PART A

IONOSPHERIC DATA

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NATIONAL BUREAU OF STANDARDS
CENTRAL RADIO PROPAGATION LABORATORY
BOULDER, COLORADO

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CONTENTS

SYMBOLS, TERMINOLOGY, CONVENTIONS

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

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

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

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

There was an expansion in meaning of the following:

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

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

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

a. For all ionospheric characteristics:

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

b. For critical frequencies and virtual heights:

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

Values missing because of G are counted:

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

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

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

c. For MUF factor (M-factors):

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

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

d. For sporadic E (Es):

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

PREDICTED AND OBSERVED SUNSPOT NUMBERS

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

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

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

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

Observed Sunspot Number

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

WORLD-WIDE SOURCES OF IONOSPHERIC DATA

The ionospheric data given here in tables 1 to 72 and figures 1 to 144 were assembled by the Central Radio Propagation Laboratory for analysis and correlation, incidental to CRPL prediction of radio propagation conditions. The data are median values unless otherwise indicated. The following are the sources of the data in this issue:

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

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

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

University of Graz:
Graz, Austria

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

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

Defence Research Board, Canada:
Resolute Bay, Canada

Danish National Committee of URSI:
Narsarssuak, Greenland

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

The Finnish Academy of Sciences and Letters:
Sodankyla, Finland

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

The Royal Netherlands Meteorological Institute:
De Bilt, Holland

Icelandic Post and Telegraph Administration:
Reykjavik, Iceland

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

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

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

Manila Observatory:
Baguio, P. I.

Institute of Terrestrial Magnetism, Ionosphere and Radio Propagation, Moscow, U.S.S.R.:
Alma-Ata
Ashkhabad
Chita
Leningrad
Providenie Bay
Rostov-on-Don
Sverdlovsk
Yakutsk
Yuzhno-Sakhalinsk

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

Post, Telephone and Telegraph Administration, Berne, Switzerland:
Schwarzenburg, Switzerland

United States Army Signal Corps:
Adak, Alaska
Fletchers Ice I.

United States Army Signal Corps (continued):
Ft. Monmouth, New Jersey
Okinawa I.
St. John's, Newfoundland
Thule, Greenland
White Sands, New Mexico

National Bureau of Standards (Central Radio Propagation Laboratory):
Fairbanks (College), Alaska (Geophysical Institute of the University of Alaska)
Huancayo, Peru (Instituto Geofisico de Huancayo)
Maui, Hawaii
Panama Canal Zone
Puerto Rico, W. I.
Talara, Peru (Instituto Geofisico de Huancayo)

Note on the Discontinuance of Sample Ionograms and f-plots

Since October 1956, representative ionograms and f-plots from 22 ionospheric soundings stations have been reproduced on this and the next page. Illustrative examples have now been published for all of the principal U.S.-associated stations, excepting a few of the newer IGY stations. Therefore, monthly publication of these samples ceases with this issue.

Beginning in July 1957, complete tables of hourly values and daily f-plots for 25 U.S.-associated stations are being published in station booklets. Copies of these booklets are available on an exchange basis or at cost on request to:

IGY World Data Center A
Airglow and Ionosphere
Central Radio Propagation Laboratory
National Bureau of Standards
Boulder, Colorado, USA

TABLES OF IONOSPHERIC DATA

May 1958 - May 1953

Table 1

Kiruna, Sweden (67.8°N, 20.3°E) — May 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.0	375		---	---	5.0	2.4
01		6.0	375		---	1.5	4.8	2.4
02	---	6.0	350	---	---	(1.7)	5.0	2.4
03	395	6.3	300	3.4	---	1.9	4.0	2.4
04	420	6.0	255	4.0	105	2.3	3.8	2.4
05	460	6.0	250	4.2	110	2.8	3.4	2.4
06	455	6.1	245	4.6	105	2.9		2.4
07	500	6.8	240	5.0	105	3.0		2.4
08	490	7.0	230	5.0	105	3.2		2.4
09	490	7.0	225	5.2	100	3.3		2.4
10	495	6.9	225	5.2	105	3.4		2.4
11	490	7.0	220	5.3	100	3.4		2.4
12	480	7.2	220	5.4	100	3.5		2.4
13	485	7.3	220	5.4	105	3.4		2.4
14	450	7.1	220	5.3	105	3.3		2.4
15	440	7.1	230	5.2	105	3.2		2.4
16	440	7.0	235	5.0	105	3.1	3.9	2.6
17	---	7.0	245	5.0	105	2.9		2.6
18	---	7.0	255	4.6	105	2.8	3.8	2.6
19	---	7.0	275	---	110	2.5	4.0	2.6
20	---	6.6	295	---	110	2.0	4.0	2.6
21		6.6	305		---	1.7	4.0	2.5
22		6.5	345		---	1.6	4.2	2.4
23		5.8	370		---	---	4.4	2.4

Time: 15.0°E.
Sweep: 0.8 Mc to 14.0 Mc in 30 seconds.

Table 2

Upsala, Sweden (59.8°N, 17.6°E) — May 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		6.5	315				2.6	2.4
01		6.3	325		---	E	3.2	2.4
02	---	6.0	315	----	---	E	3.2	2.4
03	(440)	6.2	315	3.00	140	1.40	3.6	2.45
04	400	6.2	280	3.60	110	1.80	3.7	2.5
05	390	6.5	250	4.10	105	2.40	4.7	2.6
06	435	7.0	240	4.70	105	2.80	5.0	2.5
07	440	7.1	235	5.15	105	3.20	5.0	2.6
08	470	7.5	230	5.50	105	3.40	5.1	2.5
09	450	7.5	225	5.60	105	3.55	5.1	2.5
10	480	7.5	225	5.70	105	3.70	5.0	2.5
11	460	7.8	225	5.80	105	3.75	5.1	2.5
12	450	7.8	220	5.85	105	3.80	5.0	2.5
13	450	7.8	220	5.80	105	3.75	4.8	2.5
14	435	8.0	220	5.75	105	3.65	4.9	2.5
15	420	7.8	230	5.60	105	3.50	5.0	2.55
16	390	7.8	235	5.50	105	3.40	4.8	2.6
17	370	8.1	240	5.00	105	3.10	3.8	2.6
18	(340)	8.0	250	4.55	105	2.65	3.8	2.7
19	---	7.5	260	----	105	2.20	3.6	2.7
20		7.8	270		110	1.60	3.0	2.7
21		8.0	280		---	E	2.0	2.65
22		7.4	290		---	E	1.2	2.5
23		7.0	310		---	----	2.2	2.4

Time: 15.0°E.
Sweep: 0.33 Mc to 20.0 Mc in 6 minutes, automatic operation.

Table 3

Graz, Austria (47.1°N, 15.5°E) — May 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		(8.1)	350					
01		>6.5	330					
02		>6.6	340					
03		>5.6	330					
04		>5.8	320					
05		(7.0)	275					
06		(7.8)	250		---	---		
07		8.1	240	(5.1)	120	(3.3)	3.6	
08	390	8.6	230	(5.2)	120	3.5	3.8	
09	430	>8.7	230	(5.8)	110	3.6	4.6	
10	400	>8.9	220	(6.1)	100	3.7	4.4	
11	380	>8.9	220	(6.1)	---	---	4.4	
12	415	9.3	220	(6.5)	---	---	3.6	
13	410	(9.3)	220	(6.3)	---	---	4.1	
14	400	>9.3	230	(6.0)	120	---	4.3	
15	380	>9.0	240	(6.0)	120	3.8	4.0	
16	380	>9.0	240	(5.4)	120	(3.5)	4.0	
17	360	>8.9	245	(5.1)	115	---	4.4	
18		>8.8	260		---		4.2	
19		>8.4	270					
20		(8.4)	290					
21		(8.3)	300					
22		>8.2	320					
23		(8.0)	340					

Time: 15.0°E.
Sweep: 2.0 Mc to 19.0 Mc in 50 seconds.

Table 4

Maui, Hawaii (20.8°N, 156.5°W) — May 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		10.15	300					2.70
01		9.35	290				2.1	2.75
02		9.0	280				2.0	2.70
03		8.3	<290				1.7	2.65
04		8.0	<295					2.60
05		7.4	280				1.3	2.65
06		7.6	280		121	1.80	2.0	2.55
07		8.9	245		111	2.80	3.0	2.80
08	---	10.0	230	---	109	3.30	4.0	2.65
09	---	10.8	230	---	107	3.70	4.2	2.40
10	(425)	11.5	220	6.6	108	3.90	4.3	2.35
11	420	12.4	220	6.6	109	(4.05)	4.5	2.45
12	400	13.3	220	6.5	109	(4.20)	4.7	2.55
13	405	13.7	230	6.7	109	(4.25)	4.6	2.55
14	405	13.65	230	6.6	109	4.15	4.5	2.52
15	390	13.8	(230)	6.5	109	4.00	4.5	2.60
16	375	13.5	235	6.4	109	3.70	4.4	2.60
17	350	13.1	(250)	---	109	3.25	4.5	2.65
18	---	13.0	(265)		115	2.45	4.6	2.75
19		12.8	290				4.6	2.70
20		11.8	<300				4.8	2.60
21		11.5	300				4.0	2.60
22		10.6	<310				3.4	2.60
23		10.25	310				2.5	2.65

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

Table 5

Thule, Greenland (76.6°N, 68.7°W) — April 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.0	290		119	----		2.50
01		5.8	280		114	----		2.52
02		5.5	285		121	----		2.55
03	---	5.25	275	---	115	2.05		2.50
04	---	6.0	270	---	113	2.30		2.65
05	---	6.6	270	---	113	2.42		2.55
06	G	6.2	260	4.4	111	2.60		2.55
07	(460)	5.85	260	---	109	2.70		2.55
08	500	6.55	250	4.6	109	2.98		2.40
09	G	5.5	250	4.6	107	3.10		2.48
10	470	6.5	<250	4.7	107	3.10		2.35
11	475	6.5	245	4.8	107	3.22		2.35
12	475	7.25	250	4.8	105	3.20		2.32
13	505	7.45	250	4.7	105	3.20		2.42
14	470	6.5	255	4.5	107	3.12		2.35
15	475	6.8	250	4.5	109	3.00		2.35
16	445	6.8	255	4.1	109	2.90		2.55
17	430	6.7	260	4.1	111	2.65		2.38
18	---	6.7	270	---	113	2.50		2.42
19	---	6.4	265	---	116	2.35		2.48
20		6.6	280		119	2.18		2.55
21		6.05	285		119	----		2.52
22		6.4	290		119	----		2.55
23		6.5	285		125	----		2.50

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

Table 6

Fairbanks, Alaska (64.9°N, 147.8°W) — April 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(5.6)					4.2	(2.40)
01		(5.7)					4.3	(2.38)
02		(5.45)					4.4	(2.40)
03		(5.85)			---	----	4.0	(2.40)
04		(6.0)			---	----	3.4	(2.45)
05		(6.2)		---	103	2.50	3.6	(2.40)
06		6.4		---	---	----	4.3	2.38
07		6.8		(4.5)	109	3.00	4.3	2.45
00		(6.4)		(4.7)	101	3.15		(2.40)
09		6.55		4.9	101	3.30		2.40
10		6.8		5.0	101	3.40		2.35
11		6.9		5.1	101	3.48		2.40
12		7.3		5.1	101	3.50		2.40
13		7.2		5.2	101	3.50		2.40
14		7.7		5.0	103	3.50		2.45
15		8.2		(4.8)	105	3.25		2.50
16		8.55		(4.5)	105	3.10		2.55
17		8.5		---	105	2.80		2.60
18		(8.0)			109	2.45		(2.70)
19		(6.1)			121	(2.15)		(2.75)
20		(6.0)			---	----	3.5	(2.70)
21		(6.35)					4.0	(2.75)
22		(5.4)					4.0	(2.45)
23		(6.2)					4.0	(2.65)

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

Table 7

Narsarssuak, Greenland (61.2°N, 45.4°W) April 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(5.5)	370				3.5	(2.40)
01		(5.2)	380				3.0	(2.35)
02		(5.0)	410				3.1	(2.35)
03		(5.2)	410				3.5	(2.40)
04		(4.8)	410		---	----	3.0	(2.40)
05	---	(5.3)	355	---	123	(2.20)	3.2	2.55
06	---	5.9	290	---	115	2.50	3.8	2.60
07	---	6.2	280	4.4	113	3.00		2.60
08	(600)	6.55	265	4.6	111	3.35		2.55
09	580	6.8	250	4.8	111	3.50		2.50
10	530	7.1	250	5.1	111	3.60		2.45
11	490	8.25	240	5.3	109	3.65		2.45
12	470	8.75	235	5.4	107	3.60		2.40
13	450	8.5	235	5.4	107	3.60		2.40
14	450	8.1	240	5.2	105	(3.50)		2.40
15	<455	7.4	250	4.8	108	(3.40)		2.45
16	440	7.35	260	(4.8)	108	3.25		2.50
17	425	(7.4)	280	4.7	109	(3.00)		(2.50)
18	(490)	(7.1)	290	---	111	(2.65)	3.4	(2.55)
19	---	(6.3)	335		113	2.40	4.6	(2.50)
20		(6.2)	350		111	----	4.8	(2.40)
21		(6.05)	340				3.5	(2.40)
22		(6.1)	330				3.4	(2.35)
23		(5.95)	350				4.5	(2.35)

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

Table 8

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

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(6.0)	325					(2.35)
01		5.7	350					2.25
02		5.6	350					2.25
03		5.4	355					2.20
04		5.25	365		---	----		2.30
05	---	5.9	310	---	113	2.00		2.35
06	---	6.8	270	---	111	2.52		2.45
07	475	7.6	245	4.8	111	3.02		2.55
08	505	8.0	235	5.2	109	3.40	3.4	2.50
09	520	8.4	230	5.4	109	3.70	>3.7	2.45
10	485	9.15	225	5.8	109	3.80		2.48
11	490	9.55	230	5.7	108	(3.90)	4.0	2.45
12	430	10.15	230	6.3	109	(3.90)		2.50
13	(420)	10.55	235	6.2	107	3.80		2.50
14	(460)	10.3	235	6.1	109	3.70		2.55
15	---	10.25	235	---	111	3.52		2.60
16	---	10.2	240	---	111	3.20		2.60
17	---	10.0	250	---	115	2.80		2.70
18		9.65	260		119	2.50		2.72
19		9.3	260		---	----		2.75
20		8.5	255		---	----		2.70
21		7.6	265					2.60
22		6.8	275					2.50
23		6.2	<320					2.45

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

Table 9

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

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		>5.5	(360)					(2.40)
01		(5.35)	(370)					(2.35)
02		5.6	(360)					2.30
03		5.6	335					2.35
04		5.0	320					2.50
05		5.9	290		115	2.00		2.70
06		6.45	260		115	2.70		2.80
07	---	7.05	240	---	111	3.18		2.70
00	(510)	7.1	230	5.0	109	3.50		2.70
09	600	7.3	230	5.5	107	3.70		2.50
10	570	7.7	230	5.6	108	(3.90)		2.45
11	530	8.2	225	5.7	107	4.00		2.45
12	480	8.55	230	5.8	105	3.95		2.45
13	495	8.6	230	5.7	109	3.90		2.40
14	480	8.8	230	5.6	109	3.72		2.40
15	470	9.0	235	5.3	109	3.50		2.40
16	(430)	9.2	240	5.0	111	3.20		2.50
17	---	9.4	260	---	115	2.70		2.50
18		9.15	290		---	----		2.52
19		8.5	280					2.52
20		(8.0)	300					(2.45)
21		7.3	<325					2.40
22		6.8	(330)					2.40
23		(6.45)	(360)					2.38

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

Table 10

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

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		7.75	320					2.48
01		7.6	300					2.50
02		7.45	<300					2.52
03		7.0	290					2.50
04		6.65	300					2.45
05		6.6	300					2.50
06		7.9	250		(125)	2.15		2.80
07		9.95	240		111	2.90	3.0	2.92
00		11.5	230		109	3.40	3.6	2.78
09	---	12.2	220	---	109	3.70	3.8	2.70
10	---	12.9	220	---	109	4.00	4.0	2.60
11	---	13.3	220	---	109	4.20		2.55
12	(390)	13.8	220	7.4	109	4.22		2.55
13	390	13.65	225	7.1	109	4.20		2.50
14	390	13.45	230	---	107	4.05		2.50
15	---	13.2	230	---	107	3.85		2.50
16	---	12.9	240		109	3.50		2.55
17		12.2	245		<111	3.00	3.2	2.60
18		11.6	250		<125	2.28	2.6	2.70
19		10.6	240					2.70
20		9.3	240					2.65
21		8.5	<270					2.55
22		7.75	<295					2.50
23		7.7	<310					2.45

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

Table 11

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

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		>14.5	270				2.6	2.80
01		13.5	270					2.85
02		12.1	260					2.95
03		10.0	235					2.78
04		8.6	255					2.55
05		7.95	290		---	E		2.55
06		8.4	290		---	----		2.62
07		10.6	245		<115	2.70	2.8	2.95
08		12.3	235		111	(3.30)	3.6	2.90
09		12.85	235		109	(3.75)	4.0	2.70
10		13.4	230		109	(4.00)	4.4	2.60
11	---	14.2	230		109	(4.15)	4.7	2.60
12	400	15.0	230	---	109	(4.20)	4.6	2.55
13	415	15.4	230	(7.5)	111	(4.22)	4.5	2.50
14	415	15.4	235	7.6	109	4.15	4.4	2.45
15	415	15.4	235	(7.2)	109	4.00		2.50
16	390	15.4	235	---	109	3.70		2.50
17	370	14.85	250		113	3.30	3.4	2.55
18		14.55	260		<121	(2.60)	3.0	2.55
19		14.25	295		---	----	3.2	2.58
20		>14.0	320				2.7	2.50
21		14.6	300				2.3	2.55
22		15.75	295					2.60
23		>14.6	290					2.75

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

Table 12

Baguio, P.I. (16.4°N, 120.6°E) April 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		>13.15	275					(2.90)
01		12.75	250					(2.95)
02		10.8	250					2.70
03		10.05	270					2.65
04		9.5	<270				2.4	2.68
05		8.3	<270				3.6	2.70
06		9.4	295		---	----	2.9	2.65
07		11.5	270		(127)	3.00	3.7	2.70
08		13.2	260		119	3.60	5.0	2.60
09		13.95	250		117	(4.00)	5.3	2.40
10		14.0	<250		115	(4.10)	4.8	2.25
11		13.9	<245		117	(4.15)		2.10
12	---	>13.1	<240	---	<118	(4.22)		(2.10)
13	---	>13.5	<240		(117)	4.25		2.10
14	---	13.8	<250		(119)	(4.10)		2.12
15		14.0	250		119	3.90		2.20
16		13.7	265		121	3.50		2.20
17		13.5	280		127	2.95		(2.20)
18		12.25	320		---	----	>2.6	(2.15)
19		>12.0	425					(2.10)
20		>12.05	430					(2.10)
21		>12.1	<370					(2.35)
22		>12.0	320					(2.65)
23		(12.5)	290					(2.75)

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

Table 13

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

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		11.1	285					2.65
01		10.35	270					2.68
02		9.6	260					2.62
03		9.0	260					2.70
04		8.1	250					2.60
05		6.95	250					2.45
06		7.25	295		199	1.48	1.7	2.45
07		9.9	260		121	2.65		2.75
08	---	12.1	250		115	3.30	3.5	2.72
09	---	13.25	240		110	3.80	4.6	2.62
10	---	13.65	240		109	4.08	4.6	2.55
11	---	14.15	235		109	4.25	4.6	2.45
12	(460)	14.3	230	---	109	4.35	4.7	2.42
13	460	14.7	<235	---	107	4.35	4.6	2.40
14	440	14.6	240	---	109	4.25	4.7	2.40
15	420	14.1	(240)	---	109	4.02	4.8	2.40
16	435	13.7	(250)		109	3.60	4.2	2.40
17	---	13.0	260		111	3.00	4.8	2.40
18		12.8	275		139	2.25	4.3	2.40
19		12.9	325				3.1	2.40
20		12.85	330					2.40
21		12.8	295					2.55
22		11.75	275					2.60
23		11.6	280					2.65

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

Table 14

Fletchers Ice I. (80.0°N, 112.0°W)* March 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.5	<300					2.55
01		6.5	(300)					2.55
02		(7.0)	(290)		---	----		(2.60)
03		(7.0)	<295		---	----		(2.60)
04		(6.5)	<300		---	----		(2.62)
05		6.9	(290)		---	----		2.60
06		(6.2)	<300		---	----		(2.68)
07		(5.9)	(290)		---	----		(2.65)
08		(6.2)	<290		<137	----		2.62
09		6.8	<285		130	----		2.70
10		5.7	(290)		117	1.70		2.68
11		5.8	<300		117	1.68		2.70
12		6.0	(285)		(115)	1.85		2.70
13	---	6.5	(290)	---	(139)	2.00		2.60
14		6.45	290		(130)	>2.05		2.68
15		6.0	<275		<133	(2.08)		2.70
16		7.0	(290)		(125)	(2.00)		2.60
17		7.7	<290		<132	1.85		2.60
18		6.1	<290		<122	(1.75)		2.65
19		6.0	<300		121	1.60		2.62
20		6.55	(310)		125	1.45		2.55
21		(6.9)	<315		<141	1.30		2.60
22		5.5	<300		---	----		2.65
23		(7.0)	<300		---	----		2.58

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

Table 15

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

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		----	280					----
01		>5.25	285		---	----		2.50
02		5.5	290		---	----		2.50
03		5.15	280		---	----		(2.62)
04		5.35	290		---	----		2.60
05		(5.15)	290		---	----		(2.60)
06		>5.0	<300		---	----		2.75
07	---	5.95	290		---	----		2.70
08	---	7.3	280		145	----		2.60
09	<375	5.95	280		131	----		2.70
10	<350	6.65	<275		129	(2.30)		2.62
11	(400)	6.55	(270)	---	130	2.38		2.55
12	340	6.7	<270	---	131	2.32		2.60
13	350	6.7	(280)	---	137	2.28		2.50
14	<400	6.8	280	---	135	----		2.60
15	(330)	7.0	<290		139	2.10		2.55
16	(350)	7.65	280		---	----		2.55
17		7.4	(290)		121	----		2.55
18		(7.2)	285		---	----		2.65
19		6.55	280		---	----		2.55
20		(6.6)	275		---	----		2.55
21		6.7	285		---	----		2.55
22		6.0	280		---	----		2.58
23		6.0	280					(2.55)

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

Table 16

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

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		6.3	280					(2.5)
01		6.8	290		---	---		(2.6)
02		5.6	290		---	---		(2.6)
03		6.2	290		---	---		---
04		5.2	290		---	---		(2.6)
05		5.1	290		---	---		---
06		5.2	300		---	1.5		(2.6)
07		5.2	290	---	---	1.7		(2.7)
08	---	6.0	300	---	---	1.9		2.6
09	---	6.0	280	---	---	2.0		(2.5)
10	---	6.2	(270)	---	145	2.4		(2.6)
11	(410)	6.6	280	---	---	2.5		(2.5)
12	(410)	6.4	280	4.0	130	2.5		2.5
13	(490)	6.4	280	4.2	130	2.5		2.5
14	(480)	6.6	280	4.0	---	2.6		(2.4)
15	(480)	7.0	280	---	---	2.4		(2.35)
16	---	6.5	300	---	---	2.2		2.45
17		7.0	290		---	1.9		(2.55)
18		6.5	300		---	1.6		(2.5)
19		7.0	300		---	1.3		(2.5)
20		6.4	290		---	---		(2.5)
21		7.0	290		---	---		(2.5)
22		7.0	290					---
23		6.5	290		---	---		(2.5)

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

Table 17

Fairbanks, Alaska (64.9°N, 147.8°W) March 1958*

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		>4.8					3.6	----
01		(5.8)					4.2	(2.50)
02		(5.6)					3.8	(2.40)
03		>5.2					4.2	----
04		(5.2)					2.8	----
05		---					3.9	----
06		---						----
07		---		---				----
08		---		---				----
09		---		---				----
10		---		---				----
11		(7.0)		---				----
12		(7.3)		---				(2.75)
13		7.4		---				2.65
14		>8.4		---				(2.65)
15		9.6						2.65
16		8.7						2.70
17		7.6						2.90
18		(6.8)						(2.80)
19		(5.1)						(2.60)
20		>4.8					2.8	(2.60)
21		(4.1)					3.1	----
22		(4.7)					4.3	----
23		>5.0					4.3	----

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.
*Data obtained 12 through 29, only.
Note: Around equinox, height scale was expanded.

Table 18

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

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(5.0)	420				3.5	(2.50)
01		(5.8)	420				3.4	----
02		---	420				3.2	----
03		(5.0)	445				3.8	----
04		(5.8)	<400				3.4	(2.45)
05		(5.0)	<365					----
06		(4.9)	(320)					(2.65)
07		5.6	(310)					2.70
00		6.2	280					2.80
09	---	6.4	(285)	---				2.70
10	<370	7.5	260	---				2.70
11	(340)	8.2	260	---	---	---		2.55
12	(440)	8.7	260	(4.8)	---	---		2.55
13	410	9.0	255	(4.7)	---	---		2.55
14	(395)	8.4	<275	4.6	---	---		2.60
15	(360)	7.8	270	---	---	---		2.70
16	---	7.8	<290	---	---	---		2.70
17	---	7.0	275	---				2.65
18	---	(6.8)	300	---				(2.75)
19	---	5.8	310					(2.80)
20		>6.2	370				3.4	(2.45)
21		5.8	400				3.6	(2.40)
22		5.2	400				3.8	(2.30)
23		(5.3)	<400				4.5	----

Time: 15.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 16.2 seconds.
Note: Around equinox, the height scale was expanded.

Table 19

Narsarssuak, Greenland (61.2°N, 45.4°W) March 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(5.4)	370				3.4	(2.50)
01		(5.2)	370				3.4	(2.45)
02		(5.0)	395				3.6	(2.45)
03		(5.0)	415				3.5	(2.40)
04		(5.2)	400				3.6	(2.45)
05		(5.0)	(400)				3.8	(2.50)
06		(5.3)	340				3.4	(2.65)
07		(6.0)	310		---	---	3.8	(2.80)
08		(6.6)	290		<126	2.8		(2.80)
09	---	7.2	275	---	(121)	3.0		2.75
10	---	7.7	260	---	116	3.2		2.65
11	(470)	8.4	250	4.7	(119)	3.2		2.55
12	(470)	9.1	250	4.8	117	3.2		2.50
13	430	8.6	250	(4.6)	115	3.2		2.55
14	(405)	8.2	260	4.5	117	3.2		2.62
15	(440)	(7.1)	260	(4.4)	117	3.0		(2.60)
16	360	(6.95)	280	(4.3)	119	2.7		2.70
17	---	(7.0)	280	---	<129	2.4		(2.75)
18		(6.5)	310		---	(2.6)	3.2	(2.70)
19		(6.3)	340		---	---	5.0	(2.55)
20		(6.2)	340				3.3	(2.50)
21		(6.3)	330				4.0	(2.45)
22		(6.0)	350				3.4	(2.40)
23		(5.8)	360				4.7	(2.48)

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

Table 20

Oe Bilt, Holland (52.1°N, 5.2°E) March 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00	325	5.8						2.50
01	330	5.3						2.50
02	350	4.8						2.50
03	350	4.3						2.50
04	320	4.2						2.55
05	<300	4.0			---	1.7		2.65
06	250	5.5			---	2.0		2.95
07	240	7.0			120	2.7		3.00
08	230	8.4	235	---	110	3.0		3.05
09	220	9.5	230	---	110	3.3		3.00
10	(215)	10.8	230	---	110	3.6		2.90
11	240	11.8	230	---	110	3.8		2.90
12	230	12.0	220	---	115	3.8		2.85
13	230	11.8	230	---	110	3.7		2.85
14	230	11.8	230	---	115	3.5		2.80
15	230	11.8	230	---	110	3.2		2.85
16	240	11.4			115	2.9		2.90
17	240	11.2			120	2.4		2.90
18	230	10.5			---	1.9		3.00
19	230	9.1						2.90
20	245	7.9						2.85
21	260	6.6						2.70
22	300	6.3						2.65
23	320	6.0						2.55

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

Table 21

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

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		4.95	(325)					2.40
01		4.7	360					2.30
02		4.65	<370					2.30
03		4.25	(375)					2.32
04		4.2	<380					2.30
05		4.1	355					2.35
06		5.2	290		---	---		2.60
07		7.25	250		---	---		2.95
08	---	9.2	240		---	---		2.95
09	---	11.15	230	---	---	---		2.95
10	---	>12.3	235	---	---	---		2.85
11	---	12.6	235	---	---	---		2.82
12	---	>12.5	235	---	---	---		2.80
13	---	13.0	235	---	---	---		2.80
14		12.5	235		---	---		2.75
15		12.3	240		---	---		2.75
16		11.7	240		---	---		2.80
17		11.0	240					2.85
18		10.5	240					2.90
19		9.0	240					2.90
20		7.7	245					2.85
21		6.4	255					2.75
22		5.75	270					2.60
23		5.4	305					2.50

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

Table 22

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

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		7.0	<295					2.60
01		6.7	<300					2.45
02		6.3	(300)					2.50
03		(6.0)	(310)					2.50
04		(5.7)	<300					(2.50)
05		5.2	<300					2.60
06		5.6	275					2.80
07		8.2	240		112	2.70		3.00
08		10.0	230		109	3.05		3.00
09		11.0	225		109	3.40		2.90
10		12.0	220		109	3.60		2.80
11	---	12.2	220	---	109	3.80		2.75
12	---	12.7	<230		109	3.90		2.75
13	---	12.5	225		109	3.90		2.65
14		12.3	230		109	3.75		2.65
15		12.4	230		109	>3.50		2.65
16		12.2	240		110	3.20		2.70
17		>12.0	240		119	2.70		2.75
18		11.2	240		---	----		2.80
19		10.2	240					2.70
20		9.2	250					2.65
21		8.3	260					2.60
22		7.6	(275)					2.50
23		7.2	280					2.55

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

Table 23

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

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.3	(295)					2.60
01		6.3	300					2.50
02		6.2	300					2.55
03		6.2	290					2.60
04		5.8	290					2.55
05		5.8	280					2.60
06		6.4	280		---	----		2.70
07		9.0	245		113	2.50		3.00
00		11.4	235		109	3.10		3.05
09		12.8	230		107	3.55		3.00
10		12.8	220		107	3.80		2.85
11	---	13.4	220		(107)	3.95	4.0	2.75
12	---	14.0	230	---	105	4.00		2.70
13	350	14.0	230	---	<109	4.05		2.65
14	---	13.8	230		<109	4.00		2.60
15	---	13.4	230		109	3.70		2.65
16		13.0	240		109	3.35	3.5	2.65
17		12.9	240		111	2.80	3.0	2.75
18		12.3	235		<127	----	2.3	2.80
19		10.7	225				1.9	2.80
20		8.9	230					2.80
21		7.9	250					2.75
22		7.0	265					2.65
23		6.6	(280)					2.60

Time: 105.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.
Note: Around equinox, height scale was expanded.

Table 24

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

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		14.4	250					2.85
01		13.3	250					2.95
02		11.2	240					2.90
03		9.2	240					2.85
04		8.0	230					2.65
05		6.7	260					2.65
06		6.8	300					2.60
07		10.0	260		131	2.45		2.90
08		12.4	240		111	3.00		3.05
09		13.9	235		111	(3.50)	3.7	3.00
10		14.4	230		111	(3.70)	4.2	2.90
11	---	15.0	225	---	109	(3.95)	4.2	2.75
12	(370)	15.4	225	---	109	(4.05)	4.3	2.65
13	375	16.4	220	---	111	(4.05)	4.4	2.60
14	375	16.6	230	---	111	4.00	4.2	2.60
15	365	16.4	235	---	111	3.95		2.60
16	355	16.4	235		111	3.65		2.60
17	---	15.5	245		115	3.20	3.3	2.65
18		15.3	260		119	2.50	2.6	2.70
19		15.3	270				2.5	2.75
20		16.2	280					2.70
21		17.5	260					2.70
22		16.8	255					2.80
23		>14.8	255					2.80

Time: 135.0°E.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.
Note: Around equinox, height scale was expanded.

Table 25

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

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		9.9	265					2.85
01		9.2	245					2.85
02		8.8	240					2.90
03		7.8	230					2.80
04		7.1	250					2.60
05		6.8	(270)					2.60
06		7.1	275					2.65
07		9.5	240		117	2.40		3.05
08		11.8	230		111	2.95		3.05
09		13.4	230		109	3.50		3.00
10		14.2	230		109	3.85		2.90
11		14.2	225		109	(4.00)		2.80
12		14.1	220		109	(4.10)		2.70
13	---	14.4	220		109	(4.20)		2.65
14	(380)	14.3	230		109	4.05	4.2	2.65
15	---	14.0	230	---	109	3.95	4.2	2.65
16		13.7	235		109	3.60	4.0	2.65
17		13.2	240		111	3.10	3.6	2.65
18		12.8	245		---	----	2.6	2.70
19		12.1	245					2.75
20		11.3	245					2.70
21		10.7	260					2.70
22		10.6	275					2.70
23		10.3	275					2.75

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

Table 26

Baguio, P.I. (16.4°N, 120.6°E) March 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		14.2	270					2.70
01		12.9	265					2.75
02		11.1	250					2.80
03		9.4	260					2.65
04		7.5	280				2.0	2.50
05		7.0	275				1.9	2.60
06		7.8	310				2.8	2.55
07		10.8	300		139	(2.65)	3.3	2.60
00		13.4	285		129	(3.35)	4.1	2.55
09		14.5	280		128	3.75	4.1	2.40
10		14.6	270		125	4.00	4.0	2.25
11		14.0	260		126	(4.05)		2.10
12	---	13.9	250		<127	(4.15)		2.10
13	---	13.8	(250)		127	(4.10)		2.10
14	---	14.1	260		126	4.05		2.15
15	---	14.5	275		129	3.85		2.15
16	---	14.6	280		129	3.40		2.20
17		(14.6)	300		130	2.85	3.0	(2.20)
18		(14.7)	335		---	----	2.3	(2.10)
19		(13.2)	440				2.2	(2.05)
20		(13.5)	425					(2.10)
21		(13.2)	340					(2.30)
22		13.5	300					2.50
23		14.0	290					2.60

Time: 120.0°E.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.
Note: Around equinox, height scale was expanded.

Table 27

Talara, Peru (4.6°S, 81.3°W) March 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		12.4	220				4.4	2.80
01		11.2	230				3.6	2.80
02		9.9	240				3.0	2.90
03		9.2	235				2.5	2.90
04		8.3	230				3.0	3.00
05		7.4	240					3.00
06		6.8	240				2.4	3.00
07		9.6	265		129	2.40	3.0	2.90
08		13.0	250		118	3.20	3.4	2.85
09		14.2	230		114	3.75		2.70
10		14.8	225		111	4.10		2.50
11		15.0	220		111	4.30		2.25
12		15.0	220		111	4.40		2.10
13		14.6	215		109	4.40		2.10
14		14.0	220		109	4.25		2.10
15		13.8	220		107	4.00	4.4	2.10
16		13.4	225		107	3.65	4.6	2.05
17		13.3	250		111	3.20	4.4	(2.10)
18		13.0	270		<131	2.50	5.0	2.15
19		12.5	325				3.5	2.15
20		11.9	405					2.05
21		(11.9)	325				2.2	(2.30)
22		12.6	250				2.7	2.55
23		12.6	220				4.1	2.70

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

Table 28

Huancayo, Peru (12.0°S, 75.3°W) March 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		9.3	230				4.5	2.90
01		8.8	230				4.8	2.85
02		8.1	240				4.6	2.90
03		7.9	245				4.1	3.00
04		7.6	235					3.05
05		6.8	240					3.10
06		7.2	255					2.90
07		11.3	250		121	2.75		3.00
08		13.7	240		117	3.40	5.4	2.85
09		15.0	230		110	4.00	8.4	2.60
10		15.4	225		---	----	9.0	2.35
11		14.6	220		---	----	8.6	2.20
12		13.7	215		---	----	9.0	2.15
13		>12.4	210		---	----	9.0	2.10
14		12.5	210		---	----	9.0	2.10
15		12.6	220		---	----	9.0	2.10
16		12.4	230		109	----	8.8	2.10
17		12.0	255		109	(3.00)	7.6	2.15
18		11.5	290		155	2.05	4.9	2.15
19		10.5	380		---	E		2.10
20		9.6	(385)					2.10
21		9.7	320					2.35
22		9.7	250				3.9	2.55
23		9.6	240				4.4	2.75

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

Table 29

Tromso, Norway (69.7°N, 19.0°E) February 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(5.7)	(340)		---	----	4.0	----
01		(5.7)	(355)		---	----	3.9	(2.40)
02		5.3	(335)		---	----	4.0	(2.40)
03		5.2	---		---	----	4.0	(2.40)
04		(5.1)	(380)		---	----	3.5	(2.35)
05		4.8	(300)		---	----	2.5	2.50
06		4.6	300		---	----	2.3	(2.55)
07		5.5	270		---	----		2.60
08	---	6.6	(260)		---	----		2.70
09	(250)	8.0	(265)		---	----		2.75
10	250	9.2	265		---	2.20		2.80
11	255	10.6	(250)		---	2.45		2.70
12	250	11.3	(250)		145	2.40		2.70
13	250	10.6	(250)		145	2.40		2.90
14	245	9.2	260		---	2.40		2.90
15	---	8.4	250		---	2.25		2.90
16		5.8	250		---	1.90	2.2	2.85
17		4.8	280		---	1.75	3.0	2.75
18		4.9	(245)		---	----	4.0	(2.80)
19		5.2	(265)		---	----	4.0	(2.70)
20		5.2	(300)				4.0	(2.35)
21		(5.0)	---				4.0	----
22		---	---				>3.4	----
23		---	---				3.2	

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

Table 30

Sodankyla, Finland (67.4°N, 26.6°E) February 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00			365				3.7	
01			400				4.0	
02		---	385				3.6	----
03		---	390				3.5	----
04		---	365				3.5	----
05		---	345				3.5	
06		---	315				3.0	
07		---	300			----	2.8	
08		---	290			----	3.2	----
09		(8.1)	265			E	3.5	(2.90)
10		8.4	250			2.35	3.9	2.95
11		9.8	250			2.45	3.9	2.90
12		10.6	250			2.50	3.9	2.90
13		11.4	240			2.60	3.9	2.90
14		11.5	240			2.45	3.9	2.90
15		11.4	240			2.30	3.8	2.95
16		(10.5)	240			E	3.2	(3.00)
17		(10.8)	240			E	3.2	(3.00)
18		---	290			----	3.2	----
19		---	290				3.1	----
20		---	315				3.1	----
21			335				3.4	
22			375				3.8	
23			395				3.6	

Time: 30.0°E.
Sweep: 1.4 Mc to 22.0 Mc in 8 minutes, automatic operation.

