

Library, N.W. Bldg

FEB 8 1961

CRPL-F 197 PART A

FOR OFFICIAL USE

Reference book not to be  
taken from the Library.

PART A  
IONOSPHERIC DATA

ISSUED  
JANUARY 1961

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

National Bureau of Standards

MAR 24 1934

122,432

122,432

Hed.

122,432

CRPL-F 197  
PART A

NATIONAL BUREAU OF STANDARDS  
CENTRAL RADIO PROPAGATION LABORATORY  
BOULDER, COLORADO

Issued  
23 Jan. 1961

## IONOSPHERIC DATA

### CONTENTS

	<u>Page</u>
Symbols, Terminology, Conventions . . . . .	ii
World-Wide Sources of Ionospheric Data. . . . .	v
Tabulations of Electron Density Data. . . . .	viii
Tables of Ionospheric Data. . . . .	1
Graphs of Ionospheric Data. . . . .	13
Index of Tables and Graphs of Ionospheric Data in CRPL-F197 (Part A). . . . .	49

## SYMBOLS, TERMINOLOGY, CONVENTIONS

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

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

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

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

There was an expansion in meaning of the following:

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

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

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

a. For all ionospheric characteristics:

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

b. For critical frequencies and virtual heights:

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

Values missing because of G are counted:

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

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

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

c. For MUF factor (M-factors):

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

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

d. For sporadic E (Es):

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

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

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

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

Beginning with CRPL-F188, Part A, issued April 1960, the count is given for foF2 in the tables of medians. It is regretted that space limitations prevent including detailed counts for other characteristics.

To indicate further in a general manner the relative reliability of the data, for the F2 layer, h'F or foEs, if the count is from five to nine, or, for all layers, if more than half of the data used to compute the medians are doubtful (either doubtful or interpolated), the median is enclosed in parentheses. Medians are computed for less than five values for foF2 only.

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

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

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

The latest available information follows concerning the smoothed observed Zürich numbers beginning with the minimum of April 1954. Final numbers are listed through June 1959.

#### Smoothed Observed Sunspot Number

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1954				3	4	4	5	7	8	8	9	12
1955	14	16	19	23	29	35	40	46	55	64	73	81
1956	89	98	109	119	127	137	146	150	151	156	160	164
1957	170	172	174	181	186	188	191	194	197	200	201	200
1958	199	201	201	197	191	187	185	185	184	182	181	180
1959	179	177	174	169	165	161	156	151	145	140	136	132
1960	128	124	120	118	115	112						

## WORLD - WIDE SOURCES OF IONOSPHERIC DATA

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

Republica Argentina, Ministerio de Marina:  
Buenos Aires, Argentina

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

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

Belgian Royal Meteorological Institute:  
Lwiro (Central African Institute for Scientific Research)

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

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

Defence Research Board, Canada:  
Churchill, Canada  
Ottawa, Canada  
Resolute Bay, Canada  
St. John's, Newfoundland  
Winnipeg, Canada

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

Czechoslovak Academy of Sciences:  
Pruhonice, Czechoslovakia

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

The Finnish Academy of Sciences and Letters:  
Sodankyla, Finland

French National Center for Telecommunications Studies:

Bangui, French Equatorial Africa  
Dakar, French West Africa  
Djibouti, French Somaliland  
Poitiers, France  
Rabat, Morocco  
Tahiti, Society Is.  
Tamanrasset, French West Africa  
Tananarive, Madagascar

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

Institute for Ionospheric Research, Lindau Über Northeim, Hannover, Germany:  
Lindau/Harz, Germany  
Tsumeb, South West Africa

Ionospheric Institute, Breisach, Germany:  
Freiburg, Germany

The Royal Netherlands Meteorological Institute:  
De Bilt, Holland  
Hollandia, Netherlands New Guinea  
Paramaribo, Surinam

Geophysical and Geodetic Institute, Genoa, Italy:  
Genoa (Monte Capellino), Italy

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

General Directorate of Telecommunications, Mexico:  
El Cerillo, Mexico

Telecommunication Administration, Oslo, Norway:  
Svalbard, Norway

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

South African Council for Scientific and Industrial Research:  
Johannesburg, Union of South Africa

Research Institute of National Defence, Stockholm, Sweden:

Lycksele, Sweden

Upsala, Sweden

Royal Board of Swedish Telegraphs, Radio Department, Stockholm, Sweden:

Lulea, Sweden

National Bureau of Standards (Central Radio Propagation Laboratory):

Byrd Station, Antarctica

Washington, D. C.

Tabulations of Electron Density Data, Puerto Rico, September 1960,  
are expected to appear in CRPL-F(Part A) for February 1961.

# TABLES OF IONOSPHERIC DATA

SEPTEMBER 1960 - FEBRUARY 1953

Table 1

Washington, D. C. (38.7° N., 77.1° W.)							September 1960			
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2		
08	6.0	29	285					2.70		
01	5.55	28	260					2.65		
02	5.3	27	200					2.70		
03	4.9	27	275					2.70		
04	4.3	26	290					2.75		
05	4.3	26	200					2.80		
06	5.3	28	260					3.00		
07	7.0	29	240					3.15		
08	260	0.2	29	230				3.10		
09	270	0.5	29	220				3.00		
10	320	9.05	30	210				2.90		
11	325	9.05	30	210	4.7	105	3.70	2.80		
12	355	9.45	30	205	5.0	105	3.75	2.00		
13	360	9.55	30	215	5.0	107	3.70	2.75		
14	340	9.55	30	220	4.7	105	3.60	2.75		
15	(400)	9.5	30	230		109	3.40	2.75		
16	---	9.15	30	235		109	3.15	2.05		
17	---	9.2	30	245		113	2.65	2.05		
18	---	9.15	30	250		<129	2.00	2.90		
19	8.6	29	240					2.90		
20	7.45	30	250					2.78		
21	6.06	28	255					2.75		
22	6.55	30	275					2.70		
23	6.2	29	260					2.70		

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 3

Resolute Bay, Canada (74.7° N., 94.9° W.)							June 1960			
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2		
00	(400)	5.4	29	235	3.5	100	2.20	2.00		
01	(405)	5.1	29	230	3.4	100	2.30	2.05		
02	400	5.1	29	240	3.5	100	2.30	2.70		
03	420	5.2	29	220	3.7	100	2.40	2.60		
04	490	5.2	30	220	3.0	100	2.50	2.70		
05	435	4.9	30	210	4.0	100	2.70	2.50		
06	420	5.1	29	210	4.0	100	2.90	2.55		
07	430	5.2	29	210	4.2	100	3.00	2.55		
08	490	5.0	29	<210	4.3	100	3.10	2.45		
09	515	5.0	28	200	4.4	100	3.20	2.40		
10	510	5.1	29	200	4.4	100	3.30	2.40		
11	500	5.3	29	200	4.5	100	3.30	2.40		
12	500	5.2	29	200	4.6	100	3.30	2.40		
13	480	5.4	29	200	4.6	100	3.30	2.40		
14	450	5.6	25	200	4.6	100	3.30	2.60		
15	430	5.6	26	200	4.5	100	3.30	2.60		
16	450	5.6	20	200	4.5	100	3.20	2.55		
17	500	5.4	29	205	4.5	100	3.05	2.50		
18	430	5.5	29	205	4.2	100	2.95	2.60		
19	380	5.5	20	210	4.0	100	2.60	2.70		
20	400	5.4	28	230	4.0	100	2.60	2.70		
21	410	5.6	20	230	3.0	100	2.50	2.70		
22	(410)	5.2	28	230	3.6	100	2.40	2.80		
23	(395)	5.3	29	240	3.5	100	2.30	2.90		

Time: 90.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 27 seconds.

Table 5

Lulea, Sweden (65.6° N., 22.1° E.)							June 1960			
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2		
00	5.3	19	310					2.6		
01	5.6	19	300					2.7		
02	---	5.4	17	290	3.1	---	2.2	2.6		
03	380	5.6	21	260	3.5	130	2.2	2.6		
04	390	5.8	18	250	3.8	125	2.6	2.6		
05	385	5.9	16	235	4.1	---	2.9	2.7		
06	410	5.9	16	225	4.4	115	2.9	2.7		
07	430	6.0	18	230	4.5	110	3.1	2.6		
08	395	6.0	16	230	4.8	110	3.4	2.6		
09	410	6.0	18	230	4.9	105	3.5	2.6		
10	390	6.5	17	220	5.0	105	3.5	2.6		
11	415	6.4	21	220	4.9	105	3.5	2.65		
12	395	6.2	20	210	5.0	105	3.5	2.7		
13	410	6.4	19	230	5.0	105	3.5	2.6		
14	380	6.5	21	210	4.9	110	3.4	2.7		
15	400	6.2	23	230	4.0	110	3.3	2.6		
16	375	5.9	21	225	4.6	110	3.1	2.8		
17	(380)	6.2	22	240	4.4	110	3.1	2.8		
18	---	6.0	23	245	---	120	2.8	2.8		
19	6.0	24	250		140	2.6	2.7	2.9		
20	6.0	22	260		---	2.3	2.6	2.8		
21	5.8	18	200		---	2.3	2.7	2.7		
22	5.3	21	305		---	---	2.7	2.7		
23	5.5	18	310		---	---	2.7	2.7		

Time: 15.0°E.

Sweep: 0.65 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 2

Washington, D. C. (38.7° N., 77.1° W.)							August 1960			
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2		
00										2.65
01										2.70
02										2.75
03										2.70
04										2.70
05										2.80
06										3.00
07	365	5.5	31	240	4.2	111	2.70	3.1	2.92	
08	360	5.8	31	220	4.4	109	(3.20)	3.4	2.90	
09	410	6.1	31	220	4.7	107	3.40	3.6	2.88	
10	425	6.7	30	210	5.0	107	(3.70)	3.7	2.75	
11	420	6.7	31	210	5.0	109	3.90		2.70	
12	435	6.6	31	210	5.0	109	4.00		2.65	
13	410	6.9	31	210	5.0	107	3.90		2.70	
14	410	6.6	31	220	5.0	105	3.80		2.70	
15	400	6.8	31	230	4.9	105	3.60	3.7	2.75	
16	405	6.8	31	230	4.8	107	3.32	3.5	2.75	
17	335	6.8	31	230	4.4	109	3.00	3.2	2.80	
18	270	7.15	30	250	---	117	2.40	2.6	2.85	
19	7.2	30	265		---	145	1.78	1.8	2.88	
20	6.7	31	250							2.85
21	6.5	31	260							2.75
22	6.1	31	280							2.70
23	5.6	30	298							2.70

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 4

Sodankyla, Finland (67.4° N., 26.6° E.)							June 1960			
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2		
00										2.65
01										2.65
02	(5.6)	9	330							(2.65)
03										2.65
04										2.65
05	5.8	18	250	3.9	120	2.60	(3.7)	2.60		
06	5.8	19	240	4.0	120	2.85	(3.7)	2.60		
07	6.2	16	230	4.4	110	3.00	(4.0)	2.70		
08	6.0	20	225	4.6	110	3.20	4.2	2.55		
09	6.0	24	220	4.6	110	3.40	4.2	2.65		
10	440	5.9	27	215	5.0	100	3.50	5.0		
11	430	6.0	20	210	4.9	100	3.50	5.0		
12	410	6.1	27	210	5.0	100	3.50	5.0		
13	420	6.2	29	215	4.9	100	3.50	3.9		
14	390	6.0	20	210	4.9	100	3.40	5.0		
15	425	6.2	30	215	4.9	105	3.30	4.4		
16	370	6.1	30	230	4.7	105	3.20	5.0		
17	350	6.1	30	230	4.55	105	3.00	4.0		
18	(320)	6.0	30	240	4.25	105	2.60	4.4		
19	---	6.0	29	250	---	105	2.40	3.0		
20	---	6.2	29	255	---	105	2.00	4.0		
21	---	5.7	27	260	---	100	1.80	3.3		
22	---	5.4	28	30						

Table 7

Time	Nurmijärvi, Finland (60.5° N, 11.6° E)					June 1960		
	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	(6.4)	7						(2.75)
01	(6.2)	9						(2.70)
02	(5.8)	6						(2.75)
03	5.8	13						2.80
04	5.6	14	---					2.80
05	5.9	20	---					2.75
06	6.2	19	4.2					2.70
07	6.3	20	4.3					2.80
08	6.0	19	4.5					2.75
09	6.3	21	4.8					2.75
10	7.0	19	5.0					2.80
11	6.6	20	5.0					2.80
12	6.7	24	5.0					2.75
13	7.1	18	5.0					2.80
14	6.6	21	5.0					2.75
15	6.4	26	5.0					2.75
16	6.6	26	4.0					2.85
17	6.3	29	4.4					2.85
18	6.3	27	---					2.90
19	6.4	25						2.90
20	6.5	23			4.8			3.00
21	6.5	19						2.90
22	6.0	15						2.85
23	(6.9)	8						(2.80)

Time: 30.0°E.

Sweep: 1.0 Mc to 25.0 Mc in 1 minute.

Table 9

Time	Churchill, Canada (50.0° N, 94.2° W)					June 1960		
	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	4.7	27	300					5.4
01	4.7	25	300					5.1
02	4.5	29	305	---	---			(2.75)
03	4.4	20	310	---	1.90	3.0		---
04	4.4	26	295	---	105	2.20	3.0	---
05	485	4.6	27	200	3.8	110	2.75	2.8
06	610	4.7	23	260	4.0	105	3.00	3.4
07	560	5.0	19	245	4.4	105	3.40	(2.70)
08	600	5.0	23	220	4.6	100	3.60	(2.50)
09	650	5.1	25	230	4.0	105	3.70	(2.60)
10	540	5.3	27	230	4.8	100	3.80	(2.60)
11	500	5.5	26	230	4.0	100	3.85	(2.50)
12	500	5.9	27	215	4.9	105	3.00	2.50
13	490	5.9	27	220	4.9	100	3.75	2.60
14	490	6.0	29	210	4.9	100	3.70	2.55
15	435	6.4	29	220	4.9	100	3.70	2.65
16	430	6.1	29	220	4.0	105	3.50	2.65
17	390	6.0	28	240	4.6	105	3.20	2.00
18	425	5.7	25	250	4.3	110	3.00	(2.70)
19	380	5.4	27	280	4.1	110	3.00	(2.80)
20	(370)	5.3	27	290	---	120	2.60	4.0
21	5.0	26	300	---	---	2.30	5.0	(3.00)
22	5.2	27	300	---	---	6.0	---	---
23	5.0	28	300			4.3	---	---

Time: 90.0°W.

Sweep: 1.0 Mc to 17.0 Mc in 16 seconds.

Table 11

Time	De Bilt, Holland (52.1° N, 5.2° E)					June 1960		
	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	6.6	30	275					2.2
01	6.1	30	290					2.60
02	5.8	30	290					2.1
03	5.6	29	300	---				2.65
04	(370)	5.7	30	260	---	1.9	3.2	2.70
05	400	6.2	28	240	3.0	100	2.5	3.0
06	375	6.0	28	225	4.4	100	2.8	2.75
07	400	6.5	20	210	4.8	100	3.2	2.70
08	350	6.9	29	210	5.0	100	3.4	2.90
09	340	7.2	28	210	5.1	100	3.7	2.80
10	340	7.2	20	200	5.3	100	3.0	4.5
11	340	7.2	28	200	5.4	100	3.9	4.4
12	375	7.1	28	200	5.3	100	3.9	4.4
13	365	7.6	29	210	5.3	100	3.0	4.5
14	360	7.3	27	205	5.3	100	3.7	2.85
15	345	7.2	30	210	5.1	100	3.6	4.2
16	320	7.3	29	225	5.0	100	3.4	2.05
17	330	7.2	30	225	4.7	100	3.0	4.0
18	(300)	7.2	30	230	---	100	2.7	2.95
19	---	7.4	30	250	110	2.2	3.4	2.95
20	---	7.6	30	260	---	E	2.9	2.90
21	7.6	29	260			3.2	2.80	
22	7.3	29	265			2.0	2.80	
23	7.0	30	270			2.70		

Time: 0.0°W.

Sweep: 1.6 Mc to 16.0 Mc in 40 seconds.

Table 8

Time	Uppsala, Sweden (59.0° N, 17.6° E)					June 1960		
	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00			6.0		27	290		
01			5.6		27	295		
02			5.5		26	305		
03			360	5.5	20	285	2.9	
04			350	5.8	28	255	3.5	
05			400	5.9	29	240	3.9	
06			420	6.1	29	235	4.2	
07			410	6.0	29	225	4.5	
08			440	6.2	29	220	4.7	
09			410	6.5	28	230	5.0	
10			410	6.7	20	225	5.0	
11			395	6.8	27	215	5.0	
12			395	6.5	28	215	5.1	
13			405	6.7	29	215	5.1	
14			390	6.0	30	215	5.0	
15			390	6.0	30	215	5.0	
16			405	6.6	30	220	5.0	
17			350	6.6	30	230	4.5	
18			(330)	6.4	29	240	4.2	
19			---	6.6	29	245	---	
20			---	6.5	29	265	---	
21			---	6.8	29	200	---	
22			6.9	29	280		110	1.20
23			6.2	28	290		110	1.00

Time: 15.0°E.

Sweep: 0.33 Mc to 20.0 Mc in 3 minutes.

Occasionally, 1.4 Mc to 17.0 Mc in 6 minutes, automatic operation.

Table 10

Time	Inverness, Scotland (57.4° N, 4.2° W)					June 1960		
	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00			6.4		30	290		<1.3
01			5.0		29	300		1.2
02			5.4		29	300		<1.6
03			5.2		20	310	125	1.50
04			5.4		20	280	---	1.90
05	(515)	5.5	25	270	3.8	115	2.35	2.6
06	360	5.8	29	250	3.9	110	2.70	2.8
07	410	5.9	28	240	4.3	110	3.00	3.0
08	410	5.9	29	230	4.6	105	3.30	3.5
09	450	6.1	29	230	4.0	105	3.50	2.60
10	400	6.3	25	230	4.8	105	3.70	2.70
11	420	6.4	23	230	(4.9)	105	3.90	2.70
12	400	6.5	20	220	(4.9)	105	3.90	2.70
13	425	6.6	27	220	(5.0)	105	3.80	2.60
14	410	6.4	29	225	4.9	105	3.70	2.70
15	430	6.6	26	240	(4.8)	105	3.60	2.70
16	400	6.4	30	230	4.8	105	3.50	2.75
17	400	6.6	27	240	4.6	110	3.20	2.75
18	(360)	6.8	27	250	4.7	110	2.90	3.1
19	>6.7	20	250		5.1	120	2.60	3.0
20	>6.8	29	260		5.0	130	2.20	2.6
21	>6.7	30	260		5.2	140	1.80	2.75
22	>6.7	30	280		5.1		<1.6	2.70
23	>6.7	29	265		5.2		<1.6	2.60

Time: 0.0°W.

Sweep: 0.65 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 12

Time	Slough, England (51.5° N, 0.6° W)					June 1960		
	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00			6.7		25	275		1.5
01			6.4		25	290		1.2
02			5.9		25	290		2.60
03			5.6		25	305	---	1.2
04			5.6		24	290	---	1.75
05			400	6.0	25	255	---	2.0

Table 13

Pruhonice, Czechoslovakia (50.0° N, 14.6° E)								June 1960	
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(MHz) F2	
00	6.5	28	280					1.0	
01	6.2	20	275					1.6	
02	5.8	29	205					1.3	
03	---	20	200	---	100	1.5	2.0		
04	330	6.1	28	250	3.6	105	2.1	2.4	
05	370	6.4	28	240	4.2	100	2.7	3.2	
06	355	6.0	27	230	4.8	100	3.0	3.9	
07	340	7.5	25	220	5.0	100	3.3	4.1	
08	350	7.4	24	215	5.1	95	3.5	4.4	
09	350	7.6	19	220	5.2	95	3.6	4.2	
10	345	7.5	21	215	5.2	95	3.7	4.4	
11	370	7.4	24	215	5.4	100	3.0	4.4	
12	360	7.4	21	215	5.3	100	3.0	4.3	
13	360	7.4	26	215	5.3	100	3.7	4.0	
14	350	7.4	25	220	5.2	100	3.6	4.0	
15	330	7.4	27	220	5.0	100	3.3	4.0	
16	315	7.4	27	220	4.6	100	3.1	3.6	
17	290	7.2	25	245	4.0	100	2.0	4.2	
18	---	7.4	26	260	---	110	2.1	3.3	
19	7.4	29	260	---	1.5	3.0			
20	7.4	29	265			3.1			
21	7.4	28	270						
22	7.0	28	275						
23	6.9	29	290						

Time: 0.0°.  
Sweep: 1.0 Mc to 18.0 Mc.

Table 15

St. John's, Newfoundland (47.6° N, 52.7° W)								June 1960	
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(MHz) F2	
00	5.2	21	208					2.60	
01	5.2	20	275					2.70	
02	4.4	21	290					2.60	
03	3.8	22	290					2.65	
04	---	4.3	22	275	---	110	2.00	2.80	
05	(410)	4.7	22	246	3.9	110	2.60	2.80	
06	565	5.2	23	239	4.2	105	3.00	2.65	
07	470	5.7	22	234	4.4	100	3.30	2.75	
08	440	5.9	22	222	4.8	100	3.60	2.75	
09	430	6.0	22	215	4.9	100	3.70	2.70	
10	400	6.2	23	222	5.0	100	3.90	2.70	
11	435	6.2	24	216	5.2	100	3.95	2.70	
12	410	6.7	24	219	5.1	100	3.90	2.70	
13	420	6.6	24	219	5.1	100	3.90	2.60	
14	375	6.8	24	214	5.0	100	3.70	2.80	
15	395	6.8	24	222	5.0	105	3.60	2.70	
16	370	7.0	24	230	4.8	110	3.30	2.75	
17	330	7.1	24	240	---	110	3.00	2.75	
18	---	7.5	24	260	120	2.60	3.4	2.75	
19	7.3	24	270	125	----	3.2	2.75		
20	7.7	24	269					2.70	
21	7.4	23	260					2.65	
22	7.0	22	280					2.60	
23	5.7	23	300					2.60	

Time: 60.0°W.  
Sweep: 1.0 Mc to 25.0 Mc in 27 seconds.

Table 17

Genoa (Monte Capellino), Italy (44.6° N, 9.0° E)								June 1960	
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(MHz) F2	
00	7.8	30	310					2.6	
01	7.8	27	310					3.0	
02	7.4	27	305					2.0	
03	7.1	29	305					2.4	
04	6.6	27	305					2.4	
05	6.6	29	295		1.7	2.6			
06	6.9	30	260		2.3	2.8			
07	7.9	29	250		2.0	3.0			
08	0.4	27	240		3.2	4.2			
09	0.4	27	230		3.5	4.4			
10	8.4	28	230		3.6	4.6			
11	0.6	28	225		3.7	5.0			
12	8.6	28	220		3.8	5.0			
13	0.2	30	225		3.0	5.0			
14	0.6	30	230		3.7	4.4			
15	0.5	29	230		3.6	4.4			
16	0.2	29	235		3.4	4.6			
17	0.4	27	250		3.2	4.6			
18	8.3	27	250		2.9	4.4			
19	0.8	28	275		2.3	3.0			
20	0.7	26	275		1.0	4.3			
21	0.4	29	280			3.4			
22	0.6	30	300			3.3			
23	0.1	30	310			3.7			

Time: 15.0°E.  
Sweep: 1.0 Mc to 20.0 Mc in 5 minutes, automatic operation.

Table 14

Winnipeg, Canada (49.2° N, 97.4° W)								June 1960	
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(MHz) F2	
00			5.0		20	310		2.8	2.00
01			4.5		22	320		3.0	(2.65)
02			4.2		19	315		3.0	(2.70)
03			4.0		19	305		2.5	(2.70)
04			3.9		26	300	---	2.0	(2.00)
05	(400)	4.4	25	200	3.1	120	2.00	2.00	
06	6	4.7	25	250	3.0	110	2.60	2.55	
07	500	5.0	25	240	4.1	105	3.00	2.50	
08	500	5.2	29	220	4.5	100	3.20	2.60	
09	500	5.4	26	215	4.7	100	3.50	2.50	
10	500	5.5	26	220	4.0	100	3.80	2.60	
11	530	5.5	26	220	4.0	100	3.80	2.60	
12	575	5.5	24	210	4.9	100	3.80	2.60	
13	510	5.6	26	220	4.9	100	3.80	2.50	
14	480	5.9	27	220	5.0	100	3.80	2.50	
15	450	6.1	27	220	4.9	100	3.65	2.70	
16	450	6.2	29	220	4.0	105	3.50	2.70	
17	410	6.4	30	220	4.7	105	3.30	2.65	
18	365	6.4	28	235	4.4	110	3.00	2.70	
19	320	6.4	29	250	3.9	110	2.60	2.75	
20	---	6.7	27	200	130	2.00		2.00	
21	6.2	25	200		---	---			2.75
22	5.6	22	300						2.75
23	5.0	22	290					2.4	2.75

Time: 00.0°N.  
Sweep: 1.0 Mc to 20.0 Mc in 15 seconds.

Table 16

Ottawa, Canada (45.4° N, 75.9° W)								June 1960	
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(MHz) F2	
00			5.6		26	300		2.7	(2.85)
01			4.0		26	295			
02			4.0		27	300			
03			4.0		26	300		2.7	
04			3.7		27	305			
05	(--)	4.2	29	260	---	120	2.0	3.00	
06	450	4.7	30	240	4.0	110	2.7	(2.90)	
07	495	5.0	29	230	4.3	110	3.1	2.70	
08	495	5.2	30	215	4.6	110	3.4	3.6	2.50
09	490	5.5	29	210	4.8	105	3.6		2.75
10	510	5.6	29	205	4.9	105	3.9		(2.80)
11	460	6.0	30	200	5.0	100	4.0		2.70
12	490	6.0	30	210	5.0	105	3.9		2.80
13	490	6.0	30	210	5.0	105	3.9		2.80
14	490	6.0	30	210	5.0	105	3.9		2.80
15	6.6	26	270		130	1.8	3.3		2.70
16	7.7	26	250		120	2.5	3.6		2.70
07	---	6.3	19	250	---	110	3.0	4.2	(2.75)
08	---	(0.0)	19	240	---	110	3.4	4.5	(2.85)
09	---	(0.4)	24	240	---	110	3.6	4.5	
10	---	9.0	22	(240)	---	110	3.7	5.0	(2.70)
11	(370)	9.4	22	210	5.4	110	3.0	5.4	2.75
12	360	9.1	23	210	5.4	110	3.9	4.0	2.75
13	(340)	0.9	24	220	(5.3)	110	3.0	4.5	2.70
14	350	9.2	22	220	(5.6)	110	3.7	4.5	2.75
15	(320)	0.0	25	230	(5.0)	110	3.7	4.5	2.00
16	(350)	0.4	26	240	5.0	110	3.5	4.6	2.05

Table 19

Formosa, China (25.0° N., 121.5° E.)								June 1960	
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00	9.7	23	230		(3.7)	(2.90)			
01	9.1	27	250		(3.1)	3.10			
02	9.0	27	235		(2.2)	3.00			
03	7.3	26	250		(2.3)	2.90			
04	6.6	21	255		(2.0)	2.90			
05	6.4	22	275		1.8	2.90			
06	7.6	30	235	---	3.0	3.20			
07	8.2	30	225	<100	---	4.0	3.25		
08	8.0	30	<230	---	101	---	(6.0)	2.95	
09	8.6	30	(215)	(5.6)	101	---	(5.6)	2.80	
10	9.0	(9.3)	26	(215)	(5.7)	(101)	---	(6.6)	(2.70)
11	375	>10.0	29	(225)	(5.7)	(101)	---	(6.6)	(2.70)
12	360	>10.9	29	(225)	(5.6)	<103	---	(5.3)	2.70
13	350	12.2	28	(225)	5.6	101	---	(5.1)	2.75
14	345	12.6	29	<235	(5.6)	<105	---	4.9	2.85
15	345	13.4	29	(215)	(5.6)	101	---	4.4	2.85
16	310	(13.6)	29	(230)	---	<106	---	(5.0)	2.95
17	295	(13.5)	30	(230)	---	<111	---	(4.6)	(2.95)
18	(260)	12.2	30	245	---	---	(4.6)	2.95	
19	(11.1)	28	<270	---	---	---	(4.2)	(2.90)	
20	>9.4	30	260	---	---	---	(3.4)	2.75	
21	>9.2	30	290	---	---	---	(2.7)	(2.65)	
22	>9.0	28	295	---	---	---	(2.7)	2.75	
23	>8.9	26	300	---	---	---	(3.2)	2.80	

Time: 120.0°E.

Sweep: 1.0 Mc to 25.0 Mc in 27 seconds.

Table 20

El Cerillo, Mexico (19.3° N., 99.5° E.)								June 1960	
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00	9.0	30	290		---	---	---		
01	8.6	29	270		---	---	---		
02	7.8	29	260		---	---	---		
03	7.4	29	250		---	---	---		
04	6.9	28	255		---	---	---		
05	6.4	29	260		---	---	---		
06	6.0	29	270		---	---	---		
07	7.1	30	240		109	2.40	3.0	2.95	
08	8.2	30	220		103	3.00	3.7	2.90	
09	(420)	8.9	30	210	5.0	103	3.40	4.0	2.60
10	370	9.3	29	200	5.3	103	3.60	4.4	2.60
11	300	10.1	30	200	5.5	103	3.80	3.8	2.60
12	380	11.0	29	200	5.6	103	3.90	4.2	2.60
13	360	11.0	28	210	5.4	103	4.00	4.3	2.65
14	360	11.2	29	220	5.6	103	3.90	4.4	2.70
15	350	11.4	30	220	5.4	103	3.70	4.2	2.70
16	350	11.0	29	235	5.0	103	3.50	4.4	<2.80
17	(370)	11.0	30	230	4.8	103	3.10	3.8	2.90
18	10.4	30	250	---	106	2.50	4.1	2.90	
19	10.0	29	265	---	---	---	4.5	2.90	
20	9.8	30	260	---	---	---	3.3	2.90	
21	9.4	29	260	---	---	---	3.0	<2.90	
22	9.0	30	280	---	---	---	2.6	2.80	
23	8.9	30	295	---	---	---	2.6	2.80	

Time: 90.0°E.

Sweep: 1.0 Mc to 25.0 Mc in 10 seconds.

Table 21

Singapore, British Malaya (1.3° N., 103.0° E.)								June 1960	
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00	10.4	27	220		3.4	3.10			
01	8.6	28	220		3.0	3.25			
02	6.2	29	220		2.0	3.15			
03	5.2	30	235		1.6	3.10			
04	4.5	29	230		3.10				
05	3.4	30	240		3.10				
06	5.4	30	275	---	110	1.35	1.8	2.95	
07	9.5	30	250	---	115	2.60	3.00		
08	11.9	29	235	---	110	3.20	2.95		
09	13.4	29	220	---	105	3.60	3.0	2.90	
10	305	14.0	28	210	5.5	105	3.85	2.70	
11	410	13.3	28	205	(5.3)	105	4.00	2.35	
12	325	13.0	28	205	5.6	105	4.05	2.30	
13	300	12.4	29	210	(5.2)	105	(4.00)	2.30	
14	12.3	30	205	---	105	3.85	4.2	2.25	
15	12.3	30	210	---	105	3.60	4.3	2.35	
16	12.2	28	230	---	110	3.15	3.9	2.35	
17	12.4	29	245	---	110	2.60	3.1	2.50	
18	12.9	29	260	---	---	---	2.9	2.60	
19	13.0	28	265	---	---	---	2.9	2.70	
20	>13.0	26	260	---	---	---	2.6	2.75	
21	13.1	27	245	---	---	---	2.8	2.90	
22	12.2	28	215	---	---	---	3.8	2.95	
23	>11.5	27	225	---	---	---	3.0	3.05	

Time: 105.0°E.

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

Table 22

Brisbane, Australia (27.5° S., 152.9° E.)								June 1960	
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00	4.6	13	250						2.0
01	4.4	13	260						2.1
02	4.4	15	270						2.1
03	4.3	15	290						2.1
04	4.4	14	265						2.35
05	4.1	12	260						2.1
06	4.1	14	250						2.35
07	7.2	15	240						<1.70
08	8.0	14	235						2.20
09	9.6	16	230						3.35
10	9.7	16	230						3.25
11	9.6	19	230						3.15
12	9.0	18	230						3.10
13	9.3	10	230						3.40
14	10.1	17	240						3.30
15	10.0	14	240						3.15
16	9.9	15	240						3.05
17	9.2	16	230						2.50
18	7.4	16	225						1.05
19	5.7	16	240						<1.70
20	4.9	15	250						2.2
21	4.7	16	275						3.0
22	4.8	16	260						2.1
23	4.6	15	250						2.05

Time: 150.0°E.

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

Table 24

Moscow, U.S.S.R. (55.5° N., 37.3° E.)								May 1960	
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00	5.8	29	290						2.65
01	5.3	31	290						2.60
02	5.1	29	290						2.65
03	---	5.0	31	300					
04	5.5	31	265	(3.2)					2.70
05	340	6.2	31	250	3.9	2.40	2.4	2.80	
06	340	6.9	31	235	4.3	2.00	3.0	2.80	
07	350	7.3	31	225	4.5	3.00	3.4	2.75	
08	7.7	31	225	4.8					2.80
09	8.2	31	220	5.0	3.40	4.0	2.80		
10	9.0	31	220	5.0	3.50	3.9	2.80		
11	335	8.6	31	210	5.0	3.60	3.8	2.80	
12	325	9.4	31	215	5.1	3.60	3.7	2.80	
13	335	8.1	31	220	5.0	3.50	2.00	2.00	
14	345	7.7	31	220	5.0	3.40	3.4	2.00	
15	335	7.6	31	225	4.7	3.20	3.2	2.00	
16	300	7.7	31	230	4.5	3.00	2.90		
17	305	7.6	31	240	4.2	2.00	3.1	2.90	
18	280	7.8	31	250	---	2.40	2.0	2.95	
19	---	8.1	31	255	---	1.75	2.5	2.90	
20	20	7.6	31	250	---	1.25	2.3	2.90	
21	7.2	31	250	---	---	1.7	2.05		
22	6.6	31	260	---	---	1.7	2.05		
23	6.1	31	260	---	---	1.7	2.05		

Time: 60.0°W.

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

Table 25

Time	Pruhonice, Czechoslovakia (50.0° N, 14.6° E)						May 1960	
	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	6.2	26	300					
01	6.0	26	290					
02	5.8	27	290					
03	5.4	27	300	100	1.6	1.4		
04	5.7	27	250	---	110	2.0	2.0	
05	6.1	26	240	---	100	2.5	2.0	
06	370	7.2	24	230	4.6	100	3.0	3.4
07	335	7.0	24	220	4.8	100	3.2	3.0
08	320	8.3	24	215	5.0	100	3.4	3.9
09	325	8.6	24	210	5.0	100	3.5	4.3
10	350	8.6	23	210	5.3	100	3.6	4.2
11	330	8.6	25	205	5.1	100	3.8	4.1
12	320	8.4	25	210	5.2	100	3.7	3.9
13	330	8.5	23	210	5.1	100	3.7	3.8
14	330	8.3	24	225	5.1	100	3.4	
15	320	8.4	23	225	4.9	100	3.2	3.3
16	300	8.3	25	245	4.5	100	3.1	3.5
17	---	8.6	25	250		100	2.5	3.5
18	9.2	25	250		110	2.0	2.6	
19	8.6	24	245				2.4	
20	8.1	25	250	---	---			
21	7.2	24	250					
22	6.0	25	270					
23	6.5	26	290					

Time: 0.0°.

Sweep: 1.0 Mc to 18.0 Mc.

Table 27

Time	Pruhonice, Czechoslovakia (50.0° N, 14.6° E)						December 1959	
	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	3.4	28	320					
01	3.4	26	300					
02	3.4	26	295					
03	3.2	28	270					
04	3.2	26	255					
05	3.0	23	260					
06	3.2	25	250	---	---			
07	6.3	26	215		2.0			
08	9.0	27	210	110	2.3			
09	10.0	24	220	105	2.6			
10	11.5	25	228	105	2.8			
11	11.0	25	220	100	3.0			
12	11.1	25	215	105	3.0			
13	11.0	24	220	105	2.6			
14	10.2	26	210	110	2.3			
15	9.3	27	210	---	2.0			
16	8.4	26	200					
17	6.0	25	<215					
18	4.0	20	225					
19	4.0	25	250					
20	3.5	28	270					
21	3.5	24	290					
22	3.3	27	300					
23	3.4	28	300					

Time: 0.0°.

Table 29

Time	Byrd Station (80.0° S, 120.0° W)						June 1959	
	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	>5.2	16	350	---	---	---		
01	>5.0	12	<360	---	---	2.7		
02	(6.0)	9	<365	---	---	2.5		
03	>5.0	15	330			4.2		
04	(5.3)	11	310			3.4		
05	(3.0)	5	<290			3.0		
06	>5.0	8	<300					
07	(4.2)	3	<300					
08	>3.25	8	<310					
09	(4.4)	7	(370)					
10	3.1	16	315					
11	(2.7)	8	290					
12	(3.0)	9	275					
13	(2.7)	8	<290			2.7		
14	>4.5	9	375	---	---	3.0	(2,60)	
15	>5.0	5	350	---	---	3.0		
16	>3.85	8	350	---	---	4.0		
17	(4.5)	7	320			3.0		
18	>3.5	11	320			3.6		
19	>4.5	15	(330)			4.5		
20	>5.0	9	310			4.4		
21	>6.0	9	320	---	---	---		
22	(5.3)	11	330			3.0		
23	>7.0	11	<320					

Time: 120.0°N.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 26

Time	Formosa, China (25.0° N, 121.5° E)						May 1960	
	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00			>10.8	27	260			(2.7)
01			10.3	29	245			(2.5)
02			8.7	20	230			3.05
03			8.0	27	245			3.15
04			7.2	27	235			3.05
05			6.7	26	250			3.05
06			7.7	31	230			3.00
07			8.6	30	220			3.20
08			9.2	29	(220)			3.25
09			(310)	9.8	30	210		3.25
10			(330)	10.7	31	(210)		2.80
11			11	330	12.4	31	(220)	2.75
12			13	330	13.2	30	(220)	2.05
13			14	330	14.2	30	(220)	2.05
14			14	325	14.7	30	(215)	2.95
15			15	310	15.2	31	(220)	2.95
16			16	295	15.0	30	220	3.00
17			17	270	15.1	31	(230)	3.00
18			18	14.6	14.8	31	250	3.05
19			19	12.8	29	250		(3,2)
20			20	>10.5	30	260		(3,0)
21			21	11.3	31	280		(3,3)
22			22	>10.2	31	285		(3,4)
23			23	>10.6	31	280		(2,9)

Time: 120.0°E.

Sweep: 1.0 Mc to 26.0 Mc in 27 seconds.

Table 28

Time	Ovalbard, Norway (70.2° N, 15.7° E)						June 1959	
	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	(540)	5.0	17	250	3.95	100	2.60	3.4
01	490	5.5	23	245	3.65	105	2.55	3.2
02	515	5.2	20	240	3.90	105	2.65	3.35
03	515	4.9	16	250	4.00	105	2.60	2.30
04	520	5.6	24	240	4.00	110	2.90	2.40
05	630	<5.0	20	240	4.10	110	3.15	2.10
06	560	5.4	16	250	4.30	110	3.20	2.25
07	560	6.0	17	250	4.45	110	3.35	2.30
08	500	6.4	20	240	4.80	110	3.45	2.35
09	450	6.7	23	240	4.75	110	3.45	2.40
10	430	6.5	23	220	4.80	105	3.45	2.45
11	490	6.6	21	225	4.80	105	3.35	2.55
12	550	6.3	15	220	4.90	100	3.35	2.40
13	490	6.3	21	215	4.90	110	3.40	2.40
14	495	6.0	16	215	4.80	110	3.25	2.45
15	495	6.3	19	220	4.80	110	3.25	2.55
16	505	6.3	20	230	4.70	100	3.20	2.55
17	410	6.2	23	240	4.70	110	3.15	2.55
18	(540)	6.3	21	245	4.40	110	2.95	2.55
19	(540)	6.1	22	250	4.30	110	2.85	2.55
20	--	5.9	10	250	4.15	110	2.75	2.55
21	(615)	5.7	20	250	4.10	100	2.70	2.55
22	495	5.4	22	260	3.80	110	2.60	2.55
23	(460)	5.1	23	250	4.00	105	2.55	2.60

Time: 15.0°E.

Sweep: 0.68 Mc to 24.6 Mc in 5 minutes, automatic operation.

Table 30

Time	Lindau/Harz, Germany (51.6° N, 10.1° E)						May 1959	
	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00			7.32	31	300			2.48
01			7.02	28	316			2.43
02			6.75	28	313			2.44
03			6.17	29	312			2.45
04			6.16	30	319			2.46
05			6.48	30	289			2.62
06			7.08	30	256			2.70
07			(470)	7.50</td				

Table 31

Pruhonice, Czechoslovakia (50.0° N, 14.6° E)							May 1959	
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	6.9	25	320					
01	6.6	26	310					
02	6.0	27	315					
03	6.1	26	320	---	---	---		
04	6.6	25	275	---	125	2.0		
05	7.2	24	250	---	110	2.7		
06	340	8.2	21	240	5.0	105	3.1	
07	350	8.6	22	240	5.3	100	3.4	3.9
08	350	8.9	23	230	5.6	105	3.6	2.7
09	370	9.4	24	225	5.8	110	3.8	2.9
10	380	9.4	23	230	6.0	110	3.9	4.1
11	375	9.3	26	225	6.0	110	4.0	
12	370	9.6	25	230	5.9	115	4.0	4.2
13	380	9.2	25	230	5.9	115	3.9	4.0
14	360	8.9	25	230	5.7	110	3.8	4.0
15	385	8.9	23	245	5.3	110	3.5	3.7
16	---	3.9	25	250	---	105	3.1	4.0
17	---	8.9	24	255	---	110	2.7	4.1
18	---	9.0	21	275	---	125	2.0	3.1
19	---	8.6	19	270	---	---	2.3	
20	---	8.3	21	270	---	---		
21	7.6	22	275	---	---	---		
22	7.7	23	300	---	---	---		
23	7.3	26	325	---	---	---		

Time: 0.0°.

