

CRPL-F 137 PART A

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PART A
IONOSPHERIC DATA

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JANUARY 1956

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

CRPL-F 137
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 G or W are counted as equal to or less than the median.

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

d. For sporadic E (Es):

Values of fEs missing because of E or G (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 foF2 is less than or equal to foF1, 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 foE. Blank spaces at the beginning and end of columns of h'F1, foF1, h'E, and foE are usually the result of diurnal variation in these characteristics. Complete absence of medians of h'F1 and foF1 is usually the result of seasonal effects.

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

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

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	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	40	12	14	30	53	85	105	112	130	88	42

The latest available information follows concerning the corresponding observed Zurich 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						

WORLD-WIDE SOURCES OF IONOSPHERIC DATA

The ionospheric data given here in tables 1 to 52 and figures 1 to 104 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:

Republica Argentina, Ministerio de Marina:
Depcion I.

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

University of Sao Paulo:
Sao Paulo, Brazil

Defence Research Board, Canada:
Ottawa, Canada

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

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)
Tiruchy (Tiruchirapalli), India (All India Radio)

Ministry of Postal Services, Radio Research Laboratories, Tokyo, Japan:

Akita, Japan
Tokyo (Kokubunji), Japan
Wakkanai, Japan
Yamagawa, Japan

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

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

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

United States Army Signal Corps:
Adak, Alaska
Ft. Monmouth, New Jersey
White Sands, New Mexico

National Bureau of Standards (Central Radio Propagation
Laboratory):
Anchorage, Alaska
Guam I.
Maui, Hawaii
Narsarssuak, Greenland
Panama Canal Zone
Point Barrow, Alaska
Puerto Rico, W. I.
San Francisco, California (Stanford University)
Washington, D. C.

HOURLY IONOSPHERIC DATA AT WASHINGTON, D. C.

The data given in tables 53 through 64 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.

TABLES OF IONOSPHERIC DATA

Table 1

Time	Washington, D. C. (38.7°N, 77.1°W)	December 1955						
	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	3.1			<1.6		3.0	
01	280	3.2			<1.6		3.0	
02	280	3.4			<1.6		3.0	
03	270	3.8			<1.6		3.0	
04	260	3.9			<1.6		3.1	
05	250	3.7			<1.6		3.1	
06	240	3.6			<1.6		3.1	
07	240	4.3		---	<1.6	<1.6	3.3	
08	220	6.9		---	120	2.0	2.0	3.5
09	230	8.4	230	---	110	2.5	2.7	3.4
10	230	8.6	220	---	110	2.8	3.0	3.35
11	240	9.4	210	---	110	3.0	3.4	
12	240	9.9	220	---	110	3.1	3.2	3.3
13	240	9.8	220	---	110	3.1	3.1	3.2
14	240	9.4	220	---	110	2.9	2.9	3.3
15	230	9.2	220	---	110	2.5	2.6	3.3
16	230	9.0			120	2.1	3.0	3.3
17	210	8.0				1.9	3.3	
18	220	6.5				3.0	3.2	
19	230	5.7				<1.6	3.3	
20	230	4.6				<1.6	3.3	
21	240	3.6				<1.6	3.2	
22	260	3.2				<1.6	3.1	
23	280	3.0				<1.6	3.0	

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 3

Time	Narsarsuaq, Greenland (61.2°N, 45.4°W)	November 1955						
	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	320	3.4				4.5	2.9	
01	340	2.9				4.0	2.9	
02	330	3.4				4.0	(2.9)	
03	(330)	3.6				4.5	(3.0)	
04	(320)	3.4				4.4	3.0	
05	(320)	2.7				4.5	3.0	
06	320	2.8				3.9	3.0	
07	<300	3.0				3.9	3.1	
08	260	4.0			---	<3.0	3.2	
09	240	5.5	---	---	130	2.3	3.3	
10	240	6.6	250	---	120	2.1	3.3	
11	240	7.3	230	---	120	2.3	3.3	
12	240	7.8	230	---	130	2.4	3.3	
13	240	7.7	240	---	130	2.3	3.3	
14	240	7.2	---	---	130	2.0	<2.2	3.3
15	230	6.6	---	---		<2.4	3.3	
16	240	5.5				3.6	3.2	
17	310	4.6				3.5	3.1	
18	300	3.8				3.8	3.1	
19	300	(3.6)				4.0	(3.0)	
20	280	3.4				4.1	3.0	
21	300	(3.3)				4.3	3.0	
22	280	(3.4)				4.7	(3.1)	
23	320	3.4				4.8	3.0	

Time: 45.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 5

Time	Upsala, Sweden (59.8°N, 17.6°E)	November 1955						
	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	345	(2.1)				2.2	2.8	
01	340	(2.1)				2.7	2.75	
02	330	1.8				2.6	2.8	
03	340	1.7				2.6	2.8	
04	330	1.8				2.5	2.8	
05	300	1.9				2.8	2.8	
06	300	2.0				2.9		
07	250	3.0			E		2.9	
08	230	5.0	---	---		1.6	3.3	
09	225	6.4	230	3.1	115	1.9	2.2	3.3
10	220	7.6	225	3.2	115	2.2		3.35
11	225	8.0	225	(3.3)	110	2.3		3.3
12	225	8.3	230	(3.5)	110	2.4		3.3
13	225	8.2	230	(3.2)	110	2.2		3.3
14	225	8.0	225	(3.0)	125	2.0		3.3
15	215	7.2				1.7		3.2
16	215	6.3			E	2.3		3.2
17	220	5.4					3.2	
18	230	4.2					3.1	
19	240	3.2					3.1	
20	270	2.6					3.0	
21	305	2.2					2.8	
22	350	2.2					2.7	
23	350	2.0					2.8	

Time: 15.0°E.

Sweep: 1.4 Mc to 17.0 Mc in 6 minutes, automatic operation.

Table 2

Time	Tromso, Norway (69.7°N, 19.0°E)	November 1955						
	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---		(2.2)					3.3
01	---		(3.0)					4.0
02	---		(3.6)					4.0
03	295		3.7					2.8
04	285		3.2					2.6
05	275		3.0					2.8
06	255		2.6					2.9
07	255		2.7					2.8
08	250		3.2					3.05
09	245		4.6					3.1
10	240		5.7	---	---	---	---	3.2
11	235		6.6	---	---	---	---	3.3
12	230		6.8	240	---	---	---	3.3
13	225		6.4	---	---	---	---	3.35
14	235		5.7	---	---	---	---	3.15
15	235		5.5	---	---	---	---	3.15
16	235		4.6	---	---	---	---	3.1
17	240		3.6	---	---	---	---	3.05
18	(250)		(3.2)	---	---	---	---	(3.1)
19	---		(2.2)	---	---	---	---	3.8
20	---		(2.2)	---	---	---	---	3.9
21	---		---	---	---	---	---	4.1
22	---		---	---	---	---	---	3.8
23	---		---	---	---	---	---	3.8

Time: 15.0°E.

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

Table 4

Time	Oslo, Norway (60.0°N, 11.1°E)	November 1955						
	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---		---	---				---
01	---		---	---				---
02	---		---	---				---
03	---		---	---				---
04	---		---	---				---
05	---		(2.3)	---				<1.4
06	(290)		(2.0)	---				<1.4
07	(260)		(2.3)	---				<1.4
08	250		(3.8)	---				<1.6
09	235		6.1	245	---	---	(2.0)	3.3
10	230		7.2	230	---	---	2.0	<2.2
11	240		7.8	240	---	---	120	2.4
12	235		8.2	240	---	---	115	2.4
13	230		8.2	240	---	---	130	2.4
14	225		8.1	240	---	---	140	2.2
15	220		7.5	---	---	---	1.9	<2.1
16	220		6.5	---	---	---	---	<1.5
17	220		5.8	---	---	---	---	<1.4
18	240		4.7	---	---	---	---	<1.4
19	240		3.6	---	---	---	---	<1.6
20	250		2.7	---	---	---	---	<1.4
21	---		2.4	---	---	---	---	2.9
22	---		2.3	---	---	---	---	2.7
23	---		2.1	---	---	---	---	2.7

Time: 15.0°E.

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

Table 6

Time	Adak, Alaska (51.9°N, 176.6°W)	November 1955						
	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300		3.0					<1.6
01	290		3.1					2.8
02	300		3.2					2.8
03	300		3.0					2.8
04	310		3.0					2.8
05	300		3.1					<1.6
06	260		3.3					3.0
07	240		4.6	---	---	---	---	<1.4
08	230		6.6	---	---	---	---	3.4
09	230		7.6	---	---	---	120	2.6
10	230		8.5	230	---	---	120	(2.8)
11	230		9.4	240	---	---	120	2.7
12	230		9.6	220	---	---	120	2.8
13	230		8.7	220	---	---	120	2.6
14	230		6.4	---	---	---	120	2.5
15	220		7.6	---	---	---	---	3.4
16	220		6.6	---	---	---	---	3.4
17	220		4.6	---	---	---	---	2.6
18	230		3.2	---	---	---	---	3.3
19	240		2.6	---	---	---	---	<1.8
20	270		2.4	---	---	---	---	3.35
21	280		2.4	---	---	---	---	<1.4
22	300		2.7	---	---	---	---	3.1
23	290		2.8	---	---	---	---	2.8

Time: 180.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 27 seconds.

Table 7

Time	November 1955						
	h'F2	foF2	h'F1	foF1	h'E	foE	fEs
00	330	3.5					
01	300	3.6					
02	300	3.6					
03	300	3.6					
04	300	3.3					
05	290	3.2					
06	290	3.2					
07	250	4.8					
08	210	7.3					
09	210	8.1					
10	220	8.4					
11	230	8.9					
12	230	9.0					
13	220	8.6					
14	230	8.6					
15	220	8.6					
16	210	8.1					
17	220	6.3					
18	240	5.0					
19	250	4.4					
20	255	3.9					
21	300	3.4					
22	310	3.3					
23	310	3.5					

Time: 15.0°E.

Sweep: 2.5 Mc to 12.0 Mc in 2 minutes.

Table 9

Time	November 1955						
	h'F2	foF2	h'F1	foF1	h'E	foE	fEs
00	290	3.6			2.8	2.9	
01	280	3.6			2.5	3.0	
02	270	3.6			<1.9	3.0	
03	280	3.6			<1.6	3.0	
04	270	3.4			<1.6	3.0	
05	280	3.2			<1.7	2.8	
06	280	3.5			<1.6	2.9	
07	240	6.0		130	---	2.6	3.3
08	240	8.3	230	---	120	(2.4)	3.35
09	250	9.8	220	---	110	(2.8)	4.8
10	240	9.8	220	(4.2)	110	(3.1)	4.9
11	250	9.9	210	(4.5)	110	3.3	4.5
12	260	9.7	210	(4.4)	110	3.4	4.1
13	260	9.8	220	(4.2)	120	3.3	3.4
14	260	9.9	230	---	120	3.2	3.5
15	240	9.2	230	---	120	2.9	3.8
16	230	8.7	220	---	120	(2.3)	3.2
17	220	7.8		---	---	<2.0	3.3
18	220	5.4		---	---	<1.9	3.3
19	230	4.2		---	---	<1.8	3.25
20	240	3.3		---	---	<2.0	3.2
21	<300	3.1		---	---	2.4	3.0
22	270	3.2		---	---	<2.2	3.0
23	290	3.2		---	---	<2.0	2.9

Time: 105.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 11

Time	November 1955						
	h'F2	foF2	h'F1	foF1	h'E	foE	fEs
00	240	3.7			<1.2	3.0	
01	260	3.2			<1.4	3.0	
02	260	3.0			<1.2	3.1	
03	250	3.0			<1.2	3.1	
04	270	2.4				2.8	
05	300	2.3			3.9	2.7	
06	300	2.5			3.4	2.7	
07	260	5.8		130	1.8	<2.3	3.2
08	(260)	8.6	240	---	120	2.6	4.8
09	270	10.2	230	---	110	3.0	4.2
10	280	11.8	220	---	110	3.3	5.8
11	280	12.3	220	4.8	110	3.4	5.6
12	290	12.8	210	4.9	110	3.5	6.0
13	290	13.6	210	4.9	110	3.4	5.1
14	280	14.2	220	4.9	110	3.4	5.8
15	270	14.1	240	---	(120)	3.1	6.6
16	250	13.7	240	---	(120)	2.8	5.8
17	220	10.8		---	---	5.4	3.3
18	220	8.4		---	---	4.8	3.3
19	220	6.2		---	---	4.5	3.2
20	230	5.4		---	---	4.0	2.9
21	240	5.8		---	---	3.0	3.05
22	230	5.4		---	---	1.8	3.1
23	230	4.4		---	---	<1.2	3.1

Time: 150.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 8

Time	November 1955						
	h'F2	foF2	h'F1	foF1	h'E	foE	fEs
00	280	3.2					<1.7
01	290	3.4					<1.7
02	280	3.4					<1.6
03	260	3.5					<1.6
04	260	3.3					<1.6
05	250	3.0					<1.6
06	270	2.9					<1.7
07	240	5.4				---	<1.9
08	230	7.4	230	---	120	(2.4)	3.4
09	240	8.2	220	---	120	2.7	3.4
10	240	9.0	210	(4.0)	120	3.0	3.3
11	250	9.5	210	(4.1)	120	3.1	3.2
12	250	9.7	220	(4.0)	120	3.2	3.2
13	250	9.8	220	(4.1)	120	3.1	3.2
14	250	9.4	220	---	120	2.9	3.2
15	240	9.4	230	---	120	2.5	3.3
16	220	8.8	---	---	---	<2.1	3.3
17	210	7.8		---	---	<1.7	3.3
18	230	6.1		---	---	<1.7	3.2
19	240	5.2		---	---	<1.7	3.1
20	250	4.5		---	---	<1.8	3.1
21	270	3.9		---	---	<1.7	3.0
22	260	3.6		---	---	<1.7	3.0
23	280	3.4		---	---	<1.7	3.0

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 10

Time	November 1955						
	h'F2	foF2	h'F1	foF1	h'E	foE	fEs
00	260	6.0					<1.9
01	260	6.0					<2.1
02	260	5.3					<1.7
03	240	5.3					<1.8
04	240	3.6					2.0
05	270	2.8					<1.6
06	300	3.9				---	<1.8
07	240	8.0				120	<1.8
08	240	9.5	---	---	120	2.8	3.4
09	250	10.6	240	---	120	3.1	3.5
10	260	11.3	240	4.6	120	3.4	4.7
11	260	11.2	230	4.8	120	3.4	4.2
12	280	12.5	220	4.7	120	3.5	4.5
13	280	15.1	220	4.6	120	3.4	4.0
14	270	>16.0	240	4.6	120	3.2	4.2
15	260	>16.0	240	4.4	120	3.0	4.1
16	240	>16.0	---	---	---	---	3.25
17	230	>14.4	---	---	---	---	3.1
18	210	13.1		---	---	---	2.8
19	220	11.4		---	---	---	2.6
20	230	11.0		---	---	---	2.1
21	230	9.8		---	---	---	1.9
22	240	7.4		---	---	---	<2.0
23	260	6.8		---	---	---	<1.8

Time: 120.0°W.

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

Table 12

Time	November 1955						
	h'F2	foF2	h'F1	foF1	h'E	foE	fEs
00	260	4.3					<1.7
01	260	4.2					<1.8
02	250	4.2					<1.7
03	240	4.0					<1.7
04	250	3.5					<1.7
05	260	3.3					<1.7
06	270	3.2					<1.8
07	240	5.9				---	<1.8
08	240	8.2	230	---	110	2.6	3.4
09	250	9.6	230	---	110	3.0	3.4
10	260	10.2	220	---	110	3.3	3.3
11	260	10.4	210	4.8	110	3.4	3.2
12	270	9.8	220	5.0	110	3.5	3.2
13	270	9.8	220	4.9	110	3.5	3.1
14	260	9.9	210	4.8	110	3.4	3.1
15	270	9.9	220	---	110	3.2	3.8
16	240	9.6	230	---	110	2.8	3.5
17	230	9.0	230	---	---	2.0	<2.6
18	220	8.1		---	---	---	3.3
19	210	6.3		---	---	---	<1.8
20	230	4.6		---	---	---	<1.8
21	270	4.6		---	---	---	<1.8
22	260	4.6		---	---	---	<1.8
23	260	4.4		---	---	---	<1.8

Time: 60.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 13

Time	November 1955						
	h'F2	foF2	h'F1	foF1	h'E	foE	fEs (M3000)F2
00	230	8.5			<2.1	3.2	
01	230	8.1			<1.6	3.3	
02	230	8.0			<1.4	3.4	
03	220	5.7			<1.2	3.5	
04	230	4.3			<1.3	3.2	
05	240	3.5			1.6	3.15	
06	250	3.7			2.0	3.0	
07	240	7.2		120	2.1	2.8	3.3
08	(260)	9.5	230	---	110	2.8	3.6
09	(270)	11.4	220	---	110	3.2	4.2
10	280	12.0	210	---	110	3.4	4.4
11	290	11.7	200	---	110	3.4	4.0
12	300	10.8	200	4.9	110	3.5	3.8
13	300	10.7	200	---	110	3.5	3.9
14	---	11.3	210	---	110	3.3	4.4
15	---	11.7	210	---	110	3.1	3.9
16	---	12.5	230	---	110	2.8	3.7
17	250	12.5	240	---	120	2.2	<2.7
18	260	12.6			<2.0	2.9	
19	270	11.7			<1.6	2.9	
20	240	11.0			2.2	2.9	
21	240	10.1			3.7	3.0	
22	240	9.6			3.2	3.2	
23	220	9.0			2.8	3.2	

Time: 150.0°E.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 15

Time	October 1955						
	h'F2	foF2	h'F1	foF1	h'E	foE	fEs (M3000)F2
00	(310)	(3.0)			3.5	---	
01	(320)	(2.7)			4.4	---	
02	310	(2.8)			4.1	---	
03	320	(3.3)			2.7	---	
04	300	(3.0)			<2.2	---	
05	300	(3.1)			<2.4	---	
06	280	2.6			<1.5	(3.0)	
07	240	3.6		---	1.5	3.1	
08	230	4.5		---	---	3.3	
09	240	5.5	220	---	110	(1.8)	3.3
10	240	6.0	220	---	110	(2.1)	3.3
11	250	6.8	210	3.4	110	(2.4)	3.3
12	250	7.0	220	3.8	110	2.5	3.3
13	240	7.0	220	(3.9)	110	---	3.2
14	240	6.8	220	3.8	110	---	3.3
15	230	6.4	230	---	110	---	3.3
16	230	6.4	---	---	---	<2.4	3.2
17	240	6.5	---	---	---	<2.2	3.1
18	230	(6.6)	---	---	<2.2	(3.25)	
19	240	(4.8)			3.1	(3.1)	
20	250	(5.2)			3.5	---	
21	270	(3.8)			3.6	---	
22	(280)	---			3.6	---	
23	(300)	(3.4)			3.6	---	

Time: 15.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 16.2 seconds.

Table 17

Time	October 1955						
	h'F2	foF2	h'F1	foF1	h'E	foE	fEs (M3000)F2
00	280	3.8				3.2	
01	280	3.8				3.2	
02	300	3.6				3.2	
03	290	3.8				3.3	
04	270	3.4				3.3	
05	240	3.4				3.3	
06	215	2.9				3.5	
07	200	4.8		---		3.7	
08	200	6.0		2.2		3.85	
09	200	7.0		2.7		3.8	
10	200	7.5		2.8		3.8	
11	200	8.1		3.0		3.8	
12	200	8.5		3.0		3.75	
13	200	8.3		3.0		3.7	
14	200	8.4		3.0		3.6	
15	200	8.5		2.9		3.6	
16	200	8.5		2.5		3.7	
17	200	7.8		2.3		3.8	
18	200	6.8		---		3.8	
19	200	6.3		---		3.7	
20	200	5.4				3.6	
21	200	4.6				3.65	
22	230	4.1				3.4	
23	250	3.8				3.3	

Time: 15.0°E.

Sweep: 1.0 Mc to 25.0 Mc in 30 seconds.

Table 14

Time	Panama Canal Zone (9.4°N, 79.9°W)						
	h'F2	foF2	h'F1	foF1	h'E	foE	fEs (M3000)F2
00	230	4.3				<1.6	3.3
01	230	3.3				<1.6	3.4
02	240	2.8				<1.6	3.2
03	260	2.6				2.5	3.0
04	280	2.4				3.8	2.9
05	300	2.5				3.6	2.9
06	280	3.8				3.2	2.9
07	240	7.4	250	---	120	2.2	3.9
08	260	9.8	230	---	110	2.9	4.0
09	270	11.0	220	(5.0)	110	3.2	4.2
10	270	11.6	210	5.0	110	3.5	5.0
11	280	11.5	220	5.2	110	3.6	5.1
12	290	11.5	210	5.2	110	3.7	5.3
13	280	10.9	220	5.2	110	3.6	5.0
14	290	10.8	220	5.2	110	3.5	5.2
15	290	10.5	220	5.0	110	3.3	5.2
16	270	10.5	230	---	110	2.9	5.0
17	250	10.8	240	---	120	2.3	4.4
18	230	10.0				4.4	3.25
19	220	8.8				3.9	3.4
20	210	6.4				3.1	3.4
21	220	5.4				2.5	3.0
22	250	5.4				<1.6	3.0
23	230	5.2				<1.6	3.2

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 16

Time	Anchorage, Alaska (61.2°N, 149.9°W)						
	h'F2	foF2	h'F1	foF1	h'E	foE	fEs (M3000)F2
00	340	2.3				<1.5	2.7
01	380	2.3				<1.4	2.7
02	390	2.3				<1.6	2.6
03	370	2.5				<2.0	2.6
04	350	2.5				<2.0	2.6
05	340	2.3				<1.8	2.6
06	320	2.6				<1.5	2.8
07	270	3.6	250	---	130	1.9	3.0
08	260	4.4	250	---	130	2.1	3.15
09	(290)	5.0	240	3.9	130	2.1	3.1
10	290	5.5	240	4.0	120	2.4	3.1
11	260	5.7	230	4.0	120	2.4	3.1
12	280	6.2	230	(3.9)	120	2.4	3.1
13	270	6.1	240	---	120	2.4	3.2
14	260	6.2	240	---	120	2.4	3.2
15	250	6.4	250	---	130	2.2	3.3
16	240	6.1	---	---	---	2.0	3.3
17	240	5.5				<1.6	3.2
18	240	4.6				<1.5	3.1
19	240	3.8				<1.6	3.2
20	250	2.8				<1.5	3.1
21	270	2.4				<1.6	3.0
22	280	2.0				<1.5	2.8
23	320	1.8				<1.5	2.8

Time: 150.0°W.

Sweep: 1.0 Mc to 10.0 Mc in 15 seconds.

Table 18

Time	Ottawa, Canada (45.4°N, 75.9°W)						
	h'F2	foF2	h'F1	foF1	h'E	foE	fEs (M3000)F2
00	280	3.1				<1.6	2.9
01	280	3.0				<1.6	2.9
02	290	2.6				<1.6	2.9
03	290	2.3				<1.6	2.9
04	290	2.2				<1.6	2.9
05	300	2.2				<1.6	3.0
06	270	3.1				<1.6	3.0
07	240	5.1	---	---	120	2.0	3.3
08	240	6.4	230	3.6	110	2.6	3.4
09	250	7.0	220	4.0	110	2.9	3.4
10	260	7.6	220	4.2	110	3.0	3.4
11	260	7.8	210	4.4	110	3.2	3.3
12	270	8.0	210	4.5	110	3.2	3.3
13	270	8.0	230	4.5	110	3.2	3.35
14	270	8.1	230	4.2	110	3.0	3.3
15	260	8.0	230	4.0	110	2.8	3.3
16	250	8.0	240	3.4	115	2.3	3.4
17	230	7.8	---	---	130	1.8	3.35
18	230	7.0				<1.7	3.2
19	230	6.0				<1.7	3.1
20	250	4.9				<1.6	3.0
21	260	4.3				<1.6	3.0
22	270	4.0				<1.7	2.9
23	280	3.5				<1.6	2.9

Time: 75.0°W.

Sweep: 1.0 Mc to 10.0 Mc in 15 seconds.

Table 19

Time	h'F2	foF2	h'Fl	foFl	h'E	foE	fEs	(M3000)F2	October 1955
00	260	4.6					1.2	2.9	
01	260	4.4					2.0	3.0	
02	250	4.2						3.0	
03	250	4.0						3.0	
04	260	3.8						2.9	
05	250	3.6						2.9	
06	250	5.0	---	---			1.8	3.2	
07	260	5.8	240	3.7			2.5	2.6	3.3
08	280	6.6	220	4.4			2.9	3.1	3.2
09	310	6.7	220	4.7			3.2	3.7	3.1
10	330	7.2	210	4.8			3.3	3.8	3.0
11	310	7.6	200	4.9			3.4	3.8	3.05
12	320	7.7	200	4.9			3.5	3.8	3.0
13	310	7.8	200	4.8			3.5	3.8	3.1
14	310	8.0	220	4.8			3.4	3.6	3.1
15	300	8.0	220	4.6			3.2	3.6	3.1
16	290	7.7	230	4.3			3.0	3.7	3.2
17	270	7.4	240	3.8			2.5	2.8	3.2
18	250	7.3	---	---			1.9		3.2
19	230	7.1							3.2
20	230	6.4							3.0
21	250	5.2							2.9
22	260	4.9							2.9
23	260	4.8							2.9

Time: 120.0°E.

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

Table 21

Time	h'F2	foF2	h'Fl	foFl	h'E	foE	fEs	(M3000)F2	September 1955
00							5.1		
01	---	---					5.0	---	
02	---						4.6	---	
03	(330)	(2.7)					- 4.0	---	
04	(340)	(2.5)					4.3	---	
05	(300)	2.5					<2.4	(3.0)	
06	270	3.0	---	---			<1.9	3.1	
07	250	3.8	220	3.4			<2.2	3.25	
08	290	4.4	220	3.6			<2.4	3.3	
09	300	4.6	220	3.7			<2.4	3.25	
10	300	4.9	200	3.9				3.2	
11	300	5.2	210	4.0	110	(2.7)		3.2	
12	320	5.0	200	4.0	110			3.1	
13	320	5.0	200	3.9	110			3.1	
14	330	5.0	200	4.0	110			3.1	
15	320	5.0	210	3.9	100		<2.5	3.0	
16	300	5.0	220	3.7	120		<2.4	3.05	
17	270	4.9	220	3.6	110		2.9	3.15	
18	250	4.6	---	---			3.3	3.2	
19	260	4.5	---	---			3.3	3.1	
20	260	(4.5)	---	---			3.2	---	
21	(300)	(3.4)					3.8	---	
22	---	---					4.0		
23	---	---					4.0	---	

Time: 15.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 16.2 seconds.

Table 23

Time	h'F2	foF2	h'Fl	foFl	h'E	foE	fEs	(M3000)F2	September 1955
00	280	4.5					2.2		
01	280	4.5					2.0		
02	280	4.2					2.5		
03	270	4.2					2.3		
04	260	4.0					2.3		
05	260	4.3					2.4		
06	240	5.2							
07	260	6.0							
08	280	6.5							
09	280	6.9							
10	290	6.7							
11	300	6.6							
12	300	6.6							
13	310	6.5							
14	290	6.6							
15	270	6.2							
16	270	6.3							
17	260	6.4					3.0		
18	250	6.3					2.8		
19	250	6.0					2.8		
20	260	6.0					3.5		
21	260	5.3					3.5		
22	270	5.0					2.5		
23	270	4.7					2.5		

Time: 135.0°E.

Sweep: 1.0 Mc to 22.0 Mc in 1 minute.

Table 20

Time	Deception I. (63.0°S	60.7°W)	foF2	h'Fl	foFl	h'E	foE	fEs	October 1955
00			300					6.3	2.9
01			300					5.9	2.9
02			300					6.0	3.0
03			290					5.8	3.0
04			290					5.5	3.1
05			260					5.4	3.1
06			240					5.8	3.4
07			220					6.6	2.8
08			220					7.2	3.4
09			220					7.2	3.4
10			220					7.6	3.4
11			220					8.2	3.4
12			220					8.6	3.5
13			230					8.2	3.6
14			220					7.9	3.55
15			230					7.2	3.4
16			220					7.0	3.6
17			230					6.5	3.5
18			240					6.6	3.4
19			250					6.8	3.3
20			250					6.8	3.3
21			260					6.8	3.2
22			280					6.5	3.1
23			290					6.6	3.1

Time: 60.0°W.

Sweep: 1.5 Mc to 16.0 Mc in 15 minutes, manual operation.

Table 22

Time	Anchorage, Alaska (61.2°N, 149.9°E)	foF2	h'Fl	foFl	h'E	foE	fEs	(M3000)F2	September 1955
00		330					2.0		2.9
01		350					2.1		2.8
02		<390					2.2		(2.8)
03		380					2.2		2.7
04		370					2.3		2.7
05		320					2.5		<1.7
06		350					3.2		3.0
07		450					3.4		2.9
08		420					3.6		2.7
09		400					3.8		2.8
10		400					3.9		2.9
11		380					4.0		2.9
12		390					4.0		2.8
13		380					4.0		2.9
14		350					4.0		3.0
15		340					3.9		3.1
16		280					3.5		3.2
17		250					3.6		3.2
18		300					3.8		3.1
19		320					3.6		3.0
20		300					3.5		3.0
21		270					3.2		3.0
22		280					3.4		2.9
23		310					3.0		2.9

Time: 150.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 24

Time	Akita, Japan (39.7°N, 140.1°E)	foF2	h'Fl	foFl	h'E	foE	fEs	(M3000)F2	September 1955
00		300					4.6		3.0
01		300					4.5		2.8
02		300					4.4		2.6
03		290					4.2		2.5
04		280					4.0		2.5
05		290					3.9		2.4
06		250					5.3		3.1
07		260					6.0		3.5
08		280					6.7		3.6
09		280					7.0		3.9
10		300					7.1		3.5
11		310					7.0		>3.5
12		310					6.9		
13		320					6.9		
14		300					6.8		3.4
15		290					6.6		3.4
16		280					6.6		3.3
17		270					6.8		3.5
18		250					7.0		3.3
19		250					6.5		3.0
20		260					5.7		3.5
21		290					5.1		3.4
22		300					4.9		3.4
23		300					4.8		3.2

Time: 135.0°E.

Sweep: 0.85 Mc to 22.0 Mc in 2 minutes.

Table 25

San Francisco, California (37.4°N, 122.2°W)							September 1955	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	<260	(3.6)			<1.8	(2.9)		
01	<280	(3.6)			<1.7	(2.9)		
02	<280	(3.7)			<1.7	(2.9)		
03	270	(3.6)			<1.7	(2.9)		
04	<290	(3.4)			<1.8	(2.8)		
05	<270	3.4			2.0	2.8		
06	250	(4.0)	<250	---	<1.9	3.2		
07	280	5.2	230	(3.6)	<120	(2.2)	2.4	3.3
08	300	5.8	210	(4.1)	(110)	(2.7)	2.8	3.15
09	310	6.0	200	(4.4)	(100)	(3.0)	<3.3	3.1
10	320	6.2	200	(4.5)	(110)	(3.2)	3.1	
11	310	6.6	200	(4.6)	<110	(3.2)	3.0	
12	310	6.8	200	(4.6)	(100)	(3.3)	3.4	
13	310	6.9	200	(4.6)	110	(3.3)	3.1	
14	300	6.9	210	(4.5)	(110)	(3.3)	3.1	
15	290	6.7	220	(4.5)	(110)	(3.1)	3.15	
16	280	6.5	230	(4.0)	(110)	(2.8)	<3.0	3.2
17	250	6.2	220	---	(110)	(2.3)	3.3	
18	230	5.9	---	---	---	1.9	3.3	
19	220	5.1			<1.8	3.2		
20	<230	4.5			<2.0	3.1		
21	<250	4.2			<1.8	3.0		
22	<260	4.0			<1.8	2.9		
23	<260	3.7			<1.7	3.0		

Time: 120.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 27

Yamagawa, Japan (31.2°N, 130.6°E)							September 1955	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	4.7			3.1			
01	290	4.6			3.1			
02	280	4.6			2.4			
03	250	4.3			2.3			
04	250	4.0			2.2			
05	260	3.5			2.3			
06	250	4.4			2.3			
07	240	6.6			3.2			
08	240	7.0			3.8			
09	250	7.0			4.2			
10	270	7.2			4.0			
11	300	8.0			3.6			
12	300	9.0						
13	290	9.7			3.7			
14	290	9.1						
15	290	8.5						
16	290	8.3			3.8			
17	270	8.3			3.5			
18	250	8.0			3.1			
19	240	7.7			3.6			
20	220	6.4			3.0			
21	260	4.9			3.2			
22	290	4.6			3.1			
23	300	4.7			3.2			

Time: 135.0°E.

Sweep: 1.0 Mc to 22.0 Mc in 1 minute.

Table 29

Watheroo, W. Australia (30.3°S, 115.9°E)							September 1955	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	3.8			1.6	3.0		
01	260	4.0			3.0			
02	250	4.0			3.1			
03	240	3.6			3.0			
04	250	3.3			2.9			
05	260	3.4			2.9			
06	270	3.8			2.9			
07	250	5.2	---	---	---	2.9		
08	270	6.1	240	4.0	2.0	1.5	3.4	
09	280	6.9	230	4.4	3.0	3.2	3.3	
10	300	6.8	220	4.6	3.2	3.5	3.2	
11	300	7.0	220	4.7	3.3	3.6	3.2	
12	300	7.1	210	4.7	3.3	3.7	3.3	
13	300	7.4	220	4.6	3.3	3.6	3.4	
14	290	7.2	220	4.6	3.2	3.6	3.3	
15	290	7.0	220	4.4	3.0	3.5	3.3	
16	290	6.8	220	4.0	2.8	3.0	3.2	
17	250	6.2	240	3.3	2.3	2.4	3.4	
18	240	5.8			1.5	1.5	3.4	
19	240	4.6				3.3		
20	240	4.3				3.3		
21	260	4.3				3.1		
22	260	3.9				3.0		
23	260	4.0				3.0		

Time: 120.0°E.

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

Table 26

Tokyo, Japan (35.7°N, 139.5°E)							September 1955	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280				4.5			
01	280				4.4			
02	270				4.5			
03	250				4.2			
04	250				4.0			
05	260				3.9			
06	230				5.6	240	130	1.9
07	240				6.9	230	4.0	110
08	250				7.0	220	4.3	110
09	260				7.1	210	4.5	110
10	290				7.5	220	4.8	110
11	290				7.6	210	4.8	110
12	280				7.8	220	4.9	110
13	290				7.6	230	4.8	110
14	280				7.6	220	4.5	110
15	280				7.2	220	4.4	110
16	260				7.4	240	4.0	110
17	250				7.2	240	3.5	120
18	240				7.5	240	3.4	120
19	230				6.8	240	2.8	120
20	240				5.2	240	2.5	120
21	270				5.0	270	3.0	120
22	290				4.8	290	3.0	120
23	280				4.6	280	3.0	120

Time: 135.0°E.

Sweep: 1.0 Mc to 17.2 Mc in 2 minutes.

Table 28

Baguio, P. I. (16.4°N, 120.6°E)							September 1955	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270				7.8			
01	250				7.7			
02	210				7.0			
03	210				4.0			
04	230				3.8			
05	230				3.0			
06	240				5.0			
07	220				5.0			
08	220				5.7			
09	220				6.1			
10	220				6.4			
11	220				6.8			
12	220				6.0			
13	220				7.1			
14	220				6.6			
15	220				6.7			
16	220				6.0			
17	220				5.7			
18	220				5.4			
19	230				4.4			
20	250				4.2			
21	290				3.9			
22	310				3.9			
23	320				3.6			

Time: 120.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 15 minutes, manual operation.