Table 31

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

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(4.3)					<2.0	(2.60)
01		(4.3)					<1.9	(2.60)
02		(3.9)					<1.9	(2.50)
03		(4.0)					<1.9	(2.50)
04		(3.7)					<1.9	(2.50)
05		(3.6)					<1.9	(2.60)
06		3.3						2.70
07		(3.7)						(2.70)
08		5.9						2.90
09		8.2						3.00
10		9.6						3.00
11		10.5						3.00
12		11.7						3.00
13		12.3						2.90
14		12.5						2.95
15		12.4						2.95
16		12.3						3.00
17		11.2						3.00
18		9.5						3.10
19		7.2						2.90
20		6.2					<2.4	2.90
21		5.0					<2.0	2.70
22		(5.8)					<2.2	(2.70)
23		(5.0)					<1.9	(2.60)

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

Table 32

Oslo, Norway (60.0°N, 11.1°E) February 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		4.5	350					2.40
01		4.2	340					2.40
02		3.8	330					(2.40)
03		3.5	320					2.40
04		3.7	315					2.40
05		3.6	300					2.55
06		3.6	270					2.55
07		4.1	260		---	----		2.55
00		6.8	250		125	1.90		2.85
09		8.4	250		120	2.30		2.90
10	---	9.6	250		115	2.60		2.90
11	---	11.0	250		115	2.80		2.90
12	---	11.4	240		115	2.85		2.85
13	---	>12.0	240		120	2.90		2.85
14	---	12.3	240		120	2.80		2.85
15		12.3	240		130	2.60		2.90
16		11.6	240		130	2.25		2.90
17		10.8	240		---	(1.80)		2.90
18		9.2	225		---	----		2.90
19		7.7	240					2.85
20		6.6	260					2.75
21		6.1	290					(2.70)
22		5.4	310					2.55
23		4.5	350					2.45

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

Table 33

Inverness, Scotland (57.4°N, 4.2°W) February 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		5.0	345				<1.3	2.40
01		5.2	340				<1.4	2.40
02		5.0	340				1.6	2.40
03		4.8	335				<1.4	2.40
04		4.6	325				<1.3	2.40
05		5.0	300				<1.2	2.40
06		4.6	280				<1.2	2.50
07		4.9	280		145	1.40		2.60
08		6.7	250		120	1.90		2.95
09		8.8	250		120	2.35		3.00
10		10.7	245		120	2.70		2.95
11		11.8	245		120	2.90		2.95
12		12.4	240		120	3.00		2.90
13		12.7	240		120	3.00		2.85
14		12.8	240		125	2.90		2.90
15		12.7	240		120	2.75		2.95
16		12.2	240		130	2.40		2.95
17		11.5	230		140	1.90		3.00
18		9.3	225		---	----	<1.6	2.90
19		6.9	230				<1.6	2.85
20		5.8	245				<1.6	2.65
21		5.9	280				<1.6	2.70
22		5.2	300				<1.6	2.50
23		5.0	340				<1.5	2.40

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

Table 34

Schwarzenburg, Switzerland (46.8°N, 7.3°E) February 1958

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	5.3						2.9
01	300	5.1						2.8
02	300	5.0						2.9
03	300	4.8						2.9
04	300	4.7						2.8
05	270	4.4						3.0
06	270	4.0						3.0
07	250	4.4						3.1
08	210	7.9			100	2.0		3.5
09	210	10.0			100	2.6		3.5
10	210	13.4			100	3.0		3.5
11	200	14.0			100	3.3		3.4
12	200	14.0			100	3.4		3.3
13	200	14.0			100	3.4		3.3
14	210	14.2			100	3.4		3.2
15	210	13.8			100	3.2		3.2
16	210	13.6			100	2.8		3.3
17	210	12.6			100	2.4		3.35
18	210	9.5					2.4	(3.4)
19	200	9.5						3.4
20	200	8.2						3.4
21	230	6.6						3.1
22	260	6.0						3.0
23	270	5.2						2.9

Time: 15.0°E.
Sweep: 1.0 Mc to 25.0 Mc in 30 seconds.

Table 35

Wakkanai, Japan (45.4°N, 141.7°E) February 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		5.9	310					2.60
01		5.7	310					2.50
02		5.3	300					2.50
03		5.2	310					2.50
04		5.0	300					2.50
05		5.0	310					2.50
06		4.8	270					2.80
07		8.2	240			2.20		3.00
00		11.7	240			2.60		3.10
09		13.4	235			3.10		3.10
10		14.0	235			3.40		3.05
11		13.0	230			3.50		3.00
12		13.5	230			3.50		2.95
13		13.2	235			3.50		2.90
14		12.8	240			3.25		2.85
15		12.5	240			2.90		2.90
16		12.0	240			2.35		2.85
17		11.6	240			----		2.90
18		9.8	230					2.90
19		8.4	240					2.90
20		7.2	250					2.80
21		6.6	265					2.75
22		6.2	205					2.65
23		5.8	300					2.55

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

Table 36

Akita, Japan (39.7°N, 140.1°E) February 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.0	300					2.65
01		5.8	300					2.60
02		5.8	300					2.60
03		5.6	300					2.60
04		5.3	310					2.45
05		5.2	310					2.55
06		5.5	260					2.00
07		9.1	245			----		3.15
08		12.0	240			2.90		3.10
09	---	13.8	240			3.30		3.05
10	---	14.1	240			3.50		2.95
11	(245)	14.2	230			3.70		2.90
12	---	14.0	240			3.70		2.85
13	---	13.7	240			3.65		2.80
14		13.5	240			3.50		2.75
15		12.9	240			3.20		2.80
16		12.2	245			2.55		2.85
17		11.8	250			----	2.2	2.90
18		10.5	245					2.90
19		9.0	245					2.95
20		8.0	250					2.90
21		7.2	260					2.80
22		6.8	270					2.70
23		6.4	290					2.65

Time: 135.0°E.
Sweep: 1.6 Mc to 20.0 Mc in 20 seconds.

Table 37

Yamagawa, Japan (31.2°N, 130.6°E) February 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		7.7	250					2.90
01		7.0	245					2.95
02		6.0	245					2.90
03		5.6	250					2.85
04		5.3	250					2.70
05		5.1	285					2.65
06		5.0	265					2.70
07		7.6	250					3.10
08		11.2	230			2.60	3.1	3.30
09		12.8	220			3.15		3.25
10		13.8	220			3.55		3.10
11	---	14.5	210	---		3.80		3.00
12	---	14.6	215	---		3.90		2.90
13		15.0	220			3.90	4.0	2.85
14		14.8	220			3.85	4.0	2.80
15		14.3	225			3.60		2.85
16		13.5	230			3.20	3.4	2.85
17		13.0	240			2.60	3.2	2.85
18		12.7	240			----	3.1	2.95
19		12.4	230				2.6	2.95
20		11.0	230				2.2	2.90
21		9.6	230				2.2	2.90
22		8.9	245				2.1	2.85
23		8.4	245					2.90

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

Table 38

Talara, Peru (4.6°S, 81.3°W) February 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(12.6)	240				4.7	2.90
01		11.3	240				4.1	3.00
02		10.0	240				4.1	2.95
03		9.0	240				4.6	2.92
04		8.3	240				4.5	3.05
05		7.0	240				4.0	3.10
06		6.5	240				4.2	3.00
07		9.4	265		121	2.28	3.4	2.90
08		12.3	240		113	3.10	4.4	2.80
09		14.0	230		109	3.65		2.70
10		14.6	215		109	4.00		2.52
11		14.65	210		107	4.12		2.25
12		14.8	200		109	4.30		2.15
13	---	14.0	200	---	109	4.30		2.10
14	---	13.55	205	---	109	4.20		2.10
15	---	13.8	210	---	109	4.00		2.15
16		13.65	220		109	3.60	4.0	2.18
17		13.2	240		111	3.25	3.6	2.22
18		13.1	265		119	2.60	2.8	2.25
19		(13.0)	300				2.6	(2.30)
20		>12.9	350					2.25
21		>13.0	300				1.9	(2.50)
22		(13.5)	255				3.0	(2.60)
23		(13.45)	250				3.5	(2.85)

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

Table 39

Rarotonga I. (21.2°S, 159.8°W) February 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(9.4)	250				3.0	(2.50)
01		9.0	<280				3.0	2.40
02		8.6	<300				3.0	2.38
03		8.8	330				2.3	2.40
04		8.7	<330				2.8	2.38
05		9.2	<310				2.5	2.48
06		(10.3)	270		---	(2.0)	3.1	(2.71)
07		(12.7)	250		---	3.0	4.2	2.80
08		12.8	240		110	3.5	4.3	2.80
09		13.4	230		110	3.9	4.2	2.60
10	---	14.4	230		110	4.1	4.6	2.58
11	400	15.3	(230)	---	110	4.2	4.9	2.57
12	380	15.6	240	---	110	4.3	4.7	2.59
13	380	15.2	<240	---	110	4.3	4.7	2.53
14	370	14.5	<240	---	110	4.1	4.3	2.51
15	400	13.9	240	---	110	3.9	4.2	2.52
16	400	(13.4)	250	---	110	3.5	4.4	(2.52)
17	---	(13.2)	(260)		112	2.9	4.4	(2.52)
18	---	(13.0)	<300		---	(1.7)	3.8	2.54
19		(12.8)	(310)				4.0	(2.44)
20		(11.9)	<320				4.0	(2.40)
21		(12.8)	300				3.6	(2.69)
22		(13.0)	290				3.4	----
23		(12.4)	<270				3.2	(2.84)

Time: 165.0°W.
Sweep: 1.5 Mc to 20.0 Mc in 5 minutes, manual operation.

Table 40

Christchurch, New Zealand (43.6°S, 172.8°E) February 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		8.3	290				<1.7	2.50
01		7.4	300				2.5	2.40
02		7.1	320				3.0	2.40
03		6.6	340				3.1	2.40
04		6.3	320				<1.3	2.40
05	---	5.6	300	---	---	1.0	1.4	2.45
06	---	6.0	300	---	---	2.0	2.4	2.60
07	---	7.0	260	---	105	2.7	3.2	2.70
08	---	8.0	250	---	100	3.2	4.2	2.75
09	---	9.1	240	---	100	3.6	4.4	2.70
10	(380)	9.2	240	5.1	100	3.8	4.2	2.70
11	400	9.5	240	6.0	100	4.0	4.1	2.60
12	400	9.8	210	5.8	100	4.0		2.60
13	430	9.7	230	6.3	100	4.0	4.0	2.60
14	420	9.3	230	6.0	100	4.0		2.55
15	400	9.1	240	5.9	100	4.0		2.60
16	430	9.0	240	5.8	100	3.9		2.60
17	---	8.8	250	5.0	100	3.5	3.8	2.60
18	---	9.0	250	---	110	3.0	3.0	2.60
19		9.0	260		115	2.3	3.0	2.70
20		9.1	290		---	---	3.5	2.60
21		9.2	290				3.5	2.55
22		9.1	300				4.2	2.50
23		8.6	300				3.0	2.55

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

Table 41

Upsala, Sweden (59.8°N, 17.6°E) January 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		4.0	340				2.4	2.4
01		3.6	340				3.1	2.4
02		3.5	340				3.1	2.4
03		3.5	320				3.0	2.4
04		3.6	305				3.1	2.4
05		3.5	275				3.2	2.5
06		3.4	280				3.0	2.6
07		3.6	270		---	----	3.0	2.5
08		6.2	245		---	E	3.2	2.7
09		9.5	240		130	1.80	3.6	2.9
10		12.7	240		125	2.35	3.1	2.9
11		14.0	235		125	2.60	3.1	2.9
12		14.9	230		120	2.70	3.1	2.8
13		14.7	230		120	2.60	3.1	2.8
14		14.5	230		125	2.35	3.0	2.8
15		13.8	230		130	1.80	3.0	2.8
16		12.6	220		---	E	3.1	2.9
17		10.0	210					2.9
18		8.0	220				2.3	2.8
19		6.3	240				2.0	2.7
20		5.6	255				2.3	2.7
21		4.7	260				2.3	2.6
22		4.4	300				2.2	2.5
23		4.2	320				2.4	2.4

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

Table 42

Lindau/Harz, Germany (51.6°N, 10.1°E) January 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		4.83	300					2.38
01		4.65	308					2.40
02		4.68	305					2.36
03		4.35	310					2.43
04		4.09	300					2.46
05		3.94	278					2.48
06	---	3.78	270	---				2.53
07		3.72	261					2.52
08		6.92	240		---	----	2.4	2.66
09		10.90	232		---	2.26	3.4	3.00
10		13.35	227		113	2.68	3.5	2.96
11		14.58	226		113	3.00	3.7	2.91
12		14.64	224		116	3.10	3.9	2.82
13		14.63	230		117	3.11	3.7	2.83
14		14.40	230		117	2.98		2.80
15		13.90	229		116	2.68	3.1	2.78
16		13.25	228		114	2.23	3.1	2.80
17		12.30	225		---	----	2.4	2.81
18		10.53	221					2.83
19		8.32	223					2.80
20		6.70	241					2.70
21		6.11	256					2.65
22		5.62	269					2.52
23		5.21	282					2.45

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

Table 43

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

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		5.0	295				<0.9	2.40
01		4.8	305				<0.9	2.40
02		>4.4	305				<0.9	2.40
03		4.2	300				<0.9	2.55
04		4.0	280				<0.9	2.50
05		3.0	250				<1.4	2.50
06		3.5	260				<1.6	2.50
07		(4.3)	265				<1.6	2.50
08		8.2	240			(1.90)	3.0	2.90
09		(11.5)	235		130	2.50	3.0	(3.00)
10		13.3	230		115	2.85	3.0	3.05
11		14.3	225		110	3.00	3.1	2.95
12		14.2	230		110	3.15		2.95
13		14.3	235		115	3.10		2.85
14		14.0	235		115	3.00		2.90
15		13.5	235		120	2.60		2.85
16		(12.7)	230		135	2.20		2.80
17		>11.7	220			1.60		2.85
18		9.6	215				<1.6	2.90
19		(7.9)	230				<1.7	2.85
20		6.6	240				<1.6	2.65
21		>5.9	240				<1.6	2.70
22		5.4	255				<1.6	2.50
23		5.4	270				<1.6	2.45

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

Table 44

Wakkanai, Japan (45.4°N, 141.7°E) January 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		5.0	300					2.50
01		4.9	315				2.9	2.45
02		4.8	300				2.0	2.50
03		4.5	300					2.45
04		4.3	300					2.40
05		4.2	310					2.55
06		3.9	280					2.70
07		7.2	260					2.85
00		11.5	240			2.45	2.8	3.05
09		(14.0)	240			2.95	3.5	(3.10)
10		(14.5)	235			3.25		(3.05)
11		14.0	235			3.50		2.95
12		13.0	230			3.50		2.80
13		12.7	240			3.40		2.75
14		12.5	240			3.05		2.75
15		12.0	240			2.65		2.75
16		11.5	250			2.15		2.75
17		10.4	245					2.75
18		8.8	240					2.80
19		7.3	250					2.80
20		6.3	270					2.70
21		5.8	280					2.65
22		5.5	300					2.65
23		5.2	300					2.55

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

Table 45

Akita, Japan (39.7°N, 140.1°E) January 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		5.5	300					2.65
01		5.1	300					2.65
02		5.0	300					2.65
03		4.7	335					2.50
04		4.5	330					2.45
05		4.4	325					2.55
06		4.5	290					2.75
07		7.7	250					2.95
00		11.7	245			----		3.00
09		14.3	245			----		2.90
10	---	14.9	245			----		2.90
11	---	14.1	240			----		2.75
12	---	13.2	240			(3.60)		2.65
13	---	13.1	245			3.60		2.60
14		12.7	245			3.40		2.65
15		11.8	250			----		2.65
16		11.3	250					2.70
17		11.0	260					2.75
18		9.6	250					2.85
19		8.0	250					2.85
20		6.9	260					2.70
21		6.4	290					2.70
22		6.0	300					2.70
23		5.7	300					2.70

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

Table 46

Tokyo, Japan (35.7°N, 139.5°E) January 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.1	275					2.65
01		5.7	300					2.80
02		4.9	280					2.65
03		4.6	310					2.60
04		4.3	320					2.55
05		4.3	325					2.55
06		4.5	270					2.80
07		8.2	250			2.05		2.95
08		12.1	240			2.80		3.05
09		14.1	240			3.20	3.4	2.95
10	---	14.9	240	---		3.50		2.90
11	---	14.3	230	---		3.70		2.70
12	---	13.7	230	---		3.80		2.60
13	---	13.5	235	---		3.70		2.55
14		13.3	240			3.50		2.60
15		12.5	250			3.20		2.60
16		12.1	250			2.60		2.60
17		11.6	255					2.70
18		10.7	250					2.80
19		8.7	240					2.80
20		7.5	250					2.70
21		7.1	255					2.70
22		6.9	260					2.70
23		6.4	270					2.75

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

Table 47

Yamagawa, Japan (31.2°N, 130.6°E) January 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		8.1	240					2.85
01		7.5	250					2.90
02		6.2	240					2.90
03		5.3	240					2.70
04		4.3	255					2.65
05		4.2	300					2.55
06		4.5	290					2.75
07		7.0	250					2.80
08		11.2	230			2.35	2.7	3.15
09		13.4	225			3.10		3.05
10		15.0	225			3.50	3.6	2.95
11		14.6	225			(3.75)	4.4	2.75
12		14.3	220			3.90	4.4	2.65
13		14.0	220			3.90		2.60
14		(14.0)	220			3.80	3.8	2.55
15	---	>13.8	230	---		3.50		2.60
16	---	>13.8	240			3.05	3.1	2.65
17		13.4	245			2.25	3.0	2.70
18		12.6	250				2.6	2.80
19		12.0	240				2.7	2.85
20		10.8	230					2.80
21		(9.6)	225					(2.80)
22		9.0	245					2.80
23		8.4	245					2.80

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

Table 48

Watheroo, W. Australia (30.3°S, 115.9°E) January 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.9	300				3.3	2.70
01		(6.7)	(310)				3.6	2.70
02		6.6	<315				3.4	2.65
03		6.3	305				1.5	(2.80)
04		5.8	<315					2.80
05		5.6	320		---	<1.20		(2.80)
06		6.4	285		110	2.30	2.4	3.00
07	---	6.9	245	---	105	3.05	3.5	2.80
08	540	7.0	(235)	5.6	100	3.50	4.2	2.50
09	520	7.6	<230	5.8	100	3.90	>4.2	2.45
10	530	8.4	(235)	6.0	100	4.05	4.8	2.45
11	500	>8.4	---	6.0	100	>4.00	4.9	2.35
12	475	>8.4	(255)	6.2	100	>4.05	(5.0)	2.35
13	470	>8.4	(235)	6.2	100	>4.10	5.6	2.50
14	480	8.4	(245)	6.0	100	>4.10	(6.3)	2.45
15	500	8.3	---	5.9	100	(4.05)	5.3	2.50
16	480	7.8	235	5.7	100	3.90	>4.3	2.55
17	470	7.6	(230)	5.5	105	3.55	>4.1	2.60
18	---	7.5	250	---	105	2.95	3.6	2.70
19	---	7.2	300	---	105	2.20	3.2	(2.80)
20		7.0	300		---	<1.20	2.3	(2.80)
21		>7.0	300				1.9	2.70
22		>7.0	310				3.3	(2.70)
23		7.0	315				3.2	2.70

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

Table 49

Christchurch, New Zealand (43.6°S, 172.8°E) January 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		8.0	310				3.1	2.35
01		7.2	310				<1.7	2.25
02		6.4	340				<1.5	2.30
03		6.2	350				<1.1	2.25
04		5.9	340		---	E	<1.1	2.30
05		6.0	340		100	(1.7)	1.8	2.40
06	---	6.2	270	---	110	2.6	2.9	2.55
07	(610)	6.6	250	4.9	105	3.2	4.0	2.40
08	500	7.4	250	5.5	100	3.6	4.8	2.50
09	550	8.0	(240)	6.0	100	---	5.0	2.40
10	500	8.2	230	6.3	100	---	4.7	2.50
11	490	8.3	(220)	6.2	100	4.2	5.2	2.40
12	500	8.5	220	6.3	100	4.3	5.0	2.35
13	510	8.2	220	6.4	100	4.4	4.6	2.35
14	500	8.2	230	6.3	100	4.1	4.5	2.35
15	500	8.4	240	6.1	100	4.1	4.4	2.35
16	480	8.3	240	5.8	100	4.0	4.2	2.40
17	480	8.2	250	5.6	105	3.8	4.2	2.40
18	(430)	8.2	250	5.0	105	3.3	3.7	2.45
19	---	8.2	260	---	110	2.6	3.8	2.45
20		8.1	310		105	---	2.7	2.45
21		8.6	340		---	---	2.1	2.35
22		9.0	330				3.7	2.40
23		8.4	320				2.8	2.40

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

Table 50

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

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.2	350				3.0	2.25
01		5.6	350		---	---	3.2	(2.30)
02		5.3	350		---	---	3.0	2.25
03		5.0	340		---	1.5	2.0	2.40
04		5.1	300		100	2.1		2.45
05	---	5.6	260	---	100	2.7		2.55
06	(480)	6.0	250	4.9	105	3.1		2.40
07	490	6.7	240	5.3	100	3.5		2.40
00	540	6.6	230	5.6	100	3.7		2.35
09	560	6.8	220	5.8	100	4.0		2.30
10	510	7.6	220	6.0	100	4.0		2.30
11	550	7.3	220	6.0	100	4.2		2.30
12	550	7.4	210	6.0	100	4.2		2.30
13	550	7.4	210	6.0	105	4.1		2.25
14	540	7.8	220	5.8	105	4.1		2.30
15	510	7.7	220	5.8	105	4.0		2.30
16	480	7.7	230	5.5	105	3.7		2.35
17	430	7.7	250	5.0	105	3.4	<3.5	2.35
18	(450)	7.7	260	4.6	110	3.0		2.40
19	---	7.6	290	---	110	2.5		2.35
20		7.6	340		110	1.8		2.40
21		7.0	340		---	1.2	>2.2	2.35
22		6.4	350		---	---	2.3	2.20
23		6.1	<350		---	---	2.2	(2.30)

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

Table 51

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

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		----	390				3.8	----
01		----	410				4.0	----
02		----	390				4.0	----
03		----	365				3.9	----
04		----	350				3.4	----
05		----	320				3.4	----
06		----	300				3.0	----
07		----	280				3.0	----
08		----	280				2.9	----
09		----	280			E	3.2	----
10		----	265			E	3.3	(2.90)
11		11.0	250			1.90	3.8	2.90
12		12.7	240			2.00	3.9	2.90
13		13.7	235			1.90	3.9	2.90
14		12.9	230			1.75	3.8	2.90
15		12.4	240			E	3.2	2.90
16		(11.3)	240			E	3.0	(2.90)
17		(10.1)	250				3.2	(2.95)
18		(8.3)	265				3.1	(2.90)
19		----	300				3.1	----
20		----	300				3.2	----
21		----	350				4.1	----
22		----	380				3.8	----
23		----	400				3.9	----

Time: 30.0°E.
Sweep: 1.4 Mc to 22.0 Mc in 8 minutes, automatic operation.

Table 52

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	285	8.3					2.0	2.28
01	290	7.5					2.8	2.32
02	275	6.9					2.1	2.29
03	280	6.6					2.0	2.27
04	280	7.4			120	2.0	3.0	2.52
05	250	9.1	(250)	---	110	3.0	3.6	2.51
06	(255)	10.1	240	---	105	3.7	4.0	2.39
07	---	10.5	235	---	105	4.0	3.6	2.20
08	435	11.0	230	6.6	105	4.1	4.7	2.10
09	480	11.2	230	6.6	105	4.2		2.04
10	475	11.6	230	6.4	105	4.3		2.07
11	465	12.0	230	6.4	105	4.3	4.7	2.06
12	450	11.7	230	6.0	105	4.2		2.10
13	445	11.2	240	5.9	110	4.0	5.0	2.07
14	455	11.0	245	---	110	3.8	4.9	2.05
15	420	11.0	255	---	110	3.1	4.1	2.11
16	350	10.9	290	---	---	2.2	3.7	2.16
17	330	11.2					2.4	2.18
18	330	11.0					2.9	2.20
19	300	11.4					2.6	2.26
20	290	10.8					2.4	2.34
21	280	10.2					2.8	2.35
22	270	9.4					2.5	2.29
23	270	9.0					2.3	2.32

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

Table 53

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

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		---	330				(3.2)	
01		---	350				(3.0)	
02		---	350					
03		---	(350)				(2.8)	
04		---	(360)				(2.6)	
05		---	(350)		---	----	(2.1)	
06		>6.5	(290)		(110)	2.50		----
07		>8.4	(260)		110	3.15	3.5	----
08	---	>8.4	(250)	---	110	3.40	(5.0)	----
09	---	>9.5	(245)	6.7	---	----	>4.8	----
10	(540)	>10.0	(235)	6.0	110	(4.15)	(4.8)	(2.30)
11	(465)	(11.0)	(250)	6.8	110	4.30	(5.7)	(2.40)
12	460	(11.2)	240	6.6	105	4.35	(4.8)	2.35
13	465	>10.6	(250)	6.6	---	(4.40)	(4.8)	(2.35)
14	460	(11.0)	(240)	6.3	100	4.35	5.2	(2.40)
15	450	>10.0	(250)	6.3	110	4.10	5.2	(2.30)
16	(470)	>9.5	(250)	6.2	110	3.80	5.0	(2.30)
17	---	>8.8	---		115	3.25	5.7	
18		>8.5	---		120	2.65	5.3	
19		---	<350		---	----	4.2	
20		---	(370)				3.6	
21		---	380				(3.4)	
22		---	360				(2.8)	
23		---	340				(3.2)	

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

Table 54

Rarotonga I. (21.2°S, 159.0°W) December 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(0.9)	(320)				3.9	(2.35)
01		(8.8)	(330)				3.5	(2.30)
02		(9.0)	350				3.0	(2.28)
03		(8.9)	350				3.2	(2.27)
04		(8.8)	300				3.1	(2.40)
05		(8.9)	300		---	---	3.2	(2.42)
06		(9.9)	250		(110)	(3.0)	4.0	(2.74)
07	---	(10.4)	240	---	110	3.5	4.8	(2.75)
00	---	(10.8)	240	---	110	3.9	5.0	2.44
09	---	11.8	230	---	110	(4.2)	5.0	2.35
10	490	12.6	<240	7.1	110	4.5	4.7	2.30
11	470	13.4	240	7.0	110	4.6	4.8	2.35
12	470	14.0	240	7.0	110	4.5		2.30
13	450	14.4	240	6.8	110	4.5		2.35
14	450	(13.9)	240	6.6	110	4.3	5.0	(2.35)
15	440	(13.4)	250	6.4	114	4.0	5.0	(2.40)
16	430	(13.0)	(250)		112	3.7	5.3	(2.40)
17	---	(12.3)	---		113	3.0	5.8	(2.40)
18		(12.3)	(320)		105	(1.9)	4.9	
19		(10.6)	(360)		---	---	4.6	(2.20)
20		(10.0)	(370)		---	---	4.0	----
21		(10.0)	360				3.7	(2.20)
22		(10.4)	350				3.5	----
23		(9.0)	340				3.9	----

Time: 165.0°W.
Sweep: 1.5 Mc to 20.0 Mc in 5 minutes, manual operation.

Table 55

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

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.4	340					2.20
01		5.8	360				3.0	2.20
02		5.0	380					2.10
03		4.6	360				3.1	2.20
04		>4.5	370		170	1.45	1.5	2.30
05		(5.2)	310		120	2.25		2.30
06	(580)	5.8	270	4.3	120	3.00		2.30
07	600	5.7	250	4.9	110	3.40	3.7	2.20
08	600	6.7	250	5.5	110	3.80	4.0	2.20
09	600	6.9	230	5.7	---	----	4.5	2.20
10	620	7.2	230	5.9	---	----	4.7	2.20
11	600	7.3	230	6.1	---	----	5.2	2.20
12	620	7.4	240	6.1	110	----	>4.4	2.15
13	600	7.4	240	5.9	---	----	4.5	2.20
14	600	7.6	250	6.0	---	----	4.6	2.10
15	570	7.5	240	5.8	110	4.20	4.5	2.20
16	560	7.6	240	5.6	110	3.85	4.0	2.20
17	500	7.6	250	5.2	120	3.50	4.0	2.30
18	---	7.5	270		120	3.00	4.5	2.30
19		7.5	300		---	----	4.7	2.40
20		7.6	330		---	----	4.2	2.35
21		7.8	340				3.6	2.30
22		7.4	340				3.5	2.30
23		7.0	350				3.0	2.20

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

Table 56

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

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		----	380				4.1	----
01		----	370				4.4	
02		----	365				4.2	
03		----	330				3.8	
04		----	335				3.5	----
05		----	300				3.2	----
06		----	280				3.2	----
07		----	275			E	3.2	----
08		7.2	260			E	3.2	(2.75)
09		9.6	250			1.75	3.8	2.80
10		11.6	240			2.10	4.2	2.85
11		13.3	235			2.30	4.8	2.85
12		14.4	240			2.35	4.6	2.85
13		14.9	230			2.25	4.8	2.85
14		14.8	230			2.10	3.9	2.90
15		14.1	220			1.65	3.8	2.85
16		13.7	235			E	3.5	2.90
17		12.2	230			E	3.2	2.90
18		10.4	265				3.0	2.90
19		(8.4)	315				3.1	(2.90)
20		(7.3)	365				3.8	(2.80)
21		----	340				4.0	----
22		----	390				4.0	----
23		----	385				3.8	----

Time: 30.0°E.
Sweep: 1.4 Mc to 22.0 Mc in 8 minutes, automatic operation.

Table 57

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

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(7.0)	360				4.3	----
01		(6.3)	360				4.3	----
02		(6.5)	350			----	4.2	----
03		(6.0)	340			----	3.8	----
04		(6.0)	290			----	3.6	----
05		(5.9)	270			----	3.5	----
06		(5.6)	250			----	3.2	(2.50)
07		(7.0)	250			1.90	3.6	2.70
08		8.8	250			2.30	3.9	2.80
09		10.3	235			2.65	4.2	2.85
10		11.4	230			2.80	4.4	2.85
11		12.6	225			2.90	4.1	2.85
12		13.2	225			2.90	4.3	2.80
13		13.6	225			2.95	4.2	2.80
14		13.3	225			2.80	4.4	2.80
15		13.4	225			2.60	3.9	2.85
16		12.7	225			2.20	3.9	2.85
17		11.6	230			1.60	3.6	2.85
18		10.0	235			E	3.4	2.85
19		8.5	250			----	3.5	2.85
20		6.8	270				3.2	(2.85)
21		(6.0)	330				3.4	(2.70)
22		(7.0)	355				3.7	----
23		(6.4)	350				3.6	(2.65)

Time: 30.0°E.
Sweep: 1.4 Mc to 22.0 Mc in 8 minutes, automatic operation.

Table 58

Ibadan, Nigeria (7.4°N, 3.9°E) October 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(9.3)	295					(2.40)
01		(9.5)	265					(2.60)
02		(10.1)	250					>2.65
03		(9.8)	250				1.0	2.80
04		9.0	235					2.90
05		(7.6)	220				1.4	3.05
06		9.6	260		130	2.35		2.95
07		12.4	250		115	3.25	3.6	2.80
00		13.8	240		110	3.85	5.7	2.55
09		14.4	225		110	4.10	10.8	2.30
10		14.1	215	---	110	4.35	11.0	2.05
11		13.2	210	---	110	(4.50)	10.8	2.00
12		12.8	210	---	110	(4.50)	11.1	2.00
13		12.8	215	---	110	4.40	10.9	1.95
14		12.3	220	---	110	4.20	11.1	1.95
15		12.2	225	---	110	3.80	(10.7)	1.90
16		(11.8)	250	---	110	3.30	8.7	(1.90)
17		(10.9)	295		115	2.45	>4.5	(1.90)
18		>10.0	395		---	(1.30)		<1.95
19		(8.2)	510					(1.80)
20		(8.1)	490					(1.95)
21		<8.2	395					(2.05)
22		(8.4)	340					(2.20)
23		(8.4)	330					(2.20)

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

Table 59

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

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(14.9)	<300				<1.2	(3.00)
01		(14.2)	(280)					(3.10)
02		----	260					----
03		(9.1)	(290)					(2.75)
04		(9.0)	<300					(2.80)
05		(9.2)	<300				1.1	2.85
06		(9.6)	300		---	---	1.6	(2.95)
07		(12.5)	250		---	---	3.0	(3.20)
08	(250)	(13.0)	<250		110	3.4	3.8	(3.30)
09	---	(13.8)	240		110	3.8	4.4	(2.85)
10	---	14.1	240		110	4.1	4.5	2.75
11	(460)	14.6	230	8.0	115	(4.2)	4.4	2.70
12	450	14.9	230	7.6	115	(4.3)		2.70
13	450	15.0	240	7.3	115	(4.2)		2.70
14	450	(14.6)	230	7.1	115	4.3		(2.60)
15	450	(14.5)	<250	7.0	115	4.1	4.2	(2.60)
16	450	(14.1)	250	---	115	3.9	4.3	(2.65)
17	---	(13.5)	260		115	3.3	4.3	2.70
18	---	(13.6)	290		110	2.5	4.3	(2.70)
19	---	(13.6)	320				4.2	2.70
20		----	320				3.9	(2.70)
21		(14.6)	330				3.4	----
22		----	310				2.6	----
23		----	<300				<1.3	----

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

Table 60

Macquarie I. (54.5°S, 159.0°E) October 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		---	(330)				4.0	---
01		(5.2)	(310)				3.0	(2.3)
02		(4.6)	330				3.4	(2.2)
03		4.5	340				2.4	..25
04		(5.0)	320		---	1.5	2.2	(2.4)
05		6.0	280		100	2.3		2.6
06		7.0	260		100	3.0		2.5
07	---	6.9	250	---	100	3.3		2.5
00	(550)	7.0	240	5.4	100	3.6		2.35
09	530	7.5	230	5.5	100	3.7		2.3
10	500	7.8	230	5.6	100	3.8		2.35
11	460	8.6	220	6.0	100	3.9		2.4
12	450	8.6	230	5.9	100	3.9		2.3
13	450	9.0	220	6.0	100	3.8		2.3
14	(440)	8.7	230	5.5	100	3.6		2.35
15	(450)	8.9	240	---	100	3.5		(2.4)
16	---	(8.9)	250	---	100	3.0		(2.4)
17	---	---	260		100	2.6		---
18		(6.2)	280		110	2.0		---
19		(6.8)	300		---	E	2.5	(2.25)
20		---	320				3.7	---
21		---	(320)				4.0	---
22		---	(330)				4.0	---
23		(5.5)	340				4.0	---

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

Table 61

Narsarssuak, Greenland (61.2°N, 45.4°W) August 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		---	360				3.4	----
01		(5.6)	365				3.1	----
02		(5.2)	(335)				2.9	(2.60)
03		(4.8)	(310)				3.0	(2.68)
04		(4.8)	<310		---	----		(2.85)
05		5.35	270		129	2.00		2.98
06		6.0	255		---	----		2.92
07		6.7	270		111	----		2.95
08	---	6.6	245	---	<117	(3.25)		2.90
09	---	6.95	240	---	112	3.40		2.82
10	(370)	7.0	<235	---	111	3.45		2.80
11	(445)	7.1	240	(5.1)	111	3.50		2.65
12	420	7.3	230	5.2	115	(3.50)		2.60
13	440	7.3	230	5.2	111	3.50		2.55
14	(450)	7.2	(230)	5.0	111	(3.50)		2.50
15	(460)	7.15	240	5.0	111	3.40		2.65
16	(435)	6.5	<270	---	111	3.15		2.55
17	(385)	6.7	285	---	117	2.80		2.65
18		6.25	280		120	2.60	2.7	2.70
19		6.3	300		---	----		2.60
20		5.95	310		---	----	2.5	2.70
21		5.0	345		---	----	4.6	2.52
22		(4.4)	360				3.6	(2.48)
23		(5.3)	360				3.9	----

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

Table 62

Providenie Bay, U.S.S.R. (64.4°N, 186.6°E) May 1957

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	350	5.8						2.3
01	350	5.8						2.3
02	350	6.0						2.3
03	350	6.2	300	3.3	140	2.2		2.3
04	440	6.5	280	3.8	130	2.4		2.2
05	430	6.6	250	4.3	120	2.7		2.3
06	420	7.1	250	4.6	120	3.0		2.3
07	450	6.8	250	4.8	120	3.3		2.3
08	460	7.1	240	4.9	110	3.4		2.3
09	460	7.0	240	5.1	120	3.6		2.4
10	480	6.7	240	5.2	120	3.7		2.6
11	500	6.8	240	5.4	120	3.8		2.4
12	480	6.8	240	5.4	120	3.8		2.4
13	480	6.7	240	5.3	120	3.7		2.4
14	450	6.6	240	5.4	120	3.6		2.5
15	430	6.7	240	5.3	120	3.4		2.5
16	350	6.9	250	5.0	120	3.2		2.5
17	300	7.0	250	4.8	110	3.0		2.6
18	270	7.2	260	4.6	120	2.6		2.6
19	280	7.2			140	2.5		2.6
20	280	7.2			140	2.2		2.6
21	280	6.7						2.6
22	300	6.3						2.4
23	300	5.6						2.3

Time: 180.0°E.
Sweep: 1.0 Mc to 18.0 Mc in 10 minutes, semi-automatic operation.

Table 63

Yakutsk, U.S.S.R. (62.0°N, 129.7°E) May 1957

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	8.1						2.6
01	300	(7.4)						2.6
02	300	(7.0)						2.6
03	300	(7.0)						2.6
04	300	(7.0)	260	3.2	---	E		2.6
05	320	7.2	250	3.9	120	2.4		2.6
06	340	7.1	240	4.4	100	2.8		2.6
07	380	7.0	230	4.7	100	3.0		2.6
08	390	(7.2)	230	4.9	90	3.2		2.7
09	290	(7.4)	230	5.2	90	3.3		2.6
10	(390)	(7.8)	210	5.3	90	3.2		(2.7)
11	(360)	(7.8)	220	5.5	80	3.4		(2.7)
12	350	(7.4)	230	---	90	3.3		2.6
13	400	7.5	210	5.8	90	3.5		2.7
14	380	7.6	220	5.8	80	3.4		2.7
15	380	7.4	220	5.6	90	3.4		2.7
16	300	7.6	230	5.2	90	3.2		2.7
17	330	7.6	230	(5.0)	90	3.2		2.7
18	330	7.8	240	5.0	100	2.0		2.7
19	280	7.9	250	4.3	100	2.6		2.7
20	260	8.0	250		150	2.4		2.7
21	260	8.4			---	E		2.7
22	270	8.4			---	E		2.7
23	280	8.3						2.6

Time: 135.0°E.
Sweep: 2.2 Mc to 16.0 Mc in 1 minute.

Table 64

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	4.9						---
01	300	5.0						---
02	300	5.0						---
03	300	5.2						---
04	300	7.0						---
05	290	7.3	240	---	100	2.5		---
06	310	7.9	220	4.7	100	2.8		---
07	400	7.8	230	4.8	100	3.1		2.8
08	400	8.0	220	5.0	100	3.3		2.8
09	400	8.0	220		100	3.3		2.6
10	(420)	8.2	220	5.3	100	3.3		2.6
11	(420)	8.3	220		100	3.4		2.6
12	400	8.6	220	5.2	100	3.3		2.6
13	(390)	8.5	220	5.3	100	3.3		2.6
14	(410)	8.4	220	5.2	100	3.3		2.7
15	370	8.4	220	5.1	100	3.3		2.7
16	350	8.4	220		100	3.3		2.8
17	260	8.3	250	4.8	100	3.1		2.8
18	270	8.4	240	---	100	2.8		2.8
19	250	8.1			100	(2.4)		---
20	250	8.3						---
21	250	(8.1)						---
22	270	8.6						---
23	290	4.9						---

Time: 30.0°E.
Sweep: 2.2 Mc to 16.0 Mc in 1 minute.

Table 65

Sverdlovsk, U.S.S.R. (56.7°N, 61.1°E) May 1957

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	340	7.0						2.5
01	340	6.7						2.4
02	340	6.4						2.4
03	340	6.0						2.4
04	340	6.4			---	1.9		2.4
05	320	7.0	280	---	140	2.4		2.5
06	380	7.5	270	4.7	130	2.7		2.5
07	390	7.6	260	4.9	120	3.1		2.5
08	400	7.9	250	5.2	120	3.4		2.5
09	420	8.1	250	5.3	120	3.6		2.4
10	400	8.6	240	5.5	110	3.7		2.5
11	380	9.0	240	5.7	110	3.8		2.5
12	400	9.1	240	5.8	110	3.8		2.5
13	400	9.2	240	5.7	110	3.8		2.5
14	400	8.7	240	5.6	120	3.7		2.5
15	370	8.7	250	5.4	120	3.6		2.5
16	340	8.5	250	5.3	120	3.4		2.6
17	310	8.2	260	5.0	120	3.2		2.6
18	280	8.2	270	---	130	2.8		2.7
19	280	8.1			130	2.4		2.7
20	290	7.9			140	1.9		2.7
21	300	7.8						2.6
22	300	7.6						2.6
23	320	7.4						2.5

Time: 60.0°E.
Sweep: 1.5 Mc to 18.0 Mc in 10 minutes, manual operation.

Table 66

Chita, U.S.S.R. (52.0°N, 113.5°E) May 1957

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	8.1						2.6
01	300	7.7						2.5
02	300	7.3						2.5
03	300	6.9						2.6
04	300	6.9			---	(1.7)		2.6
05	290	7.1			130	(2.2)		2.6
06	280	7.5	260	4.2	120	(2.7)		2.7
07	330	8.0	250	4.6	120	(3.0)		2.7
08	360	8.0	240	5.1	120	(3.3)		2.6
09	410	7.9	240	5.6	110	(3.6)		2.6
10	420	8.1	240	5.8	110	(3.7)		2.5
11	410	8.4	230	5.6	110	(3.8)		2.6
12	420	8.7	230	6.0	110	(3.9)		2.5
13	380	8.9	230	6.0	110	(3.9)		2.6
14	400	8.8	240	6.0	120	(3.8)		2.6
15	390	9.1	240	5.8	120	(3.7)		2.6
16	340	9.0	240	5.4	110	(3.6)		2.7
17	320	8.9	240	5.0	120	(3.3)		2.7
18	300	8.8	250	4.4	120	(2.9)		2.7
19	280	8.8			120	(2.5)		2.7
20	280	8.8			130	(2.1)		2.7
21	280	8.7			---	(1.6)		2.6
22	280	8.7						2.6
23	290	8.5						2.6

Time: 120.0°E.
Sweep: 1.0 Mc to 18.0 Mc in 5 minutes, semi-automatic operation.