Table 33

Dakar, French W. Africa (14.0° N, 17.4° W)							May 1959	
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	(6.5)	3	390		---	3.0	----	
01	(6.2)	4	360	---	---	3.1	----	
02	(5.2)	4	340	---	---	3.1	(2.35)	
03	6.4	11	295	---	---	3.0	(2.05)	
04	6.6	20	<270	---	---	3.0	2.70	
05	5.9	24	250	---	E	3.0	2.90	
06	5.4	25	250	---	E	3.0	2.75	
07	6.8	28	250	---	1.00	3.9	3.05	
08	6.6	28	240	115	2.90	6.4	3.10	
09	10.0	26	230	115	3.45	6.7	2.90	
10	11.0	28	225	110	3.80	5.2	2.65	
11	12.2	29	220	105	4.05	4.8	2.65	
12	13.2	30	220	100	4.20	4.6	2.60	
13	14.0	31	215	100	4.20	4.5	2.55	
14	14.5	31	205	100	4.20	4.4	2.55	
15	15.0	31	215	105	4.10	4.3	2.55	
16	15.0	31	225	105	3.80	4.3	2.50	
17	15.0	31	230	---	110	3.50	3.9	2.50
18	14.3	29	250	115	3.00	3.8	2.55	
19	13.4	30	270	125	2.15	3.6	2.70	
20	12.6	17	340	---	2.7	(2.30)		
21	10.9	13	445	---	2.6	(2.30)		
22	(8.2)	6	440	---	2.4	(2.25)		
23	(7.5)	5	415	---	2.5	(2.30)		

Time: 0.0°.

Sweep: 1.2 Mc to 17.0 Mc.

Table 35

Tahiti, Society Is. (17.7° S, 149.3° W)							May 1959	
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	10.5	16	240	---	E	3.10		
01	0.7	14	<245	---	E	1.4	3.00	
02	0.1	17	<245	---	E	3.10		
03	7.5	21	235	---	E	3.10		
04	0.1	23	<245	---	E	2.95		
05	5.5	23	245	---	E	2.95		
06	6.6	22	290	---	E	1.3	2.85	
07	11.0	19	250	120	2.40	3.20		
08	13.5	19	245	115	3.15	3.15		
09	14.5	21	230	110	3.50	3.15		
10	14.7	26	225	110	3.60	3.00		
11	14.0	21	225	105	4.00	4.0	2.80	
12	14.0	23	220	---	4.2	2.80		
13	14.2	21	230	---	4.1	2.70		
14	14.2	18	240	---	4.4	2.55		
15	15.0	19	245	110	3.40	4.4	2.60	
16	0	22	250	110	3.00	4.2	(2.70)	
17	0	23	270	120	2.30	3.1	(2.80)	
18	0	22	255	---	E	3.1	----	
19	0	21	250	---	3.1	----		
20	0	17	235	---	E	2.6	----	
21	0	17	230	---	E	2.2	----	
22	14.0	17	225	---	1.8	3.10		
23	11.3	15	235	---	E	1.8	(3.90)	

Time: 150.0°W.

Sweep: 1.2 Mc to 17.0 Mc.

Table 31

Table 32

El Cerillo, Mexico (10.3° N, 99.5° W)							May 1959	
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00			9.0	30	280			2.70
01			9.0	30	270			2.00
02			8.0	31	260			2.75
03			8.2	31	250			2.05
04			7.5	31	250			2.75
05			7.0	30	260			2.70
06			6.0	30	280			2.65
07			8.2	30	230			2.90
08			9.5	30	220			2.90
09			10.4	31	210			2.65
10			11.0	30	210			2.60
11			11.6	29	200			2.60
12			12.3	26	210			2.60
13			12.9	26	210			2.60
14			13.0	25	215			2.60
15			12.6	24	210			2.65
16			12.4	24	220			2.70
17			11.8	24	225			2.70
18			11.4	26	240			2.70
19			11.0	26	250			2.70
20			10.4	28	250			2.70
21			10.0	29	260			2.65
22			9.5	29	280			2.65
23			9.3	29	290			2.65

Time: 90.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 10 seconds.

Table 33

Djibouti, French Somaliland (11.6° N, 43.2° E)							May 1959	
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00			---	0	(340)			2.0
01			(7.2)	2	(290)			2.0
02			(7.5)	2	(205)			1.0
03			(6.5)	2	250			1.0
04			---	0	240			1.0
05			(6.7)	7	230			1.0
06			8.0	12	270			(3.10)
07			10.5	19	255			2.90
08			11.4	22	245			2.00
09			12.4	23	235			2.15
10			12.4	24	230			2.25
11			12.4	23	230			2.20
12			12.3	27	225			2.15
13			12.3	27	225			2.15
14			11.9	26	230			2.15
15			12.4	18	235			2.15
16			12.4	12	240			2.20
17			(11.4)	5	255			(2.15)
18			(12.6)	1	290			2.00
19			(10.3)	6	385			(2.00)
20			(9.0)	3	320			----
21			(8.0)	2	(420)			----
22			---	0	(415)			----
23			---	0	(400)			1.0

Time: 45.0°E.

Sweep: 1.25 Mc to 20.0 Mc.

Table 35

Tananarive, Madagascar (18.8° S, 47.5° E)							May 1959	
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00			4.5	30	250			2.0
01			4.0	29	255			2.0
02			3.7	30	265			2.0
03			3.0	30	<275			2.65
04			3.1	31	<300			2.1
05			3.3	31	290			2.0
06			5.4	31	270			2.0
07			10.4	30	250			2.70
08			12.6	31	240			3.15
09			13.0	31	235			3.10
10			12.0	31	230			3.10
11			12.6	31	230			2.90
12			12.5	31	230			

Table 37

Sao Paulo, Brazil (23° S, 46° 50' W)							May 1959	
Time	h°F2	foF2-Count	h°F	foF1	h'E	foE	foEs	(M3000)F2
00	11.0	23	210			3.20		
01	9.8	23	215			3.20		
02	8.7	23	220			3.10		
03	7.0	23	220			3.20		
04	5.9	23	220			3.00		
05	4.9	23	260			2.95		
06	4.5	22	(260)			2.00		
07	8.2	20	245			3.10		
08	11.6	19	230			3.10		
09	12.9	21	225			3.15		
10	13.7	20	220			3.10		
11	-- (13.6)	19	200			2.95		
12	-- >14.0	19	<215			2.00		
13	-- 14.1	17	225			2.75		
14	(13.5)	19	220			2.00		
15	(14.5)	20	230			(2.90)		
16	14.5	22	235			2.90		
17	(14.6)	23	240			(3.05)		
18	(14.2)	23	225			(3.20)		
19	(13.5)	24	220			(3.05)		
20	>13.2	24	250			(2.90)		
21	(13.4)	24	240			(3.00)		
22	12.6	26	215			3.05		
23	11.6	26	215			3.10		

Time: 45.0°W.

Sweep: 1.75 Mc to 20.0 Mc in 2 minutes 30 seconds.

Table 30

Johannesburg, Union of S. Africa (26° 10' S, 28° 10' E)							May 1959	
Time	h°F2	foF2-Count	h°F	foF1	h'E	foE	foEs	(M3000)F2
00			4.0	20	---			<1.5 2.80
01			3.6	20	---			<1.4 2.70
02			3.4	20	---			<1.4 2.75
03			3.0	20	---			<1.1 2.00
04			3.3	27	---			<1.2 2.80
05			3.2	20	260			<1.3 2.80
06			3.4	27	240			<1.3 2.90
07			7.0	20	230			2.1 3.25
08			10.8	20	230			2.9 3.20
09	(225)		12.2	28	220	---		3.4 3.10
10	(235)		13.2	28	220	---		3.6 3.00
11	(240)		13.2	29	215	---		3.8 2.90
12	(245)		13.3	29	220	---		3.9 2.80
13	(250)		13.2	29	220	---		3.9 2.75
14			13.4	30	230	---		3.7 2.75
15			13.2	29	230			3.4 2.75
16			12.0	29	235			3.0 2.75
17			13.0	29	235			2.2 2.85
18			11.9	29	225			<1.5 1.7 2.95
19			>9.6	26	220			1.8 2.95
20			10.5	26	230			<1.7 3.10
21			>7.1	28	225			<1.6 3.20
22			5.6	28	220			<1.6 3.10
23			4.6	27	(235)			<1.6 2.05

Time: 30.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 7 seconds.

Table 39

Buenos Aires, Argentina (34° 50' S, 50° 50' W)							May 1959	
Time	h°F2	foF2-Count	h°F	foF1	h'E	foE	foEs	(M3000)F2
00	8.2	31	270			2.75		
01	7.7	30	260			2.80		
02	6.9	31	250			2.05		
03	6.2	31	245			2.95		
04	5.4	31	225			3.10		
05	3.7	31	240			2.60		
06	4.0	31	205			2.65		
07	7.9	30	240			3.05		
08	10.4	20	230			3.20		
09	-- (11.7)	20	230			3.00		
10	-- 12.5	25	225			3.10		
11	-- 12.4	26	225			3.10		
12	-- >12.1	26	220			2.05		
13	-- 13.8	28	230			2.00		
14	-- (14.0)	29	235			2.90		
15	-- 14.0	29	240			2.90		
16	-- >13.6	30	240			3.00		
17	-- (12.0)	29	220			3.00		
18	-- >11.3	30	210			3.00		
19	-- 11.9	30	225			2.95		
20	-- 12.3	30	220			3.00		
21	-- >11.0	30	220			3.00		
22	-- 10.2	31	240			2.80		
23	-- 0.5	30	270			2.75		

Time: 60.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 27 seconds.

Table 40

Dakar, French W. Africa (14.0° N, 17.4° W)							April 1959	
Time	h°F2	foF2-Count	h°F	foF1	h'E	foE	foEs	(M3000)F2
00			>12.0	4	330	---		2.0 ---
01			>13.9	6	295	---		2.2 ---
02	(13.1)		9	250		---		2.6 ---
03			11.4	19	225	---		3.0 (13.1)
04			0.2	18	230	---		2.7 3.10
05			6.4	23	250	---		2.6 2.05
06			6.1	27	240	---		2.5 2.75
07			7.3	26	265	---		1.60 2.90
08			10.1	27	240	---		1.65 3.0 3.10
09			12.5	29	235	---		3.35 3.00
10			13.8	30	230	---		3.75 2.05
11			14.6	30	220	---		4.00 2.70
12			15.0	30	210	---		4.15 2.60
13			15.3	30	205	---		105 2.55
14			15.2	30	210	---		110 2.50
15			15.6	30	205	---		105 2.40
16			15.9	29	220	---		105 3.05 2.40
17			15.0	26	230	---		110 3.50 2.45
18			14.5	25	250	---		110 2.95 2.40
19			14.5	22	270	---		130 2.00 2.45
20			14.3	23	370	---		2.0 2.20
21			>13.7	12	430	---		2.6 ---
22			(12.7)	3	410	---		2.2 ---
23			(13.0)	3	370	---		2.5 ---

Time: 0.0°.

Sweep: 1.2 Mc to 17.0 Mc.

Table 41

Djibouti, French Somaliland (11.6° N, 43.2° E)							April 1959	
Time	h°F2	foF2-Count	h°F	foF1	h'E	foE	foEs	(M3000)F2
00	(10.0)	2	270			2.0	---	
01	(0.8)	3	250			1.9	---	
02	(10.0)	2	255			1.8	---	
03	(9.2)	3	250			1.9	---	
04	(0.7)	3	245			1.9	---	
05	(7.0)	8	240			2.0	(2.95)	
06	(7.6)	8	260			2.3	(2.90)	
07	10.0	12	260	120	2.70	3.6	2.80	
08	12.3	15	250	115	3.30	4.0	2.75	
09	13.0	10	240	110	3.70	6.7	2.15	
10	12.4	11	240		4.00	10.2	2.25	
11	12.2	21	230			10.0	2.15	
12	12.3	25				9.0	2.20	
13	12.5	22	(230)			10.2	2.15	
14	12.6	23	230			4.10	6.5	2.10
15	12.6	16	235			3.90	7.0	2.10
16	12.7	12	245			3.50	6.6	(2.10)
17	(12.3)	3	260	110	2.90	4.4	---	
18	(11.6)	2	295	130	1.90	3.0	---	
19	(10.8)	2	410			E	1.6	---
20	(9.6)	2	---				---	
21	(9.0)	1	(430)				---	
22	---	0	<350				---	
23	(11.2)	1	310			1.9	---	

Time: 45.0°E.

Sweep: 1.25 Mc to 20.0 Mc.

Tahiti, Society Is. (17.7° S, 149.3° W)							April 1959	
Time	h°F2	foF2-Count	h°F	foF1	h'E	foE	foEs	(M3000)F2
00			14.4	21	245	---		2.6 2.90
01			13.5	20	240	---		1.8 3.00
02			10.0	19	230	---		1.9 3.00
03			6.2	23	240	---		2.3 2.75
04			7.0	21	260	---		2.2 2.00
05			7.6	24	275	---		2.1 2.00
06			8.7	24	205	---		2.8 2.90
07			13.0	21	250	---		3.1 3.20
08			14.0	24	240	---		3.30 3.05
09			15.2	25	230	---		3.70 2.90
10			15.4	20	230	---		3.90 2.

Table 43

Tananarive, Madagascar (10.0° S, 47.5° E)							April 1959		
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00	6.7	28	250	---	2.6	3.00			
01	6.0	20	250	---	2.2	2.05			
02	5.2	28	250	---	1.7	2.90			
03	4.5	28	<255	---	2.0	2.75			
04	4.2	20	<200	---	2.0	2.70			
05	4.0	29	275	---	2.1	2.05			
06	6.3	29	270	---	1.70	2.5			
07	10.4	27	250	<115	2.60	3.10			
08	12.4	27	245	110	3.25	3.05			
09	13.4	26	240	110	3.70	3.00			
10	13.4	25	230	110	(3.90)	2.90			
11	13.0	20	235	110	4.00	2.70			
12	13.0	20	<250	110	----	2.60			
13	---	13.3	<250	110	(4.00)	2.60			
14	---	13.2	<250	110	(3.90)	2.60			
15	---	12.9	27	250	110	3.60	4.0		
16	---	12.5	20	250	<120	3.15	3.5		
17	---	12.2	20	260	<125	2.40	3.0		
18	---	12.0	29	250	110	2.70	2.70		
19	---	11.2	26	250	110	2.8	2.00		
20	---	(10.2)	27	250	110	2.8	(2.90)		
21	---	(9.8)	26	255	110	2.7	(2.95)		
22	---	9.7	20	240	110	2.8	3.05		
23	---	7.2	20	245	110	2.4	3.00		

Time: 45.0°E.

Sweep: 1.25 Mc to 20.0 Mc.

Table 45

Macquarie I. (54.5° S, 159.0° E)							June 1959		
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00	>4.0	0	(250)			4.3	----		
01	>4.0	11	250			3.9	----		
02	>4.1	10	240			3.9	----		
03	>4.1	12	250			(2.95)	----		
04	>4.2	13	240			(3.00)	----		
05	>4.0	11	240			----	----		
06	>3.9	12	220			(3.05)	----		
07	>4.6	12	220			----	----		
08	>6.1	10	200	---	<2.3				
09	>7.6	10	200	100	2.6				
10	>7.8	14	200	100	<3.0				
11	>7.8	14	200	100	(3.0)				
12	>7.0	14	200	100	(3.0)	----			
13	>7.0	16	200	100	2.0	----			
14	>7.7	19	210	100	2.3	----			
15	>7.1	10	200	100	(2.0)	----			
16	>6.9	14	200	100	2.4	----			
17	>6.4	14	200	100	2.4	----			
18	>5.9	10	200	100	4.5	----			
19	>5.5	11	220	100	4.3	----			
20	(4.4)	12	230	100	4.3	(3.00)			
21	>4.0	11	240	100	3.8	----			
22	3.9	12	250	100	3.7	(2.90)			
23	>3.8	10	250	100	4.6	(3.05)			

Time: 150.0°E.

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

Table 47

Rabat, Morocco (30.0° N, 6.0° W)							May 1958		
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00	>9.0	30	<350			3.1	----		
01	>9.0	31	<330			2.3	(2.45)		
02	>9.0	31	<315			2.1	(2.45)		
03	(9.2)	31	<305			2.1	2.50		
04	8.9	30	<300			2.50	----		
05	8.6	30	<295	---	----	2.55	----		
06	---	8.8	30	255	125	2.10	2.00		
07	---	9.1	29	245	110	2.90	3.1		
08	(365)	9.0	29	235	5.5	105	3.40	3.6	
09	(400)	9.7	29	230	5.9	105	3.70	4.5	
10	420	10.1	29	240	6.0	100	4.00	4.9	
11	400	11.1	29	235	6.4	100	4.10	4.2	
12	400	11.9	30	<240	6.5	105	4.20	2.45	
13	400	12.1	30	240	6.4	105	4.20	4.4	
14	395	12.1	30	245	6.4	105	4.15	2.50	
15	400	12.0	30	245	6.4	105	4.00	4.6	
16	375	11.3	30	250	6.0	105	3.80	5.0	
17	355	11.0	29	250	---	105	3.35	4.6	
18	---	(10.3)	27	260	110	2.75	4.4	2.65	
19	---	(9.5)	28	<200	130	1.90	3.6	2.70	
20	---	(9.1)	31	<290	130	1.90	3.5	2.50	
21	---	(9.0)	28	<340	130	1.90	3.3	(2.45)	
22	---	(9.2)	30	<350	130	1.90	3.1	(2.40)	
23	---	>9.0	27	<350	130	1.90	3.3	(2.40)	

Time: 0.0°.

Sweep: 1.6 Mc to 17.0 Mc in 1 minute.

Table 44

Juliusruh/Rügen, Germany (54.6° N, 13.4° E)							June 1959		
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00			7.7		19	<300			
01			7.0		20	<310			
02			6.9		19	310			
03			6.8		20	330			
04			7.0		20	(300)			
05			7.1		21	(280)			
06	(500)		7.1		19	(250)			
07	430		7.2		20	240	5.0		
08	465		7.4		19	<240	5.3		
09	450		7.3		10	230	5.5		
10	500		7.3		17	230	5.6		
11	450		7.4		17	<230	5.6		
12	450		7.6		20	220	5.6		
13	470		7.4		21	(230)	5.7		
14	460		7.5		21	(225)	5.6		
15	440		7.3		19	(240)	5.6		
16	440		7.4		20	230	5.5		
17	(400)		7.4		20	<245	---		
18	---		7.8		23	(260)	---		
19	---		7.0		22	<200			
20	7.0		7.0		20	290	1.95		
21	7.6		18		(290)				
22	7.7		10		<290				
23	7.8		20		<300				

Time: 15.0°E.

Sweep: 0.5 Mc to 20.0 Mc in 20 seconds.

Table 46

Loitiers, France (46.6° N, 0.3° E)							May 1959		
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		(8.2)	30		<325				
01		(0.1)	29		<325				
02		(7.5)	30		<320				
03		7.1	29		<320				
04		6.0	30		320				
05	---	7.1	29	275	---	140	1.90	2.8	
06	(415)	(0.0)	29	250	(4.7)	110	2.70	3.0	
07	410	(0.3)	29	<250	(5.4)	105	3.20	3.6	
08	450	8.6	30	240	(5.7)	105	3.60	3.9	
09	430	(0.7)	31	<235	6.0	105	3.75	4.4	
10	430	9.1	31	240	6.1	105	3.90	4.3	
11	440	9.5	29	235	6.1	105	3.95	4.2	
12	425	9.9	31	240	6.1	105	4.00	4.3	
13	410	(9.9)	31	235	6.1	105	4.05	4.2	
14	410	(9.7)	31	235	6.1	105	3.95	4.1	
15	390	(9.5)	30	<245	6.0	105	3.80	4.0	
16	390	(9.3)	29	250	(5.0)	105	3.60	4.3	
17	---	(370)	(0.3)	30	(250)	(5.2)	110	3.10	
18	---	(9.0)	30	(265)	---	115	2.55	3.1	
19	---	(8.0)	30	200	---	115	1.65	2.4	
20	---	(0.7)	29	275	---	100	3.00	4.2	
21	---	>0.0	30	(290)	---	100			
22	---	(0.2)	29	<300	---	100			
23	---	(8.3)	30	<330	---	100			

Time: 0.0°.

Sweep: 1.6 Mc to 17.0 Mc in 1 minute.

Table 48

Tamanrasset, French N. Africa (22.0° N, 5.5° E)							May 1958		
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		(12.5)	23		315				
01		(11.2)	23		310				
02		(9.6)</							

Table 49

Dakar	French W. Africa (14.7° N., 17.4° W.)							May 1950
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	(9.7)	3	365					---
01	(9.3)	4	335					---
02	(0.9)	5	305					(2.70)
03	(7.6)	9	205					(2.05)
04	(7.2)	7	260					(3.00)
05	(7.4)	17	230					(3.05)
06	6.4	18	210					3.00
07	7.4	20	<235	135	2.00	4.2		3.05
08	9.6	11	220	105	2.00	4.1		3.00
09	11.4	12	210	---	3.50	4.2		2.00
10	(12.1)	7	205	95	----	4.0		(2.65)
11	(13.5)	2	(200)	---	----	----		---
12	---	0	(200)	100	----	----		---
13	(15.0)	2	(190)	100	----	----		---
14	(14.8)	1	(190)	95	----	----		---
15	(14.0)	2	195	100	----	----		---
16	(15.3)	2	<205	100	3.85	4.0		----
17	(15.4)	1	220	100	3.50	----		----
18	(14.0)	3	230	105	2.85	3.2		----
19	(12.7)	2	255	140	2.20	----		----
20	(12.0)	8	340	---	----	----		(2.30)
21	(11.6)	9	420					(2.30)
22	(10.4)	7	425					(2.30)
23	(10.4)	4	400					----

Time: 0.0°.

Sweep: 1.25 Mc to 20.0 Mc in 10 minutes.

Table 51

Paramaribo, Surinam (5.8° S., 55.2° E.)								May 1950
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	12.2	29	375			4.3	2.35	
01	13.2	29	345			3.2	2.45	
02	13.2	29	300			3.0	2.65	
03	>11.6	29	290			3.0	2.70	
04	10.7	29	275			2.8	2.65	
05	9.9	29	290			2.8	2.70	
06	9.5	29	260			2.8	2.30	
07	0.9	29	250			2.8	2.05	
08	7.7	29	250			2.6	2.70	
09	7.1	28	250	---	E	2.9	2.70	
10	8.4	26	250	110	2.3	4.0	2.00	
11	10.5	27	245	100	3.2	4.2	2.05	
12	(200)	12.0	27	230	100	3.7	2.75	
13	320	12.7	27	230	---	4.0	4.2	2.55
14	350	13.1	27	(240)	---	4.0	2.55	
15	375	14.2	27	<250	100	4.4	2.55	
16	<300	14.7	27	<250	7.3	110	4.1	2.50
17	400	14.9	27	<250	7.0	100	4.4	2.50
18	400	14.3	27	<250	7.0	100	4.2	2.50
19	400	14.0	26	(245)	7.2	100	3.7	4.7
20	400	13.8	27	(250)	6.8	100	3.3	4.6
21	400	13.0	27	(270)	100	2.7	4.0	2.40
22	>12.0	27	330				4.7	2.30
23	12.0	20	390			4.7	2.30	

Time: 0.0°.

Sweep: 1.4 Mc to 20.0 Mc in 40 seconds.

Table 52

Hollandia, Netherlands New Guinea (2.5° S., 140.8° E.)								May 1951
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	---	(14.0)	27	230	---	100	4.0	3.10
01	(350)	>13.0	28	240	---	100	4.2	(2.80)
02	370	>13.4	29	<250	(8.4)	100	---	----
03	400	>13.5	29	(250)	(0.0)	100	---	(2.75)
04	405	>13.3	30	<260	(0.0)	100	4.2	----
05	450	13.5	30	(250)	7.4	100	4.0	(2.60)
06	430	>13.4	30	(240)	(7.6)	100	3.7	4.0
07	---	>13.5	30	(225)	---	100	3.0	4.2
08	>13.2	29	250	120	2.3	3.8	----	(2.60)
09	>13.5	29	290			3.8	----	----
10	>13.5	30	300			3.3	----	----
11	>13.3	30	250			3.5	(2.05)	----
12	>13.3	29	220			3.2	(2.05)	----
13	>13.5	30	220			3.6	2.90	----
14	(13.1)	29	200			3.4	3.00	----
15	>12.2	30	200			2.6	3.00	----
16	10.8	30	200			3.4	3.00	----
17	9.8	30	200			3.2	3.10	----
18	>9.1	30	200			3.3	3.20	----
19	0.5	28	200			3.5	3.20	----
20	6.9	29	200			3.3	3.25	----
21	10.5	29	230	120	2.2	3.3	3.30	----
22	13.5	31	220	100	3.1	3.8	3.30	----
23	14.3	31	220	100	3.0	4.2	3.20	----

Time: 0.0°.

Sweep: 1.4 Mc to 20.0 Mc in 40 seconds.

Table 53

Djibouti	French Somaliland (11.6° N., 43.2° E.)							May 1950
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00			0	370				1.9
01			0	345				1.9
02			0	300				1.0
03			0	260				1.9
04		>7.0	1	230			E	(3.15)
05		(5.4)	8	230			E	(3.15)
06		8.6	11	275			1.05	2.1
07		(10.8)	5	250			2.90	3.3
08		11.8	11	235			3.55	3.9
09		(12.5)	6	225			3.80	4.0
10		12.8	11	(220)			4.20	6.6
11		12.9	11	----			7.6	(2.15)
12		12.8	11	(215)			7.0	(2.10)
13		12.6	10	(215)			6.4	(2.05)
14		(12.3)	9	(215)			4.20	6.2
15		(12.4)	7	215			4.00	5.4
16		(11.8)	4	230			110	(3.65)
17		(12.6)	2	250			3.00	4.0
18		----	0	260			125	2.00
19		----	0	360			E	----
20		(7.0)	1	440			----	----
21		(7.0)	1	440			----	----
22		(10.0)	1	420			----	----
23		----	0	405			----	----

Time: 45.0°.

Sweep: 1.25 Mc to 20.0 Mc in 10 minutes.

Table 54

Tahiti, Society Is. (17.7° S., 149.3° E.)								May 1950
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00			11.6	25	230	----	(1.10)	3.1
01			10.0	25	230	----	(1.10)	2.8
02			0.9	26	240	----	t	2.95
03			7.5	26	225	----	3.0	3.10
04			6.3	27	240	----	(0.90)	2.8
05			5.4	24	250	----	E	3.1
06			6.0	24	305	----	E	3.1
07			12.0	25	250	120	2.45	3.1
08			15.0	27	245	110	3.20	3.10
09			16.1	23	240	105	3.60	3.05
10			15.8	22	230	105	3.00	2.85
11			(350)	16.0	24	225	100	4.00
12			(365)	16.0	25	230	100	4.00
13			375	15.4	25	230	100	3.80
14			400	15.3	26	240	105	3.70
15			400	16.0	25	245	105	3.50
16			(355)	16.7	27	250	110	3.10
17			0	28	270	125	2.20	3.1
18			0	28	280	----	3.3	----
19			0	26	270	----	3.1	----
20			0	27	240	----	(1.20)	3.1
21			0	26	230	----	(1.10)	3.1
22			>16.3	20	225	----	E	3.1
23			13.5	25	220	----	3.1	2.80

Time: 150.0°.

Sweep: 1.2 Mc to 17.0 Mc in 1 minute.

Table 55

Tananarive, Madagascar (10.0° S, 47.5° E)							May 1950	
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(MHz) foF2
00	4.6	26	<260	---	E	2.1	2.75	
01	4.6	20	<265	---	E	2.0	2.70	
02	4.3	29	<270	---	E	2.7	2.80	
03	3.6	27	270	---	E	1.7	2.70	
04	3.5	25	295	---	E	2.0	2.70	
05	3.5	27	270	---	E	2.2	2.80	
06	5.7	27	270	---	E	2.5	2.85	
07	10.8	26	240	120	2.30	3.15		
08	12.4	24	235	110	(3.10)	3.15		
09	13.2	25	230	110	3.50	3.00		
10	13.1	29	220	110	---	(2.9)	2.85	
11	12.0	28	225	110	---	2.70		
12	12.6	29	230	110	---	(4.8)	2.65	
13	12.4	20	230	110	---	4.4	2.55	
14	12.2	30	230	110	(3.70)	4.2	2.55	
15	12.2	30	240	115	3.40	3.7	2.50	
16	12.0	31	245	120	2.95	3.4	2.60	
17	11.8	29	250	125	2.05	3.4	2.75	
18	11.4	29	240			3.1	2.75	
19	10.5	25	235			2.8	2.80	
20	9.6	28	250			2.7	2.95	
21	8.7	27	235				3.15	
22	6.9	22	230			2.6	3.10	
23	4.7	24	230			2.9	3.00	

Time: 45.0°.

Sweep: 1.25 Mc to 20.0 Mc in 10 minutes.

Table 57

Poitiers, France (46.6° N, 0.3° E)							April 1950	
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(MHz) foF2
00	(8.2)	30	345					(2.20)
01	>0.1	30	<330					(2.25)
02	(7.5)	30	<325					2.20
03	(7.0)	30	<335					2.25
04	6.5	30	<330					2.30
05	6.6	30	300	---	E	2.2	2.45	
06	7.2	30	255	125	2.20	1.8	2.65	
07	8.5	30	245	---	110	2.90	2.65	
08	(400)	(9.3)	30	240	(5.0)	105	3.40	(2.55)
09	400	10.4	30	235	(6.6)	105	3.70	2.60
10	420	11.4	30	235	(6.8)	105	3.90	4.1
11	395	12.0	30	240	(7.0)	105	4.00	2.50
12	400	12.4	30	235	6.9	105	4.00	2.50
13	390	(12.3)	30	240	(7.0)	105	4.00	2.50
14	390	12.0	30	240	(6.6)	(105)	3.95	2.50
15	390	11.6	28	245	(6.4)	110	3.00	2.50
16	(340)	(11.4)	29	250	(6.1)	110	3.40	3.4
17	---	(11.5)	30	255	---	115	2.90	3.0
18	---	(11.3)	29	265	---	125	2.20	2.4
19	---	10.0	30	260	---	E	1.8	----
20	---	(9.4)	30	260	---			----
21	---	>8.5	30	<275	---			----
22	---	>8.5	30	<315	---			----
23	---	>8.4	30	<340	---			----

Time: 0.0°.

Sweep: 1.6 Mc to 17.0 Mc in 1 minute.

Table 59

Tamatassai, French W. Africa (22.8° N, 5.5° E)							April 1950	
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(MHz) foF2
00	0	22	300	---	E	1.9	(2.60)	
01	>15.0	19	280	---	E	2.0	(2.60)	
02	>13.5	23	255	---	E	2.3	(2.70)	
03	>11.5	14	250	---	E	2.4	(2.80)	
04	9.0	17	255	---	E	2.4	(2.60)	
05	8.0	20	<255	---	E	3.0	2.75	
06	10.1	20	250	120	2.40	3.4	3.00	
07	11.7	27	235	105	3.20	4.4	2.95	
08	12.7	25	230	105	(3.75)	5.9	2.80	
09	13.3	29	220	---	105	(4.05)	5.5	2.65
10	---	14.1	29	220	---	105	(4.20)	5.1
11	(415)	>15.0	29	<220	---	100	(4.20)	5.0
12	(430)	>15.3	20	225	---	(100)	4.30	2.50
13	445	15.1	26	230	(7.5)	(105)	4.25	2.45
14	445	(15.1)	25	230	(7.3)	105	4.15	2.45
15	425	(15.2)	21	240	(7.0)	105	(3.80)	(2.45)
16	405	>15.0	18	250	105	3.30	3.4	(2.50)
17	---	>15.0	19	260	110	2.60	2.8	----
18	---	>15.0	18	300	---	E	2.5	(2.40)
19	---	>15.0	22	300	---	E	2.0	(2.25)
20	---	(16.5)	19	380	---	E	2.0	(2.25)
21	0	22	350	---	E	1.8	----	----
22	0	21	330	---	E	1.9	----	----
23	0	18	310	---	E	1.8	----	----

Time: 0.0°.

Sweep: 1.4 Mc to 17.0 Mc in 1 minute.

Table 56

Lockroy (64.0° S, 63.5° W)							May 1950	
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(MHz) foF2
00			3.4	27	365			
01			3.0	30	365			
02			3.0	28	370			
03			3.0	29	360			
04			2.9	26	380			
05			2.6	27	370			
06			2.4	29	350			
07			2.0	26	320			
08			>5.2	26	250			
09			3.0	27	230			
10			10.2	31	220			
11			11.0	30	215			
12			12.0	29	215			
13			13.0	31	215			
14			11.6	31	215			
15			10.5	30	215			
16			10.0	29	220			
17			8.2	27	215			
18			6.3	25	210			
19			4.4	27	<230			
20			3.9	28	260			
21			3.6	27	325			
22			3.4	26	360			
23			3.3	26	370			

Time: 60.0°.

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

Table 58

Rabat, Morocco (30.0° N, 6.0° W)							April 1950	
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(MHz) foF2
00			(9.8)	28	<330			(2.40)
01			(9.5)	29	<315			(2.40)
02			(9.2)	29	<300			2.40
03			(9.0)	28	<300			2.40
04			8.5	29	<300			2.45
05			8.3	29	<315			2.45
06			8.9	29	275			2.65
07			(9.4)	28	245			(3.00)
08			10.4	28	230			2.90
09			(270)	11.4	28	230		2.70
10			(360)	12.6	30	230		2.60
11			355	13.1	28	230		2.55
12			370	13.2	29	240		2.45
13			380	13.2	28	240		2.45
14			395	13.3	28	245		2.40
15			390	13.0	28	245		2.45
16			370	12.8	28	250		2.65
17			(350)	12.4	27	250		2.45
18			(12.1)	27	(270)			2.60
19			(11.3)	28	(270)			2.65
20			(10.0)	28	<270			2.50
21			(9.5)	29	<325			2.35
22			>9.0	29	<340			2.40
23			>9.0	29	<330			----

Time: 0.0°.

Sweep: 1.6 Mc to 17.0 Mc in 1 minute.

Table 60

Dakar, French W. Africa (14.7° N, 17.0° W)							April 1950	
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(MHz) foF2
00			(13.0)	7	335			(2.55)
01			(14.0)	5	300			(2.00)
02			(12.7)	6	260			(2.90)
03			11.2	11	220			2.95
04			10.1	10	(220)			2.90
05			7.4	16	(235)			2.90
06			6.7	23	235			2.00
07			6.6	20	250			2.00
08			11.4	27	220			3.00
09			13.6	14	215			3.7
10			(15.0)	8	<210			2.90
11								

Table 61

Djibouti, French Somaliland (11° 40' N, 43° 20' E)								April 1958
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	(8.6)	4	290	---	---	2.4	---	
01	(8.8)	9	270	---	---	2.3	(2.65)	
02	(9.0)	4	265	---	---	2.2	---	
03	(8.3)	5	260	---	E	2.1	---	
04	(8.5)	5	250	---	---	2.3	---	
05	9.0	11	230	---	---	2.3	(2.80)	
06	(9.1)	9	260	---	1.25	2.3	(2.75)	
07	(11.0)	5	250	120	2.80	4.0	---	
08	(13.6)	3	240	110	3.40	4.5	---	
09	>14.0	2	235	---	3.90	6.8	---	
10	(12.6)	3	230	---	---	9.4	---	
11	(12.1)	5	(225)	---	---	9.4	(2.20)	
12	(13.3)	5	(225)	---	---	0.8	(2.15)	
13	>13.1	3	(230)	---	---	0.7	---	
14	14.0	12	(225)	---	4.20	0.3	(2.20)	
15	>14.0	8	230	---	4.05	7.0	---	
16	>12.9	2	240	---	3.65	7.0	---	
17	(12.6)	2	250	---	---	7.0	---	
18	(16.8)	1	290	---	1.00	4.3	---	
19	>9.7	8	420	---	E	---	---	
20	(9.0)	7	(460)	---	---	---	---	
21	(9.2)	4	(440)	---	---	1.5	---	
22	>9.0	4	330	---	---	2.3	---	
23	(0.8)	4	310	---	---	3.2	---	

Time: 45.0°E.

Sweep: 1.25 Mc to 20.0 Mc in 10 minutes.

Table 63

Tahiti, Society Is. (17.7° S, 149.3° W)								April 1958
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	14.3	25	230	---	E	3.1	2.80	
01	12.4	24	245	(0.90)	3.0	2.80		
02	10.8	24	235	---	E	3.1	2.90	
03	0.6	23	230	---	E	2.6	2.55	
04	8.1	25	200	---	(0.95)	2.7	2.65	
05	6.2	26	300	---	(1.00)	3.0	2.70	
06	---	10.2	310	---	E	3.1	2.75	
07	14.0	24	250	115	2.60	3.1	3.00	
08	16.0	28	245	105	3.35	3.4	3.00	
09	0	24	240	105	3.70	3.8	2.80	
10	0	25	230	105	(4.00)	4.2	2.70	
11	---	16.4	27	230	105	---	* 2.60	
12	410	16.5	27	230	105	---	2.50	
13	405	D	29	240	---	3.1	2.50	
14	420	0	29	245	---	3.90	2.45	
15	420	D	29	245	---	3.60	2.40	
16	405	D	29	250	110	3.15	4.3	
17	---	D	28	260	120	2.6*	3.7	(2.40)
18	D	20	305	---	3.1	---		
19	D	28	320	---	3.0	---		
20	D	29	265	---	3.1	---		
21	D	27	250	---	3.1	---		
22	D	27	250	---	E	3.1	(2.75)	
23	16.0	27	230	---	---	3.1	2.80	

Time: 150.0°W.

Sweep: 1.2 Mc to 17.0 Mc in 1 minute.

Table 65

Tsumeb, South W. Africa (19.2° S, 17.7° E)								April 1958
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	7.42	30	250	---	---	2.0	2.78	
01	6.60	30	250	---	---	2.4	2.71	
02	6.03	30	250	---	---	2.03	---	
03	4.96	30	235	---	---	1.8	2.92	
04	4.42	28	235	---	---	1.6	2.86	
05	3.69	29	260	---	---	1.8	2.66	
06	6.80	29	275	130	1.31	2.0	2.74	
07	10.68	30	232	110	2.65	3.4	3.07	
08	12.75	29	230	105	3.31	3.5	2.97	
09	13.92	29	227	108	3.70	3.6	2.82	
10	14.42	30	220	105	3.92	4.4	2.74	
11	14.31	29	220	---	4.09	4.3	2.66	
12	14.10	30	225	---	4.14	---	2.56	
13	14.20	29	227	---	4.09	4.5	2.47	
14	14.30	29	235	---	3.95	4.7	2.47	
15	14.00	29	245	110	3.67	5.2	2.46	
16	13.60	30	245	110	3.25	4.4	2.49	
17	13.42	30	250	115	2.35	3.3	2.50	
18	13.29	20	250	---	---	3.0	2.67	
19	12.30	20	250	---	---	2.9	2.71	
20	11.60	29	250	---	---	2.8	2.73	
21	11.14	30	240	---	---	2.6	2.82	
22	10.00	29	232	---	---	2.3	2.04	
23	0.45	30	235	---	---	2.3	2.77	

Time: 15.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 4 minutes.

Table 62

Banqui, French Equatorial Africa (4.6° N, 18.6° E)								April 1958
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00			>10.5	8	252			2.3
01			>10.6	10	260			2.6
02			>9.8	12	265			3.0
03			(9.6)	12	250			(2.55)
04			>9.5	22	235			(2.60)
05			0.2	24	225			3.1
06			9.6	24	260			3.00
07			12.0	23	250			2.00
08			14.7	23	235			2.60
09			15.2	26	225			2.40
10			15.6	24	220			2.20
11			>15.3	24	220			2.10
12			13.9	23	215			2.05
13			>13.5	26	220			2.00
14			>13.6	26	225			2.00
15			(13.4)	25	230			2.00
16			>13.5	24	250			2.00
17			>13.3	21	270			2.00
18			>11.7	10	325			2.00
19			>10.4	0	450			2.00
20			>10.1	5	(400)			2.00
21			>11.6	3	350			2.00
22			>11.4	3	(300)			2.00
23			>9.5	7	280			1.7

Time: 15.0°E.

Sweep: 1.2 Mc to 17.0 Mc in 1 minute.

Table 64

Tananarive, Madagascar (18.0° S, 47.5° E)								April 1958
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00			>5.9	12	250			2.6
01			5.0	14	270			(2.85)
02			5.0	17	260			(2.70)
03			5.0	21	265			(2.70)
04			4.6	23	260			2.65
05			4.2	27	<290			2.70
06			(6.2)	7	270			2.70
07			11.4	12	250			(3.05)
08			12.4	14	245			3.05
09			(13.6)	8	240			3.05
10			(13.4)	0	---			3.05
11			(13.0)	8	---			3.05
12			(12.4)	4	---			3.05
13			(12.2)	4	---			3.05
14			(12.2)	0	---			3.05
15			12.2	14	250			(2.50)
16			(12.0)	17	255			2.50
17			(12.0)	22	260			2.60
18			11.3	16	260			2.60
19			(11.4)	15	270			2.60
20			(10.6)	0	265			2.60
21			(9.0)	7	260			(2.90)
22			0.6	14	260			(2.90)
23			7.6	14	250			2.60

Time: 45.0°E.

Sweep: 1.2 Mc to 20.0 Mc in 10 minutes.

Table 66

Lulea, Sweden (65.6° N, 22.10° E)								May 1957
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00			>7.0	0	(300)			<1.5
01			(7.5)	15	305			---
02			>7.1	14	310			(2.5)
03			(7.0)	25	290			(2.4)
04			6.9	26	260			2.5
05			(415)	7.1	26	250		2.5
06			415	7.0	29	250		2.5
07			410	7.6	25	240		2.5
08			420	7.5	29	230		2.5
09			430	7.4	30	220		2.5
10			460</td					

Table 67

Lwiro, Belgian Congo (2° 30' S, 20° 00' E)							May 1957	
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(MHz)F2
00	>10.0	30	210			(2.0)	----	
01	>10.0	30	210			(1.8)	----	
02	>10.0	29	210			(1.7)	<3.15	
03	>9.6	30	225			(1.9)	3.13	
04	9.2	29	220			(2.0)	3.30	
05	7.0	28	220			(2.1)	<3.27	
06	8.0	28	250	---	---	(2.1)	3.19	
07	250	>11.1	30	235	---	119	2.70	3.1
08	260	>13.2	29	230	---	111	3.40	3.6
09	265	>13.0	31	220	---	111	3.60	3.9
10	310	>12.6	31	210	---	109	4.00	<2.36
11	(345)	>12.5	31	210	---	4.15		<2.30
12	400	>12.3	30	200	(5.2)	4.25	----	
13	420	>10.0	30	205	(5.1)	4.10	----	
14	415	>10.0	30	210	---	4.00		
15	380	>11.5	31	220	---	111	3.70	
16	(350)	>10.0	30	230	---	111	3.35	3.7
17	---	>10.0	31	240	---	115	2.75	3.1
18	---	>10.0	31	275	---		(2.5)	----
19	---	>10.0	31	295	---		(2.3)	
20	---	>9.6	31	290	---		(2.0)	
21	---	>9.6	30	235	---		(1.0)	
22	---	>9.6	29	220	---		(1.8)	
23	---	>10.0	29	220	---		(1.6)	----

Time: Local.

Sweep: 1.25 Mc to 25.0 Mc in 10 minutes, automatic operation.

