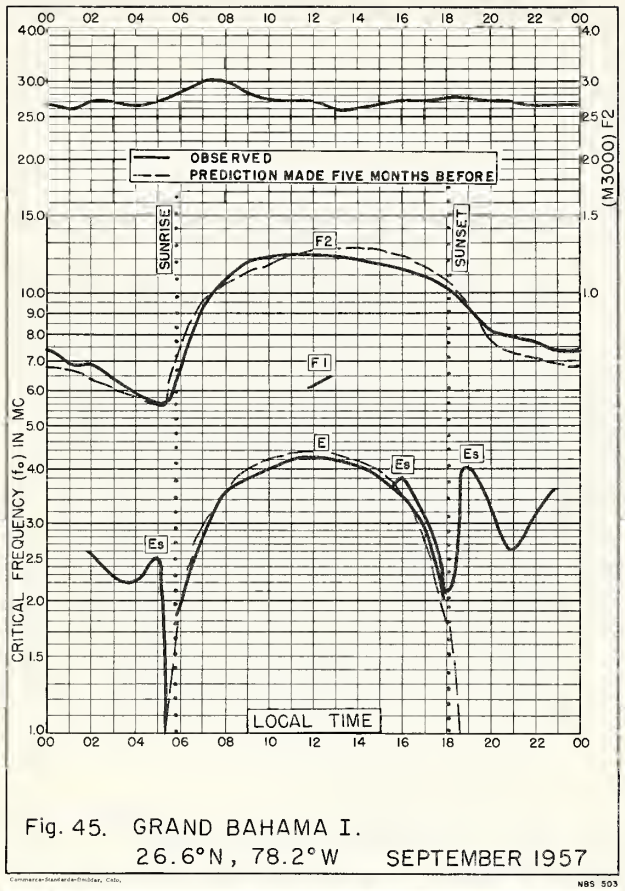


Fig. 45. GRAND BAHAMA I.
26.6°N, 78.2°W SEPTEMBER 1957

NBS 503

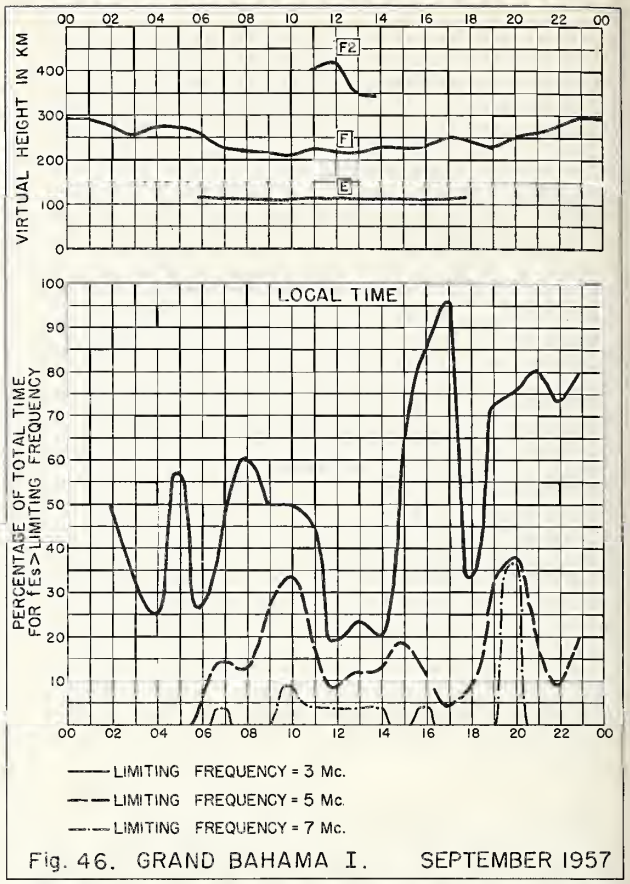


Fig. 46. GRAND BAHAMA I. SEPTEMBER 1957

NBS 490

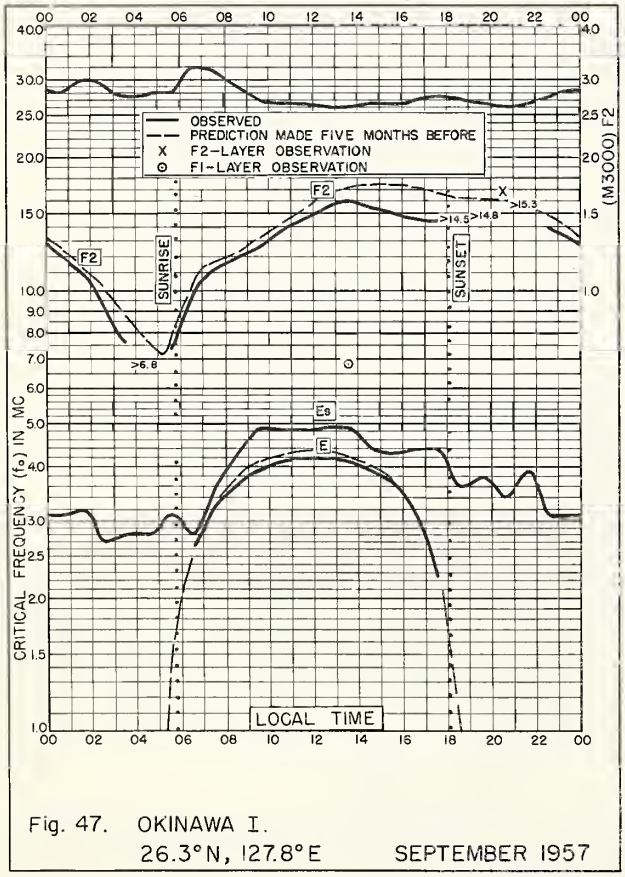


Fig. 47. OKINAWA I.
26.3°N, 127.8°E SEPTEMBER 1957

NBS 503

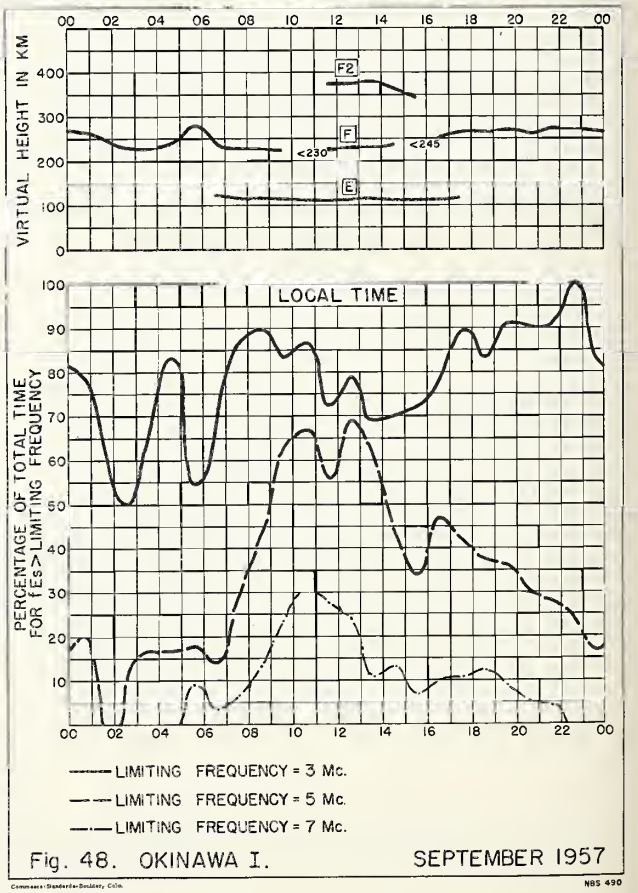


Fig. 48. OKINAWA I. SEPTEMBER 1957

NBS 490

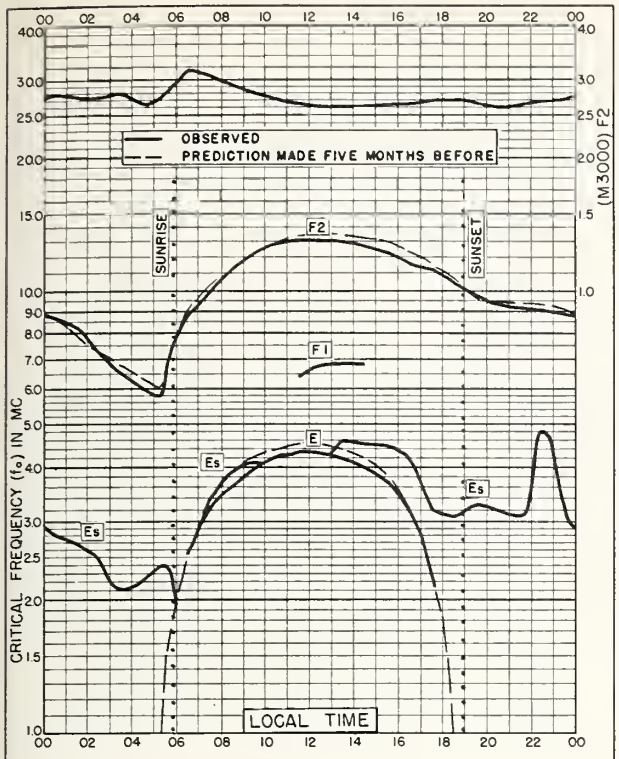


Fig. 49. PUERTO RICO, W. I.
18.5°N, 67.2°W SEPTEMBER 1957

NBS 503

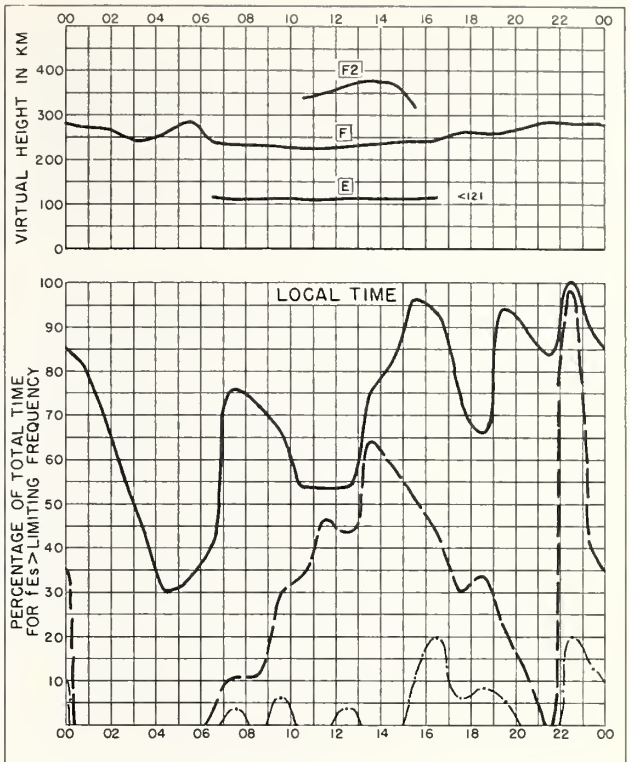


Fig. 50. PUERTO RICO, W.I. SEPTEMBER 1957

NBS 490

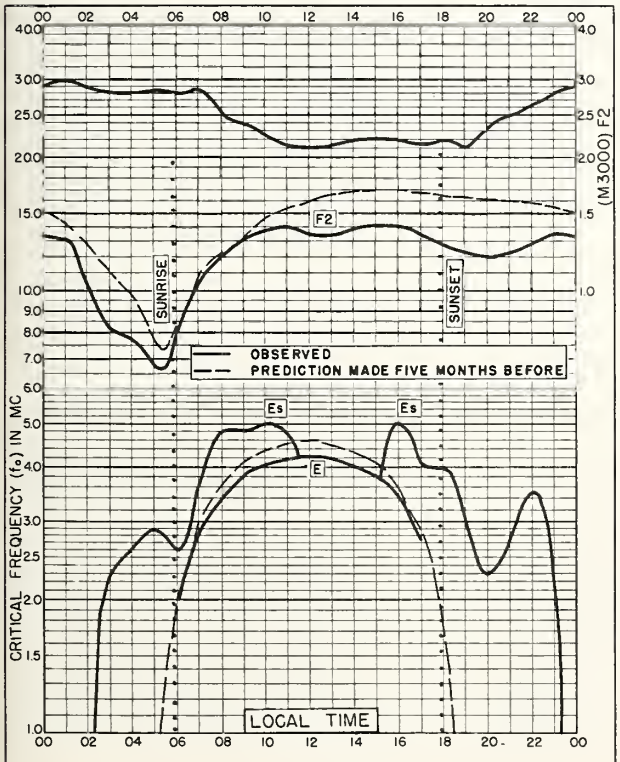


Fig. 51. BAGUIO, P. I.
16.4°N, 120.6°E SEPTEMBER 1957

NBS 503

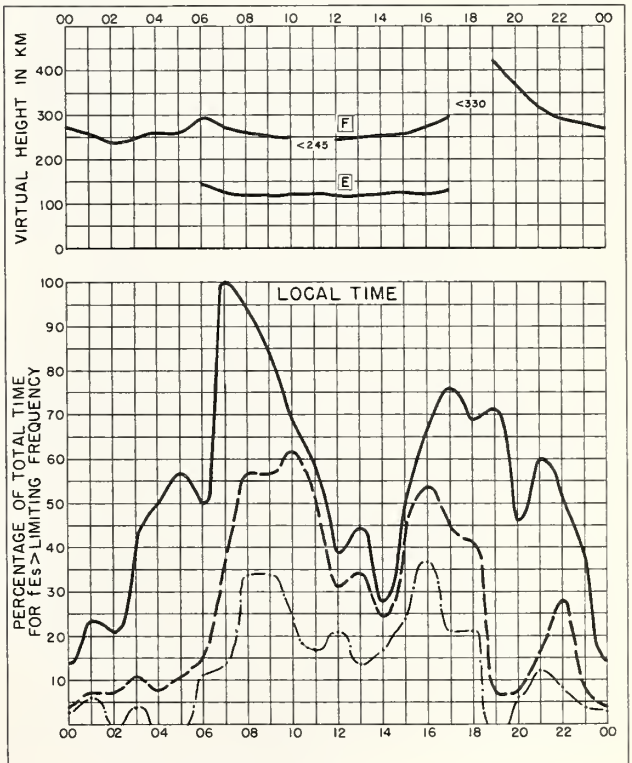


Fig. 52. BAGUIO, P. I. SEPTEMBER 1957

NBS 490

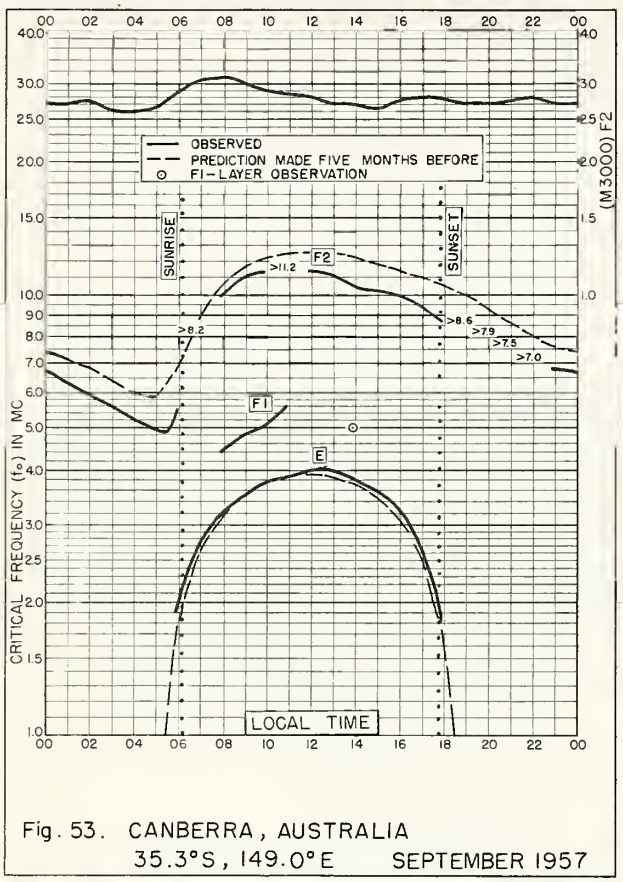


Fig. 53. CANBERRA, AUSTRALIA
35.3°S, 149.0°E SEPTEMBER 1957

NBS 503

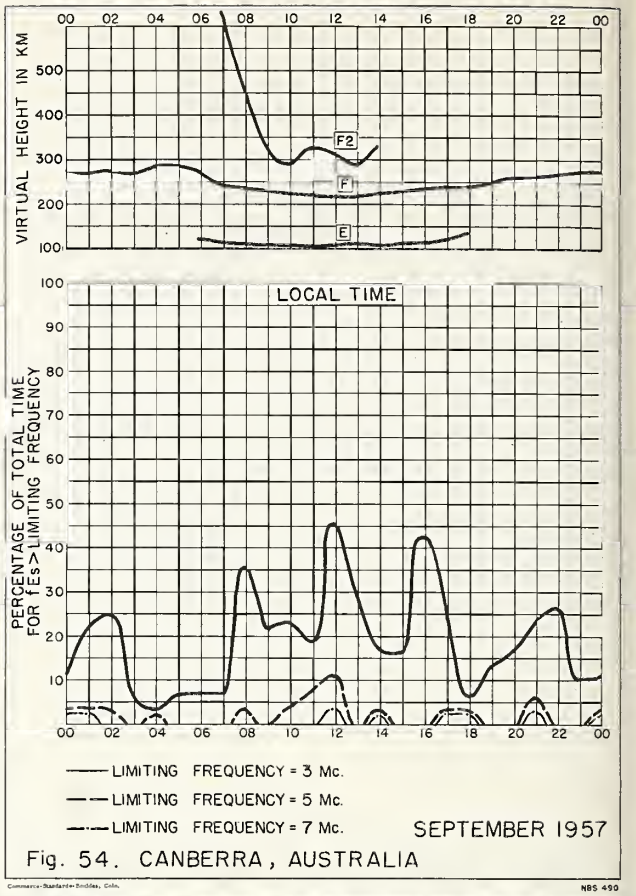


Fig. 54. CANBERRA, AUSTRALIA SEPTEMBER 1957

Commerce-Standards-Boulder, Colo.

NBS 490

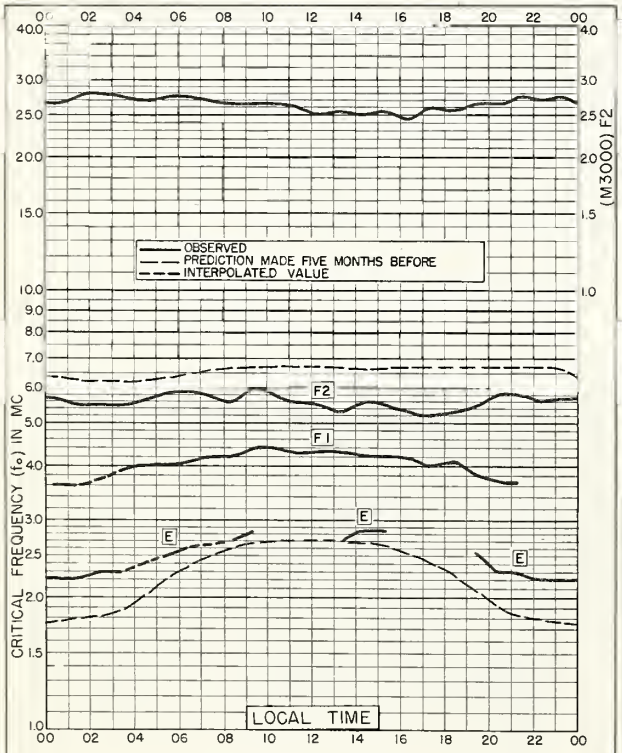


Fig. 55. FLETCHERS ICE I.
82.0°N, 101.0°W AUGUST 1957

NBS 503

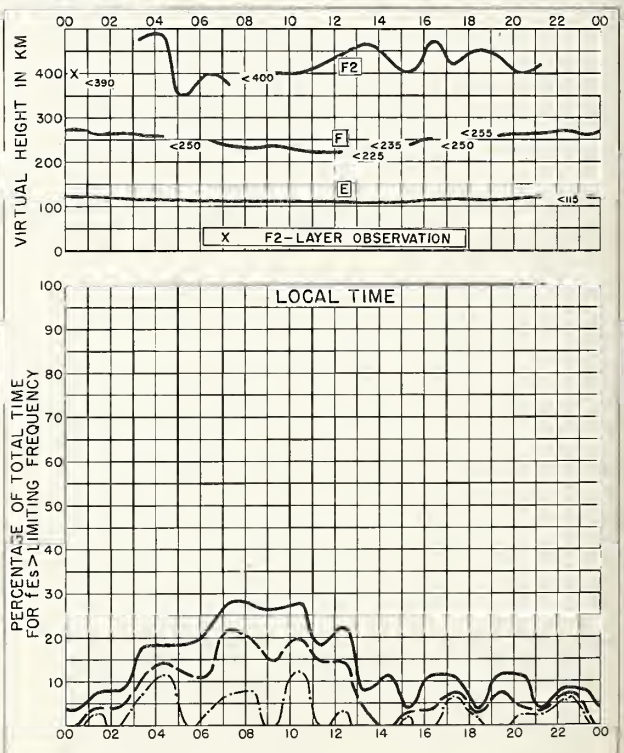


Fig. 56. FLETCHERS ICE I. AUGUST 1957

Commerce-Standards-Boulder, Colo.