Table 67

Rostov-on-Don, U.S.S.R. (47.2°N, 39.7°E) May 1957

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	320	7.4						2.4
01	320	7.4						2.5
02	330	7.2						2.4
03	330	6.8						2.4
04	330	6.9						2.4
05	300	7.1			140	1.8		2.6
06	300	8.6	270	4.3	130	2.S		2.7
07	300	8.7	2S0	5.5	120	3.1		2.7
08	320	9.2	2S0	5.2	120	3.S		2.6
09	350	9.2	250	5.S	120	3.7		2.6
10	350	9.2	2S0	5.1	120	3.8		2.6
11	410	9.3	2S0	6.0	120	3.9		2.S
12	350	9.4	24u	6.1	120	4.1		2.S
13	360	9.2	240	S.8	120	3.9	—	2.6
14	380	9.3	240	6.2	120	3.8		2.6
1S	400	9.6	240	6.0	120	3.8		2.6
16	350	9.2	240	S.8	120	3.6		2.6
17	300	9.2	2S0	5.2	120	3.4		2.6
18	300	9.2	260	4.4	120	3.0		2.8
19	280	8.6	270	3.S	130	2.4		2.8
20	280	9.0						2.7
21	280	8.0						2.6
22	300	7.6						2.6
23	320	7.5						2.4

Time: 45.0°E.
Sweep: 1.6 Mc to 10.0 Mc in 10 minutes, manual operation.

Table 68

Yuzhno-Sakhalinsk, U.S.S.R. (47.0°N, 143.0°E) May 19S7

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	8.2						2.6
01	300	8.2						2.6
02	300	7.8						2.6
03	300	7.6	---	(2.1)				2.6
04	300	7.3	---	(2.0)				2.6
05	300	7.5	---	(2.8)	---	(1.9)		2.5
06	280	7.8	250	3.8	130	2.4		2.6
07	320	8.2	250	4.6	120	2.8		2.6
08	340	8.4	250	S.0	120	3.1		2.7
09	370	8.5	240	5.2	120	3.4		2.6
10	420	8.5	240	S.7	120	3.6		2.6
11	400	8.7	230	S.8	120	3.5		2.6
12	400	8.9	240	6.0	120	3.S		2.S
13	400	8.9	230	5.8	120	3.4		2.6
14	400	9.0	240	S.8	120	3.6		2.6
15	380	9.0	250	5.8	120	3.2		2.6
16	380	8.6	240	5.4	120	3.4		2.6
17	350	8.5	2S0	5.0	120	3.2		2.7
18	300	8.6	2S0	4.6	120	2.8		2.7
19	280	8.2	270	4.0	120	2.4		2.7
20	280	8.6						2.8
21	290	8.2						2.6
22	300	7.8						2.6
23	300	7.8						2.6

Time: 150.0°E.
Sweep: 1.0 Mc to 18.0 Mc in 10 minutes, semi-automatic operation.

Table 69

Alma-Ata, U.S.S.R. (43.2°N, 76.9°E) May 19S7

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	7.8						2.7
01	300	7.S						2.7
02	300	7.4						2.7
03	300	7.0						2.7
04	300	7.0			(100)	E		2.6
05	250	7.7			100	2.0		2.7
06	2S0	8.7	230	4.4	100	2.7		2.9
07	250	10.0	220	4.8	100	3.3		2.9
08	270	10.S	220	S.4	100	3.7		2.8
09	280	11.0	220	S.8	100	4.0		2.8
10	280	11.4	210	S.7	100	4.1		2.8
11	300	11.7	210	6.1	100	4.3		2.8
12	330	11.9	220	6.2	100	4.5		2.8
13	300	11.8	220	6.1	100	4.3		2.8
14	300	11.4	210	S.9	100	4.2		2.8
15	300	11.3	220	5.6	100	4.0		2.8
16	280	10.6	220	5.5	100	3.7		2.8
17	2S0	10.2	220	4.7	100	3.2		2.9
18	240	9.8	230	4.1	100	2.7		2.9
19	250	9.6			100	1.9		2.9
20	250	9.2			100	1.S		2.9
21	250	8.7						2.8
22	270	8.3						2.7
23	280	8.0						2.8

Time: 75.0°E.
Sweep: 1.6 Mc to 17.0 Mc in 10 to 1S minutes, manual operation.

Table 70

Ashkhabad, U.S.S.R. (37.9°N, 58.3°E) May 19S7

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	320	8.4						2.6
01	310	8.2						2.6
02	310	7.9						2.S
03	310	7.3						2.5
04	330	7.3						2.S
05	300	7.1			120	1.8		2.5
06	270	8.8			120	2.S		2.7
07	280	9.8	2S0	5.1	110	3.0		2.8
08	280	10.0	2S0	5.S	110	3.S		2.7
09	320	10.S	240	6.0	110	3.7		2.7
10	360	11.1	2S0	6.2	100	3.9		2.6
11	370	11.3	230	6.1	100	4.0		2.6
12	370	11.5	230	6.2	110	4.0		2.6
13	360	11.4	240	6.2	110	4.0		2.6
14	360	11.4	250	6.1	110	3.9		2.6
15	350	11.2	2S0	5.9	110	3.8		2.6
16	340	10.4	250	S.8	100	3.6		2.6
17	300	10.4	250	5.1	110	3.3		2.7
18	270	10.6						2.7
19	290	9.8						2.7
20	280	9.0						2.7
21	290	8.S						2.6
22	320	8.6						2.5
23	330	8.S						2.S

Time: 60.0°E.
Sweep: 1.0 Mc to 1S.0 Mc in 10 to 1S minutes, manual operation.

Table 71

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

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		7.0	290				2.2	2.S0
01		6.2	300				2.9	2.S0
02		5.8	295				2.9	2.4S
03		S.0	300					2.40
04		4.6	29S					2.50
05		4.S	300			E		2.S0
06		>S.6	280			(2.00)		2.80
07	---	6.S	2S0	---		2.70	3.0	2.80
08	405	7.1	240	4.8		3.20	3.5	2.80
09	390	7.2	23S	5.2		3.S0	3.8	2.80
10	41S	7.8	230	S.7		3.70	4.0	2.70
11	400	8.1	230	5.6		3.80	4.4	2.70
12	420	8.6	220	6.0		3.80	4.2	2.60
13	435	8.6	235	5.8		>3.8S		2.60
14	410	8.1	230	6.0		(3.80)	3.8	2.5S
15	410	8.0	230	S.6		3.70		2.60
16	385	8.2	230	5.7		3.S0		2.60
17	---	8.0	240	---		3.1S	3.4	2.60
18		8.4	250			2.60	3.0	2.6S
19		8.1	270			(1.80)	2.8	2.6S
20		8.0	275			E		2.60
21		8.0	290				3.4	2.5S
22		8.0	290				3.3	2.50
23		7.4	300				3.5	2.S0

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

Table 72*

Campbell I. (52.5°S, 169.2°E) May 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05	---	1.5					1.9	2.8
06	---	1.6					1.9	2.8
07	260	2.S			110	1.5		3.1
08	240	3.S			120	1.8		3.4
09	240	4.1	220	3.2	120	2.1		3.4
10	240	4.4	210	3.4	110	2.3		3.4
11	260	4.8	220	3.3	110	2.4		3.3
12	260	5.0	230	3.4	110	2.4		3.3
13	250	4.9	230	3.3	110	2.4		3.4
14	240	4.8	220	3.0	110	2.2		3.3
15	250	4.7	230	2.6	110	1.9		3.3
16	240	4.4			120	1.5		3.3
17	240	4.0						3.1
18	250	3.3						3.1
19	250	2.7						2.95
20	350	2.S						2.8
21	---	2.1						2.9
22								
23	---	1.9						(2.7)

Time: 165.0°E.
Sweep: 1.0 Mc to 15.0 Mc in 5 minutes, manual operation.
*Observations taken on an 18-hour working schedule.

