PART A

IONOSPHERIC DATA

ISSUED
FEBRUARY 1959

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

CRPL-F 174
PART A

NATIONAL BUREAU OF STANDARDS
CENTRAL RADIO PROPAGATION LABORATORY
BOULDER, COLORADO

Issued
24 Feb. 1959

IONOSPHERIC DATA

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 numberical value of a higher layer characteristic; 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										
	1959	1958	1957	1956	1955	1954	1953	1952	1951	1950	1949
December		150*	150*	150	42	11	15	33	53	86	108
November		150*	150*	147	35	10	16	38	52	87	112
October		150*	150*	135	31	10	17	43	52	90	114
September		150*	150*	119	30	8	18	46	54	91	115
August		150*	150*	105	27	8	18	49	57	96	111
July	141	150*	150*	95	22	8	20	51	60	101	108
June	143	150*	150*	89	18	9	21	52	63	103	108
May	146	150*	150*	77	16	10	22	52	68	102	108
April	150*	150*	150*	68	13	10	24	52	74	101	109
March	150*	150*	150*	60	14	11	27	52	78	103	111
February	150*	150*	150*	53	14	12	29	51	82	103	113
January	150*	150*	150*	48	12	14	30	53	85	105	112

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

The latest available information follows concerning the corresponding observed Zürich numbers beginning with the minimum of April 1954. Final numbers are listed through June 1957.

Observed Sunspot Number

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1954				3	4	4	5	7	8	8	9	12
1955	14	16	19	23	29	35	40	46	55	64	73	81
1956	89	98	109	119	127	137	146	150	151	156	160	164
1957	170	172	174	181	186	188	191	194	196	198	200	199
1958	198	200	200	196	189	184	182					

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

Commonwealth of Australia, Department of the Interior:
- Macquarie I.

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

Universidad Mayor de San Andres:
- La Paz, Bolivia

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

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

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

Universidad de Concepcion:
- Concepcion, Chile

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

Instituto Geofisico de Los Andes Colombianos:
- Bogota, Colombia

General Direction of Posts and Telegraphs, Helsinki, Finland:
Nurmijarvi, Finland

The Royal Netherlands Meteorological Institute:
De Bilt, Holland

Icelandic Post and Telegraph Administration:
Reykjavik, Iceland

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

National Institute of Geophysics, City University, Rome, Italy:
Rome, Italy

Christchurch Geophysical Observatory, New Zealand Department of Scientific and Industrial Research:
Campbell I.
Cape Hallett (Adare), Antarctica

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

Rhodes University, Union of South Africa:
Grahamstown, Union of South Africa

Ebro Observatory:
Tortosa, Spain

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):
Maui, Hawaii
Panama Canal Zone

National Bureau of Standards (Central Radio Propagation Laboratory) continued:
Puerto Rico, W. I.
San Francisco, California (Stanford University)
Washington, D. C.

ERRATUM

CRPL-F171, p. 12, tables 70 and 72: Reporting time indicated for Djibouti, French Somaliland, should be "Local;" pp. 47 and 48, figs. 139, 140, 143, and 144: All curves except prediction curves should be transposed 1/2 hour to the left.

TABLES OF IONOSPHERIC DATA

November 1958 - November 1955

Table 1

Thule, Greenland (76.6°N, 68.7°W) November 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(6.5)	250					(2.75)
01		(6.5)	250					(2.75)
02		(6.6)	260					(2.80)
03		(5.7)	255					(2.00)
84		(5.7)	258					(2.90)
85		(6.1)	245				2.0	(2.80)
06		---	250					----
07		(6.4)	240					(2.80)
08		(6.1)	250					(2.90)
09		(7.8)	240		---	---		(2.90)
18		(7.2)	240		---	---		(2.90)
11		(8.45)	240		---	---		(3.00)
12		(8.4)	240		---	---	2.1	(2.85)
13		(8.8)	240		---	---		(2.80)
14		(8.5)	245					(2.85)
15		(7.2)	250				1.8	(2.70)
16		(7.2)	250				2.6	(2.75)
17		(7.4)	250				2.6	(2.80)
18		(7.0)	250				2.2	(2.80)
19		(6.5)	250				2.4	(2.75)
20		(7.2)	250					(2.80)
21		(7.2)	250					(2.90)
22		(7.4)	250					(2.80)
23		(6.2)	250				4.0	(2.68)

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

Table 2

St. John's, Newfoundland (47.6°N, 52.7°W) November 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.55	280					2.60
01		(6.2)	288					2.62
02		6.0	270					2.60
03		5.9	265					2.70
84		(5.5)	260					2.78
85		5.0	245					2.70
06		5.2	250		---	----		2.80
07		8.6	240		(118)	2.00	2.8	3.10
08		11.8	230		<117	2.60		3.15
09		13.8	225		113	3.00		3.05
18		15.0	230		115	3.15		3.00
11		15.05	230		115	3.25		3.00
12		15.0	230		115	3.20		2.90
13		14.8	230		115	3.18		2.90
14		14.75	235		119	2.80		2.90
15		14.2	230		(121)	2.30		2.85
16		13.3	230		---	----		2.90
17		12.0	230					2.85
18		10.6	240					2.80
19		9.6	240					2.85
20		8.5	250					2.75
21		(7.9)	255					2.72
22		7.5	265					2.75
23		6.9	280					2.65

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

Table 3

Ft. Monmouth, New Jersey (40.4°N, 74.1°W) November 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.9	265					2.80
01		6.4	260					2.75
02		6.55	265					2.72
03		6.35	260					2.78
04		6.0	250					2.80
85		5.5	250					2.75
06		5.4	250					2.80
07		8.4	235		111	(1.95)		3.10
08		11.9	225		119	2.60		3.15
09		13.4	225		113	3.05		3.10
18	---	14.25	225		113	3.35		3.05
11	---	14.8	225		115	3.50		2.98
12	---	14.0	225		117	>3.52		2.90
13	---	14.3	230		116	3.50		2.85
14		14.35	230		117	3.25		2.85
15		14.0	230		119	2.80		2.85
16		13.6	230		119	2.25		2.85
17		12.75	230					2.85
18		11.5	230					2.90
19		10.2	230					2.85
20		9.3	240					2.85
21		0.4	240					2.85
22		7.75	250					2.90
23		7.0	250					2.80

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

Table 4

Washington, D. C. (38.7°N, 77.1°W) November 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.65	260					2.78
01		6.45	265					2.75
02		6.3	270					2.75
03		6.1	265					2.80
04		5.65	250					2.02
85		5.2	250					2.78
06		5.2	260					2.80
07		7.75	250		---	----	2.2	3.00
08		11.45	230		119	2.50		3.12
09		13.15	230		111	3.80		3.05
10		14.2	230		111	3.35		2.98
11		14.6	230		113	3.50		2.90
12		14.8	230		114	3.52		2.00
13		14.5	230		115	3.50		2.75
14	---	14.3	235		115	3.35		2.75
15		14.0	235		117	3.00	3.0	2.75
16		13.8	235		119	2.35	2.6	2.80
17		13.0	230					2.80
18		11.85	235					2.80
19		10.4	235					2.85
20		9.35	235					2.85
21		8.5	245					2.85
22		7.6	250					2.85
23		7.0	255					2.85

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

Table 5

Maui, Hawaii (20.8°N, 156.5°W) November 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		9.2	220					3.10
01		7.9	225					3.15
02		7.1	220					3.10
03		5.3	230					2.80
04		4.1	250					2.65
05		3.9	(310)					2.35
06		4.45	310					2.50
07		8.9	265		125	2.12		3.00
08		13.0	240		114	3.00	3.2	3.10
09		15.0	235		109	3.50	3.0	3.05
10		15.0	230		107	3.80	4.3	3.00
11	---	15.6	220		107	3.90	4.4	2.80
12	(345)	15.95	220		107	4.00	4.3	2.70
13	(350)	16.4	<225	---	107	3.92	4.4	2.65
14	360	16.7	230	(7.6)	107	3.80	4.2	2.65
15	(340)	16.5	235	---	(107)	3.50	4.3	2.65
16	---	16.0	235		109	3.10	3.9	2.70
17		15.3	240		117	2.45	4.4	2.75
18		14.5	235				4.6	2.85
19		13.6	230				4.4	2.90
20		13.8	250				4.0	2.95
21		(14.0)	240				3.1	(3.05)
22		13.0	225				1.6	3.10
23		11.1	220					3.10

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

Table 6

Puerto Rico, W. I. (18.5°N, 67.2°W) November 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		7.35	240					3.08
01		6.65	235					3.08
02		5.5	235					3.08
03		4.45	235					2.82
04		4.2	(275)					2.55
05		4.35	<290					2.65
06		4.9	265					2.85
07		8.9	250		<137	2.35		3.20
08		11.65	240		117	2.95		3.20
09		13.3	230		114	3.40		3.10
18		13.8	230		111	3.75		3.05
11	---	13.2	225		111	3.95	4.1	2.90
12	---	12.9	220	---	111	4.00	4.2	2.80
13		12.7	230		111	4.00	4.3	2.70
14		12.4	230		111	3.80	4.2	2.62
15		12.4	240		111	3.60	3.9	2.65
16		11.8	240		<115	3.20	3.5	2.65
17		11.75	245		(119)	(2.50)	3.2	2.70
18		11.4	250				2.2	2.70
19		10.25	245					2.80
20		9.9	255					2.00
21		9.5	260					2.90
22		8.95	245					3.00
23		8.3	240					3.05

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

Table 7

Panama Canal Zone (9.4°N, 79.9°W) November 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		9.55	220					3.00
01		7.4	215					3.02
02		5.85	220					2.90
03		4.75	240					2.70
04		4.3	(270)					2.58
05		4.25	300					2.70
06		6.2	290		---	----		2.70
07		10.8	250		119	2.58	3.4	3.05
08		13.5	240		109	3.20	3.8	2.98
09		14.85	230		105	3.70	3.9	2.95
10	---	14.85	220	---	105	4.00	4.3	2.80
11	---	14.4	220	---	105	4.10	4.4	2.68
12	(390)	13.95	230	---	105	4.20	4.5	2.60
13	395	13.6	225	6.9	105	4.10	4.7	2.55
14	410	13.5	(230)	---	105	3.95	4.8	2.50
15	405	13.35	240	---	105	3.65	4.9	2.45
16	---	12.95	245		106	3.22	4.8	2.52
17		12.85	255		110	2.65	4.5	2.60
18		13.0	270				4.4	2.68
19		12.45	260				4.2	2.72
20		12.05	250				2.2	2.70
21		12.35	240					2.75
22		12.5	235					2.85
23		10.3	220					2.90

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

Table 8

Fletchers Ice I. (78.0°N, 122.4°W)* October 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		---	270					----
01		---	270					----
02		---	<260					----
03		---	<255					----
04		---	240					----
05		---	250					----
06		---	250					----
07		---	250					----
08		---	250					----
09		(6.0)	245		<135	(1.40)		(2.80)
10		---	(250)		119	----		----
11		---	(255)		(129)	(1.70)		----
12		(7.85)	250		120	2.02		(2.85)
13		(9.0)	(250)		119	2.05		(2.85)
14		(8.4)	<250		121	(2.22)		(2.70)
15	---	---	<250	---	119	(2.20)		----
16		---	250		119	2.22		----
17		---	<265		117	(2.05)		----
18		---	<255		121	(2.00)		----
19		(8.0)	(260)		<132	----		(2.65)
20		---	270		---	----		----
21		---	260		---	----		----
22		---	250					----
23		---	<260					----

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.
*Preliminary estimated average position.

Table 9

Thule, Greenland (76.6°N, 68.7°W) October 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(6.5)	260				2.8	(2.60)
01		(6.45)	250		---	----		(2.65)
02		---	270		---	----	3.0	----
03		(7.3)	270		---	----		(2.65)
04		(6.6)	270		---	----		(2.80)
05		(6.3)	250		---	----		(2.62)
06		---	260		---	----	3.1	----
07		6.3	260		<137	(1.80)		2.78
08		6.5	250		121	1.95	2.6	2.75
09		7.2	250		119	(2.00)		2.80
10		7.4	255		121	2.18		2.85
11		7.2	260		119	2.20		2.70
12		8.2	255		119	2.25		2.75
13		7.9	250		(121)	2.20		2.70
14		8.6	250		129	2.00		2.70
15		7.6	260		<139	1.90	2.0	2.60
16		8.45	255		129	----	2.1	2.70
17		8.05	260		---	----		2.60
18		8.0	250				2.5	2.65
19		8.25	260				3.2	2.65
20		(7.0)	250					(2.65)
21		(7.6)	250				3.2	(2.65)
22		7.2	255				3.1	2.70
23		(6.5)	260					(2.65)

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

Table 10

Reykjavik, Iceland (64.1°N, 21.8°W) October 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(5.7)	390				3.6	(2.40)
01		(6.2)	380				3.3	(2.40)
02		(6.5)	400				3.6	(2.45)
03		(6.65)	<390				3.2	(2.52)
04		5.2	(360)				3.0	(2.45)
05		(5.6)	330					2.45
06		(5.4)	335					2.55
07		6.15	280		---	----		2.75
08		7.8	270	---	(128)	(2.10)		2.80
09	---	9.55	250	---	(121)	2.50		2.05
10	---	10.6	250	---	117	(2.70)		2.75
11	---	11.25	250	---	119	(2.85)		2.80
12	---	11.9	240	---	<119	(2.95)		2.00
13	---	12.0	240		117	2.90		2.75
14	---	11.5	245		(118)	2.78		2.72
15	---	11.2	250		<121	2.65		2.75
16	---	11.25	250		<125	(2.30)		(2.02)
17	---	(10.6)	260		<141	----		(2.00)
18		>8.6	260		---	----		(2.80)
19		6.8	300				2.8	2.65
20		(6.1)	315				3.1	(2.60)
21		>6.2	350				3.5	(2.45)
22		6.6	365				3.0	(2.45)
23		7.2	390				3.6	(2.28)

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

Table 11

Adak, Alaska (51.9°N, 176.6°W) October 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		4.6	<310					2.50
01		4.6	<320					2.40
02		4.5	<345					2.40
03		4.45	(340)					2.40
04		4.4	<325					2.45
05		4.4	310					2.45
06		6.1	280		<164	(1.40)	2.0	2.68
07	---	9.2	235		(119)	2.30	2.4	3.05
08	---	11.3	230	---	111	2.80	3.4	3.10
09	---	13.0	220	---	107	3.15	3.3	3.00
10	---	13.6	220	---	<109	3.35	3.6	2.92
11	---	13.9	<225	---	109	3.40	3.7	2.85
12	---	13.8	225	---	<107	3.45	3.6	2.80
13	---	13.7	230	---	109	3.40		2.75
14	---	13.3	230		109	3.10	3.2	2.75
15		12.8	230		<111	2.90		2.80
16		12.3	230		<119	2.40	2.8	2.05
17		11.1	230		<139	1.80	2.5	2.05
18		10.2	230				1.9	2.90
19		8.45	220					2.90
20		7.1	240					2.85
21		6.3	240					2.80
22		5.5	250					2.75
23		5.0	<285					2.55

Time: 180.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 12

St. John's, Newfoundland (47.6°N, 52.7°W) October 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(7.0)	290					2.50
01		(6.7)	290					2.55
02		(5.8)	300					2.50
03		5.05	290					2.50
04		5.5	280				1.3	2.55
05		(5.4)	270					2.60
06	---	7.5	260	---	126	1.98		2.90
07	---	9.7	240	---	116	2.60		3.00
08	---	12.0	240	---	111	3.00	3.0	3.00
09	---	12.6	230	---	109	3.20	3.4	2.90
10	---	13.4	230	---	111	3.50		2.00
11	---	13.8	230	---	109	3.60		2.75
12	---	13.3	230	---	109	3.60		2.70
13	---	13.1	235	---	111	3.50		2.70
14	---	13.1	240	---	114	3.30		2.70
15		12.8	245		119	2.90		2.75
16		12.55	250		(122)	2.40		2.80
17		11.8	250		---	----	1.4	2.80
18		10.8	240					2.70
19		9.0	250					2.65
20		8.6	270					2.62
21		8.2	270					2.60
22		7.05	280					2.55
23		7.2	295					2.50

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

Table 13

San Francisco, California (37.4°N, 122.2°W) October 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		5.4	<285					2.52
01		5.5	<305					2.52
02		5.45	290					2.58
03		5.2	275					2.65
04		5.0	<275					2.60
05		4.8	<280				2.4	2.55
06		5.7	<280		---	----		2.70
07	---	9.3	230	---	117	2.30		3.10
08	---	11.5	225	---	107	3.00		3.10
09	---	12.7	220	---	105	3.35		3.00
10		13.3	215		104	3.55		2.85
11		13.6	215		105	3.70		2.78
12		13.6	220		105	3.75		2.70
13		13.6	225		107	3.30		2.65
14		13.6	230		105	3.60		2.65
15		13.4	230		105	3.30		2.65
16		13.2	235		107	2.62		2.70
17		12.6	230		<118	2.10	2.2	2.80
18		11.35	215					2.80
19		9.8	220					2.78
20		8.45	225					2.80
21		7.2	(240)					2.80
22		6.2	250					2.75
23		5.7	<270					2.60

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

Table 14

White Sands, New Mexico (32.3°N, 106.5°W) October 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.3	300					2.58
01		6.25	295					2.55
02		6.2	<300					2.55
03		5.8	285					2.65
04		5.6	<270					2.60
05		5.5	280					2.60
06		6.6	280					2.72
07		10.0	240		118	2.50	>2.6	3.05
08		12.1	230		113	3.15	3.2	3.05
09		13.45	230		111	3.50		2.90
10		13.8	220		111	3.80	3.8	2.80
11		13.9	220		<111	4.00		2.70
12		14.0	230		111	4.00	4.1	2.65
13		13.9	230		111	3.90		2.60
14	---	13.9	235		111	3.70	4.0	2.60
15		13.8	240		113	3.45	3.4	2.60
16		13.3	240		113	3.00		2.65
17		12.9	240		(121)	2.30	2.3	2.70
18		11.8	225				1.8	2.70
19		10.0	<225					2.70
20		8.8	245					2.75
21		7.9	250					2.75
22		7.2	260					2.75
23		6.65	270					2.62

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

Table 15

Grand Bahama I. (26.6°N, 78.2°W) October 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		7.6	255					2.80
01		7.2	265					2.75
02		7.0	260					2.70
03		6.3	255					2.70
04		5.8	(270)					2.55
05		5.7	<280					2.60
06		6.6	270		---	----		2.80
07		10.1	235		115	2.50		3.10
08		12.4	230		109	3.15		3.05
09		13.5	220		109	(3.60)		2.95
10		13.9	220		107	3.88		2.85
11		13.95	220		107	4.00		2.75
12		14.0	215		107	(4.05)		2.70
13		13.7	225		109	4.00		2.65
14		13.5	230		109	3.90	3.9	2.60
15		13.2	230		109	3.65	3.8	2.60
16		13.0	240		<110	3.20	3.4	2.60
17		12.6	240		<118	2.35	2.6	2.65
18		11.8	230				2.6	2.70
19		10.0	230				2.2	2.70
20		9.2	250					2.70
21		8.85	260					2.80
22		8.4	255					2.75
23		8.05	260					2.80

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

Table 16

Okinawa I. (26.3°N, 127.8°E) October 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(16.4)	245					(2.90)
01		14.6	235					2.95
02		12.95	230					2.98
03		10.85	230					3.00
04		8.35	230					3.00
05		6.1	250					2.70
06		6.65	270					2.65
07		10.75	245					3.08
08		12.85	230					3.05
09		14.0	230		---	----	3.8	2.90
10		14.7	225		---	----	4.1	2.85
11	---	(15.1)	220		---	----	4.3	2.75
12	(380)	(15.8)	(225)	---	---	----	4.3	2.60
13	390	(16.55)	230	---	---	----		2.60
14	380	(17.1)	230	---	---	----		2.60
15	365	(17.3)	235	---	---	(3.90)		2.60
16	(340)	(17.3)	240		---	3.60		(2.65)
17	---	16.8	250		---	----		2.70
18		(17.0)	260					2.70
19		>17.0	270				2.8	(2.70)
20		(18.25)	280					(2.65)
21		(18.8)	260					(2.75)
22		(18.5)	250					2.85
23		(17.0)	240					2.90

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

Table 17

Reykjavik, Iceland (64.1°N, 21.8°W) September 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(6.4)	385				3.4	(2.45)
01		(5.5)	(380)				3.6	(2.30)
02		(5.7)	350				3.3	(2.45)
03		(5.65)	365				3.4	(2.45)
04		4.9	330				3.1	2.45
05		5.1	305		---	----		2.62
06	---	5.65	290		---	----		2.80
07	---	6.8	265		(120)	2.40		2.80
08	---	7.7	250	---	(119)	2.75		2.85
09	---	8.5	245	---	117	3.00		2.80
10	(440)	8.65	240	5.0	(115)	3.20		2.70
11	(460)	8.8	235	5.3	115	3.32		2.65
12	(490)	9.4	230	5.4	115	3.40		2.60
13	500	9.45	240	5.2	113	3.45		2.58
14	(495)	9.6	240	5.1	115	3.40		2.62
15	(460)	8.75	245	4.8	<116	3.20		2.60
16	(470)	8.0	250	---	<121	(2.80)		2.65
17	---	8.0	260	---	(127)	>2.70		2.75
18	---	8.4	270	---	---	----		2.70
19		7.7	290		---	----		2.65
20		(6.8)	300		---	----		2.60
21		>6.2	<360				2.4	(2.45)
22		5.85	360				2.8	(2.40)
23		5.7	(390)				4.1	(2.35)

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

Table 18

San Francisco, California (37.4°N, 122.2°W) September 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		5.9	(290)				2.0	2.50
01		5.7	(300)					2.50
02		5.7	300					2.50
03		5.6	(305)					2.50
04		5.5	(310)				2.0	2.50
05		5.3	<300		---	----		2.50
06		6.55	265		<125	1.85	2.3	2.82
07		9.0	240		109	2.65	3.0	3.00
08	---	10.3	230	---	103	3.20		2.92
09	---	11.3	220	---	101	3.60		2.80
10	---	11.6	215	---	105	3.75		2.65
11	---	11.9	210	---	103	3.95		2.60
12	---	11.9	215	---	105	4.00		2.55
13	(490)	12.0	220	---	102	4.00		2.55
14	---	12.0	230	---	105	3.88		2.55
15	---	11.65	230	---	102	3.60		2.55
16	---	11.3	235	---	105	3.20		2.60
17		11.0	240		109	2.68	3.0	2.70
18		10.6	240		120	2.00	2.4	2.80
19		9.3	230				2.8	2.75
20		8.15	<240				1.9	2.70
21		7.2	(250)					2.70
22		6.55	260					2.65
23		6.0	(280)					2.60

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

Table 19

Grand Bahama I. (26.6°N, 78.2°W) September 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		8.05	280					2.70
01		7.7	270					2.70
02		7.4	260					2.75
03		7.0	265					2.65
04		6.35	260					2.60
05		6.25	<280					2.65
06		7.25	270		<126	1.88		2.85
07		9.75	235		111	2.80		3.05
08		11.0	225		109	3.32	3.4	3.00
09	---	11.0	215	---	107	3.75	3.8	2.05
10	---	12.1	210	---	107	4.05		2.70
11	---	12.6	210	---	105	(4.20)		2.65
12	---	12.9	215	---	105	4.20		2.60
13	(400)	12.7	220	---	106	4.20		2.60
14	(385)	12.45	220	---	105	4.15		2.60
15	---	12.3	225	---	105	3.92		2.60
16		11.9	230		109	3.50	3.6	2.62
17		11.55	240		109	3.05	3.2	2.70
18		11.0	245		<119	2.15	2.5	2.70
19		9.8	(235)				2.5	2.65
20		0.9	<260				2.3	2.60
21		8.6	(280)				2.5	2.60
22		8.6	280					2.65
23		8.2	280					2.65

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

Table 20

Brisbane, Australia (27.5°S, 152.9°E) September 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		8.6	260					2.70
01		8.0	250					2.70
02		7.4	250					2.60
03		7.0	260					2.50
04		6.6	290					2.50
05		6.6	290					2.60
06		>8.5	260		---	<1.70		2.85
07		11.9	240		120	2.70		3.00
08		13.0	240		120	3.45		2.95
09		13.5	230		120	3.80		2.80
10		13.0	230		120	3.95		2.75
11		12.7	220		120	4.05		2.70
12		12.2	225		120	>4.00	4.4	2.60
13		12.0	220		120	4.00	4.1	2.55
14		11.6	220		120	3.90		2.50
15		11.2	230		120	3.55	3.8	2.45
16		11.0	250		130	3.15	3.3	2.50
17		10.9	250		130	2.55		2.55
18		11.0	260		---	<1.70		2.60
19		10.6	260					2.60
20		10.2	280					2.60
21		9.9	270					2.70
22		>9.5	260					2.70
23		8.8	260					2.70

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

Table 21

Baker Lake, Canada (64.3°N, 96.0°W) August 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		6.8	230		---	---	5.0	
01		6.0	230		---	1.3	4.0	
02		5.3	290		---	1.2	4.5	
03		5.0	290		135	1.7	4.4	
04		5.2	290	---	125	2.0	4.0	
05	---	5.3	280	---	120	2.2	4.0	
06	---	5.4	250	4.0	115	2.5	4.0	
07	450	5.4	230	4.5	110	3.0	4.6	----
08	490	5.5	230	4.7	110	3.3		----
09	530	5.5	230	4.8	110	3.5		----
10	540	5.9	240	4.9	105	3.7		G
11	510	6.4	240	5.1	105	3.8		(2.5)
12	500	6.6	220	5.1	105	3.8		(2.4)
13	500	6.9	220	5.2	105	3.8		(2.4)
14	470	7.0	230	5.2	110	3.7		(2.55)
15	440	7.1	220	5.0	110	3.5		----
16	430	6.8	230	5.0	110	3.5		----
17	438	7.0	240	4.9	110	3.3		
18	(400)	6.8	240	4.8	110	3.0		
19	---	6.8	230	---	115	2.6	5.5	
20		6.4	280		115	2.2	5.1	
21		6.4	290		---	2.0	6.9	
22		5.8	300		---	1.7	7.2	
23		6.0	290		---	---	5.1	

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

Table 22

Brisbane, Australia (27.5°S, 152.9°E) August 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.6	260					2.70
01		6.2	250					2.70
02		5.8	255					2.70
03		5.6	250					2.65
04		5.0	260					2.55
05		5.0	270					2.60
06		5.8	260		---	<1.60		2.80
07		9.9	240		120	2.40		3.10
08		12.0	240		120	3.20		3.10
09		13.0	230		120	3.55		3.05
10		12.0	225		120	>3.80	4.0	2.90
11		12.1	220		120	3.90	4.1	2.80
12		11.0	220		120	3.95	4.3	2.75
13		11.3	220		120	>3.80	4.1	2.65
14		11.0	220		120	3.80		2.65
15		10.8	230		120	3.50		2.60
16		10.0	240		130	3.00	3.2	2.65
17		10.6	250		140	2.35		2.75
18		9.8	240		---	<1.60		2.75
19		8.8	250					2.70
20		8.4	260					2.70
21		7.9	260					2.65
22		7.6	260					2.70
23		7.2	260					2.75

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

Table 23

Canberra, Australia (35.3°S, 149.0°E) August 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.2	<250					(2.80)
01		6.0	250				1.5	2.75
02		6.0	250				2.0	2.90
03		5.9	245				2.2	2.95
04		5.5	<250				2.0	2.85
05		5.0	245					2.85
06		5.0	(245)					2.95
07		>7.6	225		140	2.05		(3.30)
08		10.8	210		100	2.75		3.30
09		12.0	210		100	3.25	3.3	3.30
10		12.3	205		100	3.55	3.7	3.25
11		12.2	200		100	3.70	3.8	3.10
12		12.1	200		100	3.80	4.0	3.05
13		12.0	200		100	3.80		2.90
14		11.7	200		100	3.65		2.95
15		11.2	205		100	3.40		2.95
16		11.0	210		100	3.00		2.95
17		(11.0)	220		110	2.30		3.00
18		>10.1	210					3.00
19		>9.0	215					2.95
20		>8.0	220					(2.75)
21		>7.3	230					----
22		7.0	(240)					(2.85)
23		>6.6	240					2.85

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

Table 24

Falkland Is. (51.7°S, 57.8°W) August 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		4.3	350				2.4	2.30
01		4.3	350				1.9	2.30
02		4.3	340					2.30
03		4.2	350					2.30
04		4.1	295					2.35
05		3.9	280					2.40
06		3.8	280		---	1.20		2.65
07		6.4	250		165	1.80		2.95
08		9.2	225		120	2.50		3.15
09		10.7	235		115	2.90	3.1	3.20
10		11.3	235		115	3.20	3.8	3.05
11		11.6	240		115	3.40	4.8	3.05
12		11.2	240		110	3.45	4.2	3.10
13		10.9	245		110	3.40	4.1	3.10
14		9.6	235		110	3.10	3.8	3.05
15		9.5	245		115	2.80	3.2	3.15
16		8.6	240		---	2.45	3.5	3.15
17		7.1	230		---	1.70	2.8	3.00
18		5.8	235				2.6	3.15
19		5.2	240				2.4	3.05
20		4.2	245				2.5	2.70
21		4.0	270				2.4	2.60
22		4.0	<300				2.4	2.45
23		4.2	<350				2.5	2.35

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

Table 25

Cape Hallett (72.3°S, 170.3°E) August 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(5.2)	275		---	E		(2.60)
01		(4.8)	275		---	1.4		(2.60)
02		(4.6)	280		132	1.5	(1.7)	(2.60)
03		(4.3)	(280)		134	(1.5)	1.9	(2.65)
04		(4.7)	(295)		116	(1.5)	<2.2	(2.70)
05		(4.6)	295		119	(1.7)	<2.0	(2.70)
06		(5.0)	(290)		119	(1.5)	(1.6)	(2.60)
07		(6.8)	(280)		117	(1.4)	<2.5	(2.70)
08		(7.0)	255		113	(1.0)	<2.9	(2.00)
09		(7.3)	240		113	2.0	2.7	(2.90)
10		(8.2)	240		107	2.1	<2.9	3.00
11		(8.0)	240		---	2.2	<2.9	(3.00)
12		(8.4)	245		---	2.2	<4.0	(2.95)
13		(8.7)	250		---	2.0	2.3	(2.85)
14		9.1	250		109	2.0	2.0	2.75
15		(8.6)	250		121	1.6	3.4	(2.70)
16		9.1	255		---	1.2	3.0	2.75
17		8.8	240		---	E	<2.4	2.65
18		(0.7)	250		---	E	<2.3	(2.70)
19		9.0	240		---	E	<1.5	2.70
20		(8.5)	240		---	---		(2.65)
21		(0.2)	250		---	E		(2.70)
22		(8.0)	245		---	E		(2.70)
23		(6.2)	260		---	E		(2.60)

Time: 165.0°E.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 26

Fletchers Ice I. (79.0°N, 116.9°W)* July 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	450	5.5	<260	4.1	109	2.70		2.55
01	420	5.7	(260)	4.0	109	(2.65)		2.55
02	<400	5.55	(260)	4.0	(109)	----		2.55
03	300	5.8	<260	3.0	(111)	(2.65)		2.60
04	390	5.7	<260	(4.0)	109	(2.55)		2.60
05	430	5.5	<260	4.0	109	(2.60)		2.55
06	440	5.6	(250)	4.0	109	(2.65)		2.50
07	425	5.5	250	4.2	109	(2.75)		2.55
00	425	5.5	(240)	4.4	109	(2.90)		2.50
09	480	5.3	(240)	4.4	105	----		2.50
10	500	5.55	<240	4.6	105	----		2.40
11	520	5.5	220	4.5	105	----		2.40
12	555	5.3	<230	4.5	103	----		2.32
13	560	5.5	220	4.5	103	(3.32)		2.30
14	565	5.2	(215)	4.5	105	----		2.30
15	565	5.2	<225	4.6	103	(3.40)		2.30
16	550	5.5	(235)	4.6	103	----		2.30
17	540	5.5	<235	4.6	103	----		2.30
18	540	5.7	230	4.6	105	----		2.30
19	510	5.6	<230	4.5	105	----		2.40
20	505	5.3	<250	4.4	105	3.00		2.40
21	490	5.6	(240)	4.3	109	(2.95)		2.38
22	470	5.5	(250)	4.3	109	2.90		2.50
23	450	5.75	(250)	4.1	109	(2.72)		2.45

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.
*Preliminary estimated average position.

Table 27

Resolute Bay, Canada (74.7°N, 94.9°W) July 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00	---	5.6	260	---	120	2.2		2.65
01	---	5.6	260	---	120	2.2		2.6
02	(450)	5.5	260	3.7	110	2.3		2.6
03	(420)	5.5	250	4.0	110	2.4		2.5
04	400	5.6	240	4.0	110	2.5		2.45
05	400	5.2	230	4.0	105	2.8		(2.55)
06	460	5.4	230	4.2	100	3.0		2.5
07	480	5.2	220	4.4	100	3.0		2.45
08	530	5.2	220	4.5	100	3.2		(2.4)
09	560	5.5	210	4.6	100	3.3		G
10	520	5.5	210	4.8	100	3.5		2.3
11	540	5.7	200	4.7	100	3.5		G
12	530	5.9	210	4.8	100	3.5		(2.35)
13	560	6.0	200	4.9	100	3.5		G
14	500	5.4	200	4.7	100	3.5		G
15	540	5.6	200	4.8	100	3.4		G
16	500	5.0	220	4.7	100	3.3		2.4
17	490	5.7	210	4.6	100	3.1		G
18	440	5.6	220	4.4	100	3.0		(2.5)
19	460	5.6	230	4.2	100	2.9		2.5
20	420	5.7	240	4.1	105	2.8		2.5
21	420	5.8	250	4.0	110	2.6		2.5
22	(400)	5.8	260	4.0	110	2.4		2.6
23	(440)	5.7	260	3.9	110	2.3		2.55

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

Table 20

Nurmijarvi, Finland (60.5°N, 24.6°E) July 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.4					<1.6	2.55
01		6.2					<1.7	2.55
02		5.8					<1.6	2.55
03		5.6		---		----	<1.7	2.60
04		5.8		---		----	<2.1	2.65
05		5.8		3.8		2.20	2.4	2.60
06		6.0		4.3		----		2.70
07		6.1		4.7		----		2.60
00		6.4		5.0		3.15		2.55
09		6.0		5.2		3.30		2.60
10		7.0		5.3		3.50		2.70
11		7.0		5.4		----		2.65
12		7.2		5.4		----		2.60
13		7.0		5.5		----		2.60
14		6.8		5.5		----		2.60
15		6.8		5.4		----		2.60
16		6.8		5.3		----		2.65
17		6.9		5.2		----		2.70
18		7.0		---		3.10		2.75
19		7.0				2.60		2.80
20		6.8				2.10	<2.9	2.85
21		6.0				----	<2.2	2.75
22		6.6					<1.9	2.70
23		6.6					<1.7	2.60

Time: 30.0°E.
Sweep: 1.0 Mc to 25.0 Mc in 1 minute.

Table 29

Churchill, Canada (58.8°N, 94.2°W) July 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		5.0	310				4.8	
01		4.9	330		---	---	5.4	
02		4.6	340		---	1.7	5.0	
03		4.6	340	---	---	2.0	4.3	
04	---	4.7	330	---	110	2.0	3.9	---
05	500	4.6	270	3.7	115	2.7	4.2	---
06	560	4.9	250	4.0	110	3.0	4.2	G
07	580	4.8	230	4.4	105	3.3	4.0	G
08	675	5.1	240	4.6	100	3.7	4.3	G
09	610	5.4	230	4.8	100	3.8	4.8	G
10	560	5.7	230	5.0	100	4.0	4.5	G
11	560	6.0	220	5.0	100	4.0	4.5	---
12	540	6.0	220	5.1	100	4.0	4.3	---
13	520	6.3	220	5.1	100	3.9	4.3	(2.3)
14	500	6.5	220	5.0	100	3.9	4.0	2.4
15	500	6.5	220	5.0	105	3.7	4.3	(2.4)
16	460	6.4	230	5.0	105	3.6	3.8	(2.45)
17	460	6.3	230	4.0	110	3.4	4.2	2.5
18	440	6.2	250	4.4	110	3.1	4.3	2.5
19	430	6.0	280	4.1	110	3.0	4.0	(2.6)
20	---	5.6	320	---	120	2.9	4.4	(2.5)
21	---	5.5	300		---	2.1	5.0	
22		5.2	330		---	1.0	6.0	
23		5.2	330		---	---	6.3	

Time: 90.0°W.
Sweep: 1.0 Mc to 17.0 Mc in 16 seconds.

Table 30

De Bilt, Holland (52.1°N, 5.2°E) July 1958

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	305	6.9						2.60
01	310	6.2						2.55
02	315	5.9						2.55
03	315	5.5						2.60
04	300	5.6	(270)	---	---	---		2.70
05	350	6.2	250	4.0	125	2.7		2.70
06	405	6.6	240	4.8	115	3.0	3.4	2.75
07	360	6.9	230	5.0	110	3.2	4.0	2.80
08	350	7.2	220	5.3	110	3.6	4.2	2.80
09	410	7.5	220	5.8	110	3.0	4.2	2.70
10	400	7.2	(210)	5.8	110	3.0	4.1	2.70
11	425	7.3	215	5.8	105	4.0	4.2	2.65
12	430	7.5	210	5.9	110	4.0		2.65
13	430	7.4	(225)	6.0	---	4.0		2.70
14	430	7.2	(210)	5.8	110	4.0		2.70
15	410	7.2	225	5.5	110	3.9		2.70
16	380	7.4	225	5.3	110	3.5	3.6	2.80
17	350	7.4	230	5.0	115	3.2	3.4	2.85
18	300	7.3	250	4.4	115	2.9	3.6	2.90
19	265	7.4	---	---	---	---	3.3	2.85
20	270	7.4						2.80
21	280	7.6						2.70
22	300	7.3						2.70
23	310	7.2						2.60

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

Table 31

Slough, England (51.5°N, 0.6°W) July 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		7.1	300				<1.3	2.40
01		6.6	300				<1.4	2.40
02		6.3	320				1.4	2.40
03		5.8	320		---	<1.20	<1.4	2.45
04	---	5.7	310		125	1.65		2.50
05	---	6.2	265	4.0	120	2.30	2.4	2.60
06	425	6.8	250	4.6	105	2.80	3.2	2.65
07	410	7.1	240	4.8	105	3.30	3.7	2.75
08	425	7.1	225	5.3	100	3.60	4.1	2.60
09	390	7.7	210	5.6	100	<3.80	4.6	2.70
10	400	7.6	210	5.6	100	3.90	4.4	2.55
11	455	7.7	210	5.8	100	4.00	4.4	2.50
12	450	7.7	210	5.9	100	4.05	4.4	2.50
13	450	7.7	220	5.8	100	4.00	4.2	2.55
14	450	7.6	225	5.8	100	4.00	4.4	2.60
15	450	7.6	225	5.7	100	3.85	4.1	2.50
16	400	7.8	225	5.5	100	3.70	3.8	2.60
17	395	7.8	235	---	105	3.40	3.6	2.65
18	---	8.0	250	---	105	3.00	3.3	2.70
19		8.0	255	---	115	2.45	3.6	2.75
20		8.0	270		(140)	1.80	3.1	2.75
21		7.9	275				1.9	(2.55)
22		7.8	275				<1.6	2.55
23		7.3	300				<1.6	2.45

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

Table 32

Ottawa, Canada (45.4°N, 75.9°W) July 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		5.6	300					---
01		4.8	300					---
02		4.3	300				2.6	---
03		4.0	320					---
04		4.0	310					---
05	---	4.5	280	---	130	2.1		---
06	460	5.1	250	4.1	115	2.8		---
07	460	5.5	230	4.7	110	3.2		---
08	540	5.6	230	5.0	110	3.6	4.7	---
09	600	5.8	220	5.1	105	3.8		G
10	550	6.0	220	5.3	105	4.0		---
11	590	6.1	210	5.4	105	4.0		G
12	550	6.4	220	5.4	105	4.0		---
13	540	6.3	220	5.3	105	4.0		---
14	520	6.6	220	5.4	105	4.0		---
15	480	6.9	230	5.3	110	4.0		---
16	460	6.8	230	5.1	110	3.7		---
17	430	7.0	230	5.0	110	3.4		---
18	370	7.2	250	4.5	110	2.9		2.6
19	---	7.2	200	---	120	2.3		2.6
20		7.2	280		---	1.8		(2.65)
21		7.2	270					---
22		6.0	290					---
23		6.1	300					---

Time: 75.0°W.
Sweep: 1.0 Mc to 20.0 Mc in 16 seconds.

