

CRPL-F 179 PART A

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PART A
IONOSPHERIC DATA

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

IONOSPHERIC DATA

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SYMBOLS, TERMINOLOGY, CONVENTIONS

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

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

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

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

There was an expansion in meaning of the following:

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

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

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

a. For all ionospheric characteristics:

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

b. For critical frequencies and virtual heights:

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

Values missing because of G are counted:

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

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

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

c. For MUF factor (M-factors):

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

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

d. For sporadic E (Es):

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

B for fEs is counted on the low side when there is a numerical value of a higher layer 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 data for November 1945, doubtful monthly median values for ionospheric observations at Washington, D.C., are indicated by parentheses, in accordance with the practice already in use for doubtful hourly values. The following are the conventions used to determine whether or not a median value is doubtful:

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

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

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

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

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

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

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

PREDICTED AND OBSERVED SUNSPOT NUMBERS

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

Month	Predicted Sunspot Number										
	1959	1958	1957	1956	1955	1954	1953	1952	1951	1950	1949
December	137	150*	150*	150	42	11	15	33	53	86	108
November	137	150*	150*	147	35	10	16	38	52	87	112
October	139	150*	150*	135	31	10	17	43	52	90	114
September	141	150*	150*	119	30	8	18	46	54	91	115
August	142	150*	150*	105	27	8	18	49	57	96	111
July	141	150*	150*	95	22	8	20	51	60	101	108
June	143	150*	150*	89	18	9	21	52	63	103	108
May	146	150*	150*	77	16	10	22	52	68	102	108
April	150*	150*	150*	68	13	10	24	52	74	101	109
March	150*	150*	150*	60	14	11	27	52	78	103	111
February	150*	150*	150*	53	14	12	29	51	82	103	113
January	150*	150*	150*	48	12	14	30	53	85	105	112

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

The latest available information follows concerning the corresponding observed Zürich numbers beginning with the minimum of April 1954. Final numbers are listed through June 1958.

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	184	183	181	179	179

WORLD - WIDE SOURCES OF IONOSPHERIC DATA

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

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

Universidad Mayor de San Andres:
La Paz, Bolivia

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

Defence Research Board, Canada:
Baker Lake, Canada
Ottawa, Canada
Resolute Bay, Canada
Winnipeg, Canada

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

Instituto Geofisico de Los Andes Colombianos:
Bogota, Colombia

Danish National Committee of URSI:
Narsarssuak, Greenland

The Finnish Academy of Sciences and Letters:
Sodankyla, Finland

Ionospheric Institute, Breisach, Germany:
Freiburg, Germany

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

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

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

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

Manila Observatory:
Baguio, P.I.

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

Ebro Observatory:
Tortosa, Spain

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

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

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

United States Army Signal Corps:
Adak, Alaska
Okinawa I.
Thule, Greenland
White Sands, New Mexico

National Bureau of Standards (Central Radio Propagation Laboratory):
Anchorage, Alaska
Byrd Station, Antarctica
Ellsworth, Antarctica
Fairbanks (College), Alaska (Geophysical Institute of the
University of Alaska)
Huancayo, Peru (Instituto Geofisico de Huancayo)
Little America, Antarctica
Maui, Hawaii
San Francisco, California (Stanford University)

TABULATIONS OF ELECTRON DENSITY

Reduction of hourly ionospheric vertical soundings to electron density profiles is currently a part of the systematic ionospheric data program of the National Bureau of Standards. Scaled data for this purpose are being provided by stations operated by NBS and the U. S. Army Signal Corps. For the present, the hourly profile data from one NBS station, Puerto Rico, are being provided in the CRPL-F Series. These data are in place of the other quantities formerly provided by this station. The very considerable task of scaling the ionograms for this purpose is undertaken by Mr. T. R. Gilliland, Engineer in Charge, Puerto Rico Ionosphere Sounding Station (Ramey AFB, P. R.); the computations are performed at the NBS Boulder Laboratories. Basic conversion of virtual to true heights uses the well-known matrix method developed by K. G. Budden of the Cavendish Laboratory, Cambridge University.

The tabulations provide the following basic electron density profile data for each hour of each day of the month:

<u>Quantity</u>	<u>Units</u>	<u>Remarks</u>
Electron Density (N)	(electrons/cm ³ x10 ⁻³)	Body of table; given at each 10 km of height.
NMAX	" " "	Always the highest value of N at each hour. To maintain this rule, the electron density at the next 10 km increment above HMAX is always given as exactly equal to NMAX (unless HMAX coincides with a 10 km level).
QUALIFICATION	(Alphabetic)	A standard scaling letter qualifying the observation when necessary.
HMIN	Kilometers	The height of zero or very low electron density, obtained by linear extrapolation of the electron density vs. height curve.
HMAX	Kilometers	The height of maximum electron density, determined by fitting a parabola to the upper portion of the profile.
SHMAX	(electrons/cm ² column x10 ⁻¹⁰)	Obtained by integration of the profile between the limits HMIN and HMAX.

The final tabulations are headed "AVERAGE ELECTRON DENSITY". These give the arithmetic mean electron density at each height. Before averaging, the hours are identified with the magnetic character figure Kp. The data for those hours for which Kp falls below 4+ are put into one average; the others are put into another average. Quiet averages usually result in smooth N(h) profiles, but the disturbed averages must be used with care. This is due jointly to the usually low count in the disturbed category, and to the inconsistency between disturbed days.

Individual profiles are extrapolated above HMAX by a Chapman distribution of 100 Km scale height. Such an extrapolation is required to get reliable averages near the mean; this extrapolation has also been shown to be in good agreement with present ideas of the F region above HMAX. Thus, for what they are worth, the extrapolations are shown in the averages to 950 Km. The quantities HMIN, HMAX, NMAX, AND SHMAX are averaged in a similar way. The additional quantities tabulated for each hour are:

COUNT -- The number of profiles in each average.
 SHINF -- The total electron content of the ionosphere based upon the extrapolation described above. The units are electrons/cm² column x 10⁻¹⁰.

ELECTRON DENSITY												
PUERTO RICO				60 W				1 APR 1959				
TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL									S			A
HMIN	259	253	233	222	240	317	237	113	112	117	108	110
MHMN	371	350	352	341	423	457	359	340	319	327	334	353
SHMAX	1062	723	915	728	680	733	662	1355	1808	2222	2679	3183
KM												
460							774					
450							772					
440							764					
430						661	750					
420						661	729					
410						655	702					
400						642	671					
390						623	628					
380	1528					595	573					
370	1528					562	500					
360	1510	1191				522	417	814				2790
350	1464	1191	1191	875	477	323	809					2789
340	1389	1176	1179	875	432	209	795	1316				2767
330	1245	1130	1151	869	383	112	771	1309		2430	2605	2718
320	1157	1050	1107	853	335	40.2	737	1291	1907	2421	2577	2641
310	1004	946	1050	827	281		695	1260	1896	2376	2519	2533
300	834	814	969	794	229		637	1216	1861	2294	2430	2400
290	625	667	865	749	179		573	1167	1801	2173	2306	2244
280	362	508	754	691	139		485	1104	1714	2032	2161	2053
270	83.8	286	619	625	101		389	1013	1606	1826	1969	1846
260	12.4	65.7	446	532	67.6		262	917	1462	1601	1747	1631
250			143	437	42.5		104	804	1308	1368	1534	1425
240		49.6	310				40.2	691	1143	1119	1301	1216
230			71.4					557	975	896	1096	1027
220								417	794	716	903	875
210								310	625	573	742	742
200								205	498	469	608	643
190								148	389	396	508	549
180								106	302	330	425	469
170								81.3	235	281	356	400
160								70.8	187	237	305	346
150								67.4	156	204	262	298
140								64.0	136	178	220	259
130								60.7	122	164	201	229
120								49.6	112	127	185	209
110											112	83.8

ELECTRON DENSITY												
PUERTO RICO				60 W				1 APR 1959				
TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL				A	A	A	B					
HMIN	108	110	109	109	110	107	238	246	247	252	274	268
HMAX	334	353	363	369	365	373	387	379	381	421	388	364
SHMAX	2850	3002	2908	2711	2590	2497	1922	1686	1481	1874	1343	1102
KM												
430											1786	
420											1786	
410											1777	
400											1753	
390							2032			1697	1715	1727
380							2032	2027	1907	1697	1662	1719
370							2031	2004	1989	1684	1595	1688
360							1987	1961	1869	1654	1514	1634
350							1986	1899	1819	1603	1423	1556
340							1986	1899	1819	1603	1423	1611
330	2941	2689	2301	2108	2012	1937	1818	1744	1528	1303	1465	1556
320	2937	2631	2327	2040	2045	1866	1722	1657	1436	1171	1341	1465
310	2898	2536	2150	1945	1960	1786	1598	1542	1329	1019	1162	1362
300	2814	2415	2042	1834	1863	1688	1446	1401	1198	854	960	1208
290	2684	2260	1907	1708	1751	1568	1260	1224	1035	698	754	1027
280	2511	2087	1756	1570	1626	1446	1073	1050	861	540	508	794
270	2032	1688	1466	1274	1341	1186	608	625	492	198		508
260	1756	1483	1291	1111	1182	1050	362	362	240	71 ^a		
250	1474	1265	1164	982	1019	928	161	83.8	49.6			
240	1240	1096	1035	861	875	794	26.3					
230	1027	932	907	795	742	679						
220	854	794	804	661	631	573						
210	716	679	709	587	540	485						
200	616	591	634	524	454	398						
190	534	514	557	465	389	329						
180	465	453	477	410	325	268						
170	408	395	406	351	276	223						
160	358	348	351	300	234	189						
150	318	306	302	253	204	161						
140	279	266	260	227	183	140						
130	246	238	236	213	172	126						
120	221	222	222	203	163	119						
110	143	4.9	6.0	127	12.4	112						

ELECTRON DENSITY									
60 W					2 APR 1959				
00	0400	0500	0600	0700	0800	0900	1000	1100	
22	243	235	219	111	109	106	109	109	S
38	362	332	330	295	316	336	320	337	A
44	486	387	392	758	1392	2198	2103	2521	
643									
643									
636									
16	621	590				2032		2500	
13	597	590	540			2028		2491	
98	569	582	536		1290	2004	2294	2445	
72	524	563	524		1288	1959	2274	2362	
34	462	533	503	917	1274	1889	2215	2234	
85	389	495	477	915	1247	1803	2109	2080	
27	298	441	438	902	1207	1692	1969	1889	
54	189	371	389	875	1155	1556	1803	1708	
80	83.8	286	329	834	1096	1394	1612	1512	
86	43.3	143	251	781	1012	1224	1404	1308	
89	46.5	143	143	709	926	1065	1191	1096	
.6			60.0	634	834	903	975	932	
	5.5		549	745	768	794	784		
			446	643	643	643	670		
			310	540	540	532	582		
			179	446	462	454	500		
			94.5	353	389	389	429		
			74.5	274	325	335	362		
			67.5	209	272	290	310		
			62.5	161	231	253	262		
			56.0	127	204	222	229		
			48.6	109	174	182	214		
			43.3	102	154	169	205		
			33.8	127	171	172	143		