NBS 490

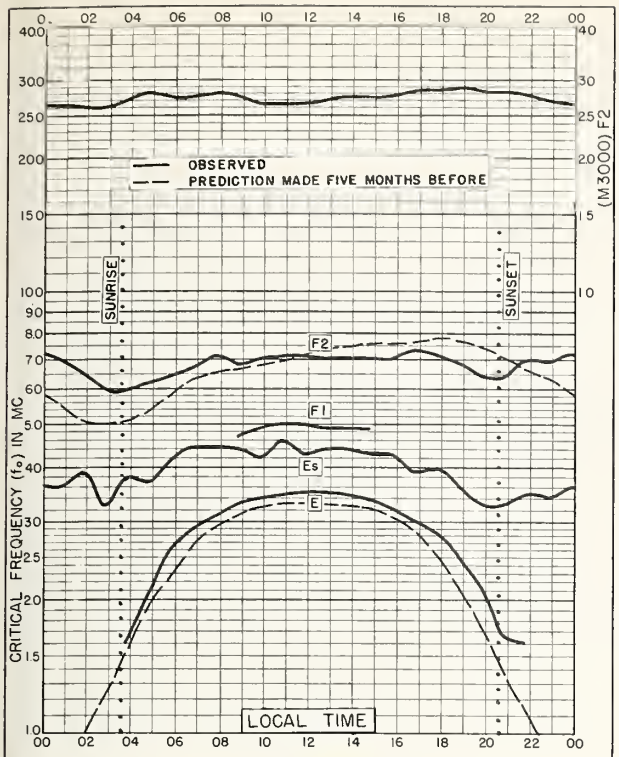


Fig. 57. SODANKYLA, FINLAND
67.4°N, 26.6°E AUGUST 1957

NBS 503

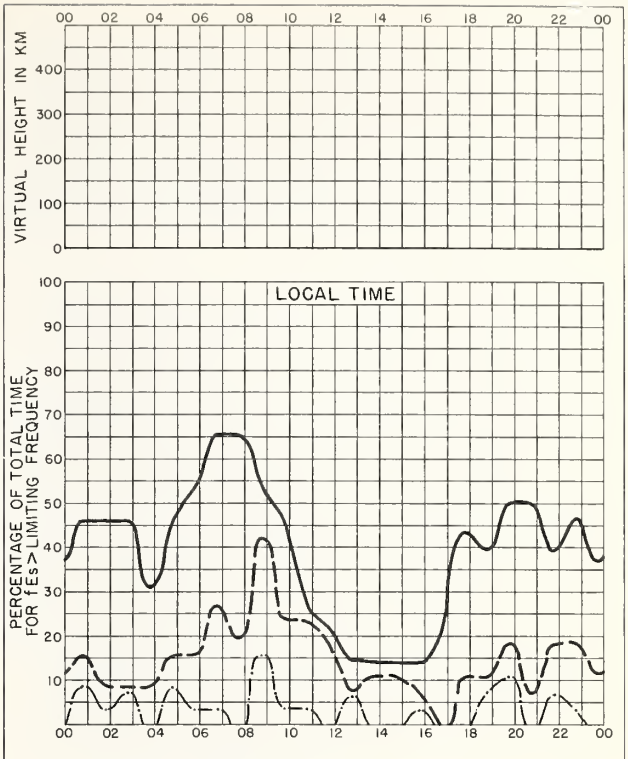


Fig. 58. SODANKYLA, FINLAND AUGUST 1957

NBS 490

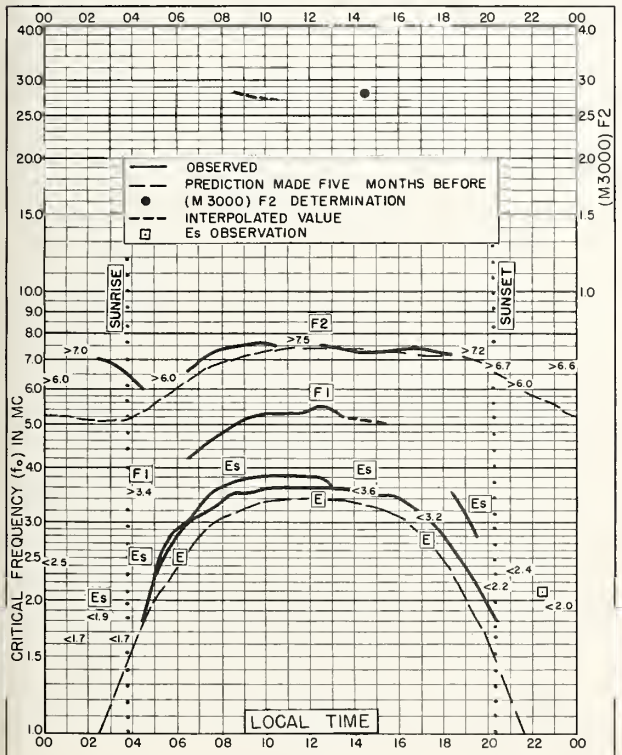


Fig. 59. LULEA, SWEDEN
65.6°N, 22.1°E AUGUST 1957

NBS 503

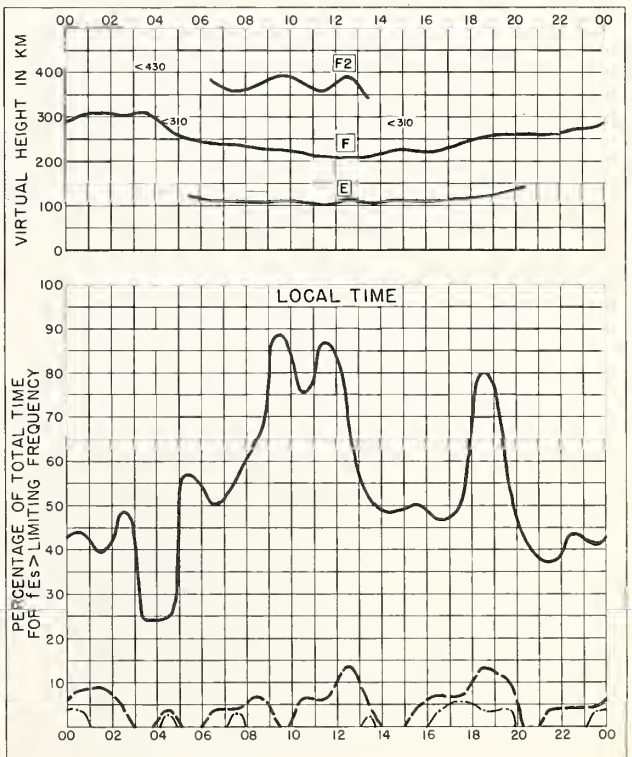


Fig. 60. LULEA, SWEDEN AUGUST 1957

NBS 490

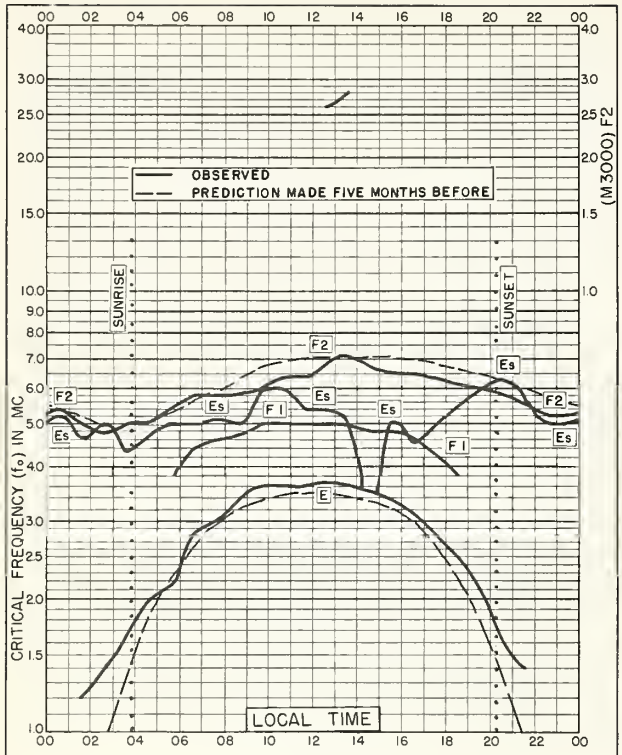


Fig. 61. BAKER LAKE, CANADA
64.3°N, 96.0°W AUGUST 1957

NBS 503

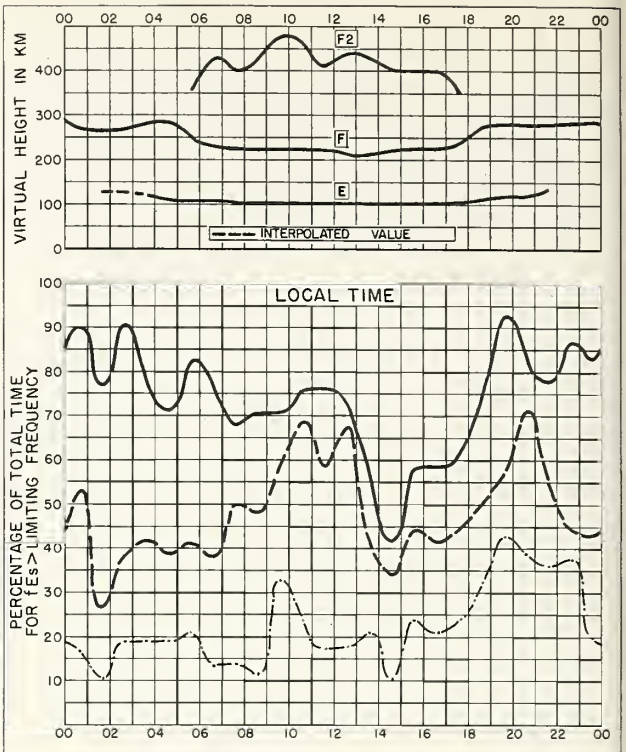


Fig. 62. BAKER LAKE, CANADA AUGUST 1957

NBS 490

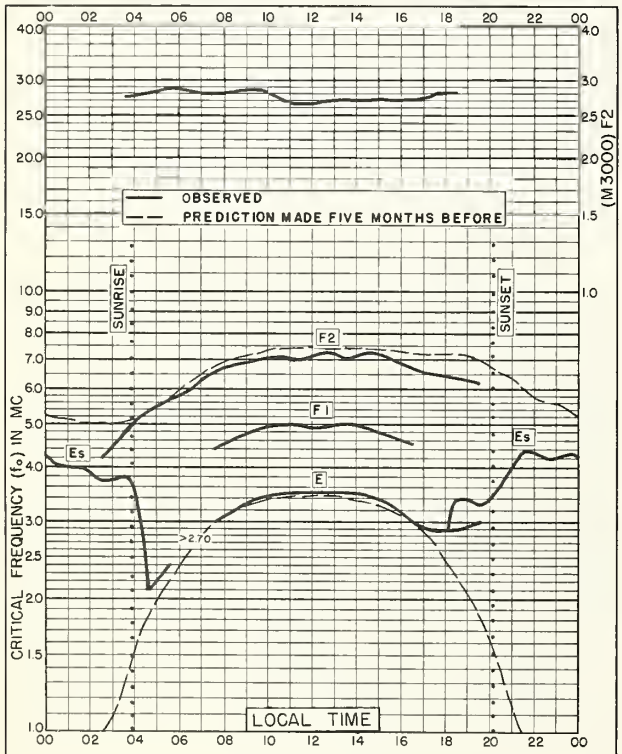


Fig. 63. REYKJAVIK, ICELAND
64.1°N, 21.8°W AUGUST 1957

NBS 503

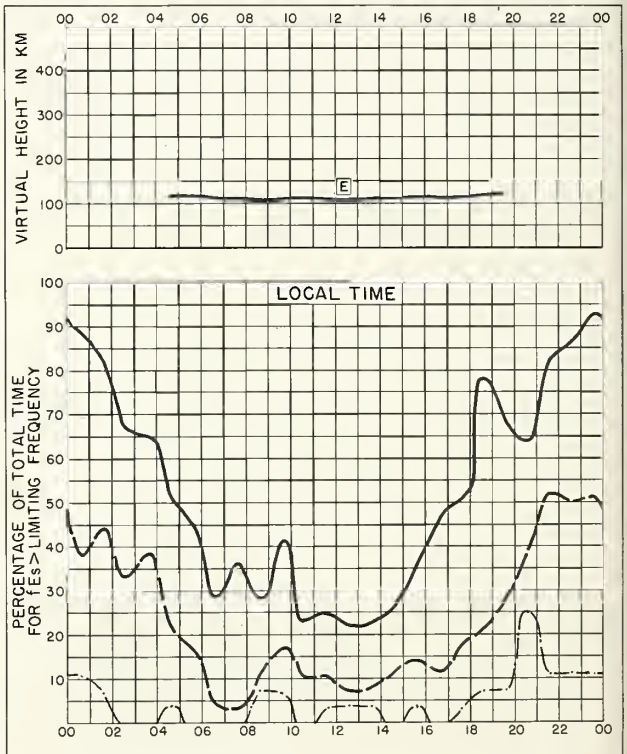


Fig. 64. REYKJAVIK, ICELAND AUGUST 1957

NBS 490

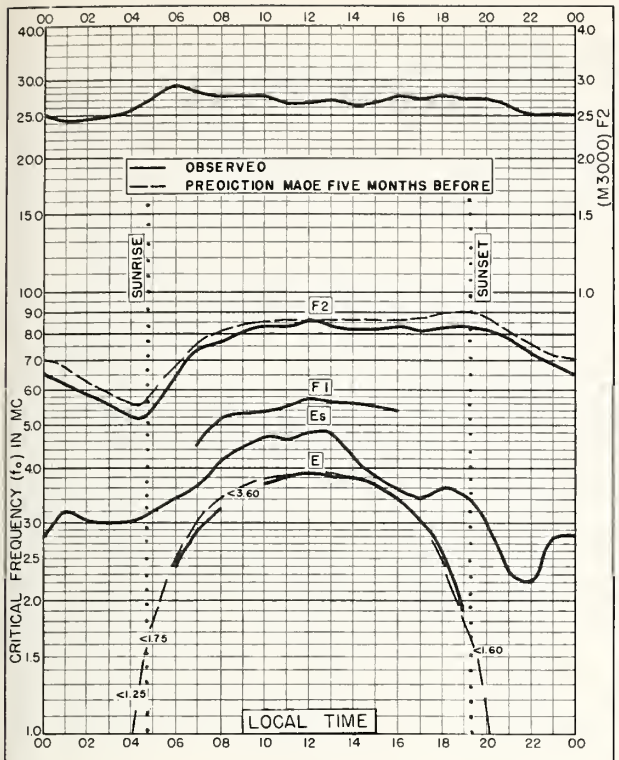


Fig. 65. SLOUGH, ENGLAND
51.5°N, 0.6°W AUGUST 1957

NBS 503

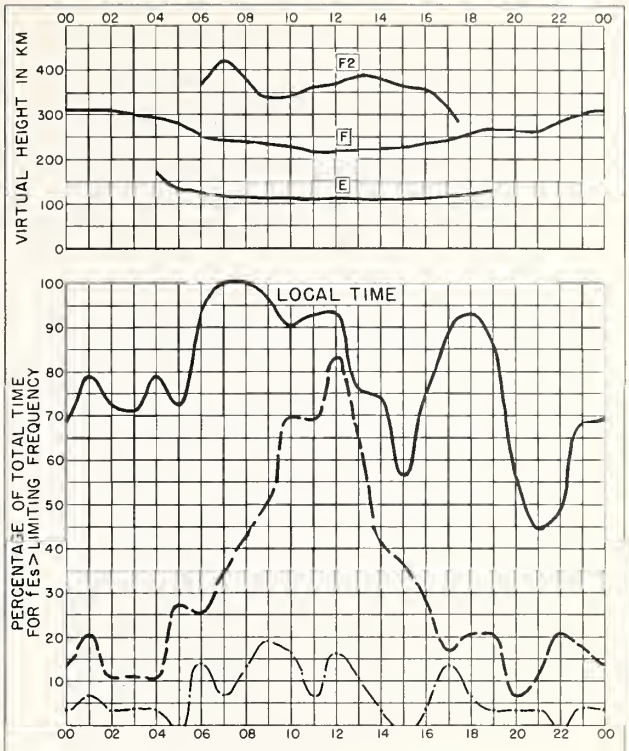


Fig. 66. SLOUGH, ENGLAND AUGUST 1957

NBS 490

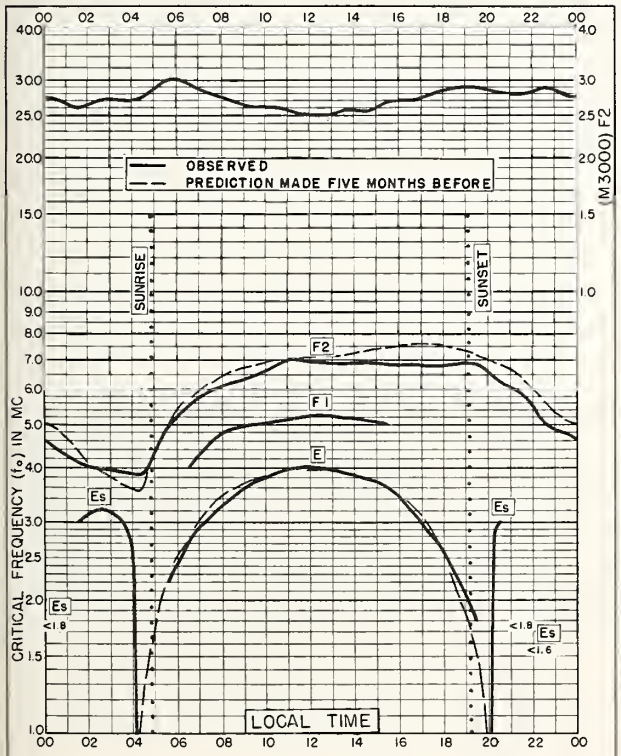


Fig. 67. WINNIPEG, CANADA
49.9°N, 97.4°W AUGUST 1957

NBS 503

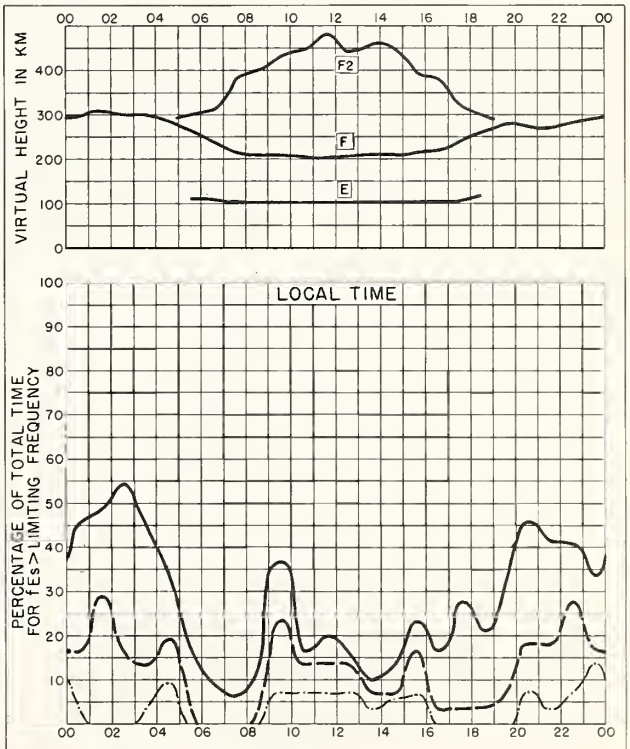


Fig. 68. WINNIPEG, CANADA AUGUST 1957

NBS 490

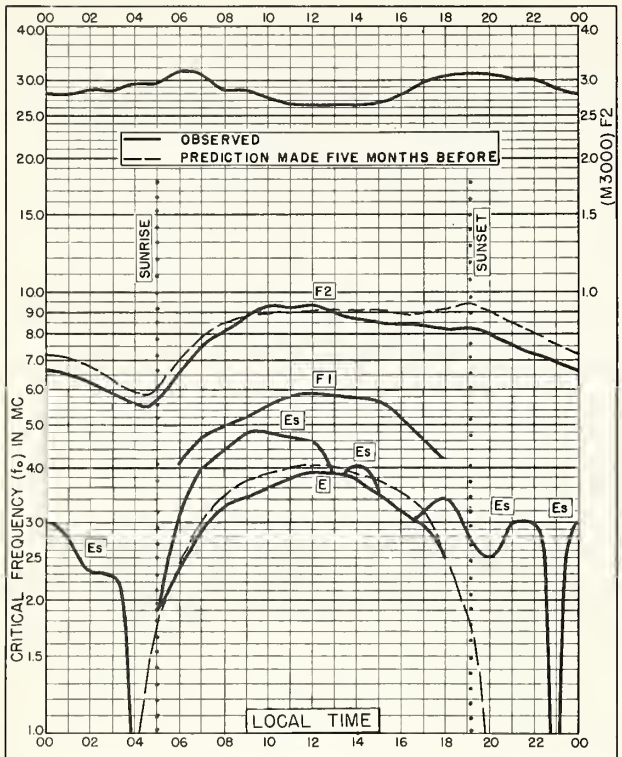