Table 33

Rome, Italy (41.0°N, 12.5°E) July 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		8.2	320				3.1	2.45
01		8.0	320				2.6	2.45
02		7.7	320				2.3	2.40
03		7.0	310				2.3	2.45
04		6.9	300				2.2	2.45
05	---	6.9	290	---	140	1.9	2.6	2.45
06	---	7.9	260	---	120	2.5	3.4	2.65
07	---	8.4	240	---	110	3.1	4.4	2.75
08	---	0.6	240	5.3	110	3.5	4.8	2.65
09	(520)	8.4	230	5.5	110	3.7	5.4	2.60
10	440	8.8	(220)	5.7	110	3.9	5.1	2.50
11	420	9.2	220	6.0	110	3.9	5.3	2.50
12	420	9.2	(230)	5.9	110	4.0	5.2	2.50
13	400	9.2	220	6.0	110	4.0	5.2	2.50
14	410	9.0	<240	5.9	110	4.0	4.9	2.50
15	400	9.0	230	5.8	110	3.9		2.60
16	(420)	8.7	240	5.3	110	3.7	4.9	2.60
17	(390)	8.9	250	5.0	110	3.3	5.2	2.70
18	---	8.9	260	---	110	2.9	4.4	2.75
19	---	8.8	270	---	120	2.1	4.1	2.80
20	---	8.6	280	---			3.5	2.70
21		0.6	290				3.7	2.50
22		(8.6)	310				4.2	(2.50)
23		8.3	300				3.8	2.45

Time: 15.0°E.
Sweep: 1.4 Mc to 15.0 Mc in 5 minutes, automatic operation.

Table 34

Ft. Monmouth, New Jersey (40.4°N, 74.1°W) July 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.5	280					2.65
01		5.9	290					2.60
02		5.2	290					2.60
03		4.9	295					2.58
04		4.4	310					2.60
05	---	4.9	280	---	<122	----	2.0	2.80
06	(470)	5.55	245	---	107	----	3.0	2.82
07	445	5.7	230	4.6	105	3.25	3.5	2.80
08	560	5.8	220	5.0	103	(3.65)	3.0	2.50
09	575	5.9	220	5.1	101	----	>3.9	2.55
10	<505	6.3	(215)	5.2	101	4.00		2.42
11	560	6.35	210	5.4	101	----	>3.8	2.40
12	<560	6.6	210	5.5	101	4.10		2.40
13	520	6.6	210	5.4	101	----		2.45
14	500	6.8	215	5.4	101	----		2.45
15	470	7.0	220	5.4	105	----		2.50
16	420	7.1	225	5.2	105	----		2.60
17	400	7.2	230	4.8	105	3.20		2.60
18	325	7.4	(245)		109	----	3.1	2.70
19		7.2	270		(125)	----	2.7	2.75
20		7.3	265				2.4	2.70
21		7.5	270					2.65
22		7.0	280					2.65
23		6.8	200					2.65

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

Table 35

Formosa, China (25.0°N, 121.5°E) July 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		13.2	280				2.2	2.70
01		11.4	270				2.2	2.80
02		9.7	240				2.1	2.80
03		8.6	240				2.4	2.65
04		7.5	260				2.2	2.65
05		>7.3	<280				2.2	2.70
06		8.6	250			---	>2.8	2.90
07	---	9.2	240	---		---	3.7	3.00
00	---	>9.4	230	---		---	5.2	2.80
09	---	10.1	(230)	---		---	6.0	2.65
10	---	11.1	(240)	---		---	>5.5	2.45
11	410	12.5	<240	6.6		---	5.8	2.55
12	400	12.8	<250	6.4		---	>5.8	2.50
13	400	13.3	<240	6.3		---	5.5	2.60
14	380	14.0	<240	6.3		---	5.8	2.60
15	390	14.5	<240	6.3		---	5.0	2.65
16	(370)	14.3	220	(5.9)		---	4.8	2.75
17		14.5	240			---	4.2	2.75
18		13.8	260			---	4.0	2.75
19		13.3	200				3.4	2.65
20		13.0	310				3.2	2.55
21		12.7	320				2.4	2.45
22		>12.8	320				2.3	2.50
23		>13.2	310				2.4	2.65

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

Table 36

Ibadan, Nigeria (7.4°N, 3.9°E) July 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(5.4)	400					----
01		(5.2)	395				1.4	
02		(5.2)	350					
03		(5.1)	320					----
04		(5.0)	250					(3.20)
05		4.4	240					3.20
06		7.9	260		125	2.20	2.8	3.05
07		11.0	245		110	3.20	7.0	3.00
00		12.8	230		105	3.60	6.0	2.05
09		13.2	220		105	3.95	7.7	2.60
10		13.0	210		105	4.15	8.9	2.35
11		(12.2)	205		105	4.30	8.6	(2.15)
12		11.4	200		105	(4.35)	8.6	2.15
13		11.2	200		105	4.35	0.7	2.15
14		10.8	200		105	(4.10)	0.0	2.15
15		10.9	200		105	3.90	7.0	2.15
16		10.9	215		105	3.40	6.8	2.20
17		10.0	250		110	2.90	3.2	2.20
18		(10.4)	290		<150	1.95		(2.30)
19		(9.0)	365		---	----		(2.20)
20		(6.8)	435					(2.05)
21		(6.5)	450					(2.05)
22		(6.1)	450					----
23		(5.6)	415					----

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

Table 37

Singapore, British Malaya (1.3°N, 103.8°E) July 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		11.3	230				3.4	3.00
01		>9.0	225				3.1	3.00
02		0.0	230				3.1	3.00
03		7.2	240				2.9	2.95
04		6.5	245				2.9	3.10
05		5.4	240				2.9	3.10
06		6.4	295		120	1.40	2.4	2.90
07		10.3	255		115	2.70	3.1	2.90
08		13.5	245		110	3.40	3.4	2.90
09		14.6	230		105	3.00	4.5	2.75
10		14.7	220		105	4.00		2.50
11		14.4	210		105	4.15		2.35
12	350	>13.9	210	---	105	(4.20)		2.20
13	400	13.4	205	---	105	4.20		2.15
14	---	>12.8	200	---	105	<4.10		2.10
15	470	(12.4)	210	---	105	3.05	4.0	2.05
16		12.1	230	---	110	3.40		2.25
17		12.0	250		115	2.00		2.30
18		12.7	280		---	----	3.1	2.35
19		>12.4	305		---	----	>3.1	2.45
20		>11.7	335		---	----	2.3	----
21		>11.0	275		140	----	2.4	
22		(12.2)	245		140	----	3.1	(2.65)
23		>12.3	240				3.8	(2.90)

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

Table 38

La Paz, Bolivia (16.5°S, 68.0°W) July 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		7.9	220					3.00
01		7.4	220					2.95
02		7.1	220					3.00
03		6.7	220					3.05
04		5.15	230					3.05
05		1.5	240					3.00
06		4.0	240					3.00
07		6.0	275		---	1.75		2.90
08		9.9	250		(113)	2.70		3.00
09		11.8	235		109	3.30	3.7	2.85
10		(12.5)	225		109	(3.60)	4.4	(2.70)
11	---	(12.0)	215		107	----	4.9	(2.60)
12	---	(11.45)	<215		107	----	5.0	(2.35)
13	---	(11.2)	210	---	105	----	5.0	(2.25)
14	---	10.75	205	---	107	----	5.0	2.10
15	---	10.4	210	---	105	----	4.9	2.20
16	---	10.0	225	---	107	(3.50)	5.1	2.25
17		9.7	250		109	(2.95)	4.6	2.25
18		9.5	280		<131	2.00	2.9	2.30
19		8.95	325					2.30
20		8.5	335					2.30
21		8.55	280				2.2	2.50
22		0.9	240				3.2	2.70
23		0.45	225					2.90

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

Table 39

Grahamstown, Union of S. Africa (33.3°S, 26.5°E) July 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		2.80					<2.0	3.0
01		2.90					<2.0	2.9
02		3.05					<2.0	3.0
03		2.95					(1.8)	3.0
04		2.80						3.1
05		(2.70)					(1.9)	(3.0)
06		(2.70)						(3.0)
07		(5.00)			---	E		(3.1)
08		(8.50)			125	(2.5)		(3.5)
09		(10.30)	---		<130	(3.0)		(3.5)
10		(11.50)	235		<125	(3.3)		(3.4)
11		(11.50)	235		<125	(3.5)		(3.35)
12		(12.00)	(235)		(125)	(3.7)		(3.3)
13		(11.55)	(240)		<125	(3.5)		(3.2)
14		(11.75)	(240)		<130	(3.4)		(3.2)
15		(11.50)	(245)		<130	(3.3)	3.5	(3.2)
16		(11.30)	---		(120)	(2.8)		(3.2)
17		(10.95)			130	(2.1)		(3.3)
18		(8.60)			---	---		(3.4)
19		(6.30)					<2.0	(3.4)
20		(5.00)					<2.0	(3.4)
21		(3.30)					1.9	(3.4)
22		(2.70)					<2.0	(3.15)
23		2.75					<2.0	2.95

Time: 30.0°E.
Sweep: 1.5 Mc to 15.0 Mc.

Table 40

Canberra, Australia (35.3°S, 149.0°E) July 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		4.8	<250					(2.80)
01		>4.6	250				2.1	2.00
02		(4.6)	250				1.0	2.90
03		4.8	250				1.6	2.90
04		4.7	240				1.6	3.00
05		4.1	215					2.95
06		3.8	<230					3.05
07		5.3	230		170	<1.70		3.15
08		(8.8)	200		100	2.50		(3.40)
09		(10.3)	200		100	2.90	3.3	3.40
10		11.2	200		100	3.30	3.5	3.35
11		>11.0	200		100	3.50	3.8	3.40
12		>11.3	195		100	3.50	3.8	3.20
13		11.0	200		100	3.55	3.8	3.10
14		11.4	200		100	3.35	3.7	3.10
15		11.0	210		100	3.10	3.4	3.10
16		10.8	210		100	2.00	2.9	3.15
17		(9.9)	205		100	2.00	2.9	3.15
18		(0.7)	<205				2.2	3.10
19		>7.6	210				2.3	3.10
20		>6.6	215				2.1	3.10
21		>6.1	<235					(3.00)
22		>5.8	235					3.00
23		>5.0	(235)					2.85

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

Table 41

Falkland Is. (51.7°S, 57.8°W) July 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		3.2	350				2.5	2.30
01		3.3	350				2.1	2.30
02		3.2	350				<1.6	2.35
03		3.2	330					2.45
04		3.2	300					2.35
05		3.1	300					2.50
06		2.9	265					2.65
07		3.8	255		160	1.35		(3.05)
08		6.7	230		150	1.90	2.3	3.30
09		8.7	230		130	2.45	2.9	3.25
10		10.2	235		120	2.80	3.8	3.25
11		10.4	240		120	2.90	4.5	3.30
12		10.5	235		115	3.00	4.4	3.35
13		9.5	230		115	3.00	3.6	3.25
14		9.0	235		115	2.80	3.9	3.30
15		9.1	235		125	2.40	3.4	3.25
16		7.7	230		---	2.00	2.3	3.35
17		5.8	215		---	----	2.4	3.25
18		5.0	240				2.3	3.20
19		4.4	240				2.4	3.15
20		3.5	240				2.3	(3.00)
21		3.0	<300				2.1	2.60
22		3.1	<350				2.6	2.40
23		3.1	<355				2.6	2.35

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

Table 42

Campbell I. (52.5°S, 169.2°E) July 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		4.0	300				2.4	2.60
01		4.6	300				3.0	2.60
02		>4.4	300				2.0	2.60
03		4.1	290				>2.1	2.60
04		4.4	260				2.1	2.80
05		3.0	260				2.0	2.75
06		3.7	250				>2.1	2.80
07		4.3	250		---	---	>2.1	2.85
08		6.4	230		110	1.9	>2.1	3.10
09		8.4	230		110	2.4		3.10
10		10.2	240		110	2.8	3.0	3.05
11		10.7	230		120	2.9	3.1	3.10
12		11.5	230		115	2.9		3.10
13		>11.0	220		110	2.8		3.00
14		10.8	240		115	2.6	<2.8	3.00
15		10.8	230		105	2.2		3.00
16		10.4	220		110	1.8	>2.0	3.00
17		8.7	230				1.5	2.90
18		7.0	250				1.9	2.85
19		5.8	250				1.6	2.80
20		5.4	290				2.0	2.65
21		5.2	290				3.0	2.70
22		4.9	280				3.1	2.60
23		4.8	300				>2.3	2.65

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

Table 43

Tortosa, Spain (40.0°N, 0.5°E) May 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		>9.0	330				2.1	(2.44)
01		8.8	325				2.2	<2.45
02		8.4	315				2.2	<2.42
03		8.2	310				2.3	2.44
04		7.7	305				2.2	2.40
05		8.0	275		<129	1.90	2.6	2.65
06	---	8.4	250	---	108	2.70	3.5	2.64
07	(380)	9.0	(240)	5.4	100	3.20	4.4	2.69
08	470	9.0	(230)	5.5	100	3.60	4.8	2.57
09	420	9.4	230	6.1	100	3.80	4.5	2.48
10	420	>9.7	215	6.4	100	4.00	4.2	2.42
11	390	10.8	225	6.4	100	4.10	4.6	2.44
12	400	11.0	225	6.3	100	4.20	4.6	2.47
13	400	11.0	230	6.4	100	4.10	4.4	2.44
14	395	10.8	230	6.3	100	4.00	4.4	2.47
15	390	10.5	(240)	6.2	100	3.90	4.9	2.50
16	395	10.2	(245)	5.8	100	3.60	4.4	2.56
17	(350)	10.2	<260	---	105	3.15	4.7	2.67
18	---	9.6	270	---	110	2.45	3.3	(2.69)
19		>9.5	280		---	----	3.0	2.67
20		>9.0	285				2.4	(2.53)
21		8.8	310				2.4	----
22		>9.0	325				2.2	(2.39)
23		9.0	330				2.2	(2.42)

Time: Local.

Table 44

Bunia, Belgian Congo (1.5°N, 30.2°E) May 1958

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	245	----					2.2	----
01	240	11.4					2.9	2.73
02	225	9.6					2.6	2.04
03	220	7.0					2.5	2.92
04	265	8.3			---	---	3.0	2.74
05	280	11.8	250	---	120	2.8	3.0	2.73
06	290	14.1	240	---	115	3.5	4.5	2.60
07	335	14.4	235	---	110	3.9	5.0	2.52
08	395	15.1	245	---	110	4.0	4.0	2.35
09	460	15.6	250	---	110	4.1		2.18
10	470	15.1	250	---	110	4.2		2.05
11	490	15.0	250	---	110	4.2		1.94
12	490	14.5	250	---	110	4.0		1.91
13	510	14.4	245	---	110	3.7	4.5	1.94
14	490	14.0	245	---	115	3.3	4.2	1.94
15	480	14.0	260	---	115	2.7	3.4	2.04
16	(350)	13.6	290	---	---	---	3.0	2.11
17	350	14.0					2.2	2.03
18	370	(14.0)						(1.91)
19	315	----						----
20	300	----					2.0	----
21	260	----					2.0	----
22	250	----					2.2	----
23	240	----					2.6	----

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

Table 45

Leopoldville, Belgian Congo (4.4°S, 15.2°E) May 1958

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	210	14.4					1.5	2.64
01	210	12.0					2.0	2.65
02	220	8.7					2.3	2.61
03	240	7.2					2.7	2.59
04	240	6.2					2.3	2.68
05	265	7.4	---	---	---	---	2.5	2.65
06	265	11.0	245	---	115	2.8	3.0	2.69
07	280	13.2	235	---	110	3.4	3.9	2.60
08	290	14.0	230	---	110	3.8	3.8	2.55
09	325	14.4	245	---	110	4.0		2.43
10	350	14.5	250	---	110	4.0		2.33
11	390	14.8	250	---	105	4.0		2.26
12	400	15.0	250	---	110	4.0		2.20
13	420	15.3	240	---	110	4.0		2.14
14	420	15.2	240	---	110	3.6	3.9	2.11
15	390	15.6	240	---	110	3.2	4.0	2.17
16	360	15.3	250	---	120	2.6	3.8	2.19
17	300	15.7	270	---			3.2	2.27
18	290	16.6					2.8	2.33
19	290	17.0					3.0	2.37
20	250	17.0						(2.50)
21	240	17.6					1.8	2.72
22	230	17.8						2.74
23	220	17.0						2.70

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

Table 46

Elisabethville, Belgian Congo (11.6°S, 27.5°E) May 1950

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	230	7.2						2.50
01	235	5.6						2.72
02	245	4.3					2.3	2.62
03	255	3.6					2.5	2.62
04	260	5.0					2.7	2.40
05	240	9.0			120	2.4	3.6	2.81
06	250	12.2	230	---	115	3.2	3.6	2.74
07	265	13.2	230	---	110	3.6	3.6	2.66
08	275	13.6	240	---	110	4.0	4.0	2.56
09	310	13.7	240	---	110	4.0		2.48
10	350	13.7	235	---	110	4.0	4.3	2.33
11	360	13.5	240	---	110	4.0		2.30
12	360	13.5	235	6.6	110	3.9	4.0	2.26
13	360	13.5	235	6.0	110	3.6	3.6	2.27
14	350	13.5	240	---	115	3.4	3.7	2.27
15	310	13.4	260	---	120	2.6	4.0	2.36
16	260	13.4	---	---	---	---	3.6	2.50
17	250	12.7					3.4	2.56
18	245	12.9					3.4	2.54
19	245	13.0					2.8	2.53
20	230	13.1					3.0	2.60
21	225	11.8					2.6	2.60
22	230	11.0					2.0	2.51
23	230	8.4						2.57

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

Table 47

Concepcion, Chile (36.6°S, 73.0°W) May 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		7.05	<285					2.70
01		7.05	280					2.75
02		7.0	260					2.85
03		6.55	250					2.80
04		5.7	<250					2.88
05		4.75	265					2.45
06		5.2	300					2.62
07		9.15	245		<139	2.15		3.10
08		12.35	225		111	2.00	3.2	3.30
09		13.6	225		109	3.20	3.5	3.20
10		13.9	220		109	3.50	4.0	3.10
11		13.9	220		109	3.60	4.2	3.00
12		13.6	<220		109	(3.65)	4.2	2.80
13		14.55	225		111	3.60	4.1	2.88
14		14.8	230		(111)	3.45	3.8	2.90
15		14.4	230		115	3.05	3.5	2.85
16		14.1	240		<121	2.55	3.0	2.95
17		13.5	230		---	----	3.5	3.00
18		11.85	225				2.5	2.90
19		11.05	240				2.0	2.90
20		10.0	230					2.85
21		8.9	240					2.80
22		8.45	260					2.68
23		8.4	280					2.70

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

Table 40

Campbell I. (52.5°S, 169.2°E) May 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.0	280		---	---	3.2	2.50
01		6.0	280		---	---	3.0	2.55
02		5.8	280		---	---	3.0	2.60
03		5.7	280		---	---	2.5	2.55
04		5.5	270		---	---	>2.1	2.65
05		5.2	260		---	---	2.0	2.78
06		4.8	250		---	---	2.1	2.70
07		6.1	250		140	1.7	2.0	2.90
08		8.4	240		110	2.1		3.05
09		10.0	230		105	2.6		3.05
10		10.9	220		105	2.9		2.95
11		12.7	230		105	3.0		2.85
12		>13.0	230		105	3.0		2.90
13		>13.0	230		110	2.9		(2.80)
14		>13.0	230		105	2.7		(3.10)
15		>13.0	220		105	2.4		(2.90)
16		11.3	230		155	1.8		2.90
17		9.7	220		---	<1.4	<1.6	2.80
18		8.4	240		---	---	1.7	2.80
19		7.6	250		---	---	>2.1	2.70
20		7.1	260		---	---	2.0	2.60
21		6.4	270		---	---	>2.1	2.55
22		6.2	270		---	---	2.8	2.50
23		6.1	270		---	---	3.5	2.55

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

Table 49

Moscow, U.S.S.R. (55.5°N, 37.3°E) April 1950

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.4	330			E		2.30
01		6.0	335			E		2.30
02		5.7	325			E		2.40
03		5.3	310			E		2.40
04		5.6	300			1.40		2.50
05		6.3	270			2.10		2.75
06	(295)	7.0	250	5.1		2.60		2.70
07	340	7.9	240	5.4		3.00		2.65
08	395	8.9	240	6.0		3.35	3.4	2.60
09	370	10.0	230	6.0		3.55	3.6	2.55
10	380	11.0	230	6.6		3.70	3.8	2.55
11	370	11.0	225	6.9		3.80		2.55
12	370	11.0	230	6.7		3.80		2.50
13	365	11.2	230	7.0		3.75		2.50
14	350	10.9	230	6.6		3.60		2.50
15	350	10.8	240	6.2		3.40		2.55
16	320	10.6	240	5.0		3.00		2.55
17	(275)	10.5	250	---		2.60		2.65
18	---	10.2	250			2.10		2.70
19		9.8	250			1.50	1.6	2.70
20		8.8	255			E	1.6	2.65
21		7.9	265			E		2.55
22		7.3	285			E		2.45
23		6.6	325			E		2.40

Time: 30.0°E.
Sweep: 1.0 Mc to 20.0 Mc in 30 seconds.

Table 50

Rome, Italy (41.8°N, 12.5°E) April 1950

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		8.8	340					2.25
01		8.8	340					2.25
02		8.6	310					2.30
03		7.7	320					2.25
04		7.2	320					2.30
05		7.1	310					2.35
06		8.4	260		(130)	2.1		2.70
07		9.7	250		110	2.8		2.70
08	---	11.0	240	---	110	3.3		2.60
09	---	12.0	230	---	110	3.7		2.60
10	---	12.5	230	---	110	3.9		2.55
11	---	12.8	220	---	110	4.0		2.45
12	(440)	13.2	230	6.8	110	4.0		2.40
13	(430)	13.6	240	6.7	110	4.1		2.40
14	---	13.2	240	---	110	4.0		2.40
15	---	12.5	240	---	110	3.9		2.40
16	---	12.0	250	---	110	3.6		2.40
17		12.0	250		110	3.1		2.50
18		(12.1)	260		110	2.4	3.5	(2.60)
19		(11.4)	260		---	---	3.1	(2.60)
20		(9.7)	260				2.5	(2.40)
21		(9.4)	280					2.35
22		(9.1)	300					2.30
23		8.8	310					2.25

Time: 15.0°E.
Sweep: 1.4 Mc to 15.0 Mc in 5 minutes, automatic operation.

Table 51

Concepcion, Chile (36.6°S, 73.0°W) April 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		10.2	300					2.62
01		9.7	300					2.60
02		9.3	265					2.65
03		0.6	245					2.80
04		7.15	225					2.45
05		6.3	290					2.40
06	---	6.8	320		<150	1.52		2.50
07		10.75	240		(119)	2.45		2.90
08		14.05	230		109	3.05	3.2	3.08
09		15.6	230		109	3.40	4.0	3.00
10		15.4	225		109	3.60	4.5	2.90
11		15.4	220		109	(3.78)	4.7	2.70
12		15.65	220		109	(3.08)	4.6	2.70
13		15.8	225		109	3.90	4.7	2.65
14		16.05	230		111	3.75	4.4	2.65
15		16.1	240		111	3.40	4.6	2.65
16		15.7	250		115	2.80	4.3	2.75
17		14.7	250		(119)	2.32	3.4	2.75
18		13.75	250				3.7	2.75
19		12.6	260				2.5	2.70
20		12.25	270				2.3	2.70
21		>11.5	250					2.75
22		11.3	275					2.62
23		11.1	280					2.70

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

Table 52

Punia, Belgian Congo (1.5°N, 30.2°E) March 1958

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	11.6					1.6	2.58
01	250	11.9					1.9	2.77
02	225	10.3					1.6	2.92
03	220	8.4					1.8	3.00
04	240	6.9	---	---	---	---	2.3	2.79
05	275	10.2	250	---	115	2.7	3.4	2.02
06	(275)	12.2	240	---	110	3.4	4.2	2.56
07	---	13.4	235	---	110	4.0	4.6	2.36
08	---	14.0	230	---	110	4.0		2.18
09	---	>14.4	240	---	110	4.2		2.10
10	---	15.0	240	---	110	4.4		<2.06
11	(440)	15.0	245	---	110	4.3		2.08
12	480	14.5	250	---	110	4.0		2.03
13	490	14.6	240	---	110	3.9		2.03
14	495	14.6	250	---	110	3.4		2.06
15	515	14.5	260	---	115	3.0	3.4	2.06
16	(485)	14.3	300	---	---	---	2.9	<1.95
17	400	14.0						<1.87
18	370	14.3						(2.11)
19	280	>13.5					1.7	(2.20)
20	240	>13.0					1.9	(2.30)
21	225	>13.1						2.50
22	220	>11.0						<2.41
23	250	11.0						2.44

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

Table 53

Concepcion, Chile (36.6°S, 73.0°W) March 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		11.35	300					2.70
01		10.8	280					2.70
02		9.7	270				1.9	2.80
03		8.7	260				1.8	2.70
04		7.7	260				2.0	2.45
05	---	7.6	335		---	----		2.35
06	---	8.85	270		(151)	2.00		2.60
07	---	11.7	240		115	2.80		2.95
08	---	13.05	230		111	3.35	3.5	2.95
09	---	14.0	230		109	3.70	4.2	2.90
10	---	14.45	240		109	3.90	5.0	2.80
11	---	14.6	240		109	(4.00)	5.4	2.70
12	---	15.1	<250	---	109	(4.05)	6.0	2.60
13	(360)	15.4	(240)		109	(4.00)	6.0	2.60
14	350	16.1	(240)		111	----	6.4	2.60
15	(370)	16.4	250		111	3.75	5.6	2.65
16	---	16.5	250		111	3.30	5.2	2.65
17		16.0	260		113	2.70	4.4	2.72
18		>15.0	270		---	----	4.2	2.75
19		13.6	270				3.7	2.75
20		13.05	290				3.0	2.60
21		12.6	290				2.5	2.65
22		11.6	310					2.60
23		11.5	315					2.60

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.
Note: Around equinox, height scale was expanded.

Table 54

Concepcion, Chile (36.6°S, 73.0°W) February 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		10.05	295				3.5	2.68
01		10.4	275		---	----	3.4	2.82
02		9.0	200		---	----	3.1	2.60
03		7.9	310		---	----	3.1	2.42
04		8.1	330		---	----	3.0	2.40
05		0.25	340		<169	1.48	3.1	2.35
06		9.2	255		129	2.35	3.5	2.70
07		10.7	240		113	3.00	3.8	2.72
08		11.7	240		111	3.50	4.1	2.75
09	---	12.4	<240	---	111	3.90	4.6	2.75
10	---	13.05	(225)	---	111	4.00	5.0	2.70
11	---	13.7	(235)	---	111	4.10	5.0	2.62
12	(400)	14.0	(240)	---	111	(4.15)	5.4	2.65
13	380	14.2	(235)	---	111	4.10	4.9	2.62
14	360	13.7	(250)	---	111	(4.00)	5.7	2.60
15	365	13.3	<250	---	111	(3.70)	6.0	2.65
16	(385)	12.85	<250	---	113	3.50	5.4	2.65
17	---	12.8	<270	---	118	3.05	5.0	2.65
18		12.7	(275)		---	----	4.2	2.65
19		>12.05	295				4.4	2.65
20		11.7	325				3.8	2.50
21		10.95	330				2.6	2.48
22		11.2	335				3.0	2.50
23		11.15	320				2.8	2.55

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

Table 55

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

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		5.2	300				3.4	2.6
01		5.0	320				3.0	2.5
02		4.6	320				3.0	2.5
03		4.4	320				3.2	2.6
04		4.1	320				3.4	2.6
05	460	4.9	280	3.5	110	2.2		2.7
06	450	5.7	240	4.2	100	2.8		2.6
07	450	6.1	220	4.7	100	3.1		2.5
08	470	6.5	210	5.0	100	3.5		2.5
09	450	6.7	200	5.1	100	3.8		2.5
10	480	6.8	200	5.3	100	4.0		2.45
11	520	6.9	200	5.4	100	4.0		2.4
12	470	7.0	200	5.4	100	4.0		2.4
13	480	7.1	210	5.5	100	4.0		2.5
14	450	7.2	200	5.4	100	4.0		2.5
15	450	7.0	210	5.4	100	4.0	4.5	2.5
16	440	7.0	210	5.2	100	3.7		2.5
17	400	6.8	220	5.0	100	3.4		2.6
18	(400)	6.7	240	4.7	100	3.0		2.7
19	---	6.7	250	---	100	2.5	4.0	2.8
20		6.6	260		---	---	3.8	2.85
21		6.2	260				3.3	2.7
22		6.2	270				3.9	2.75
23		5.8	290				3.7	2.65

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

Table 56

Tortosa, Spain (40.8°N, 0.5°E) July 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		8.3	<310				2.8	2.55
01		8.2	295				2.8	2.55
02		7.7	290				2.8	2.60
03	---	7.5	<285	---	---	---	2.6	2.60
04	---	7.2	285	---	---	---	2.8	2.65
05	---	7.1	270	---	120	1.6	2.7	2.75
06	(360)	7.6	250	4.6	110	2.5	3.7	2.80
07	320	>8.3	240	5.4	105	3.2	4.2	2.90
08	<350	8.3	230	5.5	100	3.5	4.6	2.80
09	370	8.5	220	5.8	100	3.8	4.8	2.70
10	405	8.6	235	5.9	100	3.9	5.3	2.65
11	<385	9.1	220	6.1	100	3.9	5.3	2.65
12	400	9.2	220	6.2	100	4.1	5.0	2.65
13	390	>9.4	210	5.9	100	4.1	5.1	2.70
14	380	9.2	225	5.9	100	>3.9	4.9	2.70
15	370	9.3	235	5.8	100	3.8	4.5	2.70
16	360	9.2	230	5.7	100	3.5	4.4	2.75
17	340	9.1	240	5.4	105	3.2	4.5	2.75
18	(325)	9.1	265	4.9	110	2.6	4.3	2.80
19	---	8.9	270		130	1.9	2.6	2.80
20		8.4	<270				3.1	2.65
21		>8.3	(260)				3.8	2.60
22		8.5	<290				3.6	2.60
23		>8.3	<290				4.2	2.55

Time: Local.

Table 57

Bogota, Colombia (4.5°N, 74.2°W) July 1957*

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		8.9	230					(2.90)
01		8.15	250					2.90
02		7.75	245					2.90
03		7.3	235					3.00
04		6.25	245					2.90
05		5.0	<260					2.90
06		6.0	265		---	----	2.1	2.90
07		7.8	240		111	2.05		3.10
08		8.2	230		109	3.52		2.80
09		9.3	220		109	3.08		2.50
10		10.4	215		113	(4.05)		2.35
11		11.2	210		111	4.22		2.30
12	---	12.0	210	---	111	(4.25)		2.38
13	(450)	13.0	215	---	111	4.18		2.40
14	420	13.7	215	---	107	4.10		2.50
15	(410)	13.6	230		109	3.90	>4.1	2.55
16	---	12.8	230		111	3.50	4.3	2.50
17	---	12.8	245		116	2.00	3.8	(2.55)
18		(12.0)	270				3.1	(2.55)
19		11.6	300				2.7	(2.55)
20		11.8	300					2.60
21		10.6	280					2.65
22		(9.6)	270					2.80
23		>9.85	255					(2.90)

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.
*Data observed from July 9 through July 31, inclusive.

Table 58*

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05	<290	5.5			---	1.8		2.7
06	270	6.0	---	---	140	2.1		2.8
07	250	6.9	240	---	120	2.6		2.9
08	280	7.7	240	4.9	120	3.1		2.9
09	290	8.6	230	4.8	110	3.2		2.8
10	280	9.4	230	4.8	110	3.4		2.8
11	280	9.8	220	4.8	110	3.5		2.7
12	280	10.2	230	5.1	110	3.5		2.7
13	300	10.4	220	5.6	110	3.6		2.7
14	300	10.4	230	5.3	110	3.4		2.65
15	280	10.0	230	5.1	110	3.2		2.6
16	290	9.9	240	5.0	110	2.9		2.7
17	270	9.6	250	4.7	120	2.5		2.6
18	260	9.0	250	---	---	1.9		2.7
19	250	9.1					1.9	2.6
20	260	7.9					1.6	2.5
21	<300	7.4						2.4
22	<350	7.0					2.1	2.4
23	<350	6.6					3.5	2.4

Time: 165.0°E.
Sweep: 1.0 Mc to 15.0 Mc in 5 minutes, manual operation.
*Observations taken on a 19-hour working schedule.

Table 59*

Campbell I. (52.5°S, 169.2°E) December 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05	400	6.5	250	4.4	120	2.8	>3.5	2.50
06	445	6.8	240	5.1	110	3.1	3.9	2.50
07	470	7.0	240	>5.4	110	3.4	3.9	2.40
08	515	7.0	230	5.6	110	3.6	4.2	2.40
09	510	7.2	220	5.7	110	3.8	4.1	2.50
10	520	7.2	220	5.9	110	3.9	4.2	2.40
11	515	7.2	210	6.0	110	4.0	4.2	2.40
12	530	7.4	230	6.0	110	4.0		2.40
13	520	7.5	220	5.9	110	3.9		2.40
14	505	7.6	230	5.8	110	4.0		2.38
15	475	7.7	230	5.6	110	3.8		2.40
16	455	7.8	240	5.5	110	3.5	3.9	2.40
17	400	7.9	245	5.2	110	3.2	3.5	2.50
18	350	0.0	250	4.6	120	2.8		2.50
19	290	8.1	270	---	120	2.2	3.2	2.50
20	310	0.2	---	---	175	1.8	2.4	2.40
21	320	7.8	---	---				2.40
22	320	7.6						2.30
23	325	7.4					2.7	2.30

Time: 165.0°E.
Sweep: 1.0 Mc to 15.0 Mc in 5 minutes, manual operation.
*Observations taken on a 19-hour working schedule.

Table 60

Kodaikanal, India (10.2°N, 77.5°E) November 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	285	10.9						(2.60)
01	280	10.3						2.65
02	260	10.0						2.00
03	245	0.9						2.90
04	230	8.0						3.00
05	230	6.0						3.10
06	285	0.0						2.80
07	260	11.2	---	---	115	2.9		2.70
08	---	13.0	240	---	110	3.5	7.4	2.50
09	---	14.0	235	---	105	---	10.0	2.30
10	---	13.0	225	---	105	---	11.3	2.20
11	---	13.5	225	---	105	---	11.4	2.10
12	---	12.8	225	---	105	---	11.6	2.10
13	---	12.7	230	---	105	---	11.6	2.05
14	---	12.0	235	---	105	---	9.6	2.00
15	---	12.6	240	---	110	---	9.1	<2.05
16	---	12.2	260	---	---	---	7.6	2.05
17	300	12.0						2.05
18	385	11.4						2.00
19	455	10.0						<2.00
20	445	(9.6)						2.00
21	400	(10.3)						(2.20)
22	325	10.0						2.40
23	295	(10.9)						(2.50)

Time: 75.0°E.
Sweep: 1.0 Mc to 25.0 Mc in 27 seconds.

Table 61

Macquarie I. (54.5°S, 159.0°E) November 1956

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		5.0	350				2.5	2.35
01		5.8	350					2.35
02		(5.5)	(350)				2.0	(2.40)
03		(5.2)	(350)			----	2.0	(2.50)
04		(5.1)	---			2.00		(2.60)
05		5.8	---			----		2.60
06		5.8	---			----		2.50
07		6.0	---			----		2.45
08		6.4	---			----		2.35
09		6.8	(260)			----		2.35
10		7.2	(240)			----		2.30
11		7.6	(250)			----		2.30
12		7.5	(260)			----		2.30
13		7.6	250			----		2.35
14		>7.7	(240)			----		2.35
15		7.7	---			----		2.35
16		>7.6	---			----		2.45
17		7.7	---			----		2.45
18		7.9	---			----		2.45
19		7.8	350			----		2.55
20		8.0	(330)			----		2.35
21		7.4	340			----	2.1	2.30
22		7.0	350				2.3	2.30
23		(6.6)	(340)				2.3	(2.35)

Time: 157.5°E.
Sweep: 1.0 Mc to 13.0 Mc in 1 minute 55 seconds.