USCOMM-NBS-8L

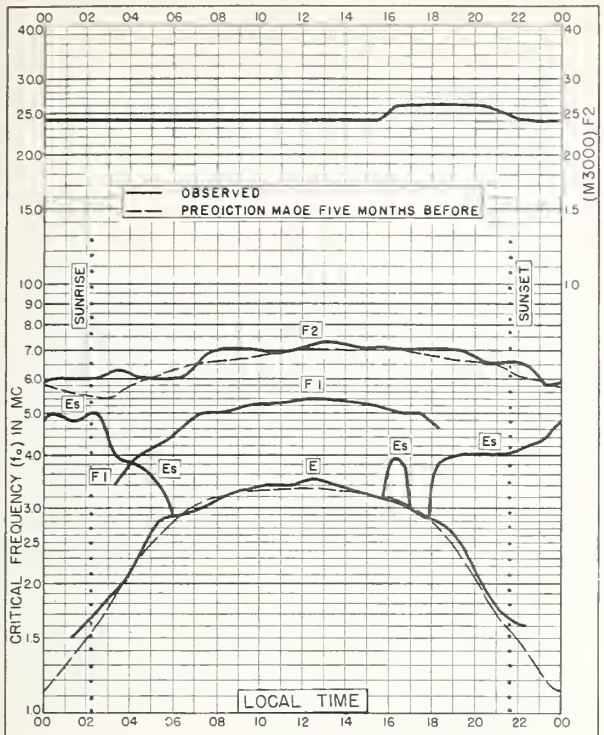


Fig. 1. KIRUNA, SWEDEN
67.8°N, 20.3°E MAY 1958

NBS 503

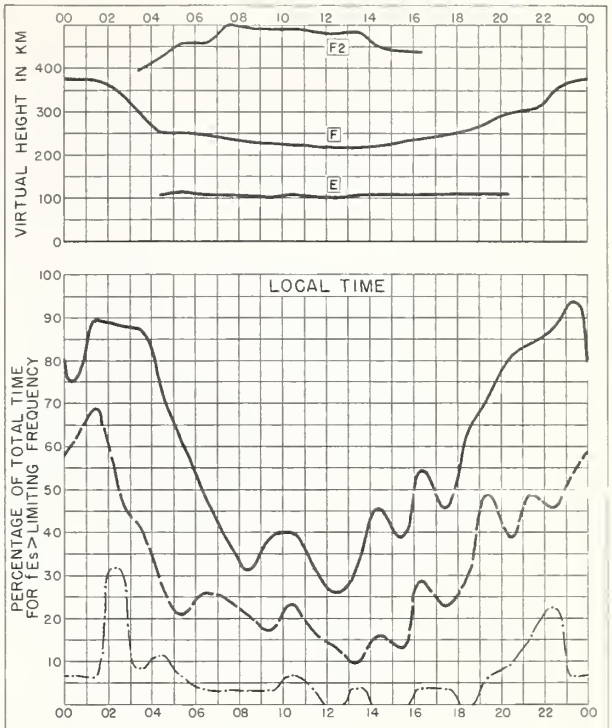


Fig. 2. KIRUNA, SWEDEN MAY 1958

NBS 490

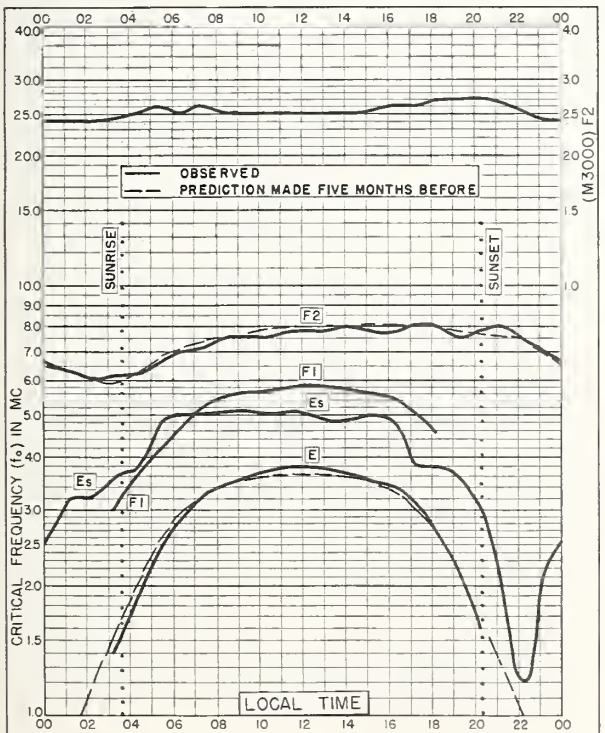


Fig. 3. UPSALA, SWEDEN
59.8°N, 17.6°E MAY 1958

NBS 503

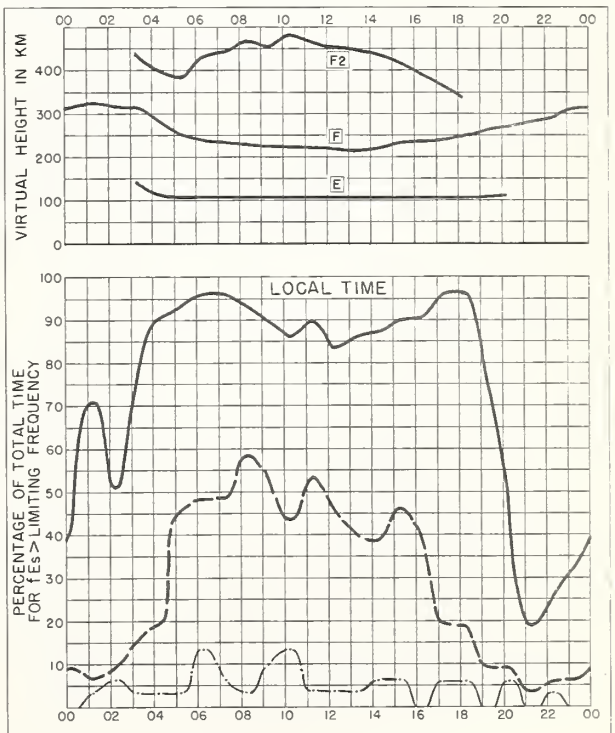


Fig. 4. UPSALA, SWEDEN MAY 1958

NBS 490

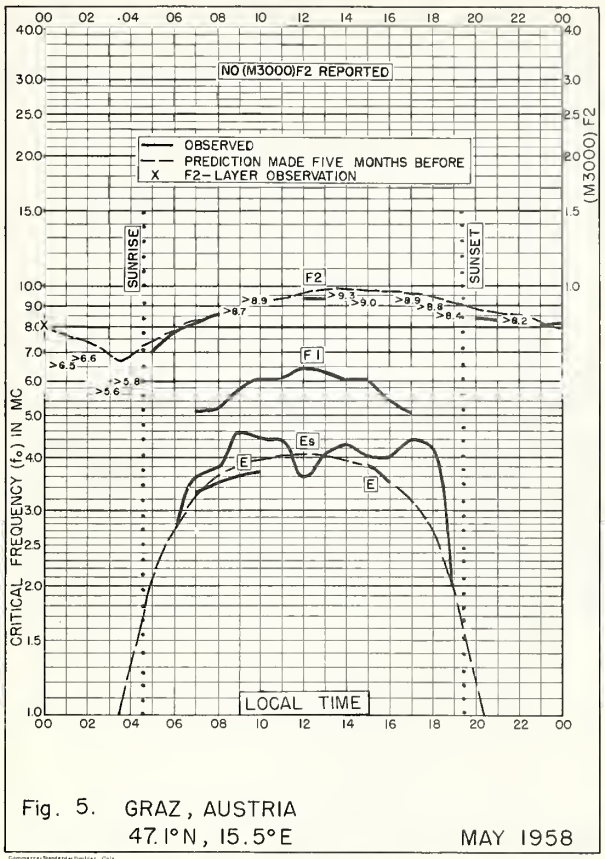


Fig. 5. GRAZ, AUSTRIA
47.1°N, 15.5°E MAY 1958

Commerce-Standards-Boulder, Colo. NBS 503

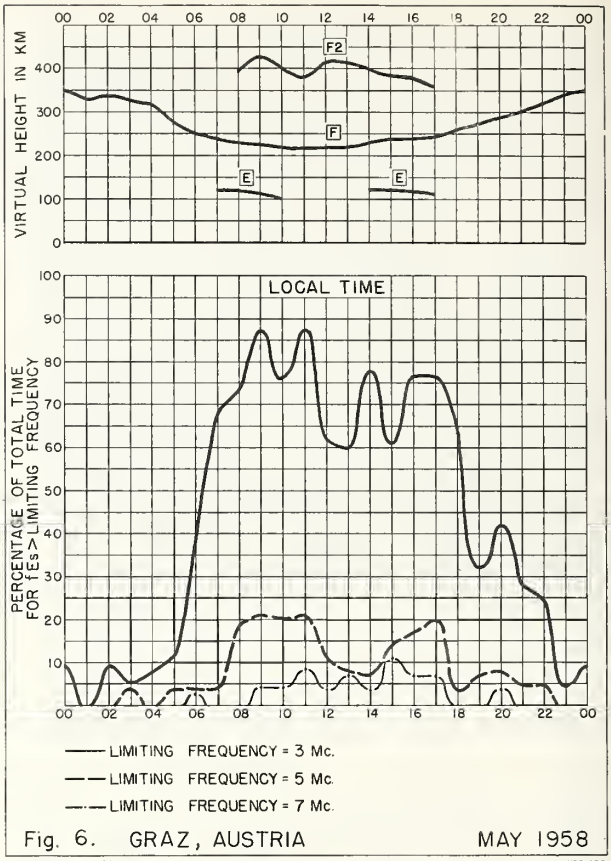


Fig. 6. GRAZ, AUSTRIA MAY 1958

Commerce-Standards-Boulder, Colo. NBS 490

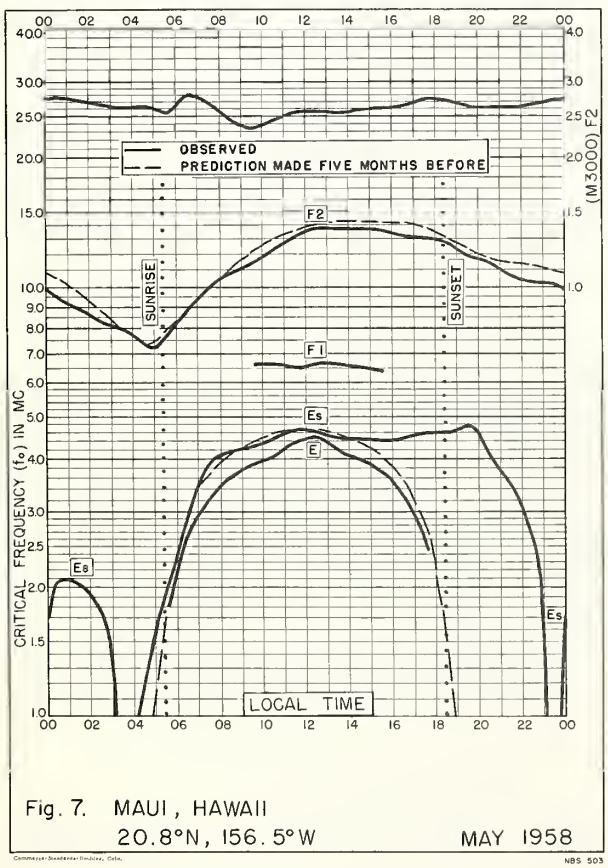


Fig. 7. MAUI, HAWAII
20.8°N, 156.5°W MAY 1958

Commerce-Standards-Boulder, Colo. NBS 503

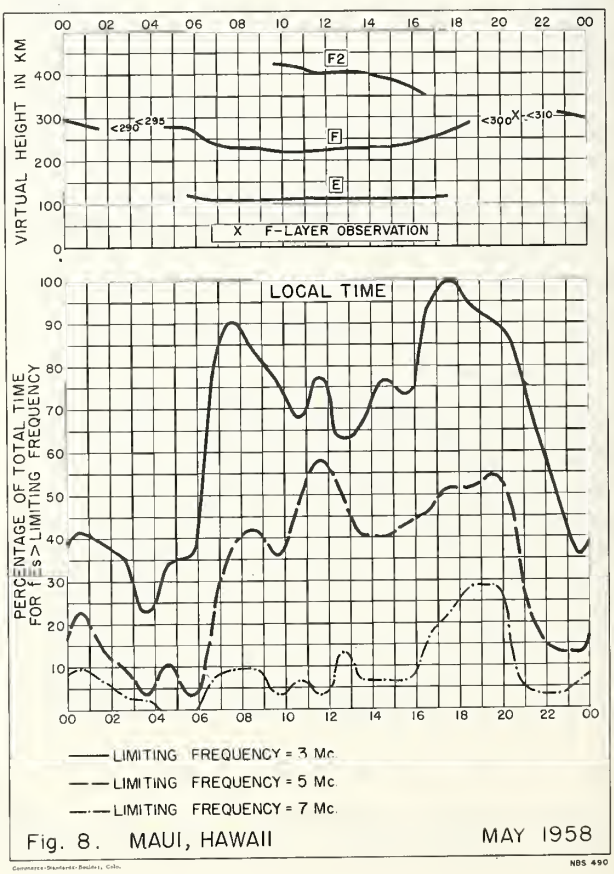


Fig. 8. MAUI, HAWAII MAY 1958

Commerce-Standards-Boulder, Colo. NBS 490

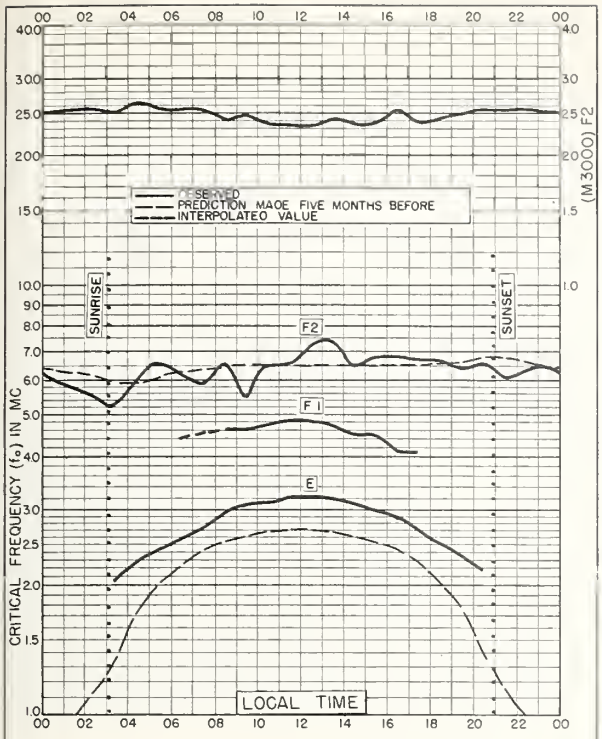


Fig. 9. THULE, GREENLAND
76.6°N, 68.7°W APRIL 1958

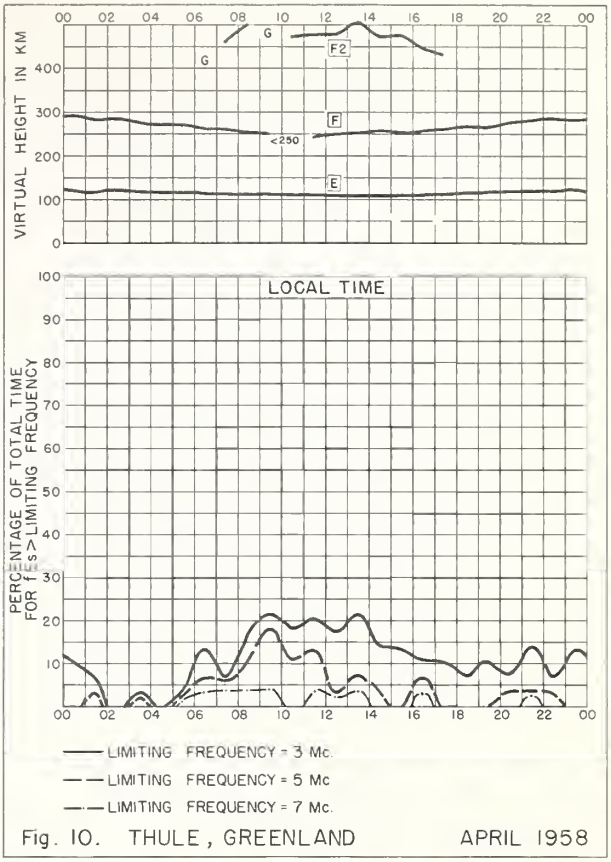


Fig. 10. THULE, GREENLAND APRIL 1958

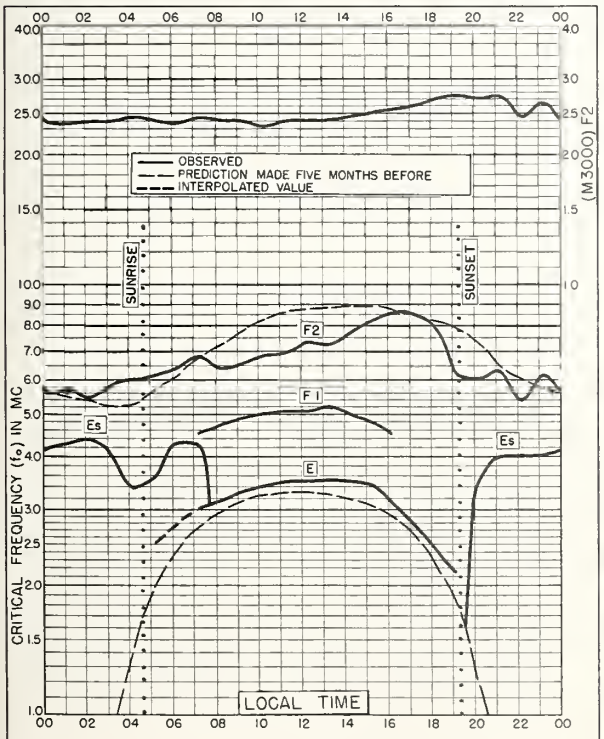


Fig. 11. FAIRBANKS, ALASKA
64.9°N, 147.8°W APRIL 1958

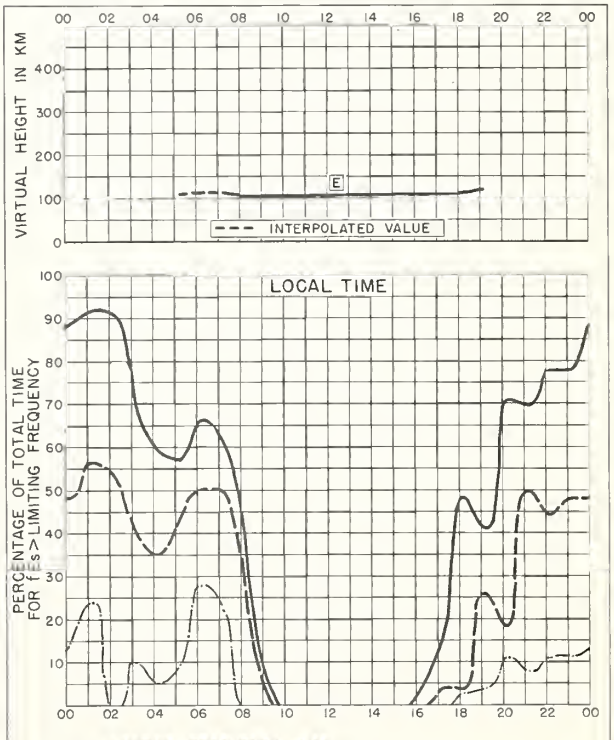


Fig. 12. FAIRBANKS, ALASKA APRIL 1958

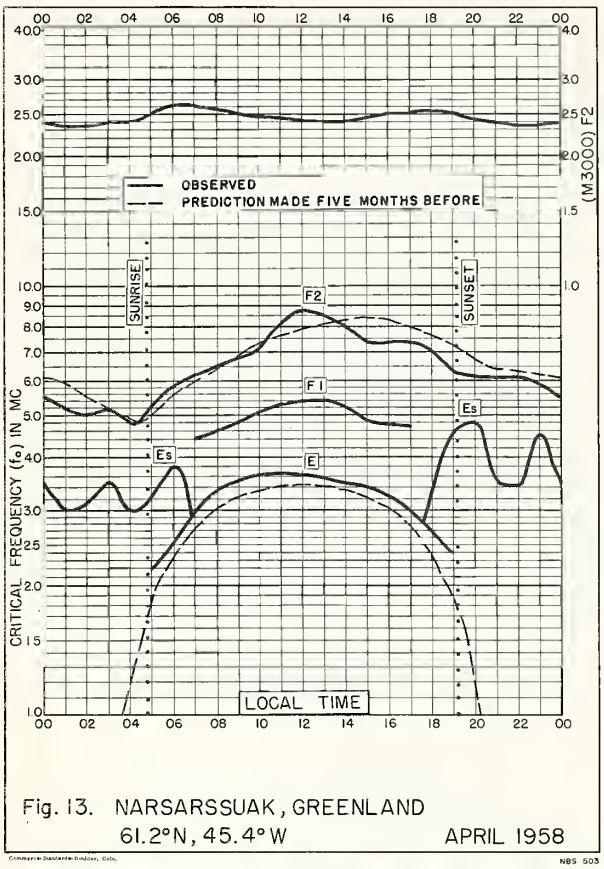


Fig. 13. NARSARSSUAK, GREENLAND
61.2°N, 45.4°W APRIL 1958

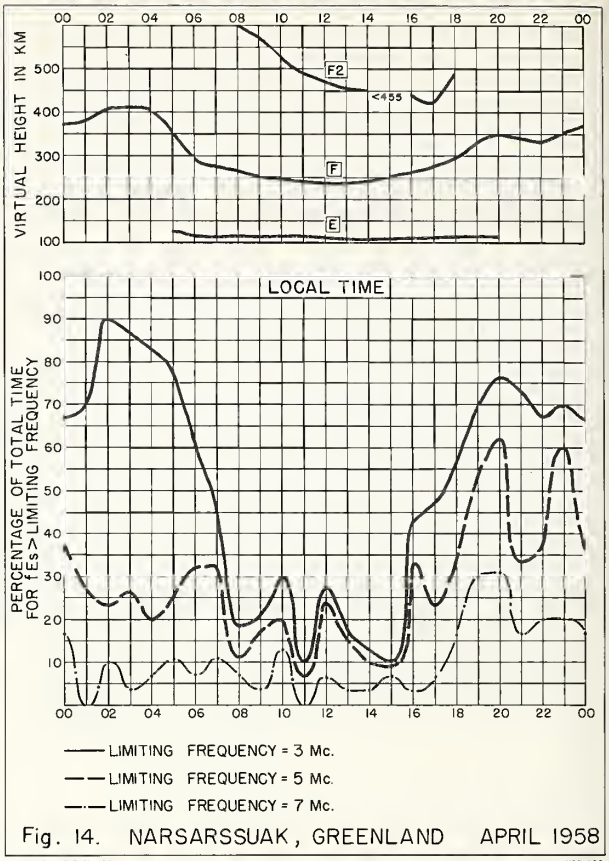


Fig. 14. NARSARSSUAK, GREENLAND APRIL 1958

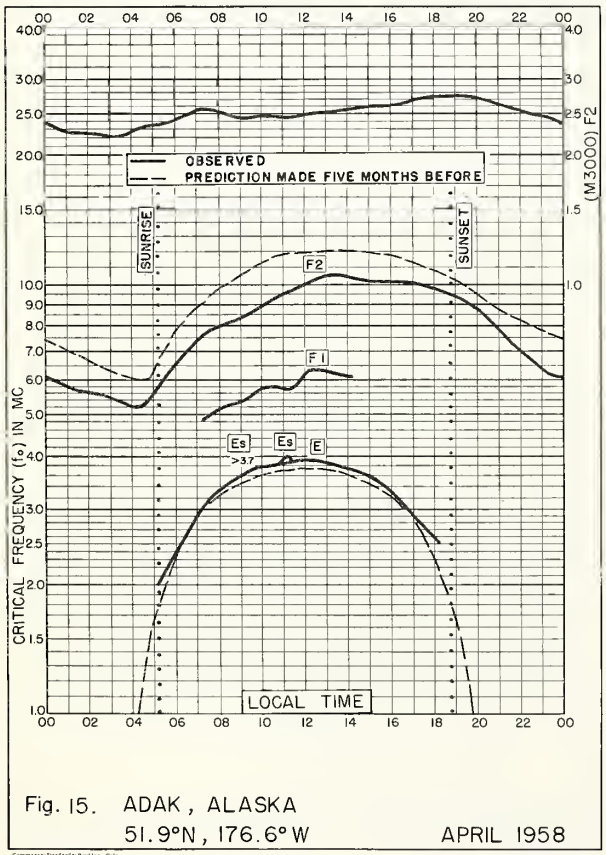


Fig. 15. ADAK, ALASKA
51.9°N, 176.6°W APRIL 1958

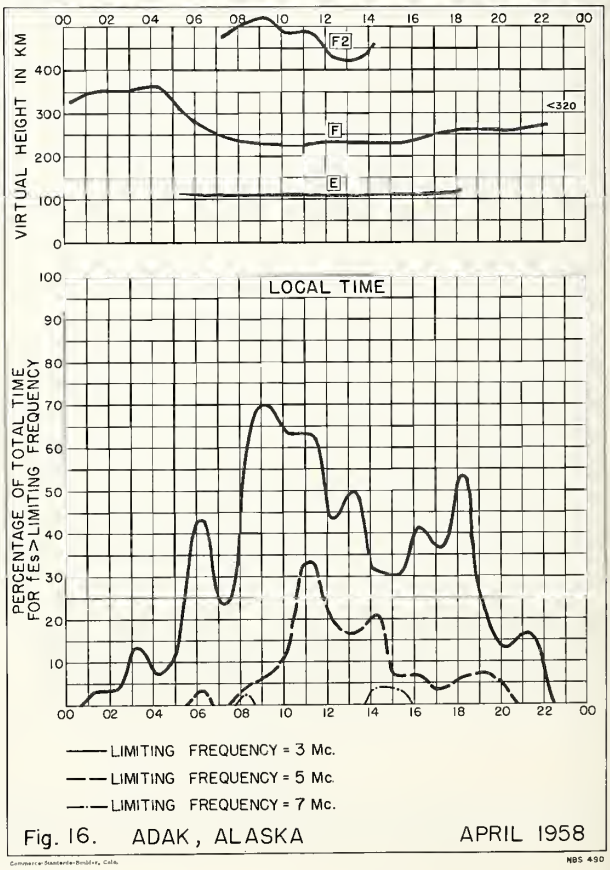


Fig. 16. ADAK, ALASKA APRIL 1958

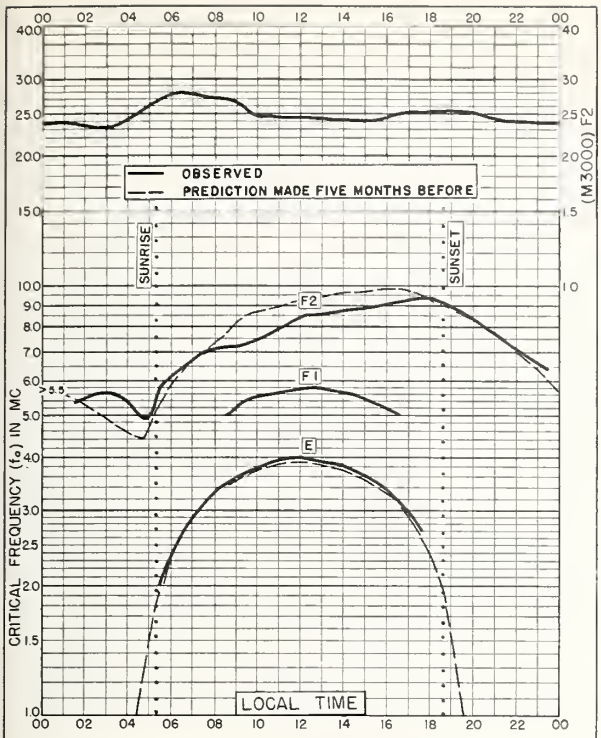


Fig. 17. ST. JOHN'S, NEWFOUNDLAND
47.6°N, 52.7°W APRIL 1958

NBS 503

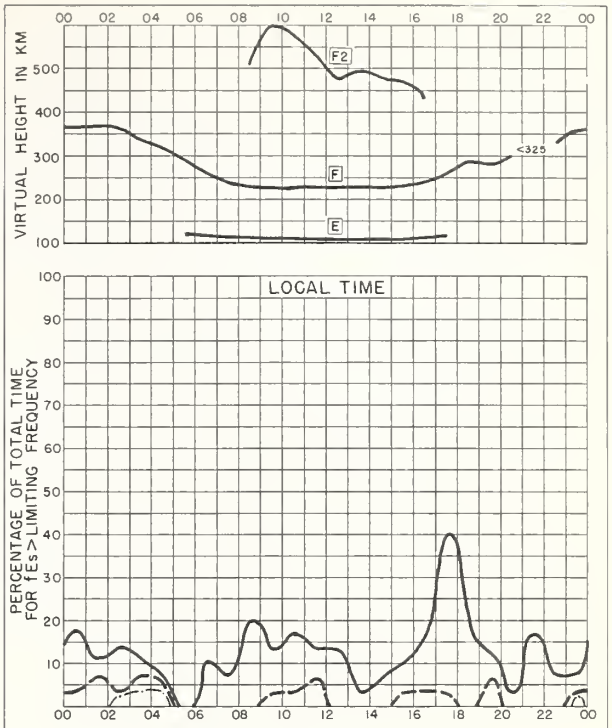


Fig. 18. ST. JOHN'S, NEWFOUNDLAND APRIL 1958

NBS 490

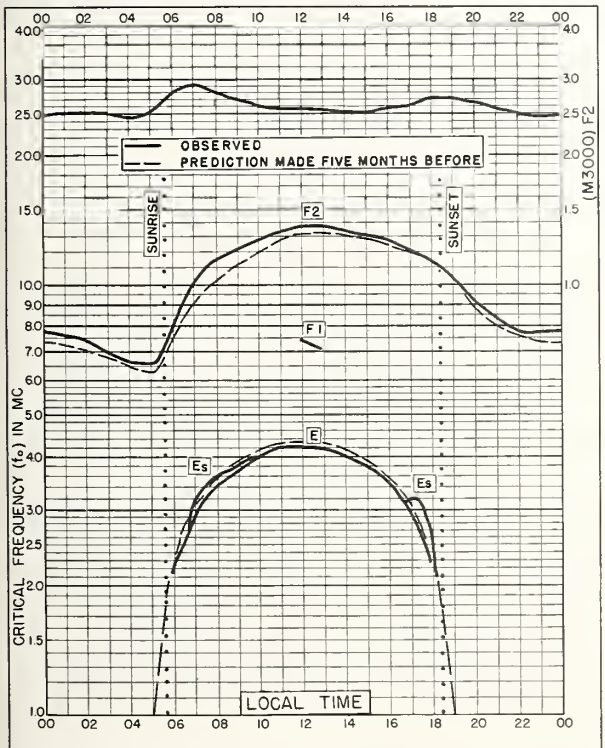


Fig. 19. WHITE SANDS, NEW MEXICO
32.3°N, 106.5°W APRIL 1958

NBS 503

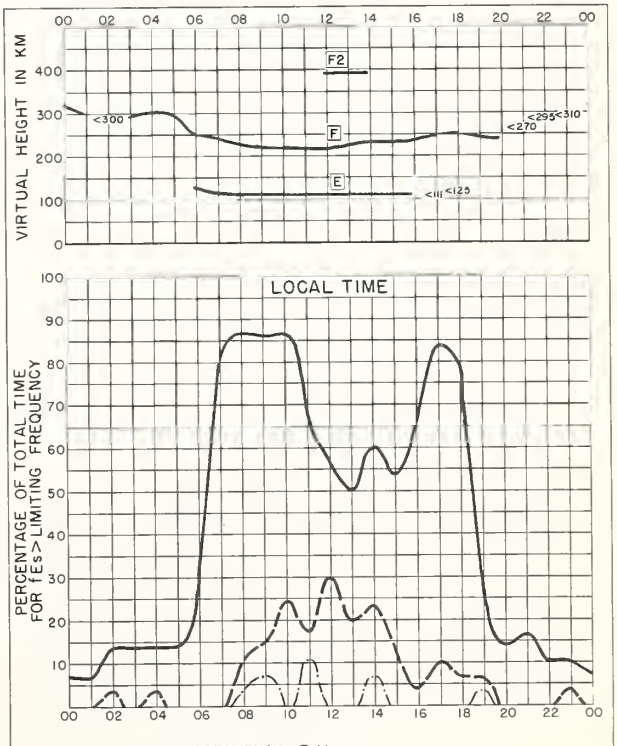


Fig. 20. WHITE SANDS, NEW MEXICO APRIL 1958

NBS 490

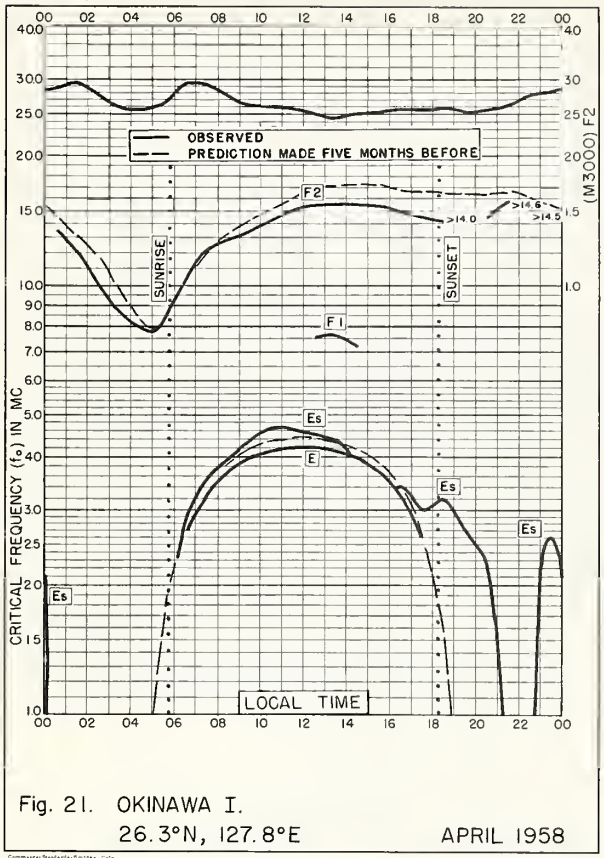


Fig. 21. OKINAWA I.
26.3°N, 127.8°E APRIL 1958

NBS 503

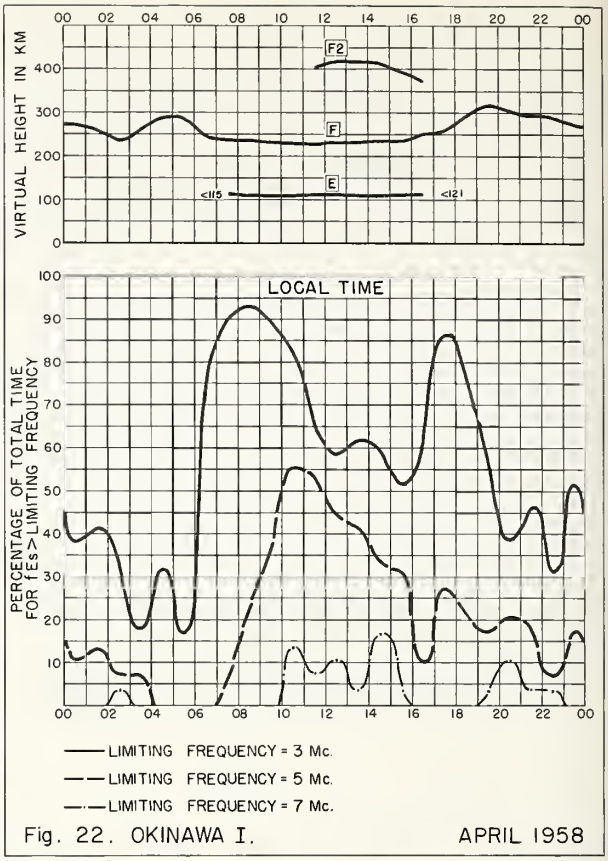


Fig. 22. OKINAWA I. APRIL 1958

NBS 490

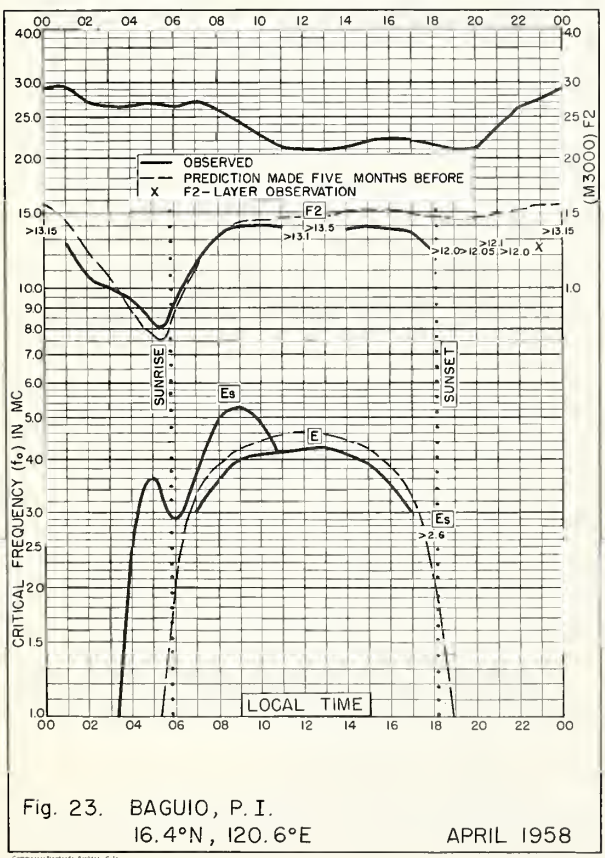


Fig. 23. BAGUIO, P. I.
16.4°N, 120.6°E APRIL 1958

NBS 503

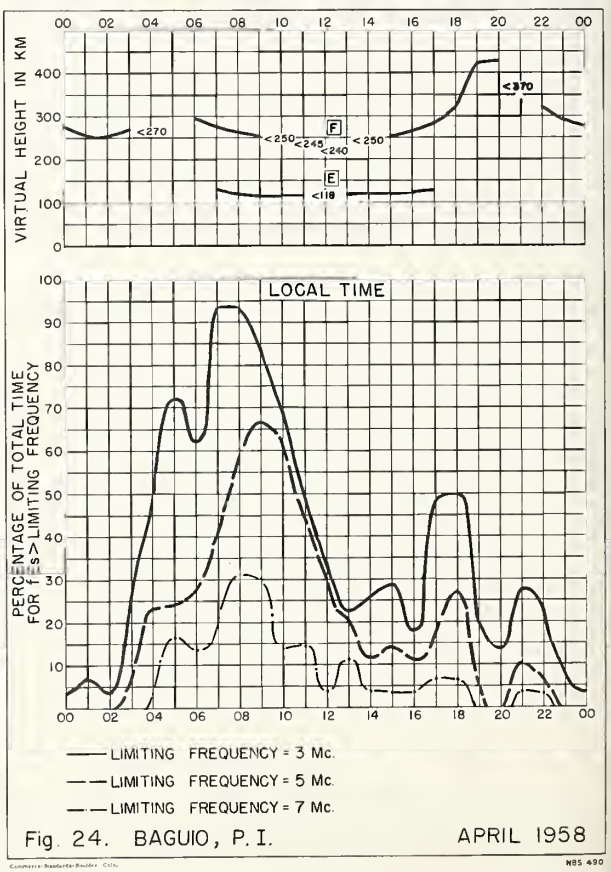


Fig. 24. BAGUIO, P. I. APRIL 1958

NBS 490

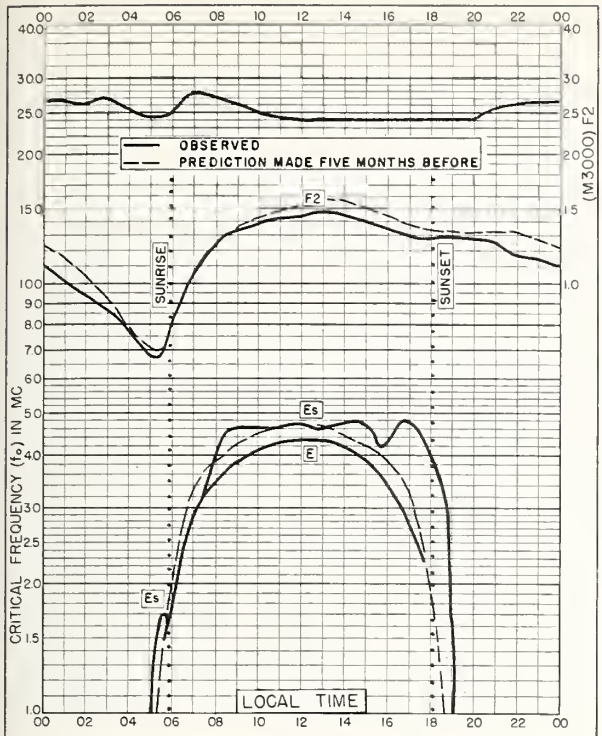


Fig. 25. PANAMA CANAL ZONE
9.4°N, 79.9°W APRIL 1958

NBS 503

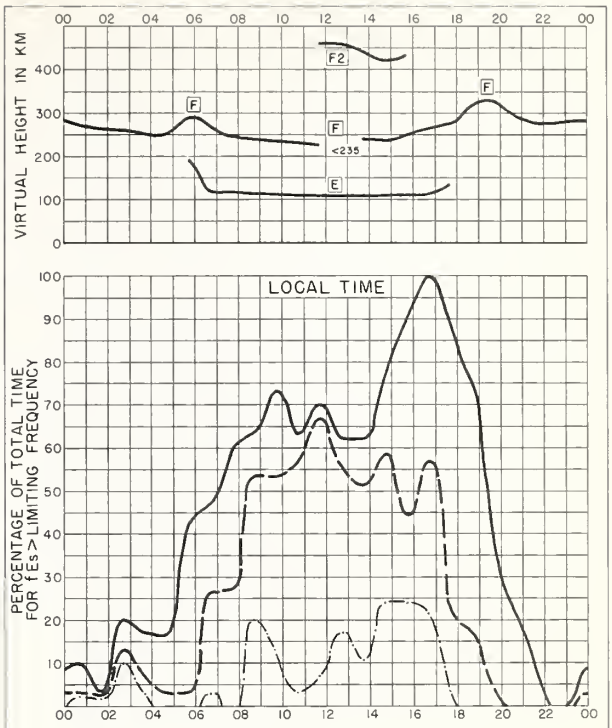


Fig. 26. PANAMA CANAL ZONE APRIL 1958

NBS 490

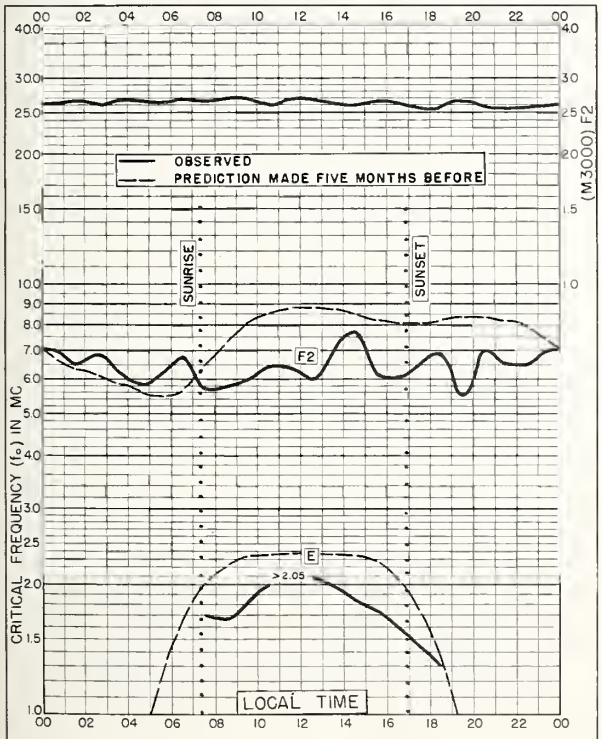


Fig. 27. FLETCHERS ICE I.
80.0°N, 112.0° W MARCH 1958

NBS 503

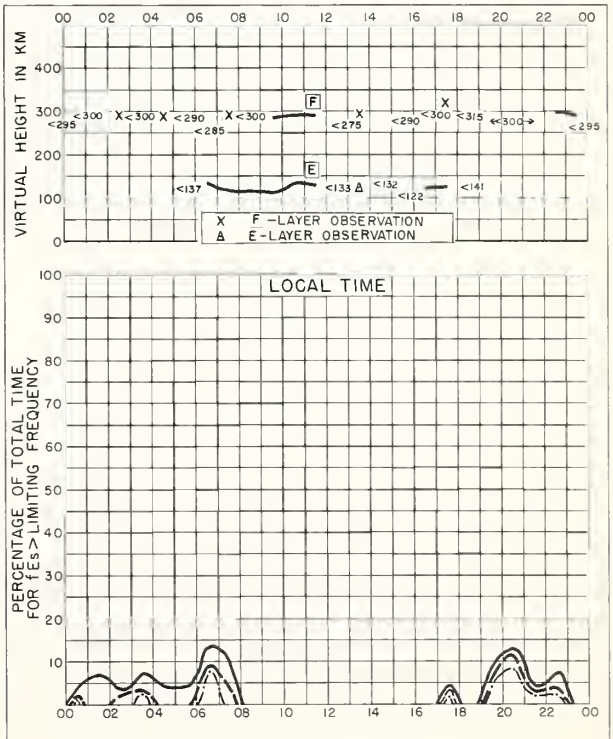


Fig. 28. FLETCHERS ICE I. MARCH 1958

NBS 490

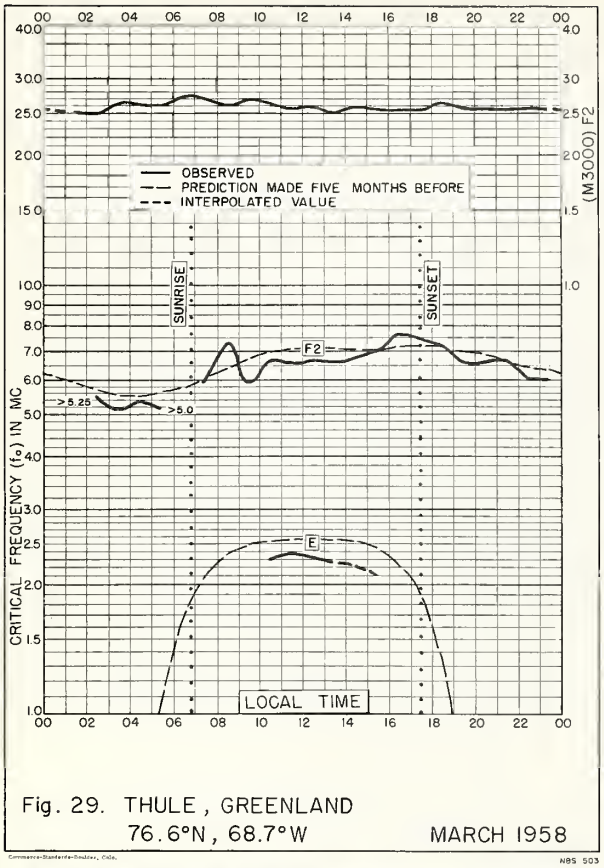


Fig. 29. THULE, GREENLAND
76.6°N, 68.7°W MARCH 1958

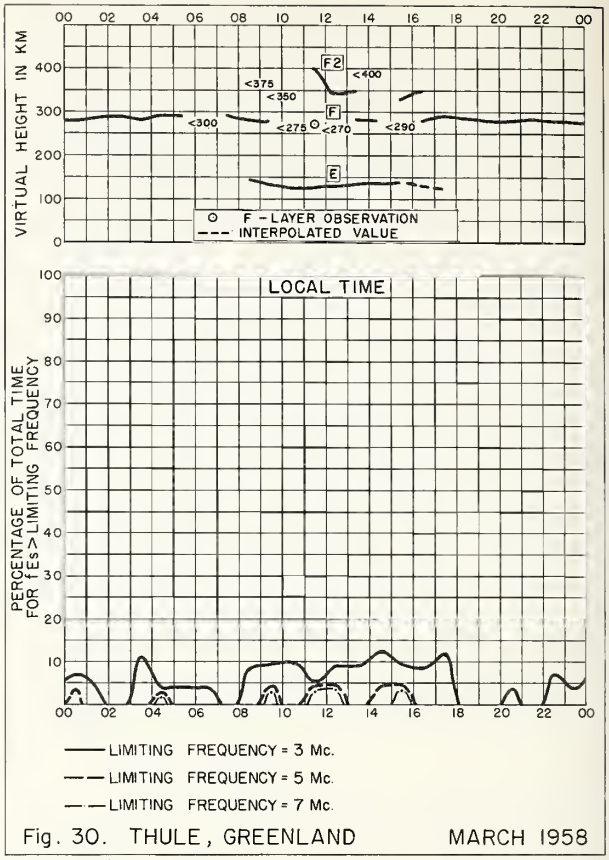


Fig. 30. THULE, GREENLAND MARCH 1958

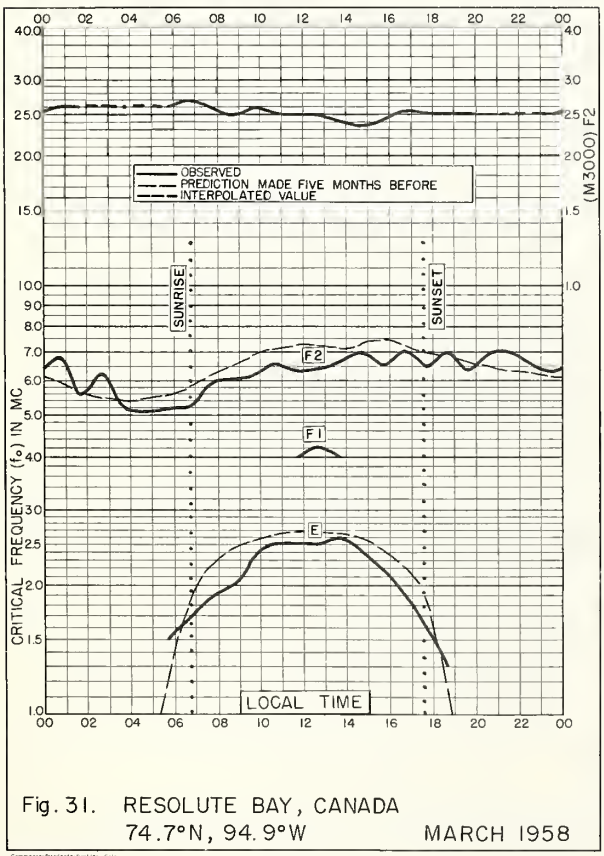


Fig. 31. RESOLUTE BAY, CANADA
74.7°N, 94.9°W MARCH 1958

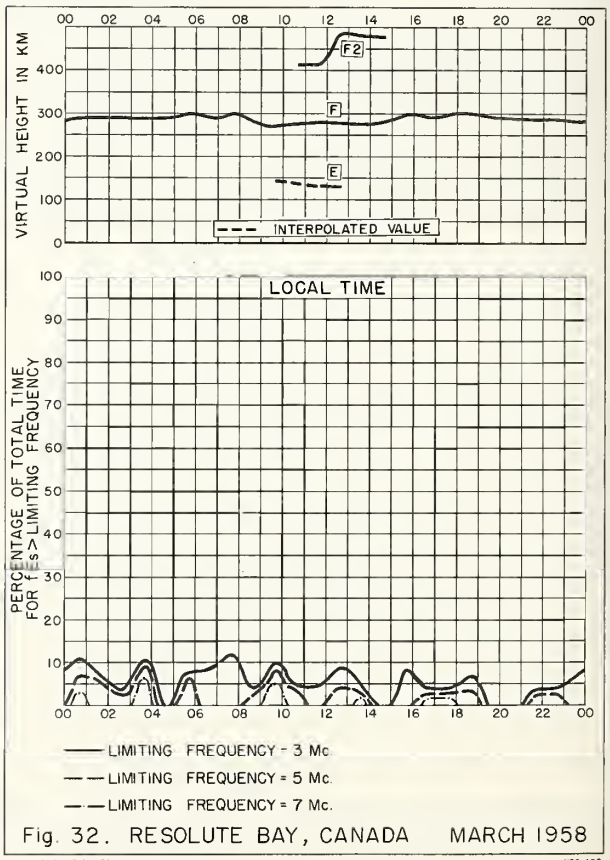


Fig. 32. RESOLUTE BAY, CANADA MARCH 1958

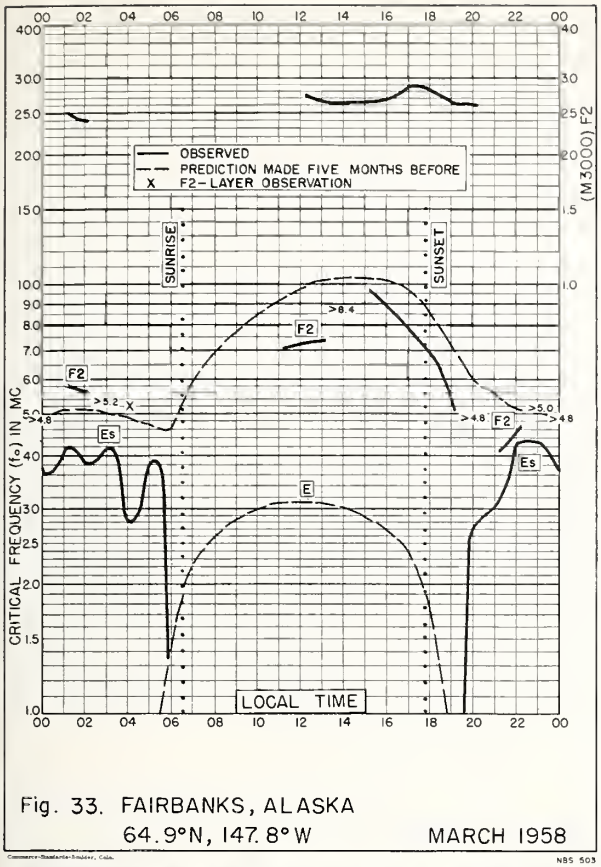


Fig. 33. FAIRBANKS, ALASKA
64.9°N, 147.8°W MARCH 1958

NBS 503

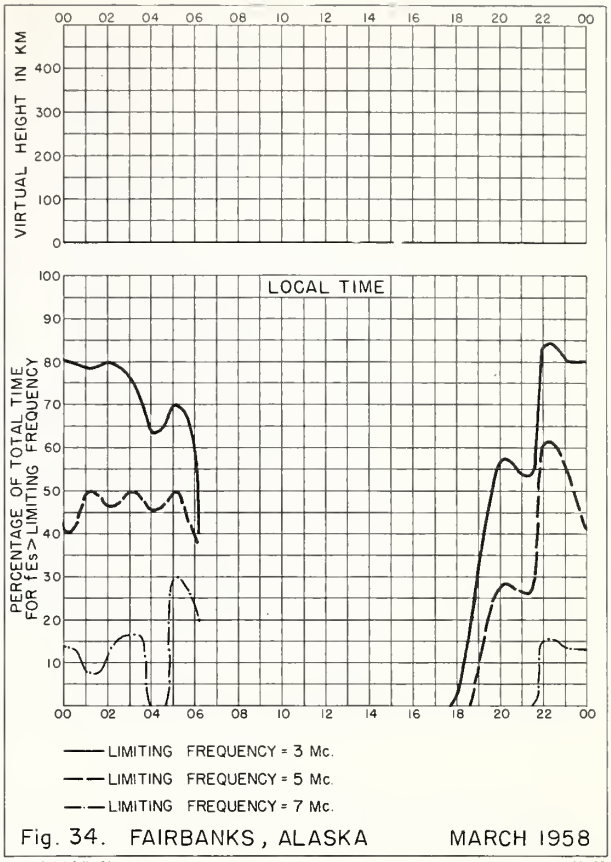


Fig. 34. FAIRBANKS, ALASKA MARCH 1958

NBS 490

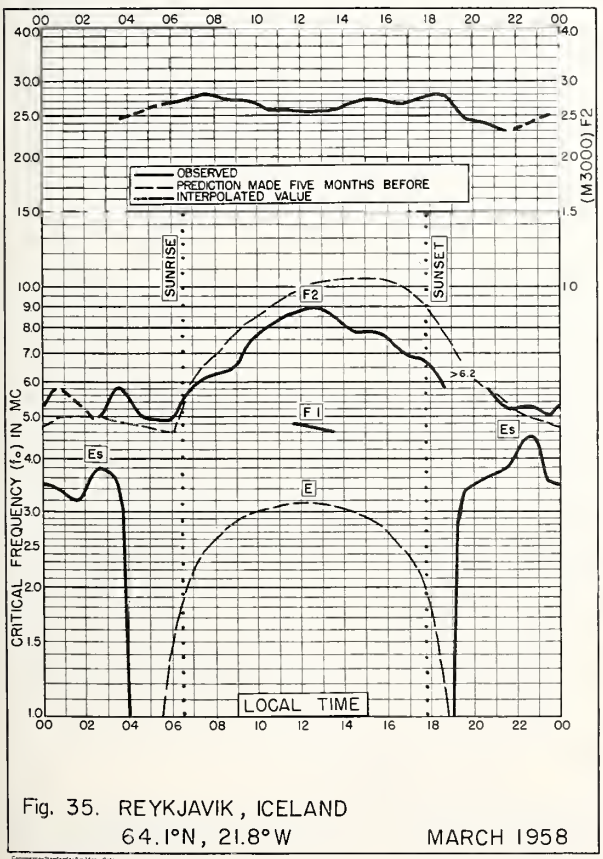


Fig. 35. REYKJAVIK, ICELAND
64.1°N, 21.8°W MARCH 1958

NBS 503

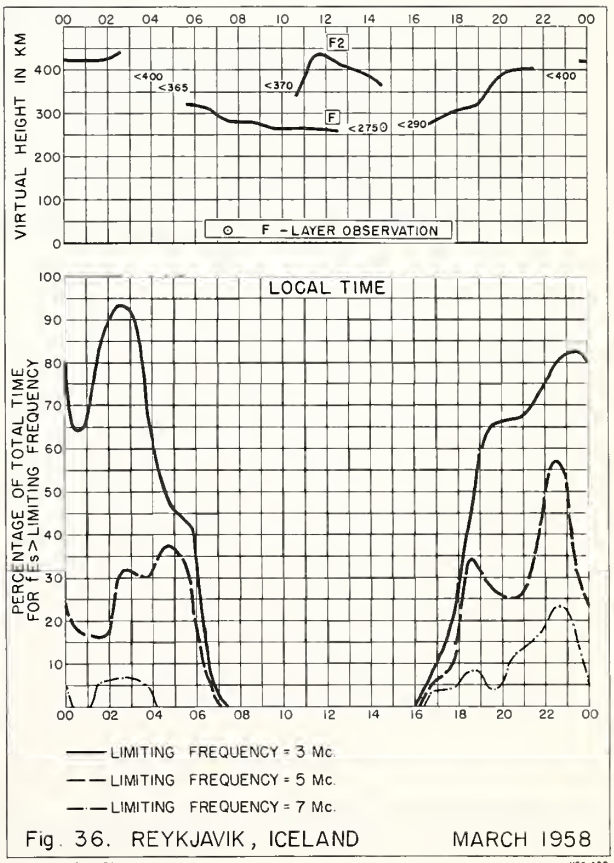


Fig. 36. REYKJAVIK, ICELAND MARCH 1958

NBS 490

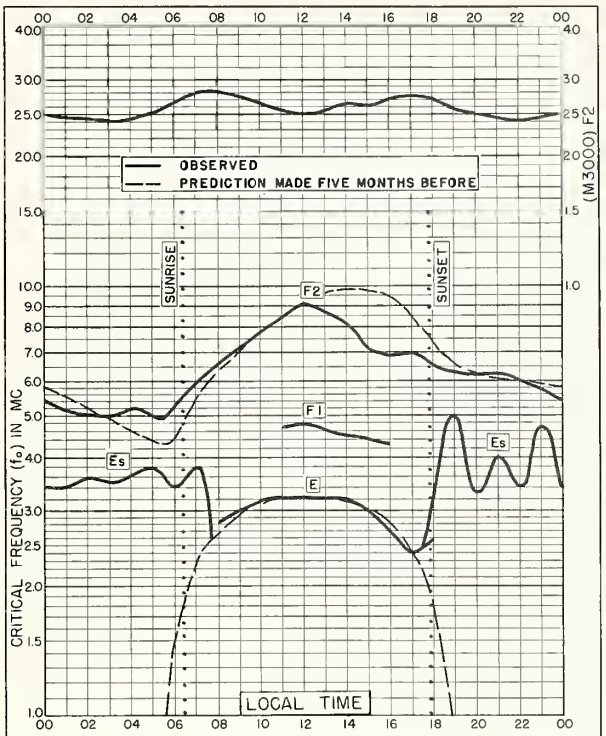
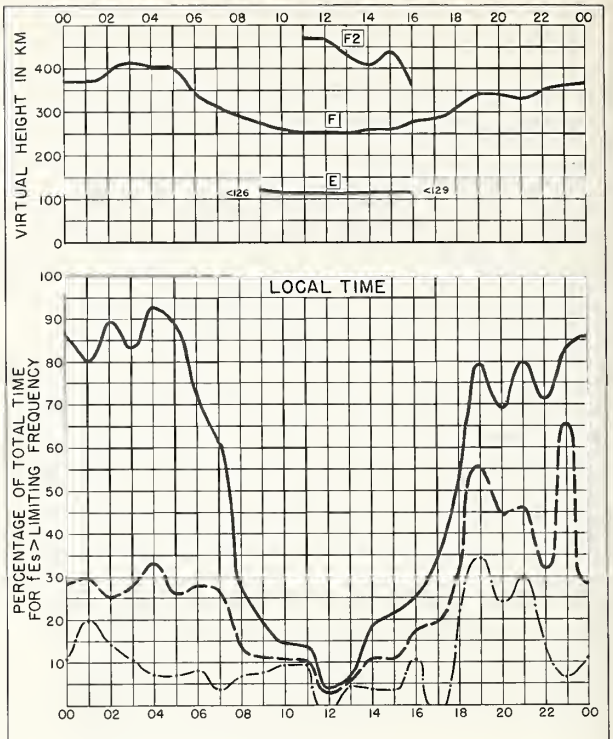