ELECTRON DENSITY

PUERTO RICO												60 W												5 APR 1959											
TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	A	A	A	A	A	A	A	A	A	A	A	A	OUAL	HMIN	HMAX	SHMAX	KM						
QUAL																																			
HMIN	243	228	204	213	224	208	267		109	109	110	109																							
HMAX	333	320	319	347	342	358	381		290	322	319	348																							
SHMAX	832	732	648	549	393	349	314		1171	1951	2027	2643																							
KM	390																																		
380																																			
370																																			
360																																			
350																																			
340	1528																																		
330	1526																																		
320	1490	1265	896	598	490	354	298		2032		2288																								
310	1410	1249	890	573	470	335	251		2012	2085	2151																								
300	1283	1203	871	543	446	310	198		1964	2048	2052																								
290	1119	1124	838	503	409	279	135		1528	1888	1986	1921																							
280	875	1016	798	457	366	244	77.6		1513	1795	1895	1769																							
270	608	875	732	406	310	207	19.3		1470	1654	1771	1604																							
260	626	679	643	342	251	168			1398	1501	1626	1429																							
250	65.7	389	551	278	179	130			1301	1321	1465	1240																							
240	143	417	212	104	93.9				1175	1143	1281	1065																							
230	26.3	240	143	46.5	64.6				1019	939	1050	917																							
220		112	71.4		43.9				834	754	861	794																							
210		40.2			8.4				608	608	691	688																							
200									403	498	540	591																							
190									278	410	437	508																							
180									204	341	355	435																							
170									157	286	295	373																							
160									127	236	245	323																							
150									115	196	198	282																							
140									109	170	181	244																							
130									104	156	172	219																							
120									100	148	165	205																							
110									49.6	71.4	83.8	83.8																							

ELECTRON DENSITY

PUERTO RICO												60 W												5 APR 1959																		
TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	A	A	A	B	A	A	A	A	A	A	A	A	OUAL	HMIN	HMAX	SHMAX	KM													
QUAL																																										
HMIN	103	108	108	110	110	110	110	110	241	240	252	258					1938	1756	1696	1727	1583	1640																				
HMAX	345	349	362	365	366	366	366	366	374	373	383	376					1936	1755	1675	1721	1579	1637																				
SHMAX	2629	2804	2966	2721	2676	2342	1652	1488	1303	1186	1179	947					2643	2536	2362	2064	1930	1736	1629	1684	1551	1598																
KM	390																2510	2643	2621	2500	2329	2037	1866	1693	1556	1614	1498															
380																	2496	2629	2568	2436	2277	1994	1794	1626	1456	1307	1418	1386														
370																	2458	2581	2484	2341	2199	1930	1690	1534	1327	1371	1316	1221														
360																	2510	2382	2497	2362	2205	2090	1836	1578	1420	1277	1283	1004	982	1027	754											
350																	2510	2310	2383	2127	2037	1919	1794	1626	1456	1307	1371	1350														
340																	2510	2321	2383	2127	2037	1919	1794	1626	1456	1307	1371	1350														
330																	2510	2322	2382	2127	2037	1919	1794	1626	1456	1307	1371	1350														
320																	2510	2322	2382	2127	2037	1919	1794	1626	1456	1307	1371	1350														
310																	2510	2322	2382	2127	2037	1919	1794	1626	1456	1307	1371	1350														
300																	2510	2322	2382	2127	2037	1919	1794	1626	1456	1307	1371	1350														
290																	2510	2322	2382	2127	2037	1919	1794	1626	1456	1307	1371	1350														
280																	2510	2322	2382	2127	2037	1919	1794	1626	1456	1307	1371	1350														
270																	2510	2322	2382	2127	2037	1919	1794	1626	1456	1307	1371	1350														
260																	2510	2322	2382	2127	2037	1919	1794	1626	1456	1307	1371	1350														
250																	2510	2322	2382	2127	2037	1919	1794	1626	1456	1307	1371	1350														
240																	2510	2322	2382	2127	2037	1919	1794	1626	1456	1307	1371	1350														
230																	2510	2322	2382	2127	2037	1919	1794	1626	1456	1307	1371	1350														
220																	2510	2322	2382	2127	2037	1919	1794	1626	1456	1307	1371	135														

ELECTRON DENSITY											
PUERTO RICO						60 W			7 APR 1959		
TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000
QUAL											
HMIN	247	243	226	216	204	263	269	116	110	109	110
HMAX	350	335	315	313	391	397	357	294	299	301	328
SHMAX	865	803	689	457	525	408	338	858	1341	1992	2118
KM											
400						524	508				
390						524	506				
380						520	496				
370						510	479				
360						494	454	573			
350	1420					471	421	570			
340	1404	1393				443	380	552			
330	1355	1389				409	335	516			1969
320	1274	1355	1143	698	369	280	471				1962
310	1167	1287	1140	697	331	224	410				1816 1934
300	990	1186	1116	687	286	173	335	1191	1556	1815	1878
290	774	1050	1070	663	245	122	251	1189	1546	1797	1807
280	540	834	1004	627	207	75.6	143	1165	1512	1748	1711
270	286	573	889	579	172	42.5	40.2	1116	1454	1669	1601
260	112	262	735	508	138			1041	1368	1556	1474
250	40.2	71.4	557	427	112			932	1263	1416	1327
240			310	323	88.3			794	1127	1257	1175
230			71.4	161	67.6			625	960	1050	1019
220				44.9	49.6			462	774	861	848
210					26.3			335	608	691	691
200								240	467	557	573
190								179	362	446	489
180								138	292	368	425
170								112	240	305	367
160								97.2	202	262	320
150								88.3	175	222	278
140								78.7	155	197	243
130								68.6	141	178	216
120								56.5	127	166	200
110								12.4	112	40.2	

ELECTRON DENSITY													
PUERTO RICO		60 W							7 APR 1959				
TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
DUAL													
HMIN	110	110	109	110	110	110	240	259	265	277	277	276	
HMAX	339	364	332	365	377	371	376	388	403	399	396	392	
SHMAX	2639	2785	1975	2433	2602	2230	1452	1421	1341	1194	1165	1218	
KM													
410													1612
400													1611 1583 1612 1640
390													1669 1593 1573 1607 1639
380													
					2032	1876	1756	1662	1554	1538	1577	1623	
370		2396		2064	2020	1876	1751	1635	1493	1478	1520	1584	
360		2394		2061	2004	1865	1720	1587	1408	1389	1437	1522	
350		2368		2036	1972	1835	1659	1514	1308	1278	1341	1429	
340	2465	2315	2161	1988	1919	1786	1565	1425	1184	1143	1191	1228	
330	2453	2334	2141	1915	1842	1708	1457	1316	1050	982	1004	1167	
320	2412	2122	2042	1808	1756	1617	1327	1184	875	794	794	1004	
310	2340	1985	1907	1692	1657	1512	1175	1035	679	573	540	754	
300	2233	1822	1769	1556	1542	1400	1019	861	492	362	310	477	
290	2103	1652	1612	1416	1407	1285	848	679	310	161	143	219	
280	1942	1483	1446	1278	1278	1175	679	477	152	40.2	40.2	49.6	
270	1766	1308	1274	1155	1131	1061	508	286	49.6				
260	1574	1143	1111	1027	1004	932	375	375					
250	1362	990	960	903	886	814	240						
240	1167	865	844	796	774	707	124						
230	975	764	739	698	687	616							
220	834	679	657	616	608	532							
210	707	614	587	547	532	454							
200	608	557	524	487	462	375							
190	527	503	472	432	396	304							
180	465	446	427	380	341	251							
170	408	395	385	335	298	207							
160	362	344	347	291	259	174							
150	328	303	310	255	225	148							
140	293	271	276	222	198	130							
130	260	243	246	198	178	122							
120	240	224	223	186	166	115							
110	212	193	192	162	162	102							

ELECTRON DENSITY												
PUERTO RICO				60 W				8 APR 1959				
TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL										A		
HMIN	249	237	208	202	269	272	295	116	111	111	111	111
HMAX	332	349	351	350	408	394	402	299	306	318	326	
SHMAX	743	909	816	599	548	428	507	922	1495	1967	2071	
KM												8
410					625		716					
400					623	573	716					
390					613	573	708					
380					596	563	687					
370					570	543	656					
360					540	511	613					
350				982	698	499	472	553				
340	1473	1257	973	693	451	422	477					
330	1472	1229	947	677	395	367	380					
320	1437	1181	912	652	329	304	286					
310	1352	1111	857	618	268	246	161		1697	2055	2099	
300	1208	1027	794	573	198	173	60.0	1215	1693	2020	1990	
290	1027	903	716	519	127	107		1205	1664	1957	1907	
280	754	754	631	459	71.4	54.8		1170	1609	1863	1786	
270	417	573	540	396	12.4			1113	1526	1742	1631	
260	161	362	437	335				1027	1420	1598	1462	
250	12.4	143	335	268				907	1283	1425	1274	
240		40.2	229	198				781	1127	1216	1111	
230			127	135				643	960	1019	932	
220			60.0	77.6				492	774	834	768	
210			12.4	43.3				362	608	679	643	
200								251	467	551	540	
190								179	362	454	462	
180								131	286	362	395	
170								105	227	298	340	
160								89.9	190	248	291	
150								81.5	163	210	240	
140								76.9	145	182	201	
130								72.3	135	176	189	
120								54.8	121	149	179	

ELECTRON OENSITY

PUERTO RICO		60 W										9 APR 1959	
TIME		0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
OUAL	F	F	F	F								A	A
HMIN	253	225	218	209	295	302	271	111	106	109	106	109	
HMAX	373	344	345	360	464	429	401	325	316	333	332	347	
HMAX	1697	1376	1250	823	830	813	835	1561	1883	2407	2573	2750	
KM													
470							917						
460							916						
450							906						
440							884						
430							850	1073					
420							804	1065					
410							748	1041	1096				
400							685	999	1096				
390							615	939	1085				
380	2260						532	865	1056				
370	2258						446	768	1010				
360	2230			1050	348	661	946						
350	2167	2032	1473	1040	240	540	865						2430
340	2068	2028	1471	1012	167	403	764						2424
330	1934	1989	1454	966	107	240	652	1727					2327
320	1766	1907	1419	900	714	119	529	1724	1876				2326
310	1556	1771	1368	818	484	8	375	1704	1872	2255	2459		2395
300	1316	1612	1299	726	20	3	229	1663	1850	2179	2373	2135	
290	1004	1404	1211	616			119	1602	1808	2075	2249		2000
280	643	1167	1115	508			60	1519	1742	1948	2096	1846	
270	335	896	990	389			1423	1669	1786	1925	1698		
260	127	608	848	286			1298	1566	1612	1727	1524		
250		362	679	198			1127	1431	1411	1534	1359		
240		161	446	122			917	1274	1208	1321	1182		
230	49.6	179	75.6				698	1065	1027	1096	1019		
220		26.3	44.9				492	875	861	903			
210			3.1				335	735	716	742	742		
200							240	608	596	608	619		
190							179	487	498	500	519		
180							143	389	389	410	439		
170							118	302	310	335	368		
160							102	236	249	280	310		
150							89.4	195	211	232	259		
140							81.2	166	179	198	228		
130							76.1	145	161	178	212		
120							65.7	134	150	168	202		
110							112	112	143				