Fig. 69. BUDAPEST, HUNGARY
47.4°N, 19.2°E AUGUST 1957

NBS 503

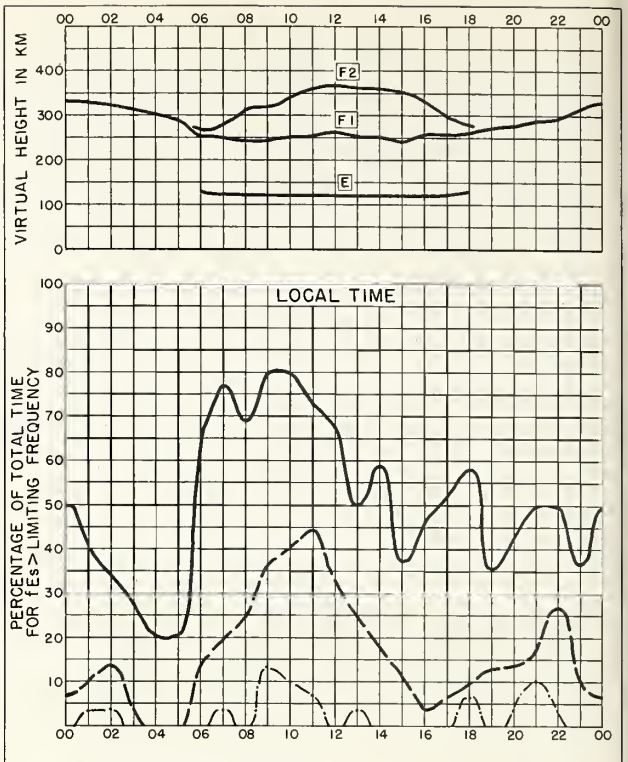


Fig. 70. BUDAPEST, HUNGARY AUGUST 1957

NBS 490

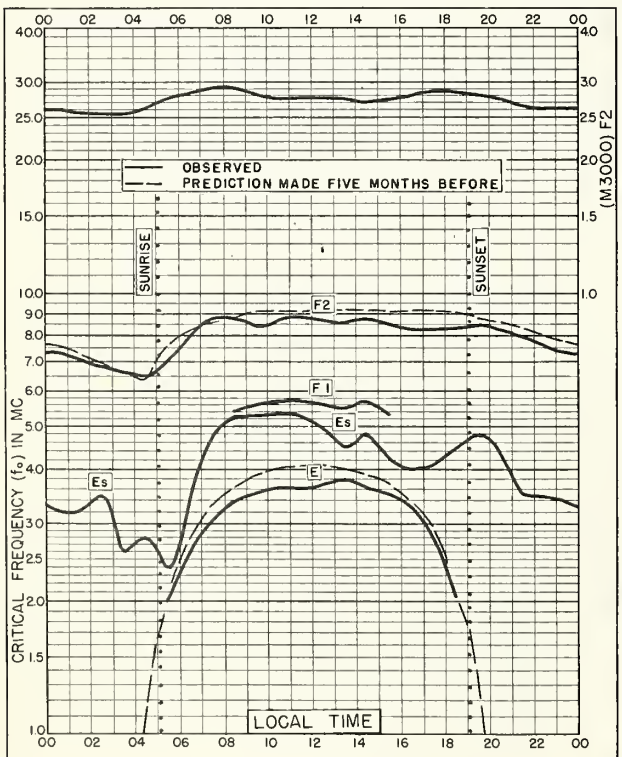


Fig. 71. WAKKANAI, JAPAN
45.4°N, 141.7°E AUGUST 1957

NBS 503

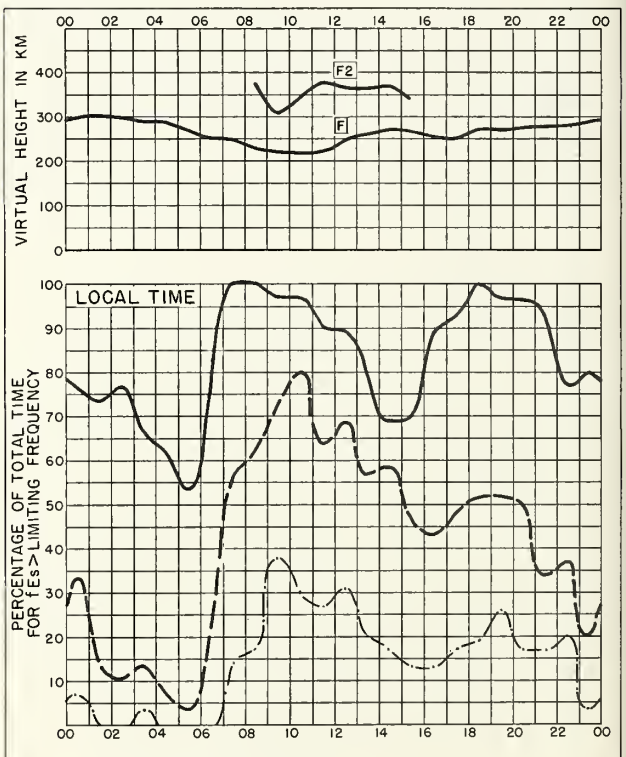


Fig. 72. WAKKANAI, JAPAN AUGUST 1957

NBS 490

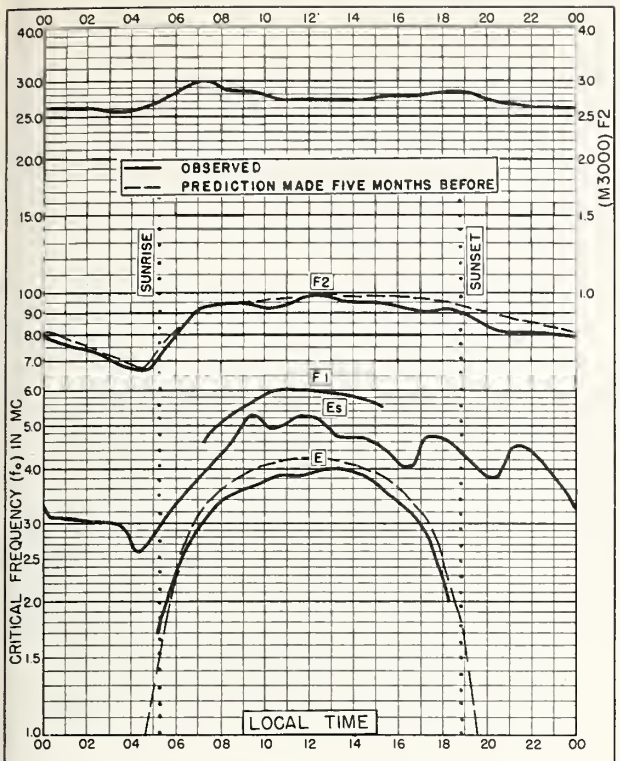


Fig. 73. AKITA, JAPAN
39.7°N, 140.1°E AUGUST 1957

NBS 503

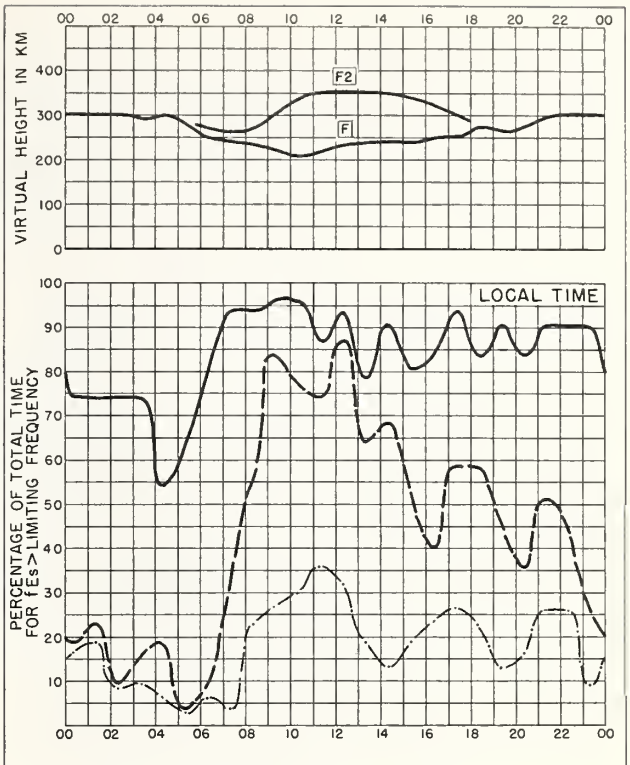


Fig. 74. AKITA, JAPAN AUGUST 1957

NBS 490

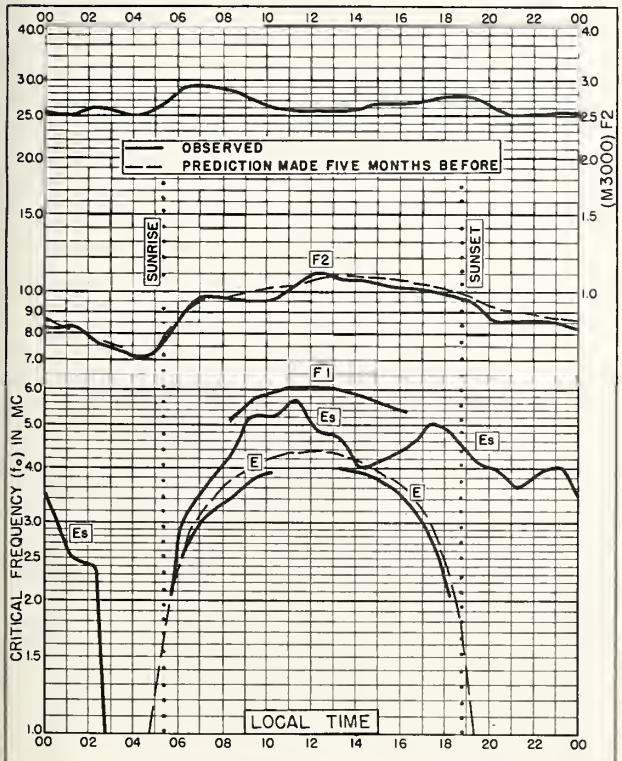


Fig. 75. TOKYO, JAPAN
35.7°N, 139.5°E AUGUST 1957

NBS 503

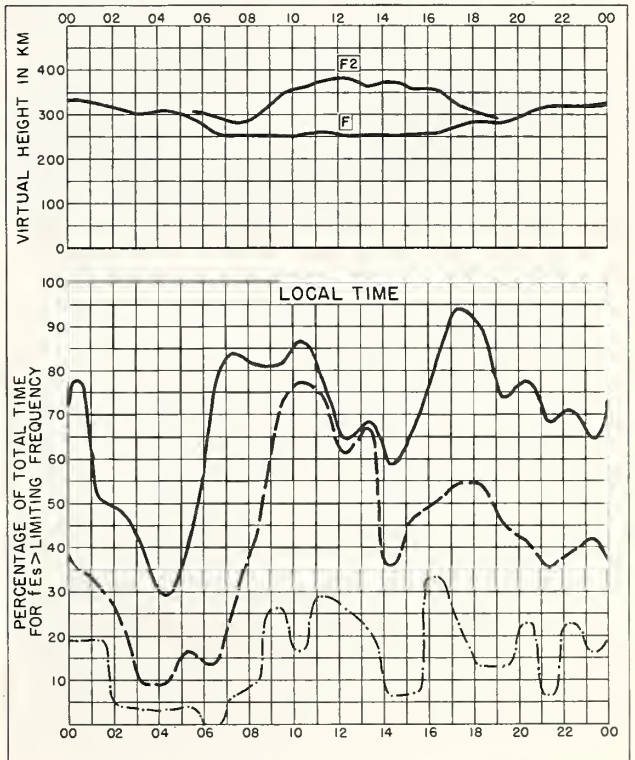


Fig. 76. TOKYO, JAPAN AUGUST 1957

NBS 490

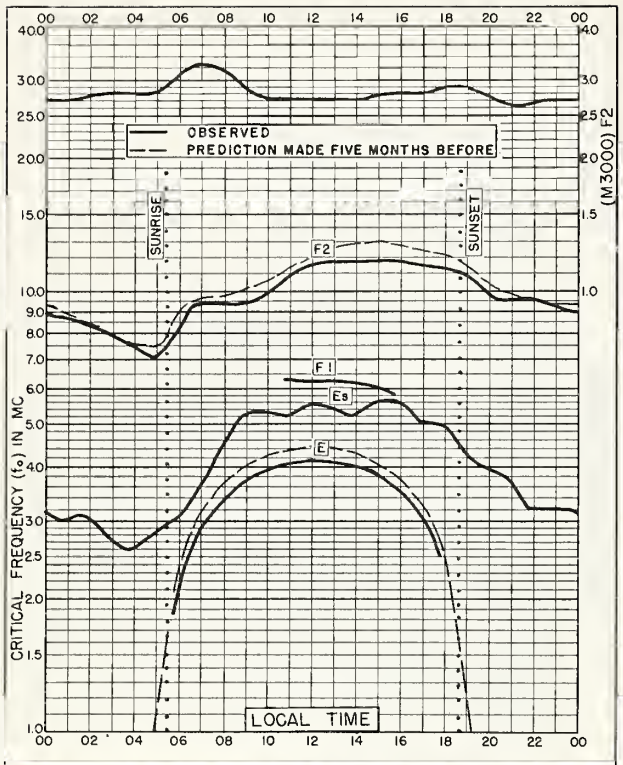


Fig. 77. YAMAGAWA, JAPAN
31.2°N, 130.6°E AUGUST 1957

NBS 503

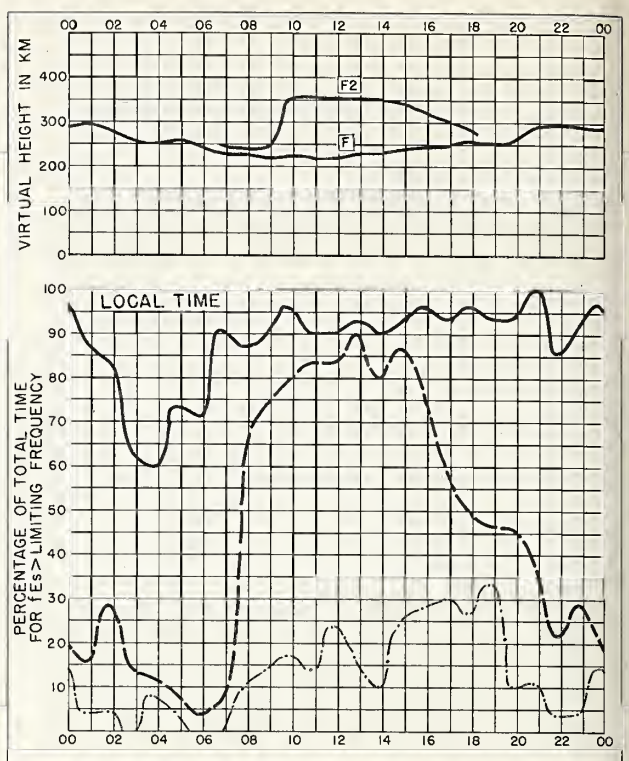


Fig. 78. YAMAGAWA, JAPAN AUGUST 1957

NBS 490

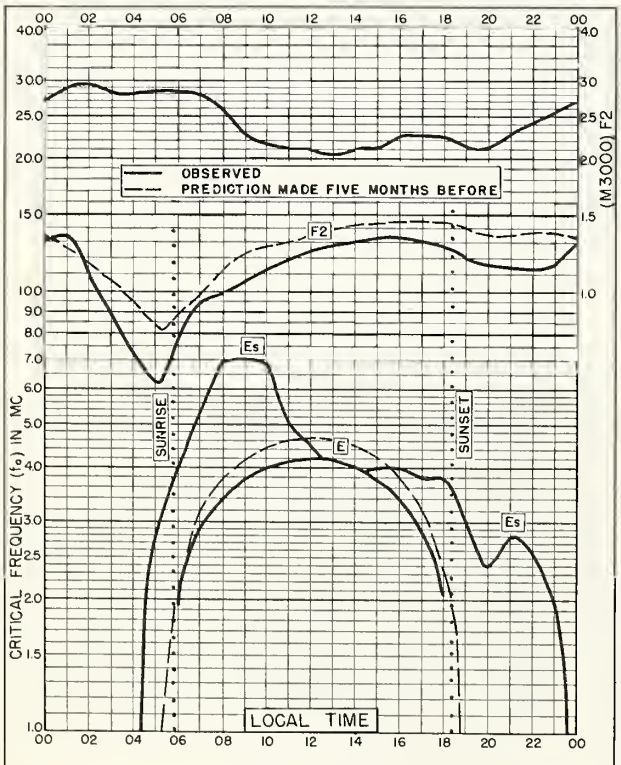


Fig. 79. BAGUIO, P.I.
16.4°N, 120.6°E AUGUST 1957

NBS 503

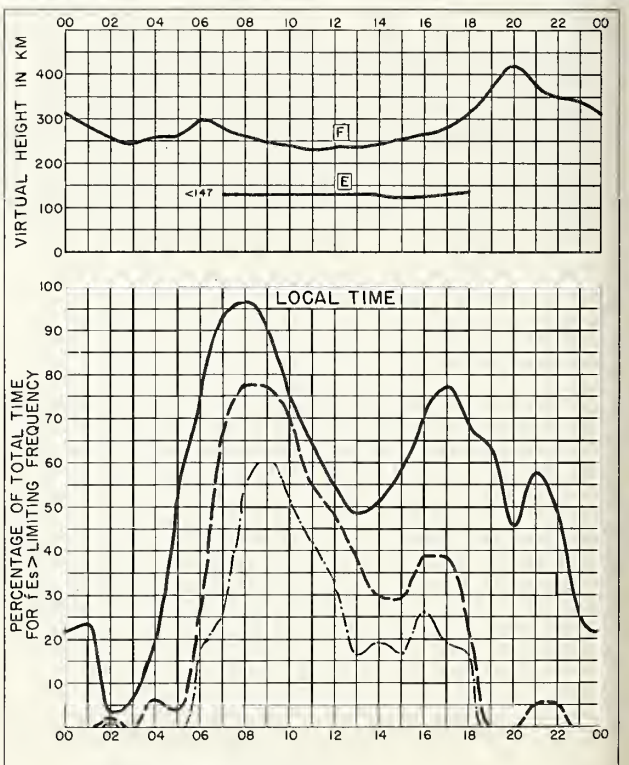


Fig. 80. BAGUIO, P.I. AUGUST 1957

NBS 490

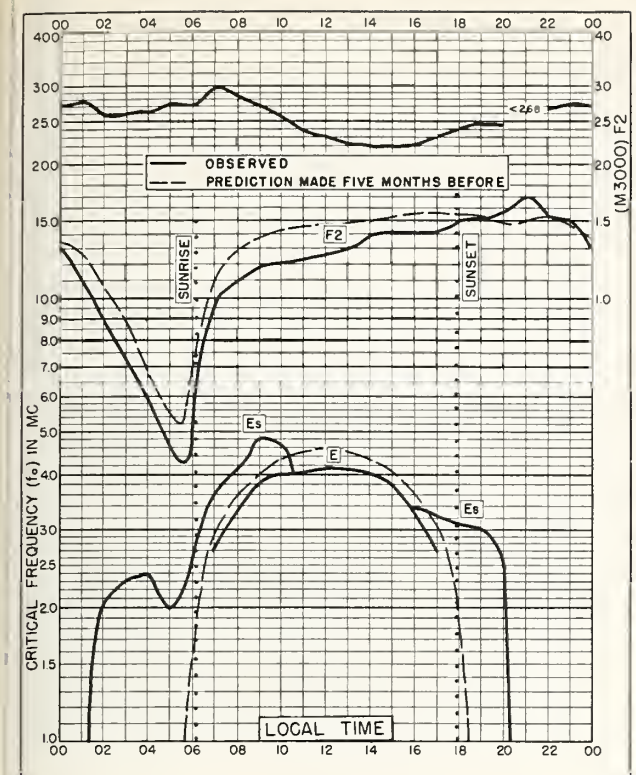


Fig. 81. LEOPOLDVILLE, BELGIAN CONGO
4.4°S, 15.2°E AUGUST 1957

NBS 503

