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PART A
IONOSPHERIC DATA

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

CRPL-F 138
PART A

NATIONAL BUREAU OF STANDARDS
CENTRAL RADIO PROPAGATION LABORATORY
BOULDER, COLORADO

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IONOSPHERIC DATA

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SYMBOLS, TERMINOLOGY, CONVENTIONS

Beginning with data reported for January 1952, 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 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 in Document No. 626-E referred to above, plus an additional symbol, R: "Scaling of characteristic is influenced or prevented by absorption in the neighborhood of the critical frequency," (May 1955).

a. For all ionospheric characteristics:

Values missing because of A, C, F, L, M, N, Q, R, S, or T 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'F2 (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 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 C 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 (and B when applied to the daytime E region only) are counted as equal to or less than the median foE, or equal to or less than the lower frequency limit of the recorder.

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 only four values or less are available, the data are considered insufficient and no median value is computed.

2. For the F2 layer, if only five to nine values are available, the median is considered doubtful. The E and F1 layers are so regular in their characteristics that, as long as there are at least five values, the median is not considered doubtful.

3. For all layers, if more than half of the values used to compute the median 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.

The tables and graphs of ionospheric data are correct for the values reported to the CRPL, but, because of variations in practice in the interpretation of records and scaling and manner of reporting of values, may at times give an erroneous conception of typical ionospheric characteristics at the station. Some of the errors are due to:

- a. Differences in scaling records when spread echoes are present.
- b. Omission of values when f_{oF2} is less than or equal to f_{oF1} , leading to erroneously high values of monthly averages or median values.
- c. Omission of values when critical frequencies are less than the lower frequency limit of the recorder, also leading to erroneously high values of monthly average or median values.

These effects were discussed on pages 6 and 7 of the previous F-series report IRPL-F5.

Ordinarily, a blank space in the fEs 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 f_{oE} . Blank spaces at the beginning and end of columns of h^*F1 , f_{oF1} , h^*E , and f_{oE} are usually the result of diurnal variation in these characteristics. Complete absence of medians of h^*F1 and f_{oF1} 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.

PREDICTED AND OBSERVED SUNSPOT NUMBERS

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

<u>Month</u>	<u>Predicted Sunspot Number</u>										
	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946
December	42	11	15	33	53	86	108	114	126	85	
November	35	10	16	38	52	87	112	115	124	83	
October	31	10	17	43	52	90	114	116	119	81	
September	30	8	18	46	54	91	115	117	121	79	
August	27	8	18	49	57	96	111	123	122	77	
July	95	22	8	20	51	60	101	108	125	116	73
June	89	18	9	21	52	63	103	108	129	112	67
May	77	16	10	22	52	68	102	108	130	109	67
April	68	13	10	24	52	74	101	109	133	107	62
March	60	14	11	27	52	78	103	111	133	105	51
February	53	14	12	29	51	82	103	113	133	90	46
January	48	12	14	30	53	85	105	112	130	88	42

The latest available information follows concerning the corresponding observed Zürich numbers (some of which may be subject to minor change) beginning with the minimum of April 1954.

Observed Sunspot Number

<u>Month</u>	<u>Jan.</u>	<u>Feb.</u>	<u>Mar.</u>	<u>Apr.</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug.</u>	<u>Sept.</u>	<u>Oct.</u>	<u>Nov.</u>	<u>Dec.</u>
1954				3	4	4	5	7	8	8	9	12
1955	14	16	19	23	29	35	40					

WORLD - WIDE SOURCES OF IONOSPHERIC DATA

The ionospheric data given here in tables 1 to 60 and figures 1 to 120 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:

República Argentina, Ministerio de Marina:
Buenos Aires, Argentina

Commonwealth of Australia, Ionospheric Prediction Service of the Commonwealth Observatory:

Brisbane, Australia
Canberra, Australia
Hobart, Tasmania
Townsville, Australia

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
Leopoldville, Belgian Congo

British Department of Scientific and Industrial Research, Radio Research Board:
Falkland Is.
Inverness, Scotland
Port Lockroy
Singapore, British Malaya
Slough, England

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

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

Danish National Committee of URSI:
Godhavn, Greenland

The Royal Netherlands Meteorological Institute:
De Bilt, Holland

Icelandic Post and Telegraph Administration:
Reykjavik, Iceland

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

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

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

Manila Observatory:
Baguio, P. I.

South African Council for Scientific and Industrial Research:
Capetown, Union of South Africa
Johannesburg, Union of South Africa
Nairobi, Kenya (East African Meteorological Department)

Research Laboratory of Electronics, Chalmers University of
Technology, Gothenburg, Sweden:
Kiruna, Sweden

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

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

United States Army Signal Corps:
Ft. Monmouth, New Jersey
Okinawa I.

National Bureau of Standards (Central Radio Propagation Labor-
atory):
Anchorage, Alaska
Fairbanks, Alaska (Geophysical Institute of the University
of Alaska)
Guam I.
Huancayo, Peru (Instituto Geofisico de Huancayo)
Maui, Hawaii
Panama Canal Zone
Point Barrow, Alaska
Puerto Rico, W. I.
San Francisco, California (Stanford University)
Talara, Peru (Instituto Geofisico de Huancayo)
Washington, D. C.

HOURLY IONOSPHERIC DATA AT WASHINGTON, D. C.

The data given in tables 61 through 71 follow the scaling practices given in the report IRPL-C61, "Report of International Radio Propagation Conference," pages 36 to 39, and the median values are determined by the conventions given above under "Symbols, Terminology, Conventions." Beginning with September 1949, the data are taken at Ft. Belvoir, Virginia.

ERRATA

1. F137(A), p. 10, table 17: $h'E$ should read at 07, ---; from 08 through 17, 100. The corresponding curve should be added to fig. 34, p. 37, in the same issue.
2. F137(A), p. 29, fig. 3: Disregard the F2 prediction curve. It is for 80°N .

TABLES OF IONOSPHERIC DATA

Table 1

Washington, D. C. (38.7°N, 77.1°W)							January 1956		
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2	
00	280	2.9			<1.6	2.90			
01	290	2.9			<1.6	3.00			
02	280	3.0			<1.5	3.00			
03	250	3.5			<1.2	3.10			
04	250	3.2			<1.2	3.10			
05	240	3.1			<1.6	3.10			
06	250	2.9			<1.6	3.10			
07	250	3.4			<1.6	3.20			
08	220	6.3		(131)	1.8	2.3	3.50		
09	220	7.4	215	---	109	2.4	2.9	3.50	
10	240	8.6	210	---	109	2.8	3.5	3.30	
11	240	9.7	220	---	109	3.1	3.6	3.30	
12	240	9.8	215	---	110	3.1	3.6	3.25	
13	250	9.5	210	---	109	3.1	3.1	3.20	
14	240	9.4	215	---	109	2.9	3.1	3.20	
15	240	9.5	230	---	109	2.7	3.0	3.20	
16	230	9.2	230	---	119	2.4	2.5	3.25	
17	220	8.0		---	1.6	<1.7	3.25		
18	220	7.8			<1.6	3.25			
19	220	6.5			<1.6	3.30			
20	220	4.9			<1.6	3.30			
21	250	3.5			<1.6	3.15			
22	270	3.5			<1.6	3.00			
23	270	3.1			<1.7	3.00			

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

Table 3

Fairbanks, Alaska (64.9°N, 147.8°W)							December 1955		
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2	
00	310	(2.2)				4.2	(3.0)		
01	(290)	(2.9)				6.0	(3.05)		
02	(310)	(2.7)				5.1	(2.85)		
03	---	(3.2)				5.5	(2.8)		
04	(300)	(3.0)				6.0	(2.8)		
05	(320)	(3.2)				4.8	(2.8)		
06	300	(2.8)				4.2	2.9		
07	(280)	3.0				4.1	2.9		
08	270	(3.2)				3.4	3.0		
09	240	4.2				<2.4	3.2		
10	230	5.9				2.0	3.3		
11	220	6.9				2.0	3.4		
12	220	7.6				2.0	3.2		
13	220	8.4				1.8	3.3		
14	220	7.7				<1.5	3.3		
15	210	6.8					3.3		
16	220	5.8					3.3		
17	220	4.5					3.4		
18	230	3.2					3.4		
19	250	2.3				1.7	3.2		
20	290	(1.9)				3.3	(3.0)		
21	280	(2.5)				2.2	3.05		
22	300	(1.8)				3.8	(3.0)		
23	300	(1.8)				4.2	(3.0)		

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

Table 5

Upsala, Sweden (59.8°N, 17.6°E)							December 1955		
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2	
00	365	(1.9)				2.9	2.7		
01	350	(1.8)				2.8	2.7		
02	340	1.8				2.9	2.8		
03	335	1.8				2.7	2.8		
04	330	1.8				2.9	2.8		
05	300	2.0				3.0	2.9		
06	290	2.0				3.1	2.9		
07	280	2.0				2.6	2.9		
08	240	3.7			E	2.8	3.0		
09	220	5.8	---	---	1.6	3.0	3.2		
10	220	7.0	---	---	115	1.9	2.5	3.3	
11	230	8.3	---	---	115	2.0	2.5	3.3	
12	220	8.5	240	(3.1)	120	2.1	2.8	3.3	
13	220	8.2	---	---	120	2.0	2.7	3.3	
14	220	7.7	---	---	120	1.8	2.4	3.3	
15	210	6.7	---	---	E	2.5	3.3		
16	220	5.9	---	---	E	2.7	3.2		
17	225	4.5				2.7	3.2		
18	240	3.0				3.1			
19	270	2.3				2.1	3.0		
20	300	2.0				2.4	2.95		
21	300	(1.8)				2.8	2.8		
22	345	(1.9)				2.7	(2.7)		
23	350	(1.8)				2.9	(2.7)		

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

Table 2

Tromso, Norway (69.7°N, 19.0°E)							December 1955		
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2	
00	---				(2.9)			4.1	
01	---				3.1			3.6	
02				(310)	3.2			2.7	
03					300	3.1		2.9	
04					285	2.8		2.7	
05					275	2.7		2.9	
06					260	2.5		2.7	
07					255	2.2		3.0	
08					250	2.4		2.8	
09					245	3.6	---	2.9	
10					240	4.7	---	3.1	
11					240	5.8	---	3.2	
12					235	6.3	---	3.2	
13					235	6.1		3.1	
14					240	5.5		3.1	
15					220	4.8	---	3.1	
16					235	3.6		3.05	
17					(240)	2.5		3.05	
18					---	2.1		3.0	
19					---	2.4		3.05	
20					---	(2.0)		2.9	
21					---			3.0	
22					---			3.0	
23					---			3.0	

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

Table 4

Oslo, Norway (60.0°N, 11.1°E)							December 1955		
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2	
00	---				1.6			(2.65)	
01	---				1.7			(2.7)	
02				(305)	1.7			2.7	
03				(310)	1.7			2.75	
04				---	1.8			2.85	
05				---	1.8			2.9	
06				(290)	1.9			3.0	
07				---	2.0			3.0	
08				250	2.6		---	2.9	
09				225	4.8		---	3.2	
10				220	6.6	---	1.6	3.35	
11				225	7.5	240	2.0	3.45	
12				225	8.1	240	2.1	3.35	
13				225	8.0	240	2.1	3.4	
14				220	7.9	---	1.8	3.4	
15				220	7.4	---	1.8	3.35	
16				220	6.2		---	3.3	
17				220	5.3		1.4	3.25	
18				230	3.7		1.4	3.1	
19				---	2.8		1.6	3.05	
20				---	2.2		1.4	2.95	
21				---	2.0		1.4	2.9	
22				---	1.8		1.4	(2.75)	
23				---	1.8		1.4	(2.7)	

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

Table 6

Graz, Austria (47.1°N, 15.5°E)							December 1955		
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2	
00	---				3.4				
01	330				3.6				
02	300				3.6				
03	300				3.6				
04	290				3.6				
05	290				3.6				
06	(270)				3.4				
07	280				3.6				
08	225				6.0				
09	210				7.3				
10	230				8.6				
11	220				8.8				
12	230				8.5				
13	230				8.4				
14	230				8.6				
15	220				8.2				
16	210				7.0				
17	250				5.6				
18	250				4.6				
19	280				3.6				
20	(265)				3.4				
21	---				3.0				
22	---				3.2				
23	340				3.4				

Time: 15.0°E.
Sweep: 2.5 Mc to 12.0 Mc in 2 minutes.

Table 7

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

December 1955

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	3.1			<1.7	2.9		
01	280	3.3			<1.7	2.9		
02	280	3.6			<1.6	2.9		
03	270	3.8			<1.6	3.0		
04	260	3.7			<1.7	3.0		
05	250	3.6			<1.7	3.0		
06	250	3.4			<1.7	3.1		
07	240	4.6	---	---	---	<1.6	<1.6	3.2
08	230	7.0	---	---	130	2.2	3.5	
09	230	8.2	220	---	120	2.6	2.7	3.4
10	240	8.7	220	---	120	2.9	3.1	3.3
11	240	9.8	220	(3.9)	120	3.1	3.3	3.3
12	240	10.0	220	(3.2)	120	(3.2)	3.3	
13	240	9.8	220	---	120	3.0	3.1	3.2
14	240	9.5	230	---	120	2.8	2.9	3.2
15	240	9.4	230	---	120	2.5	2.6	3.3
16	220	8.9	---	---	140	2.0	2.0	3.25
17	220	7.6	---	---	<1.6	<1.7	3.2	
18	230	6.8			<1.7	3.1		
19	230	5.4			<1.7	3.2		
20	240	4.6			<1.7	3.2		
21	250	3.6			<1.7	3.1		
22	<280	3.2			<1.7	3.0		
23	280	3.0			<1.7	3.0		

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 9

Formosa, China (25.0°N, 121.5°E)

December 1955

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	5.3			<1.7	2.7		
01	280	5.3			<1.7	2.9		
02	270	4.6			<1.7	2.9		
03	260	4.1			<1.4	3.0		
04	240	3.5			<1.4	3.1		
05	270	2.6			<1.4	2.8		
06	290	3.0			<1.4	2.6		
07	260	6.7			160	<1.8	3.1	
08	250	9.8	250	---	120	2.6	3.25	
09	260	11.4	250	---	120	3.0	3.3	
10	260	11.9	240	4.6	120	3.3	3.7	3.3
11	250	12.4	220	4.6	120	3.4	4.0	3.1
12	280	13.4	220	4.8	120	3.4	4.2	3.0
13	280	14.2	220	(4.6)	120	3.4	4.1	3.0
14	270	14.6	240	4.6	120	3.3	4.1	3.1
15	260	14.1	240	4.5	120	3.1	3.7	3.1
16	240	13.5	---	---	120	(2.6)	3.3	3.2
17	230	13.5			140	2.0	<2.4	3.2
18	210	12.1				2.7	3.3	
19	220	9.8				2.3	3.15	
20	240	9.8				1.9	3.1	
21	230	9.0				2.0	3.2	
22	240	7.1				1.8	3.1	
23	240	5.5				<1.7	2.9	

Time: 120.0°E.

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

Table 11

Puerto Rico, W. I. (18.5°N, 67.2°W)

December 1955

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	4.2			<1.8	3.0		
01	260	4.4			<1.8	3.1		
02	250	4.3			<1.8	3.15		
03	240	4.2			<1.8	3.2		
04	260	3.8			<1.8	2.9		
05	260	3.9			<1.8	2.9		
06	260	4.0			<1.7	3.0		
07	240	5.8	---	---	<1.7	<1.8	3.3	
08	230	7.7	---	---	110	2.5	3.4	
09	250	9.5	230	---	110	3.0	3.4	
10	250	10.0	220	---	110	3.3	3.4	
11	260	10.0	210	4.9	110	3.4	4.0	3.3
12	260	9.2	210	4.9	110	3.5	4.0	3.3
13	270	9.0	210	5.0	110	3.5	4.0	3.1
14	280	9.6	210	4.8	110	3.4	4.2	3.1
15	270	9.6	220	4.8	110	3.2	4.1	3.2
16	250	8.9	230	---	110	2.9	3.7	3.2
17	240	9.0	230	---	120	2.4	3.3	3.3
18	220	8.1				3.2	3.3	
19	220	6.8				2.6	3.2	
20	230	5.0			<2.2	3.1		
21	260	4.8			<1.8	3.1		
22	250	4.7			<1.8	3.1		
23	240	4.5			<1.8	3.1		

Time: 60.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 8

Okinawa I. (26.3°N, 127.8°E)

December 1955

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	4.3					<1.6	2.85
01	290	4.4					<1.4	2.9
02	250	4.4					<1.4	3.1
03	240	4.0					<1.4	3.3
04	230	3.7					<1.4	3.3
05	230	2.9					<1.4	3.1
06	280	2.5					<1.6	3.0
07	260	4.3					<1.6	3.0
08	240	7.7	240	---	110	>2.2		3.3
09	240	10.0	230	---	110	>2.8		3.4
10	250	10.9	230	---	110	3.3	3.6	3.35
11	240	10.9	220	---	110	3.5	3.8	3.3
12	260	11.0	220	---	110	>3.5	4.0	3.2
13	270	12.3	220	---	110	3.5	4.2	3.1
14	260	(13.0)	230	---	110	3.5	4.0	3.1
15	250	13.0	230	---	110	>3.2	3.9	3.2
16	240	12.0	230	---	110	>2.8	3.5	3.2
17	230	11.4	230	---	120	>2.0	2.6	(3.3)
18	210	9.9					2.4	3.4
19	200	8.4					1.9	3.2
20	210	8.0					2.0	3.15
21	220	7.6					<1.8	3.15
22	220	6.4					1.8	3.2
23	240	>4.8					<1.6	3.05

Time: 135.0°E.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 10

Maui, Hawaii (20.8°N, 156.5°W)

December 1955

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	3.3					<1.4	3.0
01	270	3.4					<1.3	2.9
02	250	3.4					<1.4	3.3
03	240	2.9					<1.4	3.3
04	260	2.4					<1.4	2.9
05	320	2.2					1.7	2.7
06	290	2.3					2.7	2.6
07	270	5.0					1.8	3.1
08	250	8.2	250	---	120	2.4	4.3	3.3
09	270	10.3	230	---	110	3.0	5.0	3.2
10	270	11.6	230	---	110	3.3	6.2	3.3
11	260	11.4	220	---	110	3.5	5.8	3.2
12	270	11.4	210	4.9	110	3.5	6.8	3.0
13	290	12.0	210	5.0	110	3.5	5.6	2.9
14	290	13.0	220	5.0	110	3.4	5.7	3.0
15	270	13.0	240	---	110	3.2	6.4	3.1
16	240	11.8	230	---	120	2.8	5.6	3.2
17	230	10.0	230	---	120	2.4	4.4	3.2
18	220	8.4					4.2	3.4
19	220	5.8					4.3	3.4
20	230	5.1					3.3	3.0
21	240	5.6					3.9	3.1
22	230	5.4					2.6	3.2
23	230	4.3					1.4	3.2

Time: 150.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 11

Puerto Rico, W. I. (18.5°N, 67.2°W)

December 1955

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	4.2			<1.8	3.0		
01	260	4.4			<1.8	3.1		
02	250	4.3			<1.8	3.15		
03	240	4.2			<1.8	3.2		
04	260	3.8			<1.8	2.9		
05	260	3.9			<1.8	2.9		
06	260	4.0			<1.7	3.0		
07	240	5.8	---	---	<1.7	<1.8	3.3	
08	230	7.7	---	---	110	2.5	3.4	
09	250	9.5	230	---	110	3.0	3.4	
10	250	10.0	220	---	110	3.3	3.6	2.8
11	260	10.0	210	4.9	110	3.4	3.6	2.6
12	260	9.2	210	4.9	110	3.5	4.0	3.3
13	270	9.0	210	5.0	110	3.5	4.0	3.1</

Table 13

Time	December 1955						
	h'F2	foF2	h'F1	foF1	h'E	foE	fEs (M3000)F2
00	230	5.8			<1.8	3.3	
01	220	3.4			1.9	3.4	
02	240	2.9			1.9	3.1	
03	260	2.7			1.9	2.8	
04	280	2.7			3.2	2.8	
05	290	2.8			3.5	2.7	
06	280	3.6			3.2	2.8	
07	250	7.1	---	---	120	2.0	3.9
08	260	9.4	230	---	120	2.8	4.0
09	270	10.7	230	(5.0)	110	3.2	4.5
10	280	11.2	210	5.1	110	3.5	5.0
11	280	11.8	210	5.2	110	3.6	5.2
12	290	10.8	210	(5.4)	110	(3.7)	5.1
13	290	10.5	210	5.3	110	3.6	4.9
14	300	10.6	210	5.2	110	3.5	5.0
15	280	10.3	210	---	110	3.3	4.7
16	280	9.9	230	---	120	3.0	4.8
17	240	9.2	230	---	120	2.5	4.3
18	230	8.5				4.4	3.2
19	220	7.0				3.5	3.2
20	220	6.0				3.4	3.1
21	240	5.6				3.2	3.0
22	240	5.8				2.2	3.1
23	240	5.4				2.4	3.1

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 14

Time	November 1955						
	h'F2	foF2	h'F1	foF1	h'E	foE	fEs (M3000)F2
00	(300)	2.2					5.0
01	(320)	(2.6)					4.8
02	(340)	(2.8)					5.4
03	(320)	(2.8)					5.8
04	330	3.3					4.6
05	330	(3.0)					4.0
06	310	2.8					4.7
07	300	3.0					3.8
08	250	3.7					2.4
09	240	5.1	240	---	---	---	2.1
10	220	6.2	240	---	---	---	2.0
11	230	6.9	240	---	130	2.1	2.1
12	230	7.3	230	---	---	---	3.3
13	220	8.0	230	---	150	2.0	2.0
14	220	7.8	220	---	---	(1.5)	1.8
15	220	6.8					3.4
16	220	6.0					1.6
17	220	4.7					2.0
18	240	3.5					3.3
19	250	2.7					2.5
20	270	2.4					3.7
21	300	2.3					3.5
22	<300	2.0					4.2
23	320	(1.8)					3.0

Time: 150.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 15

Time	November 1955						
	h'F2	foF2	h'F1	foF1	h'E	foE	fEs (M3000)F2
00	(330)	(2.8)			4.0	---	
01	340	(3.4)			3.9	(2.7)	
02	330	(3.5)			3.9	---	
03	320	(3.4)			3.0	(2.8)	
04	300	(3.2)			<2.2	(2.8)	
05	300	(3.2)			<1.8	(2.9)	
06	280	(2.8)			1.8	2.9	
07	280	2.6			<1.5	2.9	
08	280	3.2			<2.3	3.0	
09	240	4.4				3.3	
10	230	6.0	---	---		3.3	
11	230	6.9	---	---		3.3	
12	230	7.4	---	---		3.3	
13	230	7.2	---	---		3.3	
14	230	7.0	---	---		3.3	
15	240	6.6	---	---		3.2	
16	240	5.8			<1.6	3.1	
17	250	(5.2)			<2.4	3.2	
18	260	(4.7)			2.6	(3.2)	
19	280	(3.3)			3.3	---	
20	300	(3.6)			3.8	---	
21	(330)	(3.2)			3.4	---	
22	320	(3.0)			3.6	---	
23	(320)	(2.8)			3.0	---	

Time: 15.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 16.2 seconds.

Table 17

Time	November 1955						
	h'F2	foF2	h'F1	foF1	h'E	foE	fEs (M3000)F2
00	290	3.3				3.2	
01	290	3.4				3.2	
02	290	3.4				3.2	
03	280	3.5				3.2	
04	250	3.4				3.3	
05	225	3.2				3.5	
06	210	3.0				3.6	
07	200	3.6	---	---		3.6	
08	200	6.0	100	2.0		3.9	
09	200	7.7	100	2.4		4.0	
10	200	8.0	100	2.6		4.0	
11	200	9.0	100	2.8		3.8	
12	200	9.2	100	3.0		3.8	
13	200	9.0	100	3.0		3.8	
14	200	8.5	100	2.8		3.7	
15	200	8.7	100	2.6		3.8	
16	200	8.7	100	2.2		3.8	
17	200	7.0				3.9	
18	200	5.4				3.65	
19	200	4.5				3.5	
20	200	4.0				3.6	
21	240	3.4				3.5	
22	260	3.3				3.3	
23	300	3.2				3.3	

Time: 15.0°E.

Sweep: 1.0 Mc to 25.0 Mc in 30 seconds.

Table 18

Time	November 1955						
	h'F2	foF2	h'F1	foF1	h'E	foE	fEs (M3000)F2
00	260	>4.5					<1.6
01	260	4.2					<1.4
02	260	4.0					<1.5
03	250	>4.4					<1.4
04	230	>4.4					<1.4
05	230	2.9					<1.5
06	290	2.6					<1.7
07	240	5.2					3.3
08	230	8.0	230	---	110	>2.5	3.4
09	240	9.7	230	---	110	3.0	3.5
10	250	(10.8)	220	---	110	>3.0	3.7
11	250	11.0	220	---	110	---	4.0
12	250	11.3	220	---	110	(3.5)	4.3
13	270	12.5	220	---	110	---	4.4
14	270	(13.2)	230	---	110	---	4.3
15	250	13.5	230	---	110	>3.0	4.4
16	240	12.6	230	---	110	---	3.8
17	220	12.2	220	2.8	---	---	2.6
18	210	(9.7)	---	---			3.4
19	210	(8.7)					2.0
20	220	8.0					2.1
21	220	8.2					1.7
22	220	>6.8					1.7
23	240	5.0					1.7

Time: 135.0°E.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 19

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

November 1955

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	5.5				2.6	3.0	
01	260	5.1				2.6	3.0	
02	250	4.8				3.1	3.0	
03	260	4.5				2.0	2.9	
04	260	4.3				1.5	2.9	
05	260	4.3				1.4	3.0	
06	250	5.2	---	---		2.0	2.2	3.2
07	270	6.0	230	4.0		2.7	3.1	3.2
08	300	6.6	220	4.5		3.1	4.0	3.1
09	340	7.0	200	5.0		3.4	4.0	2.9
10	340	7.4	210	5.1		3.6	4.2	3.0
11	350	7.8	210	5.2		3.7	4.3	2.9
12	340	8.2	210	5.2		3.8	4.3	2.9
13	320	8.3	220	5.2		3.8	4.2	3.0
14	330	8.6	220	5.0		3.7	4.3	3.0
15	310	8.3	220	5.0		3.5	4.1	3.0
16	300	8.1	230	4.7		3.2	3.8	3.1
17	280	7.4	240	4.3		2.7	3.6	3.4
18	250	7.0	---	---		2.2	2.9	3.4
19	240	6.8				1.9	3.5	
20	240	6.7				1.6	3.3	
21	240	6.0					3.0	
22	270	5.7					2.9	
23	280	5.4				1.8	2.9	

Time: 120.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 1 minute 45 seconds.

Table 21

Baker Lake, Canada (64.3°N, 96.0°W)

October 1955

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	3.4			110	1.4	6.0	3.1
01	270	3.1			130	1.3	5.8	3.0
02	280	2.8			120	1.1	5.0	2.9
03	290	2.7			120	1.1	5.7	2.9
04	300	2.6			120	1.4	5.2	2.8
05	290	3.0			120	1.4	5.0	2.9
06	280	3.0			120	1.5	5.0	2.9
07	280	3.5	250	---	110	1.9	4.8	3.1
08	280	4.0	240	2.8	110	2.2	4.9	3.1
09	280	4.5	240	3.5	105	2.4	5.0	3.1
10	300	5.0	240	3.5	105	2.8	5.0	3.1
11	300	5.7	260	<3.8	110	2.9	5.0	3.0
12	300	6.3	260	4.0	105	3.0	3.9	3.0
13	280	7.1	240	3.9	110	2.8	3.1	3.1
14	270	7.2	250	3.8	110	2.6	3.8	3.1
15	270	6.9	250	3.4	110	2.4	4.0	3.1
16	260	6.2	250	3.1	110	2.3	4.1	3.1
17	260	5.6	---	---	110	2.1	4.9	3.15
18	270	4.8			120	1.9	5.0	3.0
19	270	4.3			120	1.8	5.0	3.0
20	260	3.9			125	1.6	5.3	2.95
21	250	3.9			120	1.3	7.2	2.95
22	270	3.5			125	1.3	7.1	3.0
23	260	3.5			125	1.3	6.0	2.95

Time: 90.0°W.

Sweep: 0.6 Mc to 10.0 Mc in 16 seconds.

Table 23

De Bilt, Holland (52.1°N, 5.2°E)

October 1955

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	3.6						2.7
01	290	3.6						2.55
02	290	3.5						2.6
03	280	3.2						2.65
04	250	2.9						2.9
05	230	2.6						2.95
06	240	3.8				E		3.15
07	220	5.4	230	3.1	125	1.9		3.3
08	230	6.4	220	3.5	115	2.4		3.35
09	240	7.0	210	4.0	110	2.7	2.8	3.3
10	240	7.1	210	4.2	105	2.8	3.1	3.2
11	240	7.9	200	4.1	105	3.0	3.0	3.3
12	245	7.8	210	4.2	105	3.0		3.25
13	240	7.8	220	4.0	110	2.9		3.25
14	235	7.6	225	3.9	110	2.8		3.25
15	230	7.5	230	---	115	2.4		3.2
16	230	7.1	---	---	125	2.0	2.1	3.3
17	220	6.8	---	---		E		3.25
18	230	6.2						3.2
19	230	5.3						3.2
20	230	4.4						3.2
21	240	3.8						2.8
22	275	3.7						2.7
23	280	3.6						2.6

Time: 0.0°.

Sweep: 0.8 Mc to 20.0 Mc in 20 seconds.

Table 19

November 1955

Table 20

October 1955

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	320	2.3						4.4
01	340	2.6						5.8
02	(350)	(2.4)						5.6
03	(350)	(3.0)						5.7
04	340	3.0						5.3
05	340	2.8						2.8
06	300	2.8						4.7
07	260	3.6						2.85
08	(250)	4.4	240	---	120	1.9	1.9	3.25
09	---	4.8	240	---	120	2.0	2.2	3.2
10	320	5.2	230	3.8	120	2.2	2.2	3.1
11	310	5.6	230	4.0	120	2.3	2.3	3.2
12	270	5.8	230	3.9	120	2.3		3.2
13	(300)	6.1	230	3.8	120	2.3		3.2
14	(270)	6.3	240	---	120	2.1		3.2
15	240	6.2	240	---	130	2.0		3.2
16	230	5.8	240	---	---	---		3.2
17	230	5.4	---	---	---	---	<1.4	3.2
18	230	4.6	---	---	---	---	<1.5	3.2
19	240	3.8	---	---	---	---	<1.9	3.2
20	250	3.0	---	---	---	---	<1.8	3.2
21	270	2.5	---	---	---	---	2.6	3.25
22	290	2.2	---	---	---	---	4.4	3.1
23	300	2.1	---	---	---	---	4.8	3.0

Time: 150.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 21

Churchill, Canada (58.8°N, 94.2°W)

October 1955

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	3.5						6.4
01	300	3.4						6.0
02	330	3.6						6.0
03	300	3.6						(3.0)
04	340	3.8						(3.1)
05	360	3.8						(2.7)
06	330	3.8						---
07	310	4.0						---
08	280	5.0	---	---	120	2.5	4.6	3.1
09	280	5.6	230	---	120	2.7	4.3	3.2
10	290	6.0	220	3.9	120	2.8	3.9	3.1
11	300	6.7	230	4.0	120	2.8		3.0
12	290	6.8	230	3.9	120	3.0		3.0
13	280	7.7	230	4.0	120	2.8	2.8	3.0
14	280	7.3	240	4.0	120	2.8		3.1
15	270	7.5	240	3.7	120	2.6		3.0
16	250	7.2	---	---	130	2.2		3.1
17	250	7.0			130	2.0	3.3	3.1
18	280	6.0			125	2.5	3.4	3.15
19	290	4.8			125	2.8	4.0	(3.1)
20	300	4.5			120	2.2	4.3	(3.0)
21	280	4.0			---	---	4.7	---
22	290	3.9			---	---	6.0	---
23	280	3.8			---	---	6.0	---

Time: 90.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 16 seconds.

Table 23

Winnipeg, Canada (49.9°N, 97.4°W)

October 1955

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	2.8						<1.7
01	320	2.4						2.8
02	330	2.2						<1.8
03	340	2.4						3.0
04	330	2.3						<2.0
05	330	2.4						2.2
06	330	2.5						3.0
07	270	3.8	---	---	120	(1.9)		3.0
08	260	5.0	240	---	125	2.2		3.1
09	280	5.8	230	3.8	120	2.6		3.1
10	290	6.3	220	4.0	120	2.8		3.0
11	290	6.8	220	4.1	120	3.0		3.0
12	290	7.2	220	4.2	120	3.0		3.0
13	290	7.4	230	4.1	115	3.0		3.0
14	280	7.6	240	4.0	115	3.0		3.0
15	280	7.6	240	4.0	120	2.8		3.0
16	260</td							

Table 25

San Francisco, California (37.4°N, 122.2°W)							October 1955	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	(3.6)			(2.2)		(3.0)	
01	250	(3.6)			(2.3)		(2.8)	
02	<270	(3.6)			(2.5)		(2.8)	
03	260	(3.6)			(2.5)		(2.8)	
04	<260	(3.7)			(2.3)		(2.9)	
05	250	(3.7)			(2.4)		(2.9)	
06	250	(4.0)			(2.3)		(3.0)	
07	230	(6.4)	230	---	<120	(2.0)	(3.4)	
08	230	(7.0)	220	(4.0)	(110)	(2.5)	(3.4)	(3.4)
09	250	7.5	200	(4.2)	(100)	(2.8)	(3.9)	3.3
10	250	7.9	200	(4.5)	(100)	(3.0)	(3.8)	3.2
11	260	8.8	200	(4.5)	(100)	(3.2)	3.5	3.1
12	270	9.2	210	(4.5)	<110	(3.3)	3.05	
13	260	9.2	220	(4.6)	<110	(3.3)	(3.4)	3.1
14	260	9.0	<220	(4.5)	(110)	(3.2)	3.2	
15	250	8.8	220	(4.2)	(110)	(3.0)	(3.6)	3.3
16	230	8.2	230	---	(110)	(2.5)	(3.3)	3.4
17	210	7.5	---	---	---	(2.0)	(3.1)	3.5
18	<210	5.8				(3.2)	3.4	
19	210	4.4				(2.6)	3.2	
20	<230	(3.9)				(2.5)	(3.2)	
21	<250	(3.4)				(2.5)	(3.0)	
22	<260	(3.7)				(2.2)	(2.9)	
23	250	(3.6)				<1.7	(3.0)	

Time: 120.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 27

Leopoldville, Belgian Congo (4.4°S, 15.2°E)							October 1955	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M2000)F2
00	240	6.2					2.2	
01	250	6.1				1.6	2.3	
02	240	5.8				1.5	2.4	
03	230	5.1				1.7	2.6	
04	220	3.8				2.2	2.8	
05	235	5.7	---	---	130	1.7	2.9	2.7
06	250	7.2	230	---	115	2.5	3.2	2.6
07	280	8.0	220	---	110	3.1	3.9	2.4
08	300	8.7	215	4.6	110	3.4	4.2	2.1
09	340	9.9	210	4.9	110	3.6	3.8	2.0
10	395	11.0	210	5.0	110	3.7	4.0	2.0
11	400	11.4	200	5.0	110	3.6	2.0	
12	390	13.0	200	4.9	110	3.6	2.0	
13	360	13.4	215	4.6	110	3.5	<2.1	
14	325	>13.6	225	4.6	110	3.3	3.5	2.2
15	315	>13.6	230	---	110	2.8	3.6	2.2
16	300	13.6	245	---	120	2.2	3.0	2.1
17	270	>13.3					2.4	2.2
18	280	>13.6				2.0	<2.2	
19	255	>14.0					<2.5	
20	220	>14.0					<2.5	
21	210	13.6					<2.5	
22	205	>11.4					2.5	
23	210	8.0					2.3	

Time: 0.0°W.

Sweep: 1.0 Mc to 16.0 Mc in 7 seconds.

Table 29

Elisabethville, Belgian Congo (11.6°S, 27.5°E)							October 1955	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M2000)F2
00	255	4.9					2.2	
01	255	4.7				1.6	2.2	
02	250	4.4				2.1	2.3	
03	250	3.8				1.7	2.4	
04	235	5.4			140	1.7	2.1	2.6
05	240	7.2	230	---	115	2.5	2.7	
06	255	7.5	215	---	110	3.0	2.5	
07	280	8.5	210	4.6	105	3.4	2.3	
08	290	9.1	210	4.9	105	3.6	2.2	
09	305	9.7	200	5.0	105	3.7	2.1	
10	320	10.0	200	5.0	105	3.7	2.1	
11	330	10.9	200	5.0	105	3.7	2.05	
12	325	11.3	210	4.6	110	3.6	2.0	
13	310	11.4	215	---	110	3.3	4.5	2.1
14	300	11.6	220	---	110	3.0	4.2	2.15
15	275	11.6	240	---	115	2.3	3.5	<2.2
16	250	11.6				2.9	2.2	
17	250	11.3				2.6	2.2	
18	250	>11.4				2.4	2.2	
19	235	11.0				2.2	2.3	
20	220	9.8				2.4		
21	225	9.0				2.3		
22	230	7.8				2.4		
23	220	6.1				2.3		

Time: 0.0°W.

Sweep: 1.0 Mc to 16.0 Mc in 7 seconds.