Table 31

Johannesburg, Union of S. Africa (26°29'S., 28.1°E)							August 1955	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	230	2.6				3.2		
01	<240	2.5				3.1		
02	---	2.5				3.1		
03	<250	2.6				3.15		
04	<240	2.5				3.1		
05	---	2.3				3.1		
06	---	2.4				3.1		
07	230	4.6	---	---	1.9	3.5		
08	240	5.6	210	3.6	110	2.4	3.5	
09	270	5.9	210	4.1	110	2.9	3.3	
10	280	6.3	210	4.4	110	3.1	3.3	
11	280	6.6	200	4.4	110	3.2	3.3	
12	280	6.4	200	4.5	110	3.3	3.3	
13	290	6.3	200	4.5	110	3.2	3.6	
14	280	6.4	200	4.4	110	3.2	3.9	
15	270	6.5	190	4.1	110	3.0	3.7	
16	250	6.1	220	3.7	110	2.7	3.1	
17	230	5.7	220	2.8	120	2.2	3.3	
18	220	5.0				2.1	3.3	
19	220	3.9				1.9	3.3	
20	220	3.1				1.6		
21	<230	2.9					3.2	
22	<240	3.0					3.2	
23	<240	2.8					3.1	

Time: 30.0°E.

Sweep: 1.0 Mc to 15.0 Mc in 7 seconds.

Table 33

Deception I. (63.0°S., 60.7°W.)							August 1955	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	330	2.7				3.0		
01	320	2.7				3.0		
02	330	2.7				3.0		
03	310	2.6				3.1		
04	310	2.6				3.1		
05	290	2.7				3.3		
06	280	2.5				3.4		
07	250	3.1				3.5		
08	220	4.0				3.7		
09	210	4.6			2.8	3.8		
10	210	5.0				3.7		
11	220	5.0				3.2	3.75	
12	220	5.0				3.4	3.75	
13	210	5.4			2.3	3.7		
14	220	5.3				3.7		
15	220	5.1				3.7		
16	220	4.6				3.6		
17	220	4.1				3.6		
18	220	3.6				3.5		
19	260	3.0				3.35		
20	300	2.6				3.2		
21	310	2.4				3.1		
22	340	2.5				2.95		
23	350	2.6				3.0		

Time: 60.0°W.

Sweep: 1.5 Mc to 16.0 Mc in 15 minutes, manual operation.

Table 35

Nairobi, Kenya (1.3°S., 36.8°E.)							July 1955	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	220	5.0				2.4	3.3	
01	220	4.8				2.4	3.4	
02	220	4.0				2.6	3.3	
03	230	3.8				2.8	3.1	
04	240	3.5				2.8	3.2	
05	230	3.1				2.9	3.3	
06	240	2.6				2.9	3.2	
07	250	5.4	240	---	140	1.9	2.9	3.4
08	260	7.2	230	4.0	110	2.5	3.8	3.5
09	260	7.6	220	4.3	110	3.0	4.0	3.5
10	280	7.9	200	4.6	100	3.2	4.6	3.3
11	280	8.2	200	4.7	100	3.4	5.0	3.3
12	290	8.7	200	4.7	100	3.5	5.0	3.3
13	300	9.1	200	(4.8)	110	(3.5)	5.0	3.1
14	300	9.3	200	4.6	110	3.5	4.5	3.0
15	320	9.0	200	4.5	110	3.3	4.0	2.9
16	290	9.4	200	4.3	110	3.1	4.0	3.0
17	280	8.2	220	4.0	110	2.7	4.2	2.9
18	260	8.4	240	---	110	---	3.8	3.0
19	240	8.7				3.1	3.2	
20	230	8.3				3.0	3.3	
21	220	8.1				3.0	3.5	
22	210	6.0				2.6	3.4	
23	220	4.8				2.4	3.3	

Time: 45.0°E.

Sweep: 1.0 Mc to 15.0 Mc in 7 seconds.

Table 32

Capetown, Union of S. Africa (34.2°S., 18.3°E.)							August 1955	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	2.6						3.1
01	250	2.6						3.0
02	250	2.6						3.0
03	250	2.7						3.0
04	250	2.7						3.1
05	240	2.6						3.1
06	<250	2.6						3.1
07	240	2.6						3.2
08	230	4.6	230	---	130	1.9		3.5
09	240	5.2	220	3.4	120	2.4		3.5
10	270	5.7	220	4.1	120	2.8		3.3
11	290	6.0	220	4.3	120	3.1		3.3
12	300	6.0	210	4.4	110	3.2		3.2
13	300	6.4	210	4.4	110			3.1
14	300	6.6	210	4.3	110	3.2	3.6	3.2
15	280	6.9	210	4.2	120	3.0	3.6	3.2
16	260	6.7	220	3.8	120	2.8	3.4	3.2
17	240	6.0	220	3.2	120	2.4	2.6	3.4
18	220	5.3	---	---	140	1.8		3.4
19	220	4.0						1.9
20	230	3.0						3.2
21	240	2.8						3.3
22	240	2.8						3.2
23	240	2.6						3.1

Time: 30.0°E.

Sweep: 1.0 Mc to 15.0 Mc in 7 seconds.

Table 34

Point Barrow, Alaska (71.3°N., 156.8°W.)							July 1955	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	(3.9)						5.0 (3.2)
01	280	(4.2)	---	---				4.8 (3.2)
02	(250)	(4.0)	---	---	---	---		3.9 (3.05)
03	---	(3.9)	230	---	---	---		4.0
04	(280)	(4.1)	(230)	---	---	---		---
05	(270)	(4.2)	(230)	(3.6)	---	---		3.7 (3.1)
06	(430)	(4.1)	(230)	(3.6)	---	---		<3.7 (2.75)
07	400	4.5	(240)	(3.7)	110	(2.5)		4.5
08	400	4.6	220	3.8	110	2.6		4.4
09	450	4.6	210	3.9	110	2.7		3.5
10	430	4.4	210	4.0	110	2.8		3.2
11	440	4.6	200	4.0	110	2.9		3.2
12	440	4.6	210	4.0	110	(2.9)		2.8
13	440	4.6	210	4.0	110	(2.8)		2.8
14	400	4.7	210	4.0	110	(2.8)		2.9
15	400	4.7	220	4.0	110	(2.8)		2.9
16	380	4.8	210	4.0	110	(2.8)		2.9
17	360	4.7	220	3.9	110	2.6		3.05
18	360	4.6	230	3.7	110	2.4		3.0
19	360	4.5	(220)	(3.6)	110	2.2		2.9
20	330	4.5	250	(3.4)	120	2.0		3.0
21	(290)	(4.3)	240	---	120	1.9		3.8 (3.1)
22	280	(4.1)	---	---	---	---		3.8
23	300	(4.0)	---	---	---	4.0		3.2

Time: 150.0°W.

Sweep: 1.5 Mc to 25.0 Mc in 13.5 seconds.

Table 36

Rarotonga I. (21.3°S., 159.8°W.)							July 1955	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	3.1						3.0
01	260	3.1						3.1
02	260	3.0						3.2
03	250	3.0						3.2
04	240	2.9						3.4
05	250	2.6						2.0
06	250	2.5						1.7
07	250	4.3	250	2.2	---	E		3.5
08	250	5.5	230	3.5	120	2.3		3.1
09	260	6.4	240	4.2	105	2.8		3.5
10	260	6.7	230	4.3	100	3.0		3.7
11	270	6.7	230	4.4	100	3.2		3.5
12	270	6.3	210	4.4	100	3.3		3.5
13	280	6.2	220	4.4	100	3.3		3.5
14								

Table 37

Johannesburg, Union of S. Africa (26.2°S, 28.1°E)							July 1955	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---	2.6					3.1	
01	---	2.5					3.1	
02	---	2.6					3.1	
03	<240	2.6					3.1	
04	<230	2.6					3.2	
05	---	2.3			3.1		3.1	
06	---	2.2			2.3		3.15	
07	230	4.0					3.4	
08	230	5.1	210	3.1	120	2.2	3.5	
09	260	5.4	220	3.9	110	2.7	3.4	
10	270	5.6	220	4.2	110	3.0	3.4	
11	270	5.8	210	4.3	110	3.1	3.4	
12	280	6.0	210	4.4	110	3.2	3.3	
13	280	5.9	200	4.3	110	3.2	3.3	
14	270	5.9	200	4.2	110	3.1	3.2	
15	260	5.9	200	4.0	110	2.9	3.1	
16	250	6.0	220	3.6	110	2.5	3.2	
17	230	5.7	---	---	120	2.0	2.6	
18	210	4.4					3.4	
19	<220	3.0					3.35	
20	230	2.7					3.3	
21	230	2.6					3.3	
22	220	2.8					3.3	
23	<230	2.7					3.2	

Time: 30.0°E.

Sweep: 1.0 Mc to 15.0 Mc in 7 seconds.

Table 39

Rarotonga I. (21.3°S, 159.8°W)							June 1955	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	3.0					2.95	
01	280	3.0					3.0	
02	260	3.2					3.1	
03	250	3.2					3.2	
04	240	3.2			1.8		3.25	
05	250	2.8			1.8		3.1	
06	250	2.9			1.6		3.1	
07	250	4.5	---	---	1.3	3.0	3.45	
08	250	6.0	250	3.5	120	2.3	3.8	3.5
09	260	6.5	240	4.0	115	2.7	3.8	3.5
10	260	7.2	230	4.3	110	3.0	3.7	3.5
11	260	6.8	230	4.4	105	3.1	3.9	3.5
12	270	6.5	220	4.4	110	3.2	3.8	3.4
13	270	6.4	210	4.4	110	3.2	3.8	3.4
14	280	6.6	220	4.3	105	3.0	4.0	3.35
15	280	6.8	230	4.0	---	2.8	3.9	3.35
16	260	6.5	250	4.0	---	2.5	3.9	3.3
17	250	6.8	250	3.5	---	1.8	3.7	3.4
18	230	6.2				3.1	3.3	
19	230	5.2				3.1	3.4	
20	230	3.6				2.5	3.15	
21	240	3.5				1.8	3.1	
22	250	3.1				1.7	3.1	
23	250	3.2				1.8	3.1	

Time: 157.5°W.

Sweep: 1.5 Mc to 20.0 Mc in 5 minutes, manual operation.

Table 41

Delhi, India (28.6°N, 77.1°E)							May 1955	
Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	320	4.9					3.0	
01	320	4.8					3.0	
02	(280)	4.4					(3.25)	
03								
04	280	4.2					3.25	
05	260	4.4					3.4	
06	240	5.5					3.6	
07	240	6.3					3.6	
08	280	6.4					3.25	
09	300	7.0					3.1	
10	300	7.5					3.1	
11	320	8.0					3.0	
12	360	9.0					2.8	
13	320	10.0					3.0	
14	300	10.4					3.1	
15	280	10.0					3.1	
16	290	10.2					3.2	
17	280	8.8					3.25	
18	260	8.4					3.4	
19	260	7.8					3.4	
20	260	6.4					3.4	
21	280	5.8					3.25	
22	300	5.2					3.1	
23	310	5.0					3.0	

Time: 75.0°E.

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

*Height at 0.83 foF2.

Table 38

Capetown, Union of S. Africa (34.2°S, 18.3°E)							July 1955	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	<250		2.4					3.1
01	<260		2.3					3.0
02	<260		2.4					3.0
03	250		2.6					3.0
04	250		2.6					3.1
05	250		2.6					3.2
06	<240		2.4					3.1
07	<240		2.2					3.1
08	220		3.9					3.5
09	230		4.8	210	2.8	120	2.1	3.5
10	250		5.4	220	3.7	120	2.6	3.4
11	260		5.5	220	4.1	110	2.9	3.4
12	280		5.8	220	4.2	110	3.0	3.3
13	280		5.7	220	4.2	110	3.1	3.2
14	280		5.8	220	4.1	110	3.0	3.3
15	270		6.2	220	4.0	110	2.8	3.2
16	260		6.2	220	3.6	120	2.6	3.2
17	230		5.9	230	2.8	120	2.1	3.4
18	220		4.7					3.4
19	220		3.0					3.4
20	240		2.6					2.0
21	230		2.5					3.2
22	<240		2.4					3.3
23	<250		2.5					3.2

Time: 30.0°E.

Sweep: 1.0 Mc to 15.0 Mc in 7 seconds.

Table 40

Sao Paulo, Brazil (23.5°S, 46.5°W)							June 1955	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	220		4.5					3.3
01	220		4.4					3.4
02	220		3.6					3.3
03	220		3.6					3.5
04	240		2.9					3.5
05	---	2.0						(3.2)
06	---	2.1						3.15
07	220		4.8					3.6
08	230		6.2	220	---	120	2.3	3.5
09	260		6.8	210	---	100	2.8	3.5
10	250		7.7	200	(4.3)	100	3.0	3.5
11	260		8.3	200	4.3	100	3.1	3.4
12	260		9.4	180	4.3	100	3.2	3.4
13	260		9.2	200	4.3	100	3.1	3.4
14	260		9.2	200	4.2	100	3.0	3.3
15	250		9.5	220	---	100	2.8	3.3
16	230		9.6	220	---	110	2.4	3.3
17	210		8.8					2.6
18	200		6.6					3.0
19	200		4.9					3.5
20	220		5.0					2.7
21	220		5.1					3.2
22	220		5.4					3.4
23	220		5.0					3.5

Time: Local.

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

Table 42

Ahmedabad, India (23.0°N, 72.6°E)							May 1955	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	310		4.2					3.8
01	290		4.0					3.1
02	280		3.5					3.9
03	280		3.4					3.05
04	270		3.2					3.6
05	265		3.1					3.2
06	240		4.9	---	---	1.8	3.5	3.5
07	245		5.7	230	3.7	110	2.3	4.3
08	280		5.9	210	4.2	110	2.8	3.4
09	305		6.3	210	4.4	107	3.1	5.7
10	350		7.4	200	4.5	107	3.3	5.9
11	375		8.5	210	4.6	107	3.4	6.0
12	370		10.0	215	4.6	107	3.5	5.4
13	370		10.9	240	4.6	107	3.4	6.0
14	335		11.7	230	4.5	107	3.3	4.9
15	300		12.2	230	4.4	107	3.2	4.1
16	280		12.1	220	4.2	110	2.9	4.0

Table 43

Calcutta, India (22.9°N, 88.5°E)							May 1955	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	4.6				3.6	2.95	
01	260	(4.3)				3.6	(3.1)	
02	245	(4.3)				3.2	3.25	
03	(255)	(3.7)				3.3	--	
04	250	(3.6)				3.5	(3.1)	
05	<250	3.5				3.0	3.15	
06	240	5.2	---	---	110	(1.9)	3.6	3.35
07	<250	6.5	220	(4.0)	---	2.5	4.1	3.4
08	270	(6.6)	220	4.4	100	3.0	4.3	3.3
09	320	6.8	200	4.5	100	3.2	4.2	3.0
10	340	9.1	190	4.5	100	3.4	4.3	2.75
11	350	10.4	190	4.6	100	3.6	4.2	2.85
12	350	(11.5)	200	4.6	100	3.6	4.5	2.9
13	340	(11.6)	200	4.6	100	3.5	4.7	(2.9)
14	330	(11.8)	200	4.5	100	3.4	5.1	2.9
15	300	(11.6)	210	4.5	100	3.2	4.9	3.15
16	280	(11.5)	200	4.3	100	3.0	5.0	3.2
17	260	(11.5)	220	4.1	100	2.5	3.9	3.3
18	240	11.2	---	---	---	4.2	3.25	
19	230	10.6				3.5	3.3	
20	220	9.4				3.5	3.25	
21	240	(5.8)				3.8	3.1	
22	270	(4.8)				3.2	2.9	
23	<280	(4.8)				3.4	(2.95)	

Time: 90.0°E.

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

Table 45

Madras, India (13.0°N, 80.2°E)							May 1955	
Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06	300	6.2				3.1		
07	330	7.2				2.95		
08	360	7.9				2.8		
09	390	8.1				2.65		
10	420	7.6				2.55		
11	420	7.5				2.55		
12	420	7.5				2.55		
13	420	7.8				2.55		
14	420	8.2				2.55		
15	420	8.9				2.55		
16	420	9.2				2.55		
17	390	10.4				2.65		
18	360	10.2				2.8		
19	360	8.7				2.8		
20	360	7.6				2.8		
21	(330)	>6.5				(2.95)		

Time: 75.0°E.

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

*Height at 0.83 foF2.

Table 47

Sao Paulo, Brazil (23.5°S, 46.5°W)							May 1955	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	220	4.4				3.3		
01	220	4.0				3.4		
02	220	3.8				3.5		
03	220	3.7				3.5		
04	220	2.9				3.6		
05	290	2.2				3.3		
06	280	2.4				3.2		
07	210	5.4	---	---	---	E	3.7	
08	220	6.3	200	---	110	2.4	3.6	
09	250	6.7	200	---	100	2.7	3.5	
10	260	7.8	190	4.3	100	3.0	3.4	
11	260	9.0	180	4.4	100	3.1	3.4	
12	260	9.4	180	4.4	100	3.3	3.4	
13	260	9.8	180	4.3	100	3.2	3.3	
14	260	9.7	180	4.2	100	3.1	3.25	
15	250	10.0	200	(3.8)	110	2.8	3.35	
16	220	10.0	220	---	120	2.5	3.5	
17	200	9.4				2.7	3.6	
18	200	7.5				2.2	3.7	
19	200	5.8				2.3	3.55	
20	220	4.8				2.3	3.2	
21	220	5.2				2.7	3.4	
22	210	4.9					3.5	
23	220	4.4					3.4	

Time: Local.

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

Table 44

Bombay, India (19.0°N, 73.0°E)							May 1955	
Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06:30		270	4.6					3.35
07		300	5.1					3.1
08:30		300	6.1					3.1
09		330	6.7					2.95
10		360	7.2					2.8
11		360	8.4					2.8
12		390	9.2					2.65
13		390	10.4					2.65
14		(420)	(10.8)					(2.55)
15		---	---					---
16		---	---					---
17		390	10.1					2.65
18		390	9.4					2.65
19		360	8.6					2.8
20		330	8.2					2.95
21		300	6.7					3.1
22		300	5.4					3.1
23								

Time: 75.0°E.

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

*Height at 0.83 foF2.

Table 46

Tiruchy, India (10.8°N, 78.8°E)							May 1955	
Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06		390	5.8					2.65
07		420	7.0					2.55
08		480	7.6					2.3
09		510	7.7					2.25
10		510	7.5					2.25
11		540	7.4					2.2
12		540	7.5					2.15
13		540	7.6					2.15
14		540	8.1					2.15
15		510	8.3					2.25
16		510	8.6					2.25
17		480	8.6					2.3
18		480	9.0					2.3
19		420	8.3					2.45
20		420	7.5					2.55
21		(420)	(7.0)					(2.55)
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 48

Sao Paulo, Brazil (23.5°S, 46.5°W)							April 1955	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	240	6.1						3.4
01	220	5.4						3.4
02	220	5.2						3.2
03	220	5.8						3.5
04	240	3.8						3.4
05	260	3.3						3.2
06	250	3.8						3.3
07	220	6.3						3.7
08	240	7.2	210	---	100	2.6		3.6
09	260	7.5	210	---	100	2.9		3.4
10	280	8.8	200	4.4	100	3.2		3.3
11	260	10.2	180	4.4	100	3.4		3.3
12	270	10.2	180	4.5	100	4.1		3.2
13	300	10.8	180	4.4	100	4.0		3.0
14	290	11.4	200	4.4	100	4.3		3.1
15	260	12.2	220	---	100	2.9		3.2
16	230	12.4	210	---	100	3.7		3.4
17	220	11.2						3.55
18	200	10.0						3.6
19	200	8.0						3.6
20	200	7.0						3.35
21	220	7.2						3.3
22	220	7.0						3.4
23	220	6.7						3.4

Time: Local.

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

Table 49

Townsville, Australia (19.3°S, 146.7°E)							March 1955	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	265	4.3			2.3	3.0		
01	260	4.2			2.1	3.1		
02	250	4.0			2.4	3.2		
03	245	3.8			2.7	3.2		
04	240	3.5			2.6	3.1		
05	250	2.9			2.2	3.2		
06	240	3.2			E 2.0	3.3		
07	230	>5.0	---	---	110 2.0	3.0	3.6	
08	270	6.0	230	3.9	100 2.5	3.7	3.5	
09	280	6.7	220	4.2	100 2.9	4.2	3.4	
10	290	7.5	200	4.3	100 3.2	4.3	3.2	
11	290	7.6	200	4.4	100 3.3	4.0	3.2	
12	290	8.1	190	4.4	100 3.4	4.0	3.1	
13	280	8.0	190	4.4	100 3.3	3.8	3.2	
14	290	8.0	210	4.3	100 3.3	3.8	3.1	
15	290	8.2	225	4.2	100 3.1	4.2	3.2	
16	260	8.5	230	4.0	100 2.9	4.3	3.4	
17	250	>8.4	235	3.6	100 2.4	4.3	(3.45)	
18	230	>7.1	---	---	115 1.6	3.8	(3.4)	
19	230	5.8			E 3.4	3.25		
20	240	4.8				3.1	3.0	
21	280	>4.4				2.6	3.0	
22	270	>4.4				2.6	3.0	
23	280	4.3				2.6	3.0	

Time: 150.0°E.

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

Table 51

Canberra, Australia (35.3°S, 149.0°E)							March 1955	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---	3.8			2.9	3.0		
01	---	3.7			2.9	3.0		
02	---	3.6			2.1	3.0		
03	<250	3.4			2.0	3.1		
04	(240)	3.1			2.8	3.05		
05	(240)	3.0				3.0		
06	(250)	3.2			---	3.3		
07	240	4.2	235	---	---	2.1	3.5	
08	260	4.7	230	3.8	110 2.5	3.3	3.3	
09	300	5.2	220	4.0	110 2.8	3.5	3.25	
10	300	5.7	210	4.2	110 3.0	4.0	3.3	
11	290	6.0	200	4.2	105 3.1	4.1	3.3	
12	295	5.8	200	4.3	110 (3.2) 4.8		3.15	
13	300	6.0	200	4.2	105 3.2	4.2	3.2	
14	300	6.1	220	4.2	105 3.1	4.2	3.2	
15	285	6.0	210	4.1	110 3.0	3.7	3.2	
16	265	6.0	220	4.0	110 2.7	3.3	3.3	
17	250	6.0	240	(3.6)	---	2.3	3.3	
18	240	6.1	---	---	2.5	3.3		
19	230	5.8	---	---	2.6	3.2		
20	---	5.0			2.1	3.2		
21	---	4.3				3.1		
22	---	4.0				3.0		
23	---	4.0			2.3	3.0		

Time: 150.0°E.

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

Table 50

Brisbane, Australia (27.5°S, 153.0°E)							March 1955	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	4.0					2.5	3.0
01	270	4.0					2.8	3.0
02	270	3.8					2.4	3.1
03	260	3.7					2.6	3.0
04	265	3.5						3.1
05	250	3.2						3.15
06	230	4.1						3.4
07	235	5.1	250	---	120 2.3	3.4		3.4
08	270	5.0	230	4.0	120	2.7	4.0	3.4
09	290	6.2	225	4.2	120	3.0	4.1	3.4
10	285	6.5	220	4.3	---	3.0	4.3	3.3
11	300	6.5	220	4.4	---	4.6		3.2
12	290	6.8	200	4.3	---	4.4		3.3
13	290	6.8	210	4.3	---	(4.6)		3.3
14	290	6.6	210	4.3	---	(4.2)		3.25
15	290	6.7	220	4.2	---	(4.0)		3.2
16	275	6.5	235	4.0	120	2.8	3.9	3.2
17	(250)	6.7	---	---	---	4.0		3.3
18	240	6.8	---	---	---	3.4		3.35
19	240	5.8					2.3	3.2
20	250	4.7						2.9
21	290	4.4					2.3	2.95
22	(300)	4.3						2.9
23	285	4.2						3.0

Time: 150.0°E.

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

Table 52

Hobart, Tasmania (42.9°S, 147.3°E)							March 1955	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	2.5						2.9
01	270	2.5						2.9
02	270	2.0						2.9
03	270	2.0						3.0
04	280	2.0						2.9
05	280	1.8						3.0
06	250	2.4					1.2	3.0
07	230	3.5					2.0	3.1
08	220	4.2					2.3	3.1
09	220	4.7	215	4.0	100 2.6			3.1
10	340	5.0	200	4.0	100 2.9			2.9
11	335	5.4	200	4.1	100 3.0			2.95
12	330	5.5	200	4.2	100 3.0			3.0
13	325	5.6	200	4.1	100 3.0			3.0
14	315	5.6	200	4.1	100 3.0			3.0
15	300	5.6	200	4.0	100 2.8			3.0
16	220	5.4	200	4.0	100 2.5			3.0
17	230	5.4					2.1	3.0
18	240	5.5					1.5	3.0
19	240	5.5						3.0
20	240	5.0						3.0
21	245	4.0						3.0
22	260	3.2						3.0
23	285	2.6						2.9

Time: 150.0°E.

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

TABLE 53
Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.
IONOSPHERIC DATA

$h^{\prime}F2$ Km December 1955
(Characteristic) (Unit) (Month)
Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75°W

Mean Time

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	2.70	2.80	2.90	2.90	2.70	2.60 ^a	2.70	2.60	2.50	2.40	2.40	2.30	2.40	2.60	2.50	2.60	2.50	2.50	2.60	2.60	2.60	2.70	2.70										
2	2.50	2.40	(2.60) ³	2.60	2.60	2.40	(2.60) ³	2.40	2.50	2.20 ^a	2.40	2.30	2.50	2.30	2.20	2.10	2.30	2.30	2.20	2.10	2.30	2.30	2.30										
3	2.70	2.70	2.70	2.60	2.50	2.60	2.60	2.50	2.40	2.20	2.20	2.20	2.10	2.20	2.30	2.30	2.30	2.30	2.30	2.30	2.40	2.40	2.40										
4	2.80	2.70	2.40	2.30	2.50	2.60	2.50	2.30	2.20	2.20	2.10	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40										
5	2.80	(2.90) ²	2.90	2.90 ^a	2.50	2.40	2.50	2.60	2.40	2.20	2.20	2.20	2.20	2.20	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30										
6	2.80	2.70	2.70	2.80	2.70	2.50	2.50	2.20	2.40	2.30	2.30	(2.70) ²	2.40	2.50	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40									
7	(3.20) ⁵	(3.20) ⁵	2.80	2.50	2.60	2.60	2.30	2.40	2.40	2.10	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40									
8	2.70	(2.90) ²	2.60	2.60	2.50	2.40	2.30	2.20	2.20	2.30	2.40	2.30	2.30	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40									
9	2.70	2.60	2.80	(2.80) ²	(3.10) ⁵	(3.00) ⁵	2.50	2.30	2.20	2.20	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40								
10	2.70	2.90	2.80	2.60	2.40	2.50	(2.60) ²	2.50	2.10	2.20	2.40	2.50	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40								
11	2.80	2.00	2.00	2.30	(3.00) ¹	(2.90) ¹	(2.80) ¹	(2.70) ¹	2.40	2.20	2.20	2.30	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40								
12	2.40	2.70	(2.90) ⁵	2.80	2.70 ^f	2.50	2.40	2.30	2.20	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30								
13	2.60	2.70	2.70	2.60	2.60	2.40	2.30	2.30	2.10	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20								
14	2.80	2.80	2.70	2.60	2.50	2.40	2.40	2.20	2.10	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20								
15	2.80	2.70	2.90	2.70	2.60	2.40	2.20	2.20	2.10	2.20	2.20	2.30	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40								
16	(3.00) ⁵	(3.00) ⁵	2.80	2.60	2.50	2.60	2.30	2.30	2.20	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30								
17	2.90	2.60	2.90	2.80	2.60	2.50	2.40	2.40	2.10	2.30	2.40	2.20	2.20	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30								
18	2.90	2.70	2.70	2.70	2.40	2.50	2.70	2.70	2.30	2.20	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30								
19	2.80	2.60	2.80	2.80	2.30	2.50	(2.60) ⁵	2.50	2.20	2.40	2.50	2.50	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40							
20	2.80	2.80	2.80	2.50	2.50	2.70	2.40	2.30	2.30	2.50	2.60	2.60	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40							
21	2.80	3.10	2.80	2.10	2.60	2.80	2.50	2.50	2.20	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30							
22	2.70	3.00	3.00	2.90	2.70	2.60	2.30	2.30	2.20	2.40	2.40	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30							
23	(3.00) ⁵	(3.00) ⁵	2.80	2.70	2.60	2.60	2.50	2.60	2.20	2.30	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20							
24	2.70 ^f	2.80	2.70	2.90	2.70	2.60	2.40	2.20	2.20	2.20	2.40	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30							
25	2.50	2.90	2.90	3.00	2.80	2.40	2.30	2.40	2.20	2.20	2.40	2.50	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40						
26	3.00	2.80	2.80	(2.80) ¹	2.10	2.50	2.40	2.50	2.20	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30						
27	(2.80) ⁵	3.20	2.90	2.50	2.20	2.20	2.20	2.20	2.40	2.20	2.20	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30						
28	2.80	(3.00) ³	2.90	2.70	2.50	2.50	2.30	2.40	2.40	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30						
29	2.9	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.					
30	3.00	3.00	2.90	2.60	2.50	2.40	2.30	2.20	2.20	2.10	2.40	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30					
31	3.10	3.20	3.00	2.70	2.50	2.30	[2.40] ⁴	2.40	2.30	(2.40) ⁴	2.30	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40					
Median	2.80	2.80	2.70	2.60	2.50	2.40	2.20	2.20	2.30	2.30	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40				
Count	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30

TABLE 54
Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.
IONOSPHERIC DATA

Form adopted June 1946

foF2 **Mc** **December, 1955**

(Month)

Washington, D.C.

Observed at **Lat 38.7°N, Long 77.1°W**

(Characteristic)	75°W												Mean Time	
	00	01	02	03	04	05	06	07	08	09	10	11		
K.B., F.M.	Institution												L.M., R.M.	
J.P., J.S.	Calculated by												J.W., E.W.	
Day	00	01	02	03	04	05	06	07	08	09	10	11	12	
1	3.7	3.8	4.1	4.3	4.2	3.7	3.6	4.7	7.9	9.7	10.3	10.5	11.2	
2	(1.50) ^F	4.1 ^F	(3.8) ^F	4.1 ^F	4.0 ^G	(3.9) ^F	(3.7) ^F	(4.5) ^G	10.5	9.0	11.0	11.2	10.9	
3	3.4	3.5 ^F	3.4	3.5 ^F	3.5 ^F	3.3 ^F	3.4 ^F	4.7 ^F	7.0	8.4	9.8	10.3	11.1	
4	(1.43) ^F	4.7	4.6	4.4	3.9	3.8	3.7	4.8	7.6	8.4	11.0	10.4	10.0	
5	3.1	3.3	3.7	3.9	3.9	3.8	3.4	4.6	7.6	8.4	9.0	9.0	9.6	
6	(1.41) ^G	(3.9) ^G	(3.8) ^G	(3.8) ^G	(4.0) ^F	(4.0) ^F	(4.2) ^F	4.1	4.3	7.2	8.5	9.7	10.3	
7	2.6	F	3.0	F	3.2	F	1.40	1.46	1.48	1.49	1.45	1.44	1.42	1.41
8	3.4	F	3.8	F	4.2	F	4.5	4.0	4.1	4.7	7.2	8.4	9.6	9.2
9	3.6	F	3.8	F	3.1	F	3.0	F	3.2	F	3.5	F	4.6	F
10	3.4	F	3.3	F	3.5	F	3.5	F	3.3	F	3.2	F	3.0	F
11	3.0	F	3.0	F	3.0	F	3.1	F	3.3	F	4.3	F	4.7	F
12	3.7	3.1	F	(3.0) ^F	2.9	F	(3.3) ^F	3.6	F	3.5	4.5	7.2	9.0	9.2
13	3.0	F	3.0	F	3.1	F	3.1	F	3.0	F	3.0	F	3.0	F
14	3.0	F	3.3	F	3.7	F	4.0	3.8	3.7	F	4.6	7.5	9.7	9.4
15	3.1	3.2	F	3.3	F	3.9	F	4.2	4.3	4.4	7.5	8.4	9.0	9.2
16	3.1	F	3.2	F	3.8	F	4.3	4.0	4.3	F	7.2	8.6	9.4	9.7
17	3.1	F	3.2	F	3.3	F	3.5	3.5	3.8	F	7.2	8.6	9.4	9.7
18	3.3	3.4	3.6	3.9	3.7	F	4.0	3.8	3.7	F	7.5	8.4	9.2	9.5
19	3.2	F	3.3	F	3.9	F	4.2	4.3	4.1	F	7.0	7.8	8.6	8.8
20	3.4	F	3.9	F	4.4	F	4.5	4.5	3.9	F	7.6	8.2	9.0	9.3
21	2.8	F	2.6	F	2.7	F	3.5	2.9	2.8	F	(3.8) ^F	6.7	8.4	9.7
22	2.6	F	3.5	F	3.9	F	4.1	4.6	4.5	F	(4.2) ^F	6.7	8.4	9.7
23	2.7	3.0	F	3.6	F	3.4	F	3.0	F	3.4	F	2.8	3.0	3.4
24	2.8	F	2.9	3.2	3.2	F	(3.9) ^F	(3.9) ^F	3.7	F	7.8	F	8.0	8.5
25	4.3	F	3.7	4.3	F	4.1	F	4.3	3.8	F	3.9	6.8	8.2	9.0
26	2.3	2.3	2.3	2.6	F	3.0	3.0	3.1	3.2	F	5.6	7.8	8.6	8.6
27	3.1	3.4	4.3	4.8	4.9	3.6	F	3.1	(3.3) ^F	6.7	8.3	H	9.0	9.1
28	2.5	2.3	2.3	2.6	3.0	3.0	2.9	3.2	4.2	F	8.0	8.8	9.2	9.1
29	C	C	C	C	C	C	C	C	C	C	C	C	C	C
30	2.9	2.8	F	3.0	3.4	3.8	3.7	3.5	3.8	6.7	8.0	7.5	9.6	10.0
31	2.3	2.6	F	3.0	3.3	3.9	3.4	2.9	3.1	6.2	7.2	7.9	9.0	9.6
Median	3.1	3.2	3.4	3.8	3.9	3.7	3.6	4.3	6.9	8.4	8.6	9.4	9.8	10.5
Count	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0

Sweep 10—Mc to 25.0 Mc in 1 sec.