Table 62

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

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	320	8.6						3.00
01	320	8.1						3.00
02	(320)	7.4						(3.00)
03								
04	320	5.4						3.00
05	320	5.6						3.00
06	290	7.9						3.20
07	260	11.4						3.40
08	280	12.7						3.25
09	320	13.7						3.00
10	320	14.3						3.00
11	360	14.7						2.80
12	360	15.2						2.80
13	360	>15.3						2.00
14	360	>15.4						2.00
15	(360)	>15.3						(2.00)
16	(360)	>15.2						(2.00)
17	320	>15.2						3.00
18	320	14.9						3.00
19	320	14.8						3.00
20	320	>14.0						3.00
21	320	11.8						3.00
22	320	>10.6						3.00
23	320	9.3						3.00

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

Table 63

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	13.6					3.2	2.90
01	240	12.6					3.2	2.90
02	235	10.7					3.2	3.00
03	225	8.8					3.2	3.20
04	230	6.4					3.2	3.00
05	250	5.4					3.0	2.90
06	270	6.8			---	---	3.2	2.90
07	250	11.3	250	---	115	2.3	3.2	3.20
08	240	12.6	235	4.6	110	3.1		3.20
09	255	14.0	230	5.0	107	3.5		2.85
10	300	14.9	225	5.3	105	3.8		2.80
11	330	15.1	220	5.4	105	3.9		2.70
12	380	15.9	230	5.6	105	4.0		2.60
13	390	17.2	235	5.8	105	4.0		2.60
14	370	10.1	240	5.6	107	3.8		2.60
15	350	17.6	240	5.6	110	3.6		2.60
16	325	17.4	250	5.1	110	3.2		2.60
17	270	17.0	250	5.0	120	2.3	3.2	2.60
18	260	17.2					3.2	2.60
19	290	17.6					3.2	2.55
20	255	(10.6)					3.2	2.65
21	240	(16.6)					3.2	2.00
22	240	>15.2					3.2	2.80
23	250	14.6					3.2	2.80

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

Table 64

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	8.6						3.1
01	255	8.1						3.1
02	250	7.5						3.1
03	240	6.6						3.0
04	245	5.2						3.1
05	250	4.5						3.1
06	250	7.7			110	2.2		3.1
07	250	9.2	---	---	100	2.7		3.1
00	270	10.5	230	4.6	100	3.0		3.0
09	275	11.3	220	5.0	100	3.3		3.0
10	290	11.7	210	5.3	100	3.5		2.9
11	310	12.0	210	5.5	100	3.6		2.0
12	320	12.5	210	5.6	100	3.7		2.8
13	330	12.5	210	5.5	100	3.6		2.7
14	315	13.0	220	5.5	100	3.4		2.75
15	300	12.5	220	5.3	100	3.2		2.85
16	300	12.0	220	5.0	100	3.0	3.5	2.9
17	270	11.5	225	4.5	100	2.8	3.5	3.0
18	270	11.4			110	2.2	3.0	3.1
19	270	11.0						3.1
20	250	10.6						3.2
21	250	10.2						3.2
22	250	10.0						3.2
23	250	9.2						3.1

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

Table 65

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

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06	240	6.8						3.60
07	270	7.7						3.35
08:30	300	9.6						3.10
09	330	10.4						2.95
10	360	11.2						2.80
11	390	11.6						2.65
12	480	12.4						2.30
13	480	12.0						2.30
14	400	12.0						2.30
15	450	11.4						2.45
16	440	11.0						2.50
17	390	10.8						2.65
18	380	9.8						2.70
19	360	9.1						2.80
20	(330)	(8.6)						(2.95)
21	300	7.6						3.10
22	270	6.7						3.35
23								

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

Table 66

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

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(300)	>13.7						(3.10)
01	(320)	>12.5						(3.00)
02	(320)	>11.5						(3.00)
03	(320)	9.1						(3.00)
04	(300)	8.2						(3.10)
05	(300)	(7.8)						(3.10)
06	320	0.7						3.00
07	380	12.1						2.70
08	440	13.7						2.50
09	480	13.4						2.30
10	400	13.2						2.30
11	500	13.2						2.25
12	500	13.0						2.25
13	520	13.5						2.20
14	520	13.8						2.20
15	500	13.8						2.25
16	500	>13.5						2.25
17	500	13.4						2.25
18	500	13.2						2.25
19	480	12.6						2.30
20	400	12.2						2.30
21	(480)	12.4						(2.30)
22	(400)	>12.9						(2.60)
23	(330)	(13.8)						(2.95)

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

Table 67

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

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06	320	8.7						3.00
07	360	10.5						2.80
08	400	11.4						2.60
09	480	12.0						2.30
10	480	12.2						2.30
11	500	12.4						2.25
12	520	12.2						2.20
13	520	12.1						2.20
14	520	12.1						2.20
15	540	12.0						2.15
16	520	11.8						2.20
17	520	11.4						2.20
18	520	(10.5)						(2.20)
19	(520)	(9.5)						(2.20)
20	(480)	(9.5)						(2.30)
21	(440)	(9.5)						(2.50)
21:30	(400)	(9.4)						(2.60)
23								

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

Table 68

Kodaikanal, India (10.2°N, 77.5°E) October 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	12.0						2.90
01	240	11.2						2.90
02	240	9.9						3.00
03	235	9.1						3.00
04	230	7.6						3.10
05	225	6.1						3.20
06	270	8.1						3.00
07	255	11.4	245	---	120	2.8		2.85
08	---	13.1	235	---	115	3.2	9.9	2.55
09	(270)	13.6	225	---	115	3.4	11.0	2.35
10	---	12.6	220	---	110	---	11.9	2.20
11	---	12.2	215	---	110	---	12.2	2.15
12	---	12.1	215	---	110	---	12.0	2.15
13	---	12.4	220	---	110	---	12.0	2.10
14	---	12.7	220	---	110	---	11.8	2.15
15	---	12.9	230	---	110	---	10.8	2.15
16	---	12.8	250	---	115	3.1	9.6	<2.15
17	280	12.7					6.8	2.10
18	360	11.4						2.05
19	450	9.3						2.05
20	400	(9.8)						(2.25)
21	345	(10.7)						(2.25)
22	300	(11.6)						(2.55)
23	260	12.0						2.70

Time: 75.0°E.
Sweep: 1.0 Mc to 25.0 Mc in 27 seconds.

Table 69*

Campbell I. (52.5°S, 169.2°E) May 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05	(280)	4.0						2.7
06	<260	4.0						2.6
07	250	5.0			---	E	1.9	3.0
08	240	6.5	230	---	110	2.2		3.1
09	250	7.0	220	3.4	110	2.6		3.2
10	250	8.3	230	3.8	110	2.8		3.1
11	250	8.9	230	4.0	110	2.9		3.1
12	250	9.1	230	4.0	105	2.9		3.1
13	250	9.2	230	3.7	100	2.8		3.0
14	250	9.5	230	3.2	100	2.7		3.1
15	240	9.2	---	---	100	2.3		3.1
16	240	9.0	---	---	---	1.6		3.0
17	230	8.0						2.9
18	240	6.8						2.9
19	250	5.7						2.8
20	260	5.6						2.7
21	260	5.1						2.7
22	300	5.0						2.6
23	(280)	4.8						2.6

Time: 165.0°E.
Sweep: 1.0 Mc to 15.0 Mc in 5 minutes, manual operation.
*Observations taken on a 19-hour working schedule.

Table 70*

Campbell I. (52.5°S, 169.2°E) April 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05	<270	4.4						2.6
06	260	5.0	---	---	---	E		2.8
07	250	6.7	230	---	110	2.1		3.0
08	250	7.8	230	3.5	110	2.5		3.05
09	250	8.4	220	4.0	110	2.8		3.0
10	250	9.3	220	4.2	100	3.1		2.9
11	250	10.0	230	4.4	100	3.2		3.0
12	250	10.4	230	4.6	105	3.2		2.9
13	250	10.8	220	4.1	105	3.1		2.95
14	250	10.5	230	4.0	100	3.0		2.9
15	250	9.9	230	3.8	110	2.6		2.9
16	250	10.0	---	---	120	2.2		2.9
17	240	9.7	---	---	---	E		2.9
18	240	8.6			---	E		2.8
19	250	7.5						2.7
20	300	6.6						2.5
21	290	6.5						2.5
22	300	6.2						2.5
23	300	6.0						2.4

Time: 165.0°E.
Sweep: 1.0 Mc to 15.0 Mc in 5 minutes, manual operation.
*Observations taken on a 19-hour working schedule.

Table 71

Sao Paulo, Brazil (23.5°S, 46.5°W) December 1955

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	13.0						3.2
01	230	11.1						3.4
02	220	9.8						3.25
03	220	8.1						3.25
04	220	6.2						3.2
05	250	6.5						3.1
06	230	7.6					3.2	3.0
07	240	8.2						2.9
08	(280)	8.8						2.5
09	320	9.2						2.4
10	370	10.0						2.5
11	380	10.6						2.5
12	360	11.5						2.6
13	360	12.0						2.7
14	350	12.5						2.7
15	340	13.0					4.4	2.8
16	310	13.4						2.9
17	280	13.2						2.9
18	240	12.7					3.2	2.9
19	300	13.0					3.2	2.7
20	340	(13.6)						(2.6)
21	300	(13.4)						(2.8)
22	280	(13.0)						(2.9)
23	270	(13.2)						(2.95)

Time: Local.
Sweep: 1.75 Mc to 20.0 Mc in 7 minutes 18 seconds.

Table 72

Sao Paulo, Brazil (23.5°S, 46.5°W) November 1955

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	(11.8)						(3.0)
01	240	11.7						3.15
02	240	10.4						3.3
03	230	8.2						(3.3)
04	230	7.3						3.3
05	220	7.0						3.2
06	230	7.6			---	---	2.8	3.3
07	240	7.6	220	---	120	2.8	3.3	3.1
08	(260)	(8.1)	220	---	100	---	3.7	(2.8)
09	---	9.0	220	---	100	---	4.0	2.6
10	(320)	9.7	210	4.8	110	---		(2.7)
11	(340)	(11.2)	210	5.2	100	---		---
12	360	12.2	---	5.3	100	---		(2.7)
13	330	12.9	220	---	110	---		2.8
14	320	13.5	---	---	110	---		2.95
15	300	13.6	220	---	110	3.2		(2.9)
16	290	13.6	220	---	120	3.0	3.8	2.9
17	260	13.6	230	---	---	---	3.8	2.9
18	260	13.6			---	---	3.3	2.9
19	300	13.6					4.0	(2.8)
20	300	(13.6)					3.3	(2.8)
21	280	(13.6)						(2.8)
22	280	(12.8)						(2.8)
23	280	(11.6)						(2.8)

Time: Local.
Sweep: 1.75 Mc to 20.0 Mc in 7 minutes 18 seconds.

USCOMM-NBS-BL

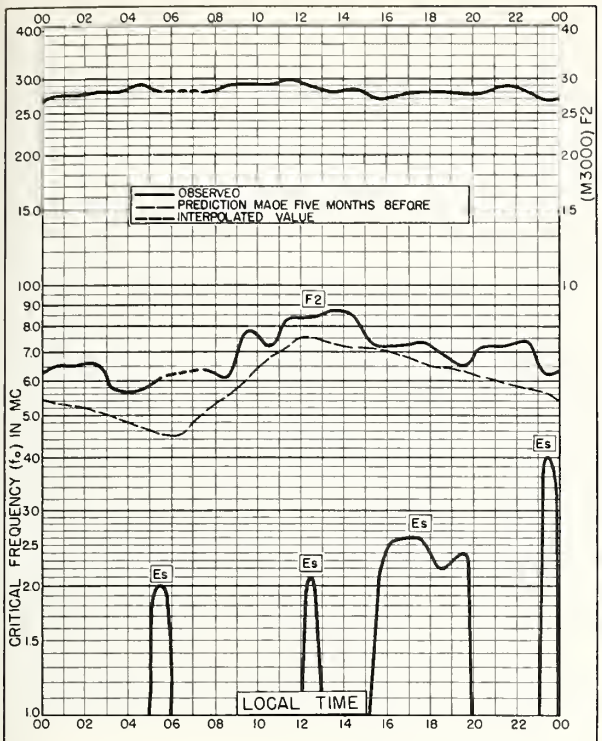


Fig. 1. THULE, GREENLAND
76.6°N, 68.7°W NOVEMBER 1958

NBS 503

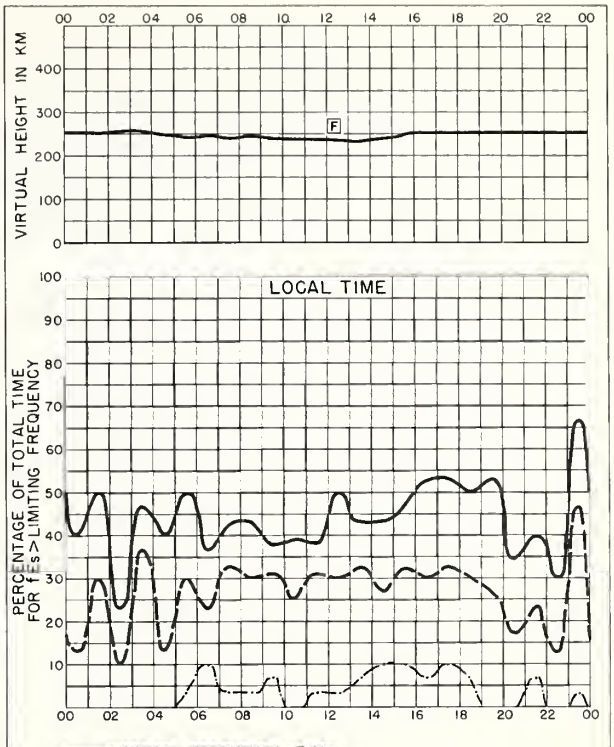


Fig. 2. THULE, GREENLAND NOVEMBER 1958

NBS 490

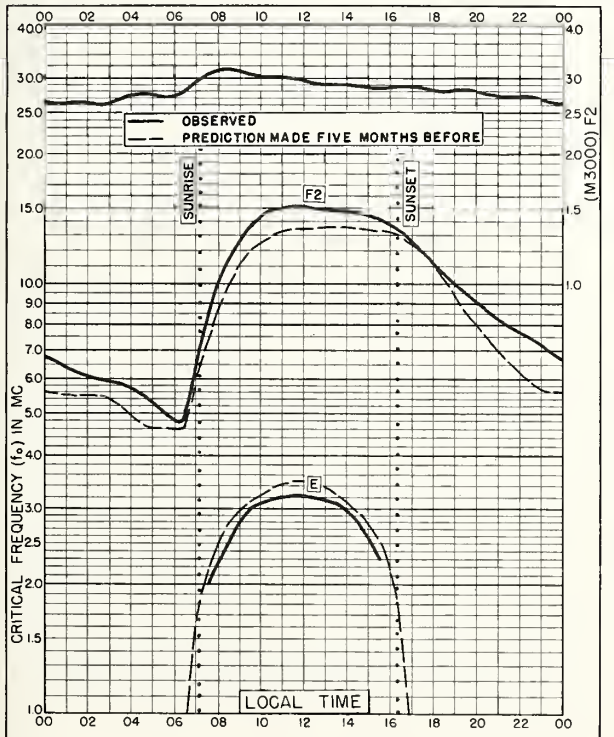
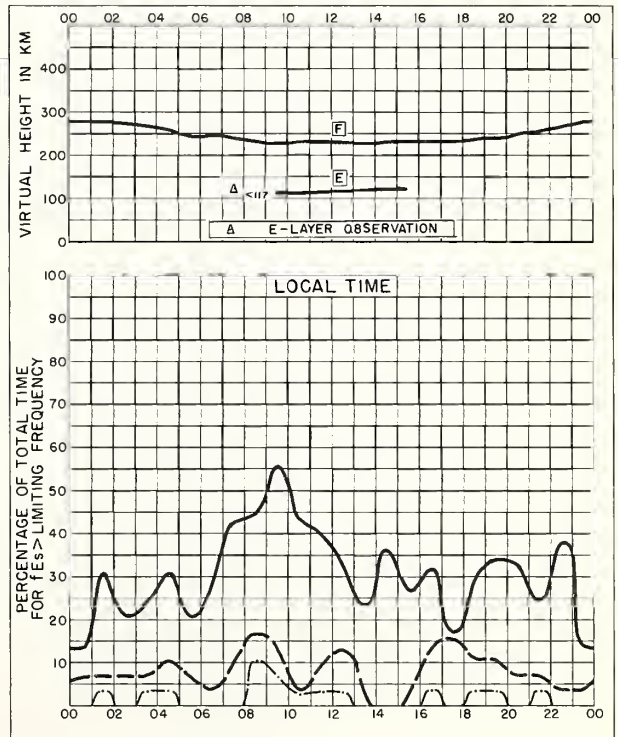


Fig. 3. ST. JOHN'S, NEWFOUNDLAND
47.6°N, 52.7°W NOVEMBER 1958

NBS 503



NOVEMBER 1958

Fig. 4. ST. JOHN'S, NEWFOUNDLAND

NBS 490

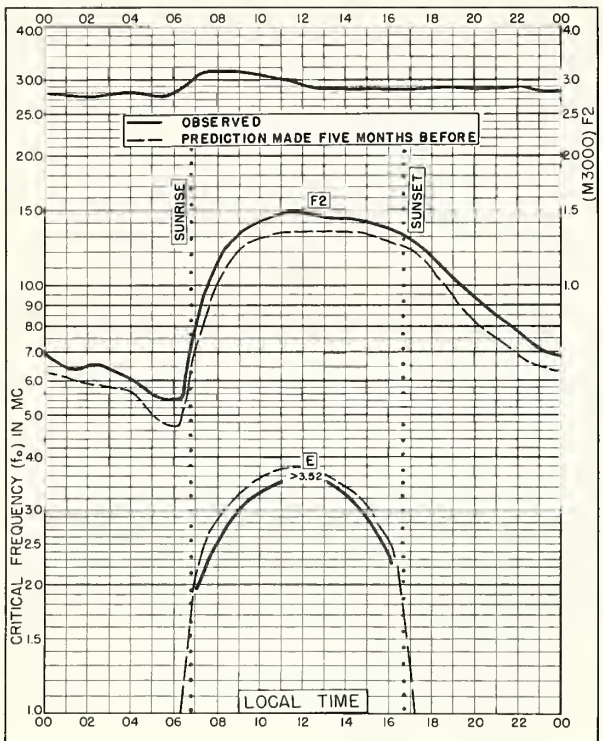
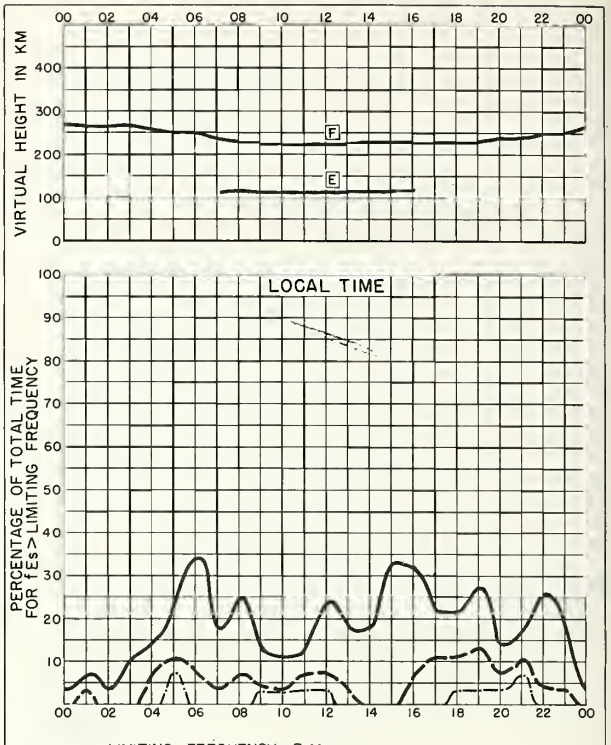


Fig. 5. FT. MONMOUTH, NEW JERSEY
40.4°N, 74.1°W NOVEMBER 1958



NOVEMBER 1958

Fig. 6. FT. MONMOUTH, NEW JERSEY

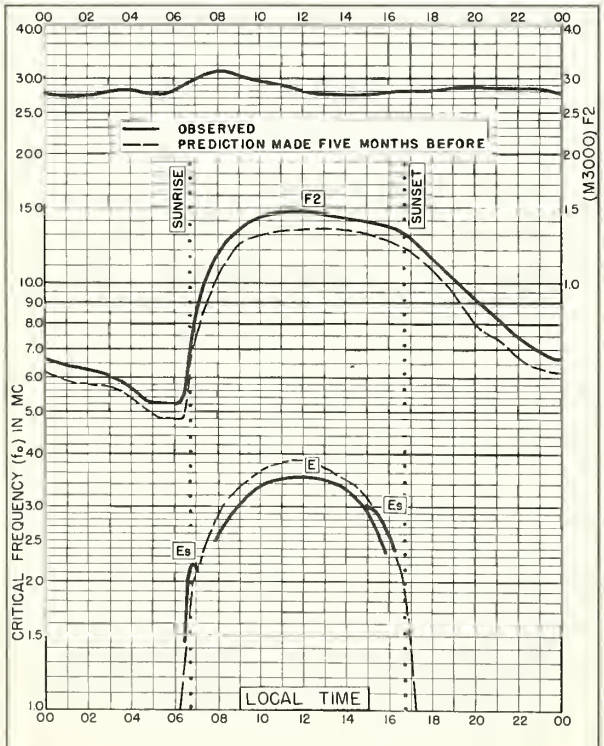


Fig. 7. WASHINGTON, D. C.
38.7°N, 77.1°W NOVEMBER 1958

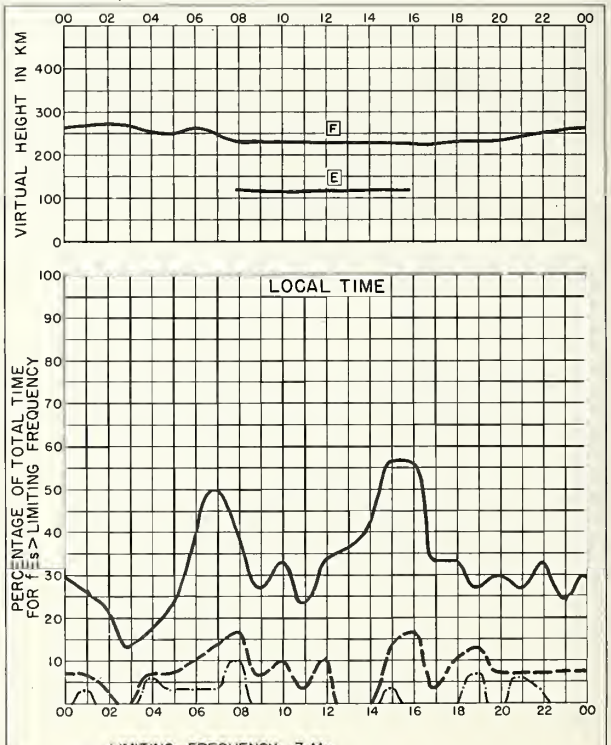


Fig. 8. WASHINGTON, D. C. NOVEMBER 1958

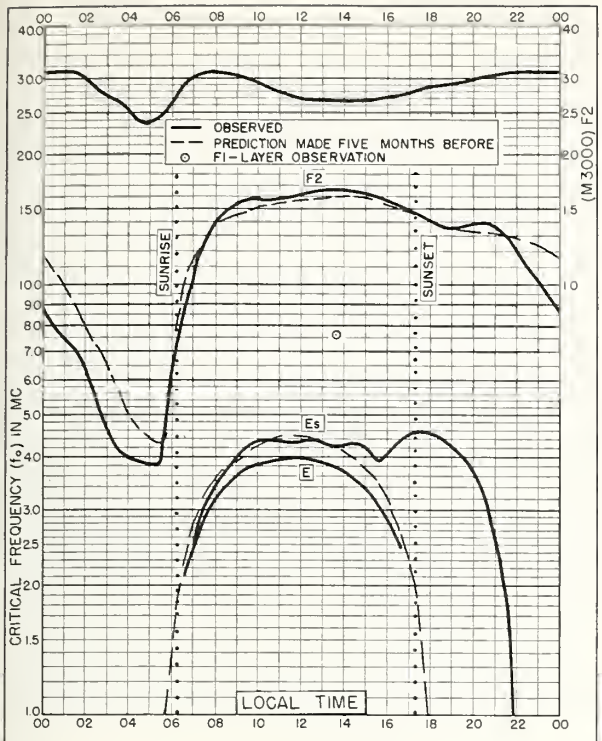


Fig. 9. MAUI, HAWAII
20.8°N, 156.5°W NOVEMBER 1958

NBS 503

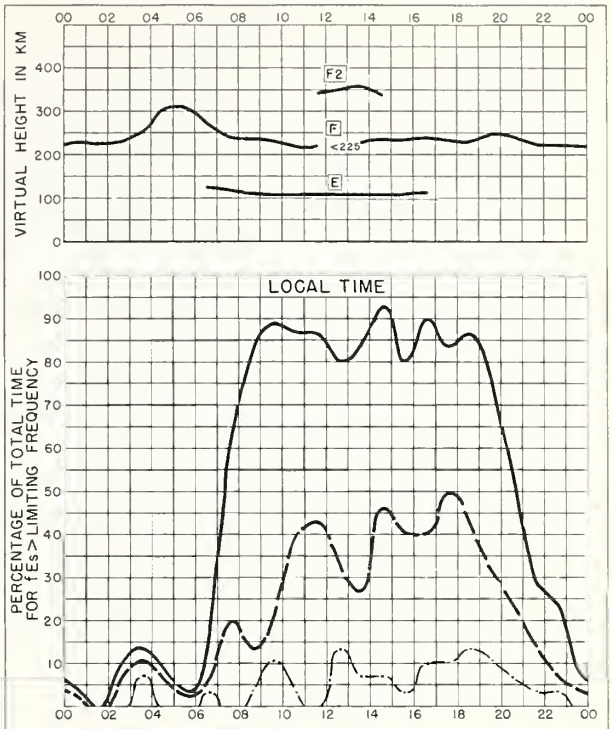


Fig. 10. MAUI, HAWAII NOVEMBER 1958

NBS 490

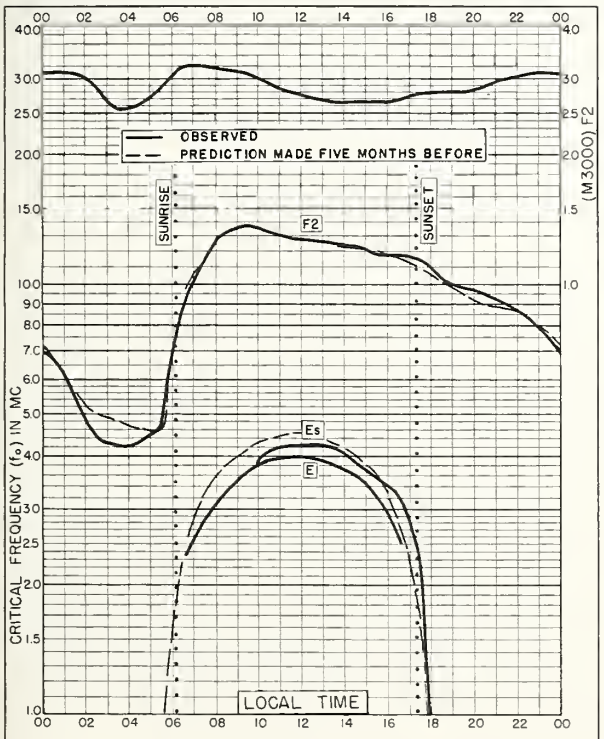


Fig. 11. PUERTO RICO, W. I.
18.5°N, 67.2°W NOVEMBER 1958

NBS 503

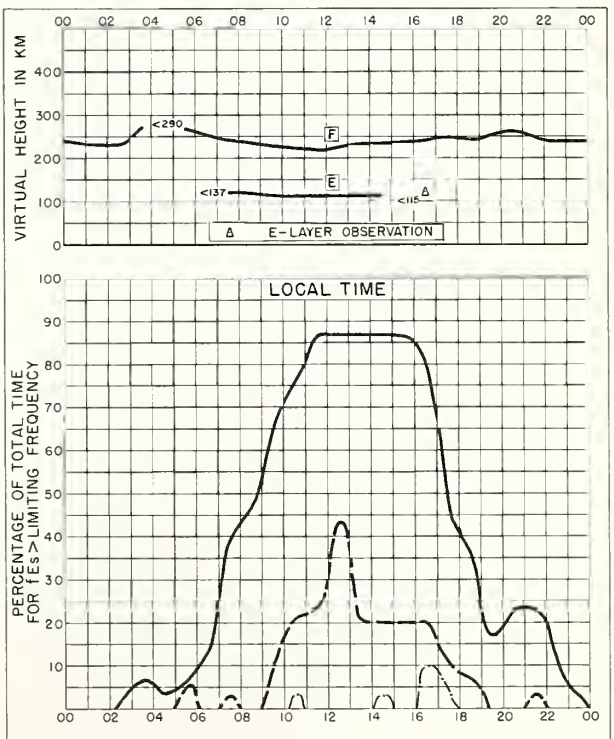


Fig. 12. PUERTO RICO, W. I. NOVEMBER 1958

NBS 490

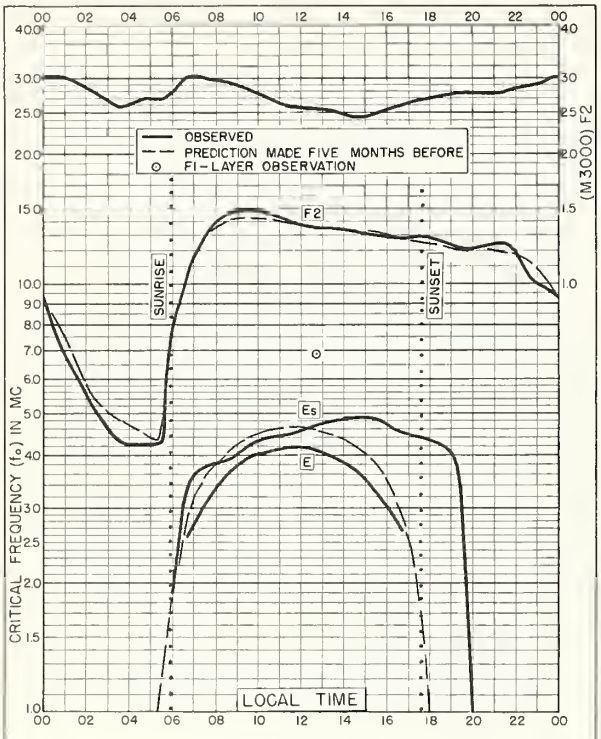


Fig. 13. PANAMA CANAL ZONE
9.4°N, 79.9°W NOVEMBER 1958

NBS 503

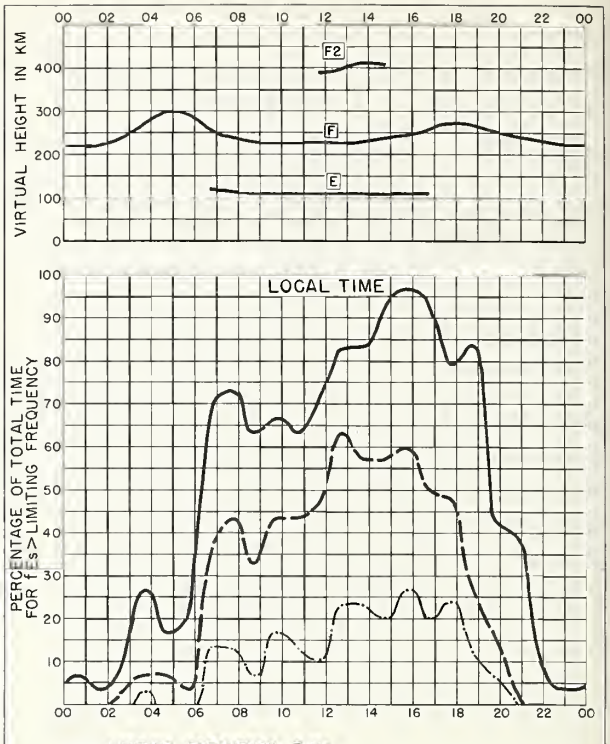


Fig. 14. PANAMA CANAL ZONE NOVEMBER 1958

NBS 490

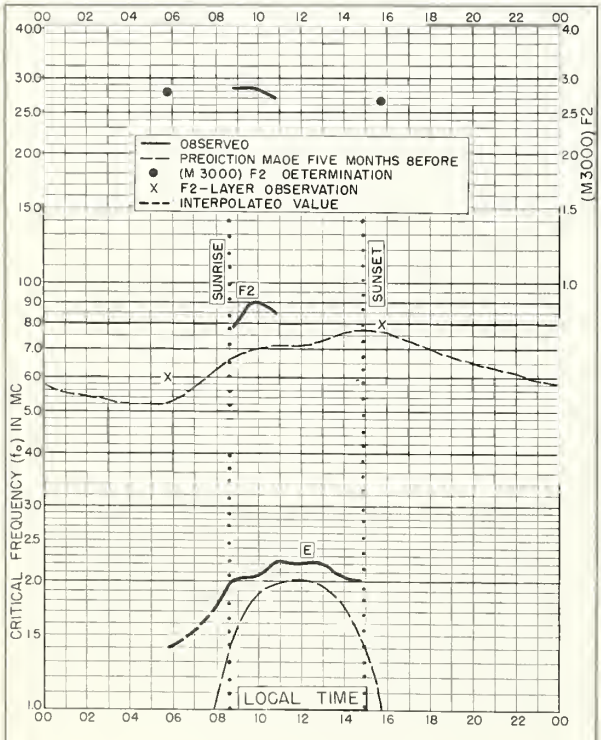


Fig. 15. FLETCHERS ICE I.
78.0°N, 122.4°W OCTOBER 1958

NBS 503

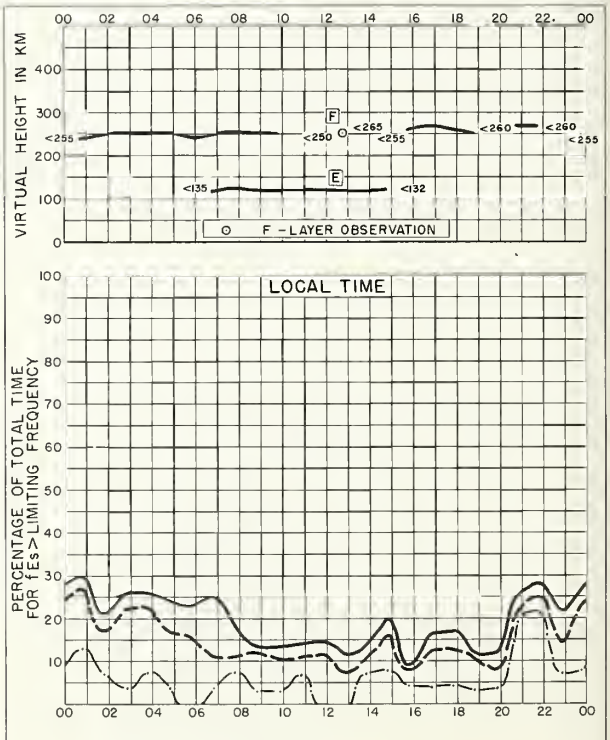


Fig. 16. FLETCHERS ICE I. OCTOBER 1958

NBS 490

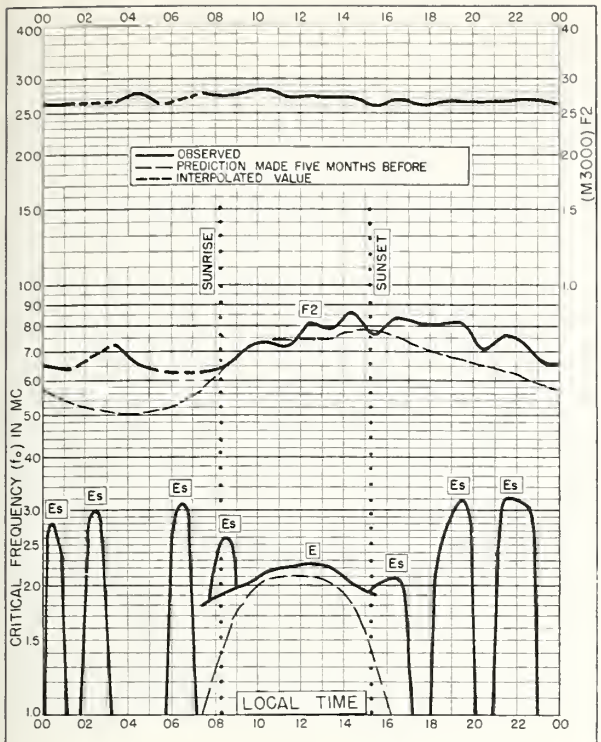


Fig. 17. THULE, GREENLAND
76.6°N, 68.7°W OCTOBER 1958

NBS 503

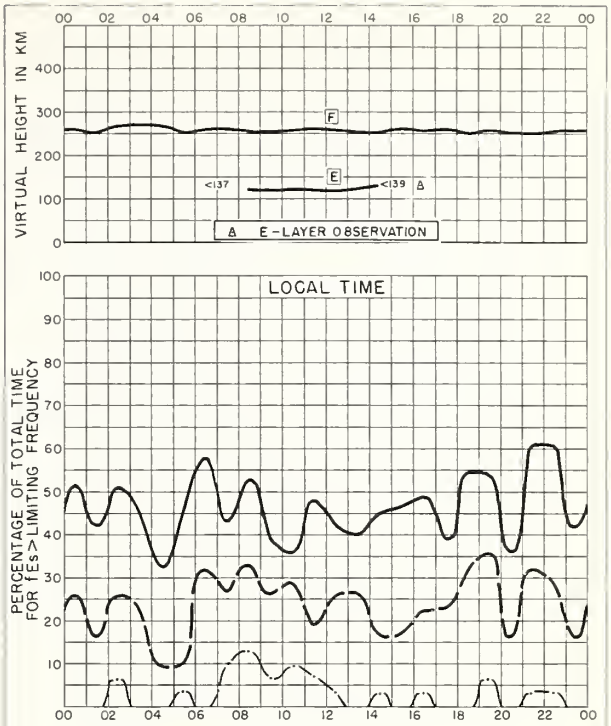


Fig. 18. THULE, GREENLAND OCTOBER 1958

NBS 490

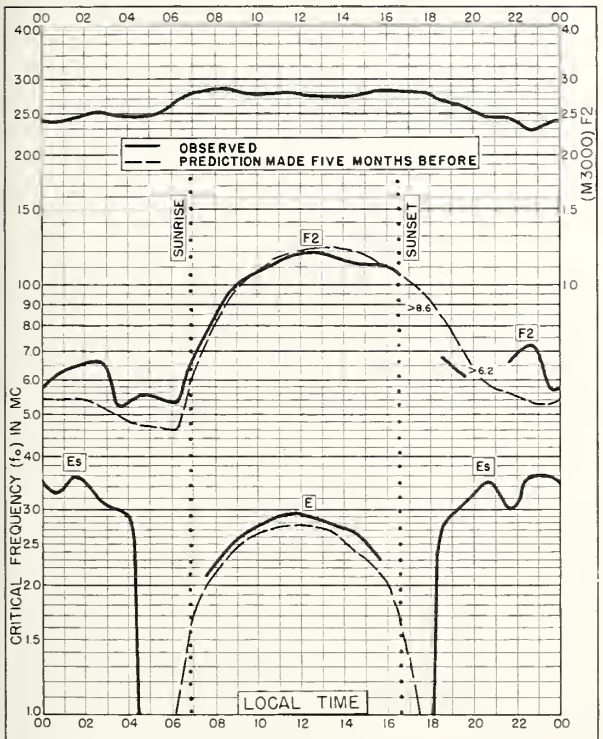


Fig. 19. REYKJAVIK, ICELAND
64.1°N, 21.8°W OCTOBER 1958

NBS 503

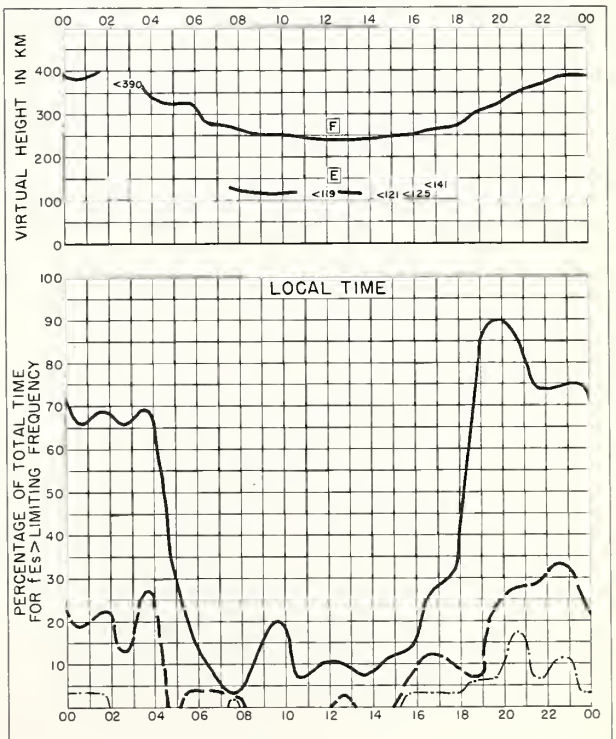


Fig. 20. REYKJAVIK, ICELAND OCTOBER 1958

NBS 490

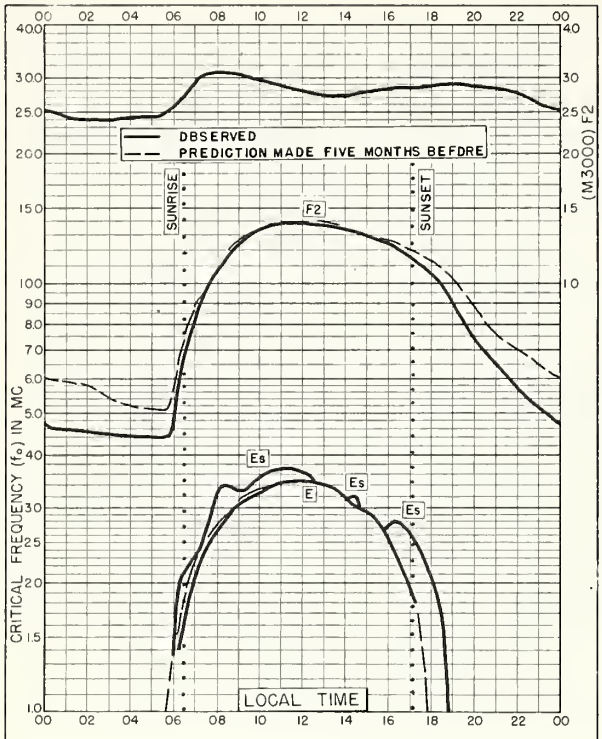


Fig. 21. ADAK, ALASKA
51.9°N, 176.6°W OCTOBER 1958

NBS 503

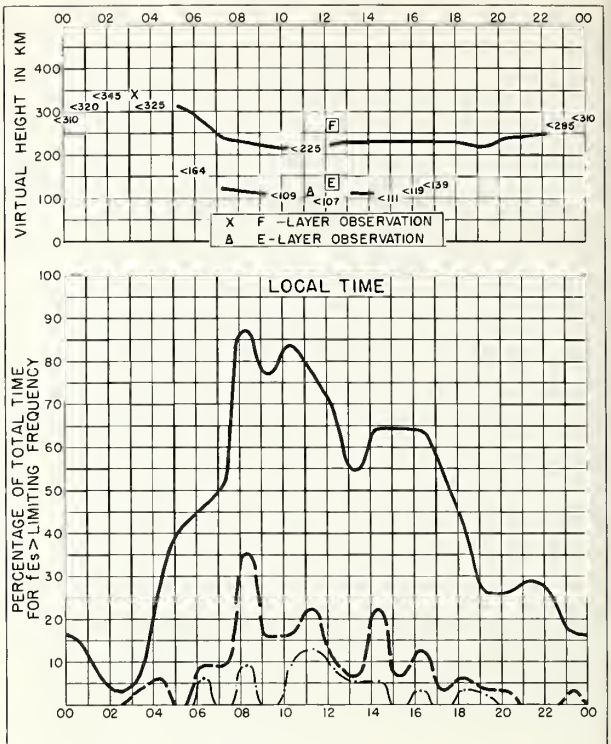


Fig. 22. ADAK, ALASKA OCTOBER 1958

NBS 490

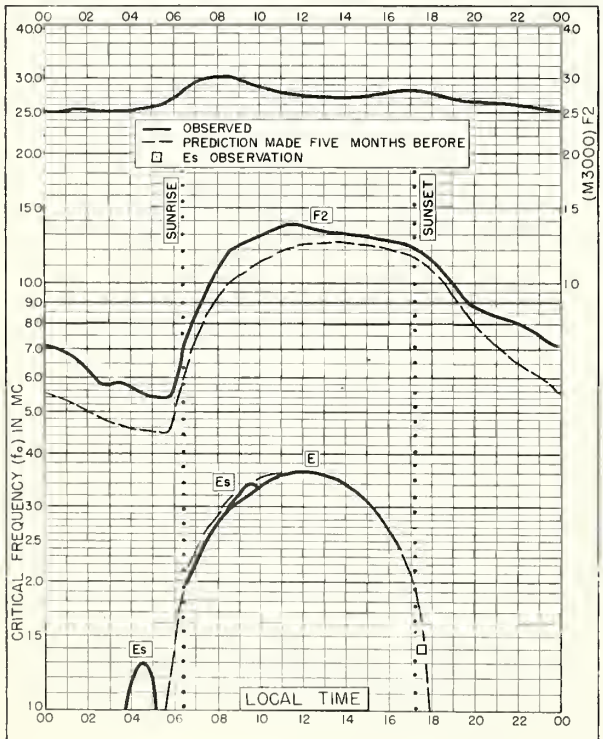
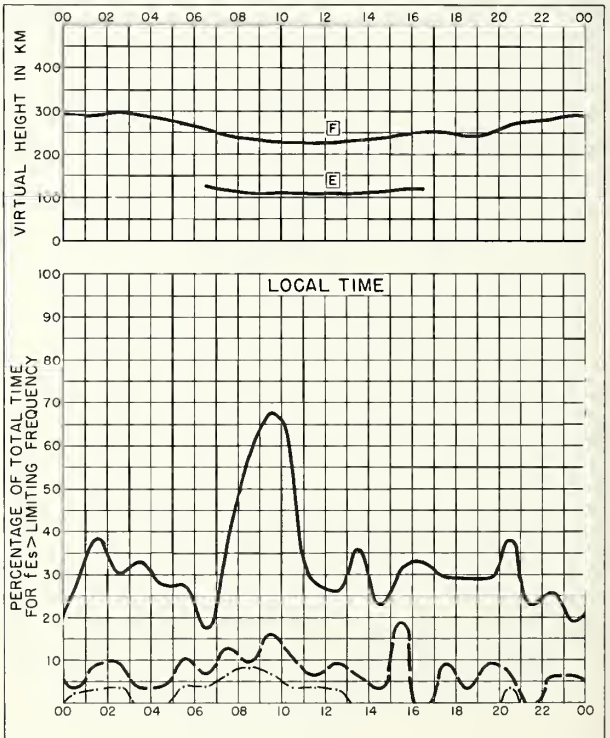