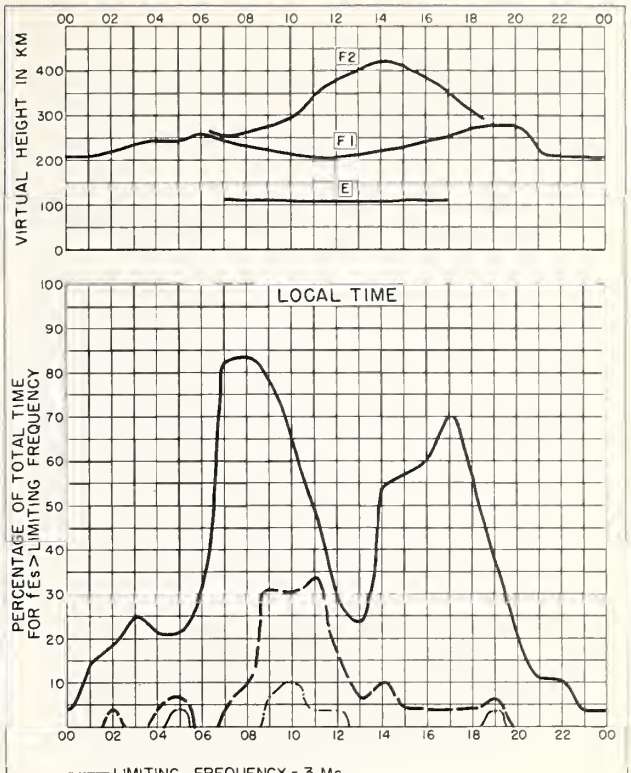


Fig. 82. LEOPOLDVILLE, BELGIAN CONGO

NBS 490

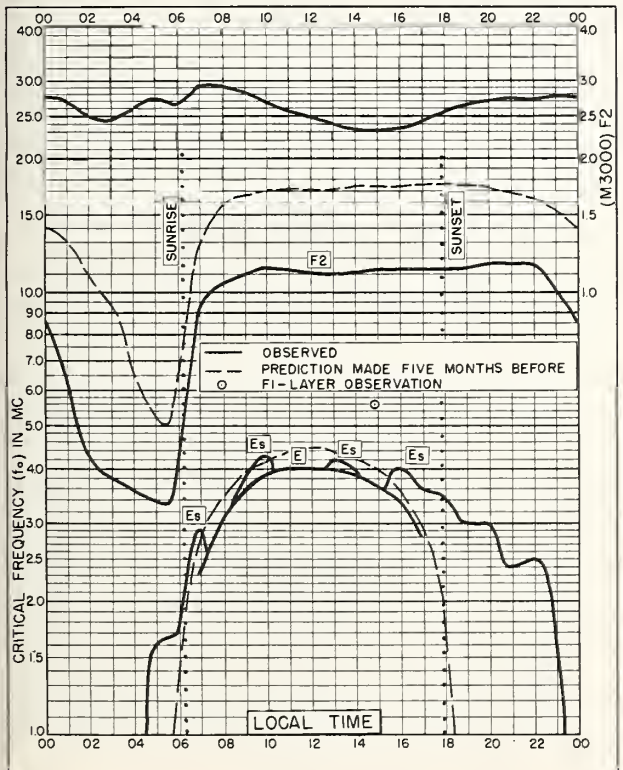


Fig. 83. ELISABETHVILLE, BELGIAN CONGO
11.6°S, 27.5°E AUGUST 1957

NBS 503

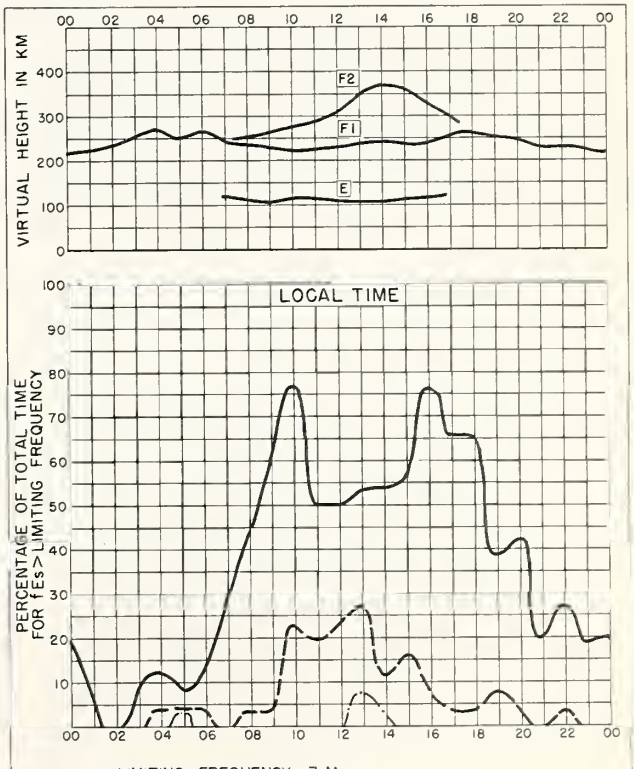


Fig. 84. ELISABETHVILLE, BELGIAN CONGO

NBS 490

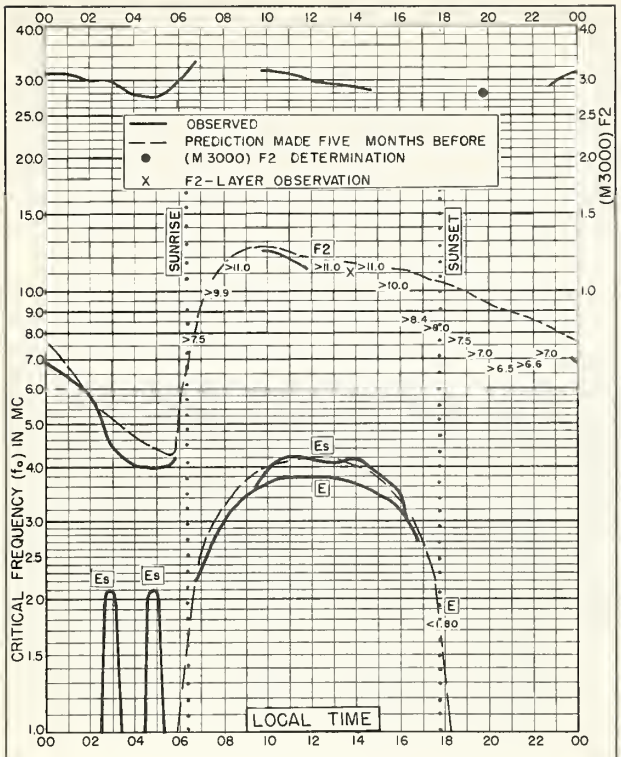


Fig. 85. TOWNSVILLE, AUSTRALIA
19.3°S, 146.7°E AUGUST 1957

NBS 503

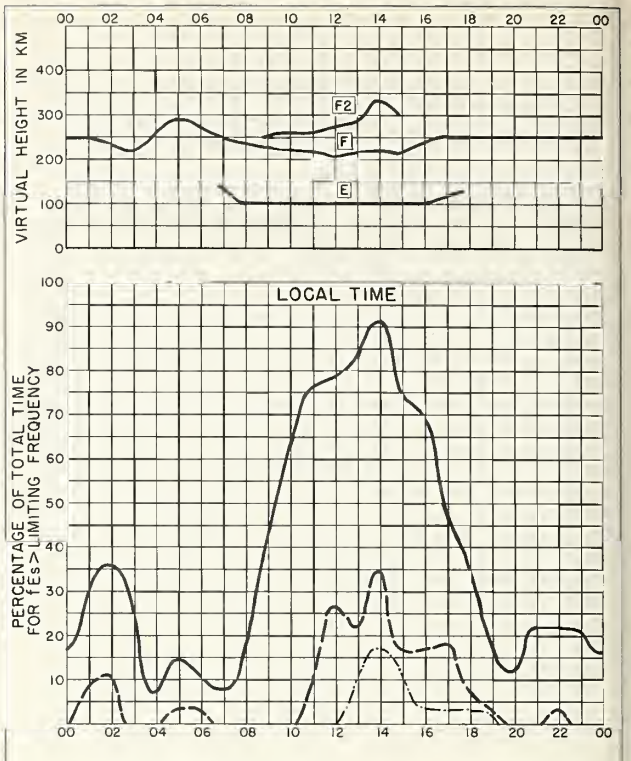


Fig. 86. TOWNSVILLE, AUSTRALIA AUGUST 1957

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NBS 490

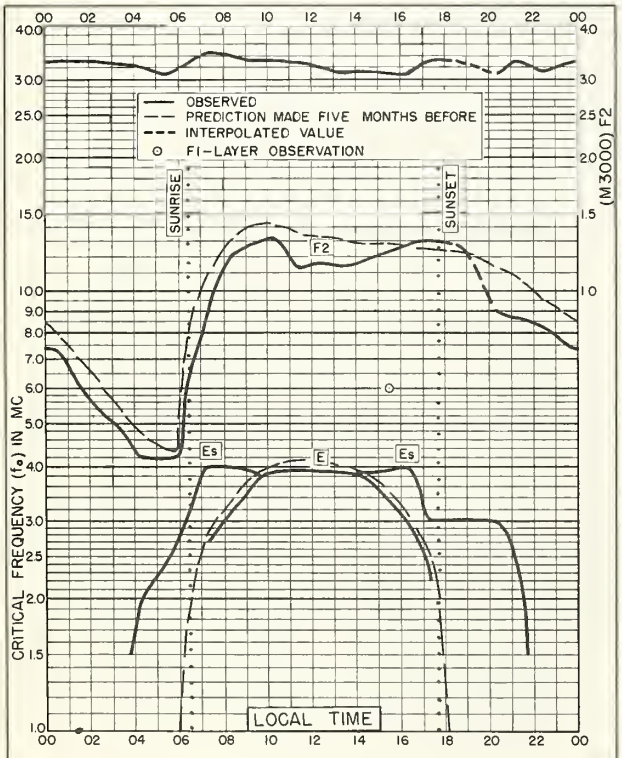

Fig. 87. RAROTONGA I.
21.2°S, 159.8°W AUGUST 1957

NBS 503

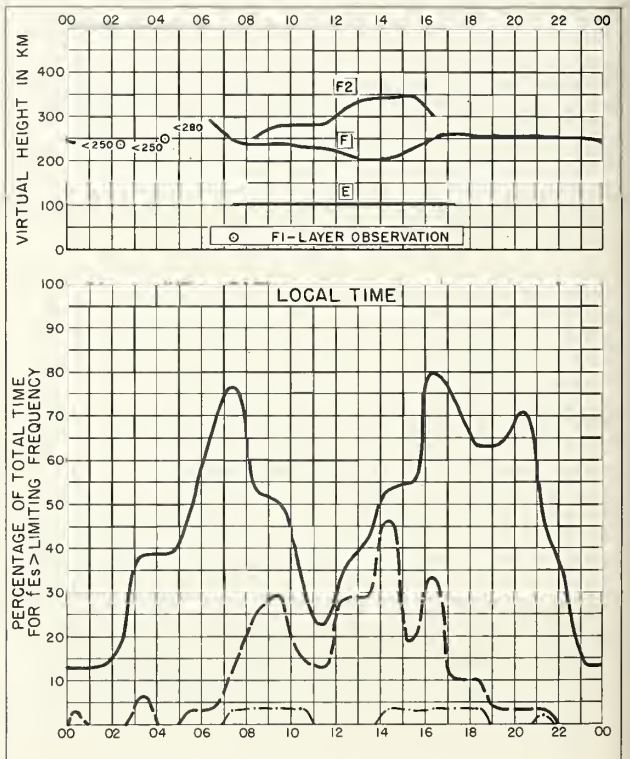

Fig. 88. RAROTONGA I. AUGUST 1957

Commerce-Standards-Boulder, Colo.

NBS 490

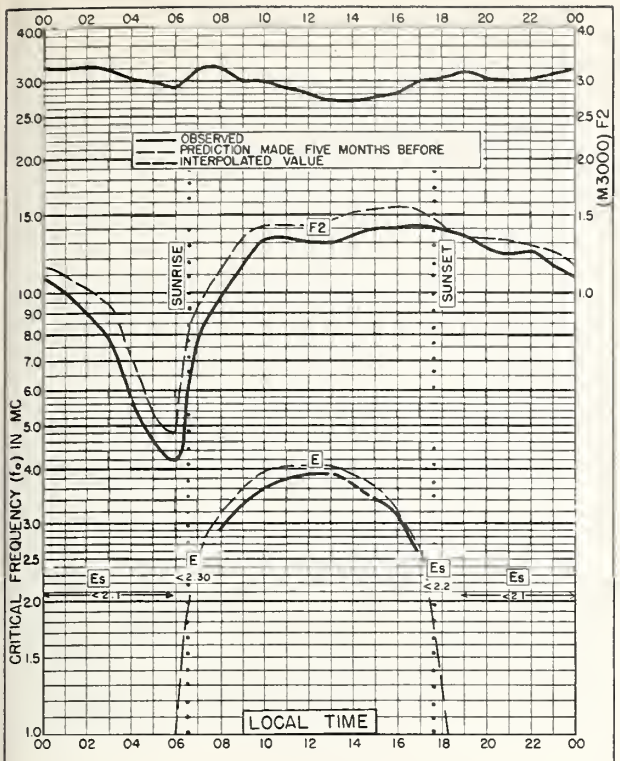

Fig. 89. SAO PAULO, BRAZIL
23.5°S, 46.5°W AUGUST 1957

NBS 503

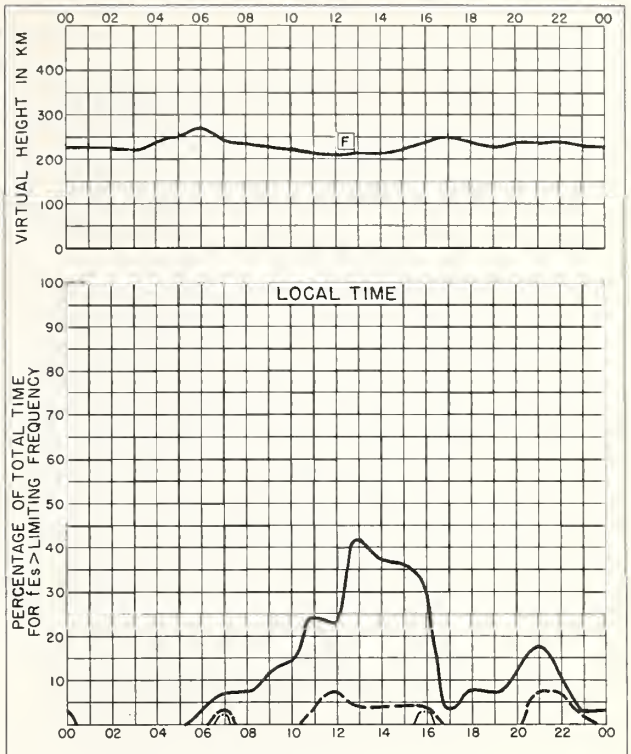

Fig. 90. SAO PAULO, BRAZIL AUGUST 1957

NBS 490

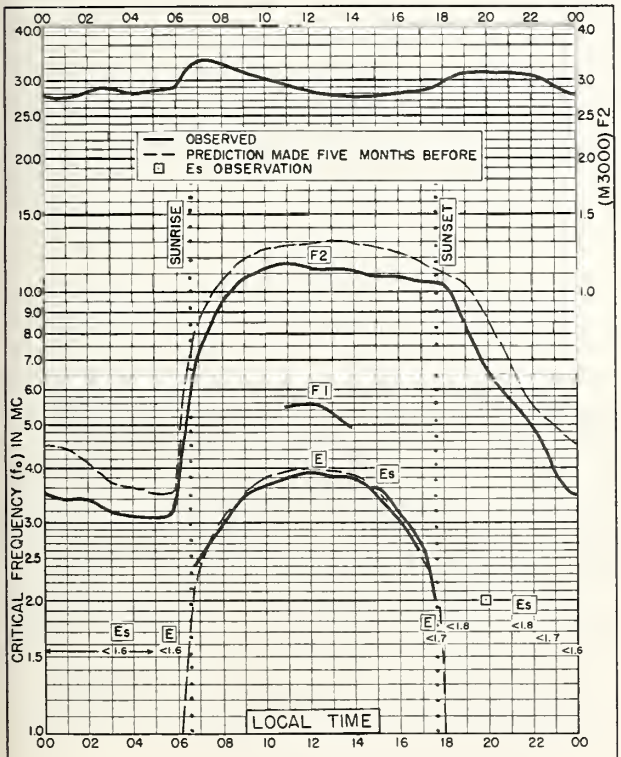

Fig. 91. JOHANNESBURG, UNION OF S. AFRICA
26.2°S, 28.0°E AUGUST 1957

NBS 503

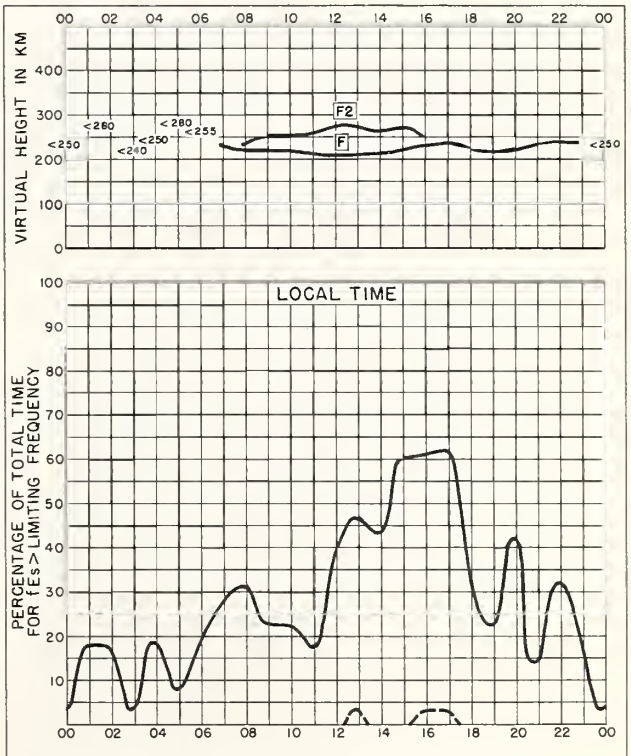

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Fig. 92. JOHANNESBURG, UNION OF S. AFRICA