Manual □ Automatic ■

cpo 03648

TABLE 55
Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

IONOSPHERIC DATA

foF2 — Mc December
(Characteristic)
Washington, D.C.
Observed at Lat 38°7'N Long 77°10'W

Day	75°W												75°W														
	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130	1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330			
1	3.6	2.9 ¹⁵	4.2	4.3	3.8	3.4	3.6	6.6	8.5 ¹⁵	9.8	9.9	10.1	10.2	10.8	11.4	11.6	12.4	10.8	8.0	4.8 ^F	(3.1) ^F	3.7 ^F	(4.6) ^F	(4.9) ^F			
2	(1.50) ^F	(4.3) ^F	3.8 ^F	4.2 ^F	3.9 ^F	(3.5) ^F	(3.2) ^F	(6.3) ^F	9.2	11.7	11.2	11.4	10.8	10.7	10.2	9.4	6.7	5.9	4.4 ^F	3.5	3.4	3.2	3.4				
3	3.3 ^F	3.4 ^F	3.5 ^F	3.5 ^F	3.2 ^F	3.2 ^F	3.6 ^F	6.5	8.4	8.8	11.2	10.3	11.4	11.3	10.7	9.2	10.0	8.4	7.0	5.6	(5.0) ^F	3.8 ^F	4.2	4.3			
4	4.4 ^F	4.6	4.4	4.0	3.9	3.8	3.8	6.7	8.6	9.2	10.5	10.2	10.2	9.7	9.4	9.2	9.0	7.0	5.2	4.5	3.8	3.4	3.2	3.1			
5	3.2 ^F	3.4 ^F	3.8 ^F	3.9	3.7	3.5 ^F	3.3	6.2	8.3	8.6	9.1	9.8	9.4	10.0	9.2	9.3	8.4	(6.8) ^S	6.4	4.6	4.2	4.4	4.5	4.4 ^F			
6	(4.3) ^F	(3.7) ^F	(3.6) ^F	(4.0) ^F	4.3 ^F	4.3 ^F	4.3 ^F	3.6	8.2	9.6	9.6	10.2	10.5	10.5	9.9	9.0	8.4	7.8 ^S	5.6 ^S	4.5 ^S	(3.7) ^S	3.1 ^F	2.8 ^F	2.8 ^F			
7	2.7 ^F	3.1 ^F	(3.6) ^F	(4.4) ^F	4.1 ^F	(3.5) ^F	6.0	1.6	8.7	9.4	9.8	(9.9) ^S	10.0	9.6	8.8	8.4	6.9	5.8	4.3	4.3	3.8 ^F	3.4 ^F	3.5 ^F	3.4 ^F			
8	3.6 ^S	4.2 ^F	4.4	4.0	3.7	4.2	8.2	9.0	9.8	9.6	9.8	9.4	9.2	8.9	8.7	8.0	6.5 ^F	5.6	(4.3) ^S	3.7 ^S	(3.5) ^F	3.6 ^F					
9	3.4 ^F	3.3 ^F	3.1	3.0	3.0 ^S	3.4 ^F	(3.5) ^F	6.2 ^F	8.7	10.0	9.2	10.0	10.0	11.0	10.8	9.7 ^S	9.0	8.0	6.9	5.5	5.2	3.9	3.5 ^F	3.6 ^F			
10	3.3 ^F	3.3 ^F	3.5 ^F	3.5 ^F	3.3 ^F	3.3 ^F	3.2 ^F	6.0	7.8	8.5 ^F	9.8	9.8	10.1	10.0	9.6	9.8	9.5 ^F	7.6	6.6	5.0	3.7 ^F	3.3 ^F	3.2 ^F	3.0 ^F			
11	3.0 ^F	2.9 ^F	2.9 ^F	3.3 ^F	3.5 ^F	3.4 ^F	3.2 ^F	6.2	8.0	9.6	9.6	9.8	10.0	10.7	9.8	9.4	9.2	7.6	6.6	5.6 ^F	4.2	4.1	4.2	3.9 ^F			
12	(3.3) ^F	(3.0) ^F	(2.9) ^F	(3.0) ^F	3.5 ^F	3.5 ^F	6.3	8.8	9.4	9.4	9.8	10.0	10.0	10.0	10.0	8.8	7.4	6.6	5.4	4.3	3.9	3.7 ^F	3.1 ^F				
13	2.9 ^F	3.0 ^F	(3.6) ^F	4.0 ^F	3.8 ^F	3.7 ^F	3.7 ^F	5.6	7.9	8.0	8.0 ^F	9.5 ^F	10.2	9.2	8.4	9.0	8.9	6.2	5.8	4.2	3.5 ^F	3.1 ^F	2.9 ^F	3.0 ^F			
14	2.9 ^F	3.2 ^F	3.2 ^F	3.9	4.0	3.8	3.7	6.2	8.5 ^F	9.4	8.0	9.0	8.8	8.6	9.2 ^S	9.2 ^S	9.2	8.6	6.6	5.2	4.3	3.6	3.2	3.1	3.0		
15	3.2 ^F	3.3 ^F	3.7 ^F	4.0	4.3	4.4	4.1	5.7	7.6	7.8	10.2	8.7	9.4	7.9	8.8	8.8	8.0	6.6	(6.0) ^S	4.3	3.6	3.2 ^F	2.9 ^F				
16	3.0 ^F	3.3 ^F	3.8 ^F	4.4	3.8 ^F	4.4	3.8 ^F	6.0	7.7	9.0	9.0	11.0	9.4	9.5	9.0	9.2	9.4	7.2 ^F	7.0	5.0	4.4	3.2 ^F	3.1 ^F	3.2 ^F			
17	3.2	3.1	3.3	3.5 ^F	3.3	3.2 ^F	3.0	5.7	7.2	9.0	8.6	9.0	9.0	9.3	9.8	9.0	7.8	5.8	4.5	4.0	2.9 ^F	3.0	3.1				
18	3.2	3.5 ^F	3.9	3.8 ^F	3.5 ^F	3.2	3.6	5.3 ^F	8.0	7.7	8.7	9.0	9.9	9.3	8.6	8.4	8.2	6.7	6.0	4.7	4.5	3.4 ^F	2.9 ^F				
19	3.2	3.2 ^F	3.5 ^F	3.5 ^F	3.3 ^F	3.0	5.6	7.4	7.8	9.7	9.6	10.5 ^F	10.4	9.6	10.1	9.2	6.6	4.6	4.0	2.9 ^F	2.6 ^F	2.9 ^F					
20	3.8 ^F	(3.9) ^F	4.5 ^F	4.0 ^F	4.2	3.7 ^F	3.7 ^F	5.1	7.2	7.9	9.0	10.0	9.7	9.0	8.9	7.6	7.0	6.6	4.7	3.5 ^F	3.4 ^F	(3.6) ^F	3.4 ^F				
21	2.7 ^F	2.7 ^F	3.5 ^F	3.6 ^F	(2.8) ^F	(3.4) ^F	(3.3) ^F	(5.4) ^S	7.4	(7.8) ^S	9.2	10.3	10.6	9.6 ^S	8.8	7.8	6.4	6.6 ^F	5.0	4.2	3.2 ^F	2.9 ^F					
22	2.6 ^F	3.6 ^F	4.0	4.0 ^F	(4.2) ^F	4.6 ^F	4.3 ^F	7.1	(7.6) ^F	8.6	10.2	8.2	(9.2) ^F	(8.8) ^F	7.4	(5.8) ^F	5.3	(4.6) ^F	3.6 ^F	2.7 ^F	(2.2) ^F	2.6 ^F					
23	3.1	(3.5) ^F	3.7 ^F	(3.6) ^F	(4.0) ^F	(4.0) ^F	(3.7) ^F	4.4	7.3	8.4	8.4	8.6	8.0	7.8	7.2	6.6	4.8	4.6	4.0	3.1	2.5 ^F	2.6					
24	2.8 ^F	2.8	3.0	3.4	4.0 ^F	3.7 ^F	3.8 ^F	5.2	7.0	7.4 ^F	7.6	7.8	7.5 ^F	8.7	9.0	8.6	8.7	7.3	6.0	5.9	4.5 ^F	3.8	2.6 ^F	2.3			
25	3.7	3.8 ^F	4.2 ^F	4.2 ^F	4.1 ^F	3.4 ^F	4.1 ^F	4.9	7.2	9.5 ^F	9.7	10.5 ^F	10.8	10.5 ^F	9.0	8.4	7.3	6.0	5.9	4.5 ^F	3.8	2.6 ^F	2.3				
26	2.3	2.3	2.3 ^F	3.0 ^F	3.0	2.5 ^F	5.0	7.0	8.7	9.1	10.2	10.0	9.8	8.7	9.0	(8.2) ^S	8.8	8.3	6.6	4.8	4.3	3.6	3.4 ^F				
27	3.1	3.8	4.5 ^F	5.1	(4.0) ^F	5.1	(4.0) ^F	3.0	2.8 ^F	4.8	8.5 ^F	8.8	9.0	9.8	9.0	(7.8) ^S	7.4	7.4	6.8	(5.4) ^S	3.4	2.9 ^F	2.7	2.5 ^F			
28	2.4	2.3	2.3	3.1	3.0	2.7	4.7	7.4	8.8	8.0	9.2	9.1	9.6	8.8	8.6	8.4	8.2	7.0	6.1	4.7	3.9	2.7	2.5 ^F				
29	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C				
30	2.7 ^F	2.9	3.3	3.5 ^F	3.6 ^F	3.8	3.4 ^F	4.9	6.5 ^F	9.6	8.6	9.4	7.8 ^F	8.4	9.2	8.2	5.0	5.0	3.6	3.0	2.8 ^F	2.8	2.4				
31	2.4	2.7	3.1	3.2	4.2	3.0	2.6	4.2	6.8	8.0	8.5 ^F	9.4	9.0	9.5 ^F	9.1	(9.3) ^S	8.2	7.2	6.0	4.4	3.7	3.3	3.6	3.9 ^F			
Median	3.2	3.3	3.5 ^F	3.7	3.8	3.5 ^F	3.6	5.7	7.8	8.6	9.0	9.7	9.9	9.6	9.2	9.0	8.6	7.2	6.1	4.8	4.0	3.4	3.2	3.1			
Count	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	31	31	31	31	30	30	30	30		

Sweep 10 Mc to 25.0 Mc in 1.35 sec.

Manual □ Autonomic ■

TABLE 56
 Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D. C.
IONOSPHERIC DATA

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, U.C.

National Bureau of Standards

Scaled by: K.B., F.M.

Institution: L.M.R.M.
Calculated by: J.P., J.S., J.W., E.W.

IONOSPHERIC DATA

h'F1 , Km December, 1955
(Characteristic) (Unit) (Month)

Observed at Washington, D.C.
Lat. 38°7'N, Long. 77°10'W

75°W Mean Time

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																									
3																									
4																									
5																									
6																									
7																									
8																									
9																									
10																									
11																									
12																									
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14																									
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24																									
25																									
26																									
27																									
28																									
29																									
30																									
31																									

Median Count

Sweep 1.0 Mc to 25.0 Mc in 135 sec.
Manual Automatic

Characteristic	fo F1	Mc (Unit)	Mc (Month)	December, 1955	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
Observed at	Washington, D. C.				1																								
Lat	38.7°N		Long	77.0°W	2																								
					3																								
					4																								
					5																								
					6																								
					7																								
					8																								
					9																								
					10																								
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					27																								
					28																								
					29																								
					30																								
					31																								
Median																													
Count																													

TABLE 57
Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D. C.
IONOSPHERIC DATA

Form Adopted June 1946

National Bureau of Standards		K.B., F.M.		L.M., R.M.	
Scaled by:		J.O., H.N.		J.W., E.W.	
Mean Time					
75°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					

Sweep I.Q. Mc to 25.0 Mc in 1.5 sec.
Manual Automatic

CPD 13544

TABLE 58
Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D. C.
IONOSPHERIC DATA

$h^{\prime}E$, Km December 1955

(Characteristic) (Month)

Observed at Washington, D. C.

Lat 38.7°N, Long. 77.1°W

75°W Mean Time

National Bureau of Standards
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																								
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
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25																								
26																								
27																								
28																								
29																								
30																								
31																								

Sweep I.O.—Mc to 25.0 Mc in 13.5 sec.
Manual □ Automatic ■
GPO 1946

TABLE 59
Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

IONOSPHERIC DATA

fo E Mc December, 1955
(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
1					<1.6	5	2.0	[2.4] ^A	2.9	(3.1) ^A	3.0	2.8
2					<1.6	5	2.0 ^H	[2.5] ^A	3.0	3.2	3.0	2.5
3					<1.6	5	(2.1) ^P	[2.5] ^A	2.9 ^H	3.1 ^H	2.9 ^H	2.5
4					<1.6	5	(2.1) ^F	A	3.1 ^H	3.2	3.1	2.1
5					<1.6	5	A	2.8	3.0	3.2	3.1	2.6
6					<1.6	5	A	(3.6) ^A	[2.8] ^A	3.1	3.2	2.5 ^H
7					<1.6	5	2.0	2.6	2.9	(3.1) ^A	3.1	2.2
8					<1.6	5	A	A	A	3.1	[3.1] ^A	(2.6) ^A
9					A	2.1	2.6	3.0	3.1	3.2	[3.1] ^A	3.0
10					A	(2.6) ^S	2.9 ^H	3.0 ^H	3.0 ^H	3.1 ^H	3.0 ^H	2.0 ^H
11					(2.6) ^P	2.6	2.9 ^H	3.2	3.2	A	A	A
12					2.0	2.7	3.0	3.1	A	A	A	A
13					A	A	2.9	3.1	3.1	[3.6] ^P	2.9	A
14					1.8	2.6	(2.7) ^A	3.0	(3.1) ^A	3.1 ^H	A	A
15					A	(2.4) ^H	2.8 ^H	3.0	3.1	3.0 ^H	2.8	A
16					2.1 ^H	2.5	(2.8) ^A	[3.0] ^A	(3.1) ^A	3.1	2.9 ^H	2.6
17					1.8	2.5	(2.7) ^P	3.0	3.1	3.1	[2.8] ^H	2.4
18					<1.6	5	2.5	A	A	3.1 ^H	3.0	(2.5) ^A
19					1.9	2.5 ^H	(2.8) ^A	[2.9] ^A	A	A	(2.8) ^A	2.6
20					1.9 ^H	(2.5) ^A	A	A	3.0	3.0	2.7	2.2
21					A	2.4 ^H	2.7	2.9	(3.1) ^P	2.9	2.6	2.2 ^H
22					A	2.4	2.7	2.9	3.0	(2.8) ^P	(2.7) ^H	2.6
23					A	2.5	2.8	3.0 ^F	3.0 ^F	3.0	A	A
24					A	1.7 ^H	A	A	3.0 ^H	(2.9) ^A	2.6	A
25					<1.6	5	2.4	[2.6] ^A	2.9	2.9	2.5	A
26					1.7	2.3 ^H	2.7 ^H	2.9	(3.0) ^A	3.0 ^H	(2.8) ^A	R
27					A	(2.4) ^A	2.8	(2.9) ^A	(3.0) ^R	3.0	2.9 ^H	(2.6) ^A
28					A	A	A	A	A	A	2.9	A
29					C	C	C	C	3.1	(3.0) ^A	A	A
30					A	A	A	A	3.2	2.9	2.5	2.4
31					A	2.4	(2.7) ^H	A	A	3.1	(3.0) ^P	[2.5] ^A
Median					<1.6	2.0	2.5	2.8	3.0	3.1	3.1	2.5
Count					8	17	24	23	24	26	27	21

Form adopted June 1946
Sweep I.Q. Mc 1025.0 Mc in 13.5 sec.
Manual □ Automatic □

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

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

TABLE 60
Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Mc, Km December 1955
(Characteristic)

(Unit)

Observed at Washington, D.C.
Lat 38°7'N Long 77°1'W

IONOSPHERIC DATA

75°W Mean Time

National Bureau of Standards
(Institution)

Scaled by K.B., F.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	3.8	1.7	5	1.6	5	1.6	5	1.6	5	1.6	5	1.7	2.0	3.7	1.2	1.0	2.2	1.0	6	6	6	1.6	5	1.7	2	1.6	5	1.6	5		
2	4.9	1.6	5	1.4	5	1.3	5	1.3	5	1.6	5	1.6	5	1.8	6	6	6	6	6	6	6	6	6	6	6	5	1.6	5	1.6	5	
3	4.8	1.6	5	1.6	5	1.7	5	1.6	5	1.6	5	1.7	2.0	3.8	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
4	2.8	1.1	0	1.7	5	1.6	5	1.6	5	1.6	5	1.7	2.0	3.0	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
5	4.9	1.0	0	1.8	100	1.8	100	1.7	5	1.6	5	1.7	2.2	3.7	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
6	4.6	1.6	5	1.3	5	1.3	5	1.5	5	1.6	5	1.6	5	1.6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
7	4.6	1.6	5	1.6	5	1.6	5	1.6	5	1.6	5	1.6	5	1.6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
8	4.6	1.6	5	1.6	5	1.6	5	1.6	5	1.6	5	1.6	5	1.6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
9	4.6	1.6	5	1.6	5	1.6	5	1.6	5	1.6	5	1.6	5	1.6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
10	4.6	1.6	5	1.6	5	1.3	5	1.3	5	1.6	5	1.6	5	1.6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
11	4.6	1.6	5	3.0	4	3.0	4	3.0	4	3.0	4	3.0	4	3.0	4	3.0	4	3.0	4	3.0	4	3.0	4	3.0	4	3.0	4	3.0	4	3.0	
12	4.6	1.6	5	1.6	5	1.6	5	1.6	5	1.6	5	1.6	5	1.6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
13	4.6	1.6	5	1.6	5	1.3	5	1.3	5	1.6	5	1.6	5	1.6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
14	4.6	1.6	5	1.6	5	1.3	5	1.3	5	1.6	5	1.6	5	1.6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
15	4.6	1.6	5	1.6	5	1.6	5	1.6	5	1.6	5	1.6	5	1.6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
16	4.6	1.6	5	1.6	5	1.6	5	1.6	5	1.6	5	1.6	5	1.6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
17	4.6	1.6	5	3.2	2.0	1.6	5	1.6	5	1.6	5	1.6	5	1.6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
18	3.0	1.6	5	1.6	5	1.6	5	1.6	5	1.6	5	1.6	5	1.6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
19	3.0	1.6	5	2.8	4	3.0	4	3.0	4	3.0	4	3.0	4	3.0	4	3.0	4	3.0	4	3.0	4	3.0	4	3.0	4	3.0	4	3.0	4	3.0	
20	4.6	1.6	5	1.6	5	3.0	4	1.3	5	1.6	5	1.6	5	1.6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
21	4.3	1.6	5	4.6	4	4.6	4	3.0	4	2.2	1.6	5	1.6	5	1.6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
22	4.6	1.6	5	5.2	2.2	1.6	5	1.3	5	1.6	5	1.6	5	1.6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
23	4.6	1.6	5	1.6	5	1.6	5	1.6	5	1.6	5	1.6	5	1.6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
24	3.0	1.6	5	2.6	2.0	1.6	5	1.6	5	1.6	5	1.6	5	1.6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
25	4.6	1.6	5	1.6	5	1.6	5	1.6	5	1.6	5	1.6	5	1.6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
26	4.6	1.6	5	1.2	5	4.3	4	1.6	5	1.6	5	1.6	5	1.6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
27	4.6	1.6	5	1.5	5	1.6	5	1.6	5	1.6	5	1.6	5	1.6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
28	3.0	1.6	5	2.6	2.0	1.6	5	1.6	5	1.6	5	1.6	5	1.6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
29	4.6	1.6	5	1.6	5	1.6	5	1.6	5	1.6	5	1.6	5	1.6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
30	4.6	1.6	5	1.6	5	1.6	5	1.6	5	1.6	5	1.6	5	1.6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
31	4.6	1.6	5	1.6	5	1.6	5	1.6	5	1.6	5	1.6	5	1.6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Median	4.6	1.6	5	1.6	5	1.6	5	1.6	5	1.6	5	1.6	5	1.6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Count	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	

Swep 10 Mc to 25.0 Mc in 13.5 sec.

Manual □ Automatic ■

TABLE 6
Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.
IONOSPHERIC DATA

(M1500) F2, (Unit)		December, 1955		75°W Mean Time																		
(Characteristic)	(Month)	Observed at Washington, D.C.	Lat 38.7°N, Long 77.1°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	2.0	1.9	2.0	2.1	2.0	1.9	2.1	2.4	2.4	2.3	2.2	2.1	2.0	2.0	2.1	2.1	2.3	2.3	F J	1.8 5	1.9 1/	
2	(2.1) ^P	2.0 F	(1.9) ^F	1.9 F	2.0 ^S	(2.1) ^F	F	(2.3) ^S	2.4	2.2	2.2	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.0	1.9	
3	2.1	2.0 F	2.0	2.1 F	2.1 F	2.0 F	2.0 F	2.3 F	2.4	2.2	2.3	2.1	2.2	2.1	2.2	2.1	2.2	2.1	2.1	(2.2) ^S	2.2 F	(2.0) ^F
4	(1.9) ^S	2.0	2.1	2.2	2.0	2.0	2.0	2.2	2.3	2.4	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	(2.1) ^S	2.1	2.1
5	1.9	1.9	2.0	2.1	2.0	2.0	2.0	2.2	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.0	1.9	1.9
6	(2.0) ^S	(1.8) ^S	(1.8) ^F	(1.8) ^S	(1.8) ^F	(1.9) ^S	(1.9) ^F	(2.0) ^F	2.1	2.1	2.2	2.2	2.3	2.1	2.1	2.3	2.1	2.2	2.1	2.1	2.1	1.9
7	1.9 F	1.8 F	J F	(2.6) ^S	(2.3) ^S	2.0 F	(2.2) ^S	2.4	(2.4) ^S	2.4	2.2	2.2	2.2	2.2	2.2	2.1	2.3	2.1	2.2	2.1	2.1	2.0
8	2.0 F	1.9 F	2.0 F	2.1	2.1 F	2.0 F	2.1	2.2	2.4	2.4	2.2	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	(2.3) ^S	2.0 F
9	2.0 F	2.0 F	2.0	1.9	1.9 F	1.9 F	(2.1) ^F	2.3 F	2.4	2.3	2.1	2.2	2.1	2.2	2.2	2.0	2.0	2.1	2.2	2.2	2.2	2.1 F
10	2.0 F	1.9 F	2.0 F	2.1 F	2.2 F	2.2 F	2.1 F	2.2	2.4	2.4	2.3	2.3	2.2	2.1	2.2	2.2	2.2	2.2	2.2	2.3	2.2 F	2.0 F
11	2.0 F	2.0 F	1.9 F	1.9 F	2.0 F	2.1 F	2.1 F	2.0	2.5	2.4	2.3	2.3	2.1	2.2	2.2	2.3	2.1	2.3	2.1	(2.2) ^S	2.1	2.0 F
12	2.2	1.9 F	(2.0) ^S	(2.0) ^F	(2.0) ^F	2.1 F	2.0	2.2	2.4	2.4	2.2	2.3	2.1	2.2	2.2	2.2	2.2	2.2	2.3	2.3	(2.3) ^S	2.0 F
13	2.1 F	2.0 F	2.0 F	2.0 F	2.0 F	2.0 F	2.2 F	2.2 F	2.4 F	2.4	2.4	2.3	2.3	2.2	2.3	2.2	2.3	2.2	2.2	2.2	2.2	1.9 F
14	2.1	2.0 F	2.1 F	2.1 F	2.1	2.1	2.2 F	2.2	2.5	2.4	2.5	2.4	2.4	(2.2) ^F	2.3	2.3	2.4	2.2	2.2	2.2	2.2	2.0
15	2.0	2.0 F	2.0 F	2.0 F	2.0 F	2.1	2.0 F	2.2	2.4	2.4	2.1	2.5	2.3	2.3	2.4	2.2	2.3	2.3	2.3	2.3	(2.2) ^S	2.0 F
16	1.8 F	2.0 F	2.0 F	2.0 F	2.0 F	2.1	2.0 F	2.1	2.2 F	2.2	2.4	2.6	2.3	2.1	2.2	2.2	2.3	2.2	2.1	2.2	2.1 F	
17	2.0 F	2.0	1.9	2.0	2.0	2.0	2.1 F	2.2	2.2	2.4	2.4	2.3	2.2	(2.1) _H	2.3	2.2	2.3	2.2	2.2	2.3	2.3 F	1.9 F
18	2.0	2.0	1.9	2.2	2.2	2.2	2.1 F	2.0 F	2.1 F	2.2	2.5	2.3 Y	2.2	2.4	2.3 H	2.5	2.3	2.3	2.3	2.3	2.3	2.0
19	2.0 F	(2.0) ^F	2.0 F	2.1 F	2.1 F	2.1 F	(2.0) ^F	2.0 F	2.1	2.5	2.1	2.4	2.2	2.4	2.2	2.3	2.3	2.3	2.3	2.3	(2.3) ^S	2.0 F
20	1.9 F	2.0 F	1.9	2.2	2.2 F	2.2 F	2.1 F	2.1 F	2.4	2.4	2.2 H	2.2	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2 F
21	2.0 F	1.9 F	2.0 F	2.0 F	2.1 F	(2.0) ^F	J S	J S	2.4	2.3	2.0	2.3	2.2	2.3	2.4	2.2	(2.3) ^S	2.1 S	2.3	2.2	(2.2) ^S	2.2 F
22	2.1 F	1.8 F	1.9 F	1.9 F	2.1	2.0	2.1 F	2.2	2.3	2.3	2.5	2.3	2.3	2.2	2.4	2.2	2.4	2.4	2.3 F	2.3	2.0 F	
23	1.9	1.9 F	1.9 F	(2.0) ^F	(2.0) ^F	(2.0) ^F	(2.0) ^F	2.2 F	2.5	2.3	2.3 S	2.4	2.4	2.3	(2.3) ^F	2.3	2.3	2.2	2.3	2.3	2.1	2.1 F
24	2.1 F	2.1	2.0	2.0	2.0	J S	J S	2.2 F	2.3 F	2.4	2.6	2.3	2.4	2.2	2.3	2.3	2.3	2.2	2.2	2.2	2.0 F	
25	2.2 F	1.9 F	2.0 F	2.0 F	2.1 F	(2.0) ^F	1.9 F	2.3 F	2.3	2.3	2.3	2.5	2.4	2.4	2.2	2.2	2.2	2.2	2.2	2.3	2.2 F	
26	2.0	2.0	2.0 F	2.0	2.2	2.3	2.2 F	2.4	2.3	2.3	2.3	2.4	2.3	2.4	(2.3) ^S	2.3	2.3	2.2	2.4	(2.4) ^S	2.1 F	(2.2) ^F
27	1.9	1.8	1.8	2.0	2.0	2.3	2.2 F	2.1	2.4	2.4	2.4	2.4	2.4	(2.4) _H	2.3	2.3	2.2	2.2	2.2	2.3	2.0 F	
28	2.0	1.9	2.0	2.0	2.1	2.1	2.2	2.3	2.4	2.4	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1 F	
29	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
30	1.9	1.9 F	2.1	2.1	2.1	2.0	2.0	2.4	2.4	2.4	2.2	2.2	2.3	2.3	2.5	2.3	2.4	2.4	2.2	2.3 F	2.0	
31	1.9	2.3 F	1.9	2.1	2.1	2.2	2.7 F	2.0	2.2	2.4	2.3	2.5	2.1	2.3	(2.3) ^S	2.2	2.2	2.0	2.0	1.9	1.9	
Median	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.2	2.4	2.4	2.3	2.3	2.2	2.2	2.2	2.3	2.2	2.2	2.2	2.1	2.0	
Count	30	30	30	29	29	29	28	29	30	30	30	30	30	30	30	31	31	31	30	30	30	

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

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

(M3000) F₂
(Characteristic)
Observed at Lat. 38°7' N., Long. 77°10' W.

December, 1955

(Month)

D. C.

75°W Mean Time
75°W Mean Time

National Bureau of Standards

Scaled by: K.B., F.M., J.S., 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	3.0	2.9	2.8	2.9	3.1	3.0	2.9	3.1	3.2	3.5	3.4	3.2	3.1	3.0	3.0	3.1	3.2	3.3	3.3	3.3	3.3	3.2	3.2	2.9	
2	(3.1) ^P	3.0	F	(2.8) ^F	2.9	F	3.0	F	(3.1) ^F	F	(3.3) ^S	3.3	3.2	3.1	3.2	3.4	3.2	3.2	3.2	3.2	3.2	3.1	3.0	2.9	
3	3.1	3.0	F	3.0	3.1	F	3.0	F	3.0	F	3.3	3.4	3.1	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.1	(3.0) ^S	2.9	
4	(2.9) ^S	3.0	3.1	3.2	3.2	3.0	3.0	3.0	3.2	3.3	3.5	3.3	3.3	3.2	3.2	3.4	3.1	3.1	3.1	3.1	3.2	3.1	3.1	2.9	
5	2.9	2.9	3.0	3.0	3.0	3.0	3.0	3.0	3.2	3.3	3.4	3.3	3.4	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.1	3.0	2.9	2.9	
6	(3.0) ^S	(2.9) ^F	(2.8) ^S	(2.9) ^F	(2.9) ^S																				
7	2.8	2.7	2.8	2.8	F	J	F	(3.2) ^S	(3.3) ^F	(3.2) ^S	(3.3) ^F	(3.5) ^S	(3.5) ^F	(3.4) ^S	(3.4) ^F	(3.4) ^S	(3.4) ^F	(3.4) ^S	(3.4) ^F						
8	3.0	F	2.9	F	3.0	F	3.1	3.1	F	3.0	F	3.1	3.3	3.5	3.2	3.4	3.2	3.3	3.2	3.3	3.2	3.2	3.1	3.1	2.9
9	3.0	F	3.0	F	3.0	F	2.9	2.8	F	2.8	F	(3.1) ^S	(3.3) ^F	(3.3) ^S											
10	3.0	F	2.9	F	3.0	F	3.1	F	3.2	F	3.2	F	3.1	F	3.2	F	3.3	F	3.3	F	3.2	F	3.2	3.2	3.0
11	3.0	F	3.0	F	2.9	F	3.0	F	3.1	F	3.0	F	3.1	F	3.0	F	3.1	F	3.1	F	3.1	F	3.1	3.1	3.0
12	3.3	2.9	F	(3.1) ^S	3.0	F	(3.0) ^F	(3.2) ^S	(3.2) ^F	(3.2) ^S	(3.2) ^F	(3.3) ^S	(3.3) ^F	(3.3) ^S											
13	3.1	F	3.0	F	3.0	F	3.0	F	3.0	F	3.2	F	3.2	F	3.5	F	3.4	F	3.4	F	3.4	F	3.4	3.4	3.2
14	3.1	3.0	F	3.1	F	3.1	F	3.1	F	3.2	F	3.3	F	3.4	F	3.5	F	3.4	F	3.5	F	3.4	3.4	3.2	
15	3.0	3.0	F	3.0	F	3.0	F	3.1	F	3.1	F	3.0	F	3.0	F	3.1	F	3.1	F	3.1	F	3.1	3.1	3.0	
16	2.8	F	3.0	F	3.0	F	3.1	F	3.0	F	3.2	F	3.3	F	3.5	F	3.3	F	3.3	F	3.3	F	3.3	3.2	3.2
17	3.0	F	2.9	3.0	3.0	3.0	3.0	3.1	F	3.1	F	3.2	F	3.2	F	3.5	F	3.3	F	3.4	F	3.3	3.3	3.2	
18	3.0	3.0	2.9	3.2	3.2	3.2	3.2	3.1	F	3.1	F	3.2	F	3.3	F	3.6	F	3.5	F	3.4	F	3.3	3.2	3.0	
19	3.0	F	(3.0) ^F	3.0	F	3.1	F	(3.0) ^S	3.1	F	3.0	F	3.3	F	3.6	F	3.4	F	3.5	F	3.4	F	3.3	3.2	3.0
20	2.9	F	3.0	F	2.9	3.2	3.2	F	3.2	F	3.0	F	3.1	F	3.4	F	3.2	F	3.3	F	3.2	F	3.2	3.2	3.0
21	3.0	F	2.9	F	3.0	F	3.0	F	3.1	(3.0) ^F	J	S	J	S	3.5	F	3.3	F	3.2	F	3.3	F	3.2	3.2	3.0
22	3.1	F	2.8	F	2.9	F	3.1	F	3.1	F	3.2	F	3.4	F	3.4	F	3.6	F	3.4	F	3.5	F	3.4	3.4	3.2
23	2.8	2.9	F	2.9	F	(3.0) ^F	(3.0) ^F	(3.0) ^F	3.3	F	3.6	3.4	3.5	3.4	3.3	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	
24	3.1	F	3.1	3.0	3.0	3.0	3.0	3.0	J	S	J	S	3.4	3.6	F	3.7	3.4	3.5	3.3	3.4	3.4	3.4	3.4	3.4	
25	3.2	F	2.9	F	2.9	F	3.0	F	2.9	F	3.4	F	3.3	3.4	3.5	3.4	3.2	3.3	3.3	3.2	3.3	3.2	3.4	3.2	
26	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.2	3.3	3.3	3.5	3.4	3.3	3.3	3.4	3.3	3.3	3.4	3.2	3.2	3.1	3.1	3.0	
27	2.8	2.7	2.7	3.0	3.4	3.3	F	(3.2) ^F	3.1	F	3.3	3.5	3.5	3.4	3.5	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	
28	3.0	2.9	3.0	3.0	3.0	3.1	3.1	3.1	3.2	3.3	3.5	3.4	3.2	3.2	3.2	3.3	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	
29	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C		
30	2.8	2.8	F	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.0	3.5	3.4	3.4	3.2	(3.2) ^F	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	
31	2.9	3.4	F	2.9	3.2	3.3	3.6	F	3.1	3.3	3.5	3.6	3.1	3.3	3.1	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	
Median	3.0	3.0	3.0	3.0	3.1	3.1	3.1	3.1	3.1	3.1	3.3	3.4	3.4	3.4	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	
Count	30	30	30	29	29	29	28	28	29	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	

Sweep 1.0 Mc to 2.0 Mc in 1.5 sec.

Manual □ Automatic ■

TABLE 63
Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.
IONOSPHERIC DATA

(M3000) FI		December		1955		National Bureau of Standards												
(Characteristic)	(Unit)	(Month)	(Year)			Scored by: K.B., F.M.		Institution: L.M., R.M.										
Observed at Washington, D.C.		Lat 38.7°N, Long 77.1°W				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
1																		
2																		
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		
11																		
12																		
13																		
14																		
15																		
16																		
17																		
18																		
19																		
20																		
21																		
22																		
23																		
24																		
25																		
26																		
27																		
28																		
29																		
30																		
31																		
Median																		
Count																		

Form adopted June 1946
CPO B 11048

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

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

(M1500) E, December, 1955

(Month)

D.C.

