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FOR OFFICIAL USE

PART A
IONOSPHERIC DATA

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JULY 1958

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

CRPL-F167
PART A

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CENTRAL RADIO PROPAGATION LABORATORY
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SYMBOLS, TERMINOLOGY, CONVENTIONS

Beginning with data reported for January 1952, and continuing through December 1956, the symbols, terminology, and conventions for the determination of median values used in this report (CRPL-F series) conform as far as practicable to those adopted at the Sixth Meeting of the International Radio Consultative Committee (C.C.I.R.) in Geneva, 1951. Excerpts concerning symbols and terminology from Document No. 626-E of this Meeting are given on pages 2-7 of the report CRPL-F89, "Ionospheric Data," issued January 1952. Reprints of these pages are available upon request.

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

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

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

There was an expansion in meaning of the following:

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

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

The following conventions are used in determining the medians for hours when no measured values are given because of equipment limitations and ionospheric irregularities. Symbols used are those given above.

a. For all ionospheric characteristics:

Values missing because of A, C, F, H, L, N or R are omitted from the median count.

b. For critical frequencies and virtual heights:

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

Values missing because of G are counted:

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

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

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

c. For MUF factor (M-factors):

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

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

d. For sporadic E (Es):

Values of fEs missing because of E or G are counted as equal to or less than the median foE, or equal to or less than the lower frequency limit of the recorder.

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

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

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

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

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

2. For the F2 layer, h'F or foEs, if the count is from five to nine, the median is considered doubtful. The E and F1 layers are so regular in their characteristics that, as long as the count is at least five, the median is not considered doubtful. A count of at least 5 is considered sufficient for an h'Es median.

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

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

Ordinarily, a blank space in the fEs or foEs column of a table is the result of the fact that a majority of the readings for the month are below the lower limit of the recorder or less than the corresponding values of foE. Blank spaces at the beginning and end of columns of h'F2 or h'F1, foF1, h'E, and foE are usually the result of diurnal variation in these characteristics. Complete absence of medians of h'F1 and foF1 is usually the result of seasonal effects.

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

- a. Predictions for individual stations used to construct the charts may be more accurate than the values read from the charts since some smoothing of the contours is necessary to allow for the longitude effect within a zone. Thus, inasmuch as the predicted contours are for the center of each zone, part of the discrepancy between the predicted and observed values as given in the F series may be caused by the fact that the station is not centrally located within the zone.
- b. The final presentation of the predictions is dependent upon the latest available ionospheric and radio propagation data, as well as upon predicted sunspot number.
- c. There is no indication on the graphs of the relative reliability of the data; it is necessary to consult the tables for such information.
- d. The tables may contain median values of either foEs or fEs. The graph of median Es corresponds to the table. Percentage curves of fEs are estimated from values of foEs when necessary.

PREDICTED AND OBSERVED SUNSPOT NUMBERS

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

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

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

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

Observed Sunspot Number

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

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:

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

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

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

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

Instituto Geofisico de Los Andes Colombianos:
Bogota, Colombia

Danish National Committee of URSI:
Narsarssuak, Greenland

The Finnish Academy of Sciences and Letters:
Sodankyla, Finland

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

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

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

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

Icelandic Post and Telegraph Administration:
Reykjavik, Iceland

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

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

Manila Observatory:
Baguio, P. I.

Institute of Terrestrial Magnetism, Ionosphere and Radio Prop-
agation, Moscow, U.S.S.R.:
Ashkhabad
Chita
Murmansk
Rostov-on-Don
Yakutsk
Yuzhno-Sakhalinsk

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

Post, Telephone and Telegraph Administration, Berne, Switzer-
land:
Schwarzenburg, Switzerland

United States Army Signal Corps:
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 Labora-
tory);
Anchorage, Alaska
Chiclayo, Peru
Chimbote, Peru
Huancayo, Peru (Instituto Geofisico de Huancayo)
Maui, Hawaii

National Bureau of Standards (Central Radio Propagation Laboratory), continued:

Panama Canal Zone
Point Barrow, Alaska
Puerto Rico, W. I.
Washington, D. C.

EXAMPLES OF IONOSPHERIC VERTICAL SOUNDINGS

Huancayo; February 17, 1958

(Geomagnetic Latitude 1°S)

The following ionograms were obtained at the Huancayo vertical sounding station operated by Instituto Geofisico de Huancayo. They are typical of day and night conditions for February at this geomagnetic latitude. Ionospheric data are scaled directly from these records onto the daily f-plot, a graph of frequency characteristics vs. time. The f-plot for the day represented by these soundings is found on the following page. Medians as found in the Tables of Ionospheric Data are calculated using hourly values taken from the f-plot or directly from the ionogram.

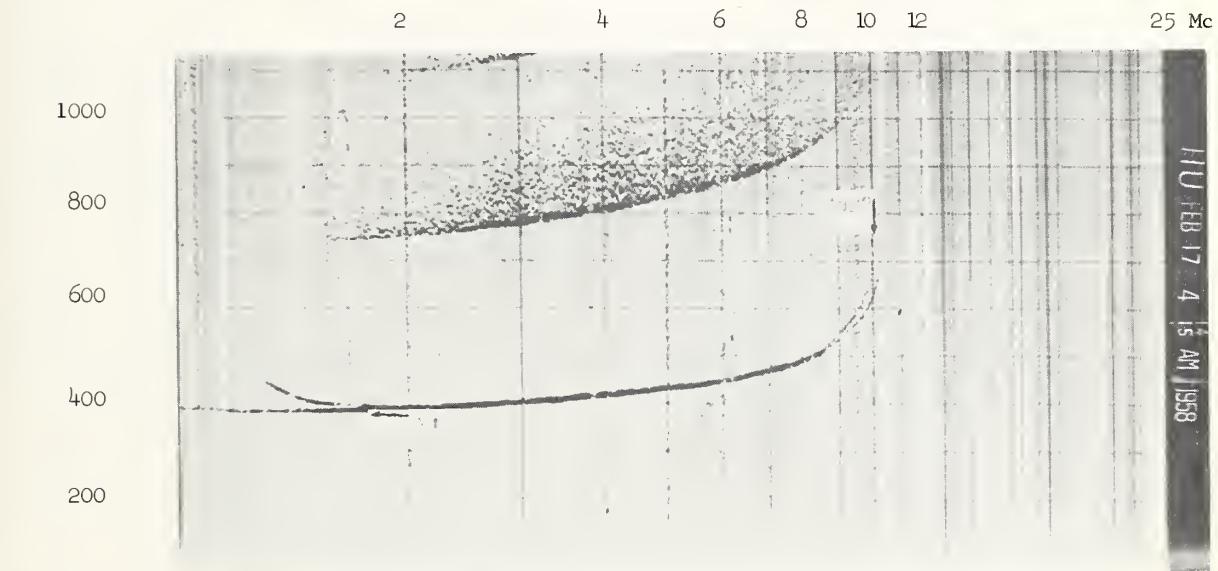


Fig. A. Huancayo, February 17, 1958, 0415 hours, 75°W time.

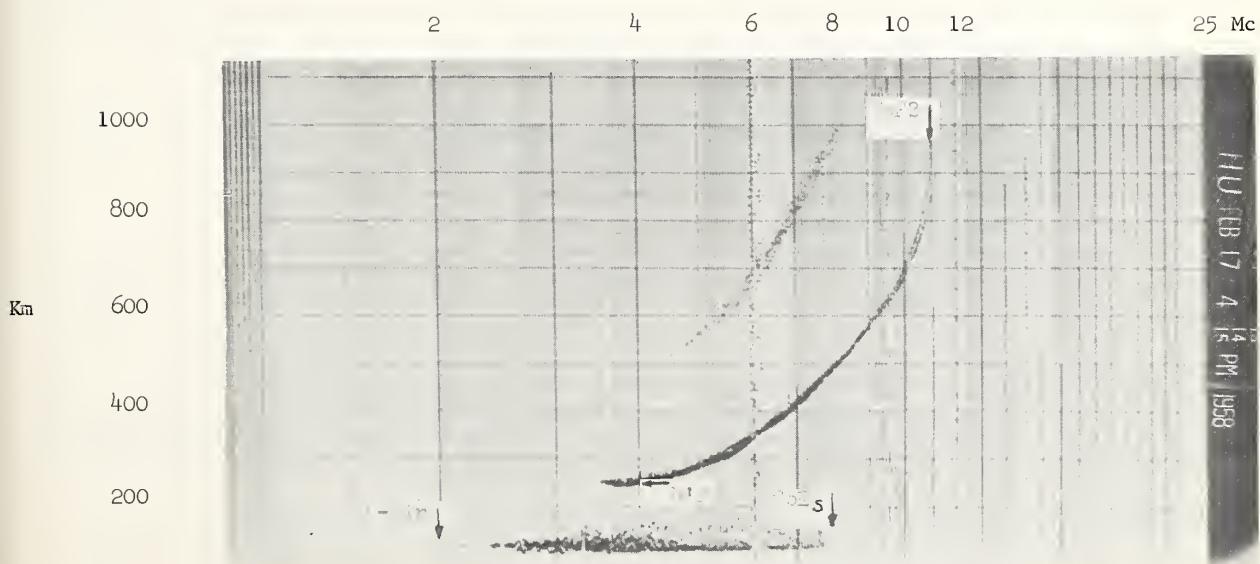


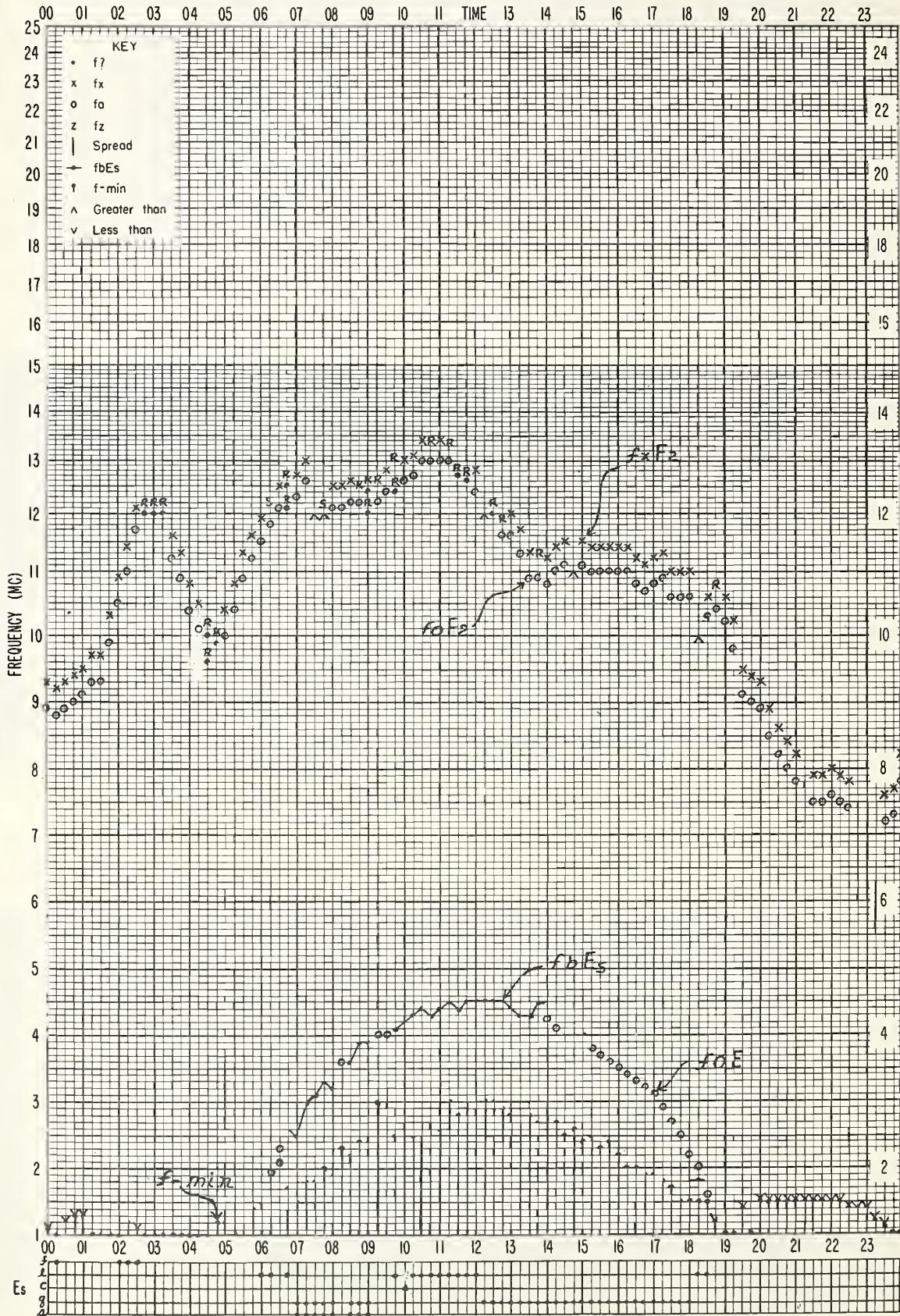
Fig. B. Huancayo, February 17, 1958, 1615 hours, 75°W time.

Huancayo, Peru

STATION ION HU

f - PLOT OF IONOSPHERIC DATA

DATE FEBRUARY 17, 1958



SCALED BY ALSQ.

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TABLES OF IONOSPHERIC DATA

April 1950 - August 1956

Table 1

Point Barrow, Alaska (71.3°N, 156.8°W)							April 1950	
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	(6.1)	325	---	---	---	3.2	(2.45)	
01	(5.8)	320	---	---	---	2.8	(2.42)	
02	(6.0)	340	131	---	---	2.1	(2.35)	
03	(6.0)	325	<137	---	---	(2.40)		
04	---	(5.6)	350	---	135	(1.90)	(2.35)	
05	(465)	(5.1)	325	3.4	122	(2.20)	2.32	
06	530	(5.05)	<300	3.9	119	2.60	(2.25)	
07	490	5.7	<300	4.0	113	3.02	2.28	
08	520	5.6	(275)	4.4	121	3.12	2.30	
09	(520)	6.2	(300)	4.9	113	3.40	2.35	
10	555	6.35	<300	4.9	113	3.75	2.32	
11	500	6.6	280	4.9	114	3.68	2.40	
12	500	6.9	<265	5.0	115	(3.50)	2.30	
13	610	6.8	260	4.9	117	3.40	2.25	
14	520	7.2	260	5.0	117	3.30	2.30	
15	490	7.7	(250)	4.9	113	3.25	2.35	
16	465	8.0	<270	4.4	114	3.10	2.40	
17	410	7.2	(260)	4.3	113	(2.90)	2.42	
18	(450)	6.65	(285)	---	115	2.65	2.55	
19	(450)	6.0	(305)	---	120	2.50	2.60	
20	---	5.95	305	---	125	2.35	2.70	
21	---	(6.0)	310	---	---	3.2	2.65	
22	---	(5.5)	325	---	139	---	3.1	2.50
23	---	(4.95)	350	---	---	2.0	(2.40)	

Time: 150.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 3

Washington, D. C. (30.7°N, 77.1°W)							April 1958	
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	7.5	310	---	---	---	2.40		
01	7.25	310	---	---	---	2.40		
02	7.1	310	---	---	---	2.42		
03	6.6	300	---	---	---	2.45		
04	6.15	290	---	---	---	2.45		
05	6.05	300	---	---	---	2.55		
06	6.8	270	---	121	2.00	2.00		
07	7.9	245	---	109	2.75	2.80		
08	(410)	9.0	235	5.2	109	3.25	2.70	
09	520	10.05	220	5.4	103	3.52	2.58	
10	520	10.2	220	5.5	105	3.80	2.50	
11	520	10.65	220	5.8	105	3.92	2.45	
12	520	10.7	220	5.8	105	4.00	2.40	
13	490	10.75	225	5.8	106	4.00	2.40	
14	475	10.9	230	5.6	109	3.95	2.38	
15	500	10.65	240	5.5	107	3.70	2.40	
16	460	10.35	240	5.4	109	3.45	2.45	
17	---	9.95	250	---	109	3.00	2.50	
18	---	9.65	265	---	119	2.25	2.55	
19	---	9.65	280	---	---	2.58		
20	---	9.1	260	---	---	2.55		
21	---	0.35	280	---	---	2.50		
22	---	7.9	290	---	---	2.45		
23	---	7.75	<305	---	---	2.42		

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 5

Point Barrow, Alaska (71.3°N, 156.8°W)							March 1958	
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	(4.7)	<300	---	---	---	2.0	---	
01	---	(315)	---	---	---	3.6	---	
02	(5.7)	325	---	---	---	2.3	---	
03	(4.2)	(340)	---	---	---	---	---	
04	---	<395	---	---	2.0	---	---	
05	---	(395)	---	---	---	---	---	
06	(5.6)	(390)	---	---	2.9	---	---	
07	---	(335)	---	---	(2.9)	---	---	
08	(6.0)	---	---	---	---	---	---	
09	---	---	---	---	---	---	---	
10	(5.9)	---	---	---	---	(2.60)	---	
11	---	---	---	---	---	---	---	
12	---	(270)	---	---	---	---	---	
13	(0.2)	<295	---	---	---	(2.80)	---	
14	---	7.9	<285	---	---	2.70	---	
15	---	8.5	<300	---	---	2.50	---	
16	---	(9.1)	295	---	---	(2.70)	---	
17	(5.4)	(270)	---	---	---	(2.70)	---	
18	---	(330)	---	---	---	---	---	
19	(5.35)	(350)	---	---	3.4	---	---	
20	---	(320)	---	---	3.5	---	---	
21	(4.0)	(340)	---	---	5.0	---	---	
22	---	<335	---	---	5.6	---	---	
23	(4.6)	<335	---	---	5.5	---	---	

Time: 150.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 6

Anchorage, Alaska (61.2°N, 149.9°W)							April 1956	
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00			(4.8)					2.4
01			4.8					2.35
02			(4.9)					2.4
03			(5.0)					(2.30)
04			(5.2)					2.30
05			(5.5)					2.40
06			(6.1)					(2.40)
07			6.3					2.35
08			6.6					2.35
09			6.75					2.35
10			7.2					2.35
11			7.45					2.35
12			7.8					2.35
13			7.75					2.40
14			7.95					2.45
15			8.4					2.50
16			8.75					2.55
17			9.0					2.60
18			0.95					2.70
19			7.9					2.70
20			6.9					2.70
21			6.1					2.65
22			(5.0)					2.60
23			(4.0)					2.50

Time: 150.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 4

Maui, Hawaii (20.8°N, 156.5°W)							April 1958	
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00			11.5					2.88
01			10.35					2.90
02			9.0					2.80
03			8.75					2.65
04			8.1					2.60
05			7.7					2.55
06			8.0					2.55
07			10.0					2.92
08			11.7					2.80
09			12.9					2.65
10			13.5					2.55
11			14.55					2.55
12			400					2.55
13			15.7					2.55
14			400					2.55
15			15.95					2.55
16			400					2.50
17			15.75					2.50
18			400					2.50
19			14.4					2.60
20			14.0					2.60
21			13.15					2.70
22			12.5					2.70
23			12.35					2.70

Time: 150.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 6

Anchorage, Alaska (61.2°N, 149.9°W)							March 1958	
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00			(4.4)					2.5
01			(4.4)					2.35
02			(5.0)					2.4
03			(5.0)					(2.40)
04			(4.3)					(2.40)
05			(5.0)					(2.50)
06			6.2					2.65
07			6.9					2.60
08			7.0					2.80
09			7.2					2.80
10			7.5					2.70
11			7.2					2.70
12			8.2					2.70
13			8.9					2.65
14			9.5					2.65
15			10.2					2.70
16			10.5					2.75
17			10.3					2.75
18			9.8					2.05
19			8.2					2.05
20								

Table 7

St. John's, Newfoundland (47.6°N, 52.7°W)							March 1958	
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(4.5)	340					(2,40)
01		(5.4)	340					(2,40)
02		5.0	340					2,40
03		(4.6)	325					(2,40)
04		(4.4)	310					(2,50)
05		(4.9)	300					(2,60)
06		6.1	270		121	2,20		2,90
07	---	7.8	250		119	2,00		3,00
00	---	8.6	235	---	112	3,10		2,90
09	---	9.6	230	---	111	3,40		2,80
10	---	10.2	220	---	110	3,50		2,75
11	---	10.4	230	---	111	3,70		2,70
12	---	10.9	235	---	113	3,80		2,60
13	---	11.0	230	---	111	3,70		2,60
14	---	11.0	230	---	113	3,60		2,55
15	---	11.0	240		115	3,25		2,60
16	---	11.0	250		115	2,90		2,70
17		11.0	255		129	2,50		2,70
18		9.9	260		---	---		2,70
19		8.6	260					2,60
20		7.9	265					2,60
21		6.6	300					2,50
22		5.3	340					2,40
23		(4.4)	350					(2,40)

Time: 60.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Note: The height scale was expanded around equinox.

Table 9

Panama Canal Zone (9.4°N, 79.9°W)							March 1958	
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		12.0	260					2,95
01		10.4	240					2,95
02		8.5	240					2,75
03		6.9	260					2,60
04		6.6	255					2,50
05		6.0	290					2,60
06		6.0	330					2,45
07		9.6	260		129	2,40		2,05
00		12.3	245		112	3,15	3.6	2,08
09	---	14.0	240		110	3,70		2,78
10	---	14.5	235		109	4,00	4.3	2,75
11	---	14.7	235		109	4,25		2,65
12	---	14.9	245		110	4,30	4.6	2,55
13	425	15.05	240	---	109	4,30		2,55
14	395	15.75	240	---	109	4,25		2,50
15	395	15.7	<265		109	4,00	4.4	2,50
16	(375)	15.15	<275		115	3,60	4.6	2,52
17	---	14.75	275		109	3,00	4.5	2,50
18		14.0	290		117	2,30	3.9	2,50
19		14.2	290			3.0		2,55
20		15.5	290					2,55
21		14.4	260			2.3		2,62
22		13.1	255					2,60
23		12.6	265					2,75

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 11

Thule, Greenland (76.6°N, 60.7°W)							February 1958	
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(5.4)	260					(2,60)
01		(6.0)	265					(2,00)
02		(6.0)	275					(2,65)
03		(5.4)	285					(2,75)
04		---	270					---
05		(5.2)	270					(2,75)
06		(5.5)	270					---
07		5.6	270	---	---	(2,70)		---
00		(5.0)	260	---	---	(2,85)		---
09		(6.6)	265	---	---	2,80		---
10		7.1	265	---	---	2,80		---
11		(7.2)	260	---	---	(2,80)		---
12		(7.9)	255	---	---	(2,85)		---
13		(7.2)	265	---	---	(2,70)		---
14		(7.3)	270	---	---	(2,75)		---
15		(9.5)	255			2,75		---
16		(0.0)	260			(2,75)		---
17		(0.0)	250			(2,75)		---
18		(0.2)	250			(2,80)		---
19		(6.8)	250			(2,60)		---
20		(5.0)	260			(2,60)		---
21		6.6	250			(2,65)		---
22		(5.4)	270			(2,55)		---
23		(5.4)	270			(2,60)		---

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 8

Maui, Hawaii (20.0°N, 156.5°W)							March 1958	
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00			12.2	245				3,00
01			10.6	240				2,90
02			9.1	250				2,90
03			8.0	240				2,90
04			7.2	245				2,80
05			5.8	260				2,70
06			5.8	290				2,50
07			8.1	265				2,90
00			10.9	240				3,00
09			13.0	230				2,80
10			14.4	230				2,80
11			15.5	230				2,70
12			(305)	15.8	230			2,60
13			375	16.0	235			2,60
14			360	16.5	240			2,60
15			365	16.3	245			2,60
16			(355)	15.0	240			2,60
17			15.0	250				2,65
18			14.6	260				2,70
19			15.0	265				2,70
20			15.0	270				2,75
21			14.0	250				2,75
22			(14.0)	245				2,0
23			13.0	250				(2,80)

Time: 150.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Note: Around equinox, the height scale was expanded.

Table 9

Fletchers Ice I. (80.0°N, 112.0°W)*							February 1958	
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00			(6.8)	250				(2,70)
01			(7.65)	260				(2,70)
02			(6.3)	265				(2,60)
03			(7.15)	250				(2,80)
04			(7.0)	260				(2,80)
05			(5.0)	250				(2,75)
06			(5.5)	265				(2,70)
07			(5.5)	260				(2,55)
09			(4.8)	260				(2,70)
10			(6.0)	260				(2,75)
11			(6.6)	260				(2,80)
12			(7.25)	250				(2,85)
13			7.3	255				2,80
14			(7.2)	270				(2,72)
15			(7.35)	255				(2,82)
16			(7.2)	250				(2,70)
17			(7.6)	260				(2,75)
18			(7.2)	250				(2,70)
19			(5.8)	260				(2,65)
20			6.8	270				2,70
21			(7.0)	250				(2,65)
22			(7.8)	260				(2,60)
23			(5.6)	265				2,72

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

*Preliminary estimated average position.

Table 12

Resolute Bay, Canada (74.7°N, 94.9°W)							February 1958	
Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00			5.6	280				---
01		5.2	280					---
02		5.5	280					---
03		(5.1)	280					(2,5)
04		4.7	200					(2,6)
05		4.2	290					---
06		4.8	290					---
07		5.0	200					(2,5)
08		5.3	270					---
09		6.3	270					---
10		7.0	270					---
11		7.0	270					---
12		7.8	270					---
13		7.9	280					---
14		8.0	280					---
15		8.2	270					---
16		7.0	270					---
17		7.0	270					---
18		6.5	270					---
19		6.2	280					---
20		6.0	200					---
21		5.5	270					---
22		5.4	280					---
23		5.0	280					---

Time: 90.0°W.

Table 13

Point Barrow, Alaska (71.3°N, 156.8°W)								February 1958	
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		(4.5)	290			3.0	(2.58)		
01		(5.15)	320			6.8	----		
02		(4.6)	<335			3.7	----		
03		(5.7)	345			4.2	(2.40)		
04		(4.4)	360			3.6	----		
05		(5.0)	340			2.9	----		
06		(4.4)	370			3.3	----		
07		(5.1)	355			3.0	----		
08		(5.05)	(350)			>3.1	(2.65)		
09		(5.6)	330			3.2	----		
10		(6.45)	290			----	(2.00)		
11		6.0	280			2.80			
12		7.4	(270)			2.85			
13		7.6	275			2.85			
14		8.4	260			2.00			
15		9.85	270			2.60			
16		10.3	260			2.85			
17		>9.0	270			2.90			
18		(7.0)	300			1.8	2.05		
19		(5.15)	300			2.6	(2.80)		
20		(4.4)	295			3.4	----		
21		(4.8)	310			3.7	----		
22		(4.7)	310			4.0	(2.70)		
23		(4.65)	280			4.2	(2.45)		

Time: 150.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 15

Reykjavik, Iceland (64.1°N, 21.8°W)								February 1958	
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		(4.6)	410			3.8	(2.35)		
01		>4.65	400			3.7	----		
02		----	400			3.5	----		
03		----	<410			3.6	----		
04		>5.0	390			>2.9	(2.50)		
05		(5.5)	360			----			
06		(4.75)	330			----			
07		(4.05)	305			(2.70)			
08		5.6	300			2.78			
09		6.9	275			2.85			
10		8.55	260			2.05			
11		9.8	250			2.00			
12		10.6	250			2.82			
13		11.0	250			2.90			
14		10.4	250			2.90			
15		9.0	250			2.90			
16		7.5	270			2.05			
17		(7.2)	290			(2.95)			
18		>5.55	325			2.8	(2.80)		
19		>6.35	290			3.65	(2.85)		
20		>6.0	350			4.0	----		
21		(5.9)	330			4.25	----		
22		>5.7	360			3.5	----		
23		---	360			3.75	----		

Time: 15.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 16.2 seconds.

Table 17

Churchill, Canada (58.0°N, 94.2°W)								February 1958	
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		5.1	310			5.0			
01		5.2	310			125	2.0	4.6	
02		5.0	310			130	2.0	4.4	
03		4.7	320			140	2.0	4.6	
04		4.4	320			130	1.8	4.4	
05		4.6	340			125	2.2	4.2	
06		4.6	360			115	2.1	4.4	
07		4.7	340			120	2.8	4.5	---
08		5.8	310			120	2.8	4.5	---
09		6.8	290			110	3.0	4.3	(3.05)
10		7.3	280			130	3.0	4.2	(2.0)
11		8.2	270			120	3.0	3.2	2.8
12		9.3	250			120	3.0	3.4	2.8
13		11.0	250			125	3.0	3.4	2.7
14		11.9	260			125	3.0	4.3	2.8
15		10.6	260			120	2.8	4.4	(2.7)
16		0.3	250			125	2.5	4.3	(2.0)
17		7.3	270			130	2.2	4.0	(2.9)
18		6.3	300			125	2.4	4.3	---
19		6.0	290			120	2.4	4.8	
20		6.0	330			120	2.5	5.0	
21		5.9	320			125	2.3	4.7	
22		5.5	300			135	2.0	5.0	
23		5.0	300			120	2.0	5.0	

Time: 90.0°W.

Sweep: 1.0 Mc to 17.0 Mc in 16 seconds.

Table 14

Poker Lake, Canada (64.3°N, 96.0°W)								February 1958	
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00					5.0	260	----	----	4.5
01			(5.7)	270	4.9	290	----	----	4.2
02			4.9	290	4.0	200	----	----	4.0
03			4.2	300	4.2	330	----	----	4.5
04			4.0	310	4.0	310	120	2.1	4.0
05			4.6	310	4.0	310	120	2.2	4.0
06			4.6	310	4.0	310	120	2.2	4.0
07			4.0	320	4.0	320	120	2.1	4.0
08			4.0	270	5.0	270	120	2.7	3.3
09			5.0	270	6.2	270	120	2.9	----
10			6.2	270	6.9	270	120	3.0	----
11			6.2	270	8.6	270	120	2.8	(2.7)
12			8.6	270	9.8	260	120	2.8	(2.8)
13			9.8	260	8.4	260	120	2.4	----
14			8.4	260	8.0	260	130	2.2	----
15			8.0	260	7.4	260	130	2.2	3.6
16			7.4	260	6.3	280	130	2.1	4.0
17			6.3	280	6.0	290	130	2.0	3.8
18			6.0	290	5.9	270	130	1.0	4.2
19			5.9	290	5.8	290	130	1.0	4.9
20			5.8	290	5.6	290	130	1.0	4.5
21			5.6	290	5.5	320	130	1.0	4.5
22			5.5	320	5.4	320	130	1.0	5.0
23			5.4	320	5.5	280	130	1.0	5.0

Time: 90.0°W.

Sweep: 1.0 Mc to 16.0 Mc in 16 seconds.

Table 17

St. John's, Newfoundland (47.6°N, 52.7°W)								February 1958	
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00			(5.8)	305					(2.50)
01			(5.65)	315					(2.50)
02			(5.7)	315					(2.62)
03			(5.0)	300					(2.60)
04			(5.5)	285					(2.60)
05			(5.05)	280					(2.62)
06			(5.0)	260					(2.72)
07			7.4	240					3.10
08			10.0	230					3.12
09			11.6	225					3.05
10			12.85	225					3.00
11			13.6	225					3.00
12			13.5	220					2.92
13			13.4	225					2.90
14			13.45	230					2.88
15			13.1	230					2.90
16			12.8	230					2.90
17			11.75	230					2.90
18			9.3	245					2.90
19			6.6	260					2.80
20			6.8	265					2.80
21			7.3	275					2.70
22			6.9	290					2.60
23			(5.9)	300					(2.50)

Time: 60.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 19
Ottawa, Canada (45.4°N, 75.0°W)

February 1950

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00	6.0	290						(2.7)
01	5.1	290						---
02	5.2	310						(2.8)
03	5.2	300						---
04	5.1	300						(2.7)
05	5.2	290						(2.75)
06	4.8	290						---
07	5.9	270			---	1.9		(2.95)
08	6.6	240			120	2.5		3.0
09	11.0	240			110	3.0		3.0
10	12.4	230			110	3.2		2.95
11	13.2	230			110	3.4		(2.9)
12	13.3	230			110	3.5		---
13	13.5	230			110	3.5		---
14	13.0	230			110	3.3		---
15	13.8	240			110	3.0		(2.0)
16	13.6	240			110	2.7		---
17	13.2	240			120	2.1		---
18	12.2	230			---	---		---
19	10.2	230			---	---		---
20	9.0	260			---	---		---
21	7.7	250			---	---		(2.0)
22	6.0	270			---	---		(2.8)
23	6.8	290			---	---		---

Time: 75.0°W.

Sweep: 1.0 Mc to 20.0 Mc in 16 seconds.

Table 21
White Sands, New Mexico (32.3°N, 106.5°W)

February 1950

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00	5.6	265						2.70
01	5.5	275						2.65
02	5.2	(285)						2.65
03	4.9	(205)						2.70
04	4.75	290						2.60
05	4.5	<300						2.60
06	4.45	<300						2.65
07	7.05	250			<132	1.90		3.00
08	10.5	230			109	2.72	2.0	3.15
09	12.7	230			109	3.30	3.4	3.10
10	13.7	225			109	3.62	3.0	3.00
11	14.1	220			111	3.02	4.0	2.95
12	14.0	225			111	3.95	4.1	2.05
13	14.0	230			111	3.90		2.80
14	13.0	230			111	3.75	3.0	2.75
15	13.6	230			111	3.50	3.9	2.75
16	13.2	235			111	3.10	3.4	2.75
17	12.95	235			115	2.50	2.5	2.85
18	12.3	230			---	---	2.0	2.90
19	10.3	220			---	---	2.0	2.90
20	9.0	230			---	---	2.05	2.95
21	7.6	230			---	---	2.05	2.95
22	6.55	245			---	---	2.05	2.85
23	6.0	250			---	---	2.05	2.85

Time: 105.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 23

February 1950

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00	10.55	240						2.95
01	9.35	235						3.00
02	0.5	230						2.92
03	7.0	240						3.00
04	5.5	245						2.70
05	5.2	<270						2.70
06	4.6	290						2.75
07	7.0	275						2.95
08	11.0	240			119	(2.65)		3.20
09	13.0	235			112	(3.25)		3.15
10	14.05	230			111	3.60	3.7	2.95
11	14.95	220			113	(3.85)	4.1	2.90
12	15.05	220			113	4.00	>4.0	2.75
13	(355)	16.5	220		111	4.00	4.0	2.75
14	(360)	17.0	225		111	3.95	4.2	2.65
15	(360)	16.5	230		111	3.80		2.70
16	---	16.4	235		111	3.45	3.7	2.70
17	---	15.1	245		117	(2.90)	3.2	2.72
18	---	14.5	250		---	2.4	2.80	2.00
19	---	14.3	250		---	2.02		2.00
20	---	14.5	250		---	2.80		2.05
21	---	14.5	235		---	2.05		2.00
22	---	13.3	240		---	2.02		2.05
23	---	11.85	245		---	2.90		2.05

Time: 135.0°E.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 20
Ft. Monmouth, New Jersey (40.4°N, 74.1°W)

February 1950

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00			6.7	270				2.75
01			6.3	(270)				2.70
02			6.0	(275)				2.70
03			6.0	<290				2.65
04			5.7	(270)				2.70
05			5.4	260				2.70
06			5.2	<255				2.70
07			6.9	240				3.05
08			10.3	230			109	2.70
09			12.1	220			109	3.10
10			13.2	220			111	3.50
11			13.25	220			109	3.65
12			13.6	220			109	3.70
13			13.4	220			109	3.65
14			13.5	220			109	3.58
15			>13.0	225			109	3.20
16			13.0	230			119	---
17			12.15	220				2.95
18			10.5	220				2.90
19			9.1	225				2.05
20			8.5	235				2.05
21			7.35	245				2.00
22			6.35	260				2.00
23			6.85	260				2.75

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 22
Grand Bahama I. (26.6°N, 78.2°W)

February 1950

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00			7.25	<255				2.80
01			6.65	<255				2.90
02			6.4	(250)				2.88
03			5.9	<255				2.80
04			5.5	<260				2.70
05			5.5	<290				2.70
06			5.7	<265				2.00
07			7.9	240			159	2.10
08			10.8	230			111	(2.80)
09			12.6	225			109	3.35
10			13.55	220			109	(3.65)
11			13.75	220			109	(3.95)
12			13.0	220			109	4.00
13			13.8	215			109	4.00
14			13.4	220			109	4.00
15			13.3	225			109	3.65
16			13.1	230			109	3.32
17			13.0	235			111	(2.75)
18			12.25	230			---	2.8
19			11.0	<220				2.8
20			9.7	<235				2.85
21			8.5	<245				2.85
22			7.05	<250				2.85
23			7.6	<260				2.05

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 24
Puerto Rico, W. I. (18.5°N, 67.2°W)

February 1950

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00			8.1	250				2.90
01			7.95	245				2.95
02			7.25	240				3.10
03			6.0	230				2.95
04			5.55	265				2.65
05			5.4	285				2.60
06			5.45	245				2.02
07			7.1	250			---	3.10
08			10.0	235			113	2.70
09			13.05	230			109	3.30
10			13.5	220			109	3.70
11			13.85	220			109	(3.90)
12			13.0	215			109	4.00
13			13.7	220			109	(4.00)
14			13.5	225			109	(3.98)
15			13.2	220			109	(3.80)
16			13.05	230			109	3.45
17			13.0	240			109	2.95
18			12.75	240			---	2.6
19			11.55	230				2.90
20			10.2	230				2.05
21			9.35	245				2.00
22			9.35	250				2.05
23			8.65	250				2.00

Time: 60.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 25

Baguio, P. I. (16.4°N, 120.6°E)							February 1950	
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	12.3	270				2.72		
01	11.0	270				2.70		
02	9.4	260				2.75		
03	7.0	260				2.70		
04	6.7	270			2.2	2.70		
05	5.2	200				2.62		
06	5.2	310				2.55		
07	9.4	310	141		2.30	2.60		
08	12.6	290	129	3.08	3.8	2.58		
09	14.2	275	125	3.55	4.0	2.40		
10	14.7	260	125	3.00	4.4	2.20		
11	13.95	250	124	3.95	4.8	2.10		
12	13.65	250	125	4.00	4.4	2.05		
13	13.4	<260	125	(4.00)	4.5	2.10		
14	13.85	260	125	3.90	4.3	2.10		
15	14.15	270	125	3.75	4.7	2.15		
16	(14.5)	280	127	3.28	4.6	(2.20)		
17	14.35	300	131	(2.70)	4.0	2.20		
18	14.3	330	---	---	3.0	2.20		
19	13.5	410				2.10		
20	(13.05)	400				(2.20)		
21	(13.6)	320				(2.40)		
22	14.0	290				2.50		
23	14.0	270				2.70		

Time: 120.0°E.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 27

Huancayo, Peru (12.0°S, 75.3°W)							February 1950	
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	10.2	250			3.0	2.02		
01	9.4	240			3.2	2.05		
02	0.65	255			2.6	2.90		
03	9.0	265			2.90			
04	0.3	245			4.0	2.95		
05	7.7	235			3.05			
06	0.0	260	---	---	4.0	2.92		
07	11.2	250	116	2.72	5.0	2.92		
08	13.0	235	111	3.40	7.6	2.72		
09	>14.0	225	110	(3.80)	0.0	2.55		
10	>13.9	215	109	(4.20)	0.0	2.40		
11	13.2	210	109	(4.40)	0.0	2.25		
12	12.2	210	---	(4.10)	0.0	2.20		
13	12.2	210	109	4.40	0.0	2.25		
14	12.2	210	109	4.23	0.0	2.20		
15	12.5	215	---	109	4.00	0.0	2.15	
16	>12.2	230	109	(3.60)	0.0	2.15		
17	12.5	250	111	(3.15)	7.1	2.22		
18	12.25	275	---	(2.30)	5.8	2.18		
19	11.6	345	---	E		2.22		
20	11.2	390				2.15		
21	11.3	320				2.32		
22	11.7	290				2.55		
23	11.4	245				2.72		

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 29

Sodankyla, Finland (67.4°N, 26.6°E)							January 1950	
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		300			3.9			
01		300			3.8			
02		360			3.5			
03		350			3.0			
04		335			2.0			
05		310			2.5			
06		270			2.6			
07		265			2.4			
08		290			2.4			
09		265	E	2.6	----			
10	(9.0)	250	E	3.3	(2.05)			
11	10.9	250	2.00	3.5	2.90			
12	12.7	230	2.20	3.5	2.90			
13	13.6	230	2.05	3.8	2.95			
14	13.7	230	1.95	3.5	2.90			
15	12.0	230	1.65	2.9	2.95			
16	11.2	230	E	2.0	2.95			
17	(8.2)	245	----	2.4	(2.05)			
18	----	270		2.7	----			
19	----	290		2.9	----			
20	----	315		3.0	----			
21		350		3.1				
22		400		3.4				
23		375		3.8				

Time: 30.0°E.

Sweep: 1.4 Mc to 22.0 Mc in 8 minutes, automatic operation.