ELECTRON OENSITY												
PUERTO RICO				60 W				9 APR 1959				
TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL	A	8			A	A	A	S				
HMIN	111		109	110	108	110		218	268	268	264	257
HMAX	358		358	352	361	368		420	411	402	381	384
SHMAX	2901		2752	2683	2698	2365		1651	1206	1316	1158	1213
KM												
420								1528	1556			
410								1521	1555	1669		
400								1500	1540	1668		
390								1466	1498	1652	1640	1640
380								1417	1429	1612	1640	1638
370								1355	1335	1547	1622	1614
360	2500		2536	2536	2396	1995		1274	1212	1463	1575	1563
350	2492		2524	2535	2381	1972		1187	1065	1353	1492	1485
340	2456		2477	2509	2342	1933		1084	917	1208	1388	1376
330	2394		2385	2447	2279	1871		982	735	1050	1255	1253
320	2304		2264	2331	2192	1800		861	573	834	1096	1096
310	2185		2105	2201	2079	1708		745	389	608	896	875
300	2032		1925	2048	1938	1601		631	240	389	643	661
290	1872		1727	1866	1786	1483		508	127	179	389	417
280	1702		1519	1669	1604	1354		398	63.8	83.8	179	219
270	1519		1324	1483	1411	1208		294	12.4	21.7	60.0	83.8
260	1341		1159	1291	1216	1050		212				30.9
250	1171		1004	1111	1019	903		143				
240	1035		865	946	861	742		92.8				
230	896		764	820	729	619		53.1				
220	784		672	716	608	508		12.4				
210	688		608	616	524	417						
200	608		551	534	453	348						
190	540		498	462	395	295						
180	471		451	400	341	251						
170	410		403	348	295	215						
160	351		358	303	255	185						
150	300		318	269	219	161						
140	253		282	240	190	143						
130	232		248	215	175	134						
120	212		227	198	166	122						
110			143	12.4	112	12.4						

ELECTRON DENSITY													
PUERTO RICO				6C W				10 APR				1959	
TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	
QUAL	A	A			S	B							A
HMIN	264	261	249	192	203	302	342	115	106	108	106	108	
HMAX	394	367	364	290	459	456	509	298	298	325	360	373	
SHMAX	1094	807	1003	569	548	265	289	759	1393	f1f17	2140	2523	
KM													
510								262					
500								262					
490								259					
480								254					
470								247					
460					298	298		238					
450					297	297		227					
440					296	292		216					
430					295	283		200					
420					292	268		183					
410					289	250		164					
400	1420				284	229		143					
390	1418				280	207		123					
380	1399				274	182	99.6						1876
370	1358	1240	1316		267	156	79.7						1875
360	1296	1234	1314		260	130	60.0						1864
350	1214	1202	1299		251	104	35.5						1633
340	1119	1143	1267		243	81.8							1614
330	990	1059	1216		233	61.9							1800
320	834	946	1155		223	46.9							1753
310	643	807	1068		212	24.7							1531
300	417	643	946		201								1599
290	240	446	781	875	189								
280	112	240	608	866	176								
270	49.6	97.2	362	841	163								
260			143	802	150								
250		12.4	739	137									
240			652	122									
230			551	103									
220			432	78.9									
210			286	49.6									
200			83.8										
190					106	417	439	459	442				
180					85.5	318	373	400	389				
170					76.8	240	315	346	344				
160					70.6	191	267	295	306				
150					67.7	161	231	251	266				
140					64.9	140	204	217	238				
130					62.0	124	179	197	219				
120					54.8	115	166	187	207				
110					97.2	127	145	179	179				

ELECTRON DENSITY												ELECTRON DENSITY														
PUERTO RICO						60 W			13 APR 1959			PUERTO RICO						60 W			13 APR 1959					
TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
QUAL													S													
HMIN	246	245	234	232	259	281	306	113	110	109	108	110		OUAL	A	A										
HMAX	349	336	348	361	408	417	430	305	325	323	338	354		HMIN	110	110	109	110	110	110	248	240	255	245	251	279
SHMAX	836	632	626	552	540	493	559	845	1731	2029	2367	2661		HMAX	356	367	372	372	384	372	372	378	416	392	372	393
KM														SHMAX	2866	3028	2919	2569	2550	2299	1445	1473	1466	1244	885	875
430															420											1528
420															410											1525
410															400											1509 1473
400															390											1290
390															380											1289
380															370											1477 1473
370															360											1291 1267
360															350											1267
350	1393	875	673	472	403	410									340											1143
340	1380	1119	870	657	427	356	342								330											1038
330	1332	1113	852	630	378	304	262								320											1038
320	1250	1079	818	596	323	246	170								310											1038
310	1143	1012	771	551	268	186	60.0	1027	1675	2102	2121	2075			300											1038
300	990	917	707	495	209	119		1024	1636	2046	2032	1948			290											1038
290	794	794	625	432	149	63.8		1004	1577	1955	1907	1801			280											1038
280	524	625	519	368	92.8			955	1497	1839	1769	1636			270											1038
270	262	417	389	294	53.1			899	1404	1685	1604	1465			260											1038
260	112	209	262	219	6.8			834	1283	1519	1429	1291			250											1038
250	40.2	60.0	143	135				754	1164	1341	1240	1111			240											1038
240					49.6	60.0		670	1019	1143	1080	971			230											1038
230								582	875	939	917	844			220											1038
220								477	716	768	781	729			210											1038
210								362	585	619	667	634			200											1038
200								251	469	508	565	557			190											1038
190								152	380	417	485	492			180											1038
180								93.9	304	351	412	437			170											1038
170								76.6	246	300	348	389			160											1038
160								69.7	203	259	295	348			150											1038
150								66.4	167	222	255	306			140											1038
140								63.0	141	192	222	266			130											1038
130								59.2	124	163	200	228			120											1038
120								51.2	115	150	181	201			110											1038
110								12.4	97.2	149	49.6				110	12.4	40.2	127	49.6	40.2	49.6					1038

ELECTRON DENSITY

PUERTO RICO												60 W												15 APR 1959											
TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	S	B																					
QUAL																																			
HMIN	269	227	218	213	235	237	299	113	110	107	110	109																							
HMAX	376	334	315	352	384	418	415	335	322	326	338	351																							
SHMAX	1075	1030	697	763	550	597	567	1312	1744	2107	2270	2564																							
KM																																			
420								590	735																										
410								588	734																										
400								580	723																										
390								643	566	702																									
380	1669							642	545	671																									
370	1662							633	517	628																									
360	1622							875	615	486	578																								
350	1545							875	586	446	514																								
340	1433	1640						868	549	405	432	1316																							
330	1291	1637						853	503	362	335	1314	1846	2128	2120	2267																			
320	1096	1602	1215					828	451	310	229	1301	1845	2123	2085	2197																			
310	875	1528	1211	794	395	262	104	1275	1828	2094	2023	2096																							
300	608	1433	1175	754	335	219	12.4	1235	1786	2039	1933	1969																							
290	348	1281	1104	698	280	170		1187	1720	1957	1622	1816																							
280	112	1096	993	625	219	127		1133	1627	1853	1683	1650																							
270	12.4	834	861	540	167	91.9		1041	1515	1712	1524	1465																							
260	573	698	437	102	64.6			928	1371	1537	1359	1291																							
250	310	508	310	60.0	44.9			794	1201	1341	1182	1127																							
240	112	286	179	29.1	12.4			655	1027	1143	1019	975																							
230	30.9	112	97.2					524	854	946	875	820																							
220				26.3	43.3			408	698	774	764	707																							
210								318	573	631	661	608																							
200								240	446	516	573	527																							
190								179	353	432	485	459																							
180								131	270	362	412	400																							
170								102	211	310	351	346																							
160								86.5	172	262	298	298																							
150								72.8	140	226	251	246																							
140								67.3	115	196	219	209																							
130								62.8	107	169	189	192																							
120								54.8	100	150	169	181																							
110								40.2	112	160	140	143																							

ELECTRON DENSITY

PUERTO RICO												60 W												15 APR 1959											
TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	B	B	B	A	A	A	A	A	A	A	B												
QUAL																																			
HMIN	109	116	109	109	108	108	108	230	240	248	272	266	258																						
HMAX	355	356	356	364	373	351	379	393	394	415	394	367	360																						
SHMAX	2757	2718	2735	2749	2830	2222	1809	1584	1514	1514	1208	1027	1106																						
KM																																			
420																																			
410																																			
400																																			
390																																			
380	1500																																		
370	1496																																		
360	1463																																		
350	1296	1393																																	
340	1159	1393																																	
330	990	1370																																	
320	794	1310	1096	711	469	315	127	1095		2000	2064	2080																							
310	540	1229	1094	682	430	262	46.5	1085	1938	1997	2012	1990																							
300	286	1111	1071	643	385	214		1060	1930	1869	1935	1880																							
290	83.8	946	1017	585	341	155		1018	1874	1914	1830	1747																							
280		754	943	524	294	102		966	1794	1829	1698	1612																							
270		524	848	446	246	246	12.4	804	1483	1384	1416	1312																							
260		286	735	362	198	12.4		707	1265	1411	1257	1159																							
250		608	286																																

ELECTRON DENSITY

PUERTO RICO											60 W			19 APR 1959		
TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100				
QUA:																
HMIN	259	250	241	246	219	226	239	110	110	109	109	110				
HMAX	371	359	344	328	337	338	334	292	333	339	344	356				
SHMAX	1060	1019	919	650	678	532	424	791	1625	2168	2470	2781				
KM																
380	1612															
370	1611															
360	1592	1640														
350	1540	1625	1528													
340	1457	1572	1525													
330	1341	1481	1490	1215	893	769	660									
320	1191	1341	1416	1204	876	748	647									
310	1004	1182	1314	1157	846	712	617									
300	754	960	1143	1068	803	661	578	982	1392	1750	1917	2032				
290	446	698	960	946	747	594	521	982	1334	1677	1798	1855				
280	219	417	754	774	670	508	446	968	1262	1584	1668	1669				
270	71.4	179	446	573	582	417	371	930	1172	1471	1528	1483				
260	12.4	65.7	198	335	477	327	274	880	1077	1353	1394	1291				
250	3.1	71.4	83.8		362	219	161	814	971	1712	1255	1096				
240					240	112	40.2	735	854	1073	1096	932				
230					104	43.3		643	735	932	960	804				
220					12.4			540	625	794	834	698				
210								427	529	681	716	615				
200								310	446	557	606	547				
190								226	375	452	516	489				
180								165	310	395	439	437				
170								130	257	335	380	389				
160								108	212	286	335	341				
150								92.3	179	244	298	298				
140								82.4	152	210	259	262				
130								77.6	136	184	229	229				
120								72.9	122	169	208	207				
110								12.4	49.6	97.2	83.8	40.2				