Observed at Lat. 38.7°N, Long 77.1°W

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

Day	75°W Mean Time											
	00	01	02	03	04	05	06	07	08	09	10	11
1							S	4.2 ^H	θ	4.4	(4.1) ^A	(4.2) ^A
2							S	4.2 ^H	θ	4.3	4.3	4.4
3							S	(4.3) ^P	θ	4.3	4.3	4.0
4							S	(4.3) ^F	θ	4.4	4.5 ^H	4.4
5							S	θ	4.2	4.3	4.3	4.4
6							S	θ	(4.3) ^A	θ	4.3	4.3 ^H
7							S	4.3	4.4	(4.3) ^A	4.4 ^H	4.0
8							S	θ	θ	4.4	(4.2) ^A	4.4
9							A	4.4	4.3	4.4	4.4 ^H	4.3 ^H
10							A	4.4	4.3	4.4	θ	θ
11							A	(4.4) ^P	4.4 ^H	4.3	4.4 ^H	4.4 ^H
12							A	4.4	4.4	4.3	4.3	4.0
13							A	θ	4.2	4.3	4.4	4.4 ^H
14							A	4.3	(4.4) ^A	4.4	(4.4) ^A	4.4 ^H
15							A	(4.3) ^H	4.4 ^H	4.3	4.4 ^H	4.4 ^H
16							A	4.1 ^H	4.3	(4.5) ^A	(4.3) ^A	4.3
17							A	4.2	4.3	(4.4) ^A	4.4	4.4 ^H
18							S	4.3	θ	θ	4.2 ^H	4.2 ^H
19							A	4.3 ^H	(4.3) ^A	(4.4) ^A	(4.4) ^A	4.4 ^H
20							A	4.3 ^H	θ	θ	4.3	4.2
21							A	4.3 ^H	4.4	4.4	(4.5) ^P	R
22							A	4.4	4.4	4.4	(4.4) ^P	(4.4) ^H
23							A	4.3	4.4	4.4 ^F	4.3 ^F	4.3
24							S	θ	θ	θ	θ	θ
25							S	4.2	θ	4.2	4.4	4.3
26							A	4.2 ^H	4.2 ^H	(4.3) ^A	4.3 ^A	R
27							A	(4.3) ^A	4.4	(4.3) ^A	4.3 ^A	R
28							A	θ	θ	θ	4.3	R
29							C	C	C	(4.3) ^A	θ	R
30							A	θ	θ	θ	4.4	4.3 ^H
31							A	4.4	(4.3) ^H	θ	4.3	(4.3) ^H
Median	-	4.3	4.3	4.4	4.4	4.4	4.3	4.3	4.4	4.3	4.4	4.3
Count	o	W	21	21	21	23	24	24	24	25	20	W

Sweep 10 Mc to 250 Mc in 135 sec.
Manual Automatic

GRAPHS OF IONOSPHERIC DATA

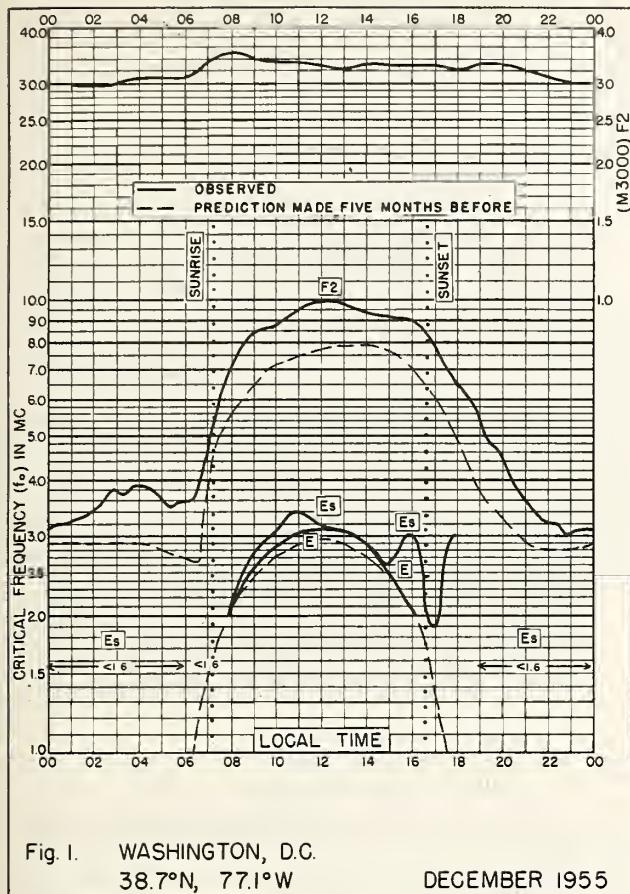


Fig. 1. WASHINGTON, D.C.
38.7°N, 77.1°W DECEMBER 1955

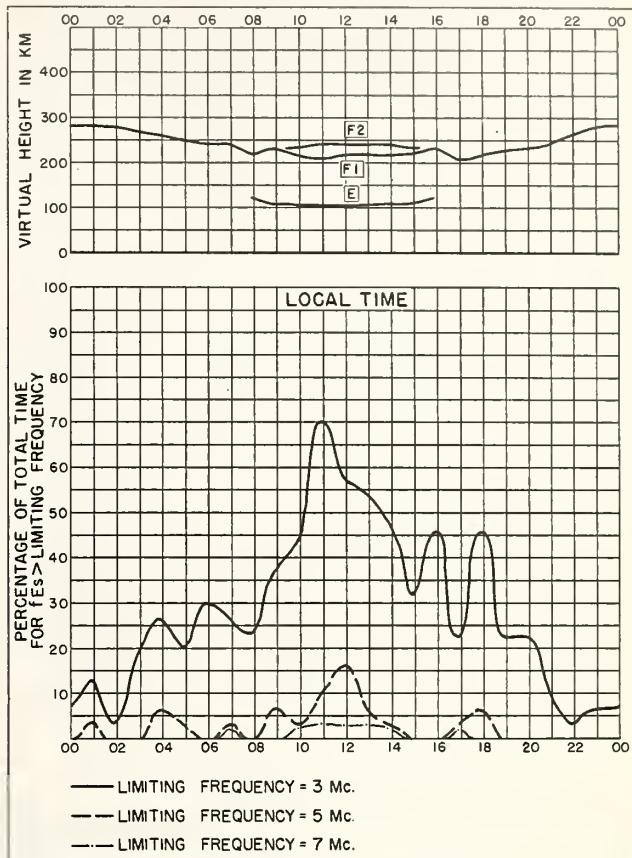


Fig. 2. WASHINGTON, D.C. DECEMBER 1955

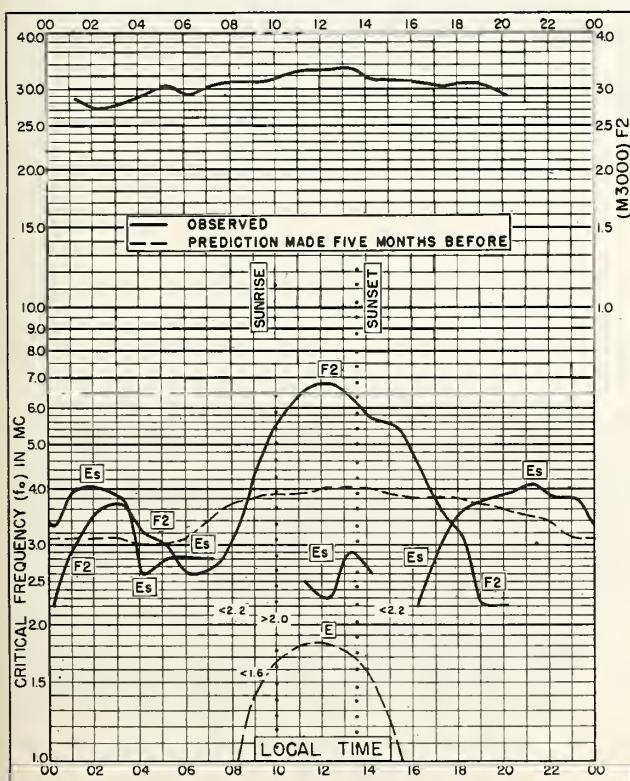


Fig. 3. TROMSØ, NORWAY
69.7°N 19.0°E NOVEMBER 1955

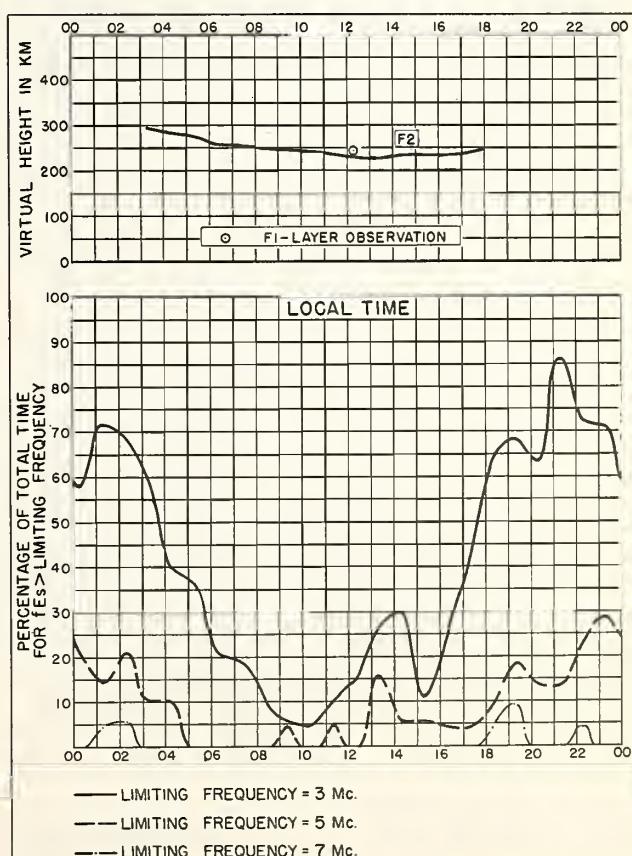


Fig. 4. TROMSØ, NORWAY NOVEMBER 1955

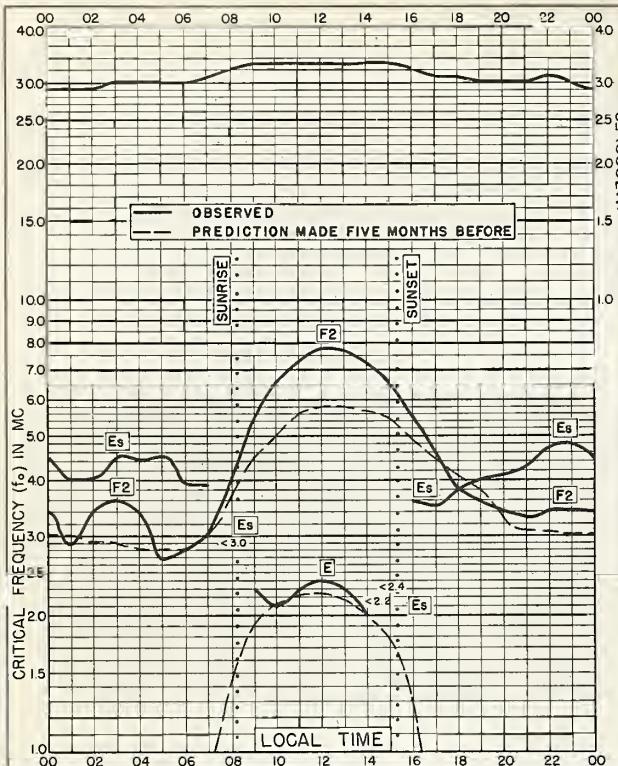


Fig. 5. NARSARSSUAK, GREENLAND
61.2°N, 45.4°W NOVEMBER 1955

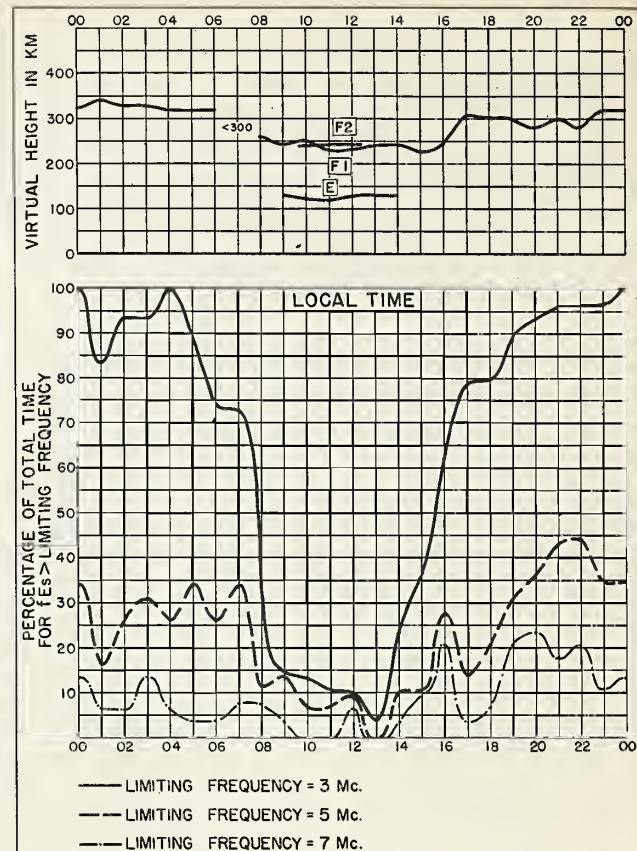


Fig. 6. NARSARSSUAK, GREENLAND NOVEMBER 1955

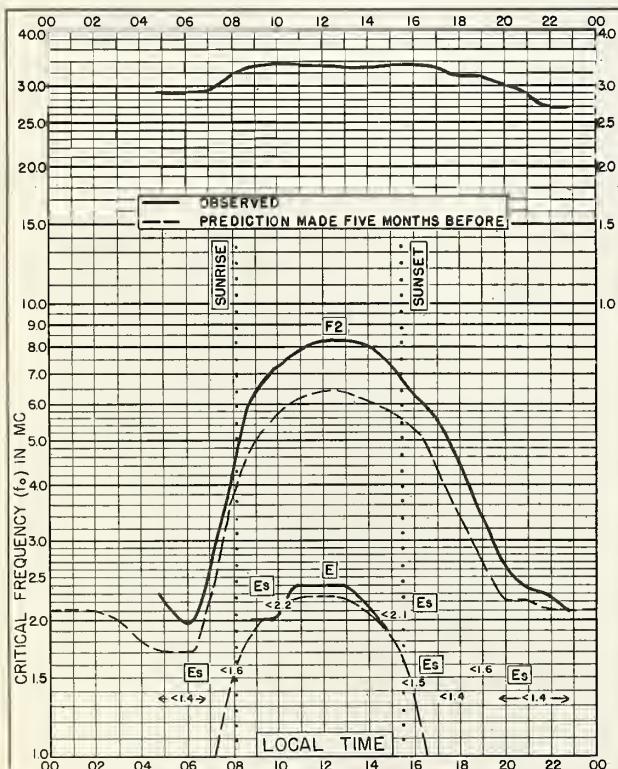


Fig. 7. OSLO, NORWAY
60.0°N, 11.1°E. NOVEMBER 1955

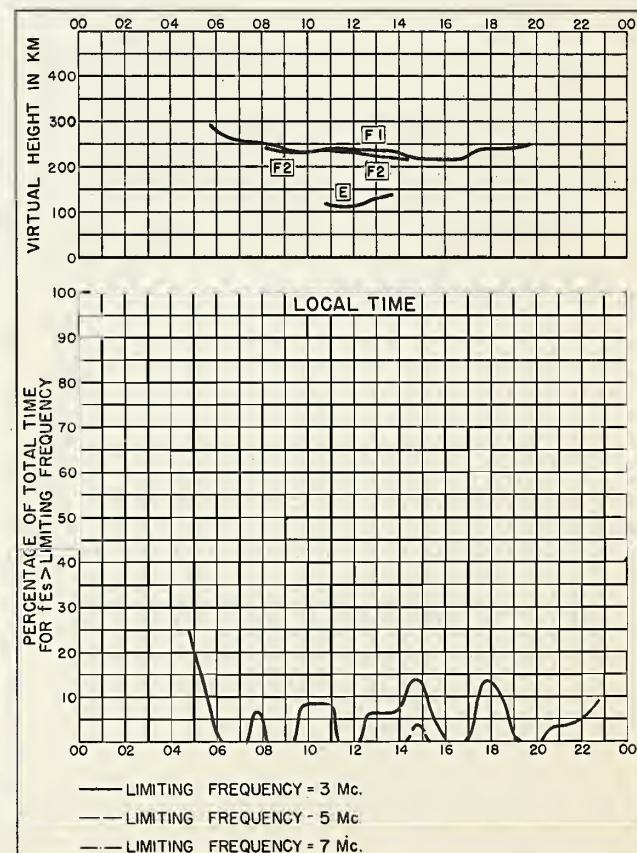
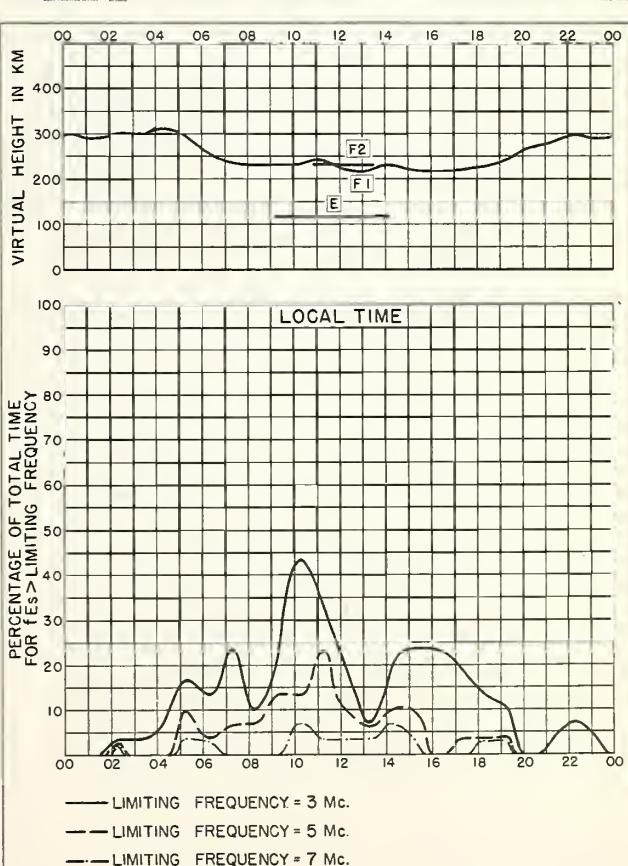
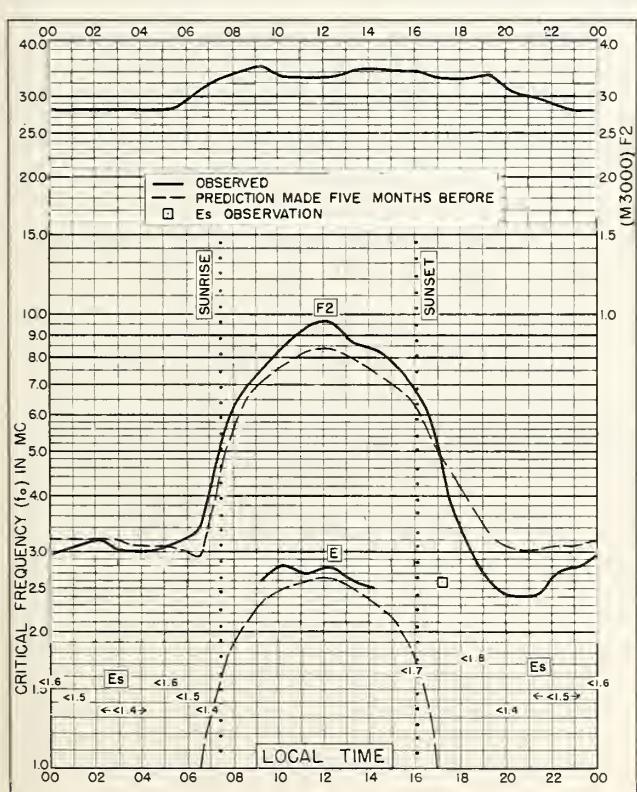
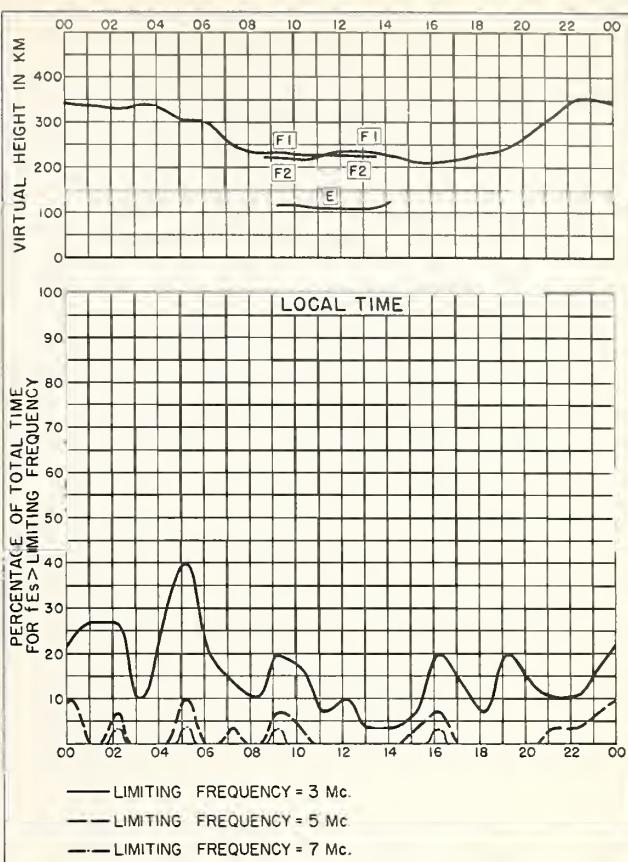
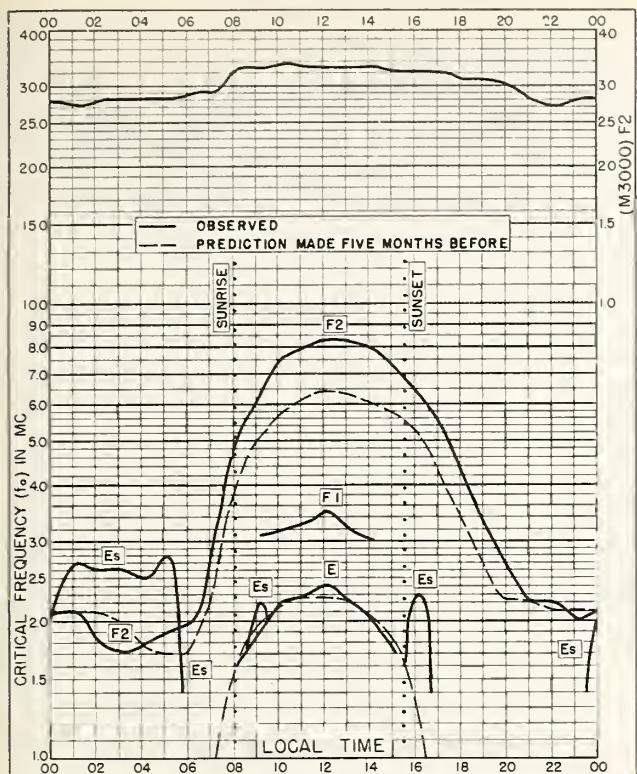


Fig. 8. OSLO, NORWAY NOVEMBER, 1955



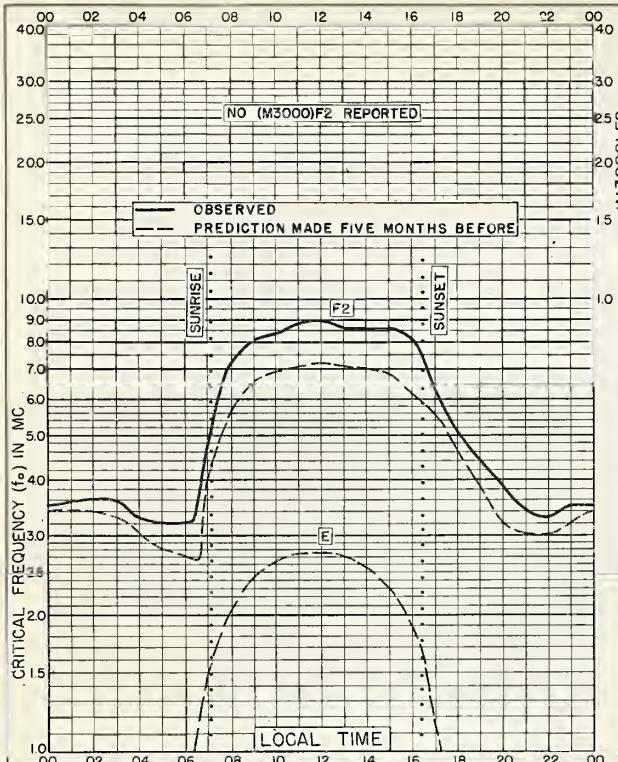


Fig. 13. GRAZ, AUSTRIA
47.1°N, 15.5°E NOVEMBER 1955

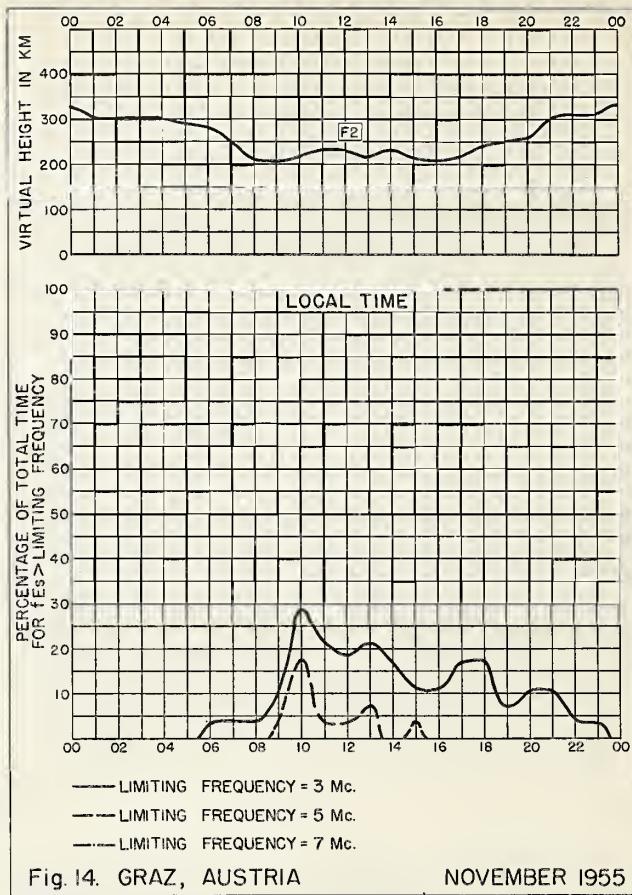


Fig. 14. GRAZ, AUSTRIA NOVEMBER 1955

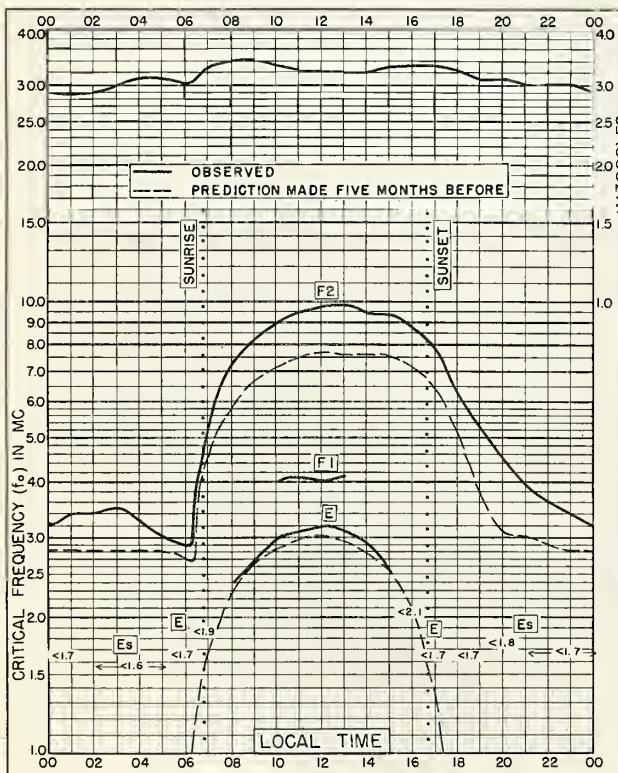


Fig. 15. FT. MONMOUTH, NEW JERSEY
40.3°N, 74.1°W NOVEMBER 1955

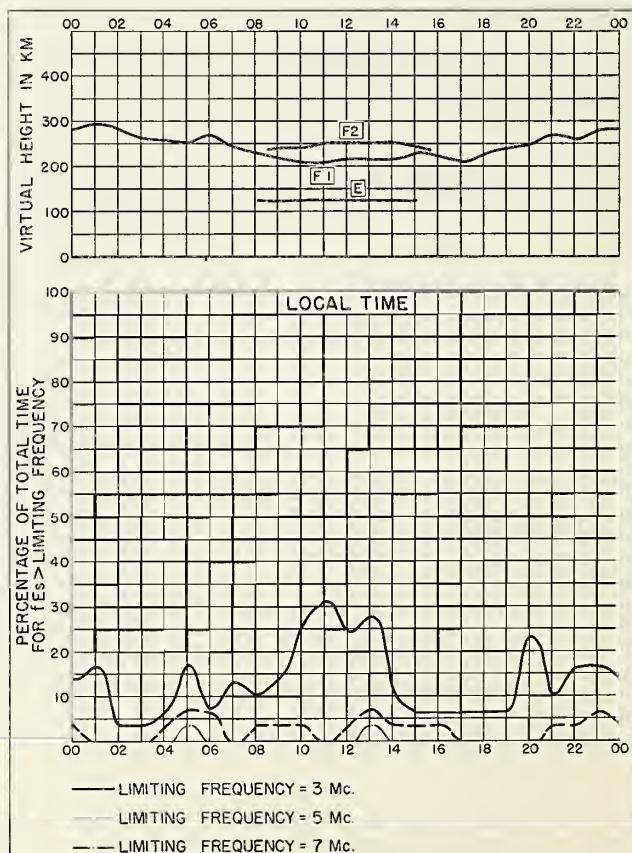
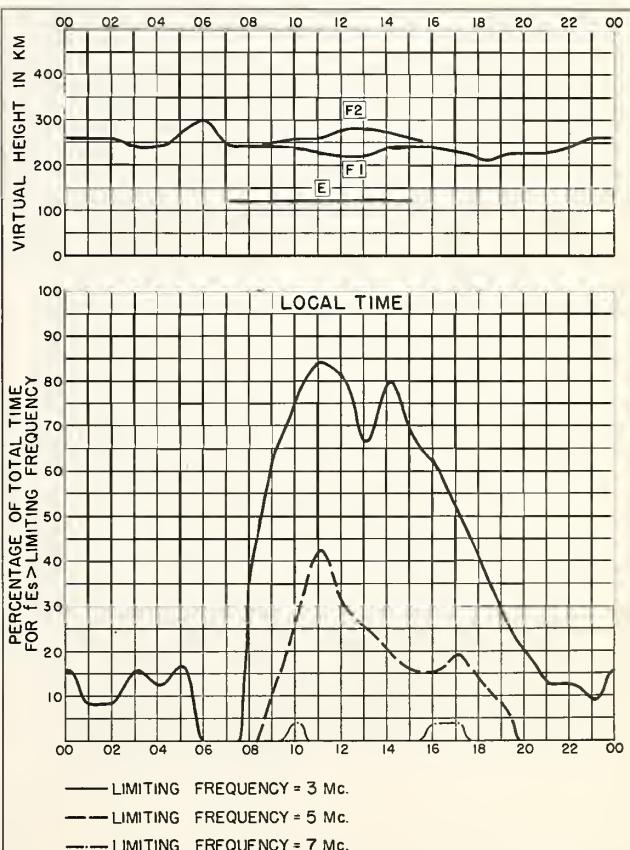
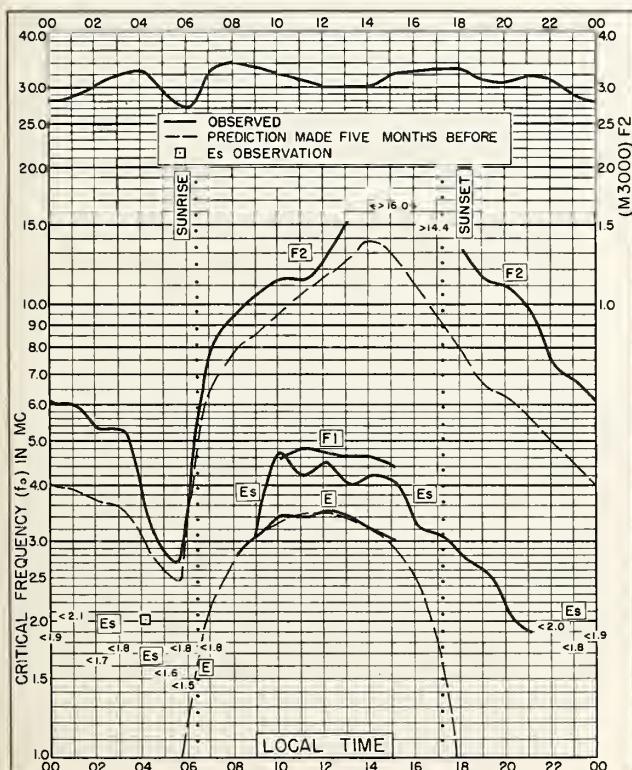
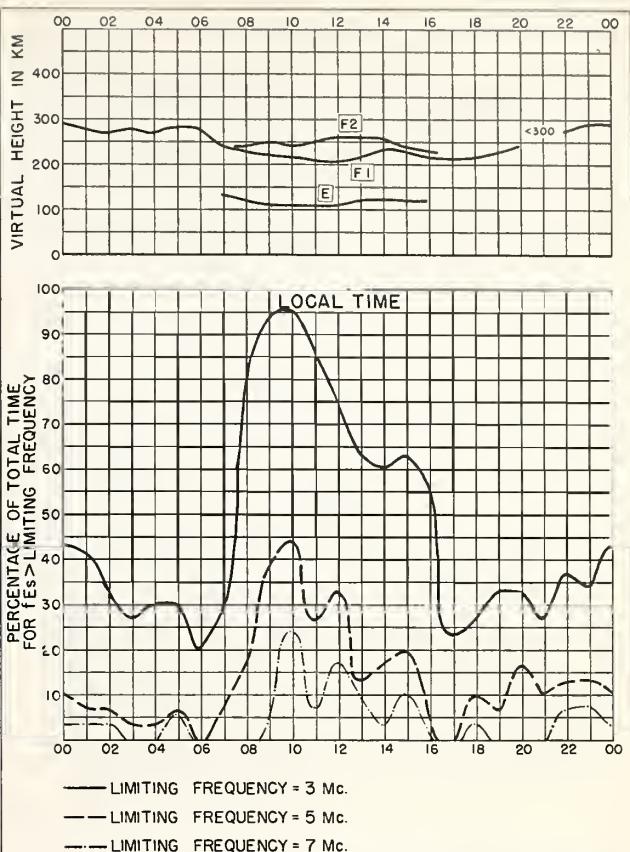
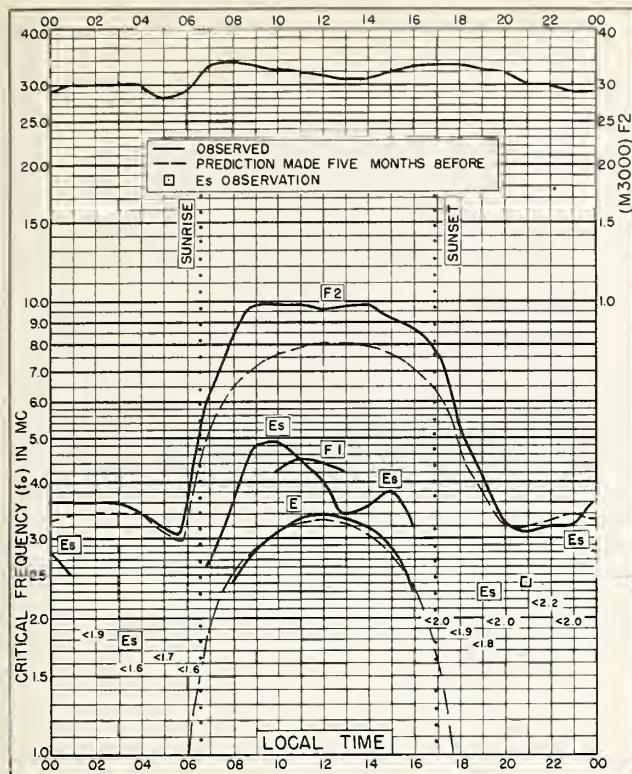
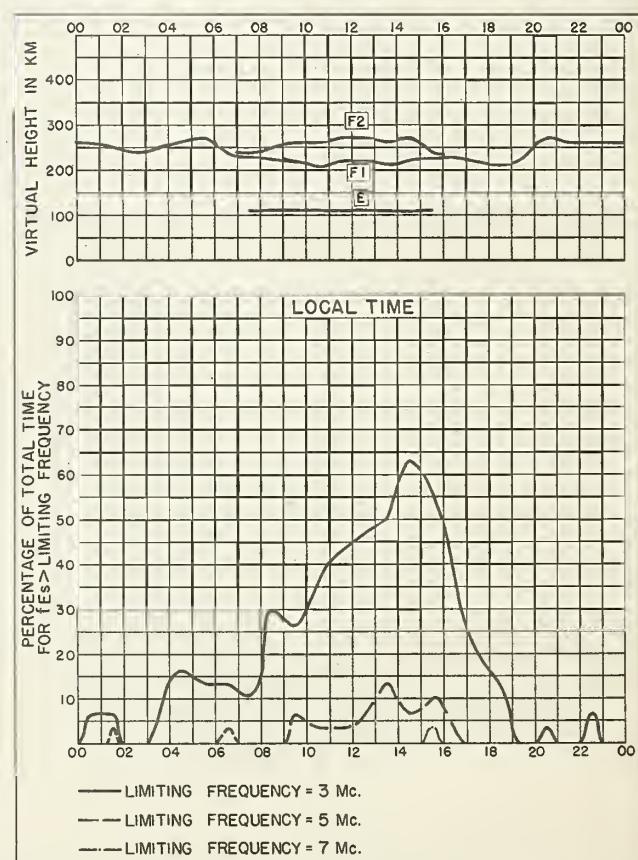
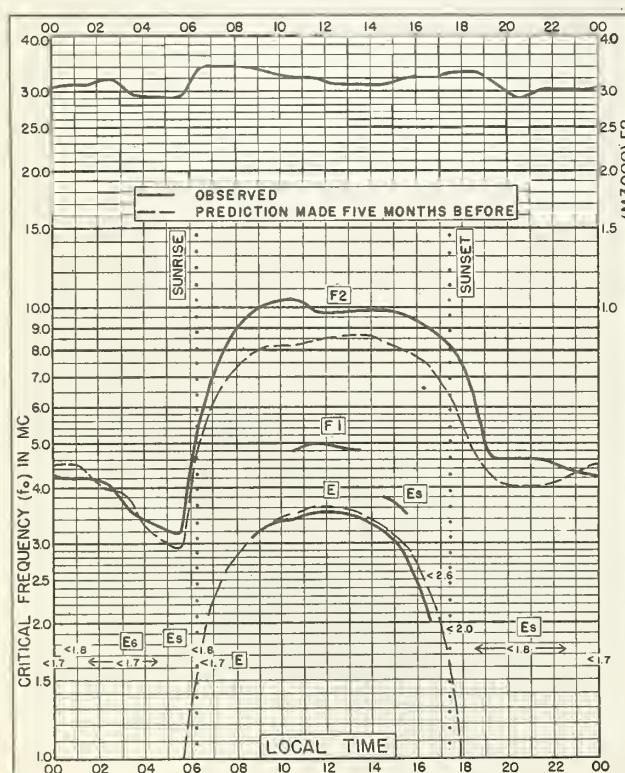
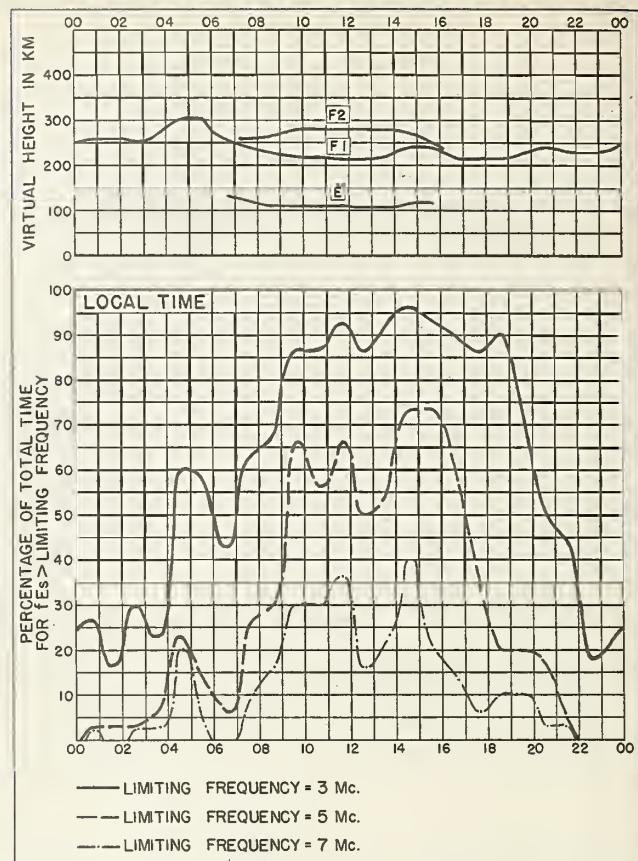
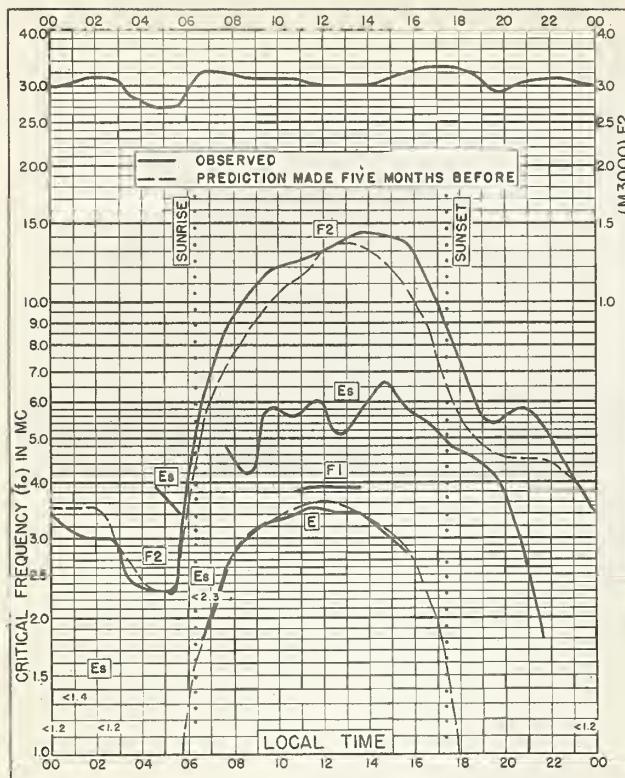