Table 69

Freiburg, Germany (48° 10' N, 7° 00' E)							May 1957	
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(MHz)F2
00	4.3	31	265			1.0	2.98	
01	4.1	29	270			1.5	2.90	
02	3.9	31	265			1.4	2.89	
03	3.6	30	265			1.4	2.94	
04	3.5	30	265			1.4	2.97	
05	280	4.1	31	245	2.75	133	1.55	1.8
06	315	4.6	30	235	3.50	111	2.15	2.3
07	310	4.9	28	230	3.90	109	2.55	3.0
08	310	5.3	29	230	4.10	107	2.00	3.5
09	325	5.6	27	220	4.20	105	3.05	3.5
10	310	5.7	28	210	4.35	103	3.20	3.5
11	330	5.8	26	205	4.40	105	3.20	3.9
12	340	5.7	27	210	4.50	103	3.30	4.0
13	350	5.6	29	220	4.40	105	3.25	3.5
14	350	5.8	29	220	4.40	103	3.20	3.3
15	330	5.7	29	225	4.30	105	3.10	3.4
16	320	5.8	30	230	4.10	107	2.90	3.2
17	295	6.0	30	240	3.60	111	2.65	3.1
18	280	6.4	28	(240)	3.40	111	2.20	3.2
19	270	6.7	29	255	---	---	3.2	3.10
20	6.8	31	250	---	---	2.4	3.11	
21	6.5	31	240	---	---	1.9	3.13	
22	5.7	31	245	---	---	2.0	3.10	
23	4.9	31	255	---	---	1.6	3.00	

Time: Local.

Sweep: 1.25 Mc to 20.0 Mc in 10 minutes, automatic operation.

Table 71

Lulea, Sweden (65° 60' N, 22° 10' E)							March 1953	
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(MHz)F2
00	(2.5)	8	(350)	---	---	2.5		
01	(2.2)	6	(340)	---	---	2.0		
02	(2.2)	6	(340)	---	---	2.0		
03	(2.0)	6	(320)	---	---	2.0		
04	---	3.0	16	260	---	---	---	
05	---	4.0	19	230	---	115	2.2	
06	---	4.0	19	230	---	115	2.2	
07	---	4.0	19	230	---	115	2.2	
08	---	4.0	19	230	---	115	2.2	
09	---	4.0	19	230	---	115	2.2	
10	(275)	4.5	20	220	3.6	110	2.5	
11	---	5.0	17	210	3.7	110	2.5	
12	(290)	5.0	17	210	3.7	110	2.5	
13	---	5.0	15	225	---	110	2.5	
14	---	5.0	15	225	---	125	2.0	
15	---	4.8	22	225	---	125	2.0	
16	---	4.8	22	225	---	125	2.0	
17	---	3.7	19	230	---	---	---	
18	---	3.7	19	230	---	---	---	
19	---	3.0	11	250	---	<1.8		
20	---	3.0	11	250	---	<1.8		
21	(2.6)	8	(290)	---	---	3.1		
22	(2.6)	8	(290)	---	---	3.1		
23	---	---	---	---	---	---	---	

Time: 15.00E.

Sweep: 1.5 Mc to 10.0 Mc in 9 minutes, automatic operation.

Table 68

Lulea, Sweden (65° 60' N, 22° 10' E)							October 1955	
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(MHz)F2
00			2.5		21	330		2.75
01			2.5		22	335		2.7
02			2.5		24	320		2.8
03			2.5		24	340		2.9
04			2.5		21	340		2.9
05			2.4		20	310		2.95
06			3.8		27	275		3.0
07			5.0		29	250		3.0
08			6.0		29	240		3.1
09			6.0		26	230		3.3
10			7.0		29	240		3.3
11			7.0		29	230		3.3
12			8.0		30	225		3.2
13			8.0		29	240		3.3
14			8.0		27	225		3.25
15			7.2		26	240		3.2
16			7.3		27	225		3.05
17			6.8		23	235		3.0
18			6.0		27	240		2.9
19			4.0		23	245		2.8
20			4.2		24	260		2.8
21			>3.0		23	290		2.8
22			(3.0)		24	300		2.8
23			>3.0		23	300		2.8

Time: 15.00E.

Sweep: 1.5 Mc to 10.0 Mc in 9 minutes, automatic operation.

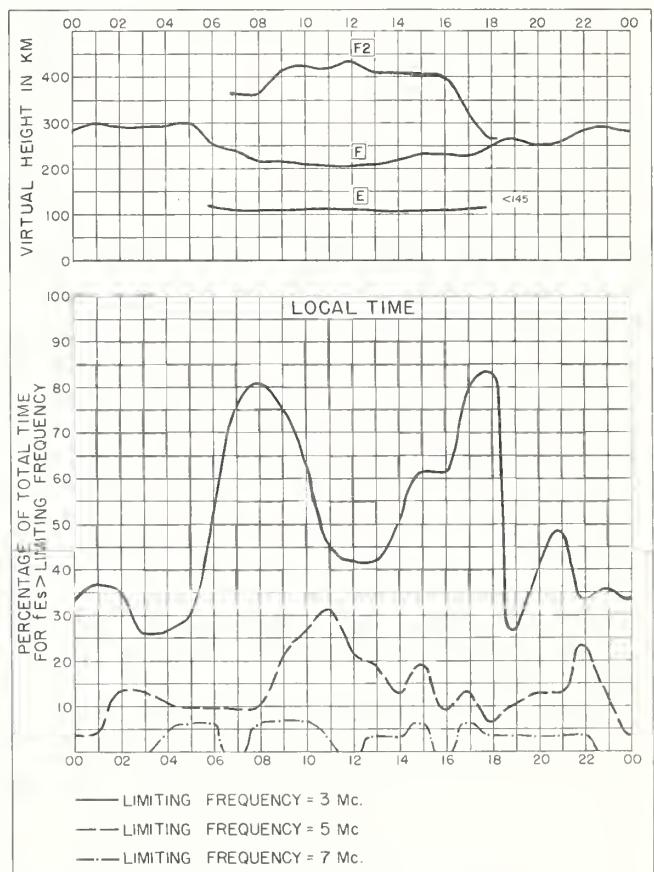
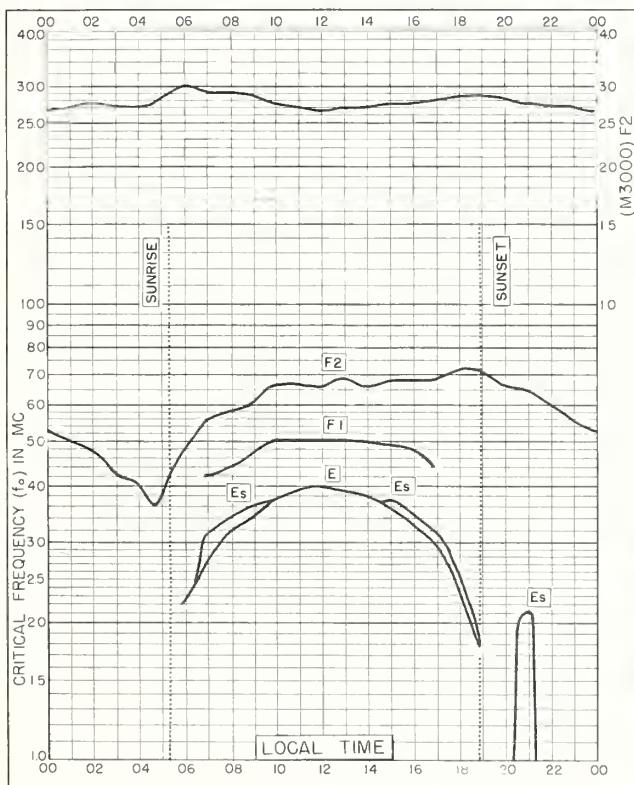
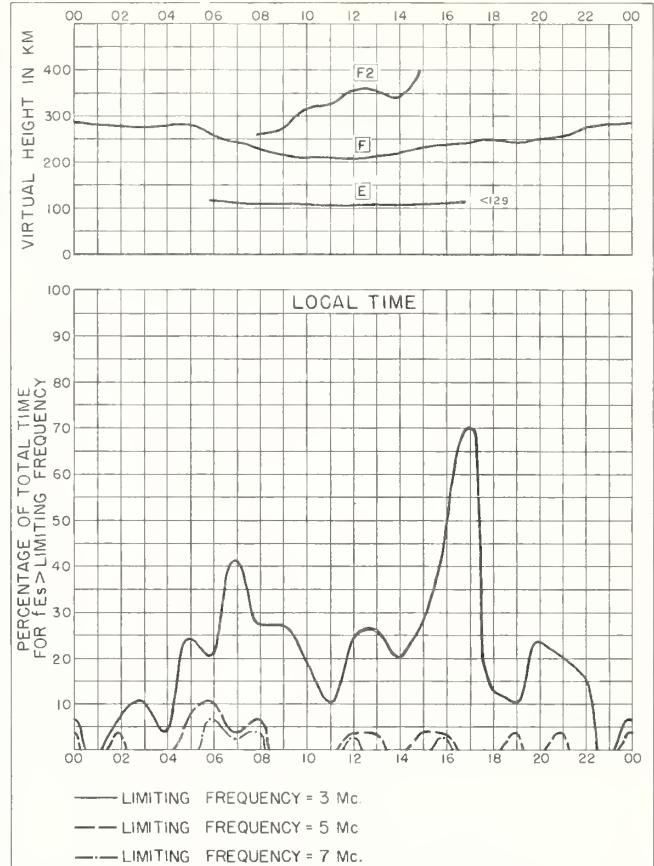
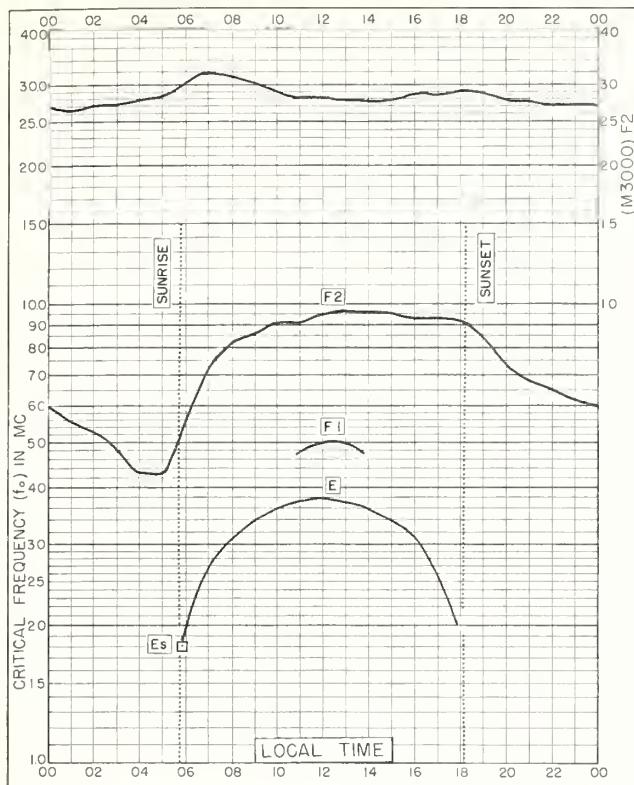
Table 70

Lulea, Sweden (65° 60' N, 22° 10' E)							April 1953	
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(MHz)F2
00		(2.6)	12	---	---	---	---	2.0
01		(2.9)	11	*	---	---	---	
02		(2.9)	11	*	---	---	---	
03		2.8	16	270	---	---	E	
04		2.8	16	270	---	---	---	
05		---	3.5	20	220	---	105	2.2
06		---	3.5	15	210	3.6	105	2.6
07		3.12	10	210	3.05	3.12		
08		350	4.1	15	210	3.9	100	2.7
09		350	4.1	19	200	3.9	100	2.7
10		310	4.5	19	200	4.0	100	2.8
11		300	4.6	15	200	3.6	100	2.7
12		300	4.6	17	200	4.0	100	2.8
13		300	4.6	17	200	3.2	100	3.0
14		300	4.6	15	200	3.2	100	2.7
15		---	4.7	15	210	---	100	2.5
16		---	4.7	15	210	---	100	2.5
17		4.5	23	240	---	---	1.8	
18		4.5	23	240	---	---	---	
19		3.11	17	250	---	---	---	
20		3.0	17	250	---	---	---	
21		2.2	5	---	---	---	---	
22		(2.2)	2	---	---	---	---	
23		(2.2)	2	---	---	---	---	

Time: 15.00E.

Sweep: 1.5 Mc to 10.0 Mc in 9 minutes, automatic operation.

Lulea, Sweden (65° 60' N, 22° 10' E)							February 1953	
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(MHz)F2
00			---	0	---	---	---	2.5
01			2.5					(2.3)
02			2.5					
03			2.5					
04			2.5					
05			2.0					
06			3.4		20	230		
07			3.4		20	230		
08			4.5		18	230		
09			4.5		18	230		
10			5.5		11	230		
11			5.5		11	230		
12			4.8		15	230		
13			4.8		15	230		
14			4.8		17	225		
15			4.8	</				



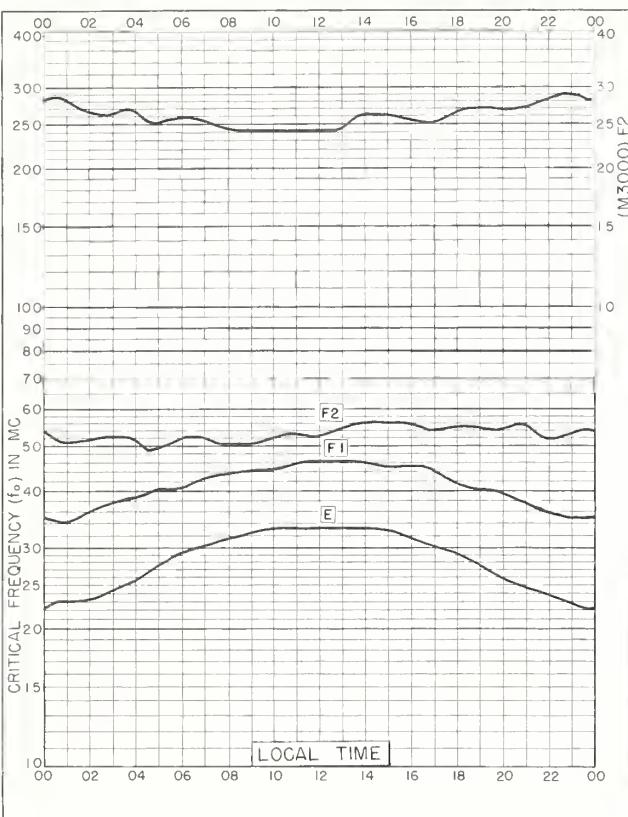


Fig. 5. RESOLUTE BAY, CANADA  
74.7°N, 94.9°W JUNE 1960

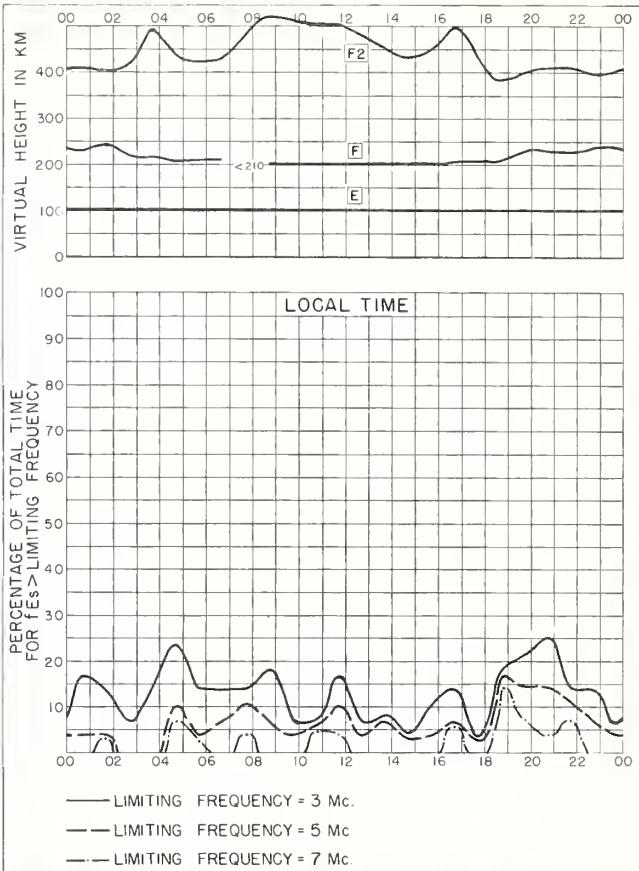


Fig. 6. RESOLUTE BAY, CANADA JUNE 1960

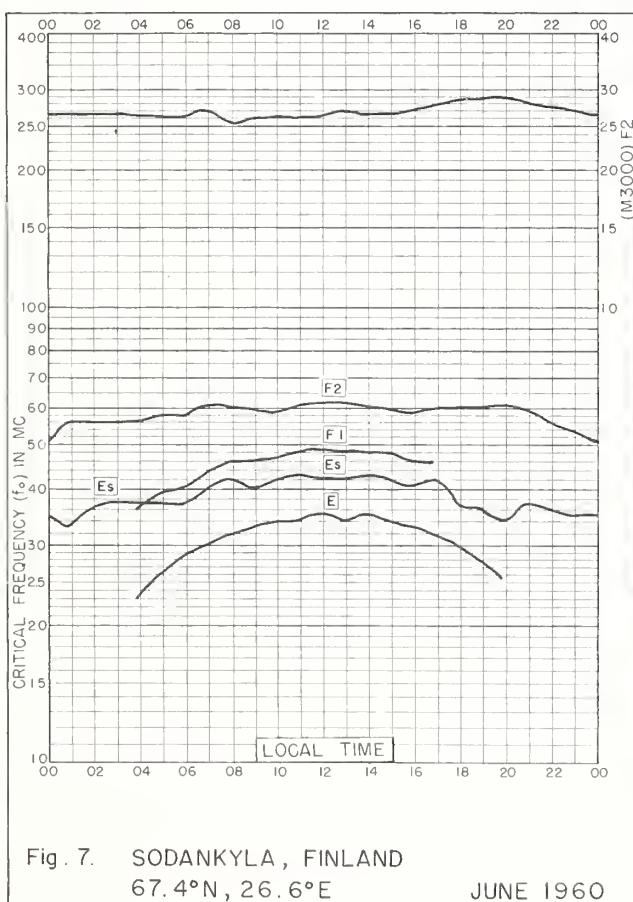


Fig. 7. SODANKYLA, FINLAND  
67.4°N, 26.6°E JUNE 1960

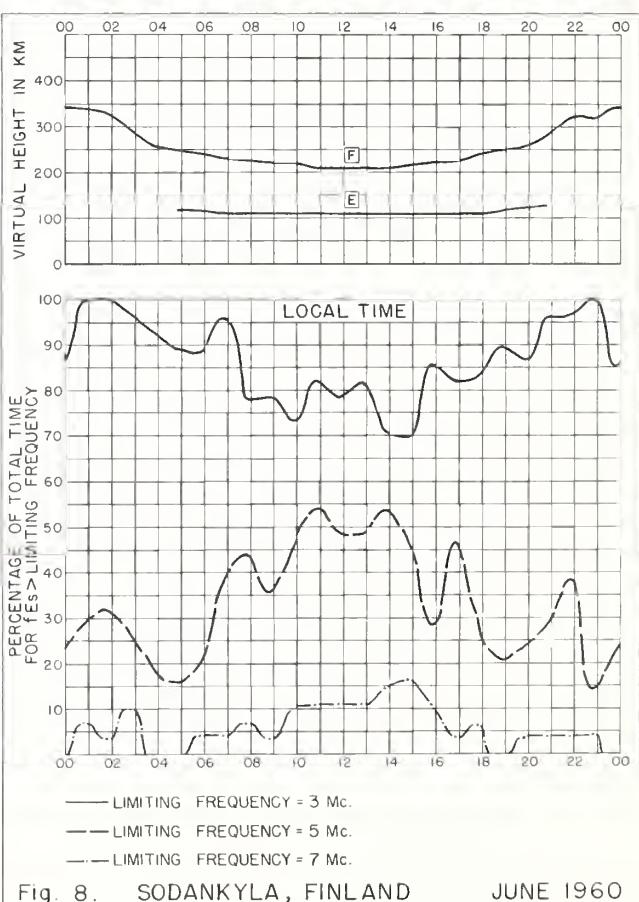


Fig. 8. SODANKYLA, FINLAND JUNE 1960

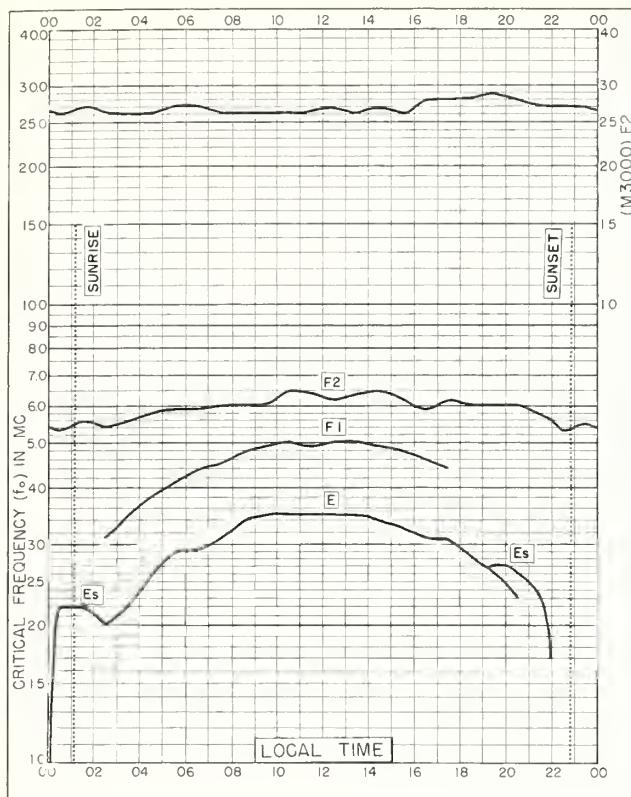


Fig. 9. LULEA, SWEDEN

65.6°N, 22.1°E

JUNE 1960

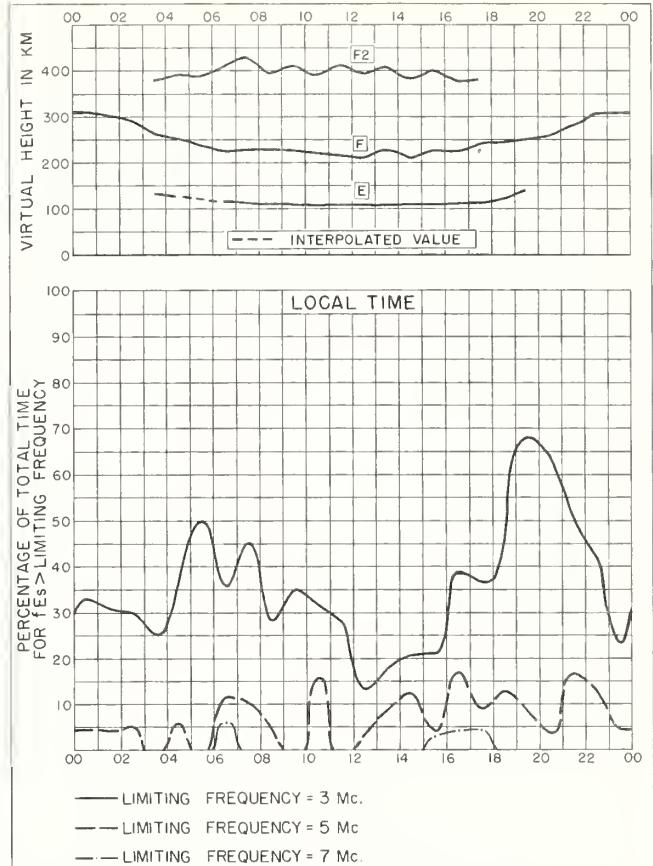


Fig. 10. LULEA, SWEDEN

JUNE 1960

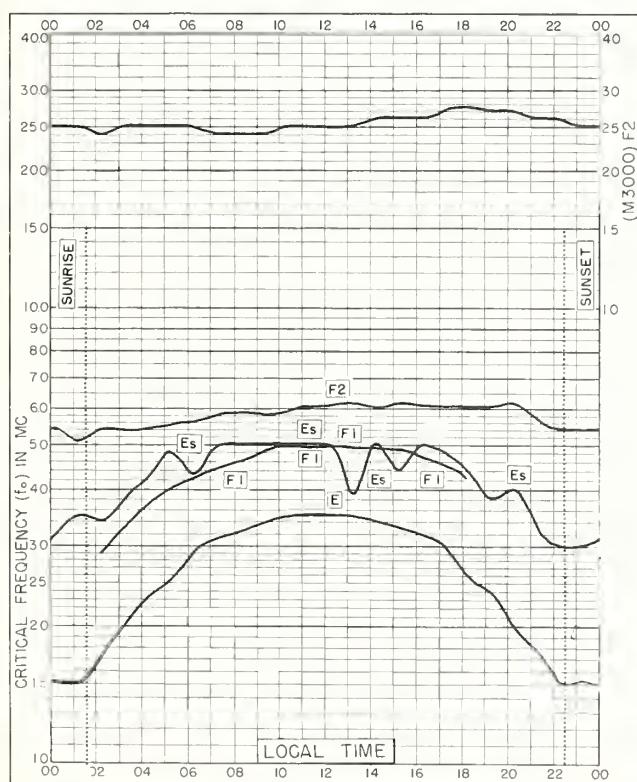


Fig. II. LYCKSELE, SWEDEN

64.6°N, 18.8°E

JUNE 1960

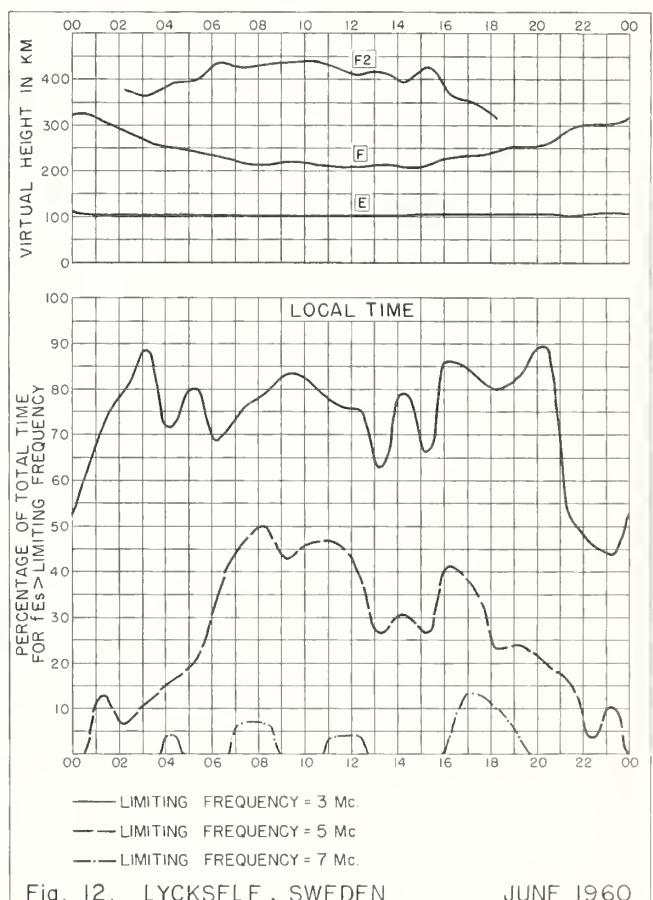


Fig. 12. LYCKSELE, SWEDEN

JUNE 1960



Fig. 13. NURMIJARVI, FINLAND

60.5°N, 24.6°E

JUNE 1960

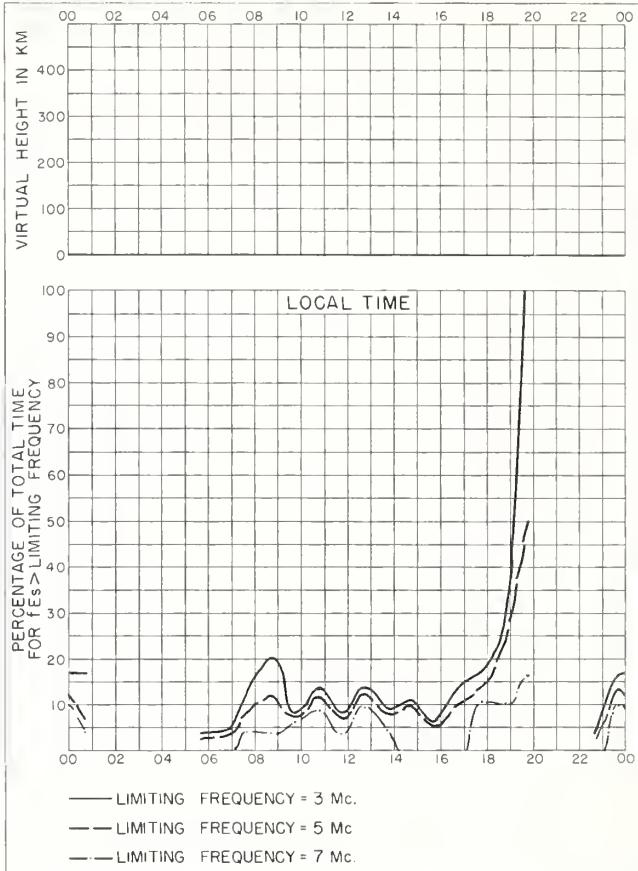


Fig. 14. NURMIJARVI, FINLAND

JUNE 1960



Fig. 15. UPSALA, SWEDEN

59.8°N, 17.6°E

JUNE 1960

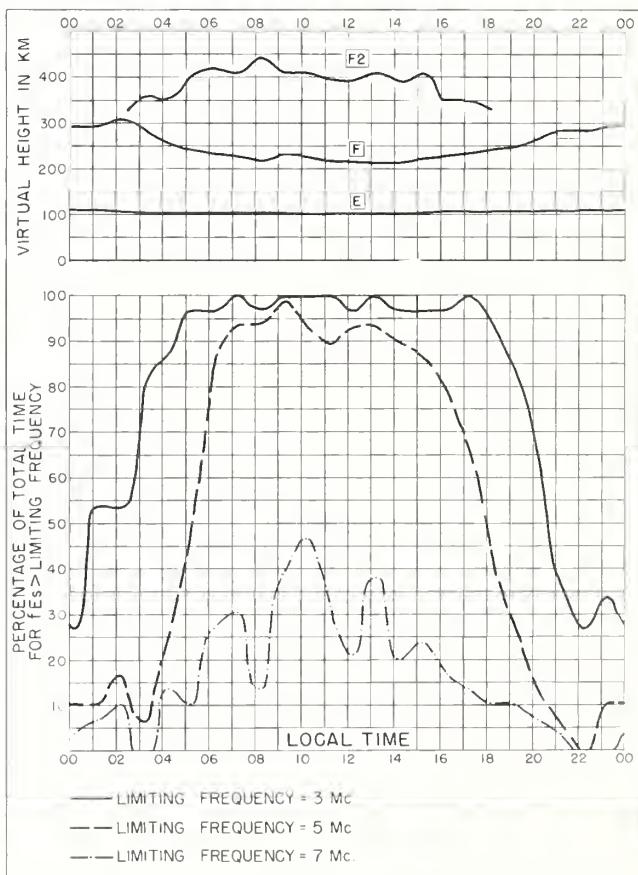


Fig. 16. UPSALA, SWEDEN

JUNE 1960

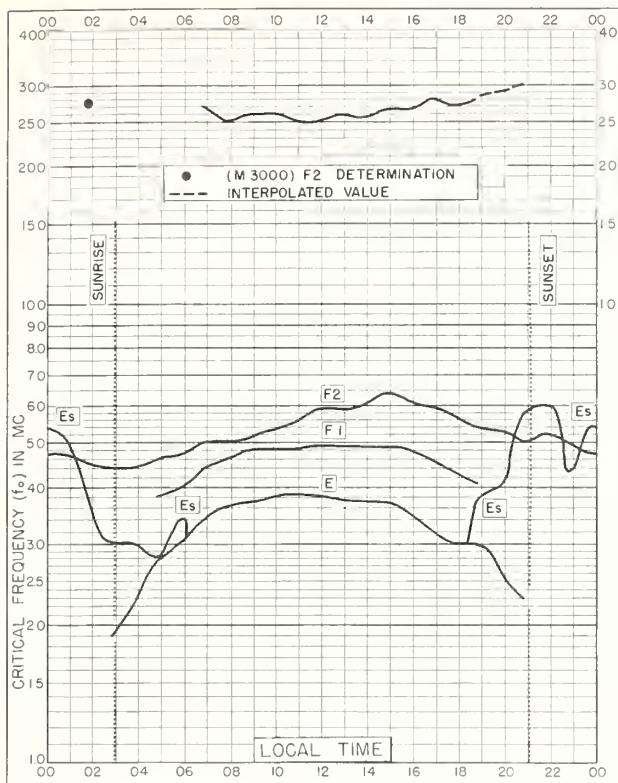


Fig. 17. CHURCHILL, CANADA  
58.8°N, 94.2°W JUNE 1960

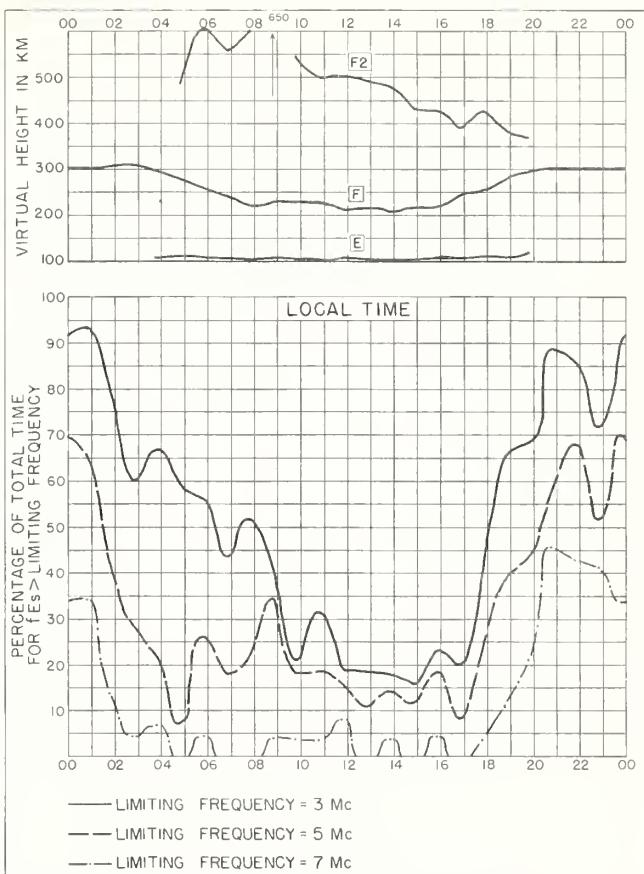


Fig. 18. CHURCHILL, CANADA JUNE 1960

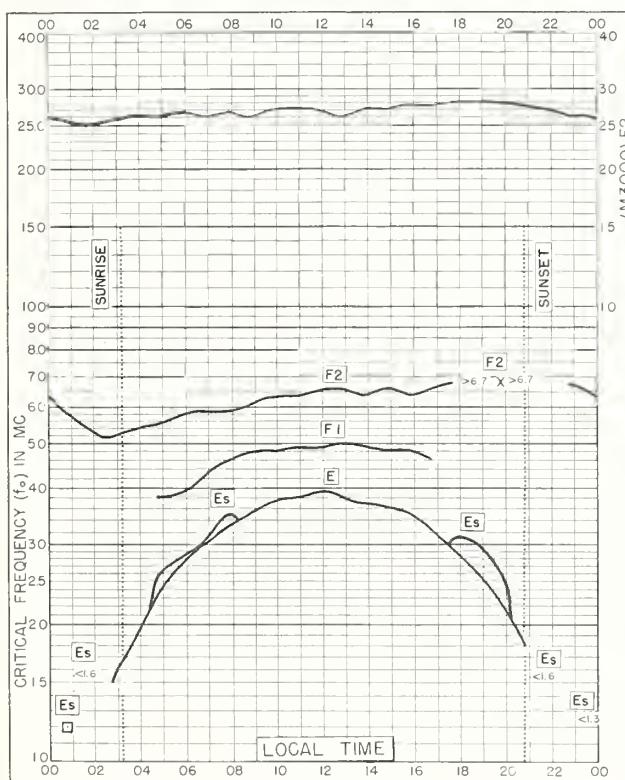


Fig. 19. INVERNESS, SCOTLAND  
57.4°N, 4.2°W JUNE 1960

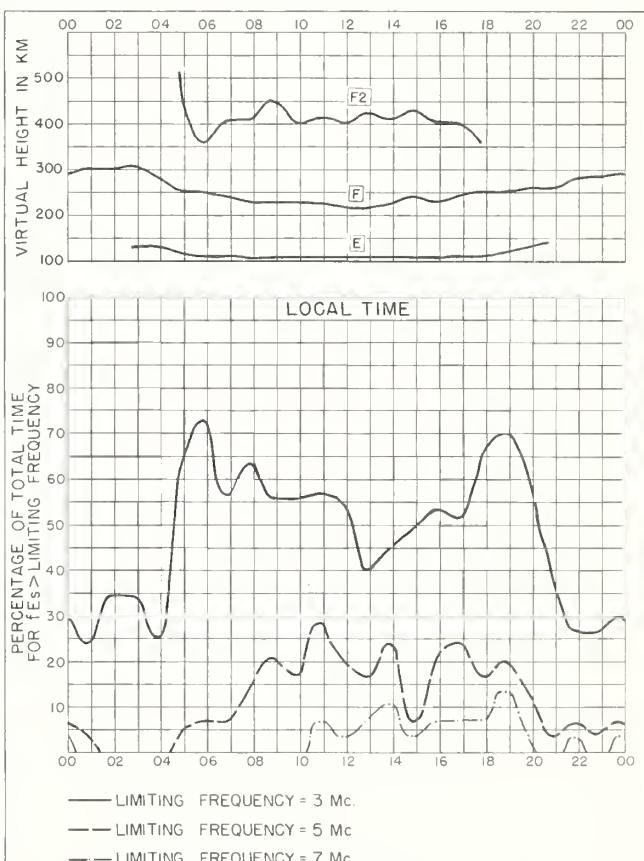
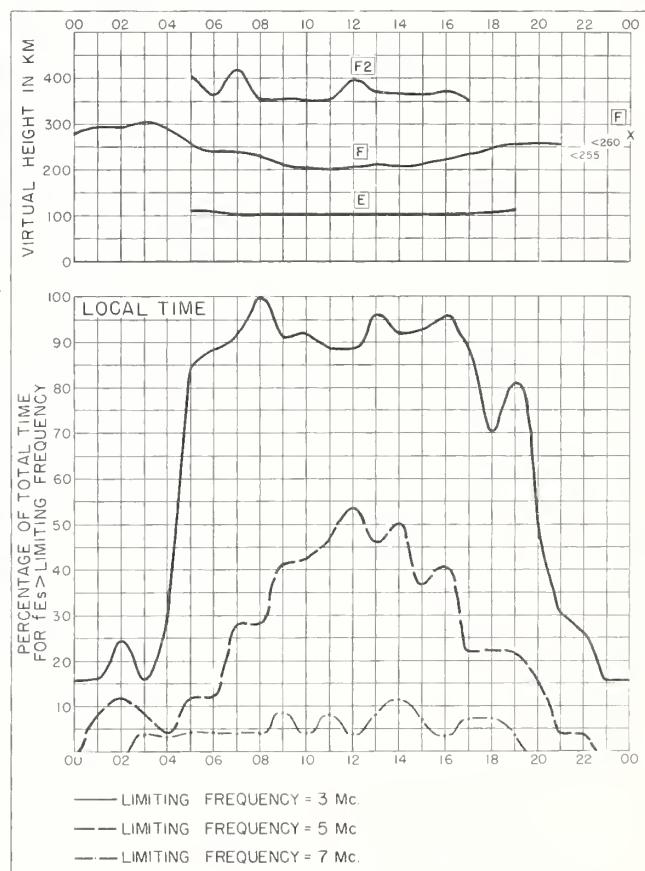
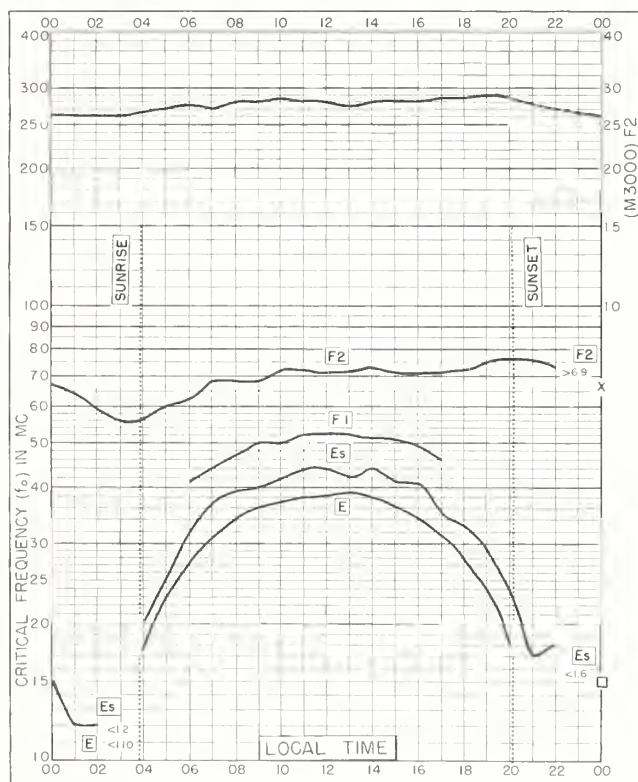
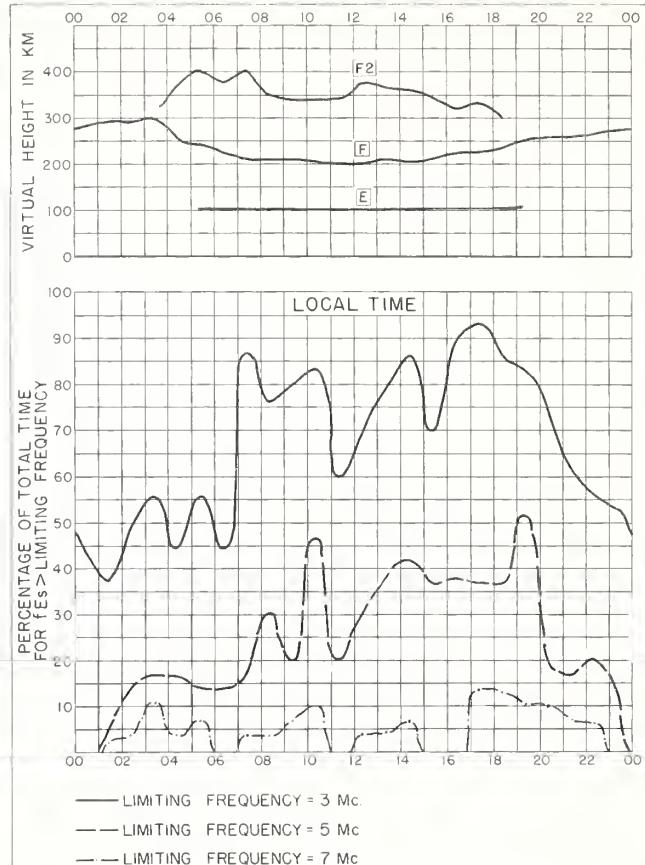
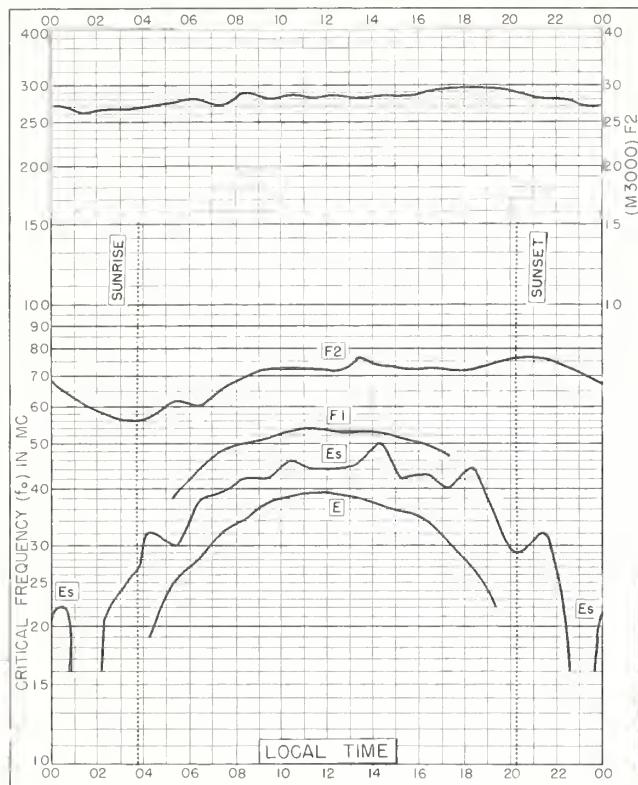