ELECTRON DENSITY												
PUERTO RICO				60 W				19 APR 1959				
TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL	R						A					
HMIN	109	110	109	109	110	110	110	222	236	295	280	259
HMAX	352	363	371	383	375	372	346	389	418	427	403	376
SHMAX	2808	2963	2777	2822	2647	2452	1700	1570	1357	1254	1167	1136
KM												
430										1640		
420										1473	1633	
410										1467	1601	1612
400										1444	1542	1610
390										1556	1402	1456
380										1549	1341	1341
370										1527	1257	1198
360	2680	2499	2280	2140	2170	2113				1488	1154	1035
350	2679	2479	2243	2083	2127	2076	1876	1431	1050	861	1208	1556
340	2652	2432	2183	2063	2063	1916	1871	1356	928	661	1050	1456
330	2587	2360	2096	1907	1974	1938	1843	1268	794	446	854	1324
320	2483	2257	1994	1786	1866	1841	1788	1172	661	262	625	1159
310	2339	2132	1861	1656	1734	1721	1708	1061	519	119	403	960
300	2161	1985	1702	1515	1598	1584	1593	950	389	44.9	219	716
290	1948	1820	1540	1371	1446	1431	1460	824	274		83.8	446
280	1715	1636	1376	1224	1291	1283	1308	707	189			
270	1490	1465	1221	1080	1127	1111	1157	596	122			
260	1265	1274	1065	950	990	960	982	477	77.6			
250	1080	1111	928	834	861	820	774	348	51.7			
240	917	975	814	745	745	691	573	219	17.0			
230	794	848	716	673	652	585	417	97.2				
220	688	745	643	614	573	492	298					
210	615	657	585	559	508	417	219					
200	557	587	529	513	446	356	161					
190	503	527	472	467	389	305	127					
180	457	465	422	421	341	259	99.6					
170	408	406	373	375	295	225	82.2					
160	362	348	327	331	256	193	73.9					
150	323	304	282	290	227	169	69.1					
140	286	274	244	253	203	151	65.9					
130	254	250	217	222	179	138	62.6					
120	231	227	204	204	164	127	57.7					
110	143	49.6	112	127	40.2	12.4	12.4					

ELECTRON DENSITY												
PUERTO RICO				60 W				20 APR 1959				
TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL												
HMIN	249	249	222	226	238	217	231	115	109	112	111	114
HMAX	346	365	338	333	343	329	361	304	312	337	349	368
SHMAX	914	1066	737	694	625	505	582	977	1593	1709	2488	2820
KM												
370		1500						735				2260
360		1497						735				2254
350	1583	1471			939		729				2064	2228
340	1576	1419	1240	1073	938		711			1528	2056	2182
330	1526	1341	1228	1071	923	716	683			1724	2030	2117
320	1454	1240	1181	1053	889	711	646		1697	1505	1985	2032
310	1324	1111	1096	1010	834	693	594	1191	1697	1470	1922	1918
300	1119	946	982	946	762	661	527	1189	1681	1414	1832	1798
290	896	735	834	854	667	618	454	1167	1641	1348	1732	1654
280	625	508	661	742	557	560	371	1119	1579	1250	1618	1515
270	335	262	477	608	437	485	286	1050	1492	1161	1495	1371
260	112	97.2	286	446	286	398	198	960	1384	1061	1356	1224
250	12.4	12.4	143	274	127	302	112	854	1255	960	1224	1080
240		71.4	112	26.3	209	56.5	745	1080	848	1080		960
230		42.1	43.3		97.2		631	917	735	939	834	
220					30.9		508	754	631	814	729	
210							398	608	532	698	634	
200							302	487	454	599	549	
190							226	389	383	516	477	
180							170	316	329	439	412	
170							130	262	276	378	356	
160							108	215	233	330	310	
150							96.1	182	201	286	270	
140							90.8	159	175	255	235	
130							85.4	141	154	228	213	
120							60.0	130	131	205	198	
110							71.4					

ELECTRON DENSITY												
PUERTO RICO			60 W			20 APR 1959						
TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL						A	A					
HMIN	110	108	110	108	109	110	112	240	217	286	277	284
HMAX	366	373	371	375	365	364	339	375	420	427	399	411
SHMAX	2692	3026	2767	2814	2423	2331	1664	1569	1589	1408	1109	1171
KM												
430										1612		
420									1500	1607		
410									1493	1584		
400									1472	1543	1556	1488
390									1436	1483	1544	1454
380	2500	2396	2294						1697	1385	1406	1505
370	2260	2499	2396	2291	2161	2227			1695	1318	1319	1437
360	2255	2479	2376	2268	2157	2224			1678	1240	1198	1341
350	2225	2432	2324	2222	2128	2200			1642	1152	1050	1212
340	2168	2360	2227	2151	2071	2149	2000	1589	1050	875	1065	939
330	2071	2257	2109	2052	1980	2071	1986	1514	917	928	879	875
320	1957	2135	1969	1932	1866	1957	1936	1427	807	508	661	557
310	1826	1996	1803	1799	1727	1826	1841	1329	691	310	446	335
300	1643	1820	1631	1654	1584	1669	1712	1204	585	161	251	161
290	1524	1650	1462	1509	1431	1501	1570	1073	467	49 ^a 6	104	60 ^a 0
280	1371	1465	1291	1356	1283	1321	1394	917	362			30 ^a 9
270	1228	1291	1155	1193	1111	1096	1208	754	270			
260	1107	1143	1016	1035	975	917	1004	557				
250	982	993	896	903	854	754	774	286				
240	865	865	794	794	745	619	573	12 ^a 4	88 ^a 3			
230	764	764	709	698	657	524	417		54 ^a 8			
220	679	672	643	625	580	446	298		18 ^a 0			
210	608	594	585	562	508	383	229					
200	551	534	535	502	446	330	179					
190	498	477	482	457	394	286	141					
180	446	430	429	403	341	248	116					
170	401	385	380	357	295	212	97 ^a 2					
160	357	348	339	314	255	182	83 ^a 0					
150	314	314	300	283	216	161	75 ^a 6					
140	274	278	266	253	191	145	69 ^a 5					
130	240	246	239	222	175	136	65 ^a 7					
120	222	227	223	205	166	129	61 ^a 9					
110	60 ^a 0	143	49 ^a 6	127	112	12 ^a 4						

ELECTRON DENSITY

ELECTRON DENSITY

PUERTO RICO												60 W												23 APR 1959					
TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300					
QUAL																													
HMIN	280	254	229	222	256	240	233	110	109	109	110	110																	
HMAX	374	347	320	359	374	349	366	315	332	334	358	371																	
SHMAX	802	690	568	571	544	443	547	990	1641	2074	2465	2674																	
KM																													
380	1393												2193																
370	1390												2193																
360	1358												2179																
350	1282	1265											2141																
340	1175	1256											2080																
330	1035	1213											1990																
320	834	1131	1004										1880																
310	608	1016	992	573	477	550	531	1003	1390	1850	1786	1747																	
300	335	834	955	502	396	495	477	991	1358	1792	1688	1612																	
290	112	625	892	432	310	425	410	967	1309	1710	1578	1462																	
280	362	794	362	209	348	342	929	1256	1617	1446	1312																		
270	161	661	294	97.2	262	262	880	1188	1501	1316	1179																		
260	49.6	492	226	40.2	161	173	820	1105	1368	1191	1038																		
250	262	149			71.4	104	747	1013	1224	1061	917																		
240	97.2	83.8			3.1	49.6	665	917	1065	932	810																		
230	12.4	46.5					582	814	903	824	716																		
220							492	707	742	726	649																		
210							408	596	608	634	580																		
200							318	487	508	557	.24																		
190							248	398	429	483	472																		
180							189	323	367	423	422																		
170							147	262	320	362	373																		
160							125	215	278	315	327																		
150							110	179	240	276	286																		
140							94.7	157	209	243	254																		
130							86.3	141	182	219	231																		
120							73.0	127	164	189	204																		
110							12.4	71.4	97.2	40.2	12.4																		

PUERTO RICO												60 W												23 APR 1959					
TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	1200	1300	1400		
QUAL																													
HMIN	110	110	110	109	109	109	110	110	110	110	110	110																	
HMAX	371	388	394	382	383	382	383	382	383	382	383	382																	
SHMAX	2968	3376	3265	2848	2772	2509	2396	1512	1477	1173	1439	1016																	
KM																													
380	1393												1393																
370	1390												1314																
360	1358	735	723	642									1295																
350	1282	1265	730	699	643	633							1256																
340	1175	1256	711	663	638	618							1191																
330	1035	1213	679	618	621	594							1109																
320	834	1131	631	553	591	567							1004																
310	608	1016	992	573	477	550							000																
300	335	834	955	502	396	495							000																
290	112	625	892	432	310	425							000																
280	362	794	362	209	348	342							000																
270	161	661	294	97.2	262	262							000																
260	49.6	492	226	40.2	161	173							000																
250	12.4	12.4	12.4	12.4	12.4	12.4							000																
240																													
230																													
220																													
210																													
200																													
190																													
180																													
170																													
160																													
150																													
140																													
130																													
120																													
110																													

PUERTO RICO												60 W												24 APR 1959											
TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	1200	1300	1400								

<tbl_r cells="27" ix="2" maxcspan="1" maxrspan="1" usedcols

ELECTRON DENSITY

PUERTO RICO										60 W		25 APR 1959				
TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500
										A	A					
DUAL																
HMIN	282	249	236	241	288	256	253	112	109	111	108	108				
HMAX	386	361	363	419	423	397	360	314	327	338	341	355				
SHMAX	775	770	695	808	583	604	662	1194	1727	2255	2534	2914				
KM																
430							754									
420						774	754									
410						771	743									
400						761	719	754								
390	1265			744	679	751										
380	1259			719	631	737										
370	1225	1119	917	688	573	709										
360	1160	1119	916	651	500	669	896									
350	1061	1107	905	603	417	618	889					2396	2712			
340	932	1074	878	551	342	553	868				2096	2396	2677			
330	774	1017	838	492	255	485	834		1669	2088	2377	2609				
320	573	943	781	432	179	408	788	1341	1664	2059	2328	2501				
310	362	844	707	368	104	335	724	1340	1640	2008	2247	2370				
300	179	716	619	304	60.0	255	643	1323	1597	1933	2135	2199				
290	65.7	585	519	240	12.4	179	540	1288	1530	1830	1996	1990				
280		417	408	186		112	432	1233	1446	1708	1820	1786				
270		219	298	132		63.8	310	1164	1341	1570	1650	1556				
260		77.6	161	80.7		26.3	143	1073	1226	1416	1446	1341				
250		12.4	77.6	47.2				960	1096	1257	1260	1119				
240			26.3					820	960	1080	1111	946				
230							679	820	917	932	807					
220							524	691	768	781	698					
210							389	582	631	661	615					
200							294	477	524	565	540					
190							219	396	439	485	483					
180							170	323	362	417	427					
170							132	262	305	362	375					
160							108	215	258	315	330					
150							95.6	179	219	272	286					
140							90.3	156	191	233	248					
130							84.9	141	174	201	217					
120							75.6	132	164	188	204					
110								83.8	161	181	143					