Table 26

Baguio, P. I. (16.4°N, 120.6°E)							October 1955	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	240	10.3					<1.9	3.15
01	230	9.4					2.1	3.3
02	220	8.9					<1.5	3.4
03	210	6.0					<1.3	3.5
04	220	4.0					1.8	3.2
05	240	3.2					2.1	3.1
06	250	5.2					---	2.3
07	240	7.8					---	3.2
08	270	9.4	220	---	110	2.8	4.0	3.3
09	290	10.5	220	---	110	3.2	4.6	3.0
10	300	11.8	210	---	110	3.3	5.0	2.7
11	300	11.4	200	---	110	3.4	4.6	2.45
12	310	10.7	200	---	110	3.5	<3.8	2.5
13	310	11.1	200	---	110	3.3	4.6	2.6
14	310	12.1	200	---	110	3.0	6.0	2.7
15	300	12.6	210	---	110	2.7	4.2	2.8
16	270	12.5	230	---	120	2.7	4.2	2.8
17	250	12.4					---	3.5
18	270	12.0					2.8	2.8
19	280	11.6					2.0	2.7
20	250	11.2					1.9	3.0
21	240	11.2					2.1	3.0
22	240	11.0					2.3	3.1
23	240	10.6					2.0	3.1

Time: 120.0°E.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 28

Talara, Peru (4.6°S, 81.3°W)							October 1955	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	210	9.7					4.0	3.3
01	220	7.7					4.1	3.4
02	220	6.0					3.0	3.4
03	230	4.5					2.6	3.35
04	240	3.4					3.0	3.3
05	250	3.1					3.5	3.2
06	270	4.3					3.6	3.1
07	240	7.8	240	---	120	2.3	3.0	3.3
08	---	9.7	220	---	110	2.9	3.6	3.1
09	---	10.8	210	---	110	3.3	4.7	3.0
10	(300)	11.0	200	4.8	110	3.6	4.4	2.55
11	320	11.0	200	4.9	110	3.7	4.4	2.45
12	330	11.0	200	4.9	110	3.7	5.0	2.3
13	(320)	10.7	200	4.8	110	3.7	4.4	2.4
14	(300)	10.5	200	4.8	110	3.6	4.8	2.5
15	---	10.8	200	---	110	3.3	4.6	2.5
16	---	10.8	210	---	110	3.0	4.5	2.5
17	240	11.0	240	---	110	2.4	3.5	2.6
18	260	(11.2)					3.0	(2.7)
19	270	(11.2)					2.3	(2.8)
20	290	11.9					<2.0	2.95
21	240	11.3					<1.7	3.15
22	220	11.0					2.1	3.3
23	220	10.4					2.8	3.3

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 29

Huancayo, Peru (12.0°S, 75.3°W)							October 1955	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	240	9.3					<1.5	3.1
01	220	7.8					2.1	3.2
02	230	6.2					<1.5	3.3
03	230	5.0					<1.5	3.3
04	230	4.4					<1.5	3.3
05	240	3.6					<1.3	3.3
06	240	6.4					1.7	3.3
07	---	8.8	220	---	110	2.6	5.0	3.2
08	(270)	10.1	210	4				

Table 31

Time	Buenos Aires, Argentina (34.5°S, 58.5°W)							(M3000)F2
	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	
00	290	6.9						2.9
01	290	6.9						2.9
02	260	7.3						3.0
03	210	6.7						3.3
04	220	5.0						3.2
05	260	5.1	---	---				3.0
06	220	6.4	---	---	110	2.1	2.9	3.5
07	220	7.4	220	---	120	(2.8)	3.5	3.4
08	270	8.3	220	---	100	3.1	3.8	3.2
09	280	9.1	210	---	---	---	3.8	3.0
10	300	10.0	200	---	---	---	4.3	3.0
11	300	10.9	200	---	---	---	4.0	3.0
12	300	11.8	200	---	---	---	4.0	3.0
13	300	12.8	200	---	---	---	4.0	3.0
14	290	13.2	200	---	---	---	3.7	3.0
15	280	13.4	210	---	---	---	3.6	3.1
16	270	12.6	220	---	---	---	3.2	3.2
17	250	11.9	230	---	---	---	3.3	
18	230	11.7						3.35
19	220	10.2						3.35
20	230	9.0						3.1
21	280	8.1						2.9
22	300	8.2						2.9
23	300	7.7						2.9

Time: 60.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 27 seconds.

Table 33

Time	Fairbanks, Alaska (64.9°N, 147.8°W)							(M3000)F2
	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	
00	(340)	(2.1)						5.5 (2.9)
01	(340)	(2.7)						5.5 (2.9)
02	330	2.9						5.2 2.9
03	360	3.0						5.1 2.8
04	360	(3.2)						4.6 (2.9)
05	290	3.2						3.0
06	330	3.6	270	3.1	---	---	4.4	3.1
07	400	4.1	230	3.4	110	2.1	2.3	3.1
08	380	4.2	220	3.7	110	2.4	2.6	2.85
09	420	4.3	220	3.8	110	2.5	2.5	2.85
10	400	4.7	210	3.9	110	2.6	2.6	2.85
11	390	4.8	220	4.0	110	2.7		2.9
12	380	4.9	220	4.0	110	2.7		2.9
13	340	4.9	220	4.0	110	2.7		3.0
14	340	4.8	220	4.0	110	2.6		3.0
15	320	4.8	230	3.8	110	2.4		3.1
16	300	4.7	230	3.8	120	2.2		3.2
17	(240)	4.9	240	---	130	2.0		3.2
18	240	4.6	240	---	---	1.7		3.2
19	250	4.2					<1.8	3.2
20	260	3.4					<2.2	3.05
21	280	(2.7)					3.9	3.1
22	300	(2.6)					4.6	3.15
23	300	(2.5)					4.6	(3.0)

Time: 150.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 35

Time	Capetown, Union of S. Africa (34.2°S, 18.3°E)							(M3000)F2
	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	
00	<250	3.2						3.0
01	250	3.1						3.0
02	<260	3.2						3.0
03	250	3.4						3.0
04	240	3.2						3.0
05	250	3.4						2.9
06	<260	3.2						3.0
07	240	4.8	---	---	---	---		3.3
08	240	6.1	230	3.6	120	2.3		3.4
09	260	6.7	220	4.1	120	2.7		3.3
10	270	7.0	220	4.4	110	3.0		3.2
11	290	7.7	210	4.6	110	3.2		3.1
12	300	8.2	210	4.7	110	3.4		2.9
13	300	9.1	210	4.7	110	3.4		3.0
14	280	9.3	220	4.6	110	3.3		3.1
15	280	9.0	220	4.5	110	3.2	3.4	3.1
16	270	8.6	220	4.2	120	2.9	3.4	3.1
17	250	8.2	230	3.6	120	2.6	3.1	3.2
18	240	7.9	240	2.7	120	1.9	2.4	3.3
19	220	6.6						3.3
20	220	5.0						3.2
21	240	3.7						3.1
22	<250	3.6						3.1
23	<250	3.2						3.1

Time: 30.0°E.

Sweep: 1.0 Mc to 15.0 Mc in 7 seconds.

Table 32

Time	Kiruna, Sweden (67.8°N, 20.3°E)							(M3000)F2
	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	
00	(330)	(2.8)						2.3 (2.8)
01	(350)	(3.1)						3.0 (2.7)
02	(340)	(2.7)						2.2 (2.9)
03	(325)	(2.6)						<1.9 (2.85)
04	(300)	(3.0)						(2.8)
05	300	3.0						<1.8 2.9
06	285	3.9	---	---	---	---	---	3.0
07	300	4.2	---	---	3.4	---	---	3.0
08	300	4.8	240	3.3	130	---	---	3.1
09	300	5.1	240	3.5	120	---	---	3.1
10	310	5.2	240	3.8	---	---	---	3.1
11	280	5.6	240	3.8	---	---	---	3.1
12	290	5.8	240	3.8	---	---	---	3.2
13	280	5.2	240	3.7	---	---	---	3.25
14	280	5.2	---	---	3.4	---	---	<3.1 3.2
15	270	5.0	---	---	3.3	---	---	<3.0 3.2
16	270	5.0	---	---	130	2.0	---	3.1
17	270	4.8	---	---	---	---	---	<2.8 3.1
18	260	4.8	---	---	---	---	---	<1.9 3.0
19	255	4.8	---	---	---	---	---	<1.9 3.1
20	260	4.2	---	---	---	---	---	<1.9 2.95
21	280	3.6	---	---	---	---	---	2.6 2.9
22	320	3.2	---	---	---	---	---	<2.2 2.8
23	(305)	(3.0)	---	---	---	---	---	<2.0 (2.95)

Time: 15.0°E.

Sweep: 0.8 Mc to 15.0 Mc in 30 seconds.

Table 34

Time	Johannesburg, Union of S. Africa (26.2°S, 28.1°E)							(M3000)F2
	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	
00	240	3.5						3.05
01	<240	3.4						3.1
02	230	3.4						3.2
03	<220	2.9						3.0
04	---	2.7						2.9
05	---	2.8						2.9
06	250	3.8						3.2
07	230	5.9	230	---	120	2.1		3.4
08	250	6.8	220	4.1	110	2.7		3.3
09	270	7.4	210	4.5	110	3.1		3.3
10	280	7.8	210	4.7	110	3.3		3.2
11	290	8.2	200	4.8	110	3.4		3.1
12	290	8.4	200	4.8	110	3.5		3.1
13	290	8.7	200	4.6	110	3.4		3.0
14	290	8.8	200	4.6	110	3.3	3.6	3.0
15	280	8.6	210	4.4	110	3.1	3.8	3.1
16	260	8.1	210	4.0	120	2.8	3.6	3.1
17	240	8.0	230	3.2	120	2.3	3.0	3.2
18	220	7.4						3.2
19	220	6.4						3.2
20	220	5.0						3.2
21	240	3.6						3.1
22	250	3.6						3.1
23	<250	3.5	---	---	---	---	---	3.1

Time: 30.0°E.

Sweep: 1.0 Mc to 15.0 Mc in 7 seconds.

Table 36

Time	Point Barrow, Alaska (71.3°N, 156.8°W)							(M3000)F2
	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	
00	(280)	---						7.2 ---
01	260	(3.6)						6.4 ---
02	250	(3.6)	---	---	---	---	---	5.2 ---
03	(260)	(3.8)	---	---	---	---	---	4.0 ---
04	(250)	(3.9)	---	---	---	---	---	4.0 ---
05	(290)	---	---	---	---	---	---	3.9 ---
06	(360)	(4.0)	(240)	(3.4)	110	(2.1)	3.9	(3.0) ---
07	(340)	(4.4)	(240)	(3.6)	---	---	---	4.6 (2.9)
08	(360)	(4.5)	(220)	(3.7)	100	2.4	4.0	(2.95) ---
09	390	(4.6)	210	(3.8)	100	2.5	4.5	2.85 ---
10	370	(4.5)	210	(3.9)	100			

Table 37

Time	Greenland (69.2°N, 53.5°W)						August 1955	
	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	(3.7)			<1.4		(3.0)	
01	250	(3.3)			3.2		(3.1)	
02	270	(3.2)			4.1		(3.05)	
03	270	(2.8)	---	---	3.2	---		
04	270	(3.2)	240	---	---	<2.3	(3.1)	
05	(320)	(3.6)	230	2.9	---	3.7	(2.8)	
06	---	(3.8)	220	(3.2)	110	---	3.7	(3.3)
07	(520)	(4.2)	210	(3.4)	110	(2.2)	3.8	(3.1)
08	(370)	(4.4)	220	3.7	110	2.5	<3.3	(3.1)
09	(350)	(4.7)	210	(3.8)	(110)	(2.6)	<3.5	3.1
10	350	(4.8)	210	4.0	110	2.7	3.0	3.1
11	340	(4.8)	200	4.0	110	(2.7)	3.0	3.15
12	370	(5.0)	200	4.0	110	2.8	3.2	(3.0)
13	350	(4.9)	200	4.0	110	2.7	2.9	(3.0)
14	(360)	(4.9)	210	4.0	110	(2.7)	4.8	(3.1)
15	(340)	(4.9)	200	4.0	110	2.6	6.6	(3.0)
16	(340)	(4.8)	200	3.8	110	2.5	5.8	(3.1)
17	320	(4.8)	210	3.8	110	2.4	6.0	(3.1)
18	320	(4.6)	230	3.5	(110)	(2.2)	4.5	(3.1)
19	(300)	(4.6)	230	(3.4)	(110)	(1.8)	4.0	(3.2)
20	(250)	(4.4)	240	---	---	3.9	(3.2)	
21	250	(4.3)	250	---	---	4.0	(3.3)	
22	250	(4.0)	---	---	---	2.9	3.2	
23	250	(3.7)				3.0	(3.1)	

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

Table 39*

Time	Inverness, Scotland (57.4°N, 4.2°W)						July 1955	
	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	4.5					2.9	
01	265	4.0					2.9	
02	265	3.6					2.9	
03	265	(3.4)			125	1.1	2.4	(2.9)
04	260	3.6			120	1.5	2.6	3.0
05	320	4.0	230	3.1	110	1.8	2.8	3.1
06	355	4.4	225	3.6	115	2.2	2.8	3.1
07	370	4.6	215	3.9	110	2.5	3.0	(3.1)
08	370	4.8	225	4.0	105	2.7	3.3	3.1
09	375	5.0	210	4.2	105	2.9	3.5	3.0
10	375	5.0	210	4.3	105	3.0	3.7	3.0
11	360	5.3	205	4.4	100	3.1	3.5	3.1
12	370	5.2	205	4.5	100	3.1		3.0
13	365	5.2	200	4.4	105	3.2		3.1
14	385	5.1	210	4.4	105	3.2		2.9
15	400	5.1	210	4.3	105	3.1		2.9
16	365	5.2	210	4.3	105	3.0	3.4	2.9
17	355	5.3	215	4.1	105	2.8	3.3	3.0
18	320	5.2	230	3.8	115	2.4	3.3	3.0
19	300	5.5	235	3.5	120	2.1	3.2	3.1
20	255	5.5	(235)	(2.6)	130	1.8	2.7	3.1
21	250	5.5					3.1	
22	250	5.4					3.0	
23	255	(5.1)					2.9	

Time: 0.0°W.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes.

*Average values except foF2 and fEs, which are median values.

Table 41*

Time	Singapore, British Malaya (1.3°N, 103.8°E)						July 1955	
	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	240	4.5					5.1	---
01	255	4.2					3.9	(3.3)
02	250	3.3					3.7	---
03	255	2.7					3.0	---
04	245	2.3					2.8	---
05	(255)	2.0					3.4	---
06	265	3.1					2.9	---
07	(250)	6.0	245		2.2	3.7	3.1	
08	300	7.9	220	4.2	120	2.8	4.6	2.9
09	315	9.0	205	4.4	(110)	3.1	5.1	2.8
10	340	9.6	200	4.6		3.4	9.9	2.7
11	360	9.3	200	4.6	110	3.5	10.0	2.5
12	375	9.2	200	4.6	110	3.6	6.9	2.5
13	365	9.0	200	4.6	110	3.5	6.6	2.5
14	365	8.9	200	4.5	110	3.4	6.0	2.5
15	335	9.1	210	4.4	110	3.2	4.2	2.6
16	310	9.0	215	4.2	110	2.9	5.1	2.7
17	(270)	8.8	225		110	2.4	4.7	2.9
18	245	8.6			155	1.9	4.7	3.0
19	250	7.9					4.2	3.0
20	240	7.8					4.0	3.2
21	225	6.3					4.4	3.3
22	225	5.2					4.4	(3.3)
23	235	4.0					4.7	(3.1)

Time: 105.0°E.

Sweep: 0.67 Mc to 25.0 Mc in 5 minutes.

*Average values except foF2 and fEs, which are median values.

Table 38

Time	Nairobi, Kenya (1.3°S, 36.8°E)						August 1955	
	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	<220							2.0
01	210							1.9
02	<220							2.3
03	230							2.3
04	<240							2.6
05	<250							2.8
06	240							3.1
07	260	5.1	250		---	---	3.1	3.4
08	280	7.4	230	4.2	120	2.6	4.0	3.3
09	290	9.2	220	4.4	110	3.0	4.7	3.3
10	280	10.0	220	4.6	110	3.3	4.4	3.3
11	280	9.5	200	4.7	100	3.5	4.6	3.3
12	280	9.6	200	4.8	100	3.6	4.1	3.2
13	300	10.0	(200)	(4.8)	110	(3.6)	4.6	3.0
14	300	9.9	200	4.7	110	3.5		
15	300	9.1	200	4.6	110	3.4		
16	310	8.7	200	4.5	110	3.1		
17	300	8.4	220	4.1	110	2.8	3.6	2.9
18	270	8.2	250	3.8	120	2.1	3.2	2.9
19	250	>8.3						3.2
20	250	6.8						3.1
21	230	8.5						2.7
22	210	8.1						2.5
23	210	5.9						3.4

Time: 45.0°E.
Sweep: 1.0 Mc to 15.0 Mc in 7 seconds.

Table 40*

Time	Slough, England (51.5°N, 0.6°W)						July 1955	
	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	265	4.8						2.6
01	260	4.4						2.9
02	265	3.9						2.6
03	270	3.8						2.9
04	275	3.6	(270)	(2.5)	115	1.3	3.6	2.95
05	320	4.1	235	3.3	120	1.8	3.2	3.0
06	330	4.7	225	3.7	115	2.3	4.2	3.0
07	350	4.8	225	4.0	110	2.7	4.4	3.05
08	375	5.2	220	4.3	110	2.9	4.7	3.0
09	365	5.2	220	4.3	110	3.1	5.0	2.95
10	355	5.6	215	4.5	110	3.2	5.2	3.0
11	360	5.6	225	4.5	110	3.2	5.2	3.0
12	350	5.7	220	4.5	105	3.3	5.0	3.1
13	350	5.4	210	4.5	105	3.3	4.9	3.05
14	370	5.4	215	4.5	110	3.2	5.0	3.0
15	360	5.3	225	4.4	110	3.2	4.7	3.0
16	355	5.5	215	4.3	110	3.0	5.0	2.95
17	320	5.4	225	4.1	110	2.8	4.7	3.1
18	305	5.8	225	3.8	110	2.4	4.7	3.05
19	285	6.1	235	3.3	115	1.9	5.0	3.05
20	250	6.6						3.6
21	255	6.3						3.8
22	245	5.8						3.0
23	255	4.9						2.6

Time: 0.0°W.

Sweep: 0.55 Mc to 16.5 Mc in 5 minutes.

*Average values except foF2 and fEs, which are median values.

Table 41*

Time	Godhavn, Greenland (69.2°N, 53.5°W)						June 1955	
	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(250)	(4.0)	240	---	120	1.4	1.7	(3.2)
01	(260)	(4.2)	250	---	140	(1.4)	1.7	(3.0)
02	(260)	(4.0)	230	---	(130)	1.5	1.9	

Table 43*

Inverness, Scotland (57.4°N, 4.2°W)							June 1955	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	(4.6)						(2.9)
01	265	(4.1)				1.2		(2.8)
02	265	(3.7)			(0.9)	1.3		(2.7)
03	280	(3.7)			135	1.2	1.7	(2.8)
04	305	3.9	255	2.7	115	1.6	2.2	2.8
05	335	4.3	235	3.3	115	1.9	2.3	2.9
06	385	4.5	225	3.6	115	2.2	2.8	2.9
07	390	4.7	220	3.9	115	2.5	2.9	2.8
08	385	4.8	220	4.1	110	2.7	3.2	2.9
09	385	5.0	215	4.2	105	2.9	3.5	3.0
10	395	5.0	210	4.3	105	3.0	3.8	3.1
11	395	5.2	210	4.4	105	3.1	3.7	2.9
12	395	5.1	210	4.4	105	3.1	4.0	(2.9)
13	390	5.2	210	4.4	105	3.1	3.7	2.9
14	405	5.0	210	4.4	105	3.1	3.6	2.8
15	400	5.0	215	4.3	105	3.1	3.6	2.9
16	360	5.1	220	4.2	110	2.9	3.5	2.9
17	345	5.2	220	4.0	110	2.7	3.2	2.9
18	330	5.2	230	3.8	115	2.4	3.1	2.9
19	300	5.4	235	3.5	120	2.1	2.9	3.0
20	260	5.3	240	(2.8)	135	1.8	2.7	3.1
21	260	5.5					2.2	3.0
22	245	5.4						2.9
23	260	4.8						(2.8)

Time: 0.0°.

Sweep: 0.67 Mc to 25.0 Mc in 5 minutes.

*Average values except foF2 and fEs, which are median values.

Table 45

Delhi, India (28.6°N, 77.1°E)							June 1955	
Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	5.5						3.25
01	280	5.3						3.25
02	---	(5.0)						---
03								
04	280	4.8						3.25
05	280	4.6						3.25
06	280	5.3						3.25
07	280	6.2						3.25
08	280	6.6						3.25
09	300	7.2						3.1
10	320	7.4						3.0
11	320	7.9						3.0
12	320	8.2						3.0
13	320	8.6						3.0
14	300	8.5						3.1
15	310	8.6						3.05
16	300	8.5						3.1
17	300	8.3						3.1
18	280	8.2						3.25
19	280	8.2						3.25
20	260	7.2						3.4
21	260	6.2						3.4
22	300	6.0						3.1
23	280	5.4						3.25

Time: 75.0°E.

Sweep: 1.5 Mc to 18.0 Mc in 5 minutes, manual operation.

*Height at 0.83 foF2.

Table 47

Calcutta, India (22.9°N, 88.5°E)							June 1955	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	4.8						2.1
01	250	4.3						3.1
02	250	4.0						3.2
03	250	3.8						3.1
04	260	3.2						3.1
05	250	3.2						3.1
06	240	4.8	220	3.6	110	2.0	3.1	3.1
07	270	6.5	210	4.0	100	2.2	3.8	3.0
08	300	7.0	200	4.4	100	3.0	4.2	3.0
09	330	7.5	200	4.5	100	3.3	5.0	2.9
10	350	9.5	200	4.6	100	3.5	5.3	2.8
11	350	10.4	200	4.8	100	3.6	5.3	2.85
12	350	10.9	200	4.9	100	3.7	5.2	2.75
13	340	11.2	200	4.8	100	3.6	5.0	2.85
14	330	11.5	210	4.8	100	3.5	4.9	2.95
15	300	11.4	210	4.6	100	3.4	5.0	3.1
16	300	11.0	210	4.5	100	3.1	4.8	3.05
17	290	10.5	220	4.1	100	2.8	4.8	3.05
18	270	10.1	220	3.8	105	2.2	4.2	3.2
19	240	9.5						3.6
20	220	8.2						3.45
21	220	7.0						3.5
22	240	5.5						3.1
23	260	5.1						3.1

Time: 90.0°E.

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

Table 48

Table 44*

Slough, England (51.5°N, 0.6°W)							June 1955	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	265	4.6						2.7
01	270	4.4						2.9
02	280	4.0						2.85
03	280	3.8						2.9
04	300	3.8	260	2.7	125	1.4	3.9	2.9
05	330	4.4	230	3.3	120	1.9	4.4	2.95
06	350	4.6	230	3.8	115	2.3	4.8	2.95
07	370	5.0	230	4.0	115	2.7	4.6	2.95
08	365	5.2	235	4.2	110	2.9	5.0	3.0
09	350	5.4	235	4.4	110	3.1	5.1	3.15
10	385	5.2	225	4.5	110	3.2	5.8	3.05
11	365	5.5	225	4.5	105	3.3	5.0	3.05
12	380	5.3	230	4.5	105	3.3	5.0	3.05
13	390	5.4	225	4.5	110	3.3	5.0	2.95
14	365	5.2	215	4.4	110	3.2	4.8	3.05
15	370	5.3	220	4.4	110	3.1	5.4	2.95
16	345	5.4	225	4.2	110	3.0	4.9	3.05
17	330	5.5	230	4.1	115	2.7	4.7	3.05
18	305	5.6	230	3.8	115	2.4	4.4	3.05
19	285	5.9	240	3.3	120	1.9	4.3	3.1
20	255	6.5						4.0
21	250	6.2						3.3
22	250	5.9						3.6
23	260	5.3						2.8

Time: 0.0°.

Sweep: 0.55 Mc to 16.5 Mc in 5 minutes.

*Average values except foF2 and fEs, which are median values.

Table 46

Ahmedabad, India (23.0°N, 72.6°E)							June 1955	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	305	4.8						4.0
01	290	4.8						3.8
02	290	4.3						3.9
03	300	3.8						3.8
04	300	3.6						3.05
05	270	3.5						3.6
06	250	4.7	245	(3.5)	125	1.8	3.7	3.25
07	275	5.8	225	4.0	110	2.4	4.0	3.3
08	290	6.2	220	4.2	110	2.9	4.0	3.2
09	320	6.8	210	4.4	110	3.1	4.4	3.1
10	350	7.2	200	4.5	110	3.3	5.6	2.8
11	400	7.9	205	4.6	110	3.4	6.0	2.6
12	360	9.1	210	4.6	110	3.4	6.0	2.85
13	360	9.4	220	4.6	110	3.4	5.2	2.8
14	355	9.9	225	4.5	110	3.3	4.6	2.85
15	335	10.0	220	4.4	110	3.2	5.2	2.9
16	320	9.4	235	4.3	110	3.0	6.2	3.0
17	300	9.6	230	4.0	115	2.6	5.4	3.15
18	275	9.2	240	3.5	125	2.0	>5.0	3.1
19	250	9.0						4.8
20	230	7.0						5.8
21	245	5.7						4.2
22	290	5.1						3.8
23	305	4.8						4.0

Time: 75.0°E.

Sweep: 1.5 Mc to 18.0 Mc in 5 minutes, manual operation.

*Height at 0.83 foF2.

Table 49

Madras, India (13.0°N, 80.2°E)		June 1955						
Time	*	foF2	b'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06	300	6.1						3.1
07	330	7.5						2.95
08	390	8.0						2.65
09	420	>7.8						2.55
10	420	7.8						2.55
11	440	7.5						2.5
12	450	7.7						2.45
13	450	7.8						2.45
14	450	8.2						2.45
15	420	8.8						2.55
16	420	9.0						2.55
17	420	9.4						2.55
18	390	9.4						2.65
19	360	8.3						2.8
20	320	7.4						3.0
21	320	6.1						3.0
22	---	---						
23	---	---						

Time: 75.0°E.

Sweep: 1.5 Mc to 18.0 Mc in 5 minutes, manual operation.

*Height at 0.83 foF2.

Table 51*

Singapore, British Malaya (1.3°N, 103.8°E)		June 1955							
Time	*	h'F2	foF2	b'F1	foF1	h'E	foE	fEs	(M3000)F2
00		260	3.7					3.6	(3.1)
01		250	3.4					3.6	(3.3)
02		240	3.2					3.6	---
03		250	2.7					2.8	---
04		230	2.6					2.8	---
05		245	(1.8)					2.9	---
06		255	3.6					3.2	
07		(255)	6.5	235	180	1.4	3.0	3.2	
08		(290)	8.4	220	125	2.2	3.8	3.1	
09		320	9.2	210	4.5	3.1	5.6	2.7	
10		330	10.1	200	4.5	3.3	6.6	2.5	
11		340	9.6	200	4.5	3.5	5.7	(2.7)	
12		355	9.2	200	4.6	3.5	6.0	2.5	
13		345	9.3	200	4.6	3.4	6.2	2.5	
14		330	9.2	205	4.5	3.3	6.3	2.6	
15		315	9.5	210	4.4	3.1	5.6	2.7	
16		280	9.4	210	115	2.8	6.0	2.8	
17		250	9.3	225		2.4	5.6	2.9	
18		240	8.5			1.7	4.4	3.1	
19		220	8.2				4.1	3.2	
20		235	7.3				4.0	3.3	
21		220	5.7				3.8	3.3	
22		220	4.4				3.9	(3.4)	
23		260	3.6				3.6	(2.9)	

Time: 105.0°E.

Sweep: 0.67 Mc to 25.0 Mc in 5 minutes.

*Average values except foF2 and fEs, which are median values.

Table 53

Brisbane, Australia (27.5°S, 153.0°E)		June 1955							
Time	*	b'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00		250	3.6						3.0
01		260	4.0						3.0
02		250	4.0						(3.05)
03		250	(3.9)						(3.1)
04		240	(4.0)						(3.2)
05		230	3.4						3.1
06		240	3.5						(3.1)
07		225	5.1						3.5
08		230	5.6	---	---	120	2.1		3.5
09		250	6.1	230	4.0	120	2.8		3.5
10		250	6.3	220	4.2	120	3.0		3.5
11		260	6.2	200	4.2	120	3.0	4.0	3.4
12		260	6.3	220	4.2	120	3.0	4.2	3.5
13		255	6.4	210	4.2	120	3.0	4.2	3.4
14		250	6.5	200	4.0	---	4.2		3.4
15		250	6.6	220	3.8	---	4.3		3.5
16		230	6.2	---	---	---	(4.2)		3.5
17		220	5.4	---	---	E	3.8		3.4
18		230	4.3				3.1		3.3
19		250	3.7				3.1		
20		245	3.7				3.2		
21		250	(3.5)				(3.0)		
22		250	3.8				(3.0)		
23		250	(3.7)				(3.0)		

Time: 150.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

Table 49Table 50

Tiruchy, India (10.8°N, 78.8°E)		June 1955						
Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06		320	5.7					3.0
07		320	7.2					3.0
08		360	7.8					2.8
09		400	7.6					2.6
10		440	7.4					2.5
11		440	7.5					2.5
12		440	7.5					2.5
13		440	7.6					2.5
14		400	7.7					2.6
15		400	8.0					2.6
16		400	8.5					2.6
17		380	8.8					2.7
18		360	8.8					2.8
19		320	8.5					3.0
20		320	7.1					3.0
21		320	6.1					3.0
22		---	---					
23		---	---					

Time: 75.0°E.

Sweep: 1.5 Mc to 18.0 Mc in 5 minutes, manual operation.

*Height at 0.83 foF2.

Table 51*

Townsville, Australia (19.3°S, 146.7°E)		June 1955							
Time	*	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00		240	(3.0)						2.0
01		240	---						2.1
02		240	(3.3)						2.1
03		230	3.4						(3.5)
04		225	2.8						(3.25)
05		230	2.8						2.1
06		240	3.0						3.2
07		230	4.7						3.6
08		235	6.0	230	3.6	100	2.3	3.1	3.6
09		240	6.5	200	4.0	100	2.8	4.1	3.6
10		250	6.7	210	4.3	100	3.1	3.6	3.6
11		260	6.6	210	4.4	100	3.2	3.5	3.5
12		265	6.5	210	4.4	100	3.3	3.5	3.5
13		265	6.5	205	4.4	100	3.2	4.3	3.4
14		260	6.5	200	4.3	100	3.1	4.6	3.5
15		250	6.4	210	4.0	100	3.0	4.3	3.5
16		250	6.4	210	3.6	100	2.6	4.3	3.5
17		230	5.9	---	---	---	2.0	4.3	3.6
18		220	5.2					3.7	3.4
19		220	4.3					3.1	3.55
20		220	3.3					3.1	3.1
21		250	3.3					2.1	3.2
22		240	3.2					1.8	(3.15)
23		250	(3.2)					2.0	(3.0)

Time: 150.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

Table 53

Canberra, Australia (35.3°S, 149.0°E)		June 1955							
Time	*	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00		---	3.3						3.1
01		---	3.4						3.1
02		---	3.6						3.1
03		---	3.6						3.0
04		---	3.7						3.2
05		---	3.8						3.45
06		---	3.3						3.4
07		(210)	3.6						3.5
08		210	5.0	---	---	---	2.1		3.7
09		230	5.7	220	---	100	2.5		3.7
10		250	6.0	210	(4.0)	110	2.8		3.6
11		240	6.0	200	(4.1)	100	3.0		3.6
12		240	6.0	210	(4.1)	100	3.0	3.4	3.5
13		250	6.1	200	(4.1)	100	3.0	3	

Table 55

Hobart, Tasmania (42.9°S, 147.3°E)							June 1955	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	2.0						3.0
01	280	2.0						3.0
02	280	2.0						2.95
03	270	2.1						2.9
04	260	2.2						3.0
05	260	2.0						3.0
06	250	2.0						3.1
07	280	2.0						3.0
08	230	4.0	100	1.7				3.2
09	220	5.0	100	2.1				3.3
10	210	5.5	100	2.5				3.3
11	200	5.8	100	2.6				3.3
12	200	6.0	100	2.7	3.1			3.2
13	210	6.1	100	2.6	3.1			3.2
14	220	6.3	100	2.5	3.0			3.3
15	220	6.3	100	2.3				3.2
16	220	6.0	100	1.9				3.2
17	210	5.2						3.2
18	220	4.2						3.1
19	250	3.0						3.0
20	250	2.4						3.1
21	270	2.0						3.1
22	280	2.0						3.0
23	280	2.0						3.0

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

Table 57*

Port Lockroy (64.8°S, 63.5°W)							June 1955	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	335	2.2						2.8
01	325	2.2						2.9
02	325	2.3						2.9
03	315	2.2						2.9
04	310	2.3						3.0
05	290	2.2						3.1
06	280	2.0						3.3
07	280	1.7						3.3
08	285	1.8						3.4
09	260	2.8	(155)	(1.3)	2.8			3.5
10	235	3.8	(125)	(1.5)	4.6			3.7
11	235	4.4	(120)	(1.8)	3.2			3.8
12	235	4.4	(120)	(1.9)	1.4			3.8
13	245	4.6			3.0			3.6
14	240	4.0			3.2			3.6
15	255	3.5		(1.4)	1.6			3.4
16	265	2.8			1.5			3.4
17	285	2.4			1.4			3.3
18	290	1.8			1.2			3.2
19	300	1.8			1.3			3.1
20	330	1.7			1.4			2.9
21	345	1.8			1.3			2.8
22	345	2.0						2.8
23	350	2.2						2.8

Time: 60.0°W.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes.
*Average values except foF2 and fEs, which are median values.

Table 59*

Port Lockroy (64.8°S, 63.5°W)							May 1955	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	2.3						2.9
01	290	2.4						2.9
02	290	2.3						2.9
03	280	2.4						2.9
04	280	2.3						3.1
05	265	2.3			1.3			3.1
06	250	2.2						3.2
07	225	2.2						3.7
08	230	2.2		(1.1)	2.3			3.4
09	225	3.6	(210)	(2.1)	(1.3)	2.6		3.7
10	220	4.3	(210)	(2.5)	(125)	1.7	2.0	3.7
11	215	4.7	(210)	(2.7)	(110)	1.9		3.7
12	225	4.8	(210)	(2.7)	130	1.9		3.7
13	220	4.9	(210)	(2.7)	128	2.0		3.7
14	220	4.6				1.7		3.7
15	230	4.2		(150)	1.6	1.4		3.7
16	235	3.6			(1.2)	1.4		3.4
17	230	3.2				1.5		3.4
18	240	2.7				1.2		3.2
19	250	2.4				1.2		3.2
20	270	1.8						3.1
21	295	2.0						2.9
22	300	2.0						2.8
23	300	2.2						2.8

Time: 60.0°W.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes.
*Average values except foF2 and fEs, which are median values.

Table 56*

Falkland Is. (51.7°S, 57.8°W)							June 1955	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	305	2.6						2.2
01	300	2.6						2.8
02	290	2.6						2.8
03	285	2.6						2.9
04	260	2.6						3.0
05	245	2.5						3.6
06	240	2.4						3.3
07	250	2.2					(190)	3.2
08	220	3.8					160	3.2
09	205	4.6					(135)	3.6
10	225	5.0					125	3.7
11	230	5.3	(225)				120	3.7
12	230	6.0	230	(3.4)	120	2.4	4.9	3.6
13	225	5.6	230	3.2	125	2.4	5.5	3.7
14	220	5.3			130	2.1	5.2	3.7
15	220	4.9			140	1.8	5.0	3.6
16	205	4.2			(170)	1.6	3.0	3.7
17	225	2.8						3.4
18	240	2.6						3.3
19	245	2.4						3.2
20	255	2.3						3.1
21	270	2.4						3.0
22	295	2.5						2.9
23	300	2.6						2.8

Time: 60.0°W.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes.
*Average values except foF2 and fEs, which are median values.

Table 58*

Falkland Is. (51.7°S, 57.8°W)							May 1955	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	2.8						2.6
01	300	2.8						2.8
02	295	2.8						2.9
03	290	2.7						2.9
04	295	2.7						3.0
05	255	2.8						3.2
06	215	2.8						3.6
07	235	2.9						3.4
08	215	4.4						3.7
09	215	5.0	225					3.6
10	215	5.2	225					3.7
11	220	5.8	215					3.6
12	225	6.0	220	3.6	110	2.6	3.8	3.7
13	220	5.6	215	(3.5)	115	2.5	3.3	3.9
14	220	5.2	200		120	2.3	4.9	3.7
15	230	5.3			130	2.0	4.9	3.7
16	210	4.8						3.7
17	220	3.4						3.4
18	240	2.9						3.2
19	245	2.7						3.4
20	265	2.4						3.1
21	275	2.5						3.1
22	285	2.6						2.9
23	290	2.7						2.9

Time: 60.0°W.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes.
*Average values except foF2 and fEs, which are median values.

Table 60

Campbell I. (52.5°S, 169.2°E)							June 1951	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05	260	2.3						2.9
06								
07	270	2.9						2.9
08	230	4.9	---	---	130	2.0	2.0	3.3
09	240	5.7	230	---	130	2.3	2.1	3.4
10	240	6.2	230	---	130	2.5	2.2	3.35
11	240	6.8	220	3.5	130	2.6	2.2	3.35
12	250	6.7	230	3.7	130	2.6	2.2	3.4
13	240	6.8	230	3.6	130	2.6	2.4	3.3
14	240	7.0	230	---	130	2.4	2.3	3.3
15	240	7.1	220	---	130	2.0		3.3
16	220	6.4	220	---	130	1.4		3.3
17	220	5.4						3.1
18	240	4.1						3.0
19	250	3.2						2.9
20								
21	280	3.0						2.9
22					</td			

TABLE 61
Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

$h'F_2$. Km . January, 1956

(Characteristic) (Unit) (Month)

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

Day	00	75°W Mean Time												E.W.
		01	02	03	04	05	06	07	08	09	10	11	12	
1	280	270	260	260	260	260	260	240	230	220	210	200	200	240
2	250	(240) ⁵	280	260	250	220	250	230	230	240	250	230	220	220
3	280	270	280	250	220	250	210	220	L	250	250	210	230	250
4	250	230	270	250	270	240	220	210	230	250	250	210	220	250
5	280	280	300	280	250	240	230	240	210	220	230	210	210	240
6	270	270	260	250	260	270	240	230	220	210	250	250	240	240
7	260	270	290	270	250	240	230	210	220	240	250	250	230	230
8	(300) ⁵	(320) ⁵	280	270	250	230	240	220	230	240	230	220	220	250
9	(320) ⁵	280	270	250	230	240	(270) ⁵	270	220	240	250	250	240	250
10	260	300	300	270	270	240	A	210	230	250	230	230	210	250
11	260	270 ^F	260	250	270	240	230	220	210	240	250	250	230	260
12	290	A	A	270	260	270	(280) ⁵	280 ^F	230	250	240	240	210	230
13	280	340	290	250	250	240	250	210	220	250	230	230	220	240
14	270	290	280	250	250	240	230	220	230	220	240	240	220	220
15	280	280	250	240	240	260	280	250	220	250	240	250	230	240
16	270	260	250	260	250	260	250	240	210	220	230	240	210	230
17	(290) ^F	270	300	370	350	240	240	240	(240) ^L	240	240	240	230	230
18	300	290	230	220	240	270	300	270	220	(250) ^L	240	240	240	240
19	330	(290) ⁵	290	260	250	260	300	(210) ⁹	260	260	240	240	230	230
20	(290) ⁵	(300) ⁵	(300) ⁵	(290) ⁵	(290) ⁵	(260) ⁵	(240) ⁵	220	220	240	250	250	230	250
21	(300) ⁵	300	300	280	250	250	260	220	220	(210) ¹¹	250	250	230	230
22	(310) ⁵	300	260	250	230	240	230	290	230	230	250	250	220	250
23	280	260	270	270	270	230	250	220	230	250	240	240	230	250
24	(300) ⁵	(350) ⁵	A	(300) ⁹	270	240	(270) ⁵	230	230	250	250	250	225	270
25	(280) ⁵	260	(270) ⁵	250	250	240	240	230	230	270	250	240	230	250
26	300	(290) ⁵	280	250	230	230	240 ^F	230	210	230	240	240	(230) ^L	230
27	(280) ⁵	(300) ⁵	(260) ⁵	280	250	230	(300) ⁵	250	220	230	250	260	210	(260) ⁹
28	(350) ⁵	(340) ⁵	250	230	220	(300) ⁵	(320) ⁵	250	220	260	230	230	210	(260) ⁵
29	(300) ⁵	320	280	240	240	220	270 ^F	(270) ⁵	210	(220) ^L	230	240	210	(240) ⁵
30	260	270	250	220	220	230	230	210	210	230	250	250	210	240
31	(270) ⁶	250	260	240	250	250	(270) ⁵	(270) ⁵	240	210	250	240	210	(260) ⁹
Median	280	290	280	250	240	250	250	220	220	240	240	230	220	270
Count	31	30	29	31	31	30	31	31	31	30	29	31	31	31

Sweep 10 Mc in 1.5 sec. Automatic Manual

TABLE 62
Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

IONOSPHERIC DATA

'f_{oF2}, Mc (Unit)

— January, 1956

Observed at Washington, D.C. (Month)

Lat. 38.7°N., Long. 77.1°W.