Fig. 37. NARSARSSUAK, GREENLAND
61.2°N, 45.4° W MARCH 1958



MARCH 1958

Fig. 38. NARSARSSUAK, GREENLAND

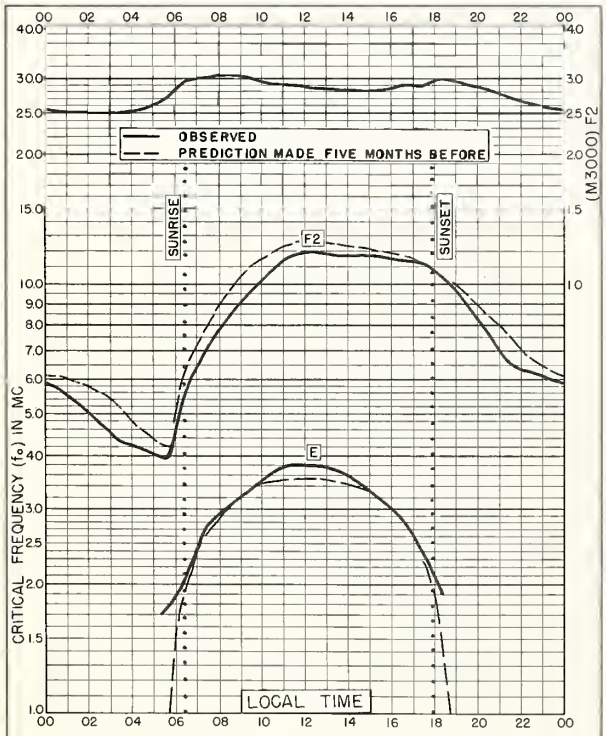


Fig. 39. De BILT, HOLLAND
52.1°N, 5.2°E MARCH 1958

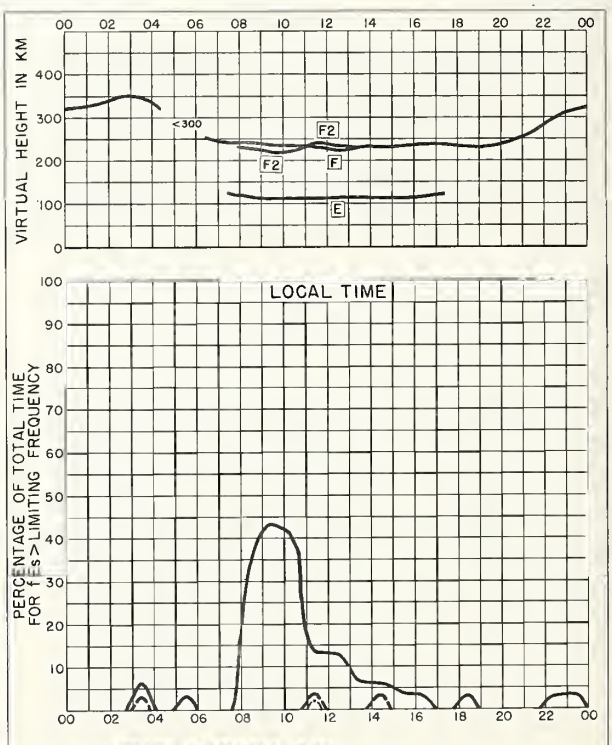


Fig. 40. De BILT, HOLLAND MARCH 1958

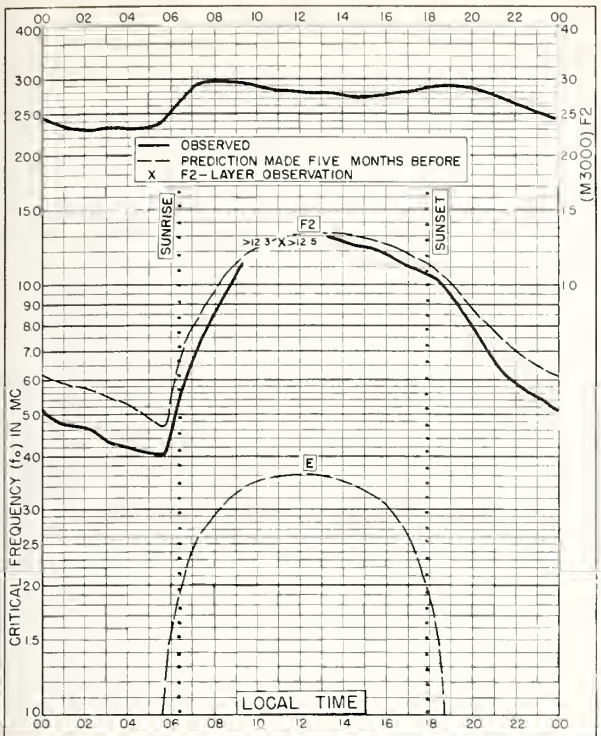


Fig. 41. ADAK, ALASKA
51.9°N, 176.6°W MARCH 1958

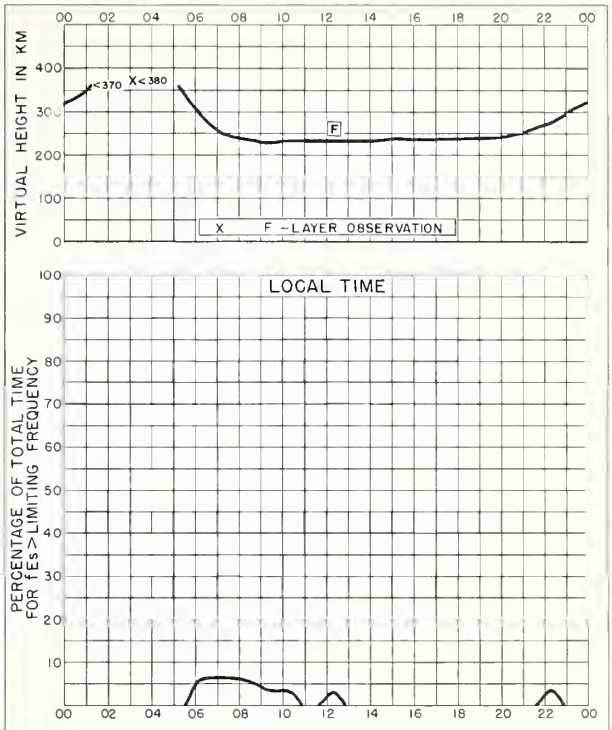


Fig. 42. ADAK, ALASKA MARCH 1958

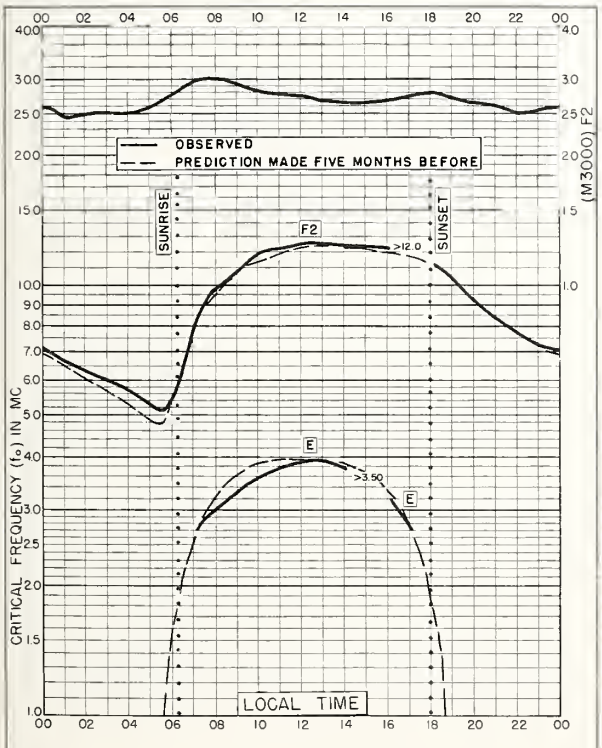


Fig. 43. FT. MONMOUTH, NEW JERSEY
40.4°N, 74.1°W MARCH 1958

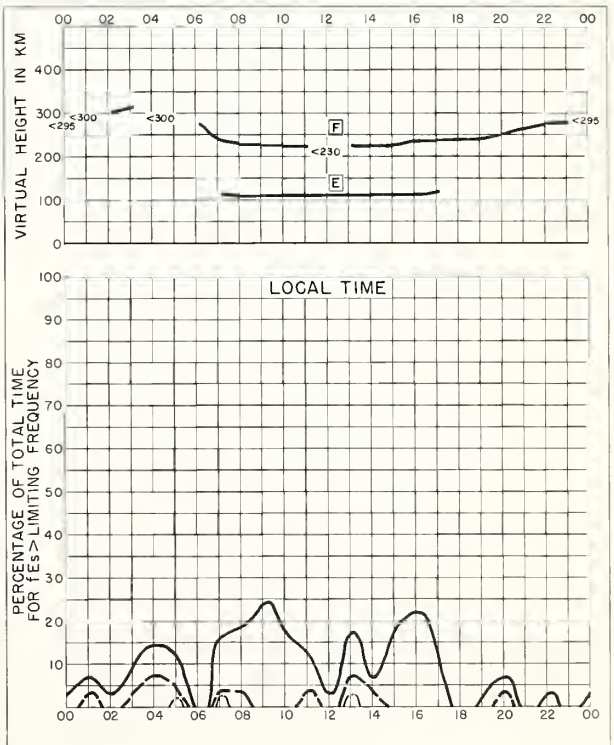


Fig. 44. FT. MONMOUTH, NEW JERSEY MARCH 1958

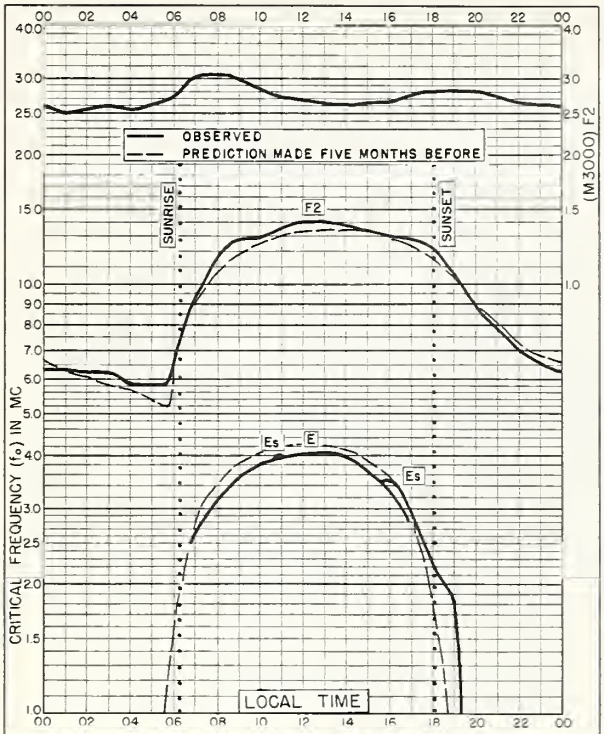


Fig. 45. WHITE SANDS, NEW MEXICO
32.3°N, 106.5°W MARCH 1958

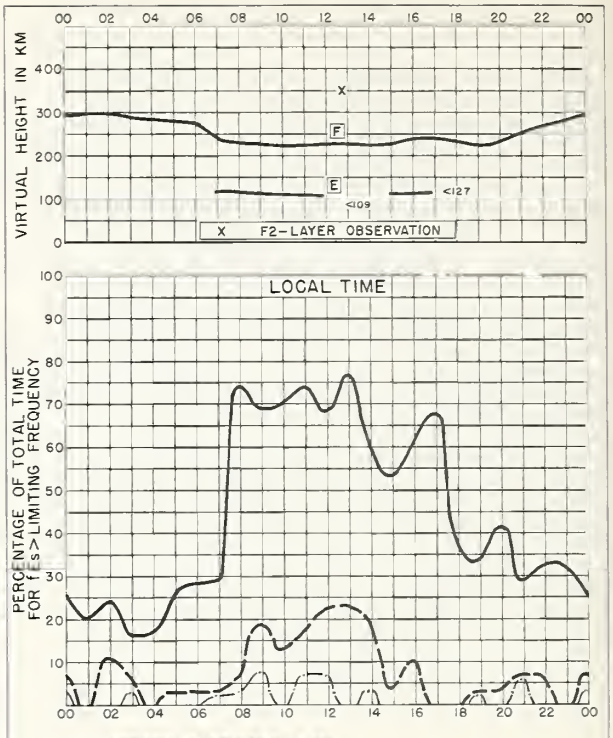


Fig. 46. WHITE SANDS, NEW MEXICO MARCH 1958

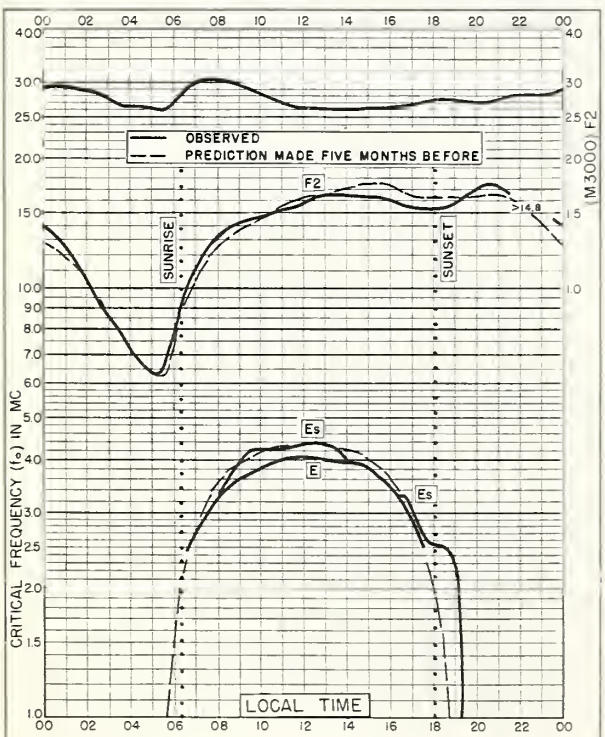


Fig. 47. OKINAWA I.
26.3°N, 127.8°E MARCH 1958

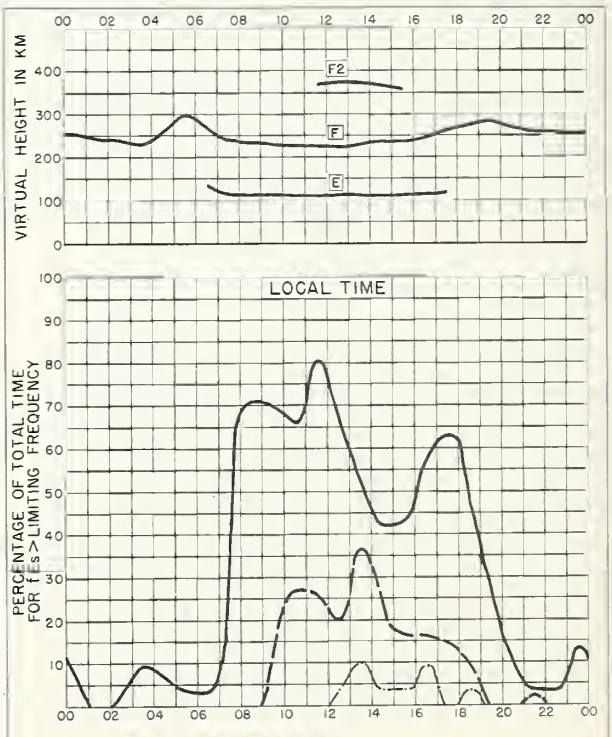


Fig. 48. OKINAWA I. MARCH 1958

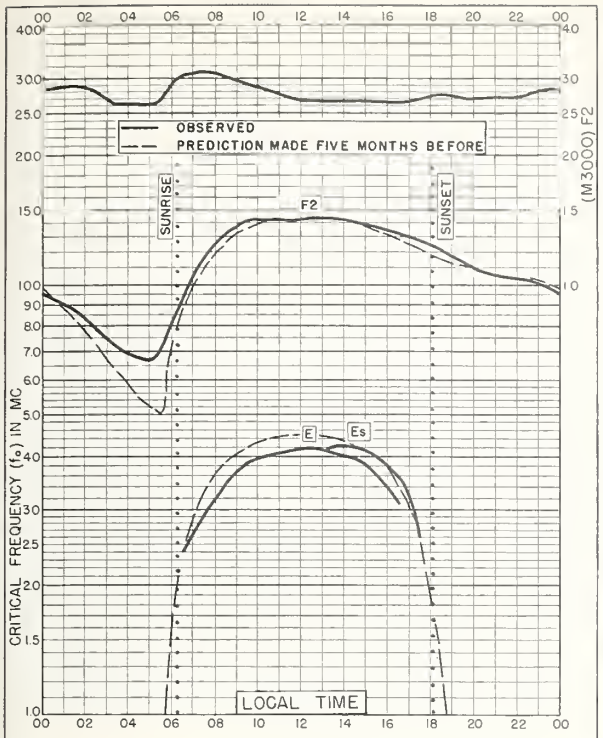


Fig. 49. PUERTO RICO, W. I.
18.5°N, 67.2°W MARCH 1958

NBS 503

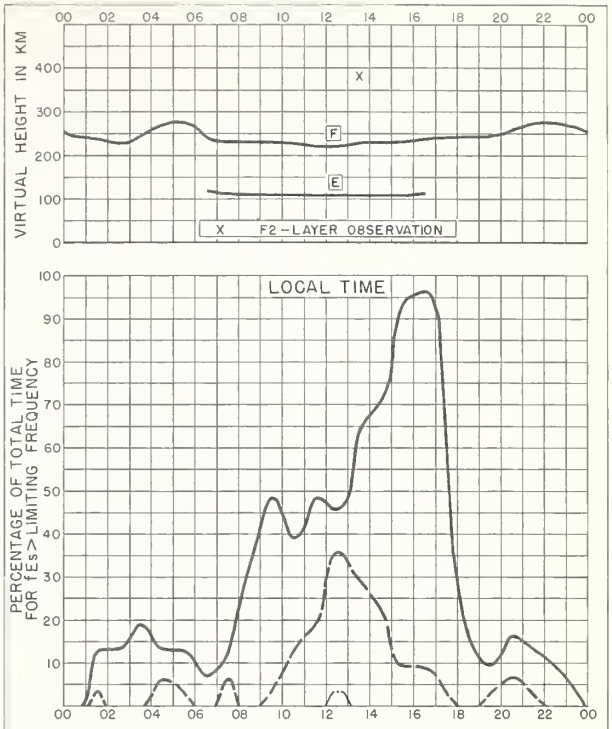


Fig. 50. PUERTO RICO, W. I. MARCH 1958

NBS 490

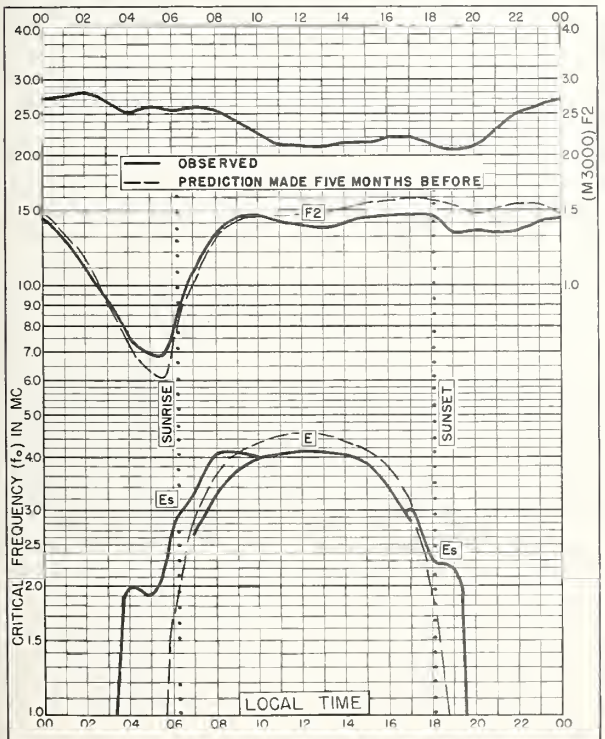


Fig. 51. BAGUIO, P. I.
16.4°N, 120.6°E MARCH 1958

NBS 503

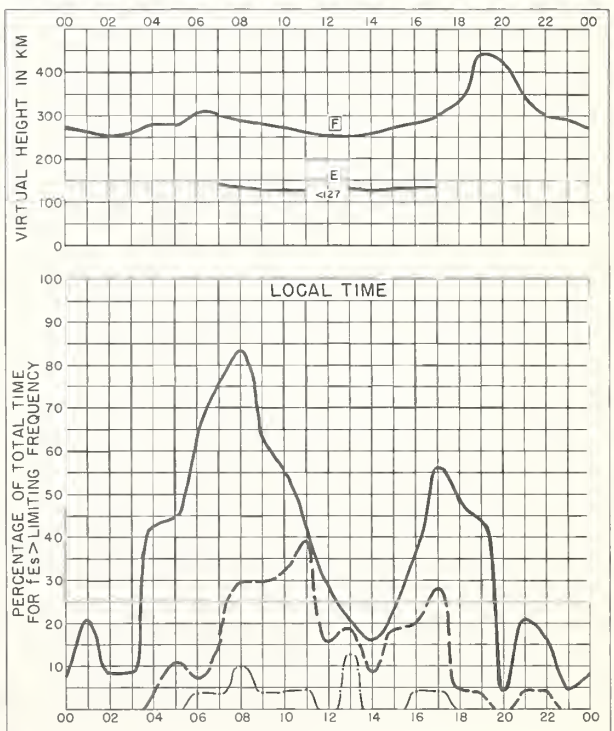


Fig. 52. BAGUIO, P. I. MARCH 1958

NBS 490

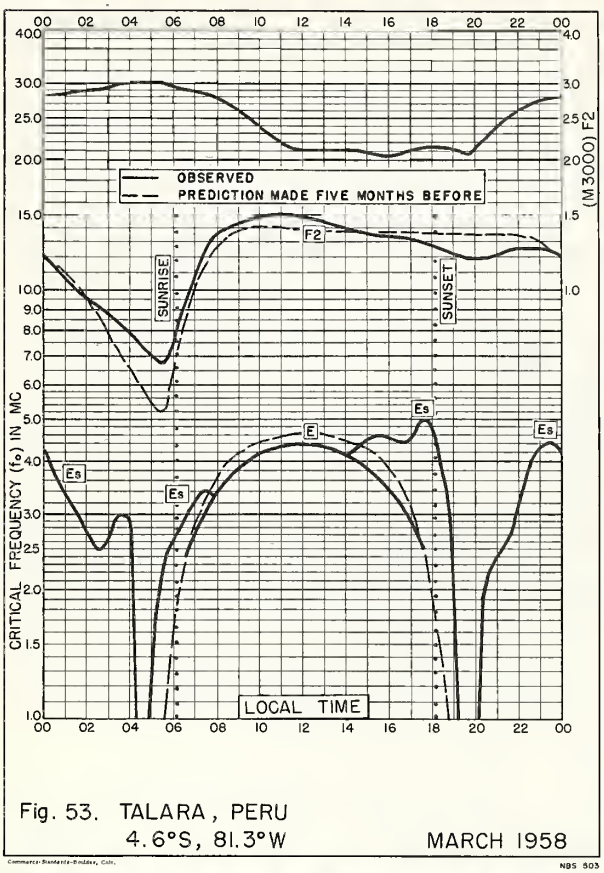


Fig. 53. TALARA, PERU
4.6°S, 81.3°W
MARCH 1958

Commerce-Standards-Boulder, Colo.
NBS 503

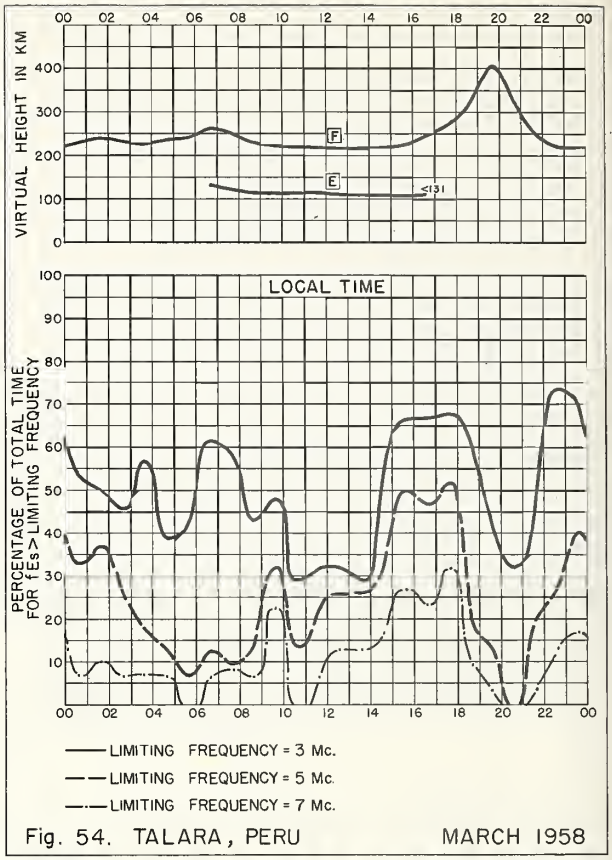


Fig. 54. TALARA, PERU
MARCH 1958

Commerce-Standards-Boulder, Colo.
NBS 490

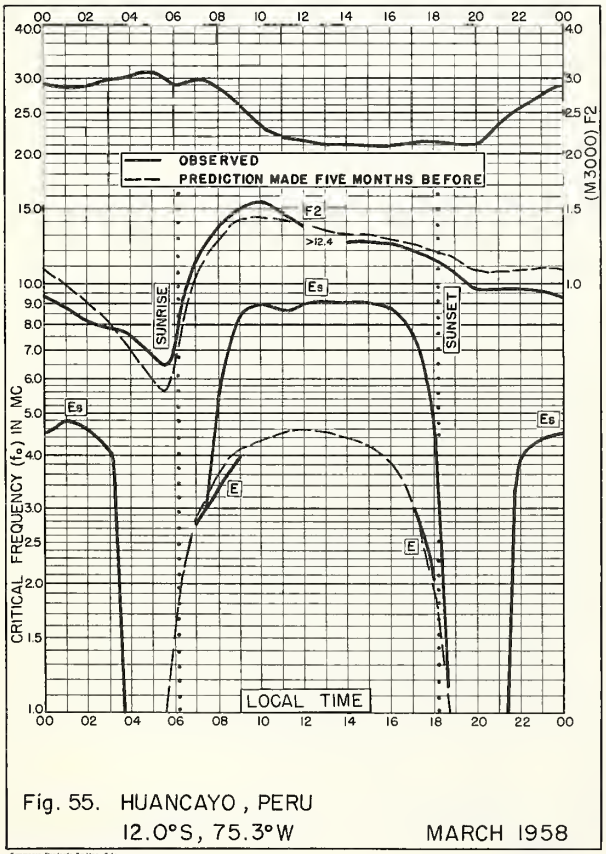


Fig. 55. HUANCAYO, PERU
12.0°S, 75.3°W
MARCH 1958

Commerce-Standards-Boulder, Colo.
NBS 503

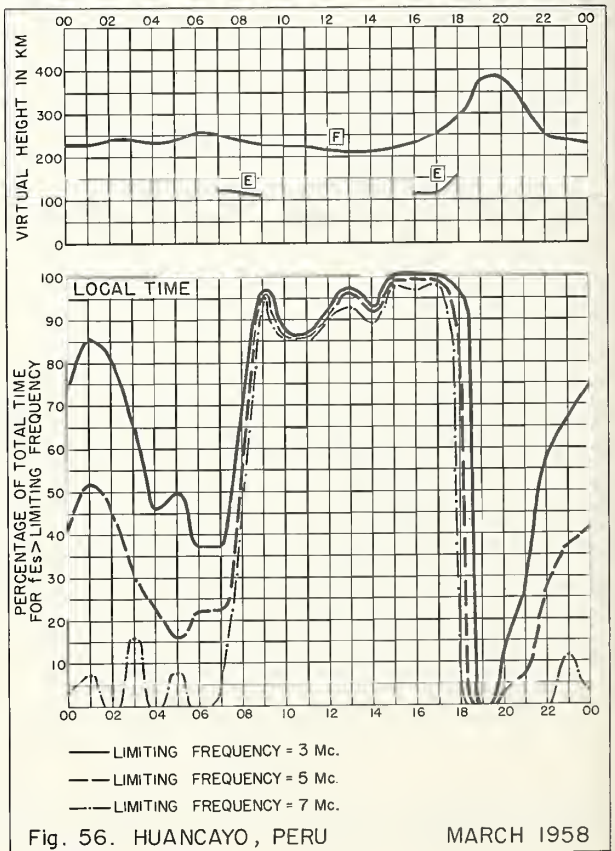


Fig. 56. HUANCAYO, PERU
MARCH 1958

Commerce-Standards-Boulder, Colo.
NBS 490

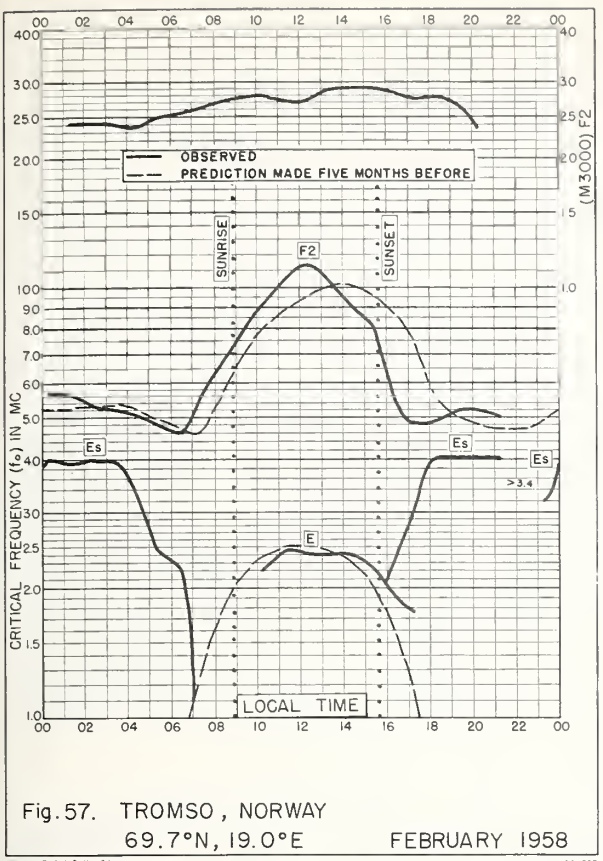


Fig. 57. TROMSO, NORWAY
69.7°N, 19.0°E FEBRUARY 1958

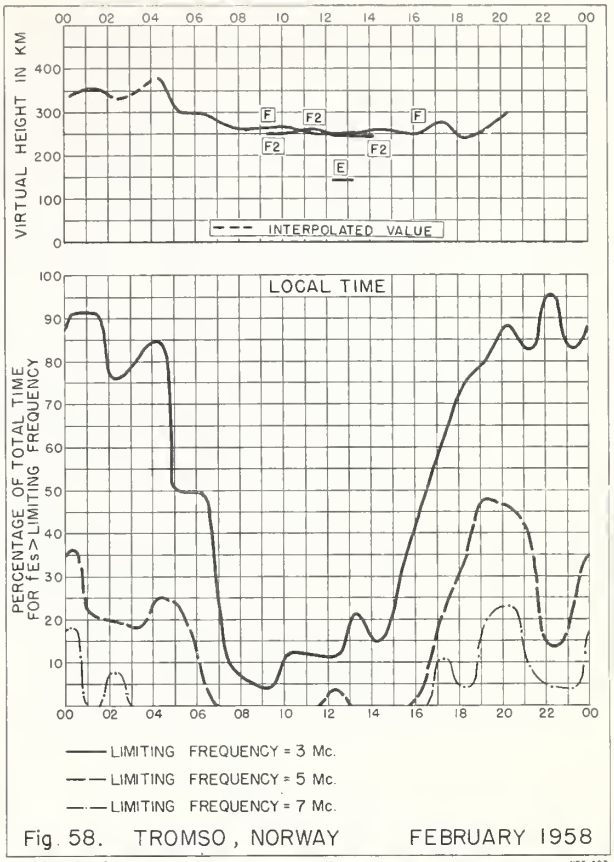


Fig. 58. TROMSO, NORWAY FEBRUARY 1958

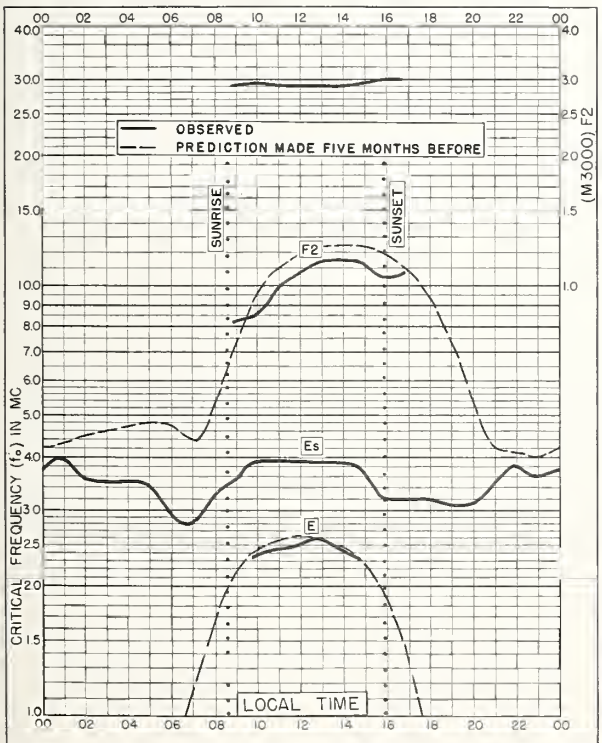


Fig. 59. SODANKYLA, FINLAND
67.4°N, 26.6°E FEBRUARY 1958

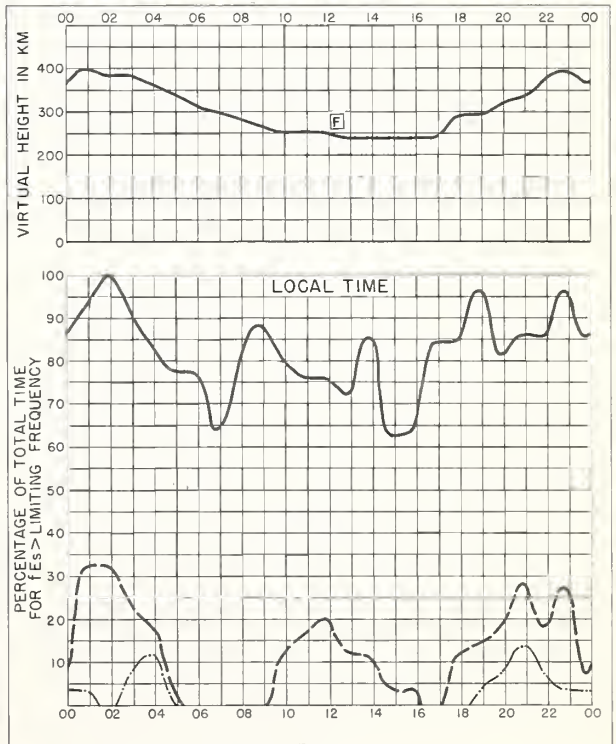


Fig. 60. SODANKYLA, FINLAND FEBRUARY 1958

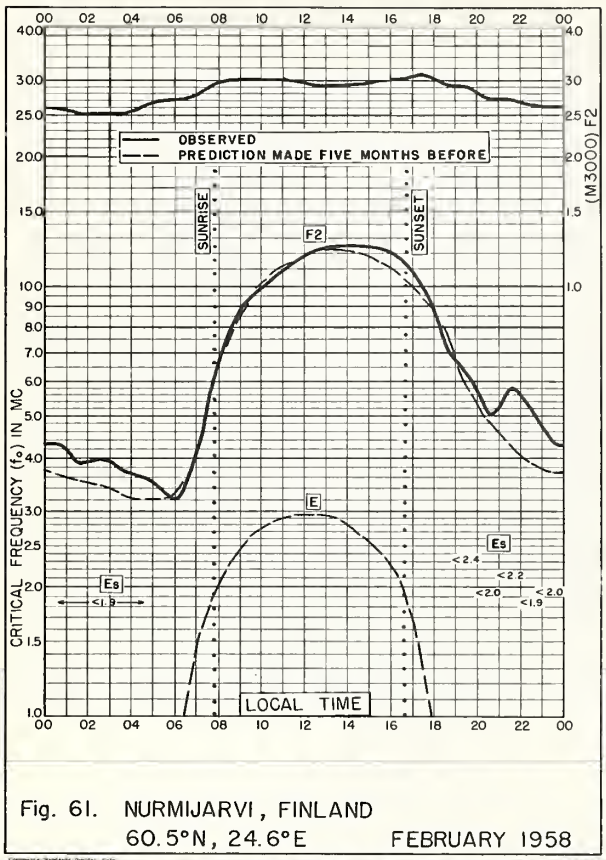


Fig. 61. NURMIJARVI, FINLAND
60.5°N, 24.6°E FEBRUARY 1958

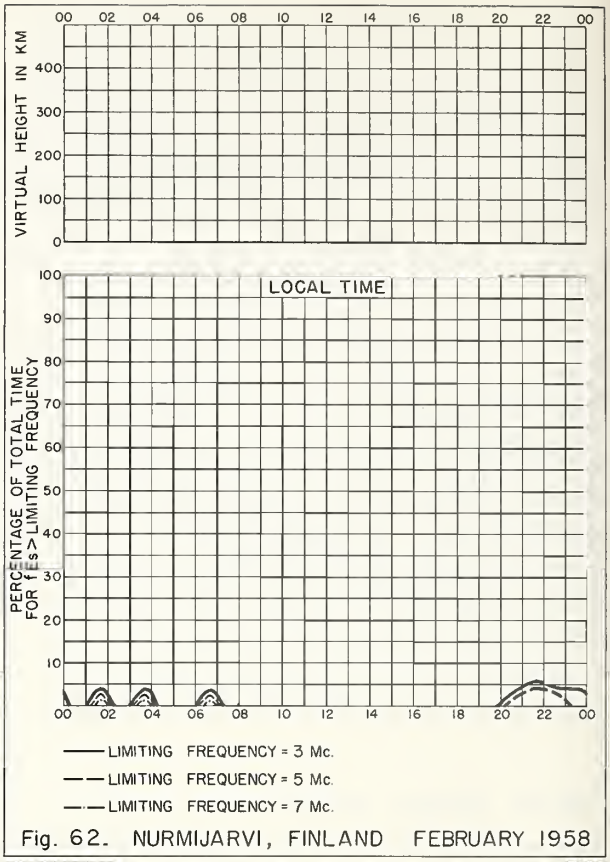


Fig. 62. NURMIJARVI, FINLAND FEBRUARY 1958

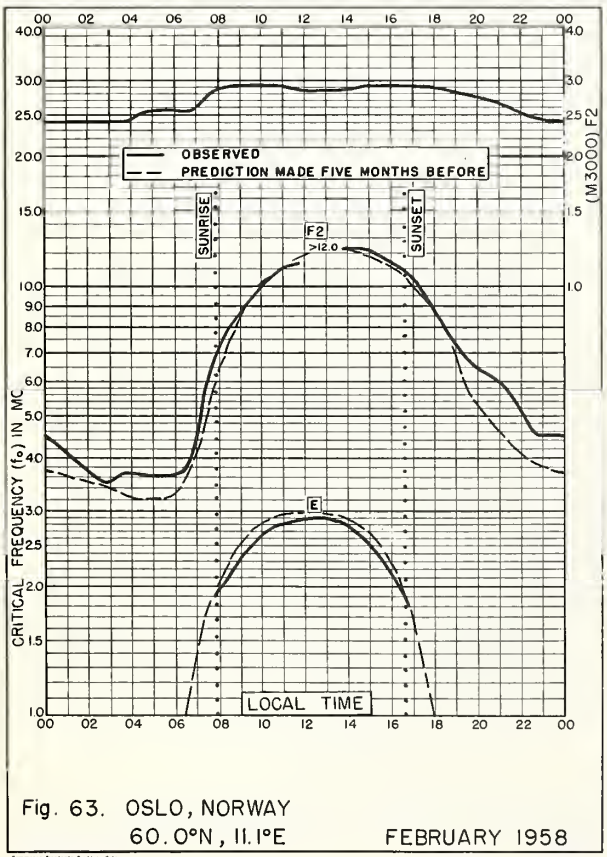


Fig. 63. OSLO, NORWAY
60.0°N, 11.1°E FEBRUARY 1958

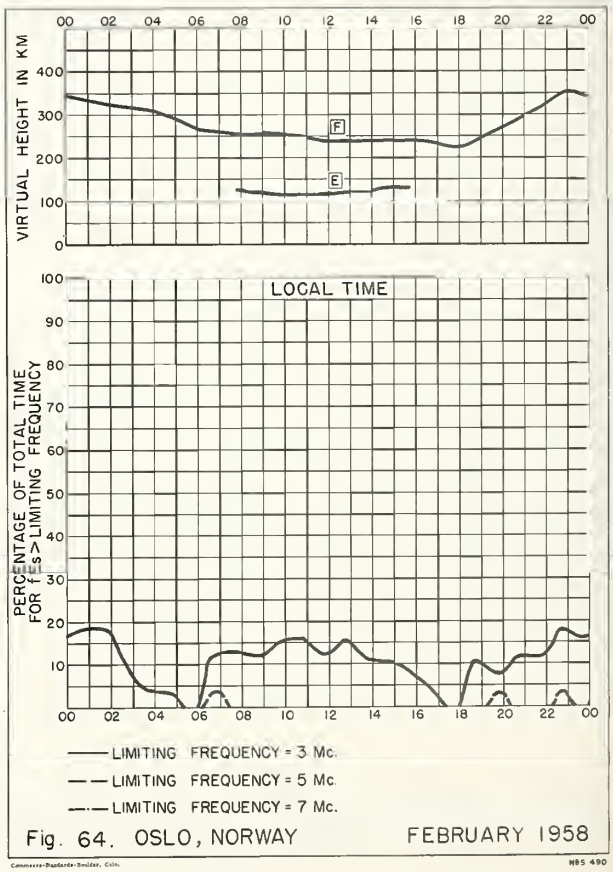


Fig. 64. OSLO, NORWAY FEBRUARY 1958

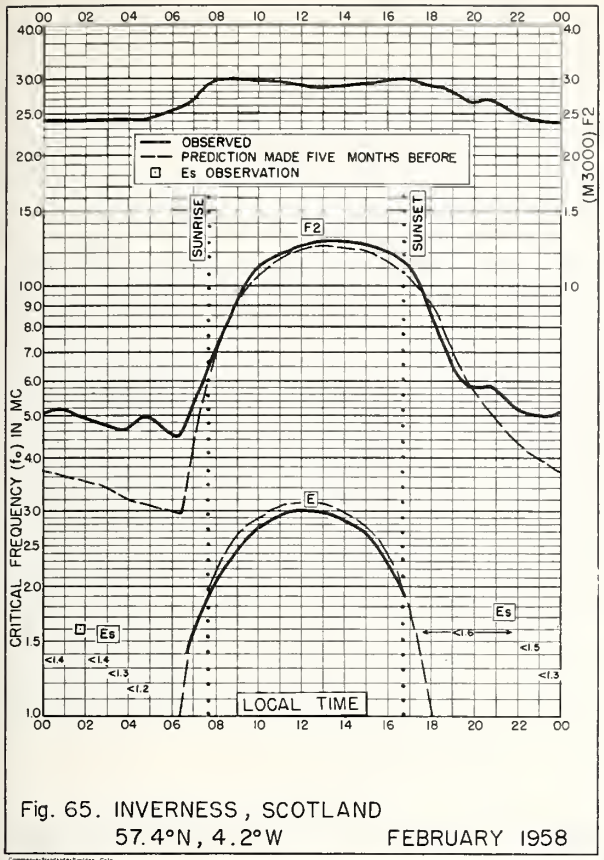


Fig. 65. INVERNESS, SCOTLAND
57.4°N, 4.2°W FEBRUARY 1958

NBS 503

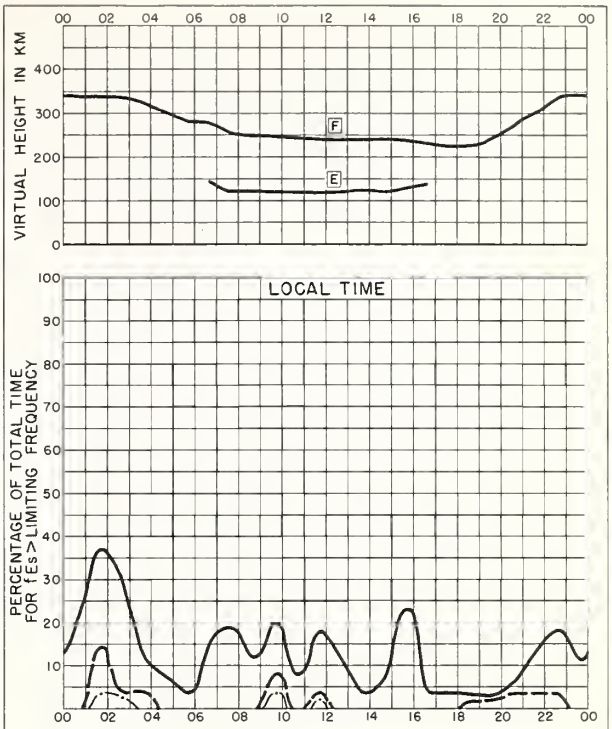


Fig. 66. INVERNESS, SCOTLAND FEBRUARY 1958

NBS 490

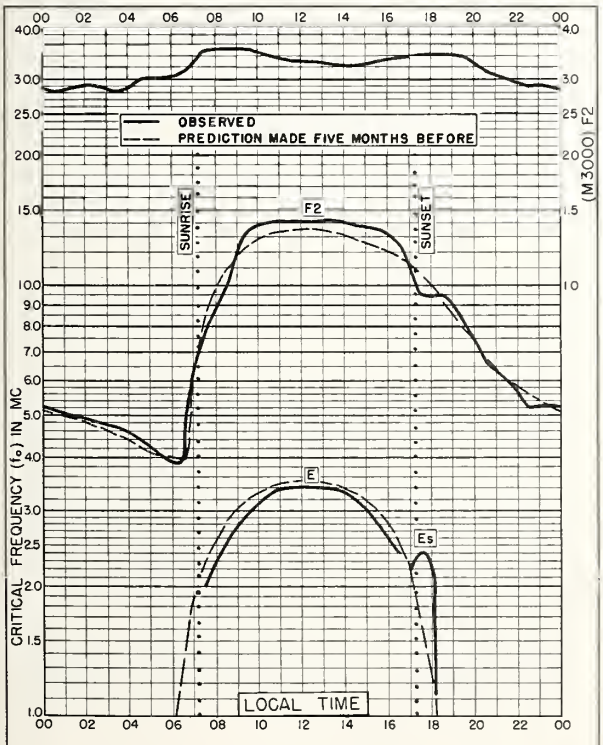


Fig. 67. SCHWARZENBURG, SWITZERLAND
46.8°N, 7.3°E FEBRUARY 1958

NBS 503

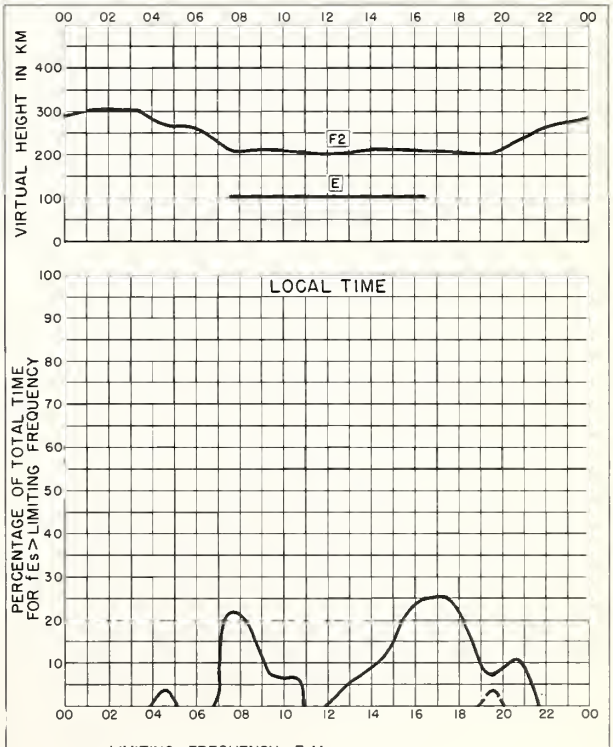