ELECTRON DENSITY

ELECTRON DENSITY

Puerto Rico	60 W	26 APR 1959
TIME	0000 0100 0200 0300 0400 0500 0600 0700 0800 0900 1000 1100	
QUAL	C C C C C C C C C C C C	

ELECTRON DENSITY

ELECTRON DENSITY

PUERTO RICO		60 W										27 APR 1950	
TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	
QUAL							S	A	A	A	A	A	
HMIN	272	244	238	270	268	245	276	113	110	110	109		
HMAX	385	362	396	420	401	382	403	333	340	342	348		
SHMAX	1139	1008	1104	954	816	783	921	1585	2134	2252	2504		
KM													
420													
410													
400													
390	1697												
380	1693												
370	1660	1446	1083	924	992	992	1004	1004					
360	1592	1446	1050	834	917	964	973						
350	1490	1427	1004	742	834	917	900					2193	2161
340	1356	1381	948	634	729	854	814	1727	2000	2193	2153		
330	1182	1304	882	529	619	784	716	1726	1990	2173	2124		
320	960	1208	810	417	498	688	608	1708	1961	2126	2073		
310	716	1084	726	298	362	585	477	1667	1913	2050	1993		
300	446	932	643	189	219	477	335	1604	1843	1941	1895		
290	239	735	540	104	119	362	209	1516	1764	1813	1773		
280	71.4	540	437	54.8	65.7	251	60.0	1411	1656	1850	1643		
270		310	310		12.4	143		1283	1524	1465	1509		
260		119	179			79.7		1096	1371	1781	1368		
250		49.6	77.6			33.2		939	1228	1111	1224		
240					21.7			774	1096	932	1065		
230								591	932	781	932		
220								446	716	655	794		
210								327	540	557	667		
200								248	403	477	565		
190								184	294	410	492		
180								143	232	348	425		
170								112	187	286	367		
160								93.4	151	229	318		
150								83.8	135	186	278		
140								80.1	125	164	240		
130								76.3	120	155	214		
120								72.6	115	147	198		
110								40.2	49.6	49.6	127		

ELECTRON DENSITY

ELECTRON DENSITY

PUERTO RICO			60 W			28 APR 1954						
TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL												A
HMIN	268	252	258	232	238	217	269	111	109	112	107	101
HMAX	380	384	368	359	385	390	383	309	331	334	338	351
SHMAX	960	1040	892	775	778	758	639	1122	1800	2088	2275	2651
KM												
390		1316			875	774	875					
380	1473	1314			874	770	874					
370	1458	1298	1290		863	757	862					
360	1410	1264	1283	1004	842	736	834					2261
350	1331	1208	1253	998	810	706	788					2254
340	1226	1143	1201	974	769	670	729		1727	1876	2032	2220
330	1080	1050	1127	932	716	623	657		1727	1875	2025	2174
320	896	917	1027	875	655	573	573		1715	1858	1997	2093
310	679	774	896	802	582	513	485	1341	1686	1822	1947	1994
300	446	619	735	716	500	446	375	1332	1631	1764	1869	1861
290	240	462	540	619	417	382	251	1301	1568	1691	1774	1830
280	83.8	286	310	519	323	316	127	1247	1483	1603	1656	1556
270	21.7	143	127	403	219	251	12.4	1167	1376	1495	1528	
260	60.0	26.3	286	127	186		1073	1253	1368	1586		
250			152	63.8	127		960	1143	1226	1228		
240			65.7	12.4	77.6		834	990	1096	1096		
230					51.7		691	848	960	946		
220						12.4	529	704	834	807		
210							389	562	698	679		
200							274	446	573	573		
190							198	344	469	492		
180							148	268	389	425		
170							114	215	320	367		
160							95.0	176	267	320		
150							83.8	148	227	278		
140							79.5	127	198	243		
130							75.3	121	174	205		
120							69.5	116	155	186		
110								71.4	143	171		

ELEGANZA RENAISSANCE

AVERAGE ELECTRON DENSITY												AVERAGE ELECTRON DENSITY													
PUERTO RICO						APR 1959						PUERTO RICO						APR 1959							
TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
COUNT	27	27	27	27	27	28	28	25	25	25	21	25	COUNT	25	25	24	26	25	21	14	24	27	27	27	27
HMIN	262	246	227	239	243	266	113	110	109	109	109	109	HMIN	108	109	109	109	110	110	110	110	110	110	110	110
NMAX	1441	1310	1055	835	717	654	699	1180	1681	2049	2212	2418	NMAX	257	253	243	227	2110	1927	1909	1705	1573	1565	1522	1514
HMAX	367	353	346	359	376	380	383	317	317	326	335	351	HMAX	363	368	374	375	375	375	375	375	375	375	375	375
SHINF	908	852	764	666	583	530	544	101	1608	2364	2721	2891	SHINF	2861	2921	2891	2778	2574	2312	1751	1420	1257	1146	1087	
KM	4973	4548	3739	3022	2605	2375	2514	4491	6349	7820	8583	9543	KM	100110071	9754	9166	8325	7747	7135	6289	5857	5671	5440	5158	5158
950	130	109	85.5	72.8	67.6	63.9	68.5	83.0	118	150	169	201	950	2117	223	220	211	195	181	178	165	171	170	161	155
900	166	140	110	93.4	86.8	81.9	87.9	106	151	192	217	257	900	278	286	282	276	251	232	229	212	200	199	199	199
850	213	180	141	120	111	113	137	193	246	279	330	357	850	356	367	361	346	321	298	293	272	282	280	264	255
800	273	230	180	153	142	134	144	175	248	315	357	423	800	456	469	462	443	411	381	375	348	360	358	337	326
750	349	294	231	196	182	172	184	224	318	404	457	540	750	583	600	591	567	547	480	444	459	457	430	417	417
700	444	376	294	250	232	218	234	287	406	516	584	690	700	744	765	754	722	669	621	565	584	580	547	530	
650	564	477	374	317	293	276	297	365	518	657	743	877	650	945	971	956	916	848	787	774	716	736	732	691	669
600	709	602	472	399	346	372	463	526	548	583	827	1047	600	1192	1224	1203	1152	1067	988	973	898	918	913	883	837
550	881	752	590	497	456	426	458	583	827	1047	1180	1383	550	1487	1524	1496	1429	1324	1224	1206	1111	1123	1117	1059	1029
500	1071	921	725	605	551	511	551	725	1028	1299	1458	1698	500	1551	1589	1559	1488	1379	1275	1257	1156	1166	1159	1100	1069
490	1109	956	753	628	570	528	569	755	1071	1353	1517	1763	490	1617	1655	1623	1549	1455	1326	1307	1202	1108	1141	1109	1069
480	1148	991	781	650	589	544	587	766	1116	1407	1577	1829	480	1684	1723	1689	1610	1492	1378	1359	1248	1250	1244	1182	1150
470	1185	1026	809	672	607	559	604	818	1161	1463	1637	1895	470	1751	1791	1754	1649	1430	1410	1294	1291	1285	1223	1190	
460	1222	1061	837	693	624	574	621	849	1206	1518	1697	1980	460	1820	1860	1820	1734	1607	1482	1462	1340	1332	1263	1229	
450	1257	1095	864	714	641	575	636	881	1252	1574	1757	2023	450	1898	1929	1887	1795	1664	1534	1514	1386	1371	1364	1301	1288
440	1290	1127	891	733	654	600	649	913	1297	1629	1816	2055	440	1958	1998	1952	1856	1720	1585	1564	1430	1407	1402	1338	1305
430	1321	1158	916	752	670	610	661	945	1343	1684	1874	2145	430	2066	2066	2017	1916	1775	1634	1614	1473	1442	1373	1341	
420	1349	1188	941	769	682	619	671	976	1387	1737	1930	2201	420	2093	2132	2080	1973	1829	1682	1662	1514	1473	1406	1374	
410	1373	1215	963	784	692	624	679	1007	1431	1789	1983	2252	410	2159	2197	2140	2026	1880	1728	1707	1553	1501	1495	1404	
400	1392	1238	983	796	698	627	683	1036	1472	1838	2033	2288	400	2258	2258	2197	2080	1971	1807	1789	1621	1541	1460	1420	
390	1406	1259	1001	805	726	652	682	1063	1512	1884	2078	2378	390	2316	2316	2251	2169	2099	1842	1823	1785	1720	1655	1620	
380	1411	1274	1015	810	698	619	675	1089	1549	1926	2118	2371	380	2398	2369	2299	2169	2099	1886	1861	1811	1787	1741	1655	
370	1405	1233	1026	811	690	605	661	945	1343	1684	1874	2145	370	2316	2316	2254	2193	2044	1870	1852	1805	1764	1734	1673	
360	1381	1285	1030	806	676	598	639	1132	1612	1994	2179	2405	360	2434	2457	2376	2234	2071	1892	1875	1834	1793	1741		
350	1395	124	1027	795	623	555	607	1149	1671	2018	2198	2409	350	2491	2490	2433	2254	2039	1909	1912	1896	1856	1815	1757	
340	1265	1251	1015	774	623	525	566	1162	1656	2035	2206	2389	340	2500	2513	2513	2426	2264	2096	1907	1889	1686	1480	1428	
330	1169	1207	992	745	583	485	515	1170	1664	2041	2198	2345	330	2042	2046	1946	1823	1565	1400	1250	976	581	380	438	
320	1038	1139	956	704	539	439	517	1171	1761	2073	2169	2274	320	2524	2524	2412	2141	2079	1886	1861	1761	1535	1452		
310	877	1067	904	653	477	392	381	1164	1662	2011	2174	2378	310	2453	2453	2317	2193	1974	1743	1703	1649	1505	1473		
300	690	923	836	591	412	341	307	1145	1636	1951	2029	2049	300	2474	2473	2317	2193	1974	1743	1703	1649	1505	1473		
290	499	767	520	343	286	233	286	639	1132	1612	1994	2179	2405	290	2454	2457	2376	2234	2071	1892	1875	1834	1793		
280	318	590	646	442	373	327	229	716	1066	1521	1764	1785	2103	280	2311	2311	2247	2117	1931	181	1539	1272	104		
270	168	395	526	360	198	176	125	1001	1429	1629	1745	1766	2103	270	2316	2316	2229	2229	2043	1908	1718	1651	1457		
270	168	395	526	360	198	176	125	1001	1429	1629	1745	1766	2103	270	2316	2316	2229	2229	2043	1908	1718	1651	1457		
260	65.9	219	401	277	130	127	81.5	91.5	131.6	147.3	146.6	137.6	260	280	1867	1770	1655	1503	1429	1273	1091	804	429	238	
250	1.0	18.5	159	120	36.2	46.6	20.0	21.1	1020	1120	1125	1029	250	270	1487	1584	1345	1287	1147	911	818	429	238	238	
240	1.0	18.5	159	120	36.2	46.6	20.0	21.1	1020	1120	1125	1029	240	270	1489	1589	1311	1196	1140	1017	717	438	187	67.6	
230	2.1	71.9	62.4	15.3	23.6	5.1	591	884	939	959	884	884	230	260	564	557	539	500	453	352	47.9	905	964	404	
220	2.1	19.9	25.6	4.9	8.8	8.8	8.6	472	723	775	808	762	220	260	510	495	480	446	395	297	37.8	116	111	2.7	
210	2.7	5.1	1.5	2.6	1.5	1.1	3.64	580	637	679	658	658	210	250	1127	1067	996	915	875	771	333	139	45.3	15.4	
200	2.7	5.1	1.5	2.6	1.5	1.1	2.01	270	456	524	571	570	200	240	972	928	870	800	763	663	182	165	8.4	2.7	
190	1.9	1.98	3.60	4.36	4.83	4.94	4.30	220	728	711	676	626	190	190	344	330	303	254	238	208	208	208	208	2.0	
180	1.8	1.8	2.84	3.61	4.10	4.30	4.30	220	728	711	676	626	190	190	344	330	303	254	238	208	208	208	208	2.0	
170	1.7	1.7	2.26	3.01	3.75	3.75	3.75	220	728	711	676	626	190	190	344	330	303	254	238	208	208	208	208	2.0	
160	1.6	1.6	2.26	2.53	3.01	3.32	3.32	220	728	711	676	626	190	190	344	3									