Table 25

Table 26

Panama Canal Zone (9.4°N, 79.9°W)							February 1950	
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00			9.7	230				3.10
01			9.05	225				3.15
02			6.7	215				3.03
03			5.35	220				2.90
04			4.0	245				2.65
05			4.1	290				2.65
06			4.15	<305				2.55
07			0.45	260	138	2.30		3.00
08			11.95	240	111	3.00		3.05
09			13.95	225	107	3.55		3.00
10			14.25	220	107	3.90		2.90
11			14.6	210	107	4.10		2.75
12	(370)	15.05	210	---	105	4.20	4.3	2.70
13	390	15.1	225	---	107	4.20		2.65
14	300	15.0	225	---	105	4.02	4.4	2.60
15	395	15.5	230	---	105	3.90	4.1	2.60
16	(360)	15.0	230	106	3.50	4.3	2.60	
17		14.55	240	111	3.05	3.6		
18		14.0	250	122	2.20	3.0		2.70
19		(13.0)	235			2.6		(2.00)
20		(13.0)	230			2.2		2.75
21		(11.7)	250					(2.70)
22		11.5	245					2.00
23		10.85	240					2.90

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 20

Fletchers Ice I. (79.0°N, 116.0°W)*							January 1950	
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00			(6.8)	250				(2.70)
01			(6.0)	260				(2.50)
02			(4.9)	260				(2.65)
03			(5.6)	260				(2.70)
04			(5.6)	250				---
05			(5.7)	250				---
06			(6.0)	255				(2.80)
07			(6.0)	250				(2.00)
08			(5.3)	260				(2.70)
09			(4.9)	260				---
10			(4.9)	250				---
11			(5.1)	245				(2.75)
12			(5.2)	245				(2.80)
13			(8.0)	240				(2.00)
14			(5.8)	240				(2.05)
15			---	240				---
16			(6.7)	245				(2.75)
17			(5.2)	255	---	---		(2.70)
18			(4.4)	260				(2.50)
19			(4.6)	250				---
20			(5.5)	250				(2.70)
21			(6.3)	250				(2.90)
22			(6.5)	255				(2.70)
23			(6.0)	260				---

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 30

Lycksele, Sweden (64.6°N, 10.0°E)							January 1950	
Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00			5.2	330				2.4
01			5.5	330				2.5
02			5.9	330				2.4
03			5.6	310				2.45
04			5.8	290				2.6
05			5.4	265				1.8
06			5.1	255				2.7
07			4.9	265	---	---		2.6
08			5.7	255	---	E		2.6
09			8.2	250	125	1.75		2.9
10			10.8	240	105	1.95		3.0
11			12.5	240	105	2.10		3.1
12			13.4	235	---	2.20		3.1
13			13.4	230	---	2.10		3.2
14			12.8	230	105	1.85		3.2
15			11.7	220	140	1.55		3.1
16			10.3	220	---	E		3.0
17			8.3	220	---	---		2.95
18			5.6	240				2.8
19			5.0	270				1

Table 31

Reykjavik, Iceland (64.1°N, 21.8°W)								January 1950	
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00	---	370			4.4	----			
01	---	410			3.6	----			
02	(5.0)	405			3.4	----			
03	---	370			3.8	----			
04	(6.7)	340			3.6	(2.70)			
05	(6.8)	290			3.0	----			
06	(6.0)	300				(2.65)			
07	(5.9)	300				(2.75)			
08	(5.8)	300				(2.70)			
09	(6.5)	270	---	----		(2.80)			
10	9.2	250	---	----		2.90			
11	(11.8)	250	---	----		(2.90)			
12	---	>12.9	240	---		2.90			
13	13.0	240	<143	(2.30)		(2.90)			
14	>12.5	240	<141	2.20		(2.95)			
15	(10.75)	240	(141)	2.02		(2.98)			
16	(8.7)	270		131 (1.60)		(2.85)			
17	(5.7)	300				(2.90)			
18	(5.0)	300			2.9	(2.75)			
19	(4.3)	350			2.9	(2.70)			
20	(4.95)	<330			3.5	(2.90)			
21	>5.2	<340			4.2	----			
22	(6.1)	355			3.5	----			
23	---	370			4.2	----			

Time: 15.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 16.2 seconds.

Table 33

Inverness, Scotland (57.1°N, 4.2°W)								January 1950	
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00	4.7	345			<1.2	2.6			
01	4.4	340			<1.2	2.6			
02	4.0	340			<1.2	2.6			
03	4.2	335			<1.3	2.6			
04	4.0	315			<1.4	2.65			
05	4.2	300			<1.3	2.7			
06	4.0	300			<1.4	2.8			
07	3.7	290			<1.3	2.85			
08	5.8	250	---	----	1.0	2.95			
09	8.3	250	130	2.00	2.7	3.25			
10	11.9	250	130	2.45		3.2			
11	13.6	240	130	2.65		3.2			
12	14.2	240	125	2.00		3.15			
13	14.6	245	125	2.00		3.15			
14	14.2	245	125	2.60		3.15			
15	13.9	240	130	2.40		3.1			
16	13.2	235	150	1.90		3.15			
17	11.8	220		<1.6		3.1			
18	8.6	225		<1.6		3.1			
19	7.4	250		<1.6		3.0			
20	6.6	250		<1.6		3.0			
21	5.5	260		<1.6		2.9			
22	4.8	290		<1.6		2.65			
23	4.6	310		<1.4		2.6			

Time: 0.0°.

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

Table 35

White Sands, New Mexico (32.3°N, 106.5°W)								January 1950	
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00	5.3	250				2.90			
01	4.8	265				2.80			
02	4.6	270				2.65			
03	4.3	<290				2.60			
04	4.0	<285				2.60			
05	3.9	(300)				2.55			
06	3.9	<290		2.4		2.75			
07	6.6	250	---	----		2.90			
08	10.0	230	119	2.60		3.10			
09	12.3	230	111	3.20	3.3	3.05			
10	13.5	230	---	107	3.50	3.8	2.95		
11	13.0	225	---	111	3.80	4.0	2.80		
12	13.5	220	---	111	3.95		2.70		
13	13.0	225	---	109	3.60		2.60		
14	12.7	230	---	109	3.70		2.55		
15	12.5	230	---	111	3.40	3.5	2.55		
16	12.1	240	---	111	3.00	3.0	2.60		
17	11.8	240	(129)	2.30		2.70			
18	11.0	<240		3.0		2.70			
19	9.7	230				2.80			
20	8.6	240				2.00			
21	7.4	240				2.90			
22	6.6	250				2.90			
23	6.0	250				2.90			

Time: 105.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 32

Oslo, Norway (60.0°N, 11.1°E)								January 1950	
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00			4.0	335					2.40
01			3.7	340					2.30
02			3.6	350					2.40
03			3.6	330					1.2
04			3.9	305					2.40
05			3.7	290					1.3
06			3.4	295					2.50
07			3.6	260					2.55
08			5.0	250	---	---	1.3		2.70
09			0.2	250	115	1.05	2.6		2.00
10			11.4	250	115	2.20	2.4		2.05
11			11.0	240	120	2.50			2.05
12			>13.0	240	130	2.65			2.05
13			>14.0	240	130	2.65			(2.05)
14			>13.5	240	135	2.45			(2.90)
15			>12.6	240	120	2.20			(2.90)
16			>12.2	230	120	1.80			(2.05)
17			11.0	215					2.05
18			8.7	225					2.70
19			6.9	250					2.70
20			6.0	255					2.55
21			5.3	260					2.55
22			4.4	290					2.40
23			4.2	315					2.40

Time: 15.0°E.

Sweep: 0.7 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 34

Schwarzenburg, Switzerland (46.0°N, 7.3°E)								January 1950	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2	
00			300	5.4					2.8
01			300	5.5					2.7
02			300	5.6					2.9
03			300	5.2					2.9
04			200	5.0					3.0
05			270	4.9					3.0
06			200	3.0					3.0
07			260	3.0					3.1
08			210	7.6					3.2
09			210	11.0	100	2.4			3.4
10			200	14.6	100	2.8			3.4
11			200	14.3	100	3.1			3.4
12			200	14.0	100	3.2			3.3
13			200	14.0	100	3.2			3.1
14			210	14.2	100	3.2			3.1
15			210	14.0	100	3.0			3.2
16			210	13.2	100	2.6			3.2
17			220	12.0					3.2
18			210	11.2					3.3
19			210	9.2					3.3
20			220	7.2					3.1
21			250	6.7					3.0
22			260	6.2					3.0
23			270	5.6					3.0

Time: 15.0°E.

Sweep: 1.0 Mc to 25.0 Mc in 30 seconds.

Table 36

Okinawa I., (26.3°N, 127.0°E)								January 1950	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2	
00			10.7	245					2.85
01			9.8	245					2.90
02			0.4	230					2.95
03			6.7	240					2.95
04			5.4	230					2.60
05			5.1	(290)					2.55
06			5.1	<300					2.68
07			7.1	200					2.85
08			11.5	245	119	(2.60)			3.10
09			1						

Table 37

Formosa, China (25.0°N, 121.5°E)							January 1950		
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00	12.0	240				2.90			
01	10.3	230				3.00			
02	0.0	230				2.95			
03	6.6	220				2.95			
04	5.2	(250)				2.55			
05	5.4	<280				2.60			
06	6.0	200				2.70			
07	10.5	260				3.00			
08	13.0	240			2.9	3.4	3.10		
09	14.0	230			3.5	4.0	2.90		
10	15.2	230			---	4.4	2.70		
11	15.2	230			---	4.8	2.55		
12	15.7	230			4.2	4.0	2.50		
13	(440)	16.4	230		4.1	4.6	2.45		
14	---	16.1	230		4.0	4.5	2.40		
15	16.1	240			3.7	4.1	2.45		
16	16.2	240			3.2	3.9	2.50		
17	15.6	260			(2.5)	3.2	2.55		
18	15.5	200				3.1	2.60		
19	15.9	200				2.4	2.70		
20	15.8	260					2.80		
21	14.9	230					2.90		
22	13.0	230					2.00		
23	12.1	240					2.85		

Time: 120.0°E.

Sweep: 1.1 Mc to 19.5 Mc in 15 minutes, manual operation.

Table 39

Panama, P.L. (16.4°N, 120.6°E)							January 1950		
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00	11.5	275				1.7	2.60		
01	10.2	265				2.70			
02	8.7	260				2.60			
03	7.2	260				2.65			
04	6.7	270				2.60			
05	6.35	270				2.65			
06	5.95	290			---	(3.0)	2.60		
07	10.4	305			131	2.40	2.65		
08	13.4	290			121	3.10	3.7	2.65	
09	14.7	265			119	(3.65)	4.0	2.50	
10	14.0	250			119	(3.90)	4.7	2.22	
11	13.4	235			119	(4.00)	5.0	2.02	
12	12.5	245			119	(4.03)	5.1	2.00	
13	12.0	250			119	4.05	4.9	2.00	
14	12.45	260			121	3.95	4.6	2.00	
15	12.6	270			<121	3.70	4.2	2.00	
16	12.0	230			<123	3.30	3.0	2.05	
17	12.0	300			129	2.55	4.4	2.15	
18	12.3	340				3.0	2.20		
19	(13.1)	405					(2.18)		
20	(13.3)	370					2.1	(2.30)	
21	13.0	300					3.1	2.46	
22	12.65	270					2.7	2.55	
23	12.1	270					1.9	2.60	

Time: 120.0°E.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 41

Huancayo, Peru (12.0°S, 75.3°W)							January 1950		
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00	8.0	360				3.5	2.20		
01	9.2	320				4.0	2.48		
02	9.3	300				4.3	2.60		
03	8.6	255				4.5	2.00		
04	7.95	240				4.5	3.00		
05	6.5	240				4.5	3.05		
06	8.5	290			115	2.02	4.0	2.75	
07	11.25	255			112	(3.00)	7.0	2.55	
08	13.0	235			111	(3.60)	9.0	2.30	
09	13.5	225			---	(4.02)	11.0	2.25	
10	13.5	220			---	(4.35)	11.5	2.05	
11	12.05	215			7.1	---	11.5	2.05	
12	11.3	210			7.0	---	11.2	2.10	
13	(590)	11.95	200		6.7	---	11.0	2.08	
14	---	12.55	210		6.4	---	(4.25)	9.0	
15	---	12.6	210		106	(4.00)	9.0	2.05	
16	---	12.0	235		---	(3.68)	9.0	2.10	
17	12.5	255			109	(3.20)	0.9	2.03	
18	12.45	290			---	(2.40)	6.0	2.10	
19	11.5	350			---	---	2.00		
20	10.6	410					1.95		
21	9.3	(430)					2.00		
22	9.35	405					2.05		
23	8.0	300					3.5	2.10	

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 38

Puerto Rico, W. I. (10.5°N, 67.2°W)							January 1950		
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00					0.2	250			
01					7.7	240			
02					6.4	235			
03					5.1	245			
04					4.0	(300)			
05					5.0	(230)			
06					5.2	250			
07					7.4	260			
08					11.6	240			
09					13.5	230			
10					13.6	225			
11					12.0	215			
12					12.7	210	6.9		
13					(305)	12.0	220		
14					12.3	230	7.1		
15					12.0	230	---		
16					12.0	245	109		
17					12.0	245	113		
18					11.0	260			
19					10.9	240			
20					10.1	250			
21					9.5	250			
22					9.0	240			
23					0.3	250			

Time: 60.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 40

Leonopolis, Belgian Congo (4.4°S, 15.2°E)							January 1950		
Time	h'F2	foF2	b'F1	foF1	h'E	foE	foEs	(M3000)F2	
00					265	11.8			
01					250	10.5			
02					245	8.6			
03					255	7.9			
04					245	6.6			
05					270	7.1	---		
06					270	9.0	250		
07					280	10.1	240		
08					(205)	11.0	230		
09					11.4	225	---		
10					485	12.6	220		
11					460	13.2	220		
12					490	12.8	220		
13					540	12.5	220		
14					525	13.0	230		
15					465	13.6	240		
16					430	13.6	260		
17					405	13.1	290		
18					380	13.2			
19					350	14.0			
20					295	14.3			
21					250	13.5			
22					250	13.0			
23					260	12.6			

Time: 0.0°W.

Sweep: 1.0 Mc to 20.0 Mc in 7 seconds.

Table 42

Rototonga I., (21.2°S, 159.8°W)							January 1950		
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00					(8.0)	300			
01					9.0	340			
02					9.0	330			
03					(0.9)	320			
04					8.4	300			
05					(8.4)	320			
06					9.0	260			
07					(10.4)	240			
08					11.2	240			
09					12.0	240			
10					490	12.9	230		
11					460	14.2	220		
12					450	15.3	230		
13					440	14.8	230		
14					450	14.3	240		
15					450	13.1	240		
16					440	(12.4)	250		
17					(420)	(12.8)	260		
18					(12.9)	300			
19					(13.2)	370			
20					(9.7)	360			
21					(9.9)	340			
22					(10.5)	310			
23					(9.6)	300			

Time: 165.0°

Table 43

Lindau/Harz, Germany (51.6°N, 10.1°E)							December 1957	
Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00	4.98	320					2.34	
01	4.92	313					2.35	
02	4.70	304					2.35	
03	4.54	308					2.42	
04	4.20	285					2.30	
05	3.93	272					2.46	
06	3.50	260					2.48	
07	3.72	271					2.55	
08	(7.10)	237	---	---	2.3	2.74		
09	11.10	230	---	---	3.2	2.95		
10	13.90	229	---	2.67	3.6	2.96		
11	15.05	223	112	2.97	3.8	2.90		
12	15.25	229	111	3.05	3.9	2.86		
13	15.15	226	---	3.04	3.9	2.78		
14	15.10	228	112	2.92	3.7	2.79		
15	14.44	229	---	2.51	3.4	2.82		
16	13.65	227	---	---	3.0	2.82		
17	12.10	221	---	---	2.8	2.80		
18	10.30	217			2.3	2.78		
19	8.39	230				2.80		
20	6.84	240				2.70		
21	5.76	266				2.58		
22	5.56	286				2.43		
23	5.12	300				2.41		

Time: 15.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 4 minutes.

Table 45

Chiclayo, Peru (6.8°S, 79.8°W)							December 1957	
Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00	10.0	340			4.3	2.40		
01	9.6	335			5.0	2.40		
02	9.2	325			5.0	2.50		
03	8.8	295			4.4	2.80		
04	8.0	245			2.9	2.95		
05	6.9	245			4.0	3.00		
06	9.0	300	---	---	4.4	2.70		
07	11.4	265	119	2.80	4.2	2.65		
08	13.3	250	114	3.60	4.2	2.55		
09	14.0	235	113	4.00		2.40		
10	14.2	230	117	4.30		2.30		
11	14.1	(225)	113	4.50		2.20		
12	13.8	(225)	6.9	115	4.50	2.10		
13	625	13.6	220	6.8	113	4.50	2.05	
14	(630)	13.0	(220)	6.5	115	4.40	2.00	
15	12.8	230	---	111	(4.10)	4.5	2.00	
16	12.0	<250	---	111	(3.70)	4.5	2.05	
17	12.6	270	115	3.40	5.0	2.05		
18	12.2	295	123	(2.50)	4.5	2.10		
19	12.2	340			3.3	2.15		
20	12.1	370				(2.15)		
21	11.0	350				2.10		
22	>11.5	<335			3.5	2.20		
23	10.8	325			4.2	2.35		

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 47

Scott Base (77.8°S, 166.8°E)							December 1957	
Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00	580	5.1	200	4.0	105	2.8	2.10	
01	640	5.0	280	4.0	100	2.7	2.05	
02	600	5.3	280	4.0	100	2.8	2.15	
03	610	5.2	270	4.1	100	3.0	2.15	
04	580	5.4	260	4.2	100	3.0	2.15	
05	550	5.6	260	4.3	100	3.1	2.20	
06	600	5.7	250	4.6	100	3.2	2.25	
07	560	6.0	250	4.6	100	3.5	2.30	
08	570	5.9	250	4.8	100	3.5	2.30	
09	610	6.0	240	4.8	100	3.5	2.20	
10	600	6.0	240	5.0	100	3.6	2.20	
11	620	6.0	230	5.1	100	3.6	2.15	
12	620	6.0	230	5.1	100	3.6	2.15	
13	640	6.0	230	5.0	100	3.6	2.10	
14	600	6.2	250	5.0	100	3.6	2.20	
15	570	6.1	240	5.0	100	3.5	2.20	
16	570	6.4	240	4.8	100	3.4	2.20	
17	560	6.4	250	4.8	100	3.4	2.20	
18	550	6.2	250	4.6	100	3.3	2.20	
19	540	6.5	250	4.3	100	3.1	2.20	
20	570	5.8	250	4.3	100	3.0	2.15	
21	>550	5.6	260	4.1	100	2.9	2.20	
22	550	5.2	260	4.1	105	2.8	2.20	
23	630	5.1	260	4.0	105	2.8	2.15	

Time: 165.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 4 minutes.

Table 44

Victoria, Canada (40.4°N, 123.4°W)							December 1957	
Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00			4.4		260			
01			4.3		230			
02			4.4		210			
03			4.4		210			
04			4.2		210			
05			4.1	(300)				
06			3.9	(270)				
07			4.0	270				
08			7.0	240			2.0	
09			10.0	220			2.6	
10			12.1	220			3.0	
11			13.7	220			3.2	
12			13.9	220			3.3	
13			14.0	210			3.2	
14			13.8	210			3.0	
15			13.6	230			2.8	
16			13.0	210			2.6	
17			12.2	210			2.2	
18			10.8	210				
19			9.0	200				
20			6.9	210				
21			5.5	220				
22			4.8	240				
23			4.5	260				

Time: 120.0°W.

Sweep: 1.6 Mc to 20.0 Mc in 15 seconds.

Table 46

Christchurch, New Zealand (43.6°S, 172.8°E)							December 1957	
Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00			8.0		340			
01			7.3		340			
02			6.8		330			
03			6.3		350			
04			6.0		350		1.2	2.30
05			5.9		300		1.5	2.45
06			(520)	6.3	290		2.0	2.45
07			500	6.6	250	5.1	2.8	2.45
08			550	7.0	250	5.7	3.0	2.40
09			550	7.8	240	5.8	4.0	2.35
10			550	8.0	240	6.0	4.0	2.30
11			520	8.0	(230)	6.2	4.2	2.30
12			550	8.1	240	6.2	5.0	2.30
13			550	8.1	240	6.1	4.4	2.30
14			550	8.1	240	6.1	4.4	2.30
15			540	8.0	250	6.0	4.1	2.30
16			540	8.0	250	5.9	4.0	2.30
17			460	8.3	250	5.5	3.7	2.35
18			(450)	8.2	260	5.2	3.2	2.40
19			8.2	300		110	2.8	2.45
20			8.2	330			3.2	2.40
21			8.5	340			3.0	2.30
22			8.8	340			3.4	2.30
23			8.4	350			3.1	2.25

Time: 180.0°E.

Sweep: 1.0 Mc to 13.0 Mc in 1 minute 55 seconds.

Table 49

Chimbote	Peru (9.1°S, 78.6°W)	October 1957						
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	8.95	255			4.5	2.55		
01	9.35	260			4.4	2.60		
02	0.05	250			4.3	2.75		
03	3.5	240			3.4	2.82		
04	7.0	240				2.90		
05	6.3	240			2.9	3.00		
06	8.1	230	(145)	2.02	3.5	2.00		
07	11.7	255		119	3.00	2.00		
08	14.05	240		119	3.70	2.65		
09	14.9	230		117	4.10	2.45		
10	---	15.2	230	115	4.30	2.20		
11	---	14.8	220	113	4.50	2.05		
12	---	(13.1)	215	---	115	4.50	(2.00)	
13	---	(12.5)	215	---	115	4.50	2.00	
14	---	(12.2)	215	---	115	4.28	7.4	2.00
15	12.0	220		111	4.00	8.1	2.00	
16	11.5	240		111	3.50	7.6	1.95	
17	(11.05)	270		119	3.00	6.3	(1.90)	
18	(11.1)	315		162	2.15	4.8	(2.00)	
19	(10.45)	415					(2.00)	
20	(9.8)	455					(2.00)	
21	(9.4)	(405)					(2.00)	
22	9.3	350					2.2	(2.25)
23	9.45	280					3.2	(2.50)

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 51

Campbell I. (52.5°S, 169.2°E)	October 1957							
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	(6.2)	300			2.5	(2.50)		
01	(5.8)	320			1.9	2.50		
02	(5.0)	300			1.7	2.45		
03	(5.0)	<320			1.6	(2.45)		
04	(4.9)	300		125	1.7	(2.50)		
05	5.8	270		105	2.2	2.70		
06	6.6	250		100	2.8	2.75		
07	---	7.4	230	---	105	3.3	2.70	
08	---	8.0	220	---	100	3.5	2.70	
09	(500)	8.2	220	6.1	100	3.8	2.55	
10	(440)	8.4	220	6.7	105	3.9	2.60	
11	(460)	8.4	220	6.6	105	3.9	2.50	
12	450	9.0	220	(6.3)	110	3.9	2.50	
13	440	9.2	220	6.6	105	4.0	2.50	
14	440	9.3	220	(6.3)	105	3.9	2.45	
15	(420)	8.9	220	5.8	105	3.6	2.50	
16	---	8.9	240	---	110	3.2	(2.60)	
17	---	(8.3)	250	---	110	2.0	(2.65)	
18	(8.1)	270		120	2.2	----		
19	(6.8)	270		115	1.6	<1.8	----	
20	(6.6)	260	---	---	---	<1.7	----	
21	7.8	270				1.0	(2.45)	
22	7.0	290				2.2	2.40	
23	(6.7)	310				3.2	2.45	

Time: 165.0°E.

Sweep: 1.0 Mc to 15.0 Mc in 5 minutes, manual operation.

Table 53

Scott Base (77.8°S, 166.8°E)	October 1957							
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	---	5.2	320	---	1.4	<2.9	2.70	
01	---	4.9	340	---	1.6	2.6	2.70	
02	(420)	5.0	330	---	160	1.7	2.0	(2.65)
03	---	4.9	320	---	<140	1.9	2.80	
04	---	5.6	300	3.8	(120)	2.0	2.2	2.90
05	(450)	6.3	290	---	110	2.2	3.00	
06	---	6.5	270	4.0	115	2.6	3.00	
07	(500)	7.1	260	4.4	110	2.7	2.90	
08	(450)	7.4	250	4.7	110	2.9	2.90	
09	430	7.6	250	4.8	110	3.0	2.70	
10	500	7.4	250	5.0	105	3.0	2.80	
11	500	7.9	250	5.2	105	3.1	2.70	
12	470	7.7	250	5.0	105	3.1	2.70	
13	460	8.1	250	5.0	105	3.0	2.70	
14	450	8.1	250	4.9	105	3.0	2.60	
15	460	8.0	250	4.8	110	2.9	2.60	
16	440	8.0	260	4.6	110	2.8	2.60	
17	430	8.4	270	4.4	115	2.7	2.70	
18	(450)	8.3	290	---	120	2.5	2.60	
19	---	7.8	290	---	<130	2.3	2.70	
20	---	7.6	300	---	140	2.0	2.70	
21	---	6.8	300	---	150	1.8	2.60	
22	---	6.0	320	---	150	1.7	2.0	2.60
23	---	5.5	340	---	---	1.6	2.0	2.65

Time: 165.0°E.

Sweep: 1.0 Mc to 15.0 Mc in 5 minutes, manual operation.

Table 53

Christchurch, New Zealand (43.6°S, 172.8°E)	October 1957							
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00			8.1	300				<1.6
01			7.8	300				<1.4
02			7.2	300				<1.1
03			6.9	300				2.35
04			6.4	310				2.35
05			6.3	310				2.40
06			6.8	300				2.40
07			8.3	250				2.75
08			9.2	250				2.80
09			10.2	250				2.70
10			10.4	240				2.65
11			10.6	240				2.55
12			(440)	10.7	240			2.55
13			(450)	10.5	240			2.50
14			10.4	240				2.45
15			10.0	250				2.50
16			9.9	250				2.50
17			9.9	250				2.55
18			9.9	270				2.55
19			10.0	290				2.55
20			9.5	290				2.50
21			9.3	300				2.50
22			8.9	300				2.45
23			8.4	300				2.40

Table 50

Table 52	October 1957							
Cape Hallett (72.3°S, 170.3°E)	October 1957							
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00			(4.6)	355				2.30
01			(4.3)	370				2.35
02			(3.7)	350				2.30
03			4.4	315				2.55
04			(4.8)	305				2.50
05			(5.7)	285	(4.0)	109	(2.4)	2.50
06			(505)	6.7	250			2.60
07			(455)	7.4	250	(4.6)	107	(3.0)
08			(465)	8.0	250	(4.8)	105	(3.1)
09			420	(8.3)	240	(4.8)	105	(3.2)
10			450	7.6	235	5.1	103	(3.3)
11			505	(7.6)	230	5.0	101	(3.4)
12			510	(7.8)	225	5.0	102	(3.4)
13			480	8.0	230	5.2	103	(3.3)
14			480	7.9	235	5.2	105	(3.2)
15			510	7.6	245	4.8	107	2.30
16			455	8.0	250	4.5	109	(2.9)
17			(445)	7.0	270	4.4	109	2.7
18			464	294	---	---	2.2	2.58
19			5.62	273	---	1.98	2.7	2.60
20			6.72	250	---	112	2.56	3.5
21			5.79	300	---			2.93
22			5.18	291	---			2.56
23			4.64	294	---			2.55
06			4.64	294	---			2.55
07			6.72	250	---	112	2.56	3.5
08			(572)	8.15	240	4.05	110	3.05
09			G	9.18	234	4.54	108	3.37
10			G	10.00	231	4.78	106	3.54
11			G	10.40	231	4.85	106	3.69
12			(735)	10.38	232	4.80	106	3.80
13			(678)	10.21	236	5.15	105	3.78
14			(658)	10.08	235	5.12	107	3.68
15			(484)	10.18	241	5.30	105	3.52
16			---	10.12	241	---	106	3.29
17			---	10.12	250	---	109	2.89
18			---	9.84	252	---	112	3.3
19			---	9.60	248	---	---	3.0
20			---	8.73	250	---	---	3.2
21			---	8.16	256	---	---	2.6
22			---	7.45	268	---	---	2.60
23			---	7.04	280	---	---	2.4

Table 54

Lindau/Harz, Germany (51.6°N, 10.1°E)	September 1957							
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2

</tbl

Table 55

Slough, England (51.5°N, 0.6°W)									September 1957		
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2			
00			6.0	340			2.0	2.45			
01			(6.2)	315			2.4	2.50			
02			5.4	320			1.9	2.45			
03			(4.8)	335			2.4	2.45			
04			(4.3)	340			---	<1.4	(2.50)		
05			4.2	320		(140)	<1.60	3.0	2.55		
06			5.3	270		---	145	2.10	3.0	2.75	
07			7.0	250		3.9	125	2.80	3.2	2.85	
08			8.0	250		4.2	120	3.20	3.4	2.75	
09	800		8.6	245		4.8	120	3.50	3.7	2.75	
10	570		9.0	240		5.1	120	3.70	4.0	2.70	
11	745		>9.4	230		5.1	115	3.75	4.1	2.65	
12	530		9.9	240		5.4	115	3.80	4.0	2.60	
13	475		10.6	240		5.4	115	3.80	4.2	2.55	
14	400		10.1	245		5.4	115	3.70		2.55	
15	520		10.0	250		5.0	115	3.50		2.60	
16	440		9.5	250		4.4	120	3.20	3.4	2.60	
17	(440)		9.3	260		---	120	2.70	3.5	2.70	
18			8.5	260		---	140	<2.10	3.6	(2.75)	
19			7.2	260			1.60	3.0	(2.65)		
20			8.4	260		---		2.9	2.60		
21			7.6	260				2.2	2.60		
22			6.8	285				1.9	2.50		
23			6.8	300				1.8	2.50		

Time: 0.0°.

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

Table 57

Bogota, Colombia (4.5°N, 74.2°W)									September 1957		
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2			
00			13.0	230				3.05			
01			>10.05	225				3.10			
02			8.7	<240				2.98			
03			8.15	230				3.00			
04			7.3	<240				2.08			
05			4.5	<270		---	---	1.9	2.00		
06			6.8	270		129	---	3.0	2.90		
07			10.3	245		111	3.00	3.4	3.02		
08			11.9	235		109	3.62		2.90		
09			13.15	230		109	4.00		2.70		
10			13.65	<230		111	4.20		2.60		
11			14.15	<230		111	(4.35)		2.55		
12			420	14.3	230	---	111	(4.42)		2.55	
13			415	14.8	(225)	---	111	4.35		2.55	
14			405	14.55	(220)	---	111	4.25		2.55	
15			415	14.3	230	---	111	3.95	4.0	2.50	
16			---	14.1	240	---	109	3.45	3.8	2.50	
17			14.75	260		<115	2.70	3.8	2.60		
18			14.75	290				3.4	2.60		
19			16.5	320				2.9	2.50		
20			(18.0)	290					(2.65)		
21			(18.0)	245					2.70		
22			(17.3)	240					(2.80)		
23			15.3	235					3.00		

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 59

Lindau/Harz, Germany (51.6°N, 10.1°E)									August 1957		
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2			
00			6.45	299			2.6	2.50			
01			6.30	297			2.6	2.50			
02			5.72	300			2.2	2.52			
03			5.50	297			2.6	2.52			
04			5.12	290		---	---	2.5	2.60		
05			5.16	286		---	---	2.9	2.70		
06			6.03	252		---	111	(2.32)	3.4	2.93	
07			7.04	232		105	2.78	4.0	2.90		
08			(400)	7.88	230	5.00	103	3.18	4.8	2.80	
09			(350)	8.01	224	5.08	103	3.42	5.0	2.79	
10			(386)	8.05	218	5.16	102	3.62	5.4	2.75	
11			410	8.06	219	5.62	101	3.80	5.0	2.73	
12			370	8.63	222	5.70	102	3.85	5.1	2.75	
13			394	8.72	216	5.68	102	3.83	4.8	2.73	
14			380	8.60	221	5.59	102	3.78	4.4	2.72	
15			359	8.40	220	5.45	105	3.66	4.4	2.74	
16			349	8.14	227	5.08	103	3.46	4.3	2.80	
17			---	8.15	232	---	106	3.14	4.2	2.82	
18			8.34	246		106	2.66	4.0	2.85		
19			8.33	260		105	---	4.0	2.85		
20			8.02	254		---	---	3.3	2.80		
21			7.88	252				3.2	2.75		
22			7.40	264					2.65		
23			6.71	280				3.1	2.56		

Time: 15.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 4 minutes.

Table 56

Budapest, Hungary (47.4°N, 19.2°E)									September 1957		
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2			
00			320		6.2						2.04
01			330		6.0						2.79
02			320		5.8						2.84
03			310		5.4						2.90
04			340		5.0						2.74
05			310		4.7						2.90
06			280		6.4						3.06
07			260		7.4		---	---	130	2.2	3.06
08			270		9.5		260	4.8	125	3.1	3.16
09			280		9.6		245	5.2	120	3.4	3.06
10			285		9.6		260	5.4	120	3.5	3.04
11			330		10.1		250	5.9	120	3.8	2.79
12			330		10.4		250	5.9	120	3.8	2.79
13			370		10.0		260	6.1	120	3.7	2.63
14			370		9.8		255	6.0	125	3.6	2.60
15			320		9.8		255	5.5	130	3.3	2.86
16			280		10.1		265	5.1	130	3.0	3.06
17			270		9.8		---	---	135	2.7	3.13
18			270		9.2		---	---	---	2.6	3.16
19			270		8.6		---	---	---	2.6	3.13
20			275		7.6		---	---	---	2.6	3.10
21			295		7.0		---	---	---	2.6	2.97
22			300		6.7		---	---	---	2.6	2.95
23			325		6.0		---	---	---	2.6	2.84

Time: Local.

Sweep: 1.0 Mc to 20.0 Mc in 35 seconds.

Table 58

Cape Hallett (72.3°S, 170.3°E)									September 1957		
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2			
00			(4.6)	310							1.6 (2.40)
01			(4.4)	300			---	---			1.3 (2.45)
02			(4.2)	(275)			---	---			1.3
03			(4.4)	---			---	---			2.4
04			(3.6)	(310)			---	---			2.4
05			(3.6)	(300)			---	---			2.0 (2.60)
06			(5.8)	270							2.5
07			(6.7)	260							2.5
08			(6.7)	245							2.5
09			(255)	8.6	235						3.1
10			(8.1)	235							3.1
11			(8.8)	250							3.1
12			(8.8)	250							3.1
13			(8.8)	250							3.1
14			(8.8)	250							3.1
15			(8.8)	250							3.1
16			(8.8)	250							3.1
17			(8.8)	250							3.1
18			(8.8)	250							

Table 61

Murmansk, U.5.5.R. (69.0°N, 33.1°E)							April 1957
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs (M3000)F2
00	420	6.0				2.5	
01	420	6.3			2.4		
02	420	5.6			2.4		
03	350	5.8			2.6		
04	320	6.0			2.6		
05	300	6.0			2.7		
06	320	6.4	260	4.0	120	2.5	2.7
07	360	6.6	240	4.6	120	2.6	2.7
08	360	6.9	250	4.8	120	2.8	2.6
09	410	7.3	240	5.0	120	3.2	2.6
10	370	8.0	220	5.0	110	3.2	2.6
11	370	8.2	230	5.2	120	3.2	2.5
12	360	8.5	220	5.1	110	3.2	2.6
13	380	8.3	230	5.2	120	3.3	2.6
14	360	8.3	240	5.2	120	3.2	2.6
15	350	8.0	240	(5.0)	120	3.1	2.6
16	340	7.1	260	(4.9)	110	2.6	2.7
17	330	7.3	270	(4.6)	110	2.7	2.8
18	300	6.6	260	4.2		2.7	
19	290	6.9			2.7		
20	330	6.3			2.7		
21	380	6.2			2.6		
22	370	5.7			2.5		
23	440	5.9			2.6		

Time: 30.0°E.

Sweep: 0.5 Mc to 20.0 Mc in 30 seconds.

Table 63

Narsarssuak, Greenland (61.2°N, 45.4°W)							April 1957
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs (M3000)F2
00	(5.4)	325			2.4	----	
01	(4.0)	330			2.8	----	
02	(4.4)	365			2.6	----	
03	(4.4)	400			3.0	----	
04	(4.3)	345			3.3	(2.60)	
05	4.6	340			3.3	2.80	
06	5.6	290	---	---	---	3.0	2.80
07	6.3	270	---	---	122	3.10	2.90
08	(540)	6.4	250	4.6	116	3.25	2.70
09	520	6.6	<250	(4.9)	117	3.40	2.65
10	500	6.9	240	5.0	116	3.50	2.55
11	450	7.8	240	5.2	113	3.55	2.55
12	450	8.0	240	5.2	112	3.60	2.55
13	450	8.0	240	5.2	111	3.60	2.55
14	430	7.4	240	5.1	109	3.50	2.60
15	420	(7.2)	250	4.9	113	3.30	2.70
16	410	7.0	255	5.0	113	3.15	2.75
17	---	6.8	290	---	115	3.00	2.70
18	---	(6.4)	305	---	121	2.70	2.70
19	---	(5.9)	320	---		3.4	(2.70)
20	---	(5.0)	305			----	
21	---	(6.0)	320			1.6	----
22	---	(5.5)	330			2.6	----
23	---	(5.6)	320			----	

Time: 45.0°E.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 65

Rostov-on-Don, U.5.5.R. (47.2°N, 39.7°E)							April 1957
Time	b'F2	foF2	b'F1	foF1	b'E	foE	fEs (M3000)F2
00	340	7.2				2.3	
01	350	7.2				2.4	
02	340	7.0				2.4	
03	340	6.4				2.3	
04	330	6.2				2.3	
05	320	6.4		---	E	2.4	
06	280	7.3		130	2.1	2.8	
07	260	7.0		130	2.7	2.8	
08	250	9.2	250	5.0	120	3.1	2.8
09	250	9.2	240	5.0	120	3.5	2.8
10	260	9.4	220	5.0	120	3.7	---
11	260	9.4	220	5.1	120	3.8	---
12	270	9.4	240	5.5	120	3.8	---
13	250	9.4	230	5.6	120	3.8	---
14	240	9.8	240	5.8	120	3.8	---
15	240	9.6	240	5.2	120	3.6	---
16	250	9.4	240	5.2	120	3.5	---
17	250	9.6	250	5.0	120	3.1	---
18	260	9.2			120	2.5	---
19	260	9.2		---	2.2	---	
20	260	9.0				2.0	
21	260	8.4				2.7	
22	300	7.3				2.6	
23	320	7.4				2.4	

Time: 45.0°E.

Sweep: 1.6 Mc to 10.0 Mc in 15 minutes, manual operation.

Table 62

Yakutsk, U.5.S.R. (62.0°N, 129.7°E)							April 1957
Time	b'F2	foF2	b'F1	foF1	b'E	foE	fEs (M3000)F2
00	330	(7.0)					2.6
01	330	(6.6)					2.5
02	340	(5.6)					2.5
03	350	(5.1)					2.5
04	330	(5.1)					2.6
05	290	(5.4)					2.6
06	260	5.8	270	---			2.7
07	260	(7.0)	260	4.6	110	2.9	2.6
08	270	(7.4)	230	4.8	80	3.0	2.8
09	230	0.0	220	4.8	90	3.2	2.9
10	250	8.6	210	5.4	00	3.3	3.0
11	280	9.0	210		00	3.4	2.8
12	250	9.5	200	---	80	3.4	2.8
13	290	9.8	210		00	3.4	2.8
14	230	10.0	210				2.8
15	270	10.2	220				2.7
16	230	10.0	230				2.7
17	240	10.2	240				2.8
18	250	10.4	(230)	---			2.8
19	250	10.2					2.9
20	250	10.2					2.7
21	260	9.2					2.7
22	280	8.2					2.7
23	310	7.6					2.6

Time: 135.0°E.

Sweep: 2.2 Mc to 16.0 Mc in 1 minute.

Table 64

Chita, U.5.5.R. (52.0°N, 113.3°E)							April 1957
Time	b'F2	foF2	b'F1	foF1	b'E	foE	fEs (M3000)F2
00	300	7.9					2.5
01	315	7.5					2.5
02	320	7.1					2.4
03	320	6.5					2.4
04	300	6.3					2.5
05	300	6.5					2.6
06	260	7.4				130	(2.3)
07	260	8.3				120	(2.7)
08	250	9.0	250	4.6	120	(3.1)	2.9
09	260	9.5	240	4.8	120	(3.4)	2.9
10	260	10.0	240	5.0	120	(3.7)	2.9
11	260	10.6	230	5.0	120	(3.8)	2.8
12	260	10.7	230	5.0	120	(3.8)	2.7
13	280	10.8	230	5.4	120	(3.9)	2.8
14	260	10.8	230	5.0	120	(3.8)	2.9
15	260	10.5	240	5.0	120	(3.7)	2.8
16	260	10.6	240	4.8	120	(3.5)	2.8
17	260	10.4	240	4.7	120	(3.1)	2.8
18	260	10.4				120	(2.7)
19	260	9.6					2.8
20	260	9.3					2.8
21	260	9.0					2.7
22	280	8.7					2.6
23	290	8.2					2.5

Time: 120.0°E.

Sweep: 1.0 Mc to 18.0 Mc in 5 minutes, semi-automatic operation.

Table 66

Yuzhno-Sakhalinsk, O.5.S.R. (47.0°N, 143.0°E)							April 1957
Time	b'F2	foF2	b'F1	foF1	b'E	foE	fEs (M3000)F2
00	320	7.4					2.5
01	320	7.6					2.4
02	330	7.4					2.5
03	320	7.2					2.5
04	320	6.7					2.4
05	320	6.8				2.1	2.4
06	260	7.8					2.7
07	250	7.7	250	4.2	120	2.8	3.0
08	250	9.0	240	4.6	120	2.9	3.0
09	250	9.8	240	5.2	120	3.4	3.2
10	250	11.0	230	5.0	110	3.6	2.9
11	250	11.1	230	5.4	110	3.7	2.0
12	250	10.2	230	5.6	110	3.5	3.0
13	250	9.4	240	6.0			3.2
14	250	10.0	240	6.4			3.3
15	250	9.4	240	6.2			3.1
16	250	9.7	250	6.8			3.0
17	250	9.2	250	6.6			3.2
18	250	9.4					3.2
19	260	9.0					3.4
20	260	8.6					3.4
21	270	7.8					3.1
22	260	7.6					2.9
23	300	7.5					2.8

Time: 140.0°E.