Fig. 16. FT. MONMOUTH, NEW JERSEY NOVEMBER 1955





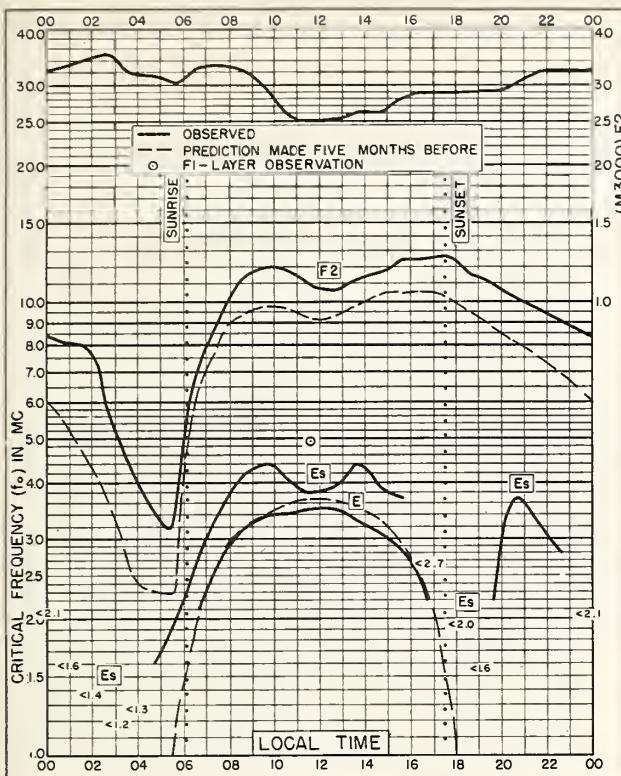


Fig. 25. GUAM I.
13.6°N, 144.9°E NOVEMBER 1955

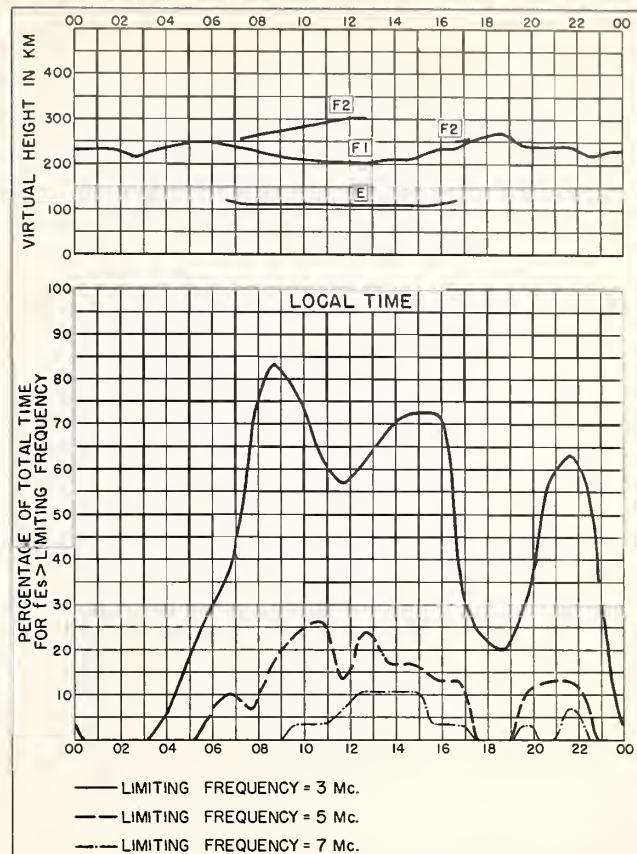


Fig. 26. GUAM I. NOVEMBER 1955

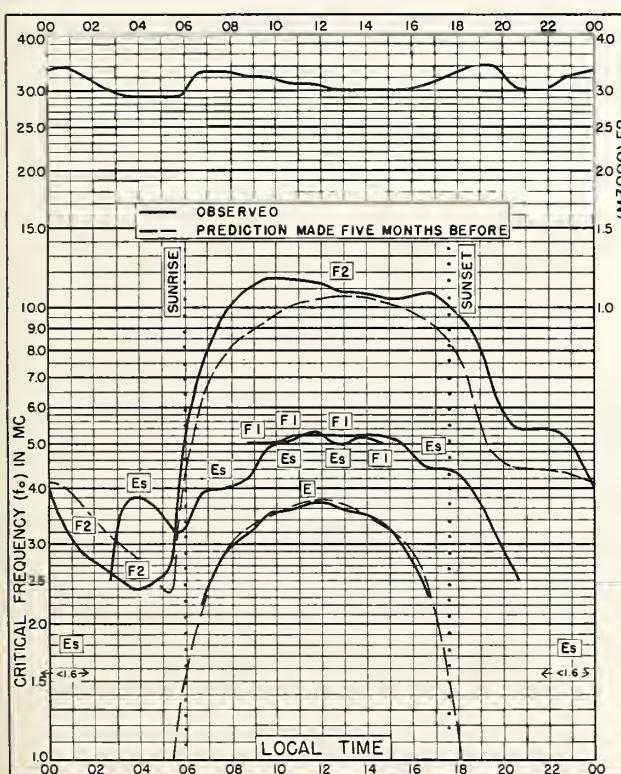


Fig. 27. PANAMA CANAL ZONE
9.4°N, 79.9°W NOVEMBER 1955

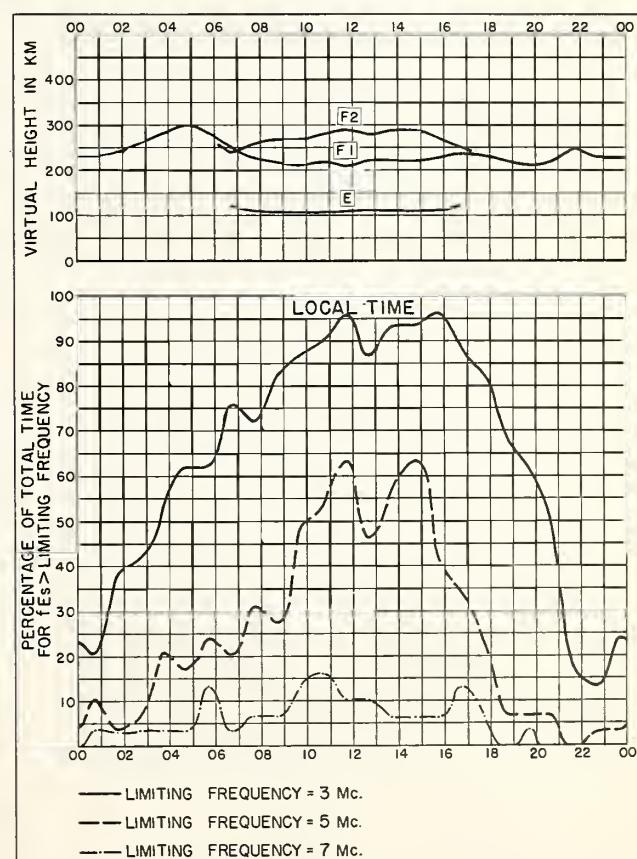
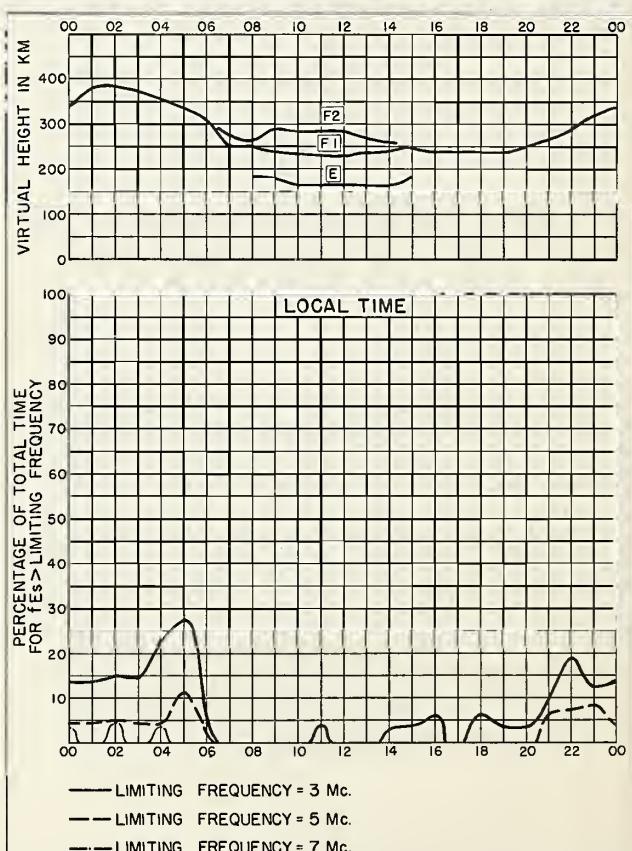
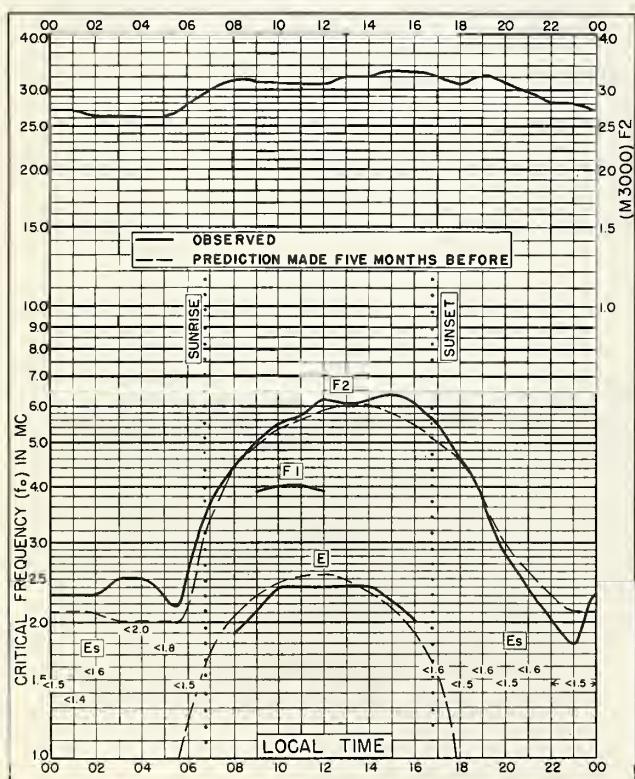
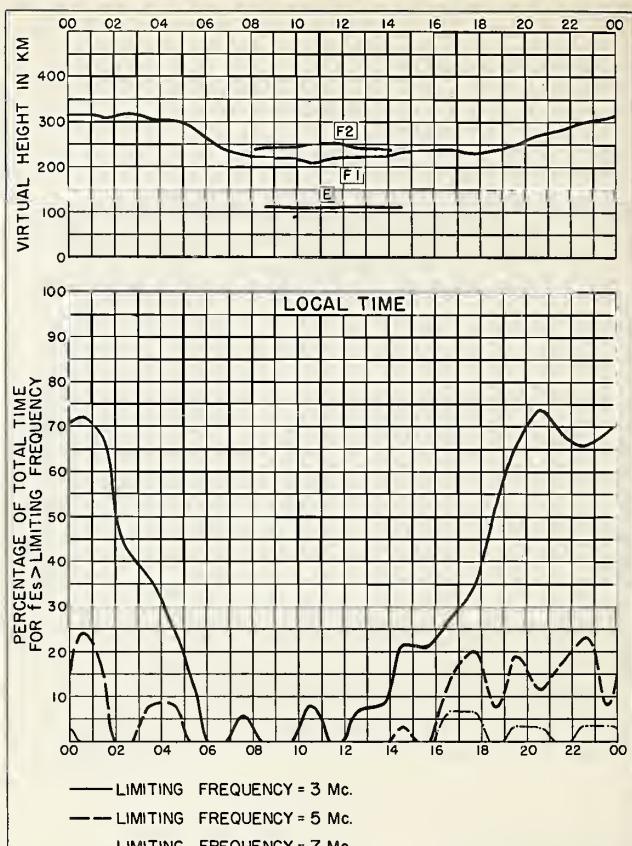
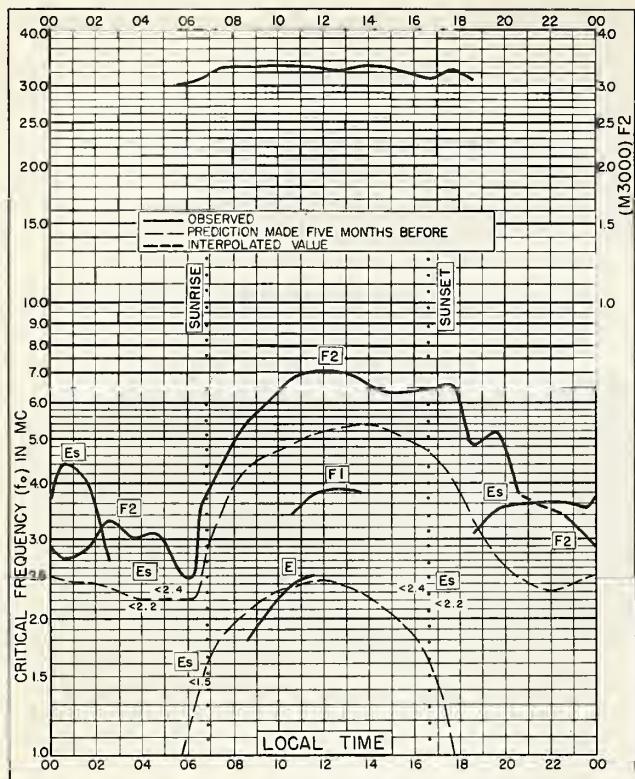


Fig. 28. PANAMA CANAL ZONE NOVEMBER 1955



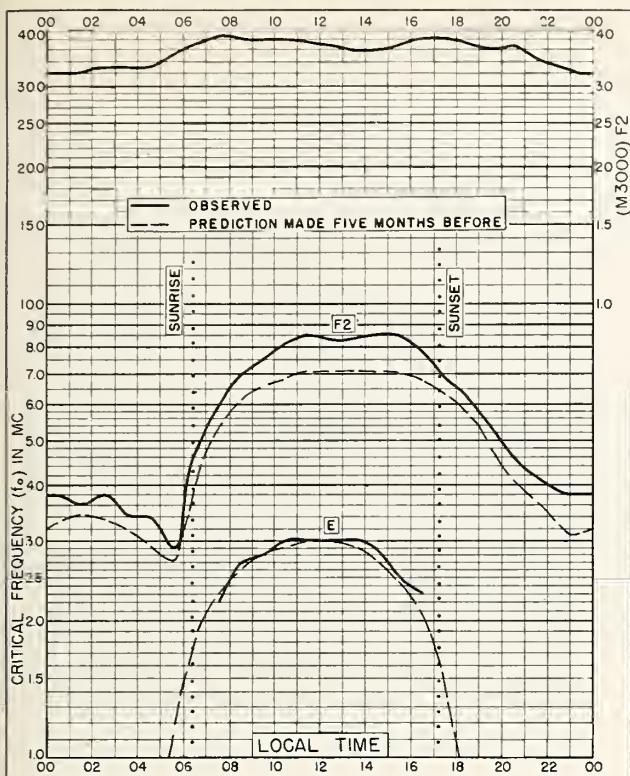


Fig. 33. SCHWARZENBURG, SWITZERLAND
46.8°N, 7.3°E OCTOBER 1955

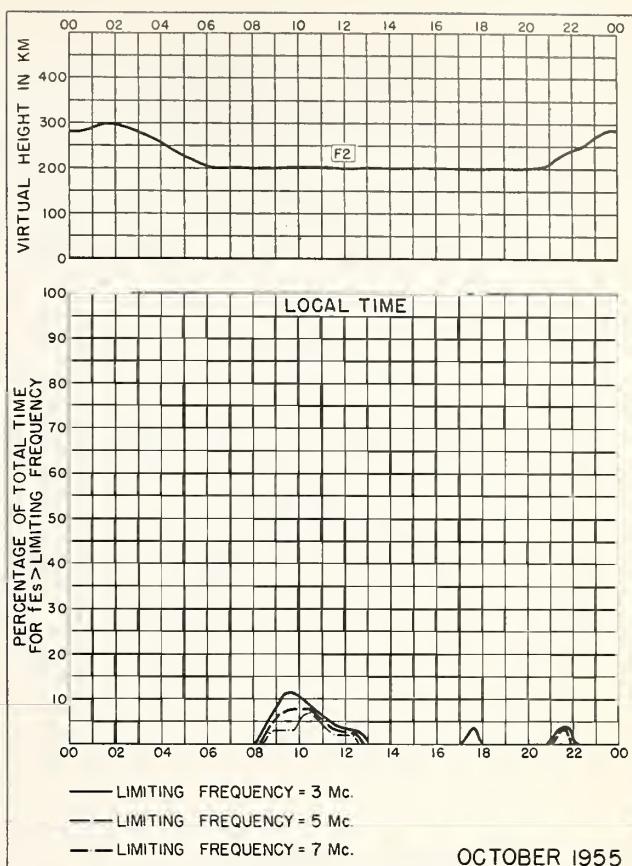


Fig. 34. SCHWARZENBURG, SWITZERLAND

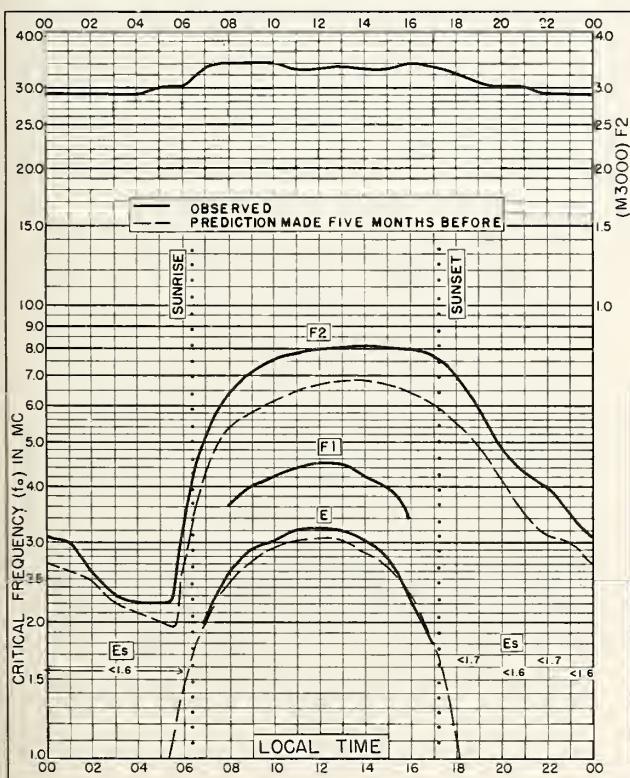


Fig. 35. OTTAWA, CANADA
45.4°N, 75.9°W OCTOBER 1955

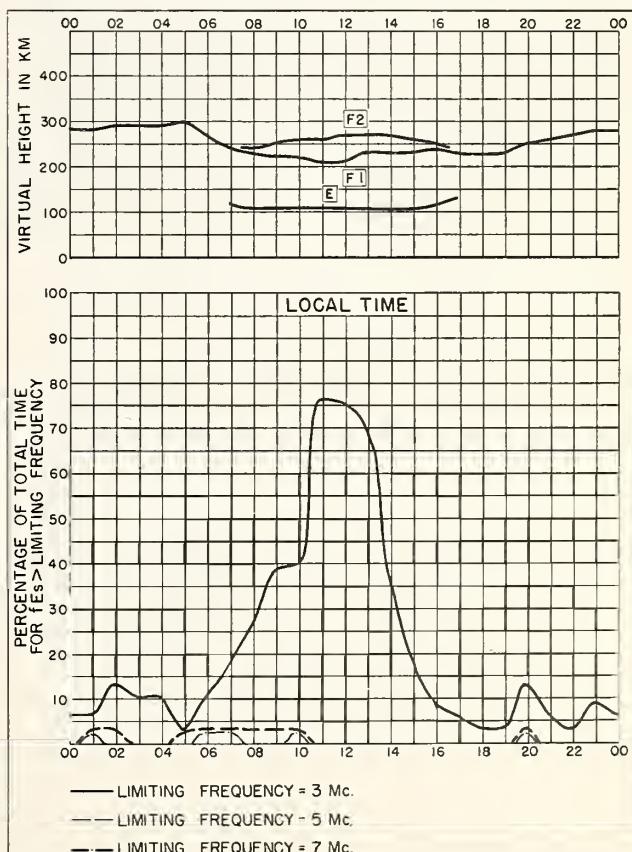
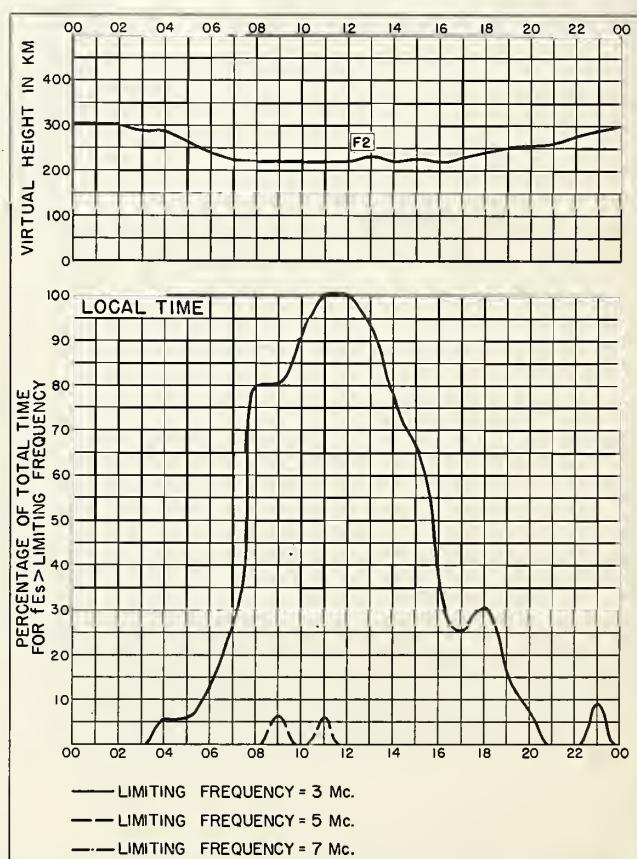
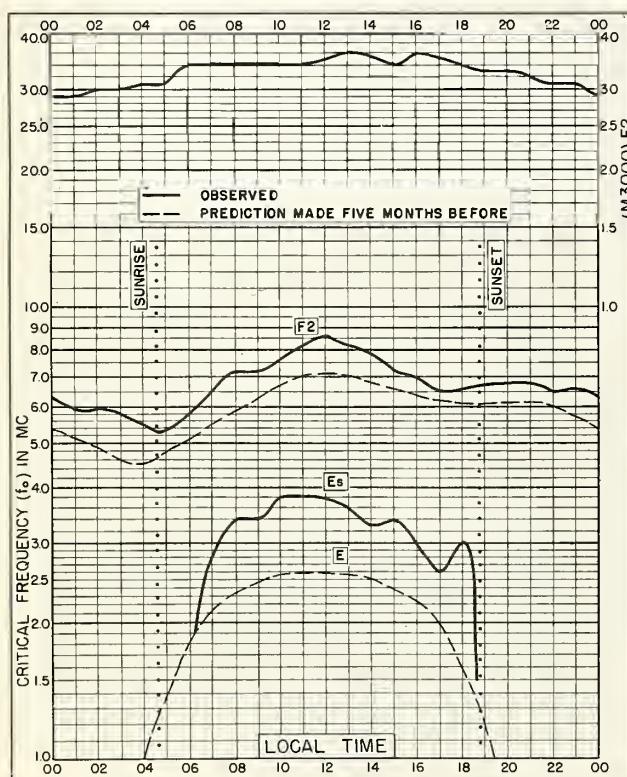
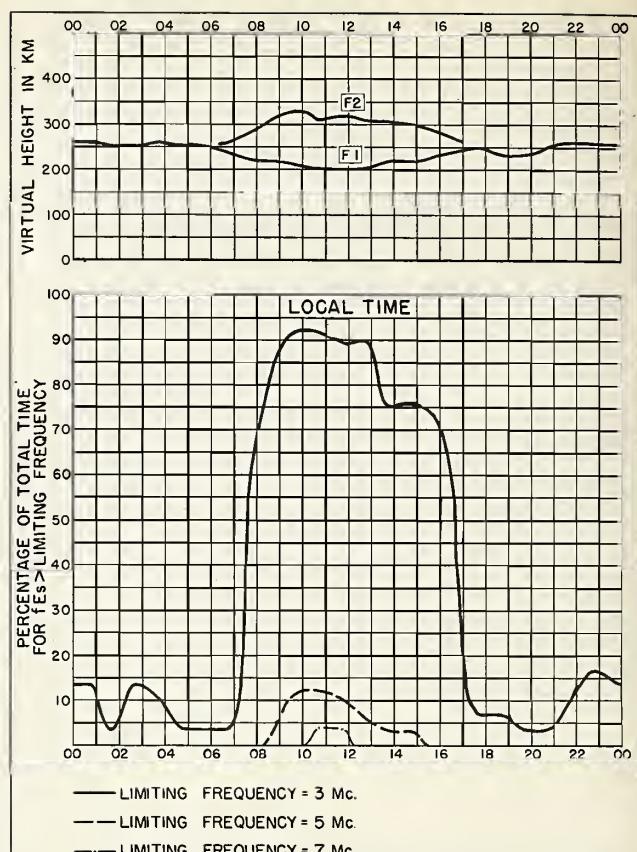
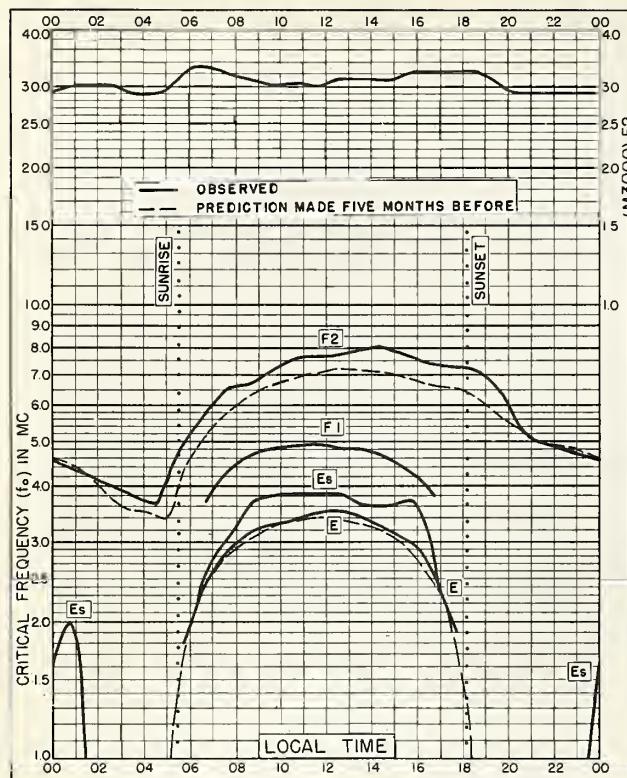