AVERAGE ELECTRON DENSITY												AVERAGE ELECTRON DENSITY														
PUERTO RICO						60 W						PUERTO RICO						60 W								
TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
COUNT	2	2	2	2	1	342	115	115	4	4	4	4	COUNT	4	4	4	4	4	4	4	3	4	2	2	2	
NMIN	258	243	233	200	249	302	112	115	108	109	108	110	NMIN	111	113	109	109	109	109	109	149	139	273	276	256	266
NMAX	1840	1636	1395	963	608	298	262	1119	1644	1898	2049	2139	NMAX	2399	2607	2532	2357	2066	1917	1643	1778	233	1901	2018	2018	2018
HMIN	383	355	354	325	461	456	509	298	324	331	354	361	HMAX	3776	3176	376	375	383	374	388	393	410	411	375	375	398
SHINF	1395	1091	1126	696	289	259	759	1702	2417	2044	2157	2447	SHINF	343	316	1777	1587	1534	1376	1587	1356	1649	1649	1649	1649	1649
KM	6595	5706	5060	3411	2402	1105	2028	3915	6339	7671	8197	8591	KM	97091052110185	9443	8229	8232	7513	6184	6392	7320	6717	7342			
950	177	137	117	71.9	87.5	41.4	47.3	70.8	119	149	172	186	950	225	244	238	220	195	191	190	168	197	228	177	213	
900	226	175	150	92.1	112	53.1	60.5	90.8	153	191	220	238	900	289	313	305	282	251	246	244	216	253	292	226	274	
850	290	224	192	118	61.9	77.2	81.1	96	196	252	305	305	850	473	514	500	462	411	403	354	312	324	374	290	351	
800	372	287	246	152	182	66.6	98.1	149	252	314	362	391	800	605	656	639	591	525	516	511	451	528	611	475	573	
750	474	367	315	194	232	110	124	191	322	402	462	500	750	700	976	1050	1032	954	753	669	775	605	728			
700	664	469	402	248	292	139	154	245	412	513	590	637	700	833	883	823	726	846	833	726	846	977	767	919		
650	765	596	511	315	364	173	189	313	524	653	749	809	650	1227	1333	1297	1199	1064	1047	1031	908	1054	1217	964	1149	
640	802	624	535	331	379	181	196	328	550	686	766	848	550	1520	1653	1607	1487	1316	1300	1273	1119	1289	1486	1197	1410	
630	839	654	561	347	396	189	203	344	577	719	824	889	550	1520	1653	1607	1487	1316	1300	1273	1119	1289	1486	1197	1410	
620	879	686	588	364	412	196	210	362	605	754	863	931	540	1582	1721	1673	1549	1370	1354	1325	1163	1338	1541	1247	1465	
610	919	718	616	381	428	204	217	379	634	790	904	975	530	1646	1791	1741	1612	1425	1409	1377	1207	1386	1597	1297	1519	
600	961	752	645	399	445	224	239	379	665	828	946	1021	520	1710	1862	1810	1675	1475	1465	1429	1252	1507	1651	1348	1574	
590	1004	787	674	418	461	221	231	417	696	867	980	1068	511	1775	1923	1878	1739	1555	1521	1400	1296	1482	1705	1400	1628	
580	1049	823	706	437	478	229	237	437	729	908	1036	1116	500	1839	2004	1947	1803	1590	1577	1528	1341	1752	1806	1504	1733	
570	1095	861	738	458	494	243	248	480	798	994	1132	1218	480	1967	2144	2082	1929	1697	1688	1632	1425	1614	1853	1555	1783	
560	1141	899	771	479	510	245	248	480	798	994	1132	1218	470	2028	2212	2148	1991	1749	1743	1680	1465	1553	1896	1605	1829	
550	1189	939	805	500	526	253	252	503	525	563	572	595	530	2349	2510	2315	2008	2033	1903	1635	1763	1996	1872	2004		
540	1228	980	840	523	540	260	260	526	573	587	602	616	460	2178	2211	2105	1979	1725	1502	1687	1507	1632	1720	1943	1889	
530	1268	1022	875	545	554	267	259	551	591	613	635	682	450	2144	2340	2271	2106	1846	1845	1768	1537	1718	1968	1699	1911	
520	1338	1065	912	569	568	274	261	576	592	612	634	684	440	2197	2399	2328	2159	1889	1892	1808	1567	1743	1995	1745	1945	
510	1388	1108	949	593	579	280	262	602	602	626	626	626	430	2245	2452	2379	2207	1927	1935	1839	1593	1762	1974	1782	1973	
500	1438	1152	987	618	589	286	286	626	626	636	1287	1449	420	2287	2500	2424	2161	1974	1868	1615	1774	2026	1818	1993		
490	1488	1197	1025	643	598	290	290	598	657	709	754	863	410	2349	2510	2315	2008	2033	1903	1635	1763	1996	1872	2004		
480	1526	1241	1063	668	603	294	254	685	612	622	634	694	400	2349	2510	2315	2008	2033	1903	1635	1763	1996	1872	2004		
470	1563	1285	1100	693	607	297	277	714	714	766	816	867	390	2352	2592	2511	2039	2019	1940	1768	1505	1720	1943	1889		
460	1628	1329	1138	719	607	298	237	743	728	738	743	787	380	2360	2502	2517	2344	2026	1901	1619	1648	1558	1898	1952		
450	1671	1372	1174	744	602	297	227	773	155	1556	1724	1859	370	2361	2595	2507	2356	2057	1880	1589	1548	1745	1893			
440	1711	1414	1210	769	590	292	216	804	1299	1776	1892	1941	360	2359	2597	2507	2356	2057	1880	1580	1419	1859	1809			
430	1746	1454	1244	793	573	293	200	834	1343	1622	1825	1941	350	222	2512	2337	2169	1865	1923	1707	1387	1477	1265	1433		
420	1777	1491	1275	816	548	268	183	865	1386	1714	1873	1987	340	2220	2431	2337	2169	1865	1923	1707	1387	1477	1265	1433		
410	1802	1526	1305	829	519	250	164	895	1427	1763	1916	2029	330	2246	2522	2477	2069	1781	1808	1511	1220	1309	1558	1377		
400	1811	1557	1331	880	485	229	143	925	1466	1646	1954	2065	320	2203	2194	2091	1940	1680	1739	1505	1112	1664	1704	1352		
390	1831	1583	1355	879	448	207	123	934	1502	1670	1784	1994	310	1817	2043	1943	1792	1492	1375	1037	418	459	1193	875		
380	1828	1605	1371	896	403	182	99	982	1536	1891	2013	2116	300	1722	1873	1779	1639	1443	1492	1237	893	230	258	985		
370	1808	1621	1384	910	357	156	79.7	1000	1565	1925	2032	2129	290	1562	1691	1601	1475	1309	1355	1088	734	112	653	329		
360	1753	1627	1390	922	304	130	60.4	1054	1591	2042	2130	2130	280	1377	1504	1424	1214	945	563	427	41.9	394	134			
350	1694	1616	1386	926	246	104	35.5	1057	1610	1972	2039	2117	270	1242	1320	1249	1161	1033	1071	796	385	6.2	10.8	48.6		
340	1594	1586	1369	921	204	862	687	880	1489	1645	1954	2084	260	1659	1744	1629	1505	1122	1222	622	49.6	48.6	15.4			
330	1442	1524	1335	906	170	61.5	81.5	1017	1377	1535	1349	1317	190	4.83	483	471	439	305	107	257	87.6	4.2	48.6			
320	1300	1427	1287	879	147	46.6	9	106	1623	1971	1924	1949	180	170	382	384	374	342	300	217	73.6	31.2	6.2			
310	1100	1289	1218	843	130	24.7	111	1119	1504	1732	1845	1730	220	668	666	619	548	209	3.1							
300	867	1128	1123	800	111	130	60.4	1054	1591	2042	2130	2130	2130	210	600	599	581	553	488	424	165					
290	622	925	996	746	94.5	302	141	1077	1459	1647	1895	1954	2084	2084	295	304	292	264	205	252	266	234	178	141		
280	378	704	862	687	880	1489	1459	1077	1459	1647	1895	1954	2084	2084	194	538	538	523	493	358	335	305	107			
270	192	497	676	615	81.5	1017	1377	1535	1349	1317	1667	1895	1954	2084	2084	194	483	483	471	439	305	107	257	87.6		

TABLES OF IONOSPHERIC DATA

FEBRUARY 1959 - JUNE 1959

Table 1

Anchorage, Alaska (61.2°N, 149.9°W)								February 1959	
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00			(3.45)			3.2		(2.50)	
01			(3.7)			3.0		(2.40)	
02			(4.0)			3.3		(2.42)	
03			(3.8)			2.0		(2.45)	
04			(4.65)					(2.40)	
05			(4.8)					(2.30)	
06			(4.6)					(2.55)	
07			(4.7)					(2.65)	
08			6.0						
09			(6.05)			---	---	3.00	
10			7.9			115	2.30	3.00	
11			9.15			121	2.70	2.95	
12			10.25			121	2.05	3.00	
13			11.4			121	2.90	3.00	
14			11.4			121	2.62	2.95	
15			11.5			125	2.55	2.95	
16			11.45			127	2.40	3.00	
17			11.25			---	---	3.05	
18			9.2					3.02	
19			6.8					3.00	
20			(5.1)					2.88	
21			(4.3)					(2.95)	
22			(3.9)					(2.80)	
23			(3.5)					(2.75)	