Sweep: 1.0 Mc to 18.0 Mc in 10 minutes, semi-automatic operation.

Table 67

Ashkhabad, U.S.S.R. (37.9°N, 58.3°E)							April 1957	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	310	8.0						2.5
01	300	7.7						2.6
02	300	7.6						2.6
03	300	7.2						2.5
04	300	7.1						2.5
05	300	7.0			---	1.2		2.5
06	260	8.3			140	2.1		2.8
07	250	9.7			110	2.8		2.9
08	250	11.2	240	5.6	110	3.2		2.9
09	250	12.2	230	5.4	100	3.6		2.8
10	280	12.6	230	6.0	110	3.8		2.7
11	280	13.0	230	6.0	100	3.9		2.7
12	290	13.2	230	6.4	110	4.0		2.6
13	330	13.2	230	6.7	110	4.0		2.6
14	320	13.0	240	6.4	100	3.9		2.6
15	320	12.2	240	6.5	100	3.7		2.6
16	300	12.0	240	6.2	100	3.4		2.6
17	250	11.4	250	5.7	110	3.1		2.7
18	260	11.0			120	2.6		2.8
19	250	10.2						2.9
20	250	9.2						2.7
21	270	8.4						2.5
22	300	8.4						2.6
23	300	8.2						2.5

Time: 60.0°E.

Sweep: 1.0 Mc to 15.0 Mc in 15 minutes, manual operation.

Table 69

Murman, U.S.S.R. (69.0°N, 33.1°E)							February 1957	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	390	5.2						2.6
01	350	4.9						2.6
02	360	4.6						2.6
03	390	5.9						2.7
04	340	5.4						2.6
05	310	5.5						2.7
06	300	5.6						2.8
07	290	5.3						2.8
08	270	6.4						2.9
09	260	8.0						3.0
10	260	9.7						3.0
11	250	11.0						2.9
12	250	11.9						2.9
13	250	12.0						3.0
14	250	11.0						3.0
15	250	10.2						3.0
16	250	9.6						3.0
17	240	8.2						3.0
18	260	6.0						2.9
19	300	5.0						2.8
20	320	5.0						2.8
21	350	5.3						2.8
22	380	5.0						2.6
23	360	5.3						2.6

Time: 30.0°E.

Sweep: 0.5 Mc to 20.0 Mc in 30 seconds.

Table 71

Christchurch, New Zealand (43.6°S, 172.8°E)							November 1956	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	310	8.1				<2.0		2.4
01	310	7.5				<2.5		2.35
02	300	7.0				<2.5		2.4
03	320	6.6				<2.4		2.3
04	320	6.2			---	<1.5		2.4
05	300	6.5			---	(1.9)		2.5
06	260	6.9	---	---	---	2.8		2.6
07	250	7.2	250	---	---	3.2	3.8	2.6
08	250	0.1	250	5.7	100	3.5		2.6
09	400	8.8	240	5.9	100	3.9	4.2	2.6
10	440	9.0	250	6.4	100	4.0	4.5	2.5
11	450	9.1	250	6.1	---	(4.2)	4.4	2.5
12	420	9.5	240	6.5	---	4.1	4.6	2.5
13	420	9.4	240	6.3	100	4.0		2.5
14	450	9.6	250	6.1	100	4.1		2.4
15	440	9.5	240	6.1	100	3.9		2.5
16	400	9.4	250	5.6	105	3.5		2.5
17	250	9.2	250	---	110	3.2		2.5
18	270	9.0	---	---	110	2.8	3.5	2.5
19	300	0.9	---	---	2.1	3.6	2.5	
20	300	9.0	---	---	---	3.5	2.5	
21	300	9.0	---	---	4.1	2.4		
22	310	8.5	---	---	<2.3	2.4		
23	320	0.3	---	---	3.4	2.4		

Time: 172.5°E.

Sweep: 1.0 Mc to 13.0 Mc in 1 minute 55 seconds.

Table 68

Murmansk, U.S.S.R. (69.0°N, 33.1°E)							March 1957	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(370)				5.9			2.5
01	(370)				6.0			2.6
02	360				6.1			2.6
03	(340)				5.4			2.5
04	(320)				(6.0)			2.6
05	290				6.0			2.7
06	290				6.2			2.9
07	270				6.8			2.9
08	260	7.4	240		4.2	120	2.5	2.8
09	260	8.1	240		4.5	120	2.8	2.8
10	260	9.0	230		4.7	120	2.8	2.8
11	270	9.5	230		4.9	110	2.9	2.0
12	270	9.9	230		4.5	120	3.0	2.7
13	260	10.0	230		4.8	120	3.0	2.0
14	260	10.0	230		4.4	120	2.9	2.8
15	260	9.3	230		4.2	110	2.7	2.9
16	250	8.6	240		4.2	120	2.5	2.9
17	260	8.0						2.9
18	270	6.6						2.8
19	310	6.0						2.8
20	(330)	6.2						2.8
21	(350)	6.0						2.7
22	(380)	(6.0)						2.5
23	(410)	(5.4)						2.5

Time: 30.0°E.

Sweep: 0.5 Mc to 20.0 Mc in 30 seconds.

Table 70

Murmansk, U.S.S.R. (69.0°N, 33.1°E)							January 1957	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	380				4.2			2.6
01	(390)				(4.2)			(2.6)
02	340				3.6			2.6
03	(360)				(5.2)			(2.6)
04	340				6.0			2.6
05	320				5.0			2.7
06	290				4.9			2.7
07	260				4.6			2.0
08	260				4.9			2.7
09	260				5.8			2.8
10	260				8.2			2.9
11	250				10.4			3.0
12	250				11.6			3.0
13	240				11.4			3.0
14	270				10.6			3.0
15	250				9.2			2.9
16	240				8.0			3.0
17	250				5.6			3.0
18	250				4.8			2.9
19	300				4.0			2.8
20	340				3.6			2.7
21	340				3.5			2.8
22	380				3.6			2.6
23	370				3.6			(2.6)

Time: 30.0°E.

Sweep: 0.5 Mc to 20.0 Mc in 30 seconds.

Table 72

Poitiers, France (46.6°N, 0.3°E)							August 1956	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300				6.6			2.4
01	300				6.4			2.4
02	305				6.2			2.6
03	295				6.0			2.6
04	285				5.7			2.6
05	275				5.7			2.85
06	260				3.6	110	2.4	3.2
07	275				4.6	105	2.9	3.8
08	280				5.0	100	3.3	4.2
09	305				5.2	100	3.6	4.6
10	330				5.6	100	3.7	4.5
11	335				5.6	100	3.8	4.7
12	360				5.7	100	3.8	4.7
13	355				5.7	100	3.8	4.6
14	350				5.7	100	3.8	4.3
15	335				5.5	100	3.6	4.0
16	320				5.2	105	3.4	4.1
17	300				4.7	105	3.0	3.7
18	260	(7.6)			4.0	110	2.4	3.5
19	250	(8.1)			---	---	E	3.7

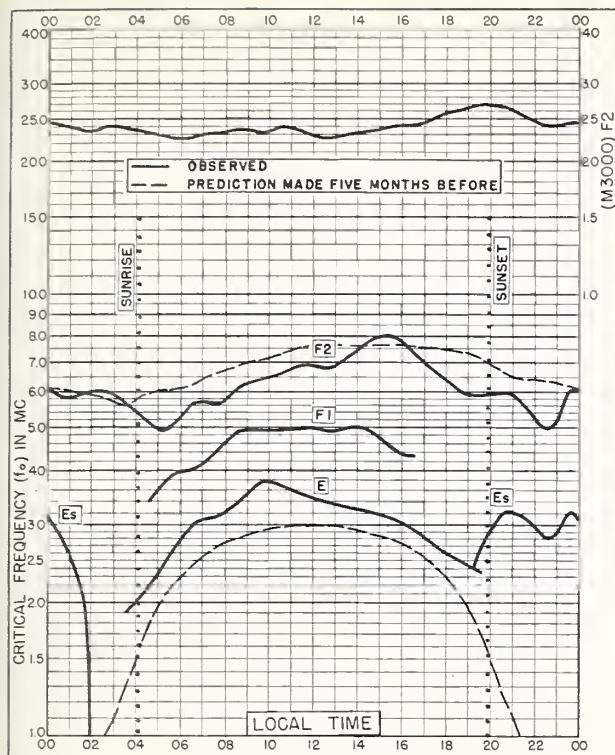


Fig. 1. POINT BARROW, ALASKA
71.3°N, 156.8°W APRIL 1958

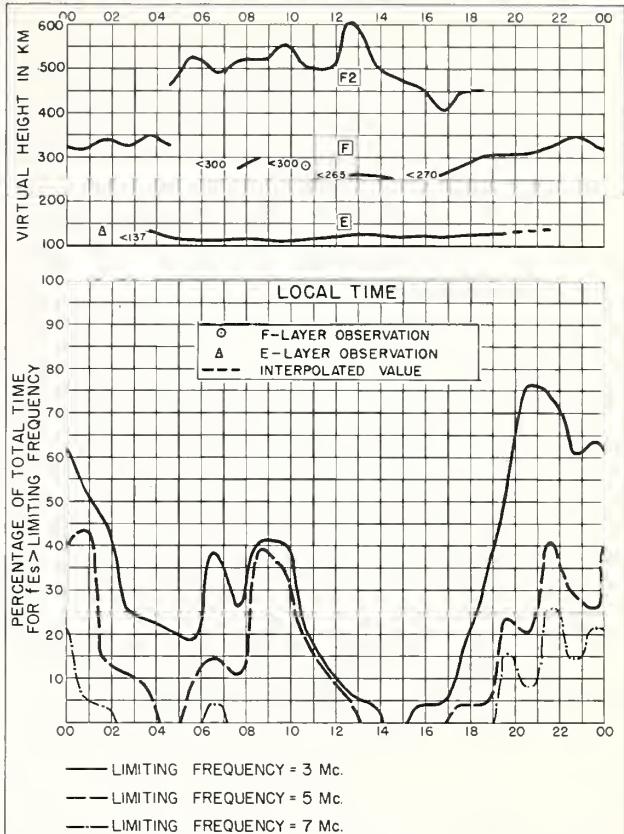


Fig. 2. POINT BARROW, ALASKA APRIL 1958

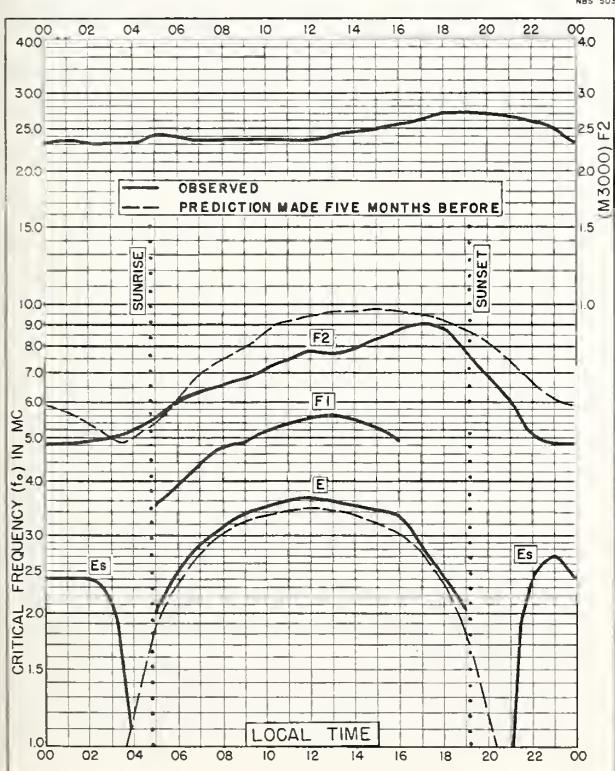


Fig. 3. ANCHORAGE, ALASKA
61.2°N, 149.9°W APRIL 1958

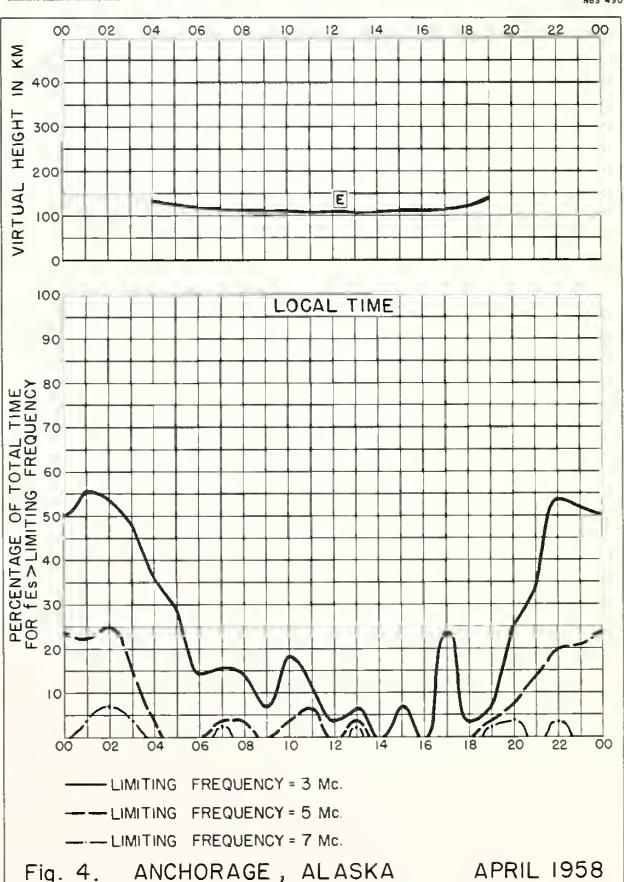
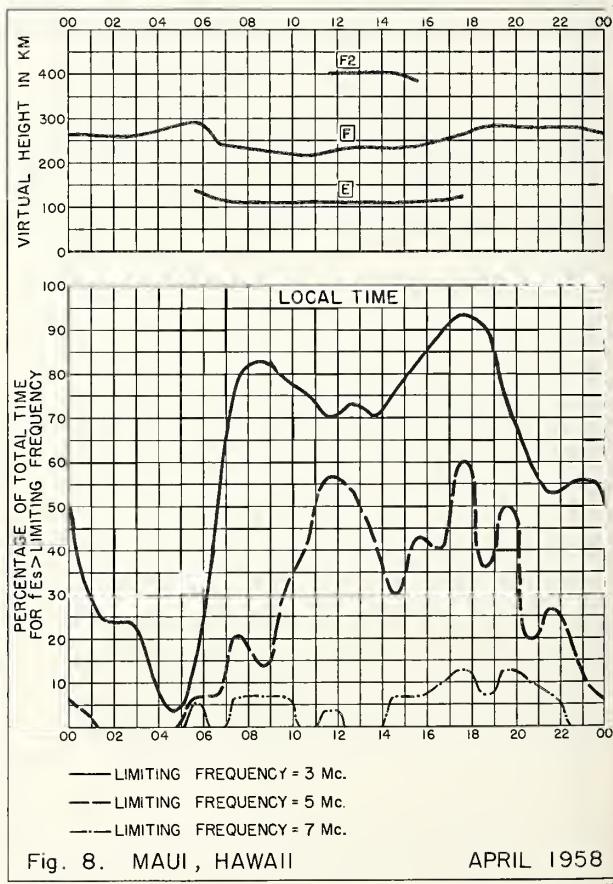
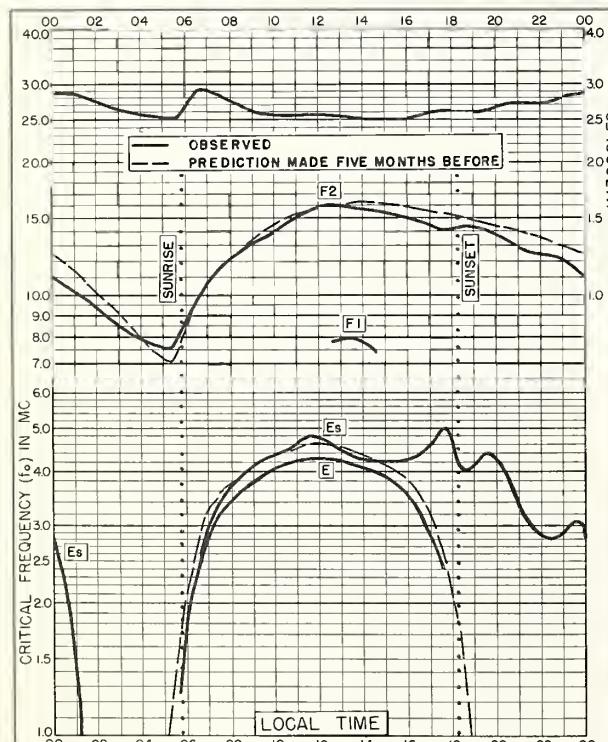
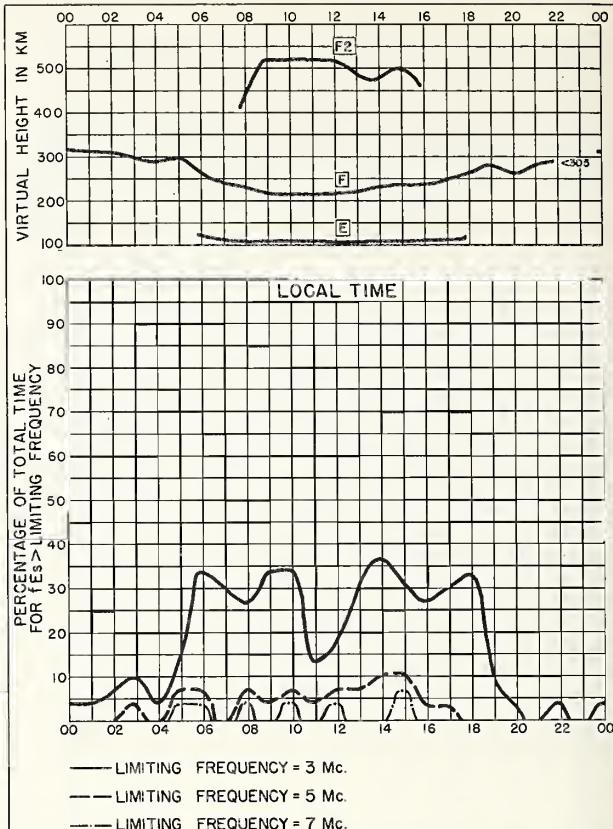
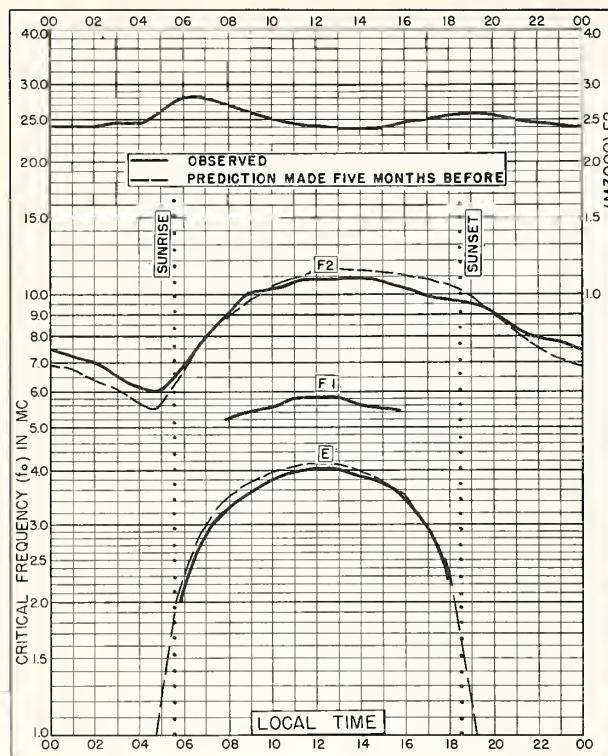
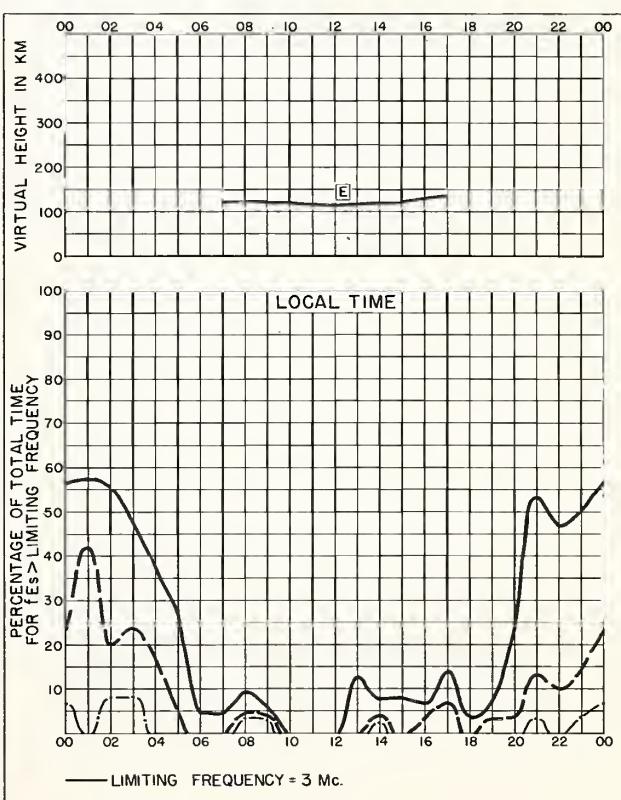
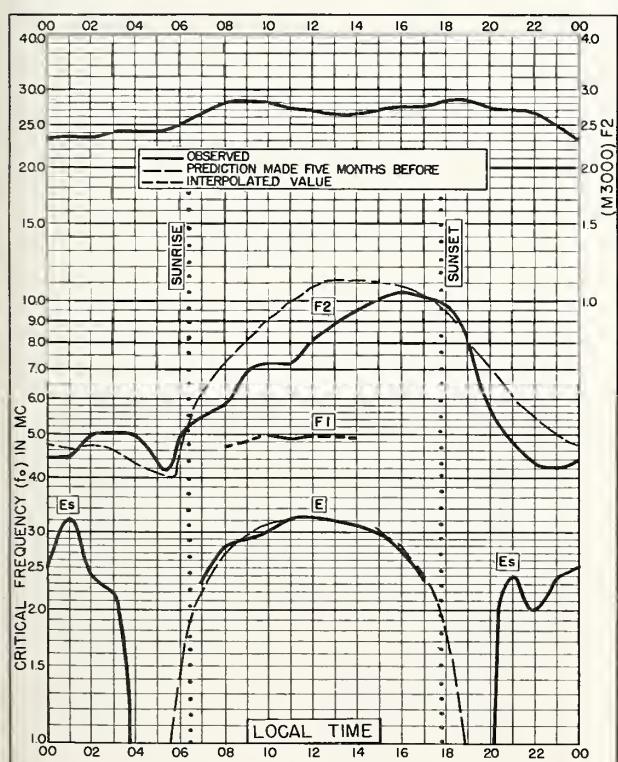
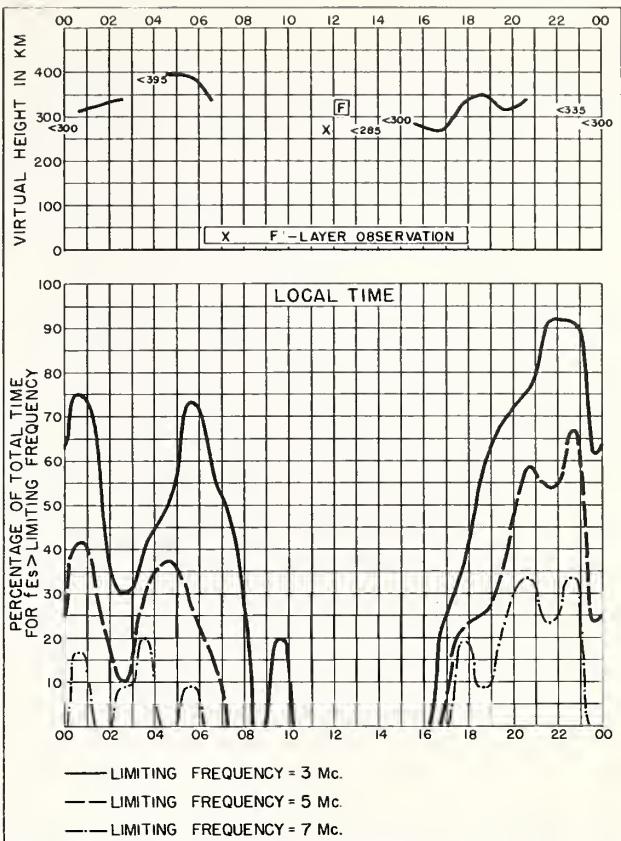
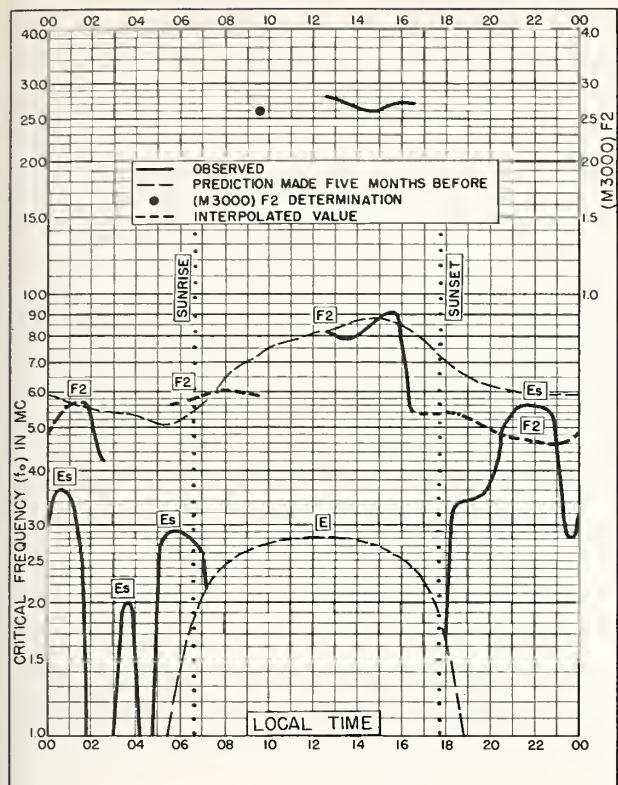
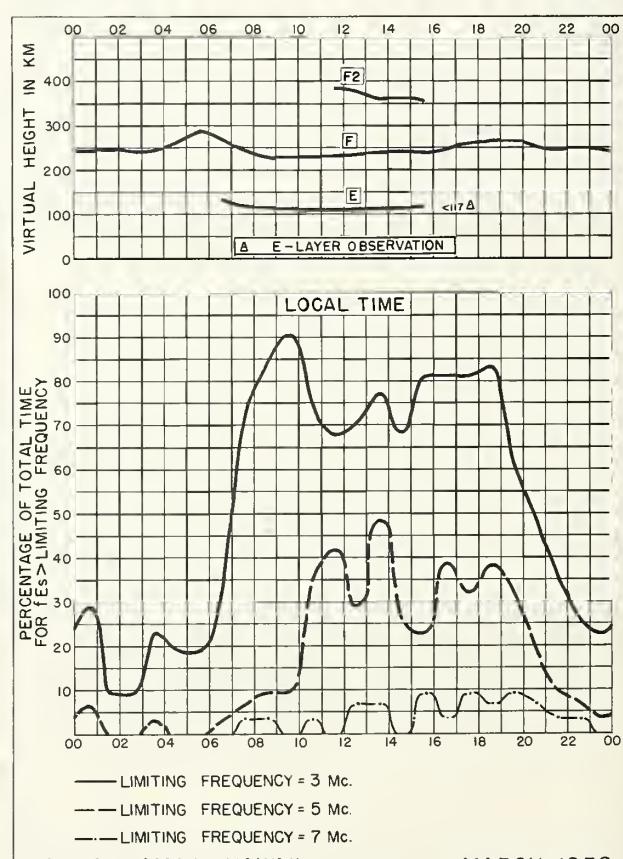
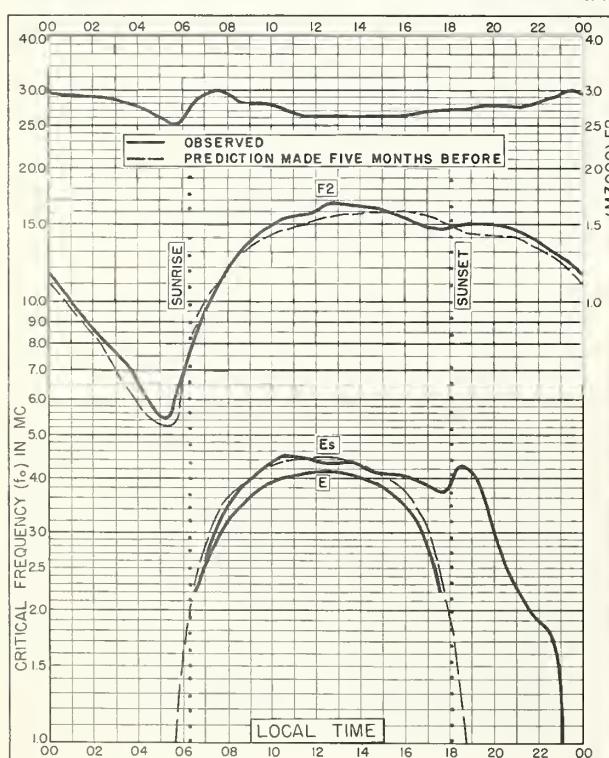
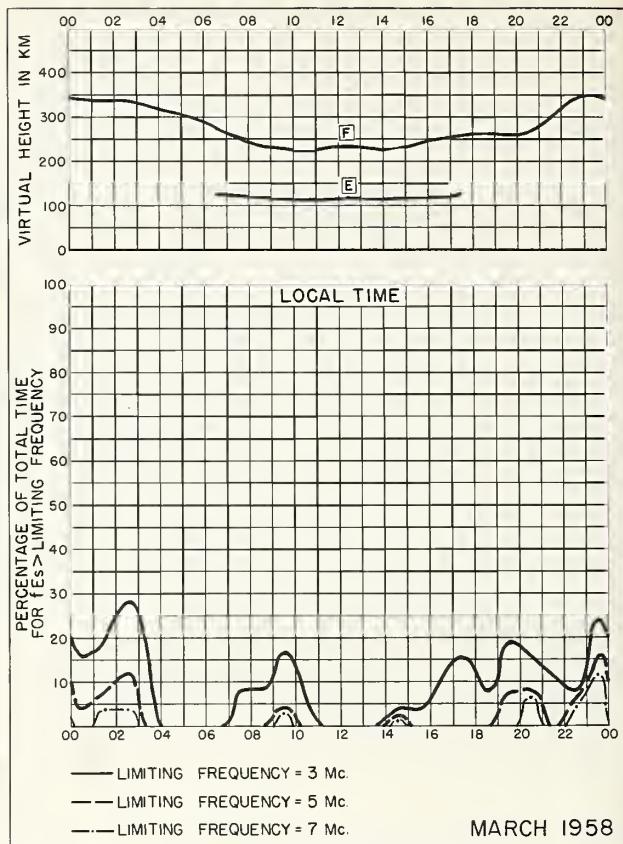
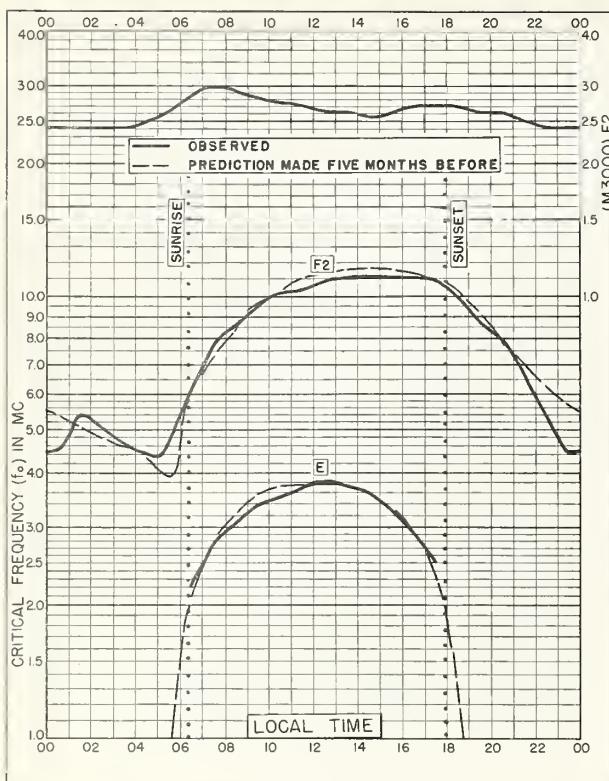


Fig. 4. ANCHORAGE, ALASKA APRIL 1958







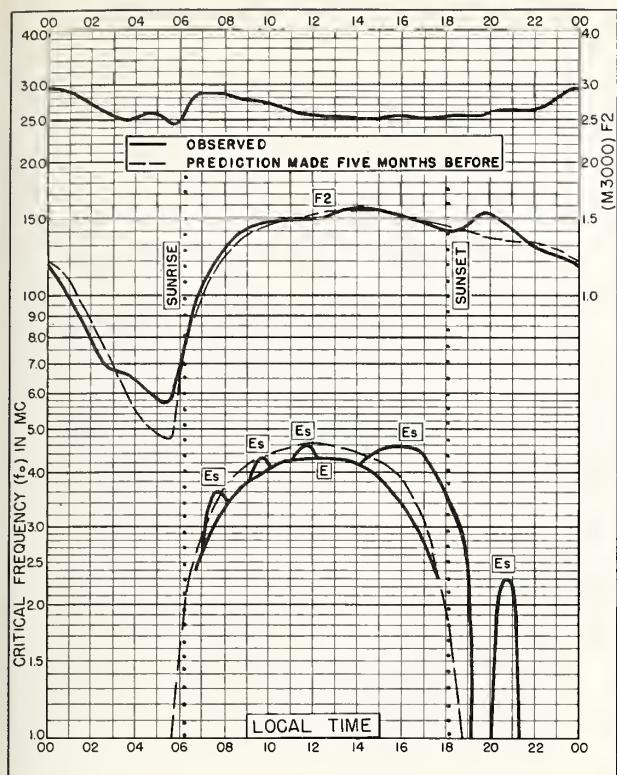


Fig. 17. PANAMA CANAL ZONE
9.4°N, 79.9°W MARCH 1958

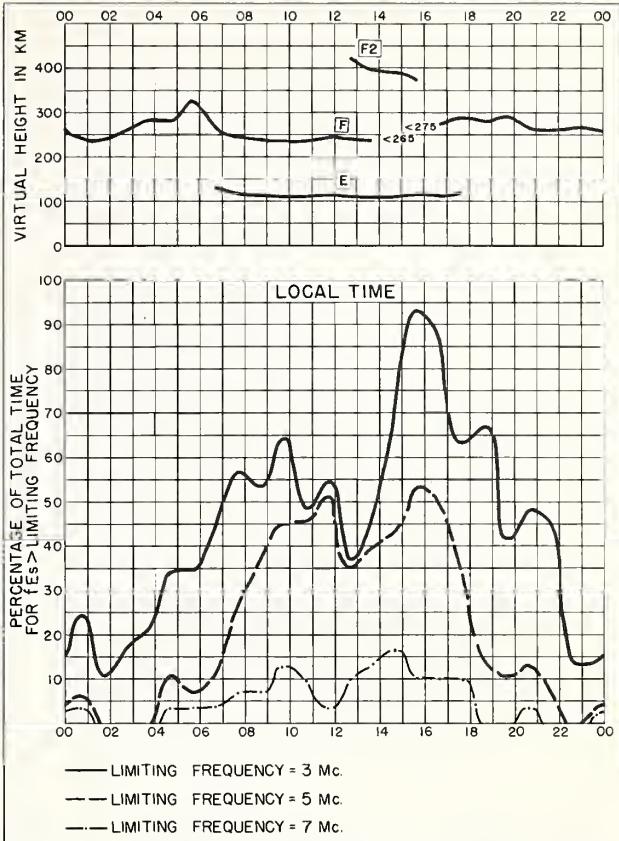


Fig. 18. PANAMA CANAL ZONE MARCH 1958

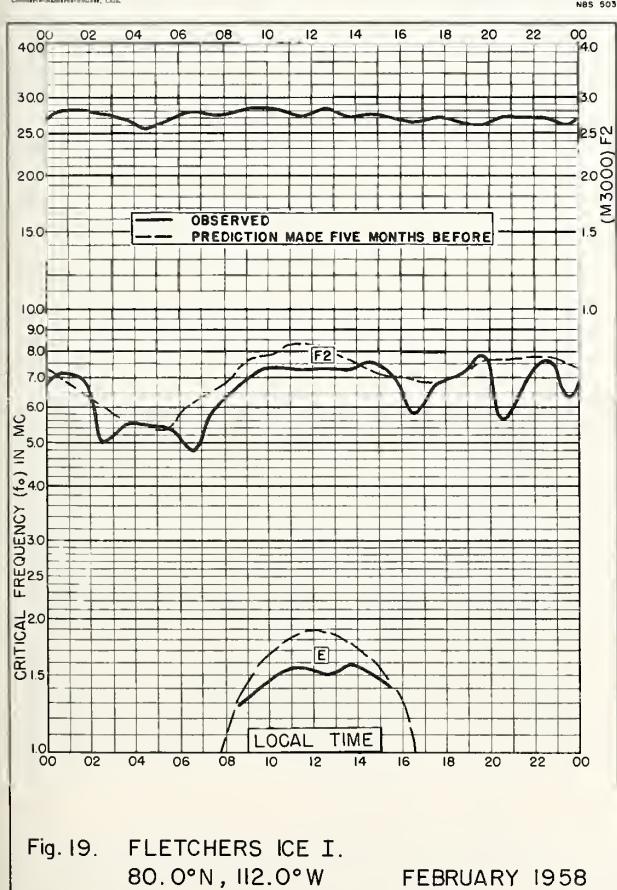


Fig. 19. FLETCHERS ICE I.
80.0°N, 112.0°W FEBRUARY 1958

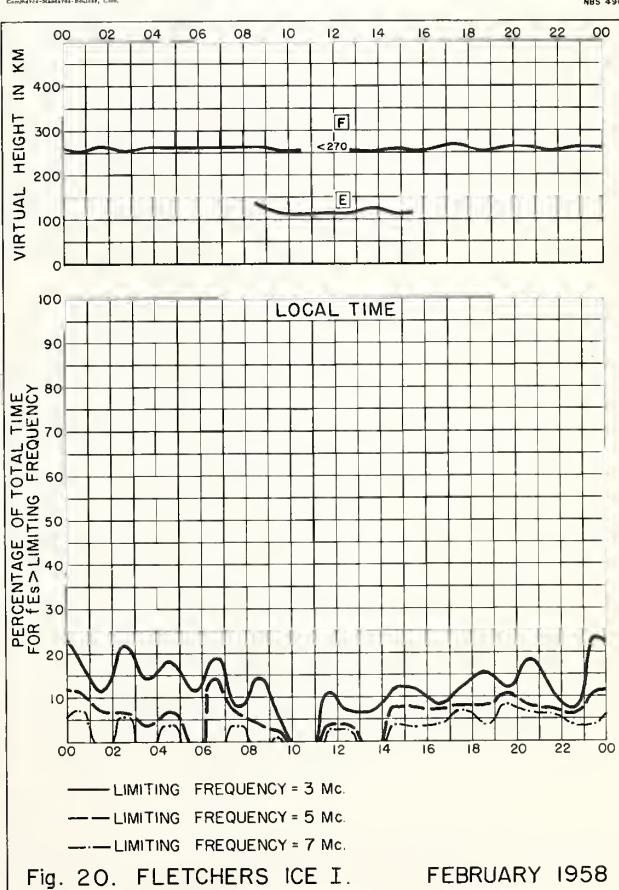


Fig. 20. FLETCHERS ICE I. FEBRUARY 1958

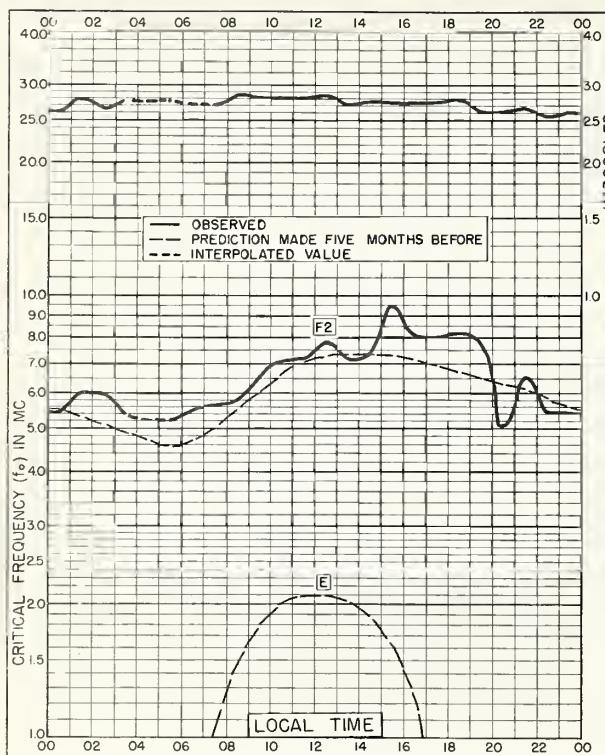


Fig. 21. THULE , GREENLAND
76. 6°N, 68. 7°W FEBRUARY 1958

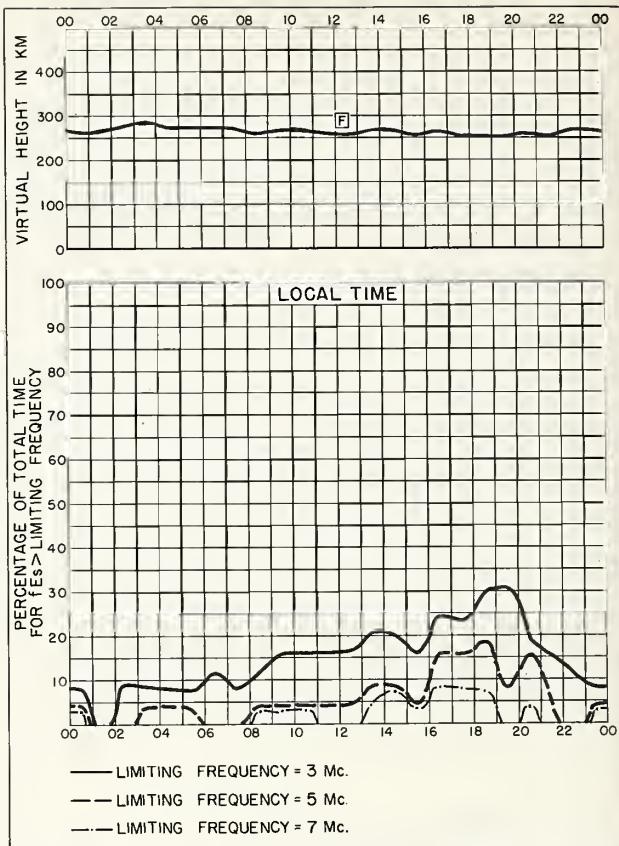


Fig. 22. THULE , GREENLAND FEBRUARY 1958

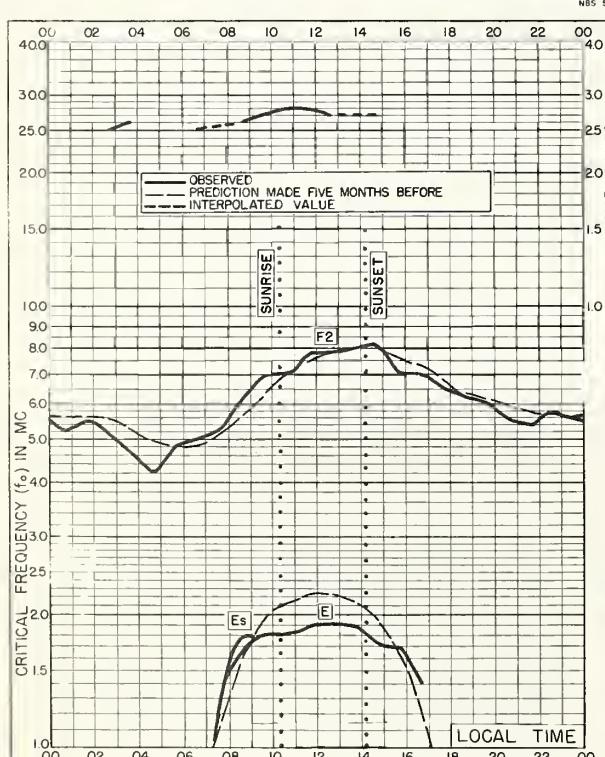
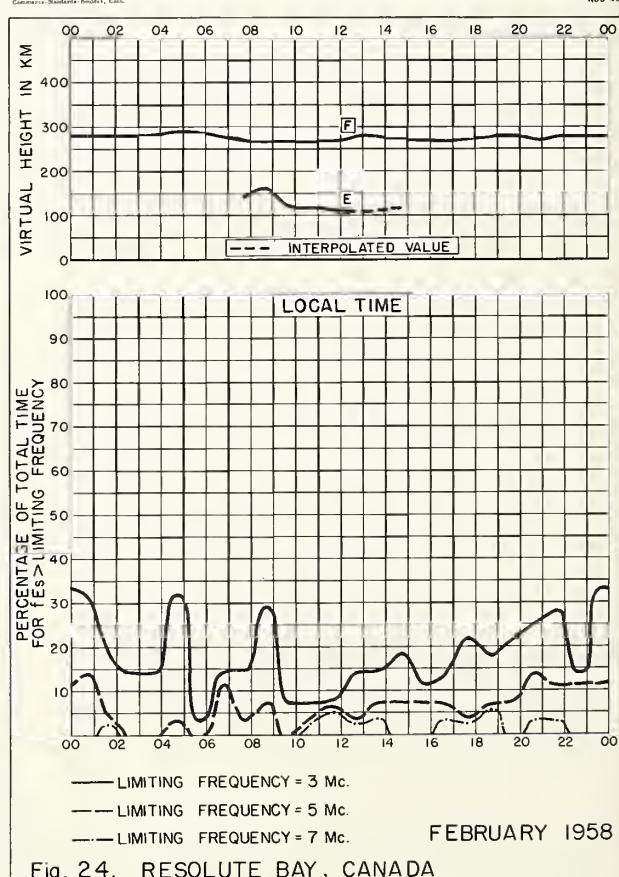