National Bureau of Standards (Institution)

Scal'd by:

K.B., L.M., J.S., F.M., R.M.
Calculated by: J.P., J.W., E.W.

Form adopted June 1946

Mc 1025.0 Mc in 135 sec.

Day	75°W												Mean Time																					
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23										
1	3.9	4.1	3.9	4.1	3.7	3.6	4.1	6.7	7.6	8.2	9.7	8.6	8.6	8.9	10.4	8.0	7.7	7.3	6.3	5.2	(5.4) ^s	4.2	4.0											
2	3.5	(3.2) ^f	(3.5) ^f	4.1	4.2	3.4	F	2.9	F	6.3	8.2	9.0	8.8	9.1	9.2	9.7	9.4	10.0	8.0	8.3	8.0	6.6	(4.5) ^c	3.7										
3	3.5	3.6	4.0	3.9	3.8	3.5	F	(3.0) ^s	(3.4) ^s	5.8	7.4	7.8	9.6	9.6	9.5	9.0	10.0	9.1	10.5	8.0	8.0	7.0	4.4	F	3.5									
4	3.4	F	3.6	F	3.7	F	4.0	3.5	F	3.5	F	3.2	F	3.3	F	6.4	7.2	8.3	9.4	9.5	9.2	9.4	9.7	9.0	8.0	6.6	3.4	F	3.1					
5	2.9	F	3.2	F	3.0	F	3.4	F	4.2	F	4.2	F	3.9	F	3.6	F	5.8	7.1	8.8	9.2	8.5	9.4	9.2	7.5	7.6	5.4	3.7	F	3.5					
6	3.5	F	3.6	F	3.7	F	3.6	F	3.3	F	3.5	F	3.4	F	3.5	F	5.8	7.1	8.5	9.2	9.0	9.5	10.0	10.5	10.2	10.2	9.4	9.0	8.0	3.5	F	3.3		
7	2.9	2.3	F	2.8	F	3.0	F	3.2	F	3.5	F	3.5	F	3.3	F	6.2	6.9	8.4	8.5	9.1	9.2	10.2	10.4	9.0	9.0	8.0	8.0	7.5	3.7	F	3.2			
8	2.3	F	(2.3) ^f	2.7	F	2.8	F	3.4	F	3.5	F	3.8	F	3.9	F	6.3	7.1	7.6	8.4	9.0	8.4	8.7	9.2	8.4	6.4	6.2	5.7	3.9	F	3.1				
9	2.8	F	3.2	F	3.8	F	3.7	F	3.9	F	3.3	F	2.9	F	3.2	F	5.3	F	7.1	9.8	9.4	9.8	9.0	9.0	9.0	9.0	9.0	9.0	7.6	7.0	6.2	3.0	F	2.9
10	2.2	F	2.3	F	2.3	F	2.3	F	2.4	F	2.4	F	2.6	F	A	4.5	F	5.7	7.4	F	9.3	9.2	10.0	10.4	11.0	10.6	9.3	9.0	8.3	5.8	5.2	F	4.7	
11	4.2	4.4	F	4.3	F	3.6	F	2.5	F	(2.2) ^s	3.1	F	3.2	F	5.8	8.6	9.0	10.7	10.8	9.6	9.4	9.6	8.9	8.8	6.8	F	5.3	3.9	3.2	2.9	2.9			
12	2.8	2.8	F	2.5	F	2.3	F	2.4	F	2.2	F	2.0	F	2.0	F	2.5	F	5.8	7.1	7.6	9.6	9.0	9.1	10.5	10.6	9.0	8.8	7.0	5.0	3.9	3.6	2.8	2.8	
13	(2.6) ^s	(2.3) ^s	(2.4) ^f	(2.4) ^s	2.7	F	3.0	F	3.0	F	3.0	F	3.0	F	3.2	F	6.8	7.4	8.8	8.9	10.6	9.8	9.0	9.0	9.6	9.2	6.2	5.1	3.9	3.4				
14	3.0	F	3.3	F	3.4	F	3.9	F	3.8	F	3.7	F	3.6	F	4.0	6.7	7.6	8.5	9.4	10.3	9.4	8.6	9.4	9.1	7.4	6.2	5.4	3.5	3.0	2.6				
15	2.7	2.8	F	2.9	F	2.9	F	2.9	F	2.7	F	2.7	F	3.7	6.5	8.0	8.6	10.5	10.7	9.8	8.0	9.9	9.2	7.6	6.0	5.5	4.3	3.4	3.1	2.9				
16	2.9	2.9	3.0	F	3.1	F	3.5	F	3.6	F	3.2	F	4.1	F	5.6	7.4	F	9.1	10.4	8.7	9.0	8.6	9.1	8.7	7.2	6.5	5.7	4.4	3.2	3.0				
17	2.9	2.8	3.1	F	3.5	F	3.6	F	3.6	F	3.4	F	6.1	F	7.8	8.8	10.0	9.8	10.1	9.8	8.8	8.6	8.4	7.0	5.0	3.8	3.6	3.2	3.0					
18	4.3	4.8	5.3	3.9	3.5	2.8	2.3	F	3.4	F	6.7	7.3	10.4	9.8	9.8	9.7	11.0	(9.3) ^s	(9.8) ^s	10.4	8.9	7.8	6.2	5.2	A	3.6	F	3.0						
19	2.9	F	2.7	F	3.0	F	(3.2) ^f	8.1	F	(3.2) ^s	2.5	F	3.1	F	6.6	F	(8.1) ^s	8.8	9.4	10.3	9.8	10.3	9.5	9.2	7.4	6.9	5.9	5.2	3.9	3.4	F	(2.8) ^f		
20	2.2	F	(1.9) ^f	(1.9) ^F	(1.9) ^F	(2.0) ^F	(2.3) ^F	(2.3) ^F	(2.2) ^s	(2.3) ^F	(2.3) ^F	(2.0) ^F	(2.3) ^F	(2.3) ^F	(2.3) ^F	7.5	9.0	10.1	8.8	8.6	8.8	9.7	8.4	7.6	7.2	6.0	4.2	3.3	F	(2.4) ^C				
21	2.3	2.3	2.4	F	2.5	F	(3.1) ^F	9.0	10.7	9.7	8.0	9.2	10.7	9.6	7.8	7.6	F	7.2	5.3	4.5	4.8	5.0	F											
22	4.7	F	5.0	4.8	4.6	F	3.9	2.4	3.2	6.8	8.4	9.3	10.3	9.0	9.4	10.0	9.0	9.4	10.0	9.0	8.5	8.5	6.8	4.2	F	3.3	F	3.0						
23	2.9	F	2.8	F	2.8	F	2.8	F	2.8	F	3.2	F	6.0	7.0	(8.0) ^s	8.8	11.0	9.2	9.4	(9.4) ^s	(9.6) ^s	(9.3) ^s	7.0	6.8	5.0	F	3.9	F	3.3					
24	(3.0) ^A	2.7	F	2.8	F	3.3	F	3.0	F	3.0	F	2.7	F	3.0	F	(5.4) ^s	6.8	7.7	10.0	10.2	10.0	10.6	10.8	9.4	7.8	(3.2) ^f	2.5	F	(2.5) ^f					
25	(2.7) ^F	(4.5) ^f	(3.4) ^F	(4.8) ^F	4.7	4.0	3.2	(3.7) ^s	7.0	8.5	8.1	10.2	10.5	10.6	9.3	9.4	9.7	8.8	8.0	6.7	5.2	3.8	F	3.3	2.8	F	2.8							
26	2.7	F	2.9	3.0	F	3.6	F	3.5	F	3.1	F	2.6	F	3.2	F	6.5	7.6	8.0	10.2	10.0	9.4	8.4	7.8	6.6	6.2	5.2	(3.5) ^F	3.2	2.9					
27	2.8	2.6	2.6	2.8	2.9	2.5	1.9	3.2	6.2	7.1	8.4	9.4	10.5	10.5	10.2	9.8	(9.8) ^F	10.2	9.6	8.0	4.9	4.6	4.5	(3.8) ^F										
28	2.6	3.5	4.2	4.3	3.0	2.4	F	2.6	F	(3.9) ^F	6.8	9.0	10.0	11.0	9.6	9.0	9.3	8.6	7.9	7.2	6.6	4.3	3.3	F	3.1									
29	2.8	F	2.8	F	(3.0) ^F	(3.3) ^F	(2.8) ^F	(2.4) ^F	(2.3) ^F	(2.3) ^F	6.6	F	7.2	F	8.2	F	9.8	10.3	10.5	9.8	9.4	7.8	6.3	4.9	4.3	3.8	3.4							
30	3.3	F	3.5	F	3.8	F	4.1	F	3.2	2.9	2.8	F	3.5	F	7.1	8.6	10.3	10.0	9.9	9.8	9.8	7.7	7.8	6.6	5.2	5.4	4.6	4.1						
31	4.0	3.7	3.5	F	3.7	F	2.7	F	2.5	F	(2.5) ^F	(3.5) ^F	(6.2) ^s	8.2	9.6	10.1	10.7	10.0	9.4	9.4	8.9	8.0	7.6	5.3	4.7	4.2	4.3							
Median	2.9	2.9	3.0	3.5	3.2	3.1	2.9	3.4	6.3	7.4	8.6	9.7	9.8	9.5	9.4	9.7	9.8	9.2	8.0	7.8	6.5	4.9	3.5	3.1										
Count	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31									

Form adopted June 1946

TABLE 64
Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.
IONOSPHERIC DATA

h'F1 — **Km** — **January, 1956**
(Characteristic) (Unit) (Month)
Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

Day	75°W												Mean Time												
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1																									
2																									
3																									
4																									
5																									
6																									
7																									
8																									
9																									
10																									
11																									
12																									
13																									
14																									
15																									
16																									
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20																									
21																									
22																									
23																									
24																									
25																									
26																									
27																									
28																									
29																									
30																									
31																									
Median																									
Count																									

Sweep 10 Mc to 25.0 Mc in 13.5 sec.
Manual Automatic

GPO 84044

TABLE 65
Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.
IONOSPHERIC DATA

$f_{\text{OF}} \text{ I}$ — Mc
(Characteristic) Mc
 (Unit)
Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

National Bureau of Standards
(Institution)

Scaled by: K.B., F.M., L.M., R.M.
Calculated by: J.P., J.S., J.W., E.W.

Day	75°W												Mean Time												
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1																									
2																									
3																									
4																									
5																									
6																									
7																									
8																									
9																									
10																									
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23																									
24																									
25																									
26																									
27																									
28																									
29																									
30																									
31																									
Median Count	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Sweep I.Q. Mc 1025.0 Mc in 135 sec.
Manual Automatic

Form adopted June 1946

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.
 TABLE 66
 IONOSPHERIC DATA

$h^{\circ}E$. Km . January , 1956
 (Characteristic) (Unit) (Month)

Observed at Washington, D. C.
 Lat. 38°N, Long. 77.1°W

Day	75°W Mean Time												National Bureau of Standards												
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1																									
2																									
3																									
4																									
5																									
6																									
7																									
8																									
9																									
10																									
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26																									
27																									
28																									
29																									
30																									
31																									
Median																									
Count																									

Sweep 10 Mc 10250 Mc in 135 sec.
 Manual Automatic

GPO 164048

TABLE 67
Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.
IONOSPHERIC DATA

(Characteristic)	f ₀ E (Mc) (Unit)	Mc Washington, D.C.	January 1956 (Month)	National Bureau of Standards																									
				(Institution)			Scaled by: K.B., F.M., L.M., R.M.			Calculated by: J.P., J.S., J.W.			E.W.																
Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23					
1									1.7	2.4 ^H	2.8 ^H	.30	(31) A	3.1	2.9	2.4	(1.9) ^H												
2									1.8	(2.5) ^A	(2.8) ^A	A	A	A	A	(2.5) ^A	A												
3									A	2.4	2.8	.30	3.1	3.0	2.9 ^H	A	A												
4									1.7	2.4	2.8 ^H	[2.0] ^A	31 H	30	[2.8] ^A	2.5 ^H	(2.3) ^A												
5									1.7	H	A	A	30	31	(31) A	(2.7) A	2.7	A											
6									<16 ^S	2.1	2.5	.30	31 H	3.1	2.9	2.5	A												
7									A	2.5 ^H	[2.8] ^A	3.1	3.1	3.0	2.9	2.4 ^H	A												
8									1.6	2.4	(2.7) ^A	31	(31) A	30	2.8	2.8 ^H	2.2												
9									<16 ^S	2.4	2.7	.28	30	(2.9) ^A	2.9	2.6 ^H	2.1												
10									A	2.4	2.7	.30	30	30	(2.8) ^A	2.6 ^H	A												
11									20 H	2.8 ^H	2.6 ^H	2.8 ^H	[2.7] ^A	30	2.8	2.5	2.2 ^H												
12									<16 ^S	2.3	2.5	2.8	31	3.1	2.8	2.5	A												
13									5	2.4	[2.8] ^A	31	3.2 H	30	2.9	2.5 ^H	2.4	1.6											
14									20	2.3 ^H	2.4	[2.8] ^A	3.2 H	29	[2.8] ^A	2.7 ^H	2.2	1.6 ^S											
15									A	2.6 ^H	3.0 H	3.4	3.4	3.3	(3.0) A	[2.7] ^A	2.4 ^H	<1.6 ^S											
16									A	2.6	2.7	3.2	(3.2) ^A	(3.2) ^A	A	A	A	A	A	A	A	A	A	A	A				
17									1.8	2.5	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A			
18									1.6	(2.6) ^A	(3.0) ^A	.32	H	A	A	A	A	A	A	A	A	A	A	A	A	A			
19									A	(2.9) ^A	(3.1) ^H	(3.3) ^A	(3.2) ^A	(3.2) ^A	(3.0) A	A	A	A	A	A	A	A	A	A	A	A			
20									A	(2.4) ^A	A	A	(3.1) A	3.1	3.0	A	A	A	A	A	A	A	A	A	A	A			
21									1.8	2.4 ^H	3.0	3.2	.33	3.1	3.0	3.0 ^H	2.6	<1.6 ^S											
22									1.9 ^H	A	A	A	3.2	3.3	3.1	A	A	A	A	A	A	A	A	A	A	A			
23									20	[2.3] ^A	3.0 H	3.4	3.4	3.3	3.1 ^H	[2.3] ^A	2.5 ^F	1.9											
24									(2.1) ^F	2.6	2.8	3.1	3.2	3.2	3.1	2.9	2.5	A											
25									21 H	2.3 ^H	2.6	2.9	(3.2) ^A	3.2	[3.0] A	2.9	A	A	A	A	A	A	A	A	A	A	A		
26									A	A	A	A	3.4	3.4	3.1	[2.8] ^A	2.5	1.7											
27									1.9	2.5	2.8	.31	3.2	3.1	2.9	2.8	2.5	1.7 ^S											
28									A	2.5	2.8	3.1	3.2	3.1	3.0	[2.8] ^A	2.5	<1.6 ^S											
29									20	2.5 ^H	A	A	3.1	3.1	2.9	2.7	2.2	<1.6 ^S											
30									R	A	A	31	[3.1] A	3.1	3.0	2.8	2.4	B											
31									A	2.5	3.0	3.1	31	[2.7] ^C	31	[2.8] ^C	2.0												
Median									1.8	2.4	2.8	3.1	3.1	2.9	2.7	2.4	1.6												
Count									1.9	2.6	2.4	2.5	2.5	2.8	2.7	2.4	1.9	1.3											

Sweep I.Q. Mc to 25.0 Mc in 13.5 sec.
Manual Automatic

TABLE 68
Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D. C.
IONOSPHERIC DATA

E.S.		Mc		January, 1956					
(Characteristic)	(Month)	(Limit)	(Month)	Washington, D.C.					
Observed at	Long. 77.1°W	Lat. 38.7°N							
Doy	00	01	02	03	04				
	05	06							
1	<1/6	5	<1/6	5	<1/6	5	2.8	1.2	<
2	<1/5	5	<1/2	5	2	2	3.4	2.9	-
3	1.8	3.4	2.1	2.1	2.2	2.2	6.6	<	-
4	2.2	2.2	1/2	2	4.6	2.1	3.7	4.3	-
5	2.0	4.6	4.4	5	3.7	<1/2	<1/6	6.6	<
6	3.5	Y	<1/6	3.7	Y	4.1	<1/6	3.8	<1/6.5
7	<1/5	5	2.2	3.5	2.0	3.7	<1/3	5	7.8
8	3.8	<1/5	<1/4	5	<1/3	5	3.5	3.7	2.0
9	<1/4	5	<1/2	5	E	E	E	1.7	<
10	E	<1/2	5	E	E	4.2	4.6	1.5	0
11	<1/6	5	<1/5	5	<1/3	5	3.0	4.0	E
12	4.5	5.5	5.5	5	<1/1	5	<1/2	5	<1/2
13	<1/5	5	<1/6	5	<1/3	5	<1/2	5	<1/6.5
14	<1/5	5	<1/5	5	1.6	E	</2	5	<1/6
15	<1/6	5	<1/6	5	<1/1	5	E	1.6	<
16	<1/5	5	<1/5	5	<1/1	5	E	<1/1	<1/6
17	4.9	3.9	10.5	4.3	3.3	3.3	2.8	<1/4	5
18	<1/5	5	<1/5	5	E	<1/1	5	E	<1/4
19	<1/5	5	E	<1/3	5	<1/1	5	5.8	F
20	2.8	<1/5	5	<1/3	5	<1/1	5	4.9	6.4
21	<1/7	5	<1/5	5	1.8	3.0	2.5	<1/6	5
22	<1/3	5	<1/6	5	<1/4	5	E	E	<
23	3.0	Y	<1/2	5	<1/2	5	<1/1	5	<1/6
24	7.0	3.6	4.2	2.8	Y	<1/2	5	<1/3	5
25	<1/4	5	<1/4	5	<1/5	5	<1/2	5	<1/3
26	1.9	3.3	<1/6	5	<1/5	5	<1/2	5	<1/3
27	<1/6	5	<1/6	5	<1/6	5	<1/2	5	<1/6
28	<1/6	5	<1/6	5	<1/6	5	<1/2	5	<1/6
29	3.1	Y	<1/6	5	4.1	E	<1/4	5	2.4
30	<1/5	5	<1/2	5	E	E	2.6	<1/6	5
31	3.7	<1/3	5	<1/3	5	E	E	<1/5	5
Median	<1/6	<1/6	<1/5	<1/2	<1/2	<1/2	<1/2	<1/6	<1/6
Count	31	31	31	30	31	31	31	31	31

Sweep 10 Mc to 25.0 Mc in 13.5 sec.
Manual Automatic

TABLE 69
Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.
IONOSPHERIC DATA

(M 3000) F₂, (Unit)
(Characteristic)

January, 1956
(Month)

Observed at Washington, D.C.

Lat 38.7°N., Long. 77.1°W.

75°W Mean Time

National Bureau of Standards
Scaled by: K.B., F.M., L.M., R.M.
(Institution)

Calculated by: J.P., J.S., J.W., E.W.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
1	2.90	3.10	F	3.00	F	3.00	2.90	2.90	3.20	3.20	3.20	3.20	3.20	3.05	3.30	3.20	3.10	3.10	3.10	3.10	3.05	3.05	3.05			
2	3.10	(3.10)	F	(3.00)	F	2.95	3.10	3.30	F	(3.30)	F	3.45	3.50	3.40	3.30	3.35	3.10	3.15	3.20	3.20	(3.10)	C	3.20	3.05		
3	2.90	3.05	2.95	3.00	3.00	3.00	3.00	3.00	3.40	F	(3.40)	F	3.55	3.60	3.20	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.05		
4	3.00	F	2.70	F	2.90	F	3.00	F	(3.00)	F	3.40	F	3.60	3.60	3.30	3.30	3.35	3.20	3.25	3.20	3.20	3.20	3.20	3.20	3.05	
5	2.90	F	3.00	F	3.00	F	3.00	F	3.10	F	3.30	F	3.60	3.60	3.30	3.30	3.45	3.30	3.30	3.30	3.30	3.30	3.30	3.30	3.05	
6	3.05	F	3.15	F	3.25	F	3.10	F	3.10	F	3.40	F	3.60	3.60	3.30	3.30	3.45	3.30	3.30	3.30	3.30	3.30	3.30	3.30	3.20	
7	3.10	3.00	F	3.20	F	3.20	F	3.10	F	3.20	F	3.50	3.60	3.30	3.30	3.20	3.20	3.20	3.10	3.10	3.10	3.10	3.10	3.10	3.20	
8	3.00	F	(3.00)	F	3.05	F	3.00	F	3.10	F	3.40	F	3.60	3.60	3.30	3.30	3.35	3.20	3.25	3.20	3.20	3.20	3.20	3.20	3.20	
9	2.90	F	3.00	F	3.10	F	3.20	F	3.20	F	3.40	F	3.60	3.60	3.30	3.30	3.55	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20	
10	3.00	F	2.80	F	2.90	F	3.05	F	3.00	F	3.20	F	A	3.00	F	3.30	3.35	3.20	3.20	3.05	3.20	3.10	3.10	3.10	3.10	
11	2.80	3.10	F	3.00	F	3.00	F	2.80	F	3.20	F	3.40	3.60	3.30	3.30	3.20	3.20	3.20	3.10	3.10	3.10	3.10	3.10	3.10	3.05	
12	2.90	3.00	F	3.00	F	3.00	F	3.10	F	3.20	F	3.40	3.50	3.30	3.30	3.20	3.20	3.20	3.10	3.10	3.10	3.10	3.10	3.10	3.10	
13	(3.00)	⁵	(2.80)	⁵	(3.00)	⁵	3.10	F	3.20	F	3.40	F	3.60	3.60	3.30	3.30	3.55	3.30	3.30	3.30	3.30	3.30	3.30	3.30	3.20	
14	3.00	F	2.80	F	3.10	F	3.20	F	3.00	F	3.20	F	3.40	3.40	3.30	3.30	3.35	3.30	3.30	3.30	3.30	3.30	3.30	3.30	3.20	
15	2.90	3.00	F	3.10	F	3.10	F	2.90	F	3.20	F	3.40	3.60	3.30	3.30	3.20	3.20	3.20	3.10	3.10	3.10	3.10	3.10	3.10	3.05	
16	2.90	3.00	3.20	F	3.15	F	3.00	F	3.10	F	3.30	F	3.50	3.60	H	3.30	3.40	3.30	3.30	3.30	3.30	3.30	3.30	3.30	3.30	
17	2.90	2.90	2.75	F	3.00	F	3.00	F	3.10	F	3.30	F	3.50	3.50	F	3.30	3.30	3.30	3.30	3.30	3.30	3.30	3.30	3.30	3.30	
18	2.70	2.80	3.20	F	3.20	F	3.20	F	2.90	F	3.10	F	3.30	3.30	3.30	3.30	3.35	3.30	3.30	3.30	3.30	3.30	3.30	3.30	3.20	
19	2.80	F	3.00	F	2.90	F	3.10	F	2.80	F	3.00	F	3.20	3.20	F	(3.20)	F	3.15	3.15	3.15	3.15	3.15	3.15	3.15	(3.00)	
20	(3.10)	F	(3.10)	F	(3.00)	F	(3.00)	F	(3.00)	F	(3.40)	F	(3.20)	F	J	5	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	
21	3.10	3.00	3.10	F	3.20	F	3.20	F	(3.10)	F	(3.20)	F	3.30	3.30	F	(2.95)	H	3.20	3.40	3.40	3.40	3.40	3.40	3.40	3.40	
22	2.70	F	2.90	3.00	F	3.20	F	3.20	F	3.00	F	3.20	3.40	3.40	3.40	3.40	3.40	3.30	3.25	3.25	3.25	3.25	3.25	3.25	3.20	
23	3.00	F	3.00	F	3.00	F	3.05	F	3.35	F	3.20	F	3.50	3.50	F	(3.10)	S	3.35	3.35	3.35	3.35	3.35	3.35	3.35	3.35	
24	A	2.60	F	2.70	F	2.80	F	3.10	F	3.10	F	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20	
25	(2.90)	⁵	(3.10)	⁵	(3.15)	⁵	2.95	F	2.80	3.10	F	(2.90)	⁵	3.55	3.40	3.35	3.20	3.20	3.10	3.25	3.15	3.20	3.20	3.20	3.20	3.20
26	2.80	F	2.90	3.00	F	3.10	F	3.30	F	3.30	F	3.35	F	3.60	3.60	3.55	3.30	3.40	3.40	3.45	3.45	3.45	3.45	3.45	3.45	3.40
27	3.00	2.90	2.85	2.95	3.20	3.45	3.10	3.10	3.10	3.40	3.10	3.10	3.00	3.10	3.10	3.05	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.05		
28	2.50	2.70	3.00	3.30	3.20	3.20	2.75	H	3.00	F	3.40	3.55	3.35	3.35	3.55	3.30	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20		
29	2.90	F	(3.00)	F	(3.30)	F	(3.15)	F	2.95	F	3.10	F	3.40	3.70	F	3.35	3.35	3.35	3.35	3.35	3.35	3.35	3.35	3.35	3.35	
30	3.00	F	3.00	F	3.30	F	3.20	F	3.00	F	3.10	F	3.40	3.40	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25
31	3.05	3.10	F	3.00	F	3.30	F	3.10	F	3.00	F	3.40	3.40	F	(3.20)	F	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	
Median	2.90	3.00	3.00	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10		
Count	30	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	

Sweep 10 Mc to 250 Mc in 1.35 sec.
Manual □ Automatic ■

Form adopted June 1946

TABLE 70
Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.
January, 1956
(Month)

(Characteristic) (Unit)
Observed at Washington, D.C.

Lat 38.7°N Long 77.1°W

(M 3000)F, (Month)

IONOSPHERIC DATA
75°W Mean Time
77.1°W

Day	National Bureau of Standards																						
	Scaled by: K.B., L.M., J.S., J.P., F.M., R.M.		Calculated by: J.P., J.S., J.W., E.W.																				
00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	Q	Q	L	L	L	L	L	L	L	L	L	L	L	H	Q	Q	Q	Q	Q	Q	Q	Q	Q
2	Q	Q	L	L	L	L	L	L	L	L	L	L	L	L	A	A	A	A	A	A	A	A	A
3	Q	Q	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
4	Q	Q	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
5	Q	Q	L	L	L	L	L	L	L	L	L	L	L	L	H	L	L	L	L	L	L	L	L
6	Q	Q	A	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
7	Q	Q	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
8	Q	Q	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
9	Q	Q	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
10	Q	Q	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
11	Q	Q	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
12	Q	Q	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
13	Q	Q	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
14	Q	Q	L	L	L	L	L	L	L	L	L	L	L	L	L	H	L	L	L	L	L	L	L
15	Q	Q	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
16	Q	Q	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
17	Q	Q	L	L	L	L	L	L	L	L	L	L	L	L	L	L	H	L	L	L	L	L	L
18	Q	Q	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
19	Q	Q	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
20	Q	Q	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
21	Q	Q	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
22	Q	Q	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
23	Q	Q	L	L	L	L	L	L	L	L	L	L	L	L	L	H	L	L	L	L	L	L	L
24	Q	Q	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
25	Q	Q	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
26	Q	Q	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
27	Q	Q	L	L	L	L	L	L	L	L	L	L	L	L	L	H	L	L	L	L	L	L	L
28	Q	Q	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
29	Q	Q	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
30	Q	Q	L	L	L	L	L	L	L	L	L	L	L	L	L	H	L	L	L	L	L	L	L
31	Q	Q	L	L	L	L	L	L	L	L	L	L	L	L	L	L	C	L	C	L	C	L	C
Median			—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Count			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Sweep LO Mc to 25.0 Mc in 13.5 sec.
Manual Automatic

TABLE 7
Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.
IONOSPHERIC DATA

F Min., Mc
(Characteristic)
Mc
(Unit)
January, 1956
(Month)

Observed at Washington, D.C.
Lat. 38.7°N., Long. 77.1°W.

National Bureau of Standards
Scaled by: K.B.,
(Institution)
F.M., L.M., R.M.
Calculated by: J.P., J.S., J.W., E.W.

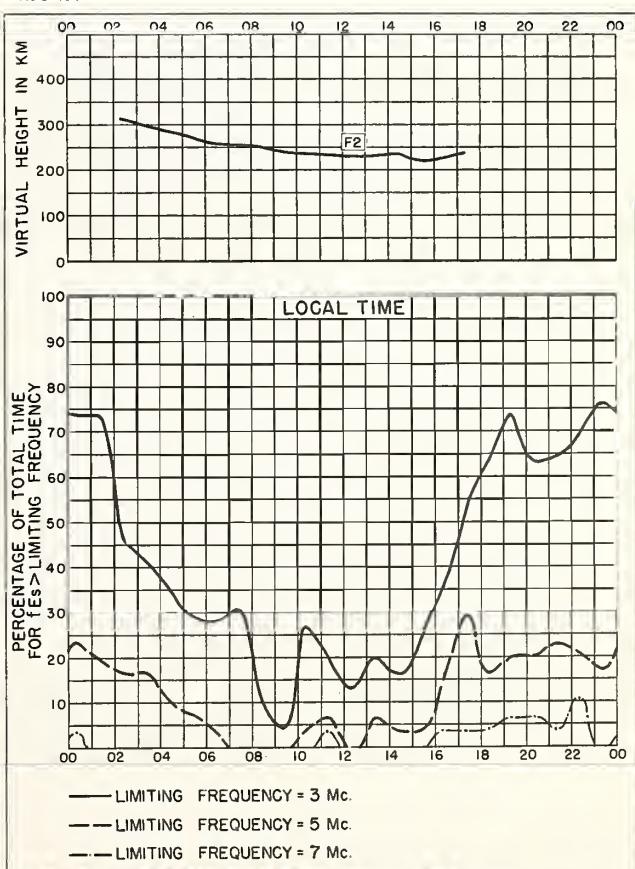
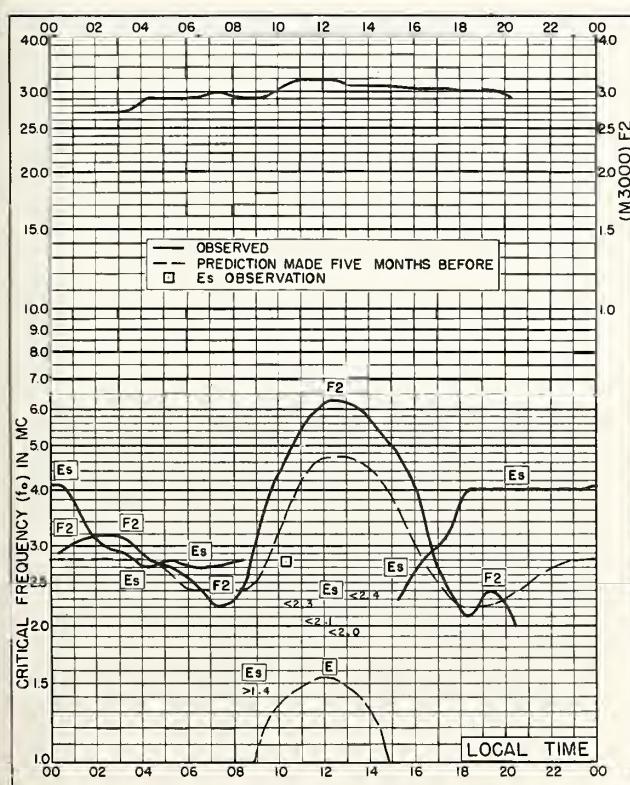
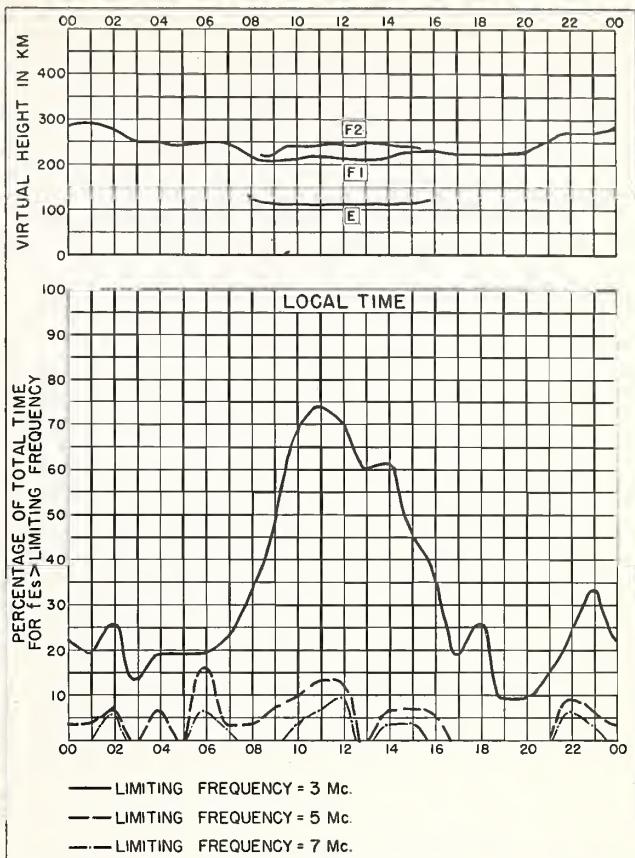
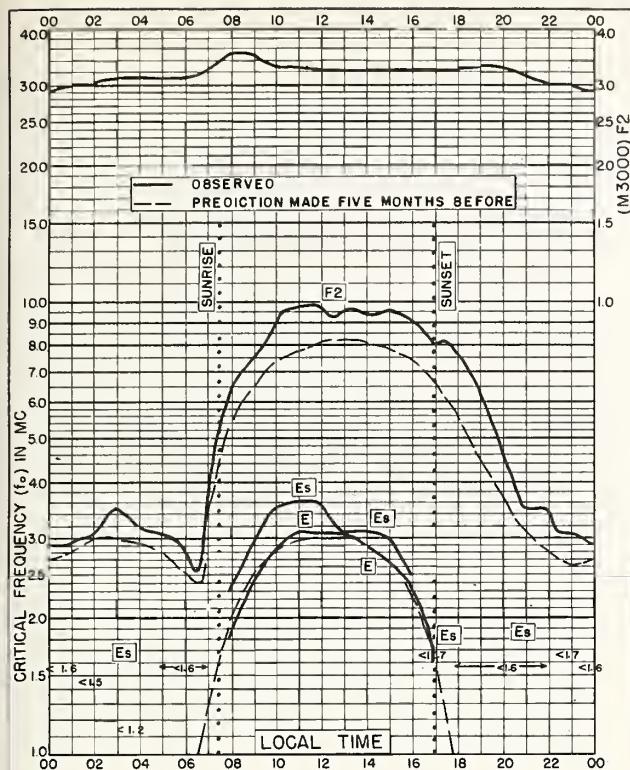
Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	1.16 ⁵																							
2	1.15 ⁵	1.14 ⁵	1.12 ⁵	1.10 ⁵	1.12 ⁵																			
3	1.15 ⁵	1.15 ⁵	1.16 ⁵																					
4	1.12 ⁵	1.13 ⁵																						
5	1.14 ⁵	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
6	1.16 ⁵																							
7	1.15 ⁵	1.16 ⁵																						
8	1.16 ⁵	1.16 ⁵	1.14 ⁵	1.13 ⁵	1.13 ⁵	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
9	1.14 ⁵	1.12 ⁵	1.12 ⁵	1.12 ⁵	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
10	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
11	1.16 ⁵	1.15 ⁵	1.13 ⁵	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
12	1.15 ⁵	1.13 ⁵	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
13	1.15 ⁵	1.16 ⁵																						
14	1.15 ⁵	1.16 ⁵																						
15	1.16 ⁵	1.15 ⁵	1.15 ⁵	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
16	1.15 ⁵	1.15 ⁵	1.15 ⁵	1.15 ⁵	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
17	1.15 ⁵	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
18	1.15 ⁵	1.15 ⁵	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
19	1.15 ⁵	1.13 ⁵	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
20	1.15 ⁵	1.15 ⁵	1.13 ⁵	1.12 ⁵	1.12 ⁵	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
21	1.17 ⁵	1.15 ⁵	1.15 ⁵	1.15 ⁵	1.13 ⁵	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
22	1.13 ⁵	1.16 ⁵																						
23	1.15 ⁵	1.12 ⁵	1.12 ⁵	1.12 ⁵	1.12 ⁵	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
24	1.13 ⁵	1.16 ⁵	1.13 ⁵	1.13 ⁵	1.12 ⁵	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
25	1.14 ⁵	1.14 ⁵	1.15 ⁵	1.12 ⁵	1.12 ⁵	1.13 ⁵	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
26	1.16 ⁵	1.15 ⁵	1.12 ⁵	1.12 ⁵	1.13 ⁵	1.12 ⁵	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
27	1.16 ⁵	1.16 ⁵	1.12 ⁵	1.12 ⁵	1.12 ⁵	1.12 ⁵	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
28	1.16 ⁵	1.16 ⁵	1.13 ⁵	1.13 ⁵	1.12 ⁵	1.12 ⁵	1.14 ⁵	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
29	1.16 ⁵																							
30	1.15 ⁵	1.12 ⁵	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
31	1.16 ⁵	1.13 ⁵	1.12 ⁵	1.12 ⁵	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E

Sweep I.O. Mc to 25.0 Mc in 1.5 sec.
Manual □ Automatic ■

Median Count

Note

Beginning with data for January 1956, no values of $h^{\prime}Es$, (M1500)F2, or (M1500)E will be reported from the Washington, D. C., ionosphere station.