Time: 150.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 3

White Sands, New Mexico (32.3°N, 106.5°W)								February 1959	
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00			5.2		290			2.65	
01			5.3		<300			2.60	
02			5.0		290			2.70	
03			5.1		270			2.78	
04			4.7		(280)			2.60	
05			4.5		<300			2.55	
06			4.6		<300			2.62	
07			7.0		260	(145)	2.00	2.90	
08			10.5		240	113	2.80	3.12	
09			12.5		235	111	3.28	3.02	
10			13.4		230	109	3.60	3.7	3.00
11			---		220	(111)	3.80	2.85	
12			13.8		225	(111)	3.80	2.80	
13			14.0		225	113	3.90	3.9	2.75
14			13.5		225	115	3.80	2.70	
15			13.2		235	115	3.50	2.70	
16			12.8		240	115	3.12	2.75	
17			12.5		240	119	2.50	2.80	
18			11.45		230			2.85	
19			10.0		225			2.85	
20			8.6		235			2.90	
21			7.0		230			2.90	
22			6.3		250			2.80	
23			5.45		270			2.75	

Time: 105.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 5

Baguio, P.I. (16.4°N, 120.6°E)								February 1959	
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00			>10.2		250			(2.75)	
01			10.55		250			(2.90)	
02			>10.0		240			(2.95)	
03			8.25		235			2.90	
04			6.2		260			2.80	
05			6.0		270			2.85	
06			6.0		295			2.72	
07			(9.6)		290	---	---	(2.85)	
08			(12.5)		260	121	3.18	(2.05)	
09			(14.5)		250	119	(3.65)	(2.70)	
10			(14.7)		235	119	(4.00)	(2.58)	
11			(14.55)		230	119	(4.10)	(2.40)	
12			(14.0)		(230)	119	(4.10)	(2.20)	
13			>13.0		(240)	110	(4.05)	(2.15)	
14			(12.95)		<245	119	(3.90)	(2.20)	
15			(13.0)		<250	119	----	4.2	
16			>11.0		255	119	(3.30)	4.0	
17			>10.0		270	(125)	----	3.2	
18			>10.0		310		2.2	----	
19			>10.0		400			(2.15)	
20			>10.0		390			----	
21			>10.75		290			----	
22			>10.0		250			----	
23			>10.0		250			(2.62)	

Time: 120.0°E.

Sweep: 1.0 Mc to 25.0 Mc in 27 seconds.

Table 2

Adak, Alaska (51.9°N, 176.6°W)								February 1959	
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00			3.4		<325				2.45
01			3.3		<335				2.45
02			3.2		(340)				2.32
03			3.25		340				2.38
04			3.3		350				2.35
05			3.25		<350				2.35
06			3.45		325				2.45
07			5.0		250	(122)	1.70		2.85
08			8.3		230	111	2.35		3.20
09			10.35		230	111	2.80		3.15
10			12.25		220	---	3.05		3.10
11			13.35		220	---	3.20		3.05
12			13.2		220	---	3.25		3.05
13			12.6		225	111	3.20		3.00
14			12.6		230	111	3.00		3.00
15			12.5		225	115	2.70		3.05
16			11.5		220	121	2.30		3.05
17			10.5		220	<141	1.82		3.05
18			9.1		220				3.05
19			6.7		210				3.08
20			4.65		220				3.02
21			4.2		240				2.90
22			3.95		270				2.70
23			3.7		295				2.60

Time: 180.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 4

Maui, Hawaii (20.0°N, 156.5°W)								February 1959	
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00			8.0		230				3.02
01			6.0		235				3.05
02			5.2		240				2.90
03			4.3		240				2.95
04			4.2		<240				2.80
05			3.6		<300				2.40
06			3.2		(330)				2.45
07			5.05		290	(153)	1.90		2.82
08			10.2		245	113	2.75		3.10
09			12.8		235	109	3.30		3.00
10			14.3		230	107	3.70		3.00
11			14.7		220	107	3.85		2.85
12			15.55		215	107	4.00		2.80
13			360		215	---	4.00		2.75
14			360		190	107	3.90		2.70
15			340		16.8	225	107	3.70	2.70
16			(340)		16.3	230	109	3.45	2.70
17			15.55		240	(113)	2.90	3.2	2.75
18			14.9		240	<135	2.15	2.6	2.90
19			13.3		230			2.6	2.95
20			13.0		230			2.4	3.00
21			12.3		<250			1.9	3.00
22			12.2		240			1.9	3.05
23			9.2		230			9.2	3.15

Time: 150.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 6

Thule, Greenland (76.6°N, 68.7°W)								January 1959	
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00			(5.0)		260				----
01			(5.5)		265				(2.80)
02			(5.2)		260				(2.90)
03			(5.3)		260				(2.68)
04			(4.9)		260				----
05			(6.0)		250</td				

Table 7

Fairbanks, Alaska (64.9°N, 147.8°W)								January 1959
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00			(4.5)			4.0		(2.65)
01			(4.4)			4.0		(2.60)
02			(4.9)			5.0		(2.55)
03			(5.15)			4.0		(2.65)
04			(4.85)			4.4		(2.60)
05			(5.0)			3.7		(2.60)
06			(4.8)			3.0		(2.55)
07			(4.5)			2.4		(2.65)
08			(4.65)					(2.78)
09			(6.55)					(2.95)
10			8.25					3.00
11			10.0					3.00
12			11.5		121	2.40		2.98
13			11.8		(129)	2.30		2.98
14			11.9					2.95
15			11.95					2.95
16			11.2					2.90
17			9.8					3.00
18			(7.3)					(2.95)
19			(5.6)					(2.90)
20			(4.65)					(2.98)
21			(3.9)					(2.92)
22			(3.8)					(2.90)
23			(3.9)					(2.85)

Time: 150.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 9

Adak, Alaska (51.9°N, 176.6°W)								January 1959
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00			2.9		<315			2.60
01			3.0		<340			2.55
02			2.95		<340			2.55
03			2.9		(315)			2.55
04			2.85		<315			2.50
05			2.85		<300			2.55
06			2.6		(305)			2.50
07			>4.05		250			2.50
08			8.0		230			3.10
09			10.9		220			3.25
10			12.95		225			3.15
11			13.55		225			3.10
12			13.2		225			3.02
13			13.0		230			2.95
14			12.0		230			3.00
15			12.0		220			3.00
16			11.2		220			3.05
17			9.55		210			3.10
18			7.2		220			3.10
19			5.3		220			3.10
20			3.8		230			3.05
21			3.2		(270)			2.90
22			3.0		<280			2.80
23			3.05		<300			2.70

Time: 180.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 11

White Sands, New Mexico (32.3°N, 106.5°W)								January 1959
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00			4.3		270			2.85
01			3.9		<275			2.82
02			3.9		<260			2.80
03			3.7		(285)			2.72
04			3.5		<300			2.65
05			3.55		(305)			2.50
06			3.5		<300			2.60
07			6.0		265			2.95
08			9.5		240			3.15
09			11.2		235			3.10
10			12.1		230			2.95
11			13.3		235			2.85
12			13.0		235			2.75
13			12.6		230			2.70
14			12.2		230			2.60
15			12.1		240			2.65
16			11.6		245			2.70
17			11.0		240			2.75
18			10.2		235			2.80
19			8.7		235			2.85
20			7.4		240			2.90
21			6.4		<250			2.90
22			5.4		250			2.95
23			4.7		275			2.90

Time: 105.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 8

Anchorage, Alaska (61.2°N, 149.9°W)								January 1959
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00			(3.0)					(2.75)
01			(3.2)					(2.50)
02			(3.1)					(2.50)
03			(2.9)					(2.55)
04			(2.85)					(2.55)
05			(2.9)					(2.55)
06			(2.7)					(2.55)
07			(3.05)					(2.60)
08			(4.8)					(2.80)
09			7.0					3.05
10			8.9					3.10
11			10.8					3.05
12			12.35					3.05
13			13.0					3.05
14			12.6					3.00
15			12.5					3.00
16			12.0					3.00
17			10.7					3.00
18			8.4					3.05
19			6.1					3.00
20			4.85					3.02
21			(3.8)					3.00
22			(3.3)					2.85
23			(3.2)					(2.80)

Time: 150.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 10

San Francisco, California (37.4°N, 122.2°W)								January 1959
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00			3.8		<270			2.80
01			3.3		<285			2.80
02			3.3		<285			2.80
03			3.2		<285			2.65
04			3.0		<300			2.60
05			3.0		<315			2.60
06			2.9		<305			2.70
07			4.8		265			2.70
08			8.4		230			3.20
09			11.0		230			3.10
10			12.6		230			3.00
11			13.4		230			3.00
12			13.0		225			2.85
13			12.8		225			2.75
14			>12.4		230			2.70
15			12.0		235			2.75
16			11.75		230			2.78
17			10.9		230			2.82
18			10.2		225			2.85
19			8.7		<225			2.95
20			7.1		<225			3.00
21			5.5		<235			3.00
22			4.6		(255)			2.90
23			4.1		(260)			2.85

Time: 120.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 12

Okinawa I. (26.3°N, 127.0°E)								January 1959
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00			9.8		230			2.95
01			9.4		230			2.90
02			7.5		235			2.95
03			6.4		225			2.85
04			5.1		220			2.80
05			4.5		235			2.55
06			4.5		310			2.60
07			6.2		275			2.05
08			11.3		240			3.15
09			13.4		235			3.15
10			13.6		230			3.00
11			14.1		220			3.00
12			14.8		220			2.65
13			360		16.0			2.60
14			365		16.5			2.55
15			(355)		16.3			2.55
16			(320)		16.3			2.60
17			16.0		245			2.75
18			15.6		240			2.75
19			15.1		240			2.80
20			15.5		240			2.85
21			15.5		220			2.85
22			13.1		220			2.88
23			11.25		225			2.92

Time: 135.0°E.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 13

Time	January 1959						
	h'F2	foF2	h'F	foF1	h'E	foE	foEs (M3000)F2
00	8.6	230				1.9	3.10
01	0.5	240					3.15
02	6.5	225					3.20
03	4.6	215					3.05
04	3.9	<230					2.85
05	3.4	<260					2.70
06	2.9	<300				1.9	2.60
07	5.7	300	(151)	1.70	1.8	2.75	
08	11.0	250	113	2.00	3.2	3.15	
09	---	235	109	3.35	3.9	3.15	
10	13.5	<230	108	3.65	3.9	2.95	
11	(360)	14.0	220	---	107	3.90	4.0
12	365	15.2	215	(6.0)	109	4.00	4.0
13	(360)	15.9	230	(7.6)	107	4.05	4.3
14	365	15.9	230	---	107	3.85	4.0
15	360	15.5	230	---	109	3.45	3.8
16	340	15.0	235	---	109	3.45	3.8
17		14.0	250		111	2.80	3.6
18		12.9	240		---	4.0	2.90
19		11.7	230			4.0	2.90
20		11.5	245			3.7	3.00
21		11.4	230			3.6	3.10
22		10.1	220			2.2	3.00
23		9.3	230			1.9	3.00