Fig. 23. RESOLUTE BAY , CANADA
74. 7°N, 94. 9°W FEBRUARY 1958



FEBRUARY 1958

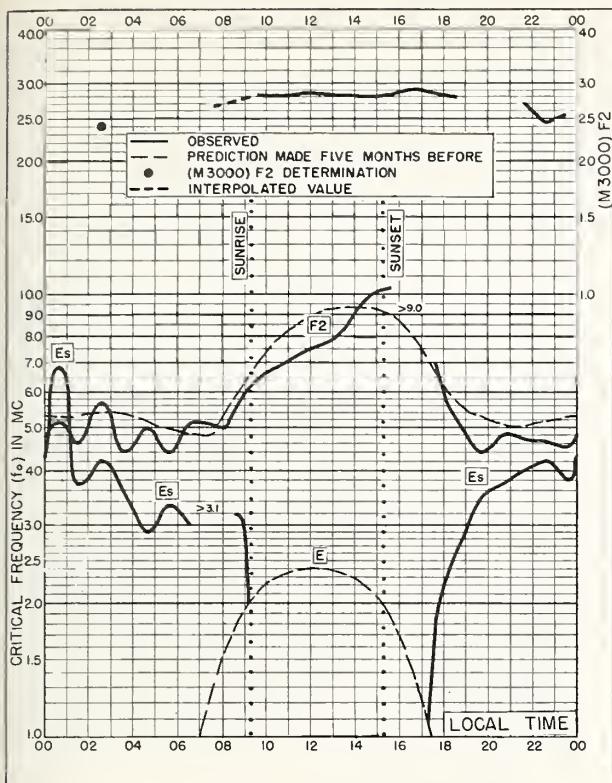


Fig. 25. POINT BARROW, ALASKA
71.3°N, 156.8°W FEBRUARY 1958

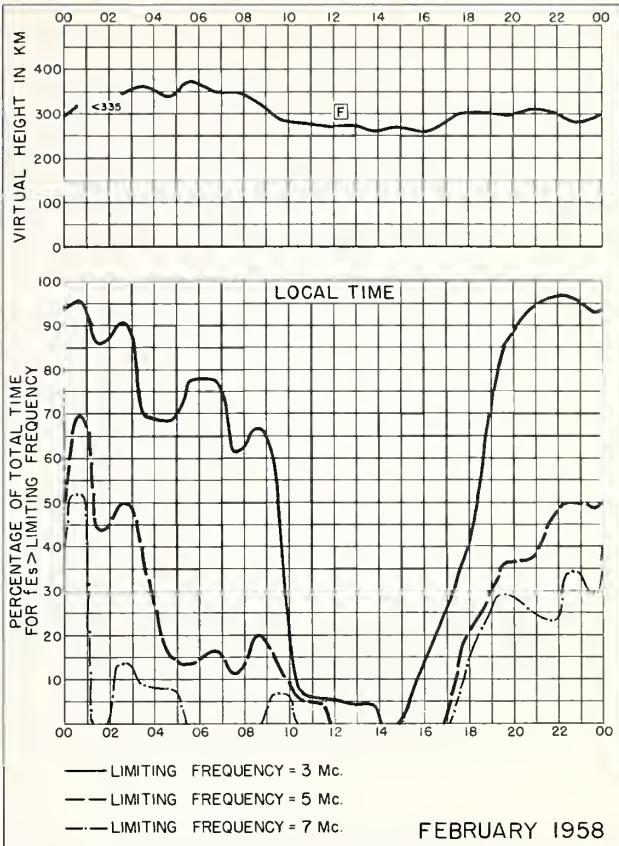


Fig. 26. POINT BARROW, ALASKA FEBRUARY 1958

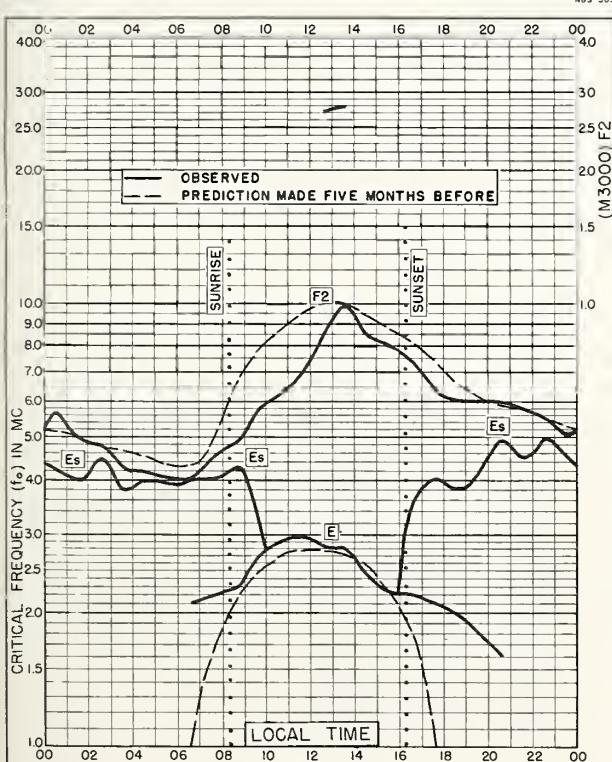


Fig. 27. BAKER LAKE, CANADA
64.3°N, 96.0°W FEBRUARY 1958

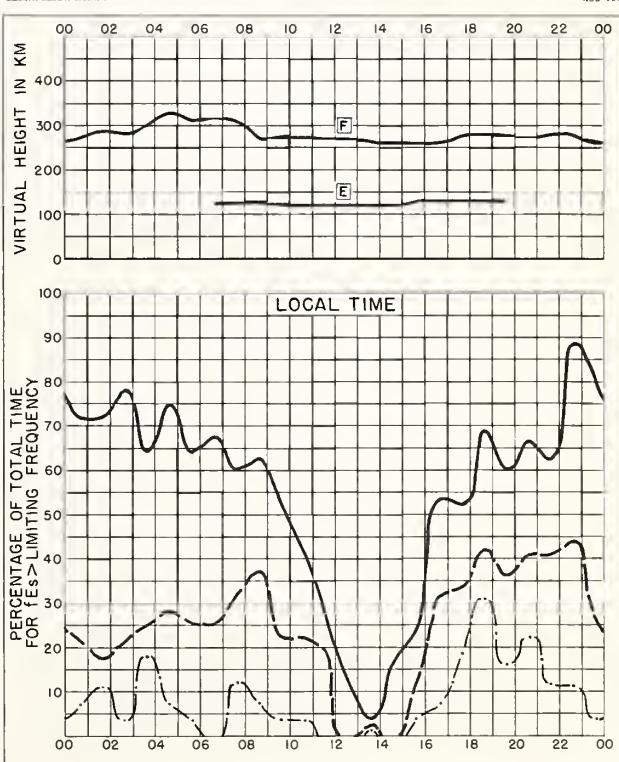
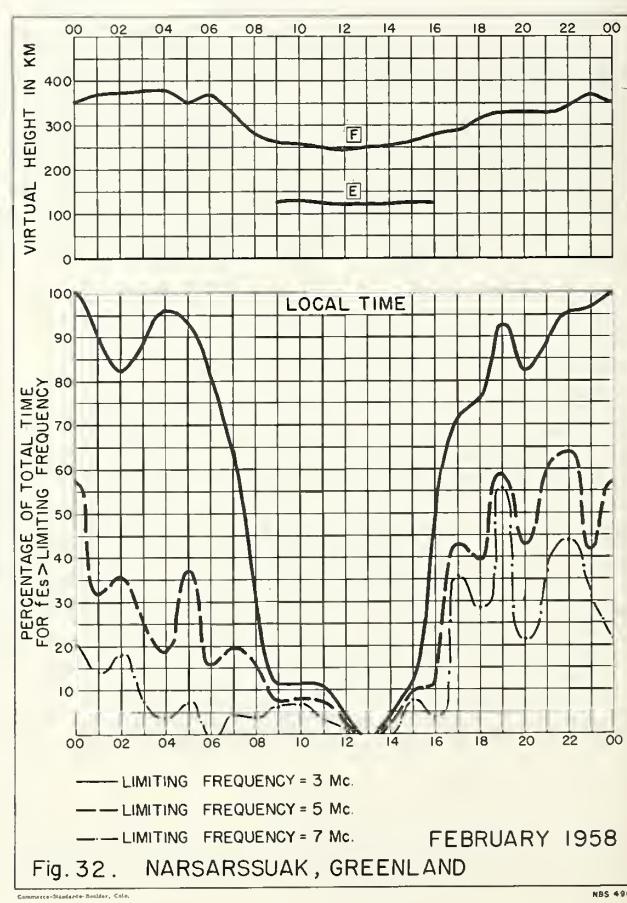
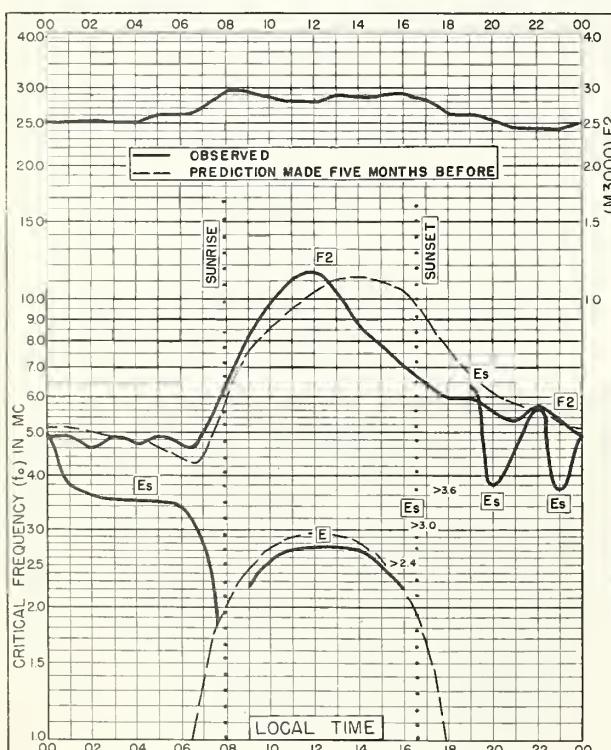
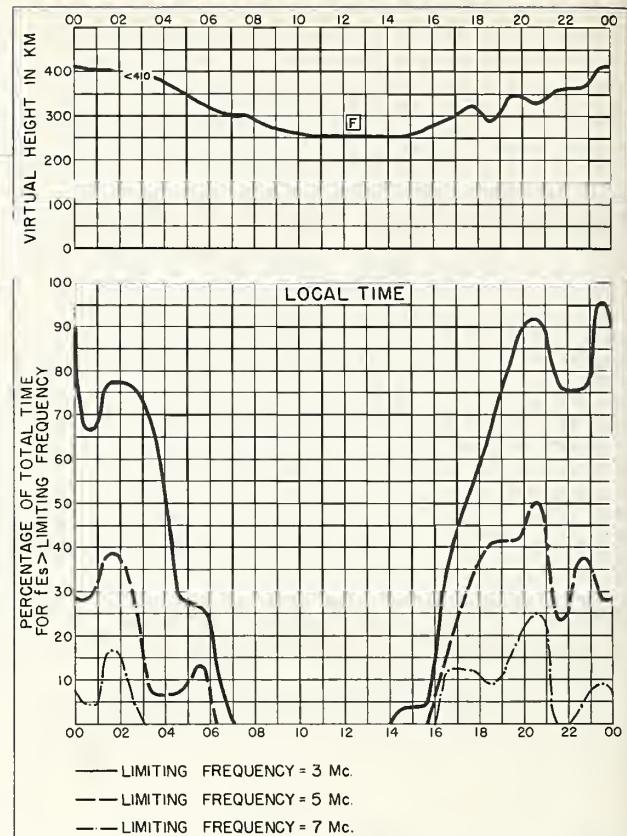
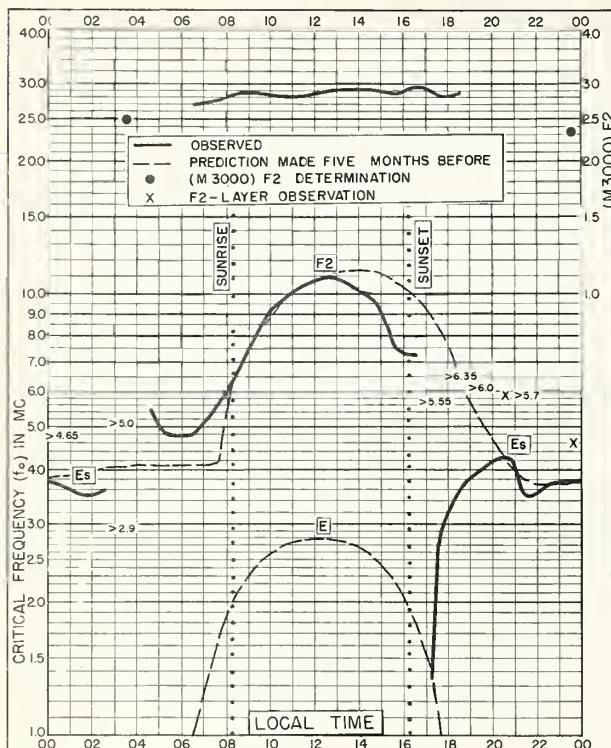


Fig. 28. BAKER LAKE, CANADA FEBRUARY 1958



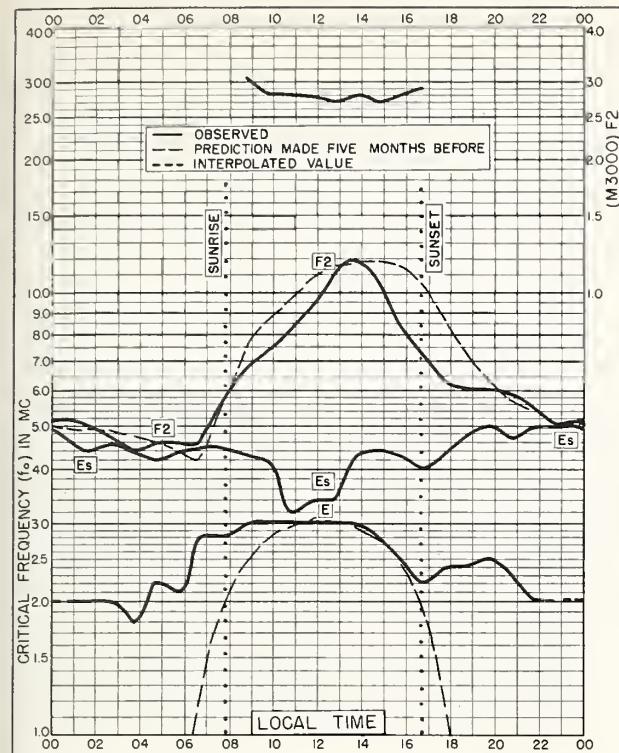


Fig. 33. CHURCHILL, CANADA
58.8°N, 94.2°W FEBRUARY 1958

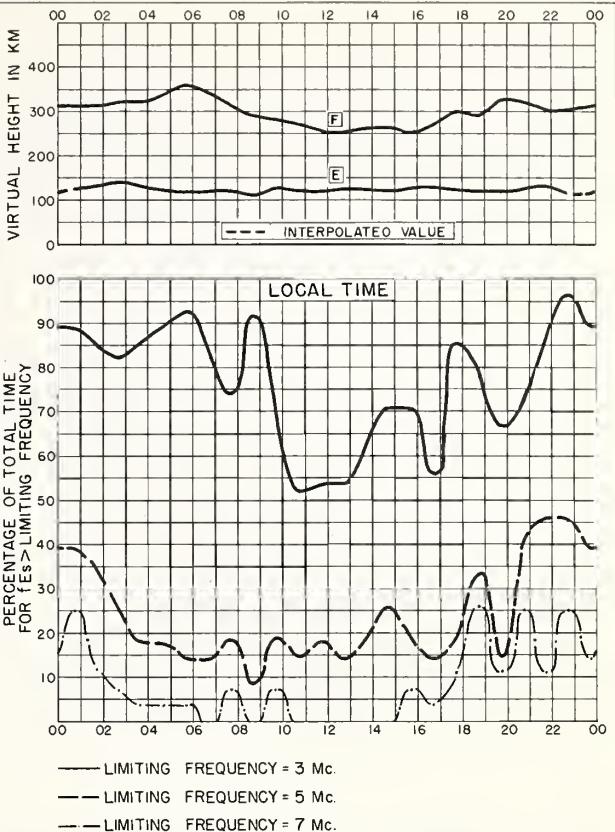


Fig. 34. CHURCHILL, CANADA FEBRUARY 1958

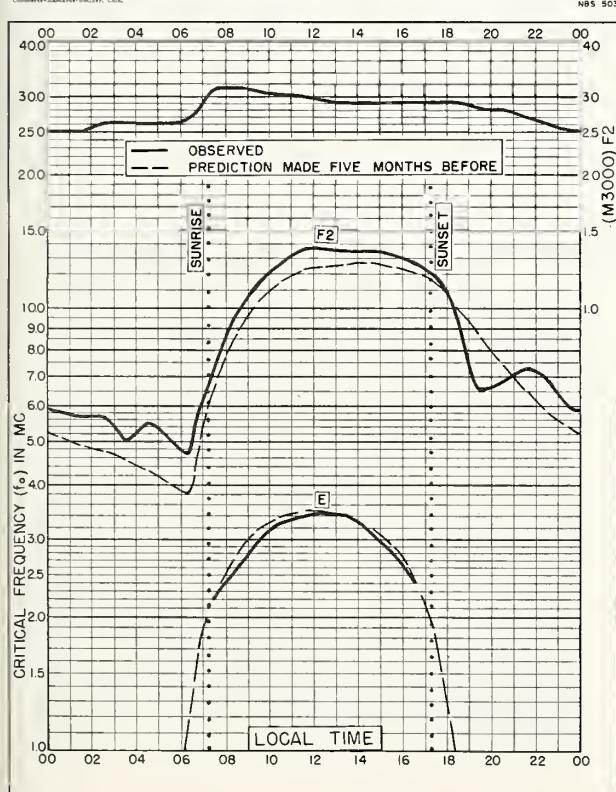
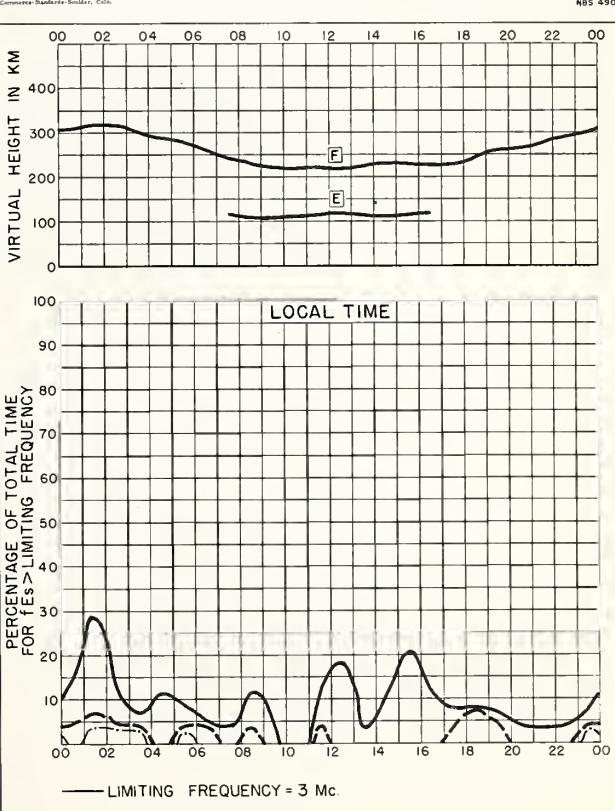
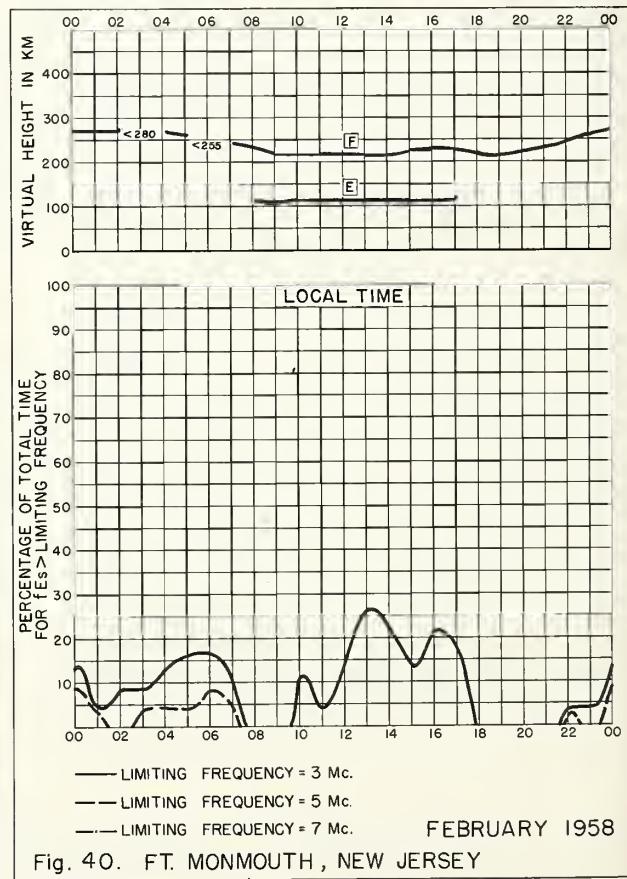
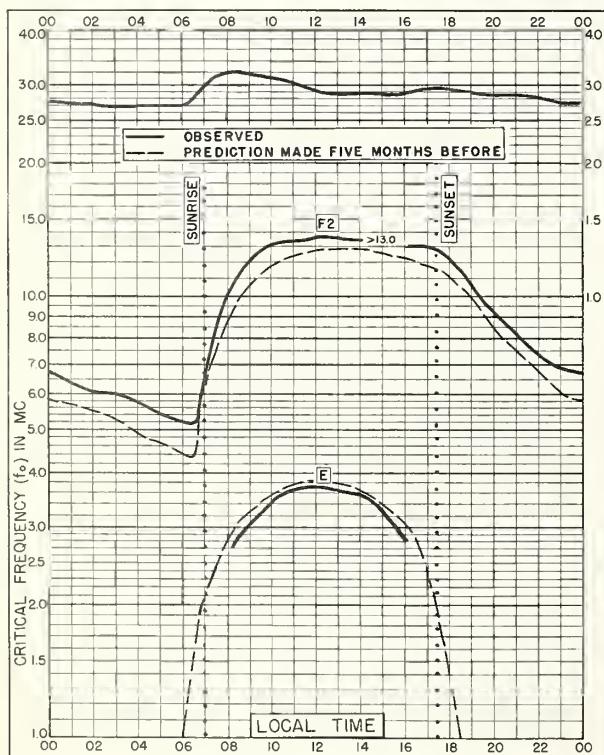
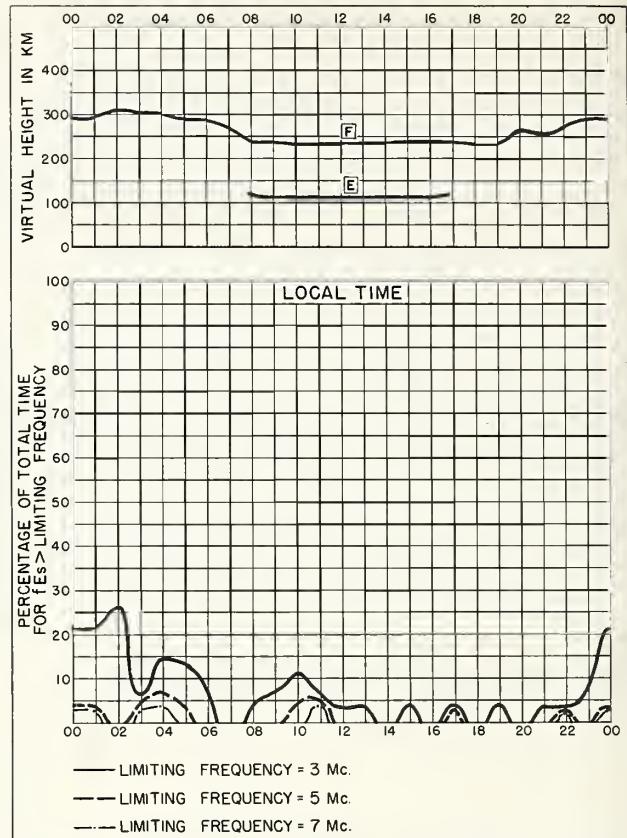
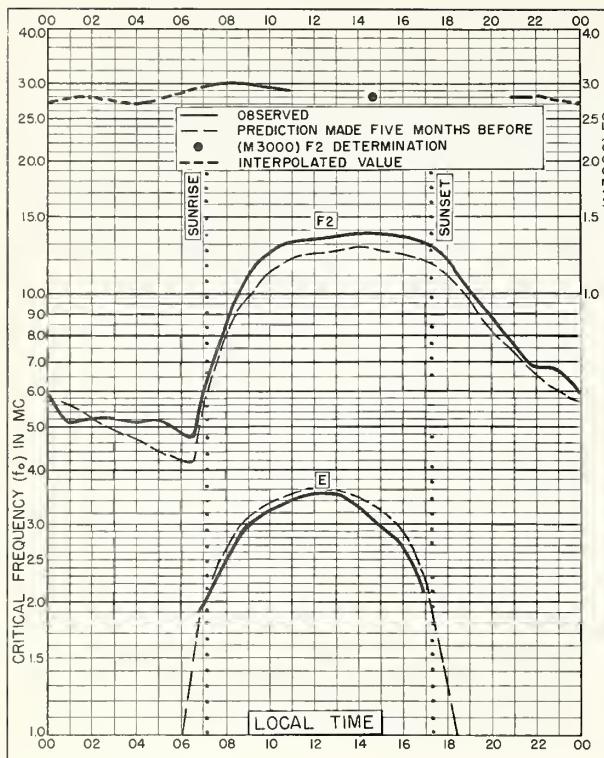
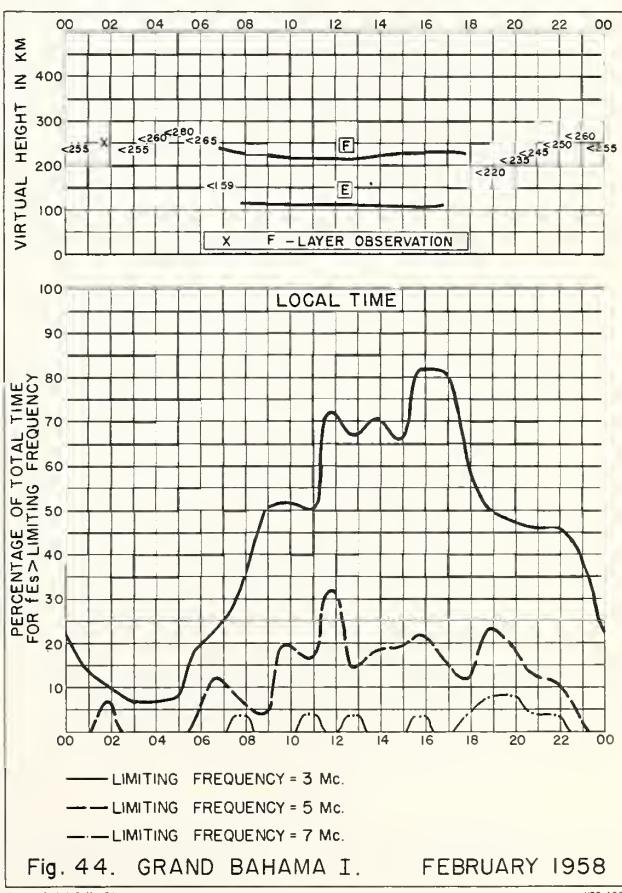
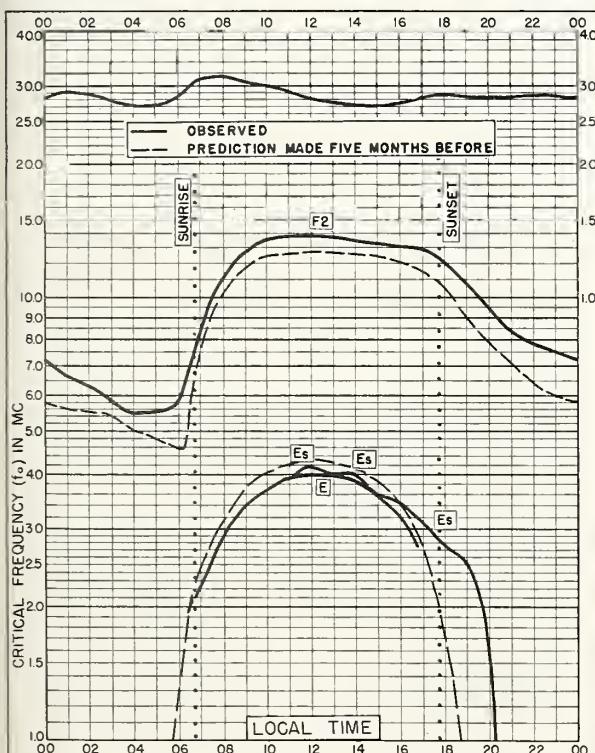
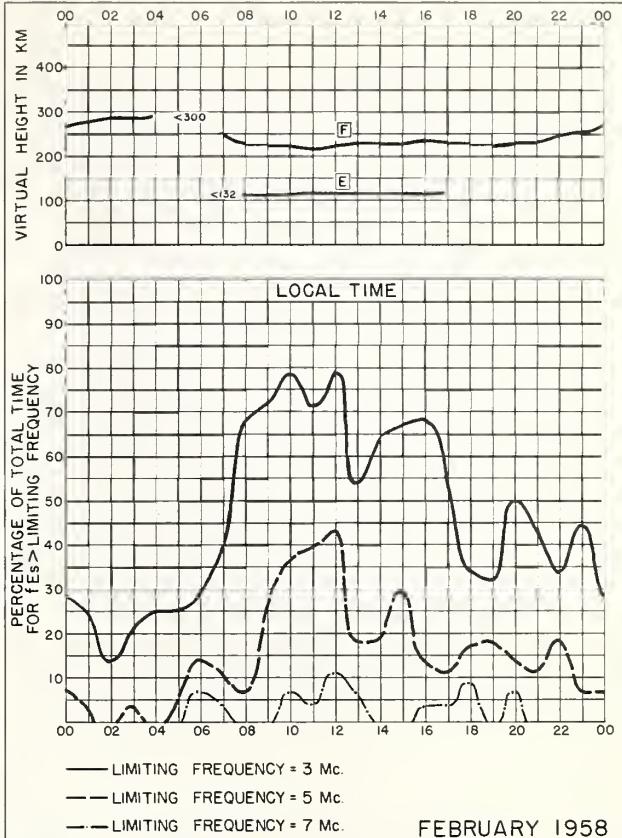
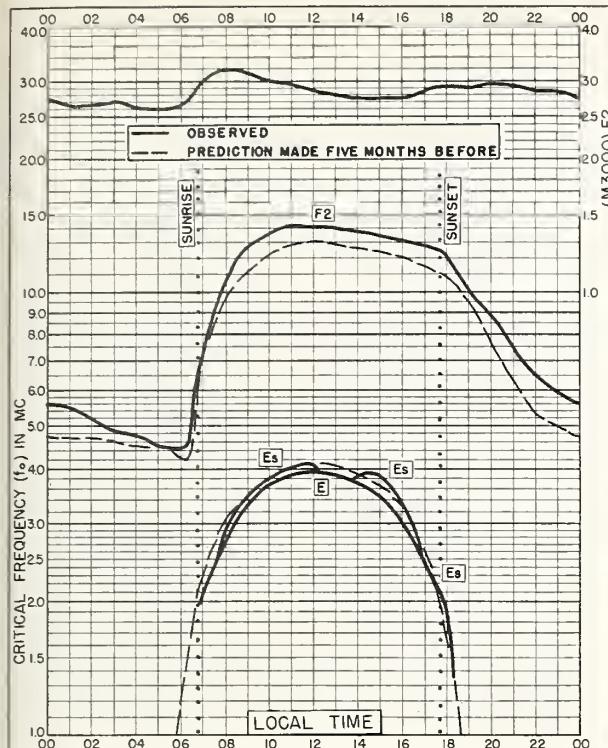