Fig. 23. ST. JOHN'S, NEWFOUNDLAND
47.6°N, 52.7°W OCTOBER 1958

NBS 503



OCTOBER 1958

Fig. 24. ST. JOHN'S, NEWFOUNDLAND

NBS 490

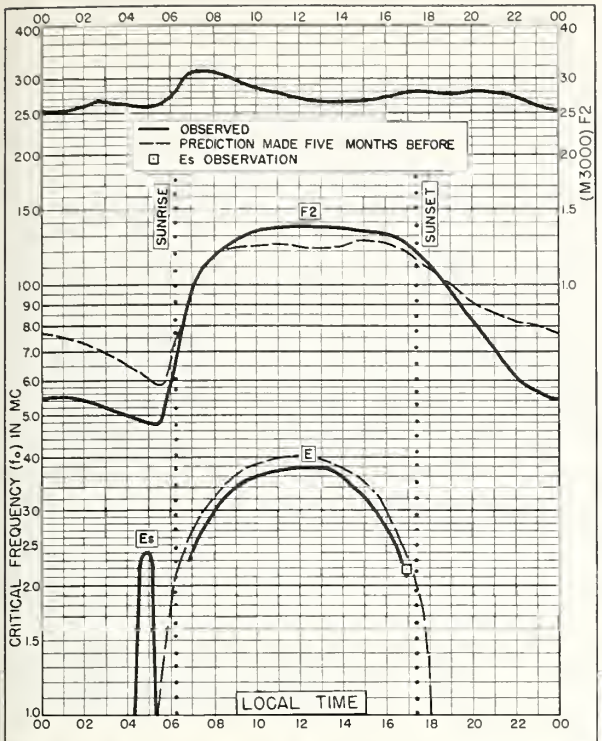
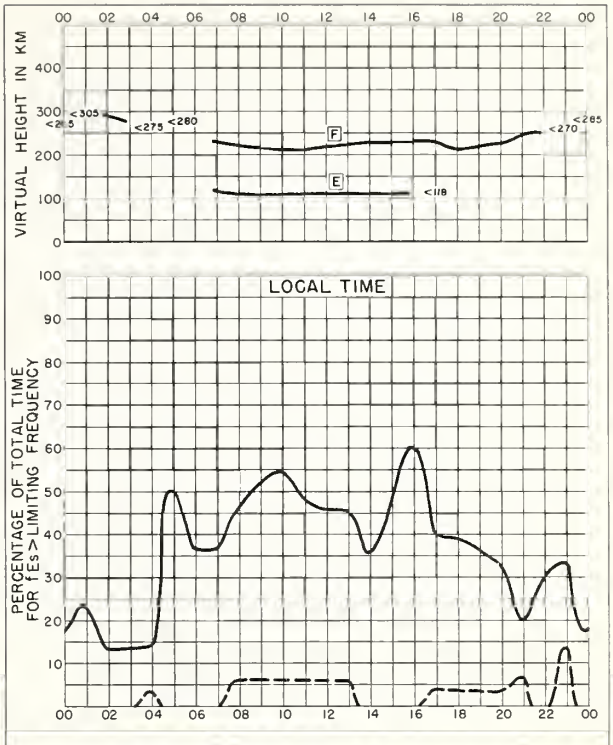


Fig. 25. SAN FRANCICO, CALIFORNIA
37.4°N, 122.2°W OCTOBER 1958

NBS 503



OCTOBER 1958

Fig. 26. SAN FRANCISCO, CALIFORNIA

NBS 490

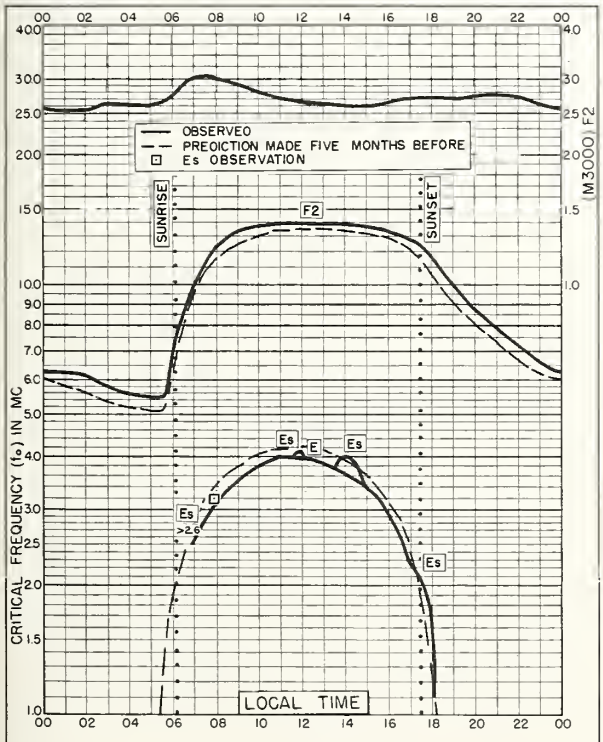
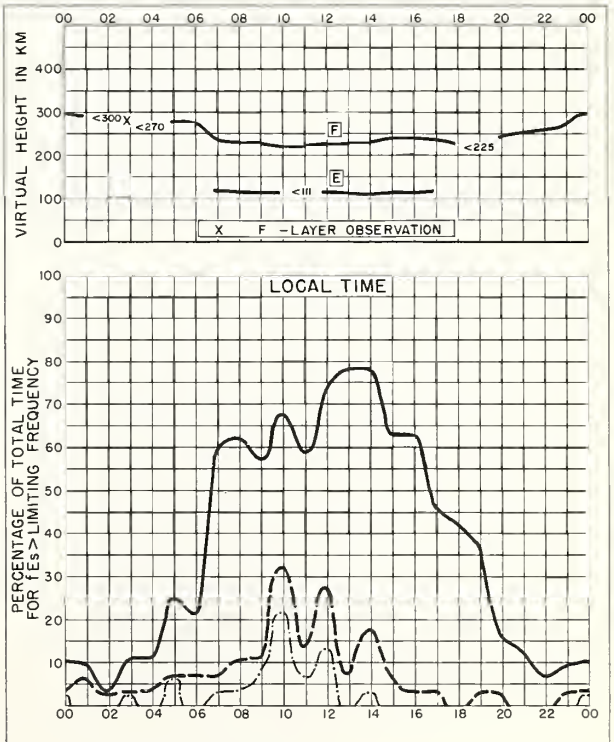