Fig. 20. INVERNESS, SCOTLAND JUNE 1960



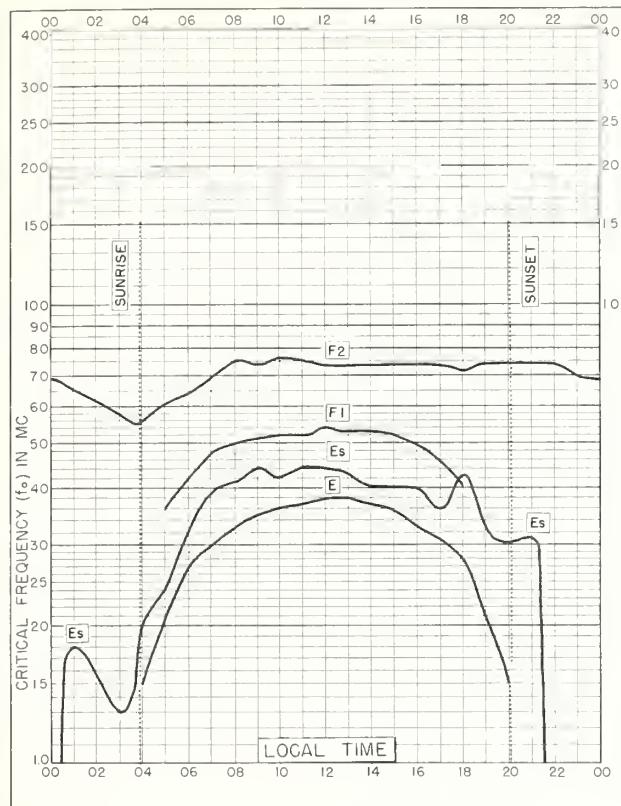


Fig. 25. PRUHONICE, CZECHOSLOVAKIA  
50.0°N, 14.6°E JUNE 1960

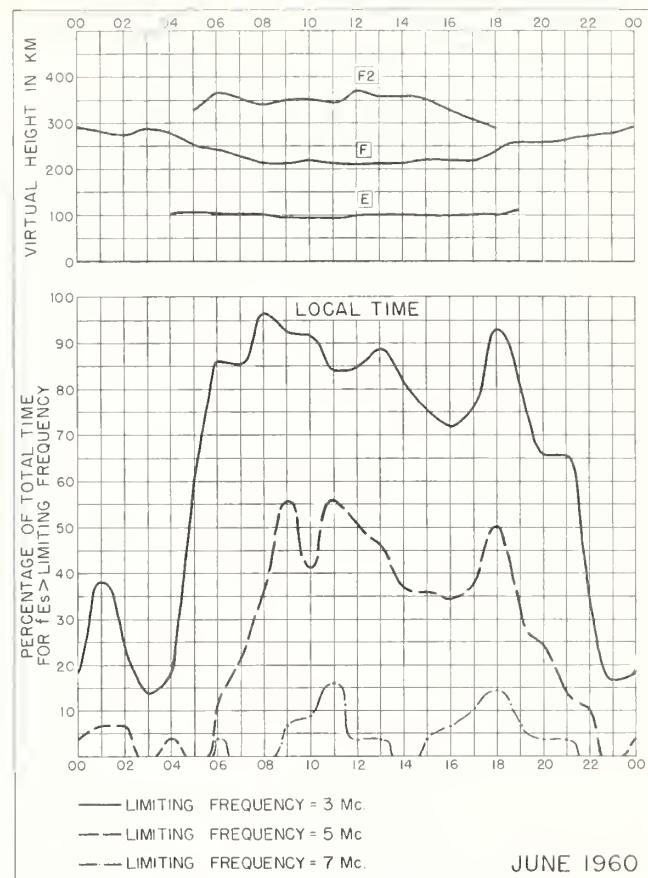


Fig. 26. PRUHONICE, CZECHOSLOVAKIA JUNE 1960

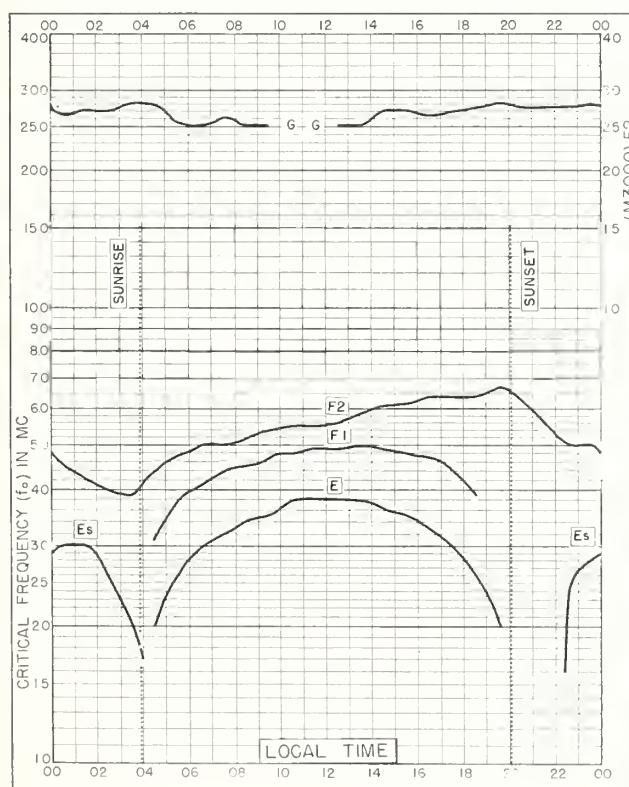


Fig. 27. WINNIPEG, CANADA  
49.9°N, 97.4°W JUNE 1960

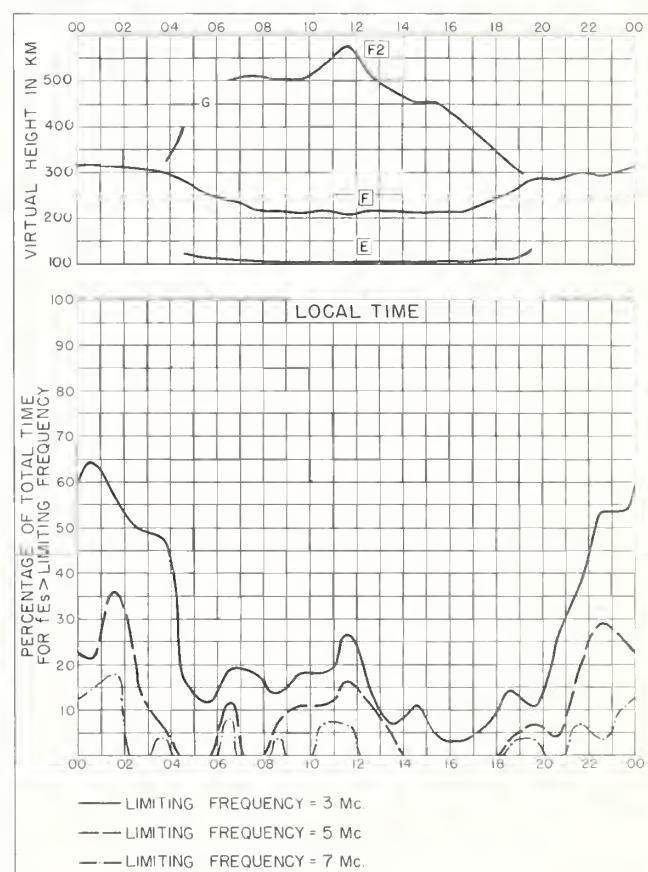
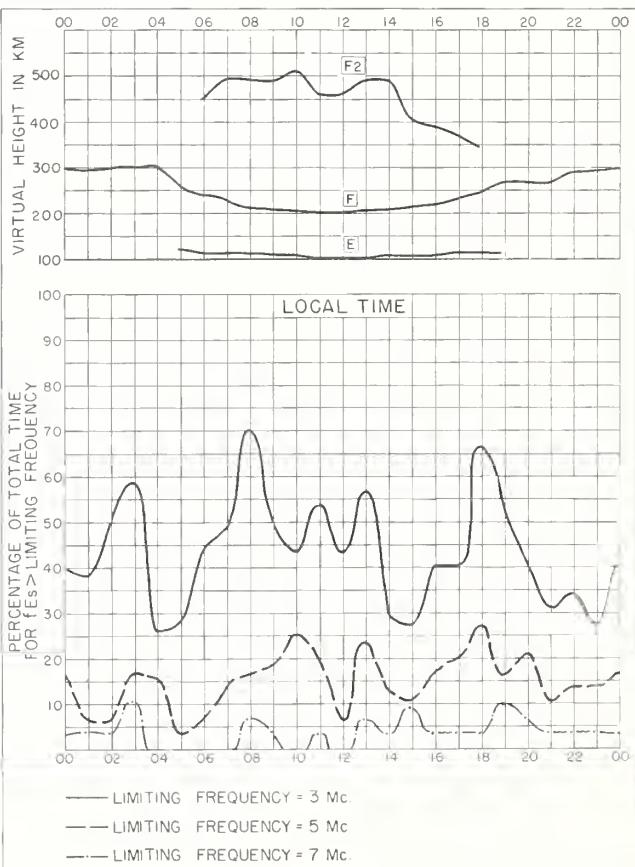
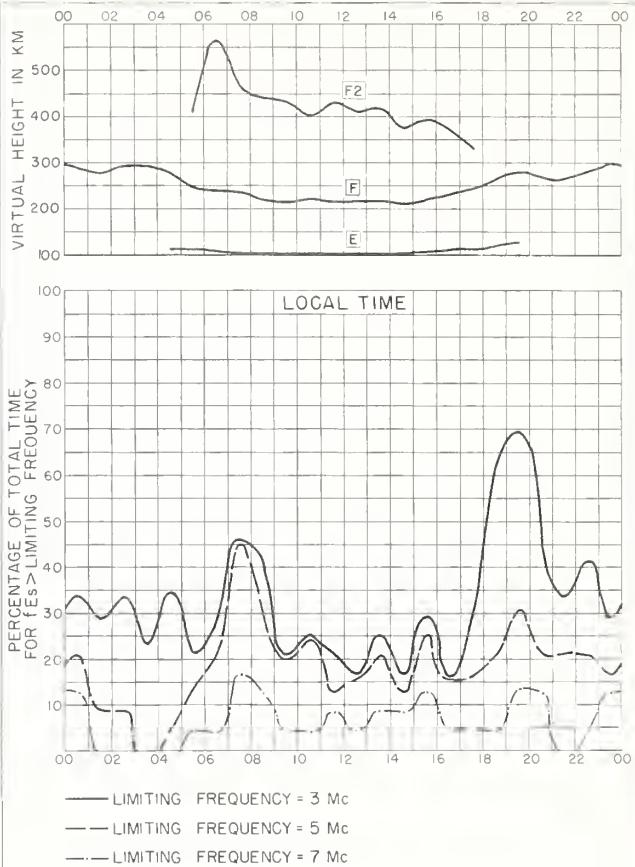
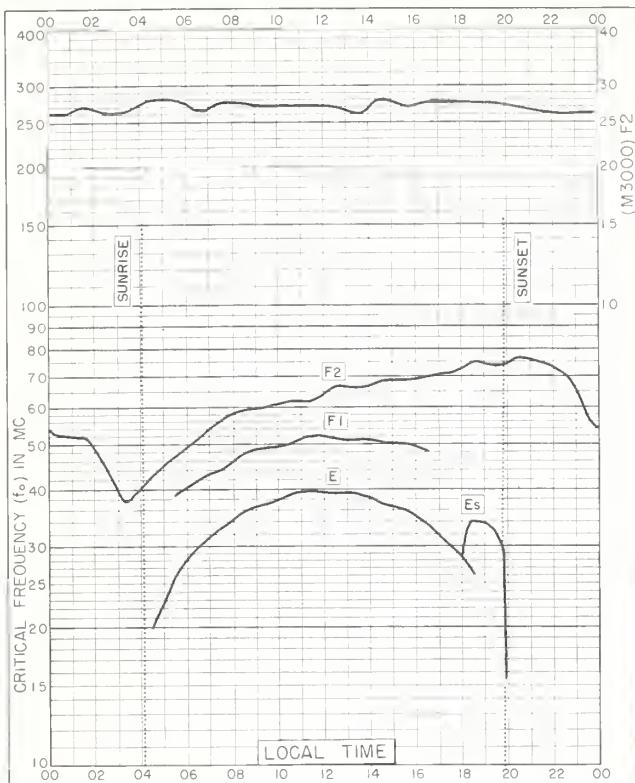
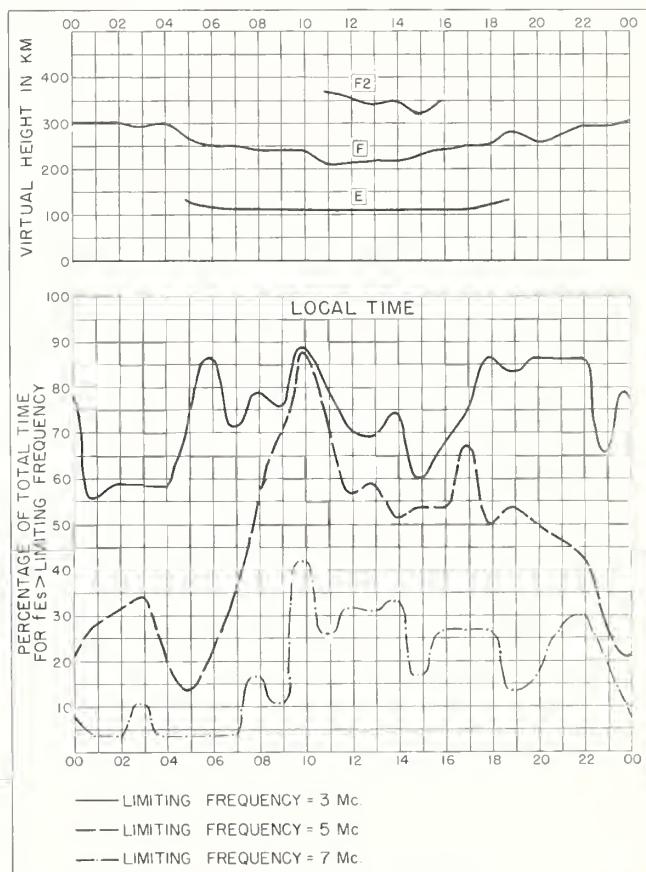
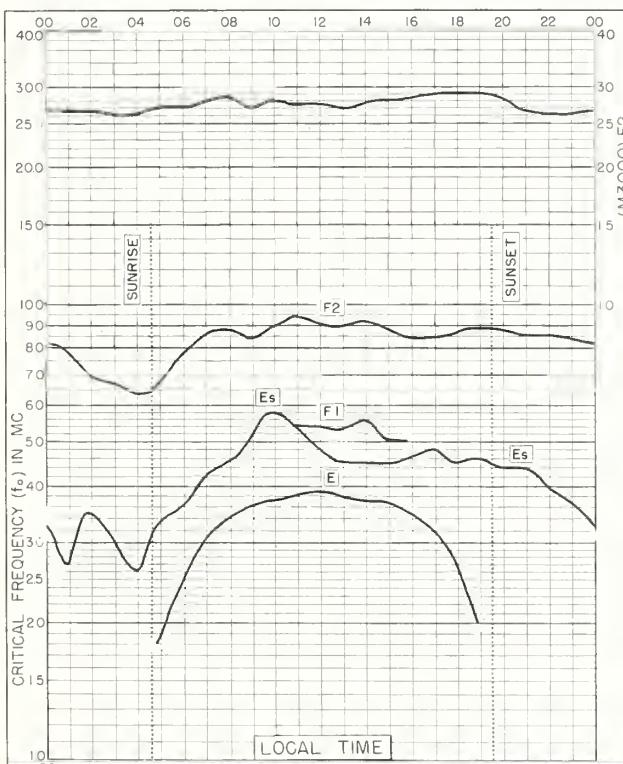
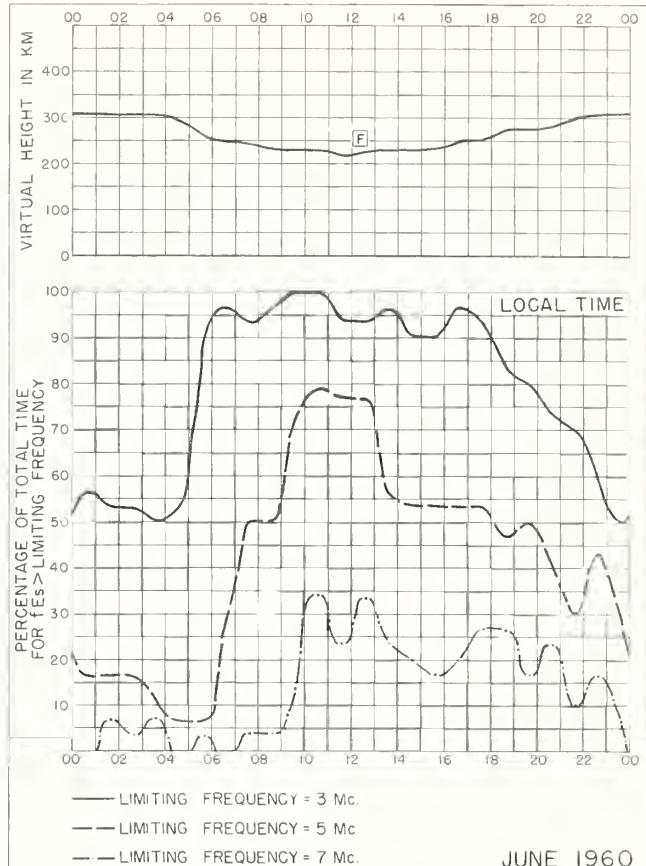
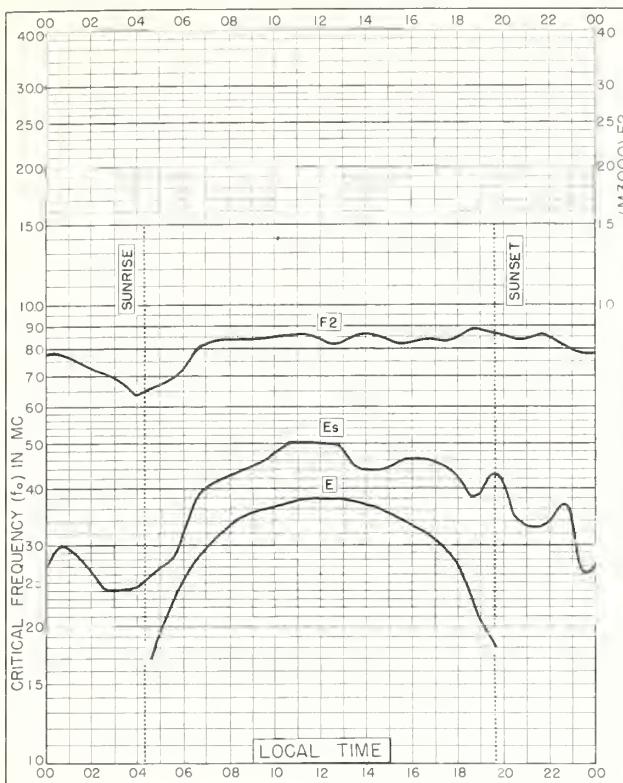
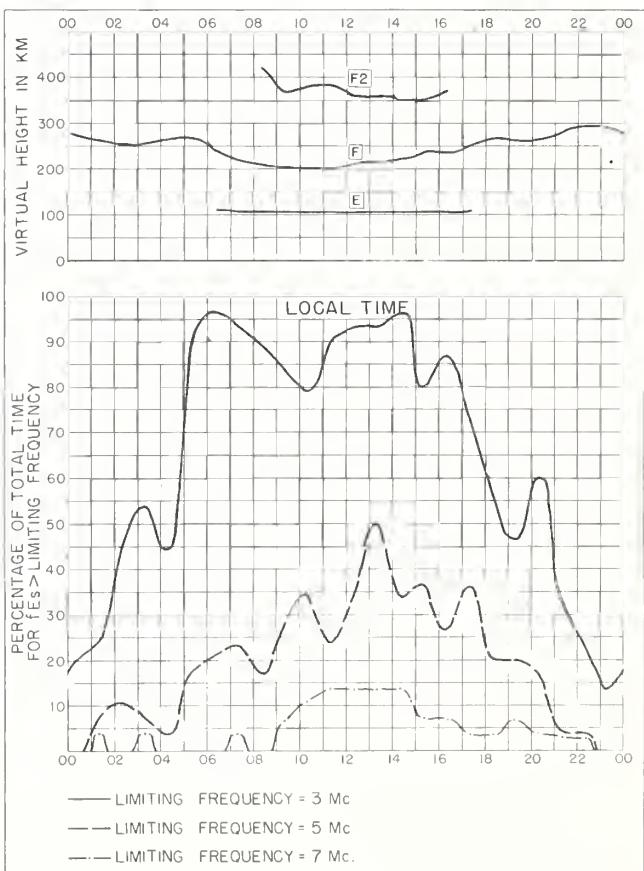
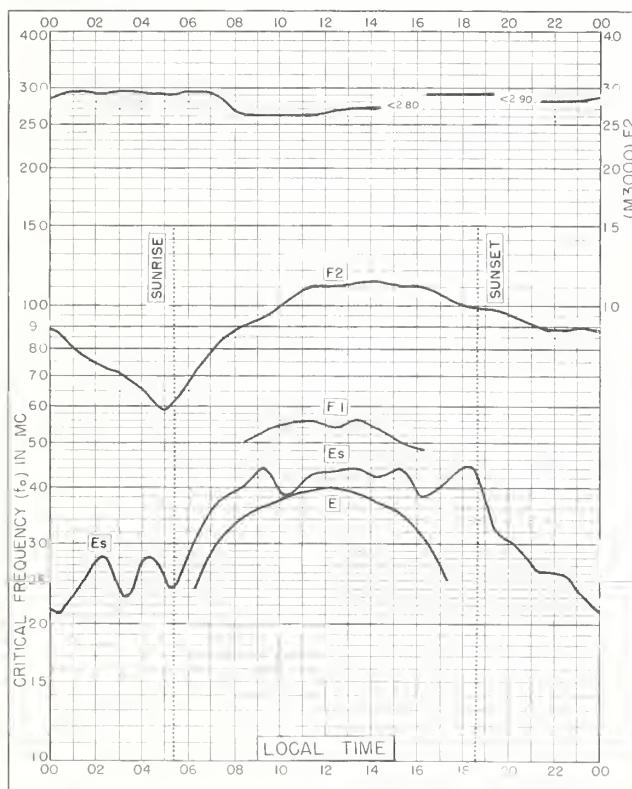
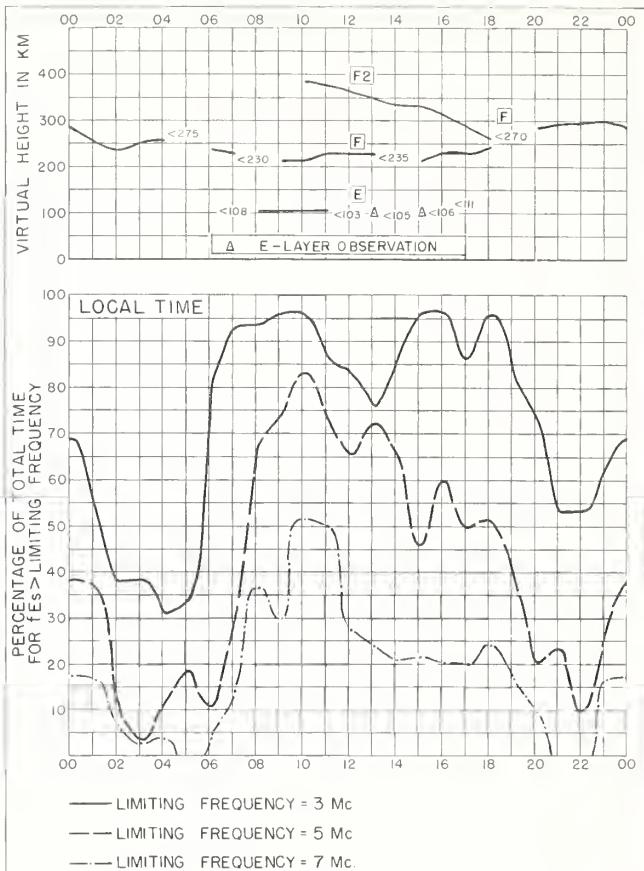
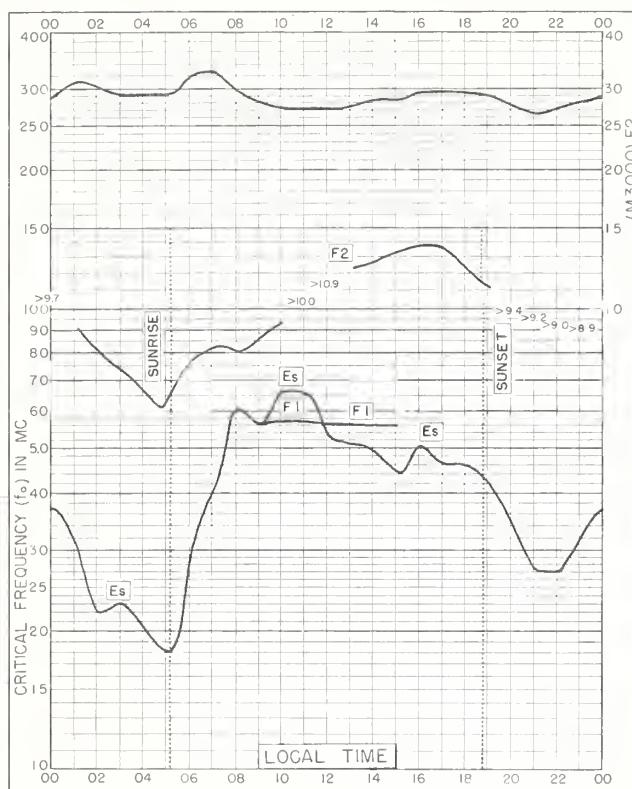