Fig. 35. ST. JOHN'S, NEWFOUNDLAND
47.6°N, 52.7°W FEBRUARY 1958



FEBRUARY 1958
Fig. 36. ST. JOHN'S, NEWFOUNDLAND





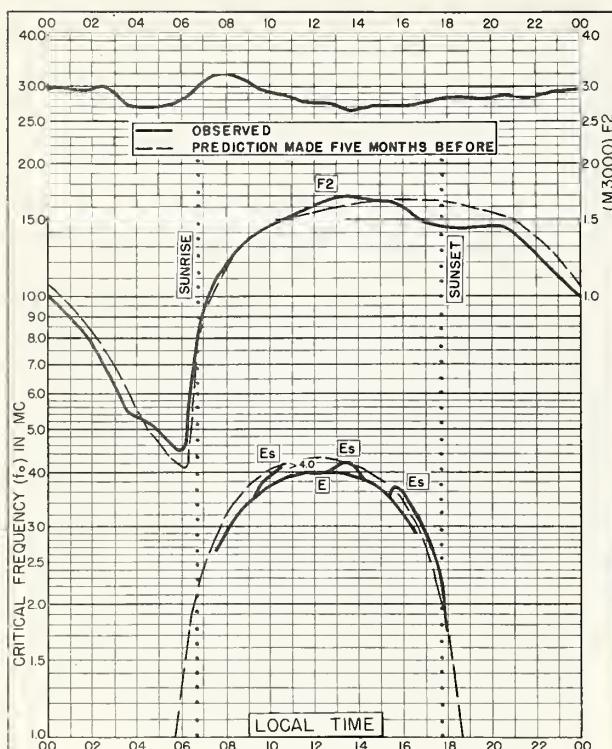


Fig. 45. OKINAWA I.
26.3°N, 127.8°E FEBRUARY 1958

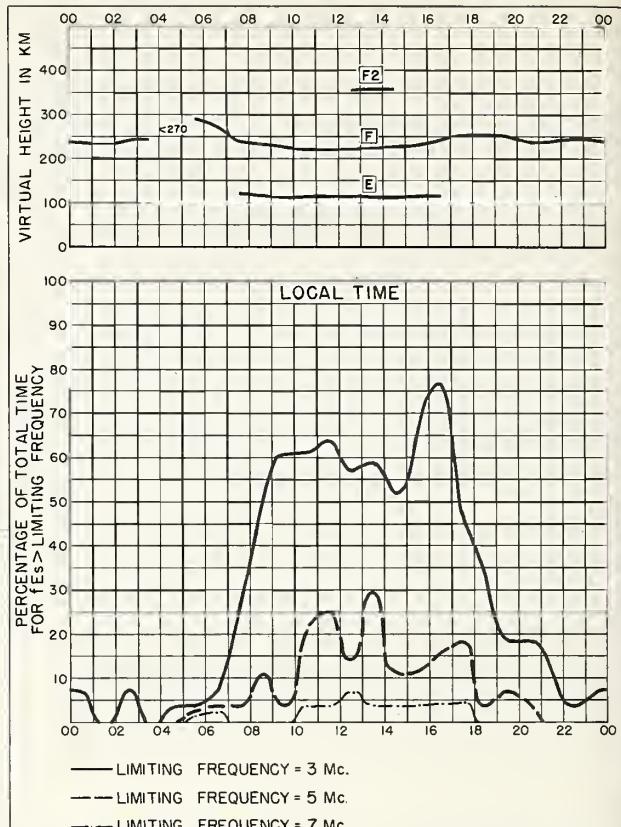


Fig. 46. OKINAWA I. FEBRUARY 1958

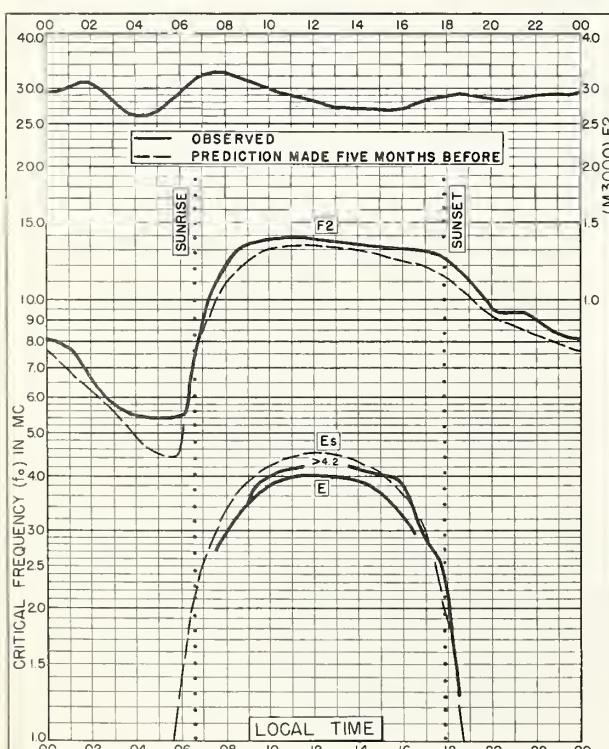


Fig. 47. PUERTO RICO, W.I.
18.5°N, 67.2°W FEBRUARY 1958

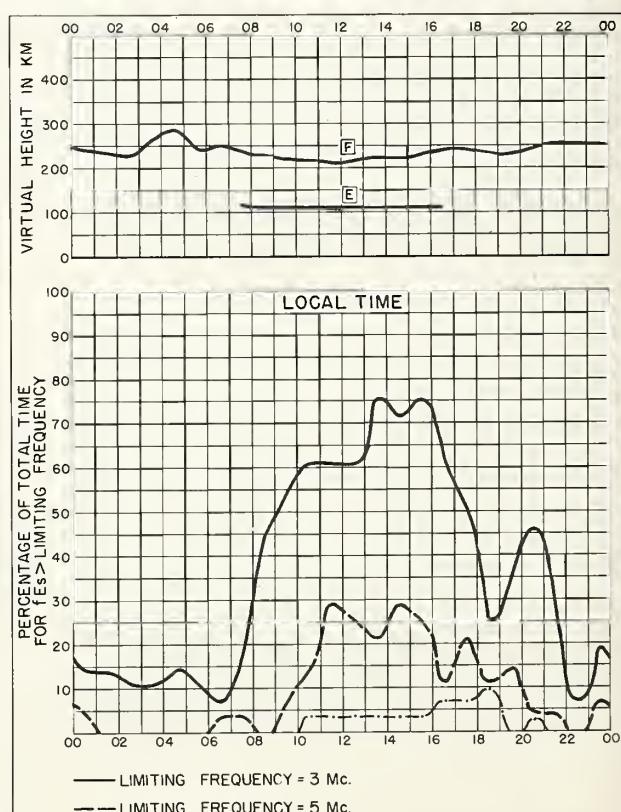
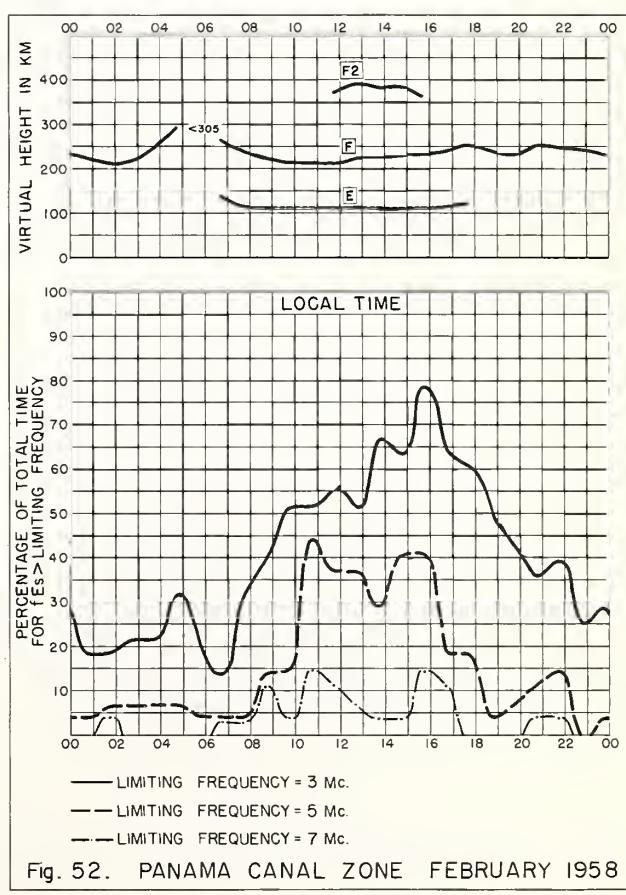
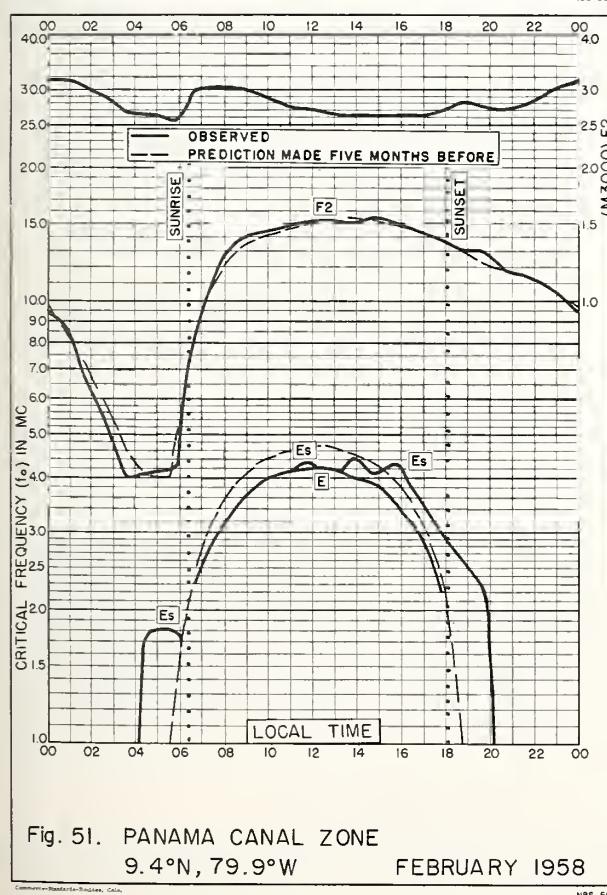
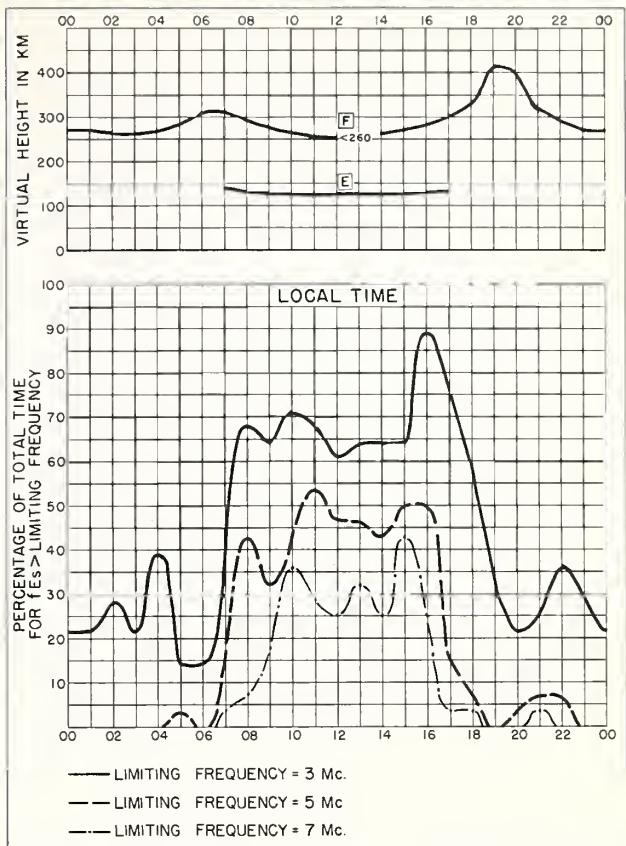
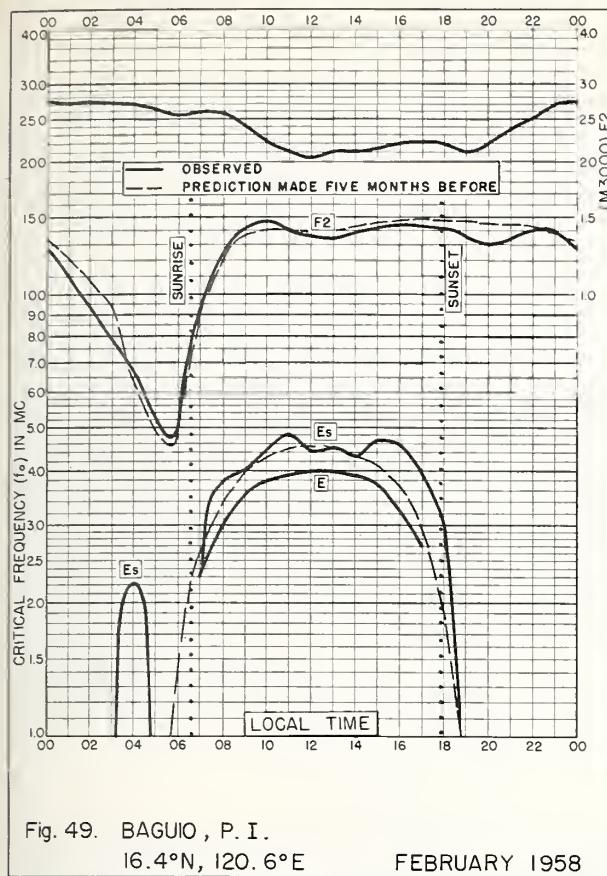


Fig. 48. PUERTO RICO, W.I. FEBRUARY 1958



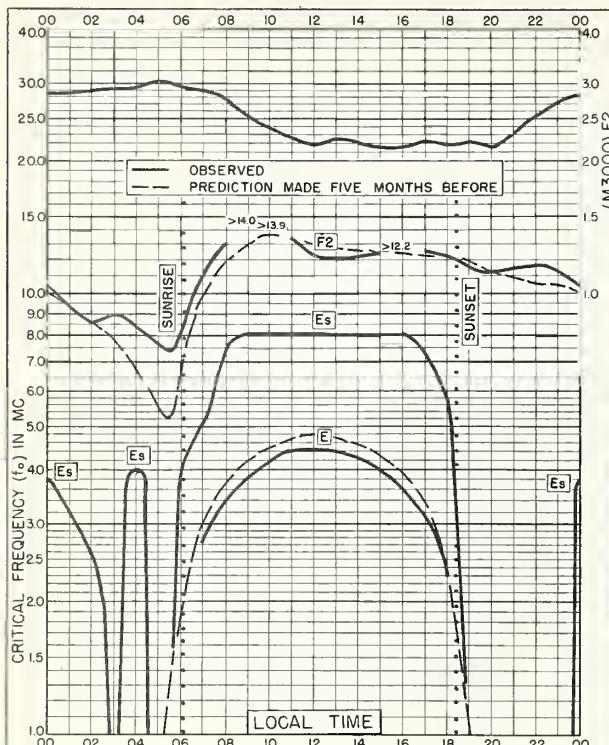


Fig. 53. HUANCAYO, PERU
12.0°S, 75.3°W FEBRUARY 1958

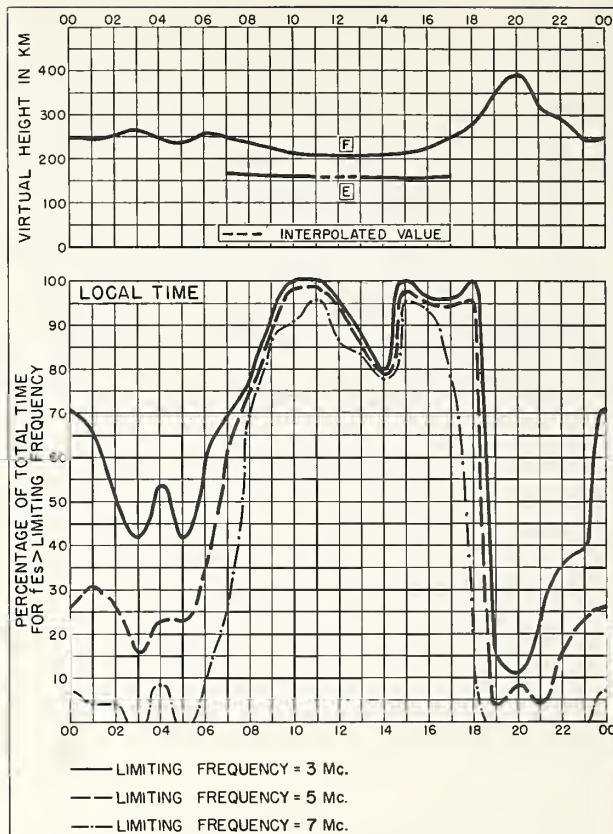


Fig. 54. HUANCAYO, PERU FEBRUARY 1958

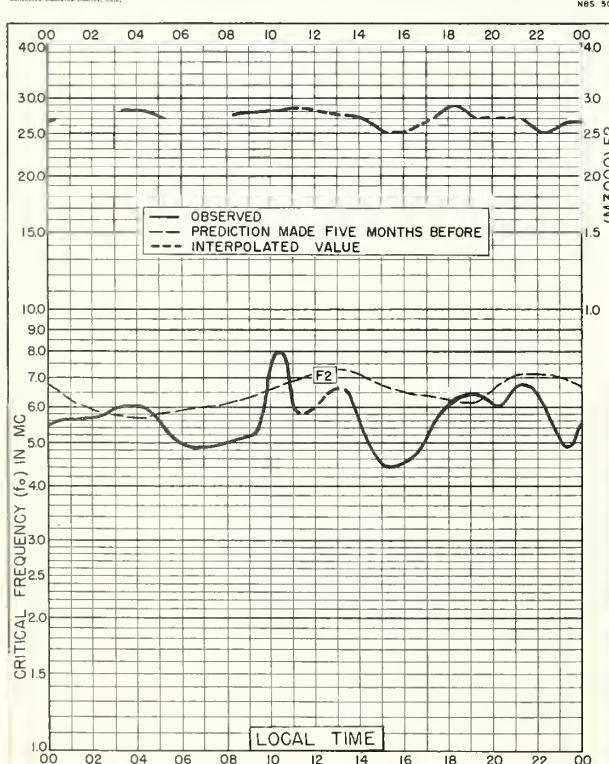


Fig. 55. FLETCHERS ICE I.
79.0°N, 116.0°W JANUARY 1958

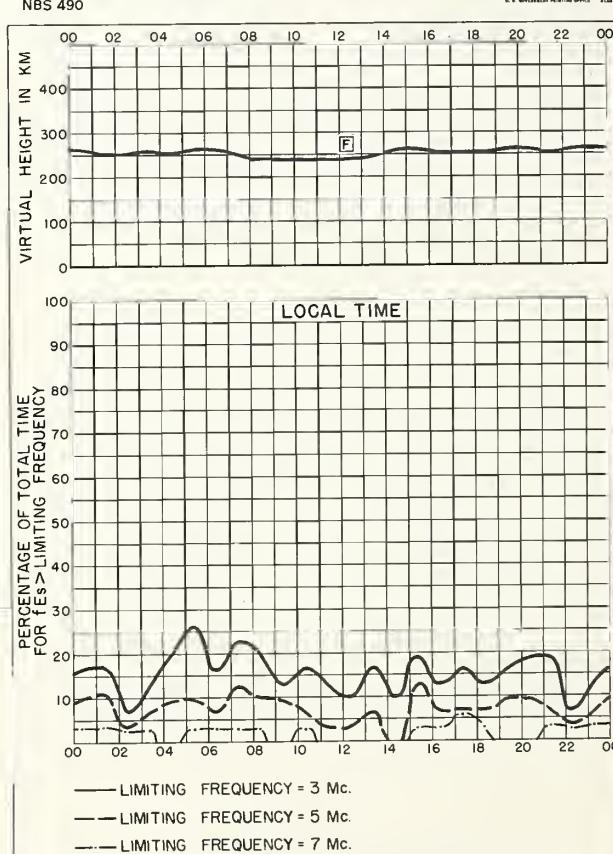
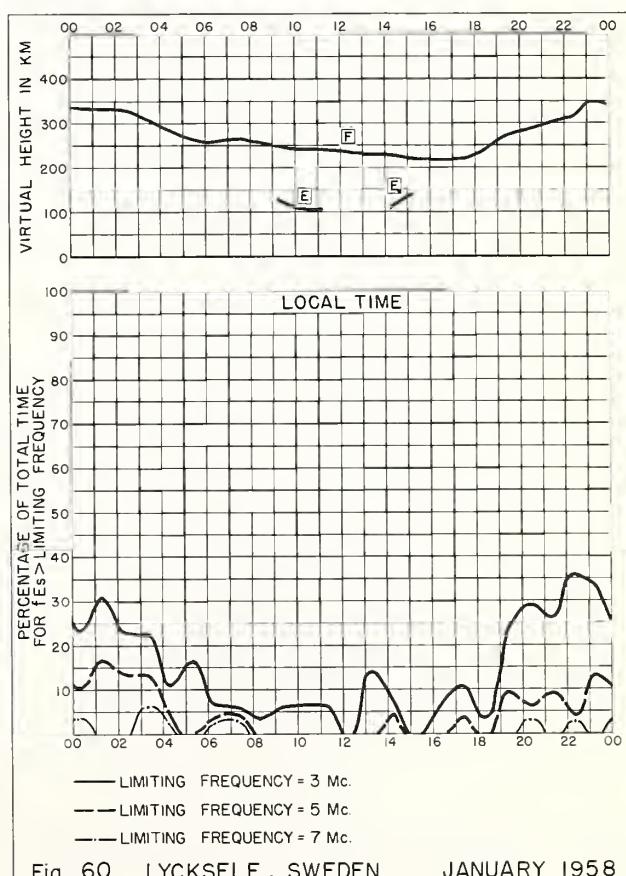
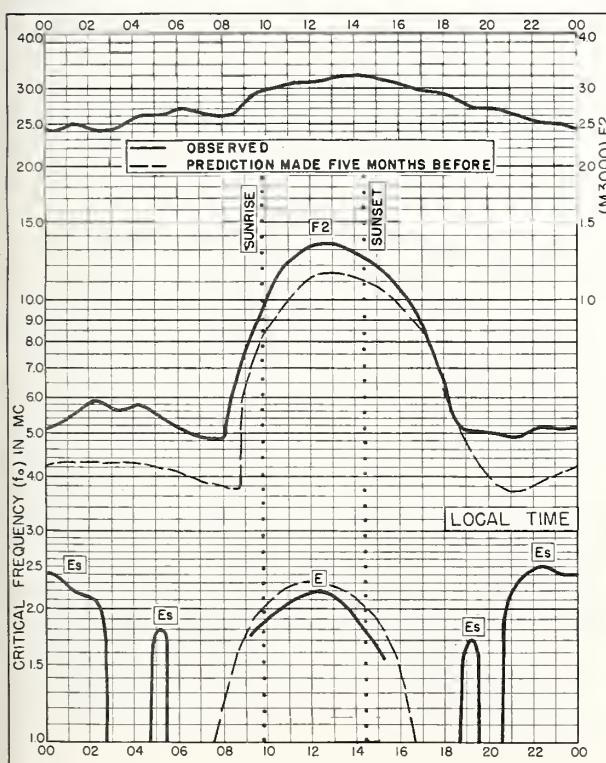
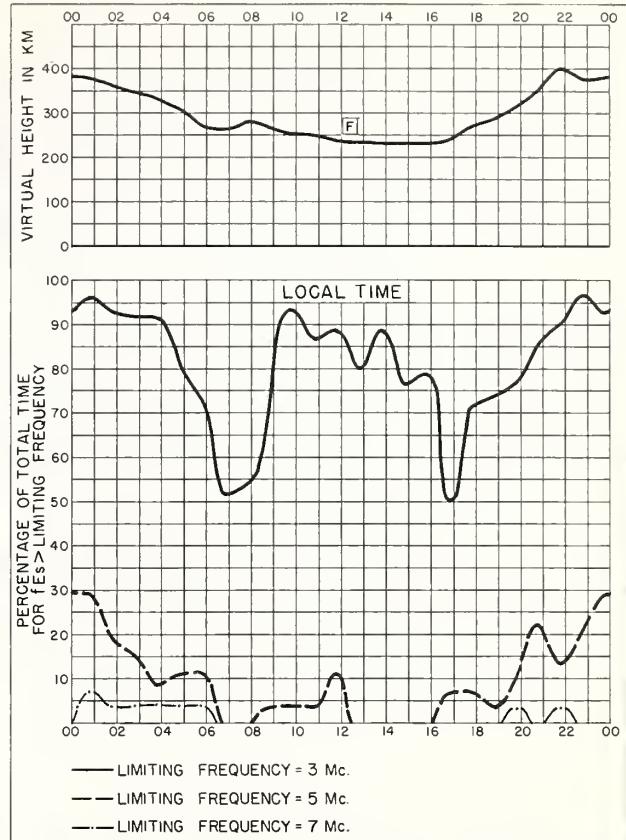
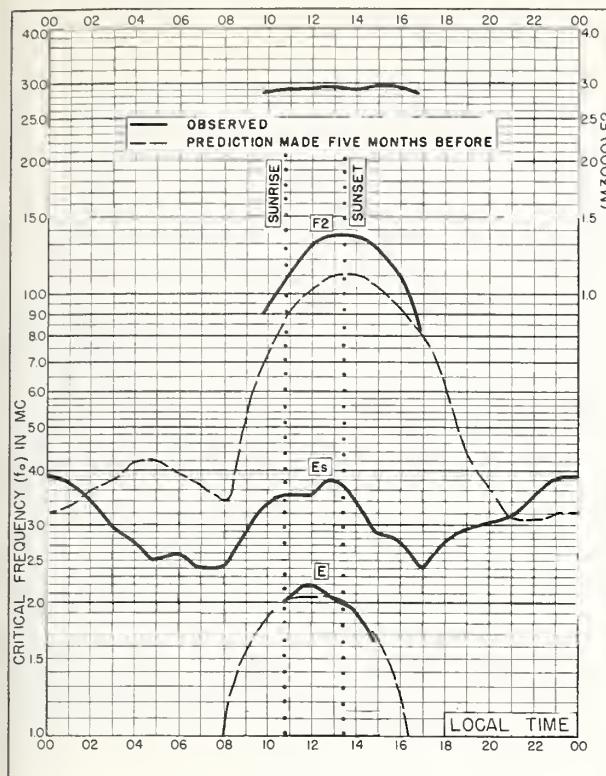
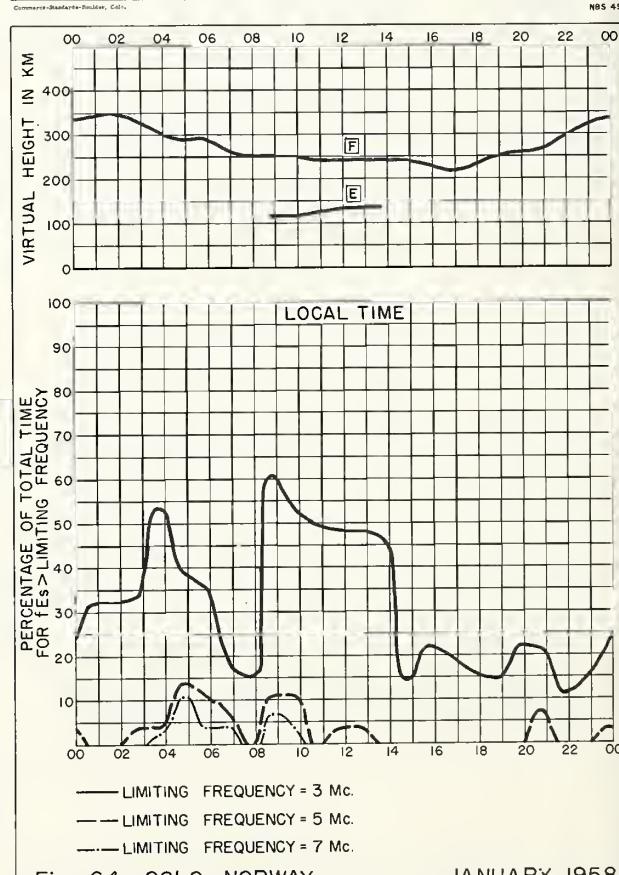
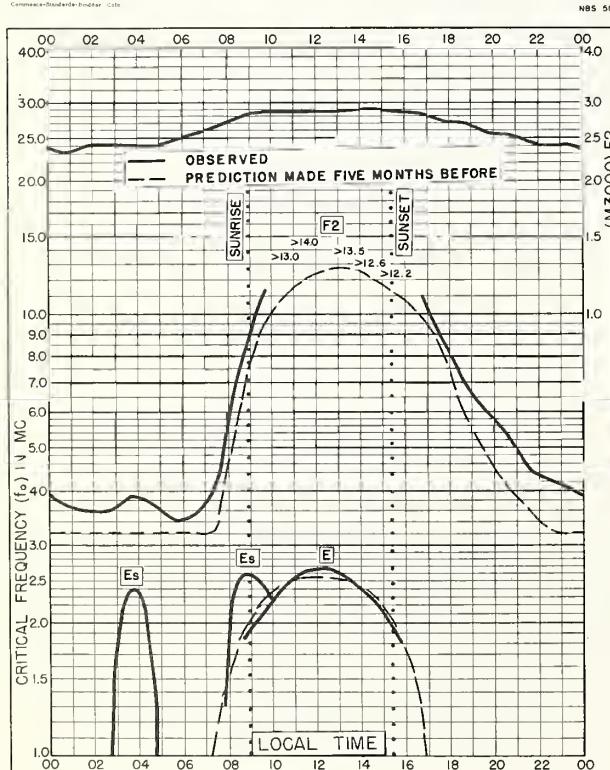
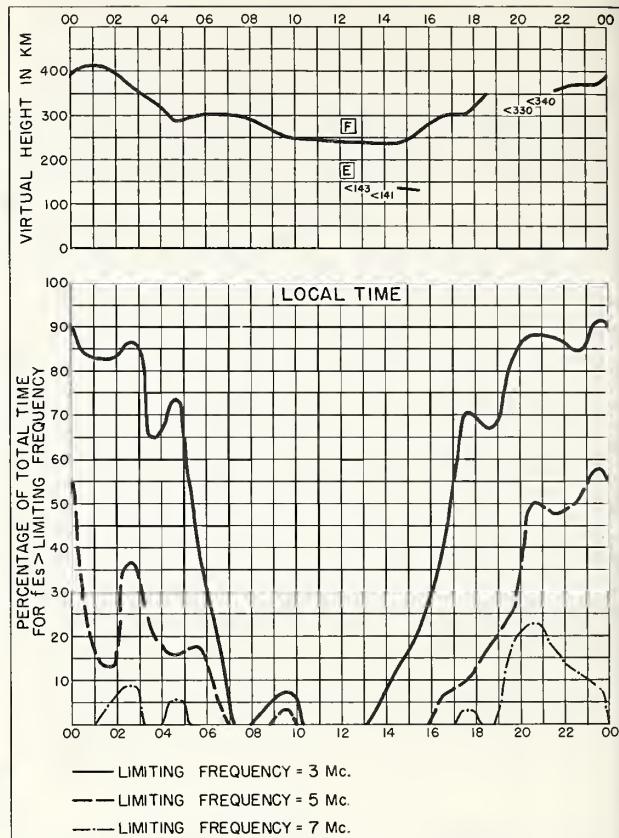
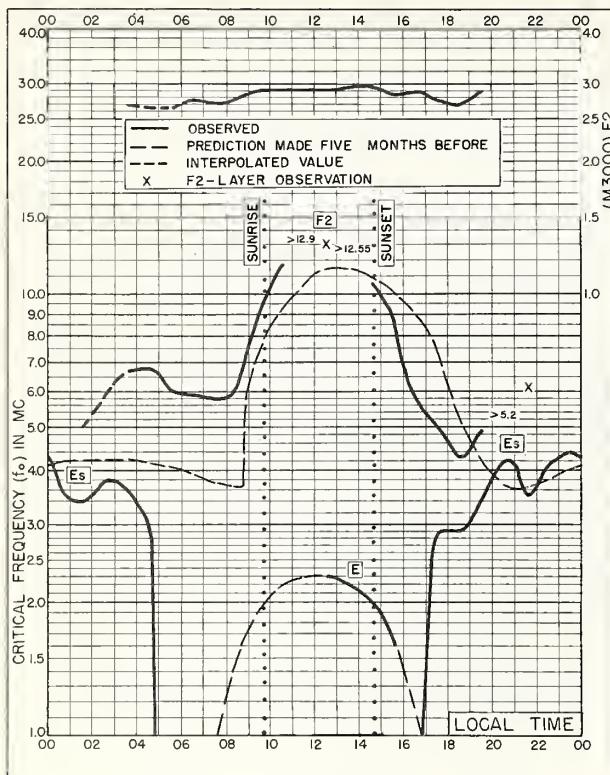


Fig. 56. FLETCHERS ICE I. JANUARY 1958





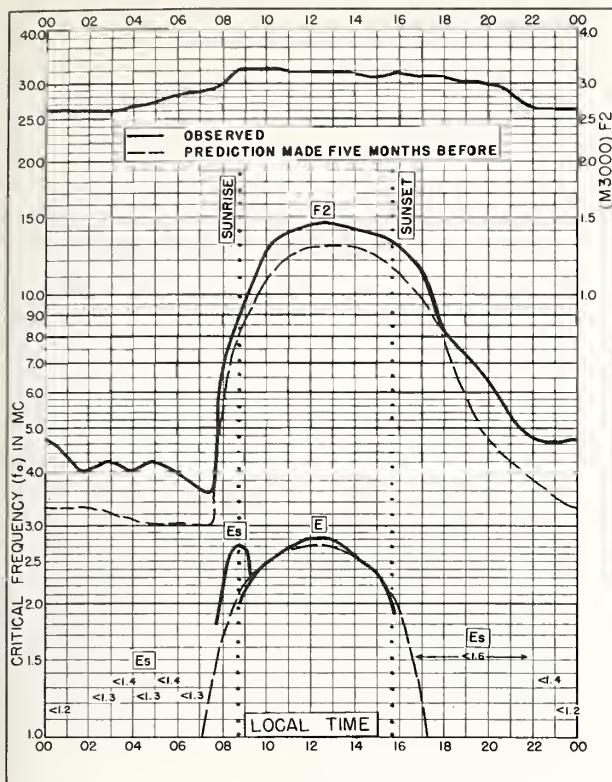


Fig. 65. INVERNESS, SCOTLAND
57.4°N, 4.2°W JANUARY 1958

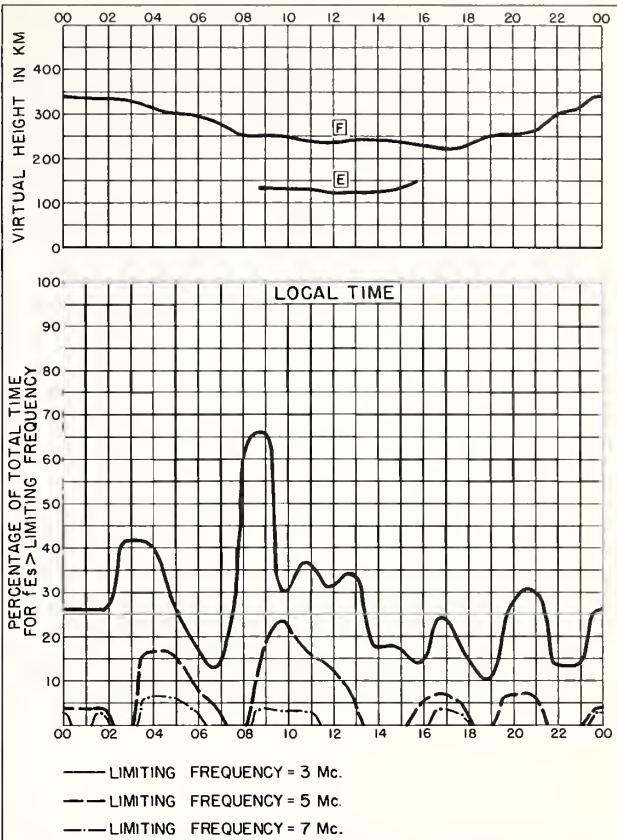


Fig. 66. INVERNESS, SCOTLAND JANUARY 1958

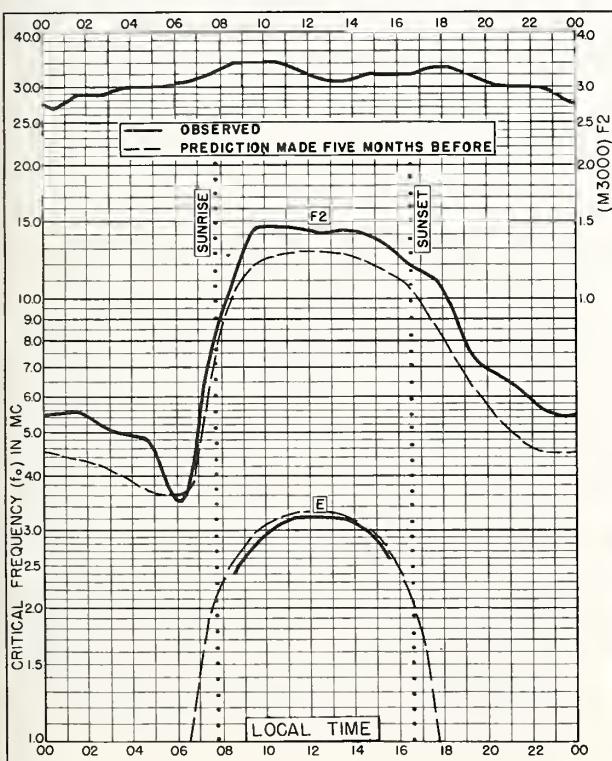
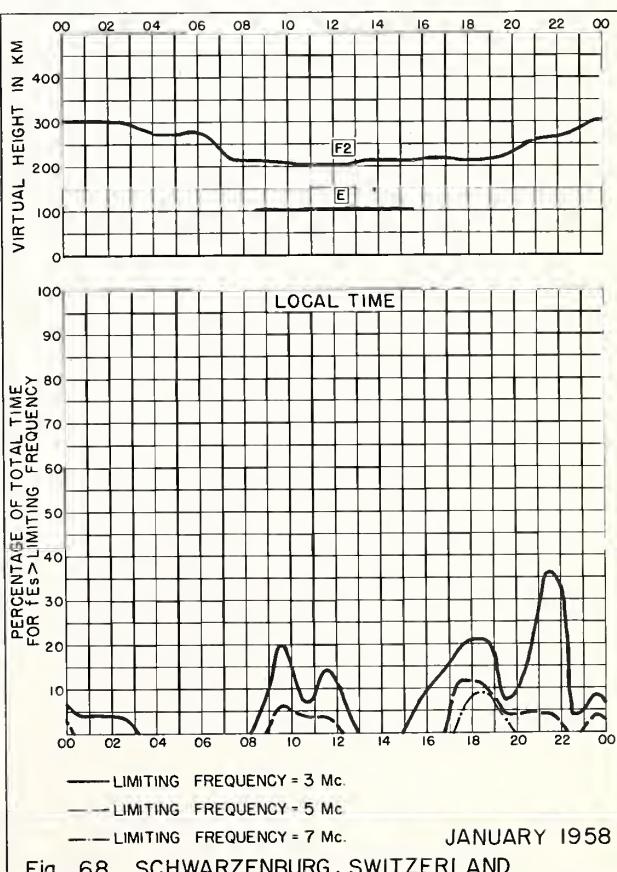