Fig. 68. SCHWARZENBURG, SWITZERLAND FEBRUARY 1958

NBS 490

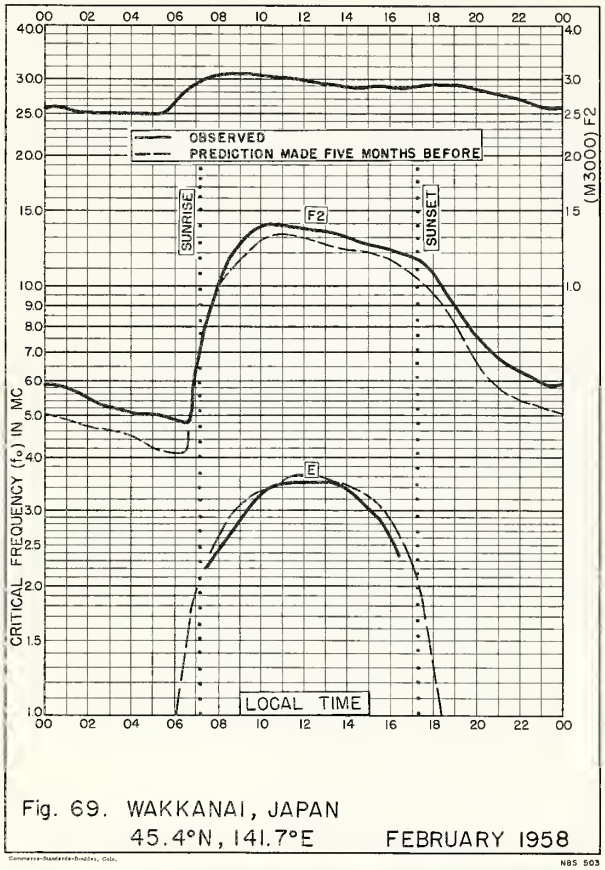


Fig. 69. WAKKANAI, JAPAN
45.4°N, 141.7°E FEBRUARY 1958

Commerce-Standards-Boulder, Colo.
NBS 503

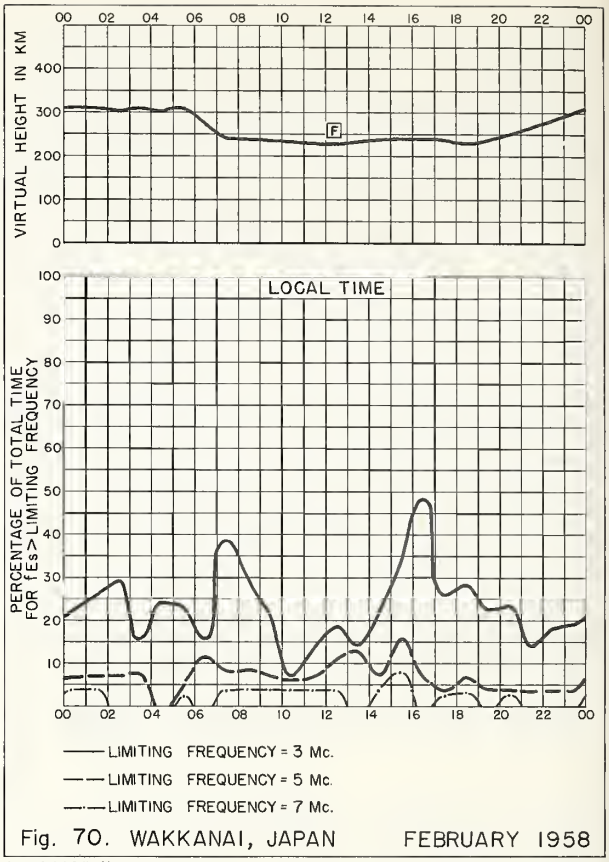


Fig. 70. WAKKANAI, JAPAN FEBRUARY 1958

Commerce-Standards-Boulder, Colo.
NBS 490

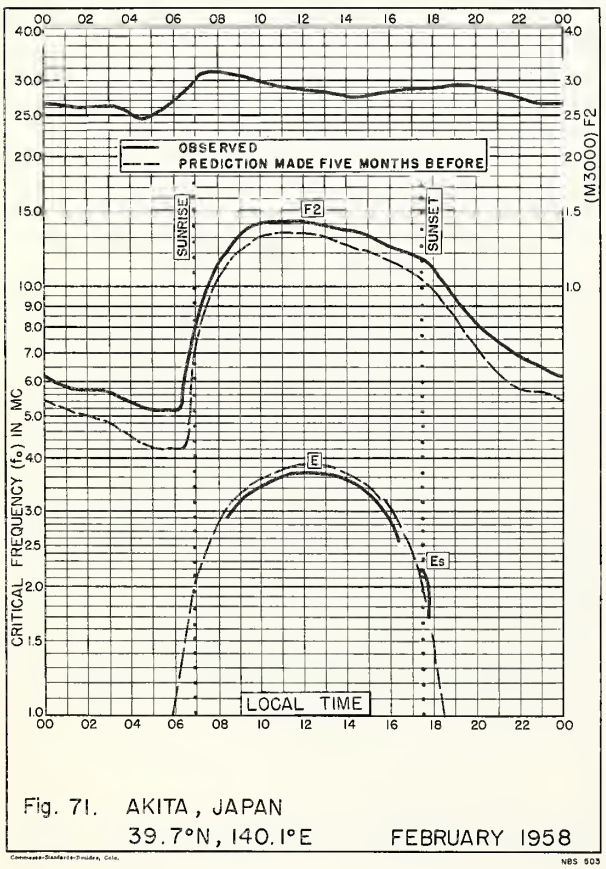


Fig. 71. AKITA, JAPAN
39.7°N, 140.1°E FEBRUARY 1958

Commerce-Standards-Boulder, Colo.
NBS 503

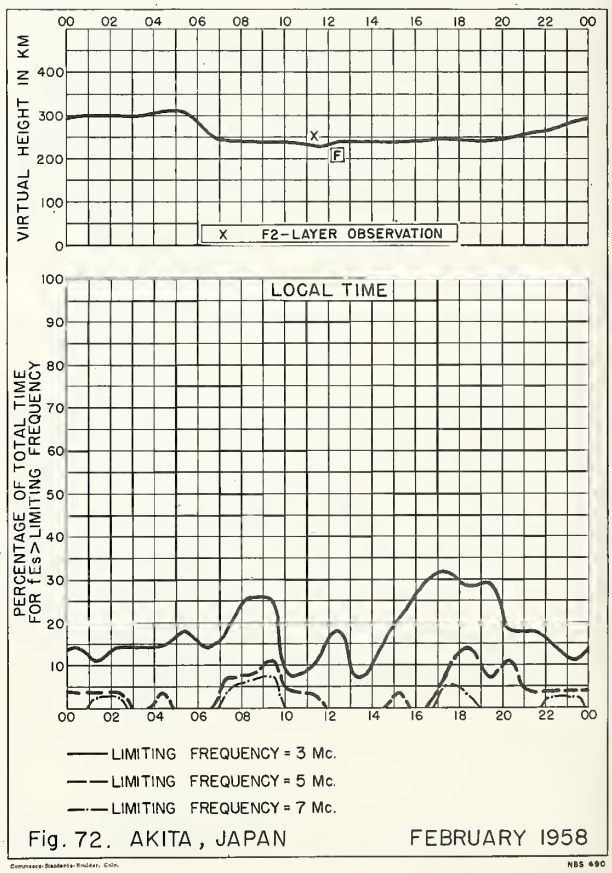


Fig. 72. AKITA, JAPAN FEBRUARY 1958

Commerce-Standards-Boulder, Colo.
NBS 490

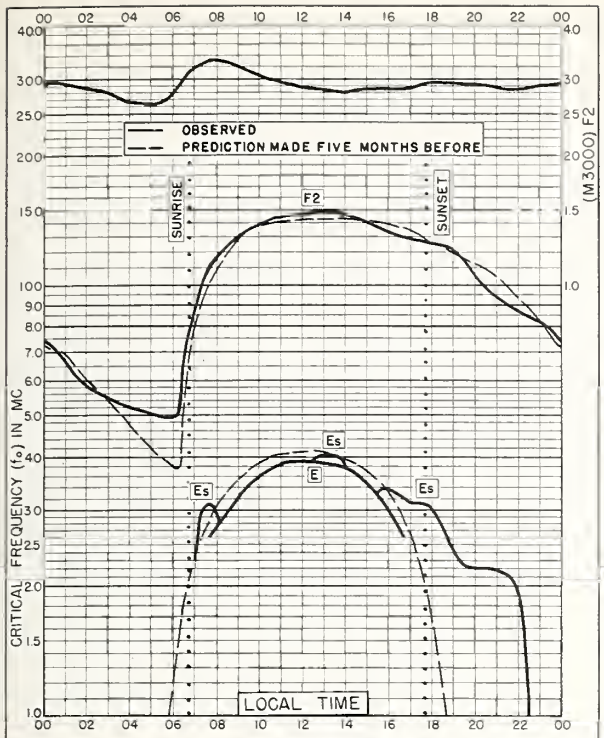


Fig. 73. YAMAGAWA, JAPAN
31.2°N, 130.6°E FEBRUARY 1958

NBS 503

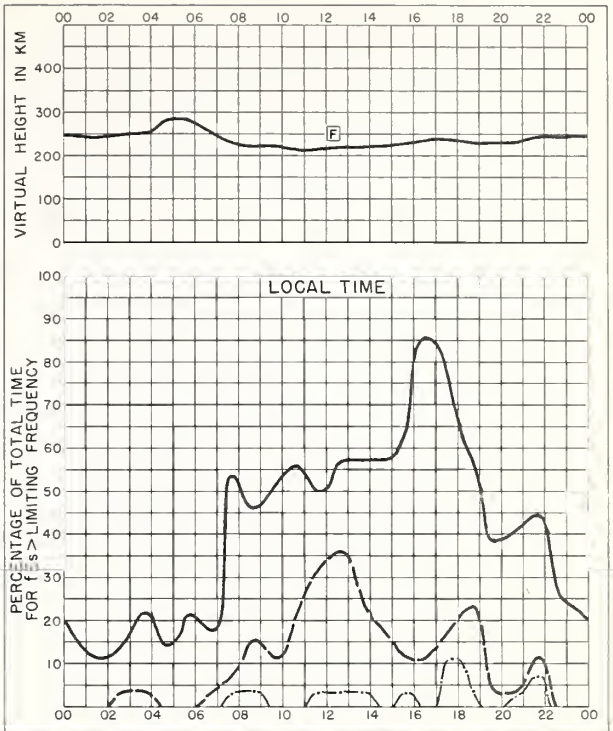


Fig. 74. YAMAGAWA, JAPAN FEBRUARY 1958

NBS 490

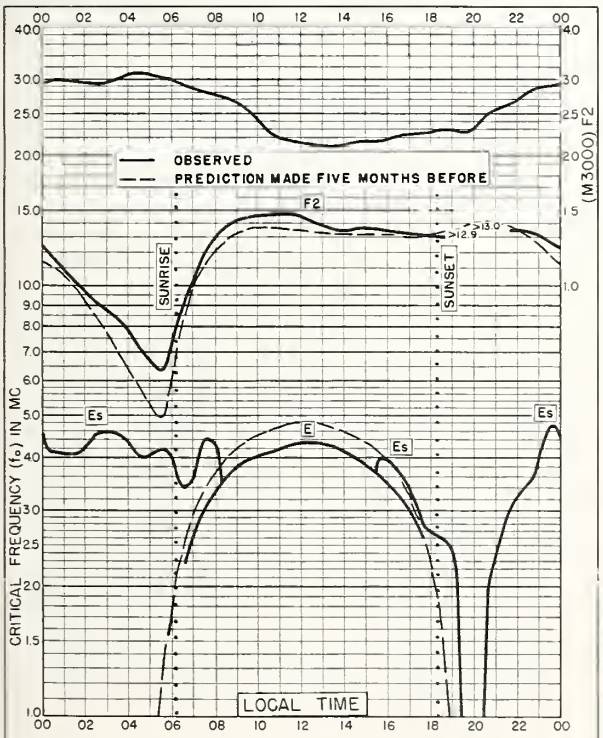


Fig. 75. TALARA, PERU
4.6°S, 81.3°W FEBRUARY 1958

NBS 503

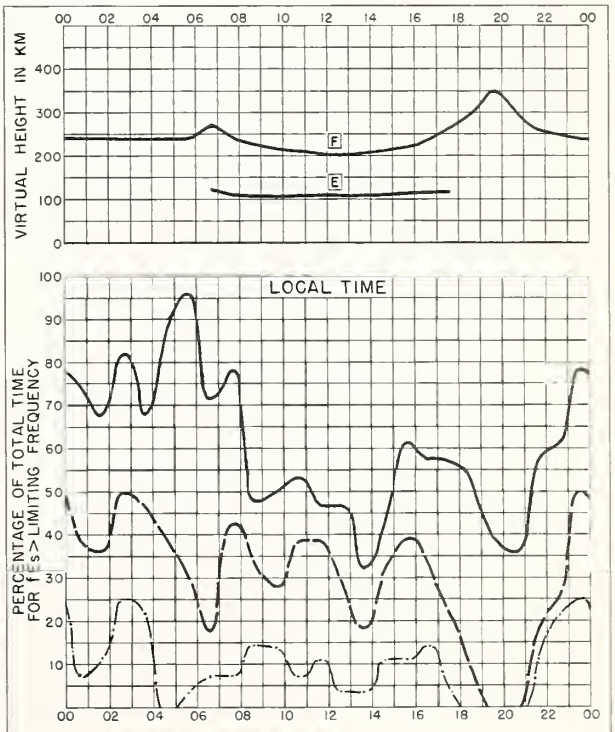


Fig. 76. TALARA, PERU FEBRUARY 1958

NBS 490

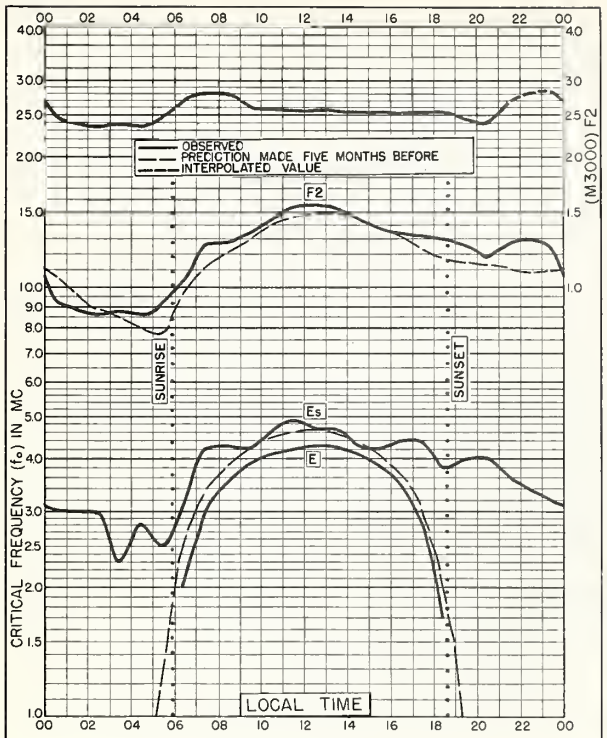


Fig. 77. RAROTONGA I.
21.2°S, 159.8°W FEBRUARY 1958

NBS 503

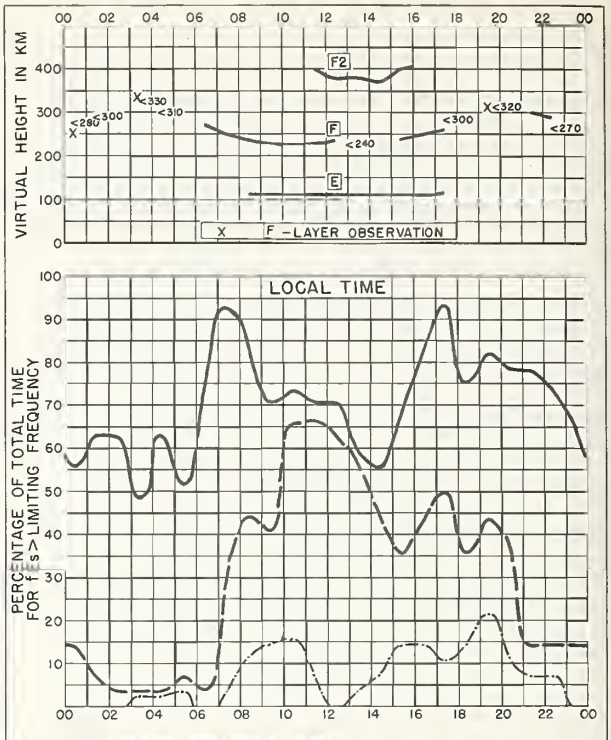


Fig. 78. RAROTONGA I. FEBRUARY 1958

NBS 490

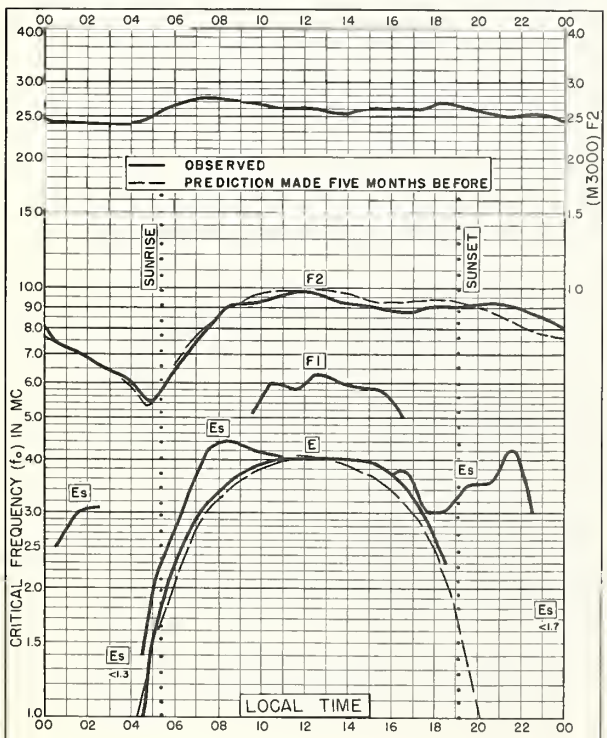


Fig. 79. CHRISTCHURCH, NEW ZEALAND
43.6°S, 172.8°E FEBRUARY 1958

NBS 503

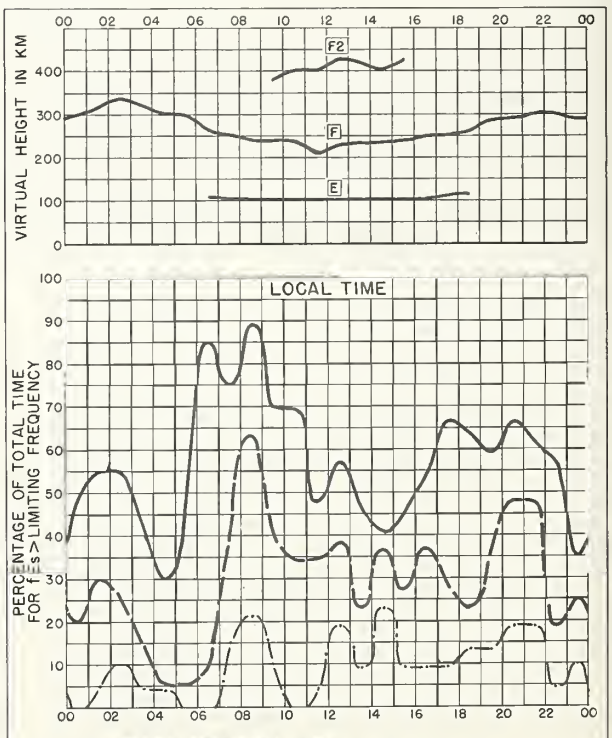


Fig. 80. CHRISTCHURCH, NEW ZEALAND FEBRUARY 1958

NBS 490

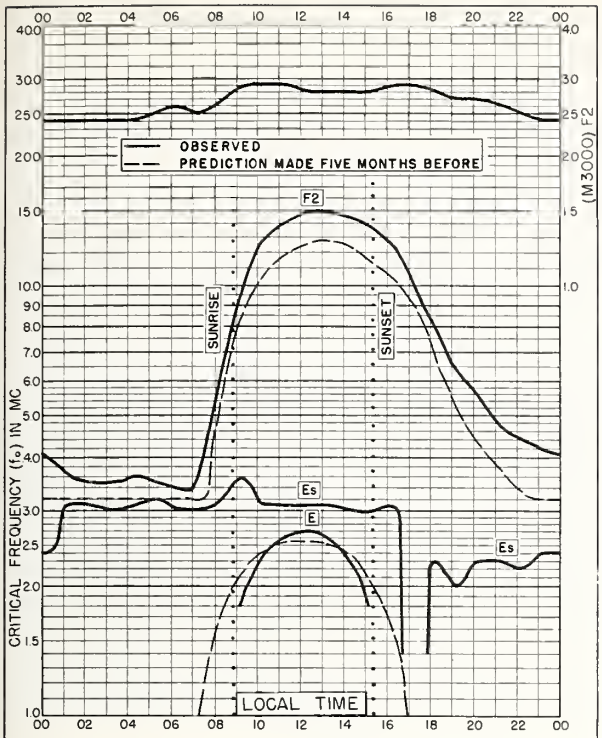


Fig. 81. UPSALA, SWEDEN
59.8°N, 17.6°E JANUARY 1958

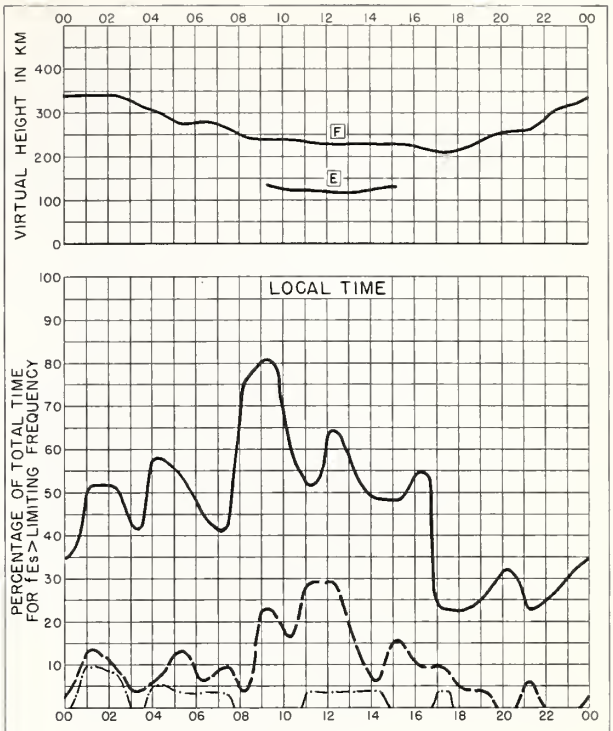


Fig. 82. UPSALA, SWEDEN JANUARY 1958

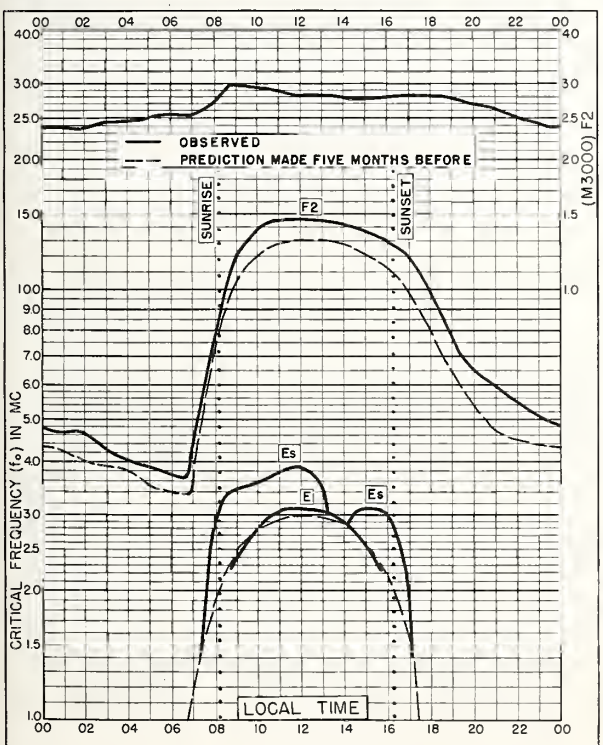


Fig. 83. LINDAU/HARZ, GERMANY
51.6°N, 10.1°E JANUARY 1958

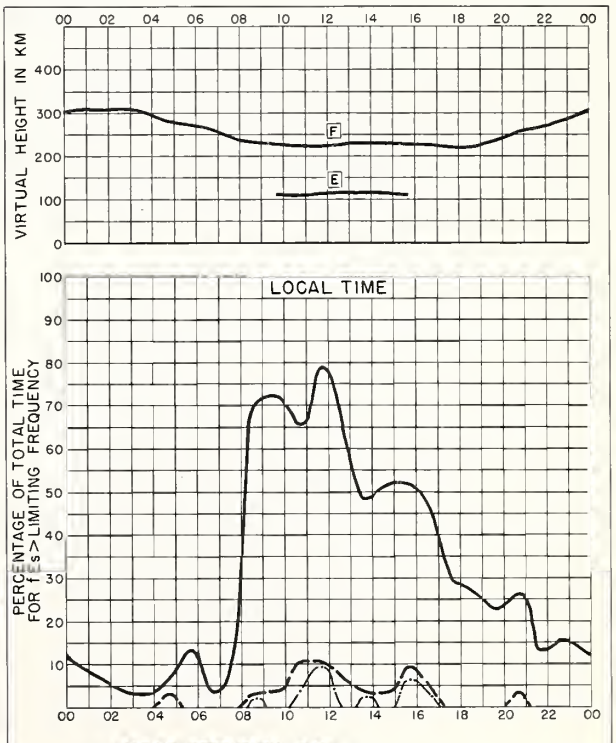


Fig. 84. LINDAU/HARZ, GERMANY JANUARY 1958

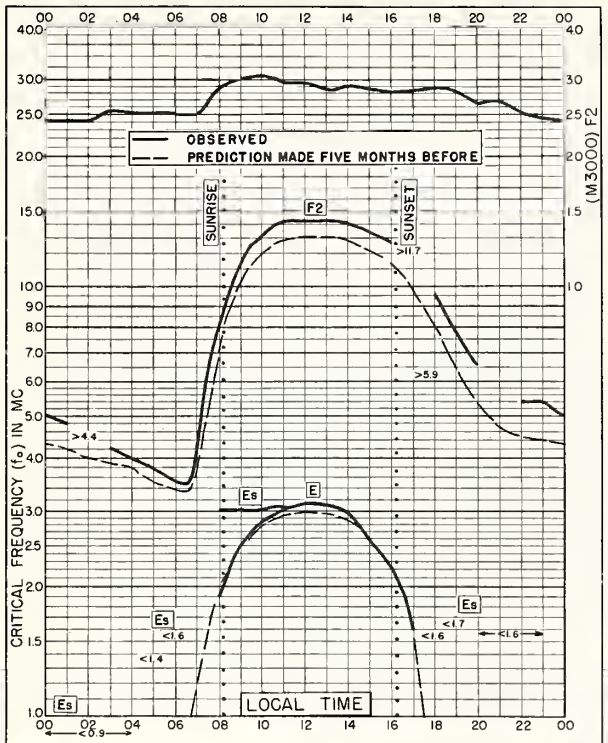


Fig. 85. SLOUGH, ENGLAND
51.5°N, 0.6°W JANUARY 1958

NBS 503

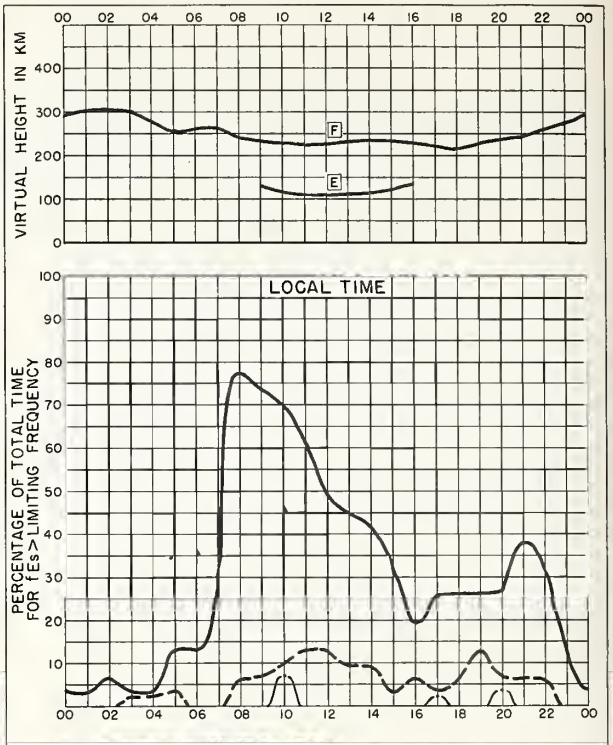


Fig. 86. SLOUGH, ENGLAND JANUARY 1958

NBS 490

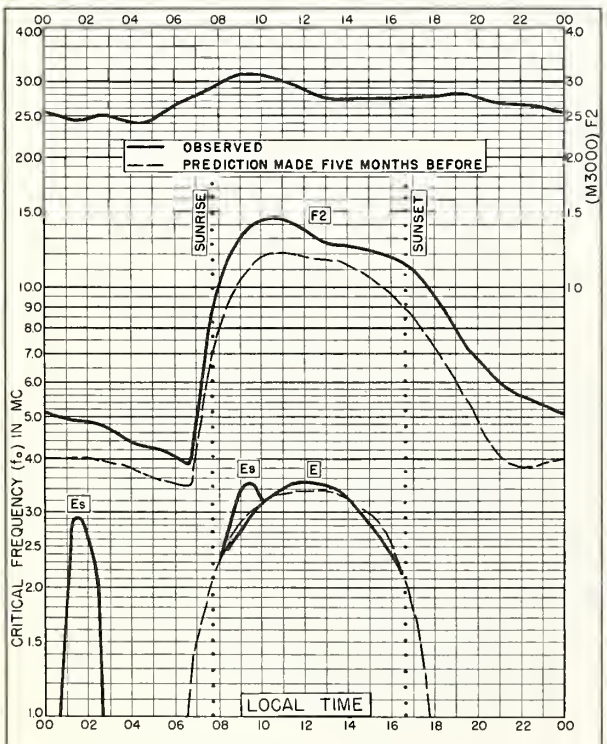


Fig. 87. WAKKANAI, JAPAN
45.4°N, 141.7°E JANUARY 1958

NBS 503

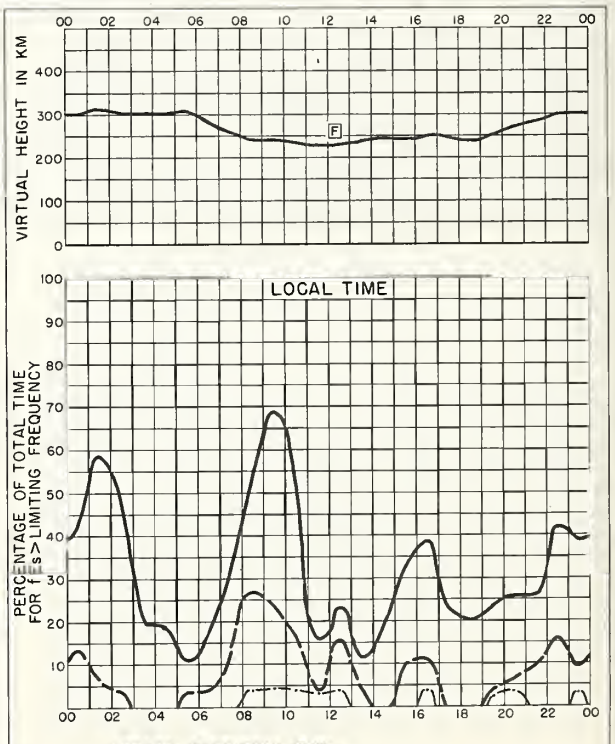


Fig. 88. WAKKANAI, JAPAN JANUARY 1958

NBS 490

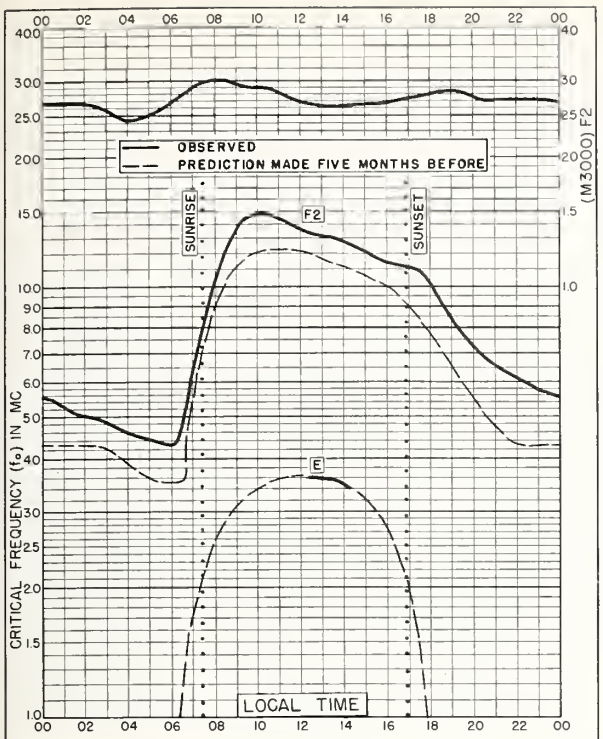


Fig. 89. AKITA, JAPAN
39.7°N, 140.1°E JANUARY 1958

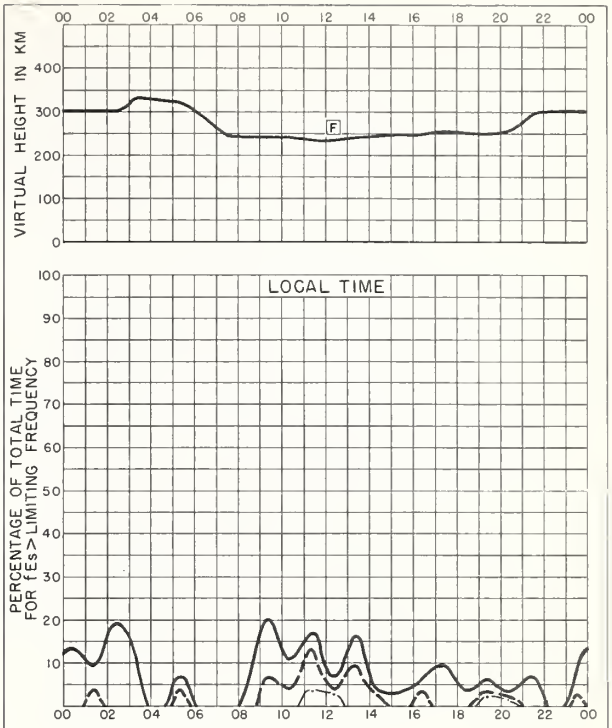


Fig. 90. AKITA, JAPAN JANUARY 1958

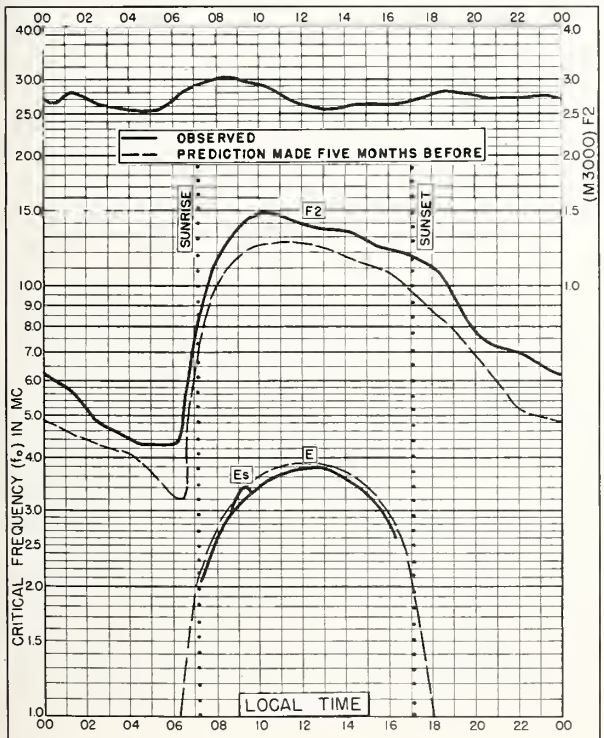


Fig. 91. TOKYO, JAPAN
35.7°N, 139.5°E JANUARY 1958

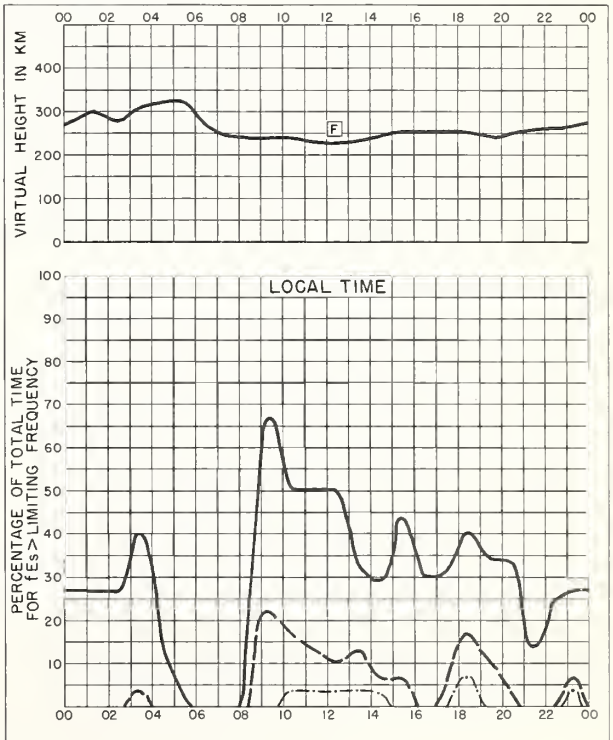


Fig. 92. TOKYO, JAPAN JANUARY 1958

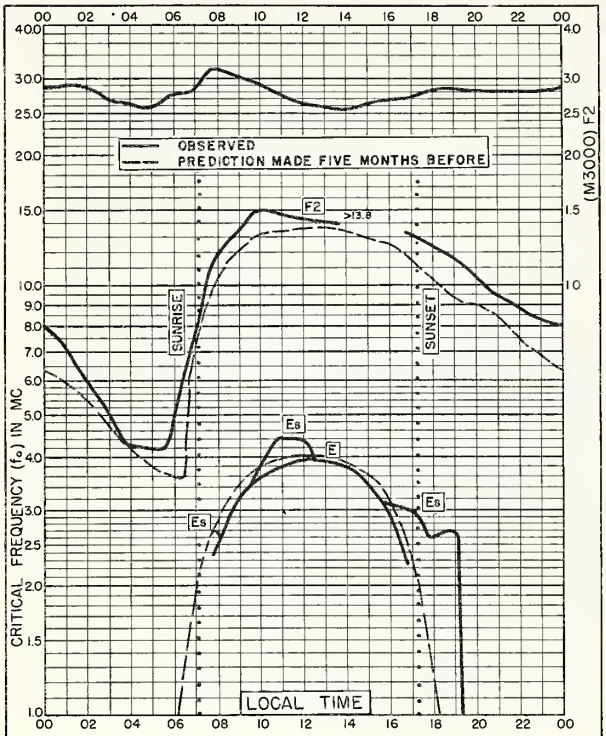


Fig. 93. YAMAGAWA, JAPAN
31.2°N, 130.6°E JANUARY 1958

NBS 503

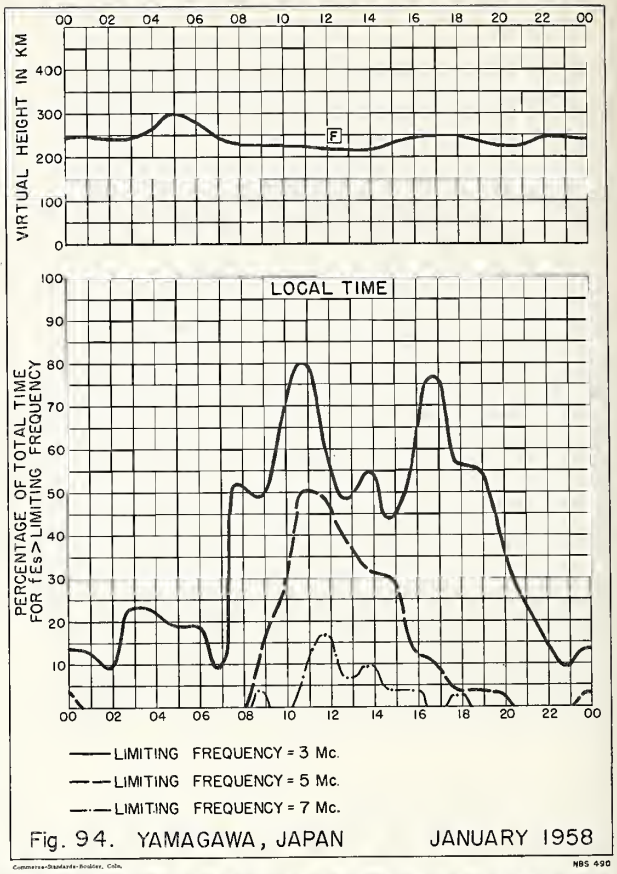


Fig. 94. YAMAGAWA, JAPAN JANUARY 1958

NBS 490

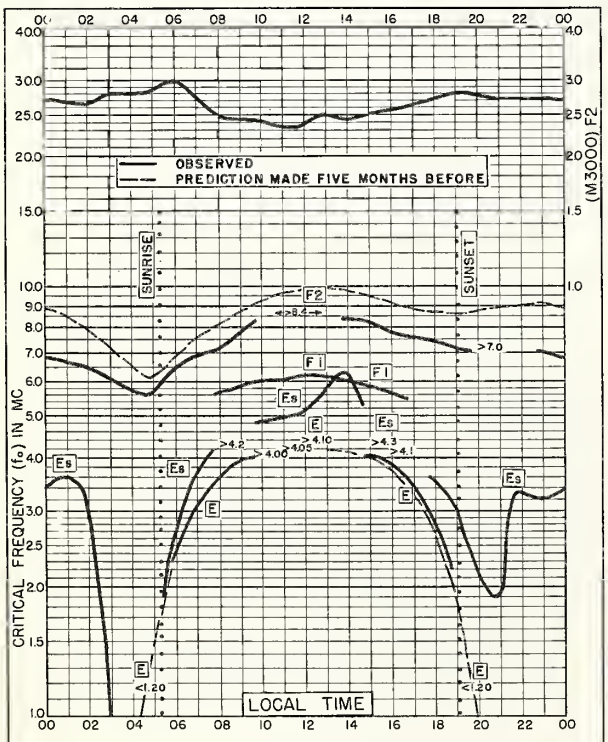


Fig. 95. WATHEROO, W. AUSTRALIA
30.3°S, 115.9°E JANUARY 1958

NBS 503

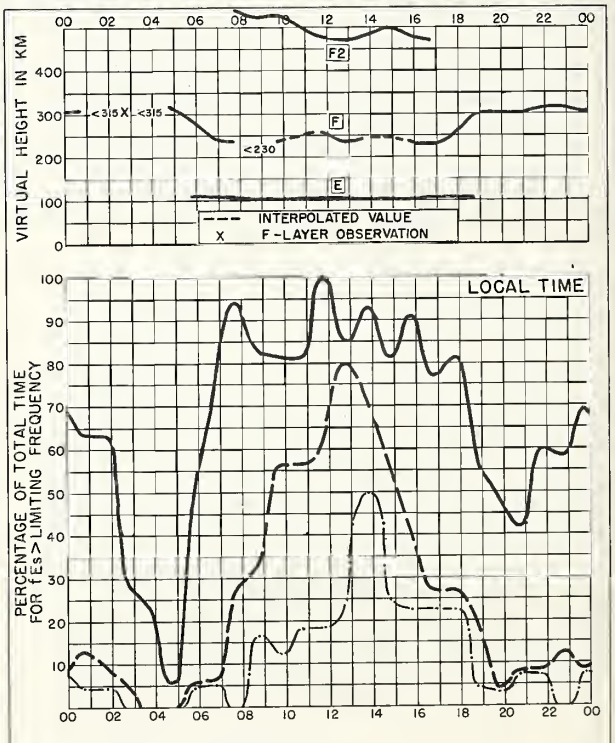


Fig. 96. WATHEROO, W. AUSTRALIA JANUARY 1958

NBS 490

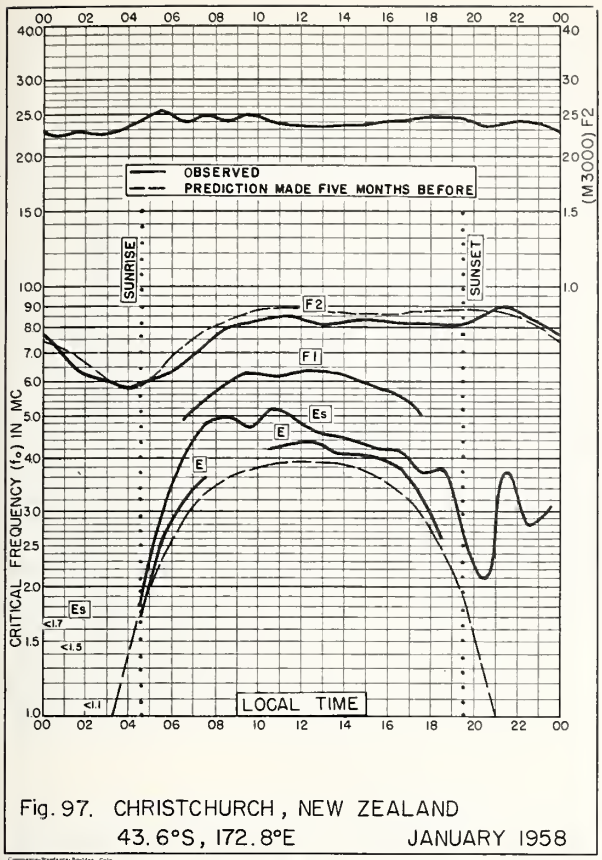
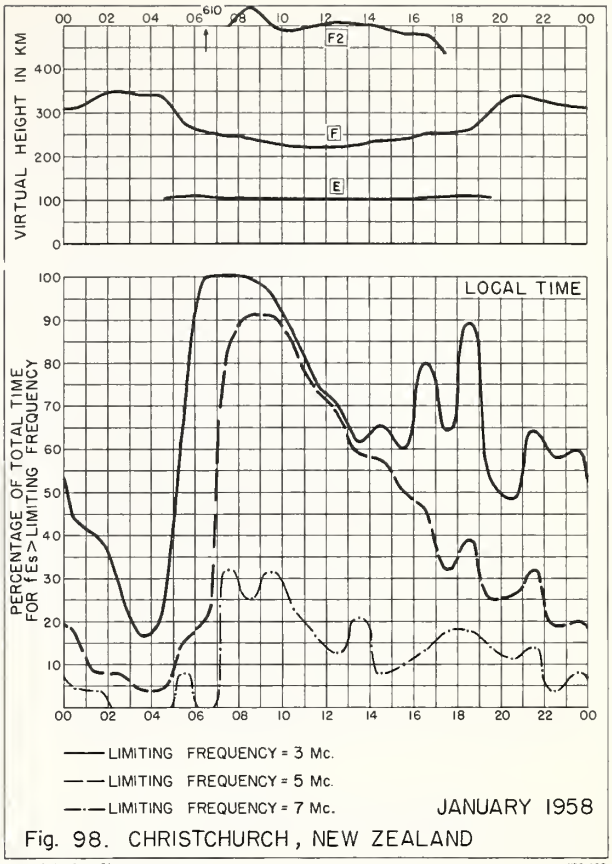