Fig. 27. WHITE SANDS, NEW MEXICO
32.3°N, 106.5°W OCTOBER 1958

NBS 503



OCTOBER 1958

Fig. 28. WHITE SANDS, NEW MEXICO

NBS 490

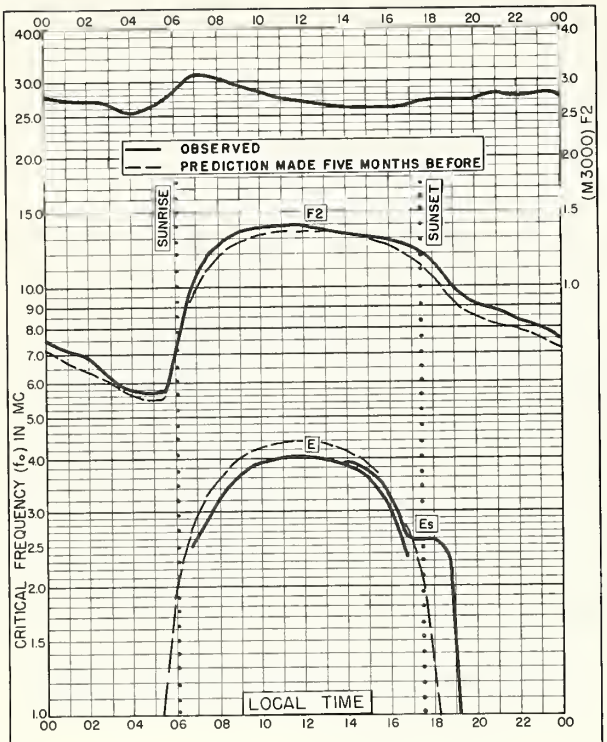


Fig. 29. GRAND BAHAMA I.
26.6°N, 78.2°W OCTOBER 1958

NBS 505

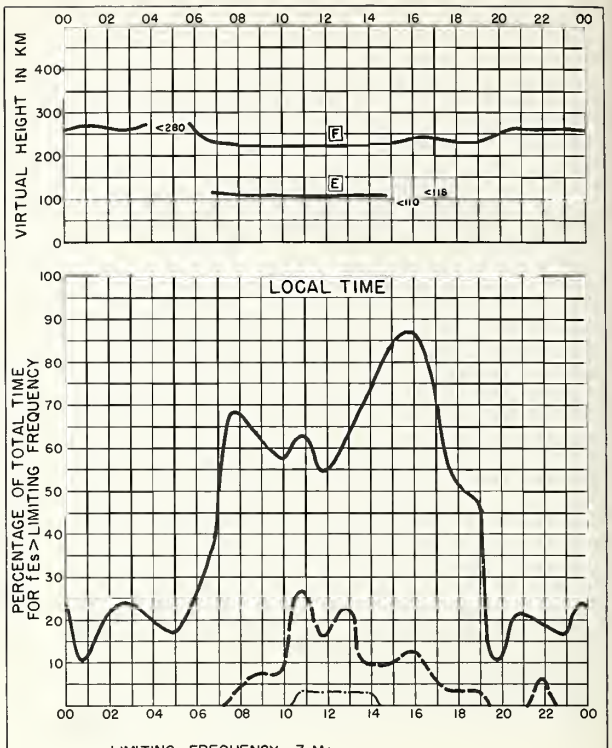


Fig. 30. GRAND BAHAMA I. OCTOBER 1958

NBS 490

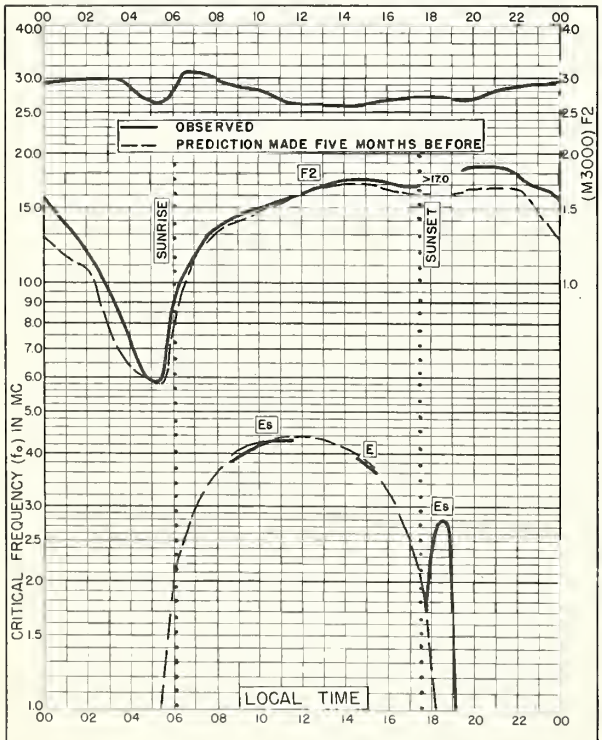


Fig. 31. OKINAWA I.
26.3°N, 127.8°E OCTOBER 1958

NBS 503

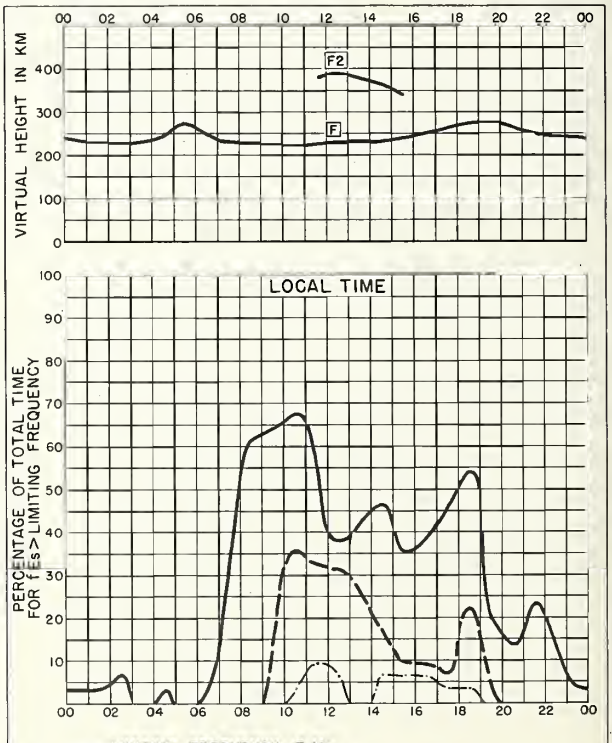


Fig. 32. OKINAWA I. OCTOBER 1958

NBS 490

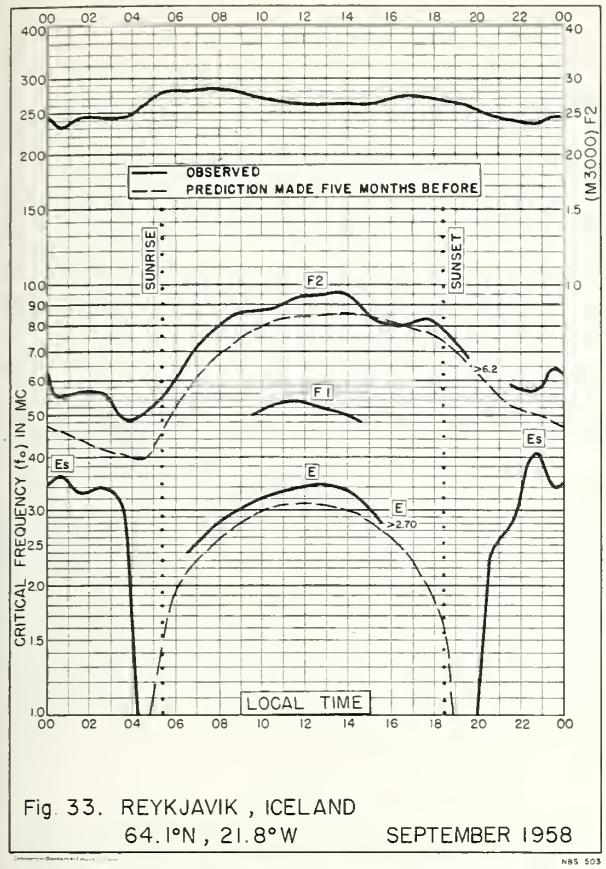


Fig. 33. REYKJAVIK, ICELAND
64.1°N, 21.8°W SEPTEMBER 1958

NBS 503

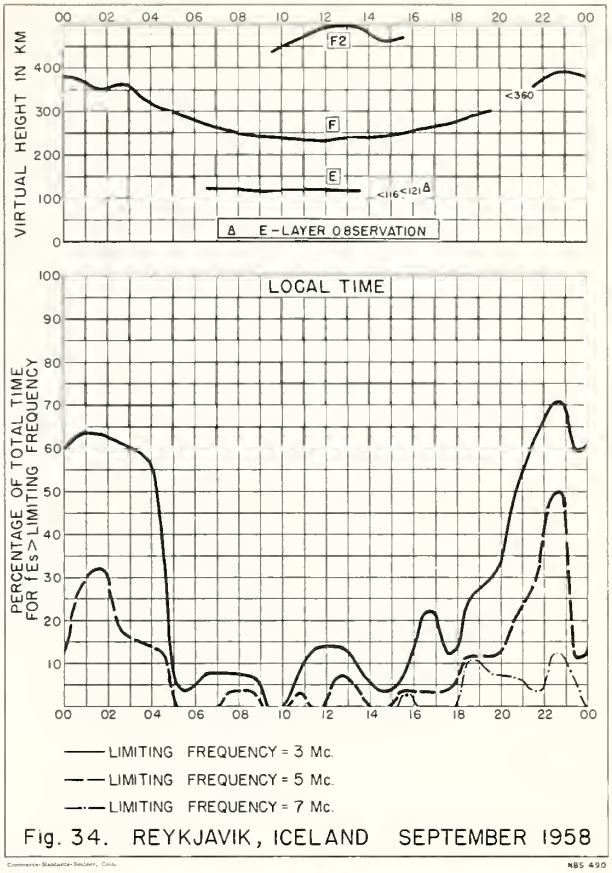


Fig. 34. REYKJAVIK, ICELAND SEPTEMBER 1958

NBS 490

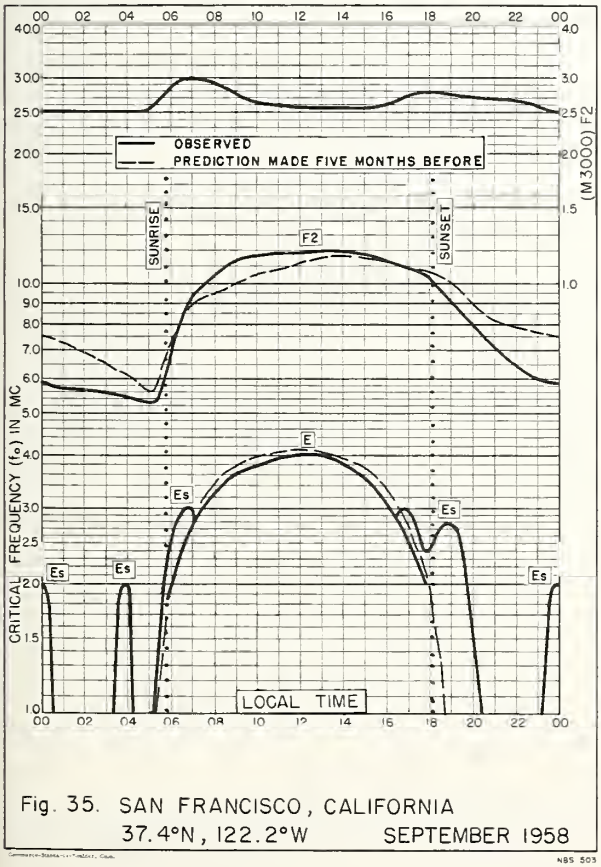


Fig. 35. SAN FRANCISCO, CALIFORNIA
37.4°N, 122.2°W SEPTEMBER 1958

NBS 503

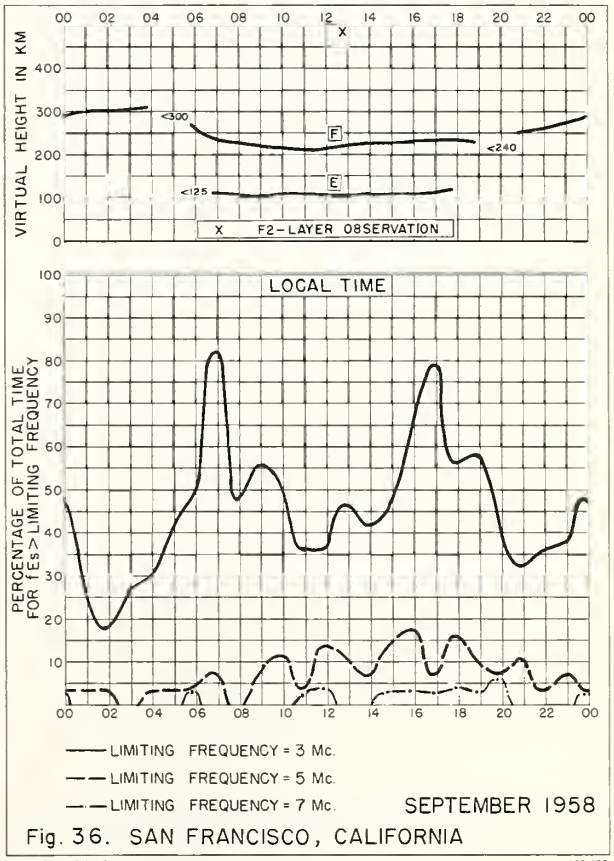


Fig. 36. SAN FRANCISCO, CALIFORNIA SEPTEMBER 1958

NBS 490

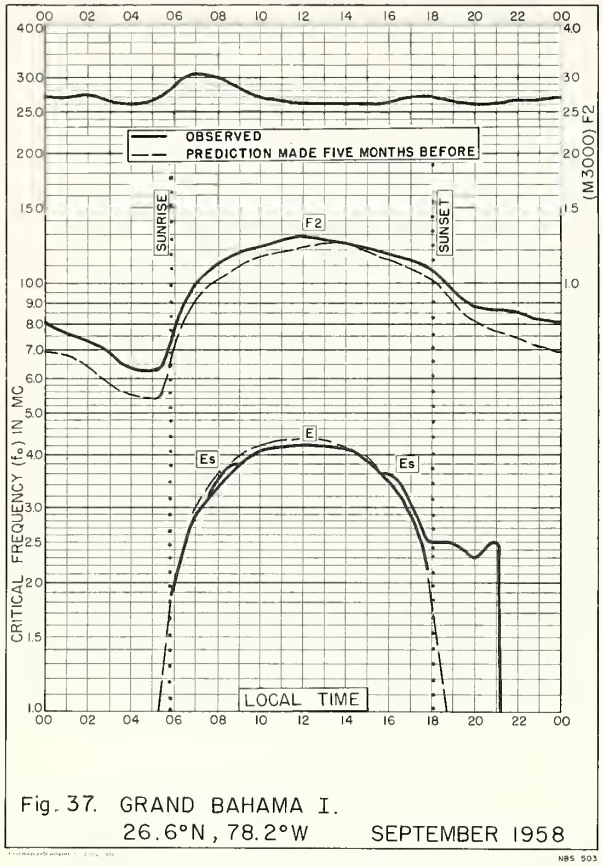


Fig. 37. GRAND BAHAMA I.
26.6°N, 78.2°W SEPTEMBER 1958

NBS 503

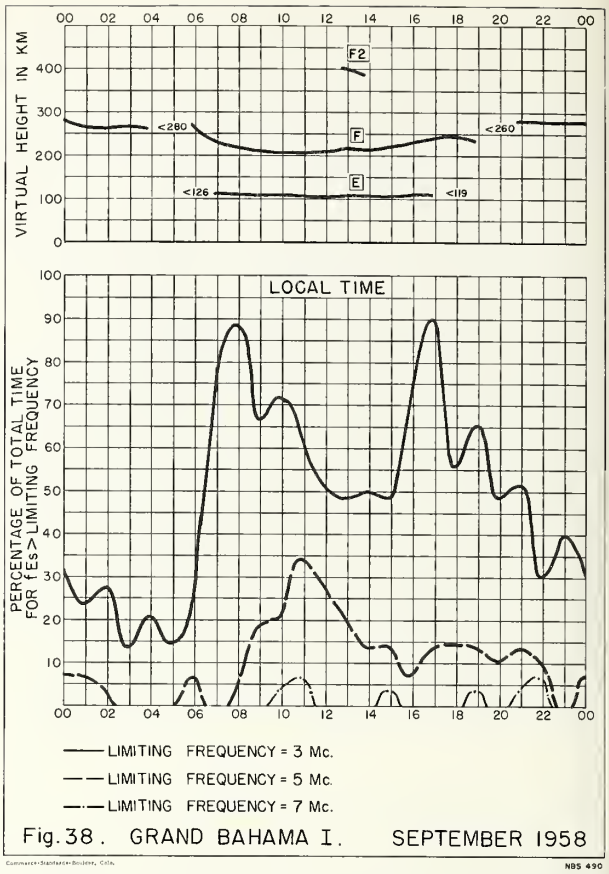


Fig. 38. GRAND BAHAMA I. SEPTEMBER 1958

NBS 490

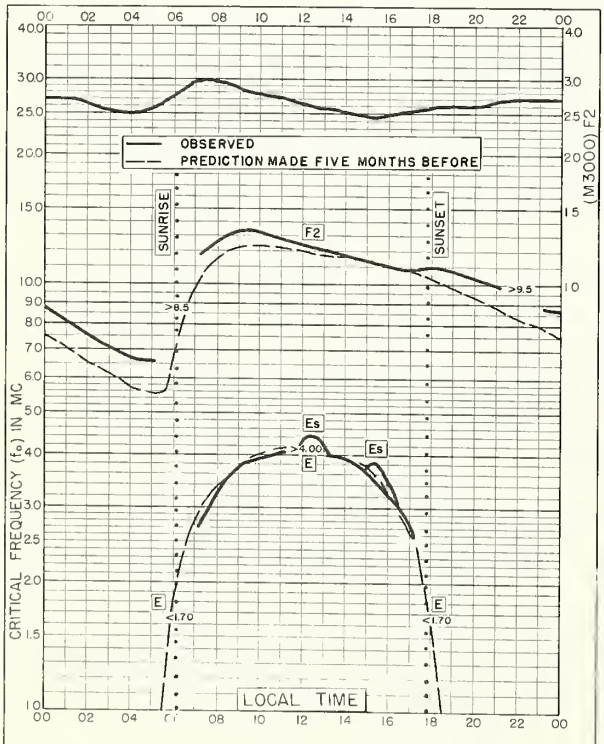


Fig. 39. BRISBANE, AUSTRALIA
27.5°S, 152.9°E SEPTEMBER 1958

NBS 503

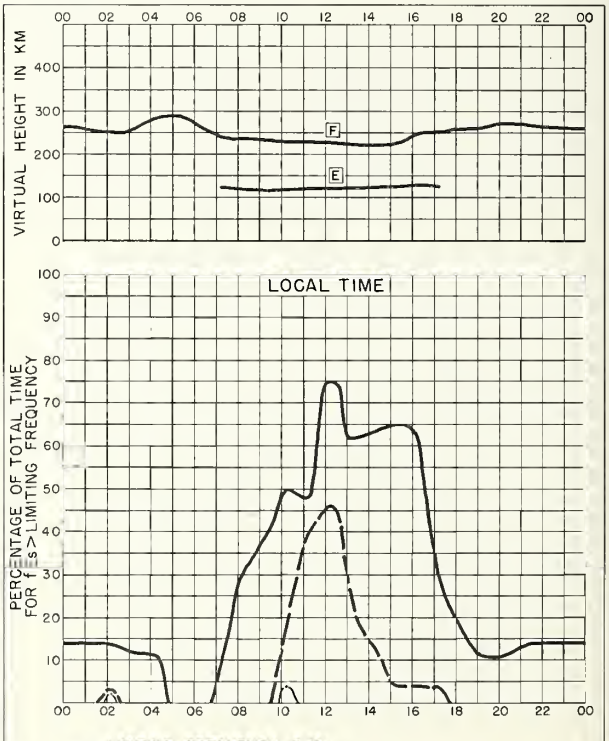


Fig. 40. BRISBANE, AUSTRALIA SEPTEMBER 1958

NBS 490

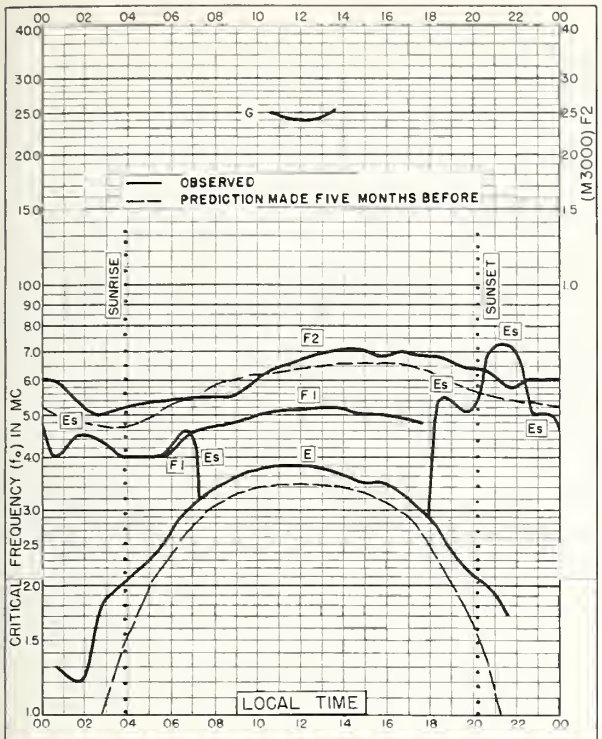


Fig. 41. BAKER LAKE, CANADA
64.3°N, 96.0°W AUGUST 1958

NBS 503

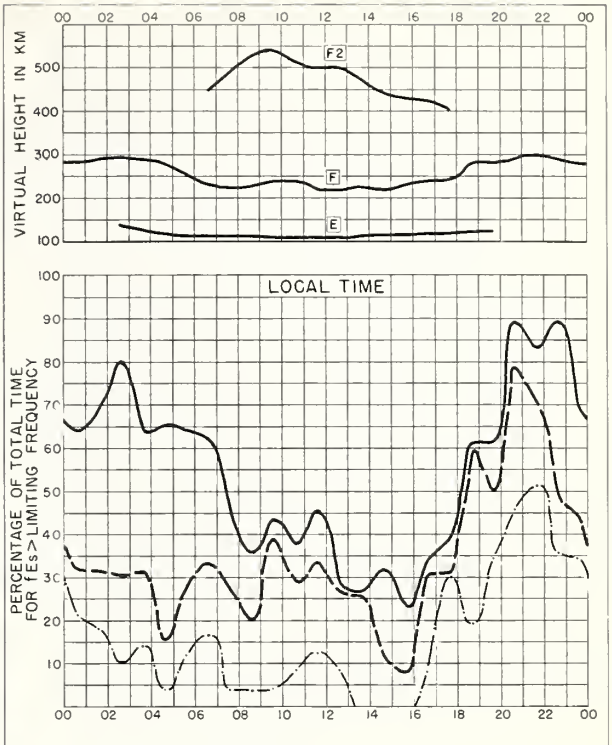


Fig. 42. BAKER LAKE, CANADA AUGUST 1958

NBS 490

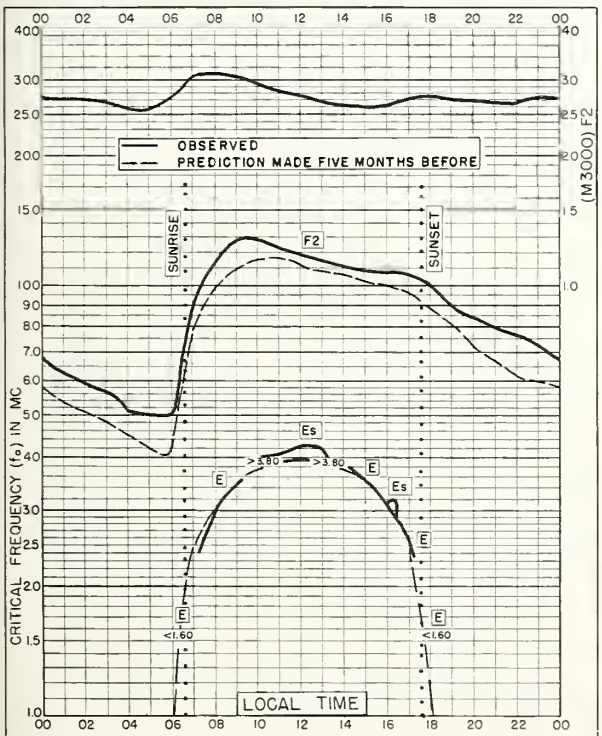


Fig. 43. BRISBANE, AUSTRALIA
27.5°S, 152.9°E AUGUST 1958

NBS 503

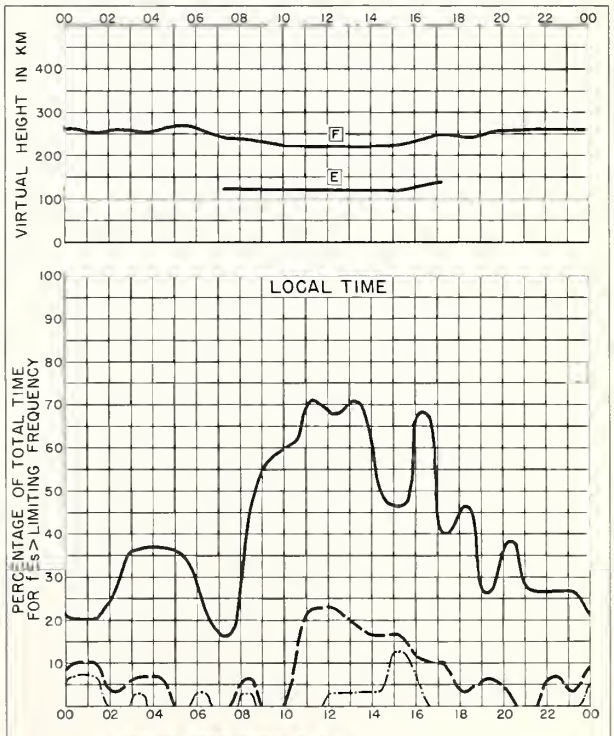


Fig. 44. BRISBANE, AUSTRALIA AUGUST 1958

NBS 490

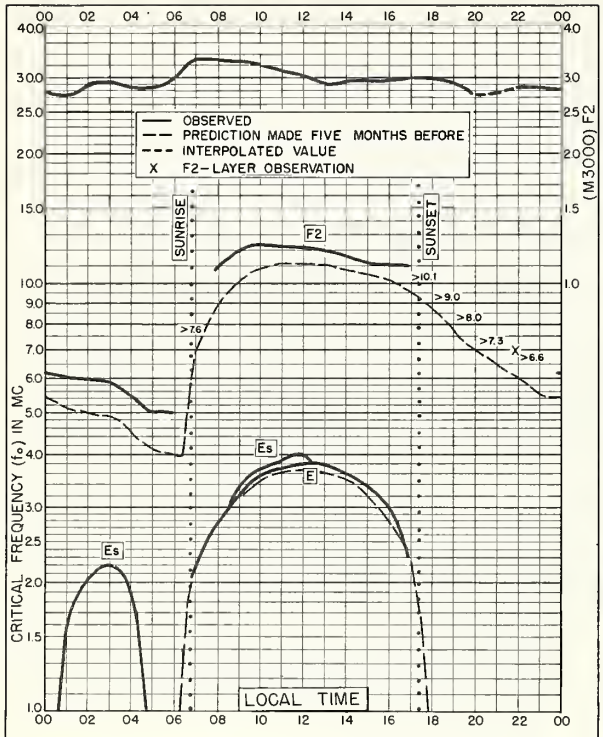


Fig. 45. CANBERRA, AUSTRALIA
35.3°S, 149.0°E AUGUST 1958

NBS 503

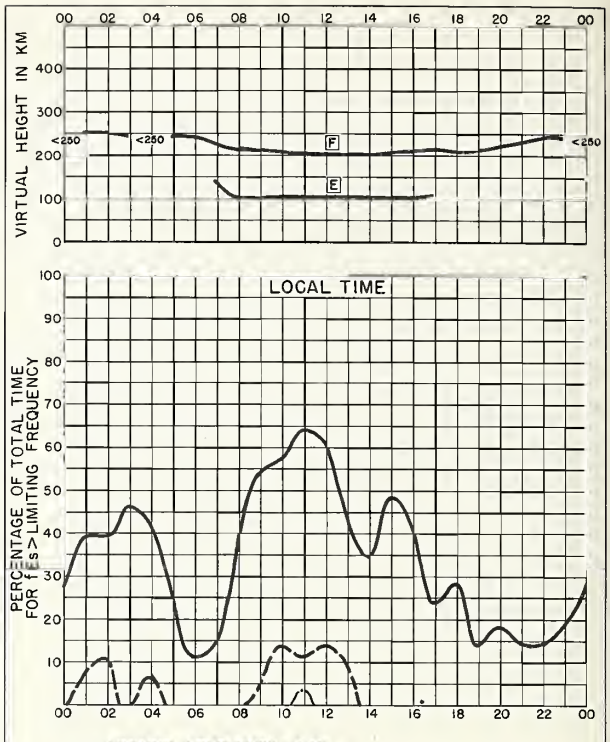


Fig. 46. CANBERRA, AUSTRALIA AUGUST 1958

NBS 490

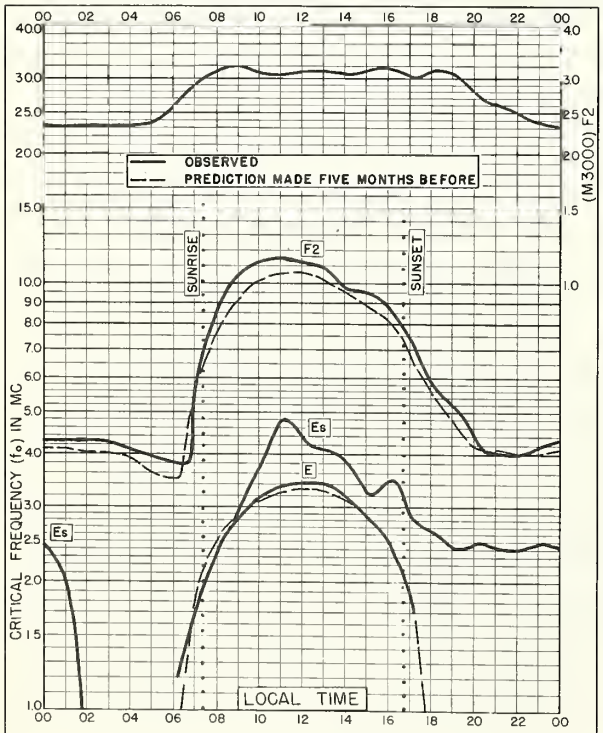


Fig. 47. FALKLAND IS.
51.7°S, 57.8° W AUGUST 1958

NBS 503

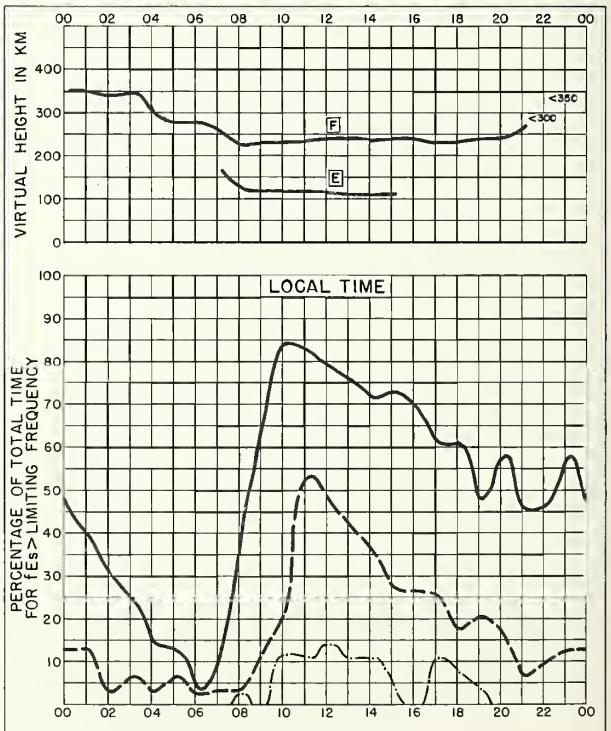


Fig. 48. FALKLAND IS. AUGUST 1958

NBS 490

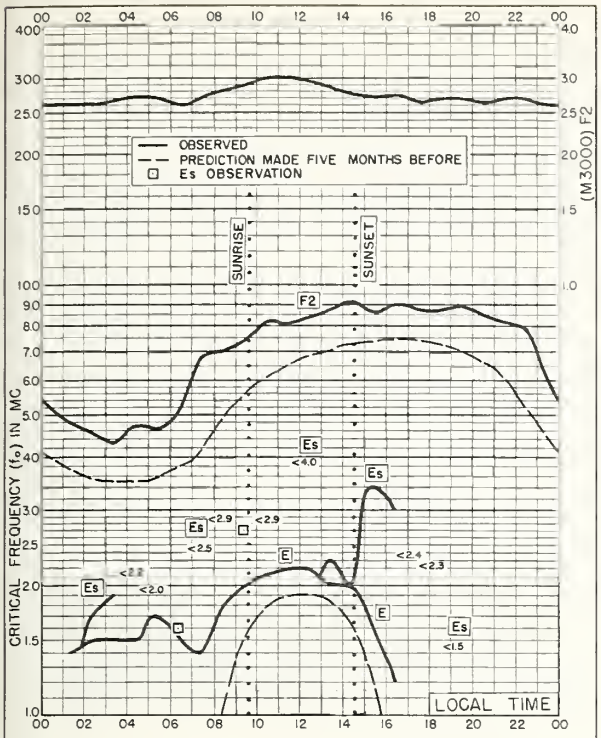


Fig. 49. CAPE HALLETT
72.3°S, 170.3°E AUGUST 1958

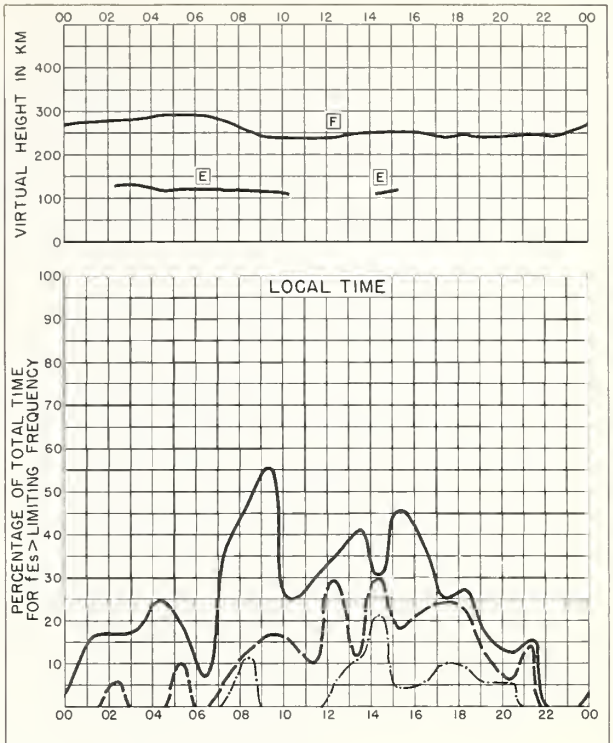


Fig. 50. CAPE HALLETT AUGUST 1958

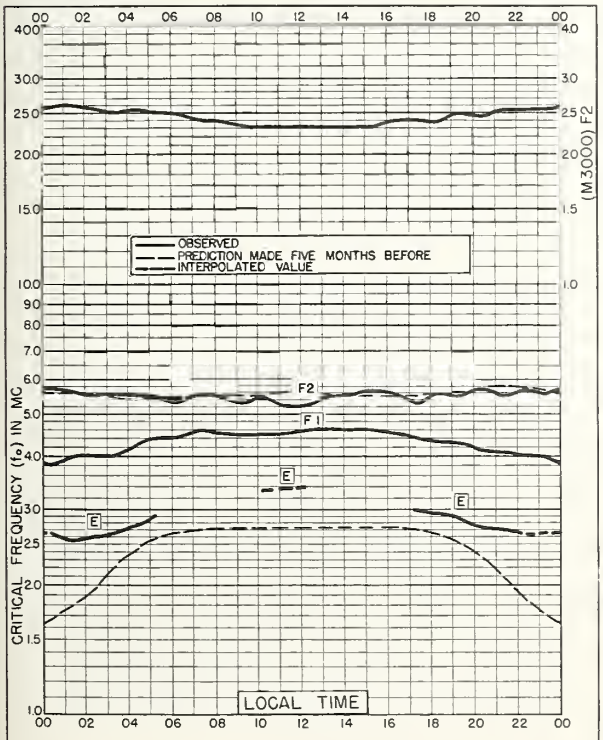


Fig. 51. FLETCHERS ICE I.
79.0°N, 116.9°W JULY 1958

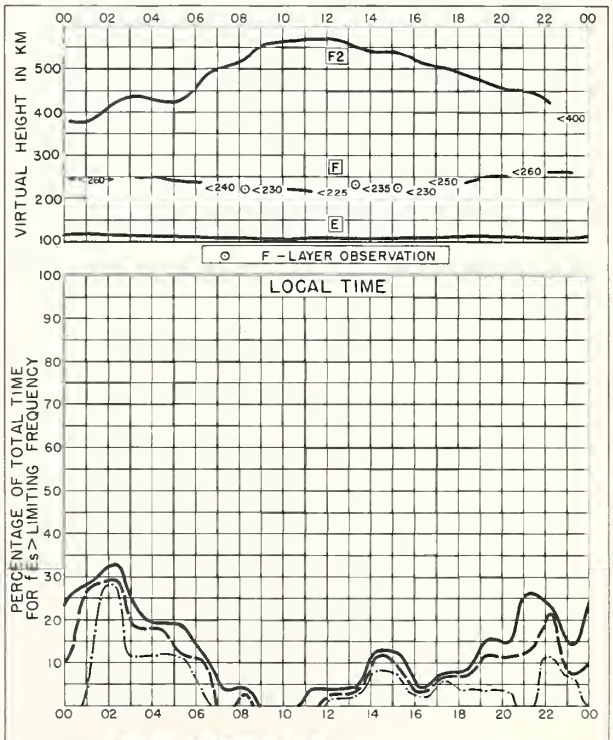


Fig. 52. FLETCHERS ICE I. JULY 1958

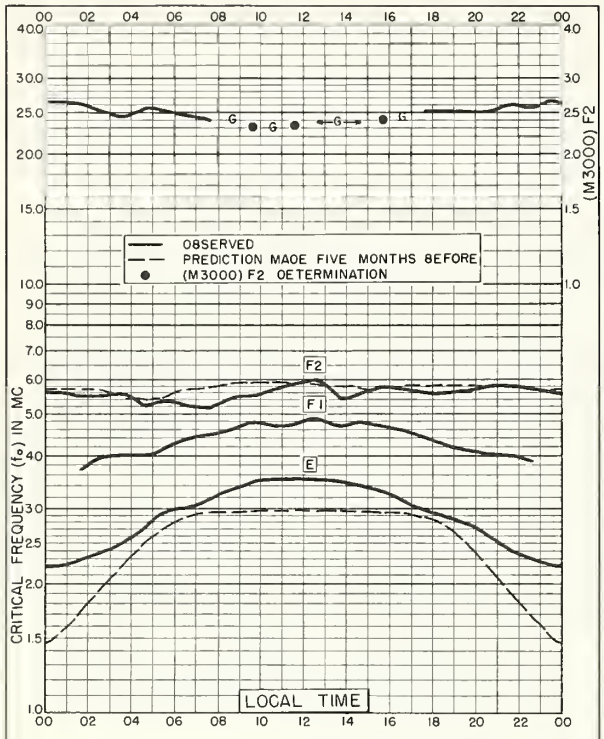


Fig. 53. RESOLUTE BAY, CANADA
74.7°N, 94.9°W JULY 1958

NBS 503

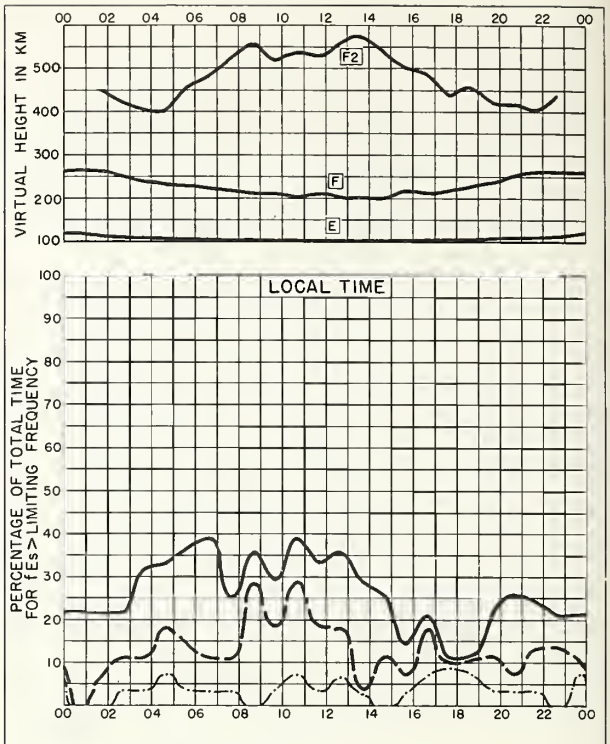


Fig. 54. RESOLUTE BAY, CANADA JULY 1958

NBS 490

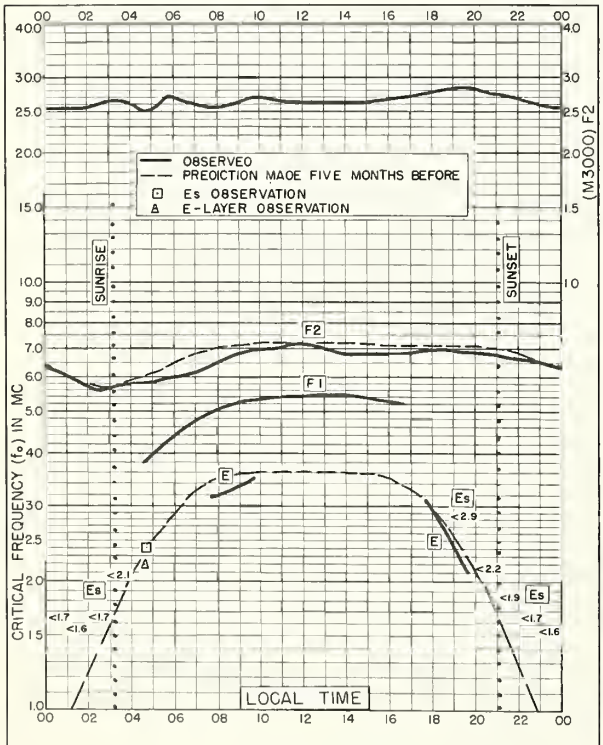


Fig. 55. NURMIJARVI, FINLAND
60.5°N, 24.6°E JULY 1958

NBS 503

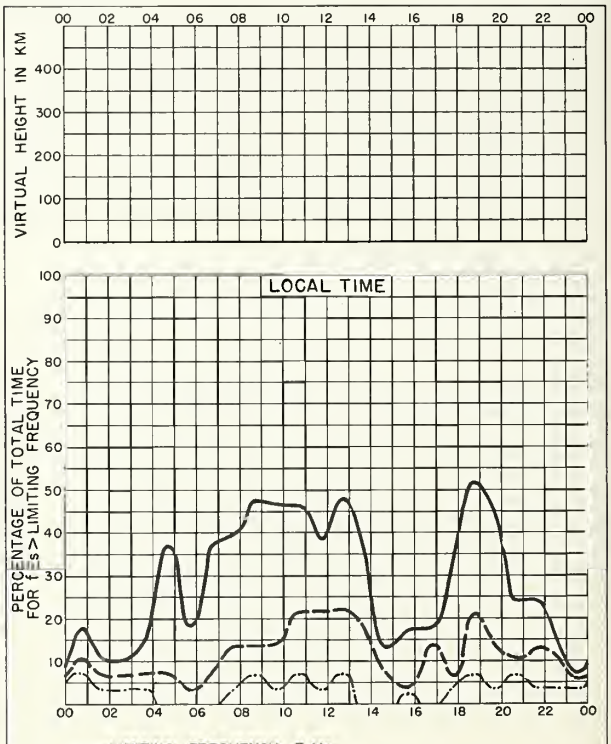


Fig. 56. NURMIJARVI, FINLAND JULY 1958

NBS 490

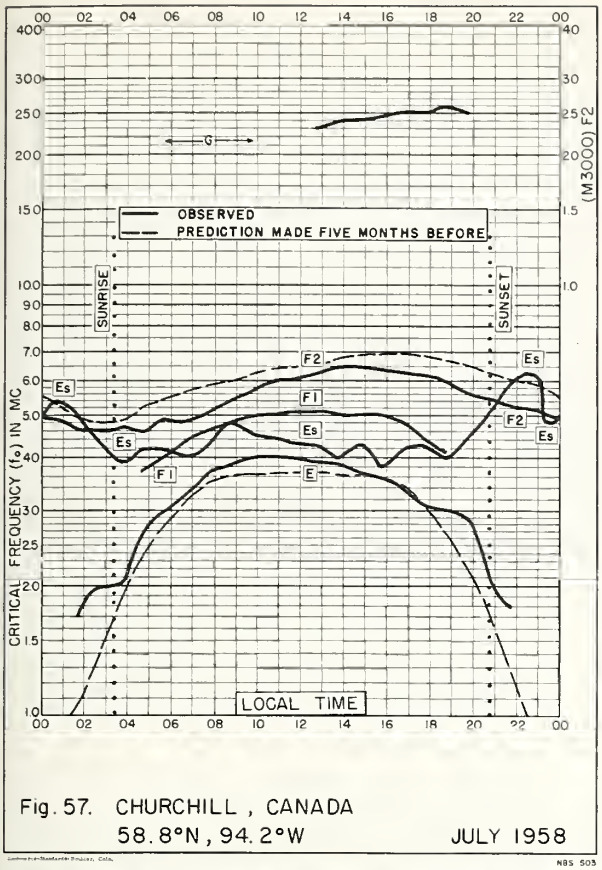


Fig. 57. CHURCHILL , CANADA
58.8°N , 94.2°W JULY 1958

NBS 503

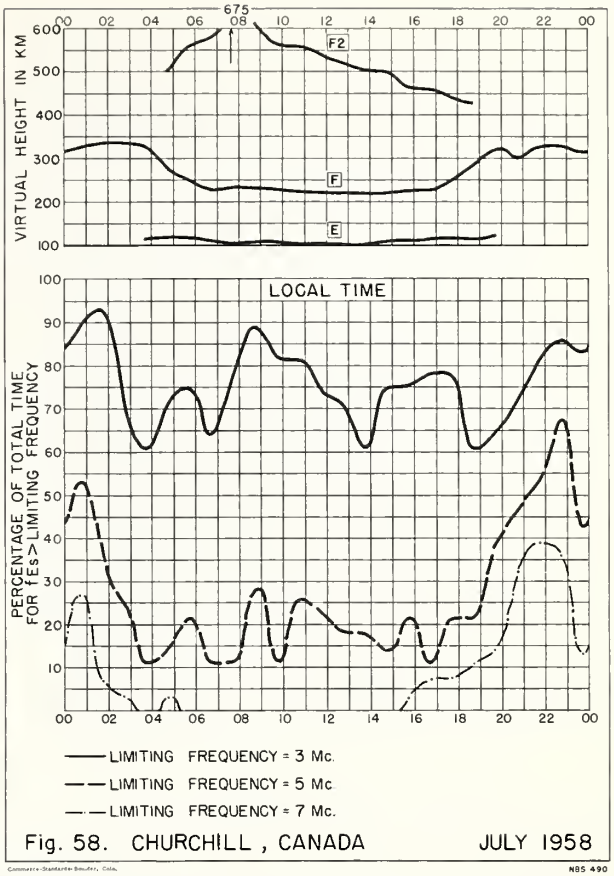


Fig. 58. CHURCHILL , CANADA JULY 1958

NBS 490