Fig. 67. SCHWARZENBURG, SWITZERLAND
46.8°N, 7.3°E JANUARY 1958



JANUARY 1958
Fig. 68. SCHWARZENBURG, SWITZERLAND

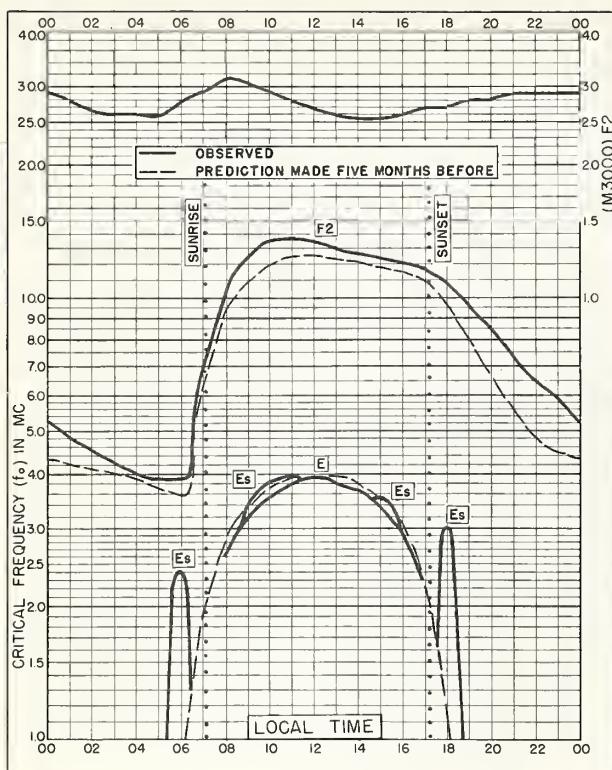


Fig. 69. WHITE SANDS, NEW MEXICO
32.3°N, 106.5°W JANUARY 1958

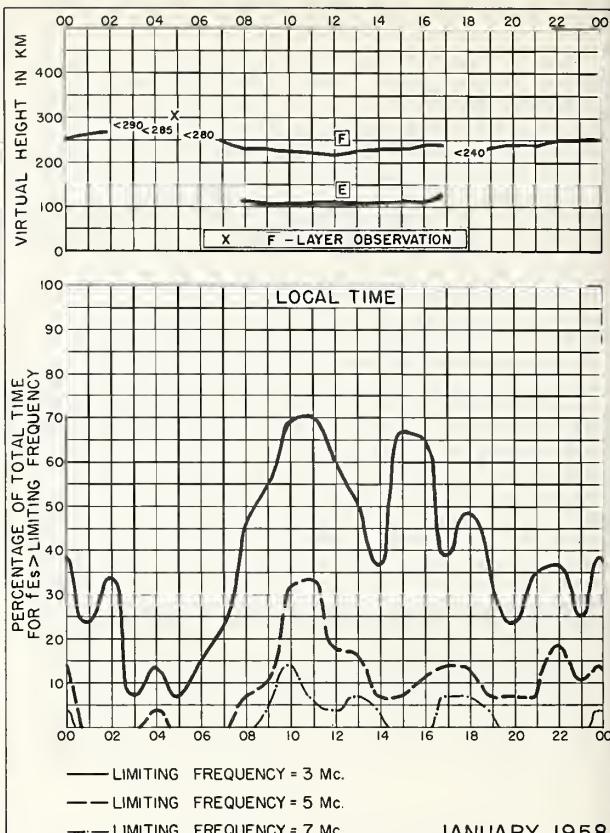


Fig. 70. WHITE SANDS, NEW MEXICO

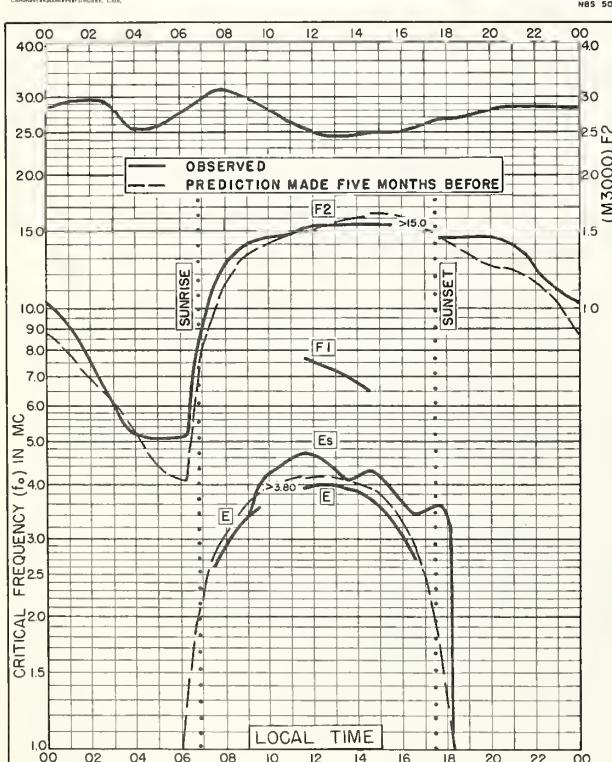


Fig. 71. OKINAWA I.
26.3°N, 127.8°E JANUARY 1958

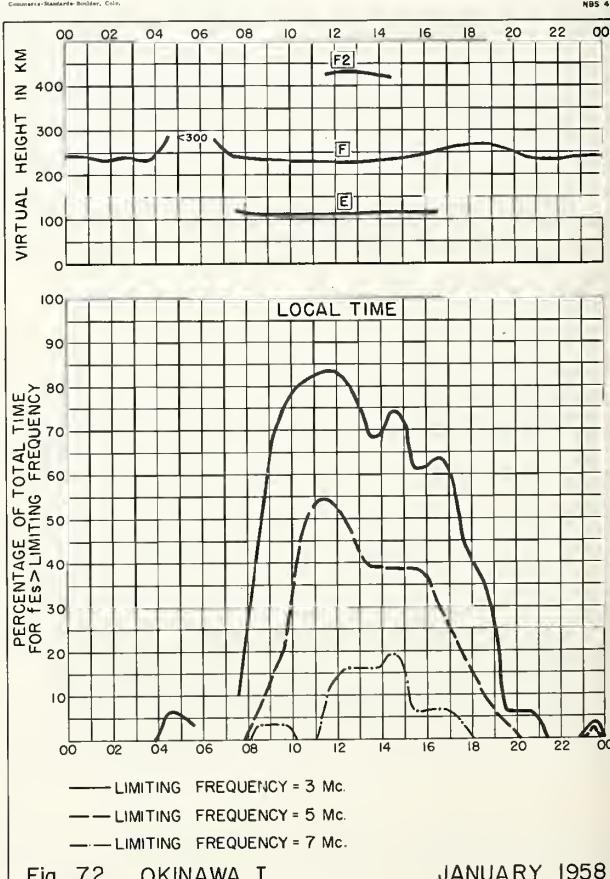
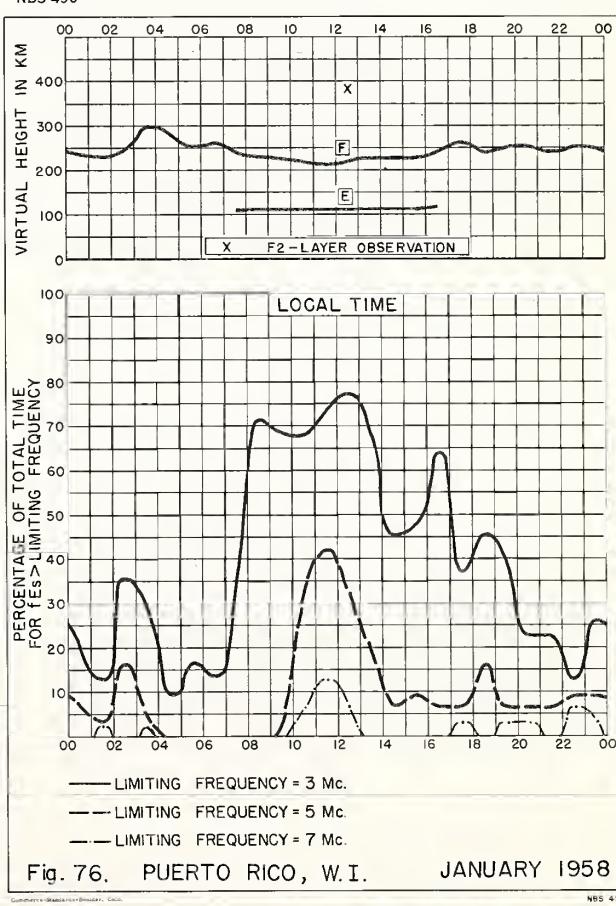
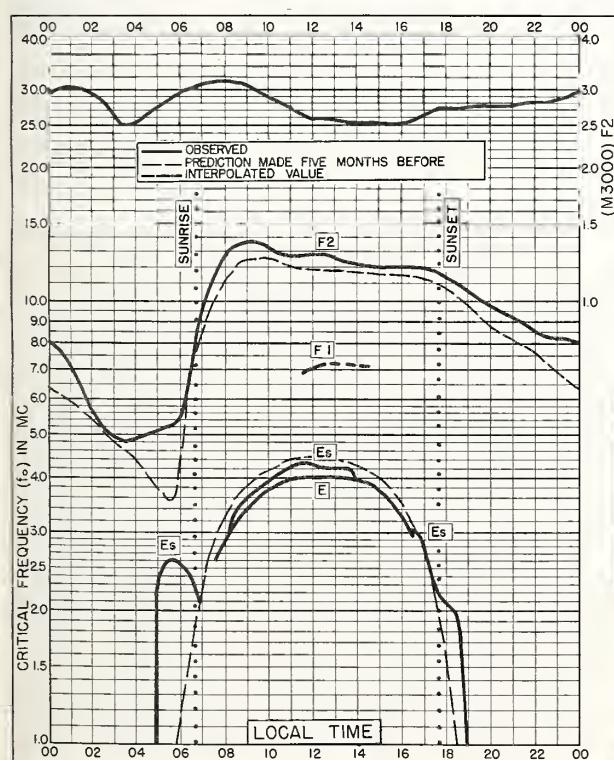
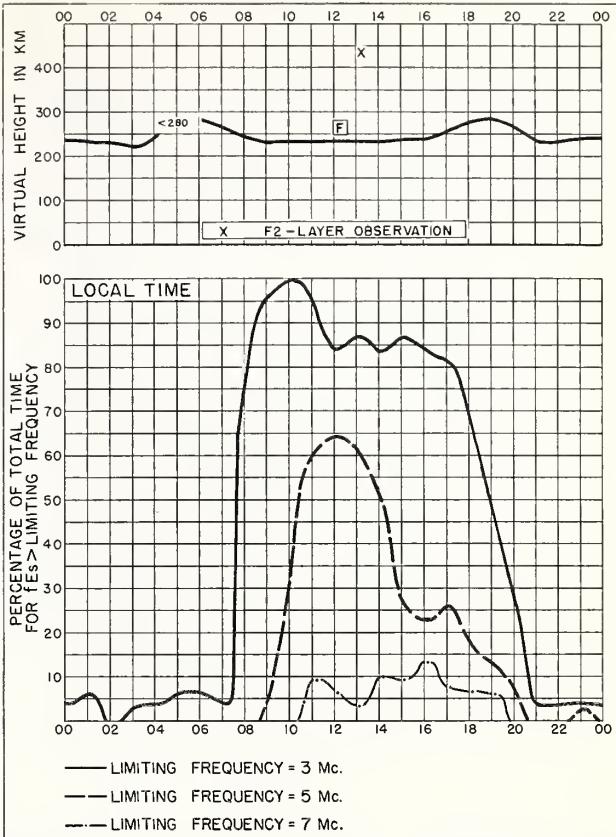
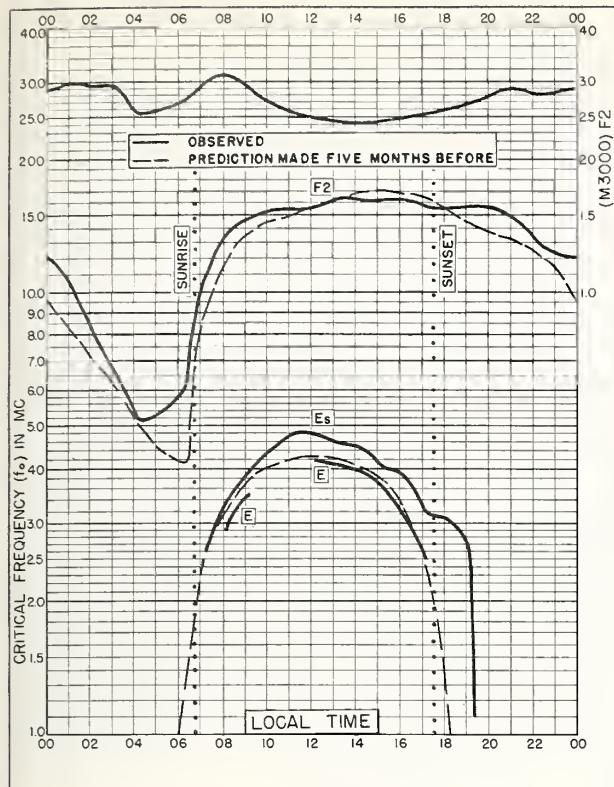


Fig. 72. OKINAWA I.



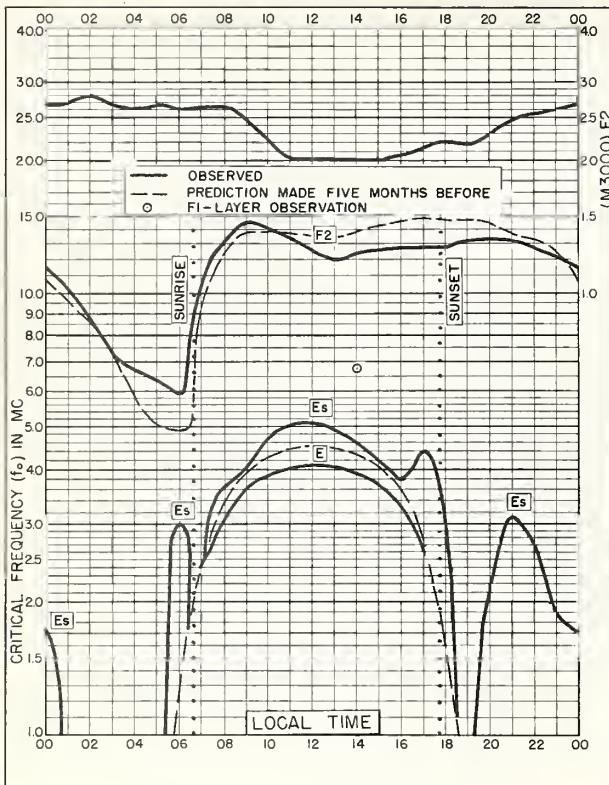


Fig. 77. BAGUIO, P.I.
16.4°N, 120.6°E JANUARY 1958

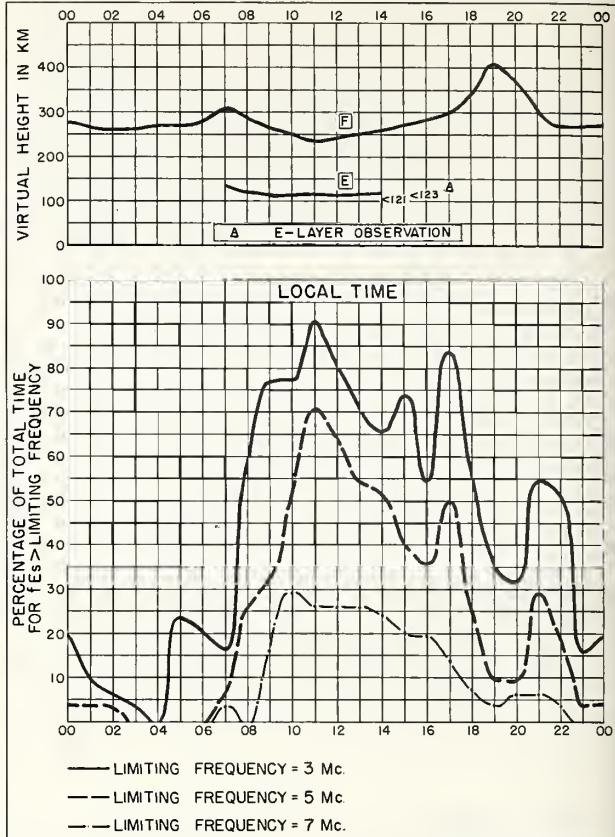


Fig. 78. BAGUIO, P.I. JANUARY 1958

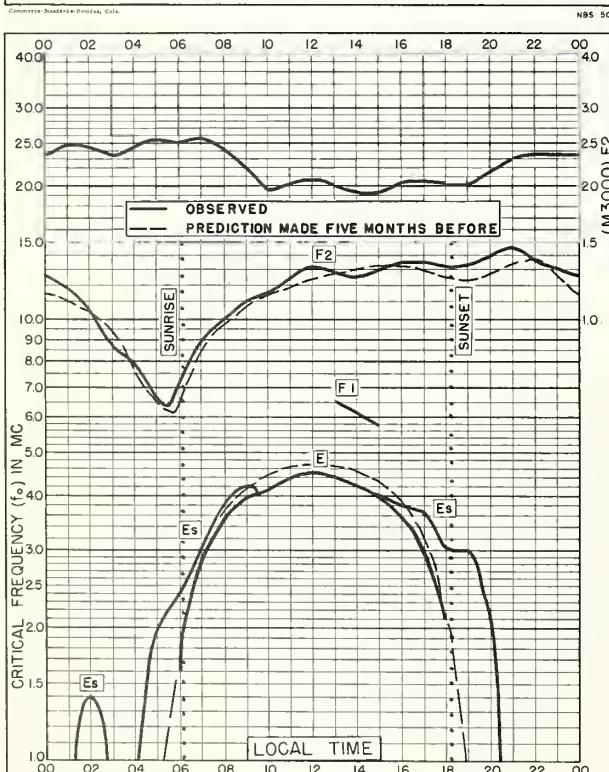
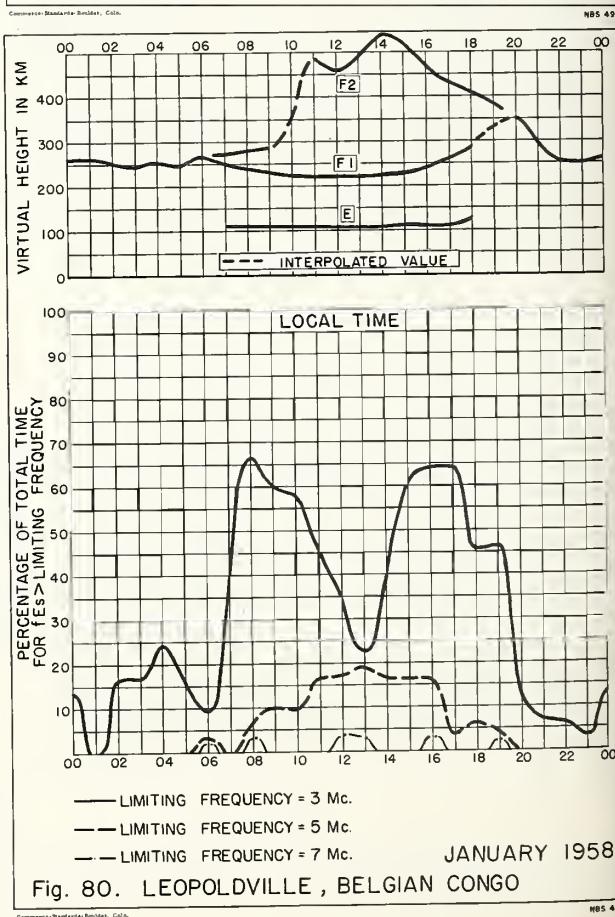


Fig. 79. LEOPOLDVILLE, BELGIAN CONGO
4.4°S, 15.2°E JANUARY 1958



JANUARY 1958

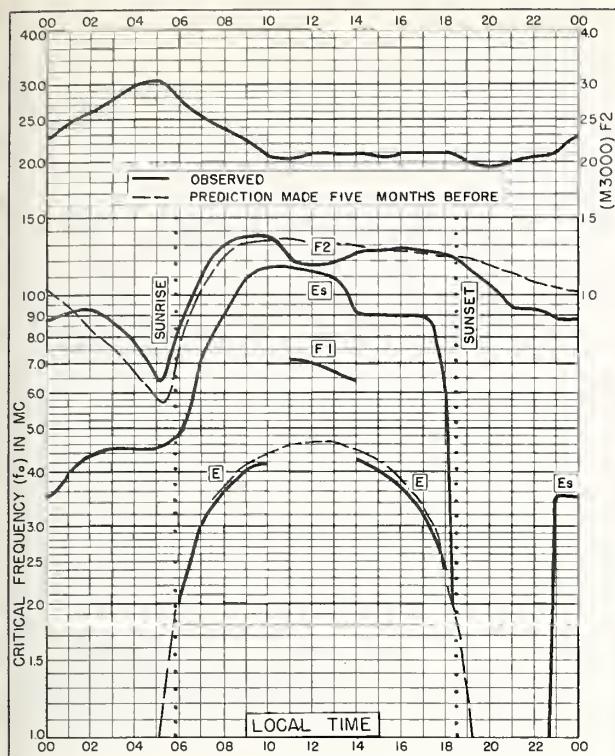


Fig. 81. HUANCAYO, PERU
12.0°S, 75.3°W JANUARY 1958

Commerce-Bureau-Bulletin, Calif.

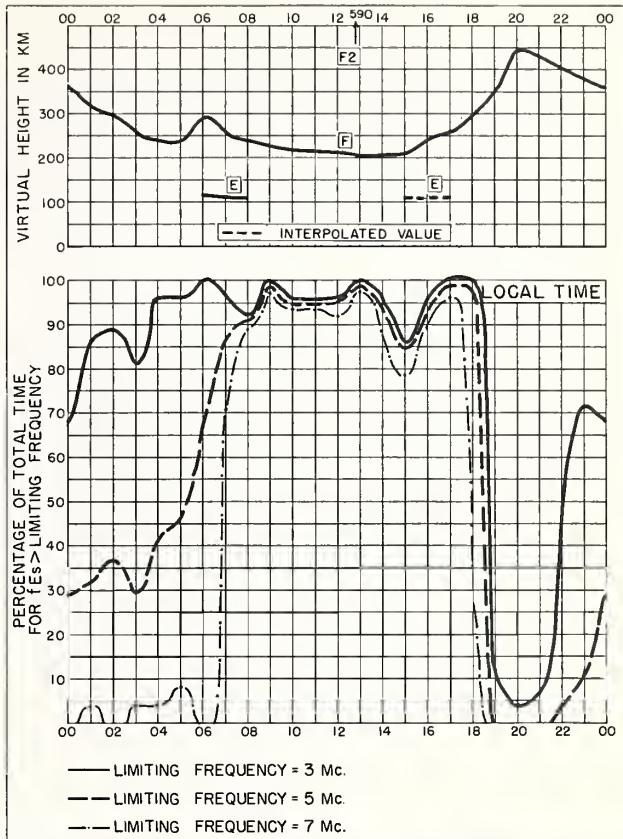


Fig. 82. HUANCAYO, PERU JANUARY 1958

Commerce-Bureau-Bulletin, Calif.

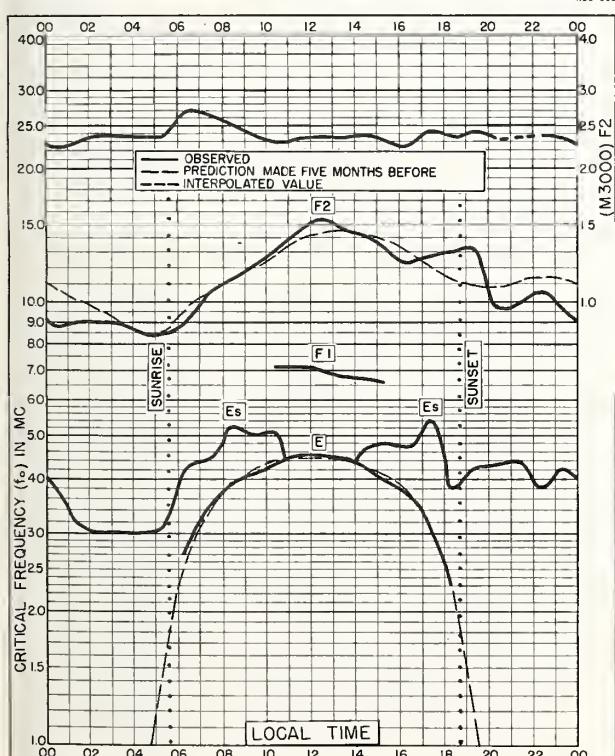


Fig. 83. RAROTONGA I.
21.2°S, 159.8°W JANUARY 1958

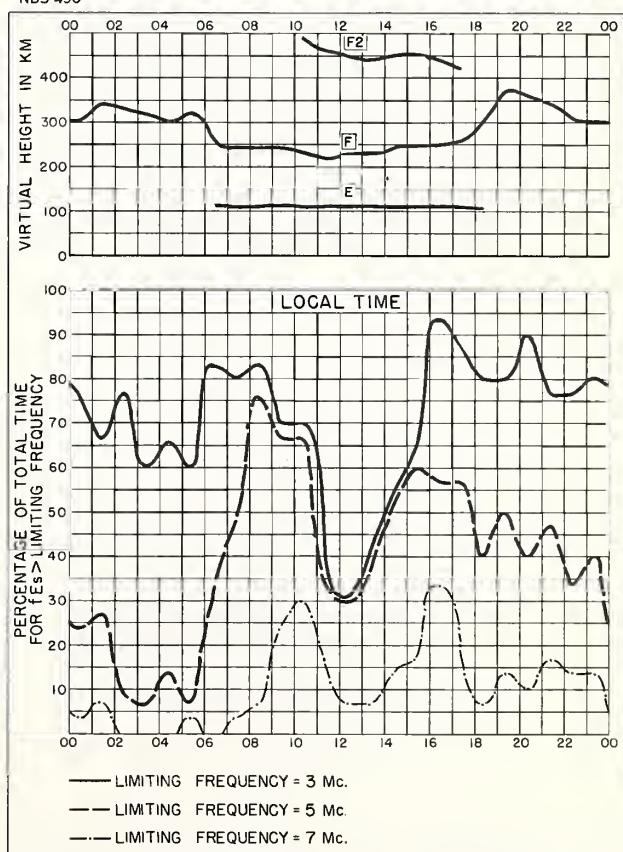
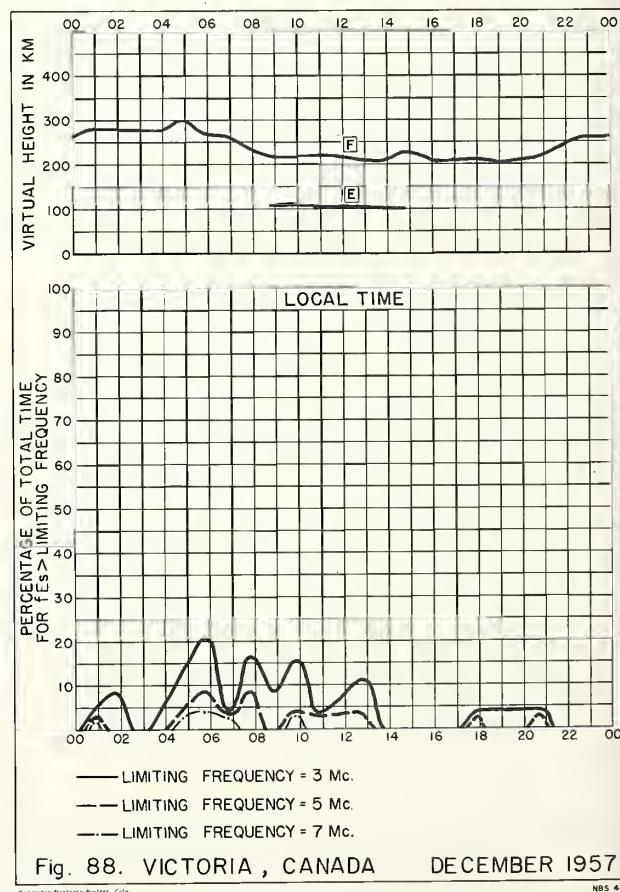
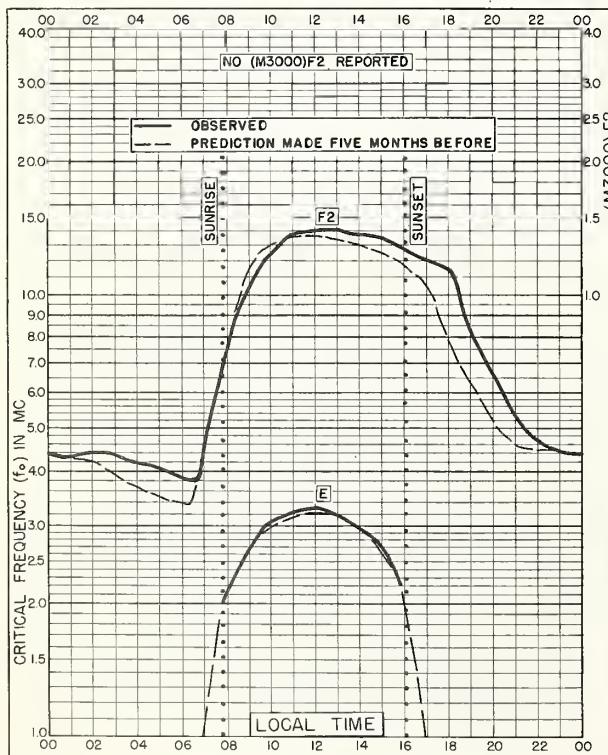
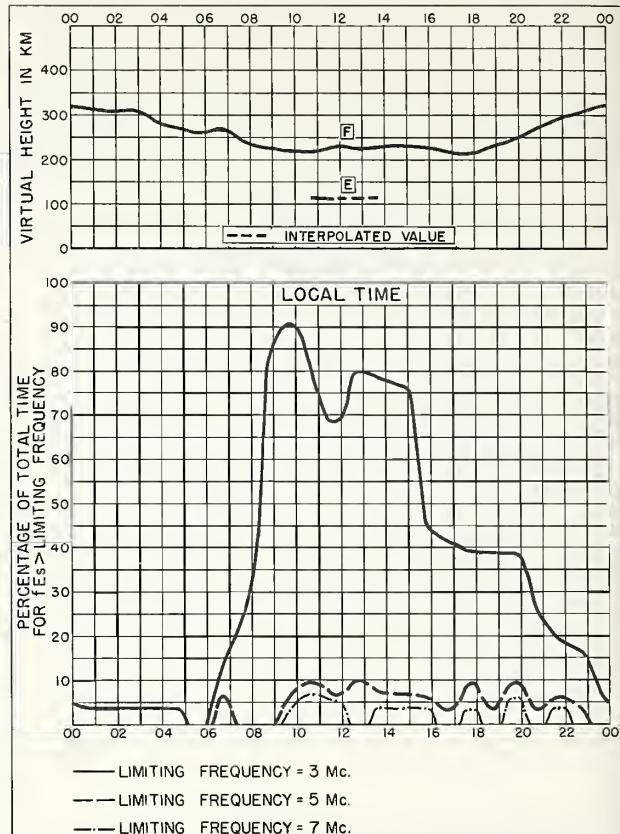
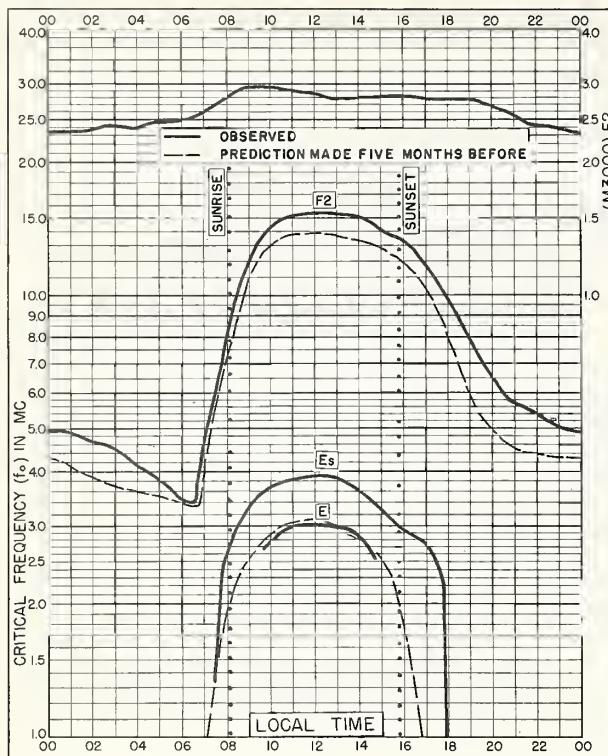


Fig. 84. RAROTONGA I. JANUARY 1958

Commerce-Bureau-Bulletin, Calif.