Fig. 28. WINNIPEG, CANADA JUNE 1960







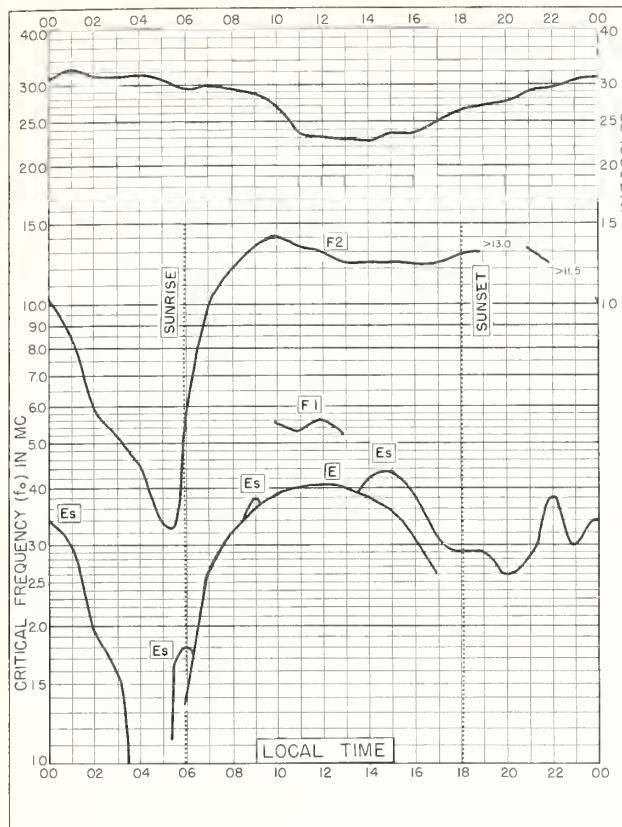


Fig. 41. SINGAPORE, BRITISH MALAYA  
1.3°N, 103.8°E JUNE 1960

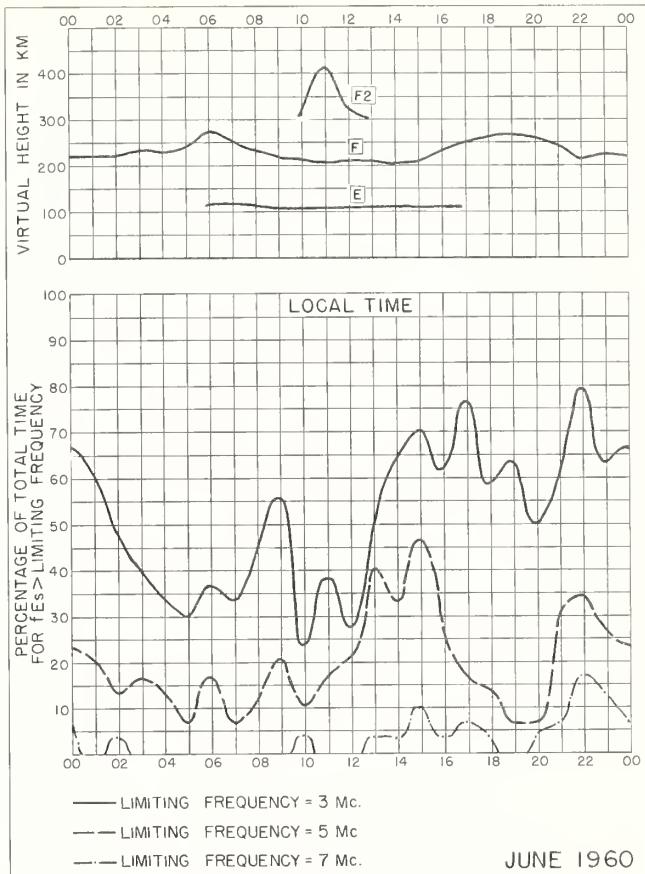


Fig. 42. SINGAPORE, BRITISH MALAYA JUNE 1960

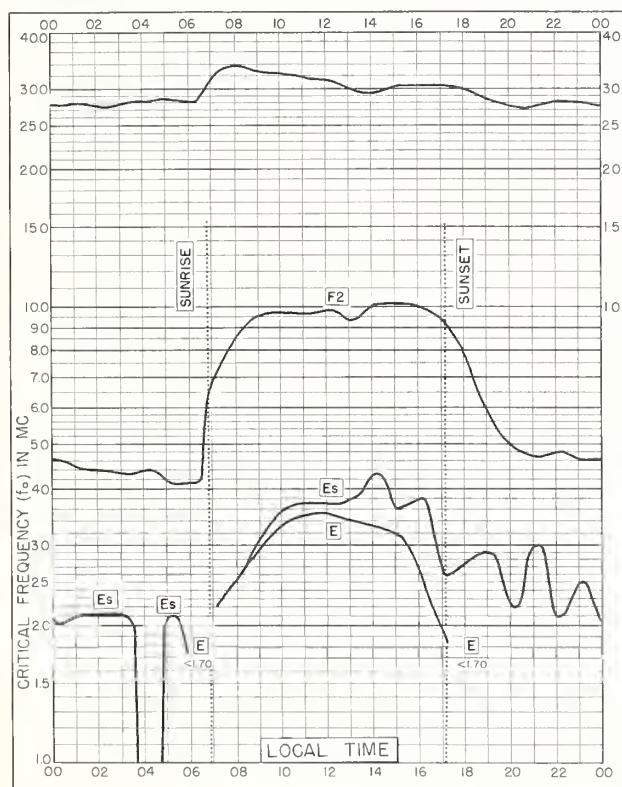


Fig. 43. BRISBANE, AUSTRALIA  
27.5°S, 152.9°E JUNE 1960

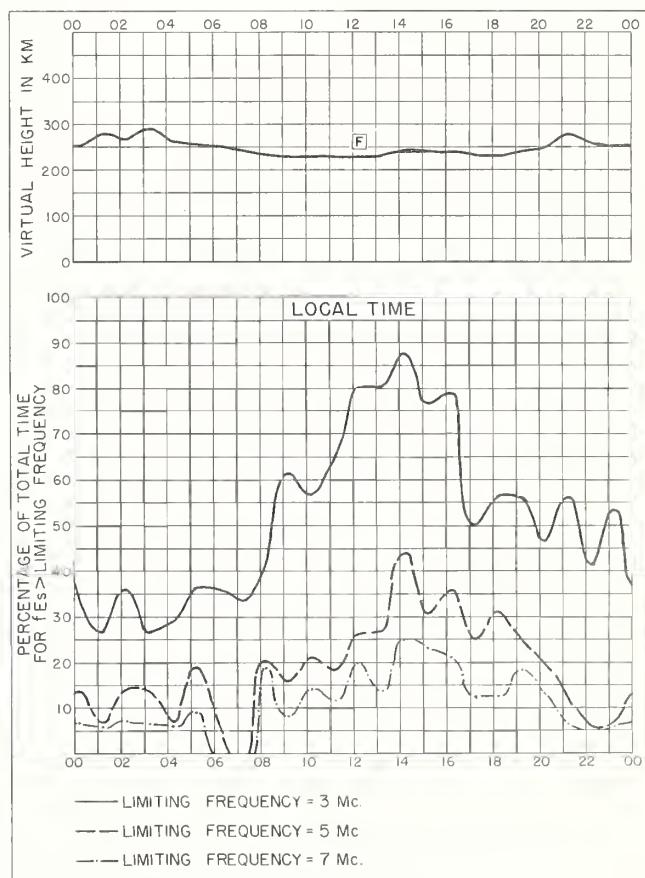
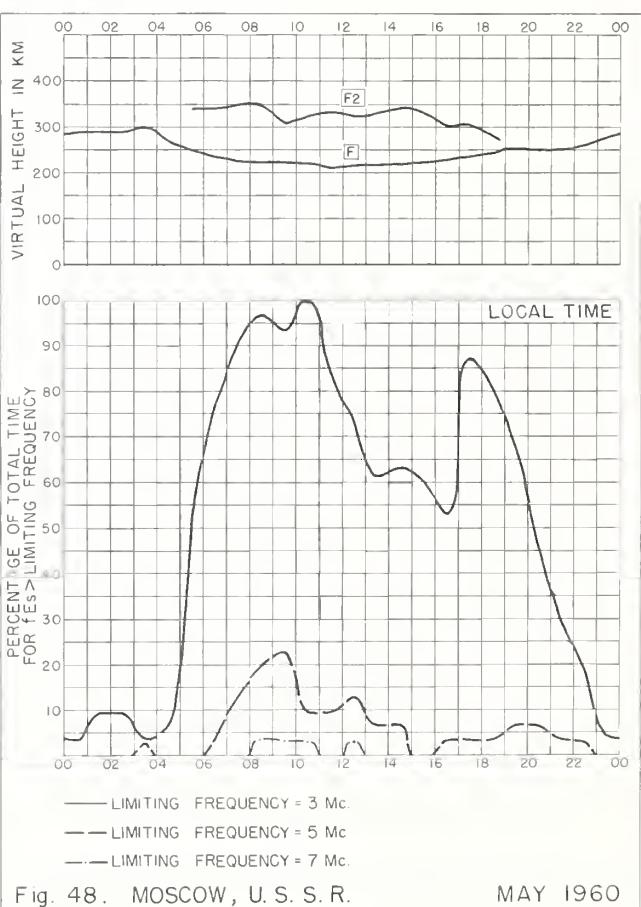
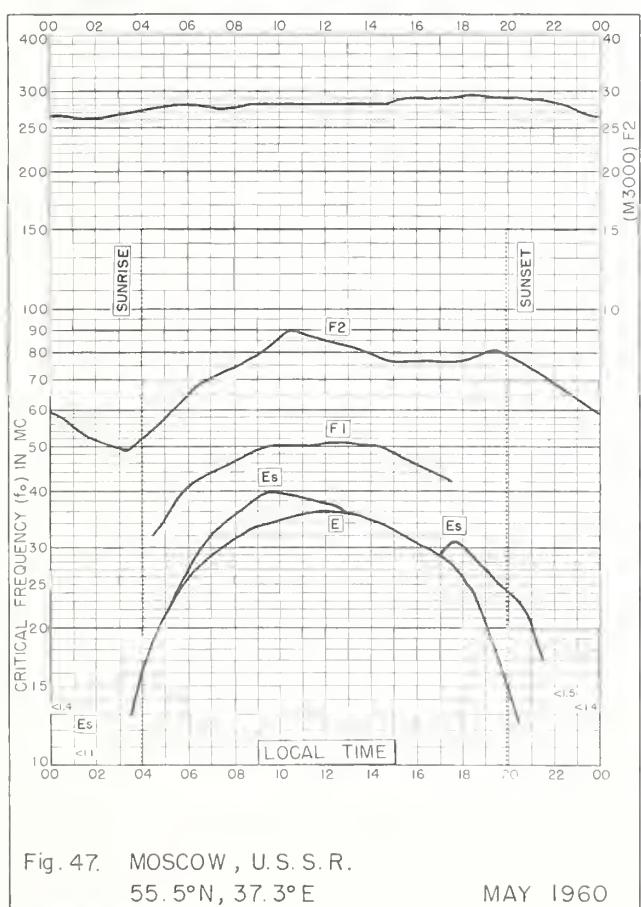
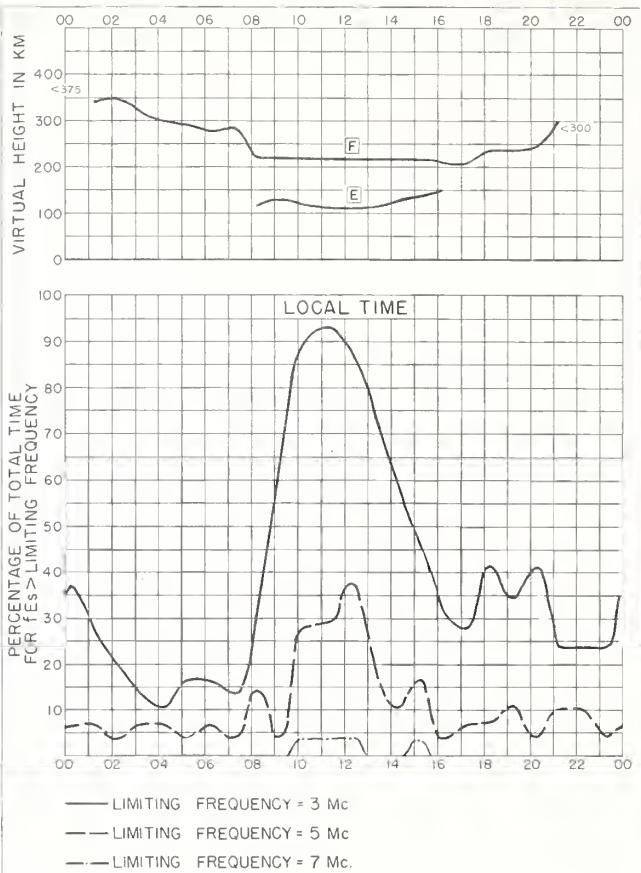
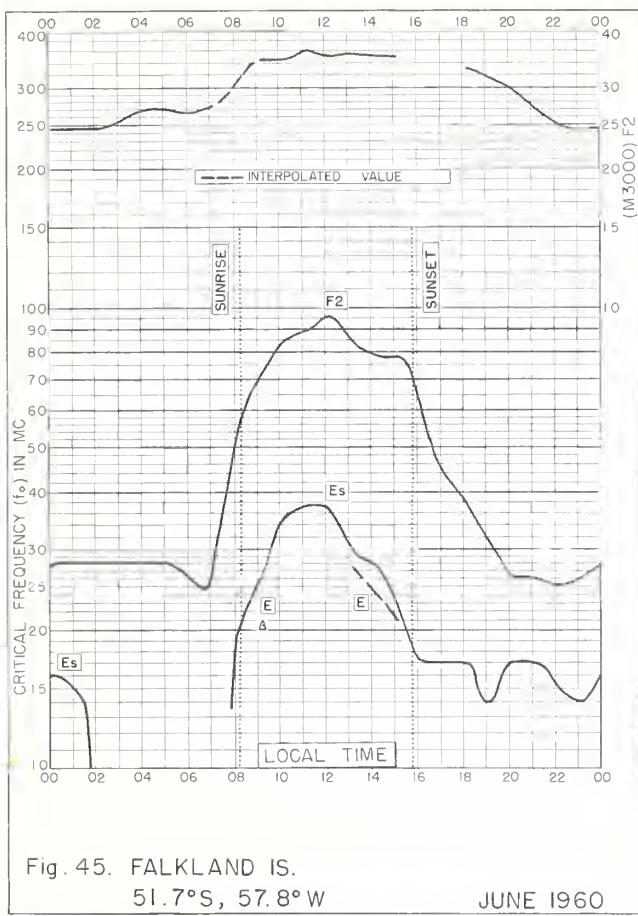
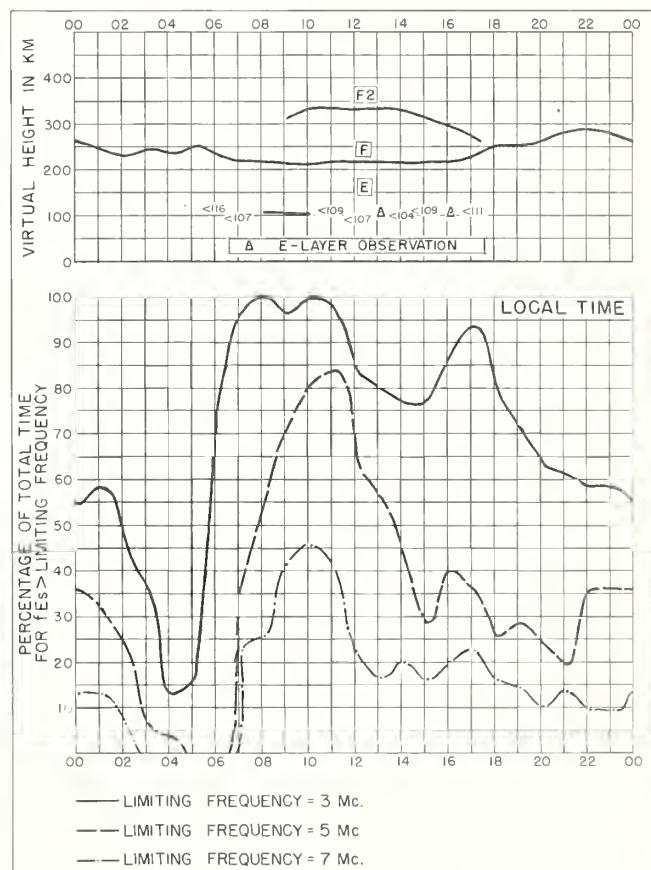
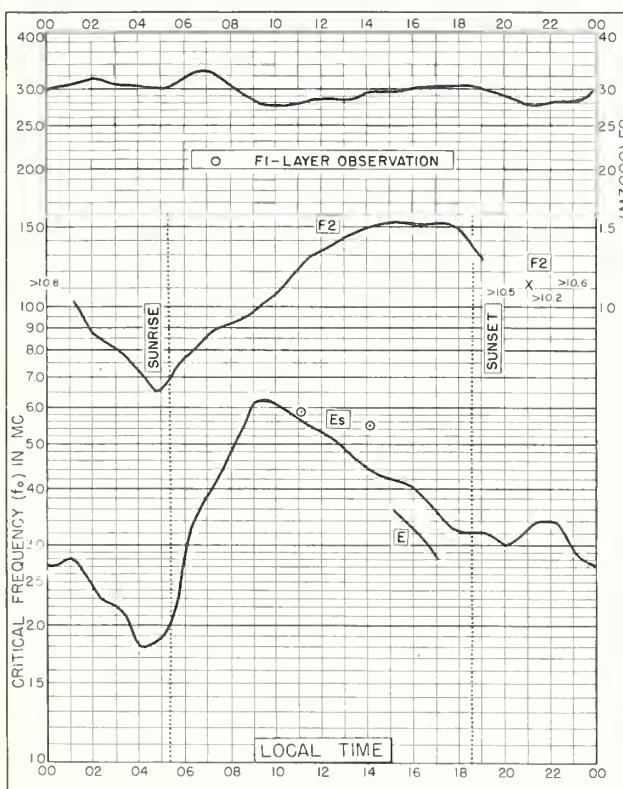
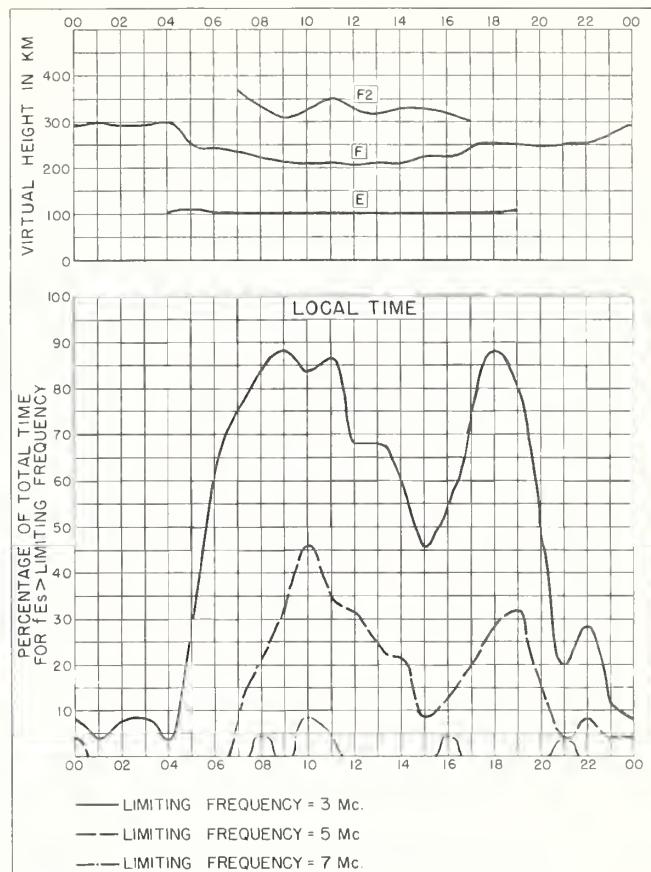
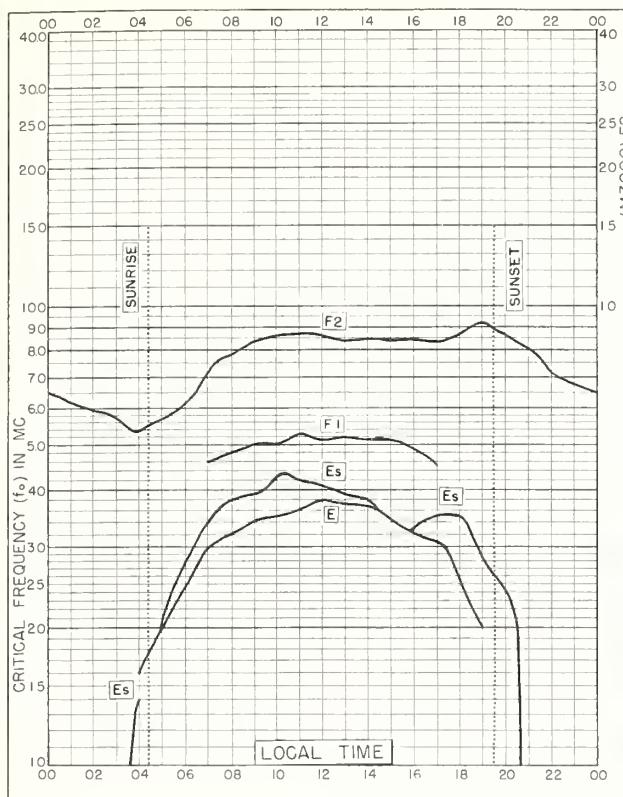
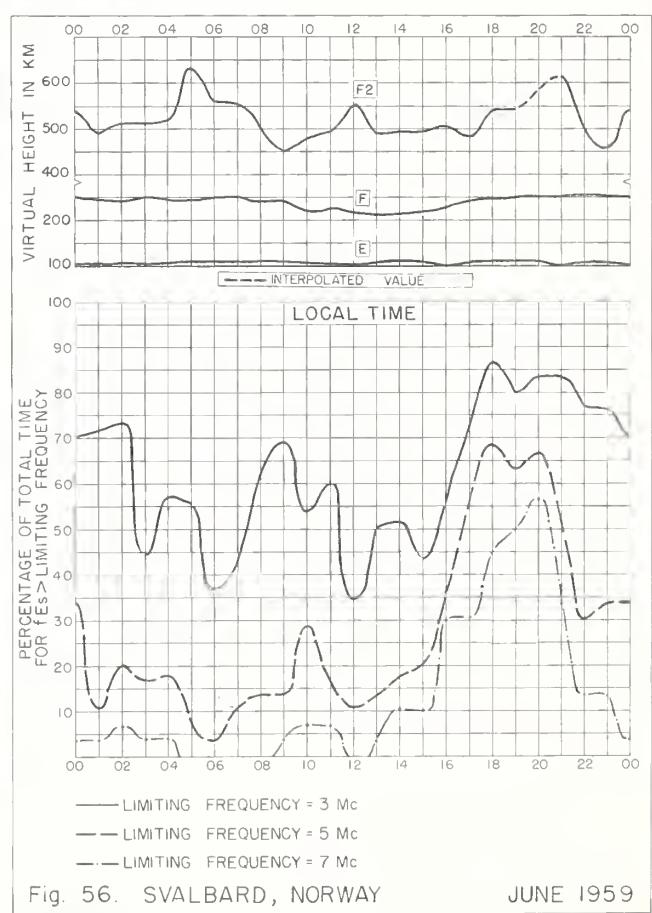
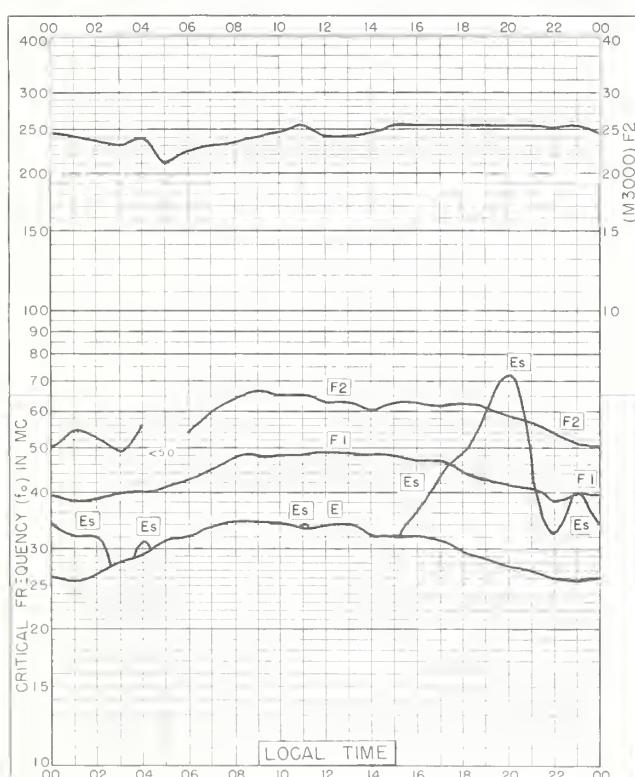
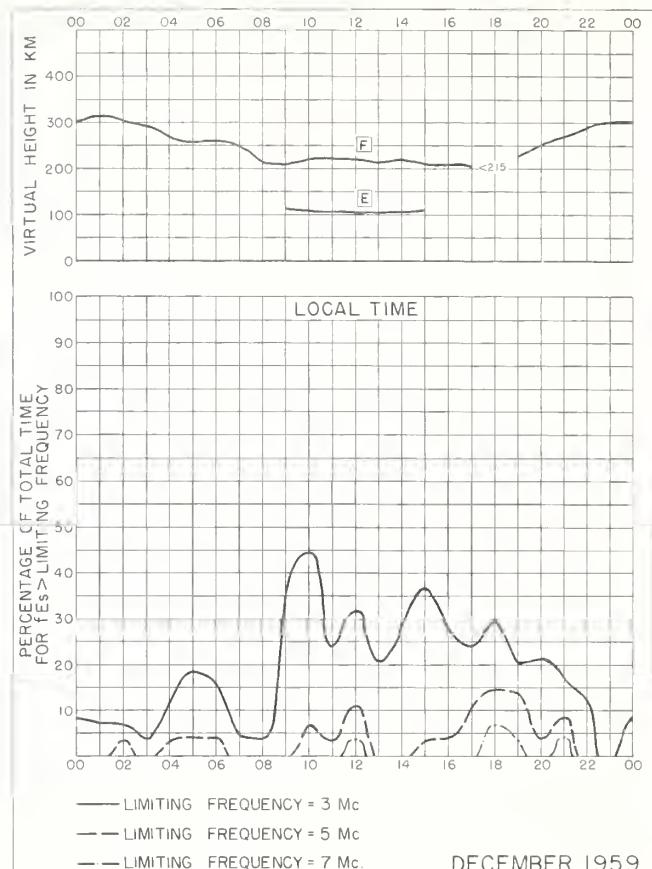
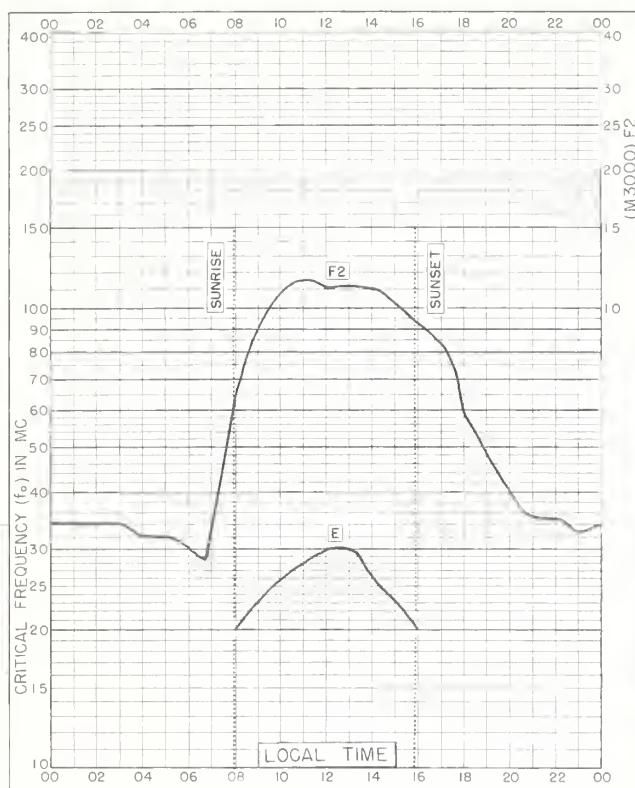


Fig. 44. BRISBANE, AUSTRALIA JUNE 1960







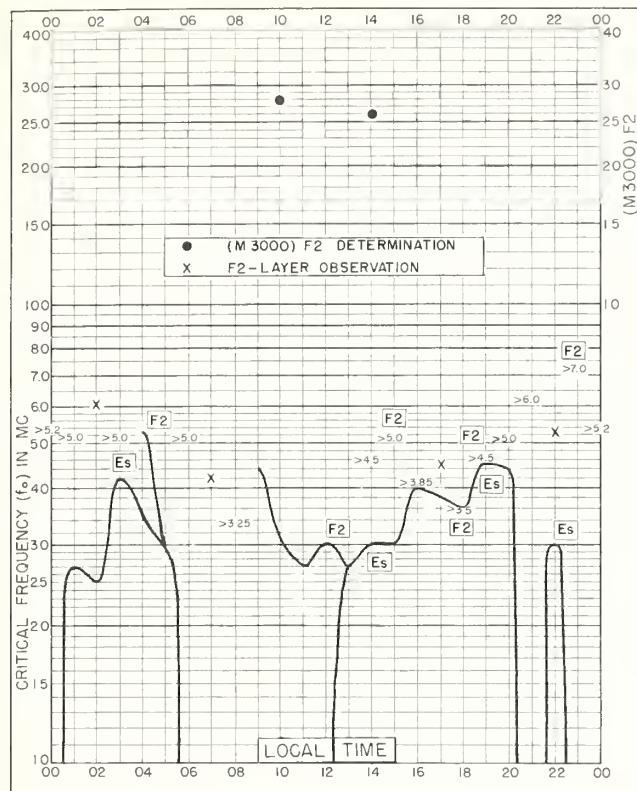


Fig. 57. BYRD STATION  
80.0°S, 120.0°W JUNE 1959

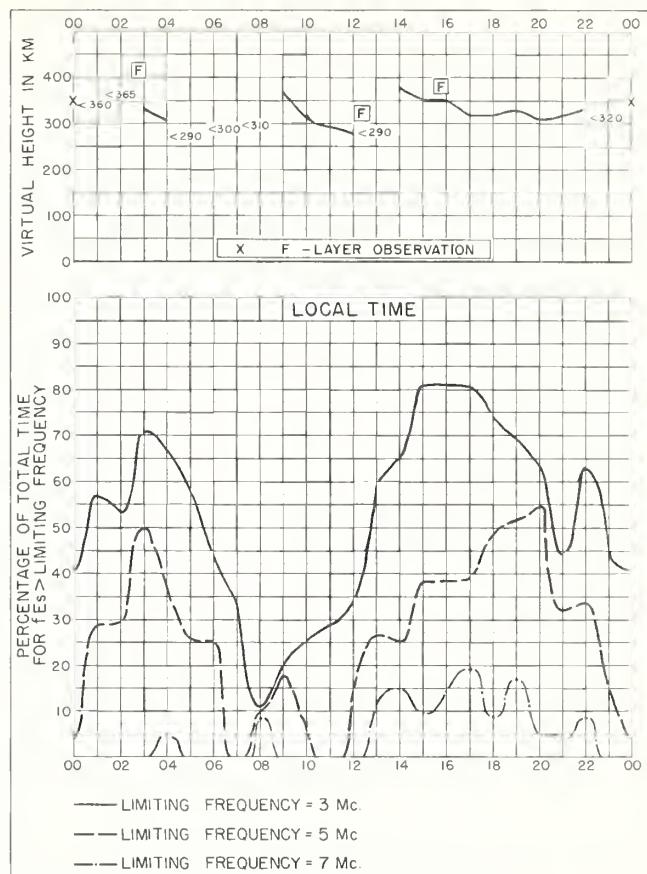


Fig. 58. BYRD STATION JUNE 1959

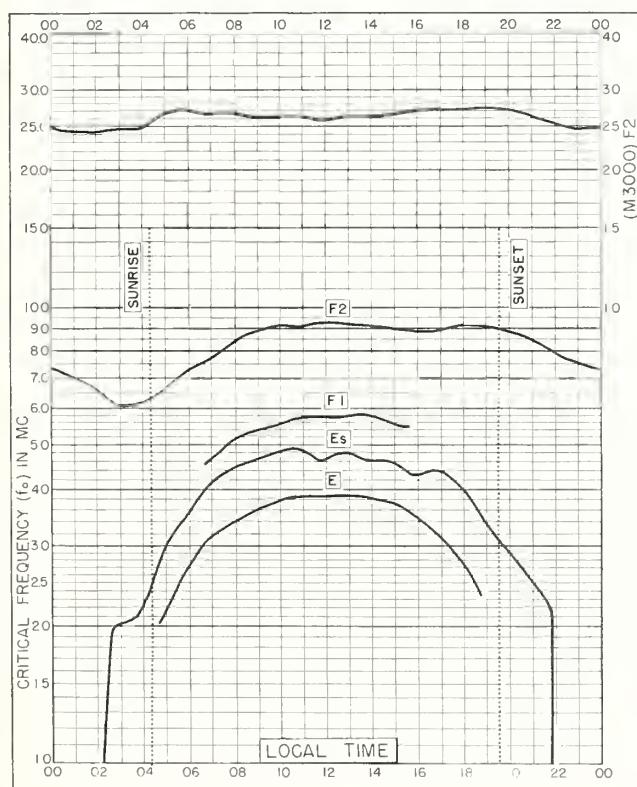


Fig. 59. LINDAU/HARZ, GERMANY  
51.6°N, 10.1°E MAY 1959

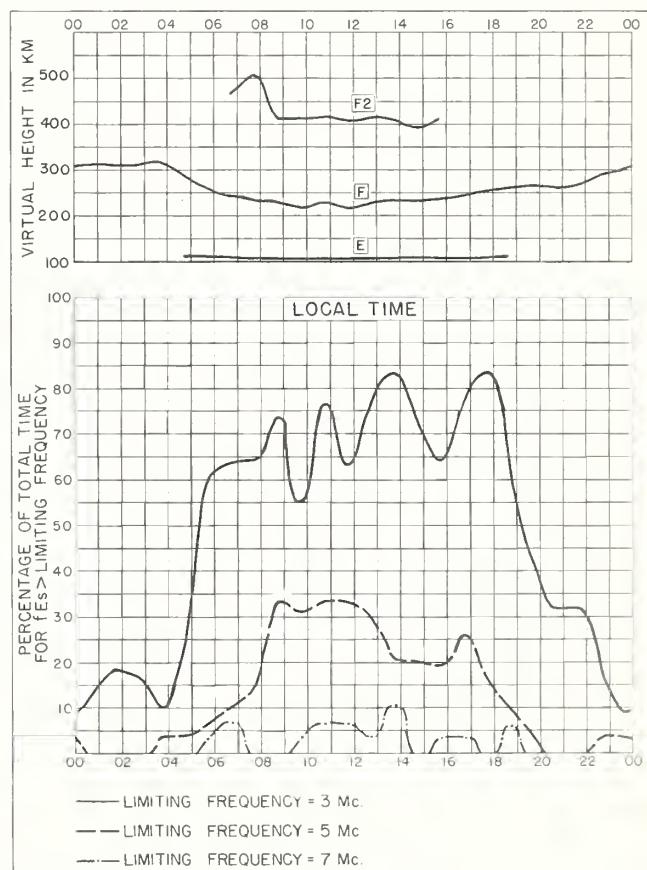


Fig. 60. LINDAU/HARZ, GERMANY MAY 1959

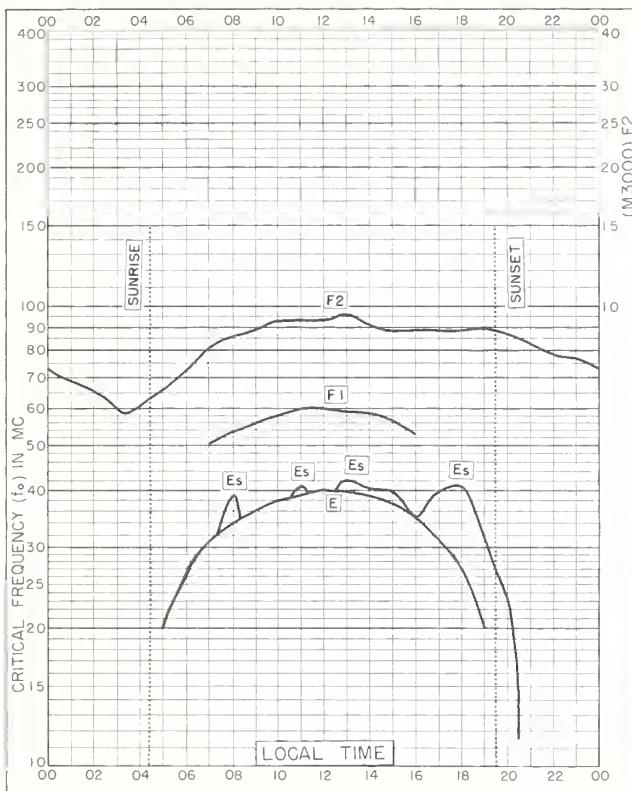


Fig. 61. PRUHONICE, CZECHOSLOVAKIA  
50.0°N, 14.6°E MAY 1959

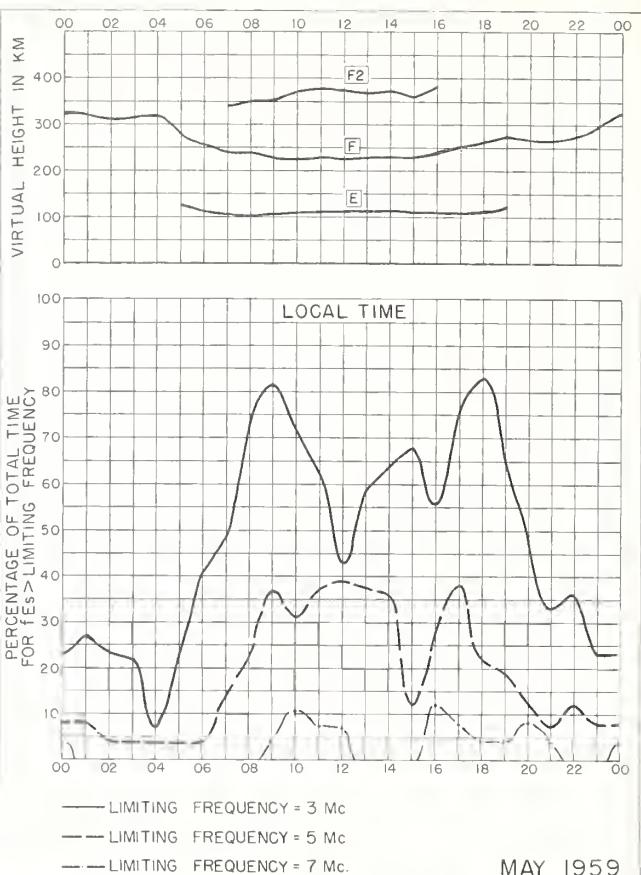


Fig. 62. PRUHONICE, CZECHOSLOVAKIA

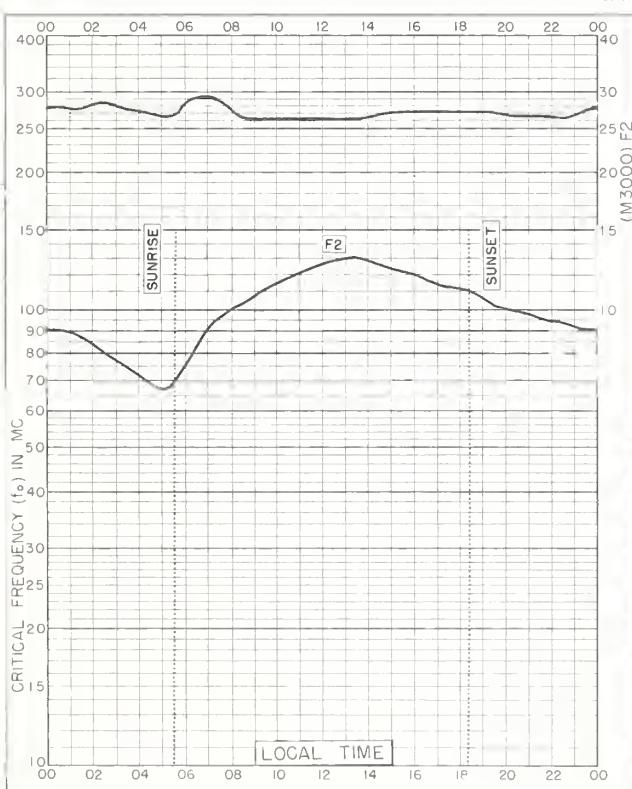


Fig. 63. EL CERILLO, MEXICO  
19.3°N, 99.5°W MAY 1959

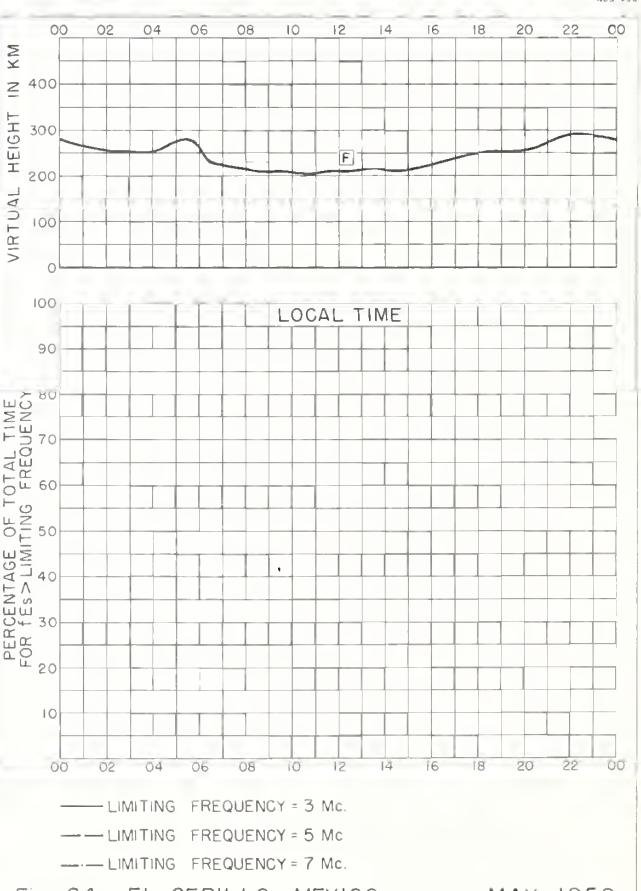
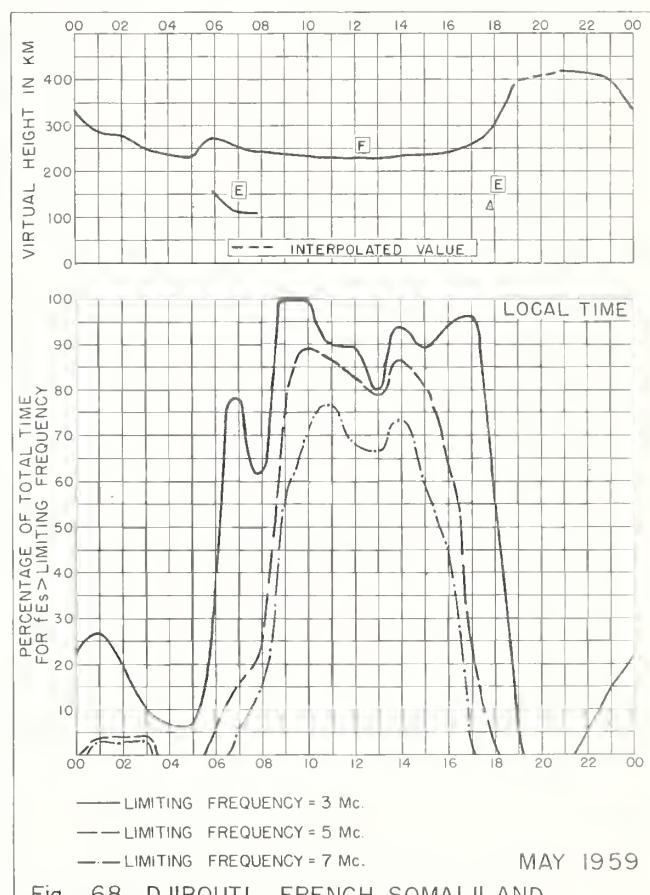
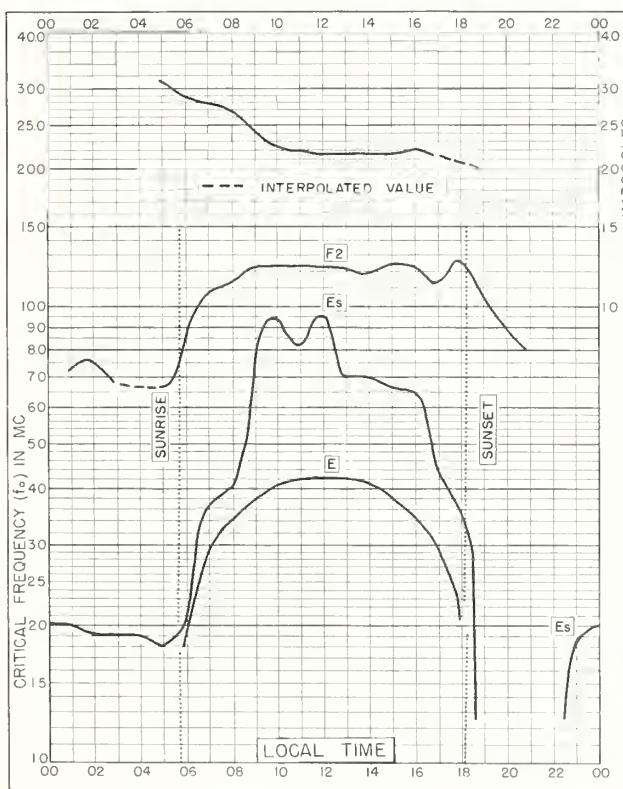
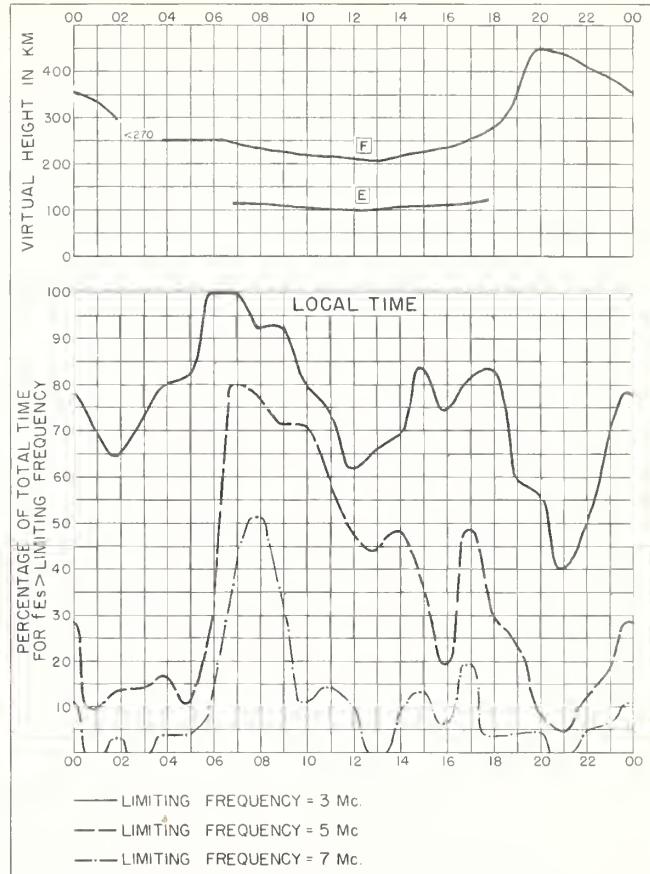
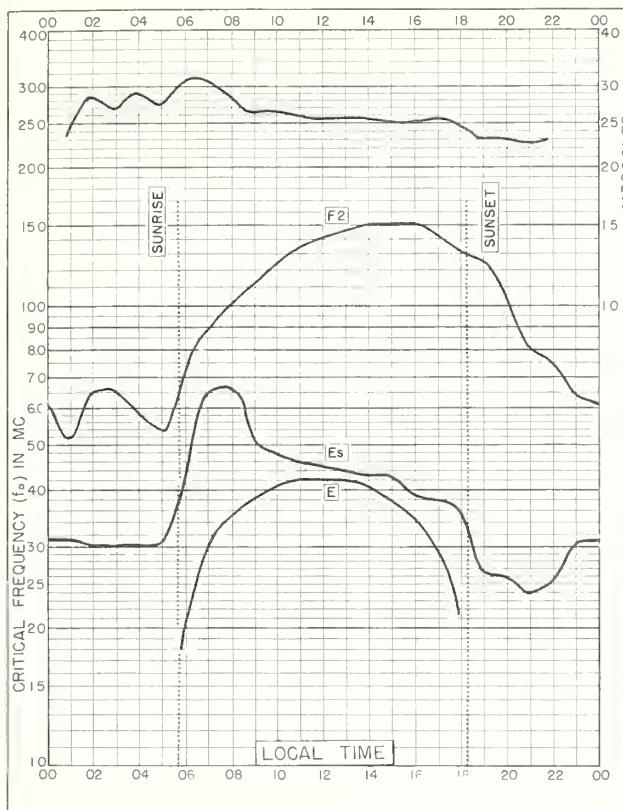


Fig. 64. EL CERILLO, MEXICO MAY 1959



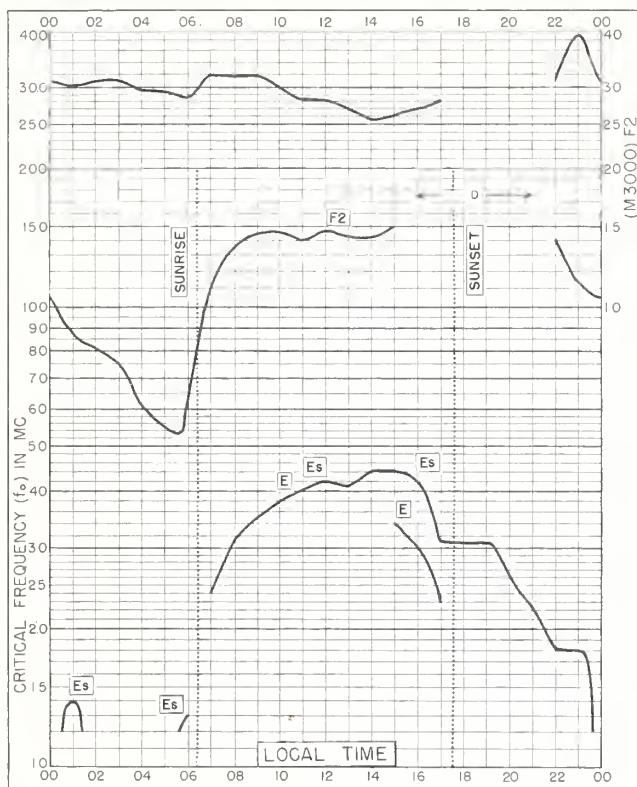


Fig. 69. TAHITI, SOCIETY IS.

17.7°S, 149.3°W

MAY 1959

NBS 503

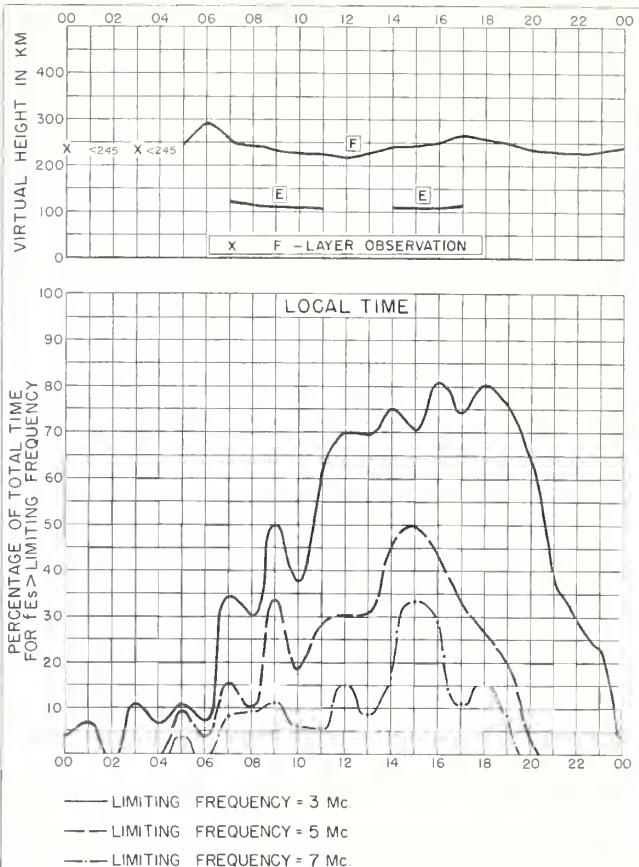


Fig. 70. TAHITI, SOCIETY IS.