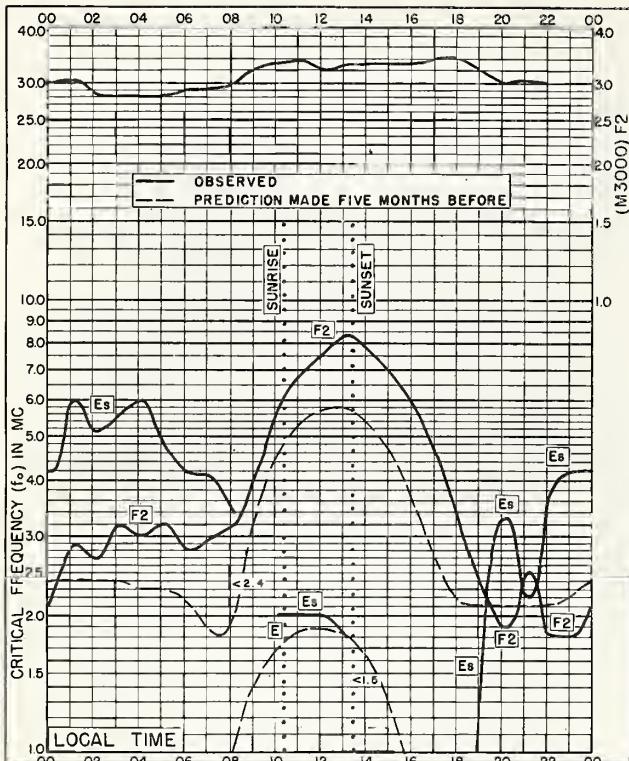


Fig. 5. FAIRBANKS, ALASKA
64.9°N, 147.8°W DECEMBER 1955

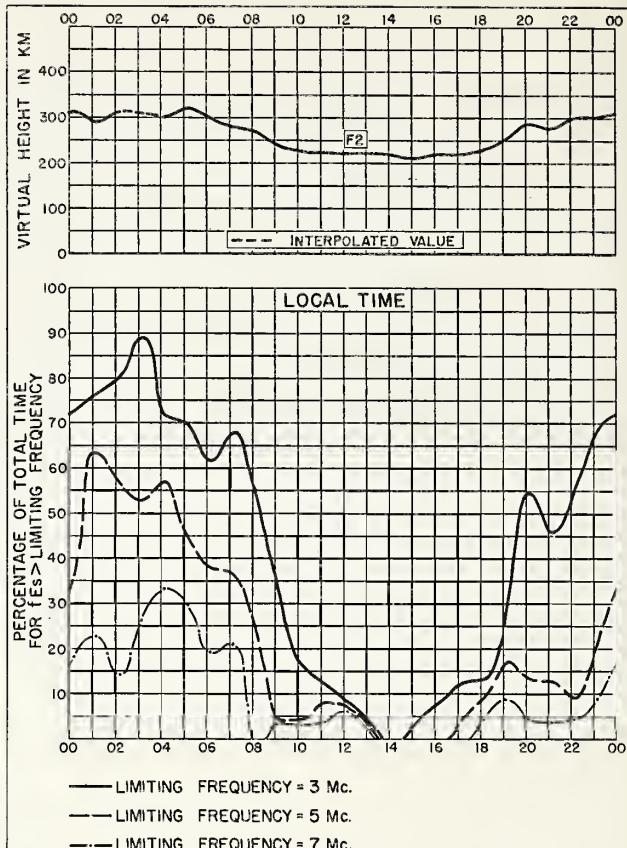


Fig. 6. FAIRBANKS, ALASKA DECEMBER 1955

NBS 490

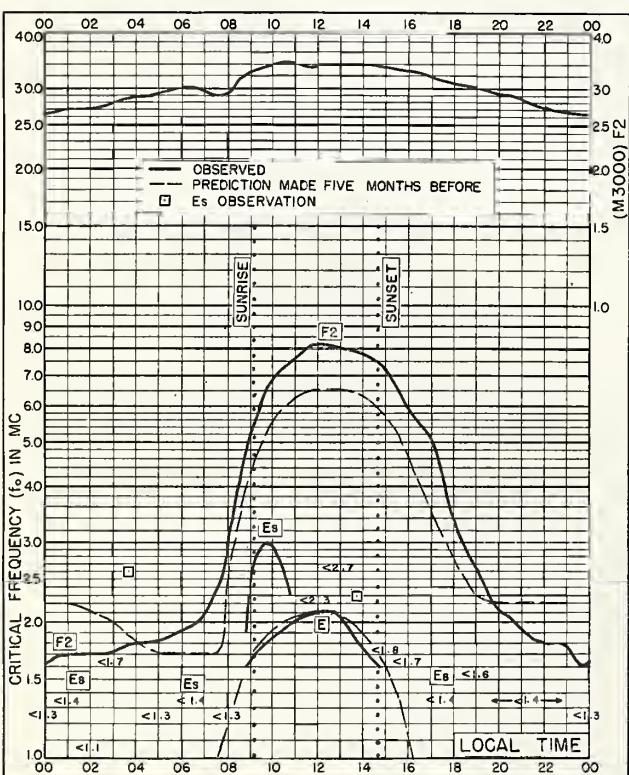


Fig. 7. OSLO, NORWAY
60.0°N, 11.1°E DECEMBER 1955

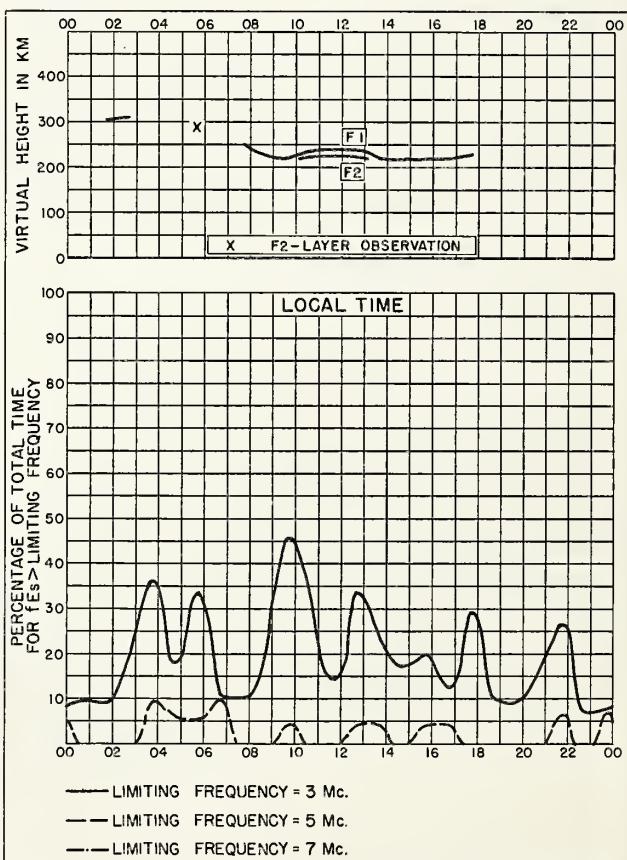
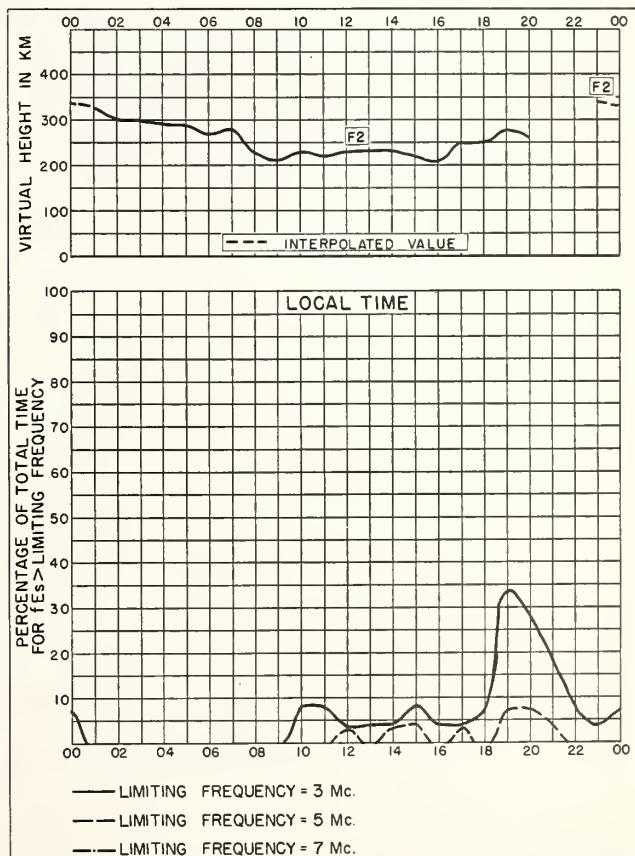
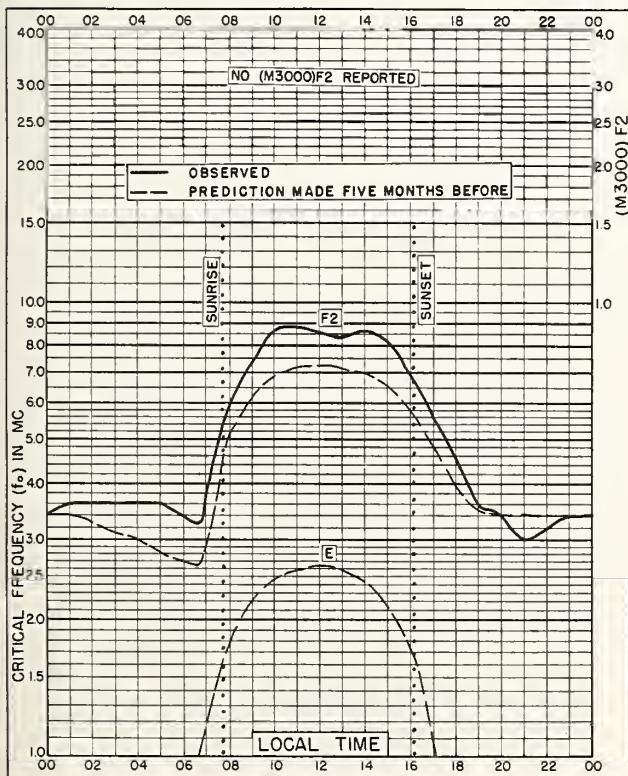
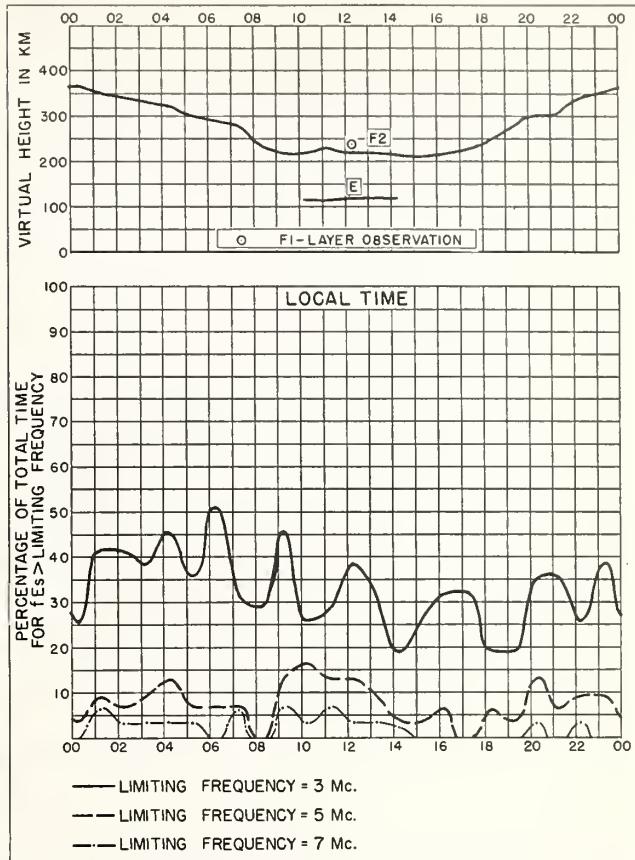
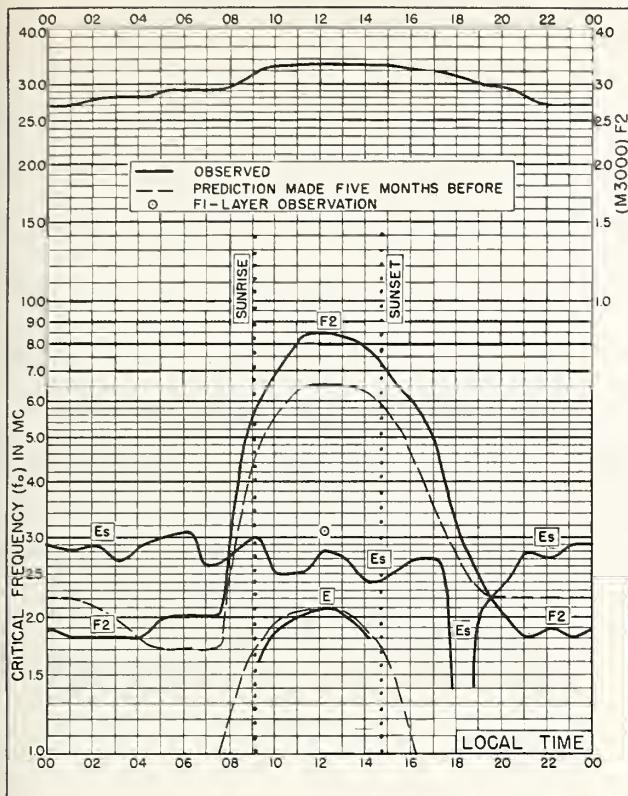
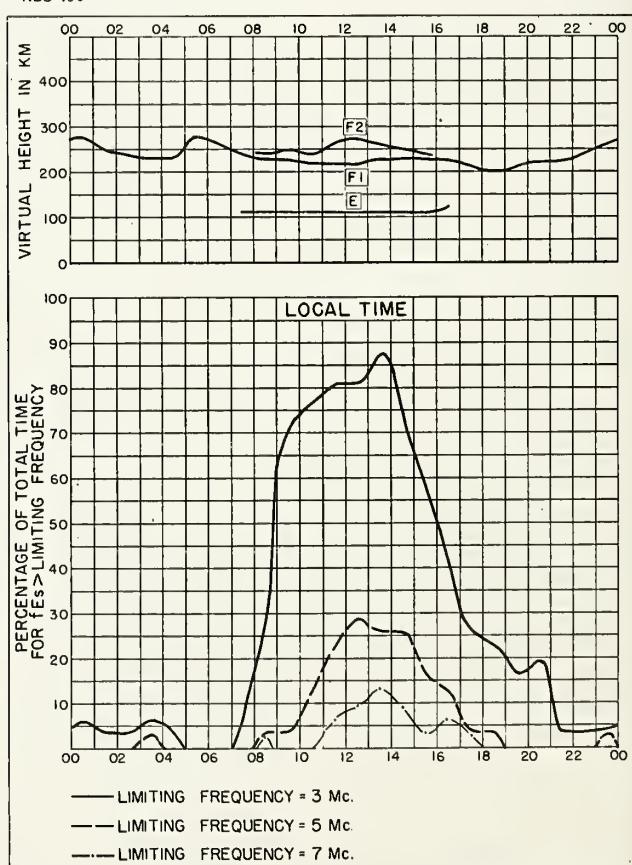
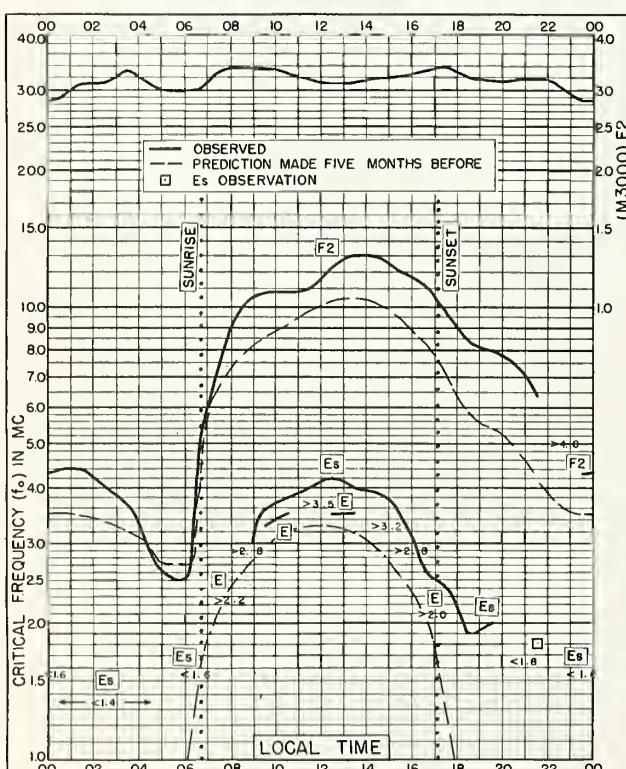
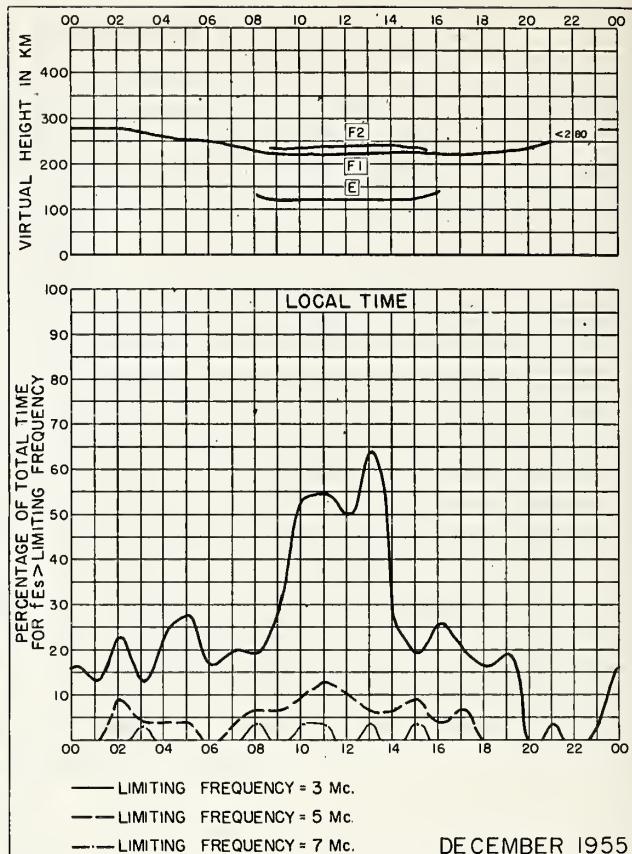
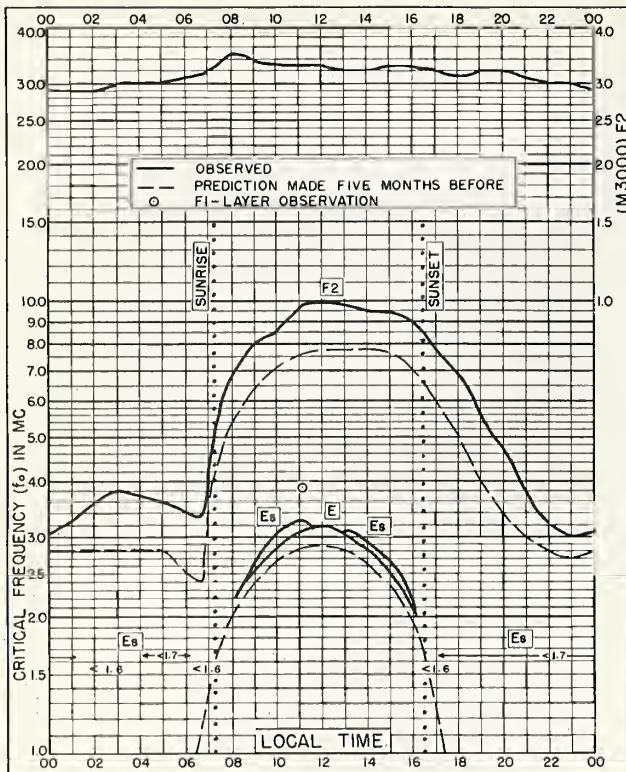