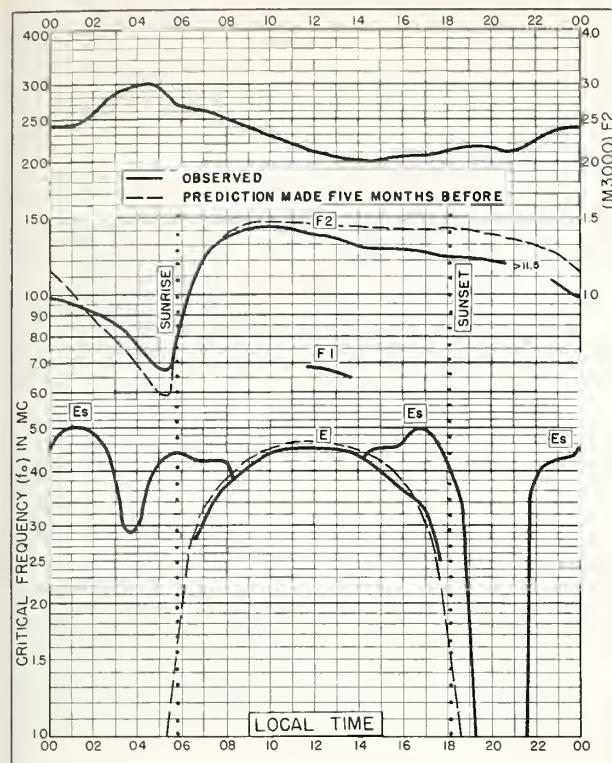


Fig. 89. CHICLAYO, PERU
 6.8°S, 79.8°W DECEMBER 1957

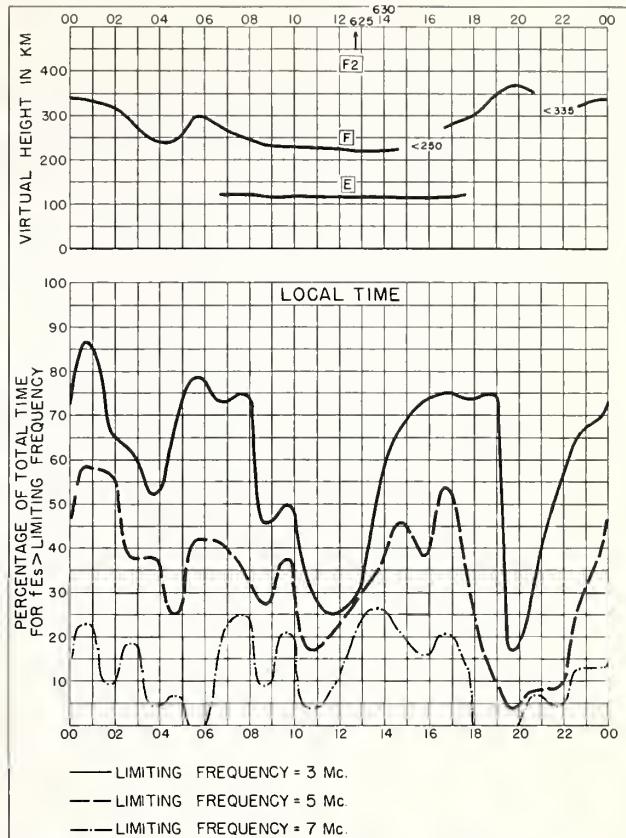


Fig. 90. CHICLAYO, PERU DECEMBER 1957

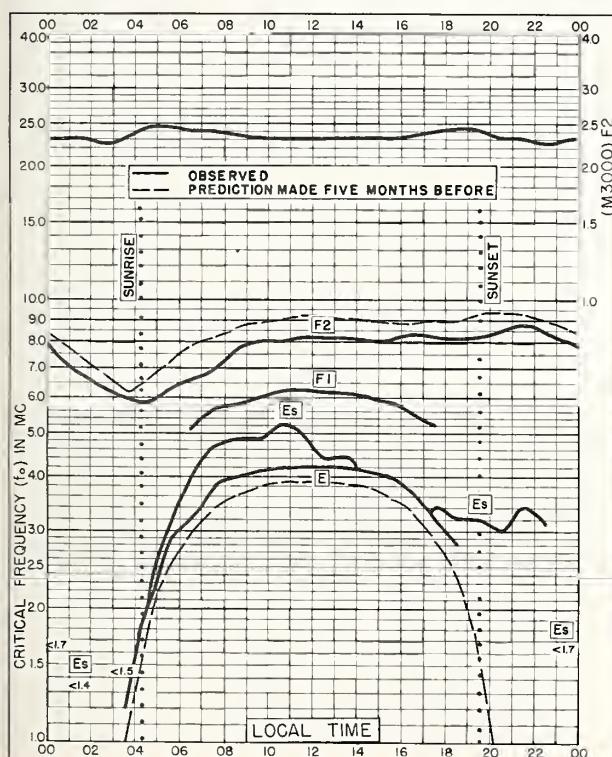
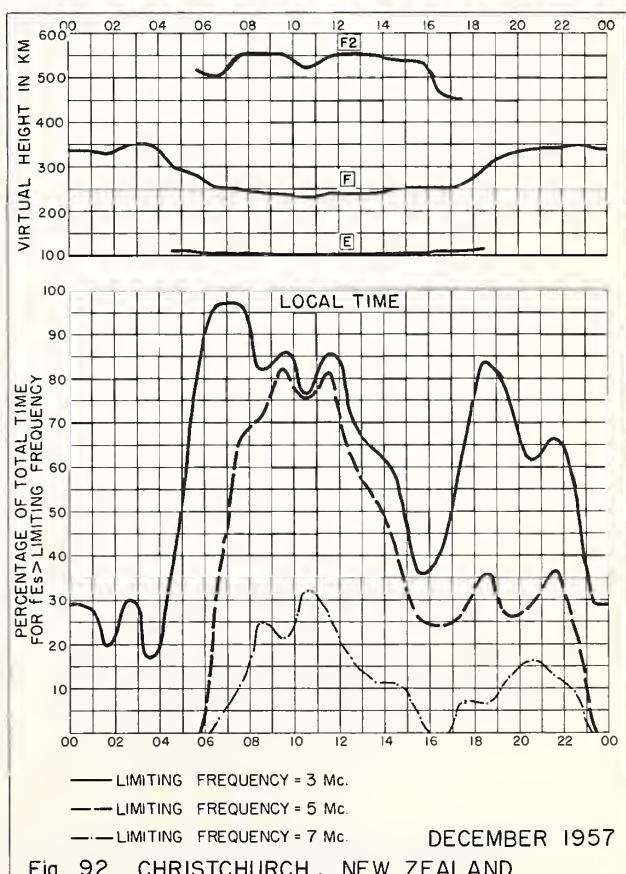
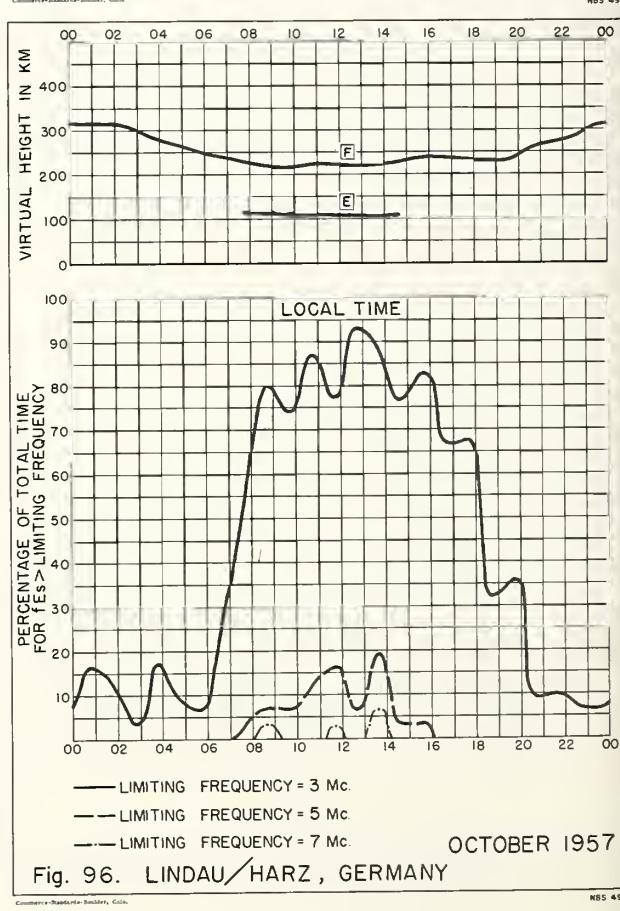
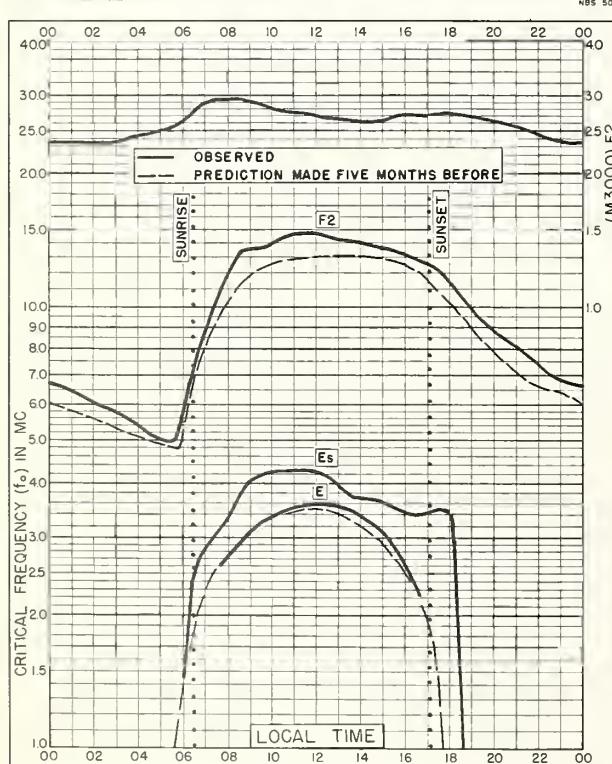
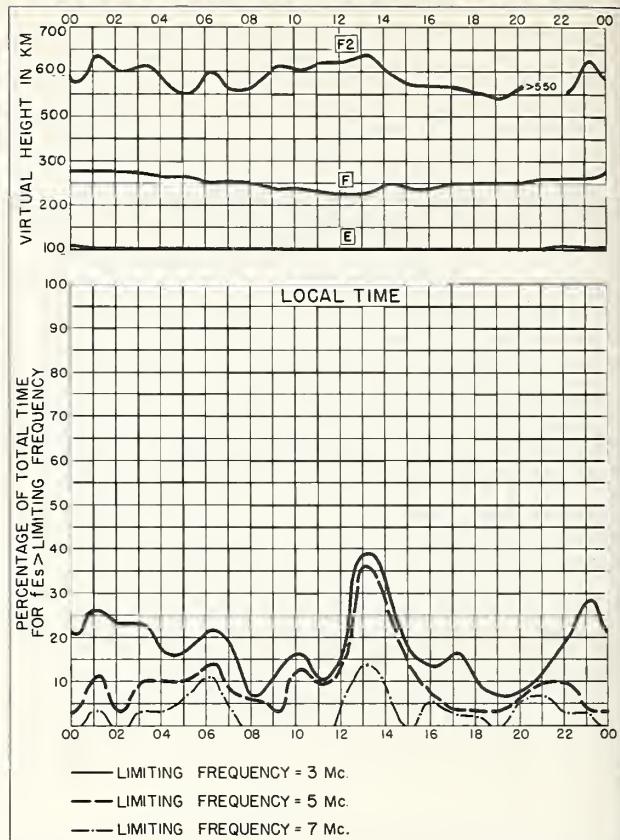
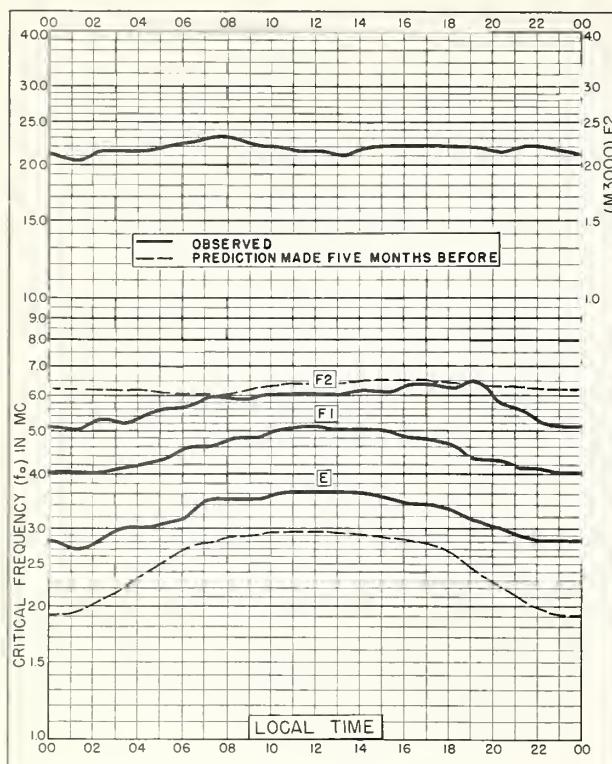
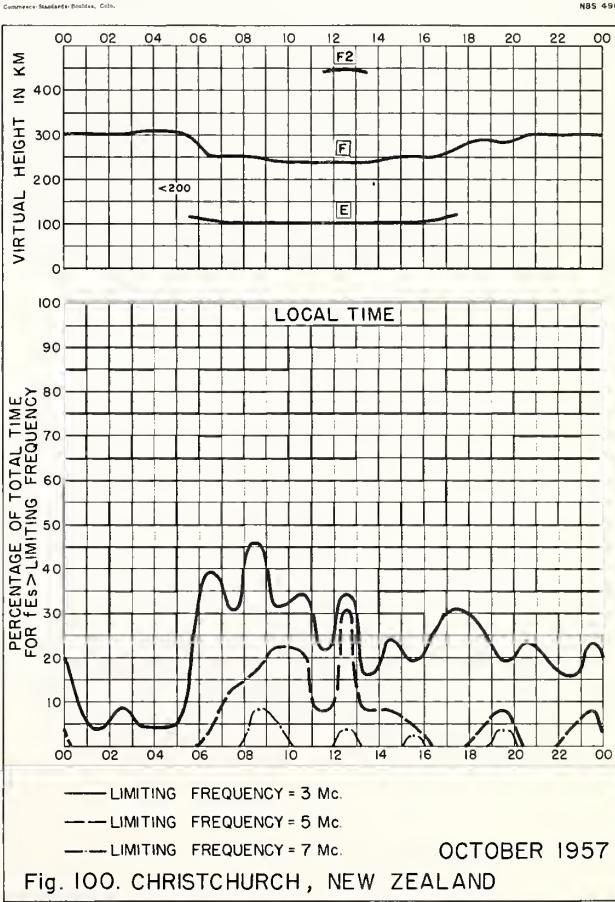
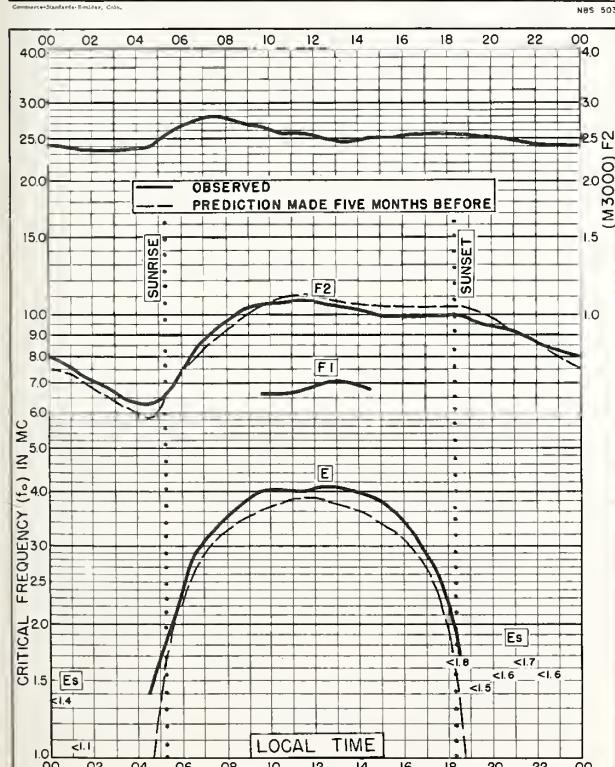
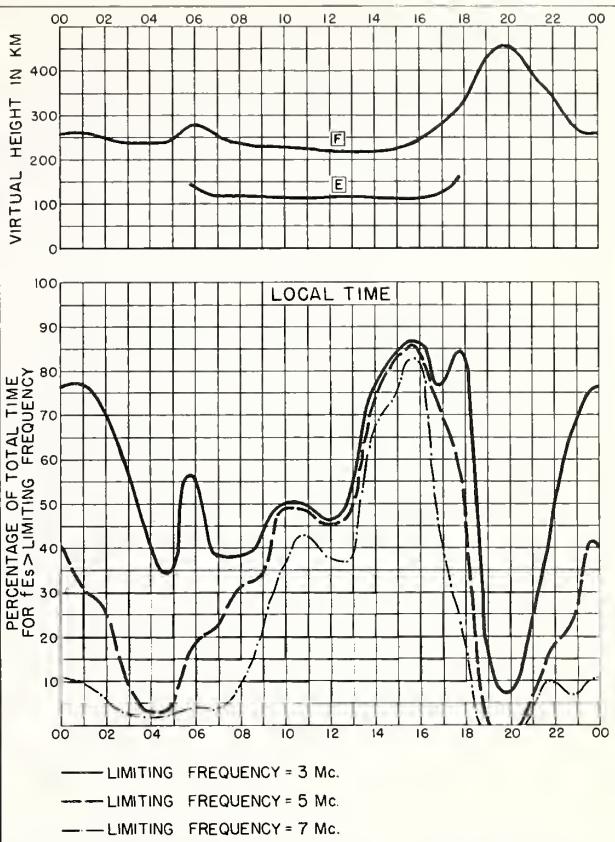
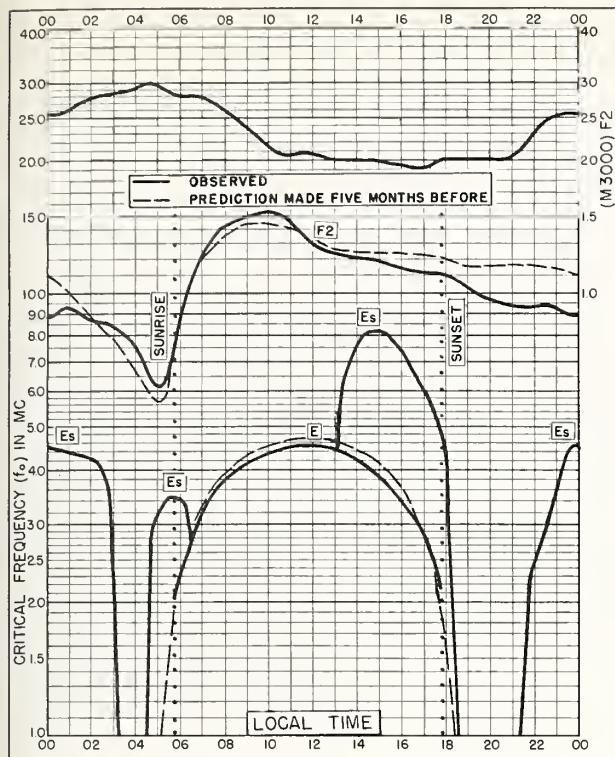
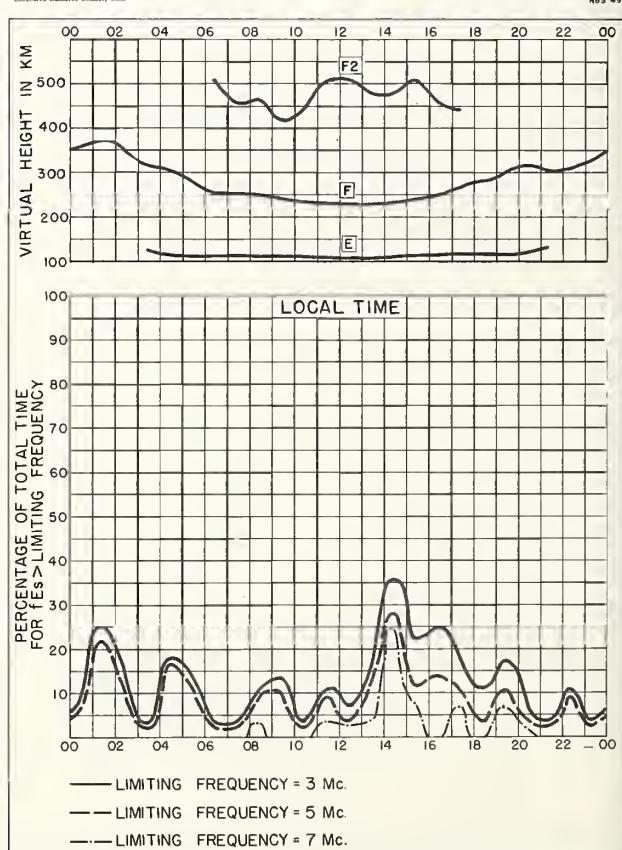
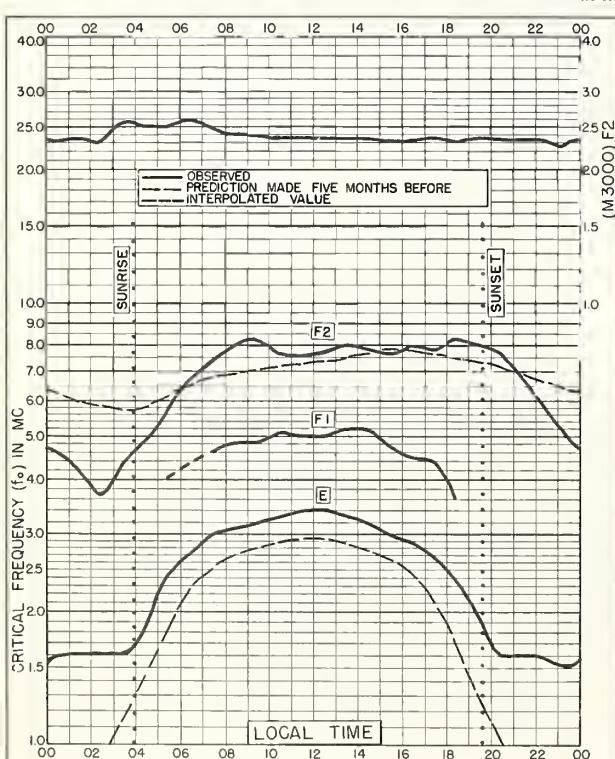
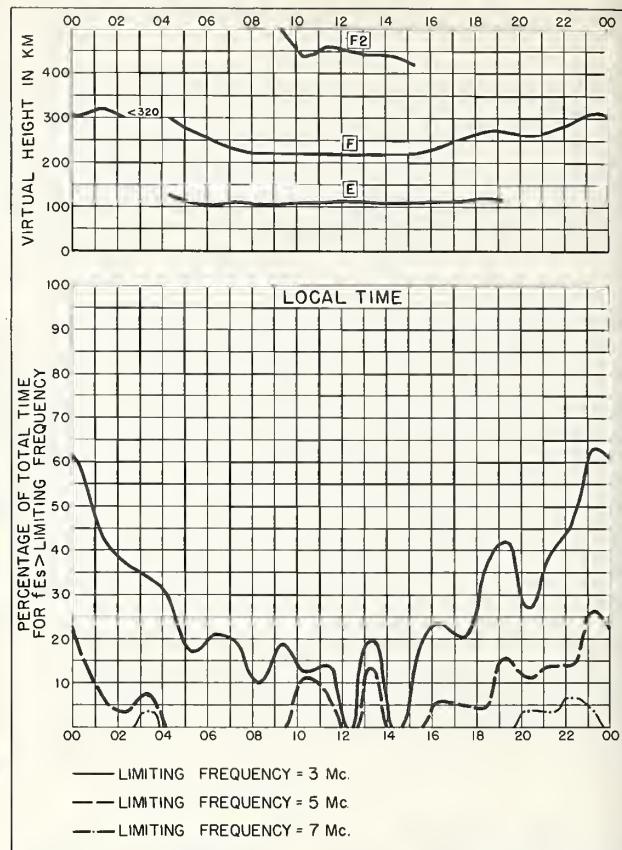
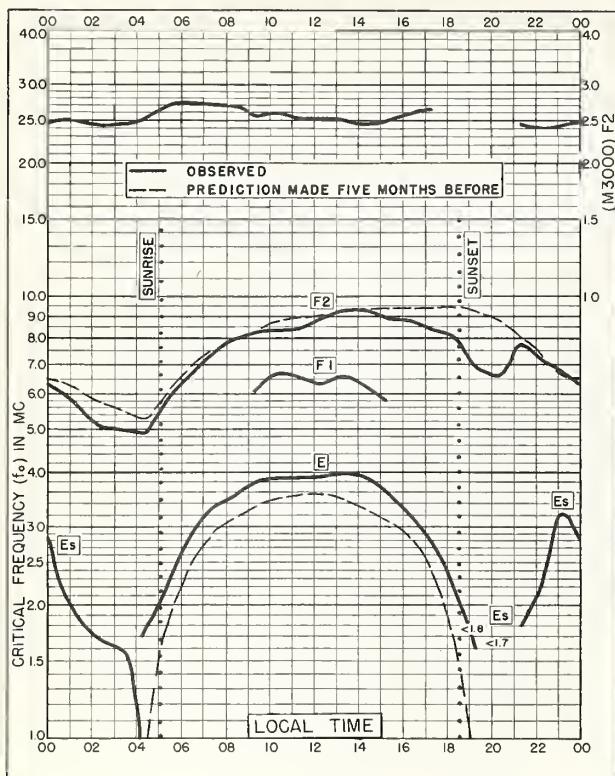


Fig. 91. CHRISTCHURCH, NEW ZEALAND
 43° 6' S., 172° 8' F. DECEMBER 1957









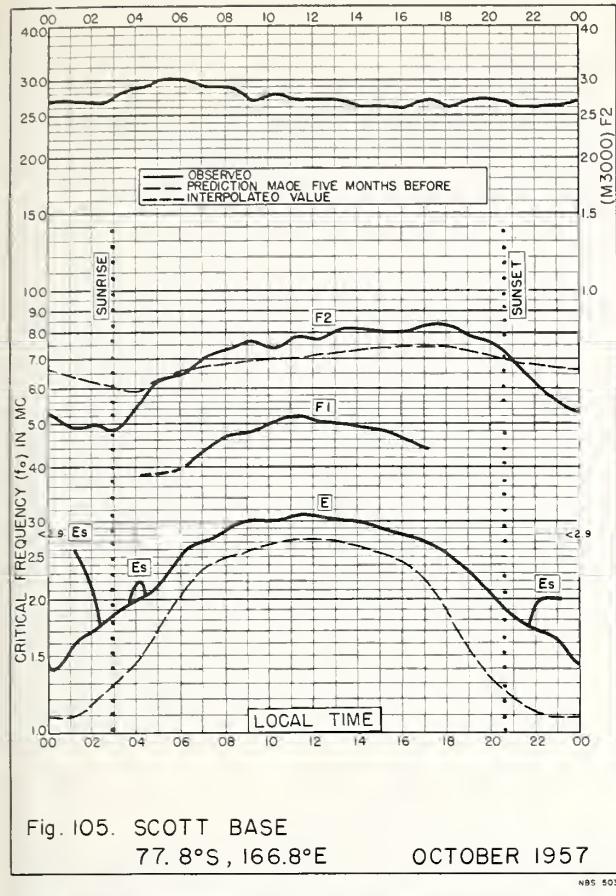


Fig. 105. SCOTT BASE
77.8°S, 166.8°E OCTOBER 1957

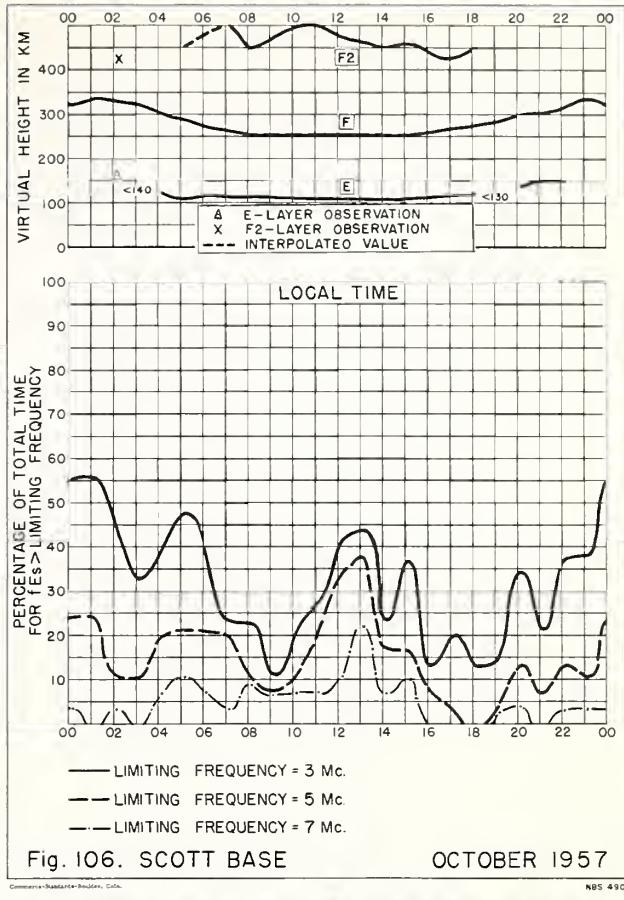


Fig. 106. SCOTT BASE OCTOBER 1957

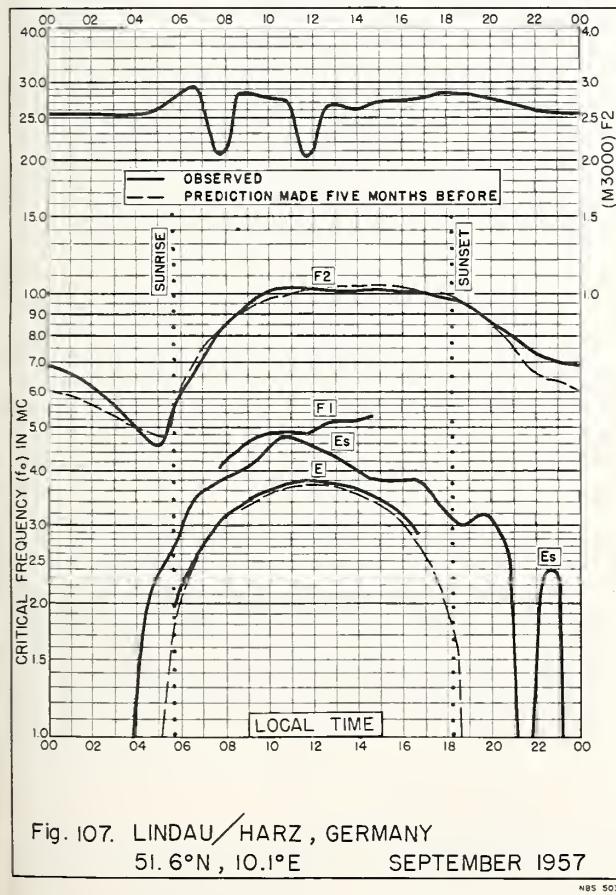


Fig. 107. LINDAU/HARZ, GERMANY
51.6°N, 10.1°E SEPTEMBER 1957

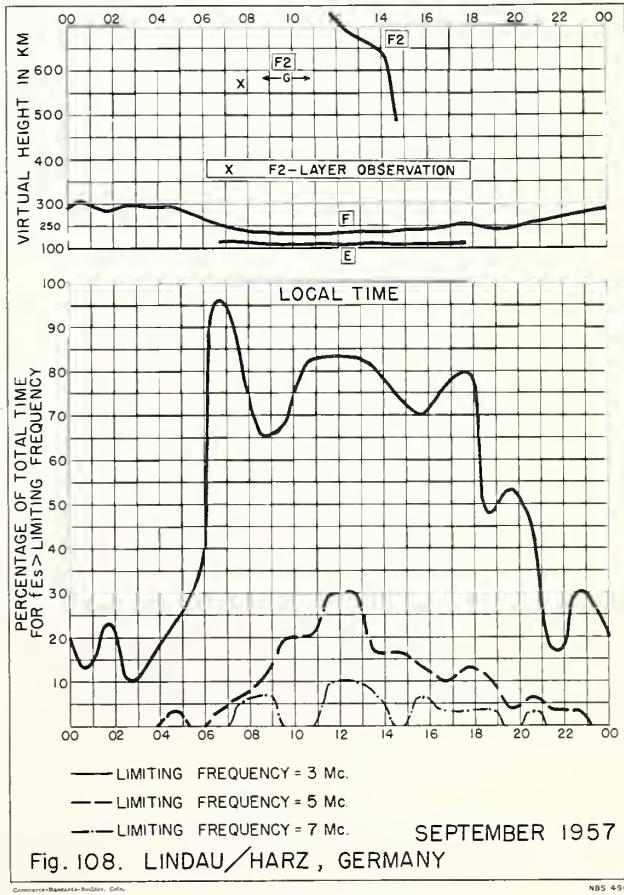


Fig. 108. LINDAU/HARZ, GERMANY SEPTEMBER 1957

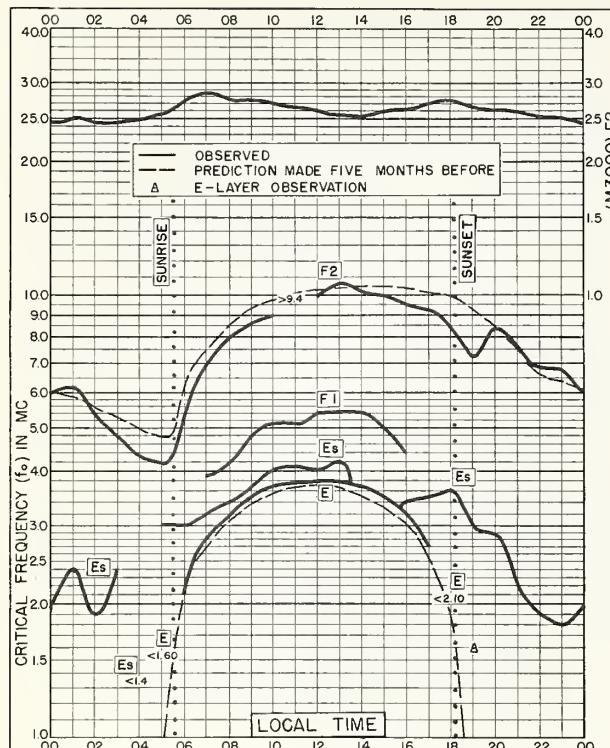


Fig. 109. SLOUGH, ENGLAND
51.5°N, 0.6°W SEPTEMBER 1957

NBS 503

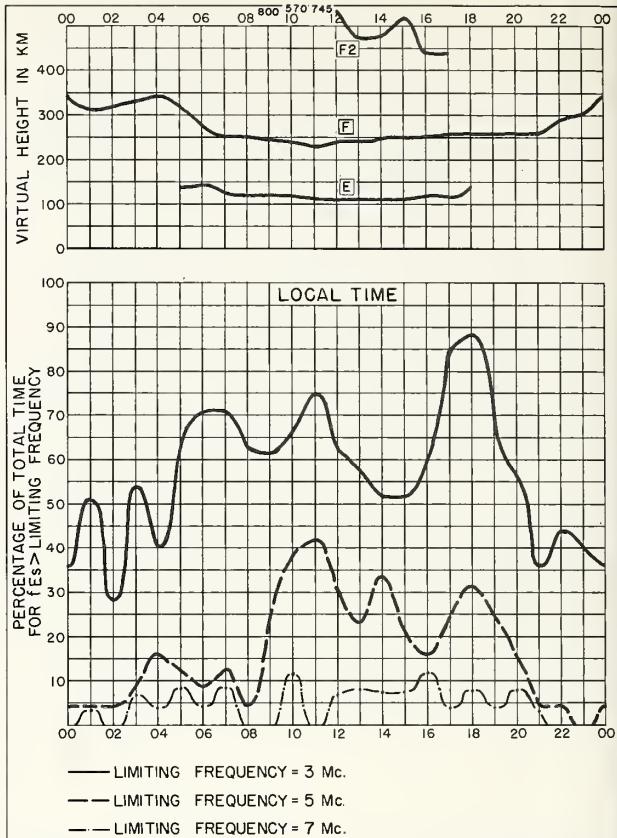


Fig. 110. SLOUGH, ENGLAND SEPTEMBER 1957

NBS 490

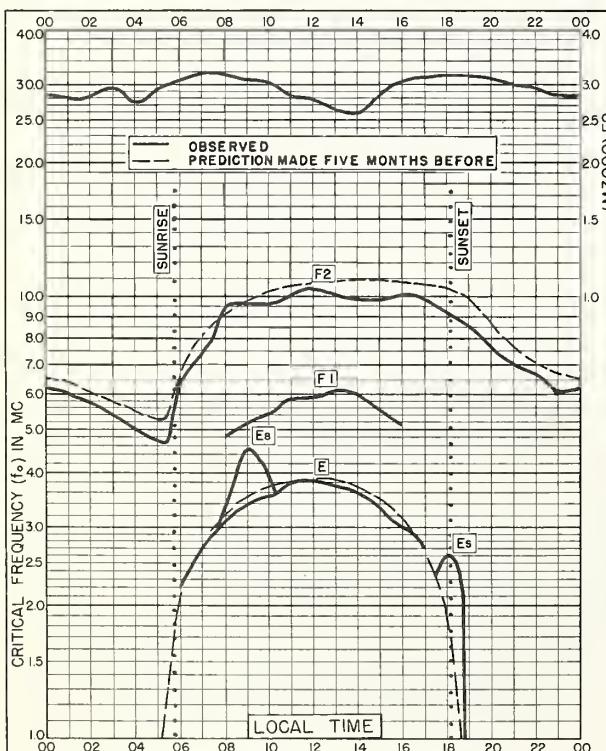


Fig. 111. BUDAPEST, HUNGARY
47.4°N, 19.2°E SEPTEMBER 1957

NBS 503

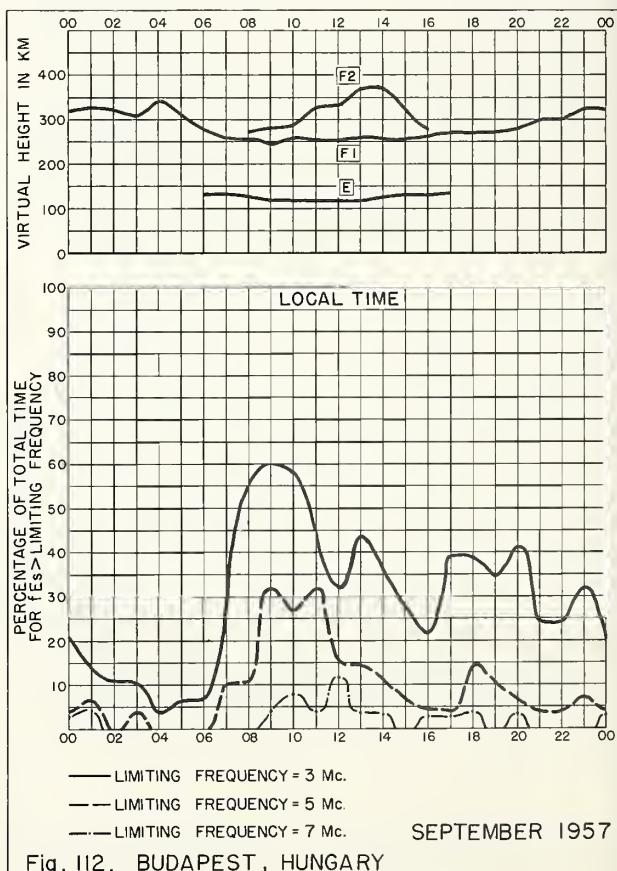


Fig. 112. BUDAPEST, HUNGARY SEPTEMBER 1957

NBS 490

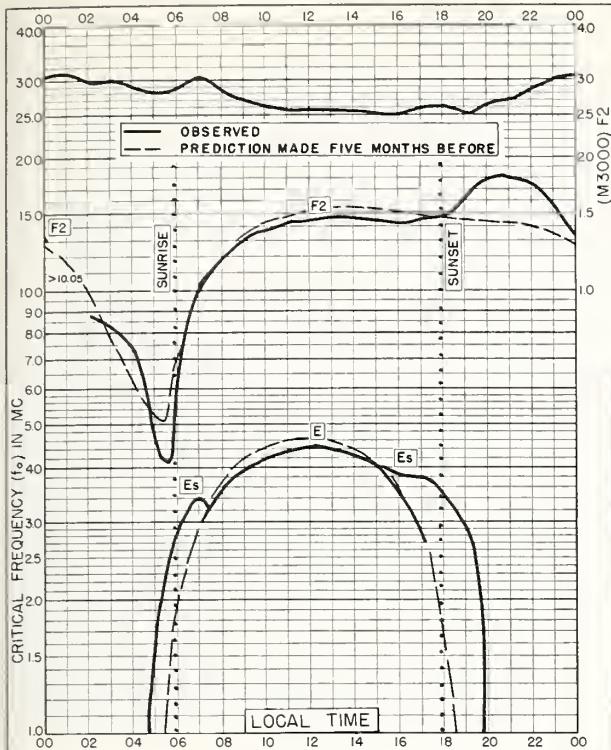


Fig. 113. BOGOTA, COLOMBIA
4.5°N, 74.2°W SEPTEMBER 1957

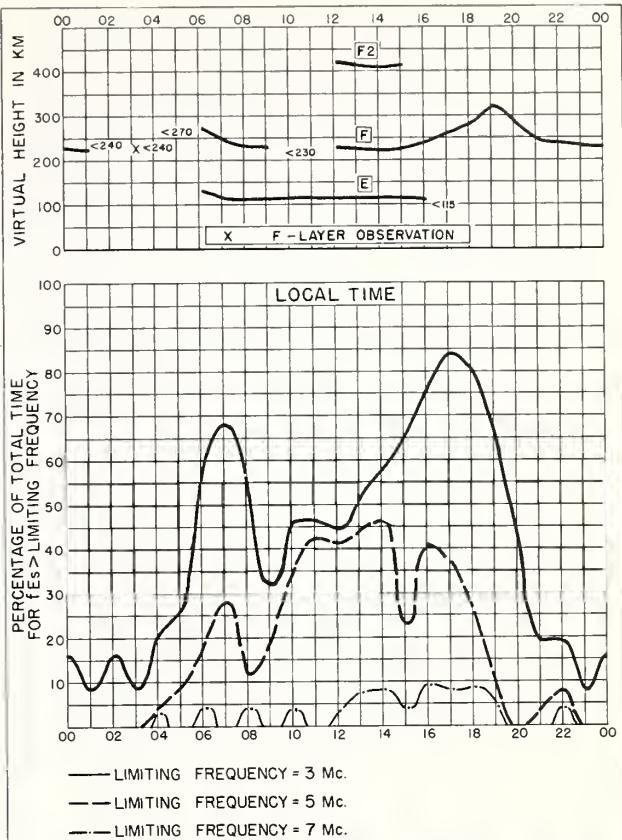


Fig. 114. BOGOTA, COLOMBIA SEPTEMBER 1957

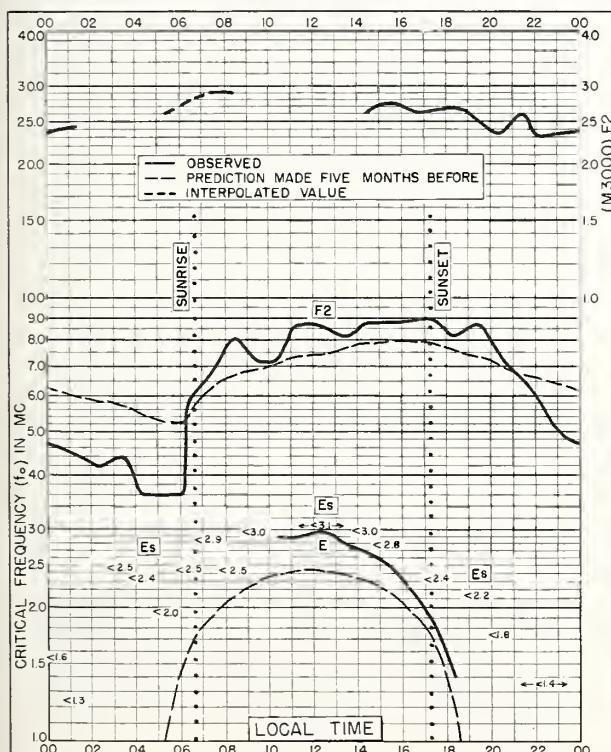


Fig. 115. CAPE HALLETT
72.3°S, 170.3°E SEPTEMBER 1957

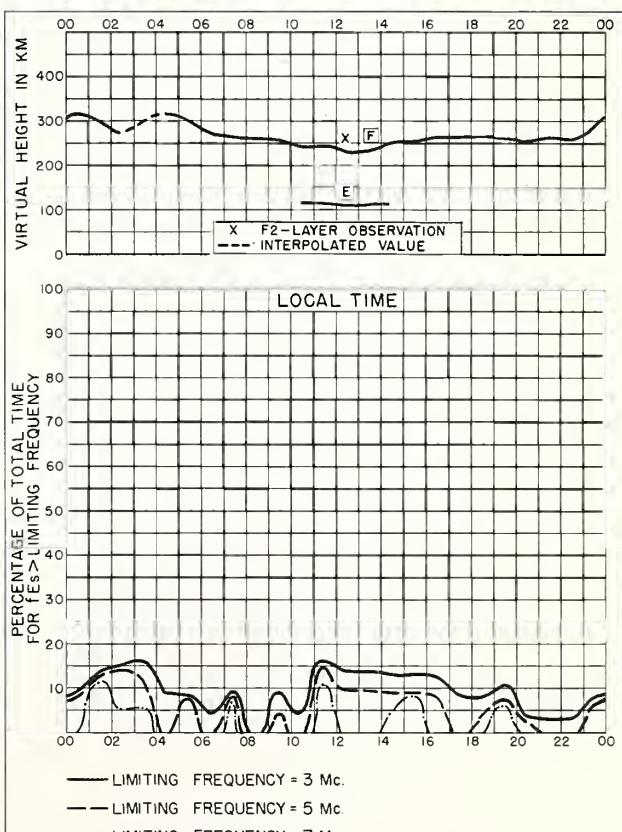


Fig. 116. CAPE HALLETT SEPTEMBER 1957

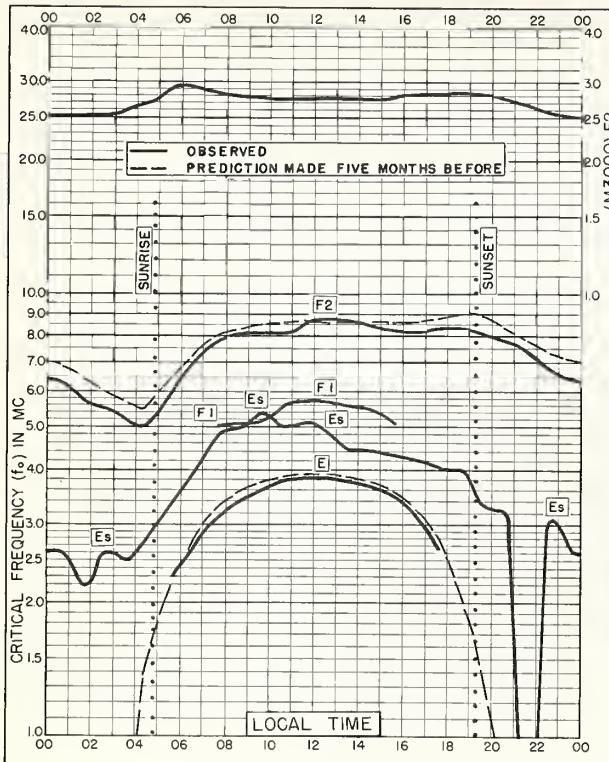


Fig. 117. LINDAU/HARZ, GERMANY
51.6°N, 10.1°E AUGUST 1957

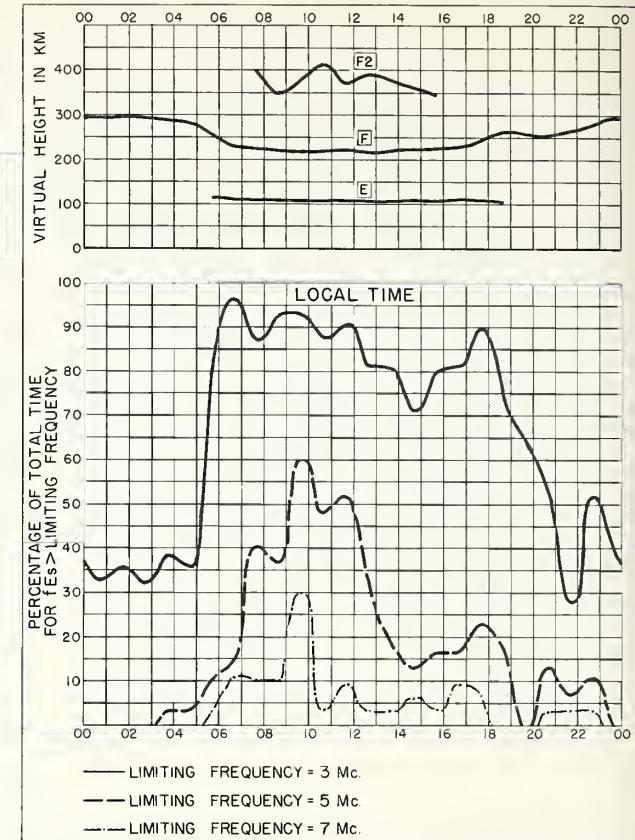


Fig. 118. LINDAU/HARZ, GERMANY AUGUST 1957

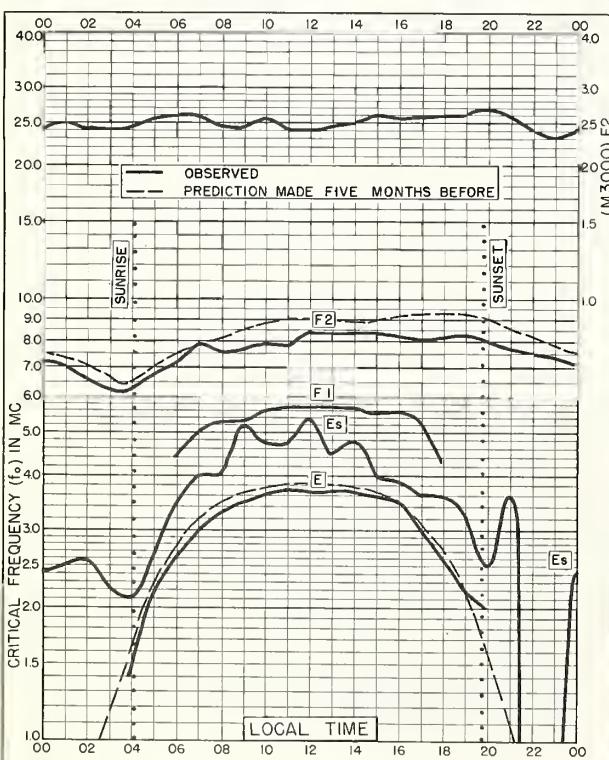


Fig. 119. JULIUSRUH/RÜGEN, GERMANY
54.6°N, 13.4°E MAY 1957

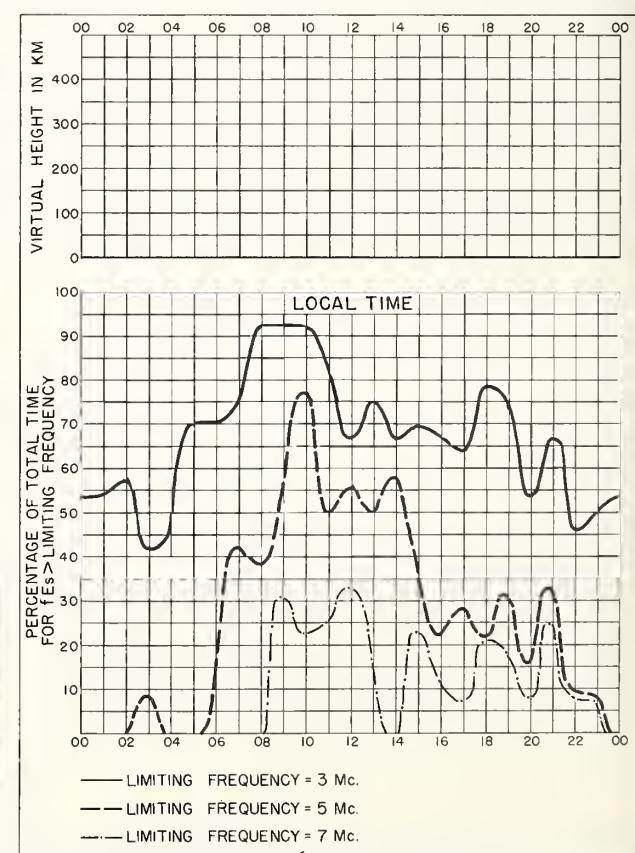


Fig. 120. JULIUSRUH/RÜGEN, GERMANY MAY 1957

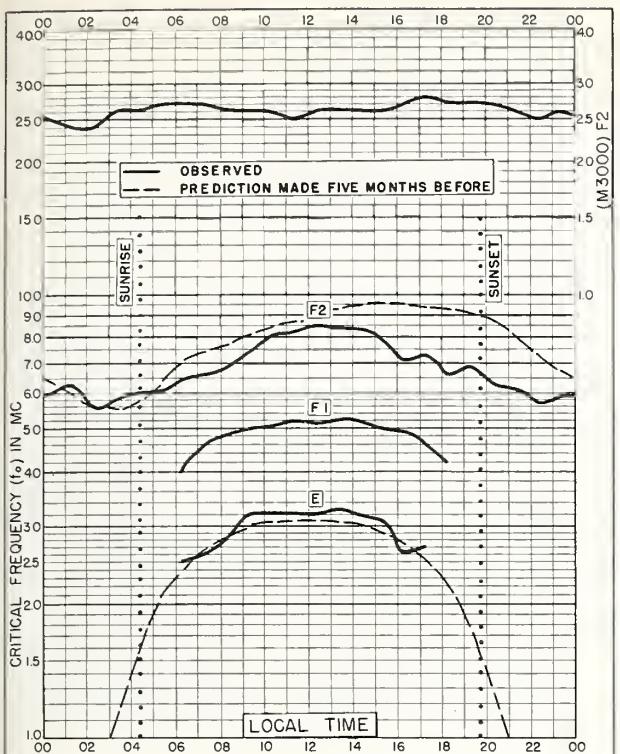


Fig. 121. MURMANSK, U.S.S.R.
69.0°N, 33.1°E

Montgomery, Blairstown, Somerville, Calif.