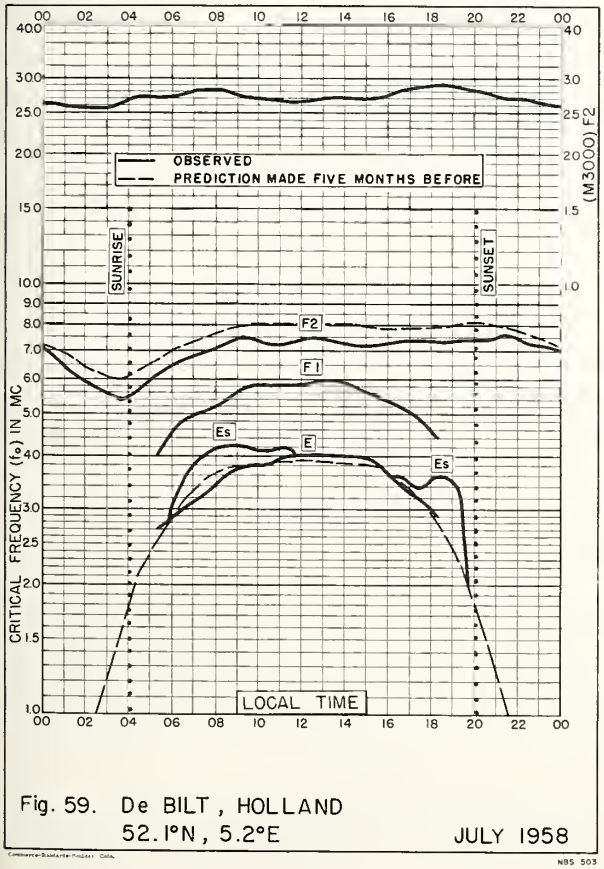


Fig. 59. De BILT , HOLLAND
52.1°N , 5.2°E JULY 1958

NBS 503

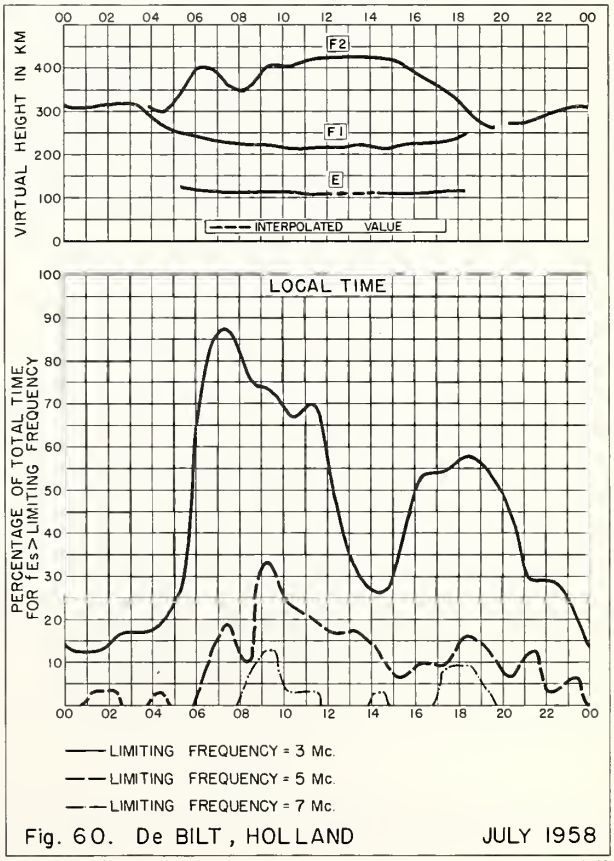


Fig. 60. De BILT , HOLLAND JULY 1958

NBS 490

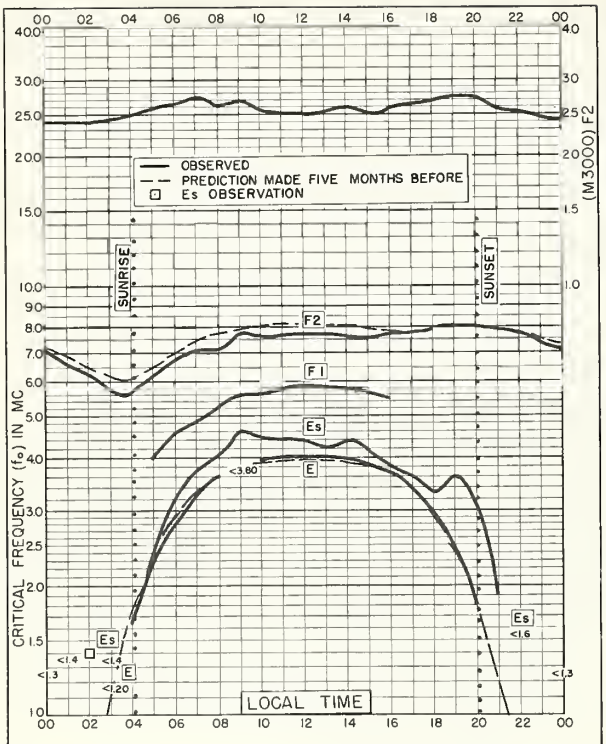


Fig. 61. SLOUGH, ENGLAND
51.5°N, 0.6°W JULY 1958

NBS 503

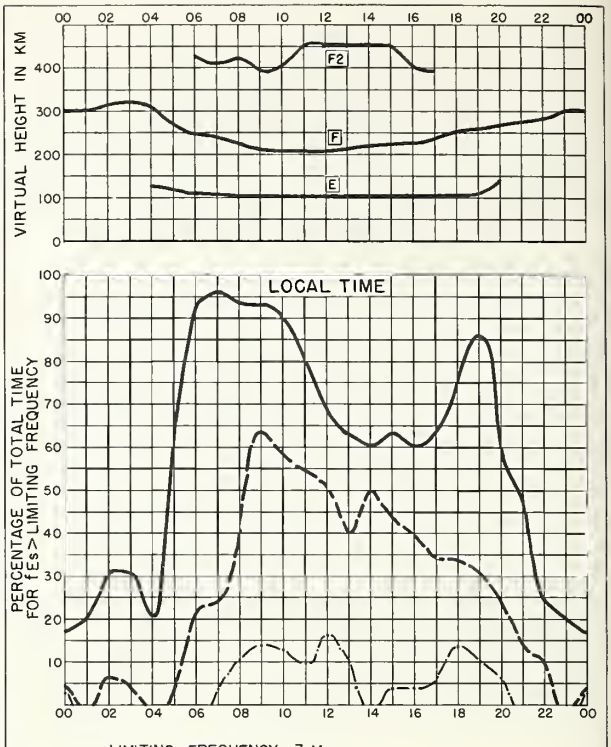


Fig. 62. SLOUGH, ENGLAND JULY 1958

NBS 490

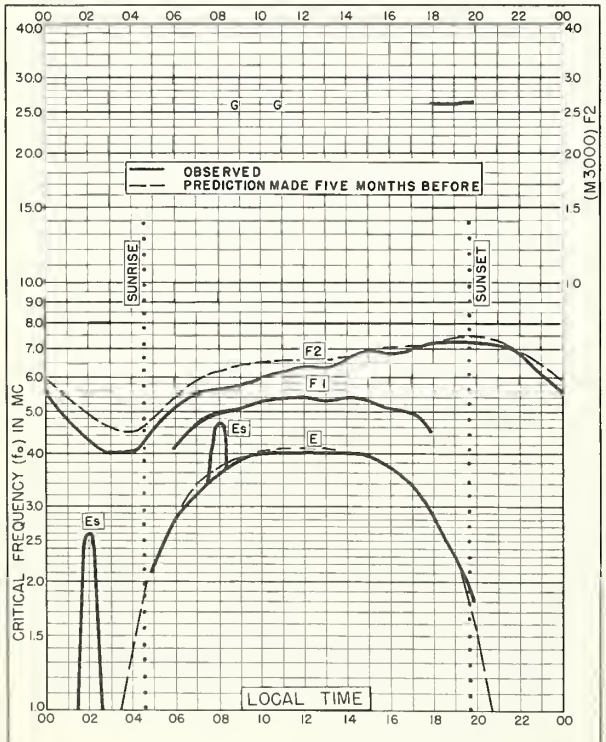


Fig. 63. OTTAWA, CANADA
45.4°N, 75.9°W JULY 1958

NBS 503

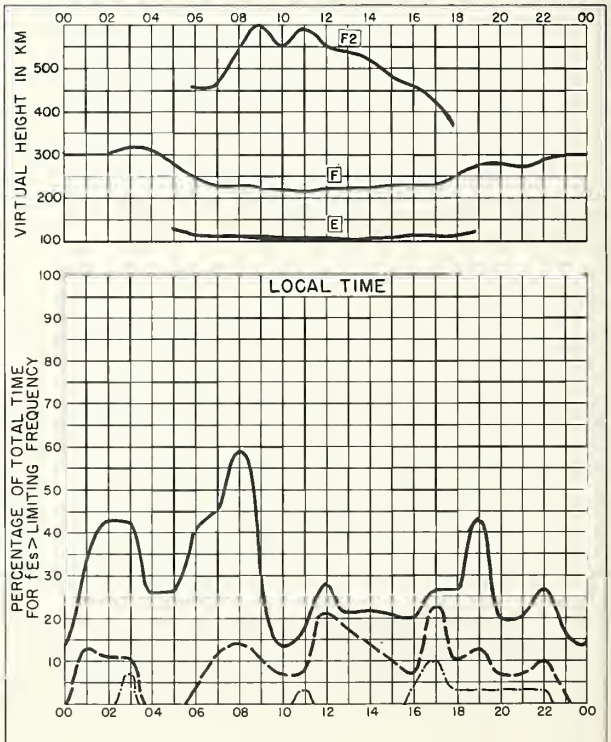


Fig. 64. OTTAWA, CANADA JULY 1958

NBS 490

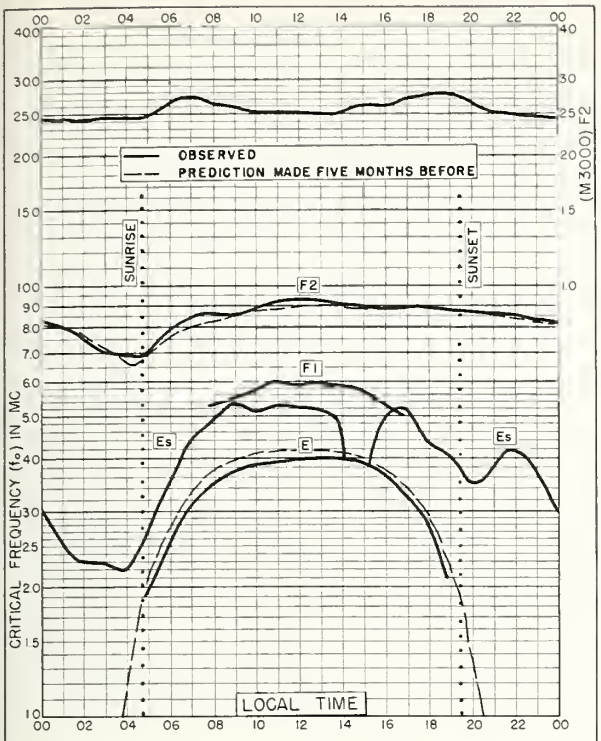


Fig. 65. ROME, ITALY
41.8°N, 12.5°E JULY 1958

NBS 503

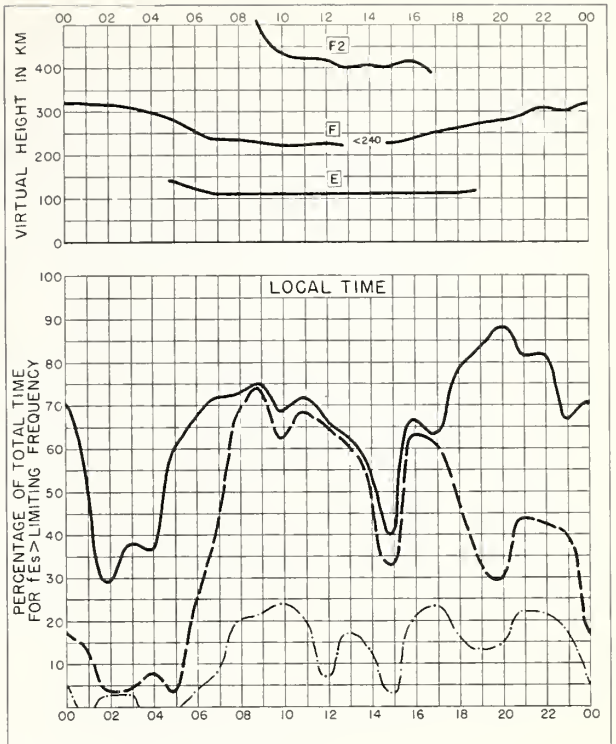


Fig. 66. ROME, ITALY JULY 1958

NBS 490

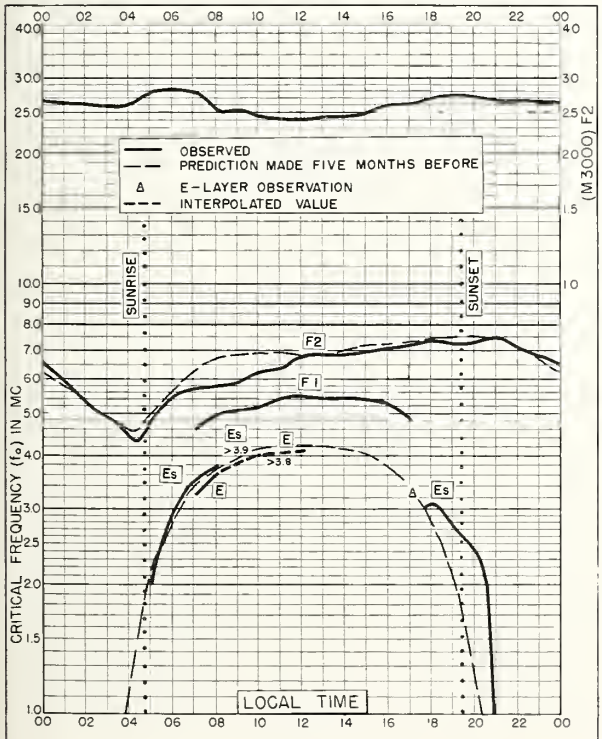


Fig. 67. FT. MONMOUTH, NEW JERSEY
40.4°N, 74.1° W JULY 1958

NBS 503

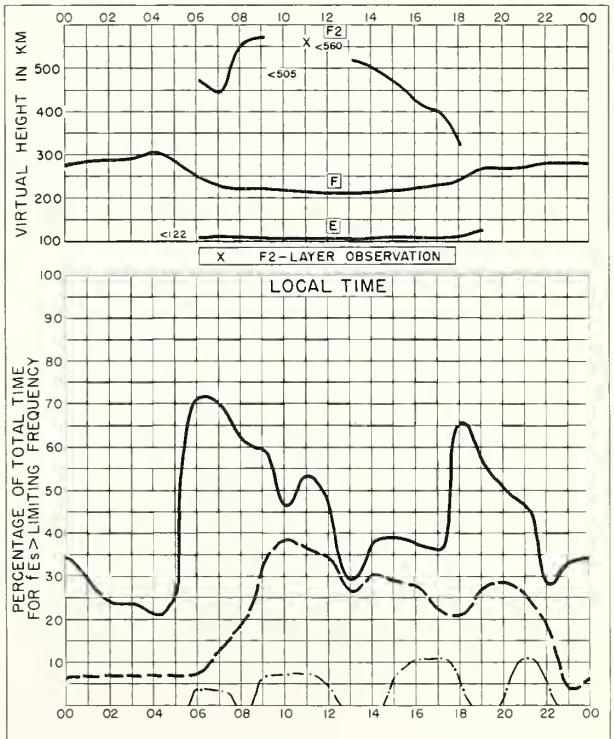


Fig. 68. FT. MONMOUTH, NEW JERSEY JULY 1958

NBS 490

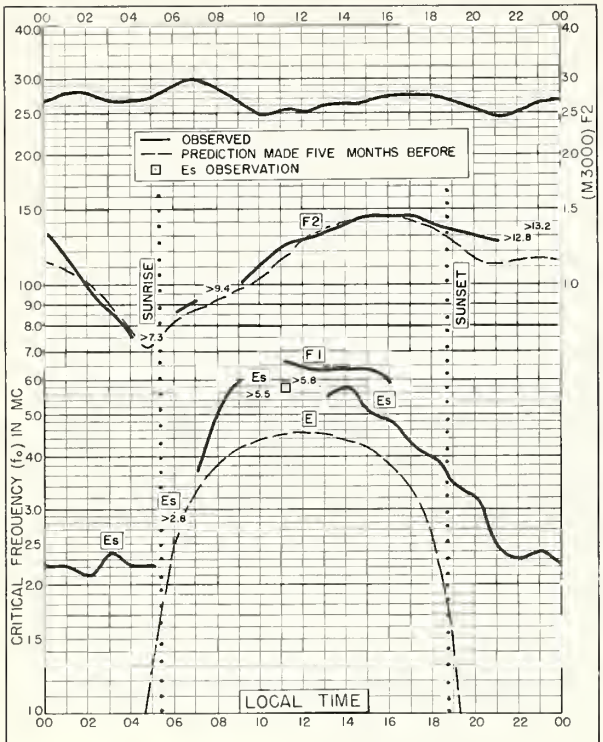


Fig. 69. FORMOSA , CHINA
25.0°N, 121.5°E JULY 1958

NBS 503

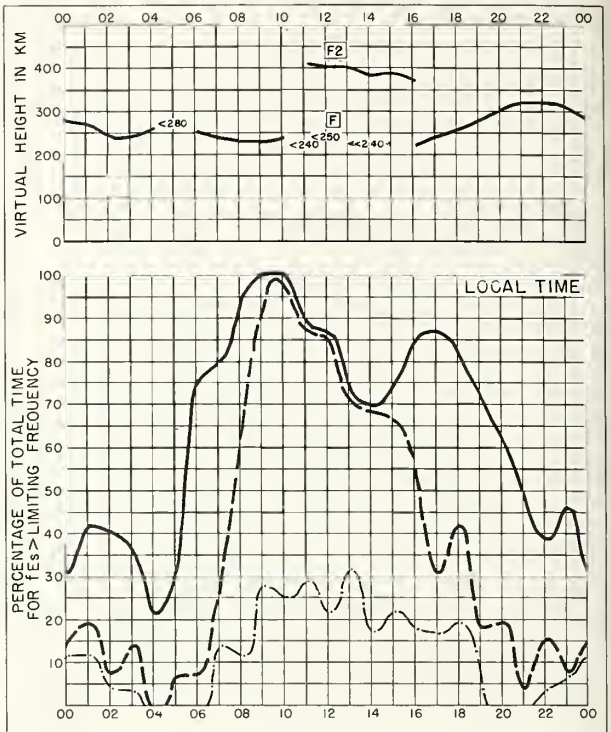


Fig. 70. FORMOSA , CHINA JULY 1958

NBS 490

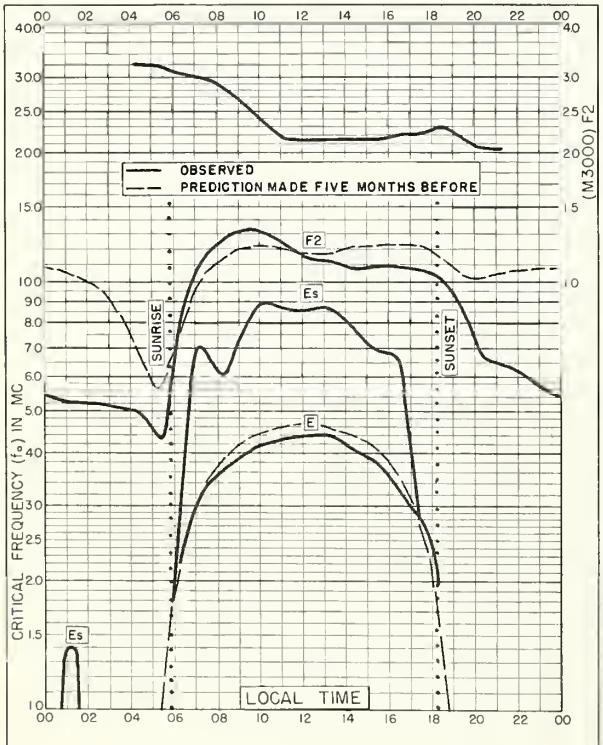


Fig. 71. IBADAN , NIGERIA
7.4°N, 3.9°E JULY 1958

NBS 503

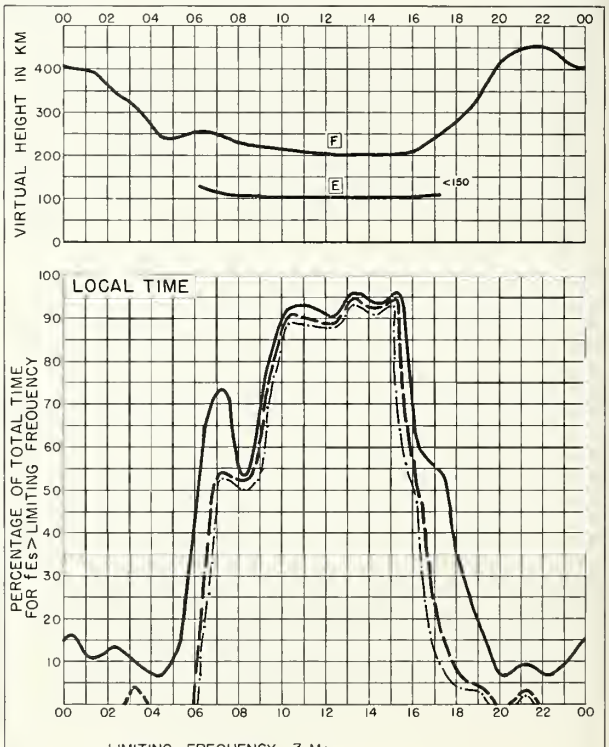


Fig. 72. IBADAN , NIGERIA JULY 1958

NBS 490

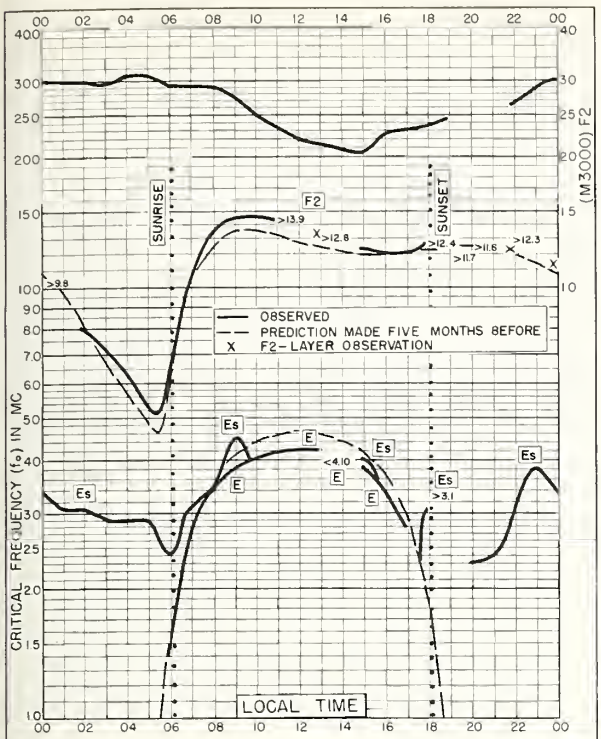


Fig. 73. SINGAPORE, BRITISH MALAYA
1.3°N, 103.8°E JULY 1958

NBS 503

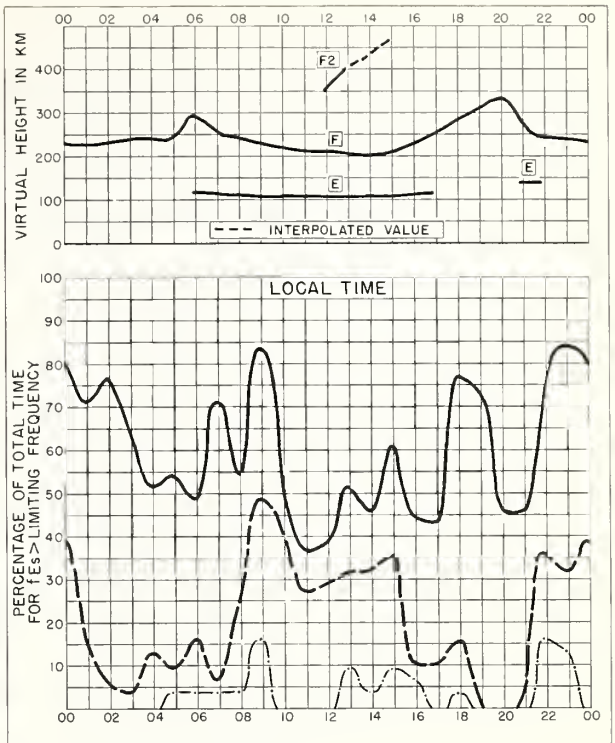


Fig. 74. SINGAPORE, BRITISH MALAYA JULY 1958

NBS 490

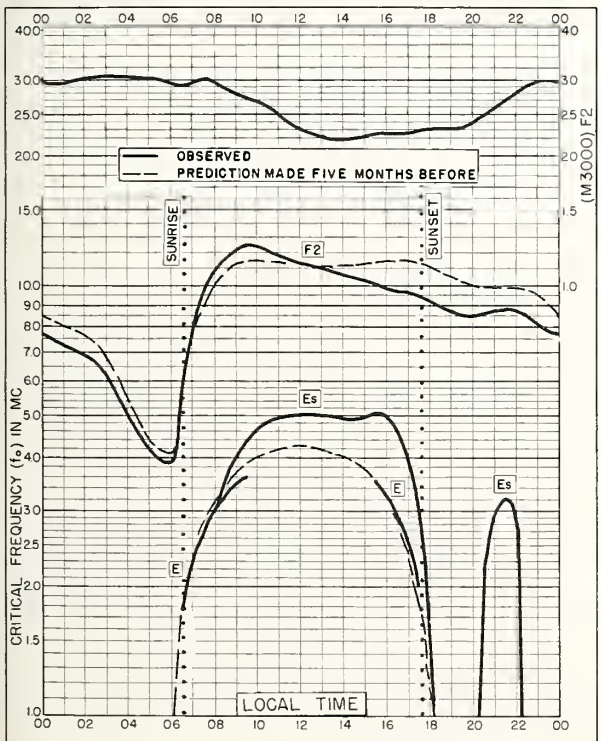


Fig. 75. LA PAZ, BOLIVIA
16.5°S, 68.0°W JULY 1958

NBS 503

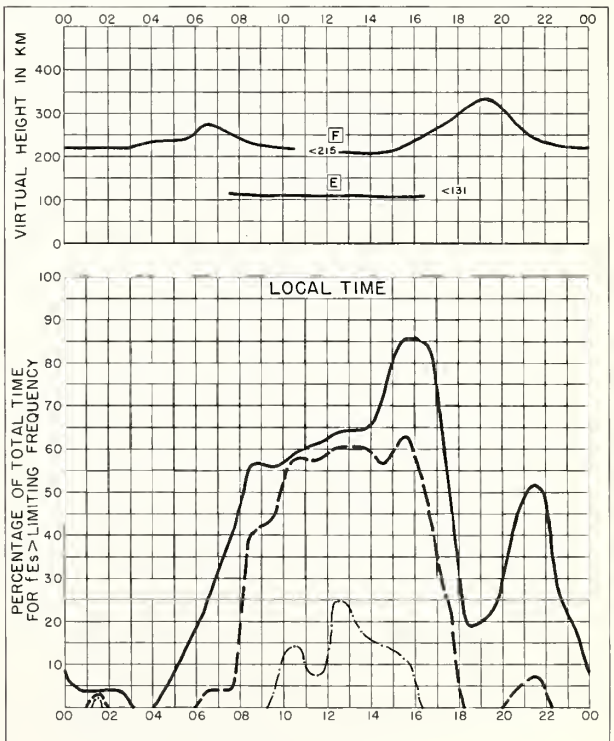


Fig. 76. LA PAZ, BOLIVIA JULY 1958

NBS 490

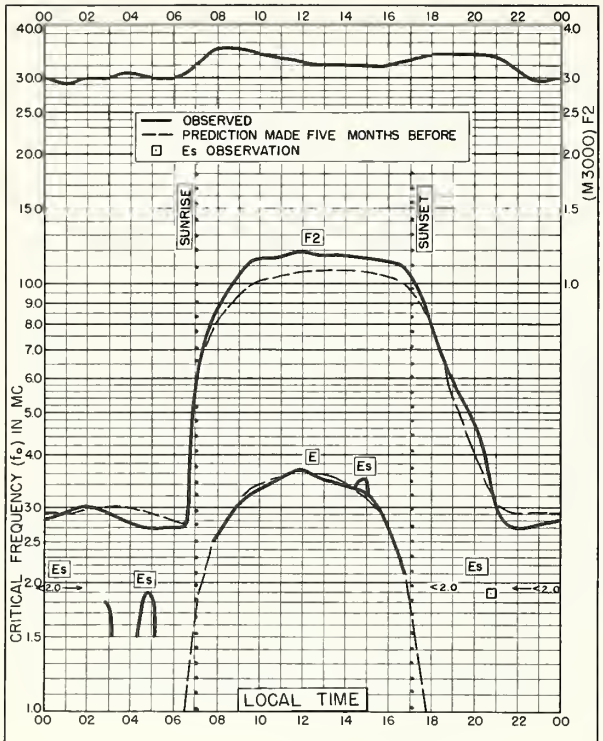


Fig. 77. GRAHAMSTOWN, UNION OF S. AFRICA
33.3°S, 26.5°E JULY 1958

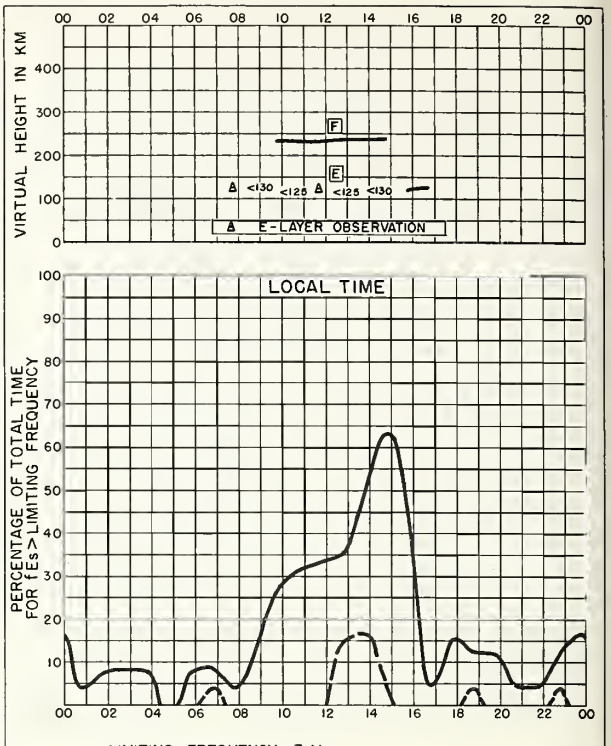


Fig. 78. GRAHAMSTOWN, UNION OF S. AFRICA JULY 1958

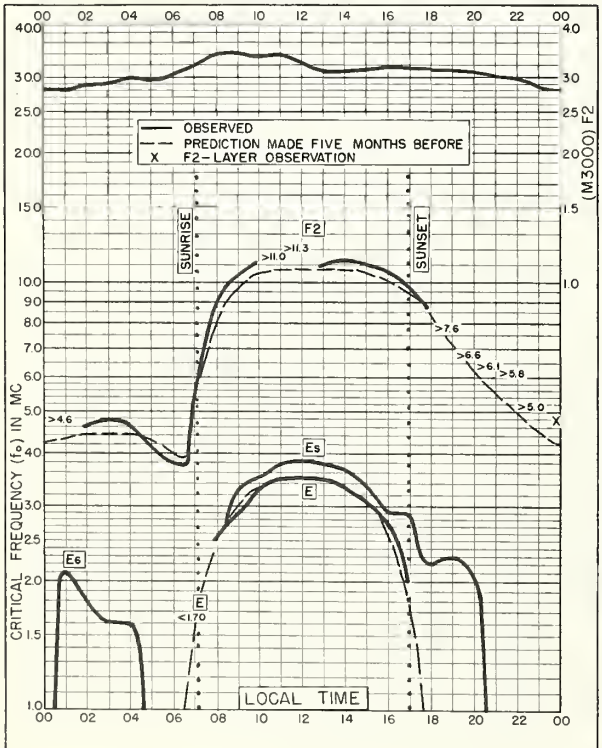


Fig. 79. CANBERRA, AUSTRALIA
35.3°S, 149.0°E JULY 1958

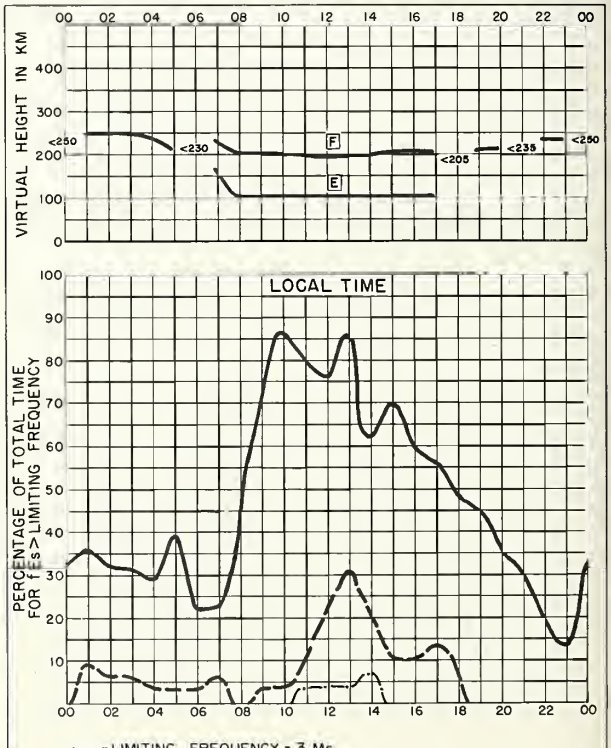


Fig. 80. CANBERRA, AUSTRALIA JULY 1958

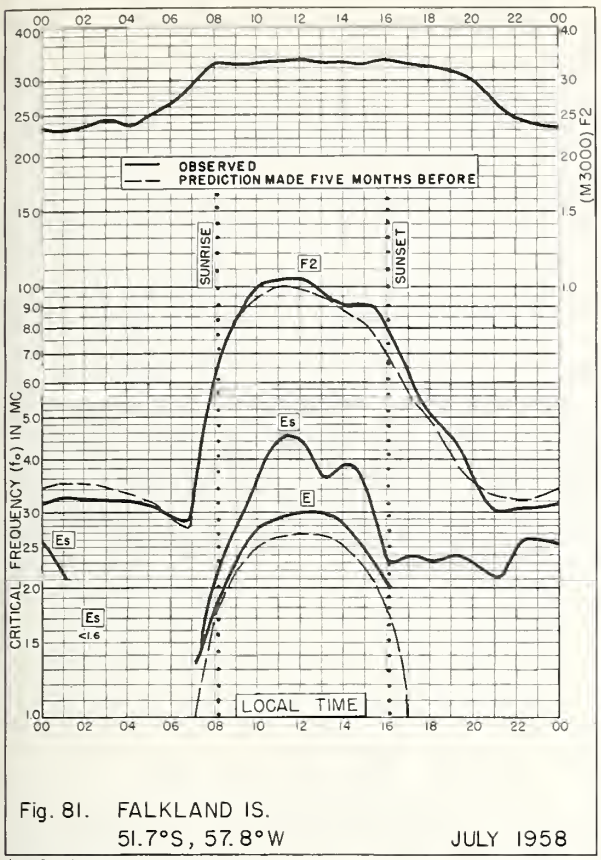


Fig. 81. FALKLAND IS.
51.7°S, 57.8°W JULY 1958

NBS 503

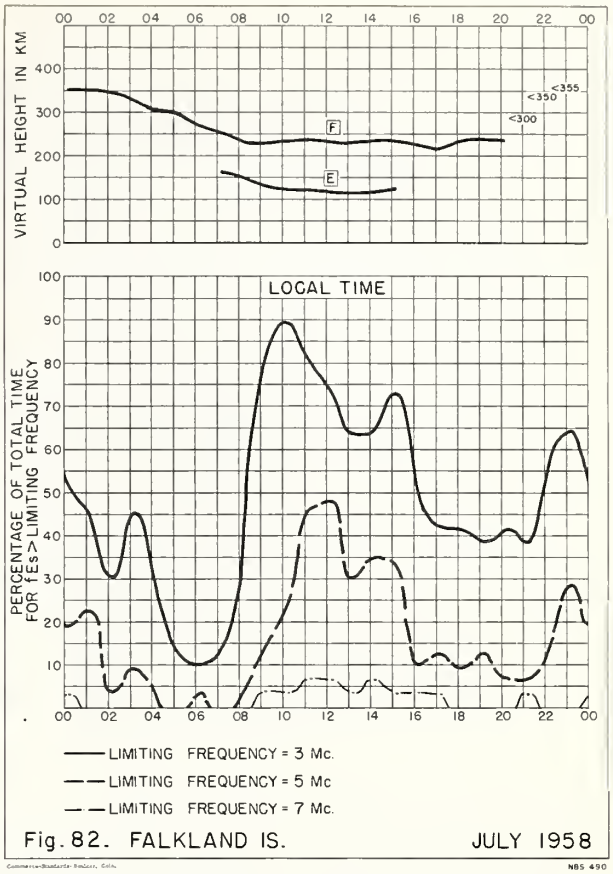


Fig. 82. FALKLAND IS. JULY 1958

NBS 490

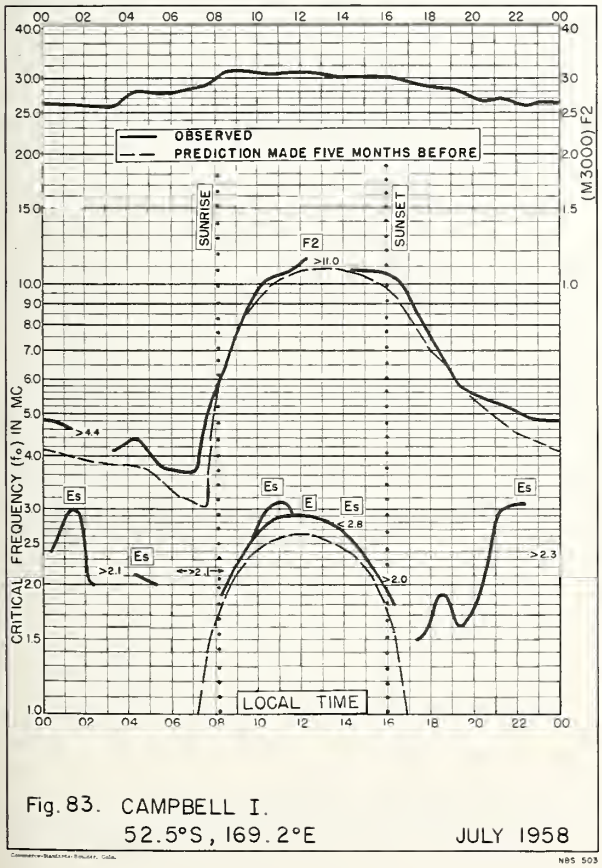


Fig. 83. CAMPBELL I.
52.5°S, 169.2°E JULY 1958

NBS 503

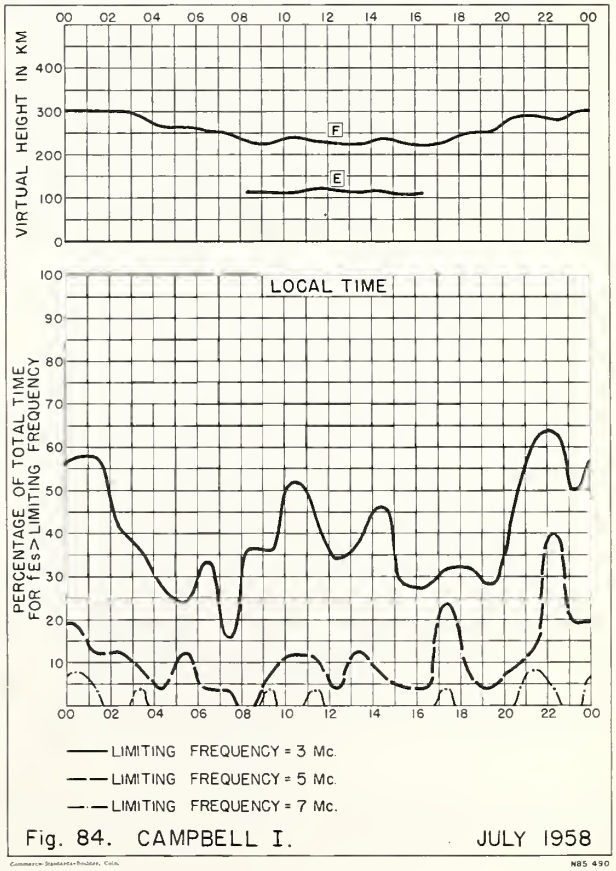


Fig. 84. CAMPBELL I. JULY 1958

NBS 490

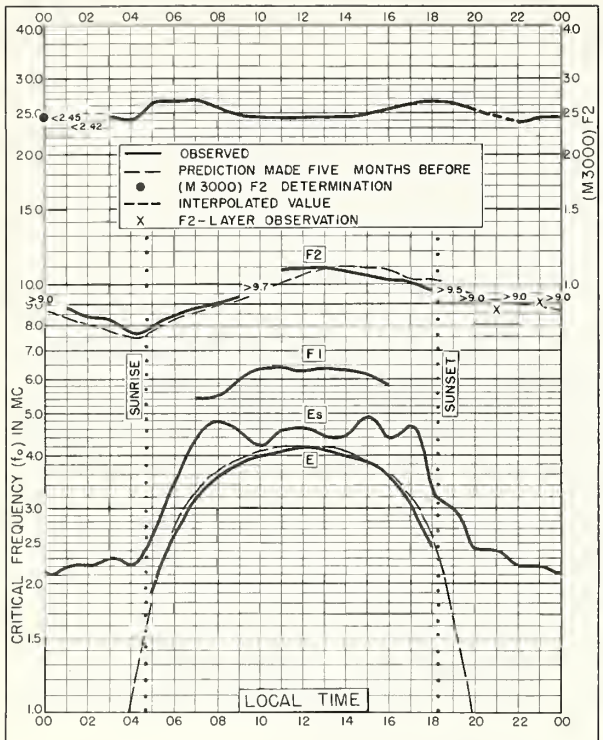


Fig. 85. TORTOSA, SPAIN
40.8°N, 0.5°E MAY 1958

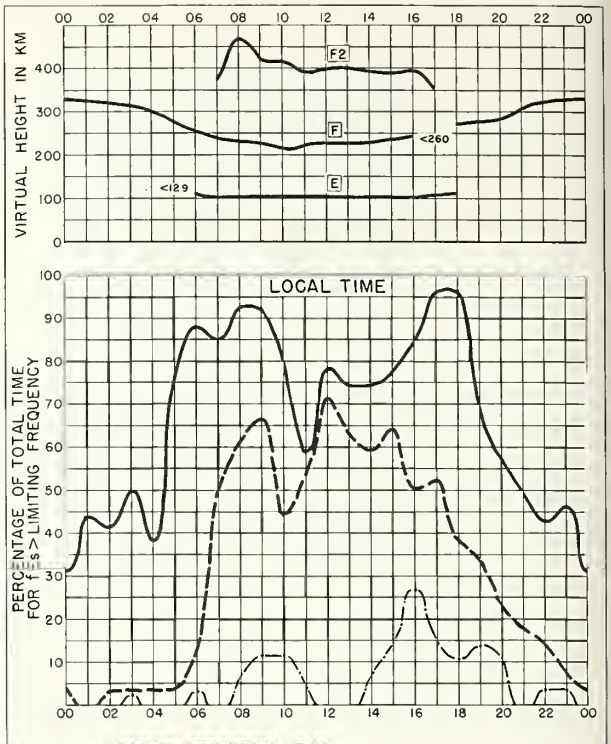


Fig. 86. TORTOSA, SPAIN MAY 1958

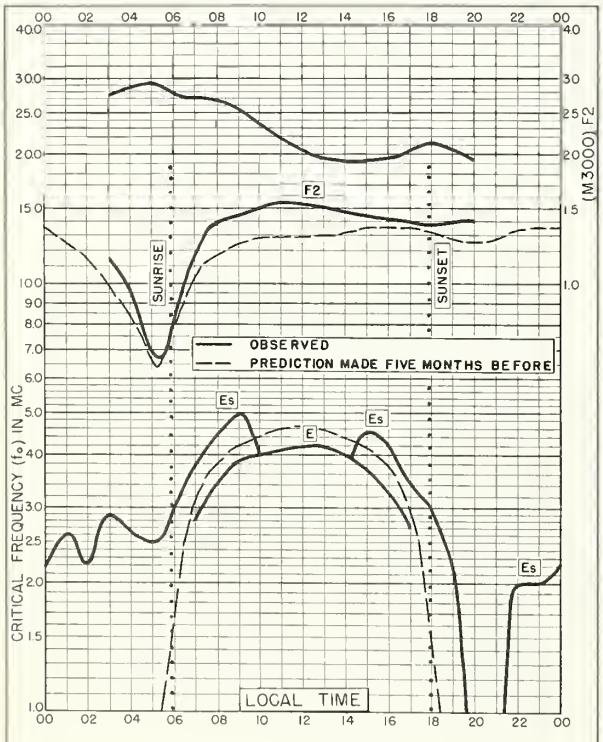


Fig. 87. BUNIA, BELGIAN CONGO
1.5°N, 30.2°E MAY 1958

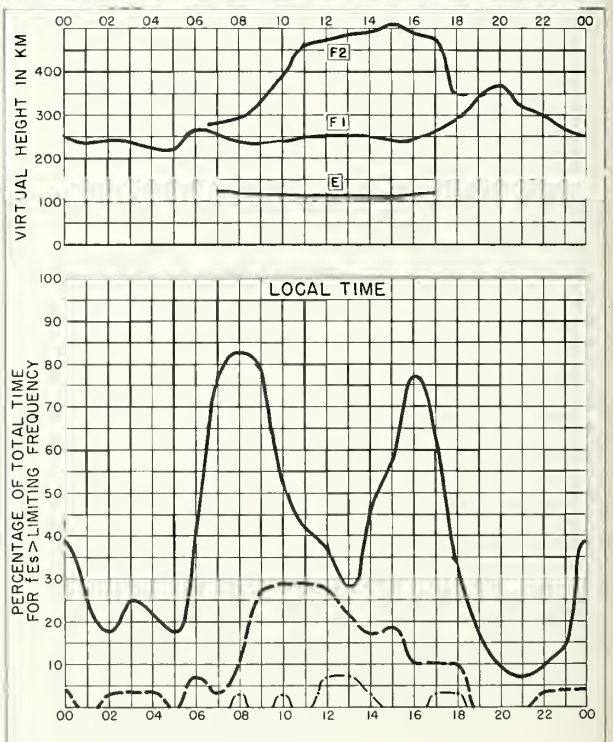


Fig. 88. BUNIA, BELGIAN CONGO MAY 1958

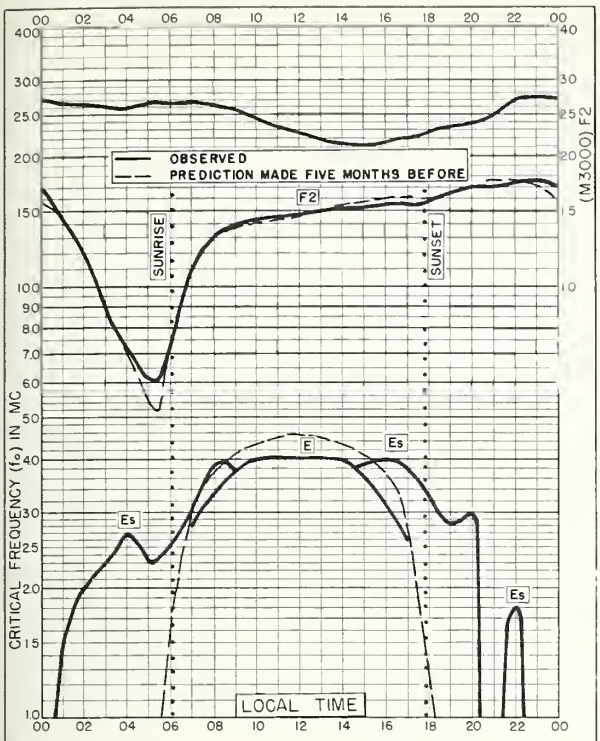
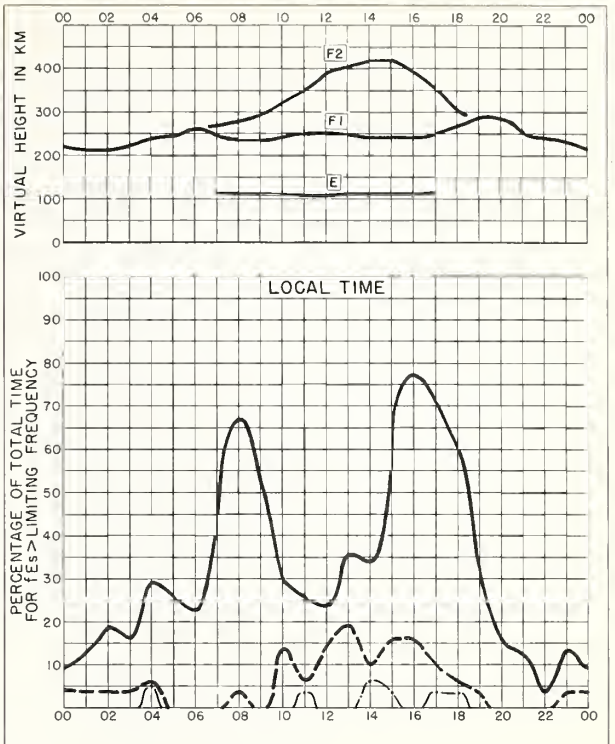


Fig. 89. LEOPOLDVILLE, BELGIAN CONGO
4.4°S, 15.2°E MAY 1958



MAY 1958

Fig. 90. LEOPOLDVILLE, BELGIAN CONGO

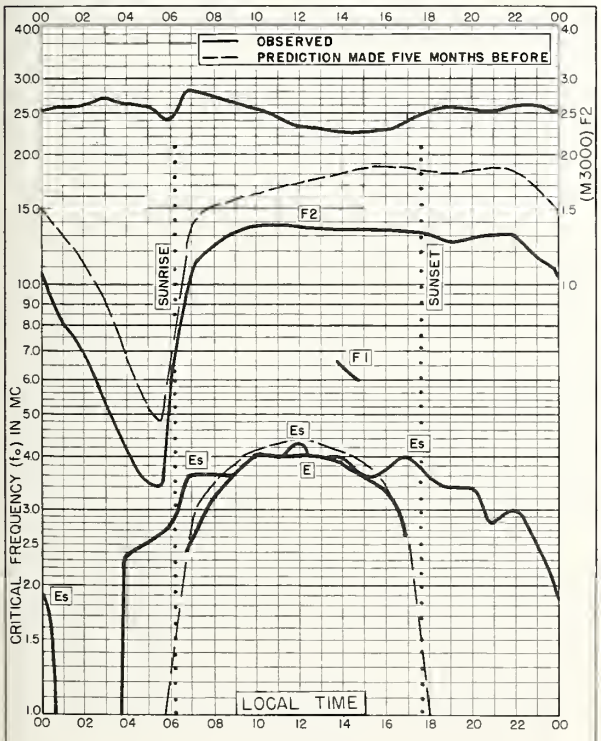
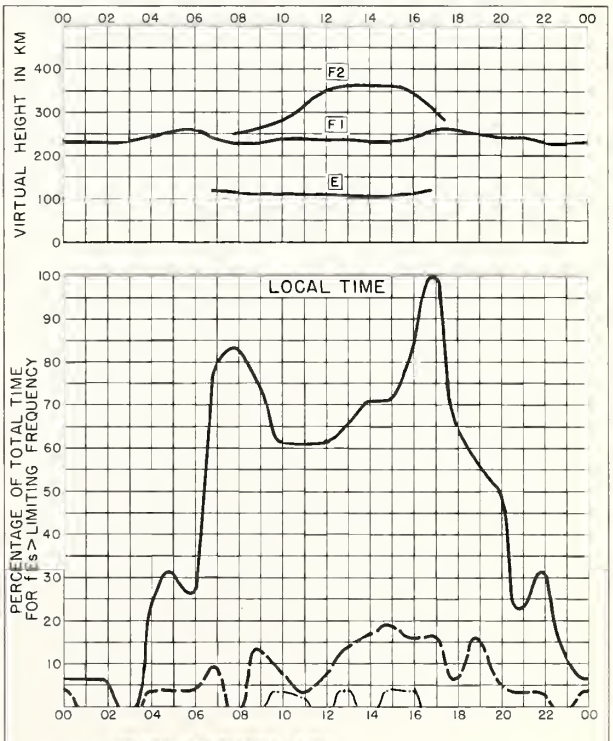