Fig. 8. OSLO, NORWAY DECEMBER 1955

NBS 490





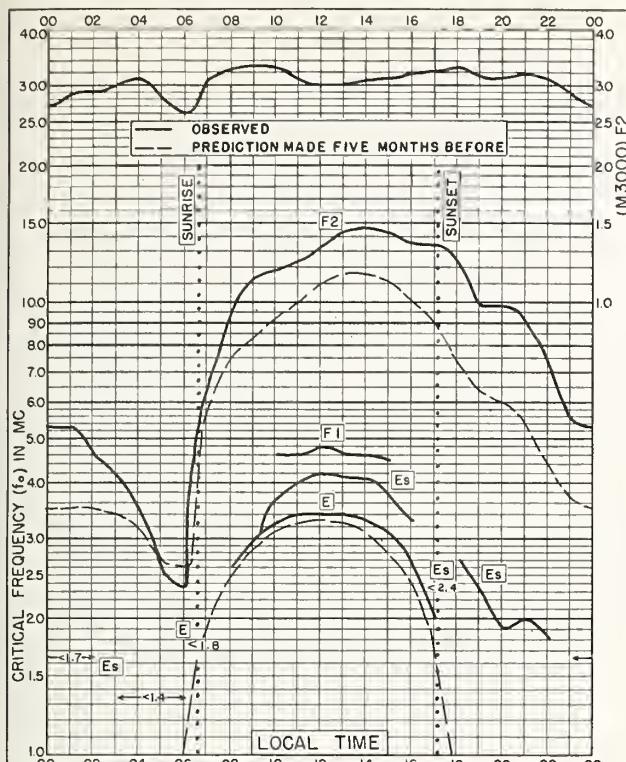


Fig. 17. FORMOSA, CHINA
 25.0°N, 121.5°E DECEMBER 1955

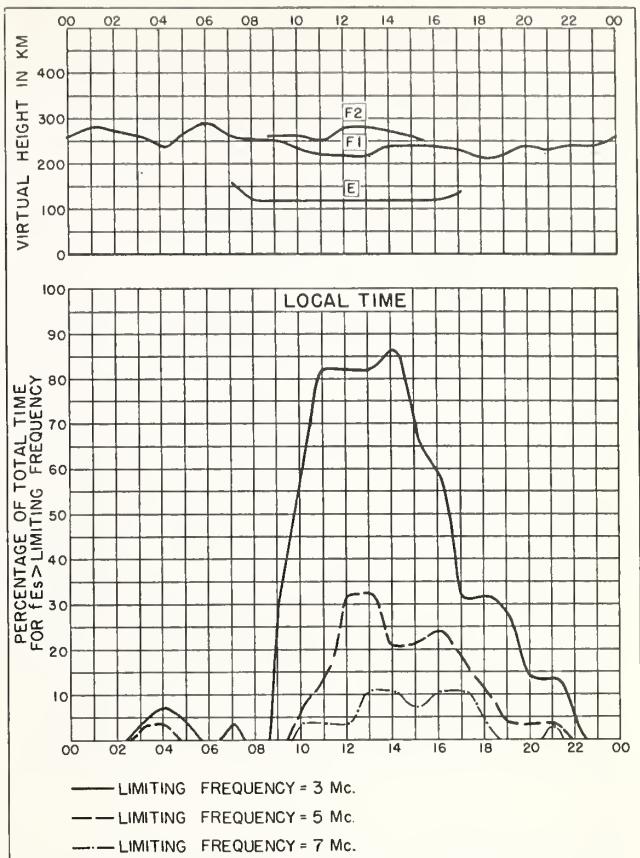


Fig. 18. FORMOSA, CHINA DECEMBER 1955

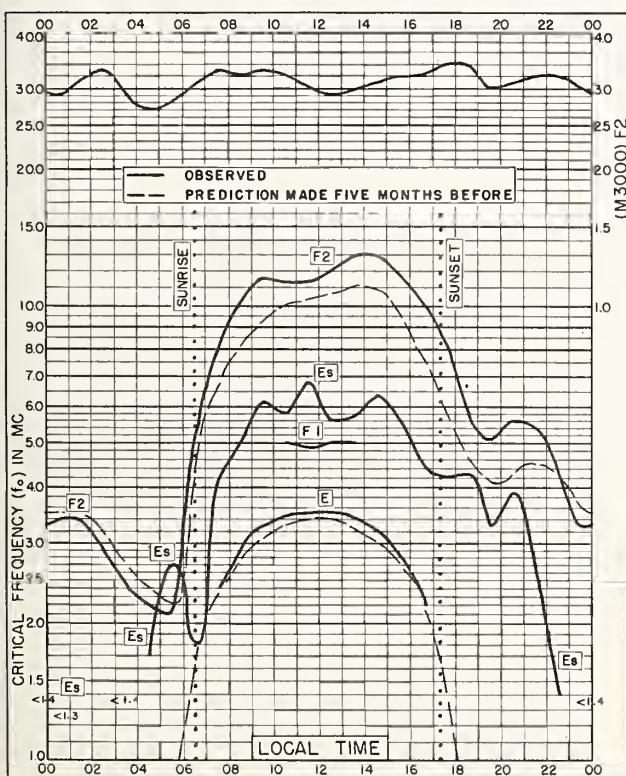


Fig. 19. MAUI, HAWAII
 20.8°N, 156.5°W DECEMBER 1955

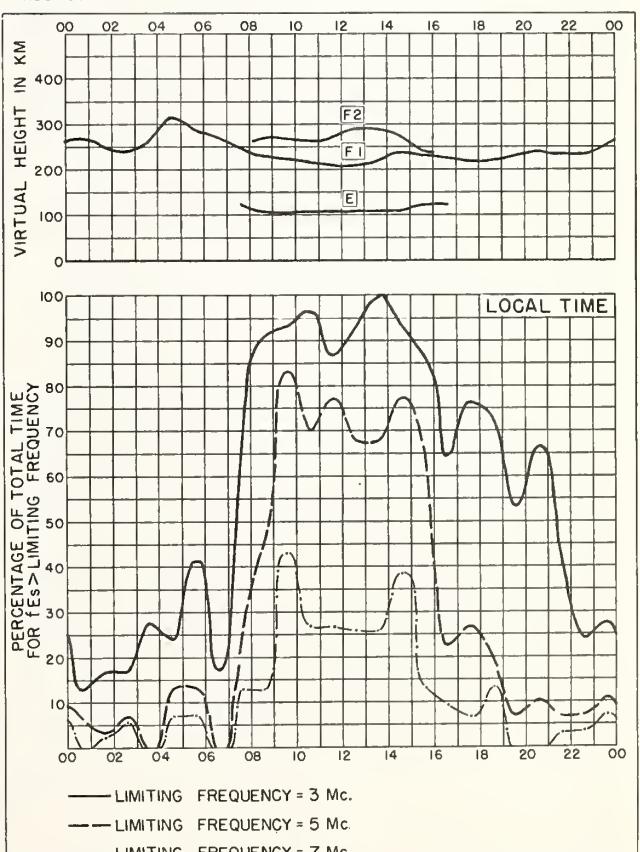


Fig. 20. MAUI, HAWAII DECEMBER 1955

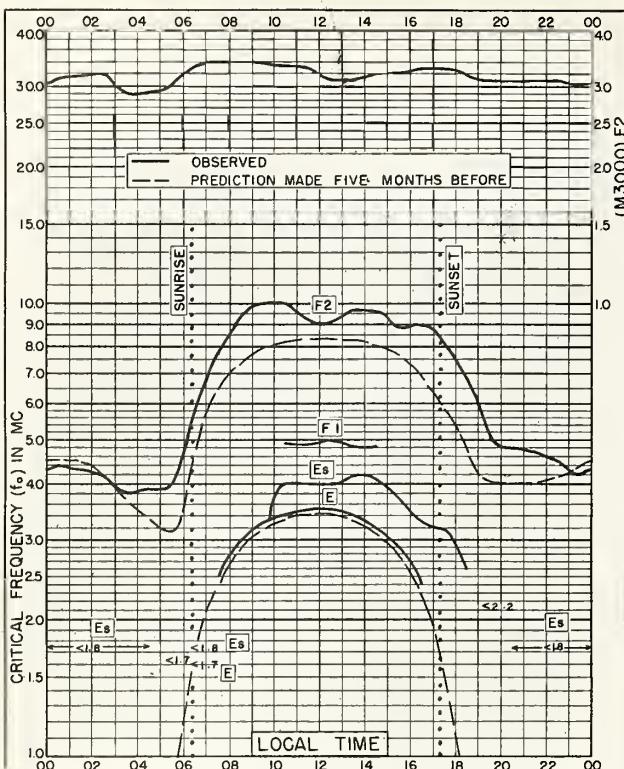


Fig. 21. PUERTO RICO, W.I.
18.5°N, 67.2°W DECEMBER 1955

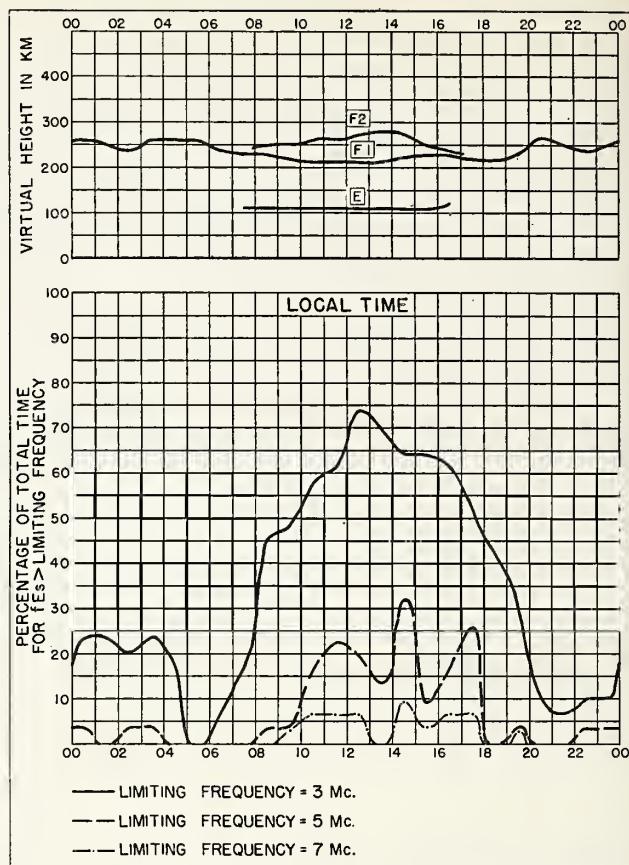


Fig. 22. PUERTO RICO, W. I. DECEMBER 1955

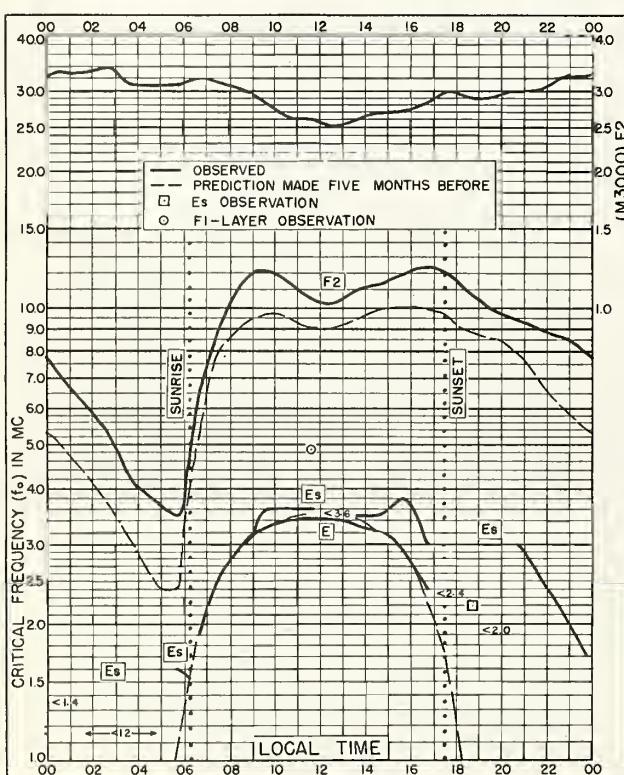


Fig. 23. GUAM I.
13. 6°N, 144. 9°E DECEMBER 1955

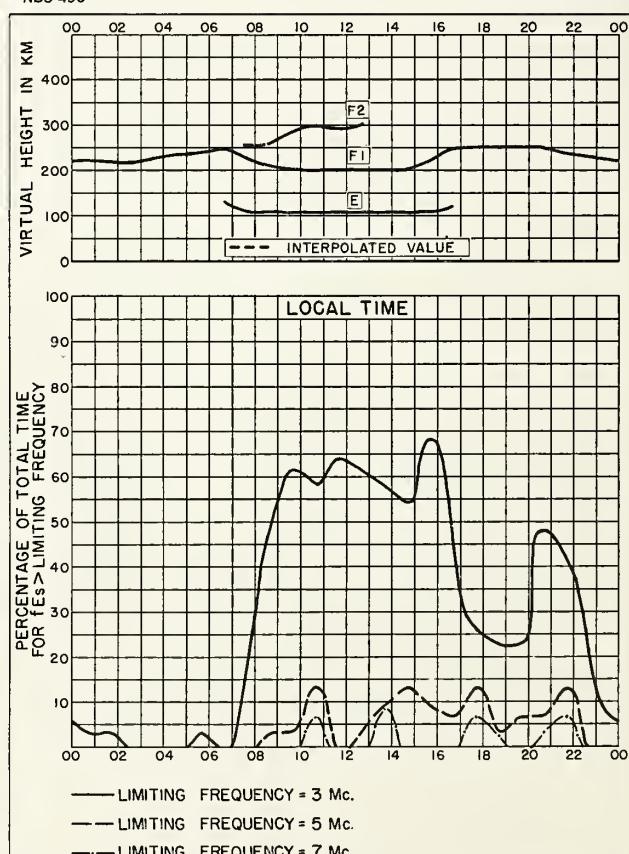


Fig. 24. GUAM I. DECEMBER 1955

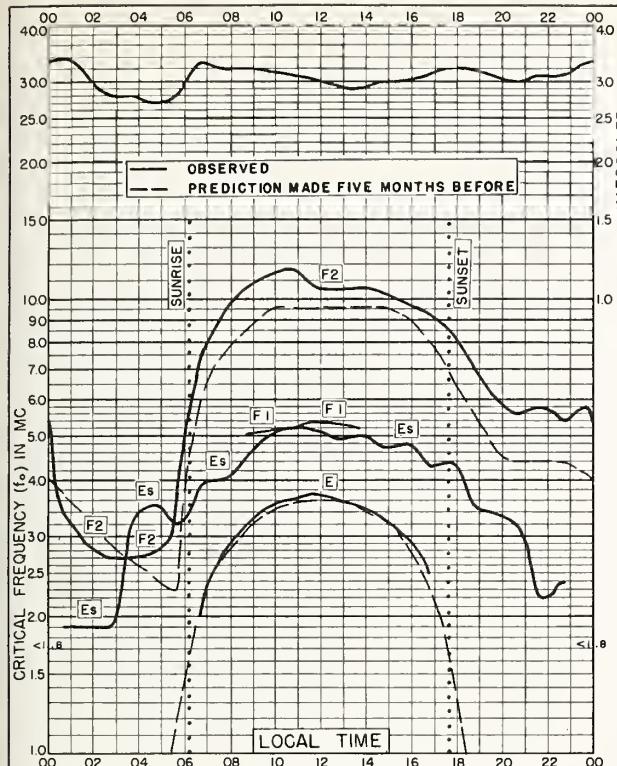


Fig. 25. PANAMA CANAL ZONE
9.4°N, 79.9°W DECEMBER 1955

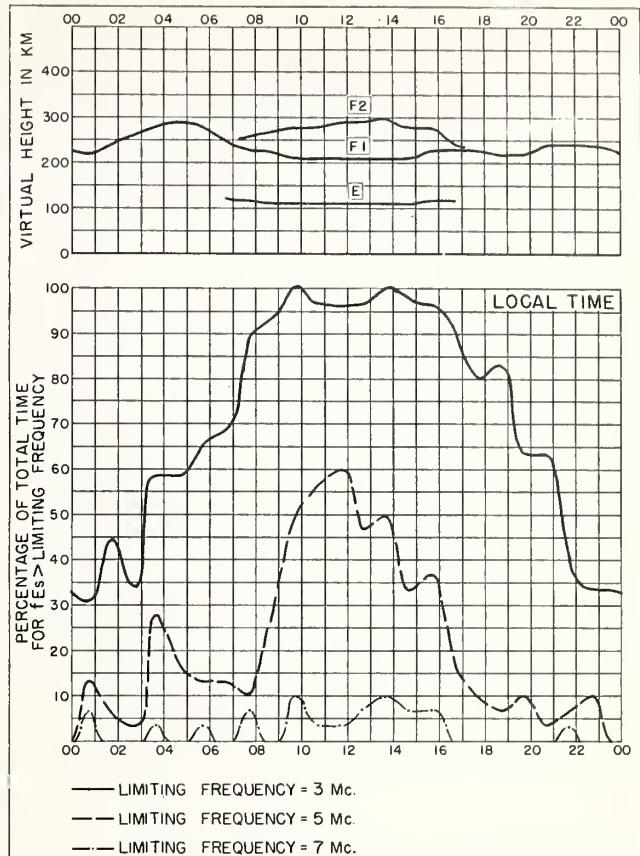


Fig. 26. PANAMA CANAL ZONE DECEMBER 1955

NBS 490

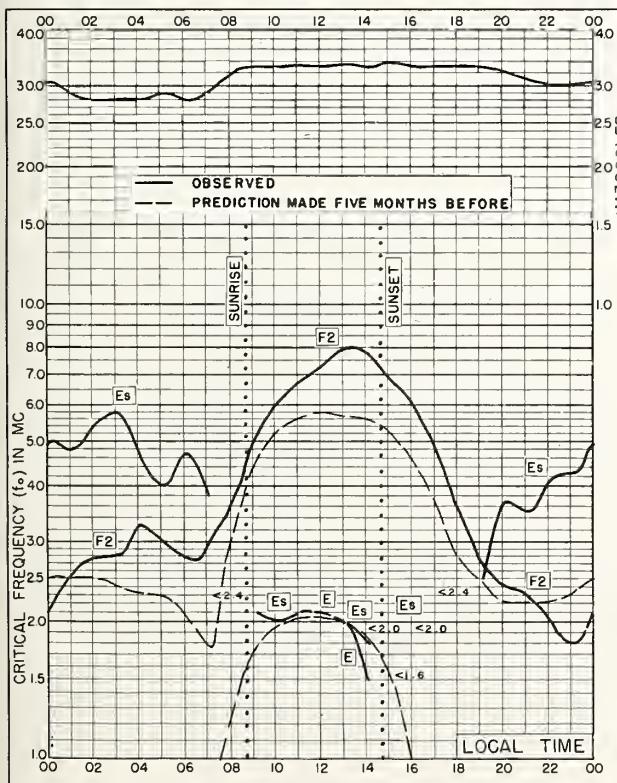


Fig. 27. FAIRBANKS, ALASKA
64.9°N, 147.8°W NOVEMBER 1955

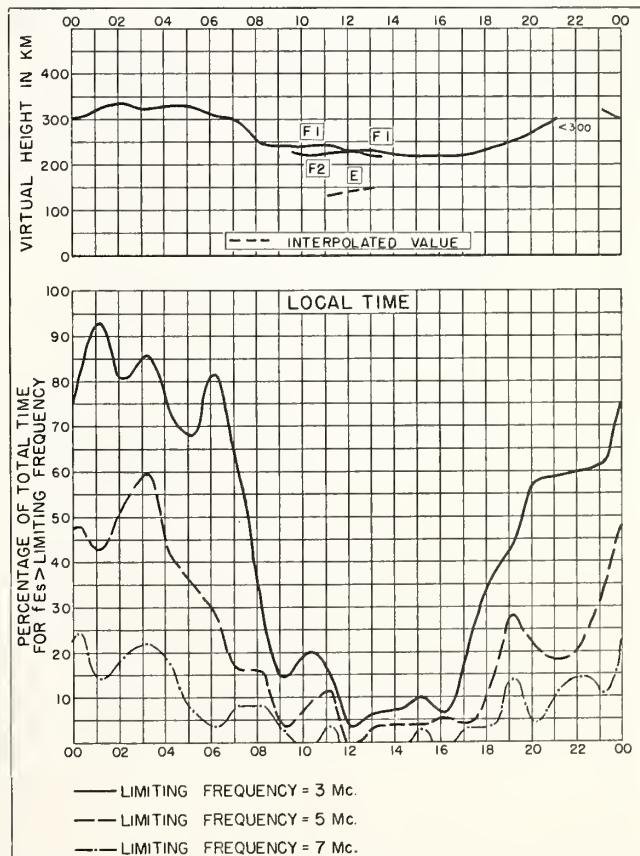
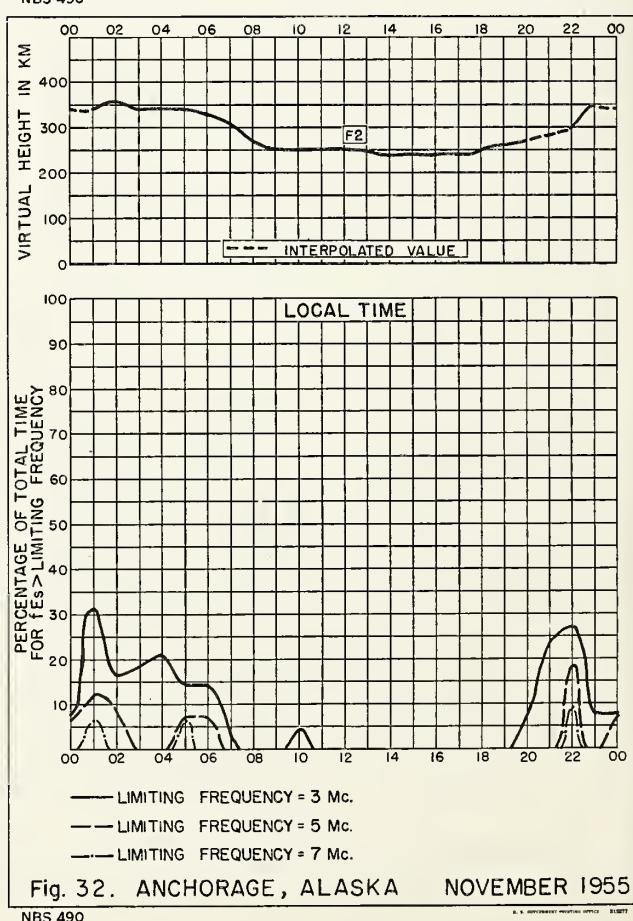
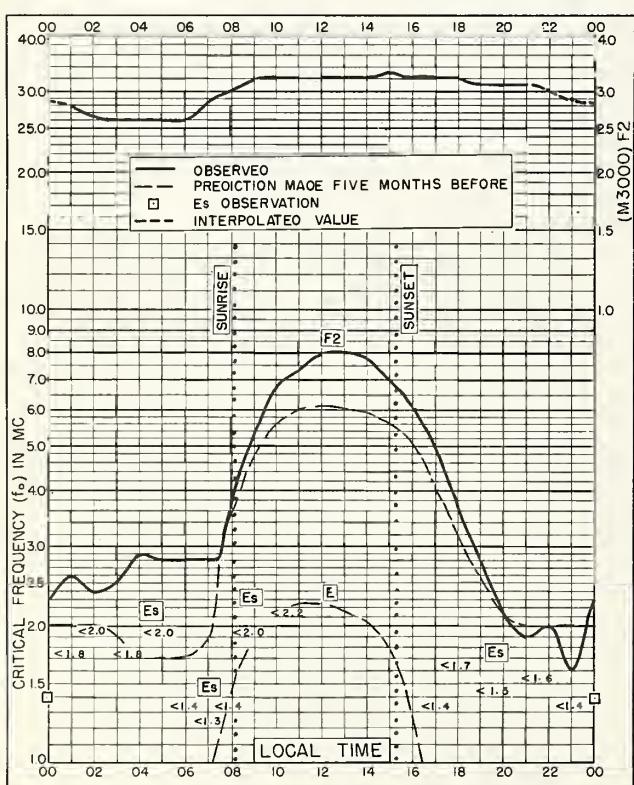
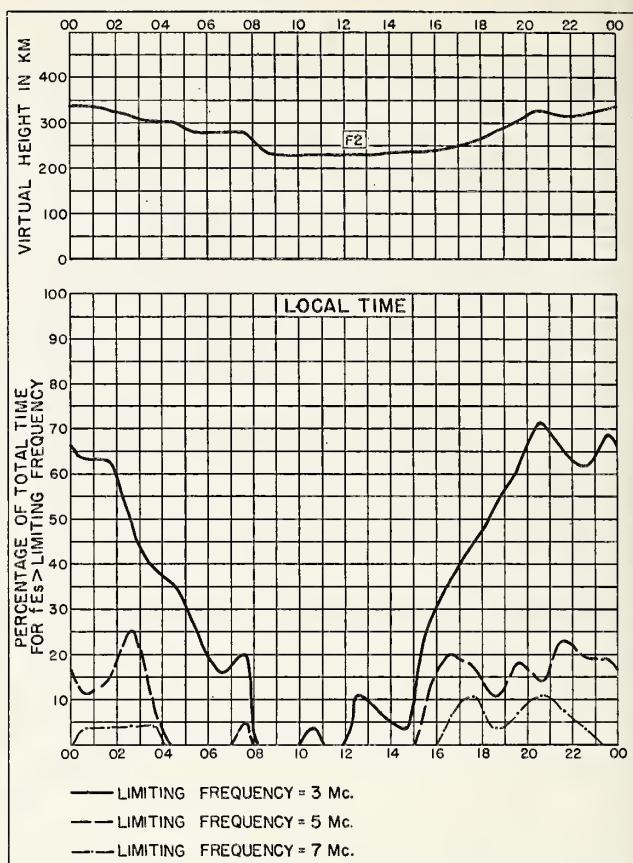
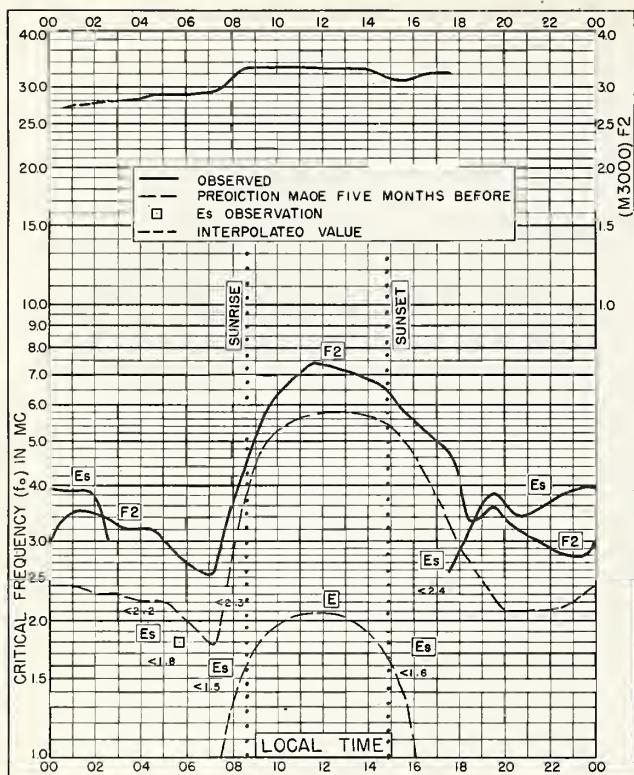


Fig. 28. FAIRBANKS, ALASKA NOVEMBER 1955

NBS 490



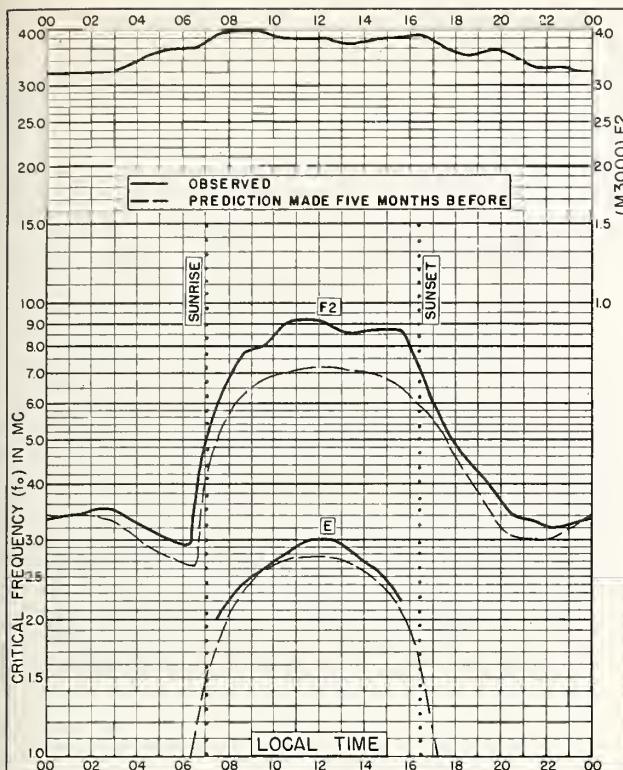
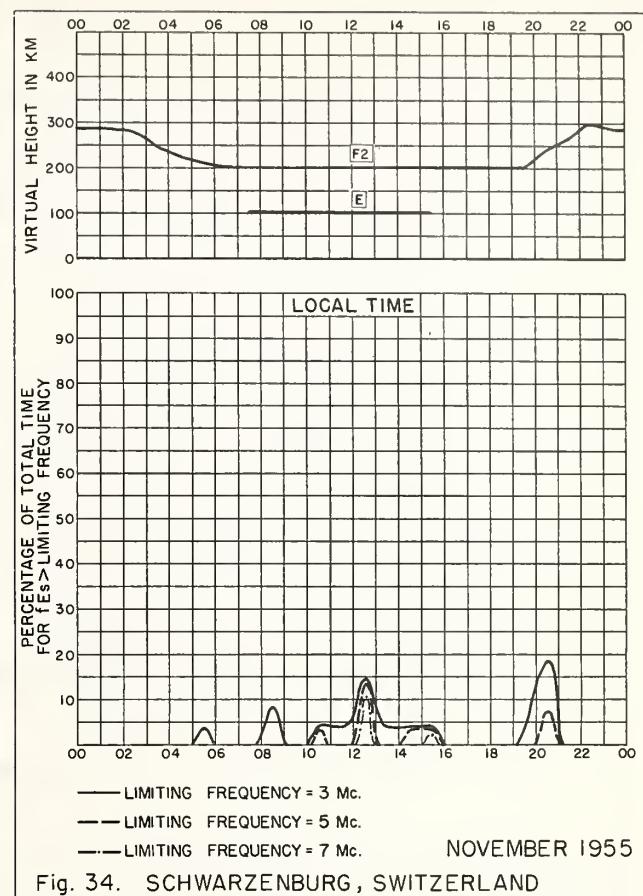


Fig. 33. SCHWARZENBURG, SWITZERLAND
46.8°N, 7.3°E NOVEMBER 1955



NOVEMBER 1955
NBS 490

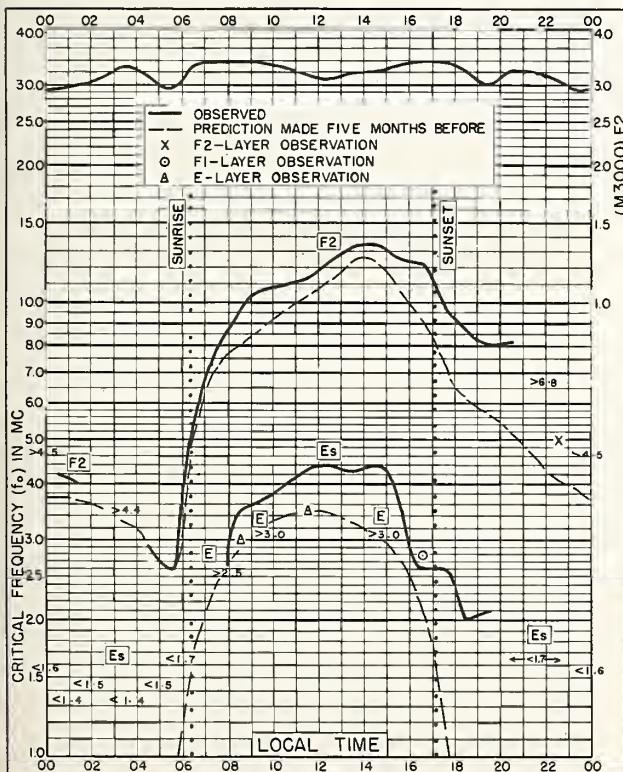
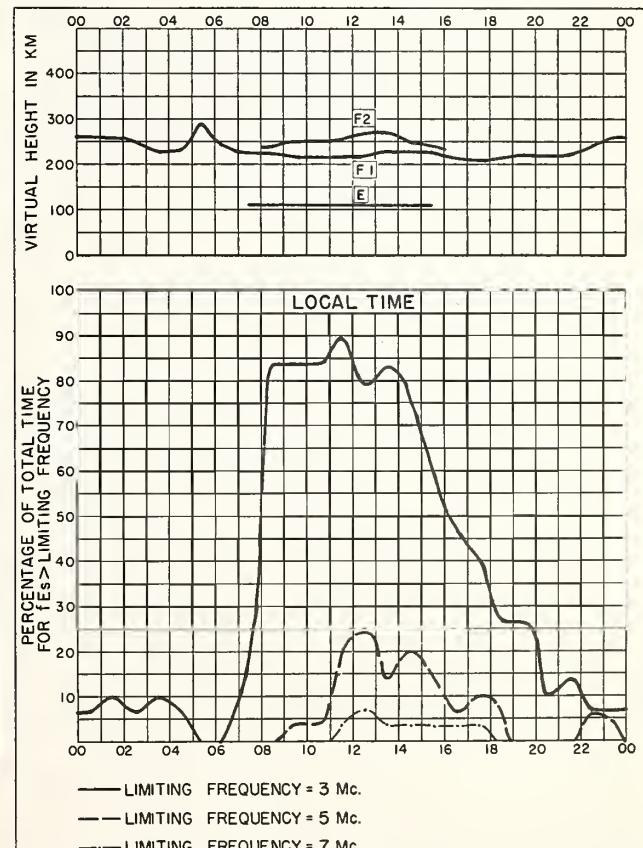


Fig. 35. OKINAWA I.
26.3°N, 127.8°E NOVEMBER 1955



NOVEMBER 1955
NBS 490

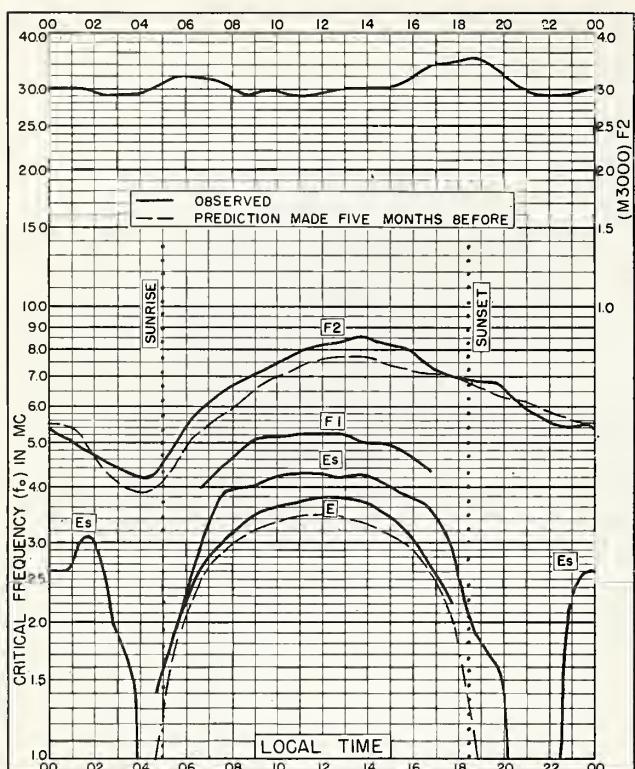
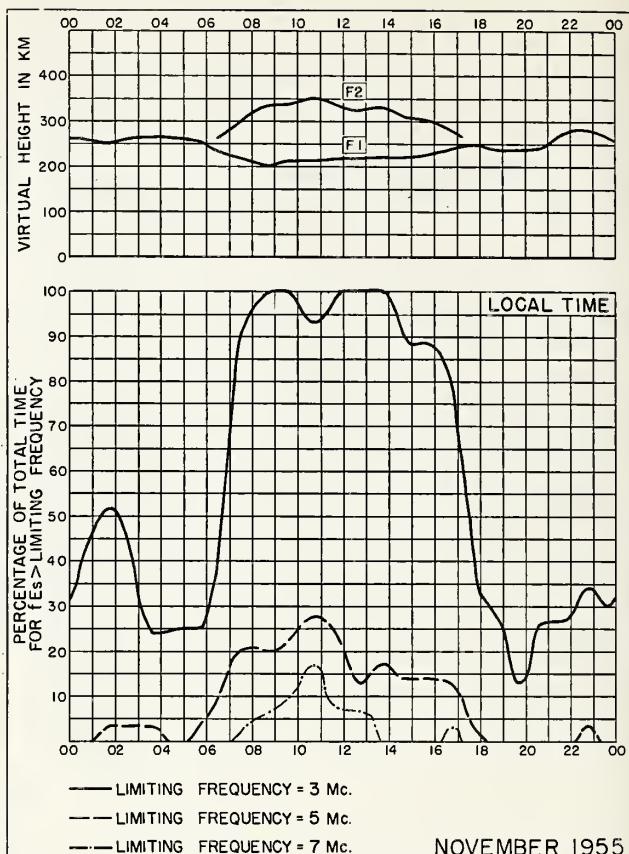


Fig. 37. WATHEROO, W. AUSTRALIA
30.3°S, 115.9°E NOVEMBER 1955



NOVEMBER 1955
NBS 490

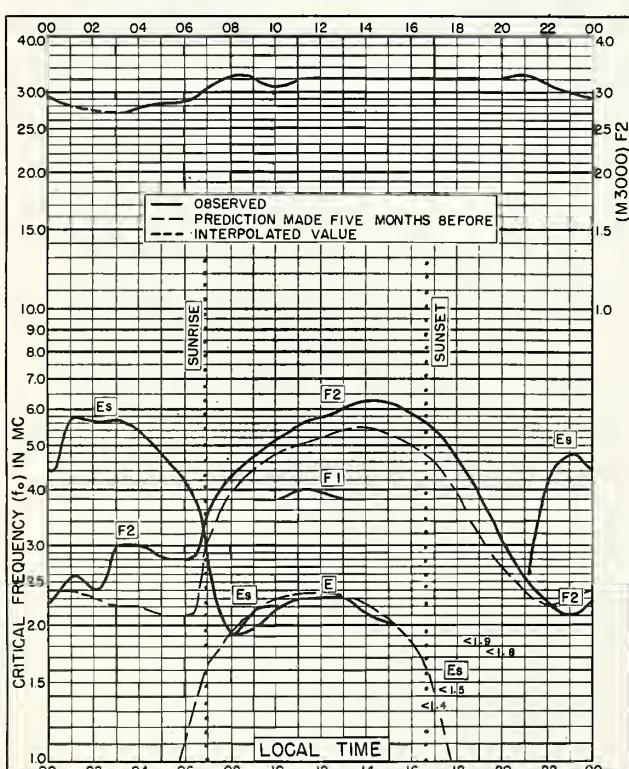
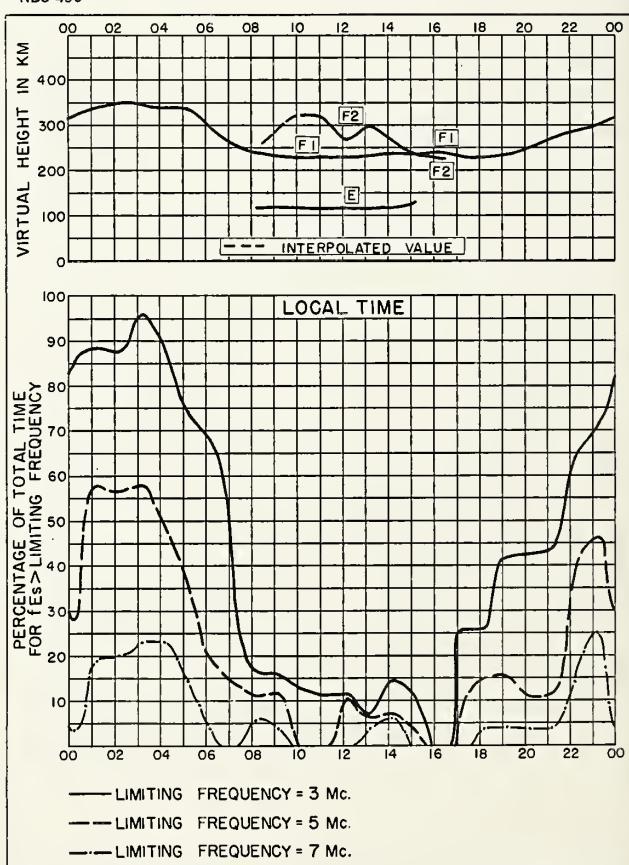


Fig. 39. FAIRBANKS, ALASKA
64.9°N, 147.8°W OCTOBER 1955



OCTOBER 1955
NBS 490

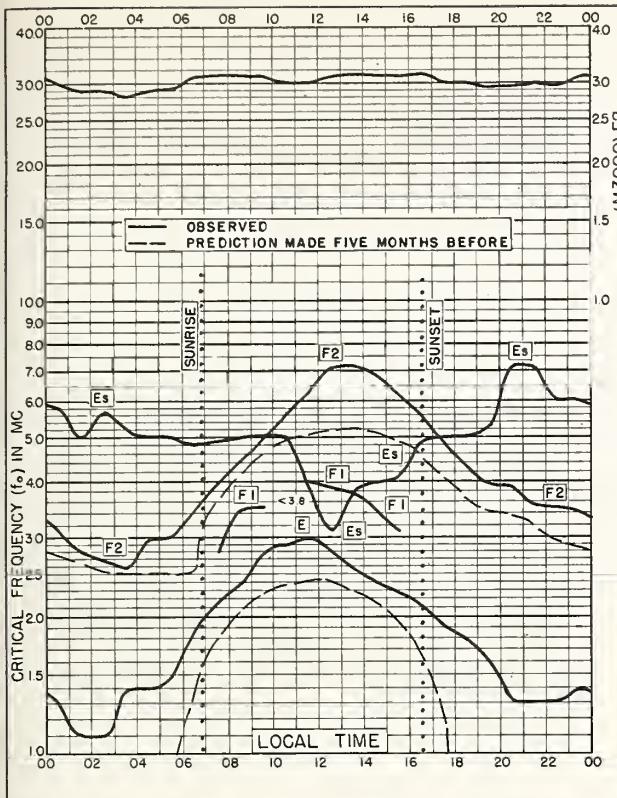


Fig. 41. BAKER LAKE, CANADA
64.3°N, 96.0°W OCTOBER 1955

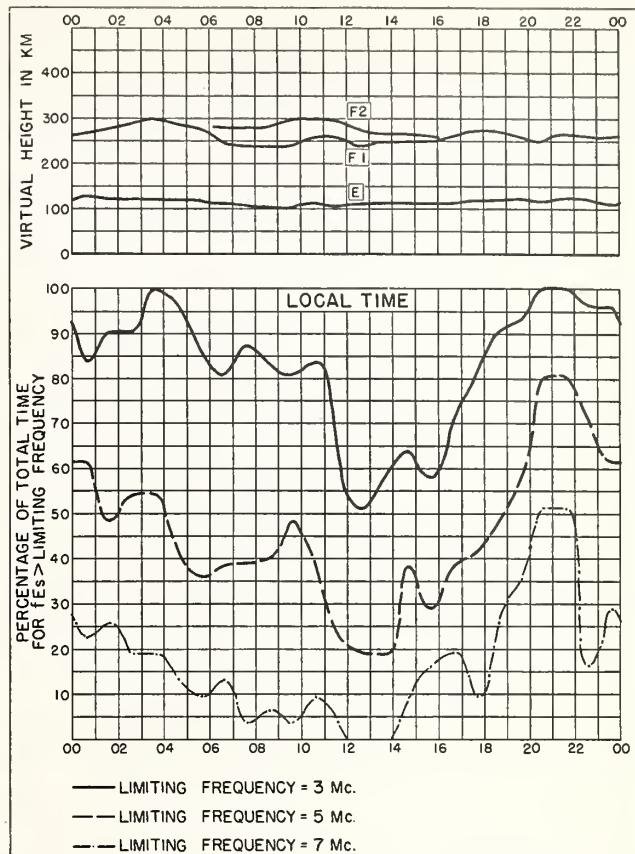


Fig. 42. BAKER LAKE, CANADA OCTOBER 1955

NBS 490

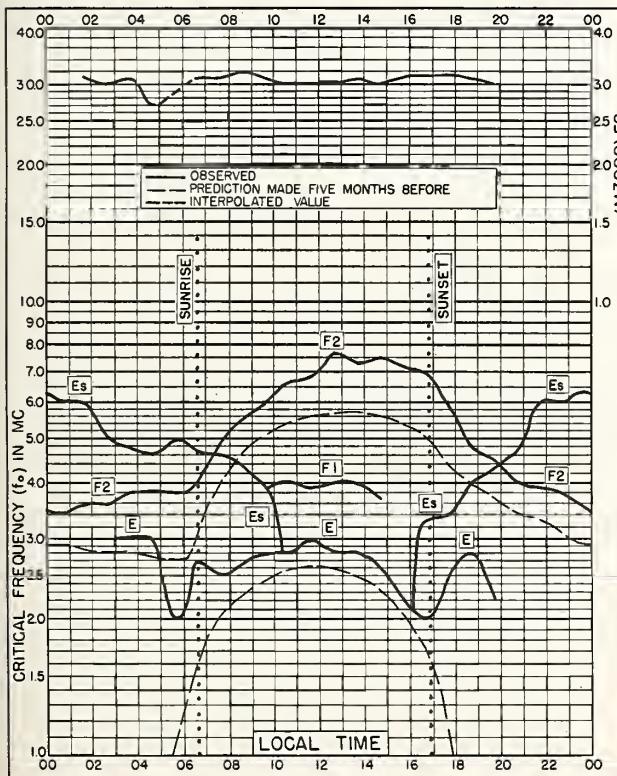


Fig. 43. CHURCHILL, CANADA
58.8°N, 94.2°W OCTOBER 1955

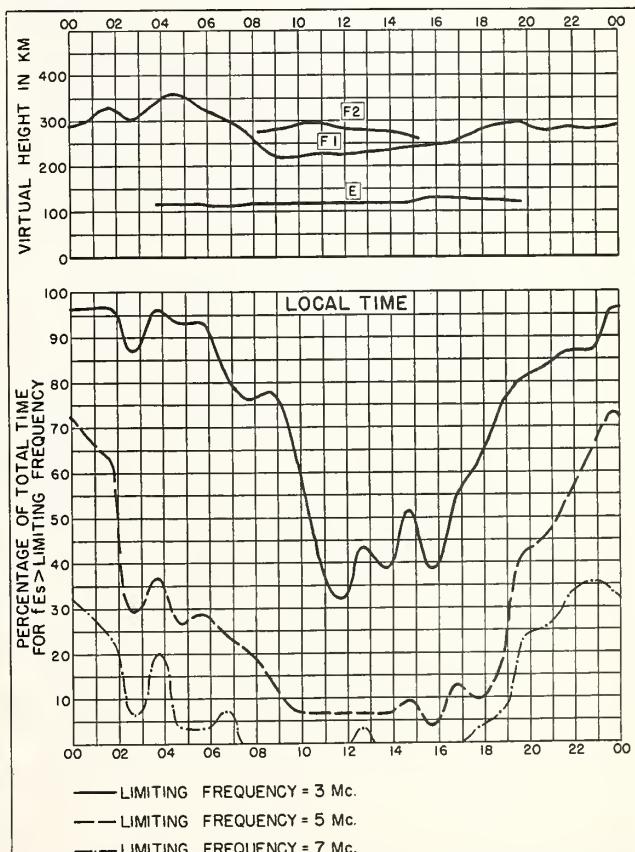


Fig. 44. CHURCHILL, CANADA OCTOBER 1955

NBS 490

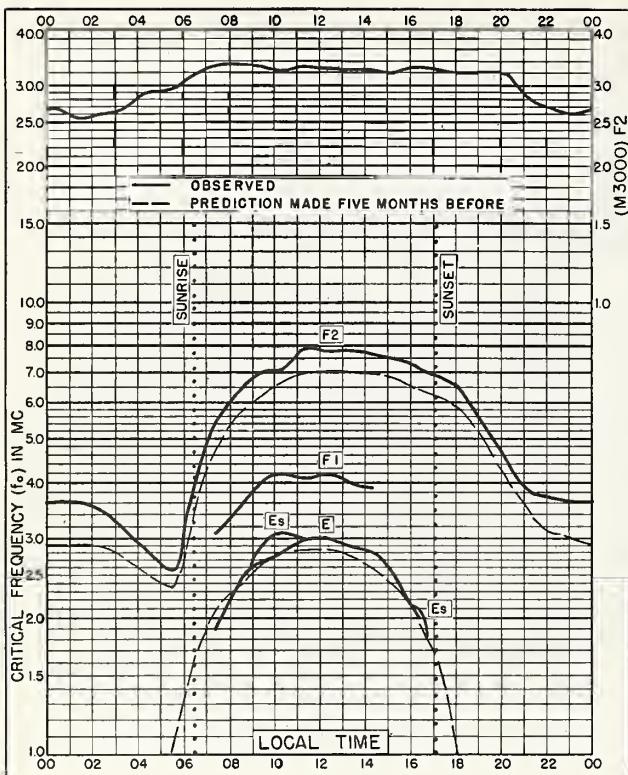


Fig. 45. De BILT, HOLLAND

52.1°N, 5.2°E

OCTOBER 1955

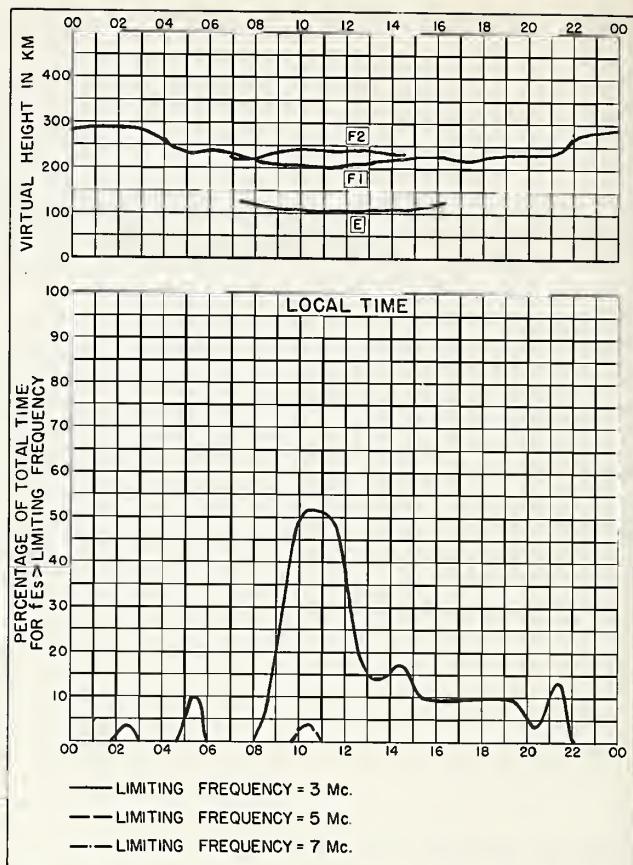


Fig. 46. De BILT, HOLLAND

OCTOBER 1955

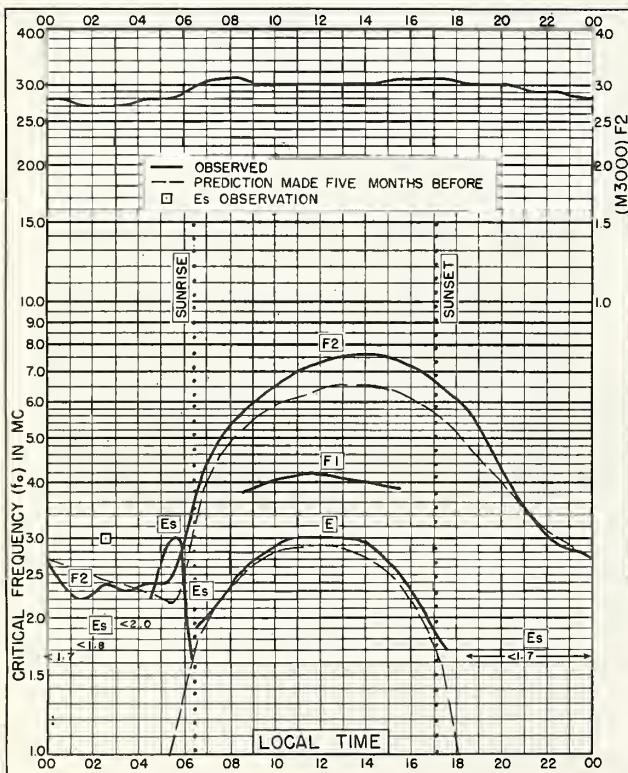


Fig. 47. WINNIPEG, CANADA

49.9°N, 97.4°W

OCTOBER 1955

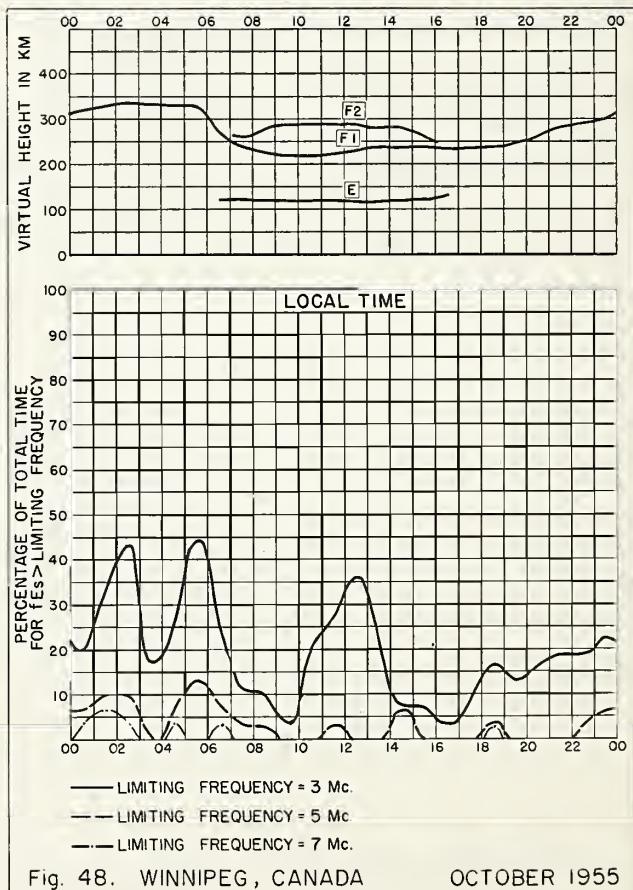
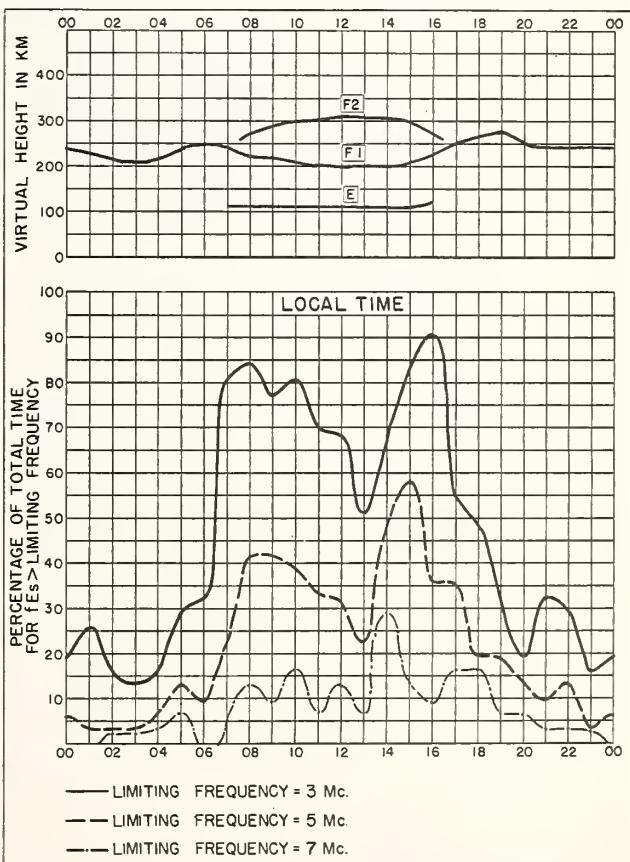
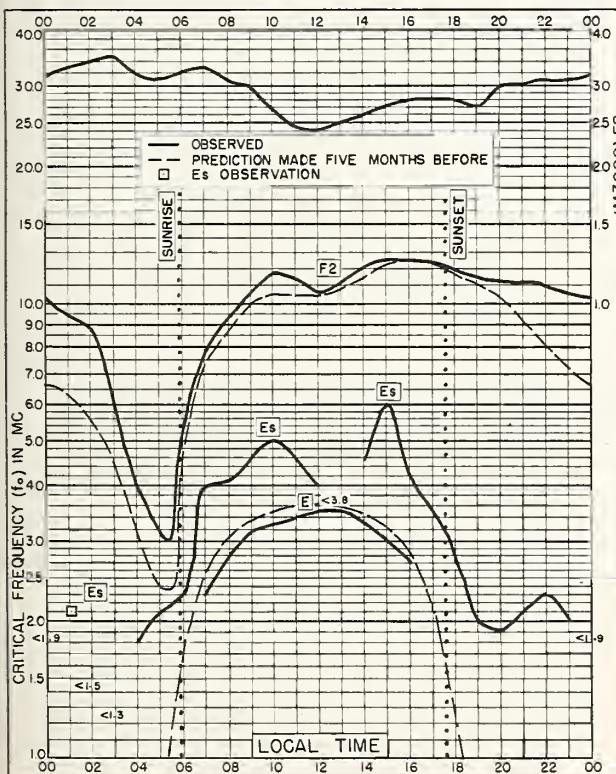
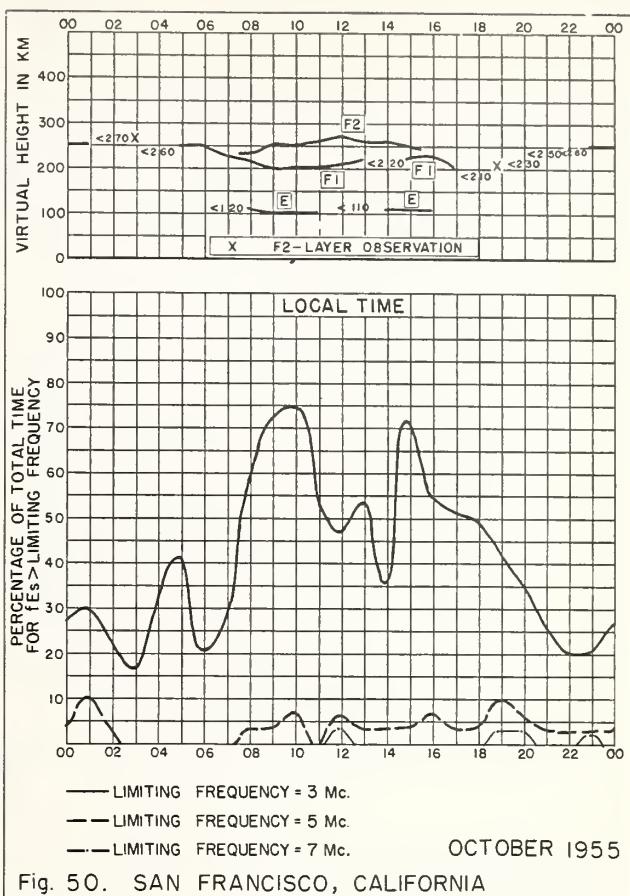
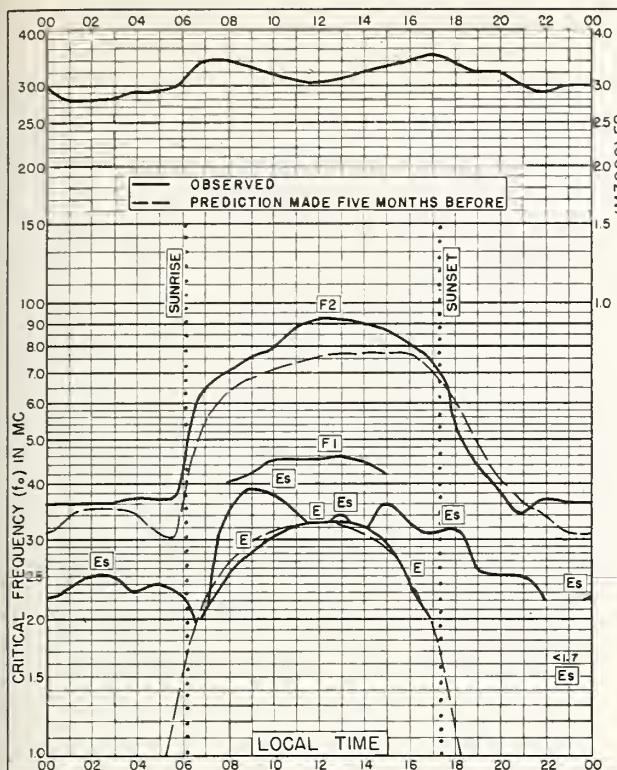