APRIL 1957

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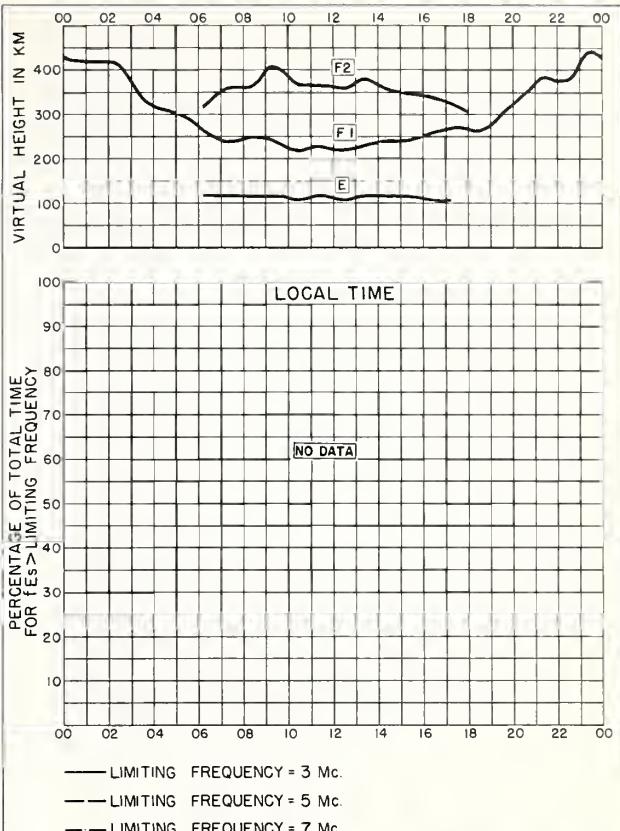


Fig. 122. MURMANSK, U.S.S.R.

APRIL 1957

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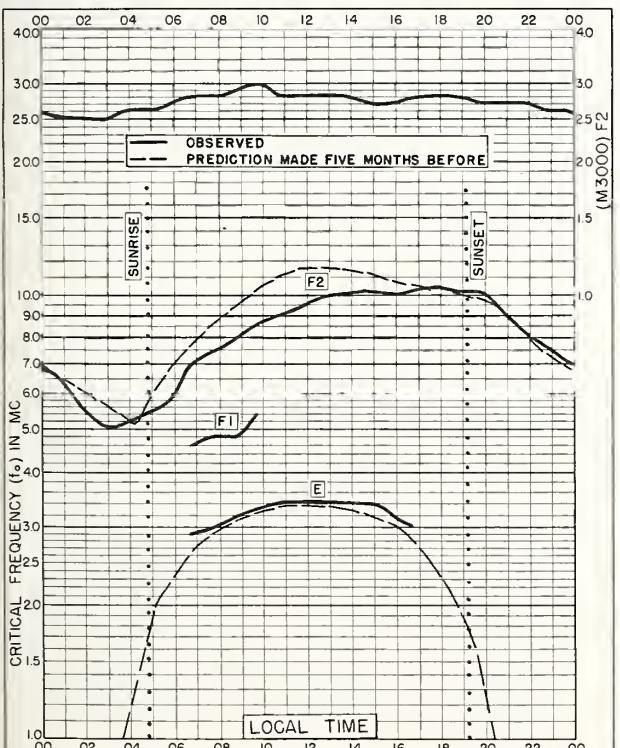


Fig. 123. YAKUTSK, U.S.S.R.
62.0°N., 129.7°E.

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APRIL 1957

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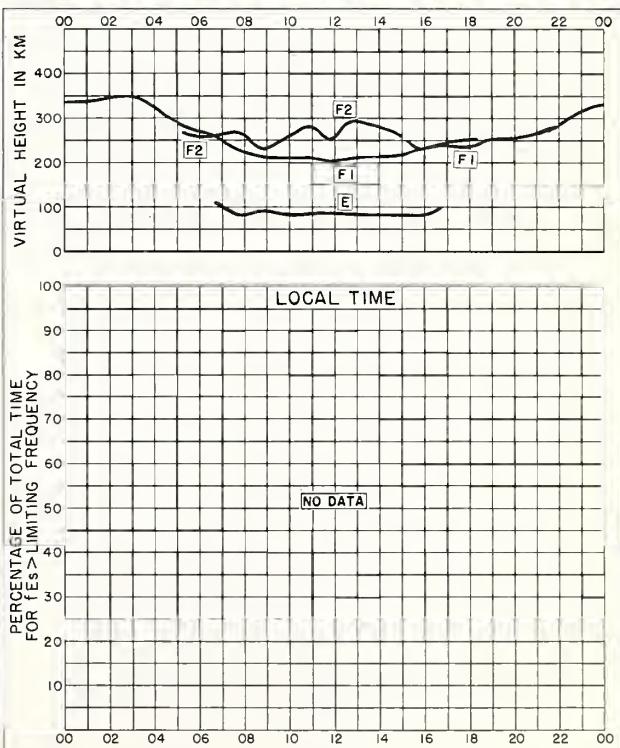


Fig. 124. YAKUTSK, U.S.S.R.

APRIL 1957

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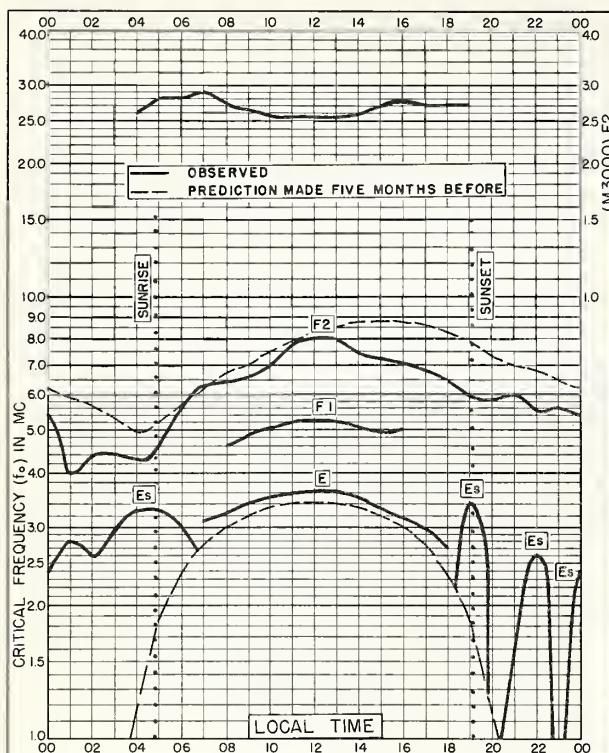


Fig. 125. NARSARSSUAK, GREENLAND
61.2°N, 45.4°W APRIL 1957

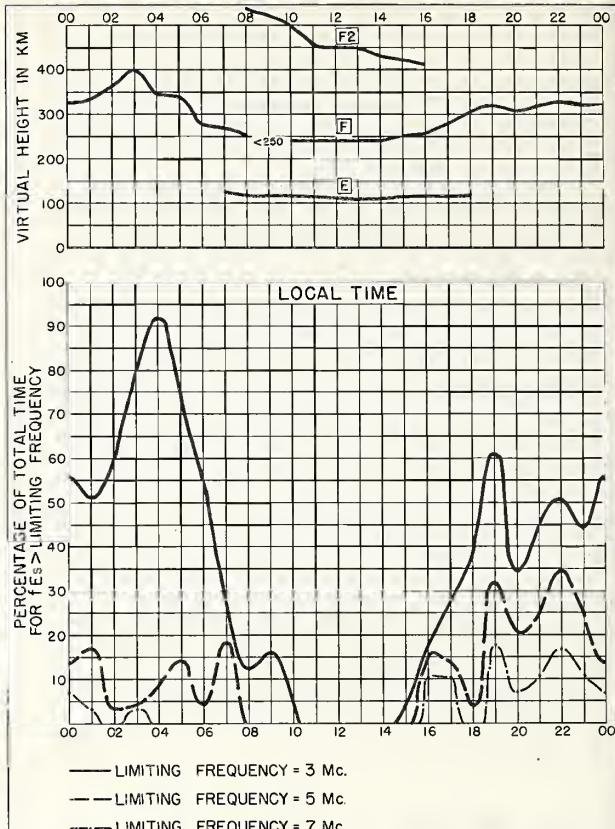


Fig. 126. NARSARSSUAK, GREENLAND APRIL 1957

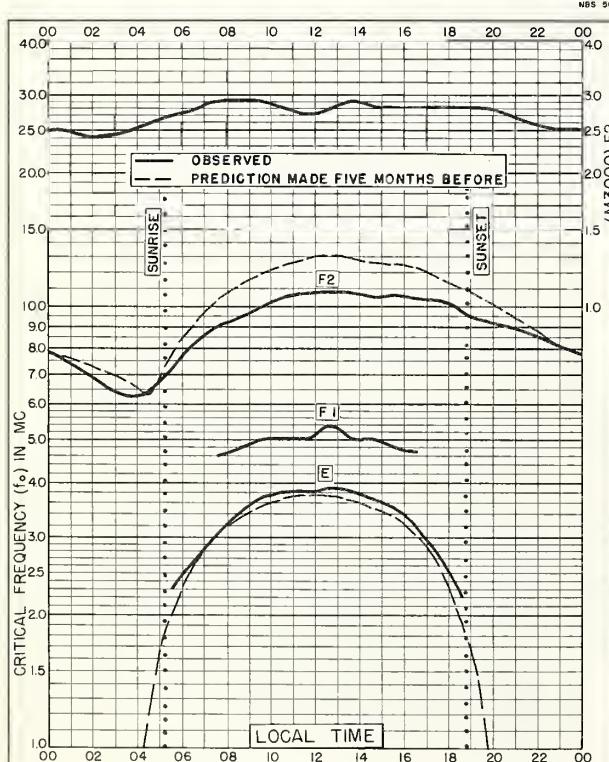


Fig. 127. CHITA, U.S.S.R.
52.0°N, 113.3°E APRIL 1957

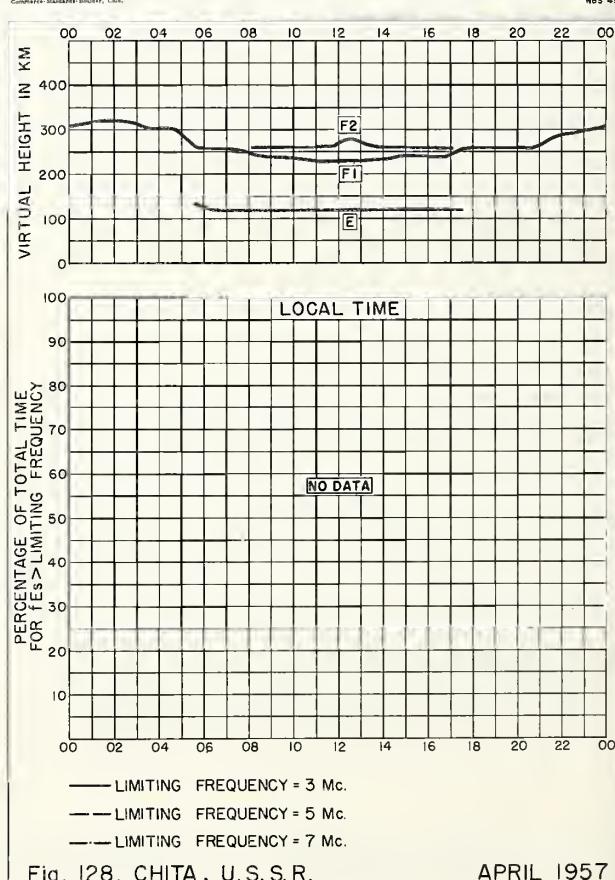
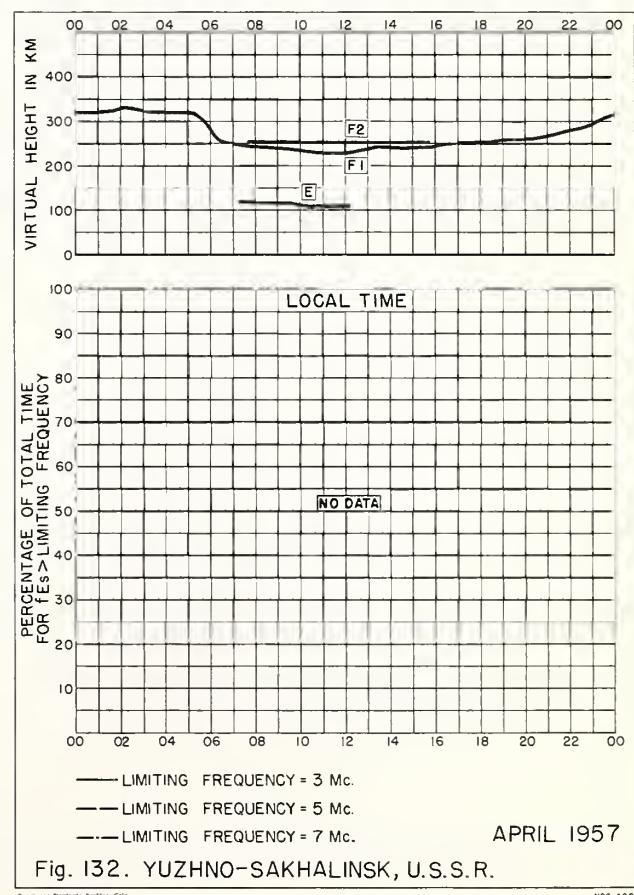
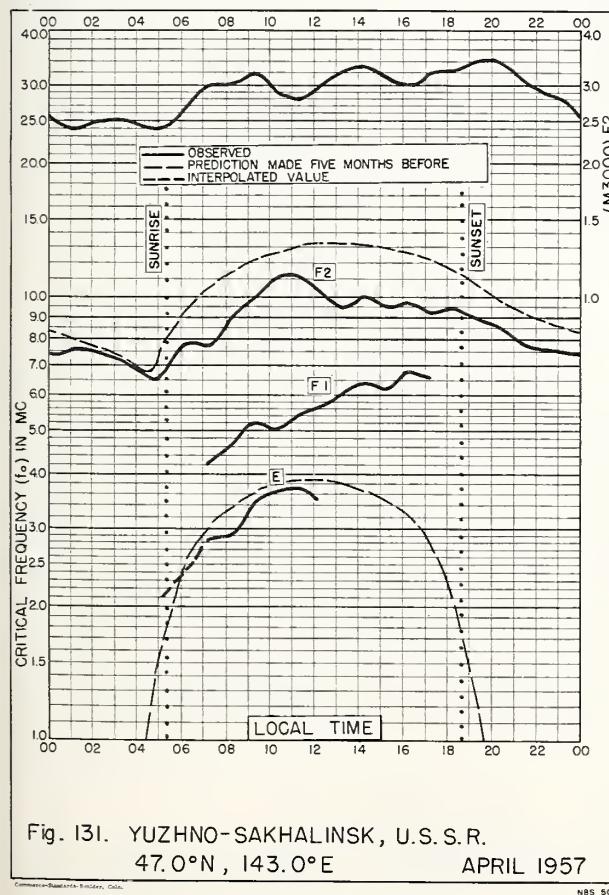
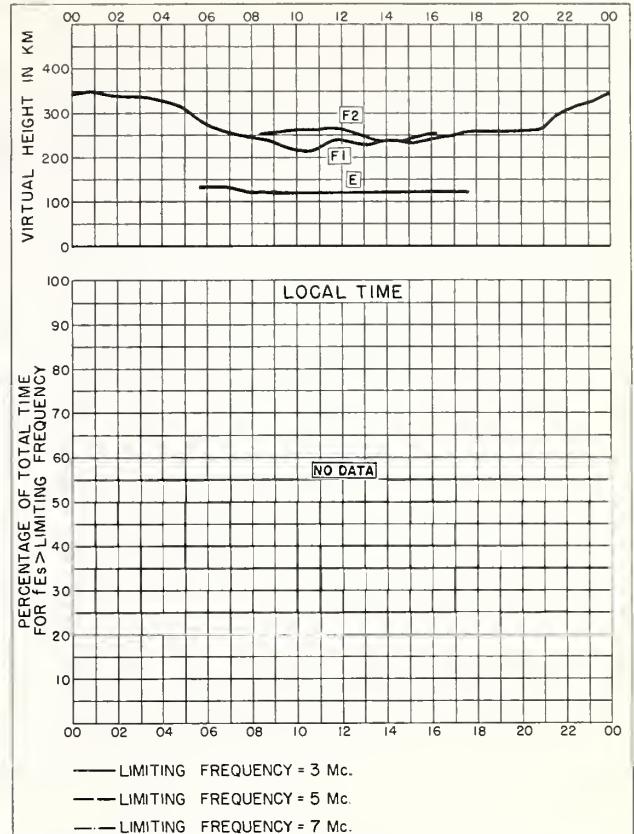
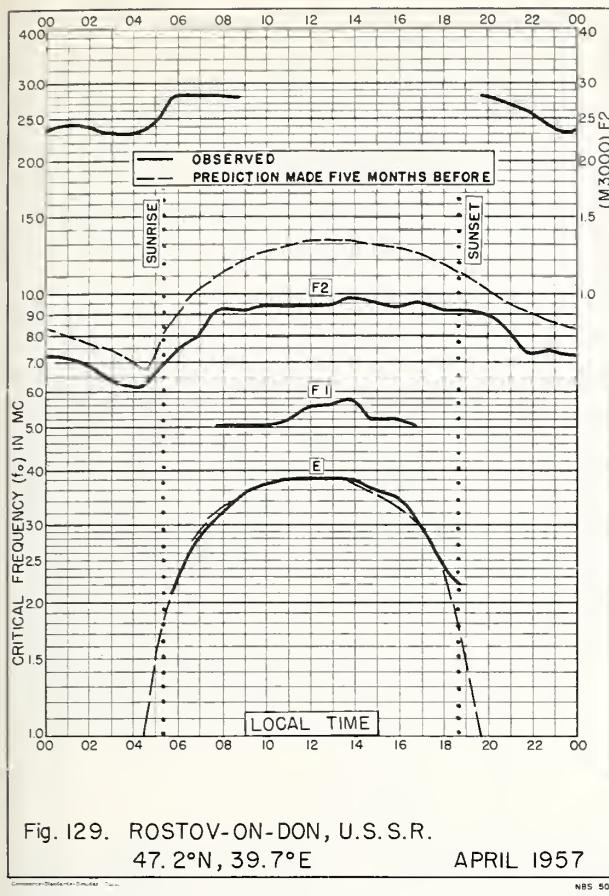


Fig. 128. CHITA, U.S.S.R. APRIL 1957



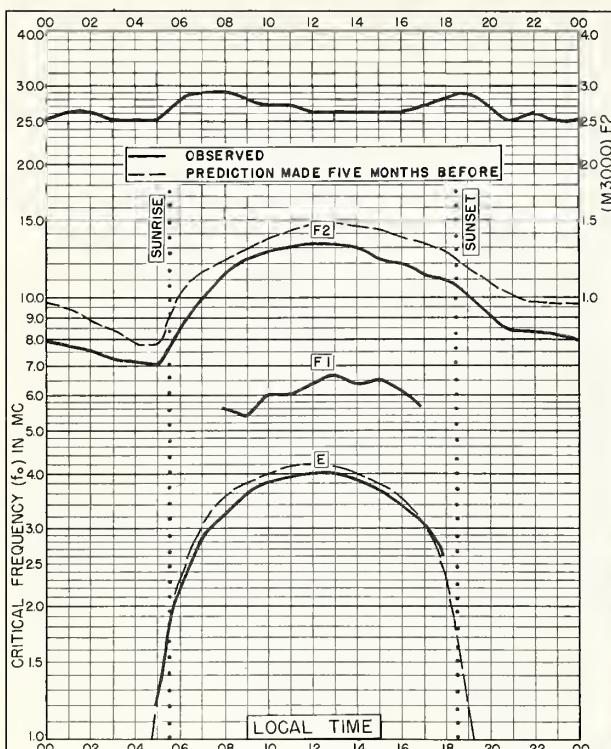


Fig. 133. ASHKHABAD, U.S.S.R.

37.9°N, 58.3°E

APRIL 1957

NBS 503

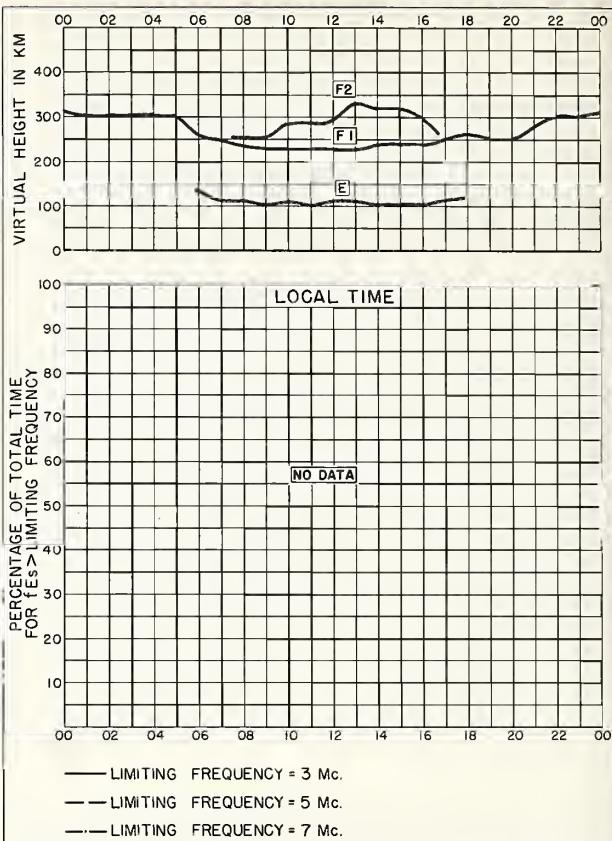


Fig. 134. ASHKHABAD, U.S.S.R.

APRIL 1957

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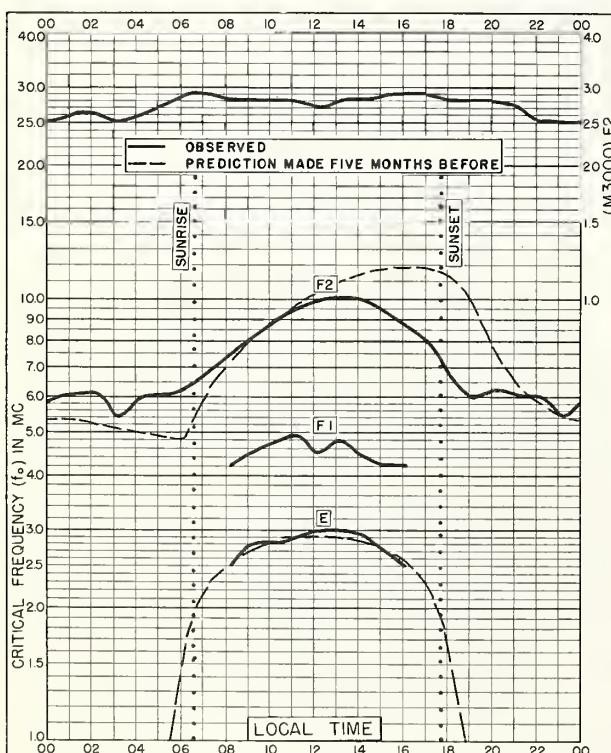


Fig. 135. MURMANSK, U.S.S.R.

69.0°N, 33.1°E

MARCH 1957

NBS 503

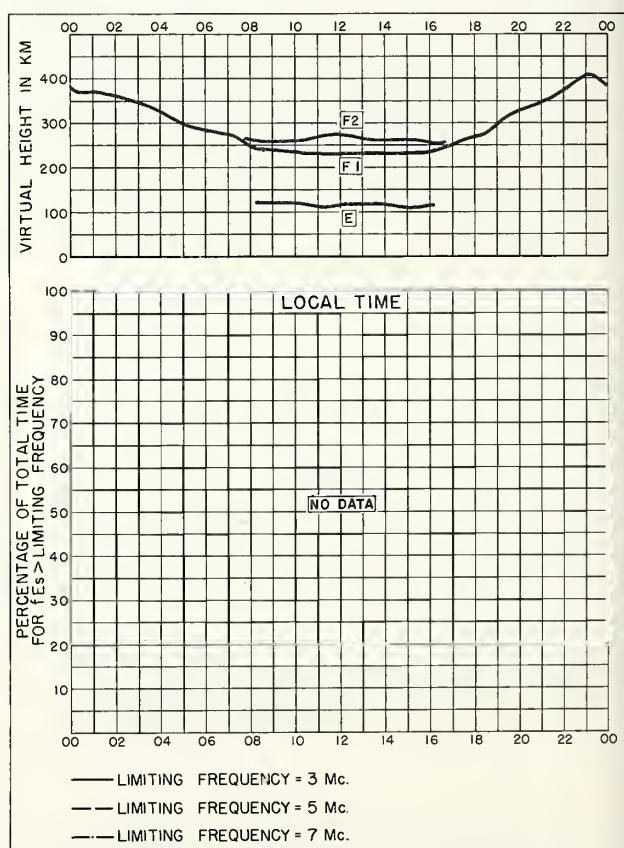


Fig. 136. MURMANSK, U.S.S.R.

MARCH 1957

NBS 490

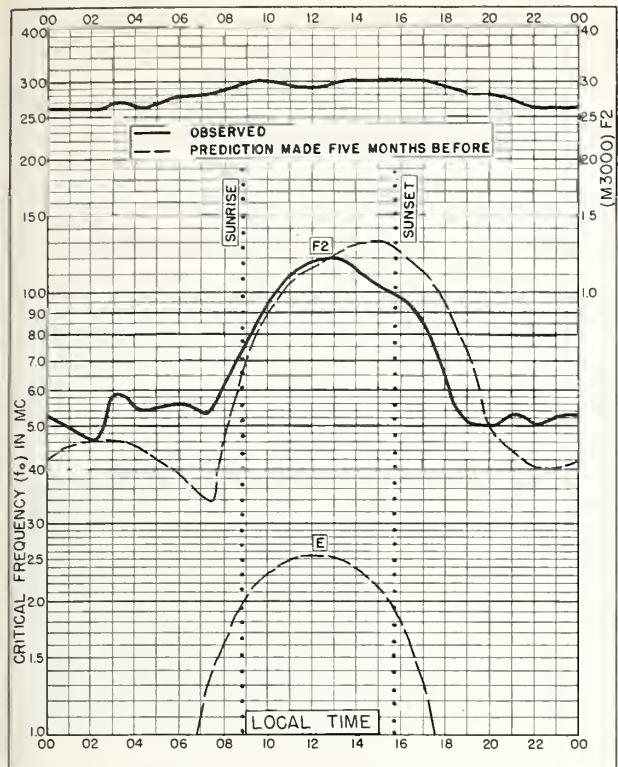


Fig. I37. MURMANSK, U.S.S.R.
69.0°N, 33.1°E FEBRUARY 1957

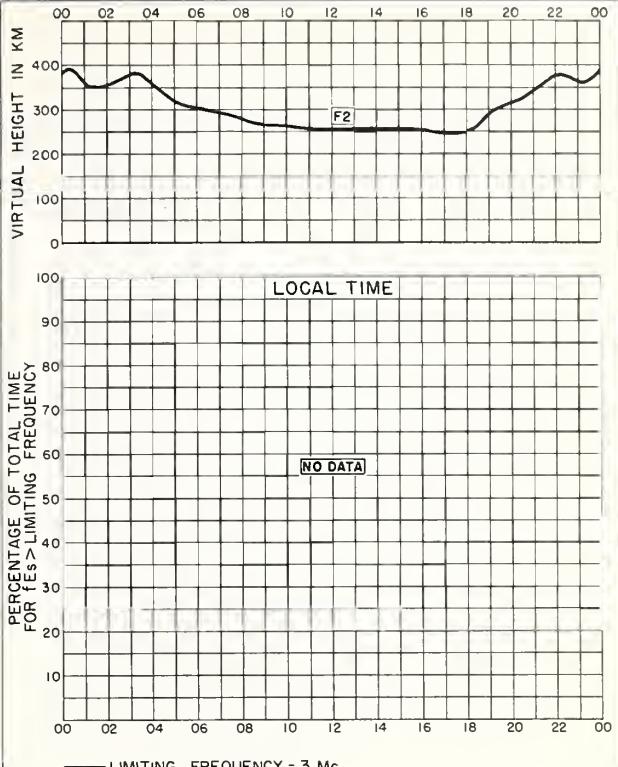


Fig. 138. MURMANSK, U.S.S.R. FEBRUARY 1957

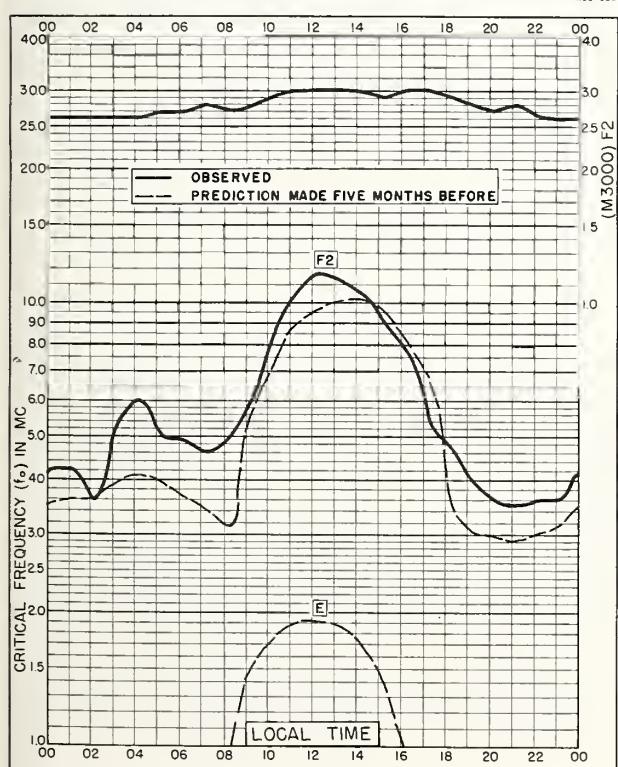


Fig. I39. MURMANSK, U.S.S.R.
69° 0' N. 33° 1' E JANUARY 1957

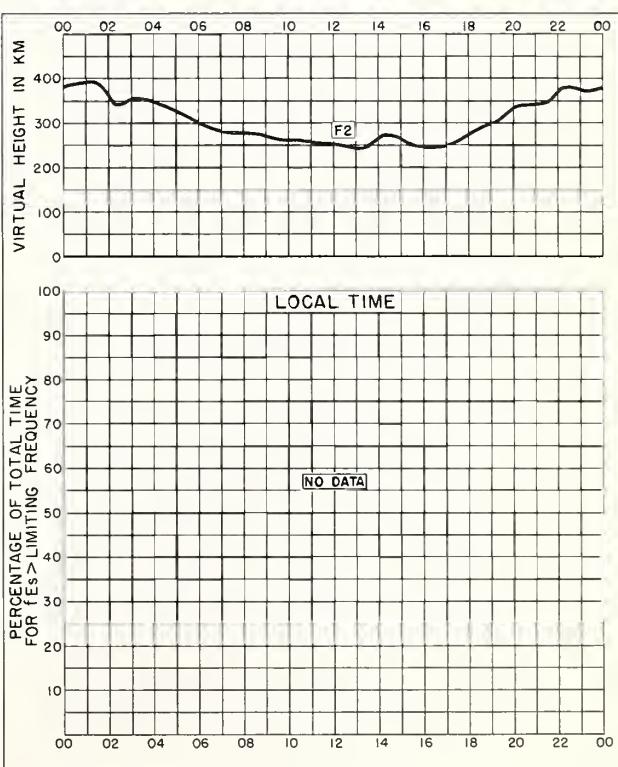


Fig. 140. MURMANSK, U.S.S.R. JANUARY 1957

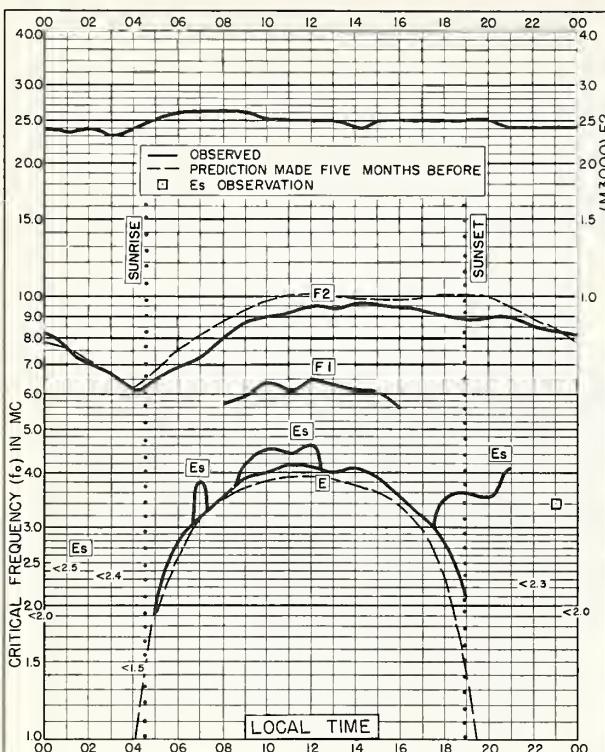


Fig. 141. CHRISTCHURCH, NEW ZEALAND
43.6°S, 172.8°E NOVEMBER 1956

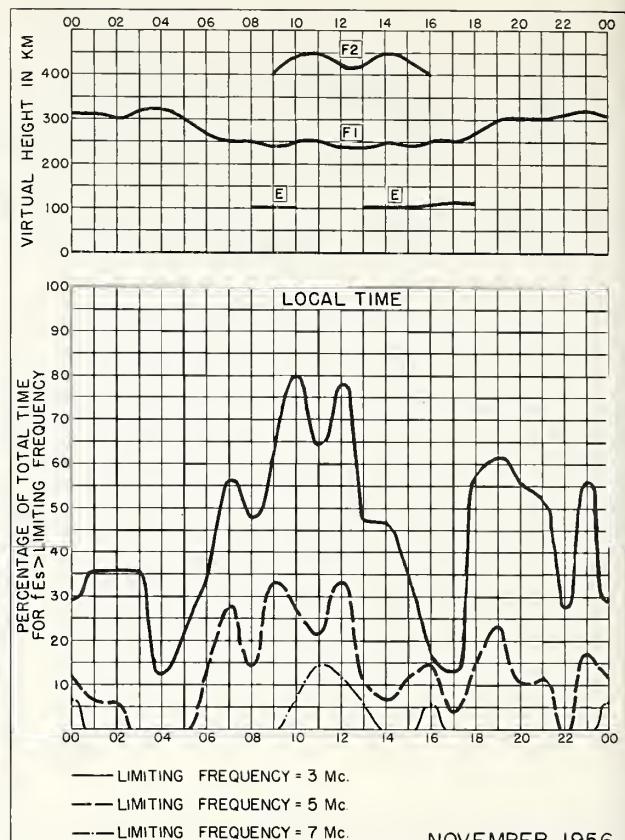


Fig. 142. CHRISTCHURCH, NEW ZEALAND NOVEMBER 1956

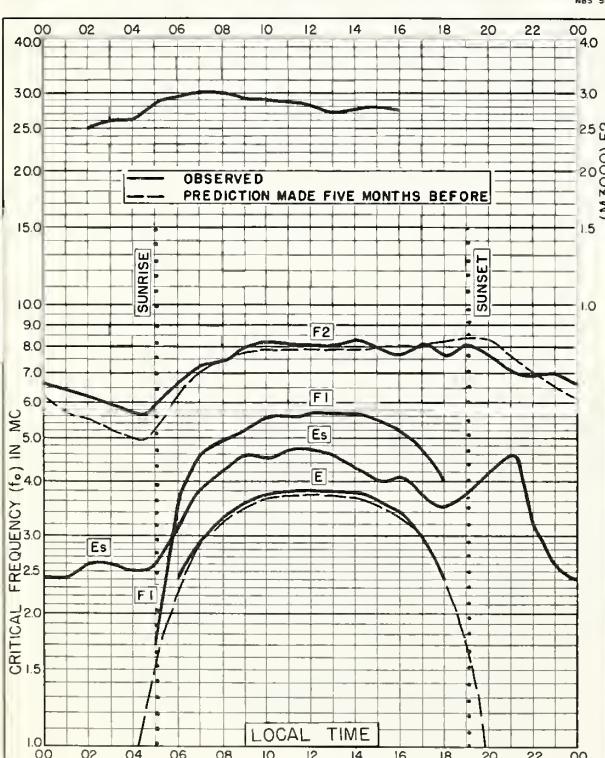


Fig. 143. POITIERS, FRANCE
46.6°N, 0.3°E AUGUST 1956

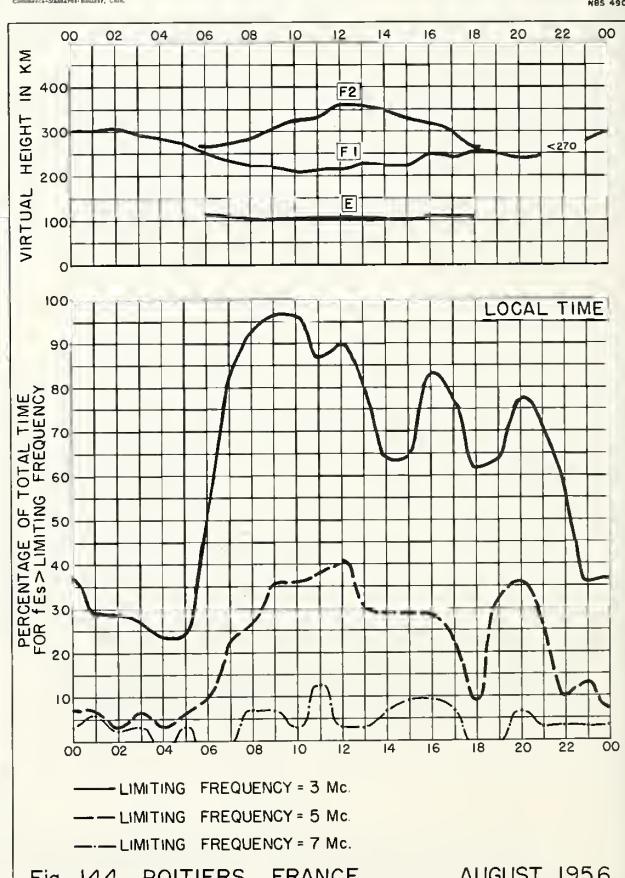


Fig. 144. POITIERS, FRANCE AUGUST 1956

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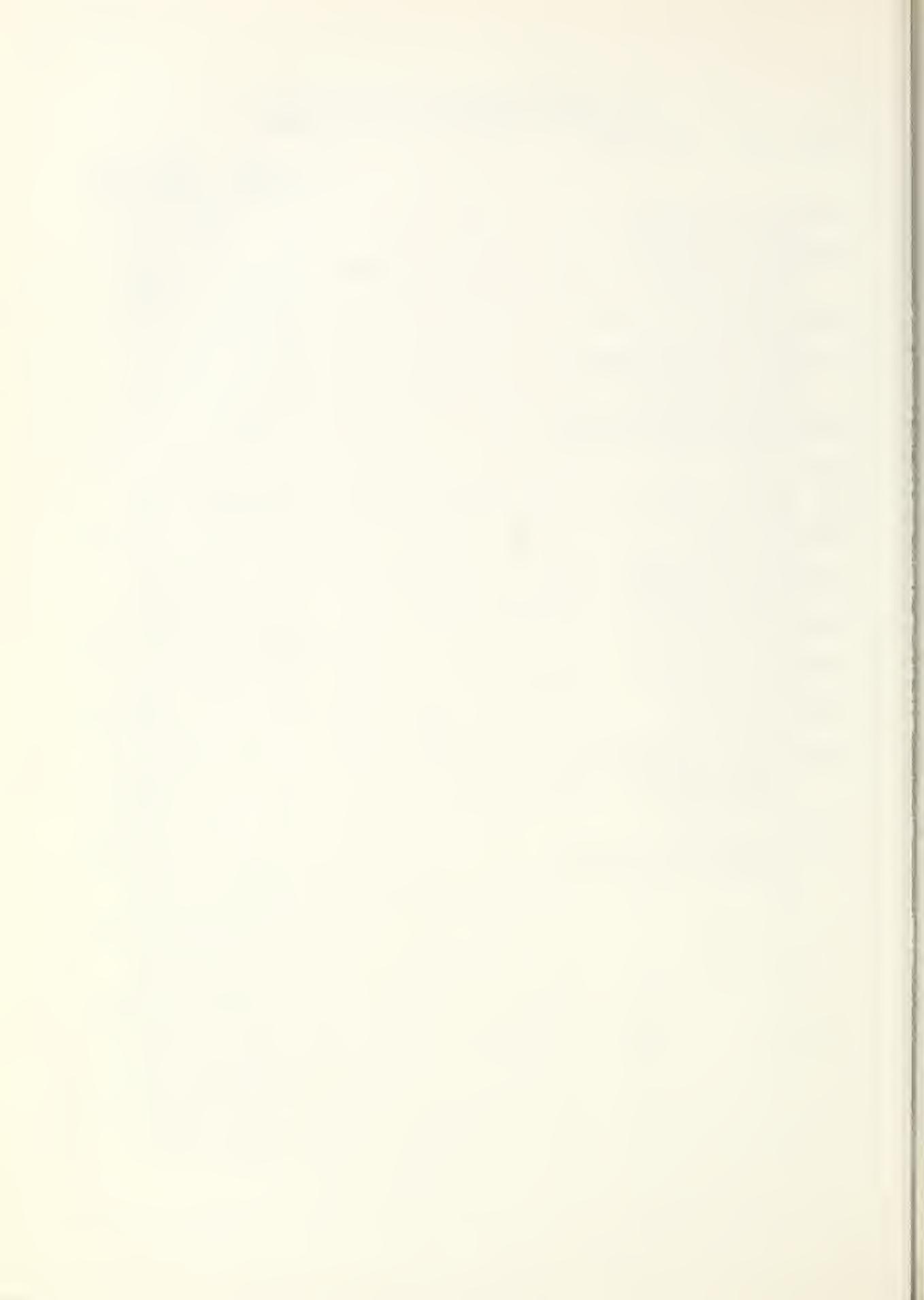
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