Fig. 91. ELISABETHVILLE, BELGIAN CONGO
11.6°S, 27.5°E MAY 1958



MAY 1958

Fig. 92. ELISABETHVILLE, BELGIAN CONGO

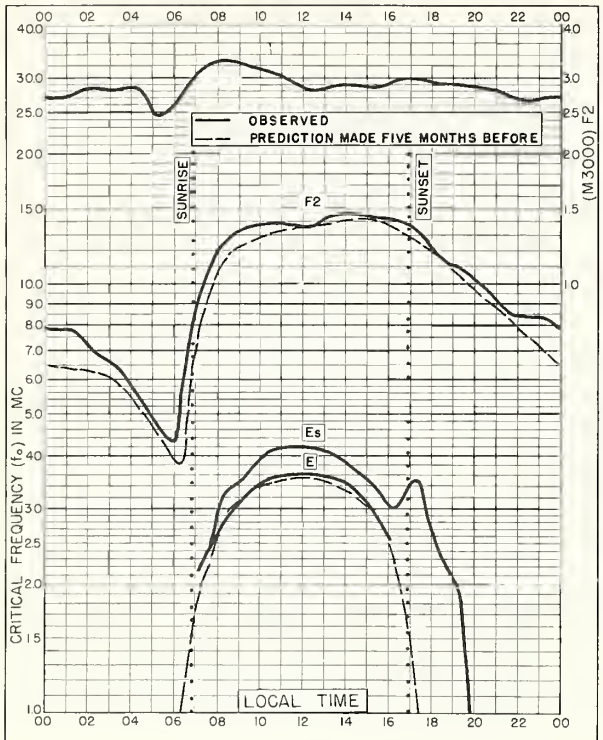


Fig. 93. CONCEPCION, CHILE
36.6°S, 73.0°W MAY 1958

NBS 503

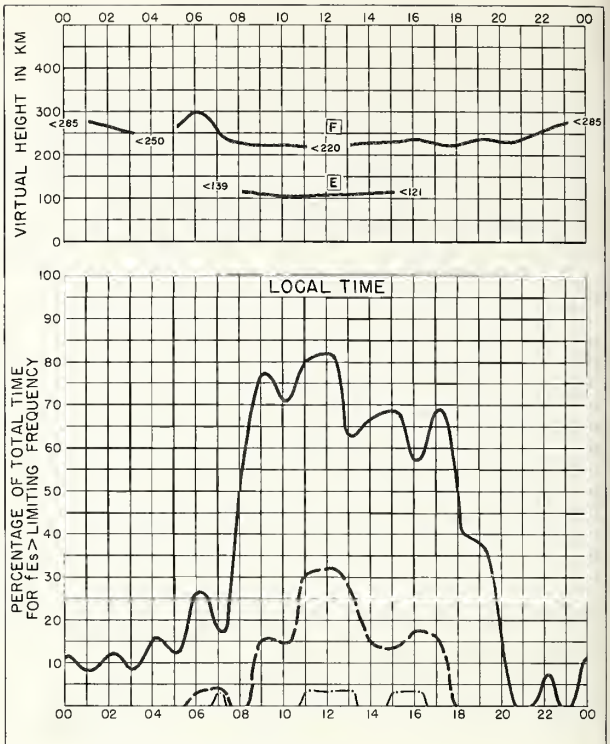


Fig. 94. CONCEPCION, CHILE MAY 1958

NBS 490

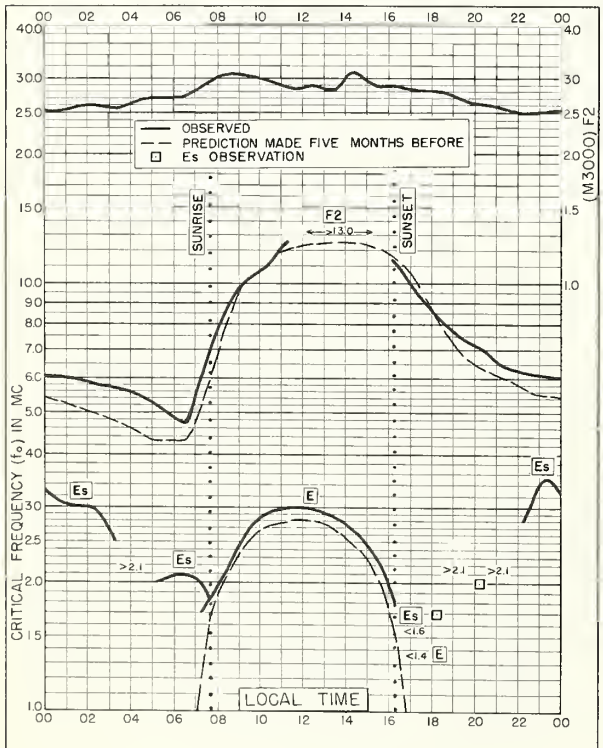


Fig. 95. CAMPBELL I.
52.5°S, 169.2°E MAY 1958

NBS 503

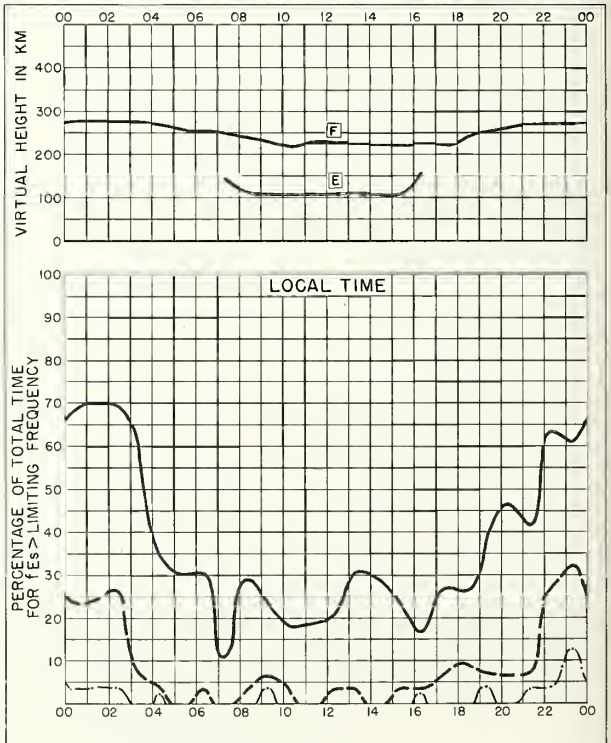


Fig. 96. CAMPBELL I. MAY 1958

NBS 490

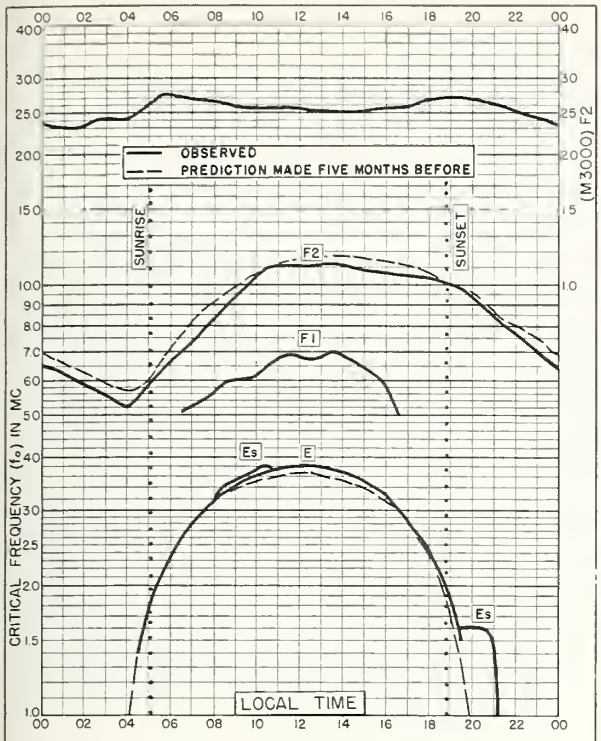


Fig. 97. MOSCOW, U. S. S. R.
55.5°N, 37.3°E APRIL 1958

NBS 503

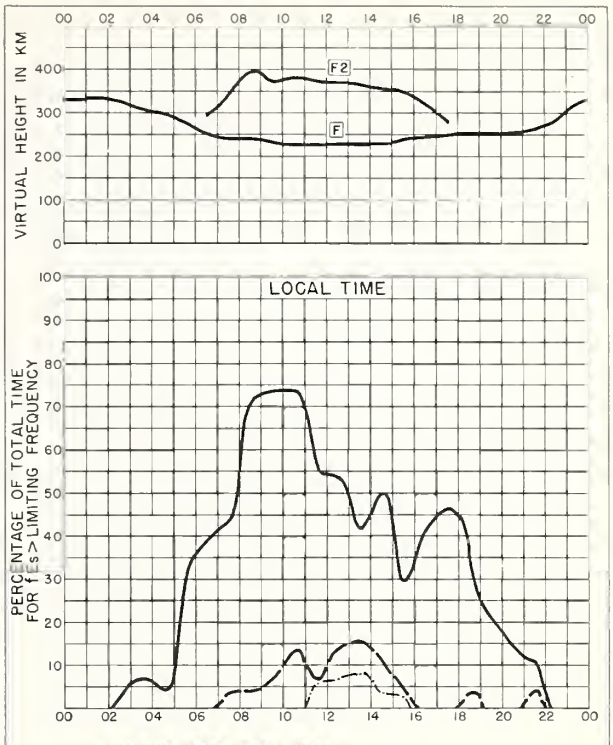


Fig. 98. MOSCOW, U. S. S. R. APRIL 1958

NBS 490

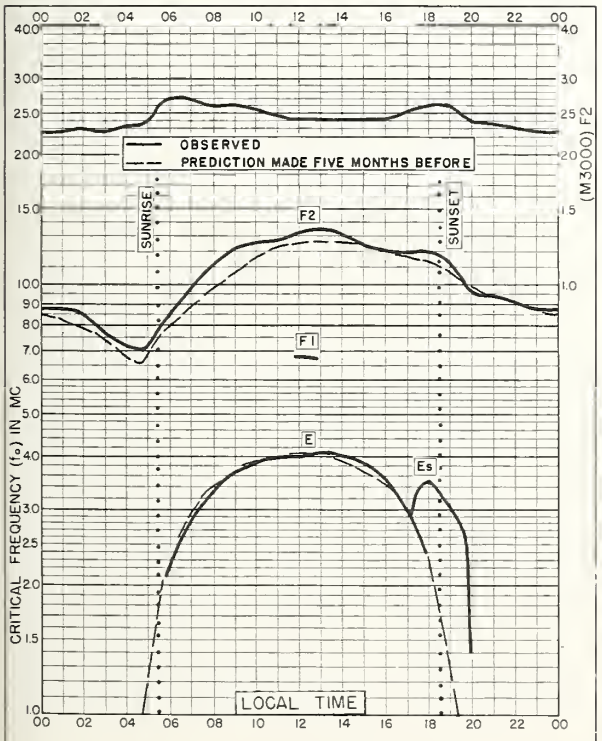


Fig. 99. ROME, ITALY
41.8°N, 12.5°E APRIL 1958

NBS 503

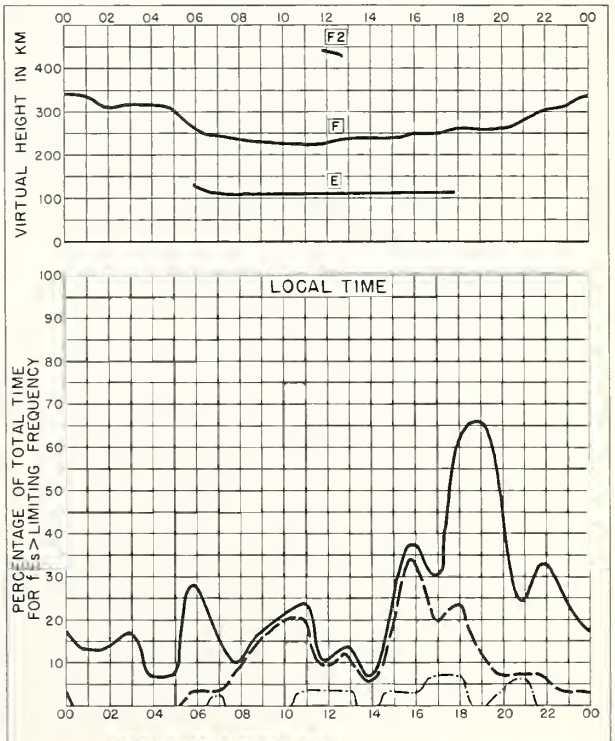


Fig. 100. ROME, ITALY APRIL 1958

NBS 490

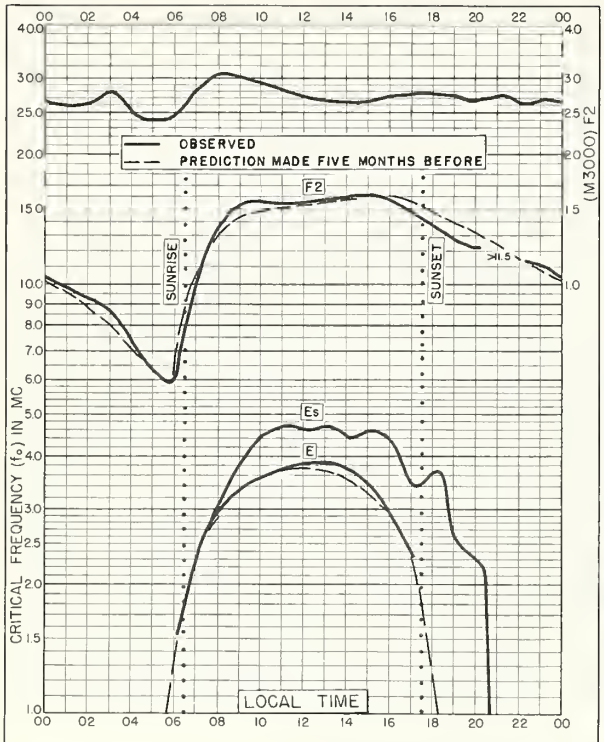


Fig. 101. CONCEPCION, CHILE
36.6°S, 73.0°W APRIL 1958

NBS 503

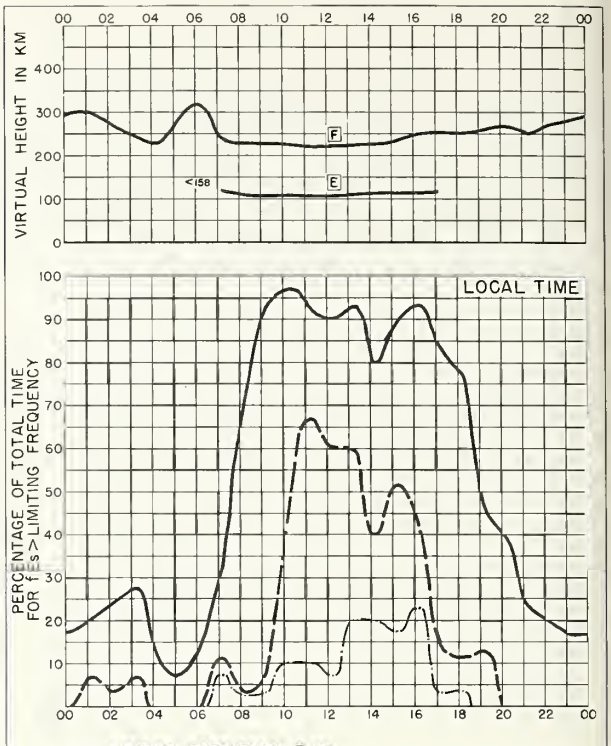


Fig. 102. CONCEPCION, CHILE APRIL 1958

NBS 490

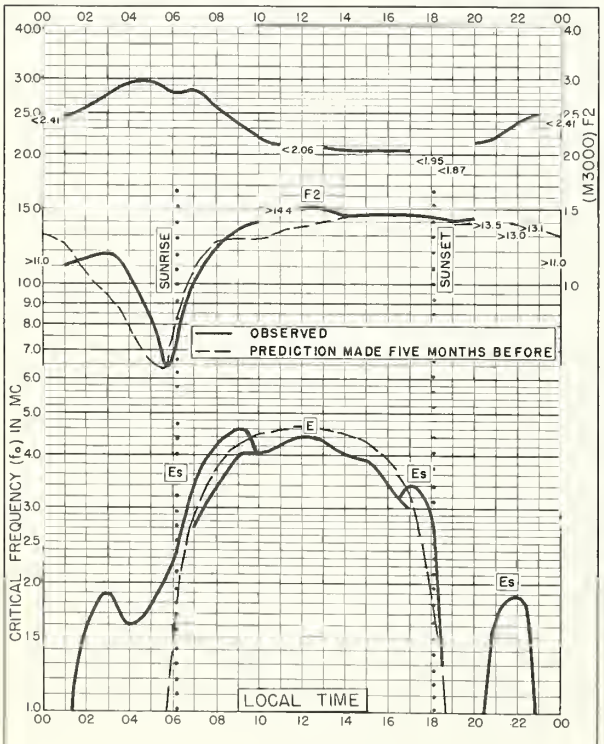


Fig. 103. BUNIA, BELGIAN CONGO
1.5°N, 30.2°E MARCH 1958

NBS 503

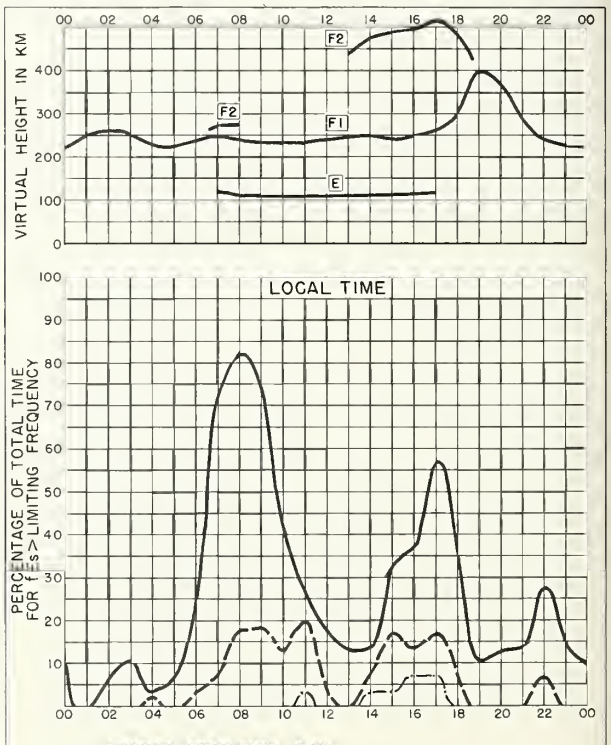


Fig. 104. BUNIA, BELGIAN CONGO MARCH 1958

NBS 490

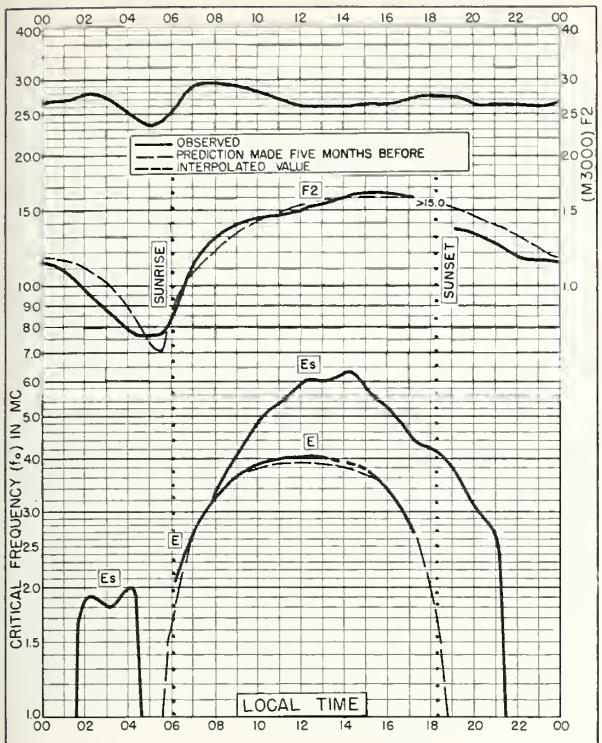


Fig. 105. CONCEPCION, CHILE
36.6°S, 73.0° W MARCH 1958

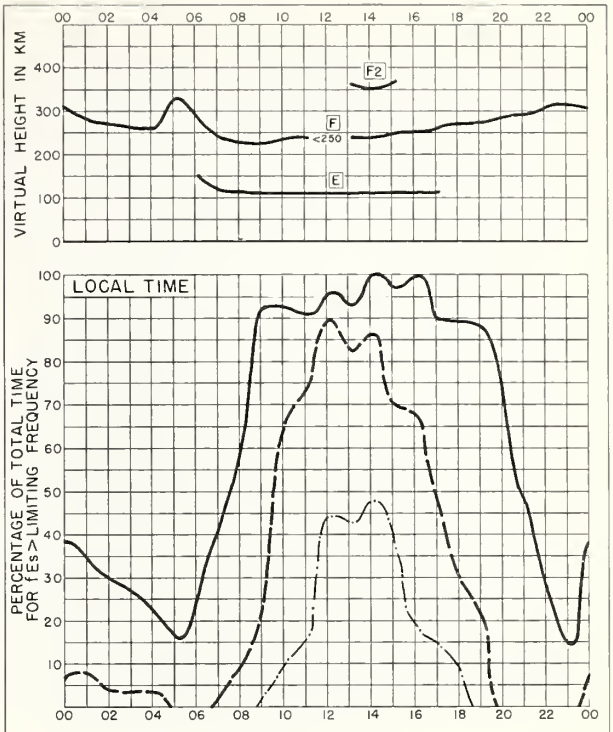


Fig. 106. CONCEPCION, CHILE MARCH 1958

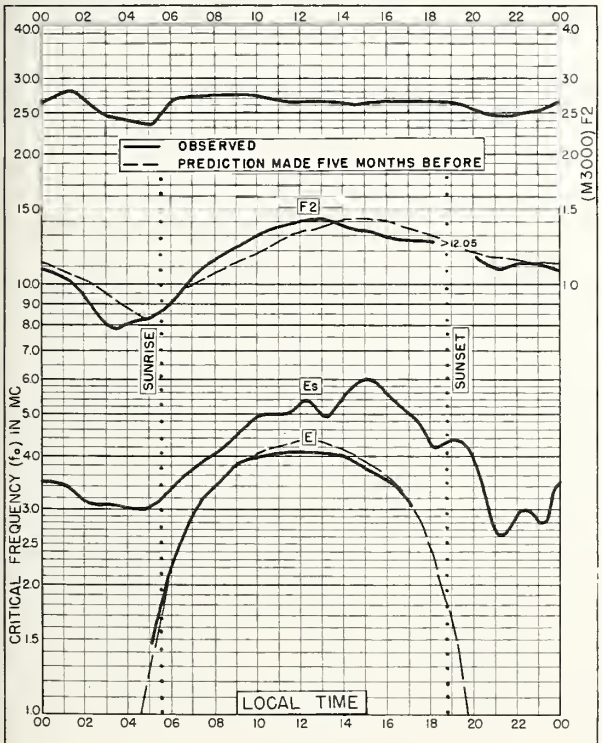


Fig. 107. CONCEPCION, CHILE
36.6°S, 73.0°W FEBRUARY 1958

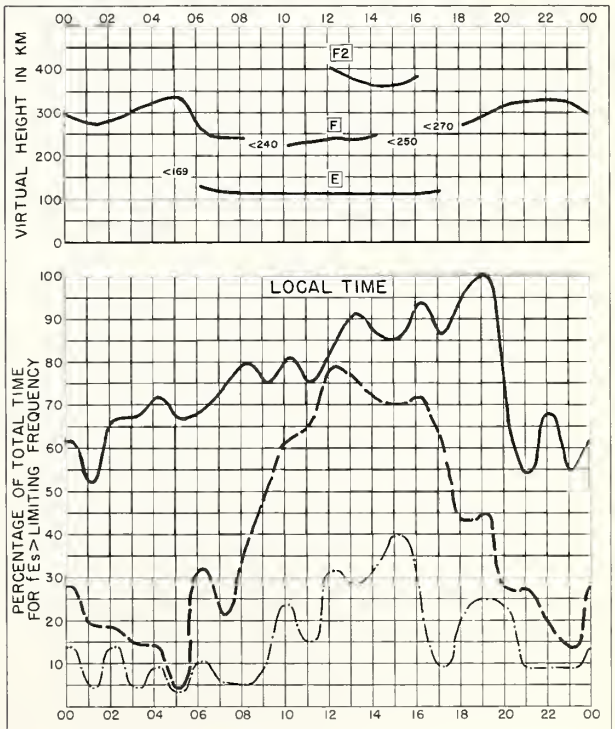


Fig. 108. CONCEPCION, CHILE FEBRUARY 1958

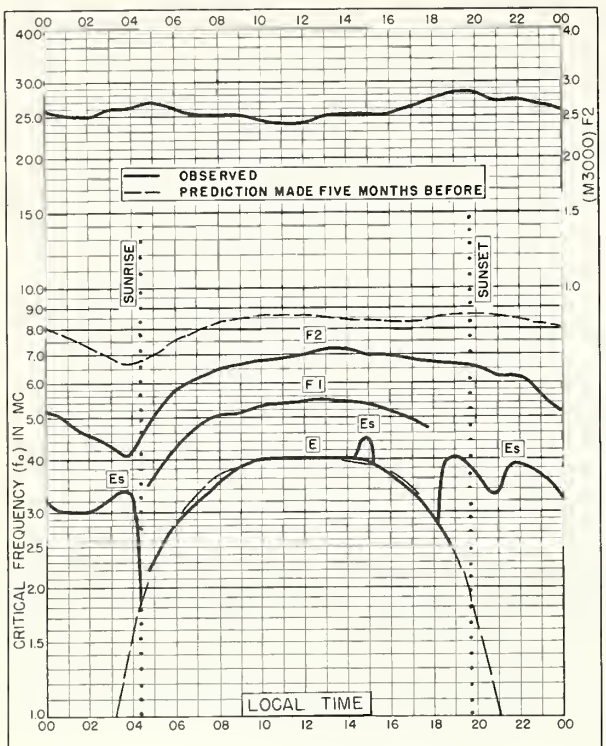


Fig. 109. VICTORIA, CANADA
48.4°N, 123.4°W JULY 1957

NBS 503

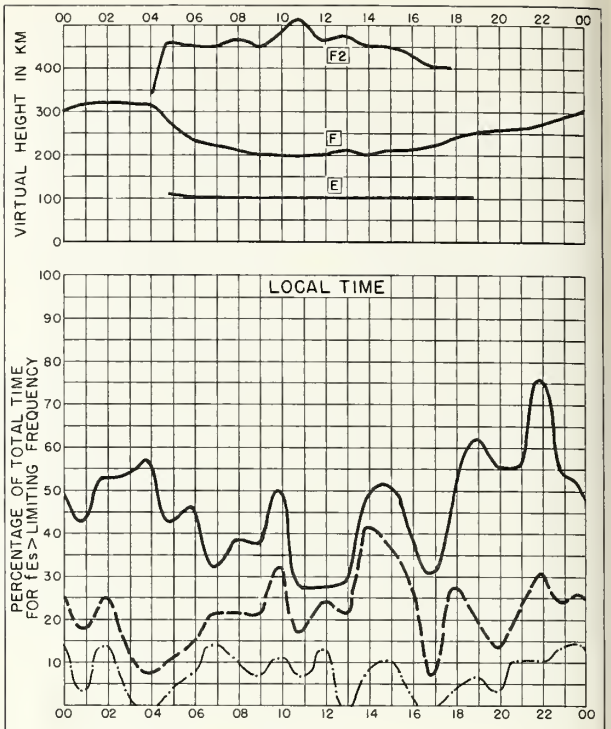


Fig. 110. VICTORIA, CANADA JULY 1957

NBS 490

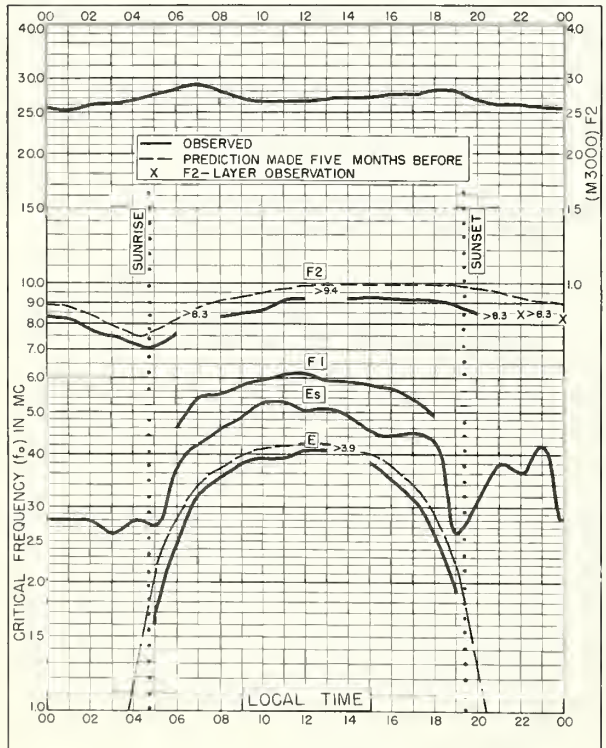


Fig. 111. TORTOSA, SPAIN
40.8°N, 0.5°E JULY 1957

NBS 503

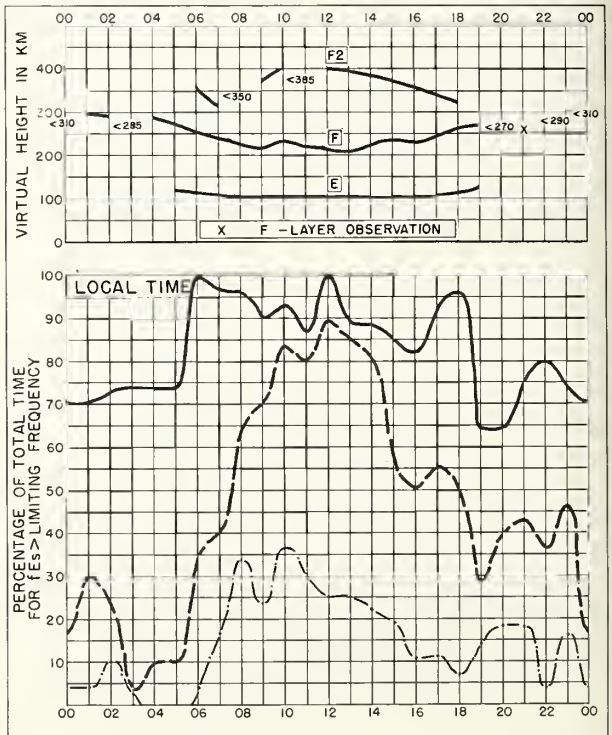


Fig. 112. TORTOSA, SPAIN JULY 1957

NBS 490

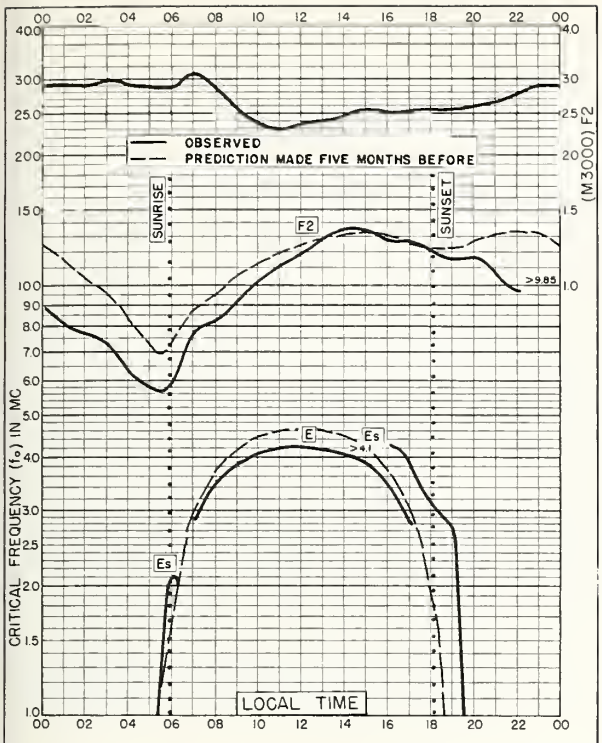


Fig. 113. BOGOTA , COLOMBIA
4.5°N , 74.2° W JULY 1957

NBS 503

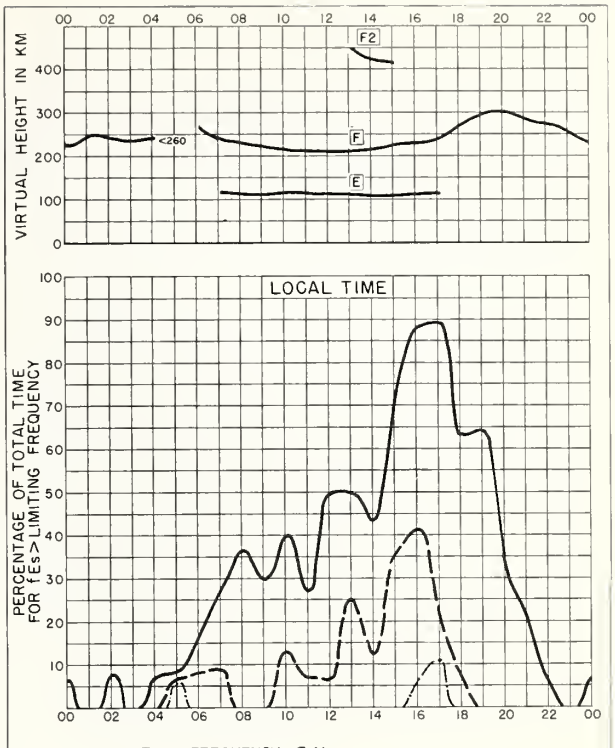


Fig. 114. BOGOTA , COLOMBIA JULY 1957

NBS 490

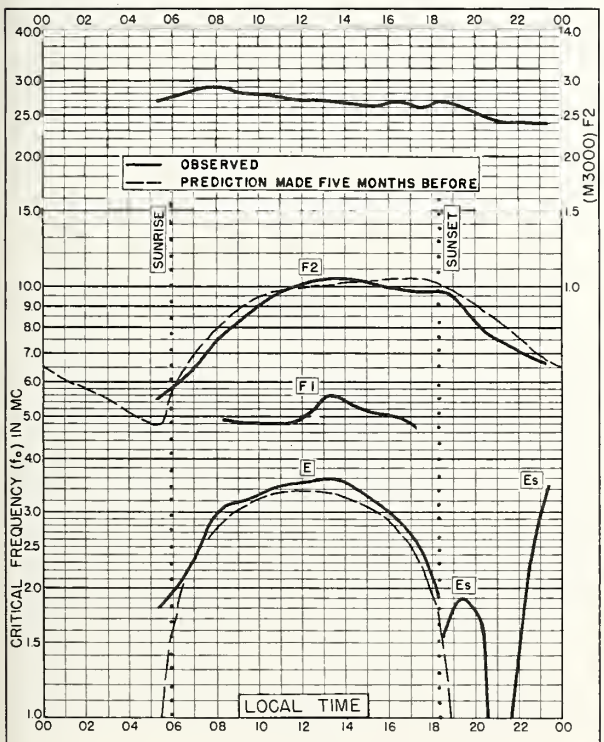


Fig. 115. CAMPBELL I.
52.5°S , 169.2°E MARCH 1957

NBS 503

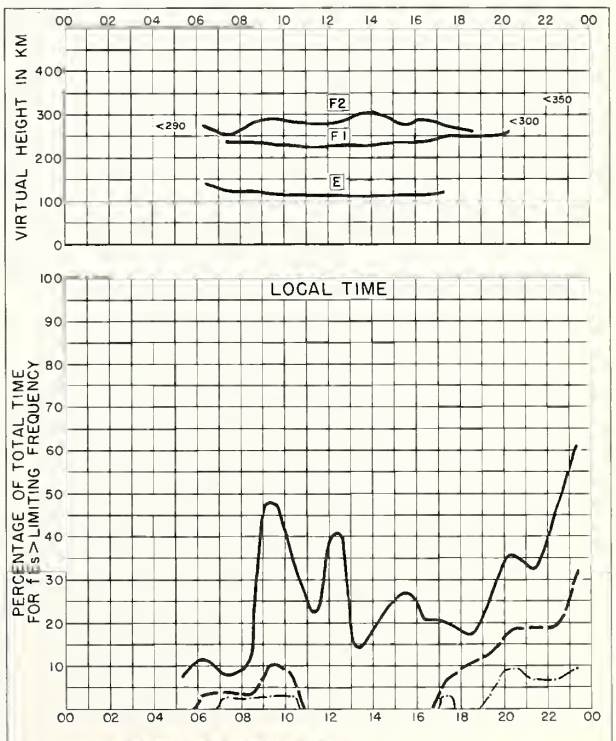


Fig. 116. CAMPBELL I. MARCH 1957

NBS 490

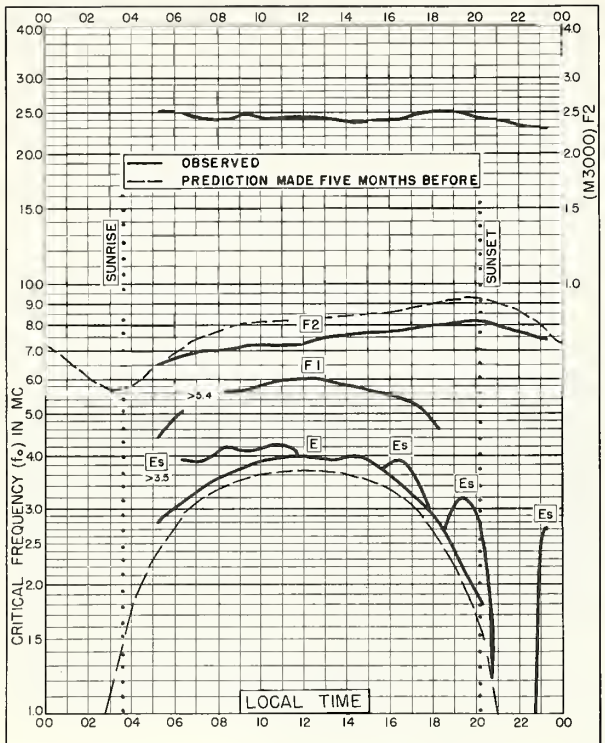


Fig. 117. CAMPBELL I.
52.5°S, 169.2°E DECEMBER 1956

NBS 503

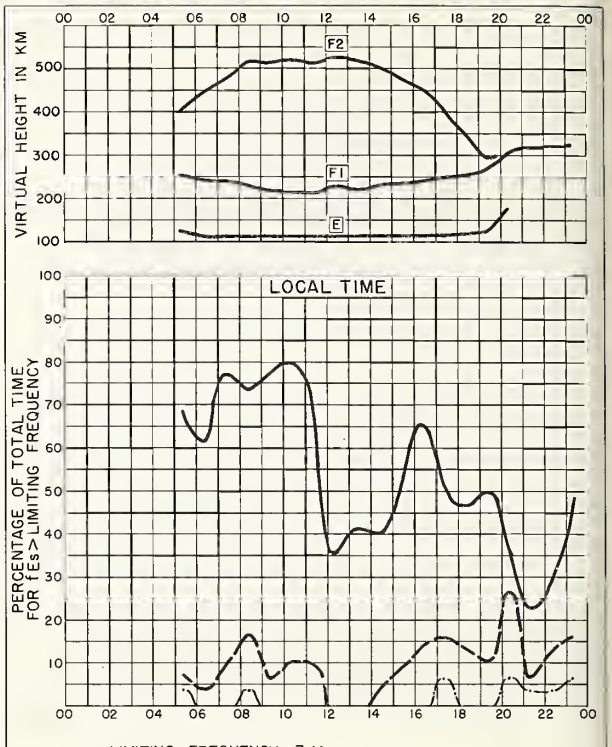


Fig. 118. CAMPBELL I. DECEMBER 1956

Commerce-Standards-Boulder, Colo.

NBS 490

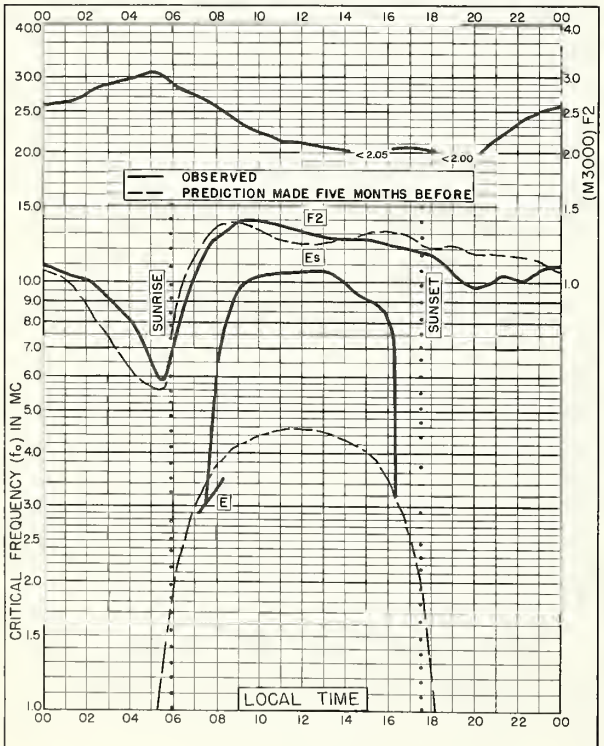


Fig. 119. KODAIKANAL, INDIA
10.2°N, 77.5°E NOVEMBER 1956

NBS 503

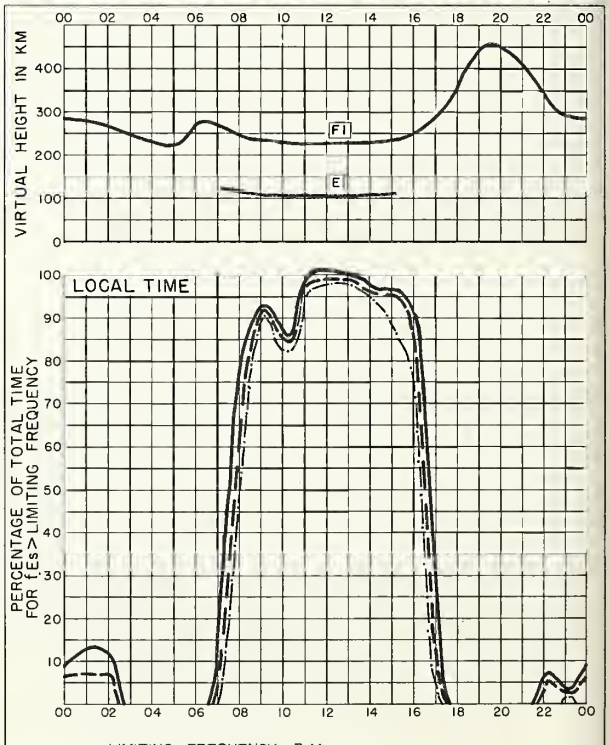


Fig. 120. KODAIKANAL, INDIA NOVEMBER 1956

Commerce-Standards-Boulder, Colo.