Fig. 36. OTTAWA, CANADA



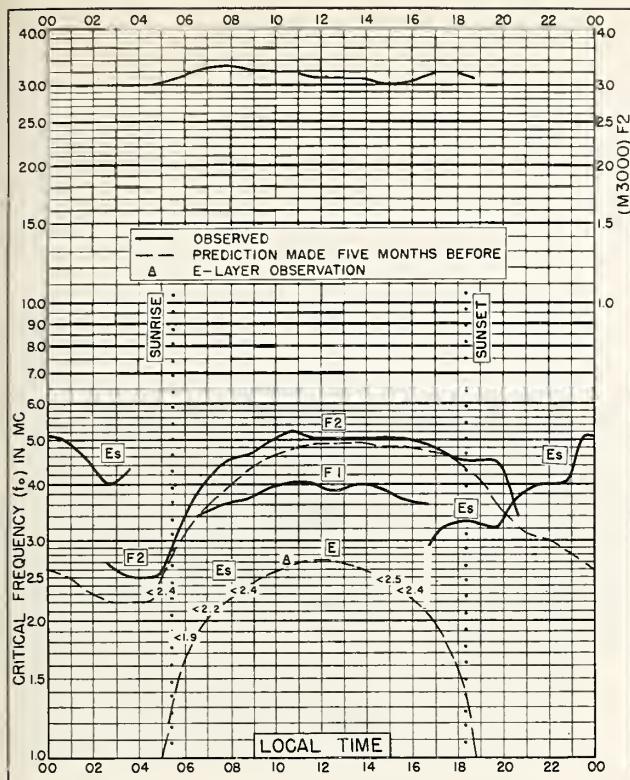


Fig. 41 REYKJAVIK, ICELAND
64.1°N, 21.8°W SEPTEMBER 1955

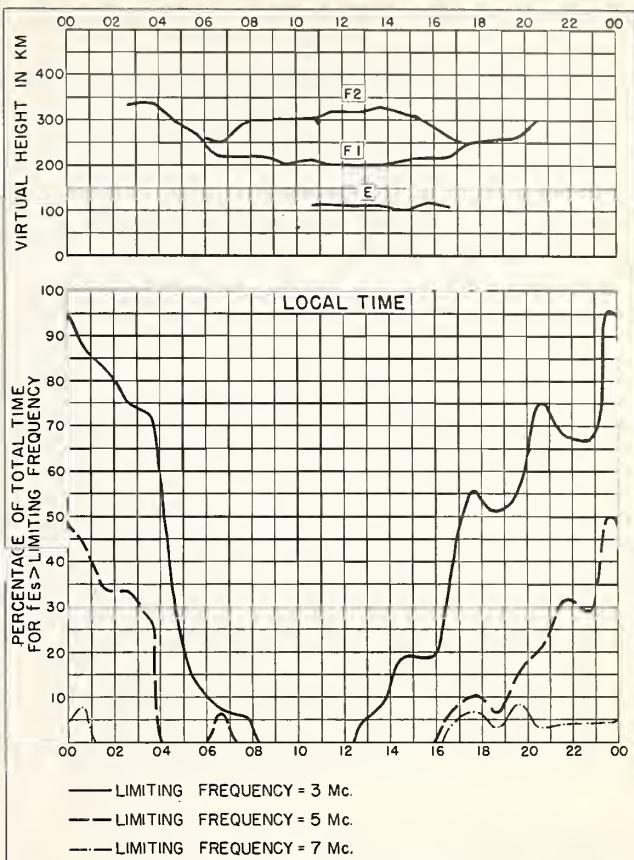


Fig. 42. REYKJAVIK, ICELAND SEPTEMBER 1955

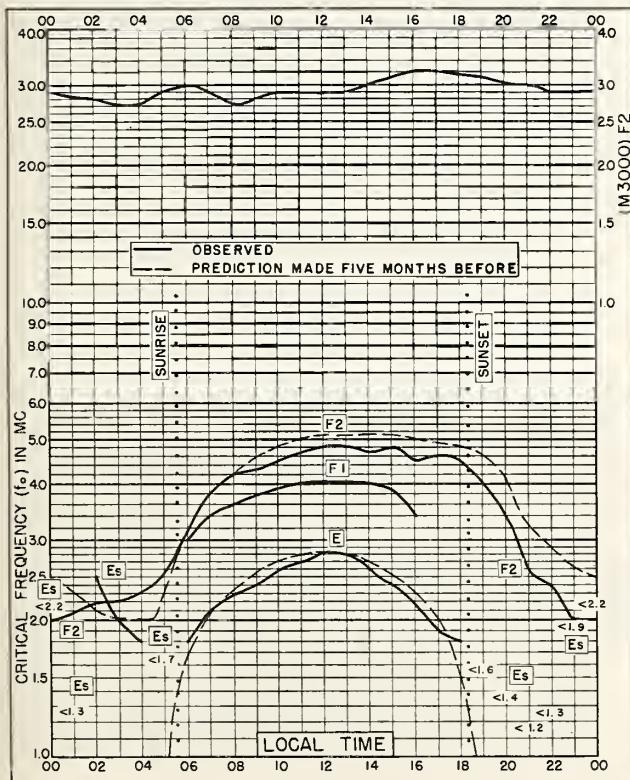


Fig. 43. ANCHORAGE, ALASKA
61.2°N, 149.9°W SEPTEMBER 1955

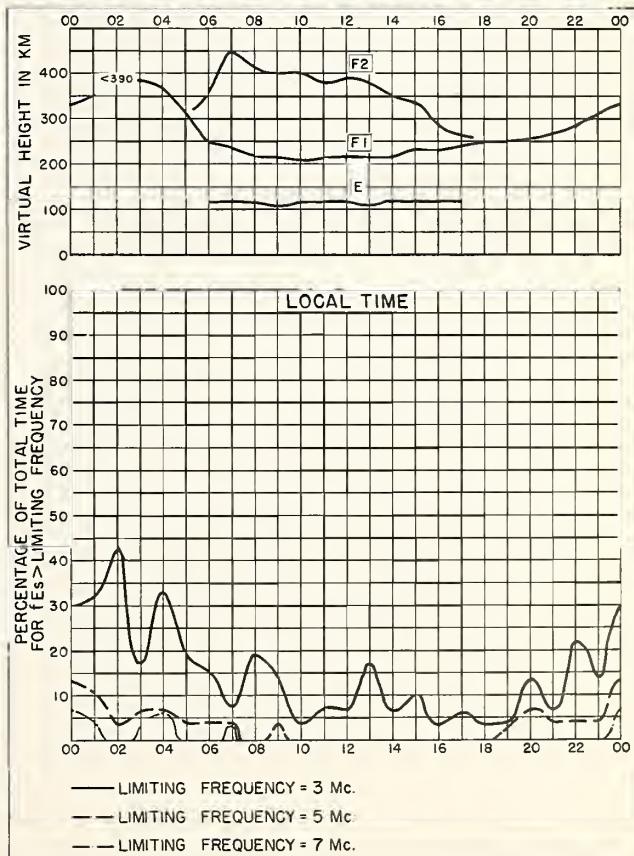
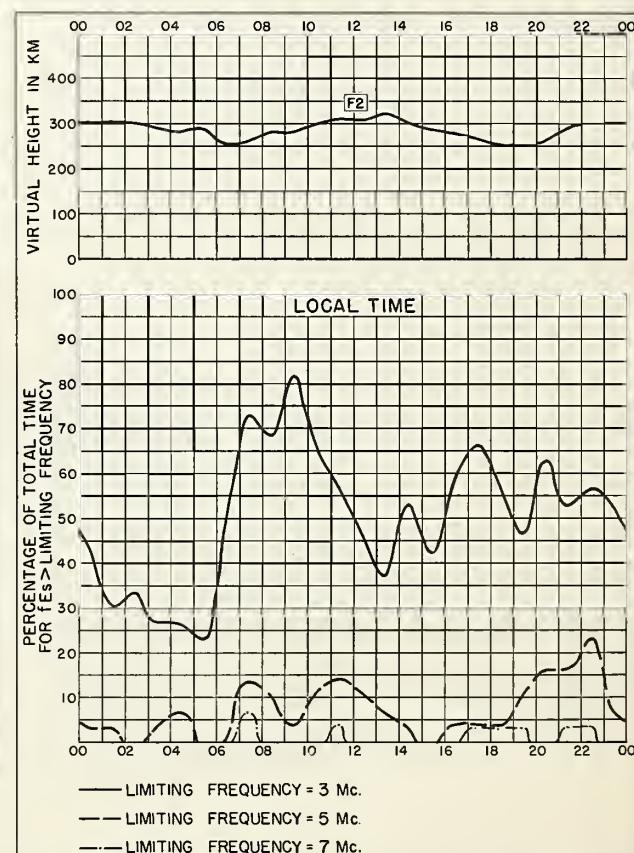
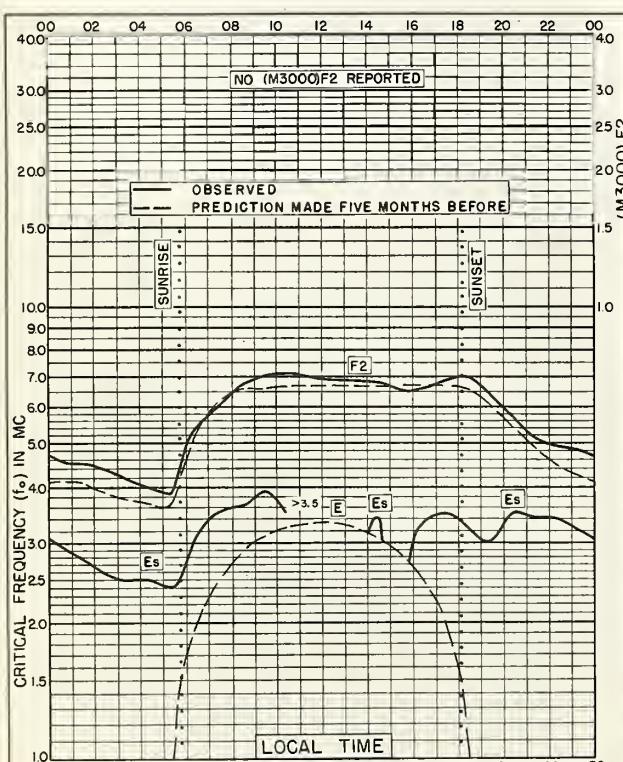
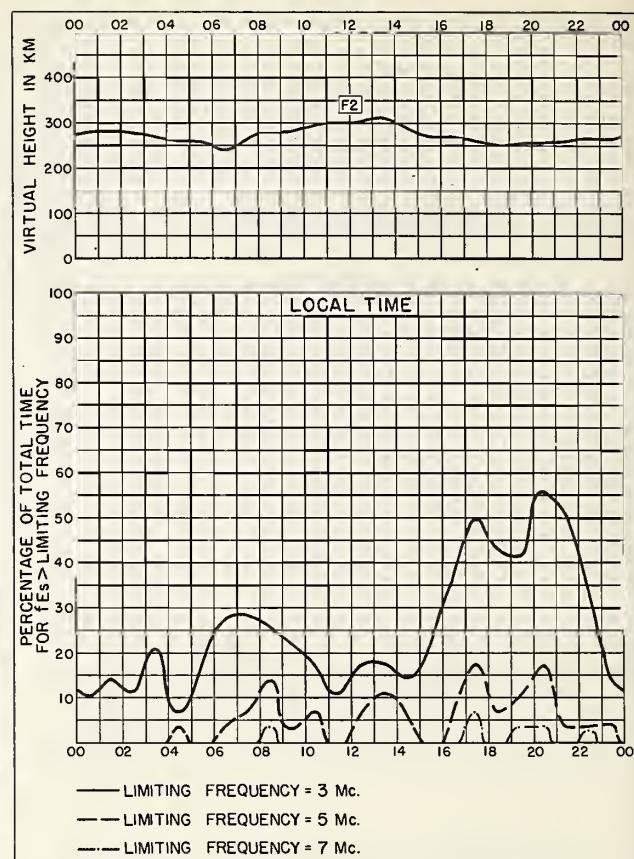
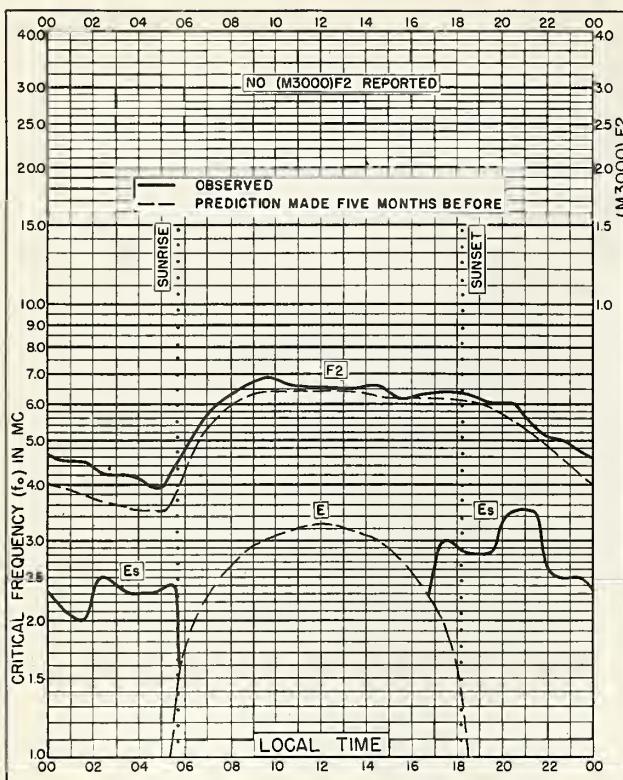


Fig. 44. ANCHORAGE, ALASKA SEPTEMBER 1955



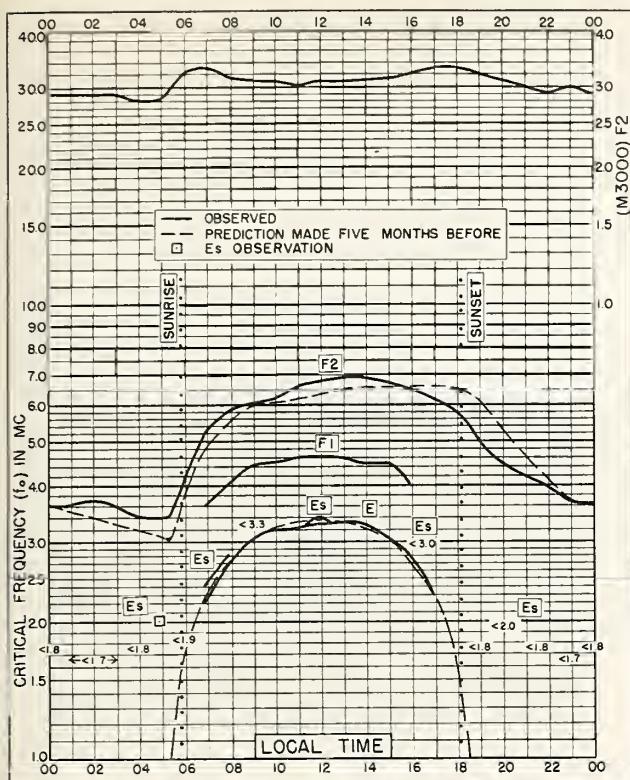


Fig. 49. SAN FRANCISCO, CALIFORNIA
37.4°N, 122.2°W SEPTEMBER 1955

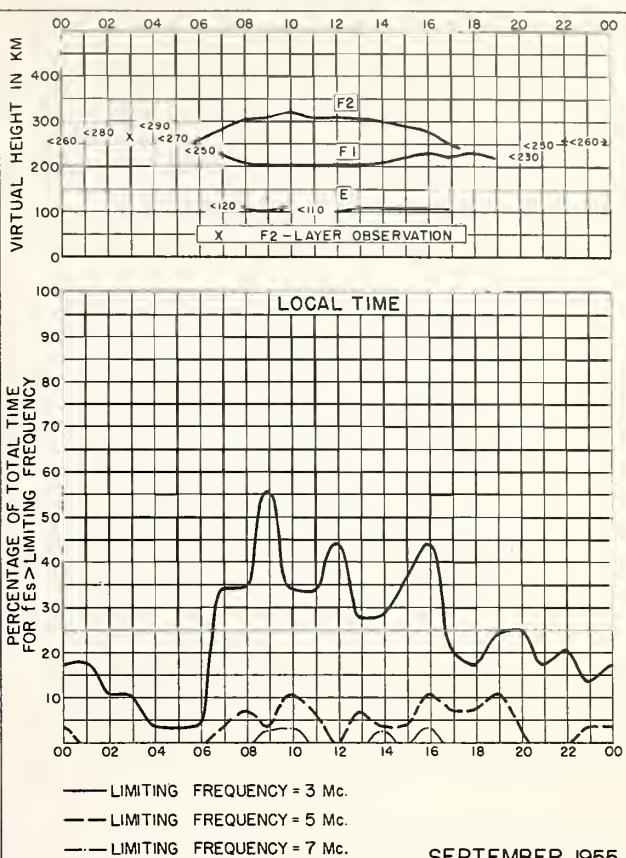


Fig. 50. SAN FRANCISCO, CALIFORNIA

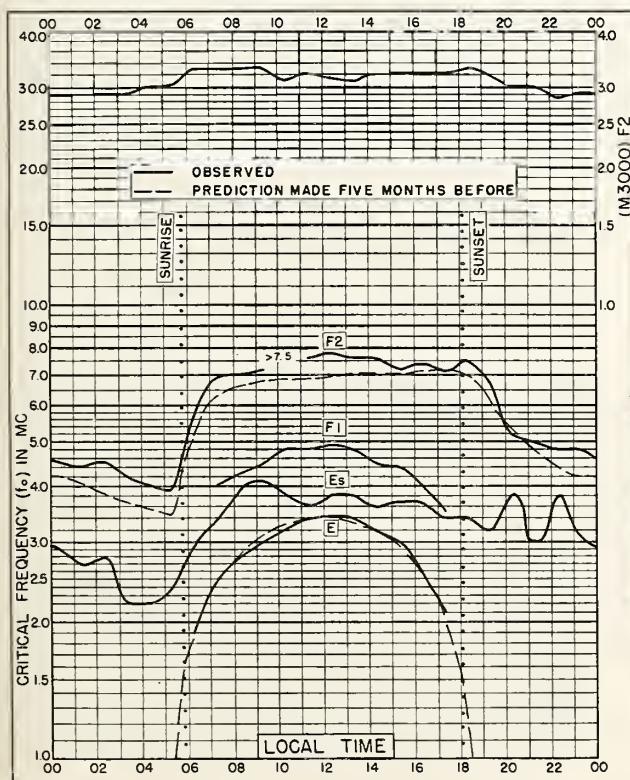


Fig. 51. TOKYO, JAPAN
35.7°N, 139.5°E. SEPTEMBER 1955

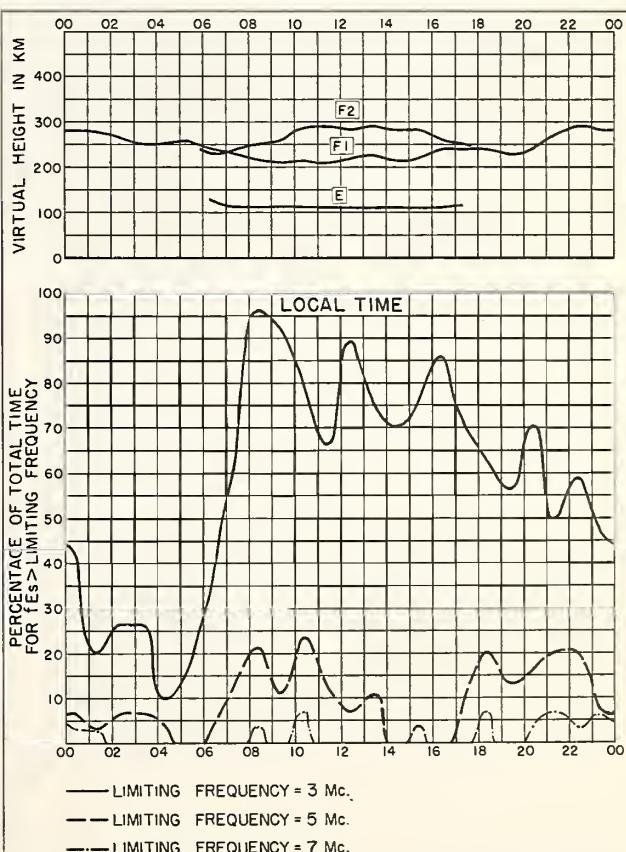


Fig. 52. TOKYO, JAPAN SEPTEMBER 1955

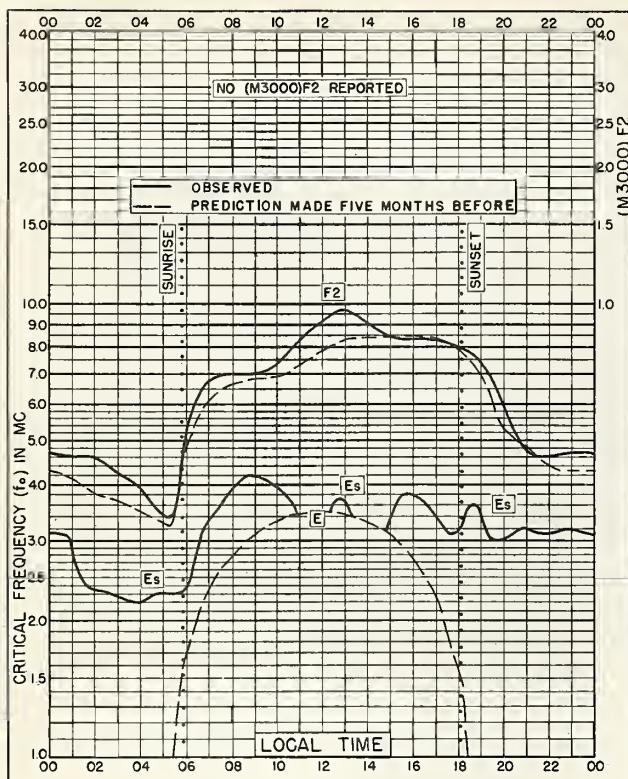


Fig. 53. YAMAGAWA, JAPAN
31.2°N, 130.6°E SEPTEMBER 1955

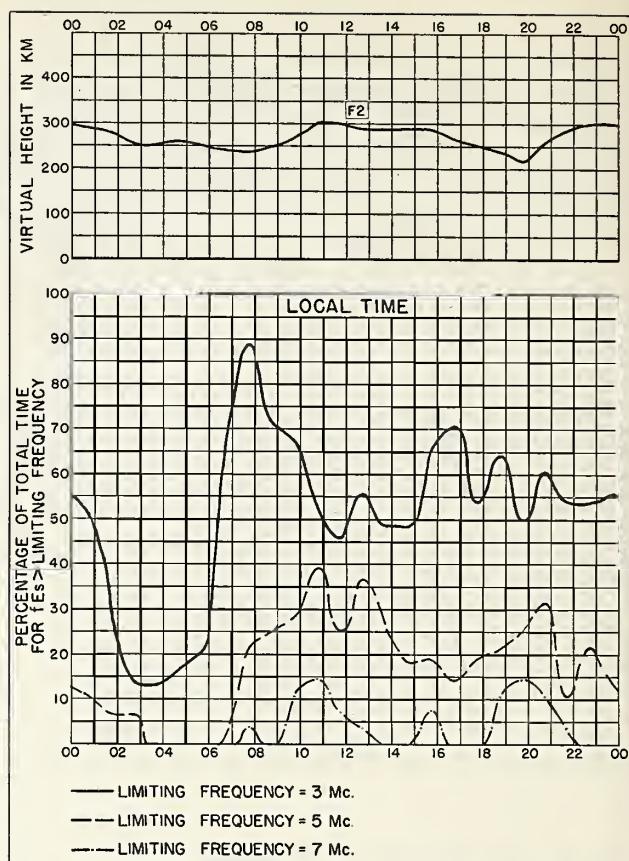


Fig. 54. YAMAGAWA, JAPAN SEPTEMBER 1955

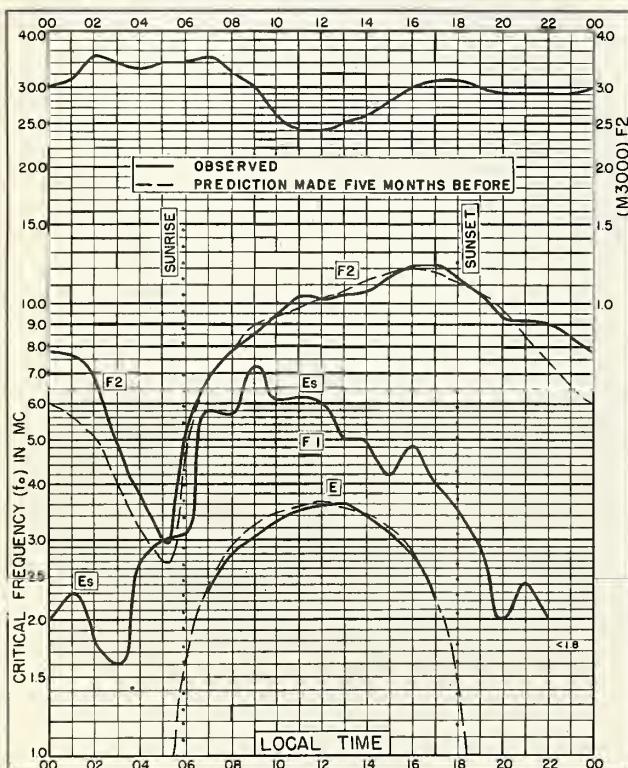


Fig. 55. BAGUIO, P. I.
16.4°N, 120.6°E SEPTEMBER 1955

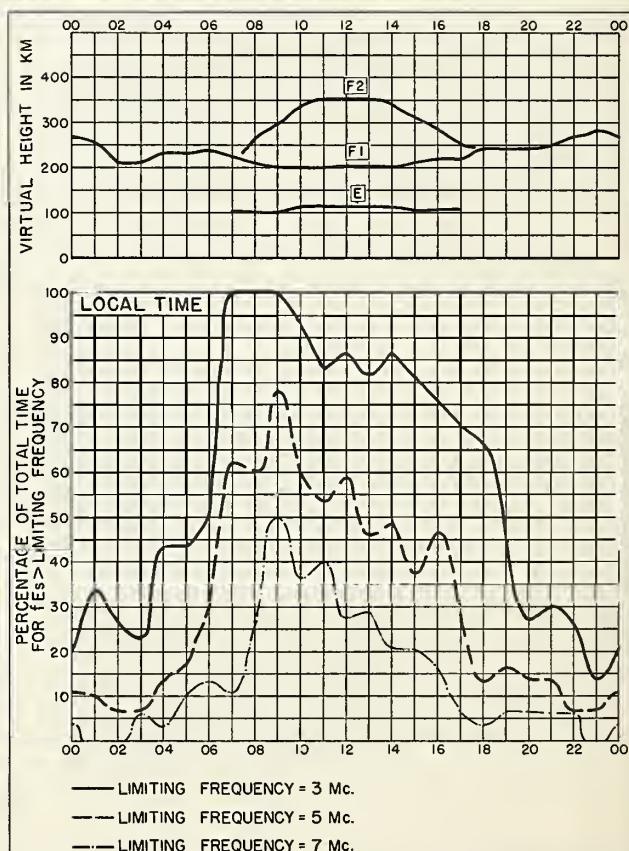


Fig. 56. BAGUIO, P. I. SEPTEMBER 1955

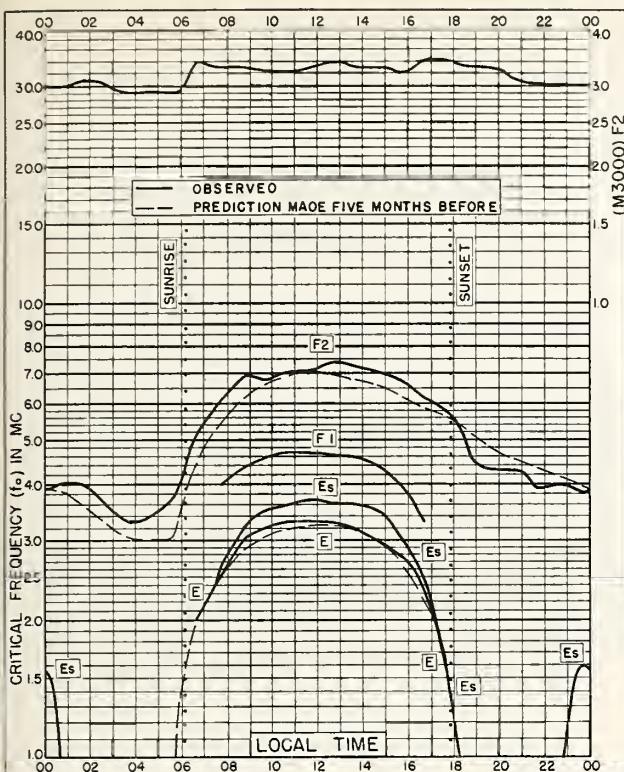


Fig. 57. WATHEROO, W. AUSTRALIA
30.3°S, 115.9°E SEPTEMBER 1955

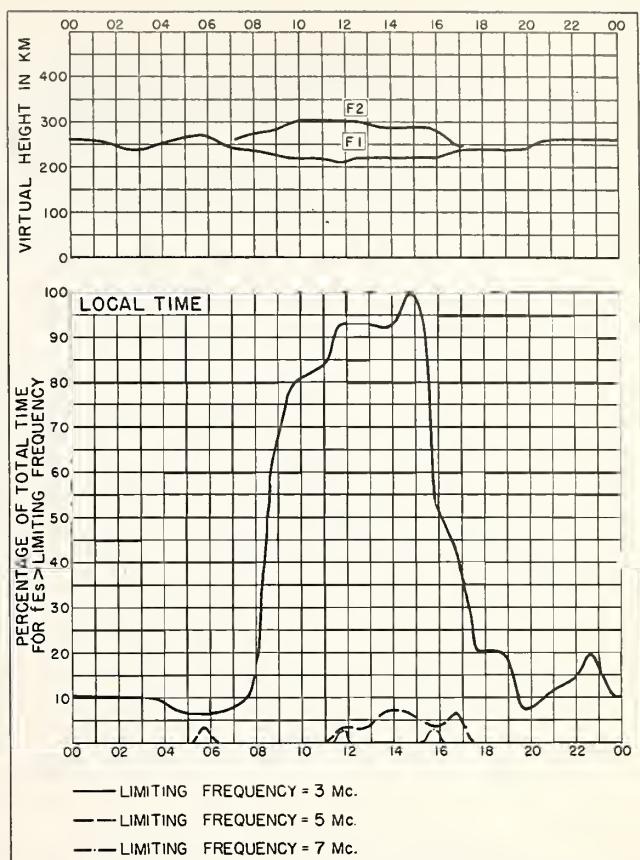


Fig. 58. WATHEROO, W. AUSTRALIA SEPTEMBER 1955

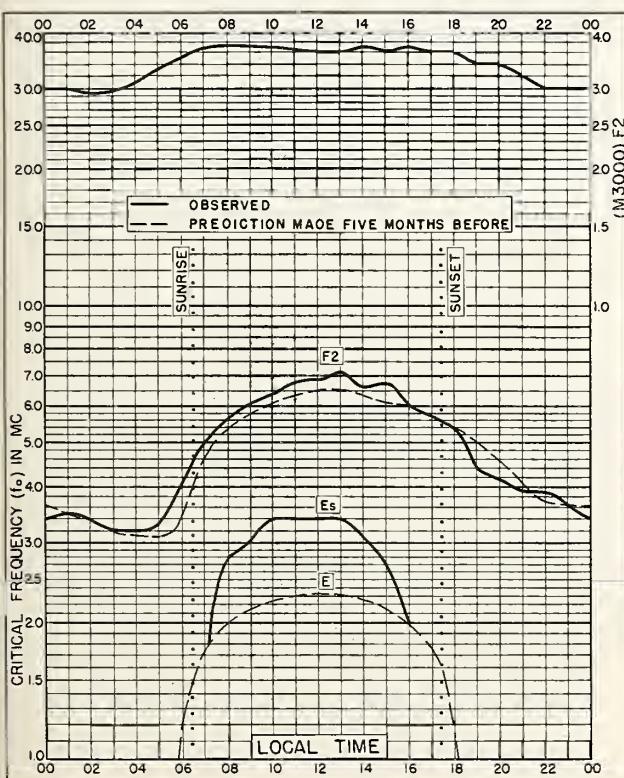


Fig. 59. DECEPCION I.
63.0°S, 60.7°W SEPTEMBER 1955

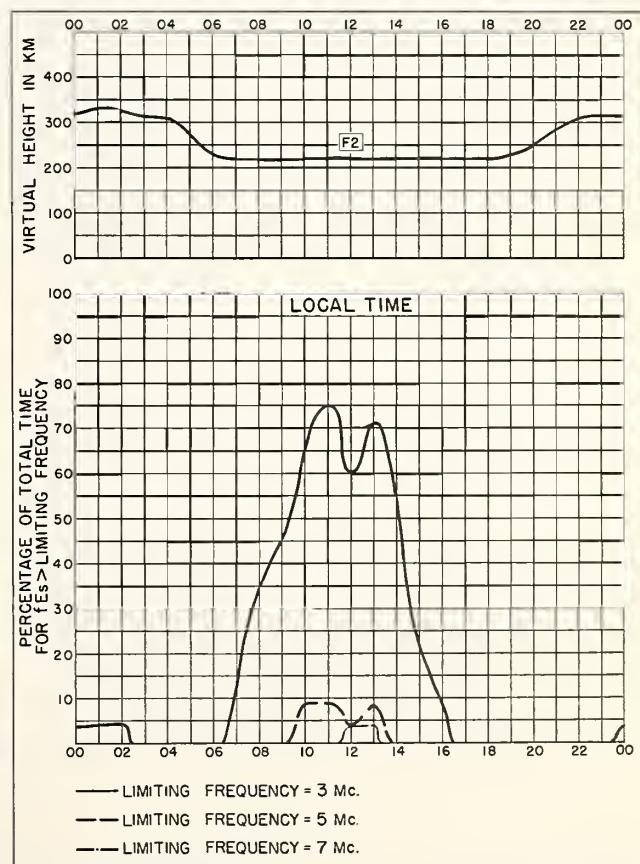


Fig. 60. DECEPCION I. SEPTEMBER 1955

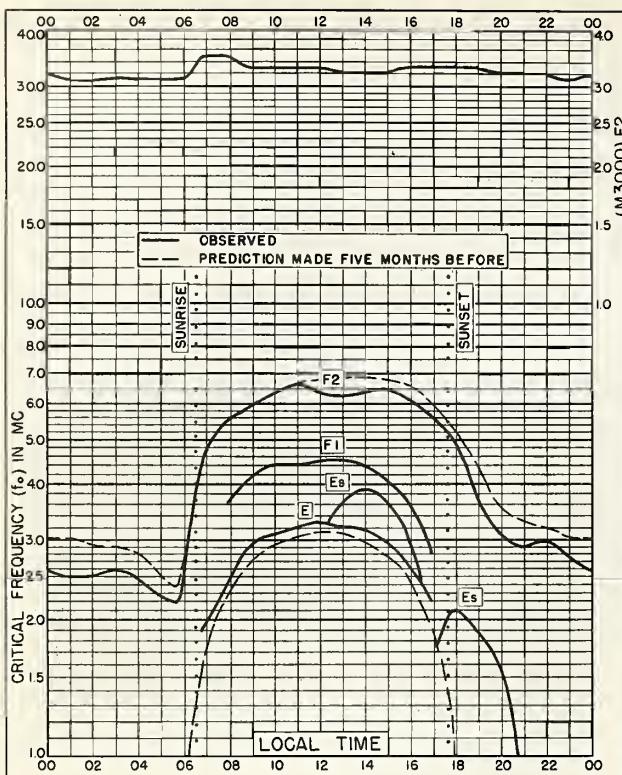
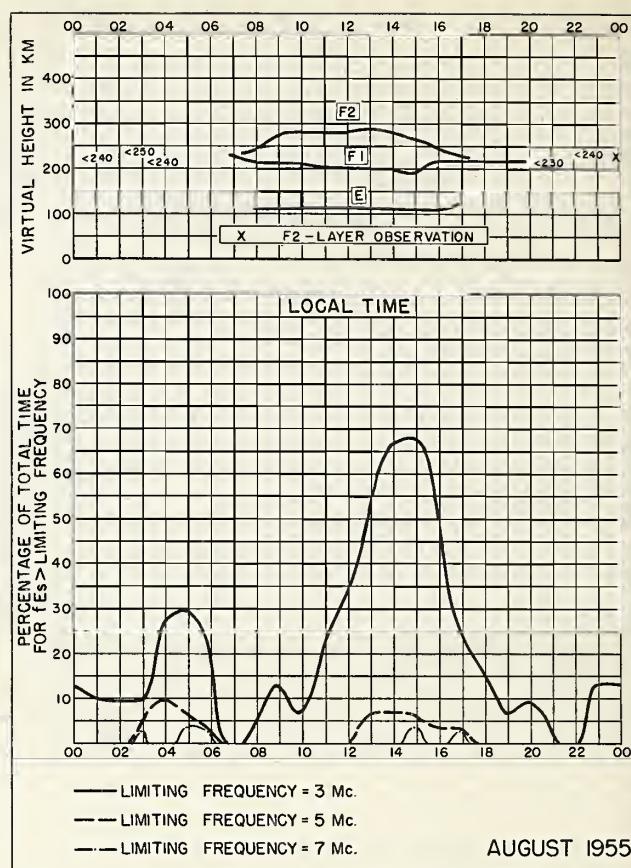