Fig. 97. CHRISTCHURCH, NEW ZEALAND
43.6°S, 172.8°E JANUARY 1958



JANUARY 1958

Fig. 98. CHRISTCHURCH, NEW ZEALAND

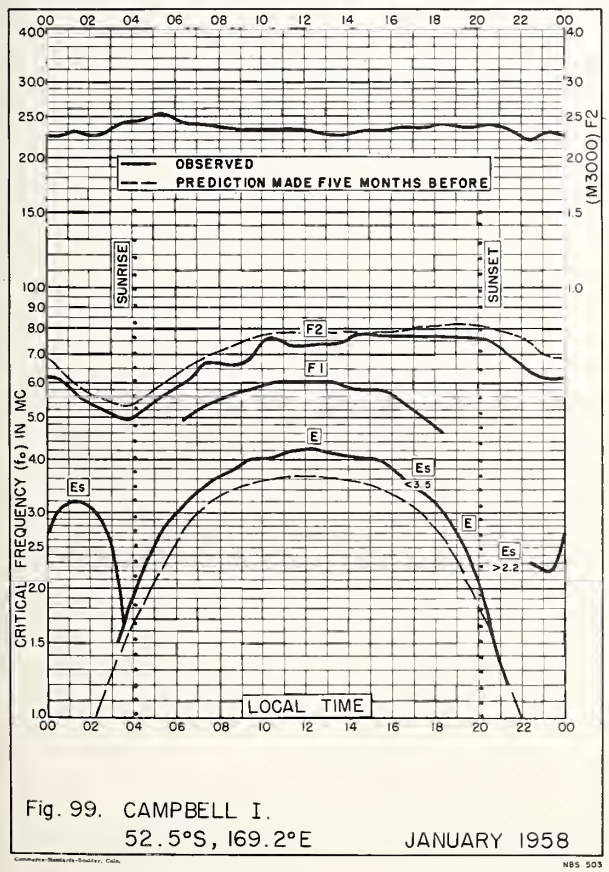


Fig. 99. CAMPBELL I.
52.5°S, 169.2°E JANUARY 1958

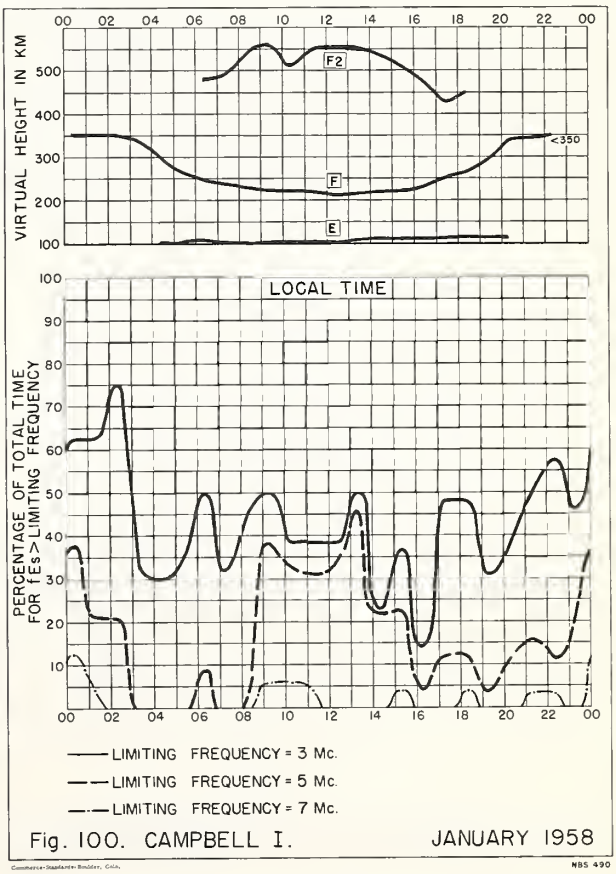


Fig. 100. CAMPBELL I. JANUARY 1958

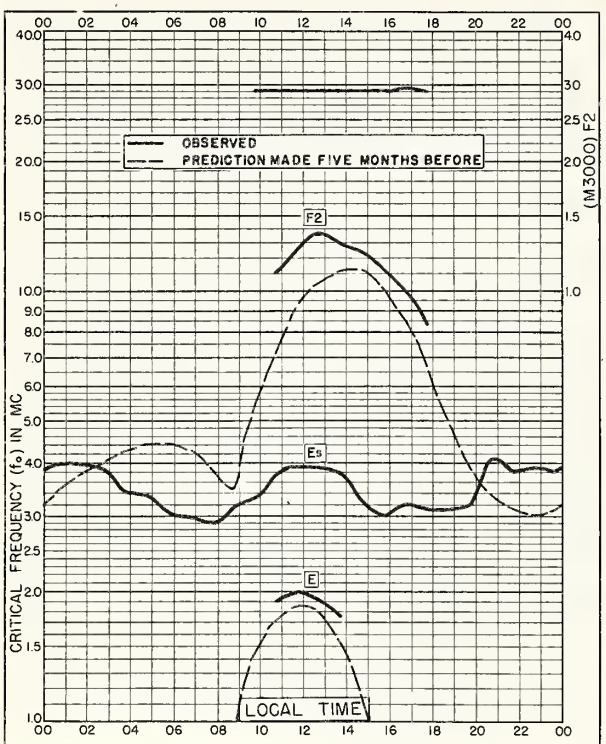


Fig. 101. SODANKYLA, FINLAND
67.4°N, 26.6°E DECEMBER 1957

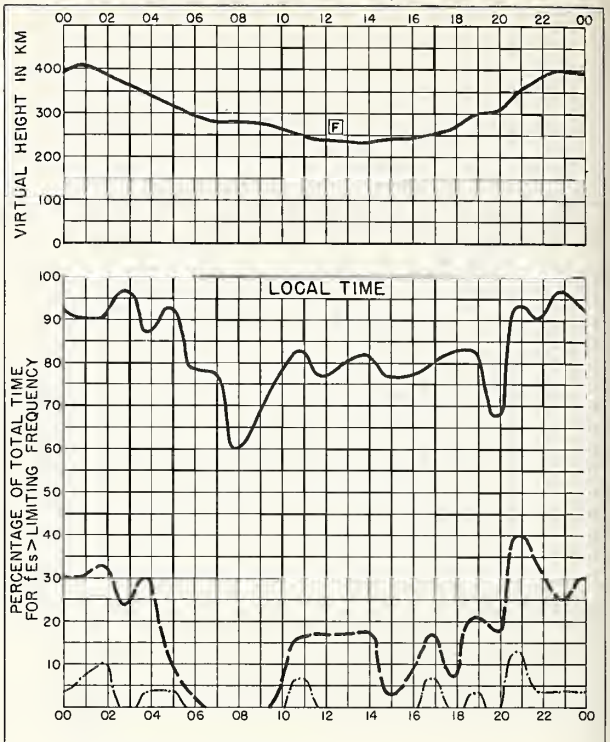


Fig. 102. SODANKYLA, FINLAND DECEMBER 1957

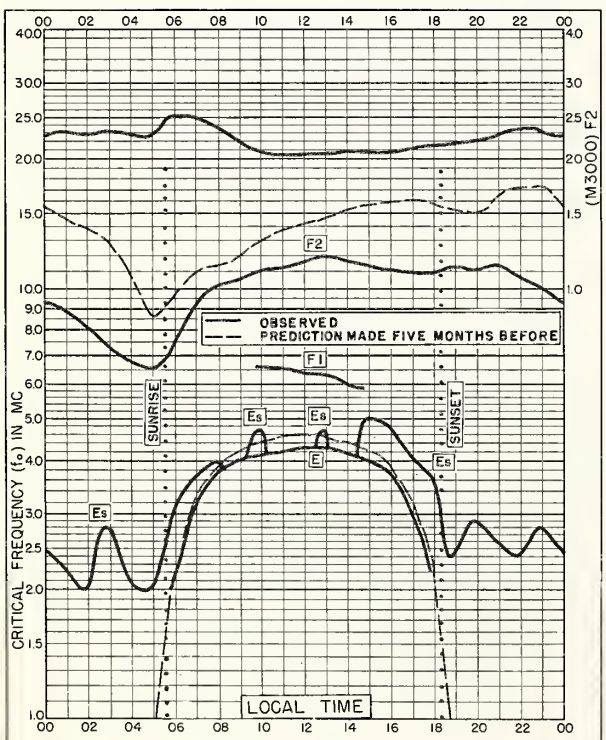


Fig. 103. ELISABETHVILLE, BELGIAN CONGO
11.6°S, 27.5°E DECEMBER 1957

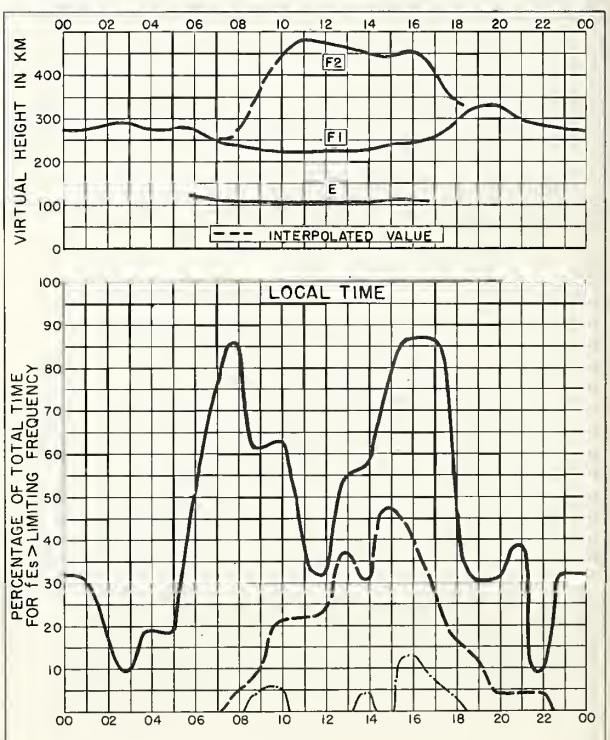


Fig. 104. ELISABETHVILLE, BELGIAN CONGO DECEMBER 1957

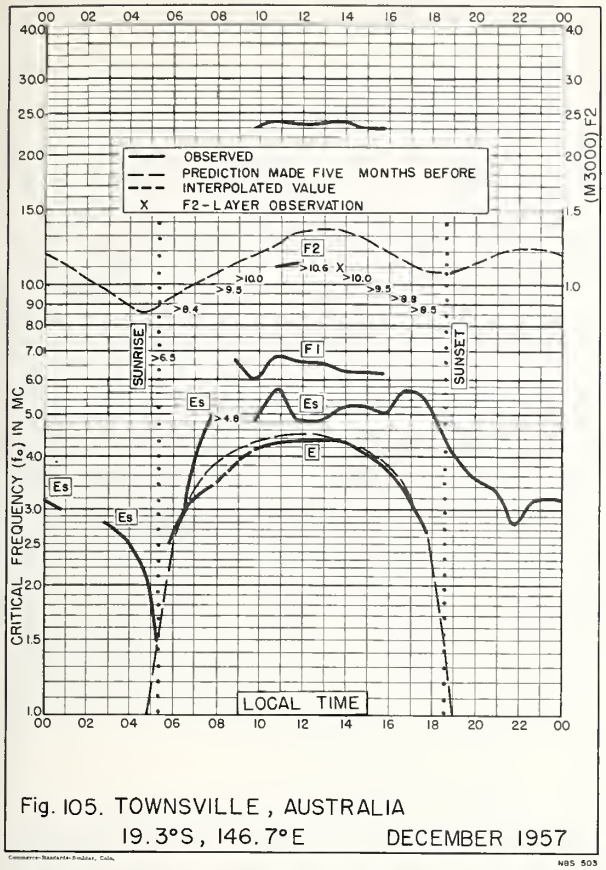


Fig. 105. TOWNSVILLE, AUSTRALIA
19.3°S, 146.7°E DECEMBER 1957

Commerce-Standards-Boulder, Colo. NBS 503

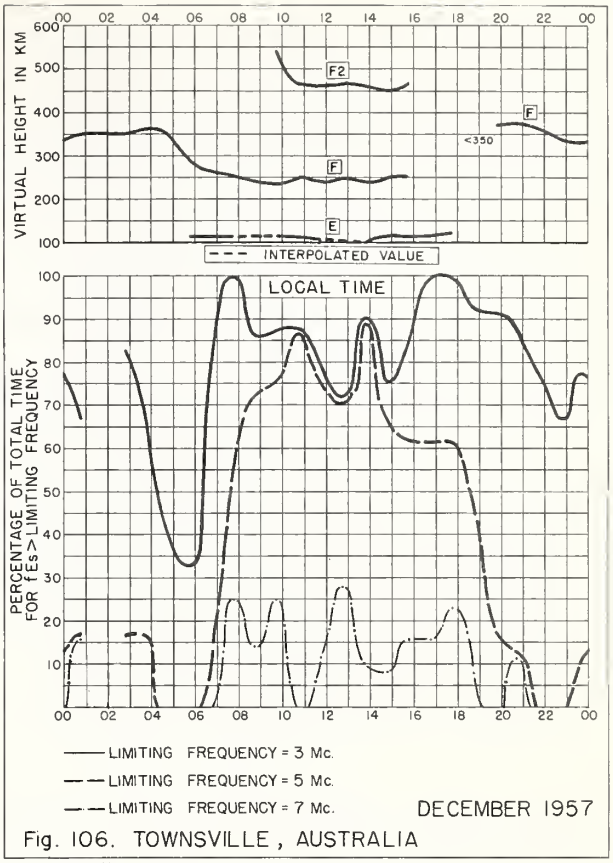


Fig. 106. TOWNSVILLE, AUSTRALIA DECEMBER 1957

Commerce-Standards-Boulder, Colo. NBS 490

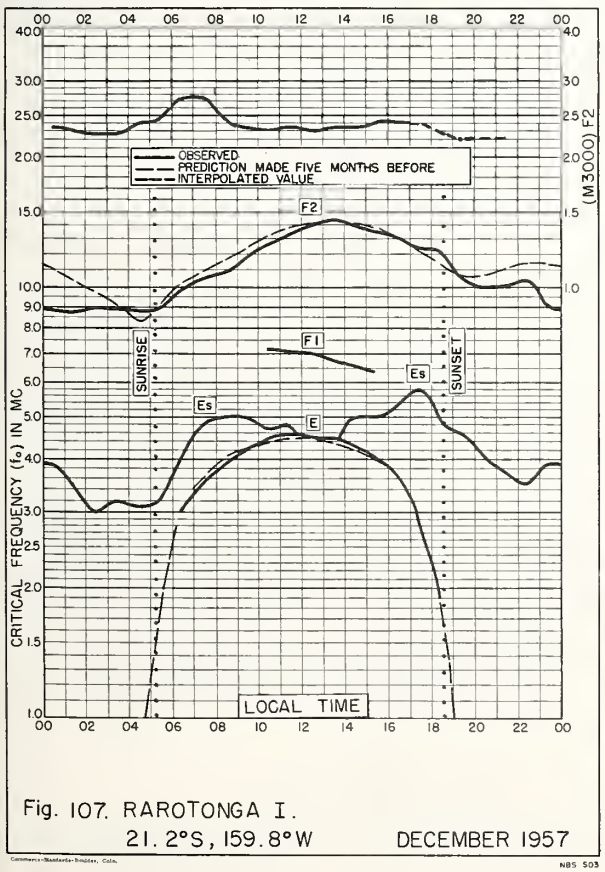


Fig. 107. RAROTONGA I.
21.2°S, 159.8°W DECEMBER 1957

Commerce-Standards-Boulder, Colo. NBS 503

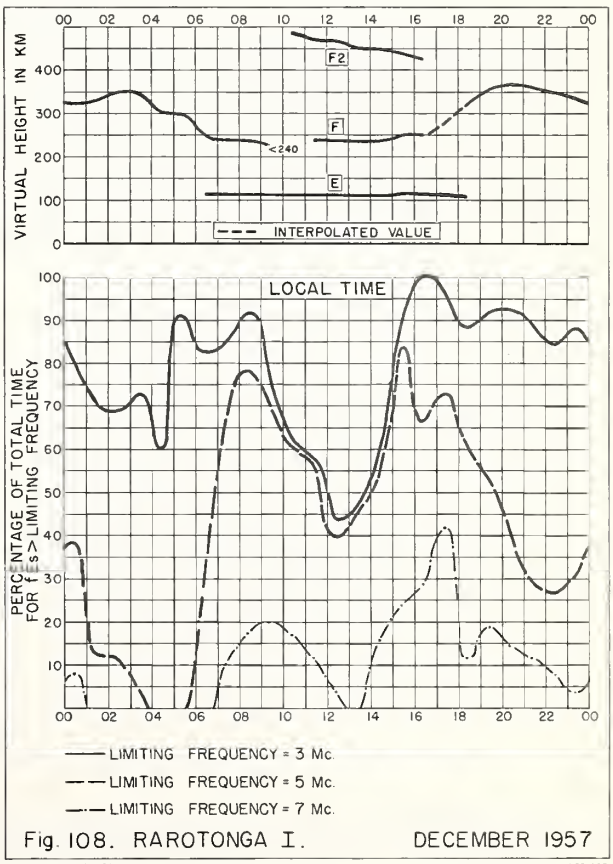


Fig. 108. RAROTONGA I. DECEMBER 1957

Commerce-Standards-Boulder, Colo. NBS 490

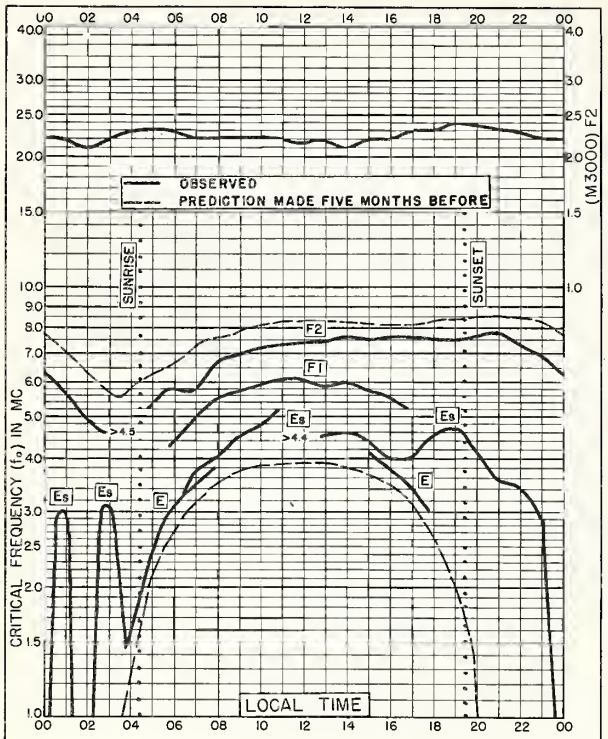


Fig. 109. HOBART, TASMANIA
42.9°S, 147.2°E DECEMBER 1957

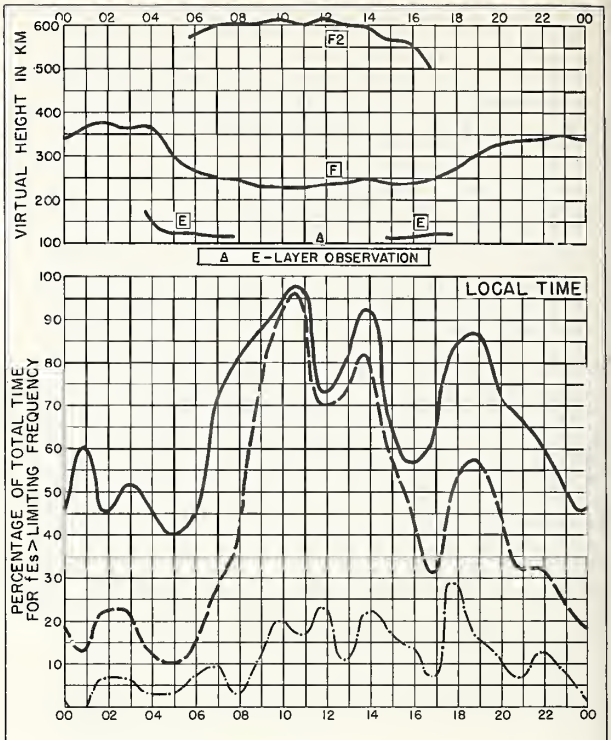


Fig. 110. HOBART, TASMANIA DECEMBER 1957

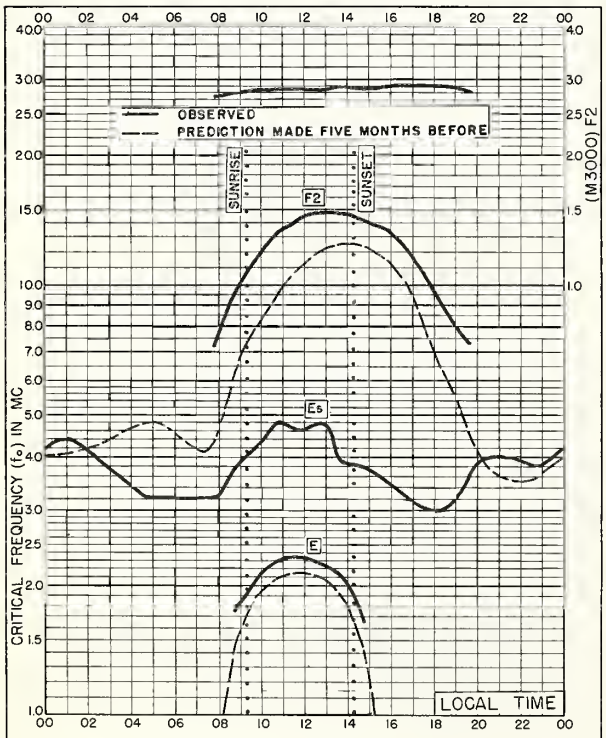


Fig. 111. SODANKYLA, FINLAND
67.4°N, 26.6°E NOVEMBER 1957

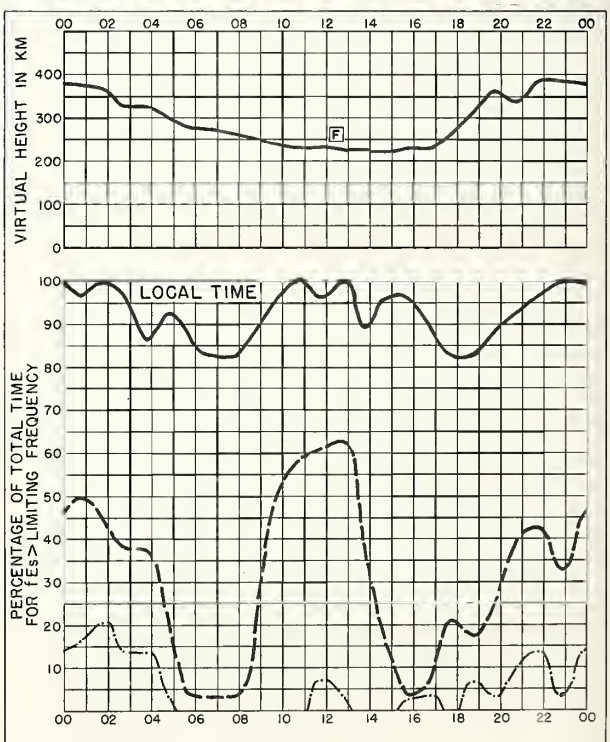


Fig. 112. SODANKYLA, FINLAND NOVEMBER 1957

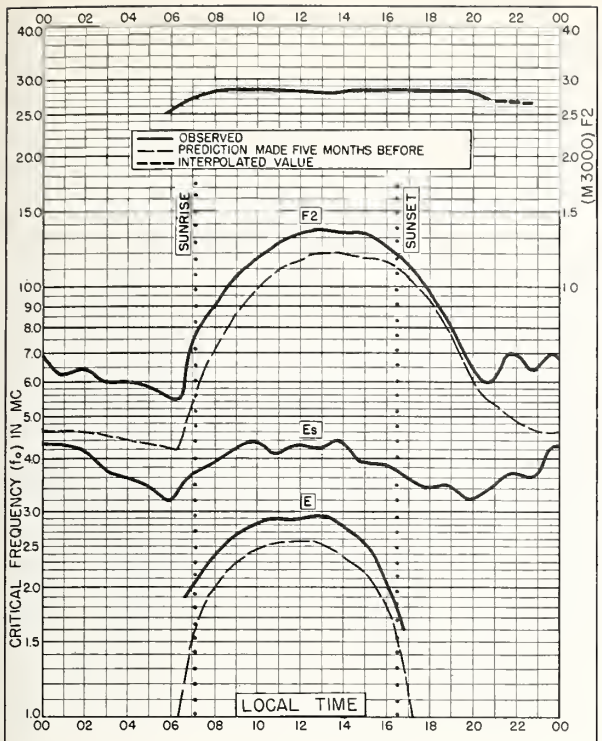


Fig. 113. SODANKYLA, FINLAND
67.4°N, 26.6°E OCTOBER 1957

NBS 503

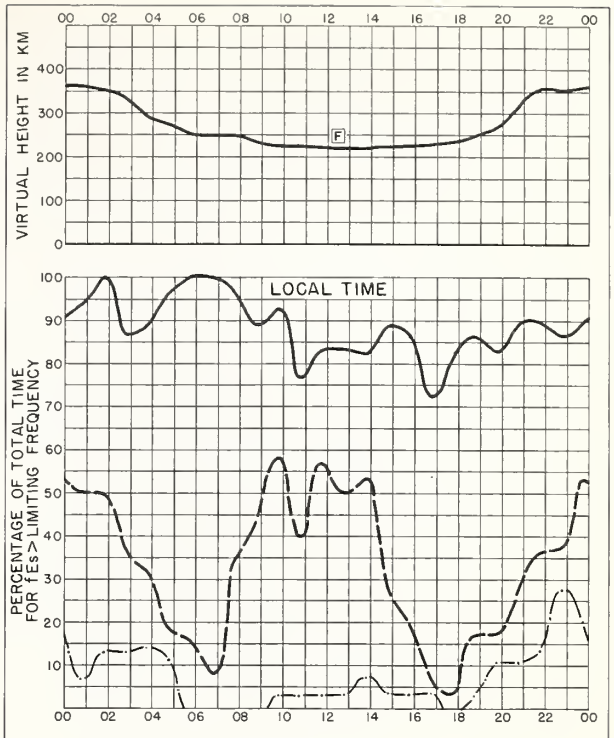


Fig. 114. SODANKYLA, FINLAND OCTOBER 1957

NBS 490

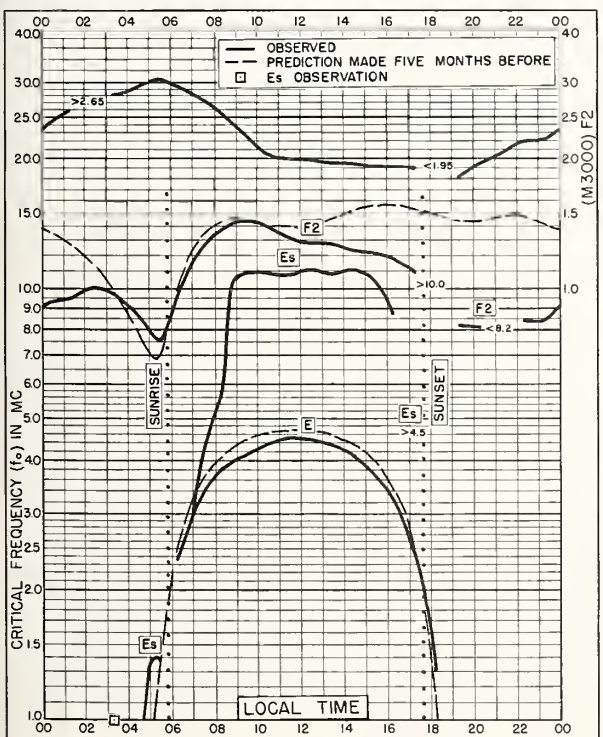


Fig. 115. IBADAN, NIGERIA
7.4° N, 3.9°E OCTOBER 1957

NBS 503

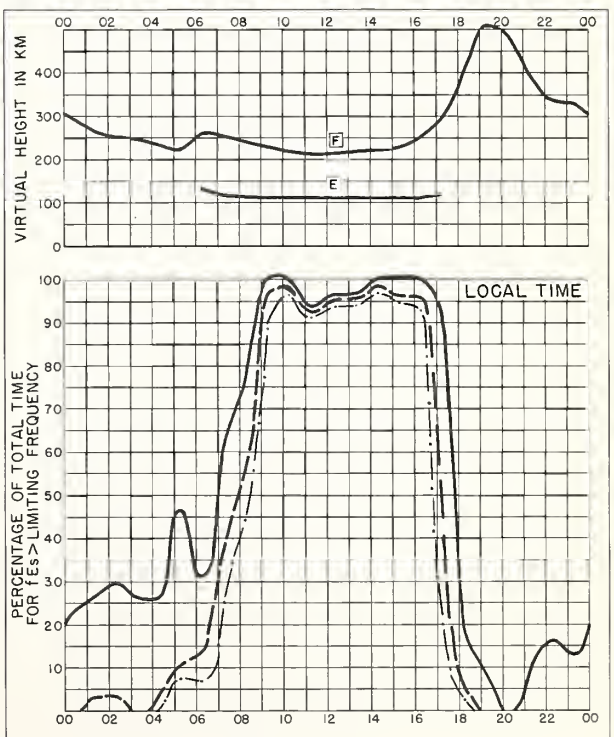


Fig. 116. IBADAN, NIGERIA OCTOBER 1957

NBS 490

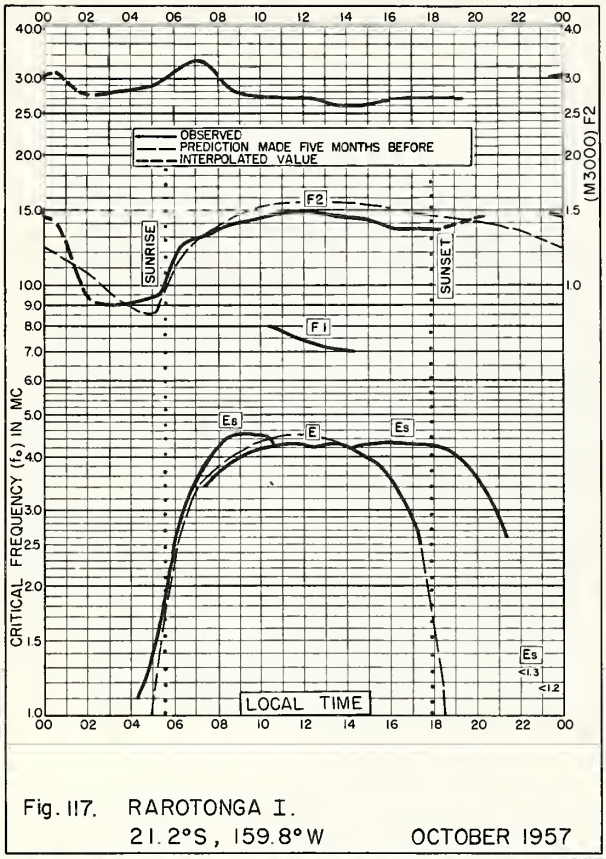


Fig. 117. RAROTONGA I.
21.2°S, 159.8°W OCTOBER 1957

NBS 503

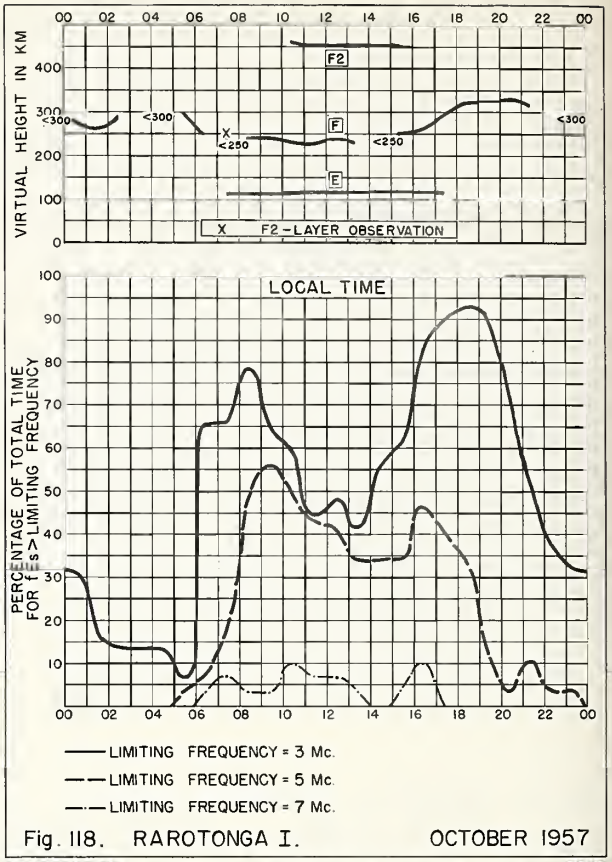


Fig. 118. RAROTONGA I. OCTOBER 1957

NBS 490

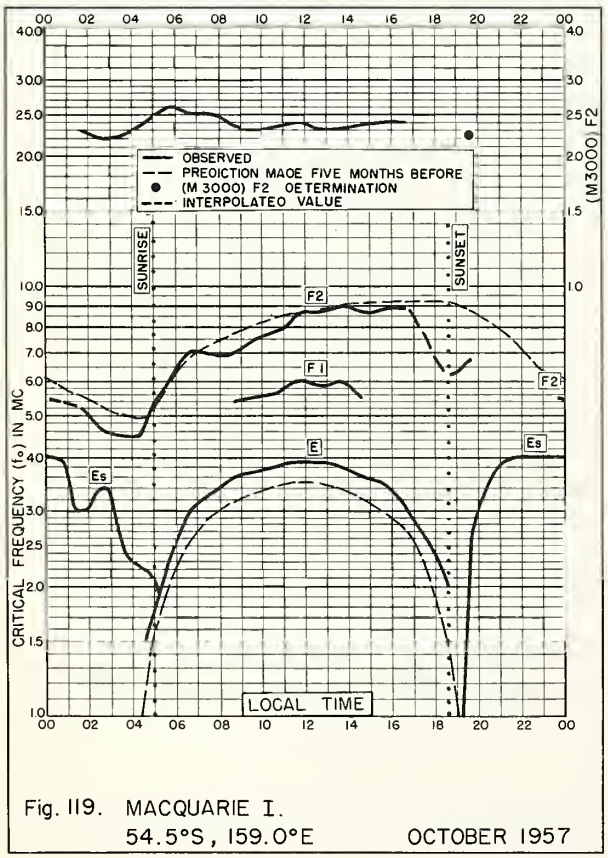


Fig. 119. MACQUARIE I.
54.5°S, 159.0°E OCTOBER 1957

NBS 503

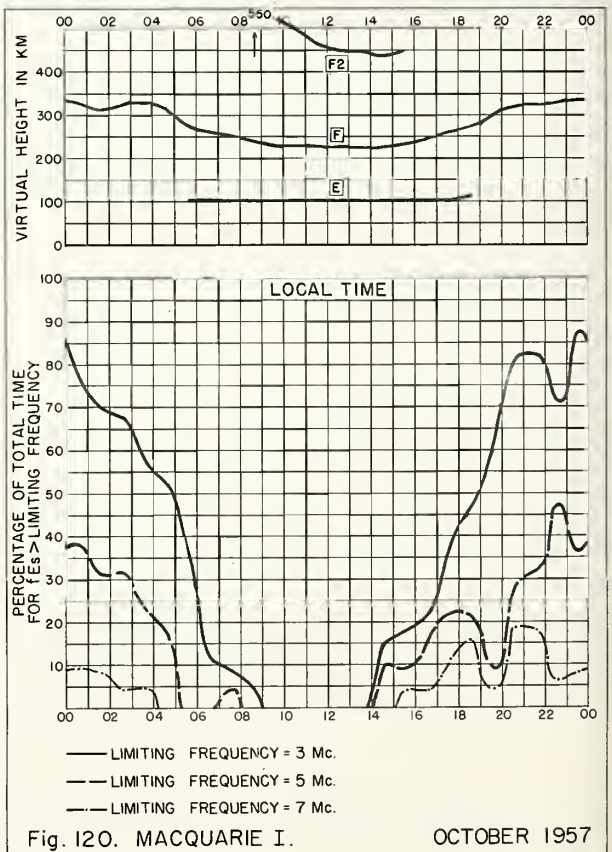


Fig. 120. MACQUARIE I. OCTOBER 1957

NBS 490

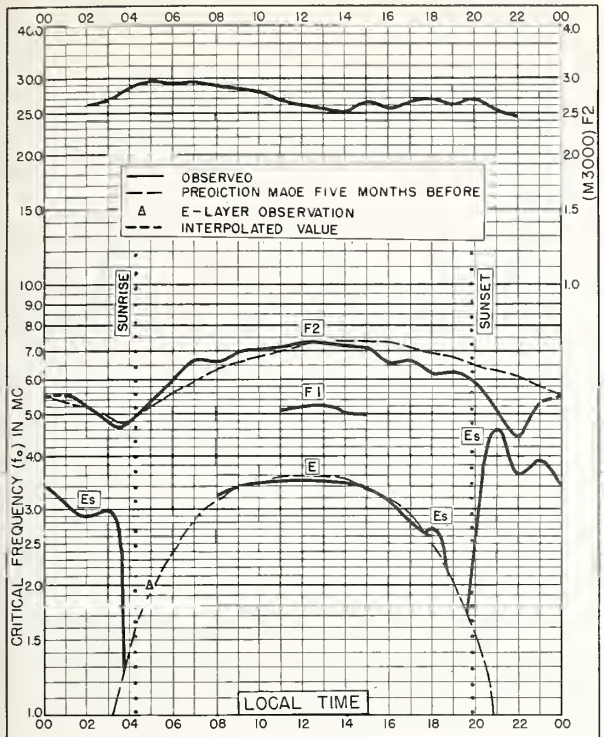
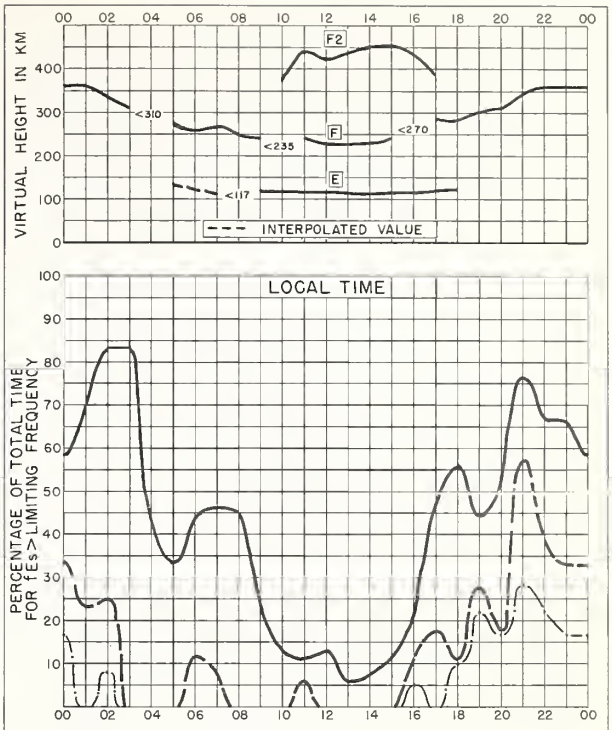