Fig. 48. WINNIPEG, CANADA

OCTOBER 1955



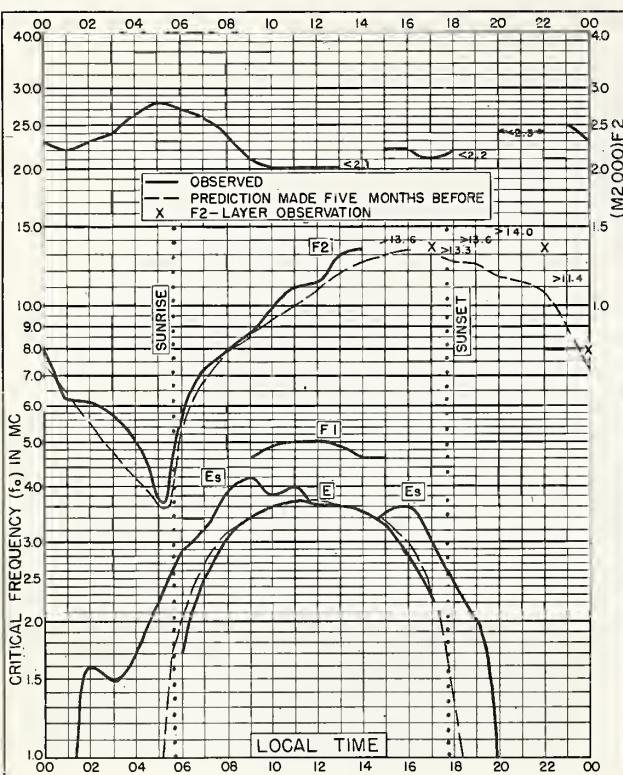


Fig. 53. LEOPOLDVILLE, BELGIAN CONGO
4.4°S, 15.2°E OCTOBER 1955

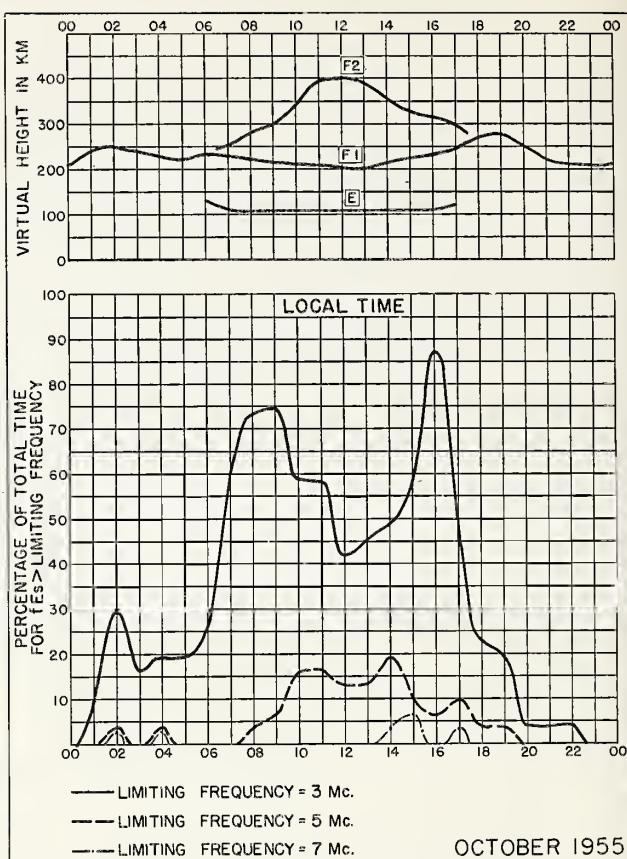


Fig. 54. LEOPOLDVILLE, BELGIAN CONGO OCTOBER 1955

NBS 490

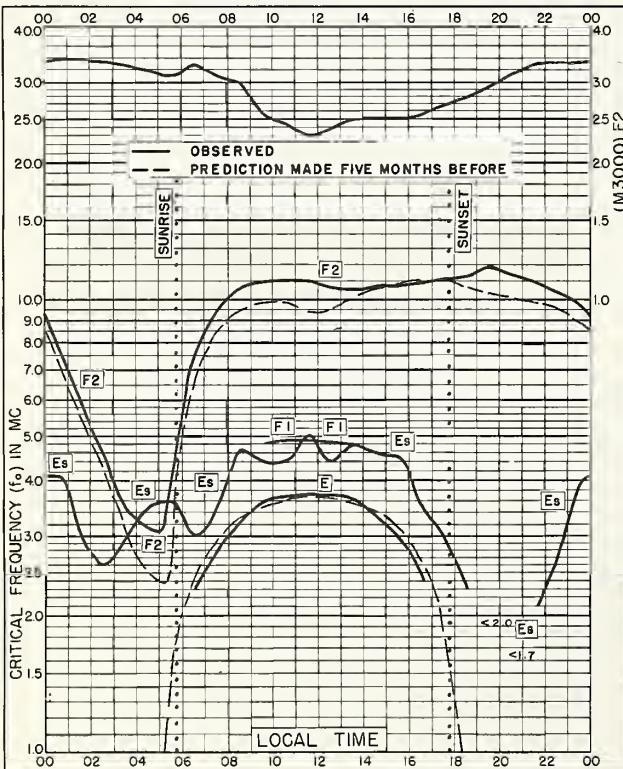


Fig. 55. TALARA, PERU
4.6°S, 81.3°W OCTOBER 1955

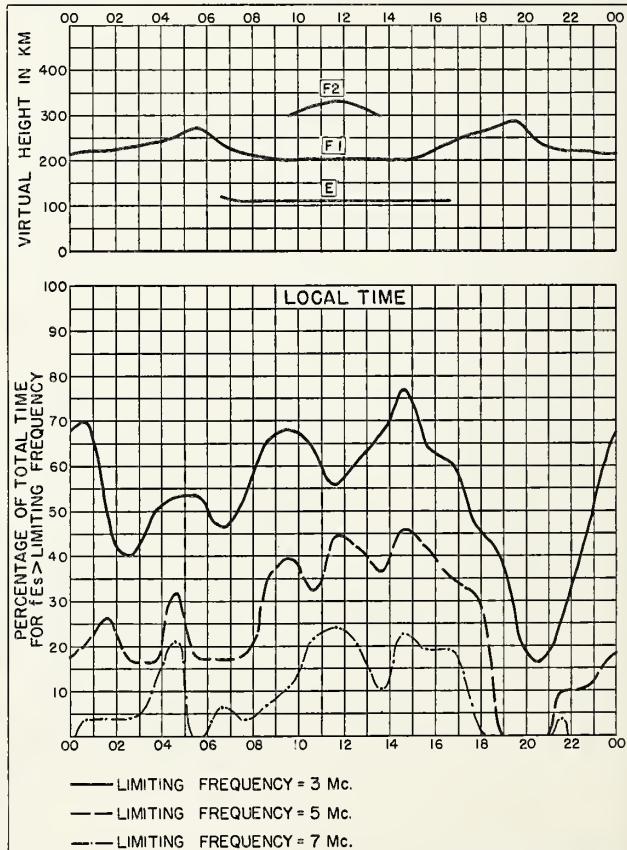
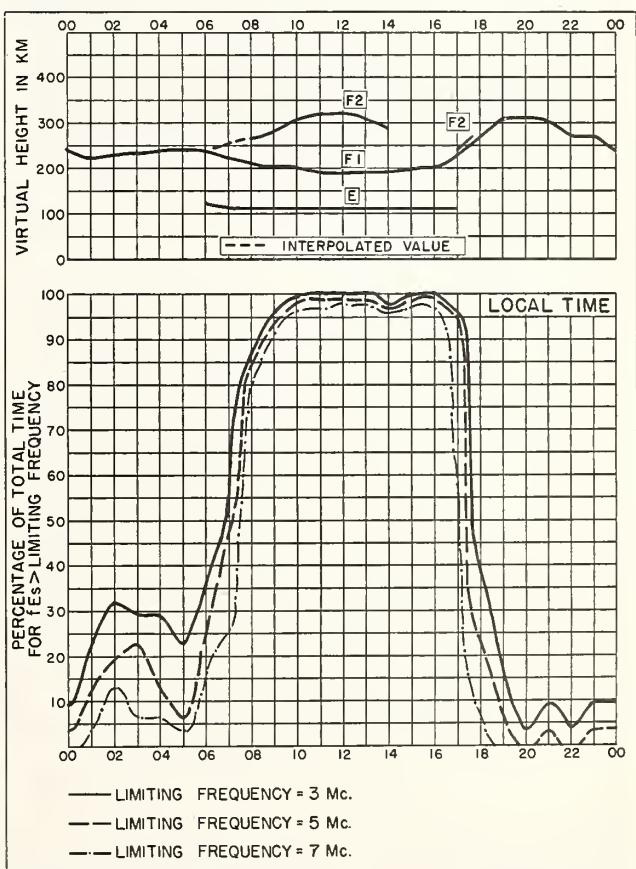
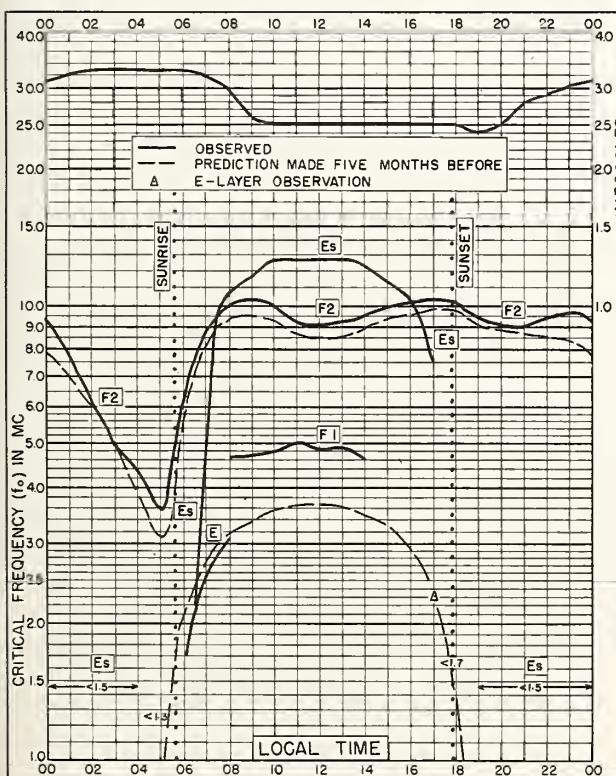
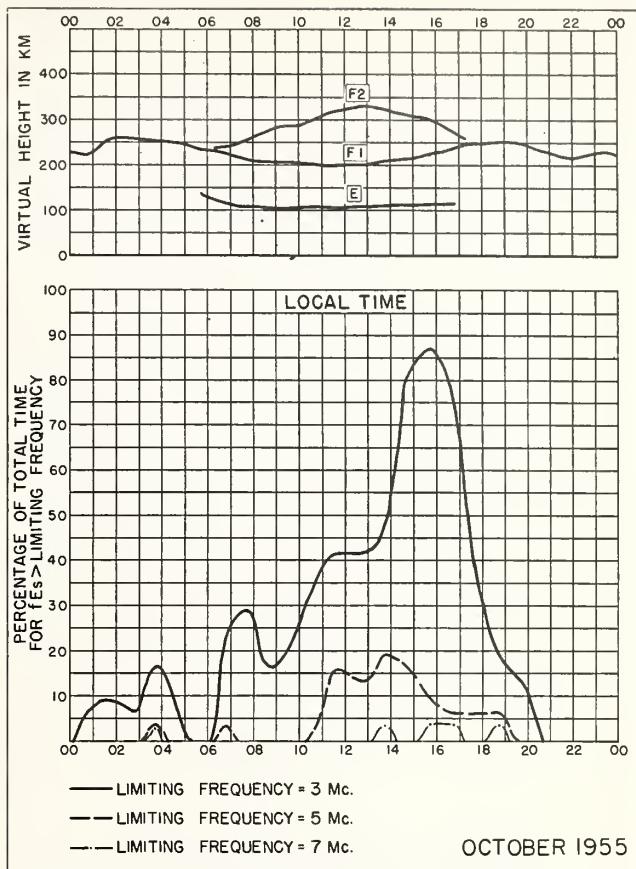
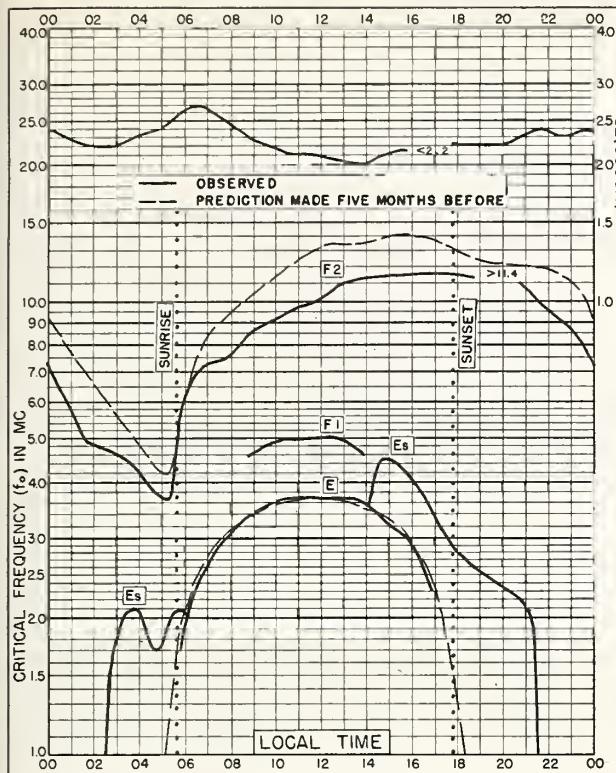


Fig. 56. TALARA, PERU OCTOBER 1955

NBS 490



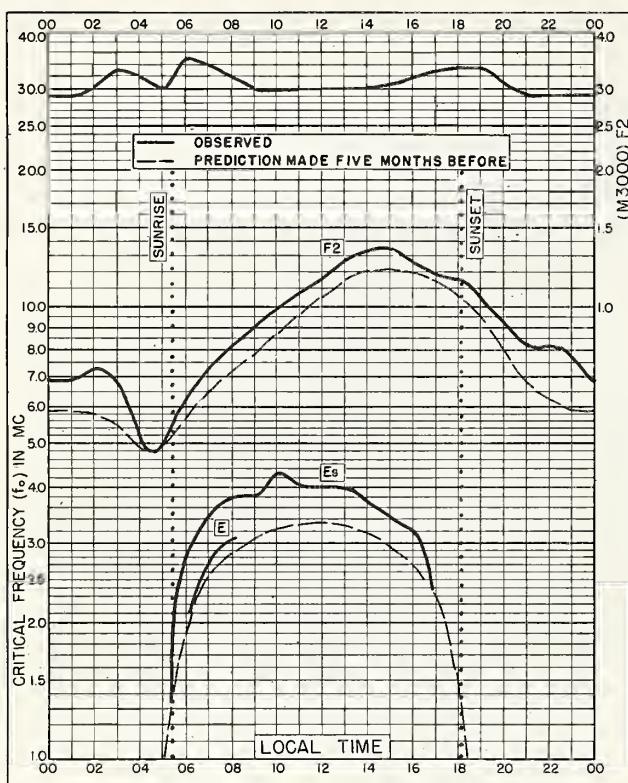
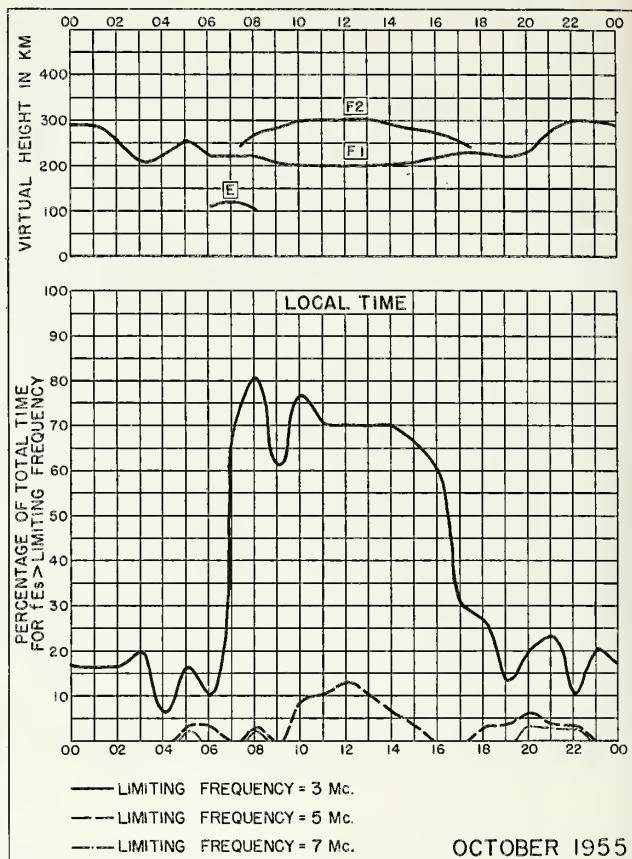


Fig. 61. BUENOS AIRES, ARGENTINA
34.5°S, 58.5°W OCTOBER 1955



OCTOBER 1955

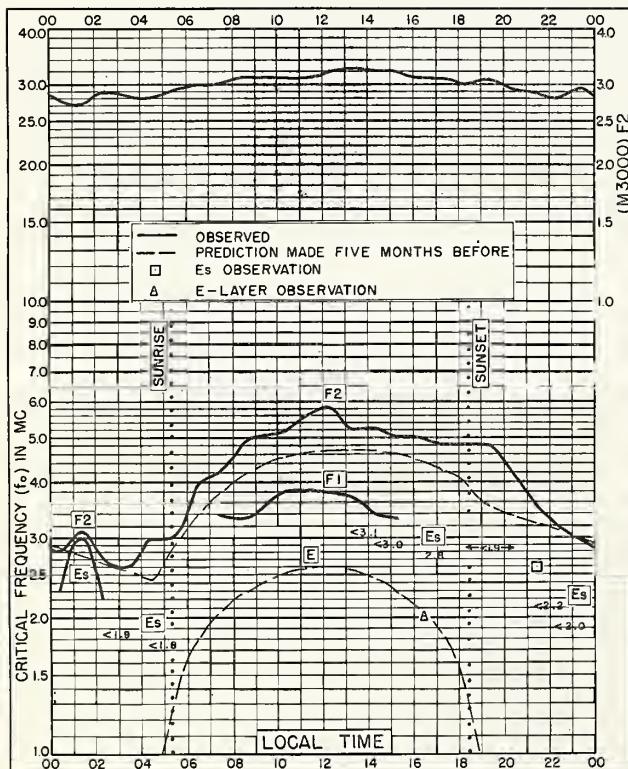
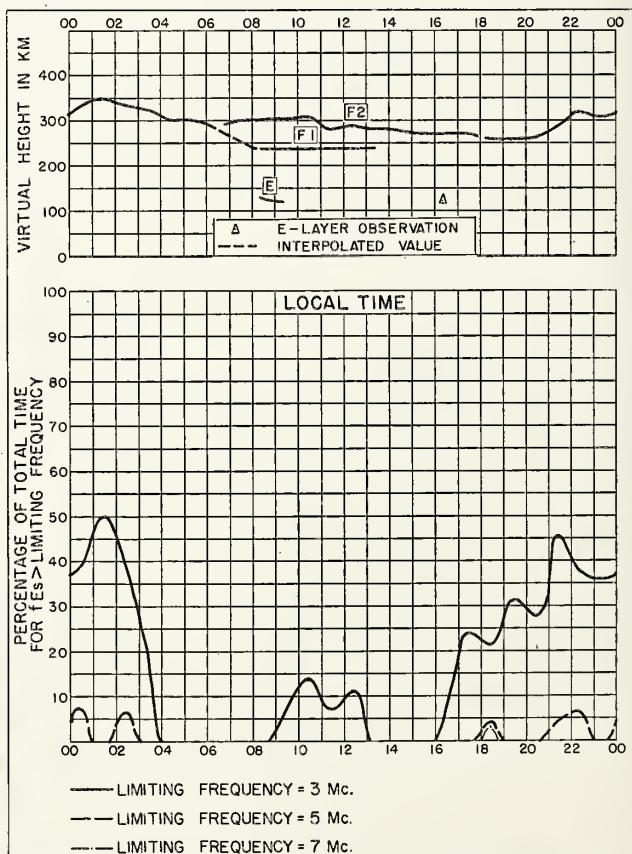
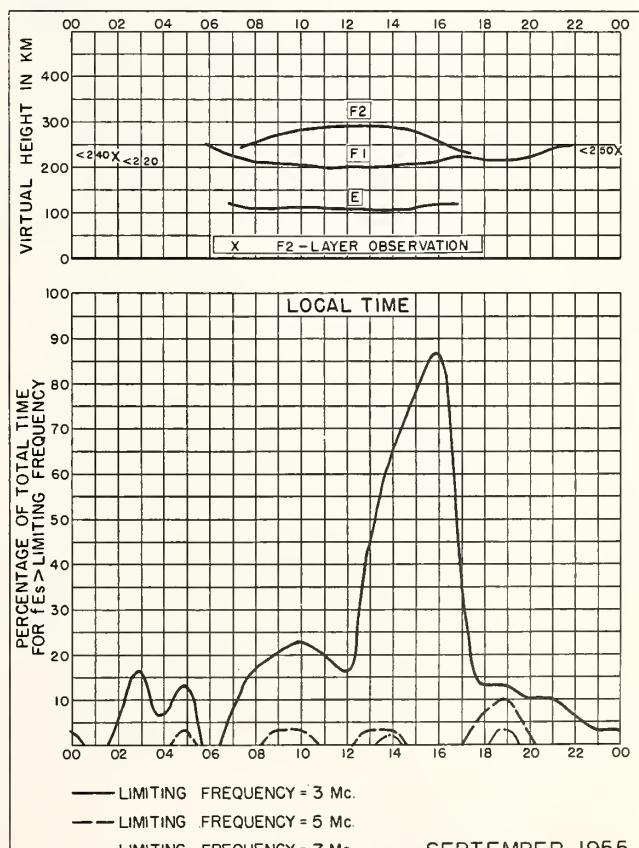
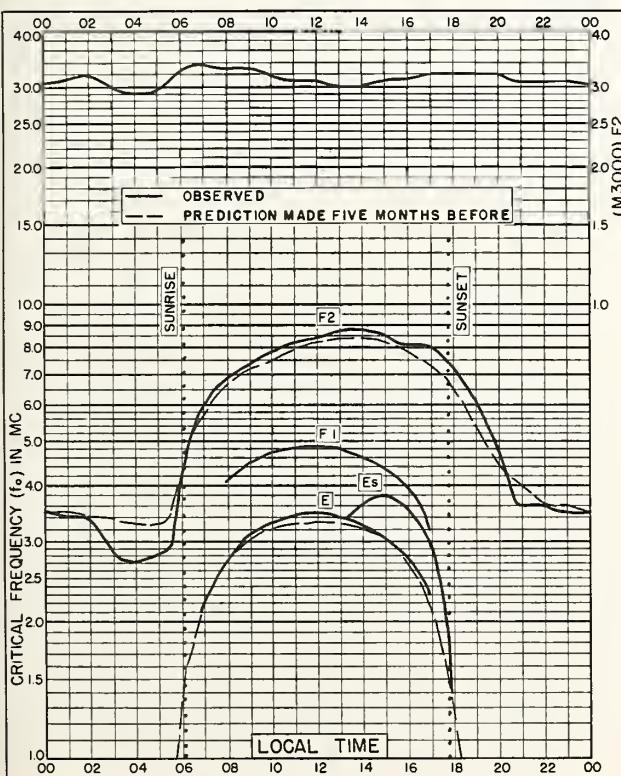
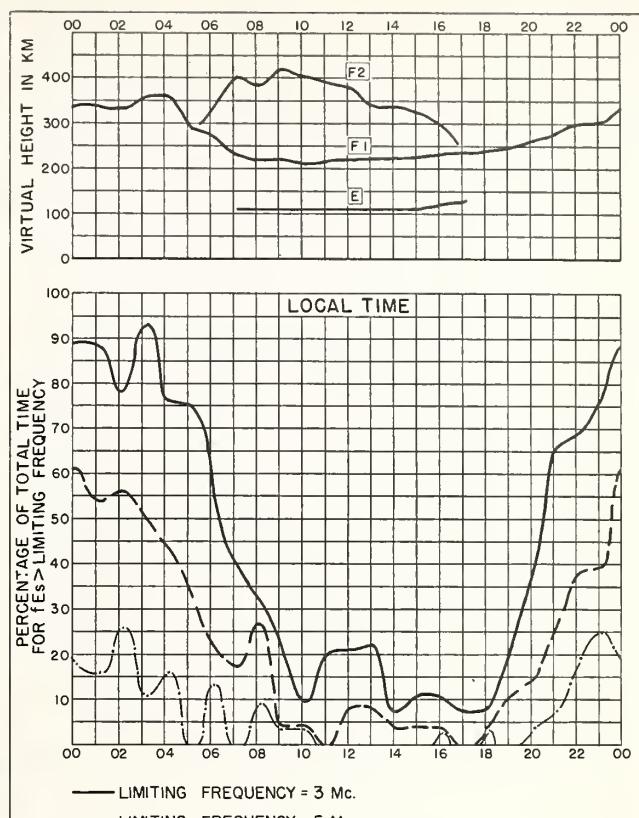
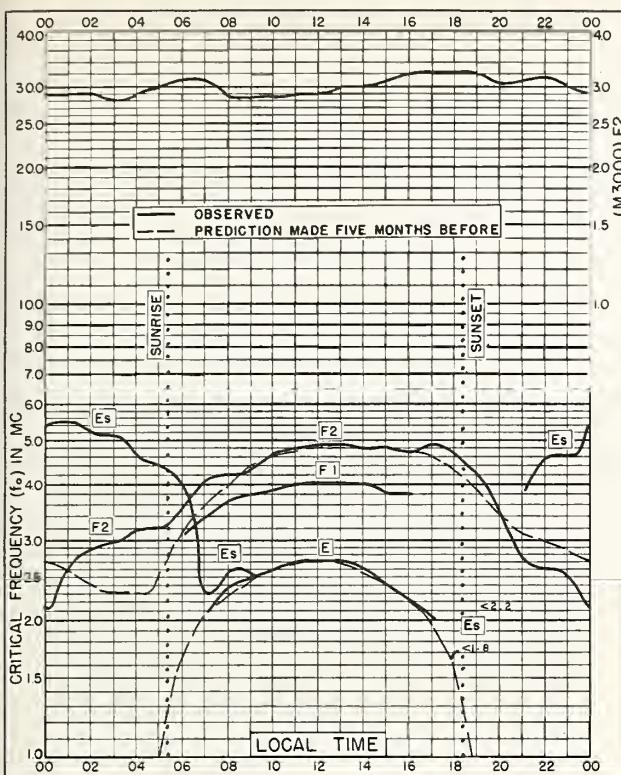


Fig. 63. KIRUNA, SWEDEN
67.8°N, 20.3°E SEPTEMBER 1955



SEPTEMBER 1955



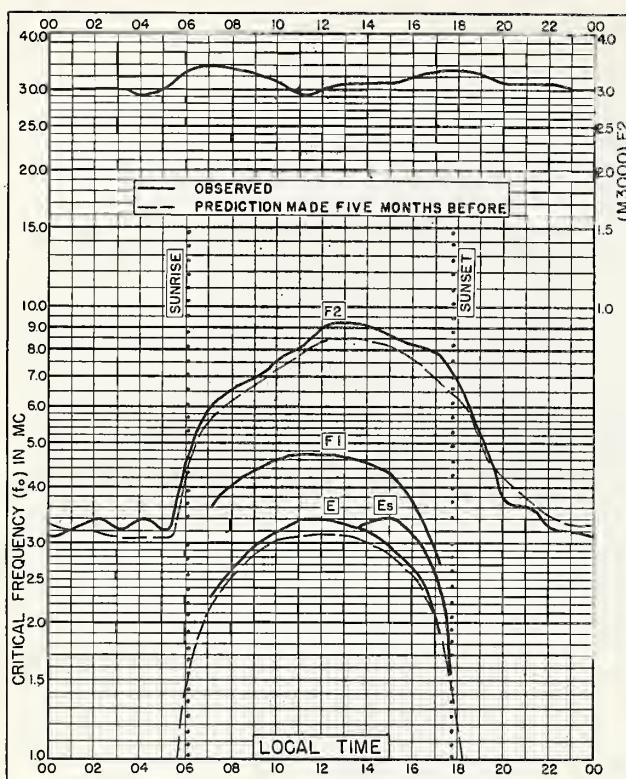


Fig. 69. CAPETOWN, UNION OF S. AFRICA
34.2°S, 18.3°E SEPTEMBER 1955

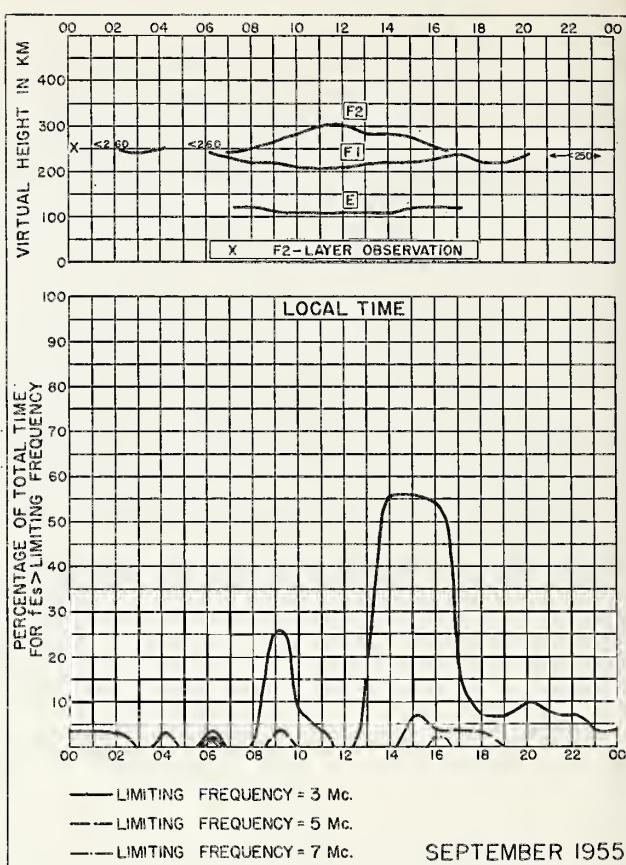


Fig. 70. CAPETOWN, UNION OF S. AFRICA
SEPTEMBER 1955

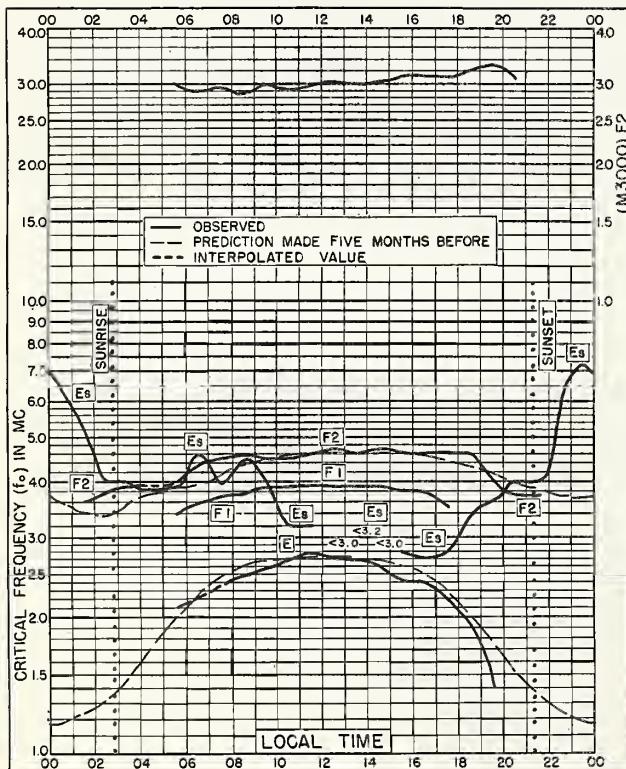


Fig. 71. POINT BARROW, ALASKA
71.3°N, 156.8°W AUGUST 1955

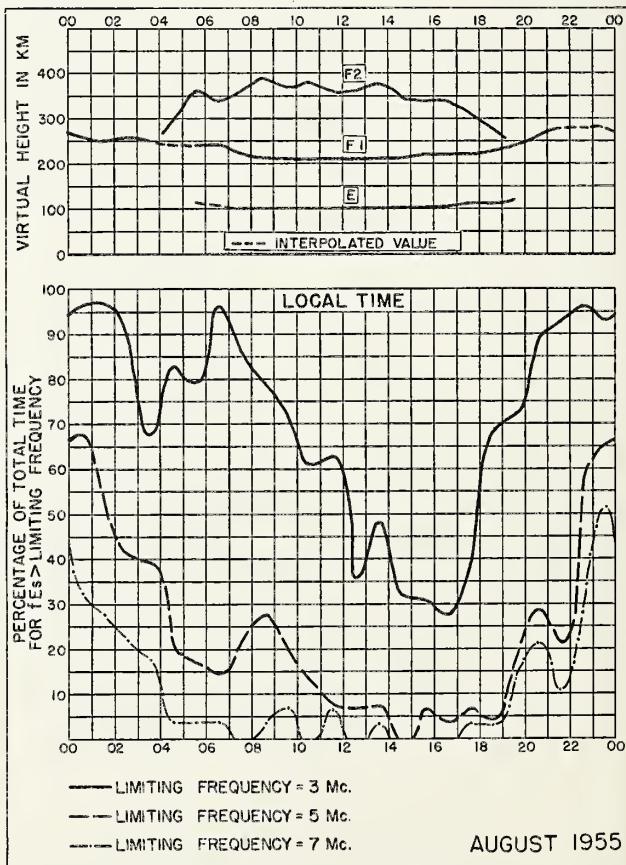


Fig. 72. POINT BARROW, ALASKA
AUGUST 1955

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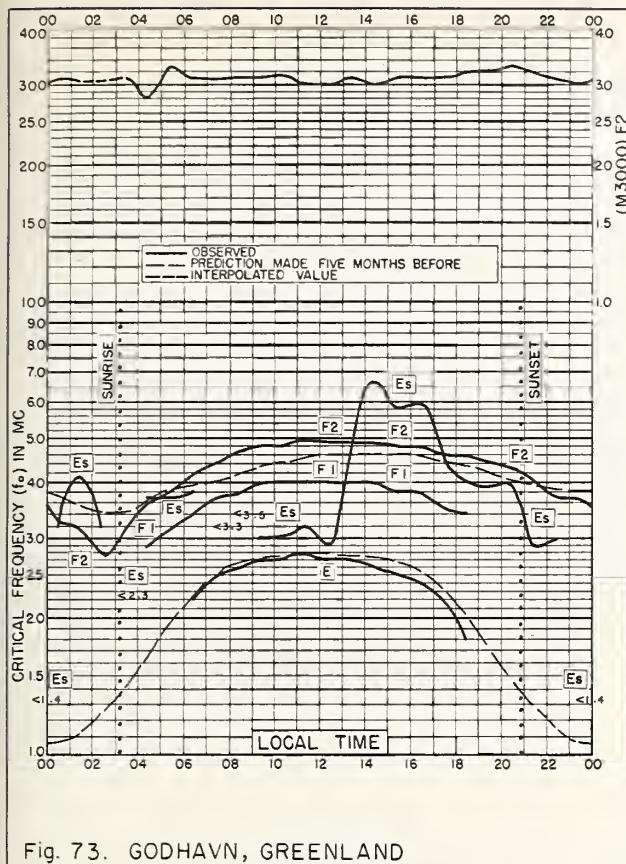