NBS 490

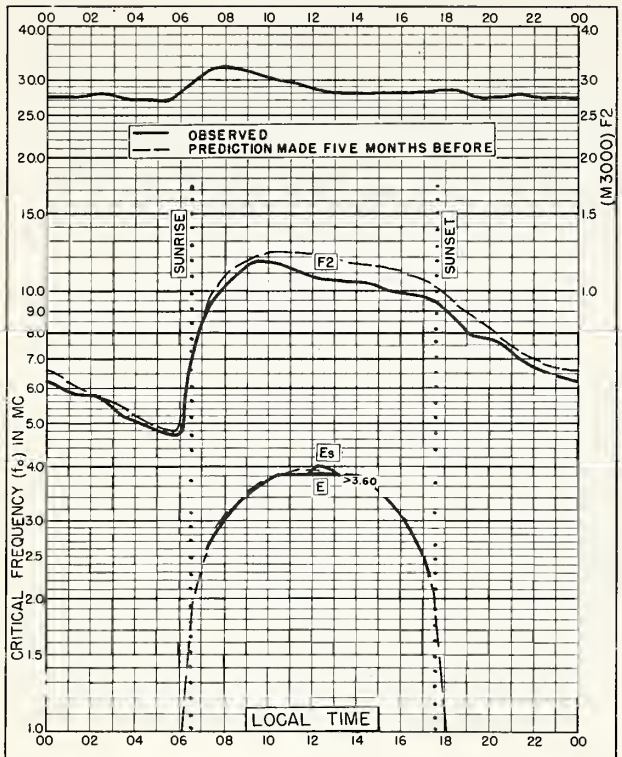

Fig. 93. BRISBANE, AUSTRALIA
27.5°S, 152.9°E AUGUST 1957

NBS 503

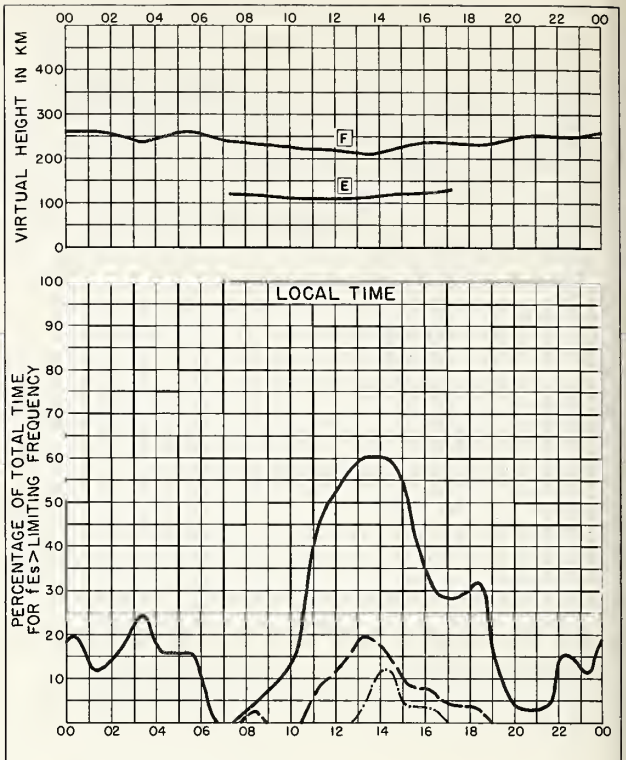

Fig. 94. BRISBANE, AUSTRALIA AUGUST 1957

NBS 490

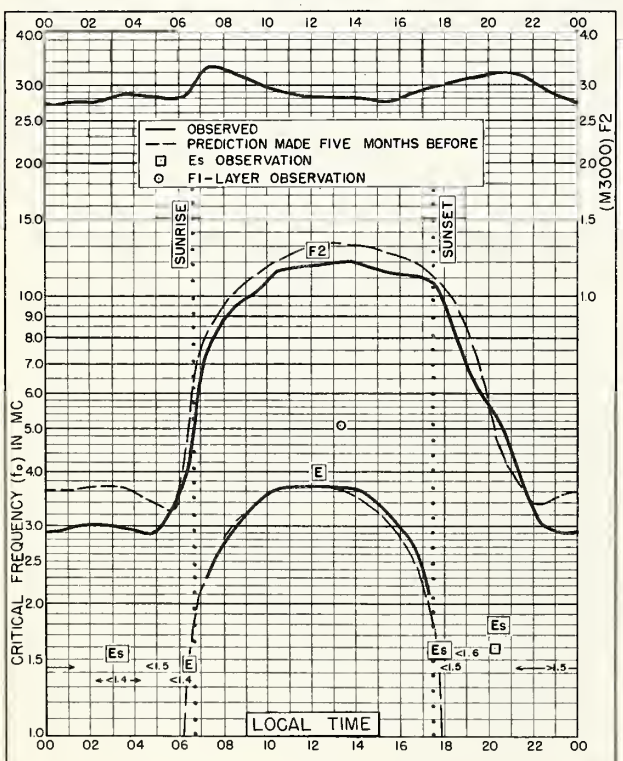

Fig. 95. CAPETOWN, UNION OF S. AFRICA
34.1°S, 18.3° E AUGUST 1957

NBS 503

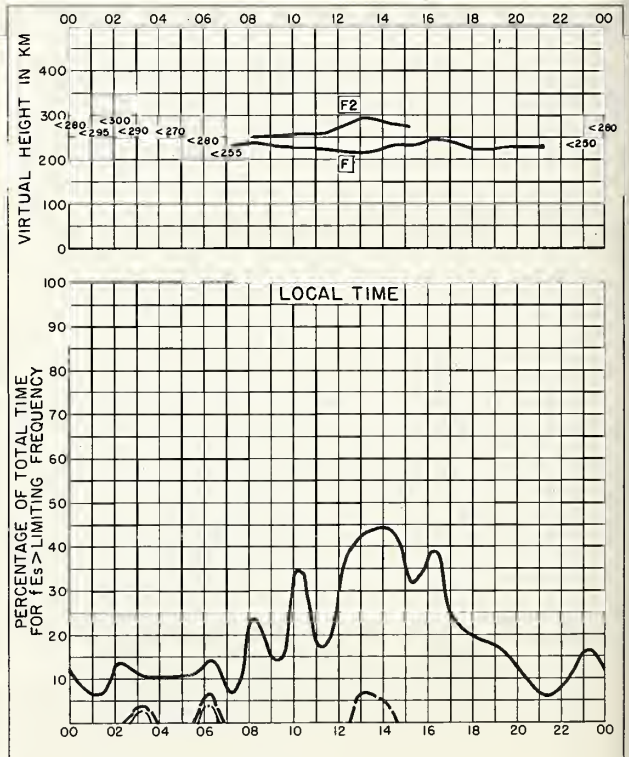

Fig. 96. CAPETOWN, UNION OF S. AFRICA AUGUST 1957

NBS 490

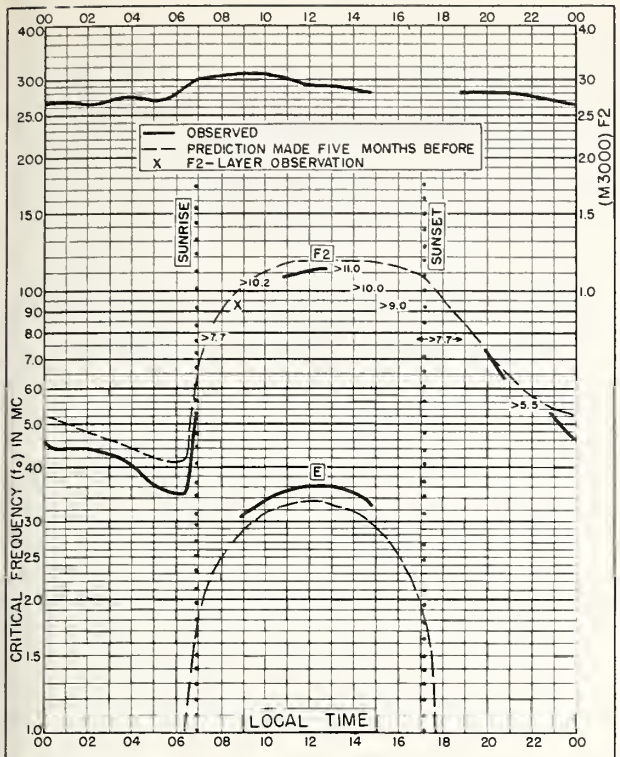

Fig. 97. HOBART, TASMANIA
42.9°S, 147.2°E AUGUST 1957

NBS 503

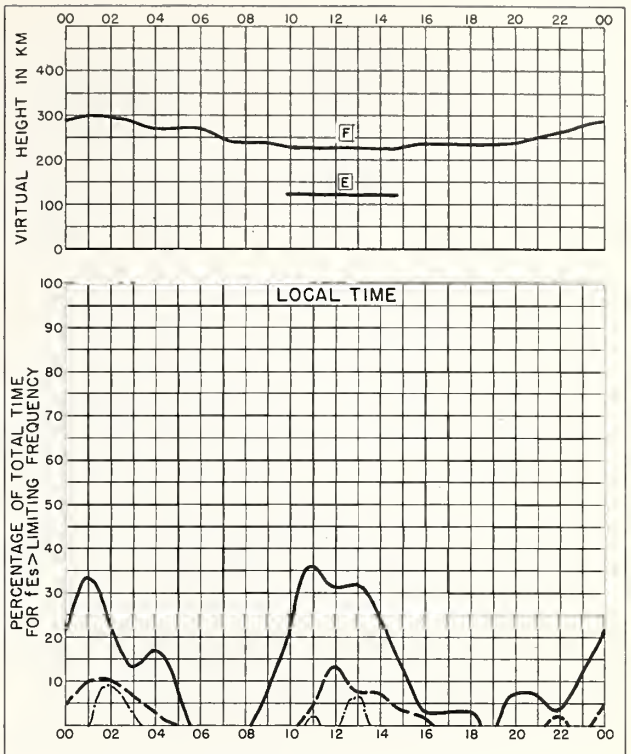

Fig. 98. HOBART, TASMANIA AUGUST 1957

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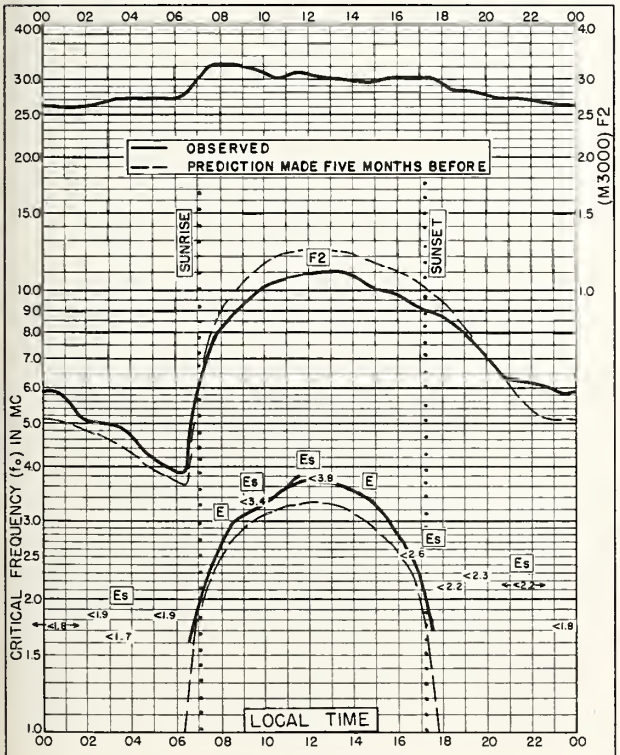