Fig. 61. JOHANNESBURG, UNION OF S. AFRICA
26.2°S, 28.1°E AUGUST 1955



AUGUST 1955
Fig. 62. JOHANNESBURG, UNION OF S. AFRICA

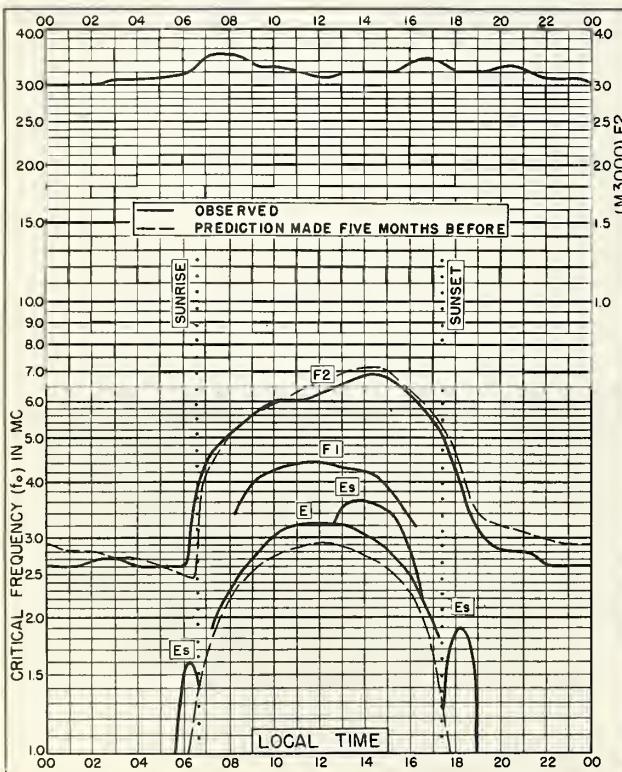
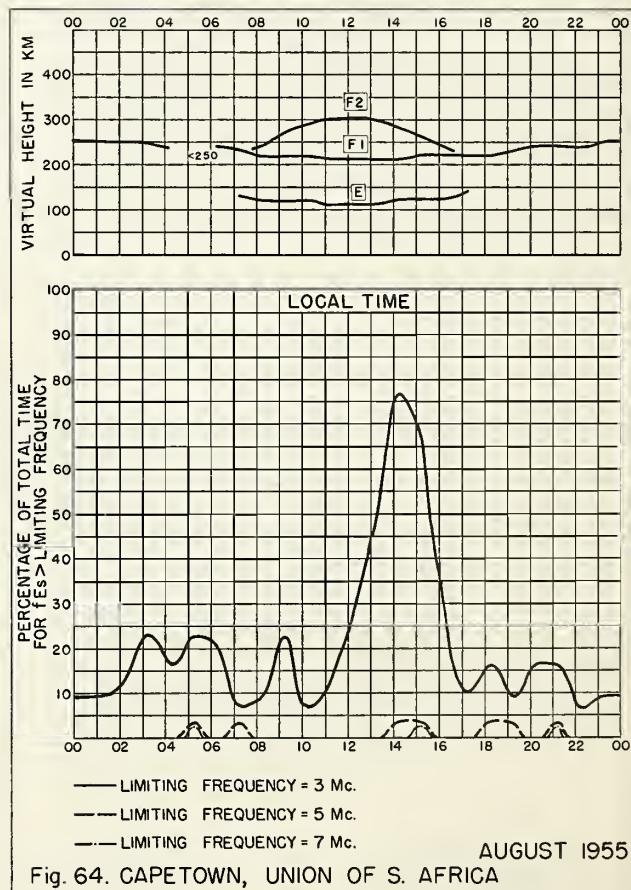


Fig. 63. CAPE TOWN, UNION OF S. AFRICA
34.2°S, 18.3°E AUGUST 1955



AUGUST 1955
Fig. 64. CAPE TOWN, UNION OF S. AFRICA

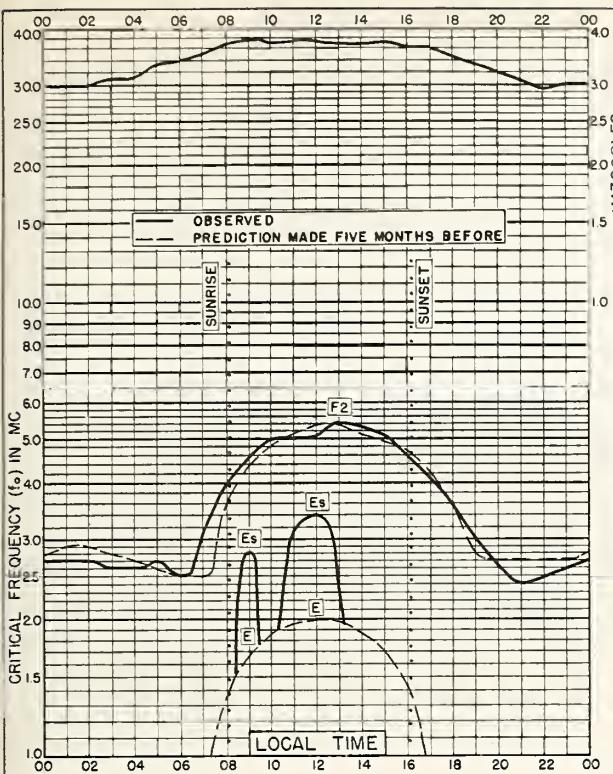


Fig. 65. DECEPCION I.
63.0°S, 60.7°W

AUGUST 1955

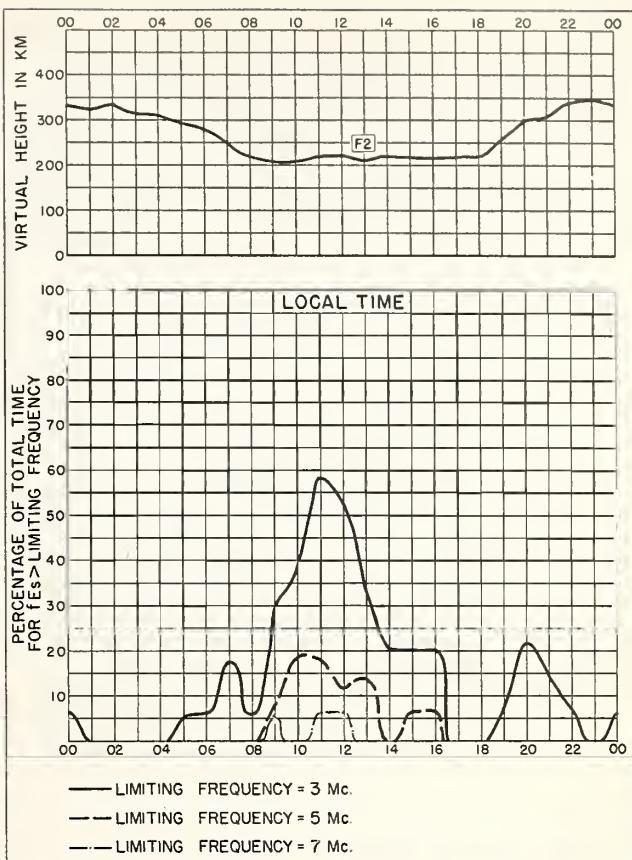


Fig. 66. DECEPCION I.
AUGUST 1955

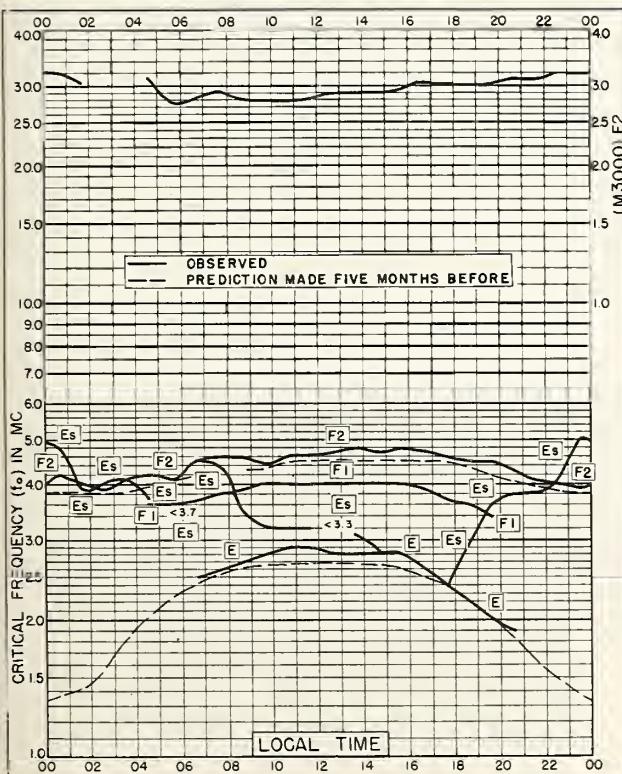


Fig. 67. POINT BARROW, ALASKA

71.3°N, 156.8°W

JULY, 1955

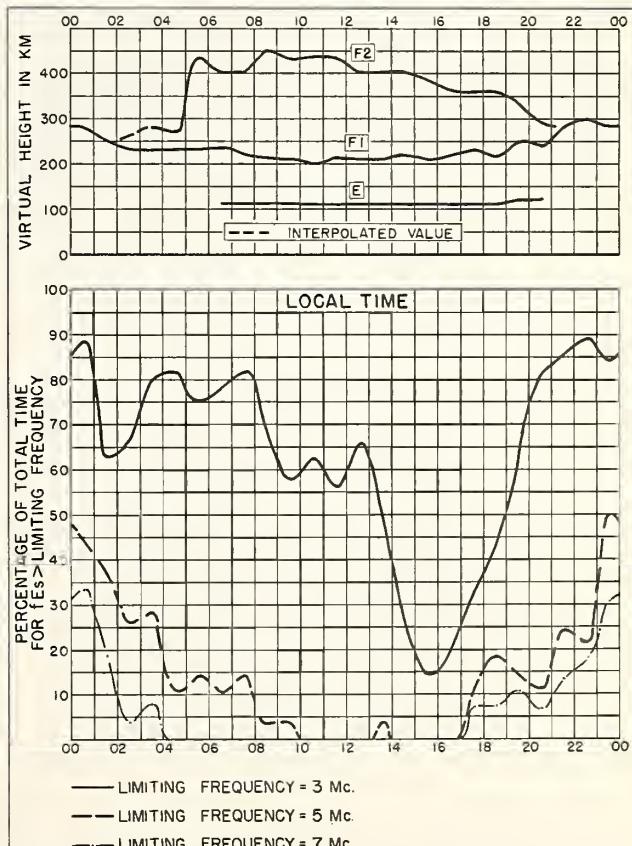


Fig. 68. POINT BARROW, ALASKA

JULY 1955

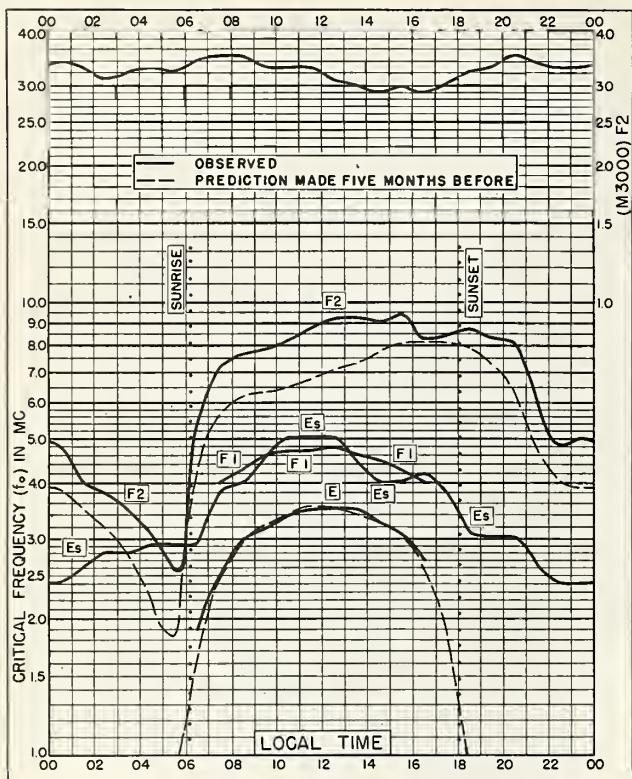


Fig. 69. NAIROBI, KENYA
1.3°S, 36.8°E

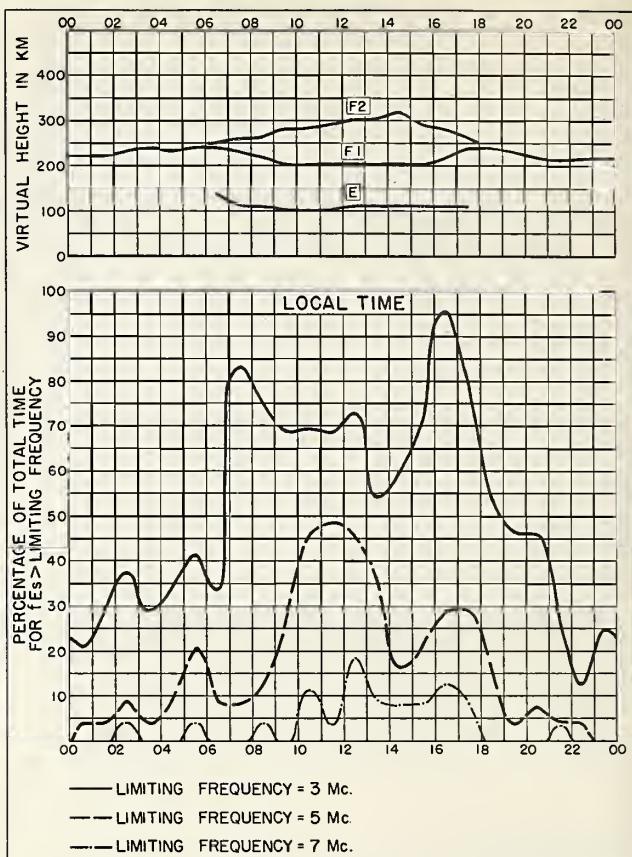


Fig. 70. NAIROBI, KENYA JULY 1955

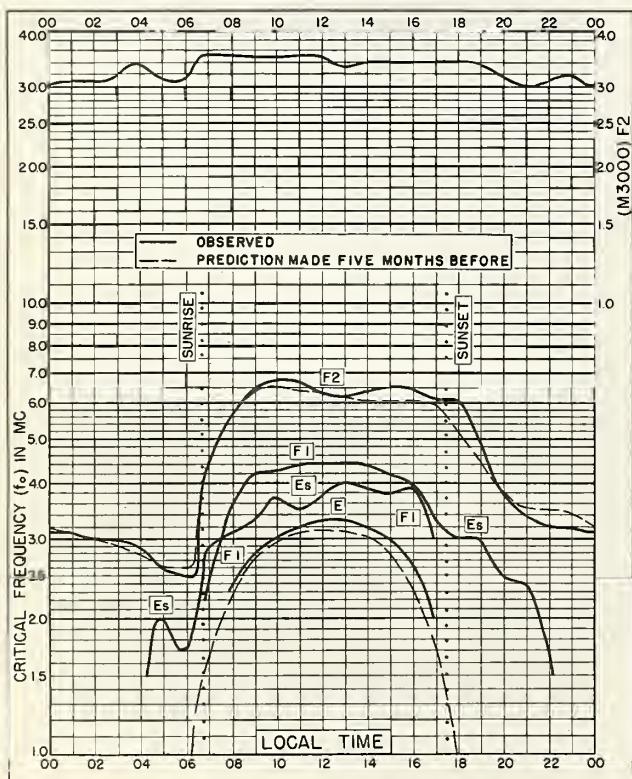


Fig. 71. RAROTONGA I.
21.3°S, 159.8°W JULY 1955

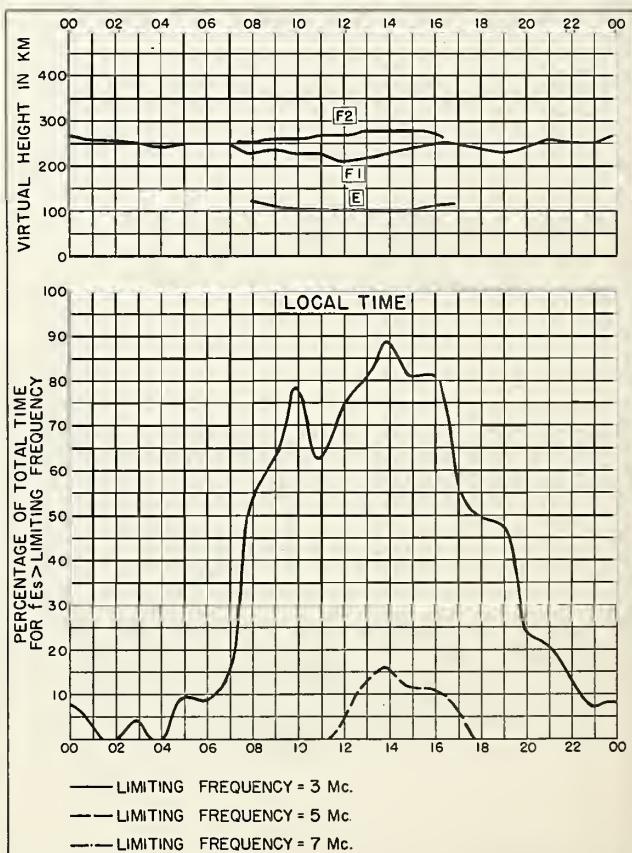


Fig. 72. RAROTONGA I. JULY 1955

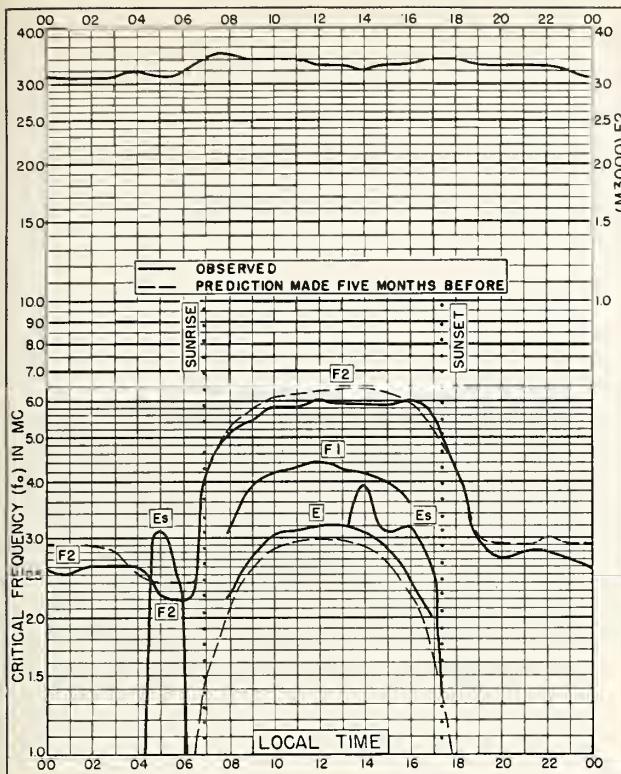


Fig. 73. JOHANNESBURG, UNION OF S. AFRICA
26.2°S, 28.1°E JULY 1955

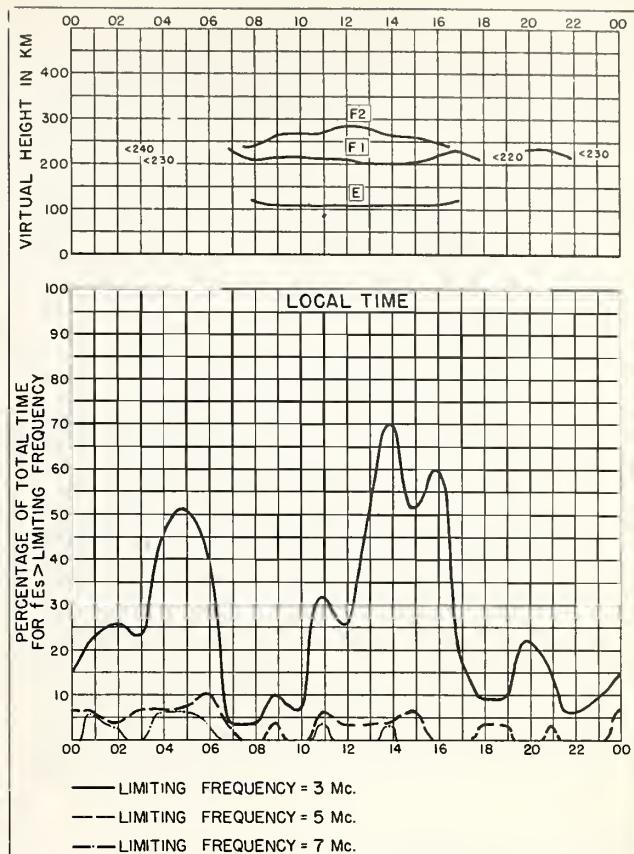


Fig. 74. JOHANNESBURG, UNION OF S. AFRICA JULY 1955

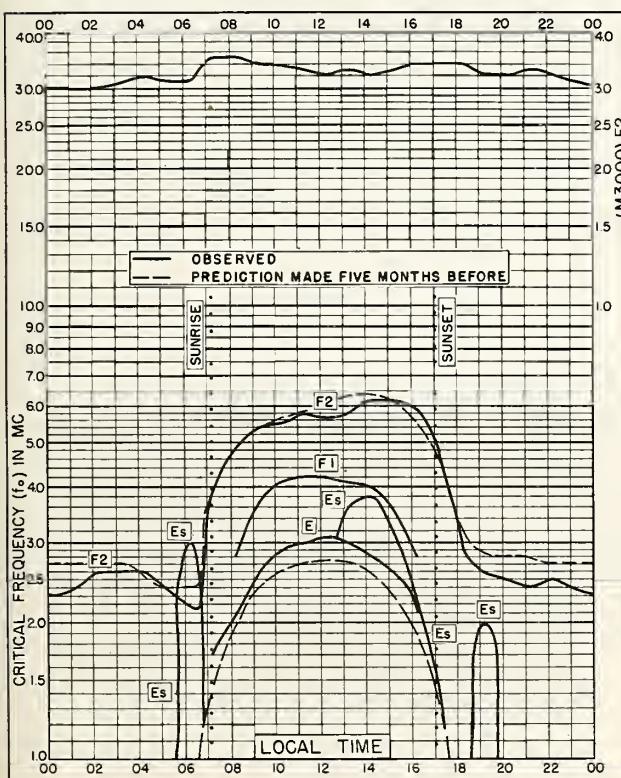


Fig. 75. CAPETOWN, UNION OF S. AFRICA
34.2°S, 18.3°E JULY 1955

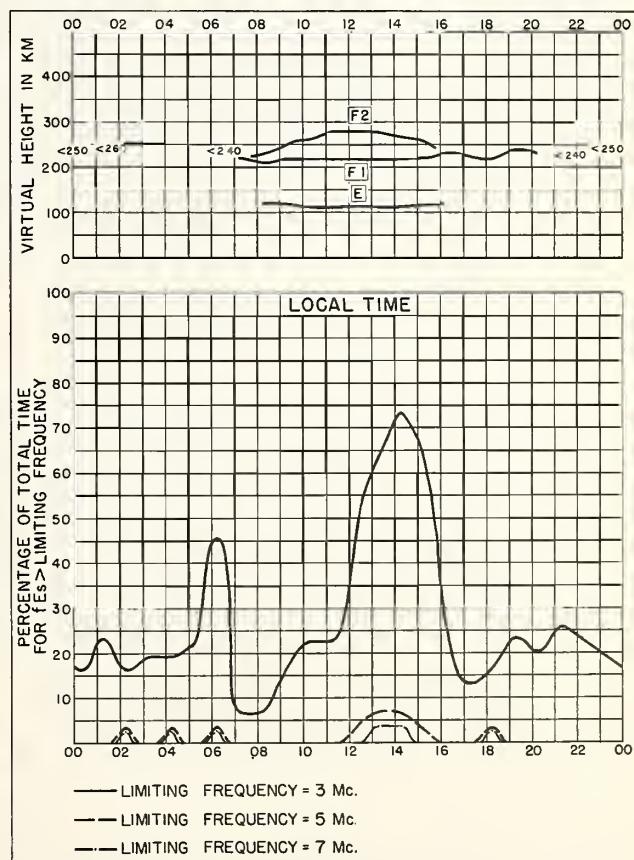
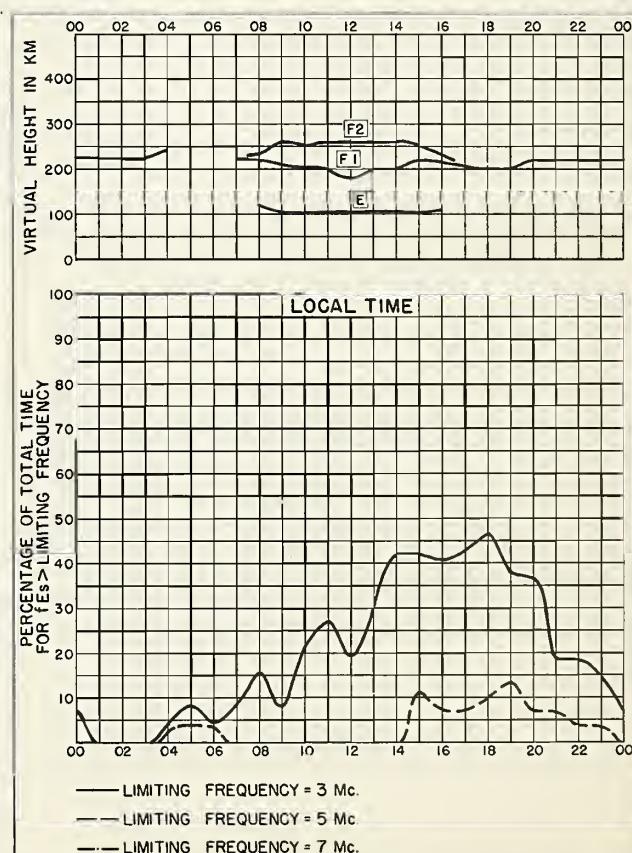
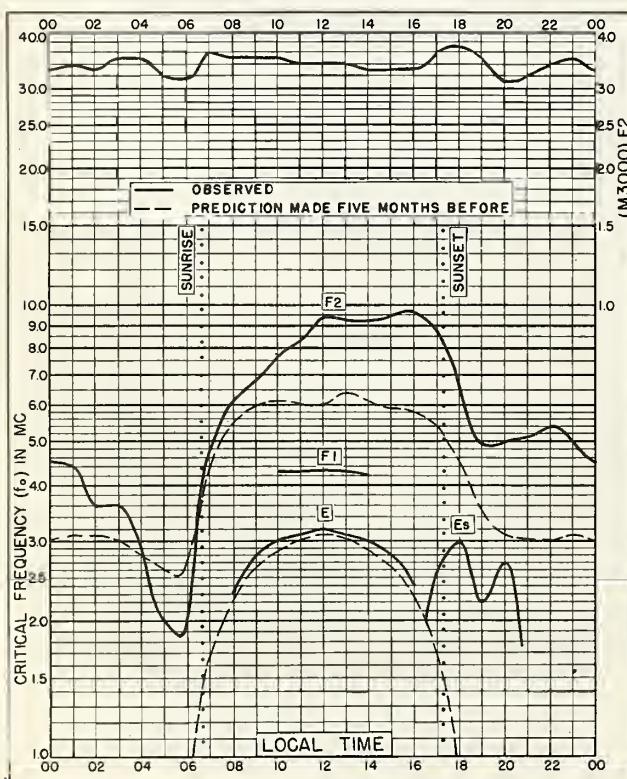
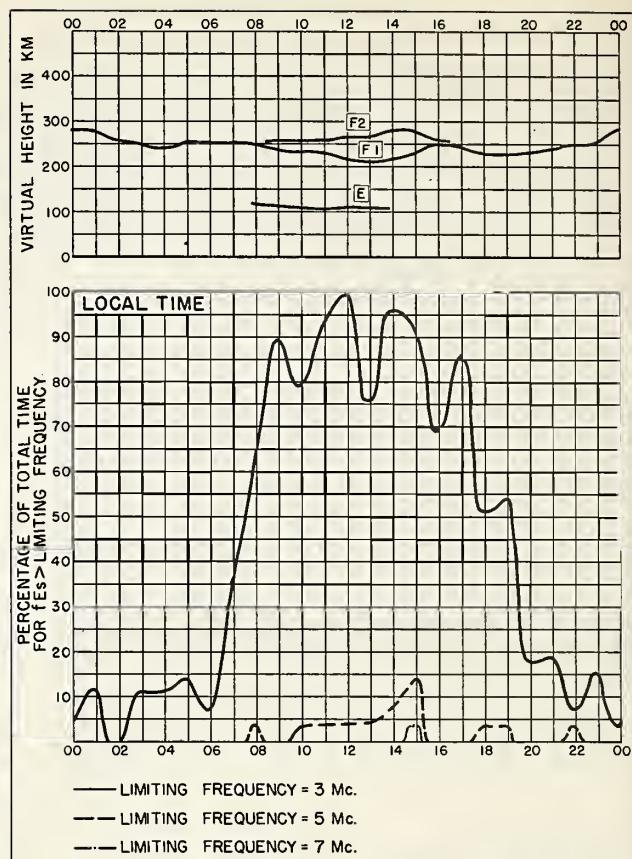
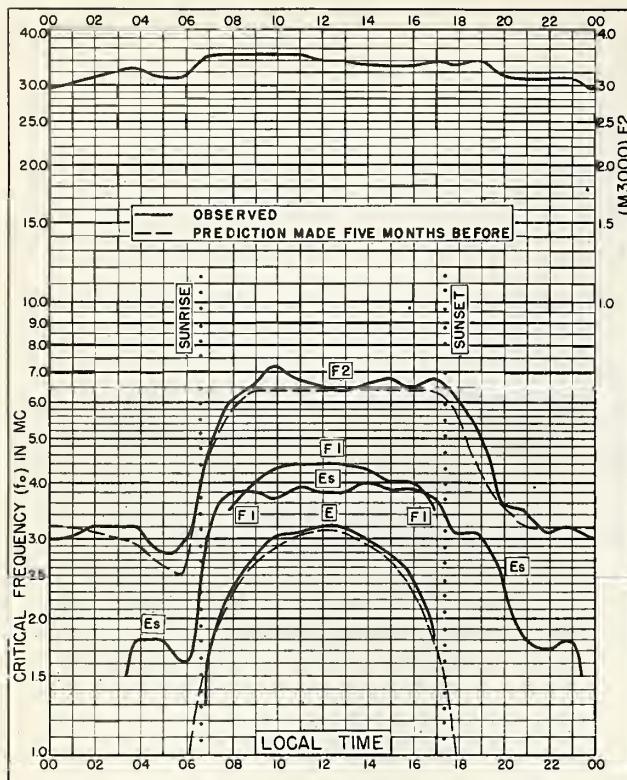