Fig. 73. GODHAVN, GREENLAND
69.2°N, 53.5°W AUGUST 1955

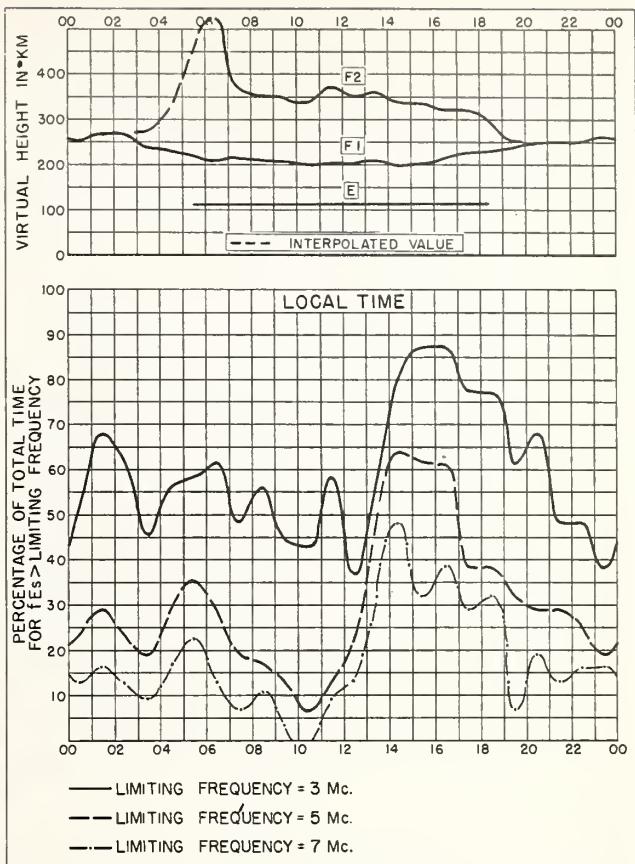


Fig. 74. GODHAVN, GREENLAND AUGUST 1955

NBS 490

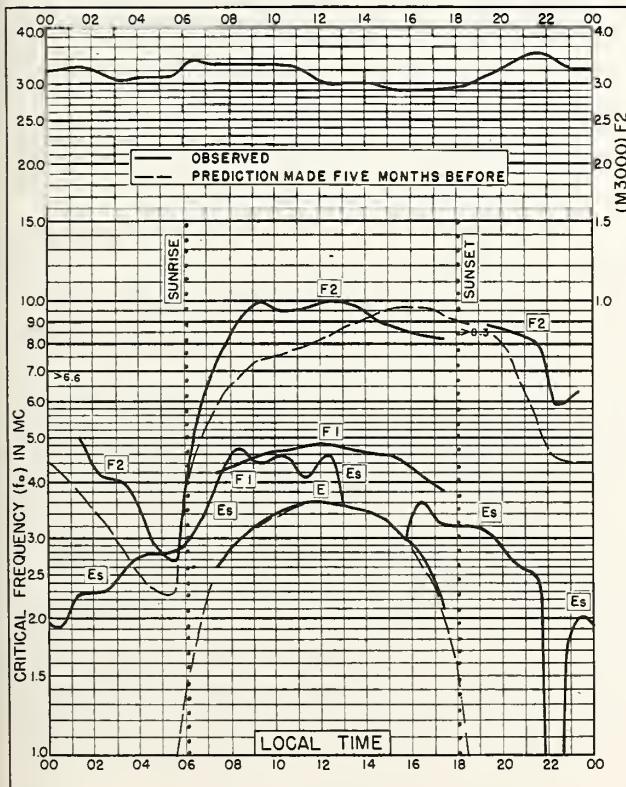


Fig. 75. NAIROBI, KENYA
1.3°S, 36.8°E AUGUST 1955

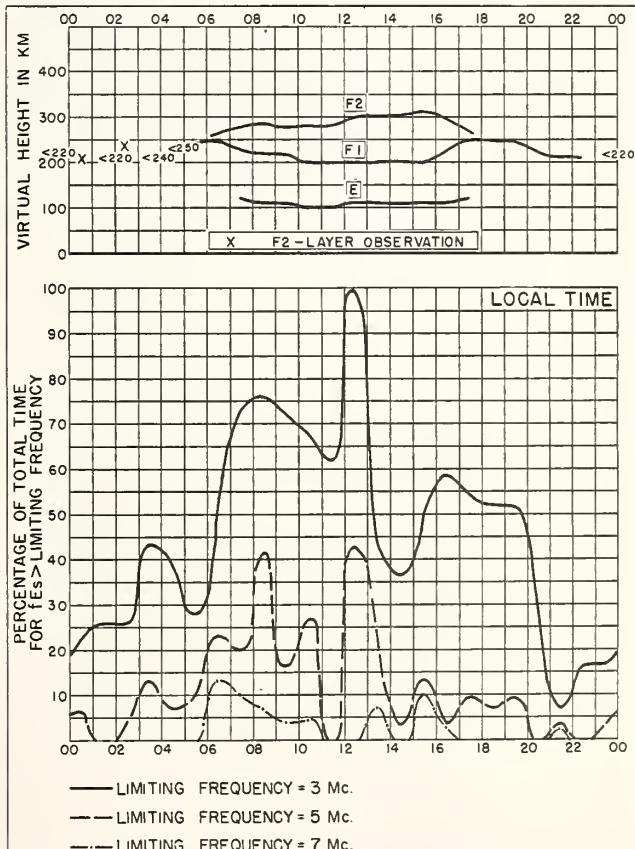


Fig. 76. NAIROBI, KENYA AUGUST 1955

NBS 490

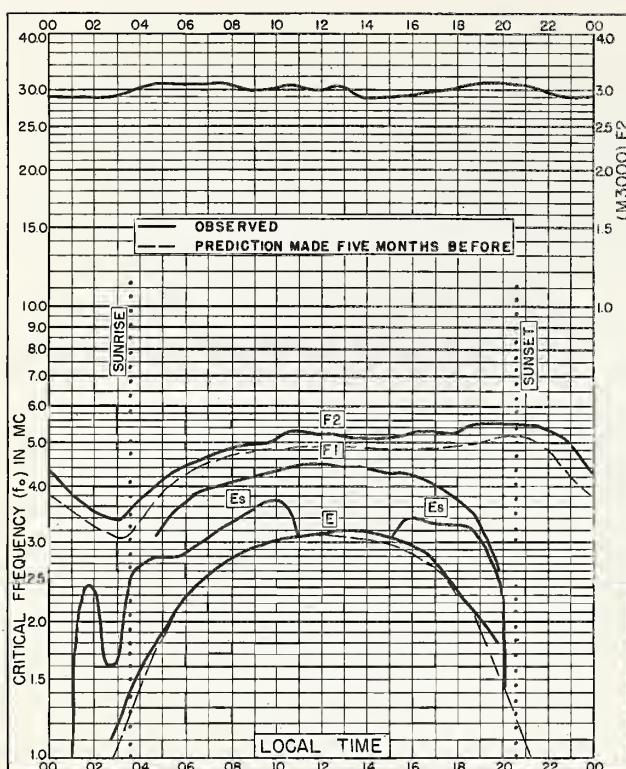


Fig. 77. INVERNESS, SCOTLAND

57.4°N, 4.2°W

JULY 1955

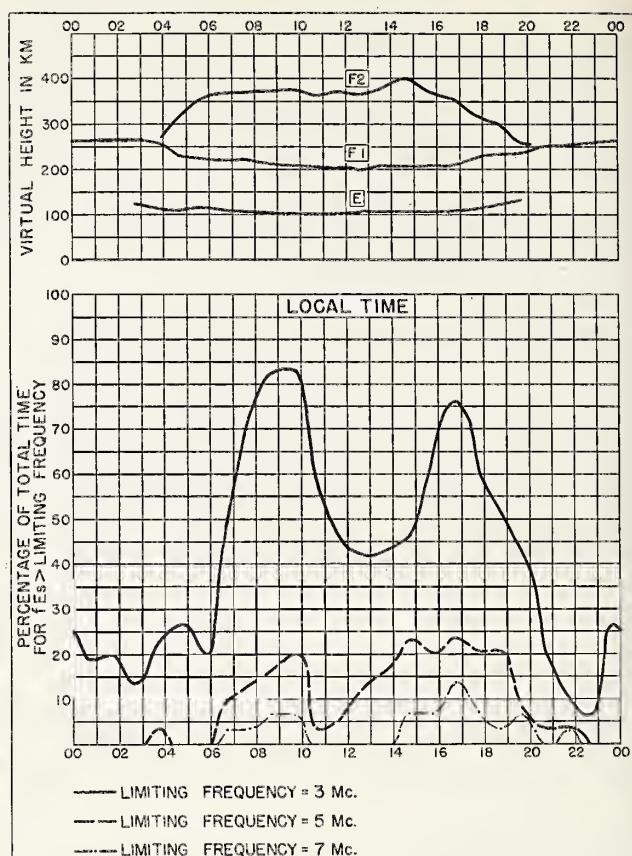


Fig. 78. INVERNESS, SCOTLAND

JULY 1955

NBS 490

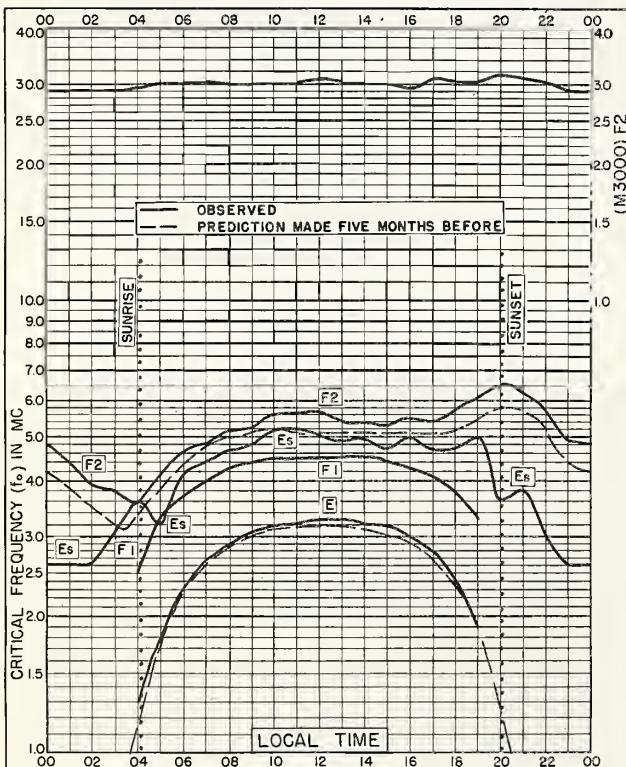


Fig. 79. SLOUGH, ENGLAND

51.5°N, 0.6°W

JULY 1955

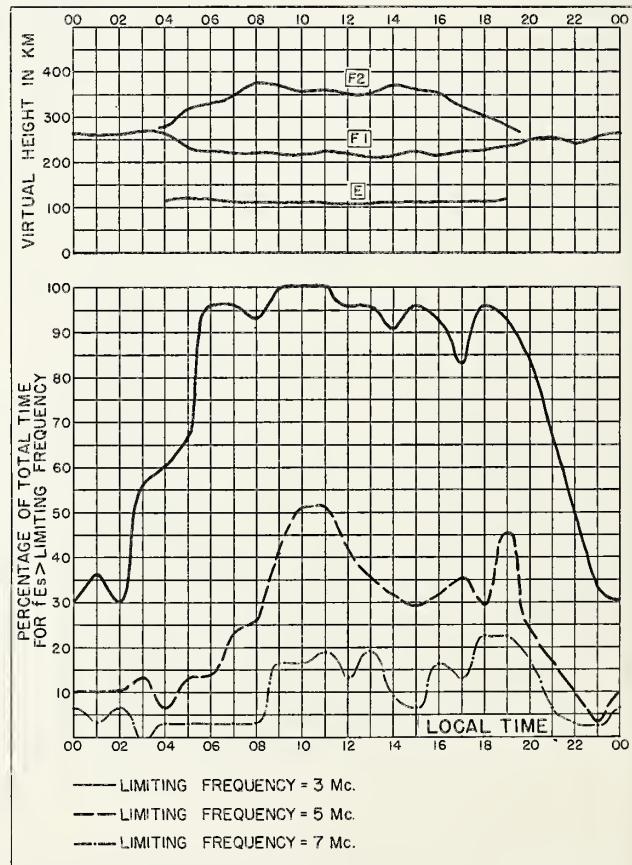
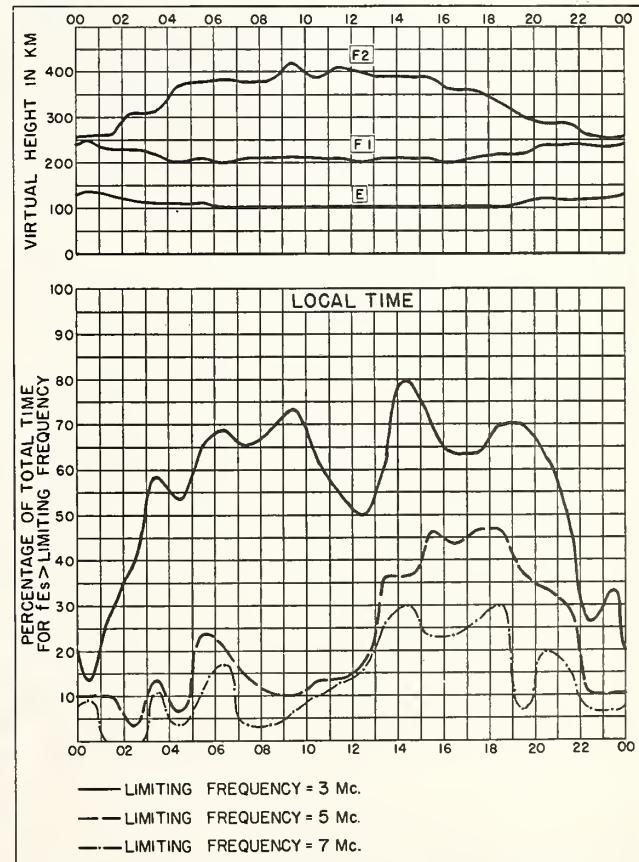
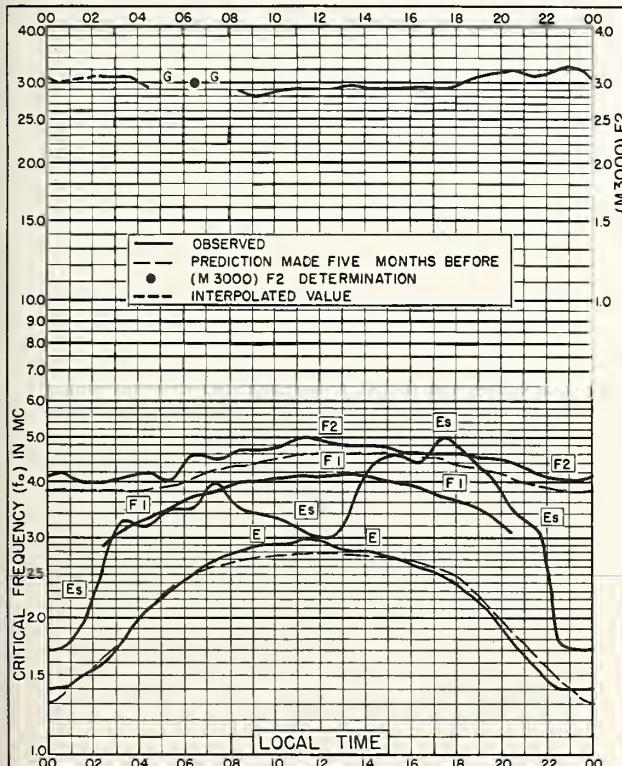
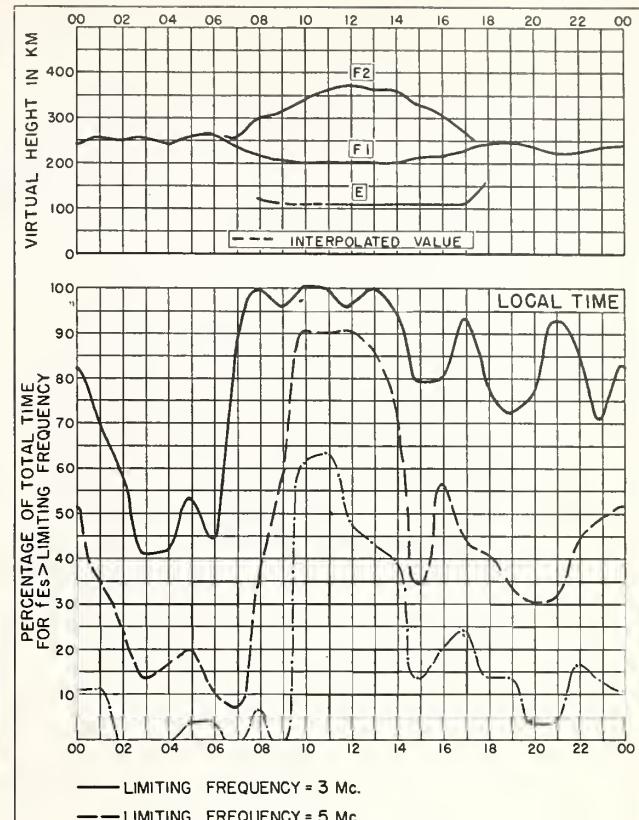
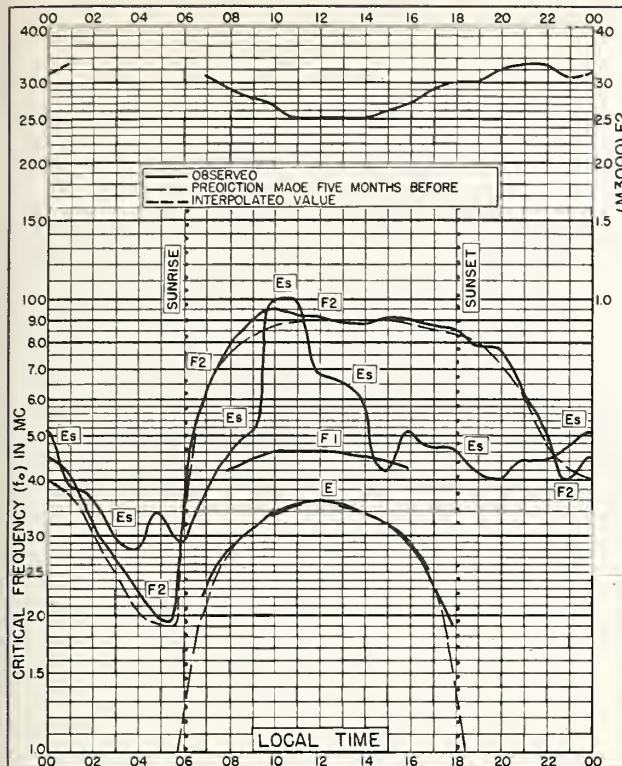