MAY 1959

NBS 490

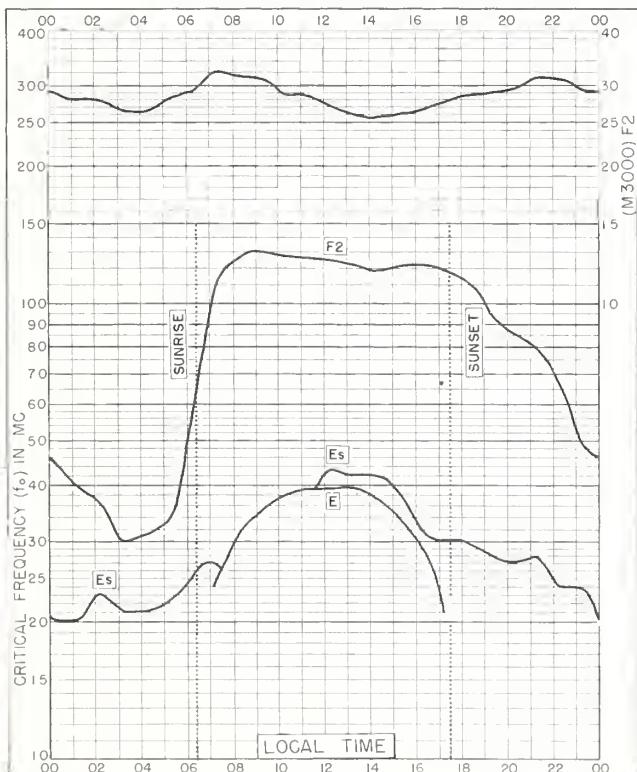


Fig. 71. TANANARIVE, MADAGASCAR

18.8°S, 47.5°E

MAY 1959

NBS 503

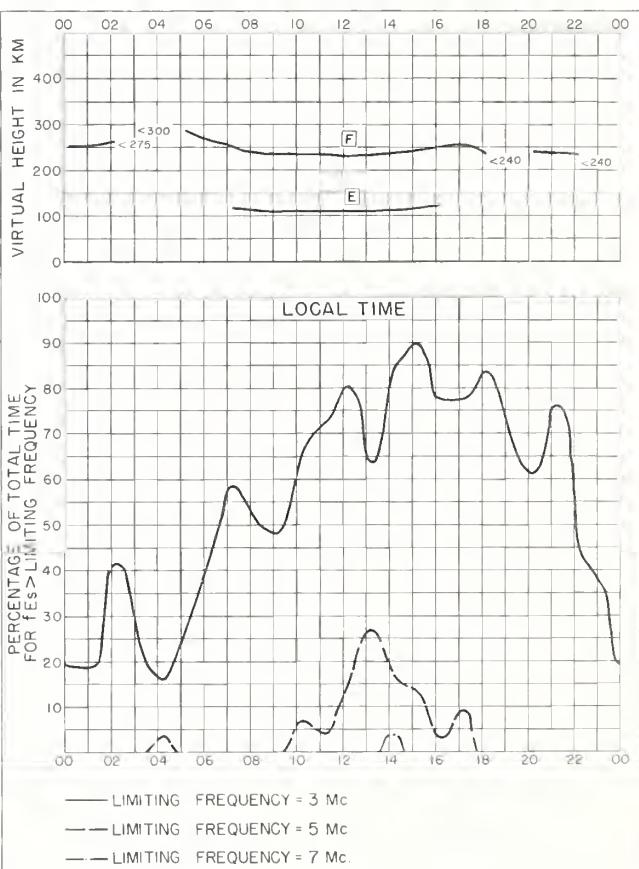
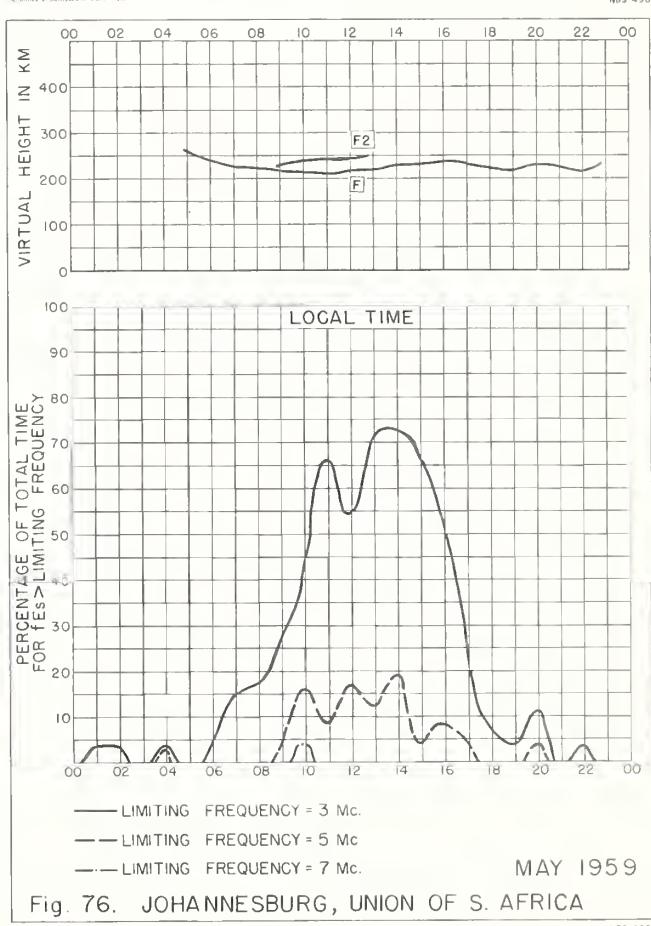
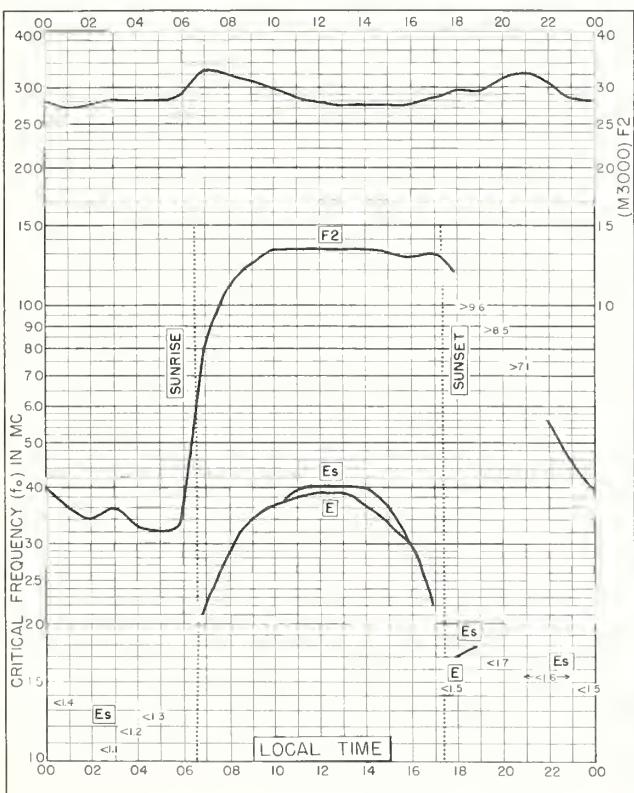
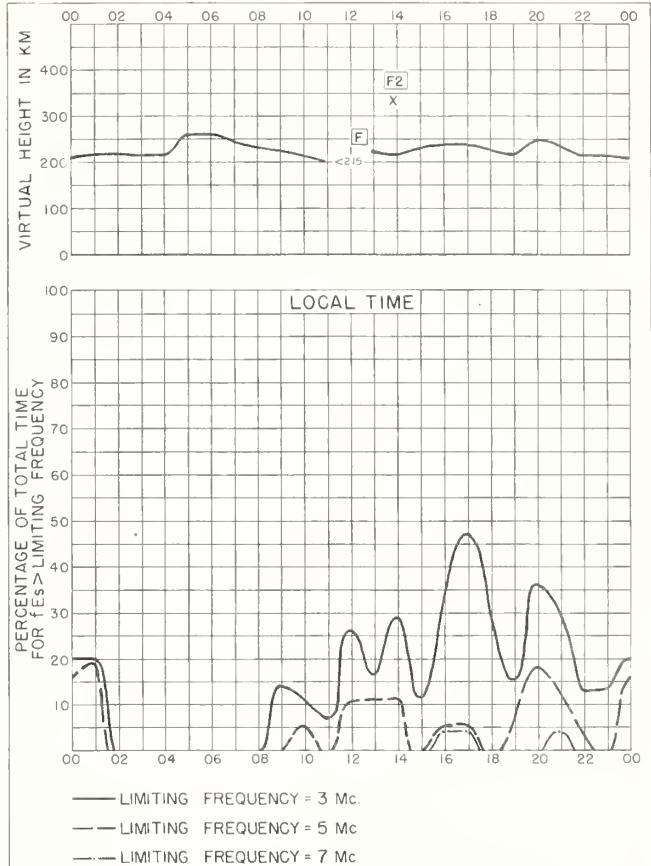
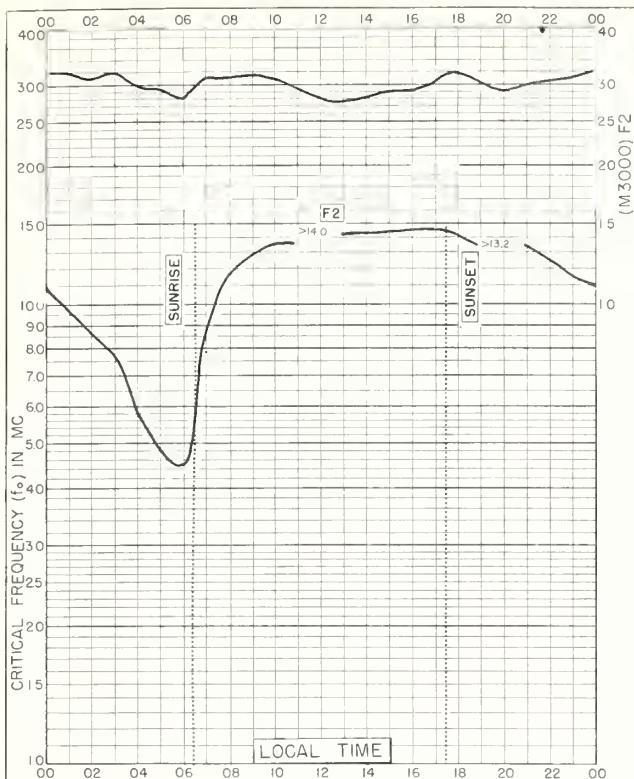
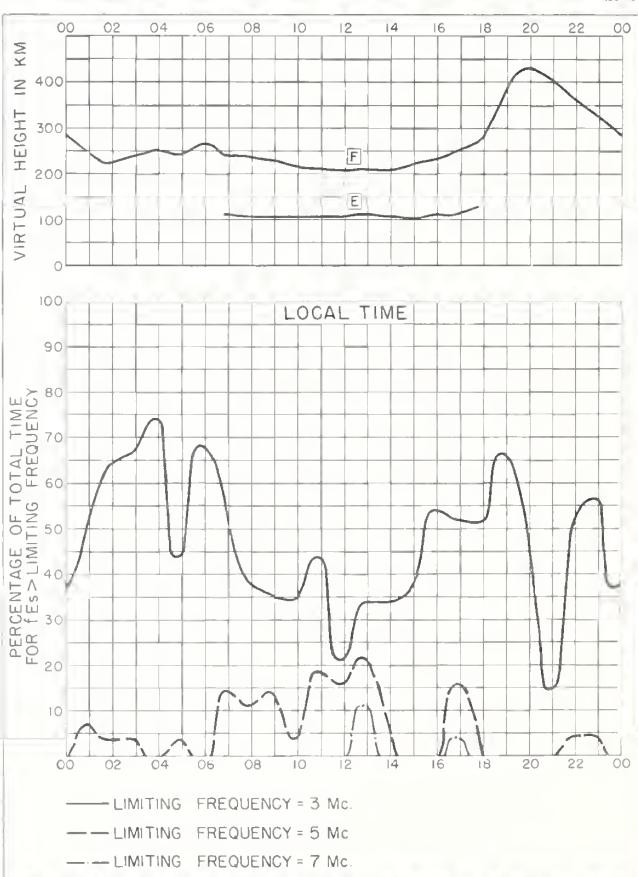
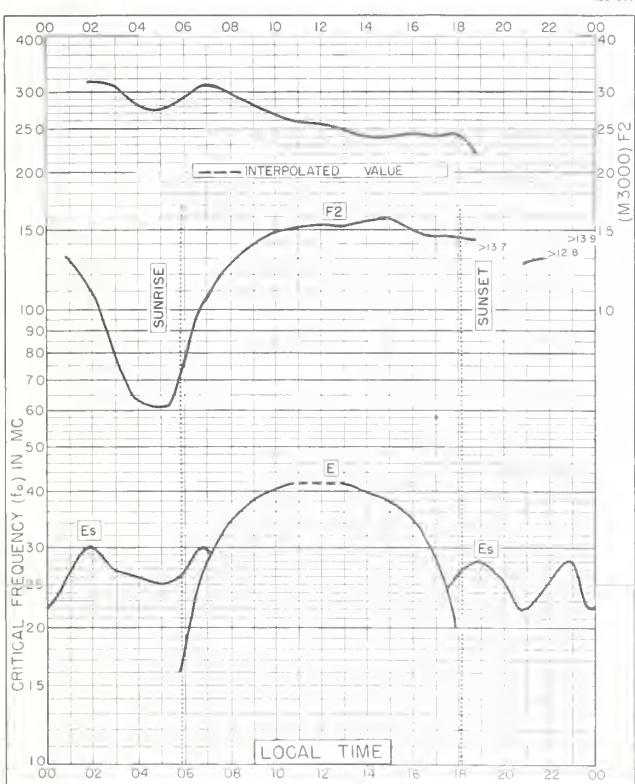
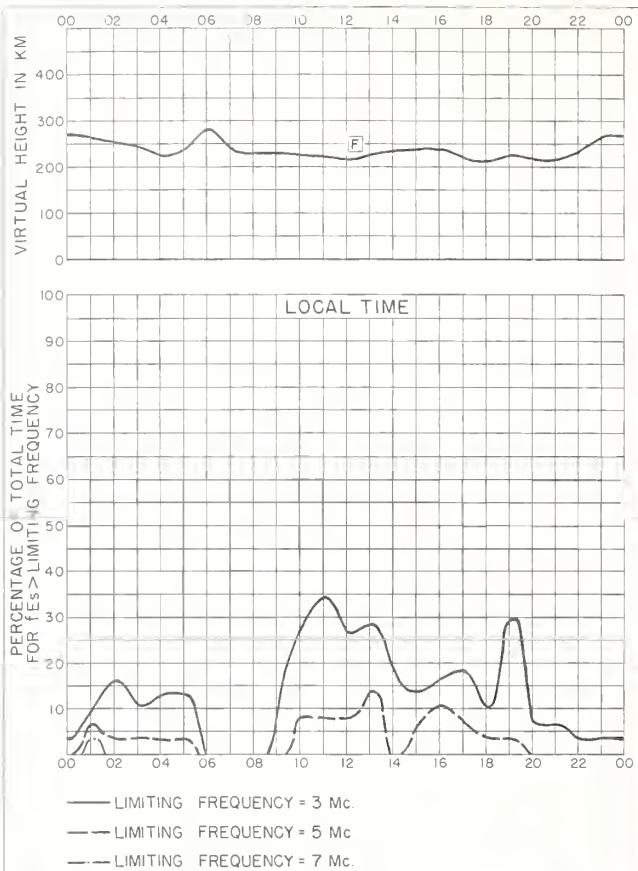
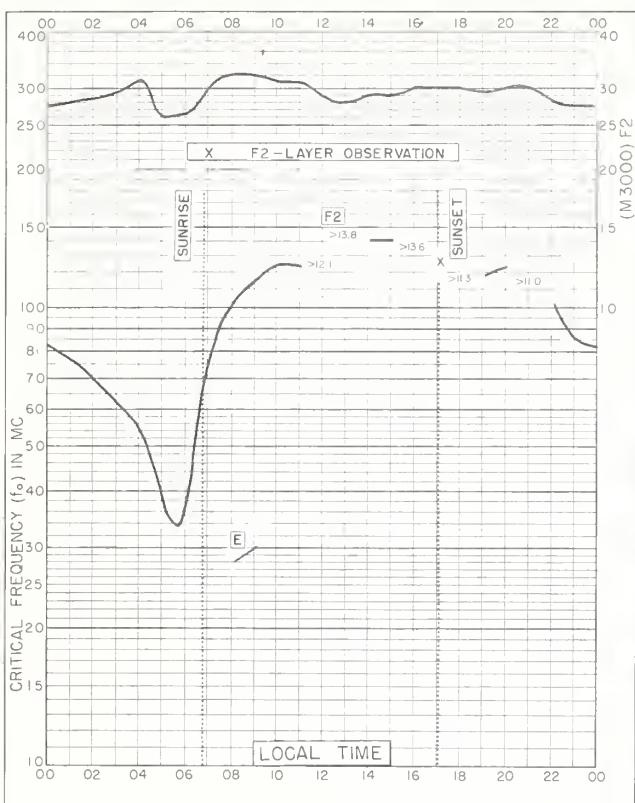
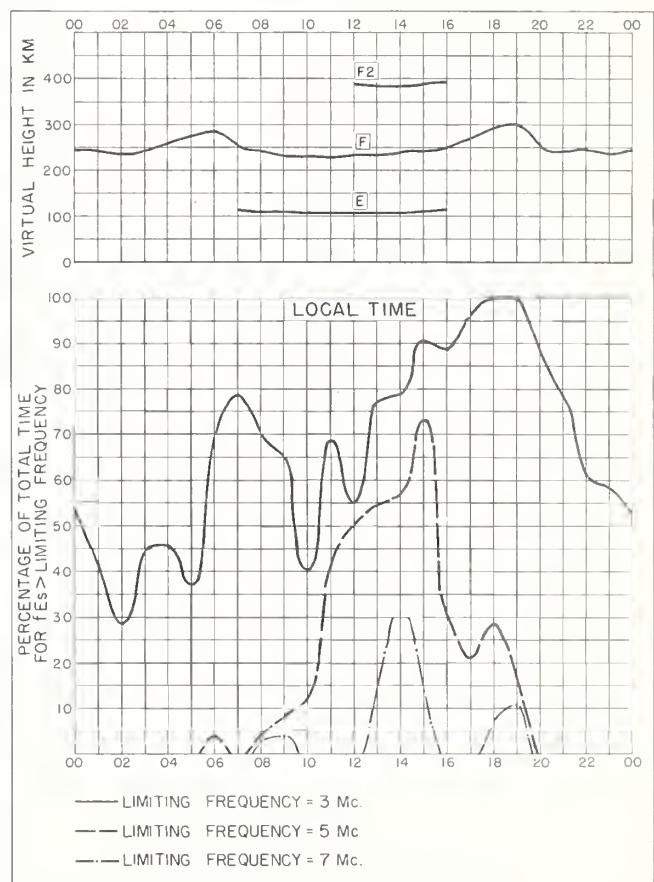
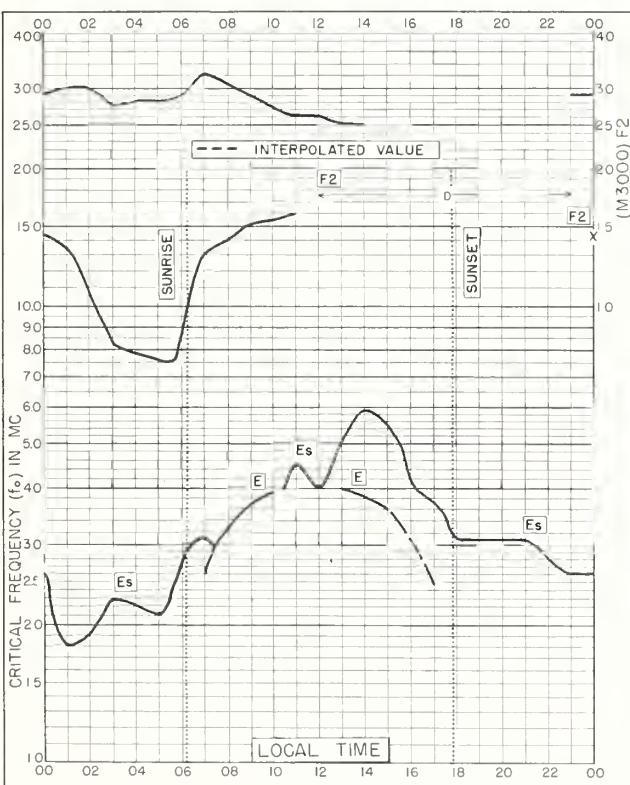
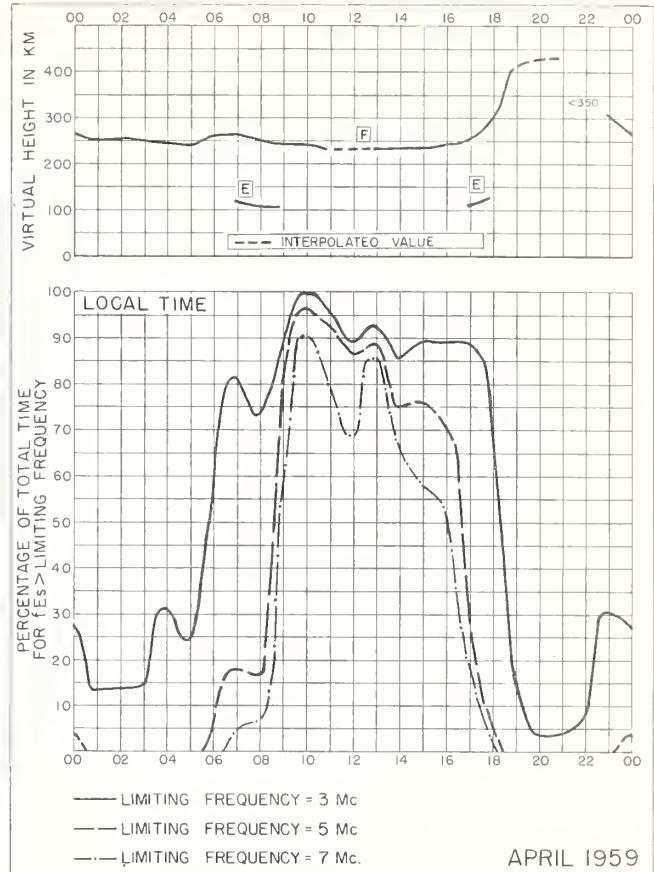
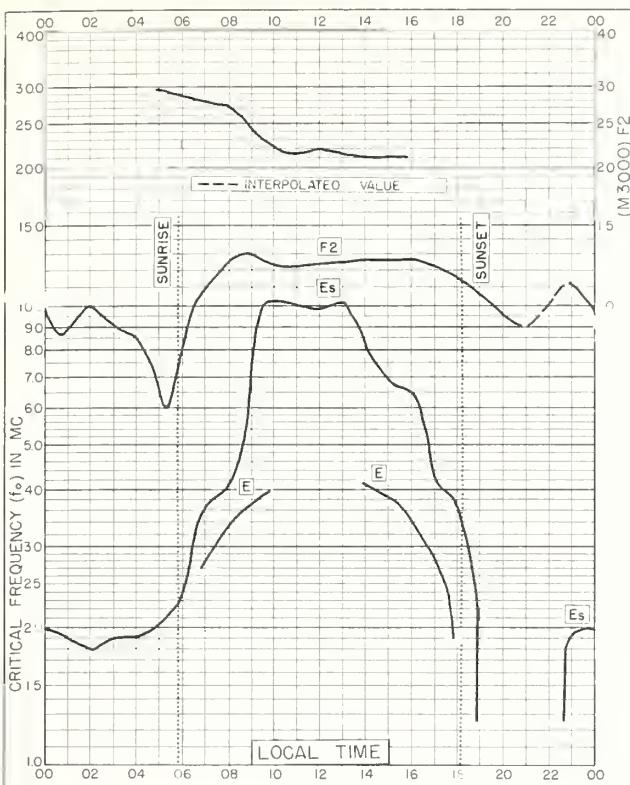


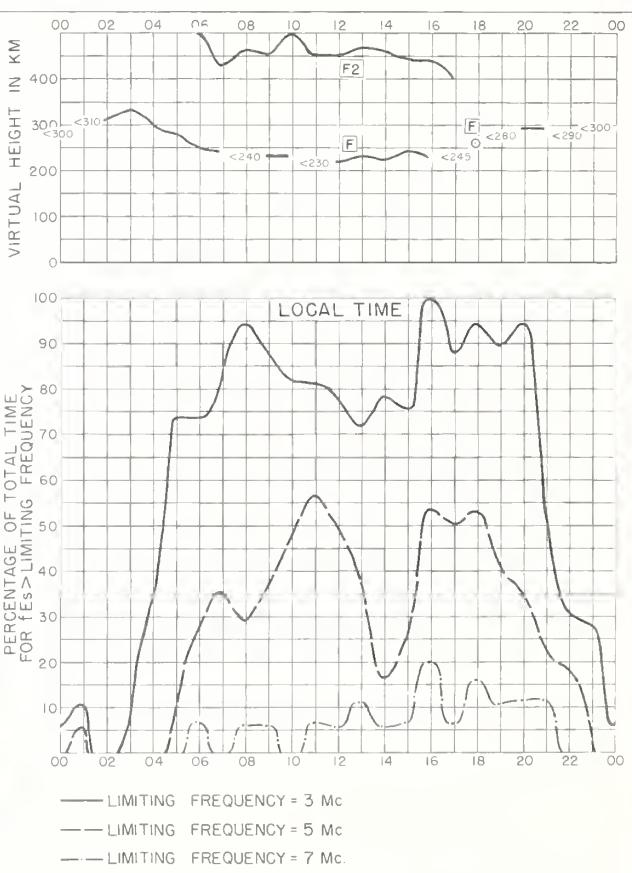
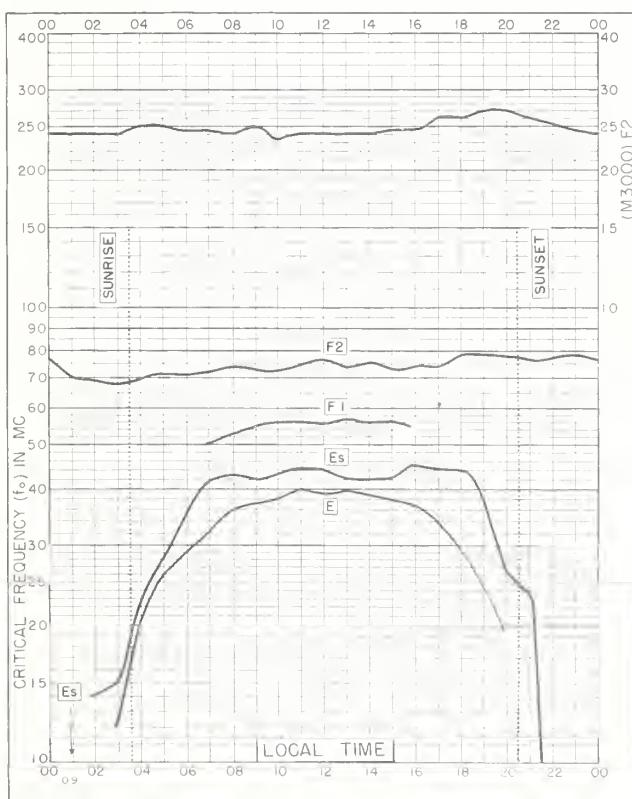
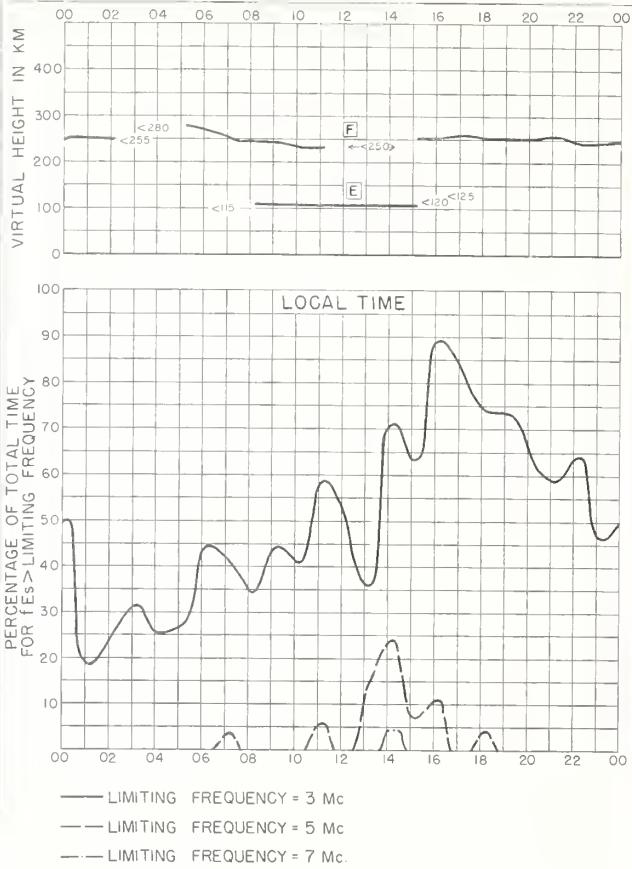
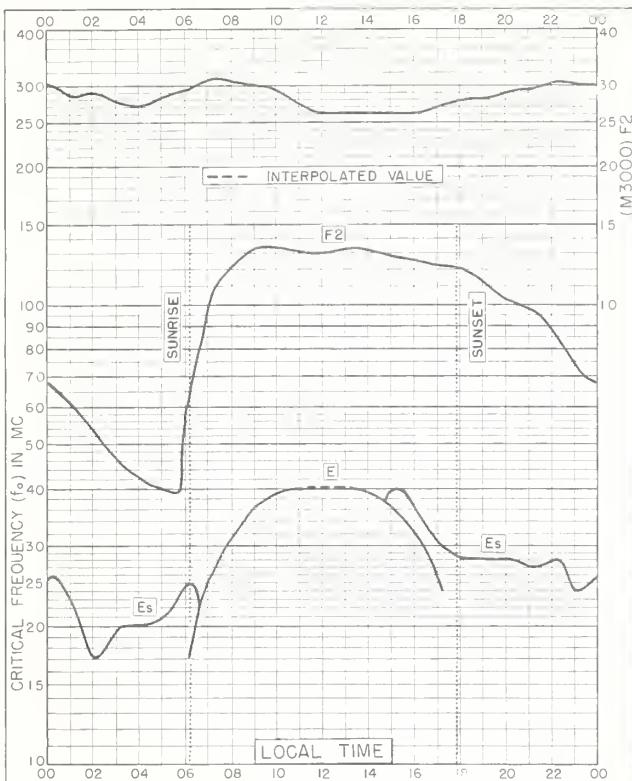
Fig. 72. TANANARIVE, MADAGASCAR MAY 1959

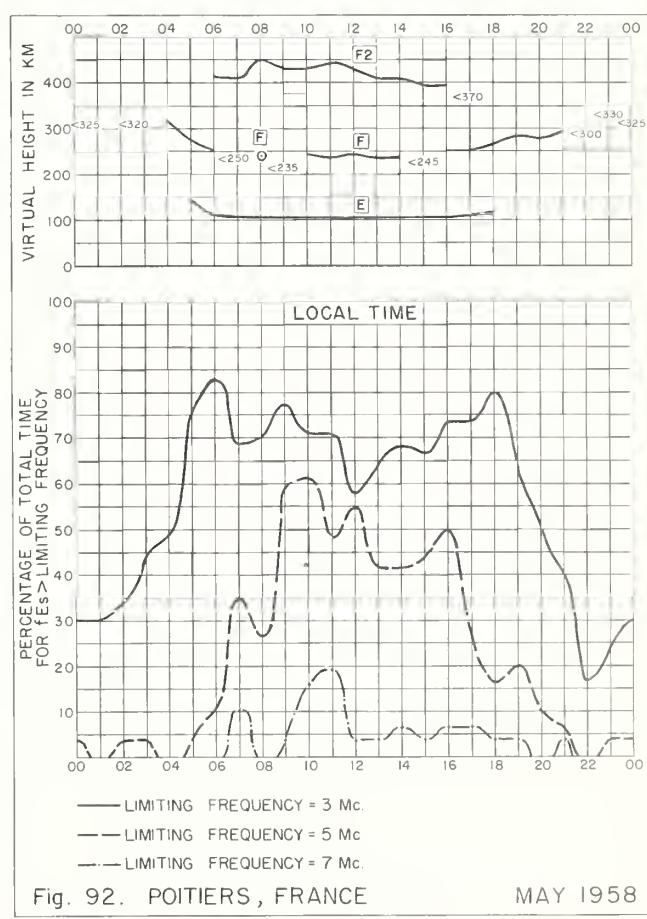
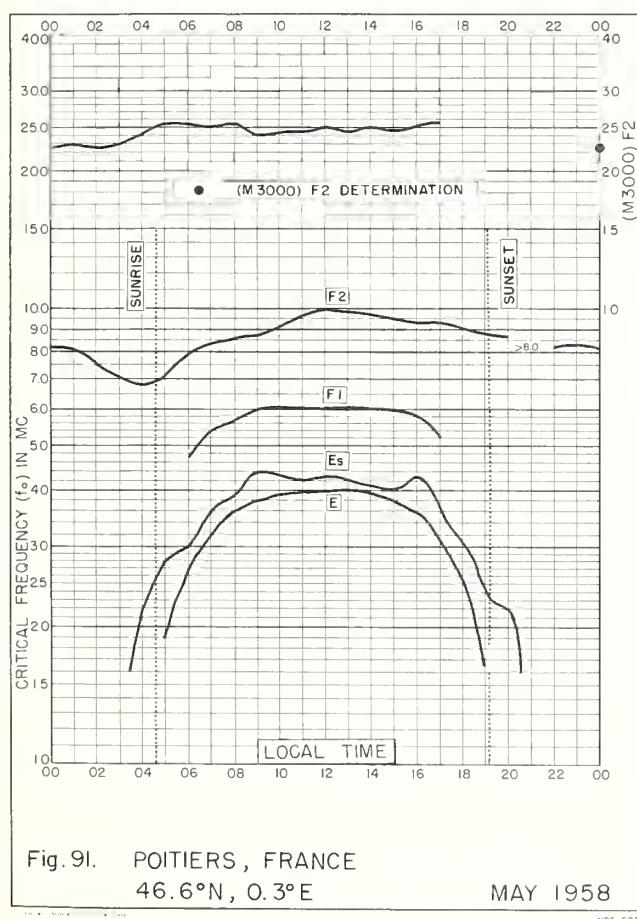
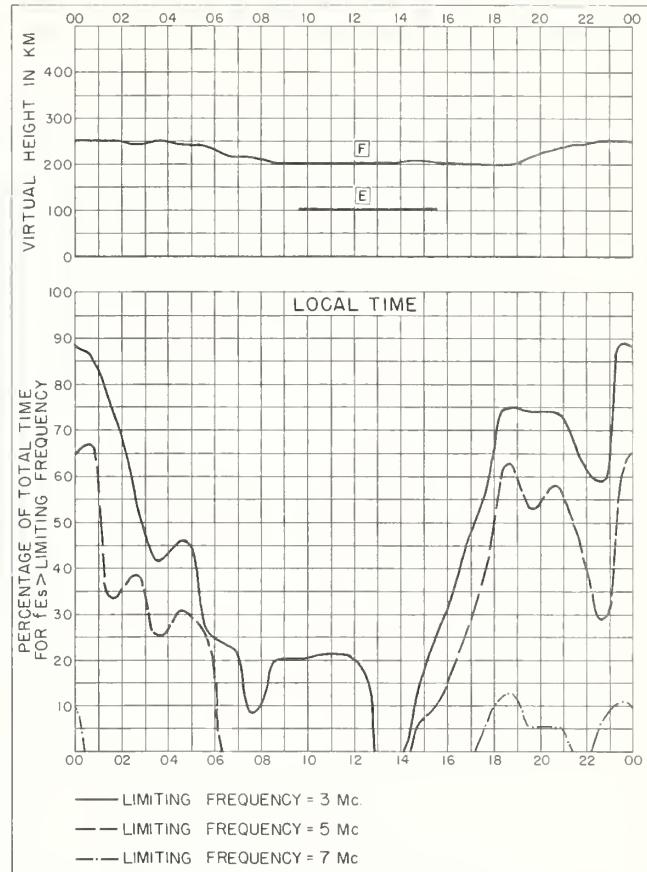
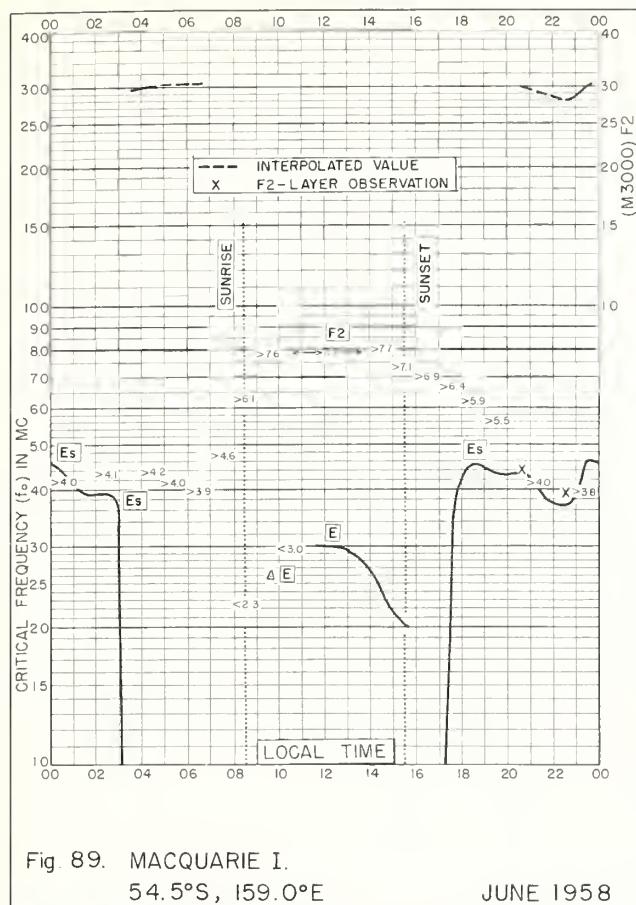
NBS 470

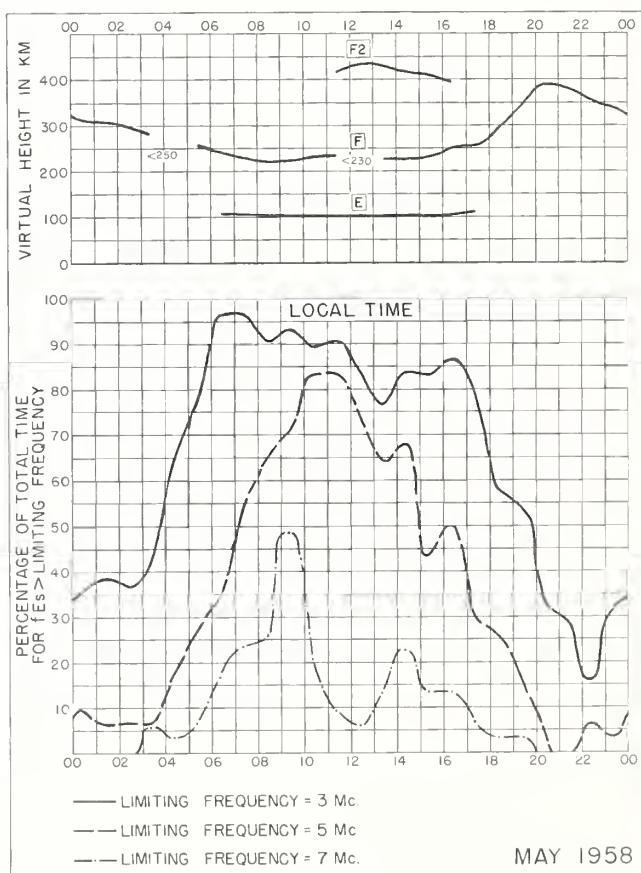
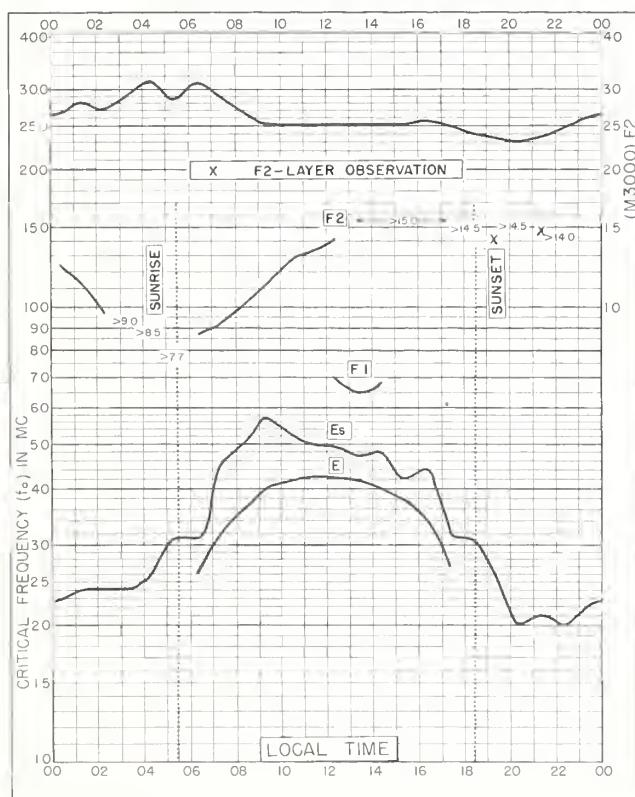
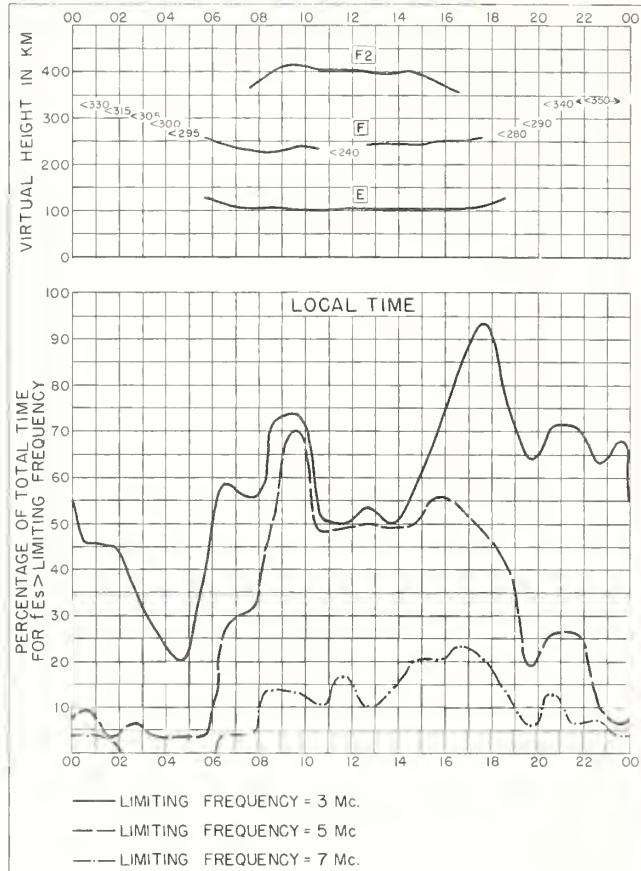
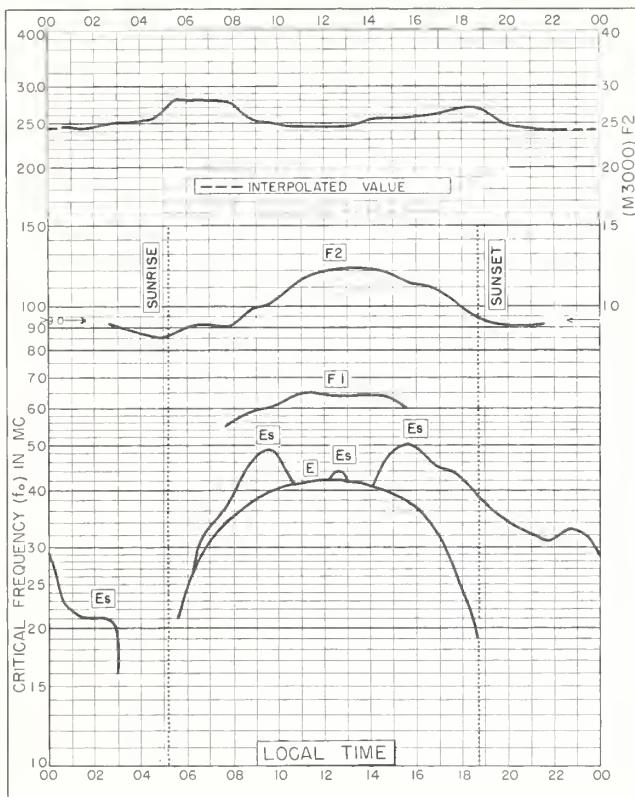