Fig. 76. CAPETOWN, UNION OF S. AFRICA JULY 1955



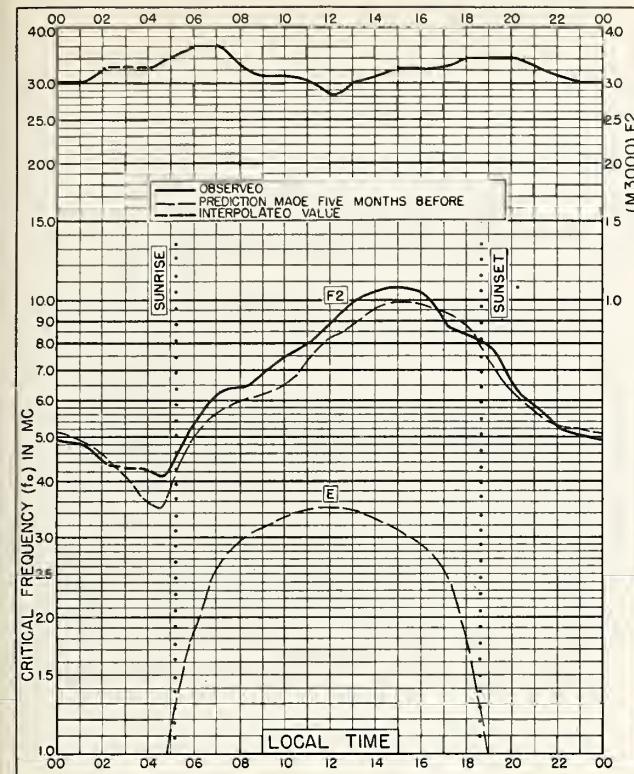


Fig. 81. DELHI, INDIA
28.6°N, 77.1°E

MAY 1955

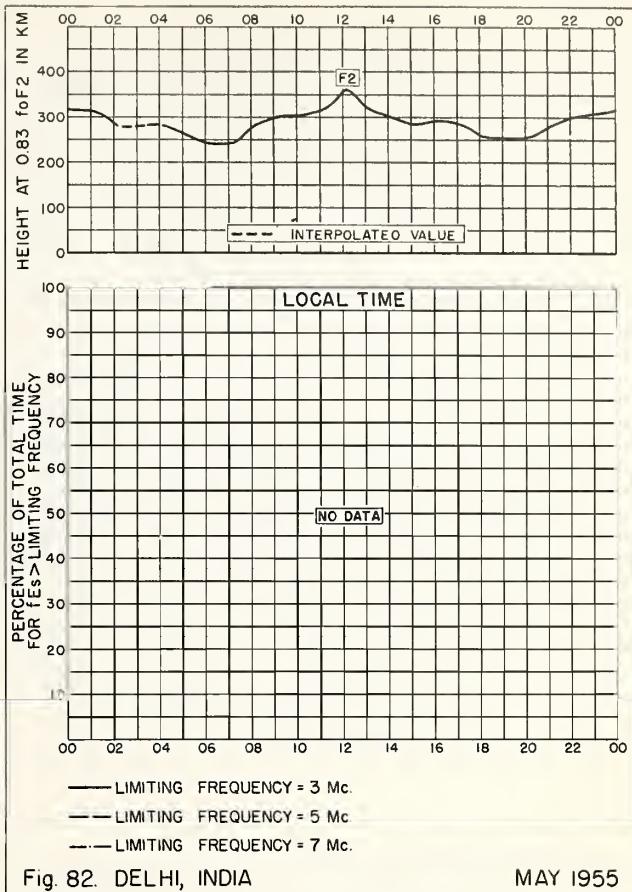


Fig. 82. DELHI, INDIA

MAY 1955

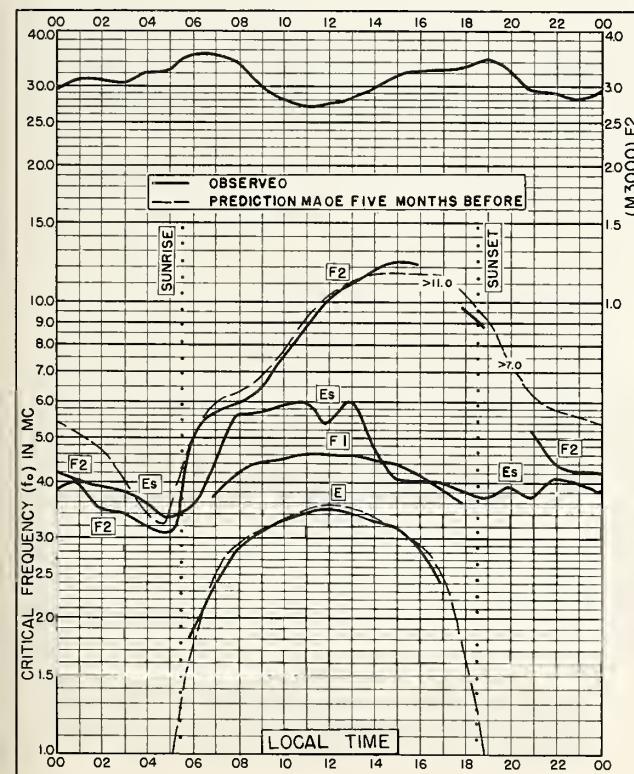


Fig. 83. AHMEDABAD, INDIA
23.0°N, 72.6°E

MAY 1955

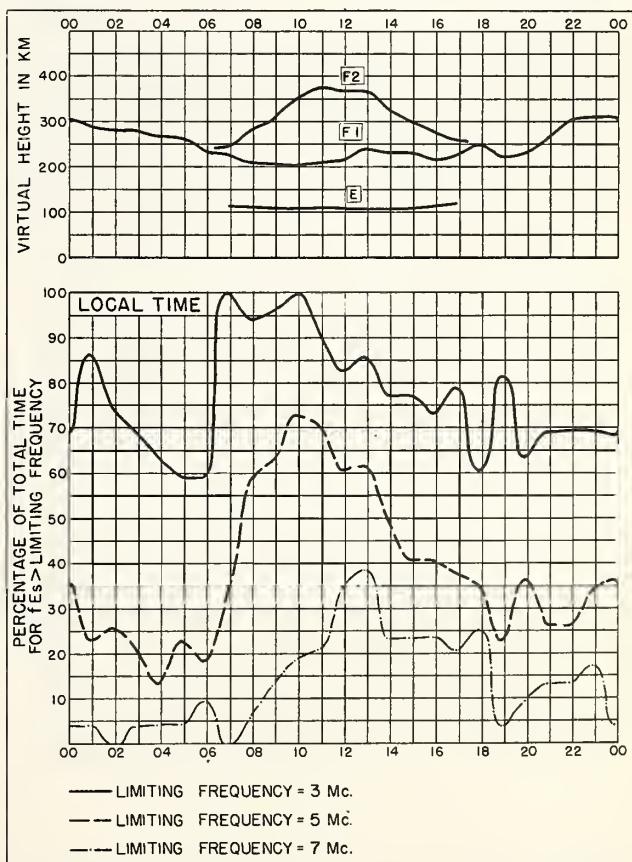


Fig. 84. AHMEDABAD, INDIA

MAY 1955

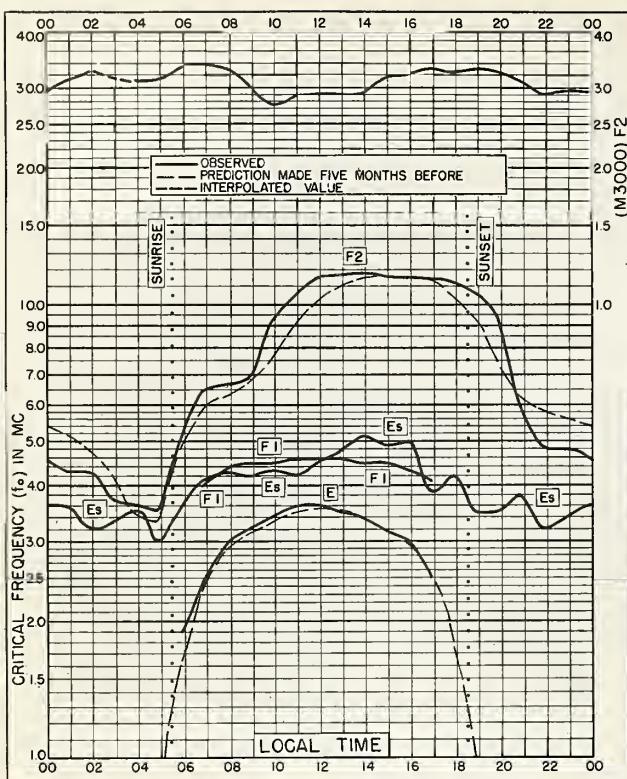


Fig. 85. CALCUTTA, INDIA
22.9°N, 88.5°E

MAY 1955

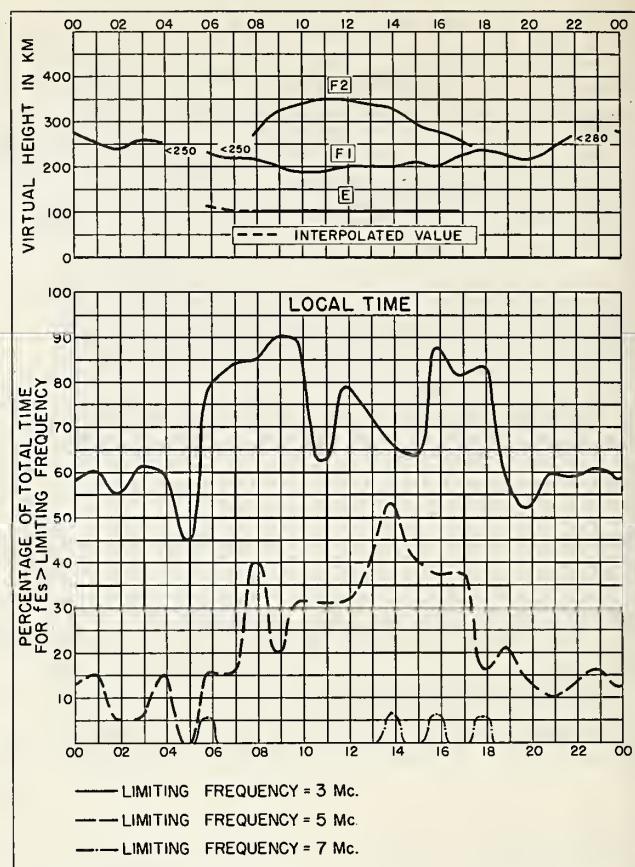


Fig. 86. CALCUTTA, INDIA

MAY 1955

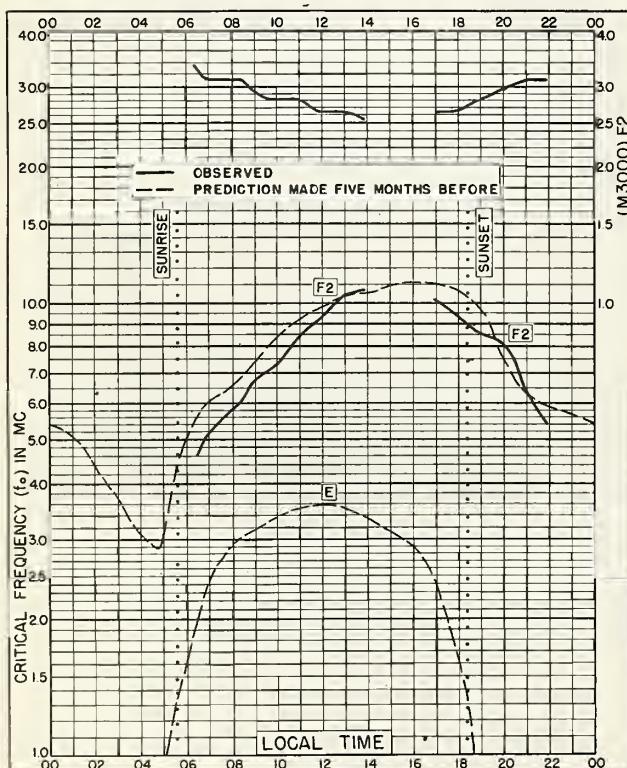


Fig. 87. BOMBAY, INDIA
19.0°N, 73.0°E

MAY 1955

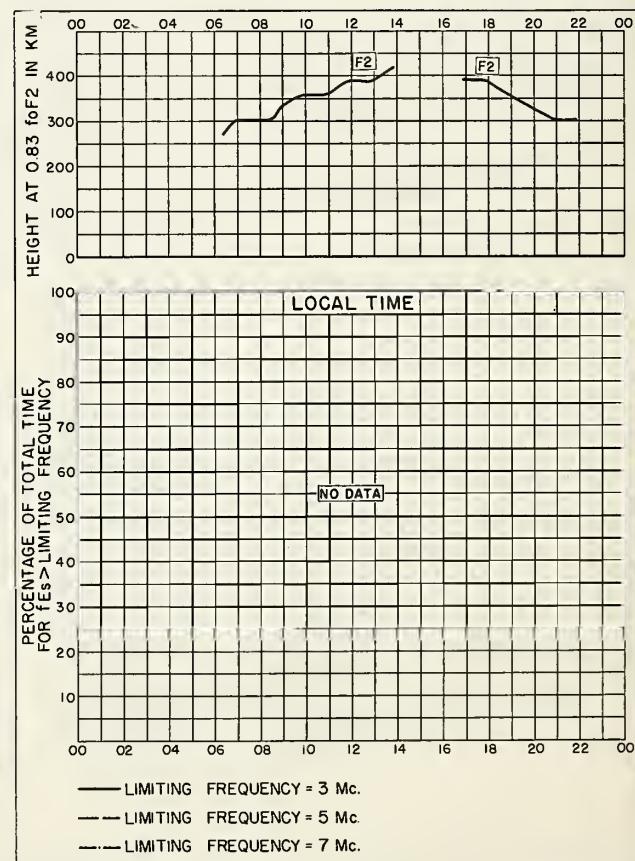


Fig. 88. BOMBAY, INDIA

MAY 1955

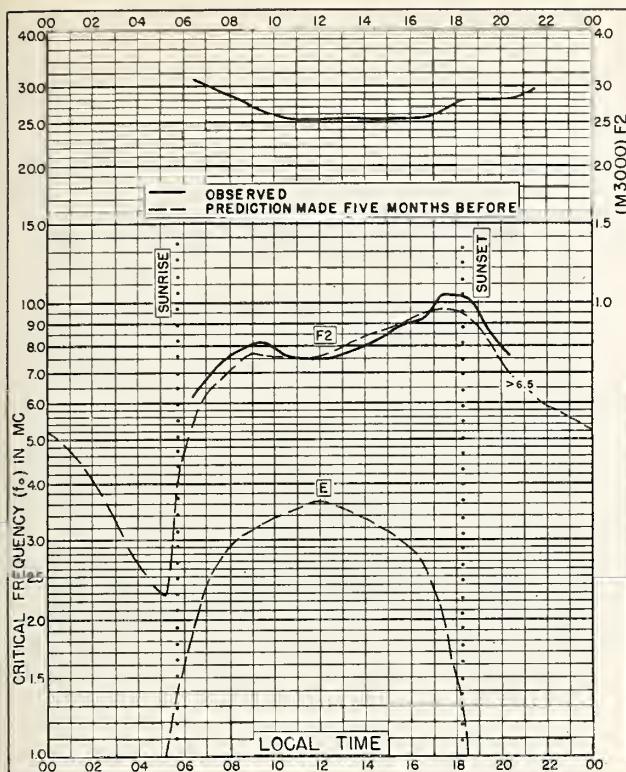


Fig. 89. MADRAS, INDIA
13.0°N, 80.2°E MAY 1955

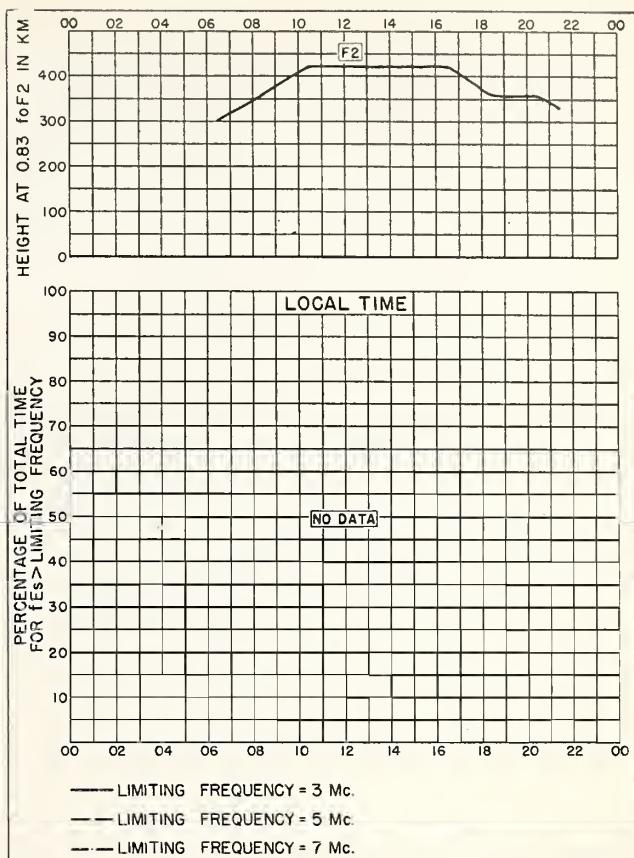


Fig. 90. MADRAS, INDIA MAY 1955

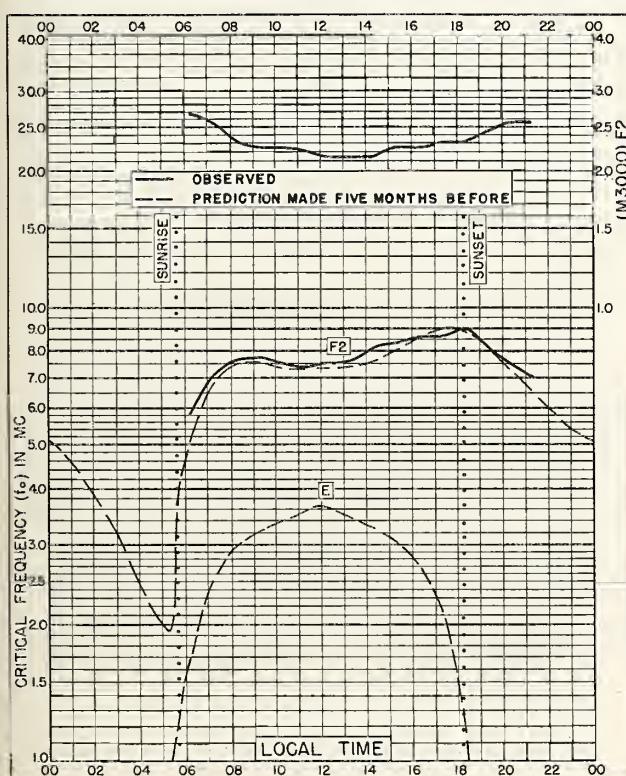


Fig. 91. TIRUCHY, INDIA
10.8°N, 78.8°E MAY 1955

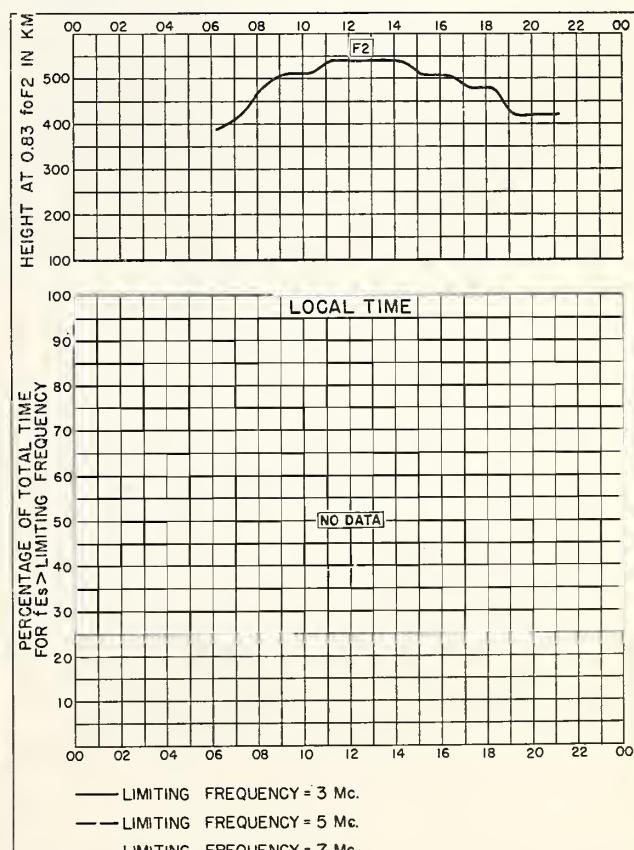


Fig. 92. TIRUCHY, INDIA MAY 1955

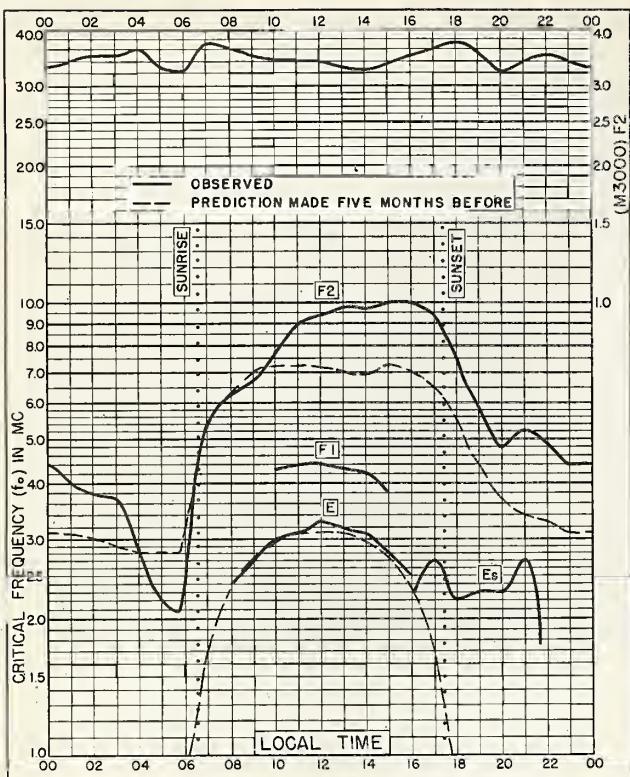


Fig. 93. SAO PAULO, BRAZIL
23.5°S, 46.5°W

MAY 1955

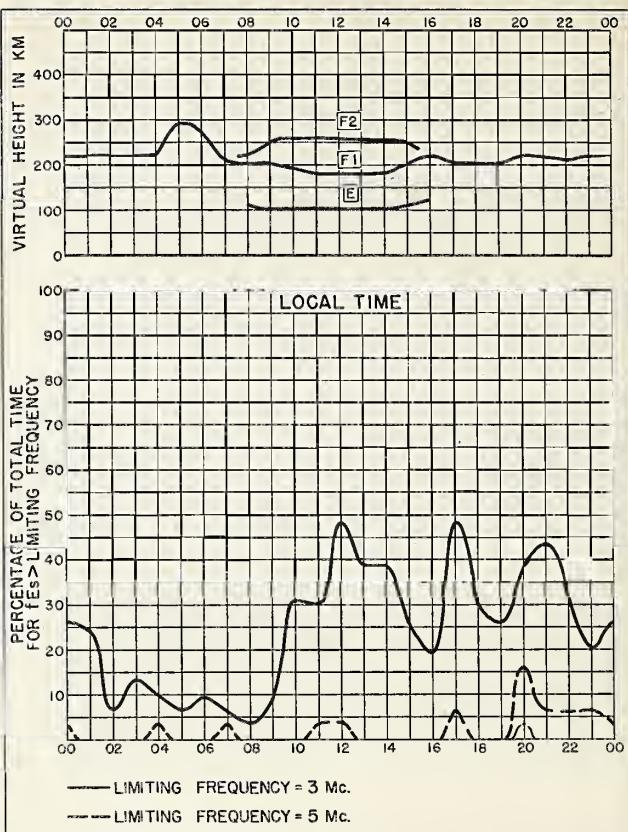


Fig. 94. SAO PAULO, BRAZIL

MAY 1955

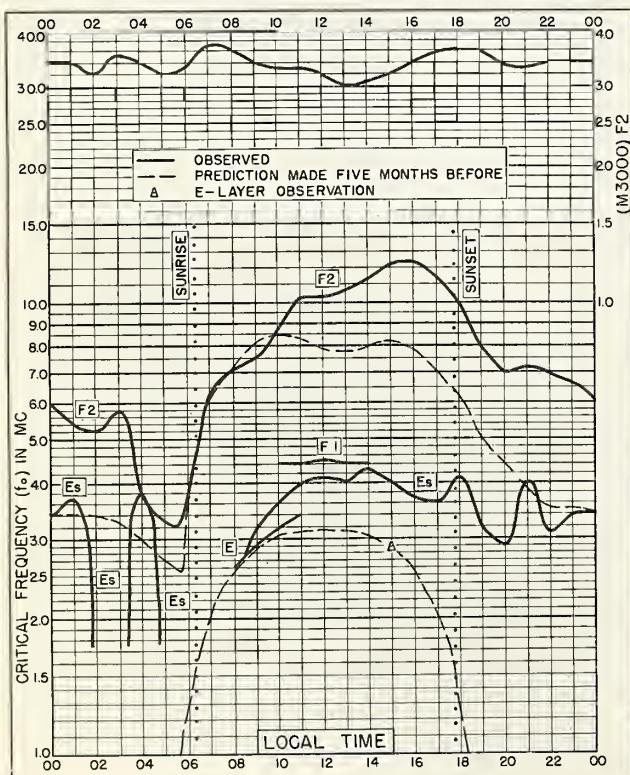


Fig. 95. SAO PAULO, BRAZIL
23.5°S, 46.5°W

APRIL 1955

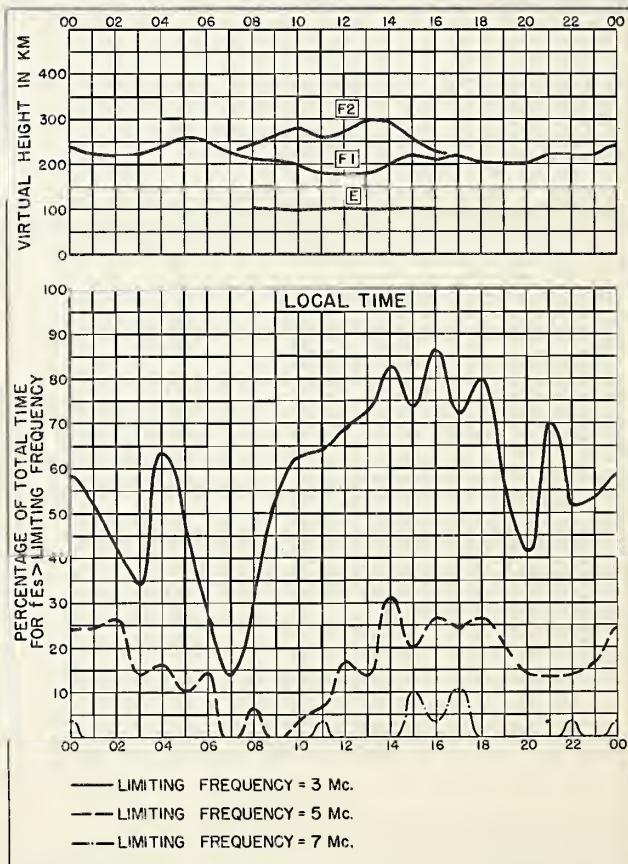


Fig. 96. SAO PAULO, BRAZIL

APRIL 1955

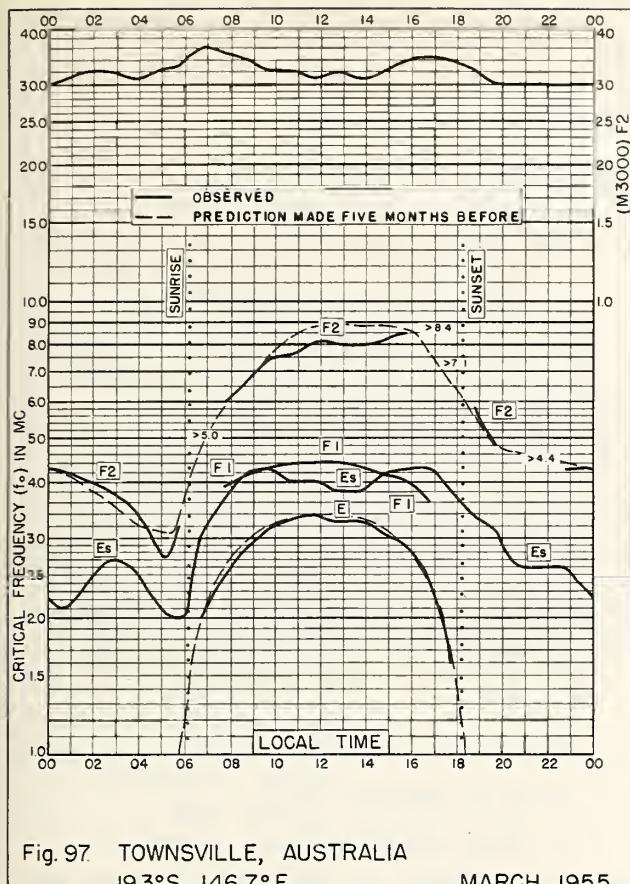


Fig. 97. TOWNSVILLE, AUSTRALIA
19.3°S, 146.7°E

MARCH 1955

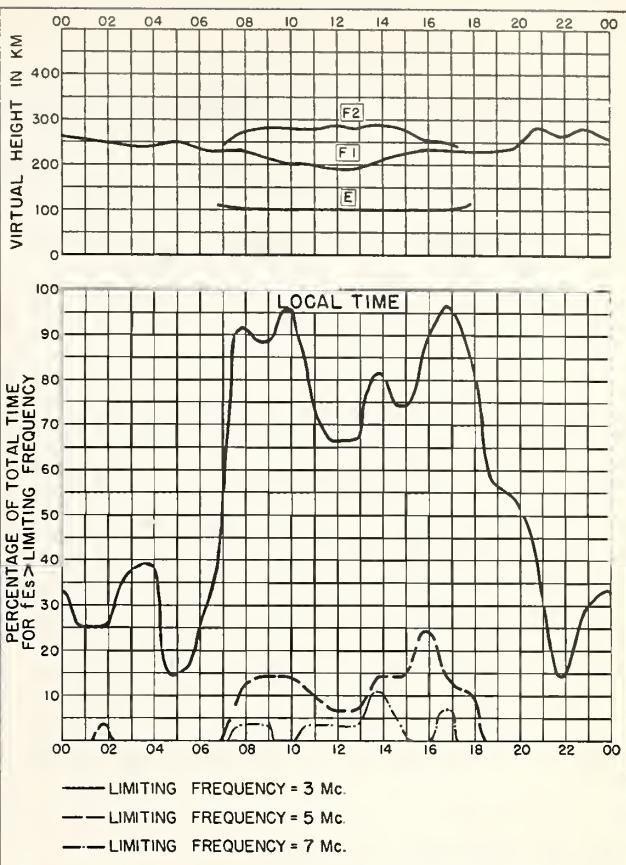


Fig. 98. TOWNSVILLE, AUSTRALIA

MARCH 1955

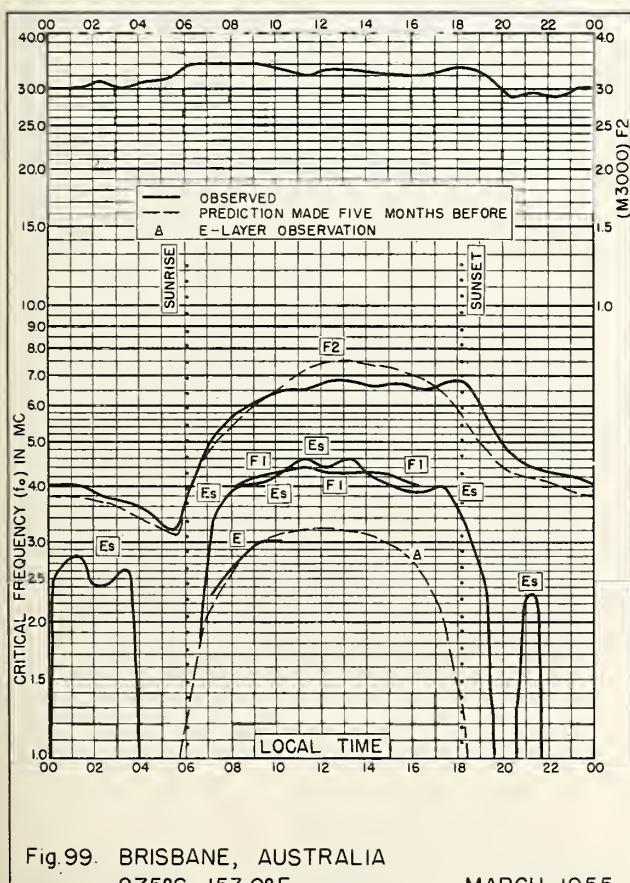


Fig. 99. BRISBANE, AUSTRALIA
27.5°S, 153.0°E

MARCH 1955

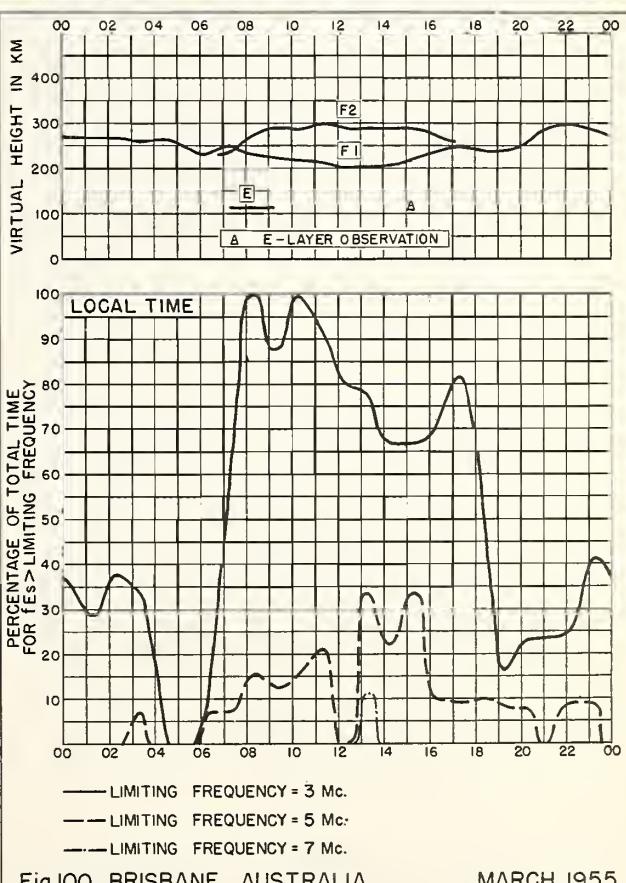
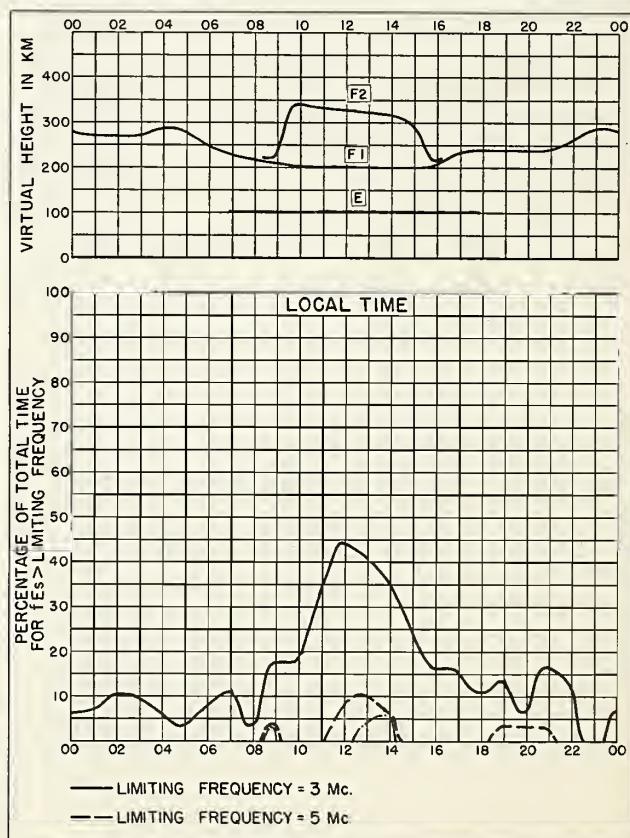
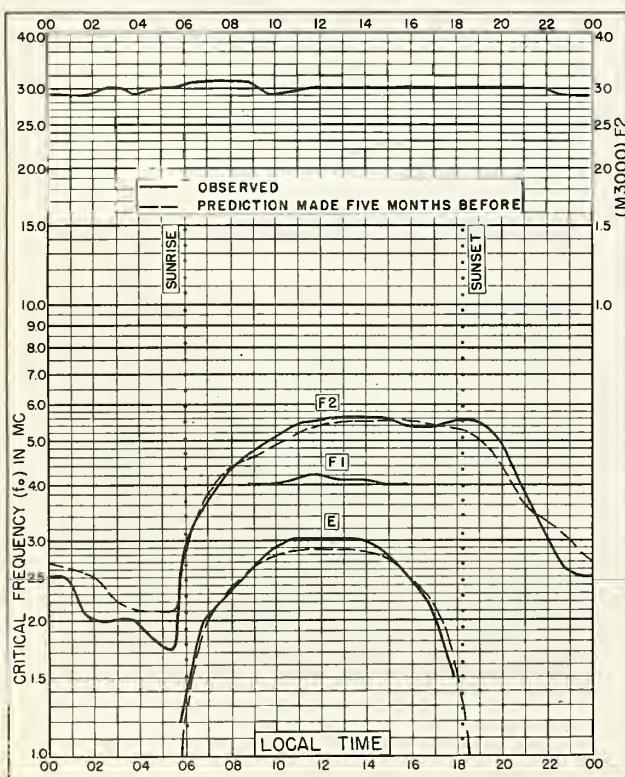
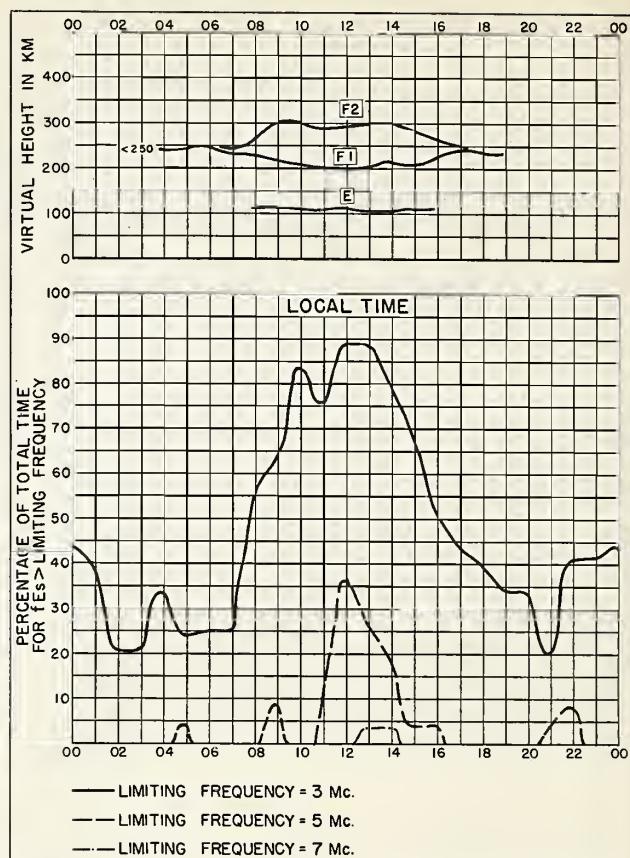
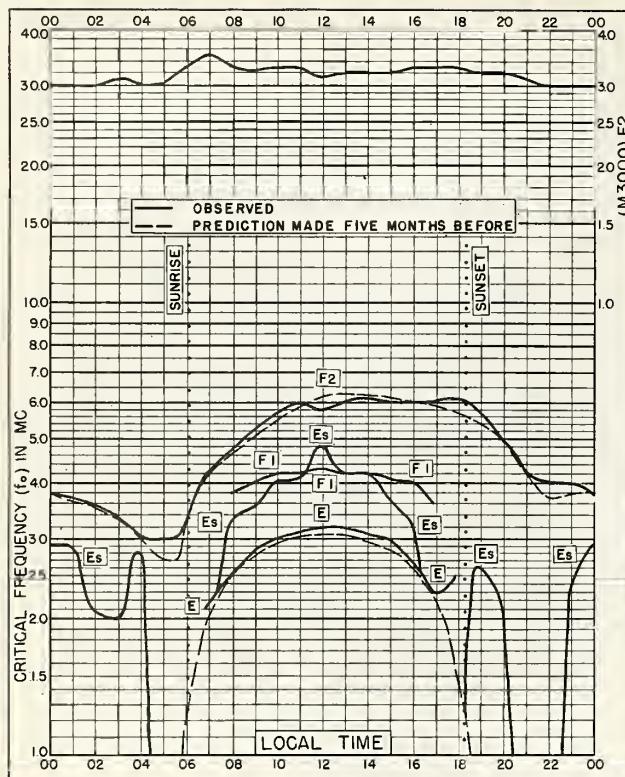


Fig. 100. BRISBANE, AUSTRALIA

MARCH 1955



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