Fig. 80. SLOUGH, ENGLAND

JULY 1955

NBS 490



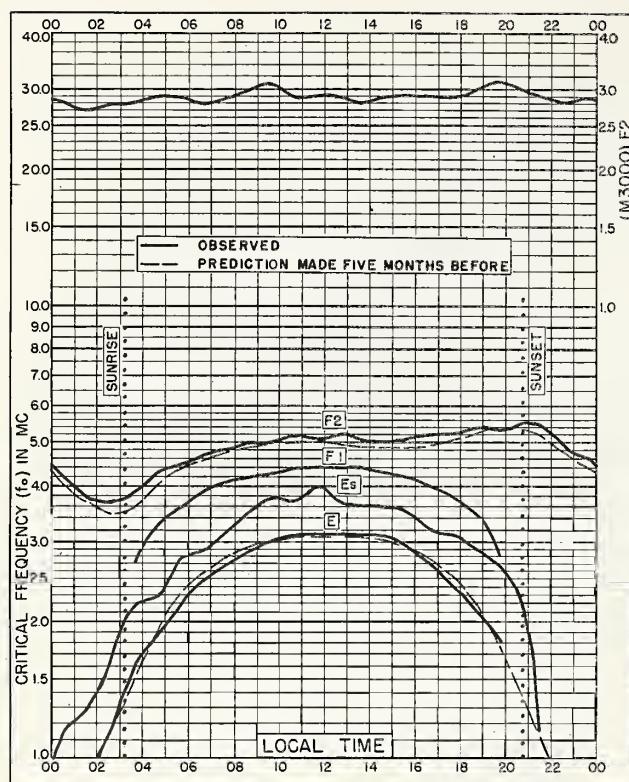


Fig. 85. INVERNESS, SCOTLAND

57.4°N, 4.2°W

JUNE 1955

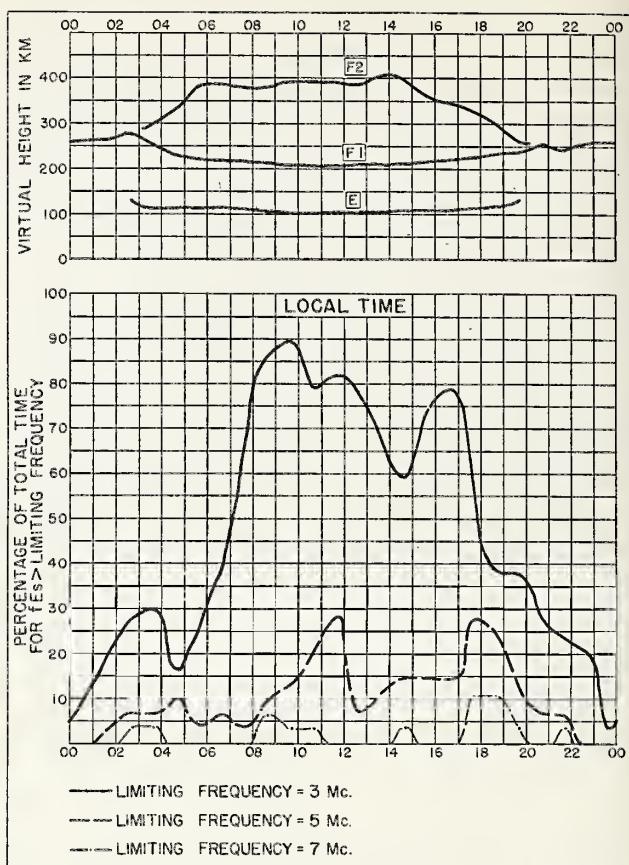


Fig. 86. INVERNESS, SCOTLAND

JUNE 1955

NBS 490

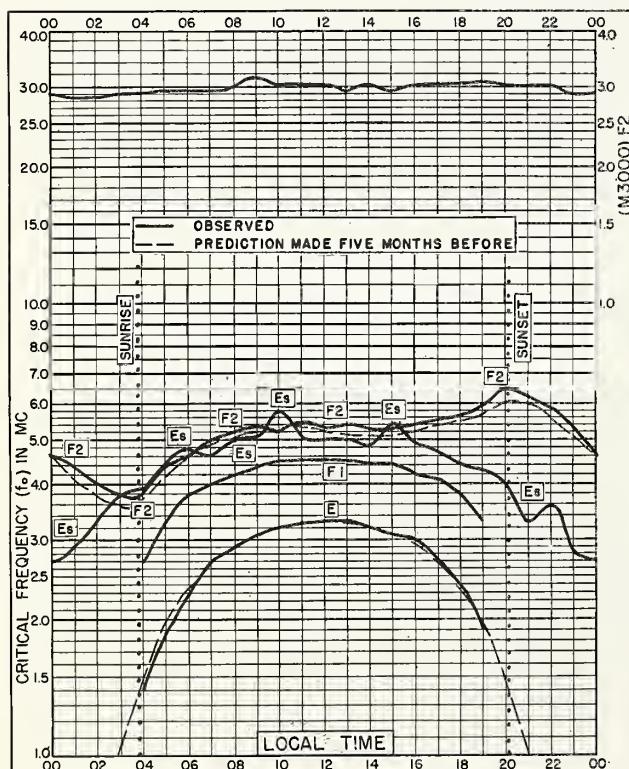


Fig. 87. SLOUGH, ENGLAND

51.5°N, 0.6°W

JUNE 1955

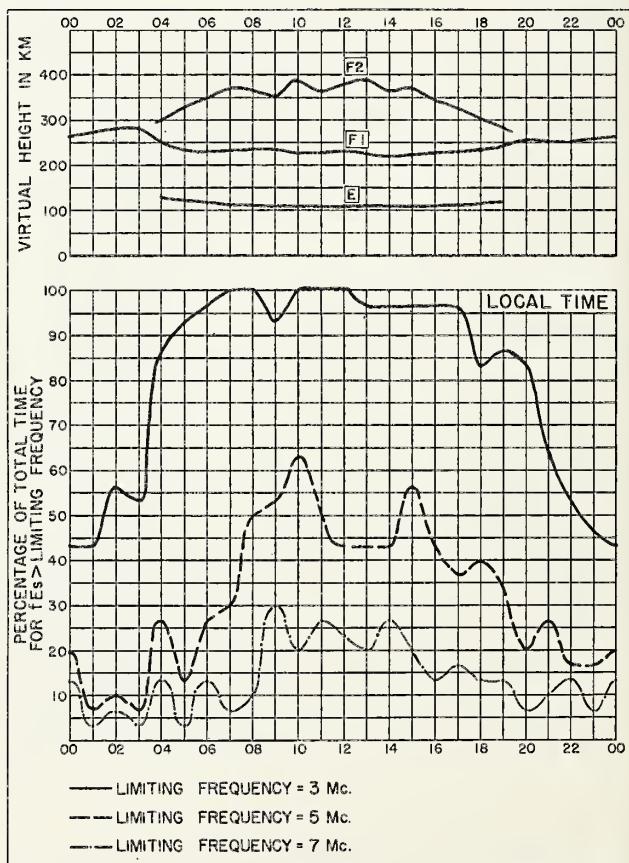


Fig. 88. SLOUGH, ENGLAND

JUNE 1955

NBS 490

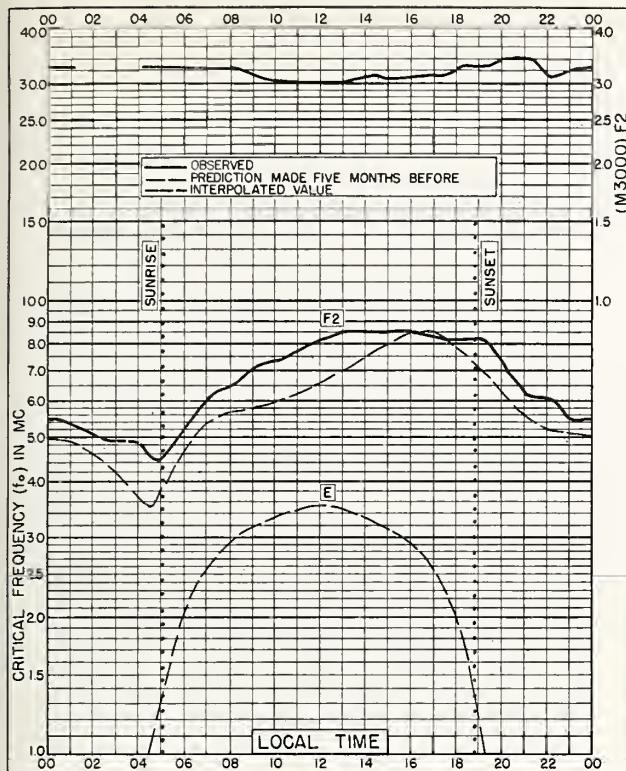


Fig. 89. DELHI, INDIA

28.6°N, 77.1°E

JUNE 1955

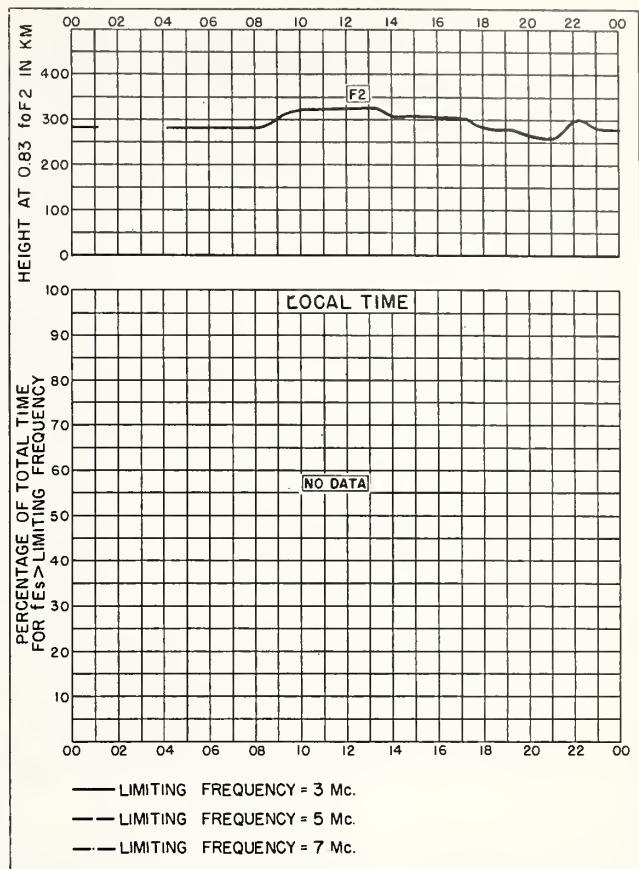


Fig. 90. DELHI, INDIA

JUNE 1955

NBS 490

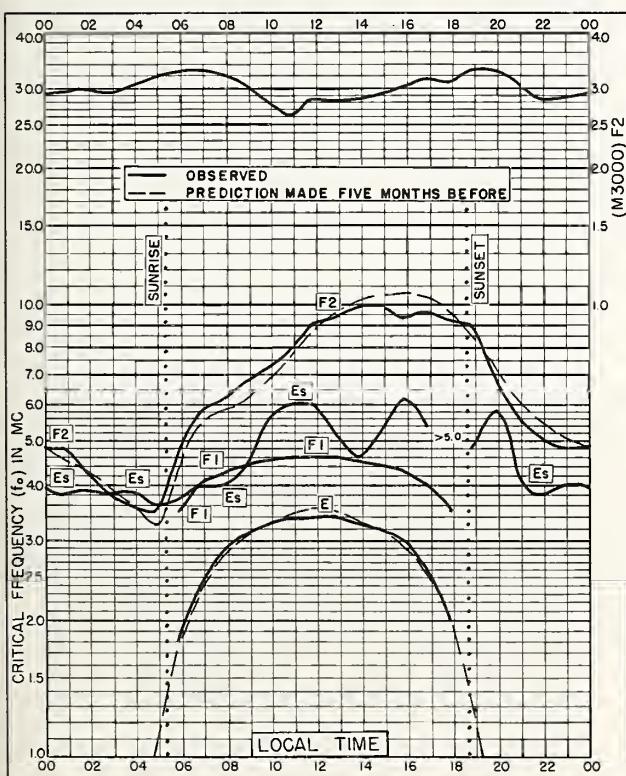


Fig. 91. AHMEDABAD, INDIA

23.0°N, 72.6°E

JUNE 1955

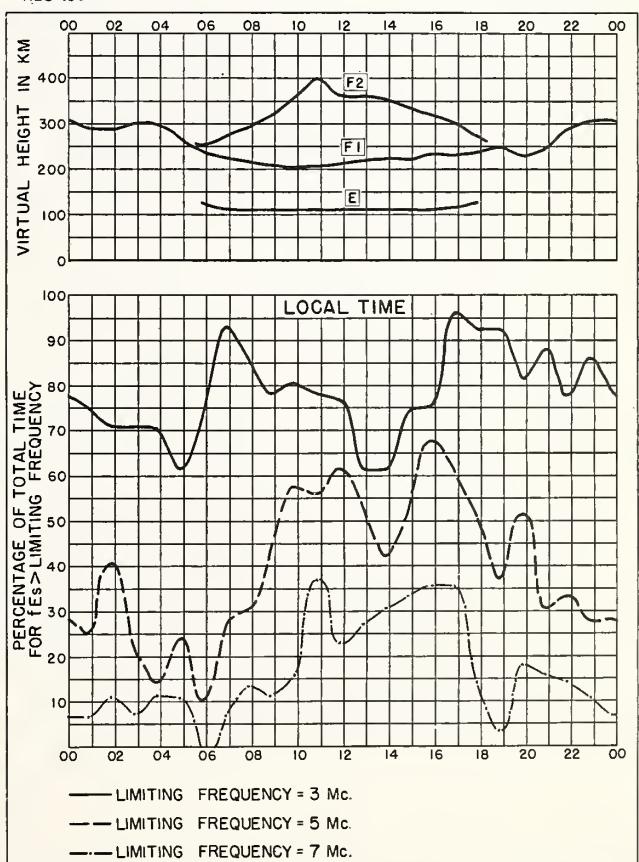


Fig. 92. AHMEDABAD, INDIA

JUNE 1955

NBS 490

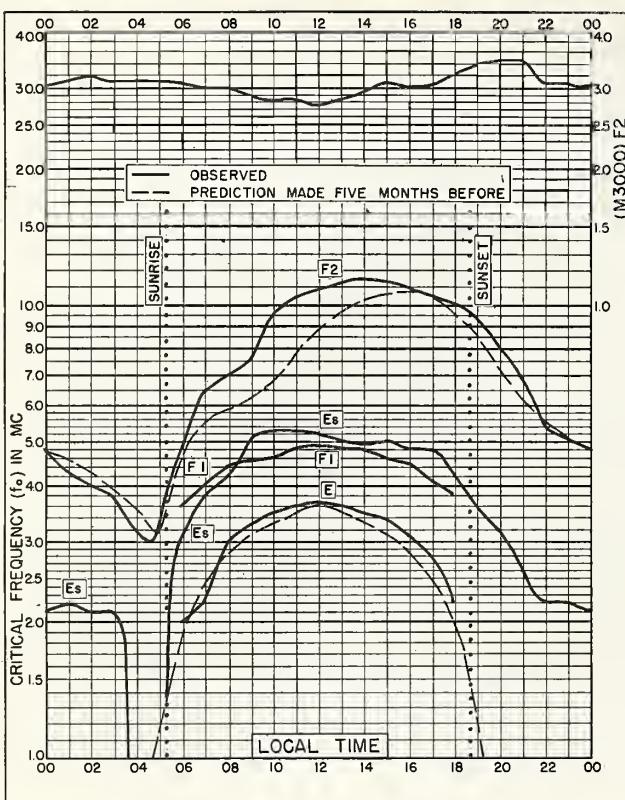


Fig. 93. CALCUTTA, INDIA
22.9°N, 88.5°E JUNE 1955

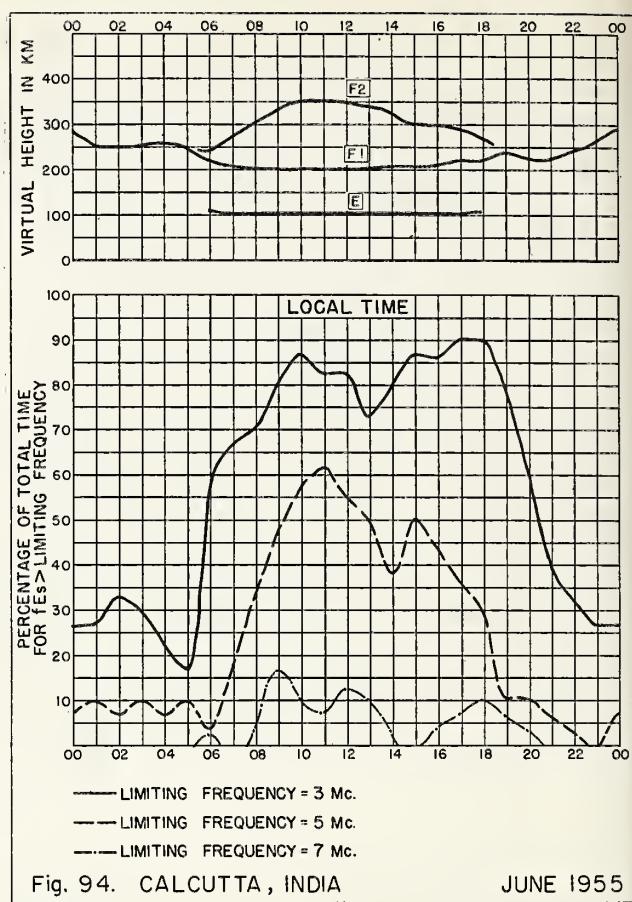


Fig. 94. CALCUTTA, INDIA JUNE 1955

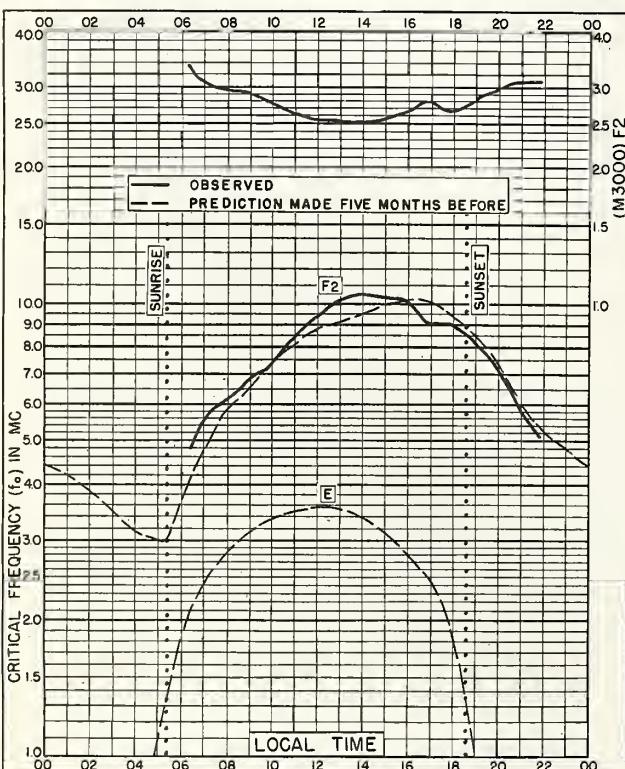


Fig. 95. BOMBAY, INDIA
19.0°N, 73.0°E JUNE 1955

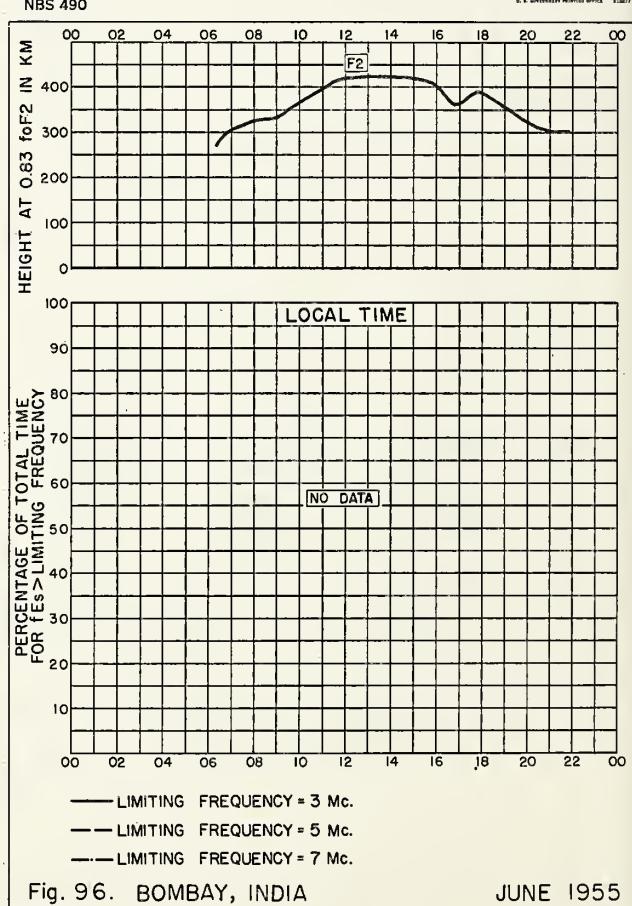


Fig. 96. BOMBAY, INDIA JUNE 1955

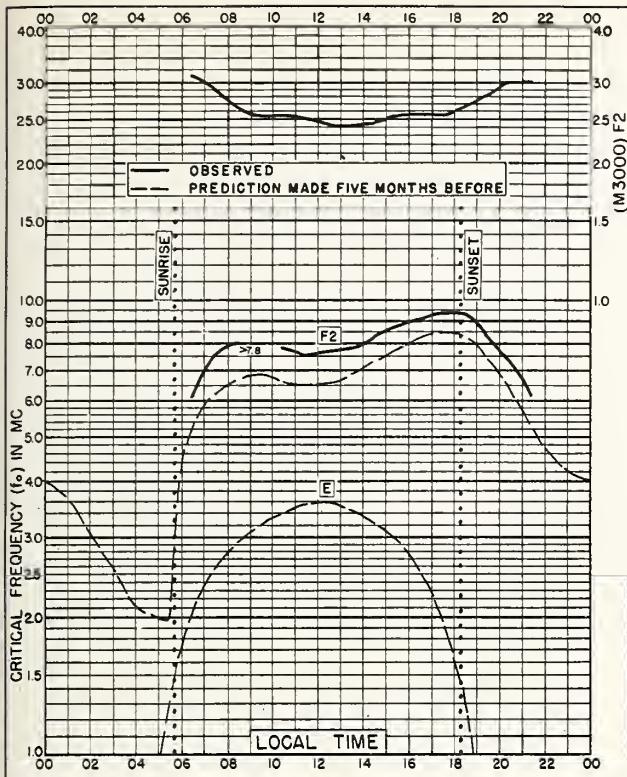


Fig. 97. MADRAS, INDIA
13.0°N, 80.2°E

JUNE 1955

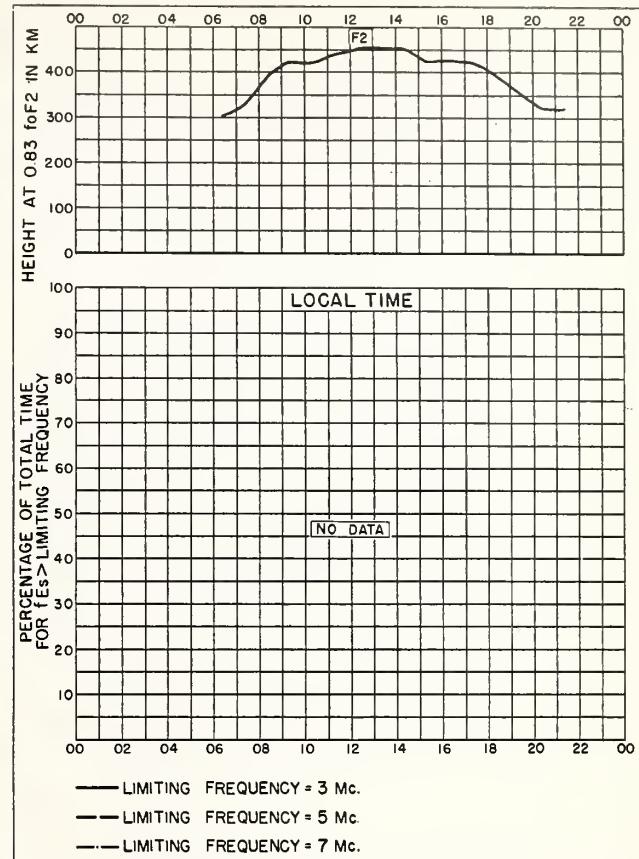


Fig. 98. MADRAS, INDIA

JUNE 1955

NBS 490

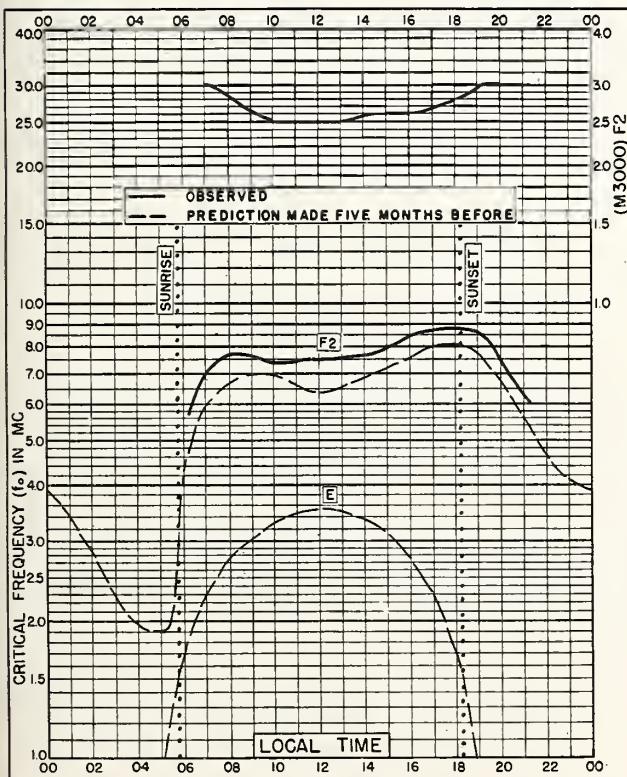


Fig. 99. TIRUCHY, INDIA
10.8°N, 78.8°E

JUNE 1955

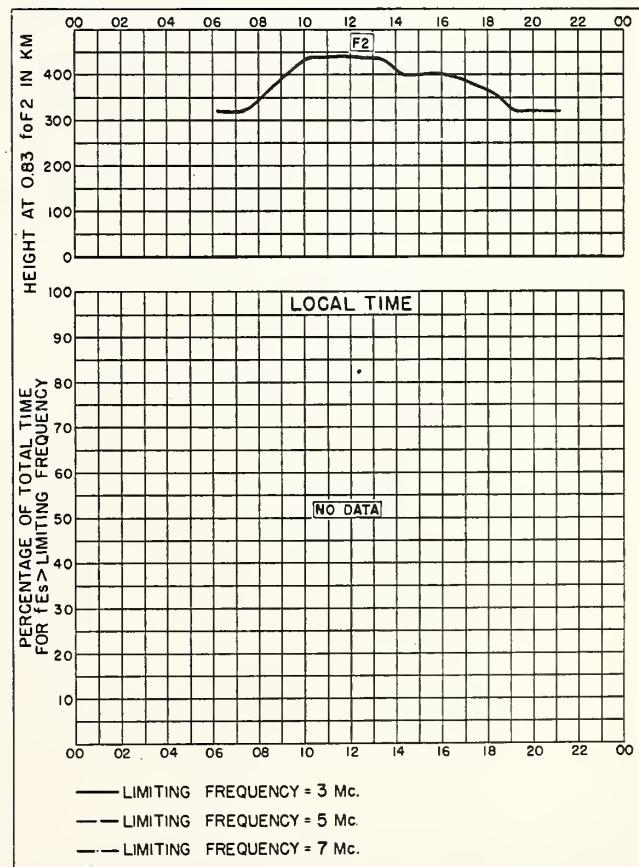


Fig. 100. TIRUCHY, INDIA

JUNE 1955

NBS 490

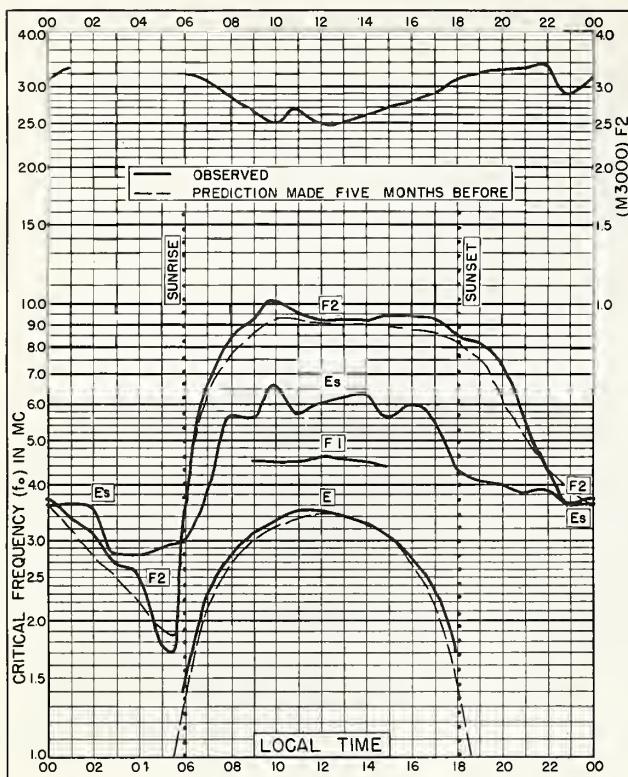


Fig. 101. SINGAPORE, BRITISH MALAYA
1.3°N, 103.8°E JUNE 1955

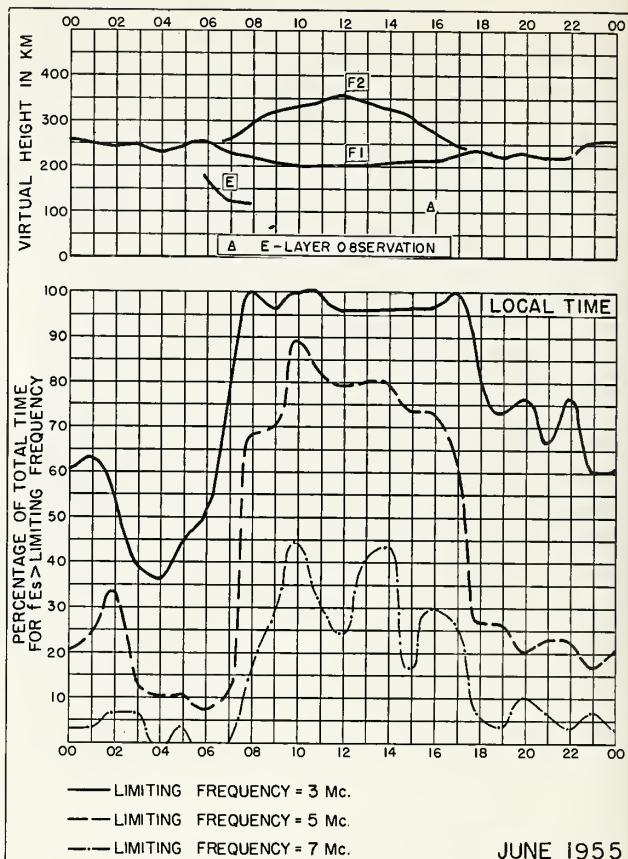


Fig. 102. SINGAPORE, BRITISH MALAYA NBS 490

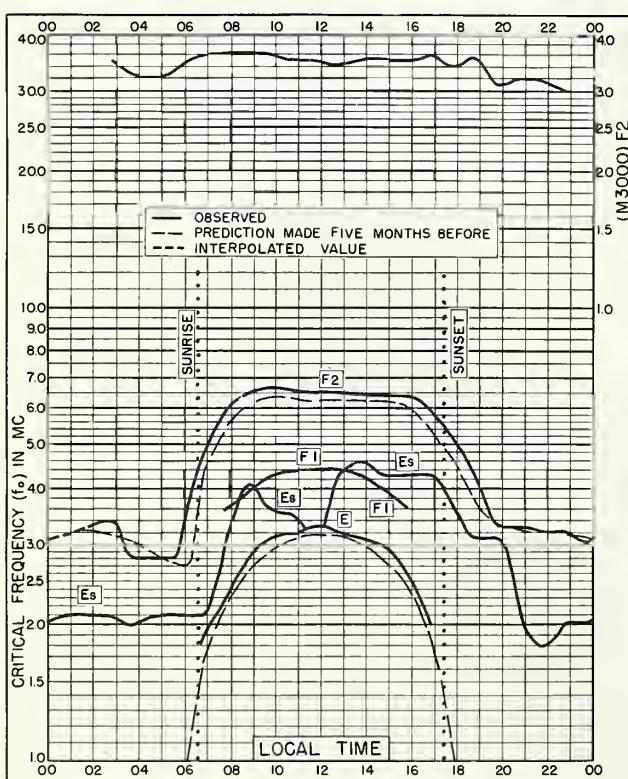


Fig. 103. TOWNSVILLE, AUSTRALIA
19.3°S, 146.7°E JUNE 1955

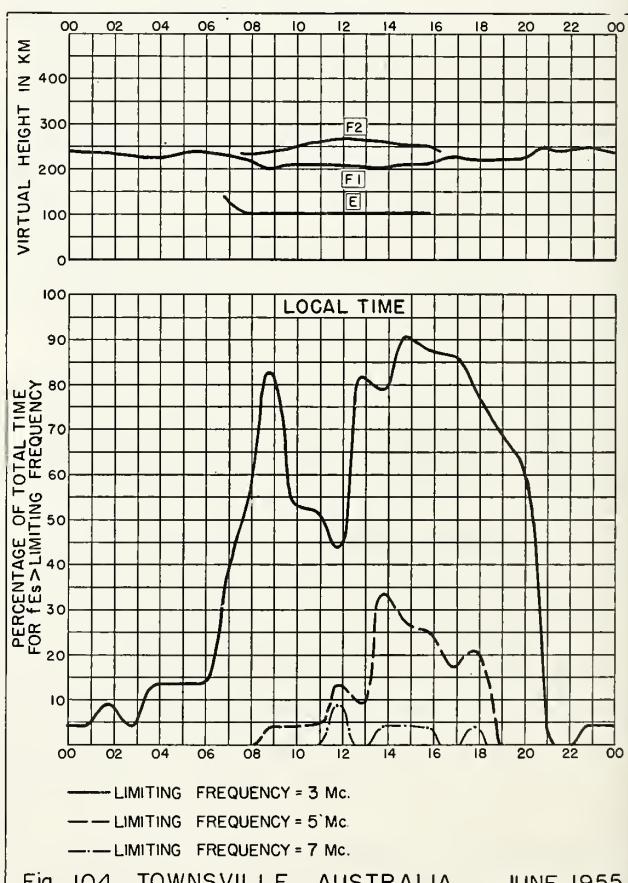


Fig. 104. TOWNSVILLE, AUSTRALIA NBS 490

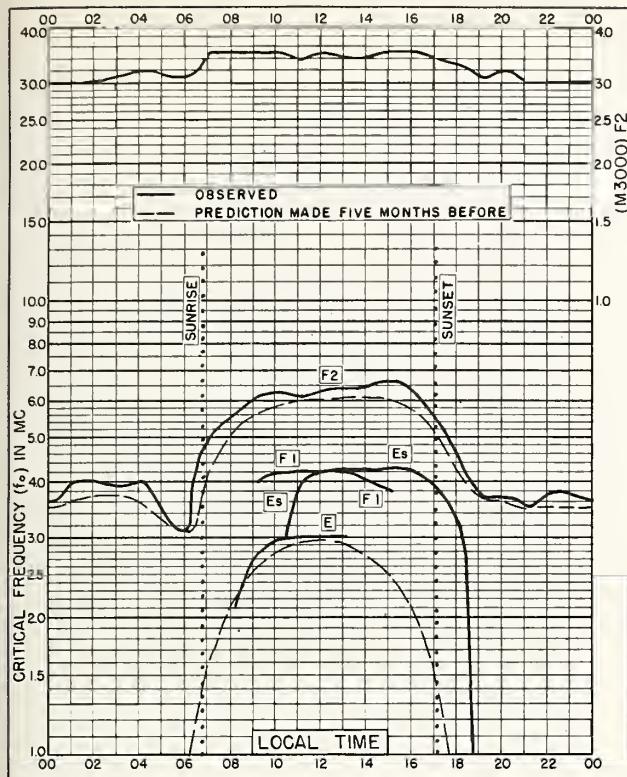


Fig. 105. BRISBANE, AUSTRALIA
27.5°S, 153.0°E JUNE 1955

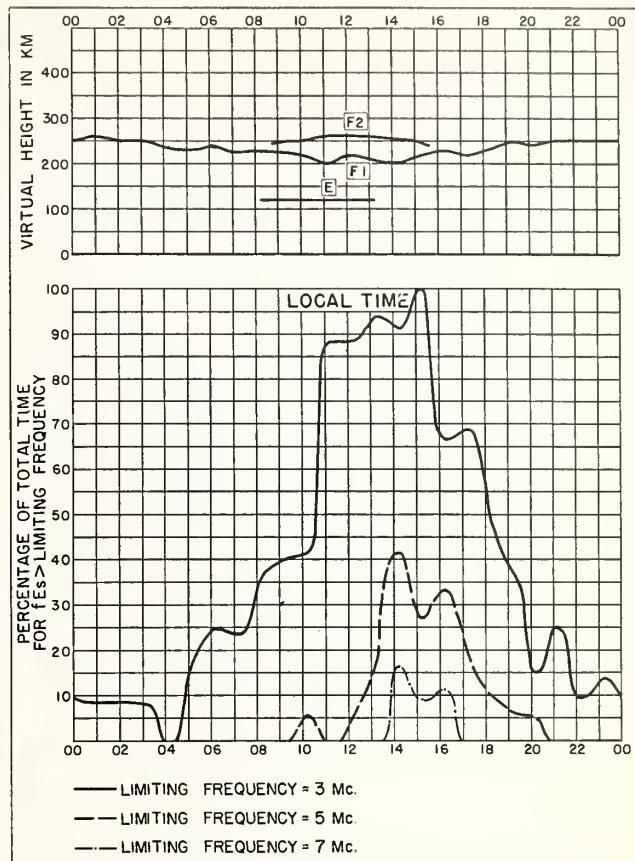


Fig. 106. BRISBANE, AUSTRALIA JUNE 1955

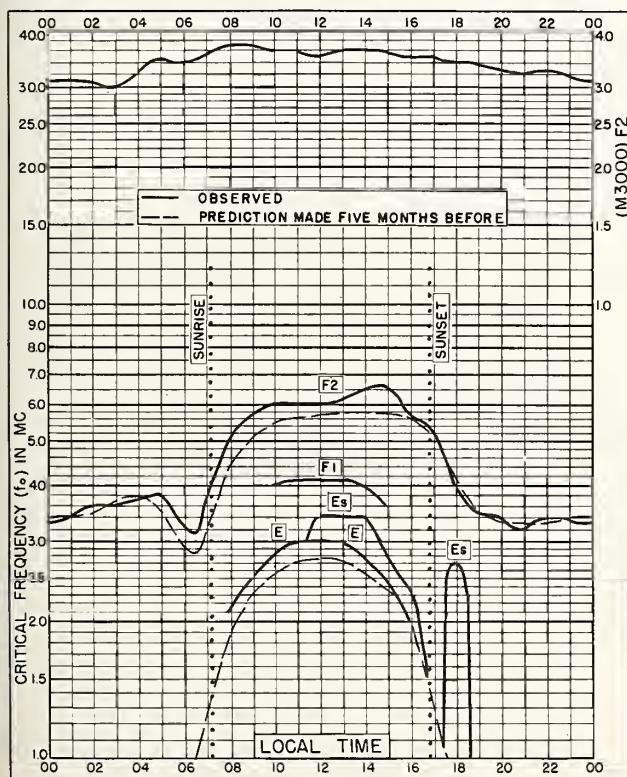


Fig. 107. CANBERRA, AUSTRALIA
35.3°S, 149.0°E JUNE 1955

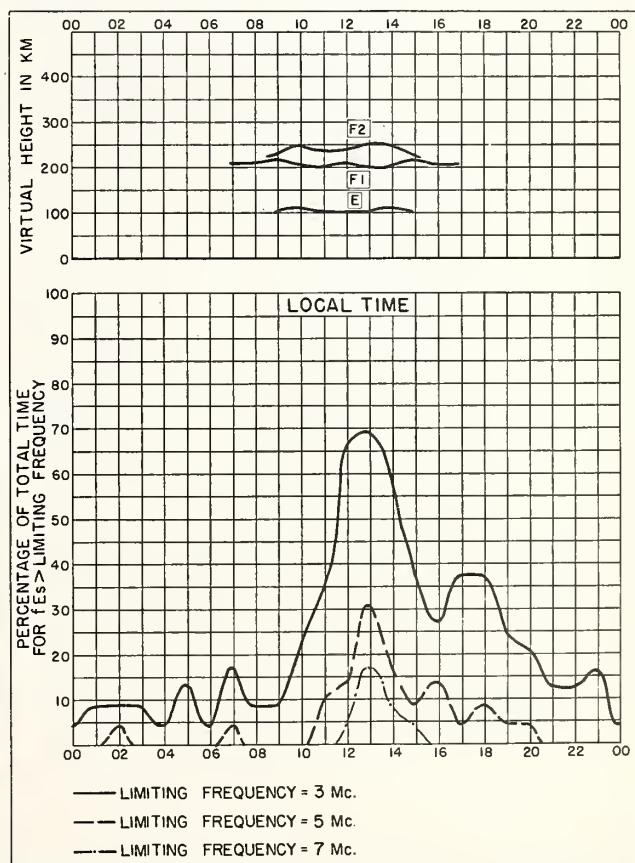
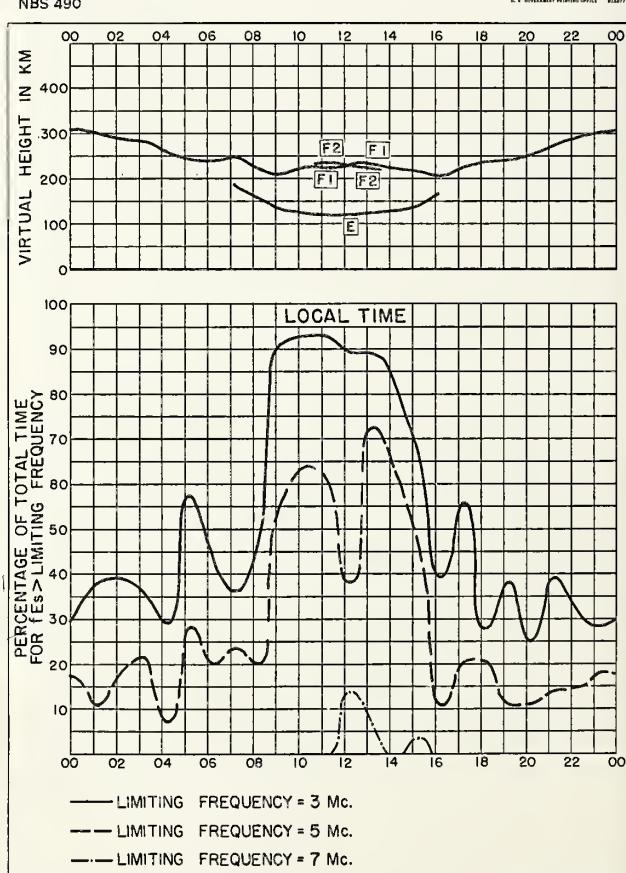
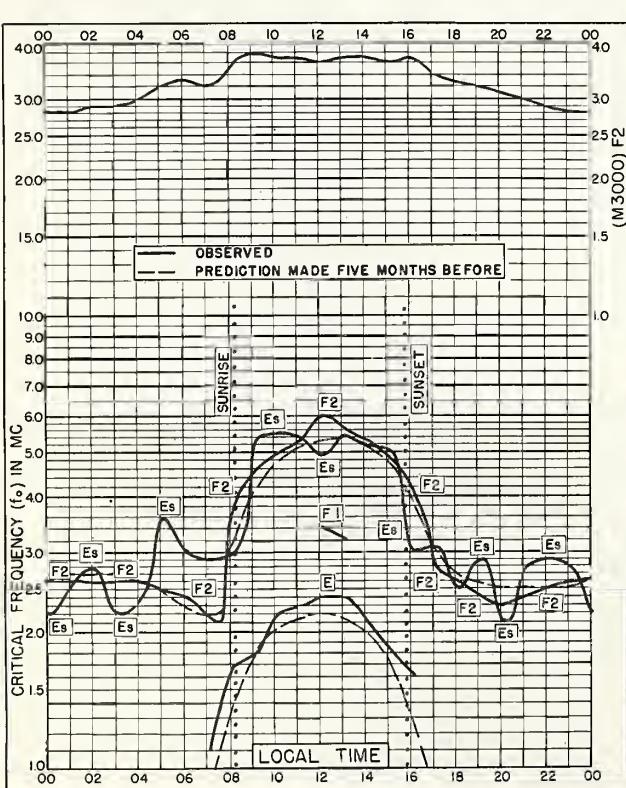
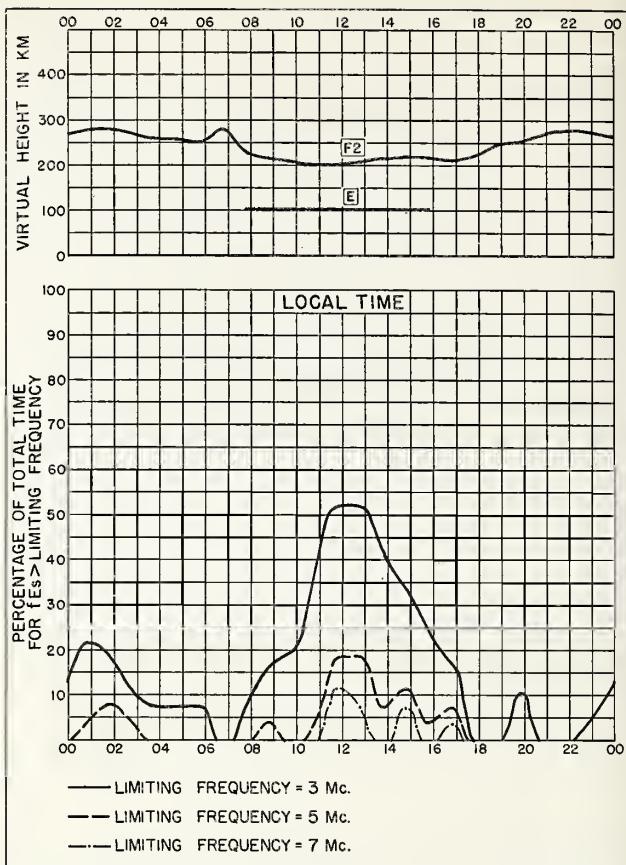
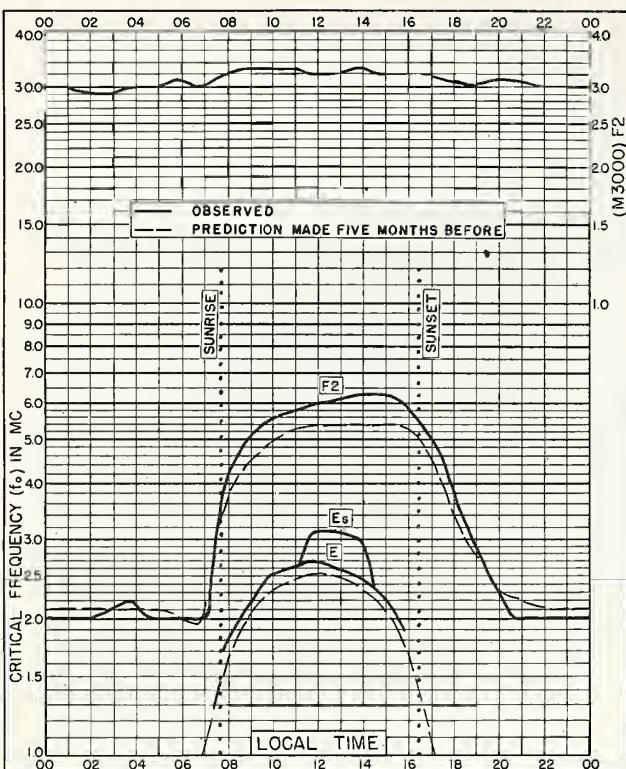


Fig. 108. CANBERRA, AUSTRALIA JUNE 1955



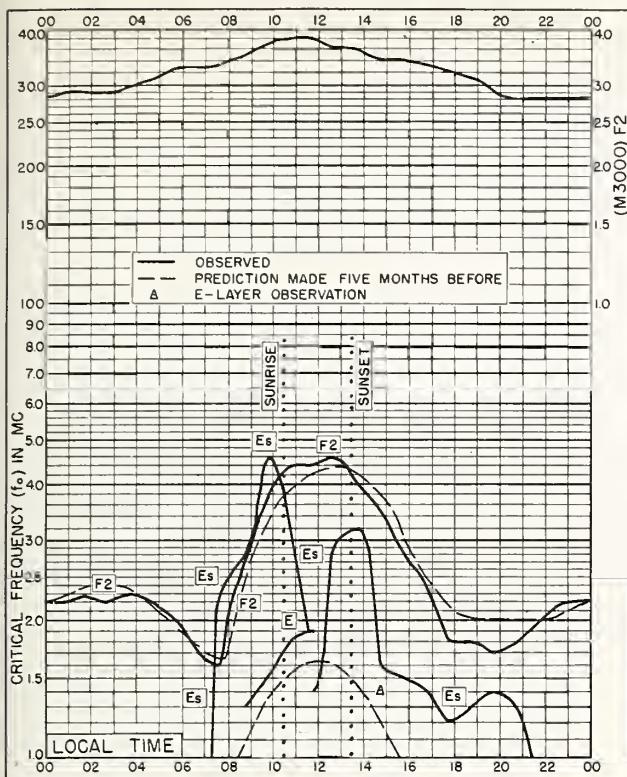


Fig. 113. PORT LOCKROY

64.8°S, 63.5°W

JUNE 1955

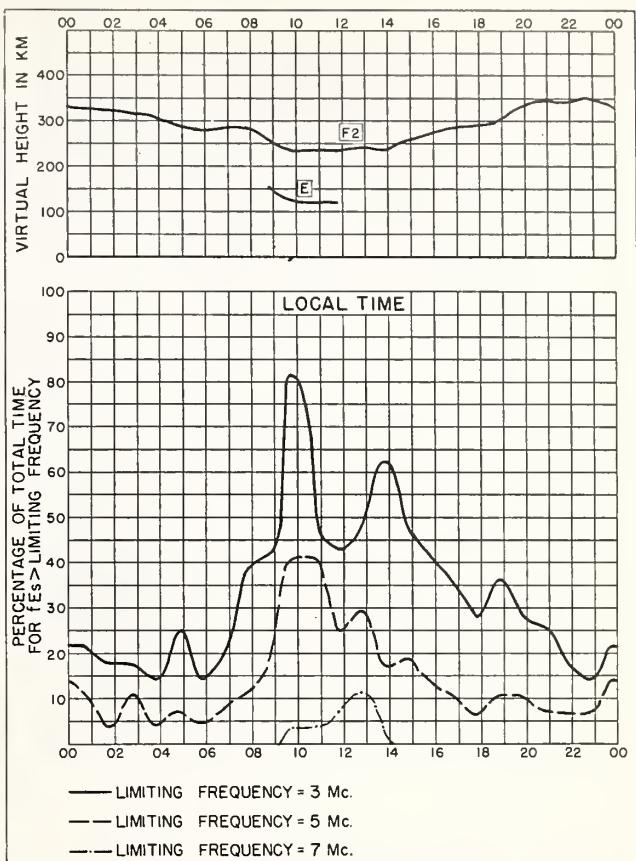


Fig. 114. PORT LOCKROY

JUNE 1955

NBS 490

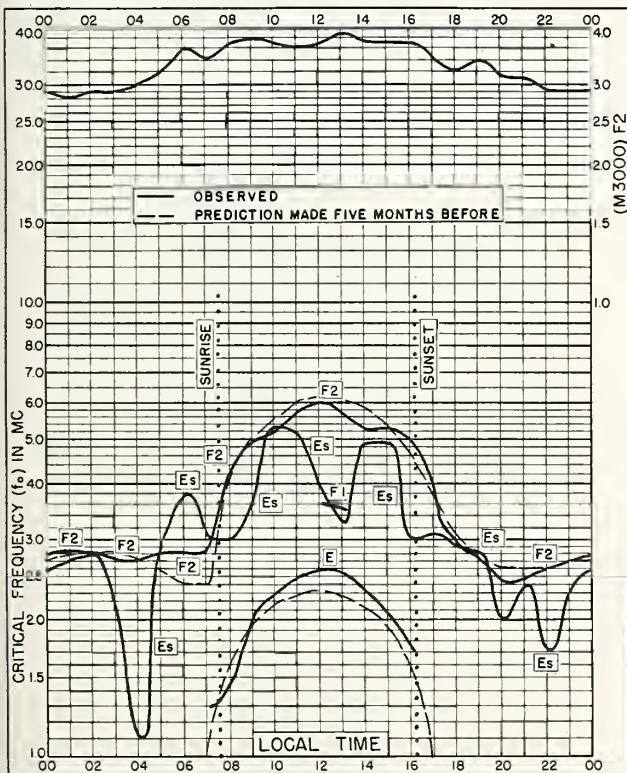


Fig. 115. FALKLAND IS.

51.7°S, 57.8°W

MAY 1955

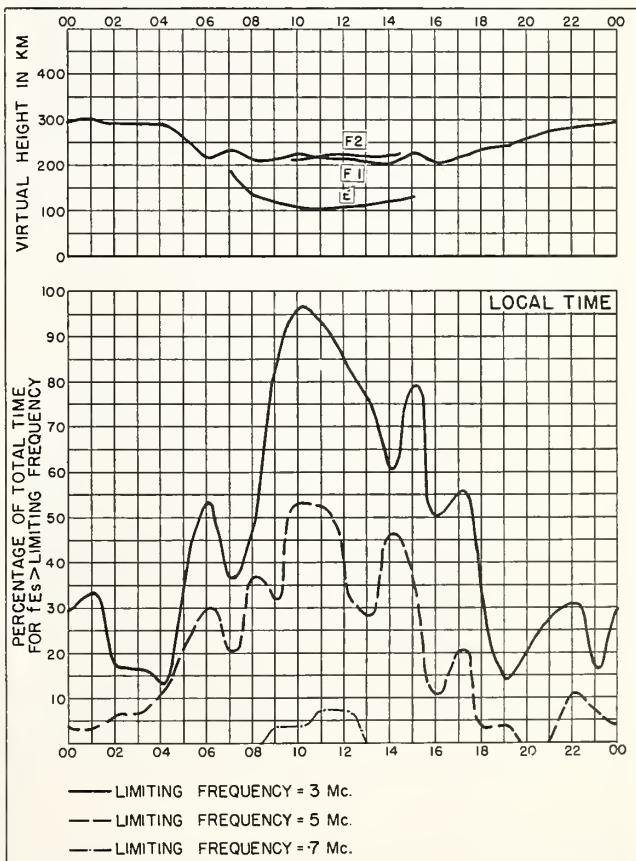


Fig. 116. FALKLAND IS.

MAY 1955

NBS 490

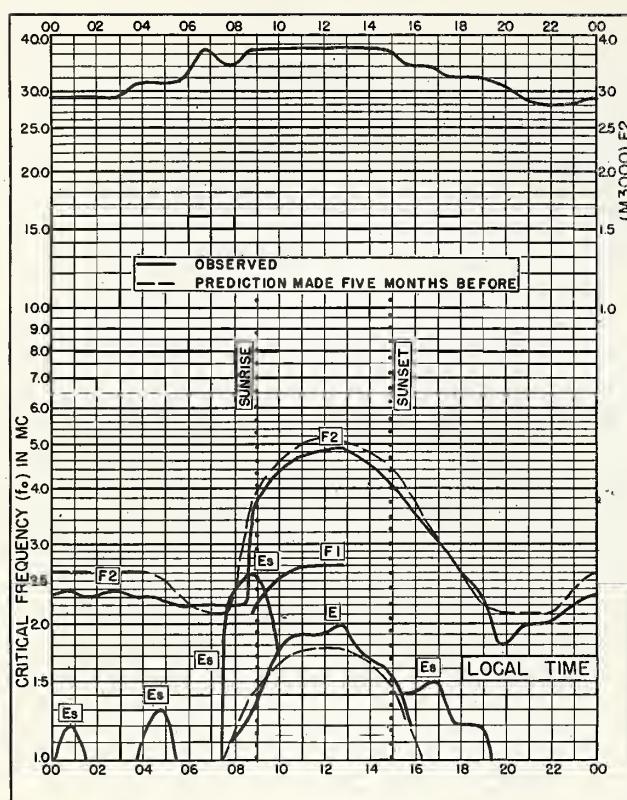


Fig. II7. PORT LOCKROY
64.8°S, 63.5°W MAY 1955

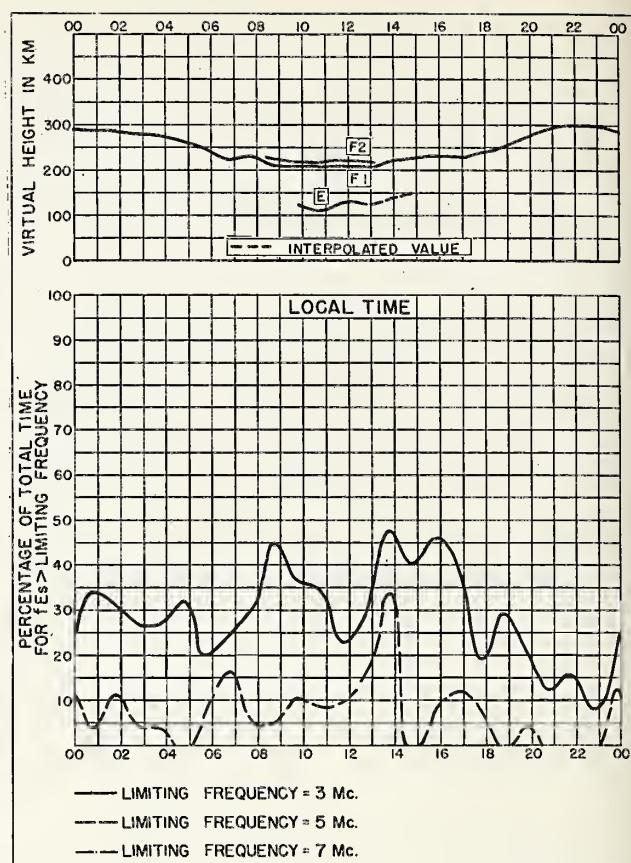


Fig. II8. PORT LOCKROY MAY 1955

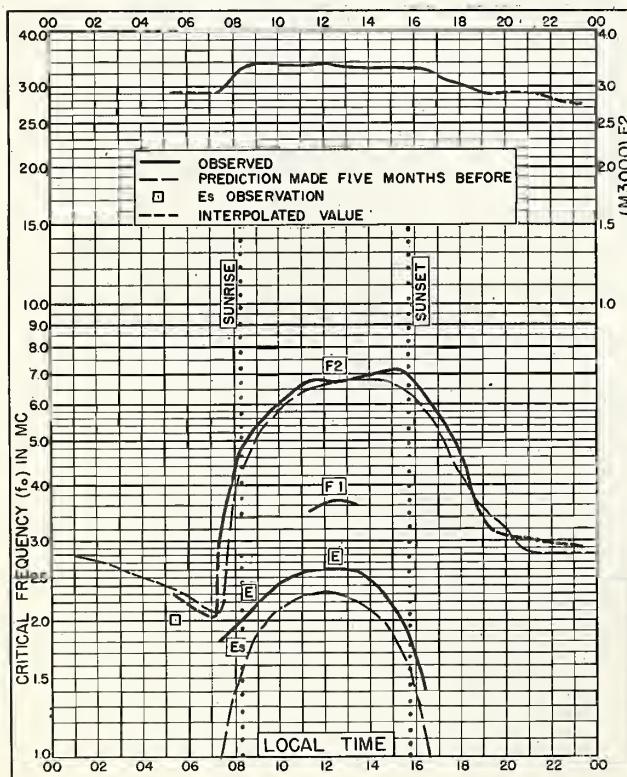


Fig. II9. CAMPBELL I.
52.5°S, 169.2°E JUNE 1955

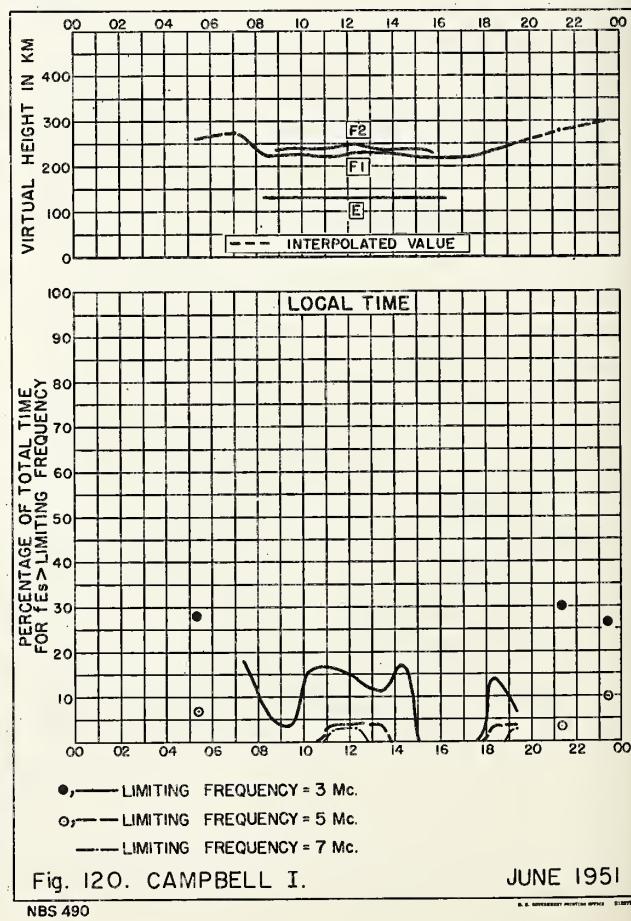


Fig. II10. CAMPBELL I. JUNE 1955

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