NBS 490

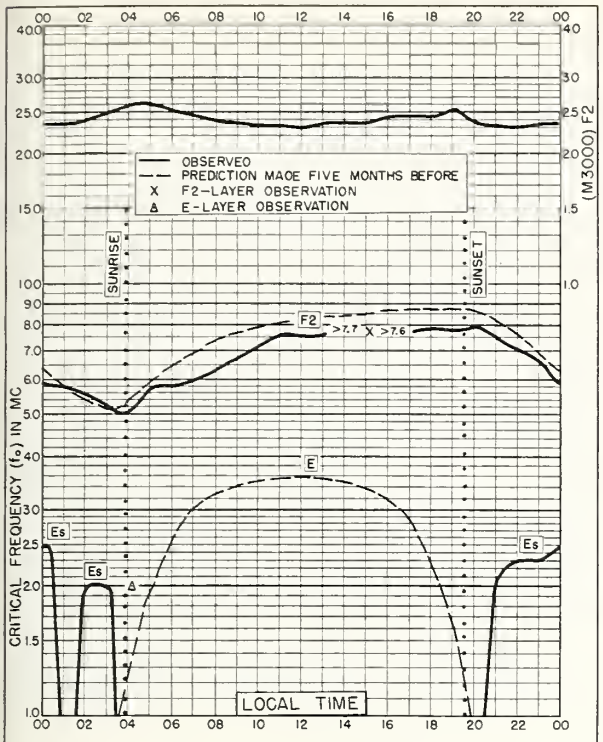


Fig. 121. MACQUARIE I.
54.5°S, 159.0°E NOVEMBER 1956

NBS 503

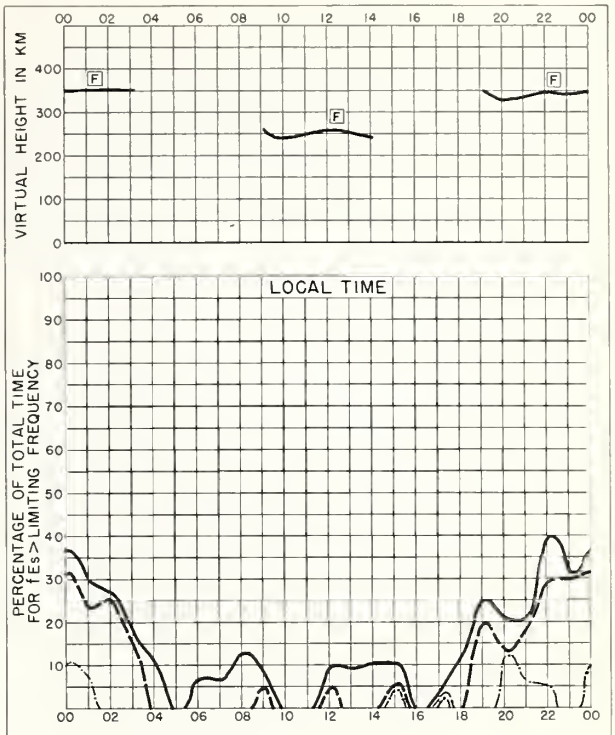


Fig. 122. MACQUARIE I. NOVEMBER 1956

NBS 490

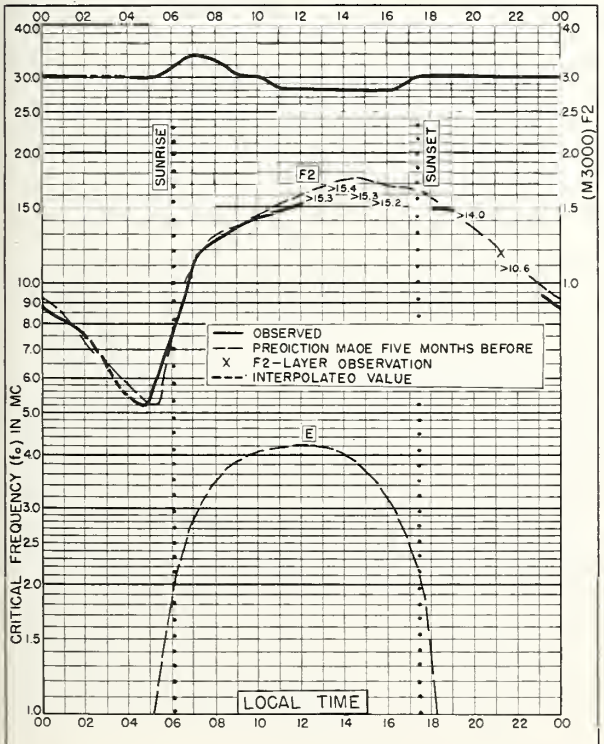


Fig. 123. DELHI, INDIA
28.6°N, 77.1°E OCTOBER 1956

NBS 503

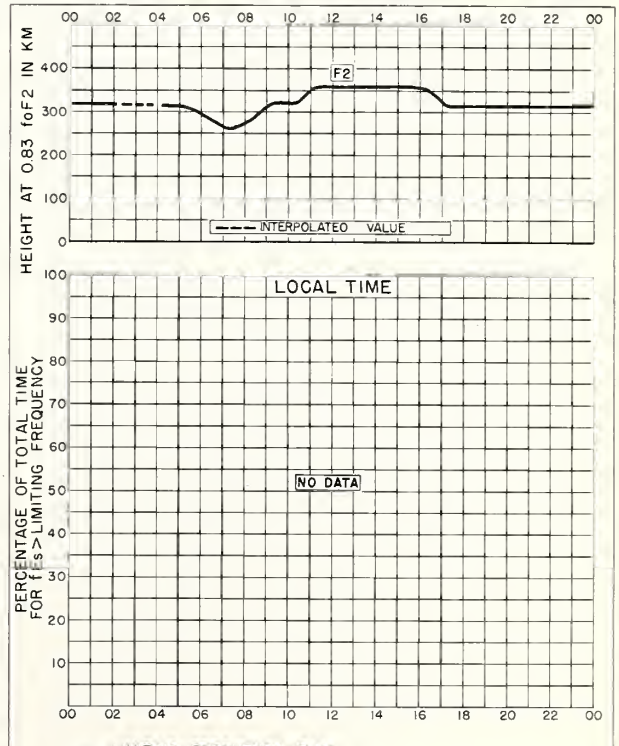


Fig. 124. DELHI, INDIA OCTOBER 1956

NBS 490

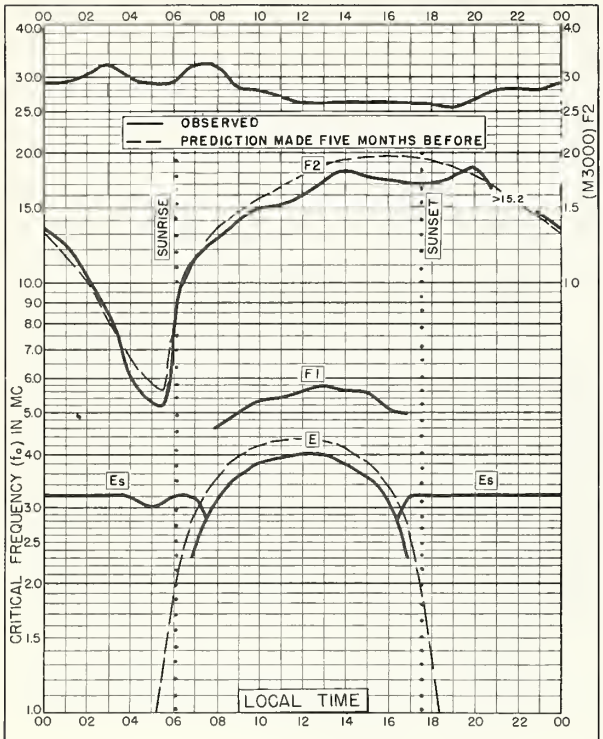


Fig. 125. AHMEDABAD, INDIA
23.0°N, 72.6°E OCTOBER 1956

NBS 503

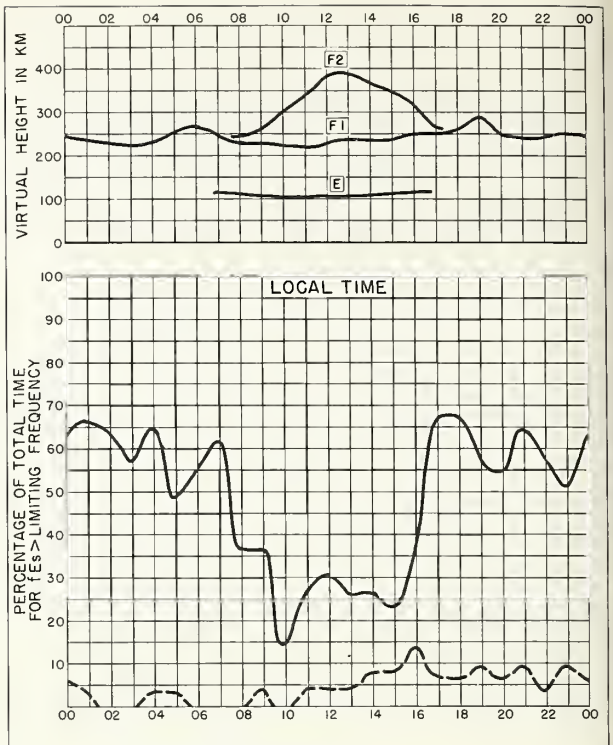


Fig. 126. AHMEDABAD, INDIA OCTOBER 1956

NBS 490

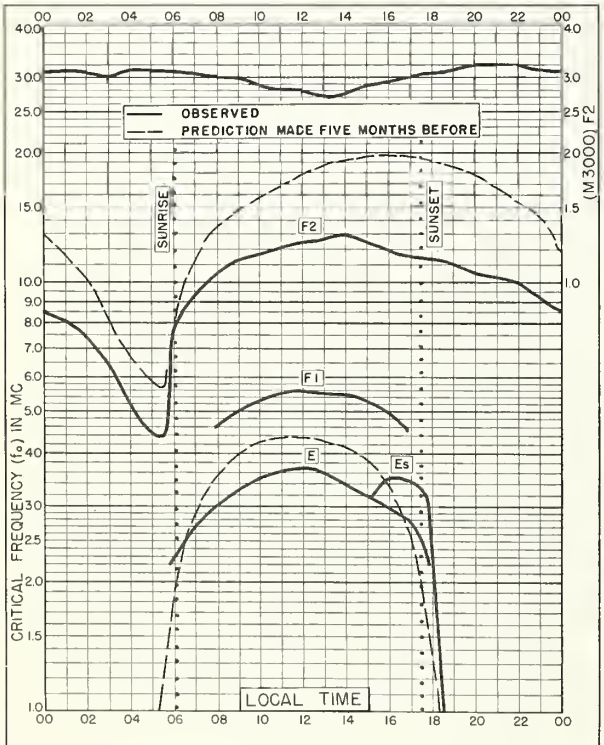


Fig. 127. CALCUTTA, INDIA
22.9°N, 88.5°E OCTOBER 1956

NBS 503

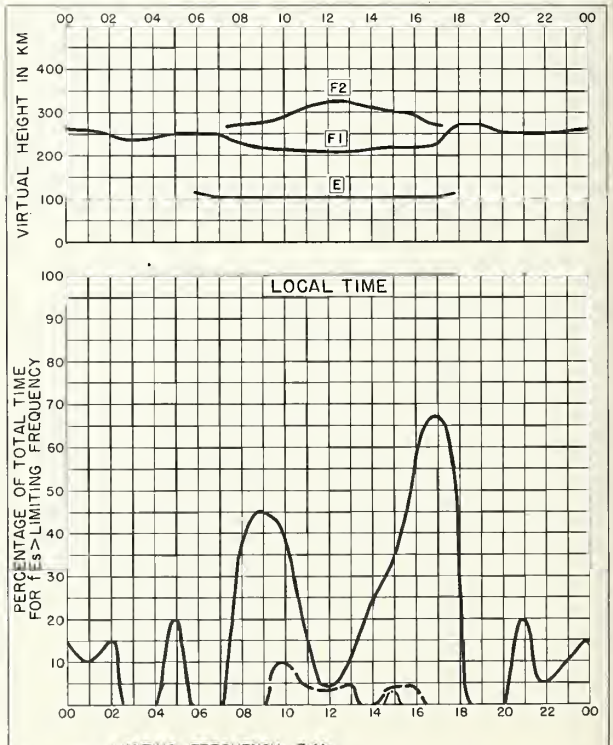


Fig. 128. CALCUTTA, INDIA OCTOBER 1956

NBS 490

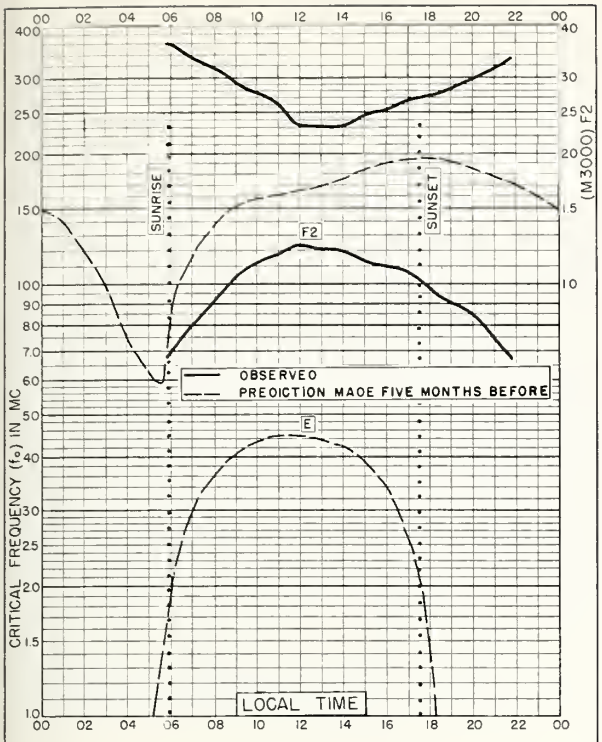


Fig. 129. BOMBAY, INDIA
19.0°N, 73.0°E OCTOBER 1956

NBS 503

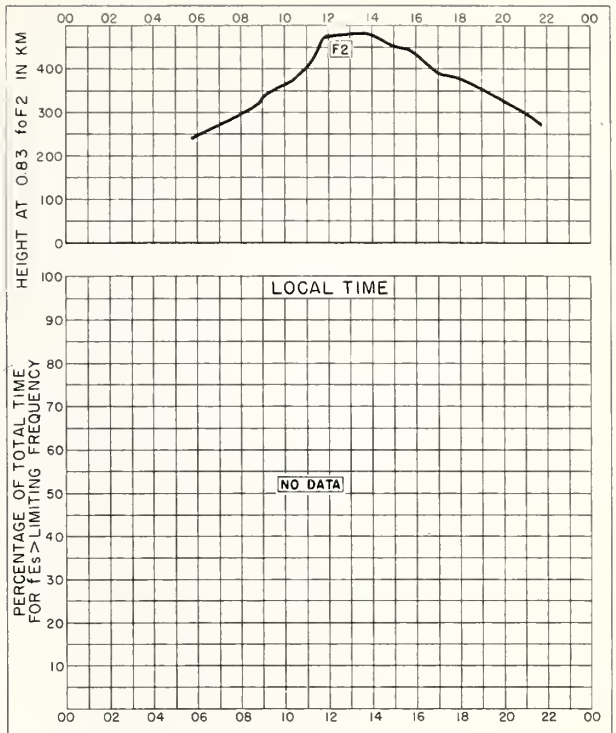


Fig. 130. BOMBAY, INDIA OCTOBER 1956

NBS 490

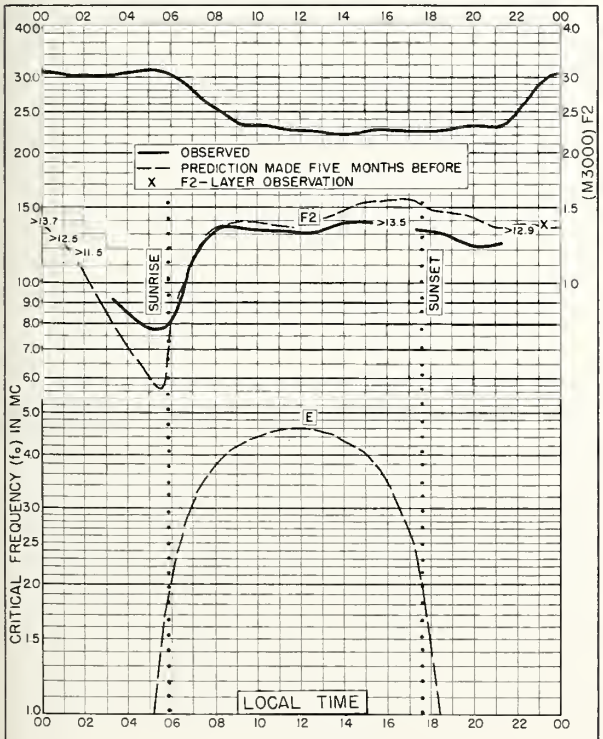


Fig. 131. MADRAS, INDIA
13.0°N, 80.2°E OCTOBER 1956

NBS 503

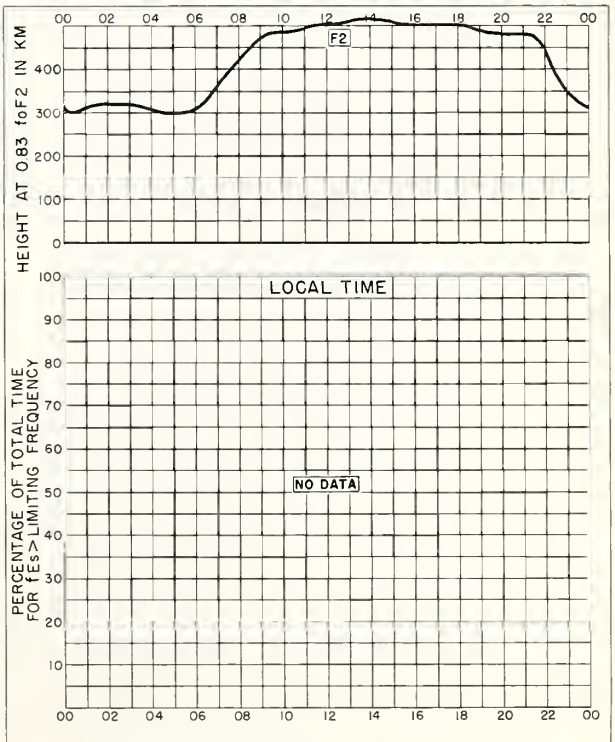


Fig. 132. MADRAS, INDIA OCTOBER 1956

NBS 490

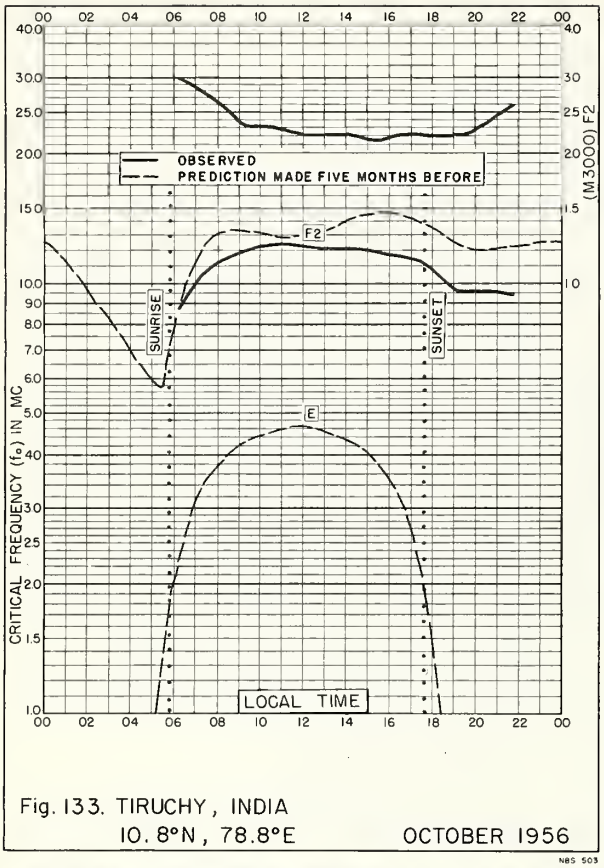


Fig. 133. TIRUCHY, INDIA
10.8°N, 78.8°E OCTOBER 1956

NBS 503

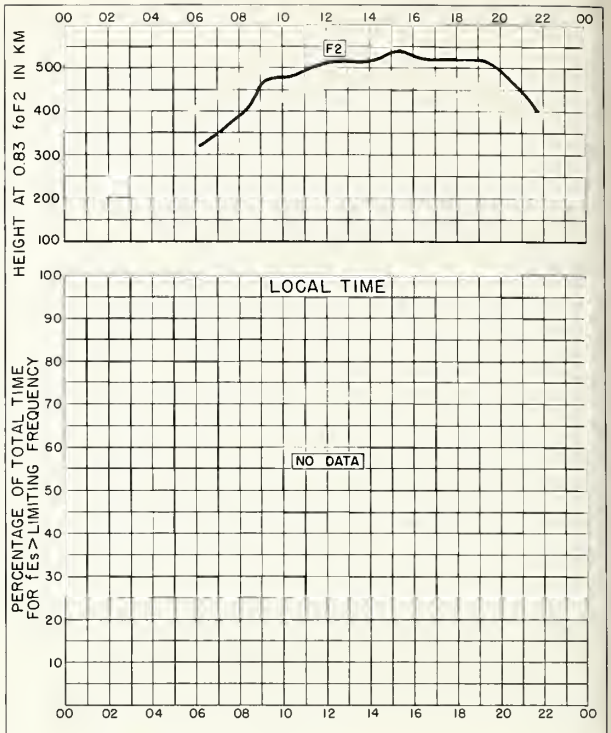


Fig. 134. TIRUCHY, INDIA OCTOBER 1956

NBS 490

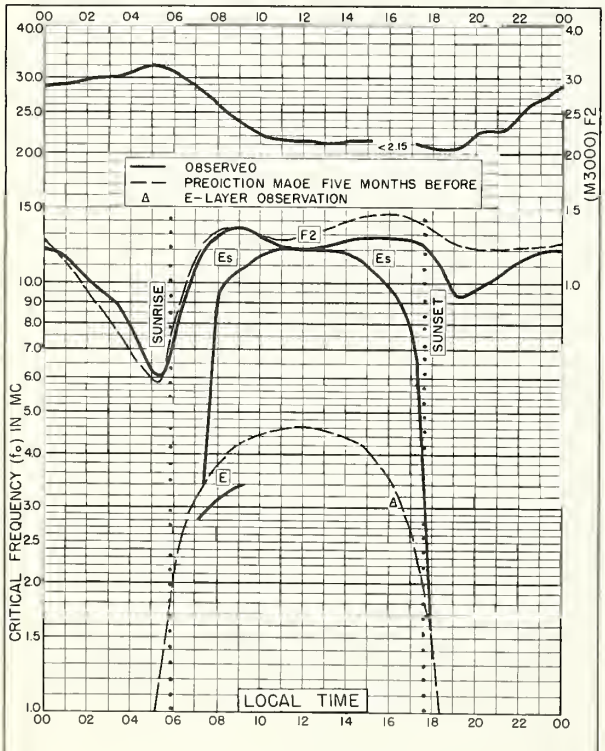


Fig. 135. KODAIKANAL, INDIA
10.2°N, 77.5°E OCTOBER 1956

NBS 503

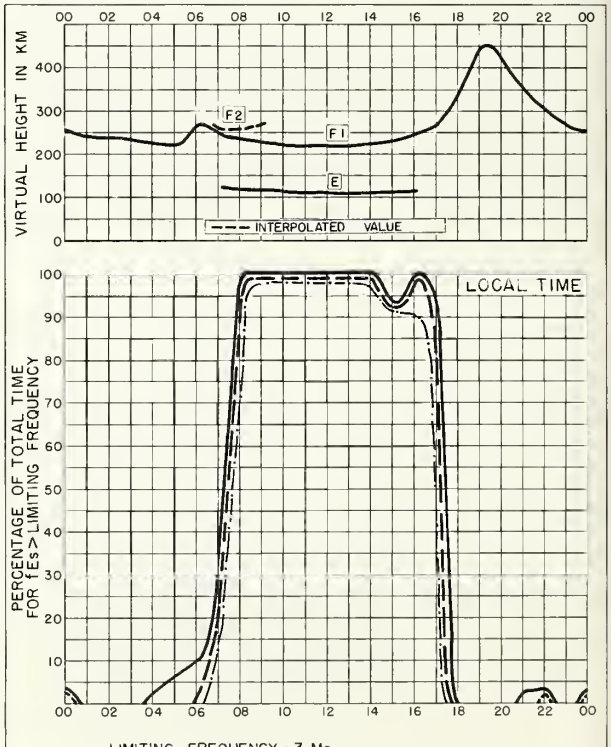


Fig. 136. KODAIKANAL, INDIA OCTOBER 1956

NBS 490

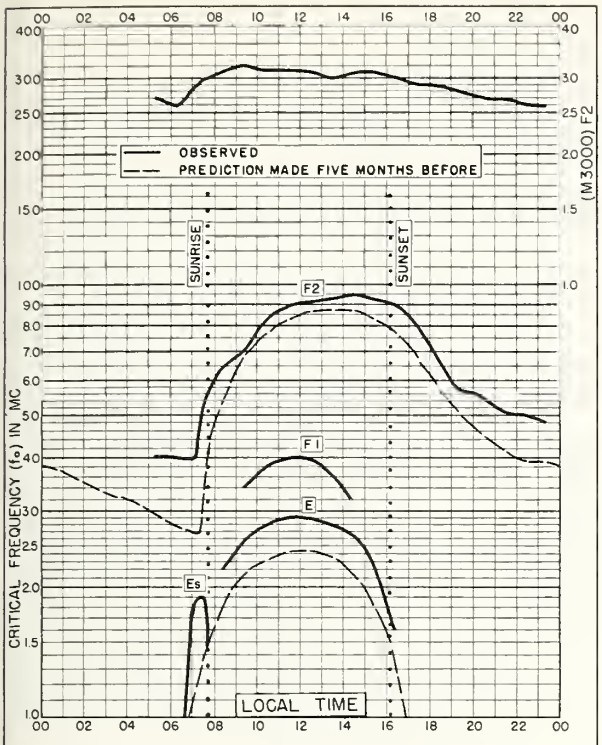


Fig. 137. CAMPBELL I.
52.5°S, 169.2°E MAY 1956

NBS 503

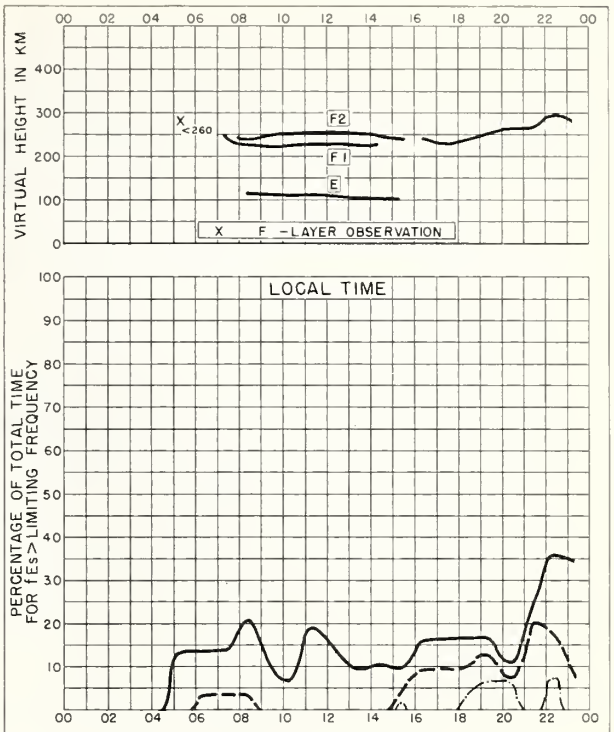


Fig. 138. CAMPBELL I. MAY 1956

NBS 490

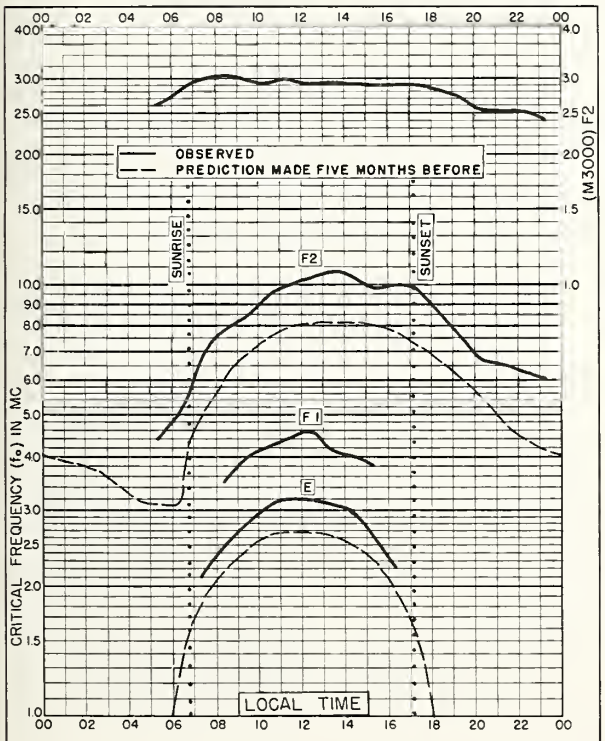


Fig. 139. CAMPBELL I.
52.5°S, 169.2°E APRIL 1956

NBS 503

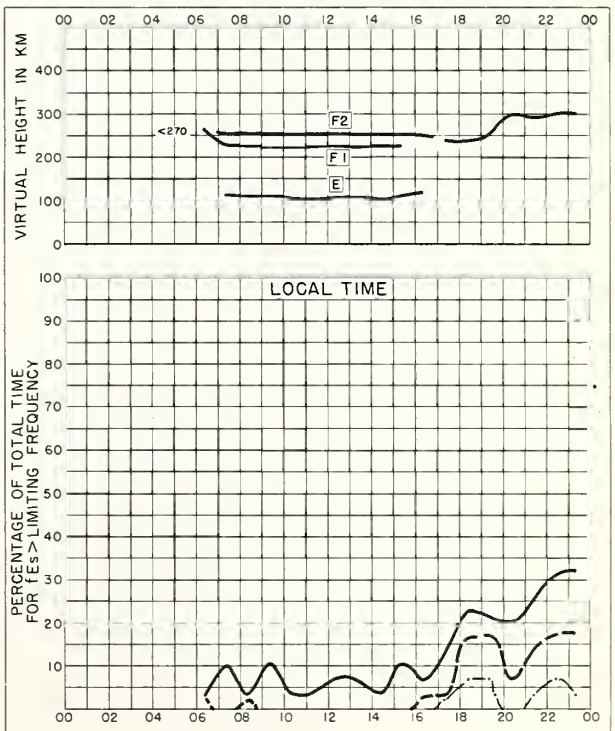


Fig. 140. CAMPBELL I. APRIL 1956

NBS 490

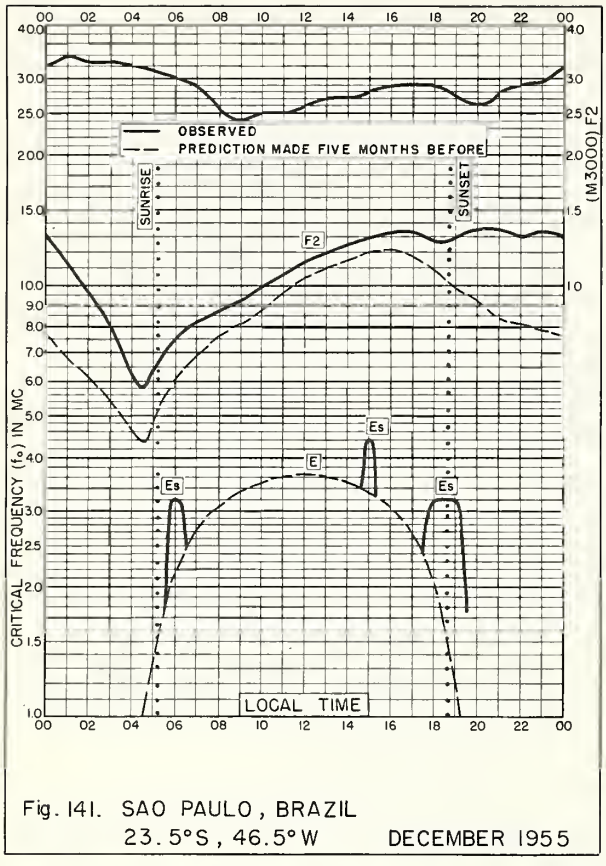


Fig. 141. SAO PAULO, BRAZIL
23.5°S, 46.5°W DECEMBER 1955

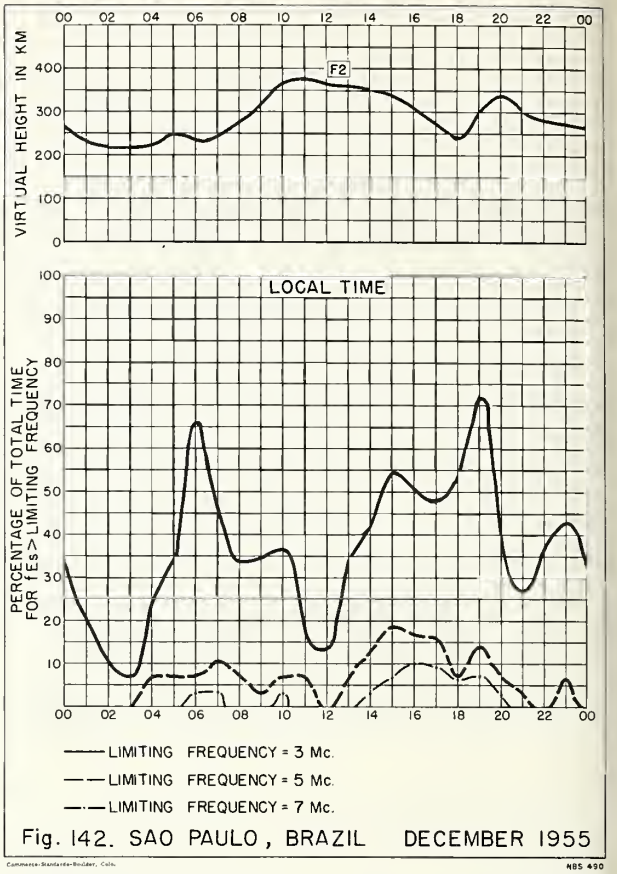


Fig. 142. SAO PAULO, BRAZIL DECEMBER 1955

Commerce-Standards-Boulder, Colo. NBS 490

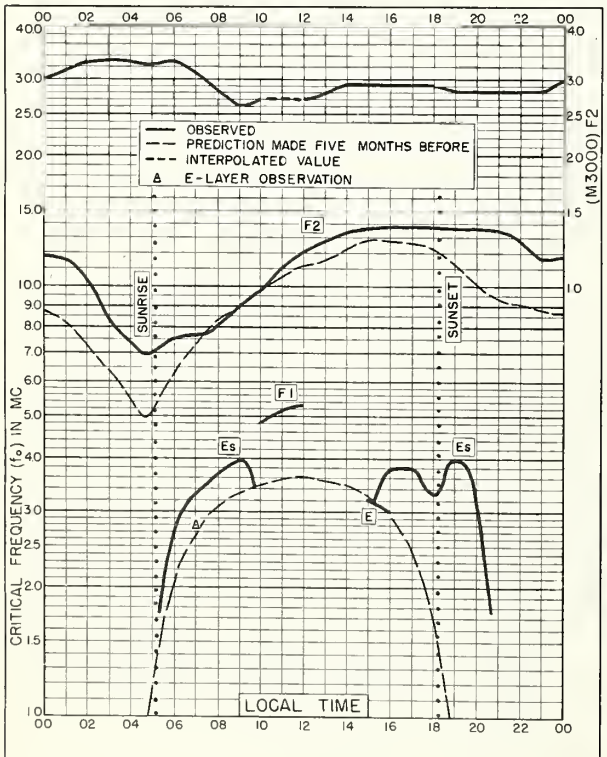


Fig. 143. SAO PAULO, BRAZIL
23.5°S, 46.5°W NOVEMBER 1955

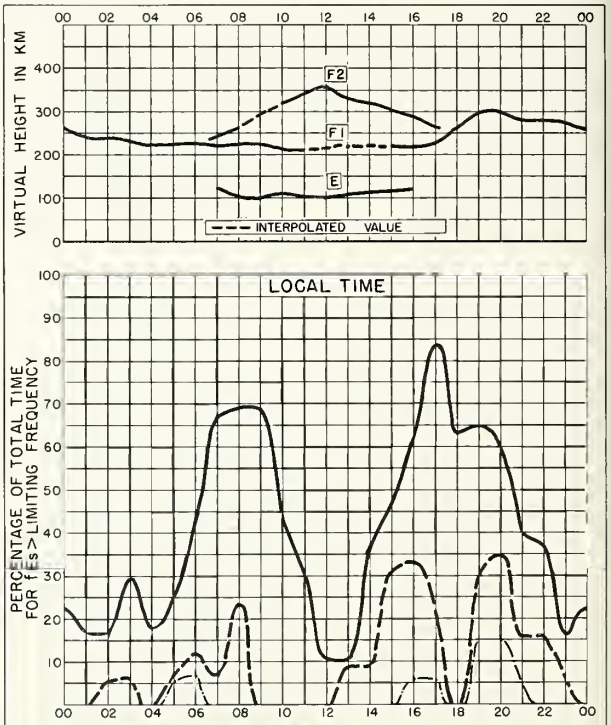


Fig. 144. SAO PAULO, BRAZIL NOVEMBER 1955

Commerce-Standards-Boulder, Colo. NBS 490

Index of Tables and Graphs of Ionospheric Data

in CRPL-F174 (Part A)

Index (CRPL-F174 (Part A), continued)

Index (CRPL-F174 (Part A), concluded)

CRPL Reports

[A detailed list of CRPL publications is available from the Central Radio Propagation Laboratory upon request]

Daily:

Radio disturbance forecasts, every half hour from broadcast stations WWV and WWVH of the National Bureau of Standards.

Telephoned and telegraphed reports of ionospheric, solar, geomagnetic, and radio propagation data.

Semiweekly:

CRPL—J. North Atlantic Radio Propagation Forecast (of days most likely to be disturbed during following month).

CRPL—Jp. North Pacific Radio Propagation Forecast (of days most likely to be disturbed during following month).

Semimonthly:

CRPL—Ja. Semimonthly Frequency Revision Factors For CRPL Basic Radio Propagation Prediction Reports.

Monthly:

CRPL—D. Basic Radio Propagation Predictions—Three months in advance. (Dept. of the Army, TB 11–499–, monthly supplements to TM 11–499; Dept. of the Air Force, TO 31–3–28 series). On sale by Superintendent of Documents * Members of the Armed Forces should address cognizant military office.

CRPL—F. (Part A). Ionospheric Data.
(Part B). Solar-Geophysical Data.
Limited distribution. These publications are in general disseminated only to those individuals or scientific organizations which collaborate in the exchange of ionospheric, solar, geomagnetic or other radio propagation data.

Catalog of Data:

A catalog of records and data on file at the U. S. IGY World Data Center A for Airglow and Ionosphere, Boulder Laboratories, National Bureau of Standards, which includes a fee schedule to cover the cost of supplying copies, is available upon request.

The publications listed above may be obtained without charge from the Central Radio Propagation Laboratory, National Bureau of Standards, Boulder Laboratories, Boulder, Colorado, unless otherwise indicated. Please note that the F series is not generally available.

Circulars of the National Bureau of Standards pertaining to Radio Sky Wave Transmission:

NBS Circular 462. Ionospheric Radio Propagation. $1.25.
NBS Circular 465. Instructions for the Use of Basic Radio Propagation Predictions. 30 cents.
NBS Circular 557. Worldwide Radio Noise Levels Expected in the Frequency Band 10 Kilocycles to 100 Megacycles. 30 cents.
NBS Circular 582. Worldwide Occurrence of Sporadic E. $3.25.

These Circulars are on sale by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. Members of the Armed Forces should address the respective military office having cognizance of radio wave propagation.

---

* For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington 25, D. C. Price 10 cents (single copy). Subscription Price: $1.00 a year; 50 cents additional for foreign mailing.

USCOMM-NBS-BL