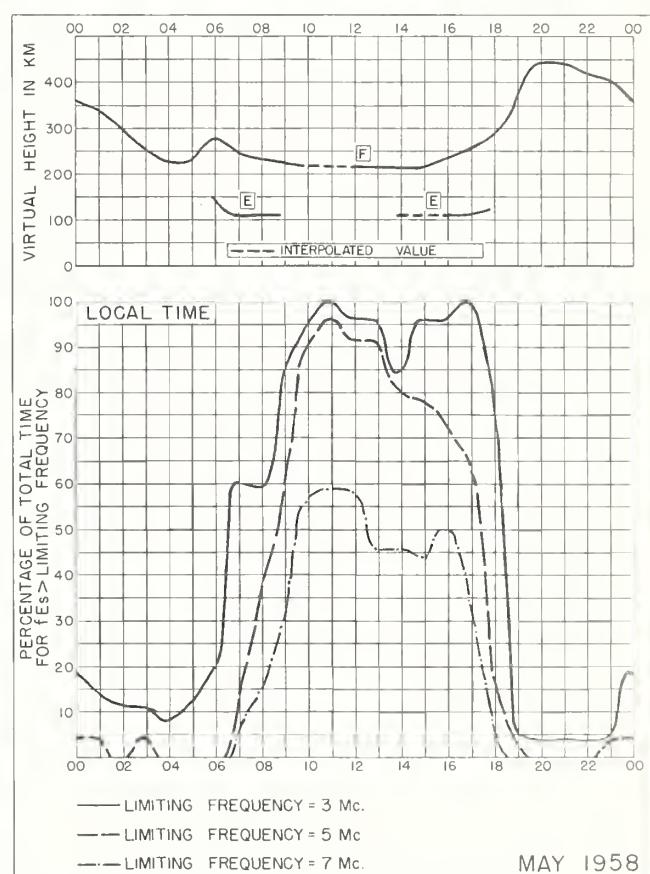
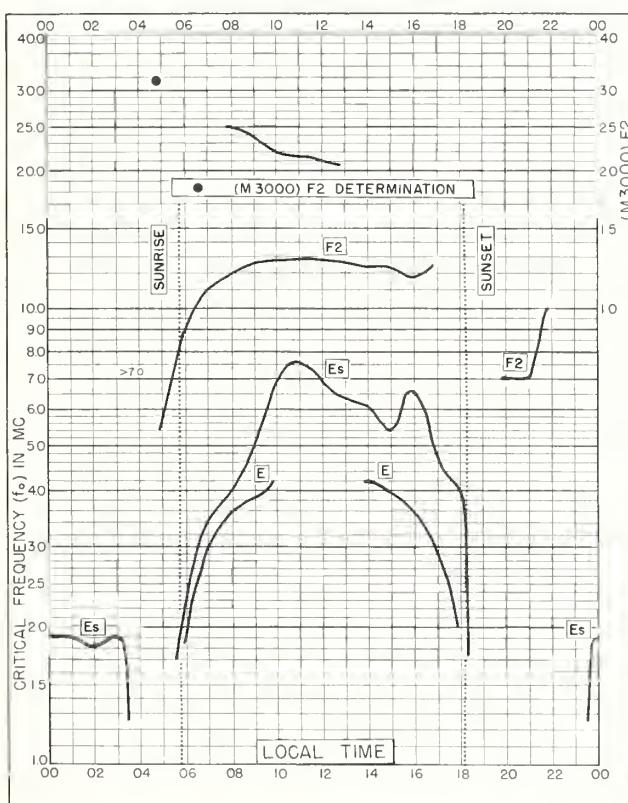
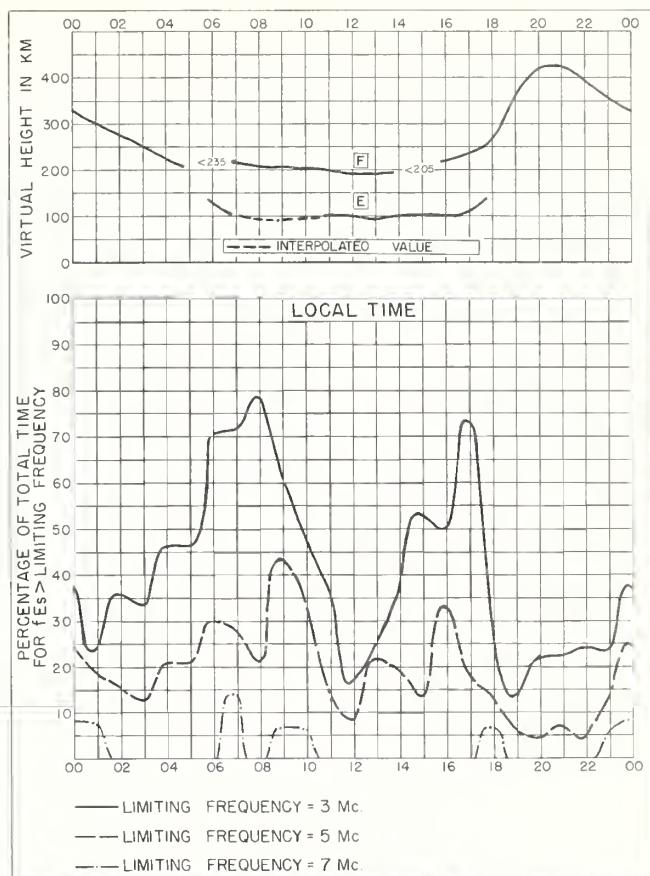
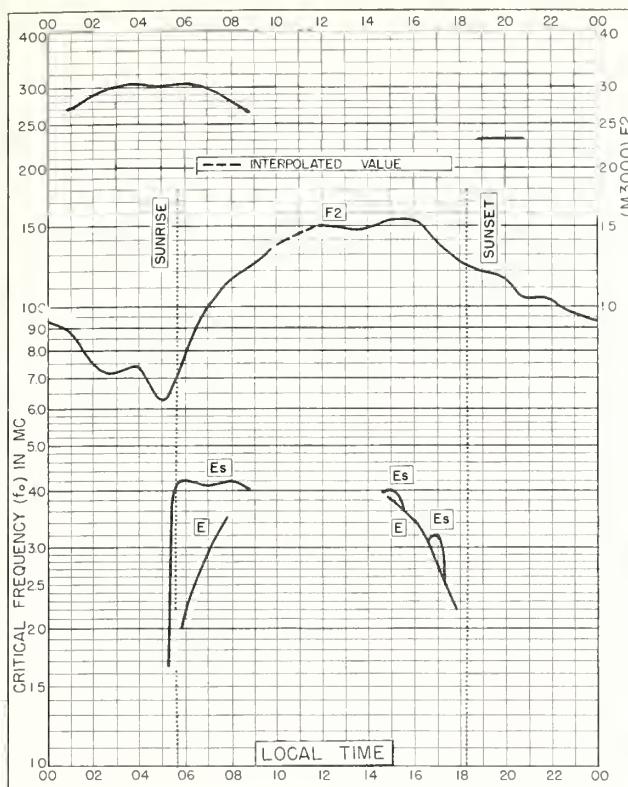












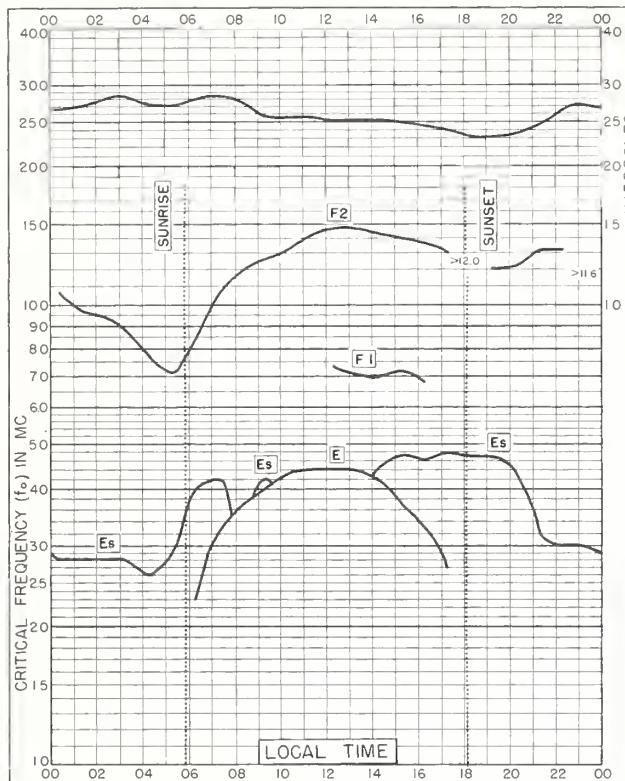


Fig. 101. PARAMARIBO, SURINAM  
5.8°N, 55.2°W MAY 1958

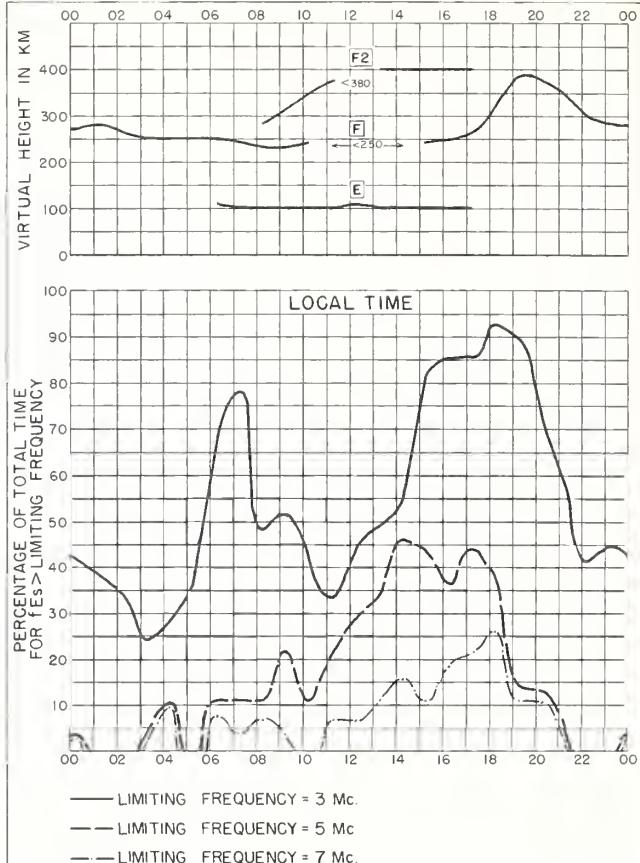


Fig. 102. PARAMARIBO, SURINAM MAY 1958

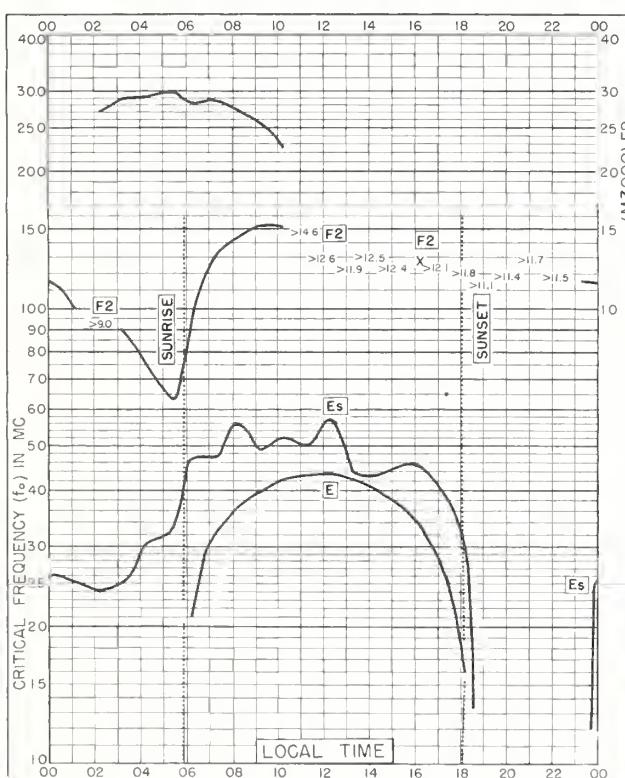


Fig. 103. BANGUI, FRENCH EQUATORIAL AFRICA  
4.6°N, 18.6°E MAY 1958

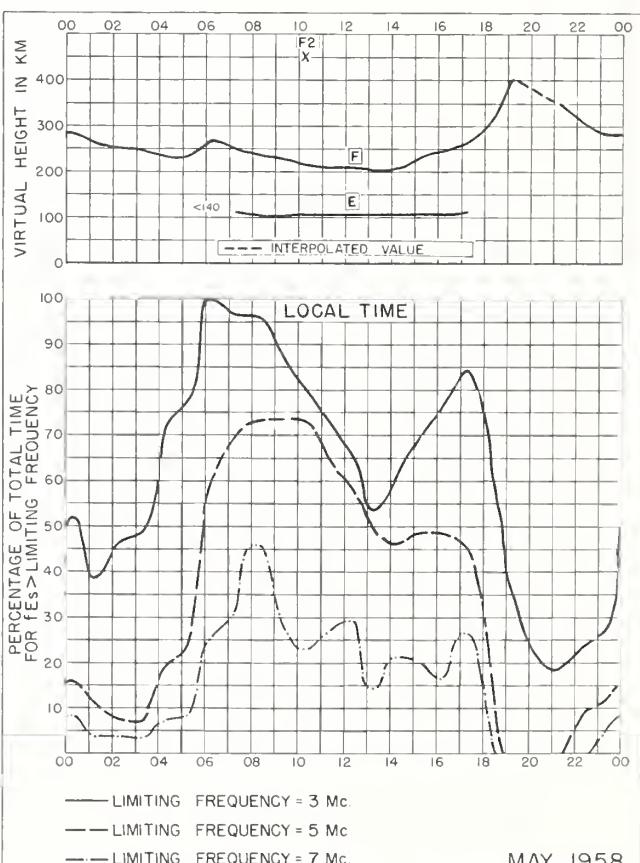


Fig. 104. BANGUI, FRENCH EQUATORIAL AFRICA MAY 1958

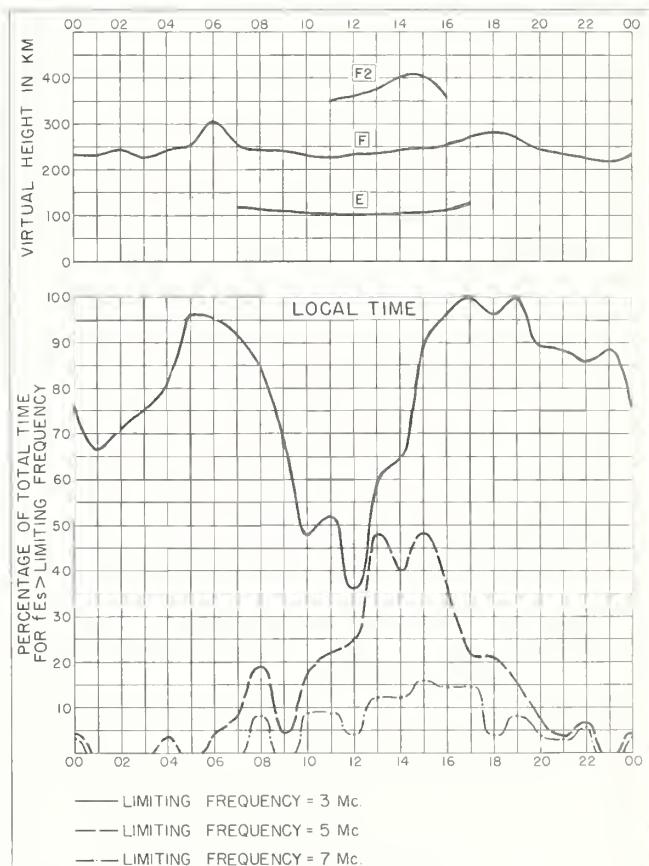
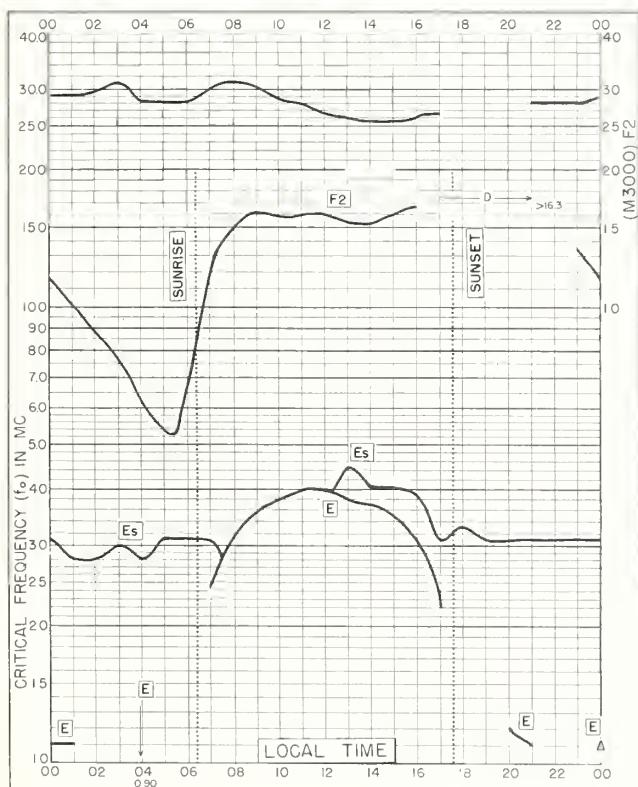
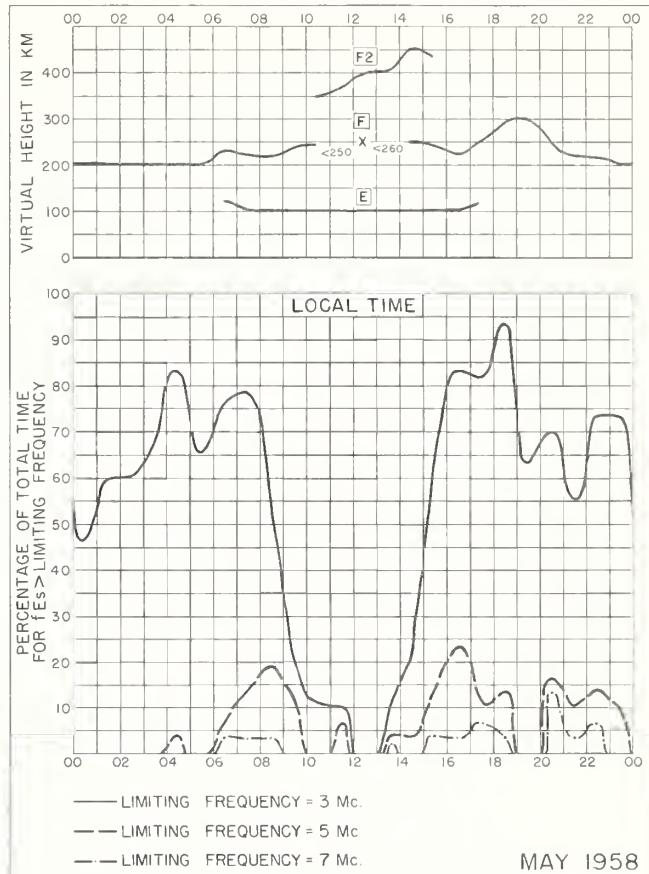
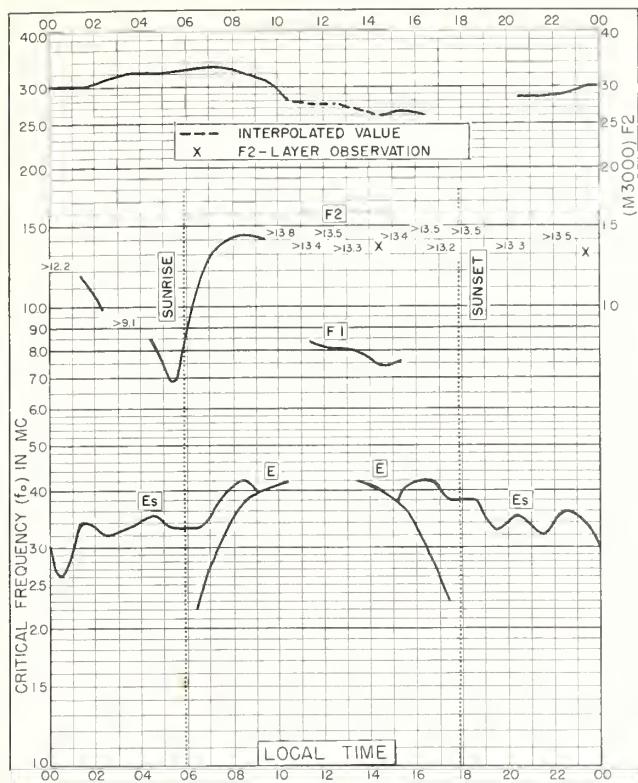




Fig. 109. TANANARIVE, MADAGASCAR  
18.8°S, 47.5°E MAY 1958

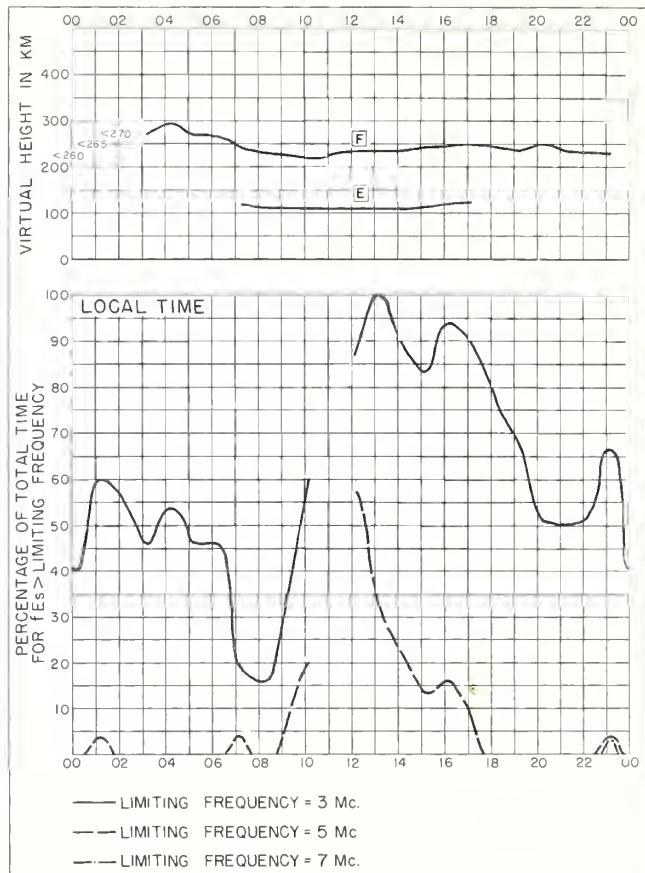


Fig. 110. TANANARIVE, MADAGASCAR MAY 1958

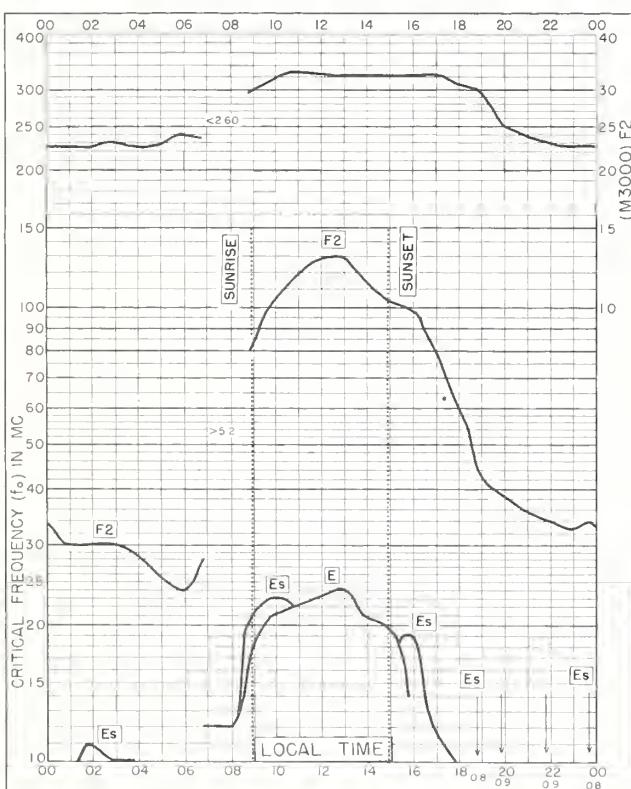


Fig. III. PORT LOCKROY  
64.8°S, 63.5°W MAY 1958

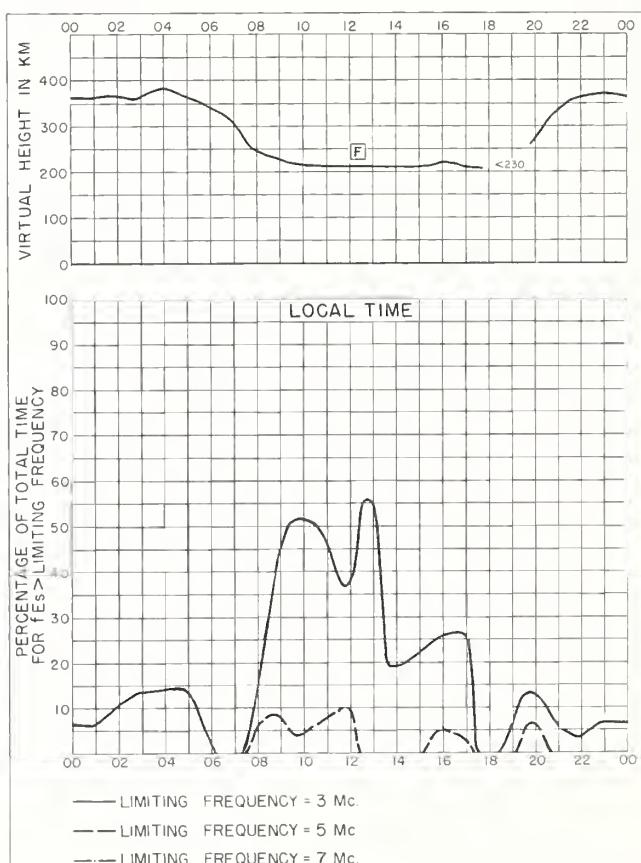
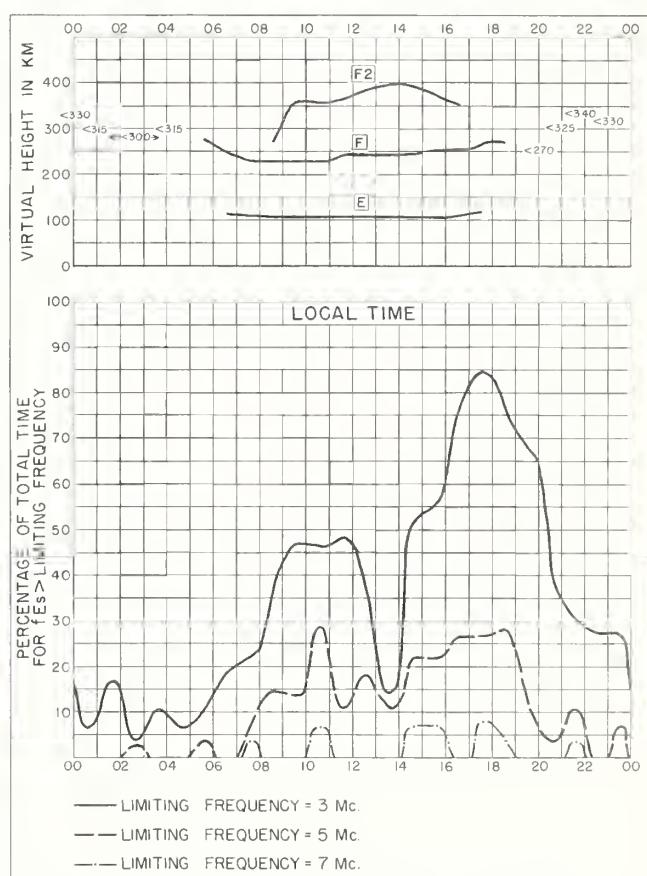
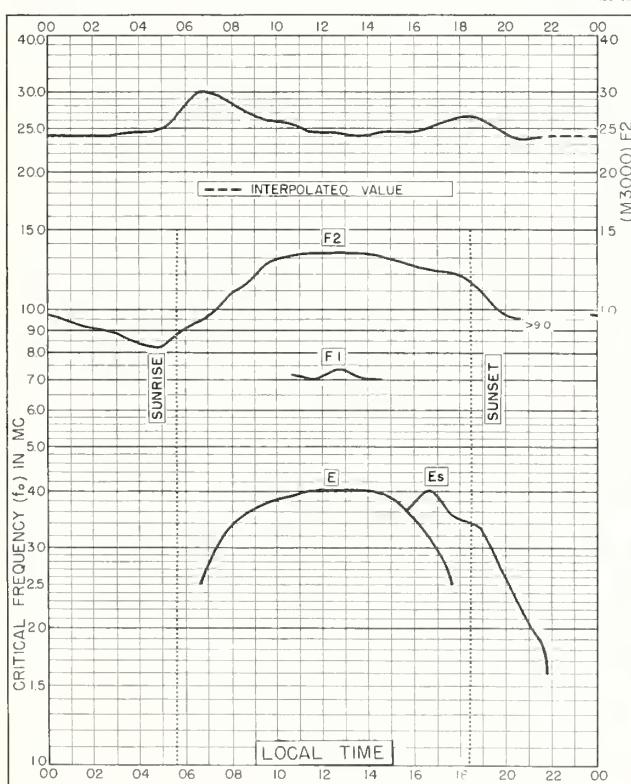
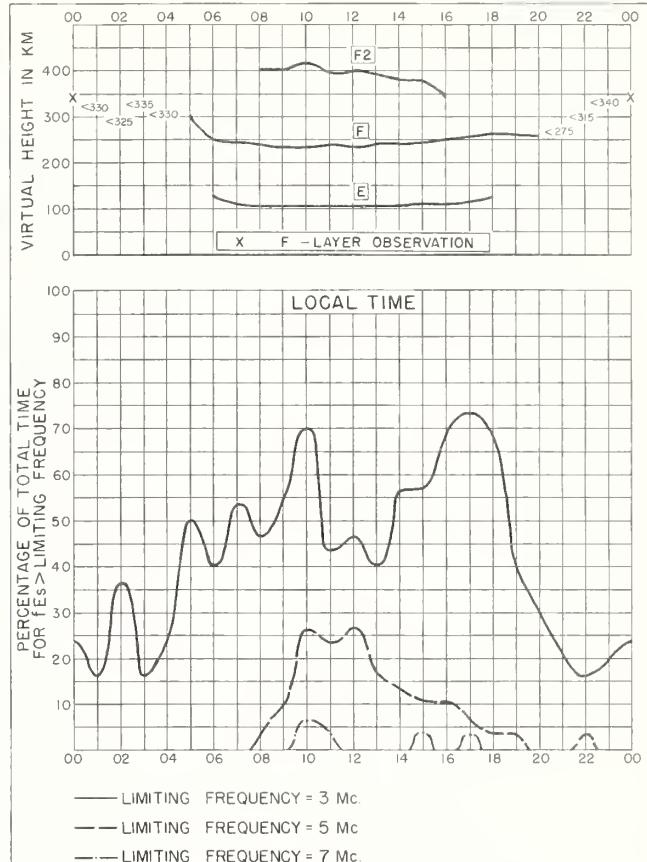
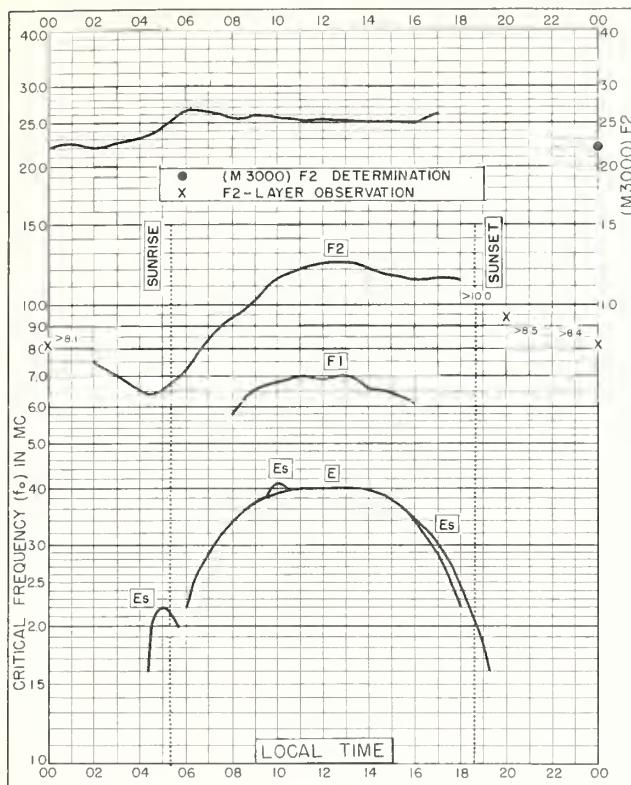