Fig. 99. CHRISTCHURCH, NEW ZEALAND
43.6°S, 172.8°E AUGUST 1957

NBS 503

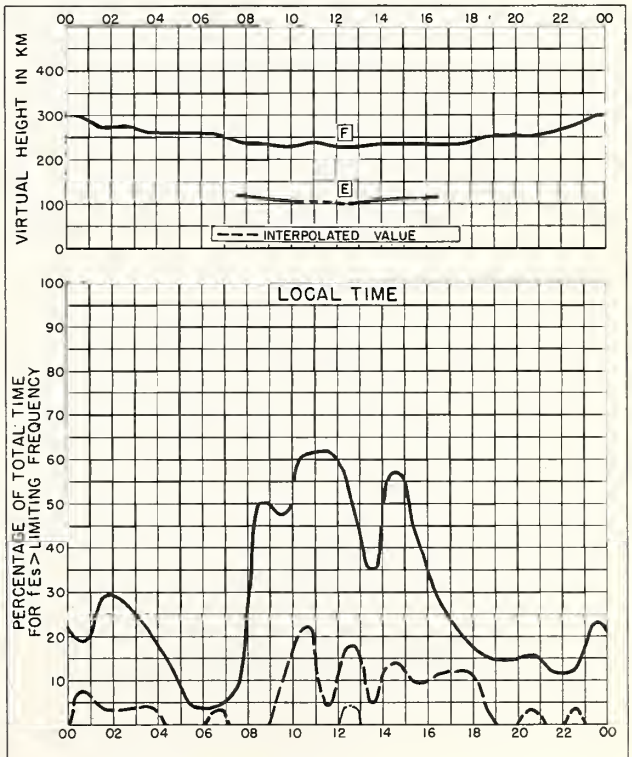

Fig. 100. CHRISTCHURCH, NEW ZEALAND AUGUST 1957

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NBS 490

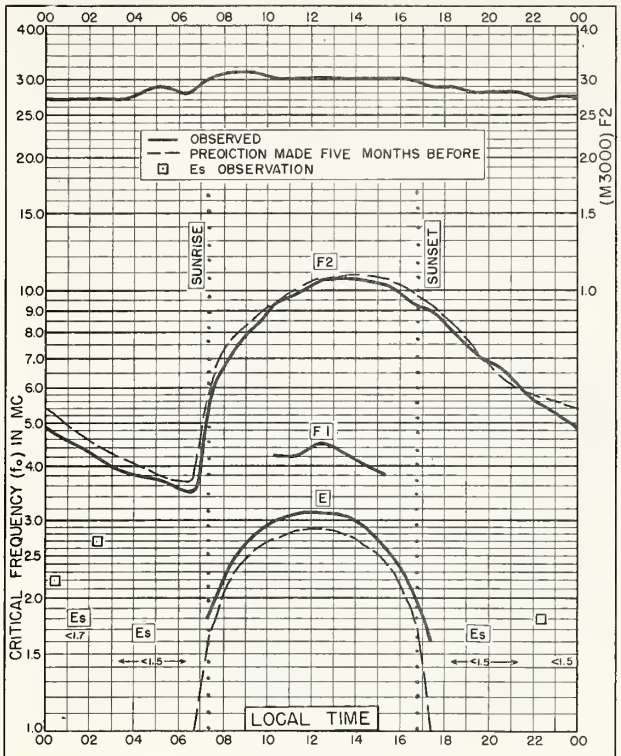

Fig. 101. CAMPBELL I.
52.5°S, 169.2°E AUGUST 1957

NBS 503

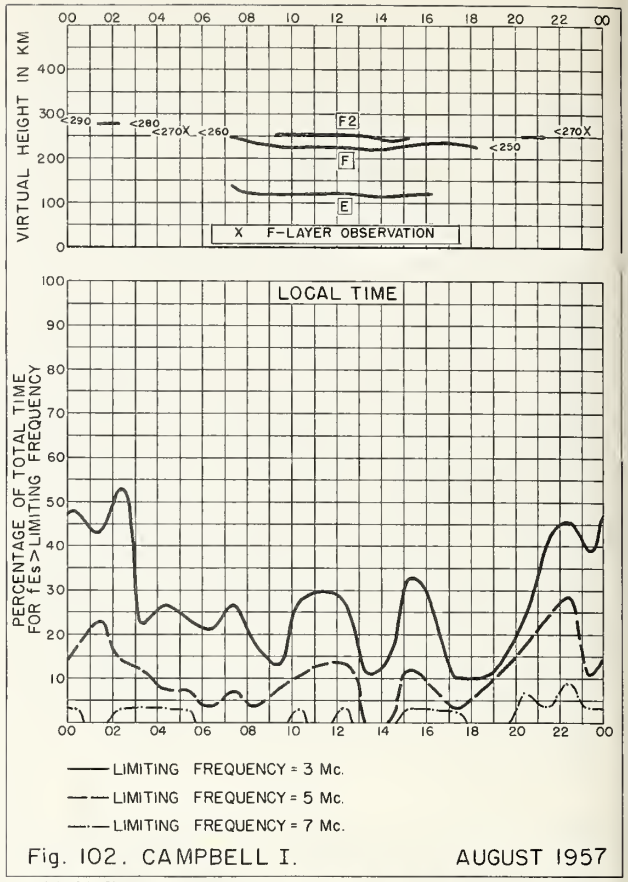

Fig. 102. CAMPBELL I. AUGUST 1957

NBS 490

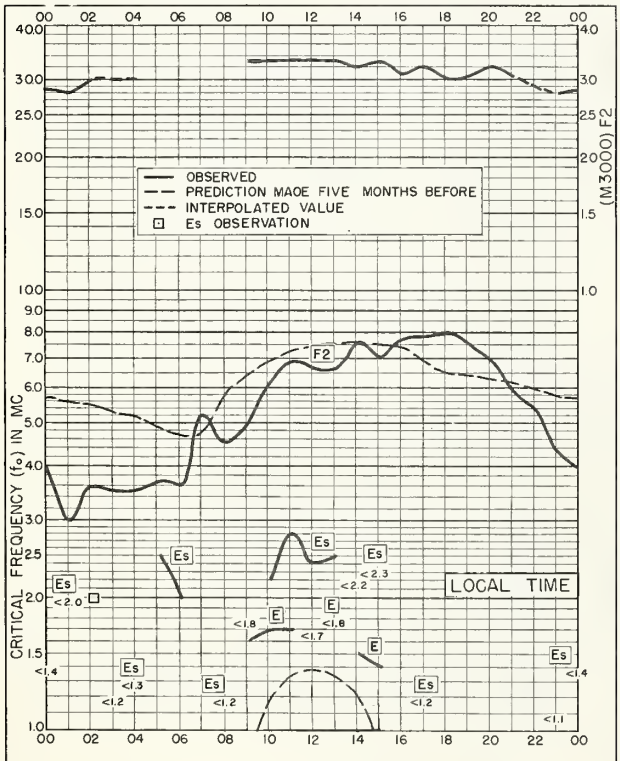

Fig. 103. SCOTT BASE
77.8°S, 166.8°E AUGUST 1957

NBS 503

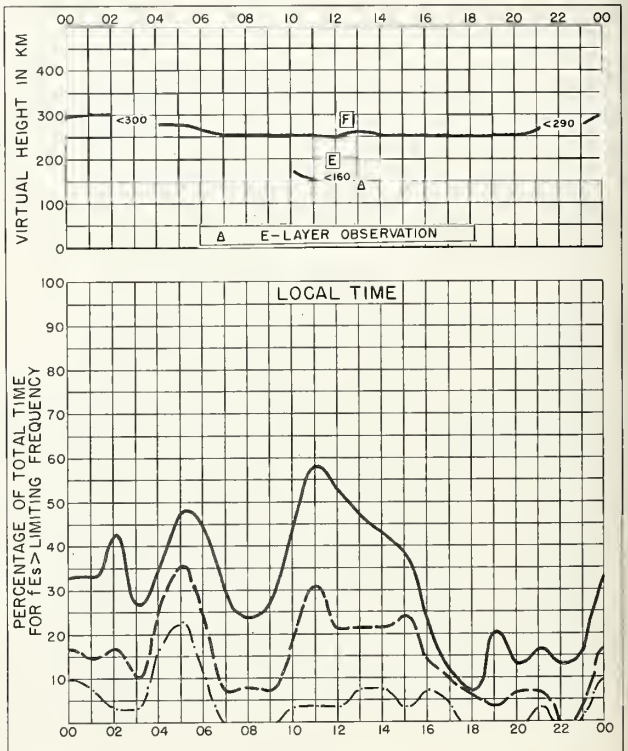

Fig. 104. SCOTT BASE AUGUST 1957

NBS 490

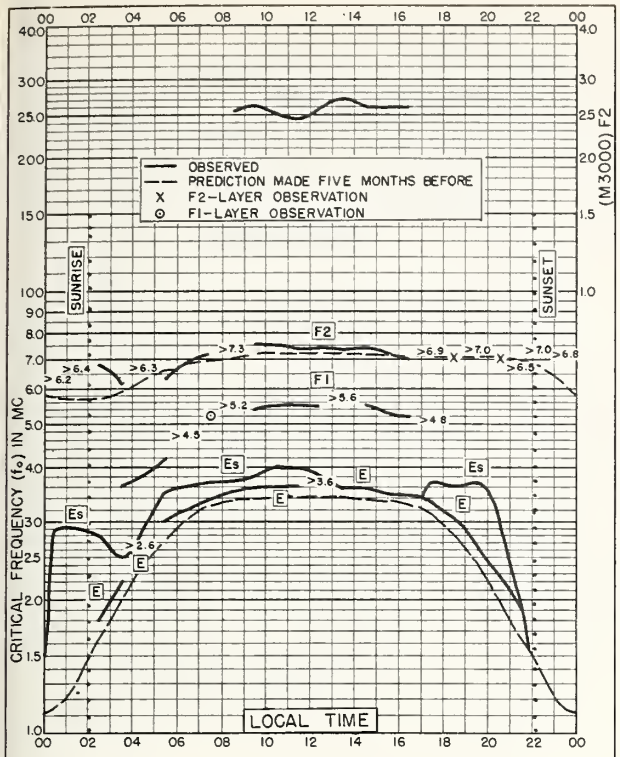

Fig. 105. LULEA, SWEDEN
65.6°N, 22.1°E JULY 1957

NBS 503

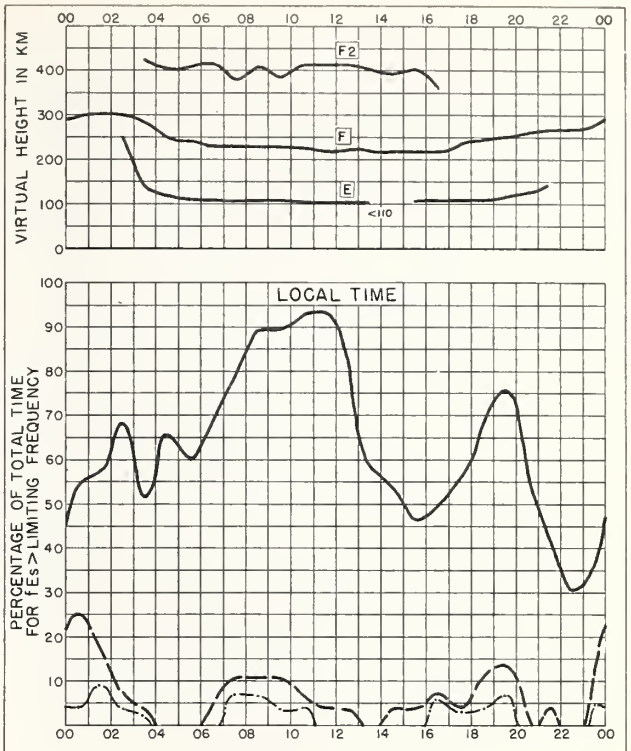

Fig. 106. LULEA, SWEDEN JULY 1957

NBS 490

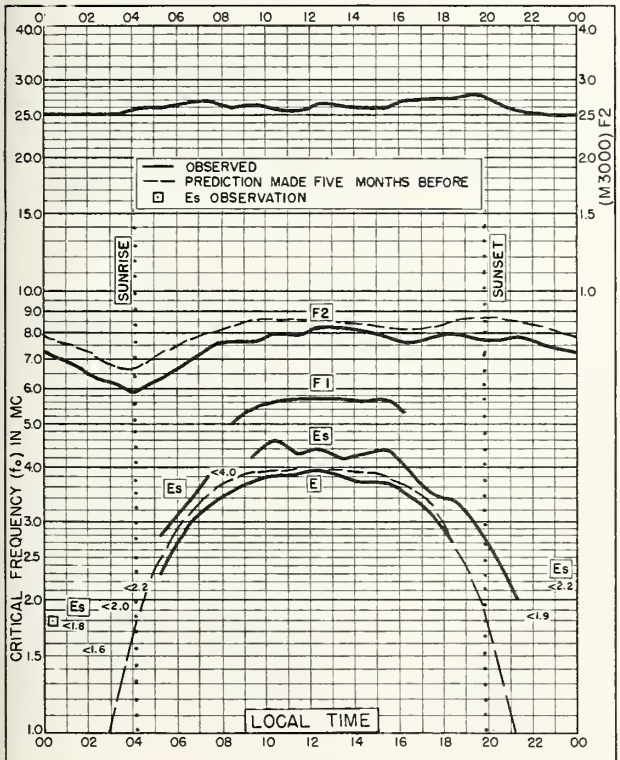

Fig. 107. DOURBES, BELGIUM
50.1°N, 4.6°E JULY 1957

NBS 503

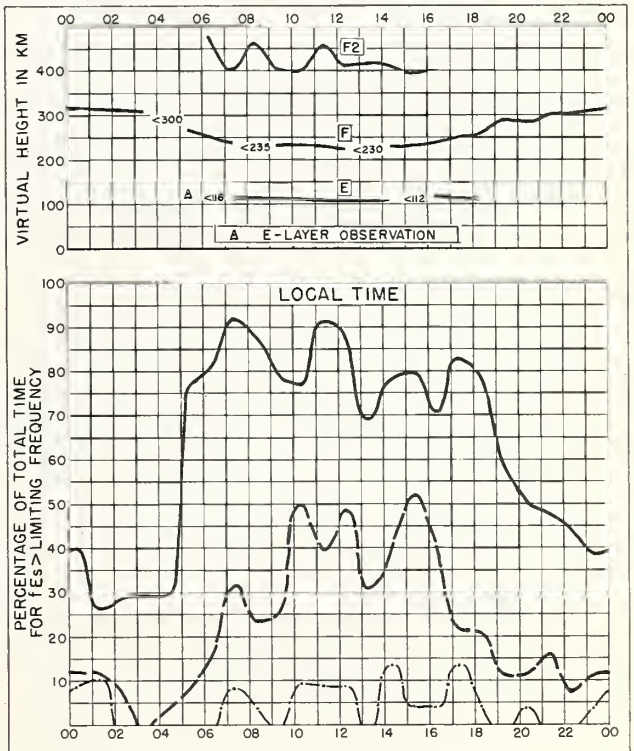

Fig. 108. DOURBES, BELGIUM JULY 1957

NBS 490

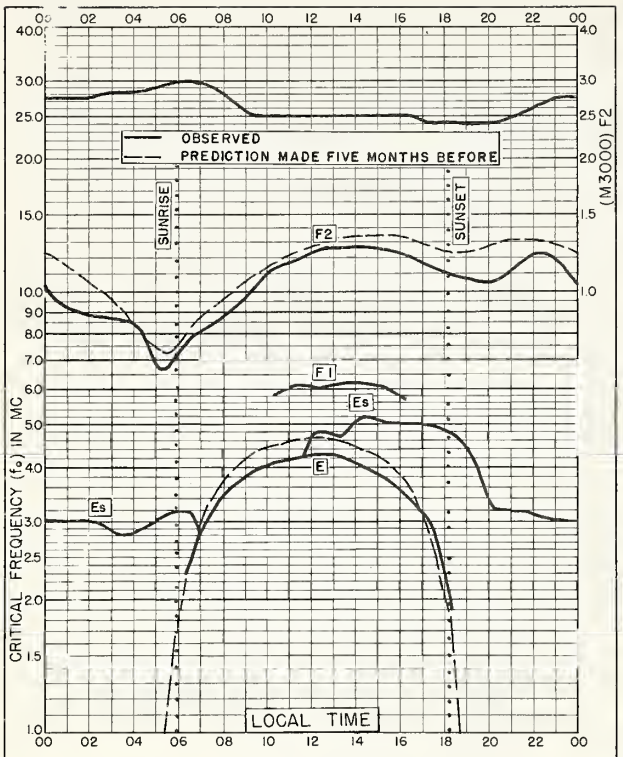

Fig. 109. PARAMARIBO, SURINAM
5.8°N, 55.2°W JULY 1957

NBS 503

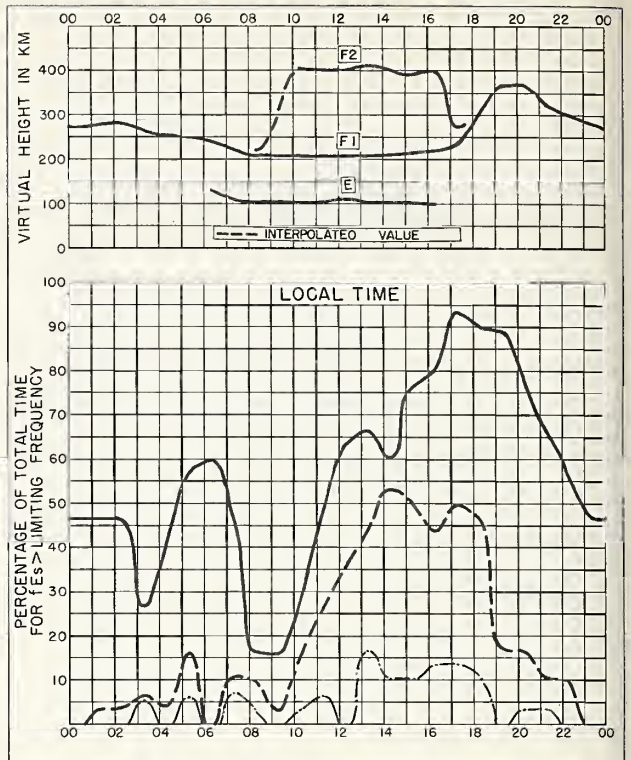

Fig. 110. PARAMARIBO, SURINAM JULY 1957

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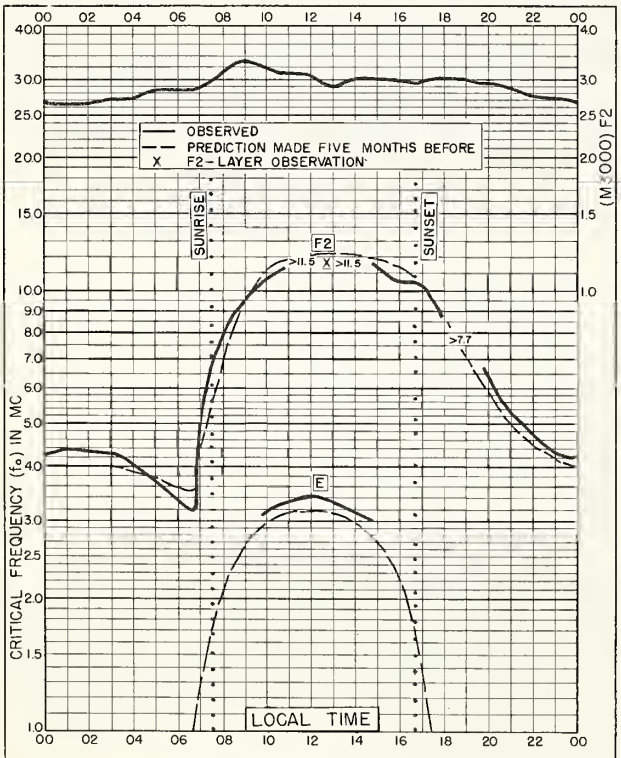

Fig. 111. HOBART, TASMANIA
42.9°S, 147.2°E JULY 1957

NBS 503

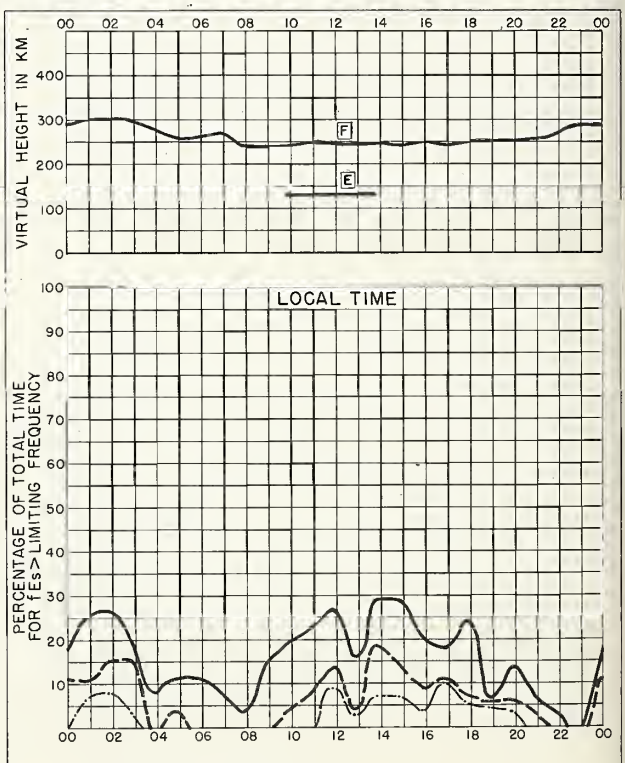

Fig. 112. HOBART, TASMANIA JULY 1957

Commerce-Standards-Boulder, Colo. NBS 490

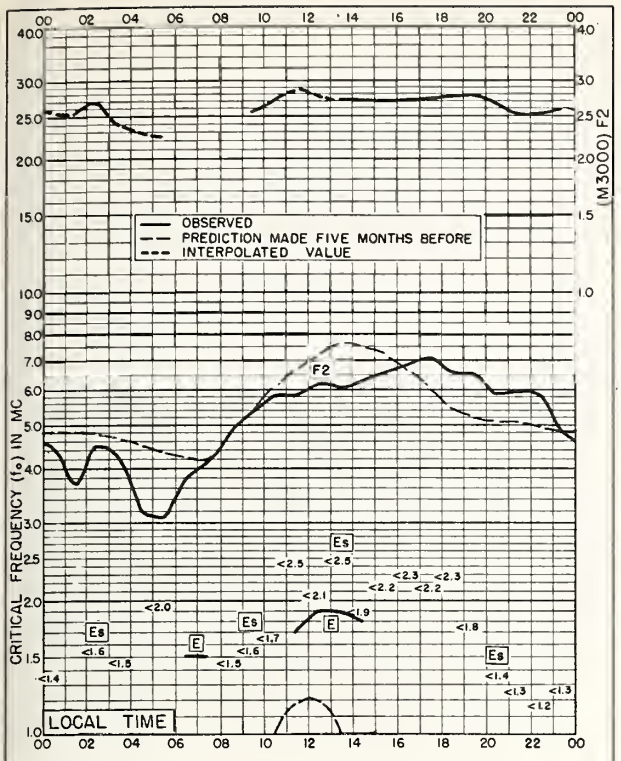

Fig. 113. CAPE HALLETT
72.3°S, 170.3°E JULY 1957

NBS 503

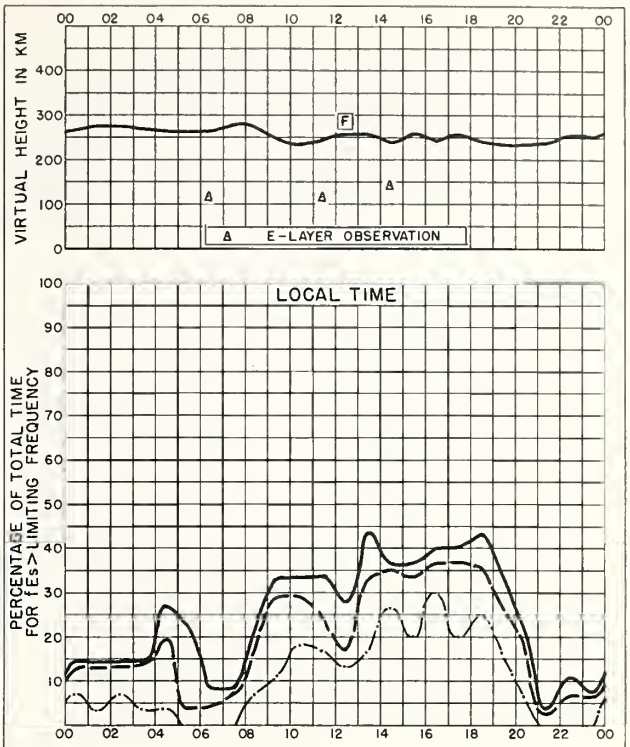

Fig. 114. CAPE HALLETT JULY 1957

NBS 490

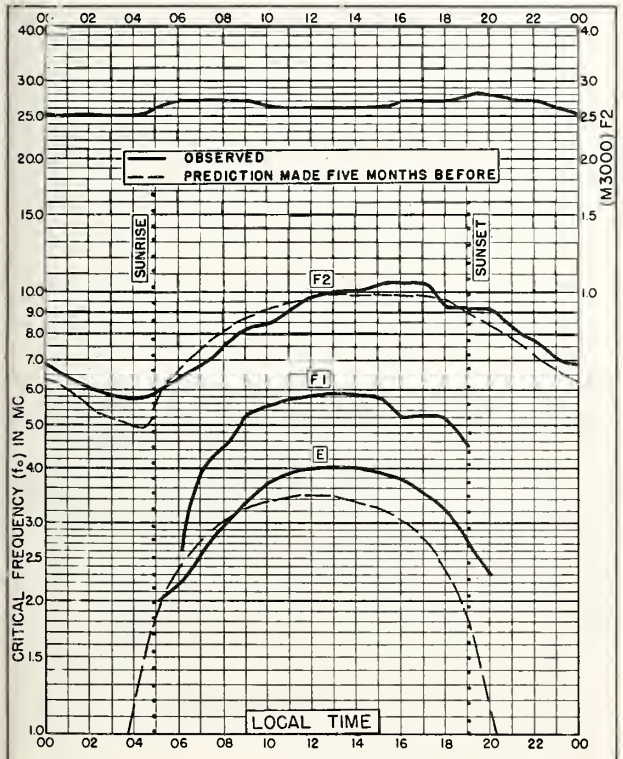

Fig. 115. LENINGRAD, U.S.S.R.
59.9°N, 30.7°E APRIL 1957

NBS 503

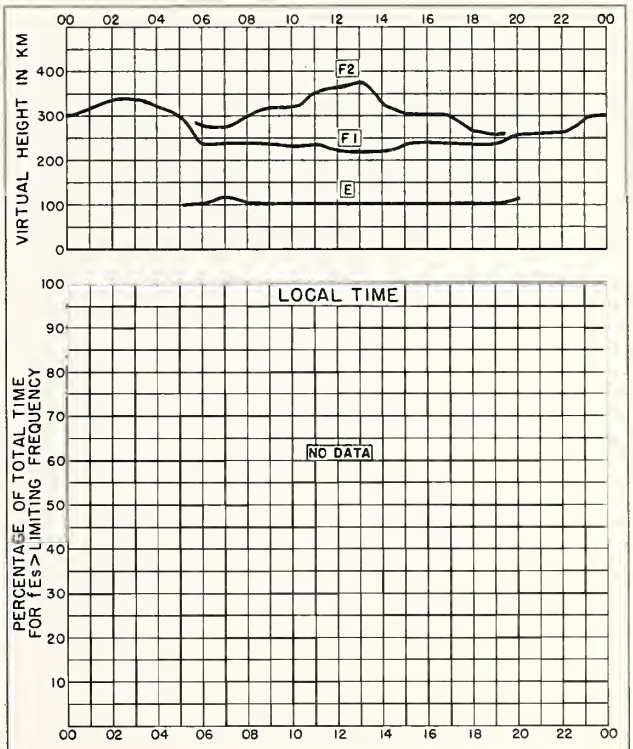

Fig. 116. LENINGRAD, U.S.S.R. APRIL 1957

NBS 490

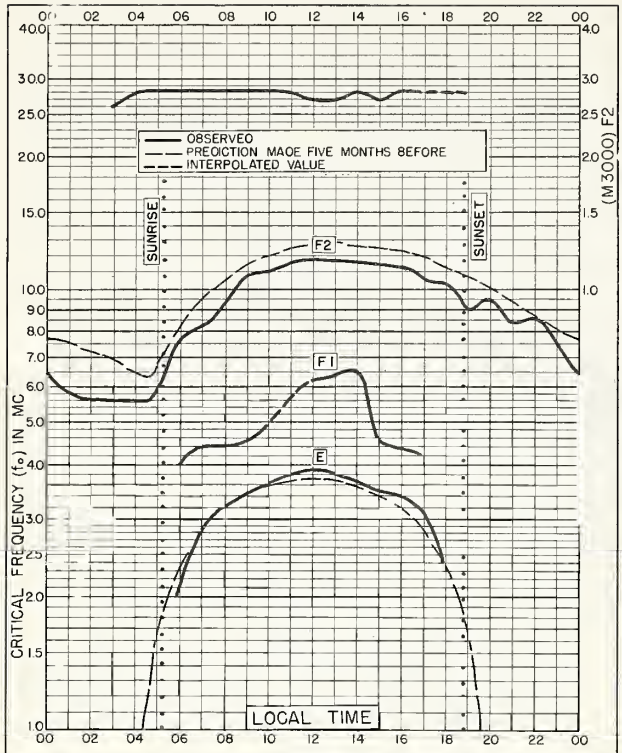

Fig. 117. IRKUTSK, U.S.S.R.
52.5°N, 104.0°E APRIL 1957

NBS 503

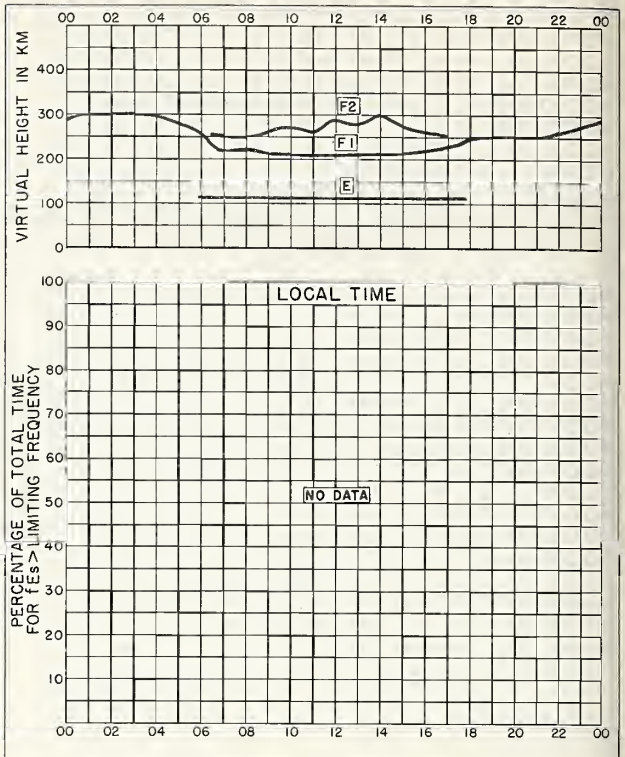

Fig. 118. IRKUTSK, U.S.S.R. APRIL 1957

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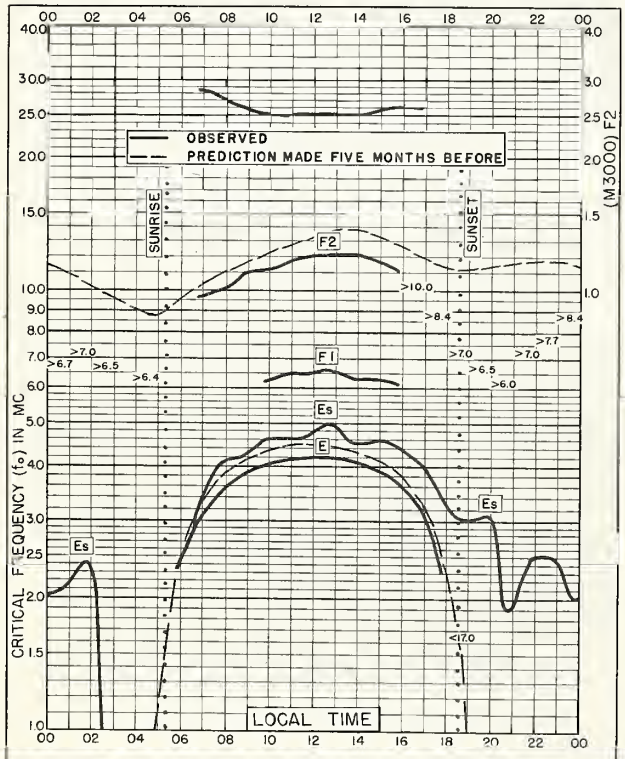