Fig. 121. NARSARSSUAK, GREENLAND
61.2°N, 45.4°W AUGUST 1957

503



AUGUST 1957

Fig. 122. NARSARSSUAK, GREENLAND

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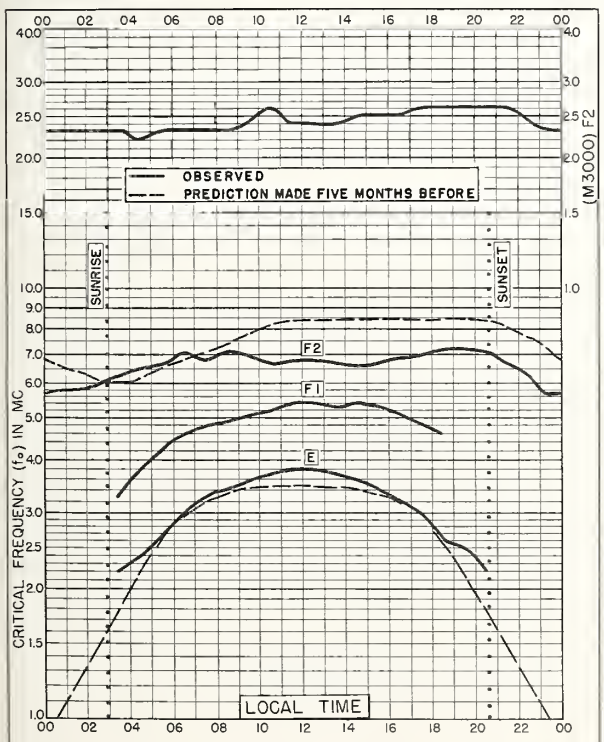

Fig. 123. PROVIDENIE BAY, U.S.S.R.
64.4°N, 186.6°E MAY 1957

Commerce-Standards-Boulder, Colo. NBS 503

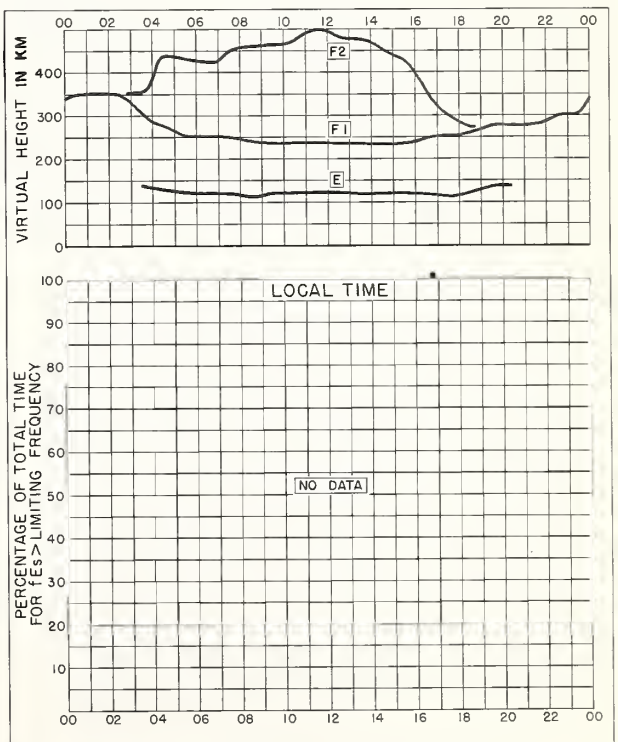

Fig. 124. PROVIDENIE BAY, U.S.S.R. MAY 1957

Commerce-Standards-Boulder, Colo. NBS 490

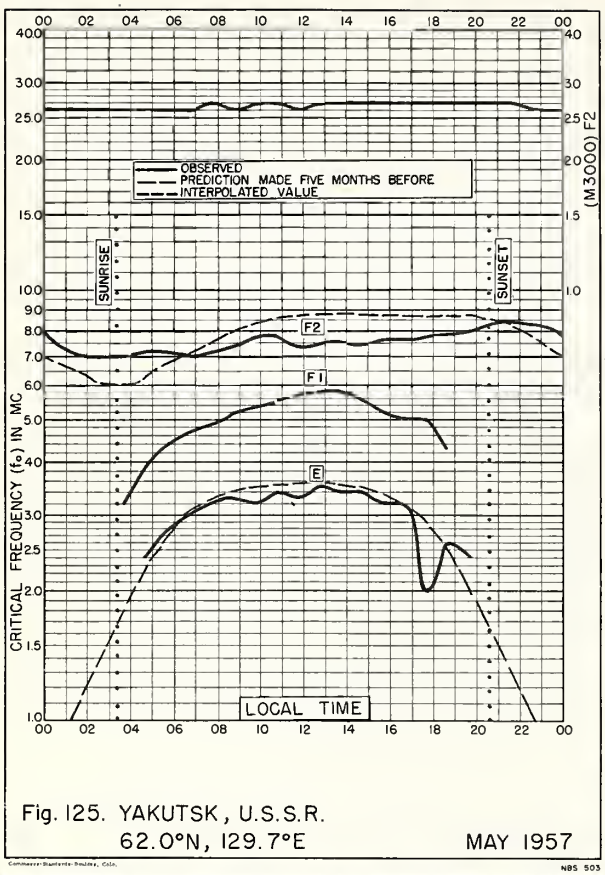

Fig. 125. YAKUTSK, U.S.S.R.
62.0°N, 129.7°E MAY 1957

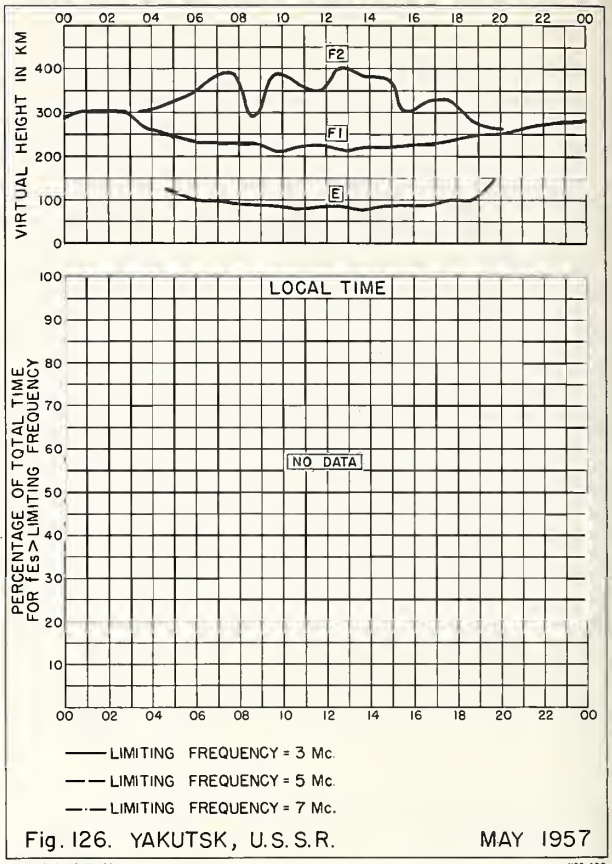

Fig. 126. YAKUTSK, U.S.S.R. MAY 1957

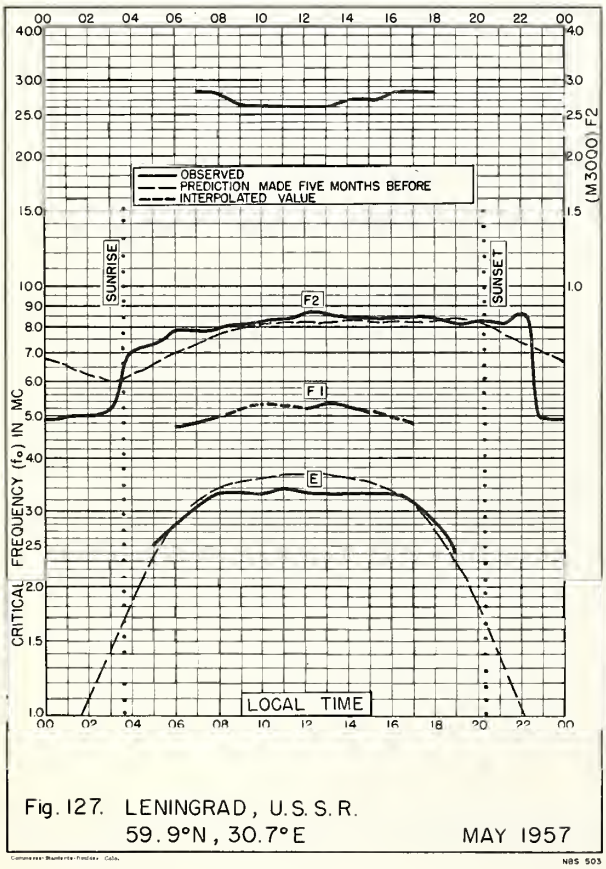

Fig. 127. LENINGRAD, U.S.S.R.
59.9°N, 30.7°E MAY 1957

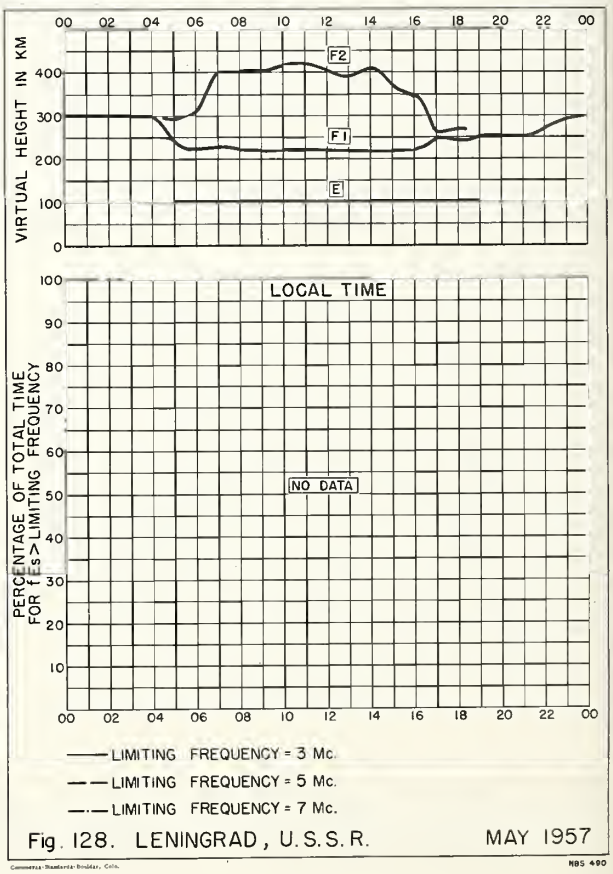

Fig. 128. LENINGRAD, U.S.S.R. MAY 1957

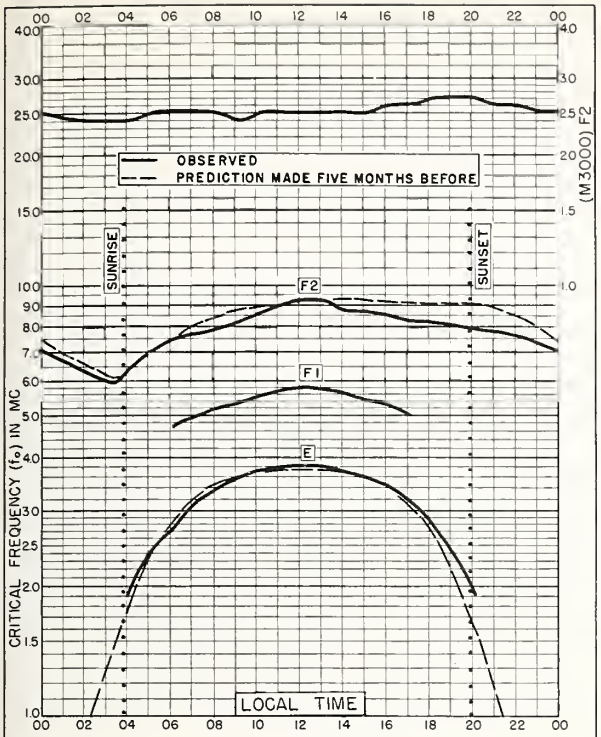

Fig. 129. SVERDLOVSK, U.S.S.R.
56.7°N, 61.1°E MAY 1957

NBS 503

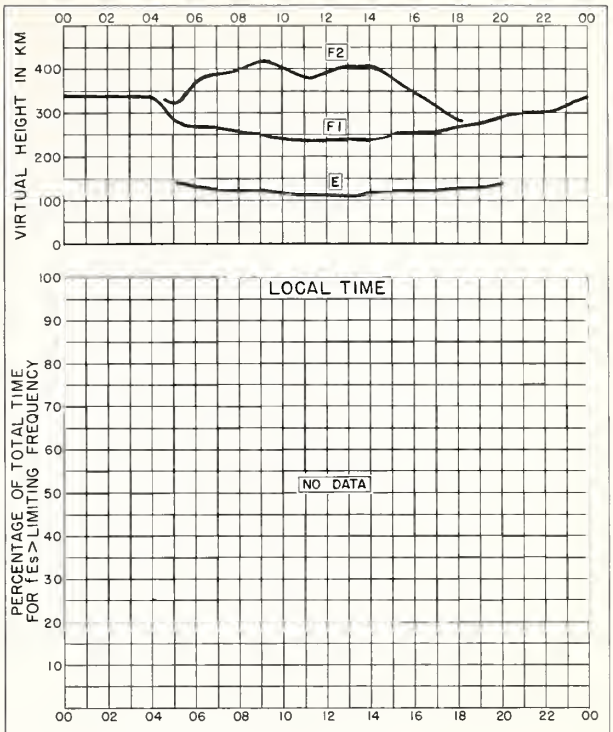

Fig. 130. SVERDLOVSK, U.S.S.R. MAY 1957

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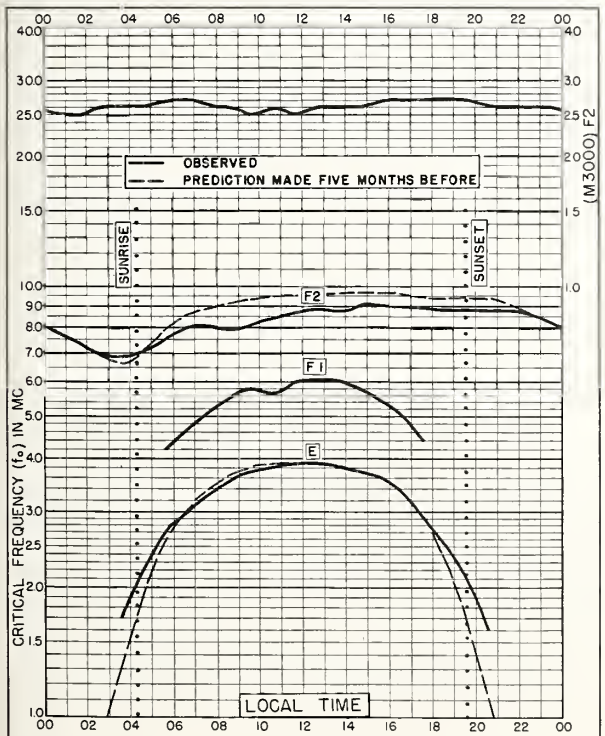

Fig. 131. CHITA, U.S.S.R.
52.0°N, 113.3°E MAY 1957

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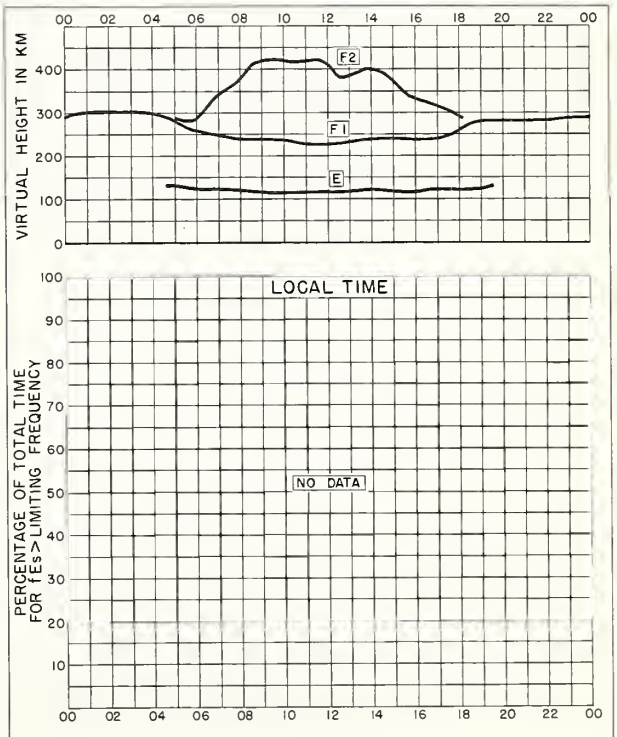

Fig. 132. CHITA, U.S.S.R. MAY 1957

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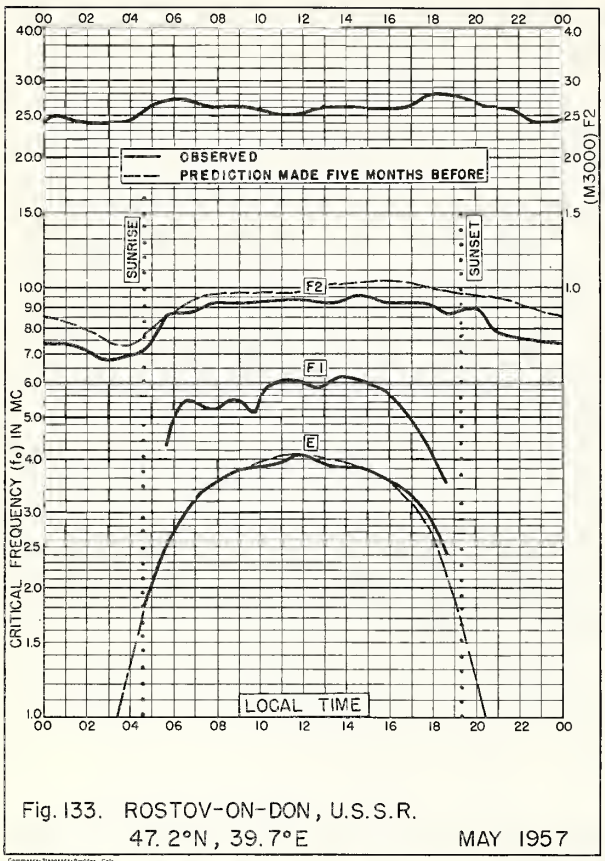


Fig. 133. ROSTOV-ON-DON, U.S.S.R.
47.2°N, 39.7°E MAY 1957

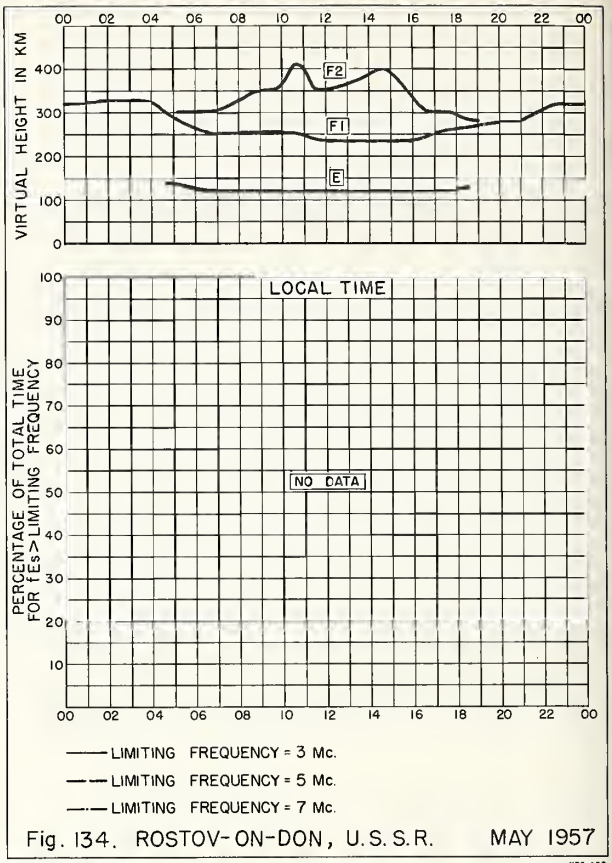


Fig. 134. ROSTOV-ON-DON, U.S.S.R. MAY 1957

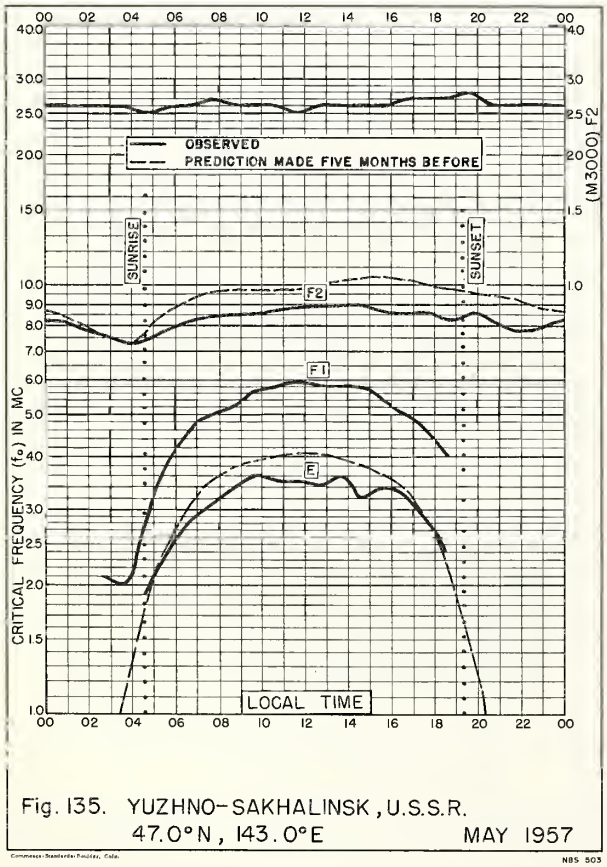


Fig. 135. YUZHNO-SAKHALINSK, U.S.S.R.
47.0°N, 143.0°E MAY 1957

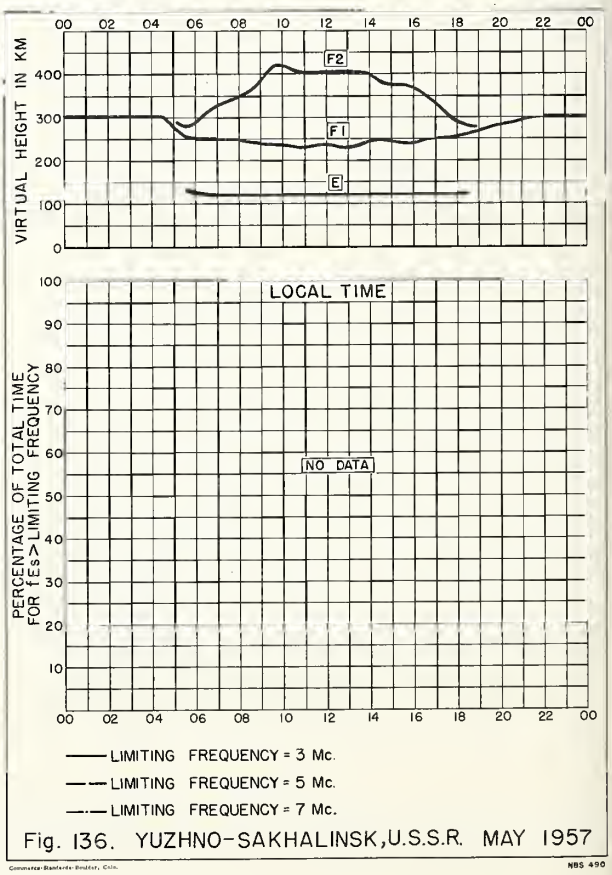


Fig. 136. YUZHNO-SAKHALINSK, U.S.S.R. MAY 1957

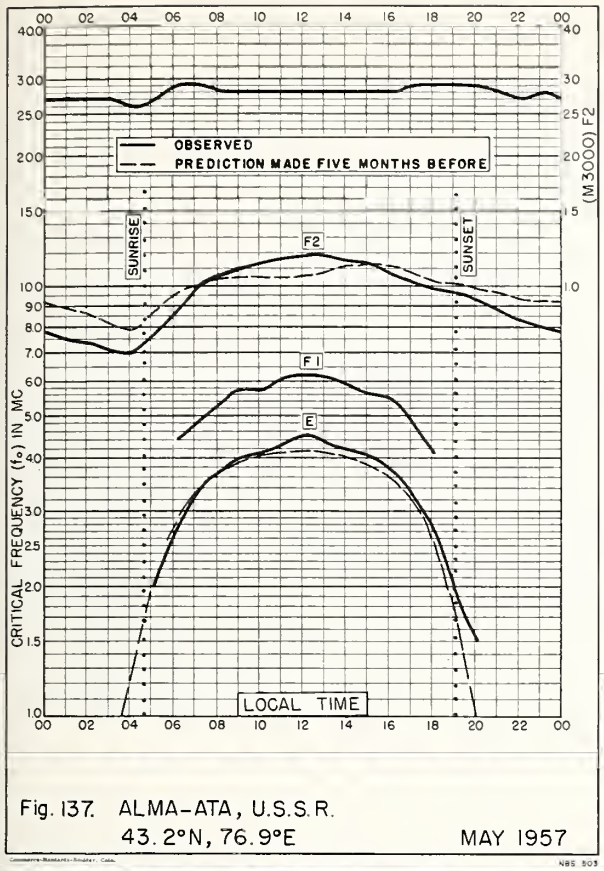


Fig. 137. ALMA-ATA, U.S.S.R.
43.2°N, 76.9°E MAY 1957

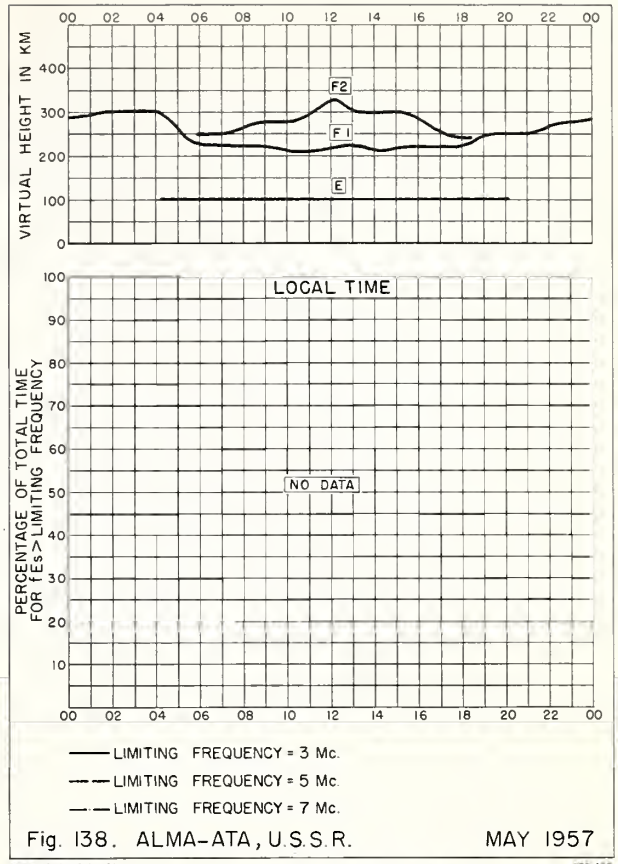
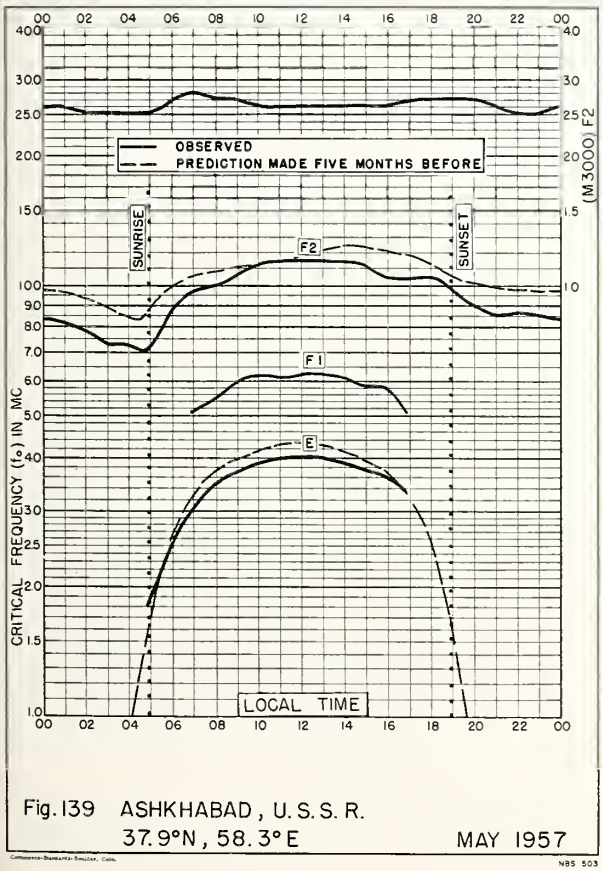


Fig. 138. ALMA-ATA, U.S.S.R. MAY 1957



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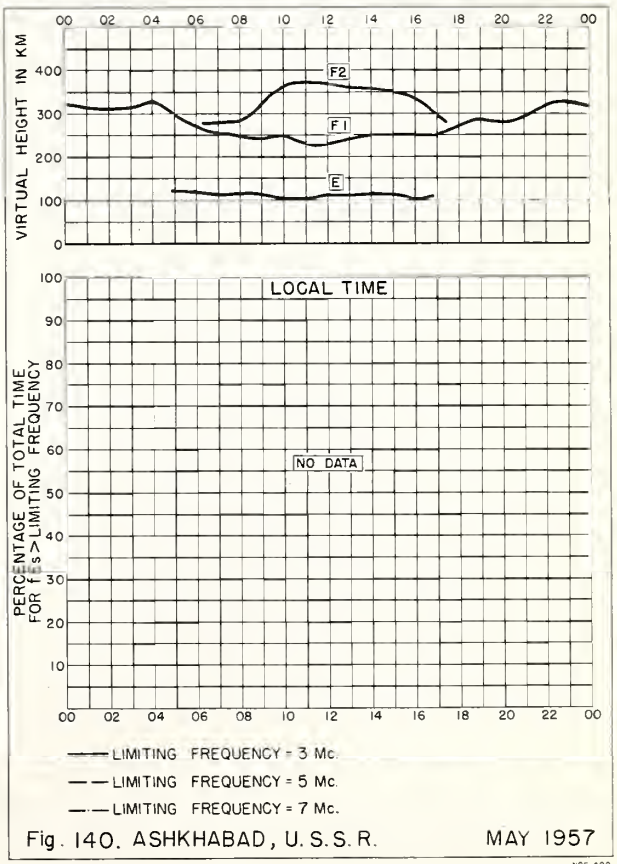
37.9°N, 58.3°E MAY 1957



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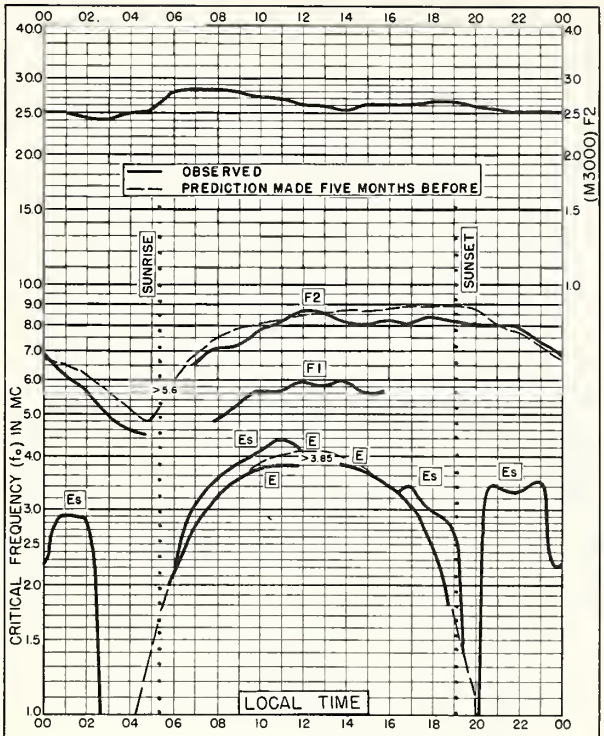

Fig. 141. HOBART, TASMANIA
42.9°S, 147.2°E FEBRUARY 1957

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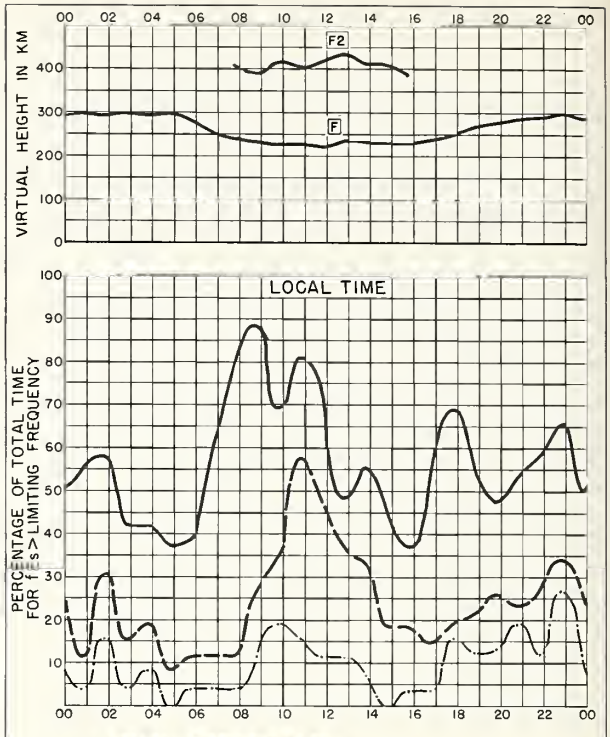

Fig. 142. HOBART, TASMANIA FEBRUARY 1957

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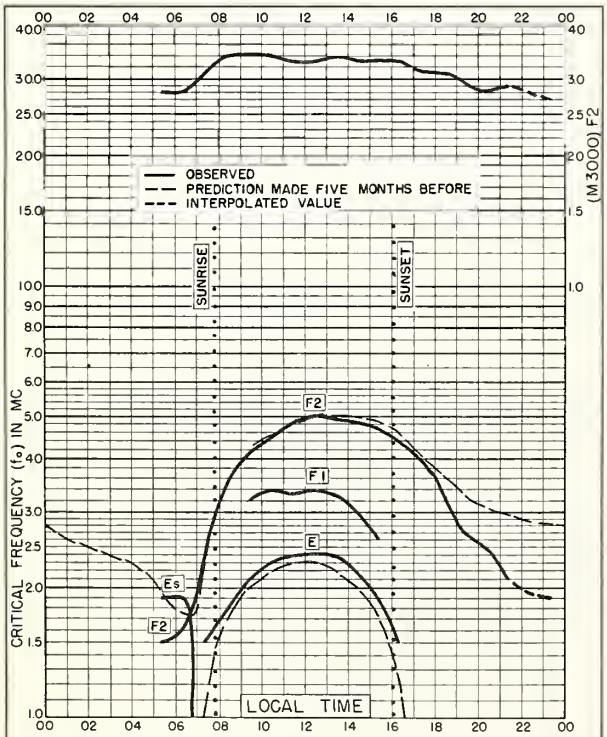

Fig. 143. CAMPBELL I.
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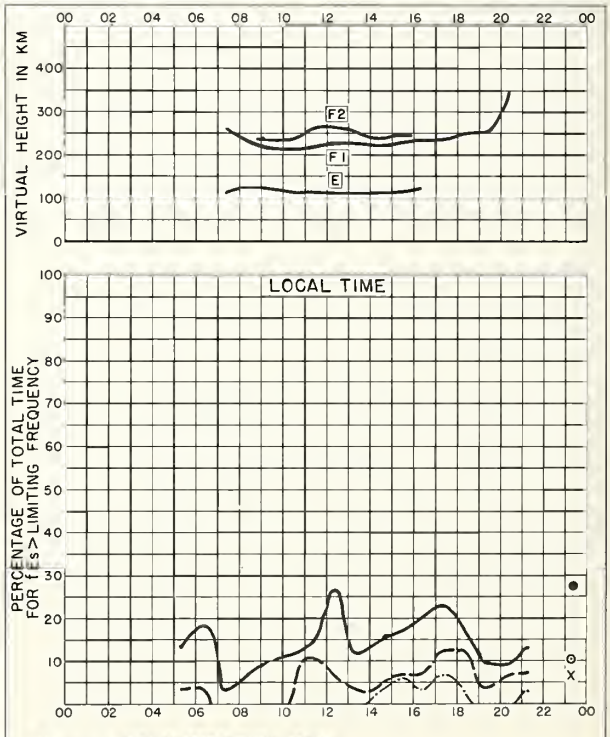

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(Part B). Solar-Geophysical Data.
Limited distribution. These publications are in general disseminated only to those individuals or scientific organizations which collaborate in the exchange of ionospheric, solar, geomagnetic or other radio propagation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

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

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