Fig. 112. PORT LOCKROY MAY 1958



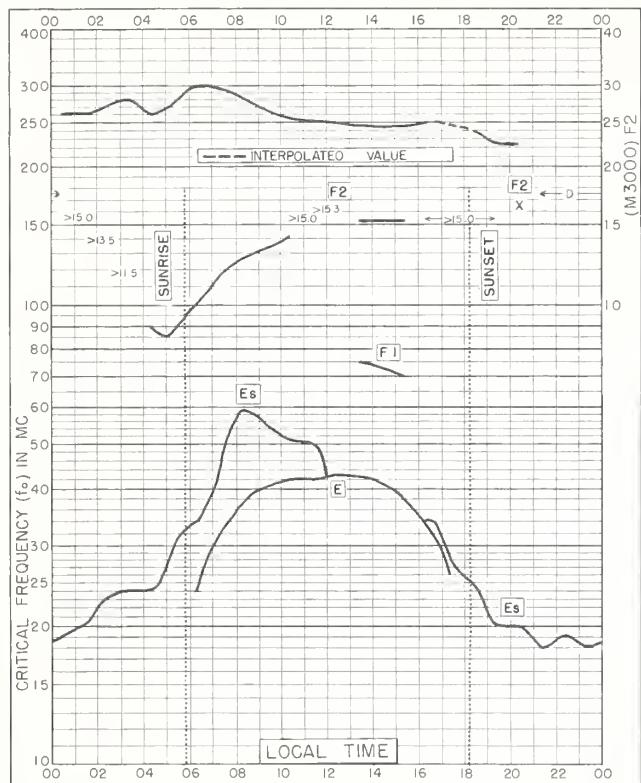


Fig. 117. TAMANRASSET, FRENCH W. AFRICA  
22.8°N, 5.5°E APRIL 1958

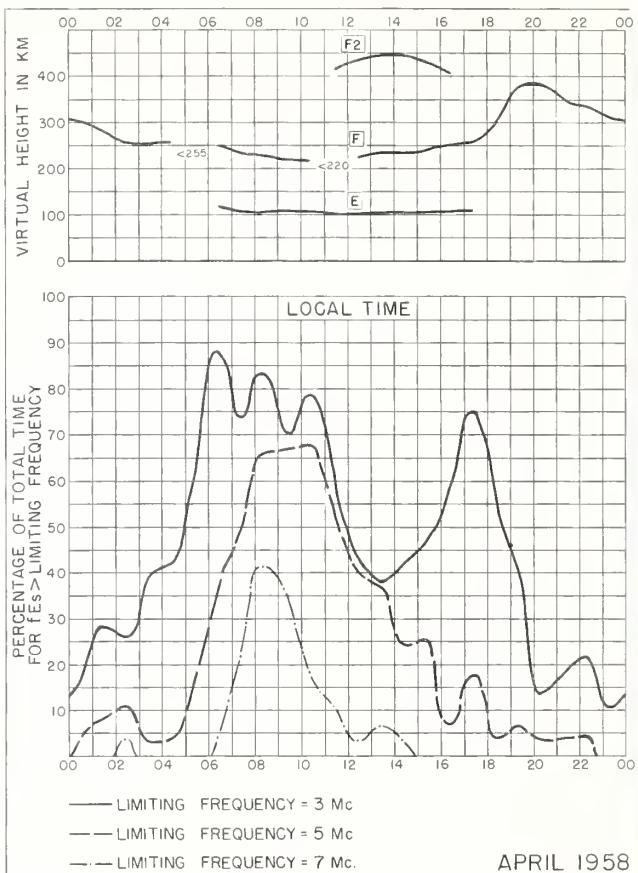


Fig. 118. TAMANRASSET, FRENCH W. AFRICA APRIL 1958

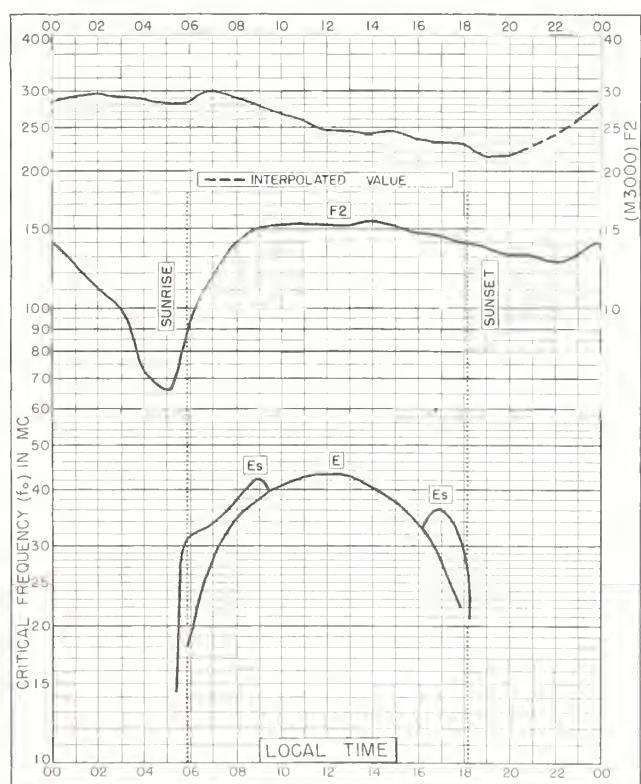


Fig. 119. DAKAR, FRENCH W. AFRICA  
14.7°N, 17.4°W APRIL 1958

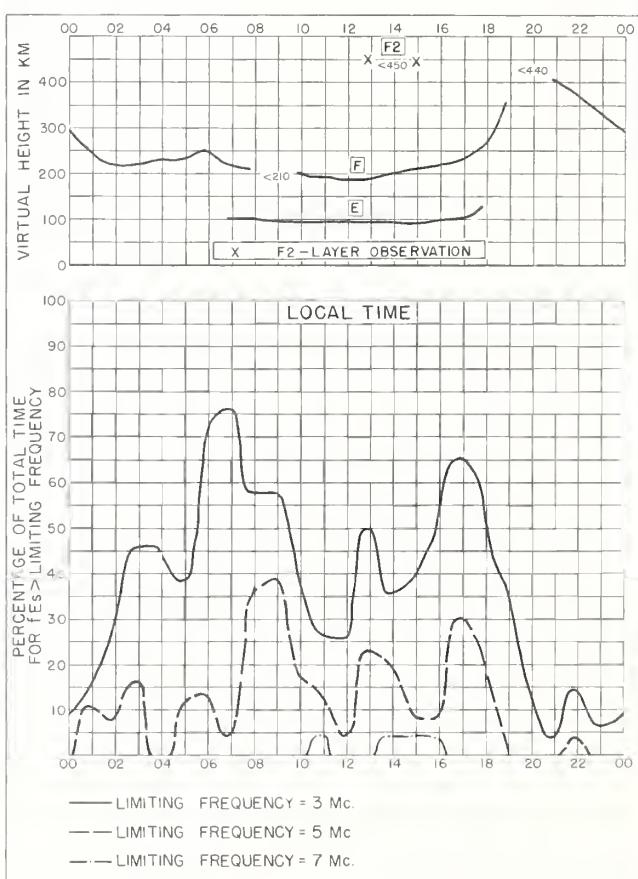
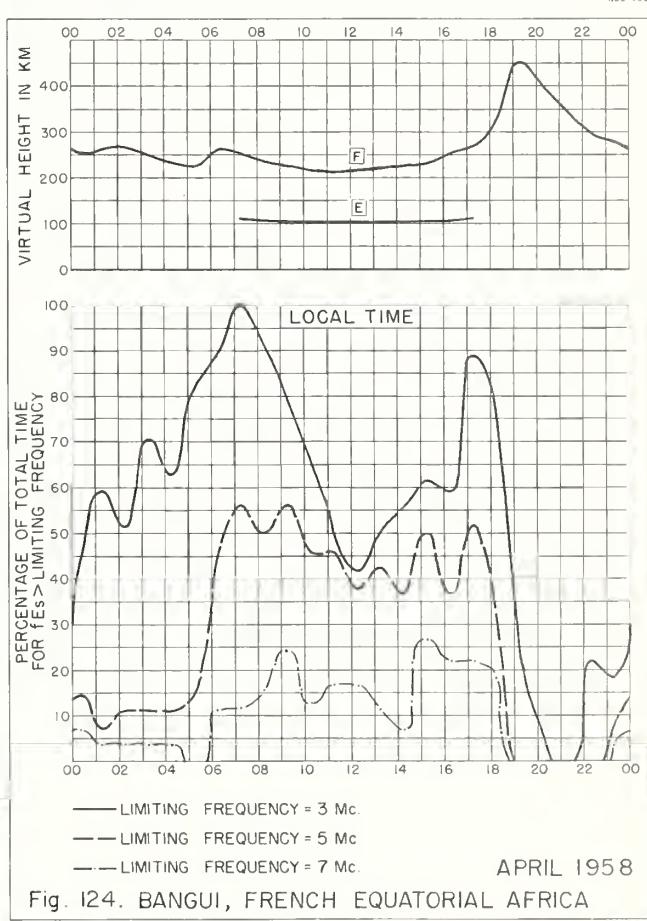
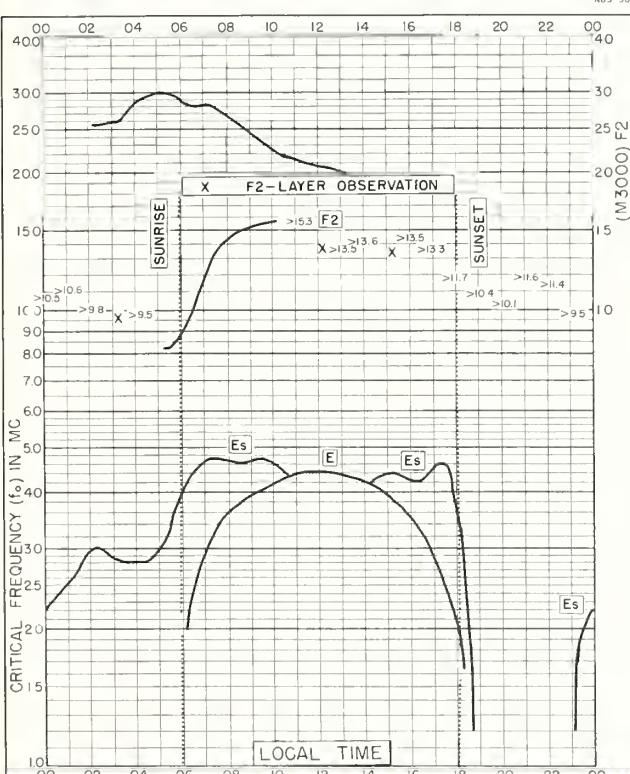
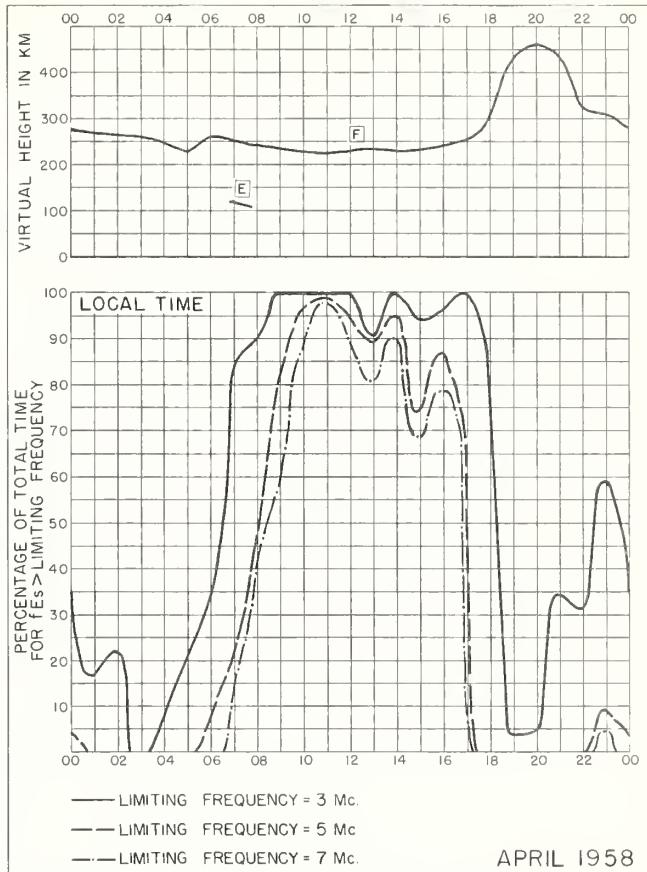
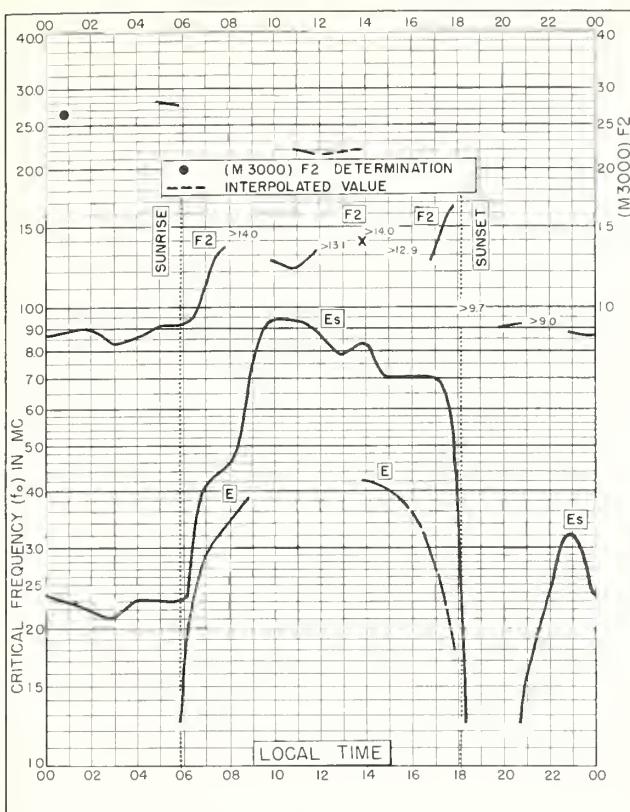
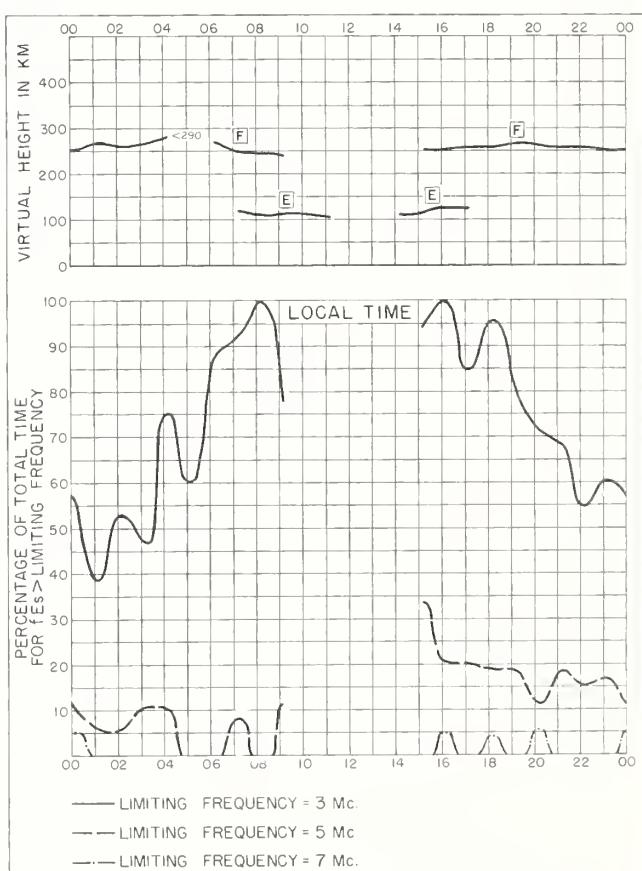
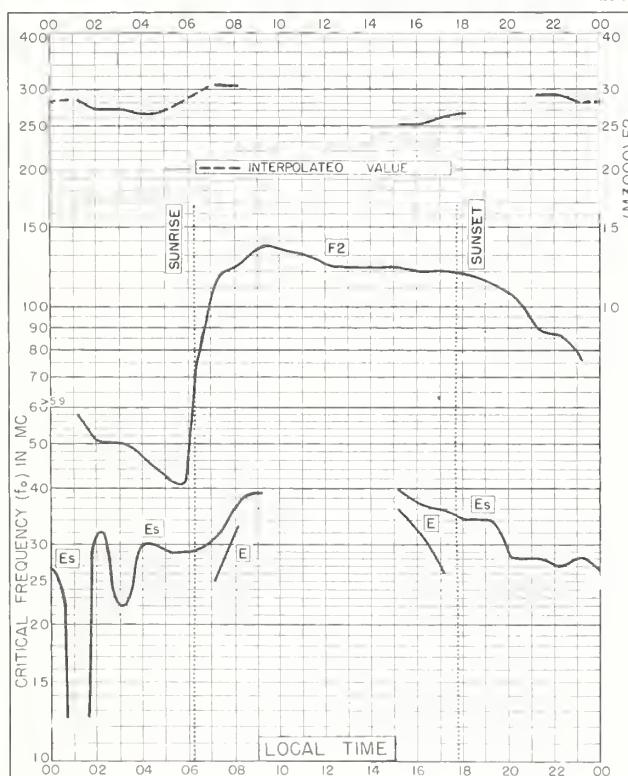
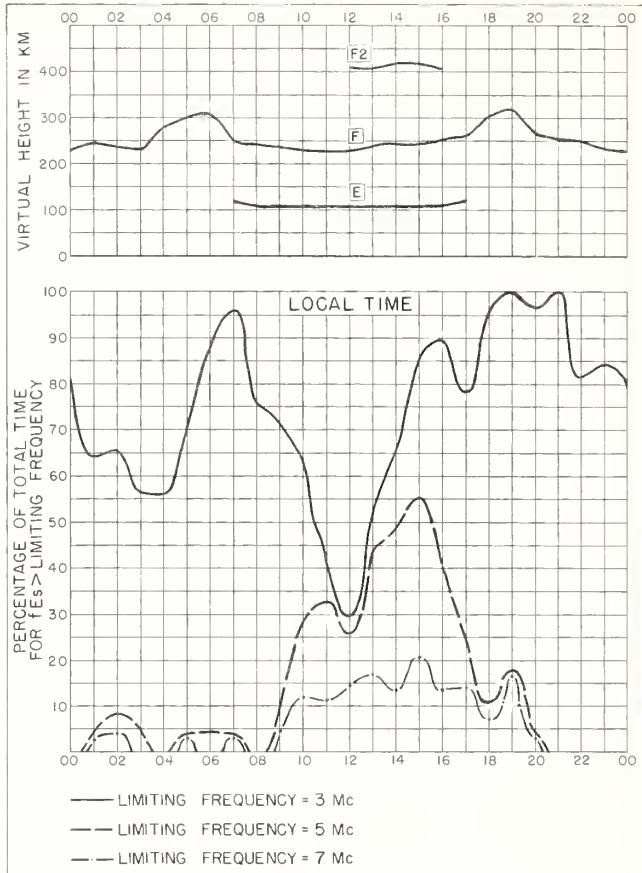
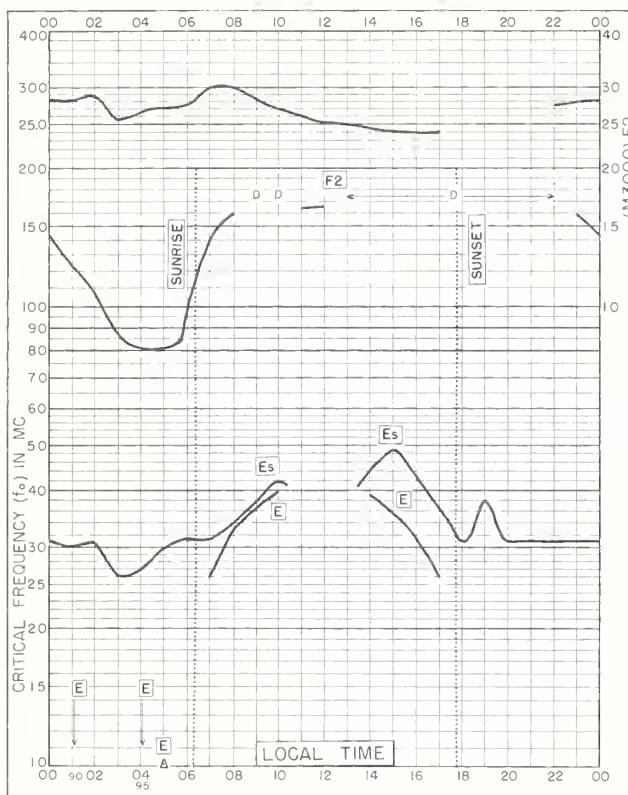


Fig. 120. DAKAR, FRENCH W. AFRICA APRIL 1958





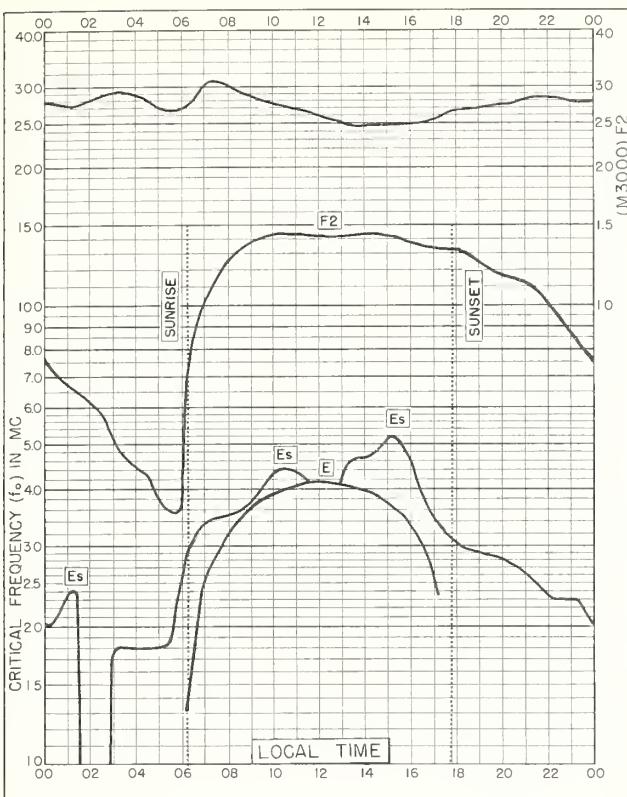


Fig. I29. TSUMEB, SOUTH W. AFRICA  
19.2°S, 17.7°E APRIL 1958

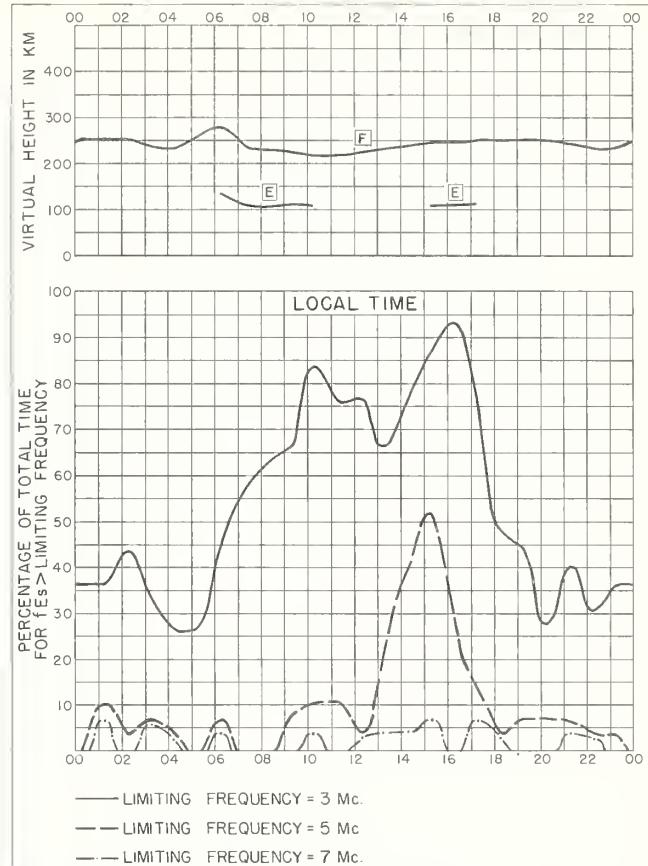


Fig. I30. TSUMEB, SOUTH W. AFRICA APRIL 1958

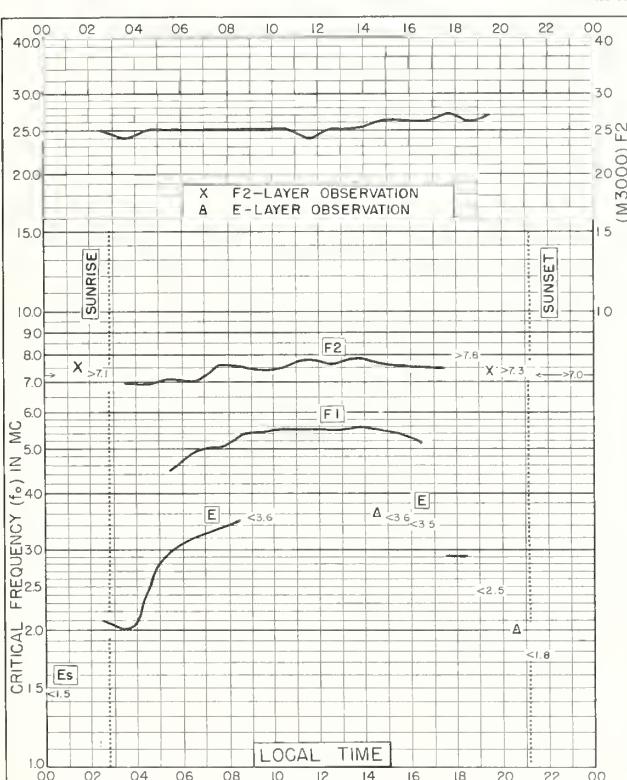


Fig. I31. LULEA, SWEDEN  
65.6°N, 22.1°E MAY 1957

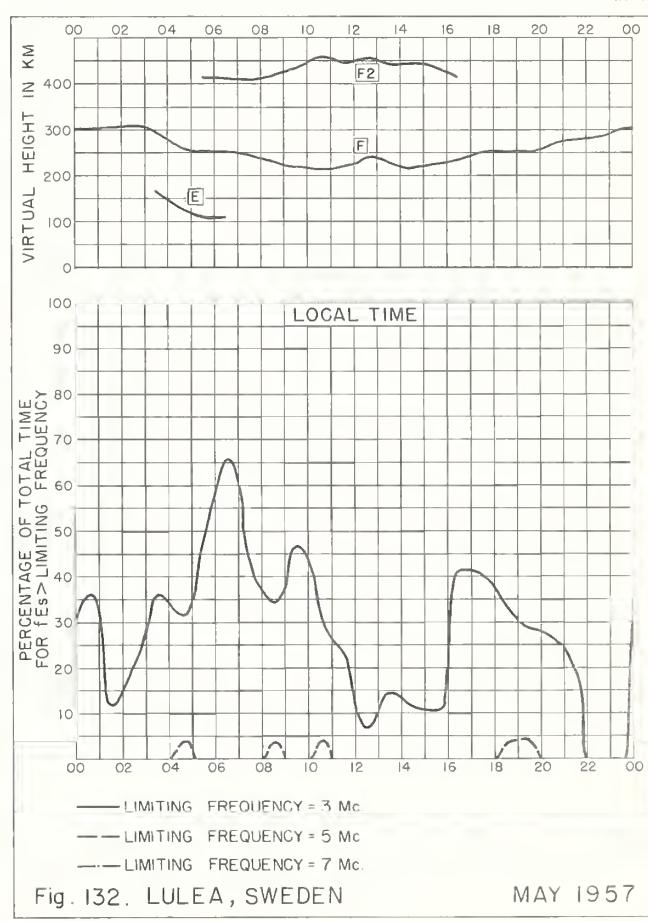
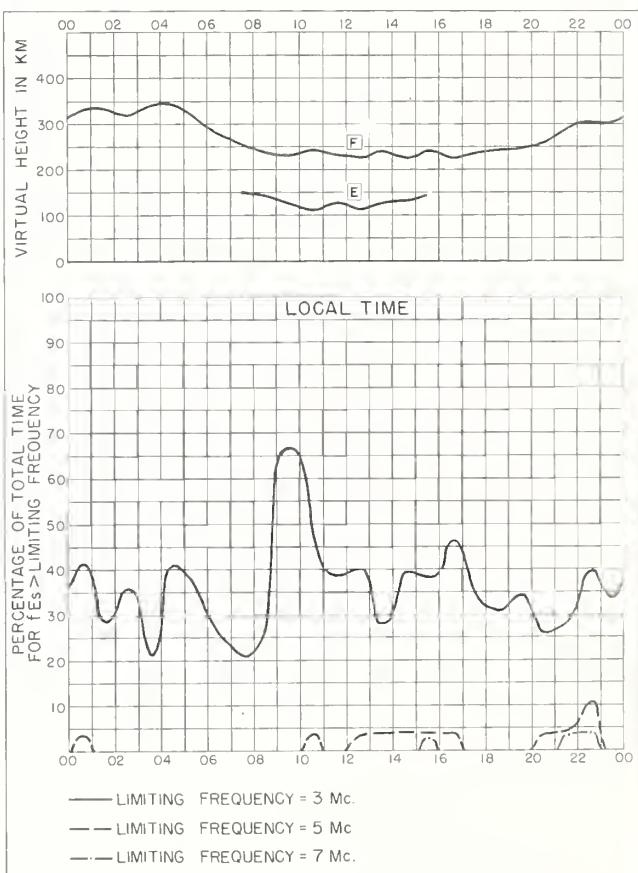
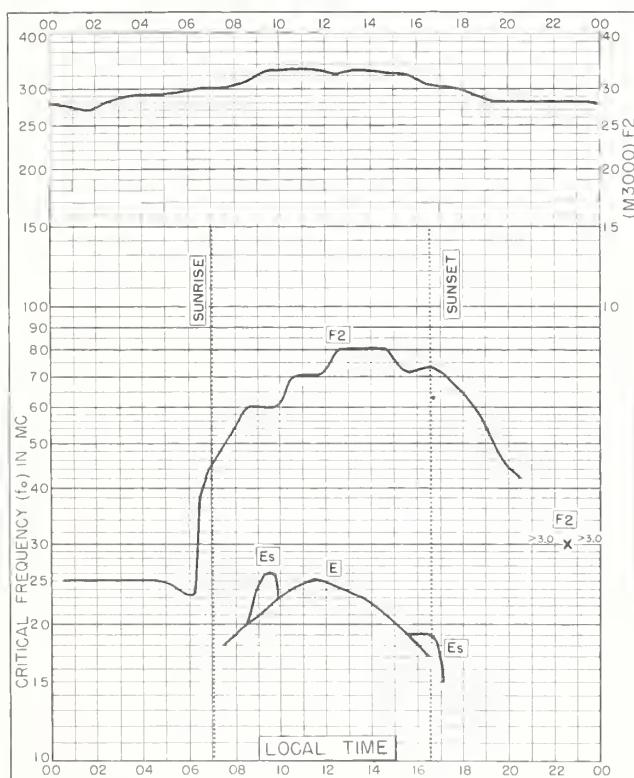
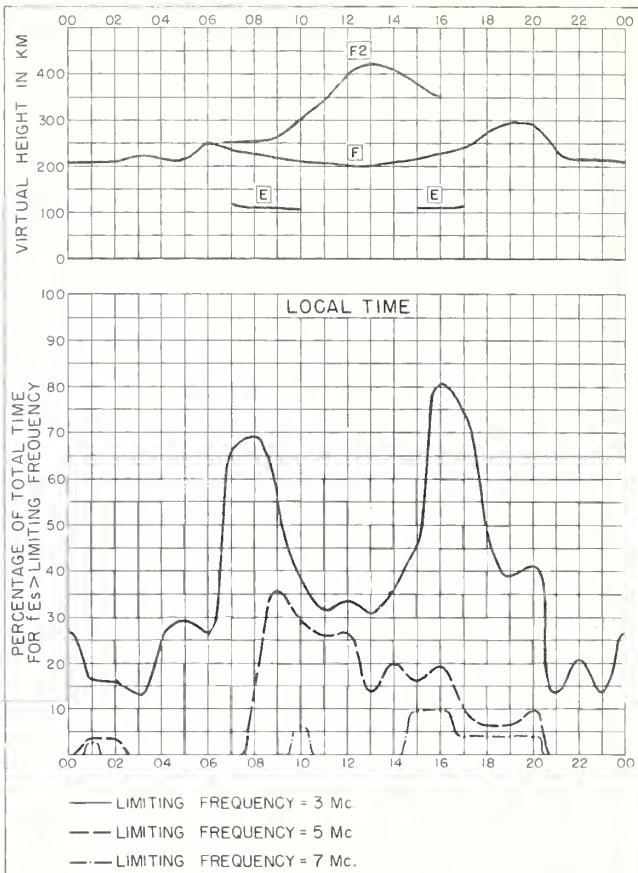
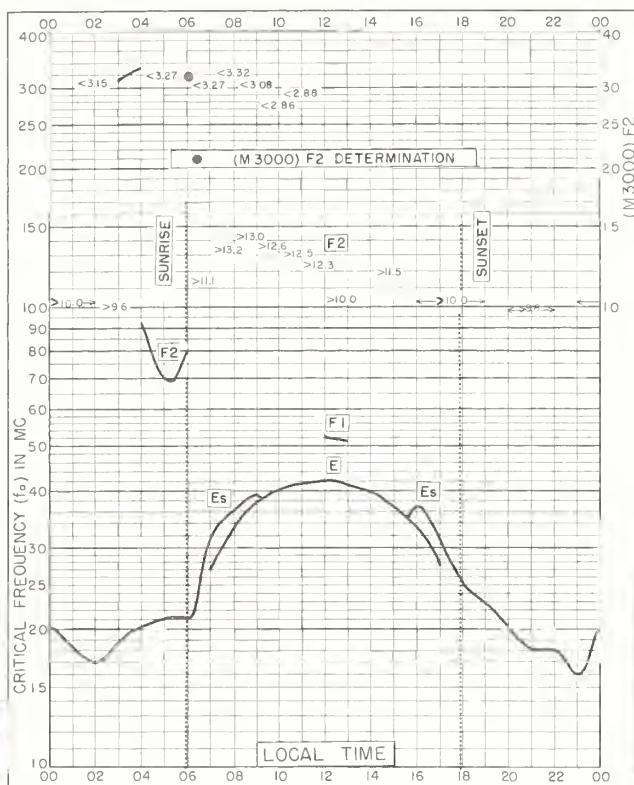
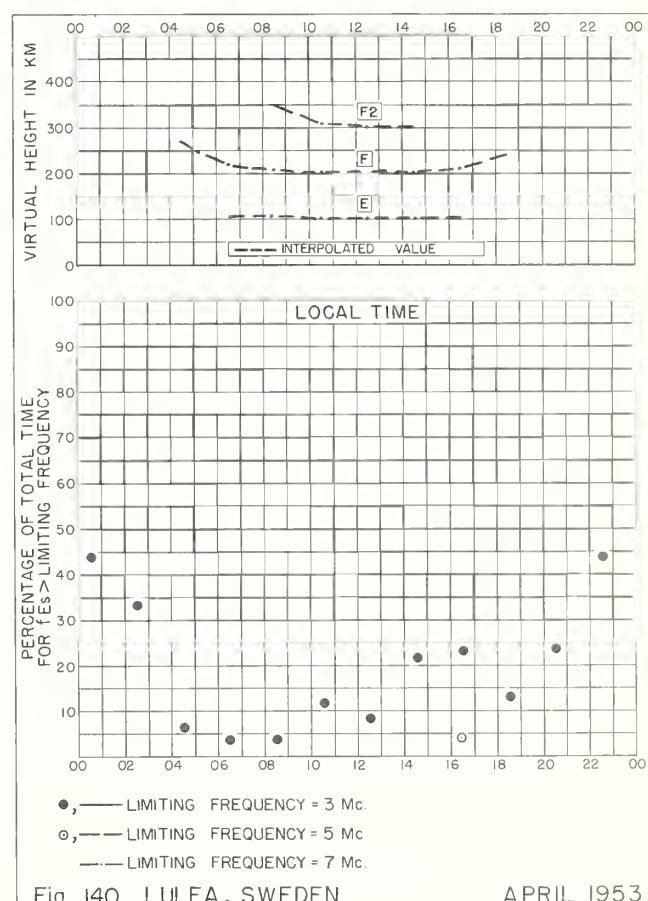
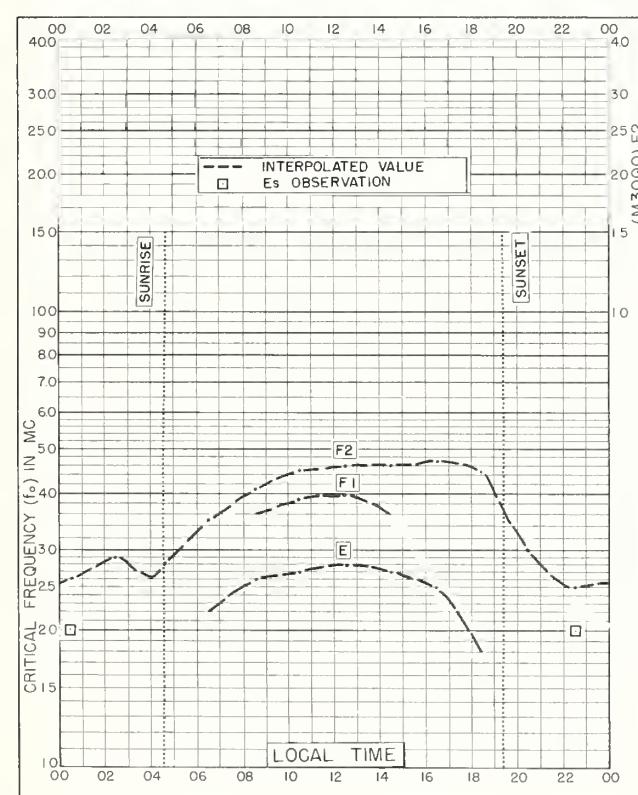
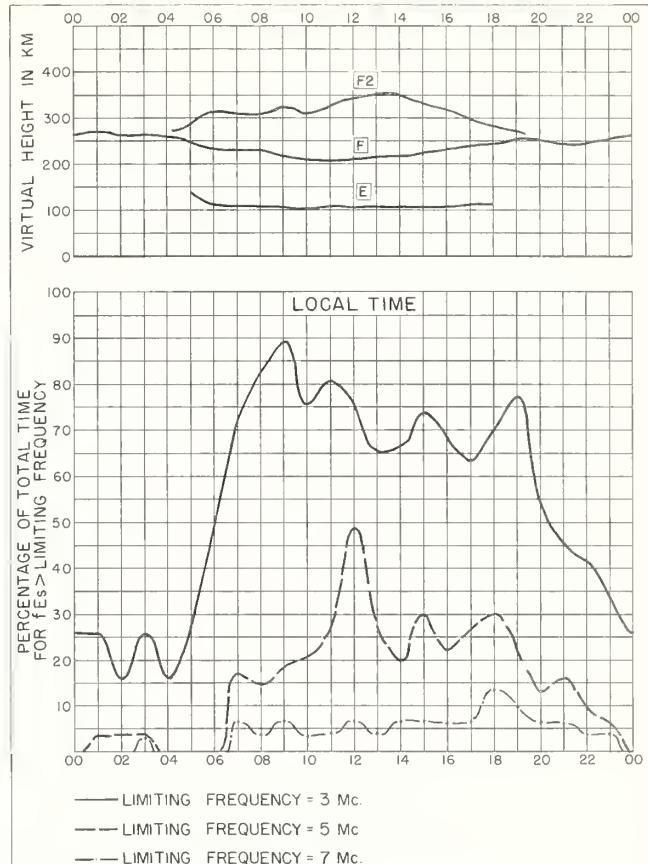
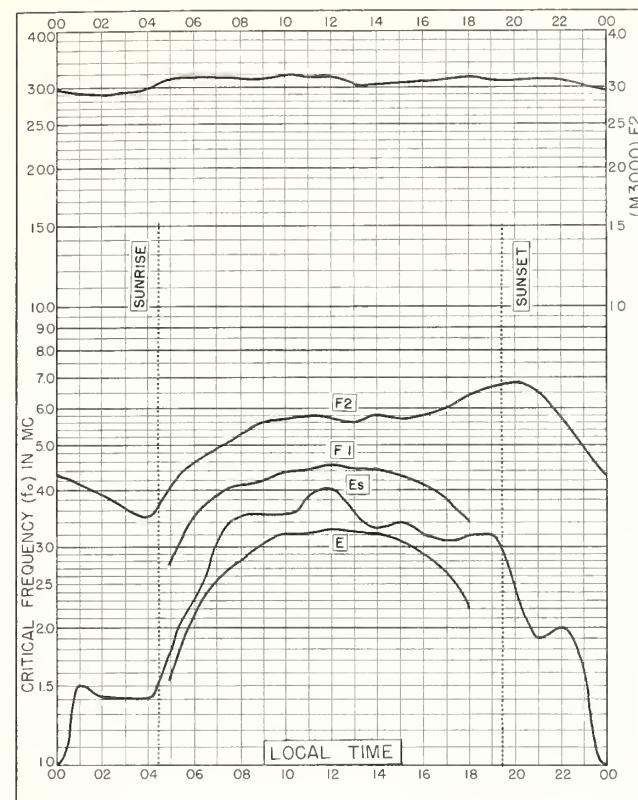
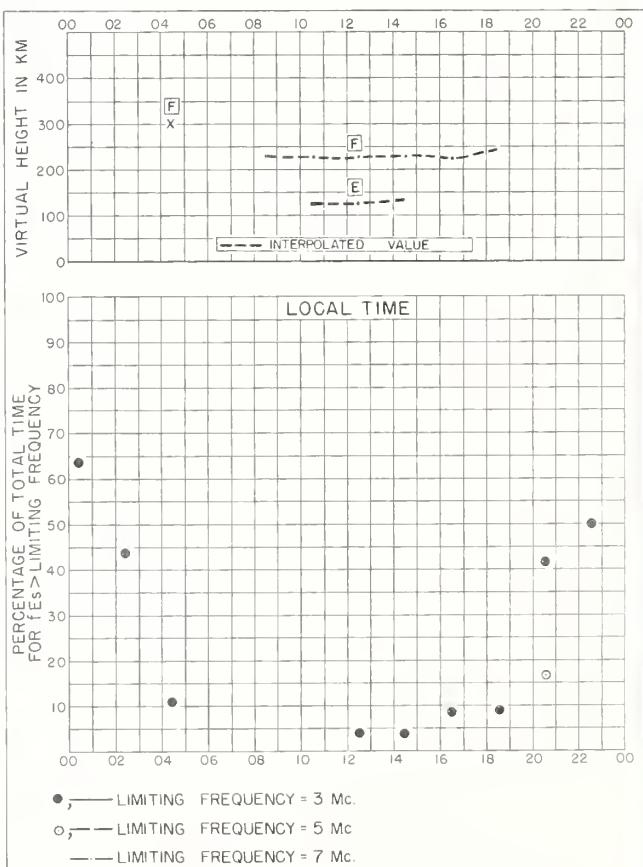
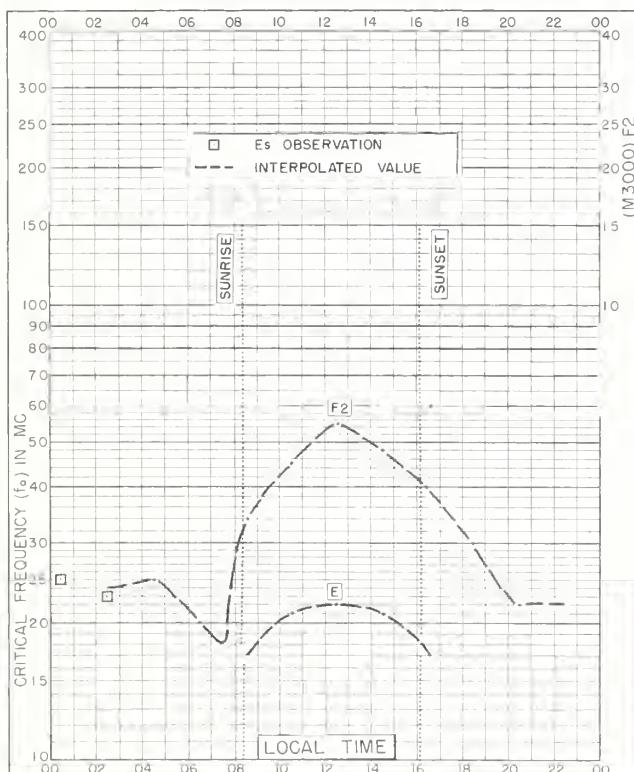
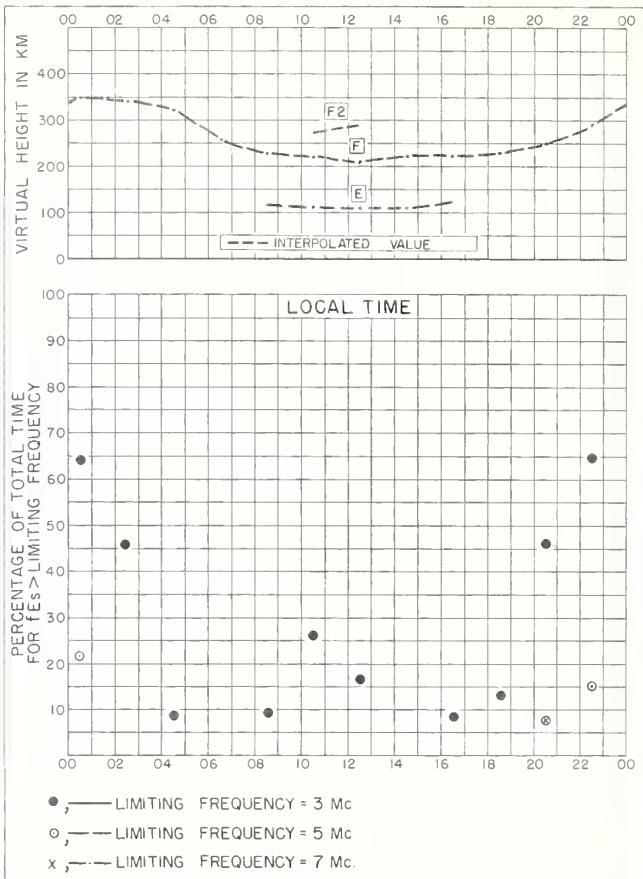
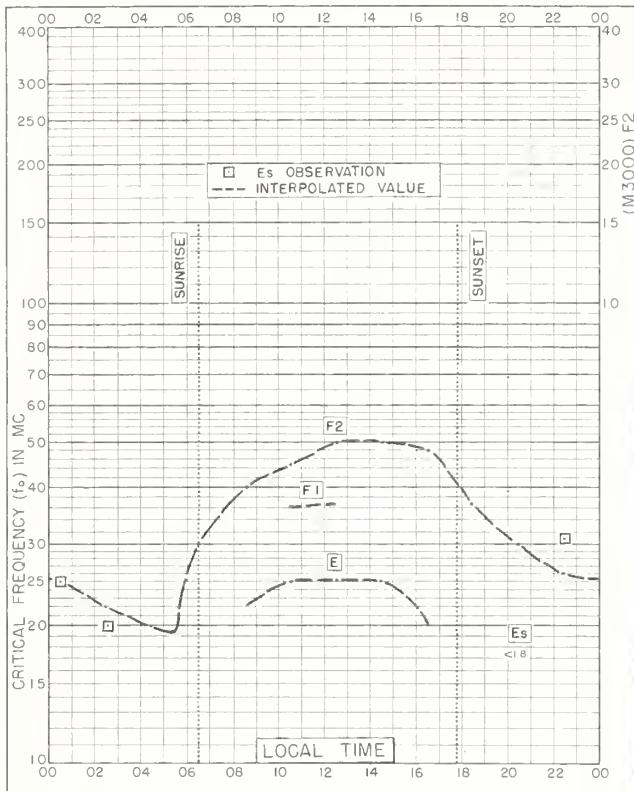


Fig. I32. LULEA, SWEDEN MAY 1957







Index of Tables and Graphs of Ionospheric Datain CRPL-F197 (Part A)

	<u>Table page</u>	<u>Figure page</u>
Bangui, French Equatorial Africa		
May 1958 . . . . .	9	38
April 1958 . . . . .	11	43
Brisbane, Australia		
June 1960 . . . . .	4	23
Buenos Aires, Argentina		
May 1959 . . . . .	7	32
Byrd Station		
June 1959 . . . . .	5	27
Churchill, Canada		
June 1960 . . . . .	2	17
Dakar, French W. Africa		
May 1959 . . . . .	6	29
April 1959 . . . . .	7	32
May 1958 . . . . .	9	37
April 1958 . . . . .	10	42
De Bilt, Holland		
June 1960 . . . . .	2	18
Djibouti, French Somaliland		
May 1959 . . . . .	6	29
April 1959 . . . . .	7	33
May 1958 . . . . .	9	37
April 1958 . . . . .	11	43
El Cerillo, Mexico		
June 1960 . . . . .	4	22
May 1959 . . . . .	6	28
Falkland Is.		
June 1960 . . . . .	4	24
Formosa, China		
June 1960 . . . . .	4	22
May 1960 . . . . .	5	25
Freiburg, Germany		
May 1955 . . . . .	12	47
Genoa (Monte Capellino), Italy		
June 1960 . . . . .	3	21
Hollandia, Netherlands New Guinea		
May 1958 . . . . .	9	39
Inverness, Scotland		
June 1960 . . . . .	2	17
Johannesburg, Union of S. Africa		
May 1959 . . . . .	7	31
Juliusruh/Rügen, Germany		
June 1958 . . . . .	8	34

Index (CRPL-F197 (Part A), continued)

	<u>Table page</u>	<u>Figure page</u>
Lindau/Harz, Germany		
May 1959 . . . . .	5	27
Lulea, Sweden		
June 1960 . . . . .	1	15
May 1957 . . . . .	11	45
October 1955 . . . . .	12	46
April 1953 . . . . .	12	47
March 1953 . . . . .	12	48
February 1953 . . . . .	12	48
Lwiro, Belgian Congo		
May 1957 . . . . .	12	46
Lycksele, Sweden		
June 1960 . . . . .	1	15
Macquarie I.		
June 1958 . . . . .	8	35
Moscow, U.S.S.R.		
May 1960 . . . . .	4	24
Nurmijarvi, Finland		
June 1960 . . . . .	2	16
Ottawa, Canada		
June 1960 . . . . .	3	20
Paramaribo, Surinam		
May 1958 . . . . .	9	38
Poitiers, France		
May 1958 . . . . .	8	35
April 1958 . . . . .	10	41
Port Lockroy		
May 1958 . . . . .	10	40
Pruhonice, Czechoslovakia		
June 1960 . . . . .	3	19
May 1960 . . . . .	5	25
December 1959 . . . . .	5	26
May 1959 . . . . .	6	28
Rabat, Morocco		
May 1958 . . . . .	3	36
April 1958 . . . . .	10	41
Resolute Bay, Canada		
June 1960 . . . . .	1	14
Rome, Italy		
June 1960 . . . . .	3	21
St. John's, Newfoundland		
June 1960 . . . . .	3	20
Sao Paulo, Brazil		
May 1959 . . . . .	7	31

Index (CRPL-F197 (Part A), concluded)

	<u>Table page</u>	<u>Figure page</u>
Singapore, British Malaya		
June 1960 . . . . .	4	23
Slough, England		
June 1960 . . . . .	2	18
Sodankyla, Finland		
June 1960 . . . . .	1	14
Svalbard, Norway		
June 1959 . . . . .	5	26
Tahiti, Society Is.		
May 1959 . . . . .	6	30
April 1959 . . . . .	7	33
May 1958 . . . . .	9	39
April 1958 . . . . .	11	44
Tamanrasset, French W. Africa		
May 1958 . . . . .	8	36
April 1958 . . . . .	10	42
Tananarive, Madagascar		
May 1959 . . . . .	6	30
April 1959 . . . . .	8	34
May 1958 . . . . .	10	40
April 1958 . . . . .	11	44
Tsumeb, South W. Africa		
April 1958 . . . . .	11	45
Upsala, Sweden		
June 1960 . . . . .	2	16
Washington, D. C.		
September 1960 . . . . .	1	13
August 1960 . . . . .	1	13
Winnipeg, Canada		
June 1960 . . . . .	3	19



---

## CRPL Reports

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

*Daily:*

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

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

*Weekly:*

CRPL—J. North Atlantic Radio Propagation Forecast.

CRPL—Jp. North Pacific Radio Propagation Forecast.

*Semimonthly:*

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

*Monthly:*

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

CRPL—F. (Part A). Ionospheric Data.

(Part B). Solar-Geophysical Data.

Limited distribution. These publications are in general disseminated only to those individuals or scientific organizations which collaborate in the exchange of ionospheric, solar, geomagnetic, or other radio propagation data.

*Catalog of Data:*

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

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

---

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

NBS Circular 462. Ionospheric Radio Propagation. \$1.25.

NBS Circular 465. Instructions for the Use of Basic Radio Propagation Predictions. 30 cents.

NBS Circular 557. Worldwide Radio Noise Levels Expected in the Frequency Band 10 Kilocycles to 100 Megacycles. 30 cents.

NBS Circular 582. Worldwide Occurrence of Sporadic E. \$3.25.

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

*Selected Technical Notes of the National Bureau of Standards:*

NBS Tech. Note 2. PB151361. World Maps of F2 Critical Frequencies and Maximum Usable Frequency Factors. \$3.50.

NBS Tech. Note 13. PB151372. Technical Considerations Leading to an Optimum Allocation of Radio Frequencies in the Band 25 to 60 Mc. \$2.50.

NBS Tech. Note 18. PB151377. Radio Noise Data for the IGY. \$2.50.

18-2. PB151377-2. Quarterly Radio Noise Data (Mar.-May 1959). \$1.00.

18-3. PB151377-3. (June-Aug. 1959). \$1.00.

18-4. PB151377-4. (Sept.-Nov. 1959). \$1.50.

NBS Tech. Note 31. PB151390. An Atlas of Oblique-Incidence Ionograms. \$2.25.

NBS Tech. Note 40-1. PB151399-1. Mean Electron Density Variations of the Quiet Ionosphere, 1: March 1959. \$1.25.

40-2. PB151399-2. 2: April 1959. \$1.25.

These Technical Notes are on sale by the Office of Technical Services, U. S. Department of Commerce, Washington 25, D. C. Order by PB number.

NOV 06 2017