Fig. 119. TOWNSVILLE, AUSTRALIA
19.3°S, 146.7°E DECEMBER 1956

NBS 503

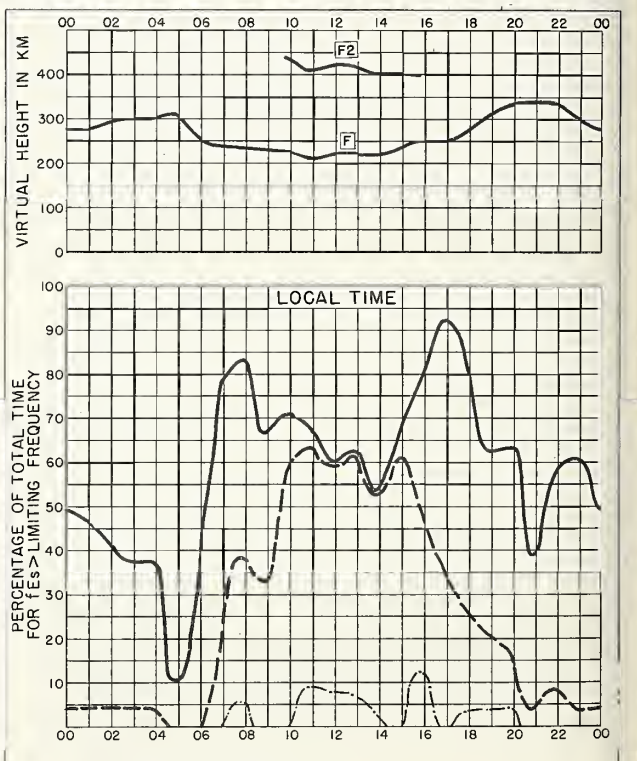

Fig. 120. TOWNSVILLE, AUSTRALIA DECEMBER 1956

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NBS 490

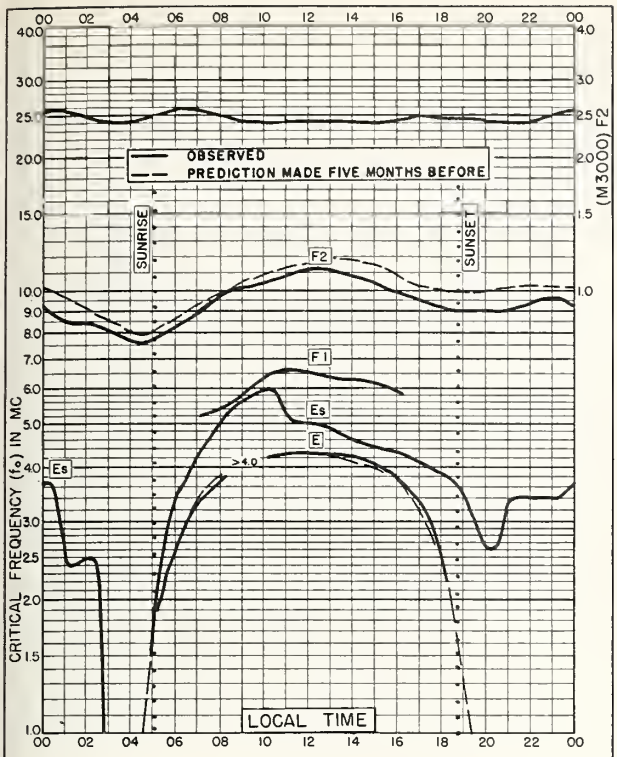

Fig. 121. BRISBANE, AUSTRALIA
27.5°S, 152.9°E DECEMBER 1956

NBS 503

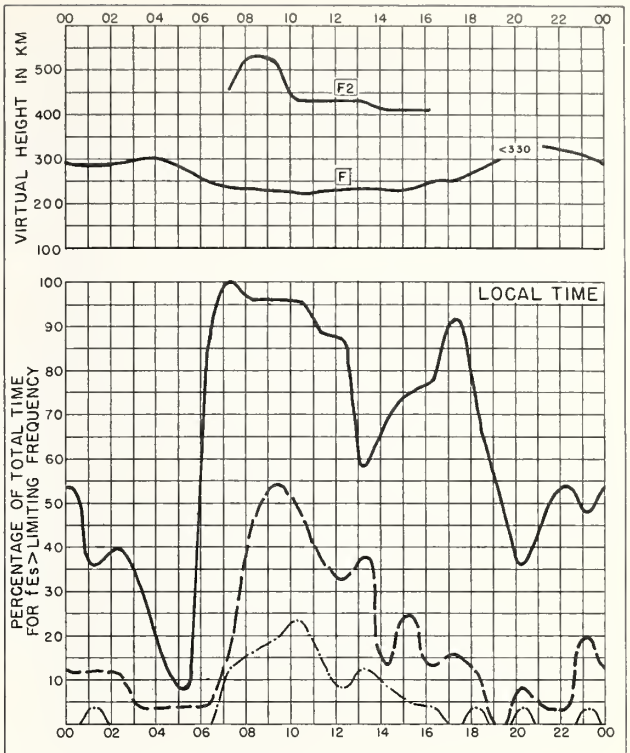

Fig. 122. BRISBANE, AUSTRALIA DECEMBER 1956

NBS 490

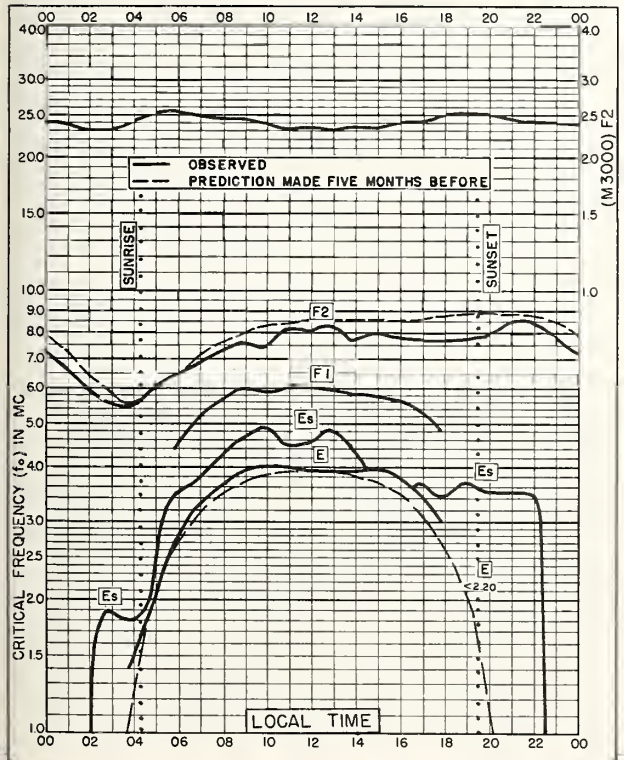

Fig. 123. HOBART, TASMANIA
42.9°S, 147.2°E DECEMBER 1956

NBS 503

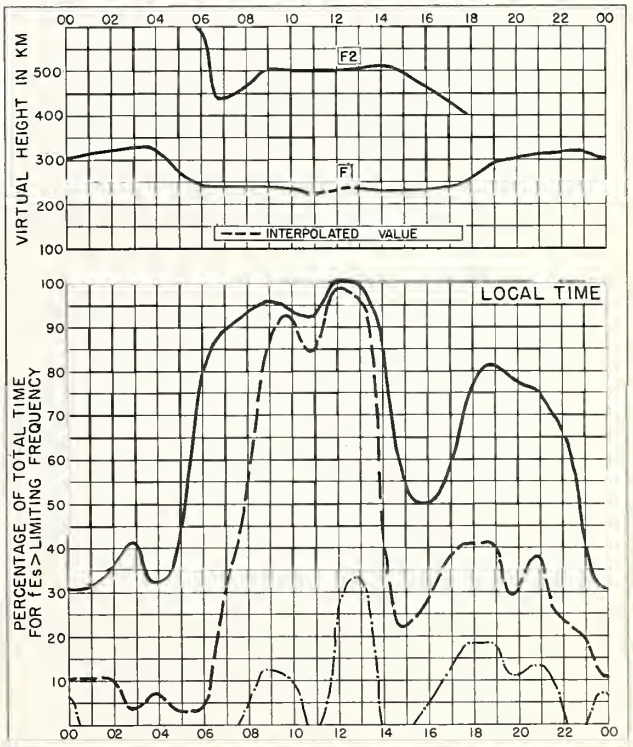

Fig. 124. HOBART, TASMANIA DECEMBER 1956

NBS 490

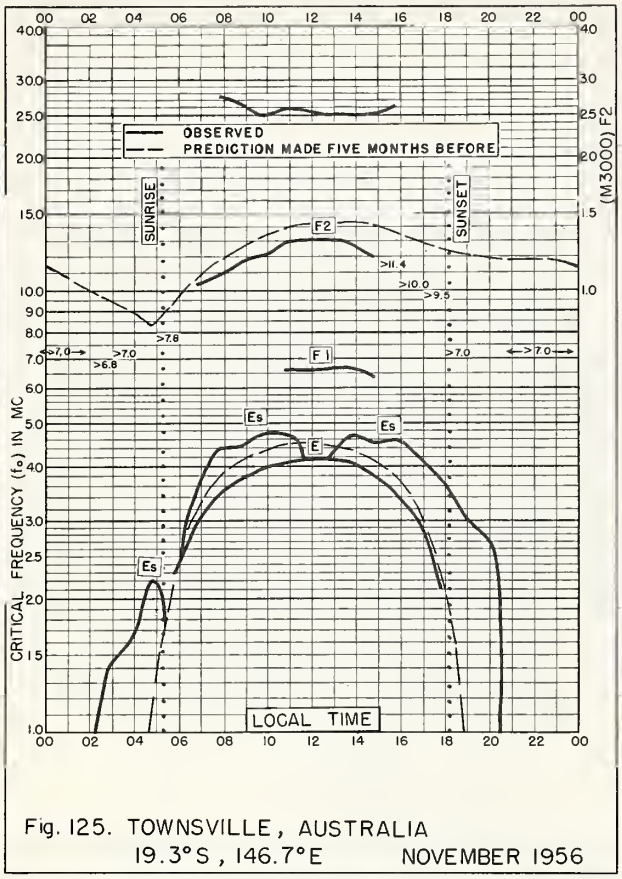

Fig. 125. TOWNSVILLE, AUSTRALIA
19.3°S, 146.7°E NOVEMBER 1956

NBS 503

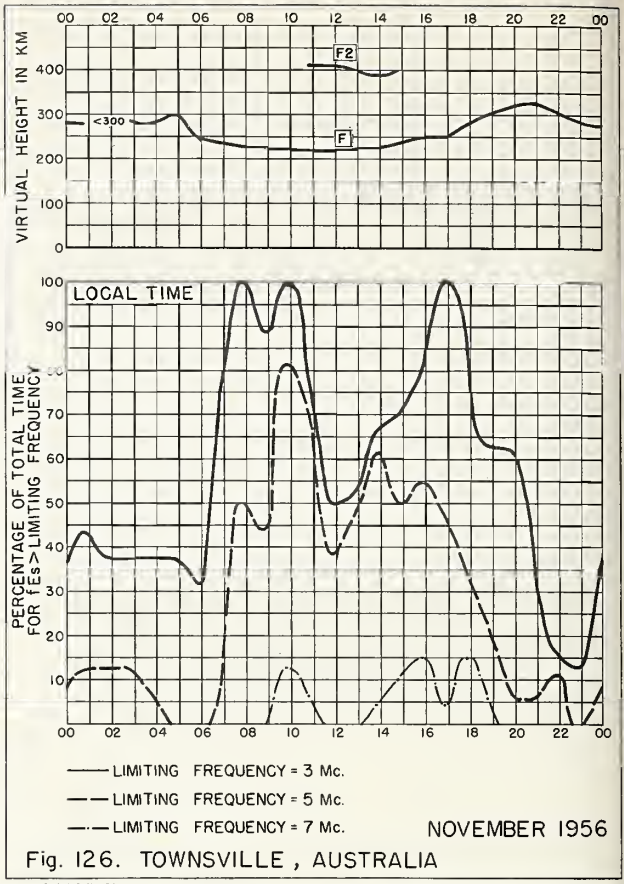

Fig. 126. TOWNSVILLE, AUSTRALIA NOVEMBER 1956

NBS 490

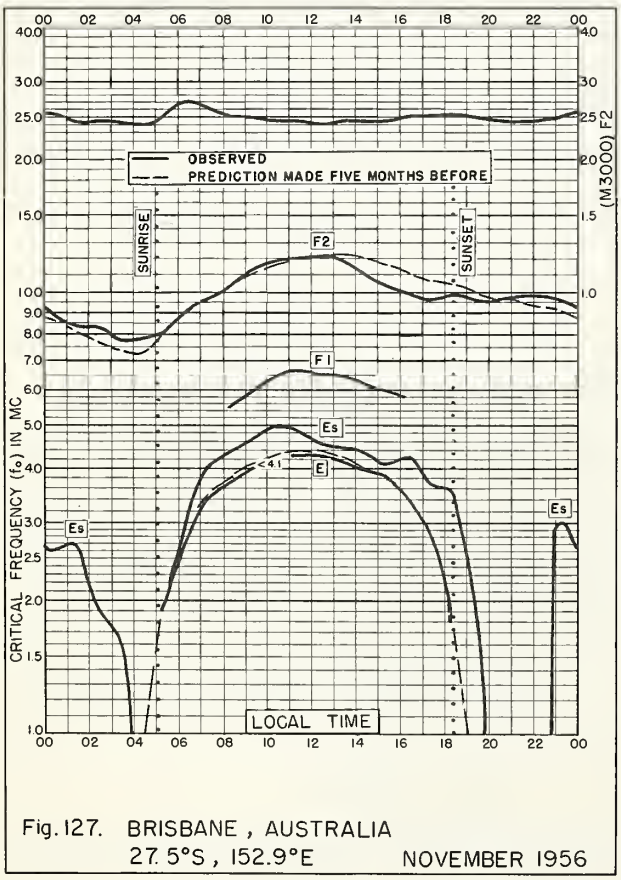

Fig. 127. BRISBANE, AUSTRALIA
27.5°S, 152.9°E NOVEMBER 1956

NBS 503

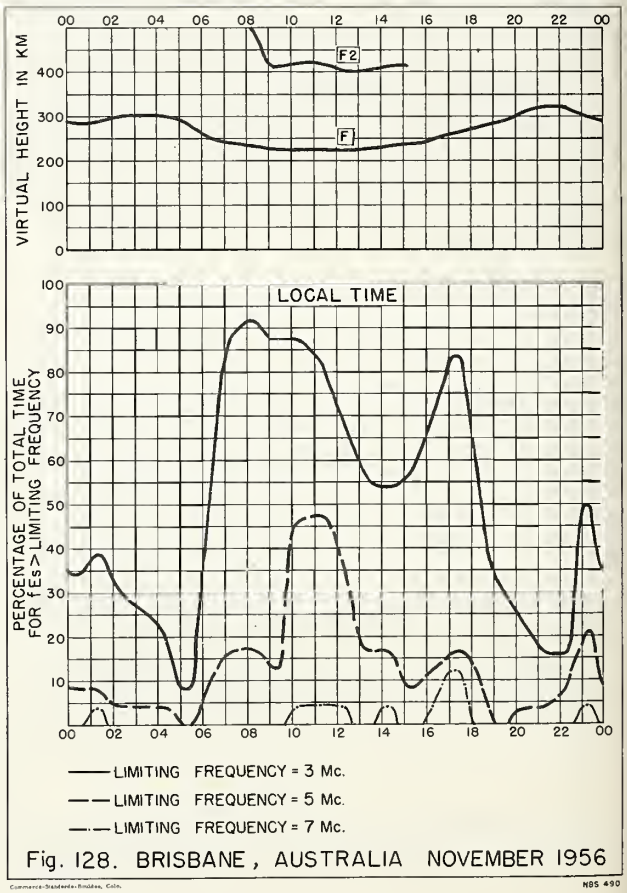

Fig. 128. BRISBANE, AUSTRALIA NOVEMBER 1956

NBS 490

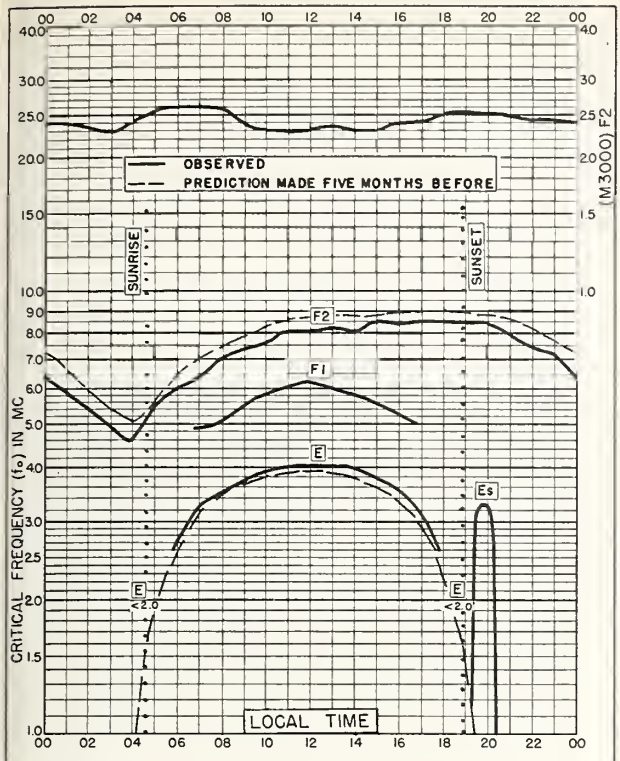

Fig. 129. HOBART, TASMANIA
42.9°S, 147.2°E NOVEMBER 1956

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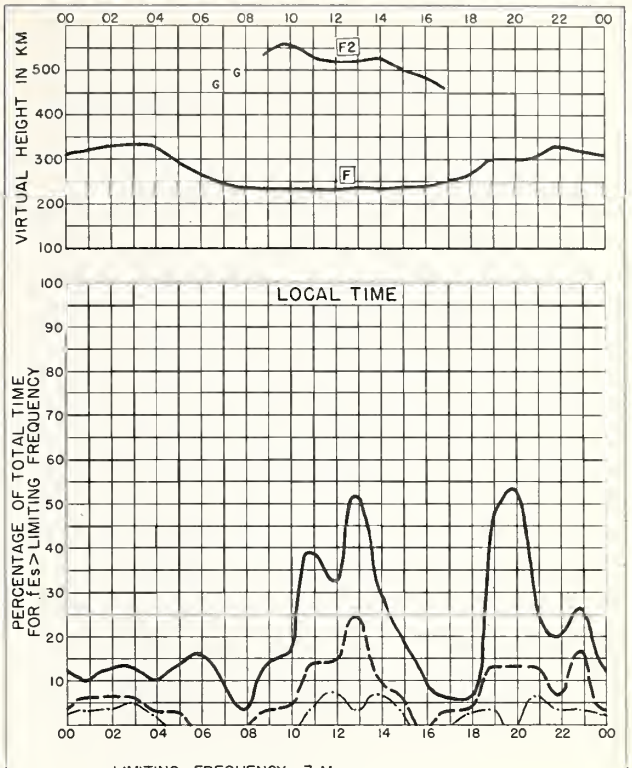

Fig. 130. HOBART, TASMANIA NOVEMBER 1956

NBS 490

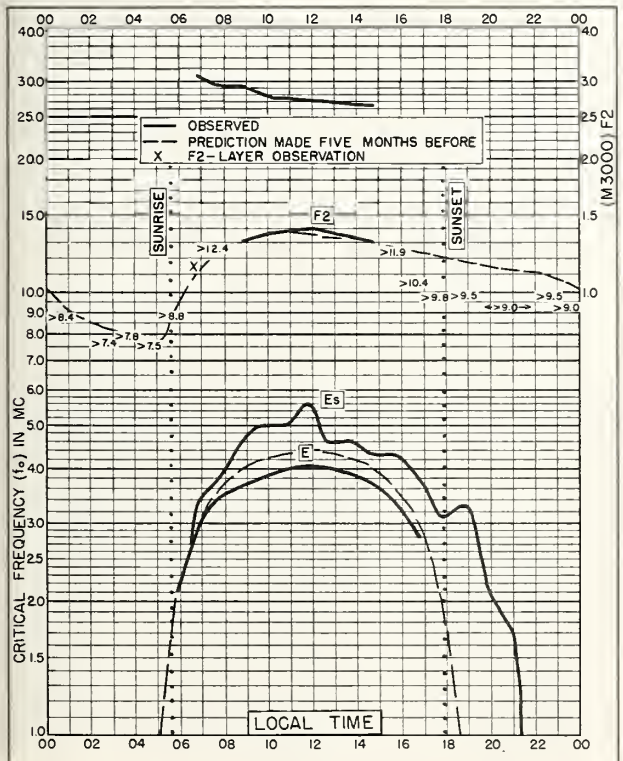

Fig. 131. TOWNSVILLE, AUSTRALIA
19.3°S, 146.7°E OCTOBER 1956

NBS 503

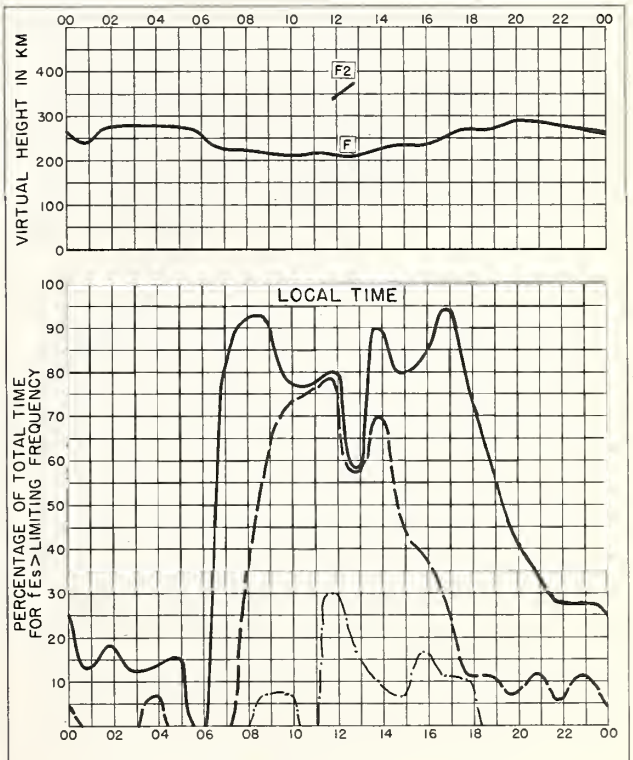

Fig. 132. TOWNSVILLE, AUSTRALIA OCTOBER 1956

NBS 490

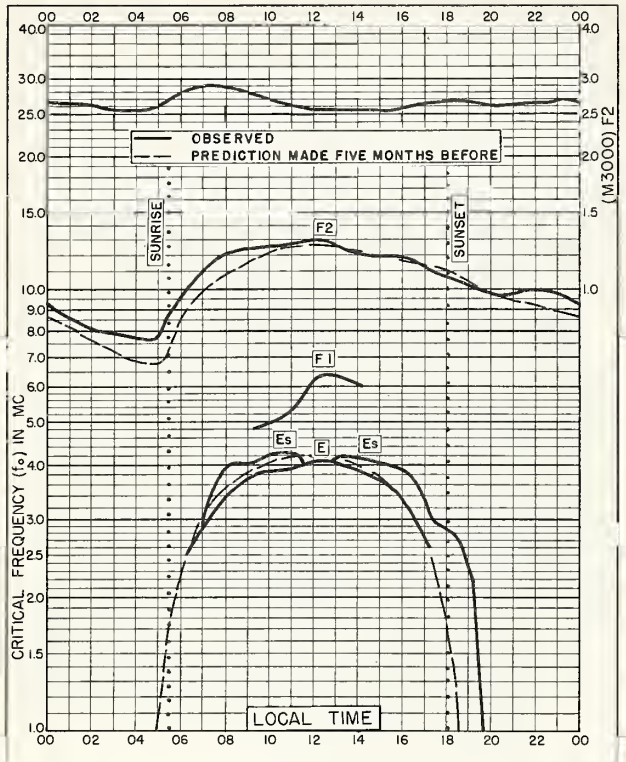

Fig. 133. BRISBANE, AUSTRALIA
27.5°S, 152.9°E OCTOBER 1956

NBS 503

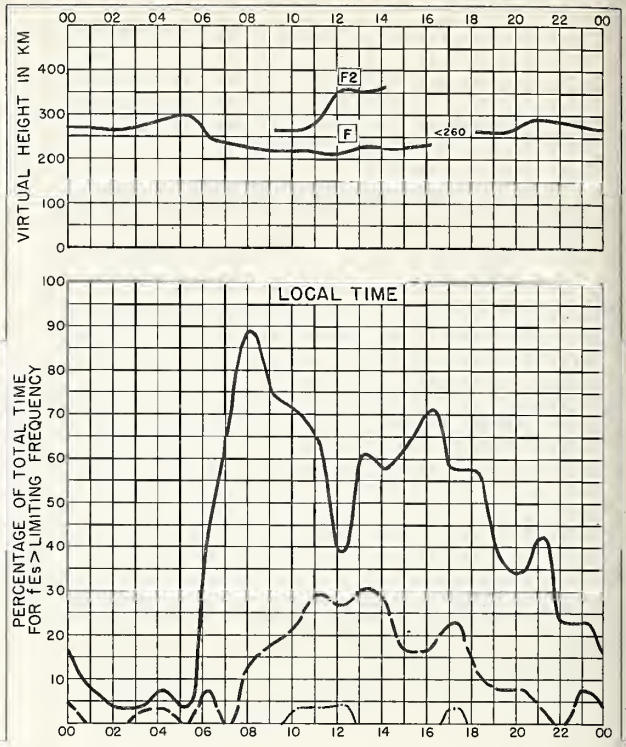

Fig. 134. BRISBANE., AUSTRALIA OCTOBER 1956

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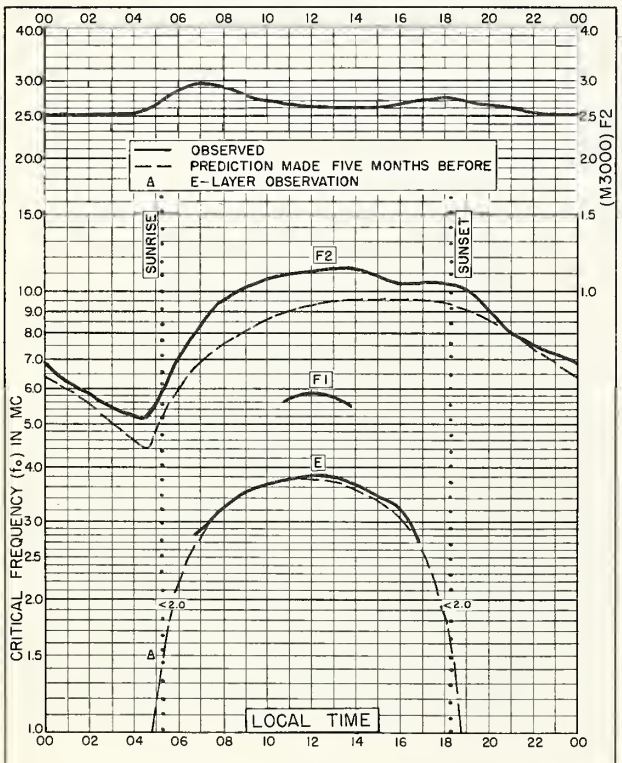

Fig. 135. HOBART, TASMANIA
42.9°S, 147.2°E OCTOBER 1956

NBS 503

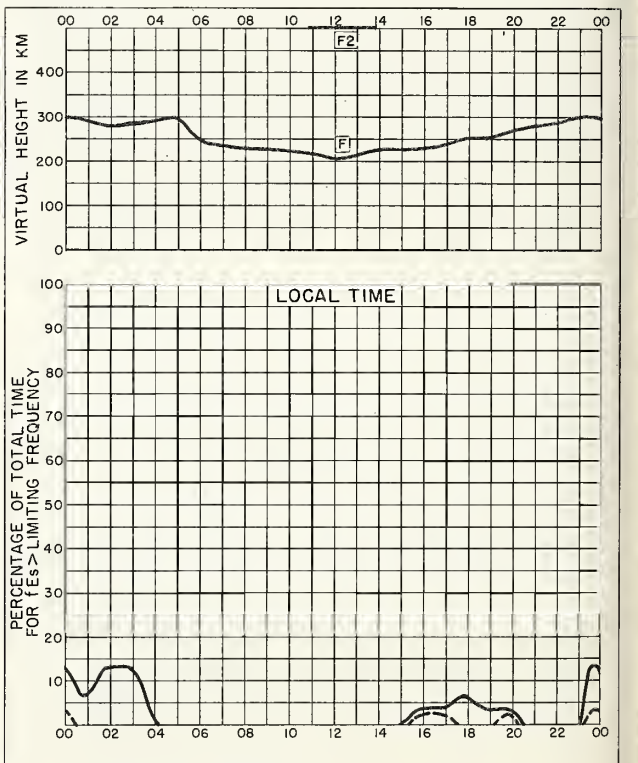

Fig. 136. HOBART, TASMANIA OCTOBER 1956

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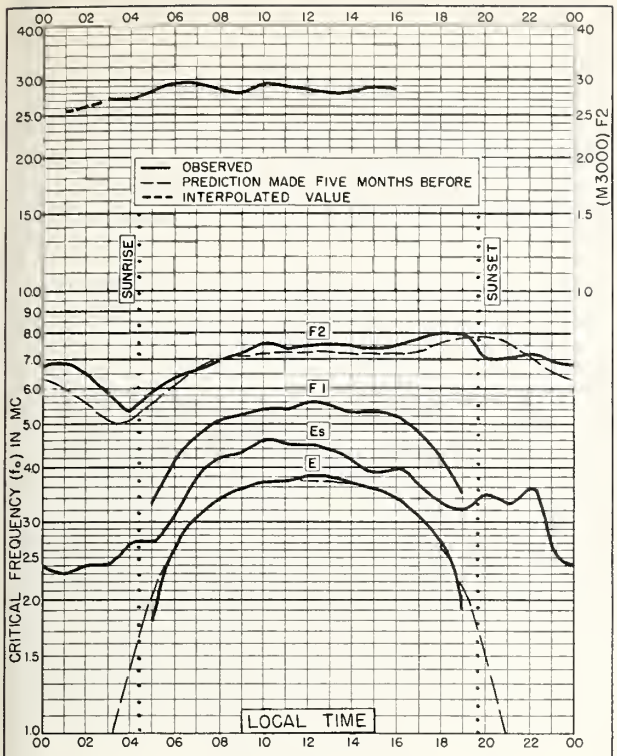

Fig. 137. POITIERS, FRANCE
46.6°N, 0.3°E JULY 1956

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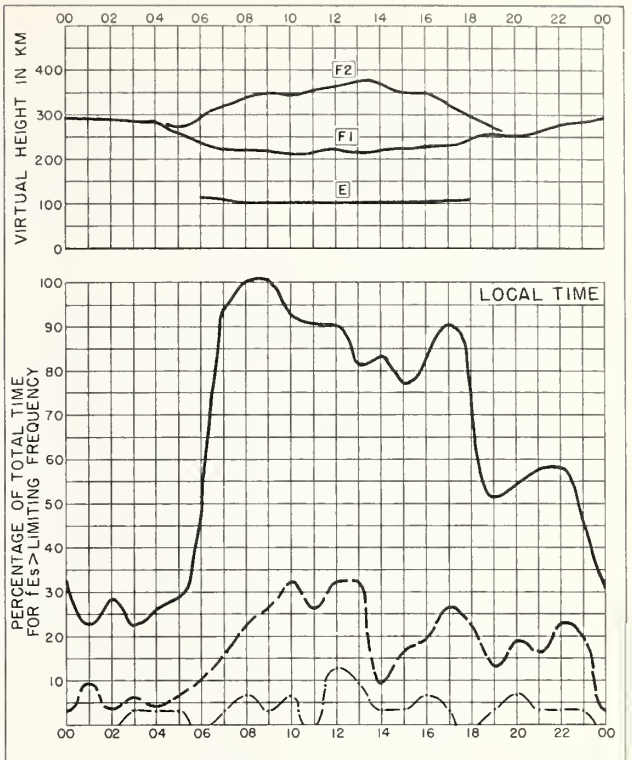

Fig. 138. POITIERS, FRANCE JULY 1956

NBS 490

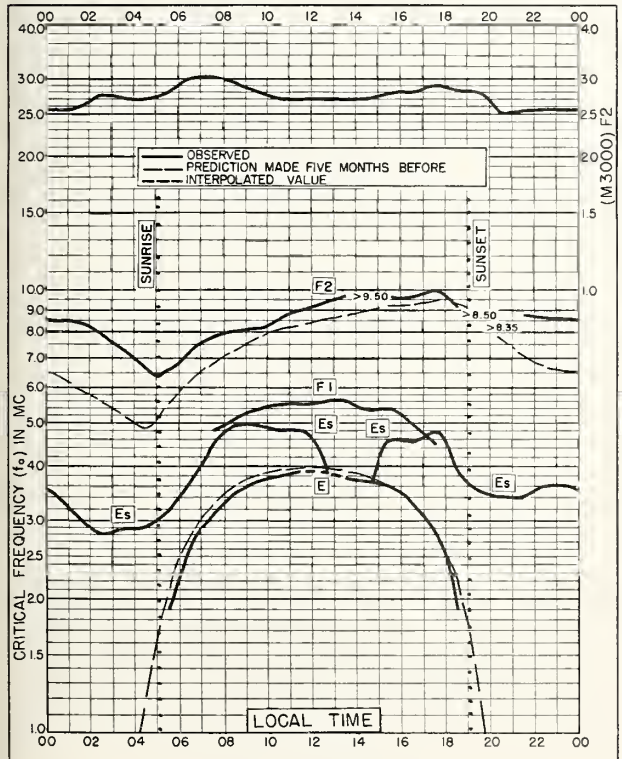

Fig. 139. CASABLANCA, MOROCCO
33.6°N, 7.6°W JULY 1956

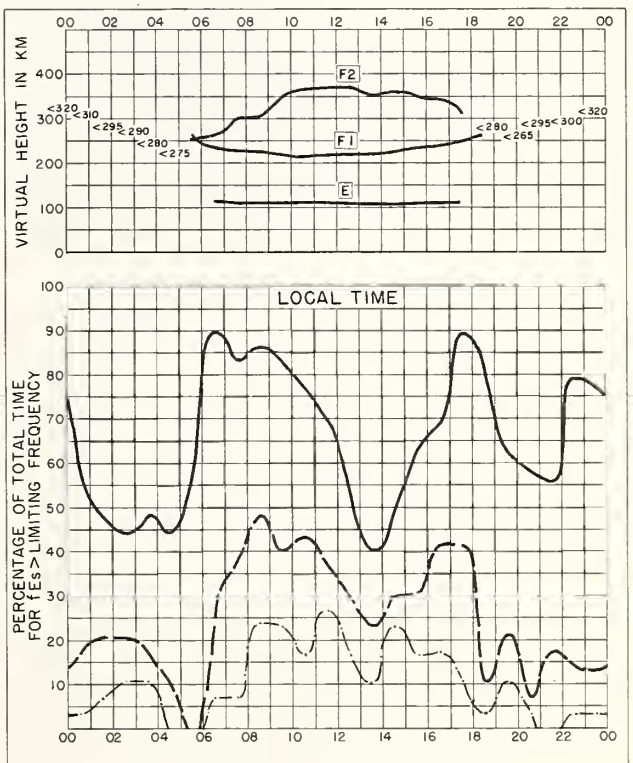

Fig. 140. CASABLANCA, MOROCCO JULY 1956

NBS 490

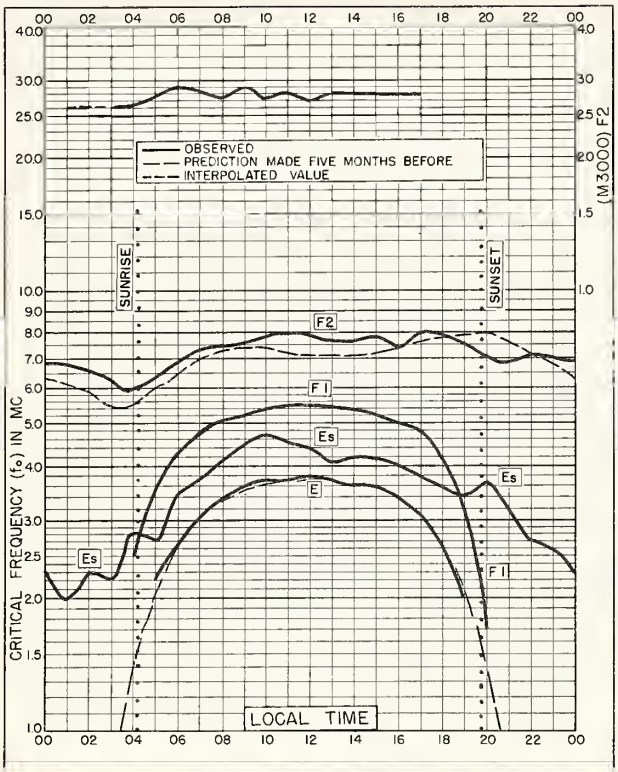

Fig. 141. POITIERS, FRANCE
46.6°N, 0.3°E JUNE 1956

NBS 503

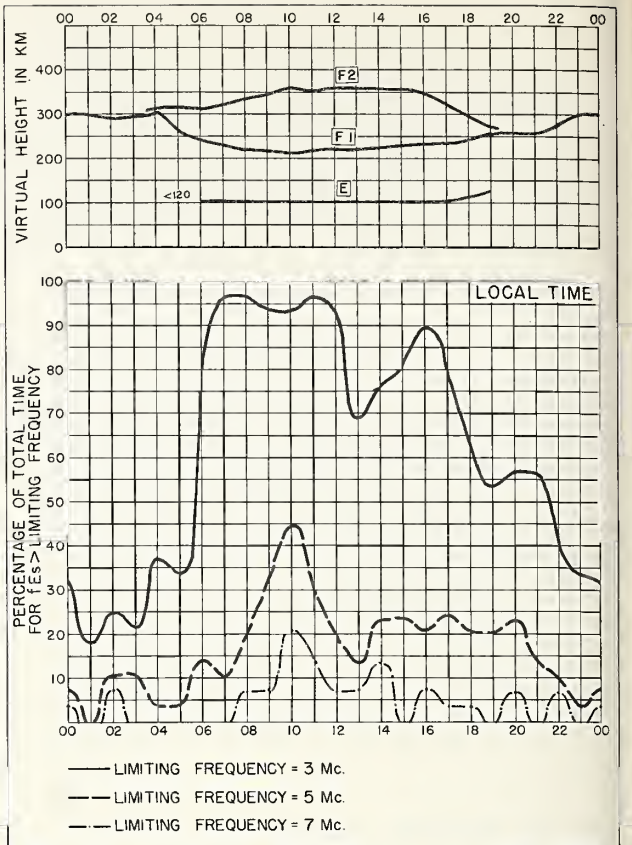

Fig. 142. POITIERS, FRANCE JUNE 1956

NBS 490

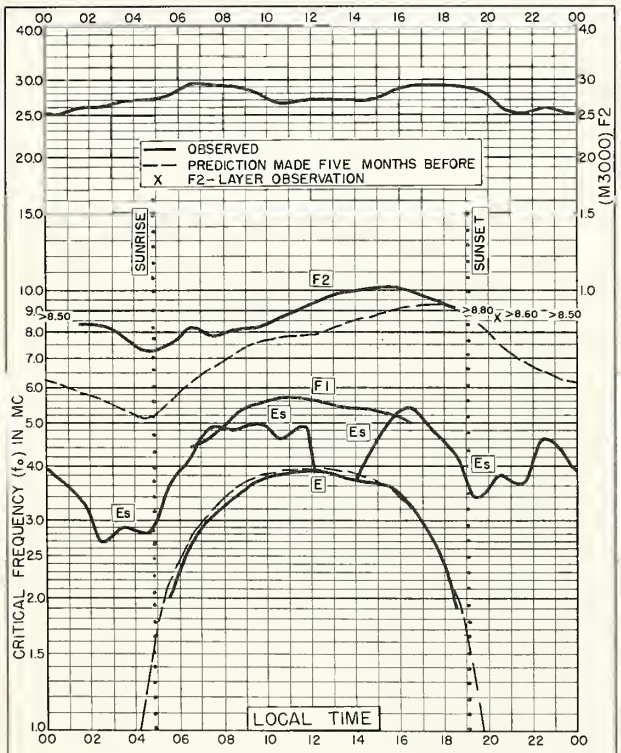

Fig. 143. CASABLANCA, MOROCCO
33.6°N, 7.6°W JUNE 1956

NBS 503

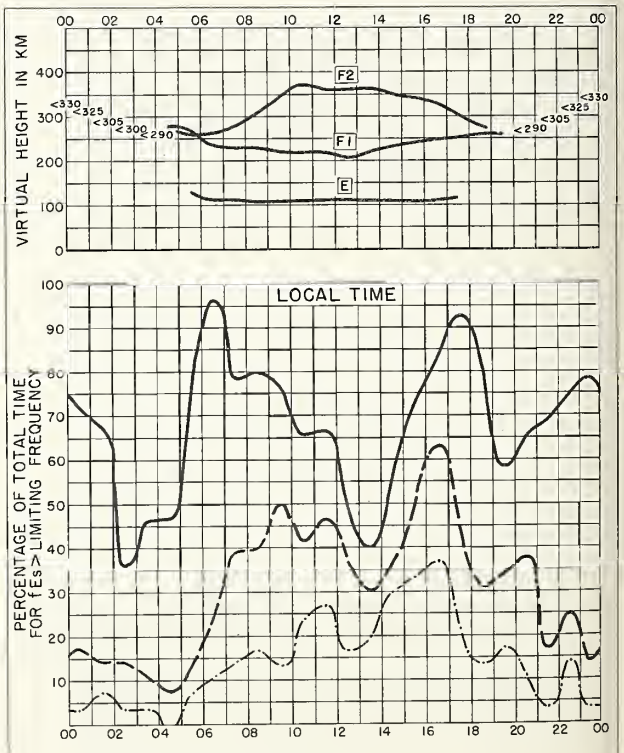

Fig. 144. CASABLANCA, MOROCCO JUNE 1956

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