Time: 150.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 15

Time	January 1959						
	h'F2	foF2	h'F	foF1	h'E	foE	foEs (M3000)F2
00	(8.5)	325				3.5	(2.55)
01	(8.45)	285				3.4	(2.75)
02	8.6	260				3.5	2.05
03	8.0	240				4.0	3.00
04	6.6	225				4.0	3.15
05	5.05	230				4.0	3.20
06	7.6	275	<137	1.90	4.3	2.95	
07	10.8	240	109	2.95	5.8	2.85	
08	12.55	230	109	(3.58)	7.4	2.65	
09	13.7	220	107	(4.00)	9.0	2.50	
10	13.8	210	---	(4.25)	9.0	2.25	
11	13.0	<210	---	(4.40)	9.0	2.15	
12	12.4	200	---	---	(4.50)	9.0	2.15
13	11.7	200	6.6	---	(4.35)	9.0	2.10
14	(510)	12.0	200	6.2	105	(4.25)	8.9
15	(505)	12.3	200	6.0	107	(4.00)	8.2
16	---	12.5	220		107	(3.70)	8.0
17	---	12.3	250		(109)	(3.20)	7.2
18		11.8	275		(115)	2.40	5.8
19		11.35	335				2.12
20		10.1	(410)				2.00
21		9.6	(415)				(2.05)
22		(9.75)	(375)				(2.15)
23		(8.8)	360				3.0

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 17

Time	December 1958						
	h'F2	foF2	h'F	foF1	h'E	foE	foEs (M3000)F2
00	435	7.15	275	(4.2)	107	2.50	2.9
01	445	7.0	280	4.1	109	2.60	3.0
02	445	>7.0	270	4.2	105	2.70	3.0
03	480	6.9	270	4.2	105	2.80	3.0
04	470	6.6	260	4.3	105	2.90	3.0
05	500	6.7	250	4.4	101	3.00	2.25
06	520	6.4	240	4.6	101	3.18	2.25
07	510	6.2	240	4.6	99	3.30	2.30
08	520	6.3	235	4.8	99	3.38	2.30
09	560	6.0	240	5.0	99	3.40	2.25
10	560	6.1	230	5.0	99	3.50	2.25
11	590	6.3	230	5.1	99	3.50	2.30
12	555	6.3	230	5.2	100	3.50	2.35
13	540	6.5	235	5.2	101	3.45	2.40
14	500	6.5	235	5.2	101	3.40	2.45
15	500	6.65	235	5.0	101	3.40	2.48
16	470	6.8	235	5.0	101	3.30	2.50
17	430	7.0	245	4.8	103	3.20	2.55
18	430	7.2	245	4.8	103	3.00	2.55
19	455	7.3	250	4.5	105	2.95	2.50
20	435	7.2	<260	4.3	105	2.82	2.55
21	(415)	7.2	260	---	109	2.70	2.50
22	(450)	7.4	265	---	109	2.60	2.50
23	450	7.4	<280	(4.1)	107	(2.40)	3.0

Time: 45.0°W.

Sweep: 1.4 Mc to 25.0 Mc in 13.5 seconds.

Table 14

Time	January 1959						
	h'F2	foF2	h'F	foF1	h'E	foE	foEs (M3000)F2
00			>10.5		265		(2.90)
01			(9.75)		250		(3.00)
02			8.4		250		2.90
03			6.8		270		2.78
04			6.0		290		2.80
05			5.95		290		2.80
06			5.7		290		2.75
07			(9.9)		290	<141	2.40
08			13.3		265	<120	(2.82)
09			>15.0		250	(3.18)	(2.90)
10			(14.3)		245	119	(2.85)
11			14.0		235	119	(2.50)
12			---	(240)	---	117	(4.02)
13			>12.0	(245)	---	117	(2.15)
14			>12.0		250	119	(2.00)
15			(12.1)		255	119	(2.10)
16			>11.5		265	119	(2.28)
17			>11.5		265	<123	2.60
18			>11.65		310		3.2
19			>11.2		380		(2.35)
20			>11.5		340		(2.55)
21			>11.0		275		(2.60)
22			>11.0		250		(2.70)
23			>10.5		250		(2.80)

Time: 120.0°E.

Sweep: 1.0 Mc to 25.0 Mc in 27 seconds.

Table 16

Time	December 1958						
	Narsarssuak, Greenland (61.2°N, 45.4°W)	foF2	h'F	foF1	h'E	foE	foEs (M3000)F2
00		(5.6)			125	2.50	3.4
01		(5.8)			120	2.72	3.1
02		(5.75)			115	2.70	2.7
03		(6.15)			113	3.00	2.58
04		(5.0)			111	2.80	3.3
05		5.4			115	3.00	2.72
06		(5.1)			118	2.15	(2.00)
07		(4.8)			---	---	2.75
08		5.1			118	2.45	2.80
09		7.6			115	2.00	2.95
10		10.3			125	2.25	3.00
11		12.15			129	2.32	3.00
12		13.2			125	2.40	3.00
13		12.75			127	2.35	3.00
14		10.6			131	2.20	3.02
15		(8.3)			120	1.80	(3.00)
16		(7.3)			115	2.80	(2.80)
17		(5.8)			116	2.30	2.82
18		(6.0)			122	2.50	(2.80)
19		(5.5)			115	2.80	2.9
20		(5.45)			117	2.55	3.4
21		(6.0)			115	2.50	2.6
22		(5.95)			124	2.30	5.6
23		(5.75)			122	2.30	(2.50)

Time: 45.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 18

Time	November 1958							
	Narsarssuak, Greenland (61.2°N, 45.4°W)	h'F2	foF2	h'F	foF1	h'E	foE	foEs (M3000)F2
00		(6.2)			125	2.25	3.4	(2.50)
01		(5.8)			123	(2.40)	2.8	(2.60)
02		(6.0)			121	2.65	2.7	(2.60)
03		(6.0)			115	2.75		
04		(6.4)			110	2.80	3.1	(2.70)
05		(6.4)			121	2.35	3.5	2.68
06		(5.5)			---	---	2.9	(2.70)
07		5.8			122	2.10	2.80	
08		7.2			122	2.20	3.00	
09		10.0			123	2.42	3.00	
10		11.9			125	2.45	2.95	
11		13.2			123	2.60	2.95	
12		14.0			123	2.50	3.00	
13		14.0			123	2.50	3.00	
14		13.8			125	2.40	3.00	
15		12.9			131	2.18	3.00	
16		10.2			123	2.10	2.95	
17		8.65			127	2.22	2.85	
18		(6.4)			123	2.32	(2.80)	
19		(6.45)			124	(2.50)	2.5	(2.70)
20		5.9			123	2.40	2.6	
21		(6.1)			123	2.40	2.6	
22		(6.2)			131	(

Table 19

La Paz, Bolivia (16.5°S, 68.0°W)								November 1958	
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00			(9.1)	390				(2.55)	
01			(6.6)	350				(2.60)	
02			(8.0)	320				(2.65)	
03			(8.8)	275				(2.75)	
04			8.45	230				3.00	
05			7.3	220				3.15	
06			8.4	255	<135	1.90		2.95	
07			11.5	240	108	2.65		2.88	
08			12.8	230	106	3.45	5.0	2.75	
09			14.0	220	105	3.85	5.2	2.60	
10			14.5	215	105	4.15	7.5	2.40	
11			14.65	210	---	---	7.6	2.25	
12			14.4	210	---	4.35	7.6	2.18	
13			14.1	205	---	---	7.1	2.10	
14			14.1	200	104	4.32	7.8	2.10	
15			14.0	210	105	4.05	7.5	2.10	
16			14.0	220	104	(3.70)	7.9	2.10	
17			12.85	240	---	(3.15)	7.0	2.00	
18			(12.0)	270	111	2.50	5.0	(2.05)	
19			9.8	320				2.05	
20			9.4	435				1.95	
21			(8.7)	465				(1.95)	
22			(9.0)	430				(2.10)	
23			(10.0)	400				(2.30)	

Time: 60.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 21

Resolute Bay, Canada (74.7°N, 94.9°W)								September 1958	
Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2	
00			7.0	270	---	---		(2.5)	
01			6.8	270	---	---	3.2	---	
02			6.4	260	---	---	3.2	(2.6)	
03			6.0	260	---	1.5	1.6	(2.6)	
04			6.1	260	---	1.6	3.2	(2.6)	
05			6.3	270	---	1.9		(2.65)	
06			7.0	260	115	2.0		2.7	
07			7.0	250	110	2.4		2.7	
08			(420)	7.2	250	4.0	110	2.6	
09			470	7.0	240	4.1	100	2.8	
10			460	7.2	240	4.4	100	3.0	
11			450	7.0	240	4.9	100	3.0	
12			440	7.0	230	4.5	100	3.0	
13			420	7.0	240	4.6	100	3.0	
14			450	6.7	240	4.4	100	3.0	
15			460	6.9	250	4.3	105	2.9	
16			410	7.2	250	4.2	110	2.0	
17			(500)	7.1	260	4.0	120	2.6	
18			6.9	270	---	120	2.2	2.55	
19			7.0	270	120	2.0		2.5	
20			7.0	200	---	1.8		2.5	
21			6.3	270	---	1.6		2.6	
22			6.4	270	---	1.2		2.5	
23			6.6	270	---	1.1		---	

Time: 90.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 23

Slough, England (51.5°N, 0.6°W)								September 1958	
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00			6.6	295				1.4	2.45
01			6.5	290				<1.4	2.40
02			6.4	300				<1.4	2.40
03			5.9	295				<1.4	2.40
04			5.7	<290				<1.4	2.45
05			5.4	260	---	---	<1.40	1.6	2.65
06			6.7	250	125	2.05	2.2	2.90	
07			7.6	240	110	2.70	2.8	2.95	
08			8.4	235	105	3.10	3.2	2.90	
09			9.2	225	105	>3.40	3.6	2.80	
10			435	9.8	220	---	3.65	3.8	2.70
11			420	10.3	210	5.6	100	3.80	2.65
12			440	10.6	220	6.0	100	3.85	2.60
13			---	10.6	230	---	100	3.70	2.60
14			385	10.6	230	6.1	100	3.70	2.65
15			---	10.5	240	---	105	3.45	2.65
16			---	10.7	240	---	105	3.20	2.65
17			10.4	250	110	2.70	3.0	2.75	
18			10.5	250	---	>2.15	2.6	2.80	
19			9.7	245		(1.65)	2.4	2.75	
20			8.3	245			2.8	2.70	
21			0.0	<250			2.6	2.55	
22			7.4	<260			2.4	2.50	
23			6.9	<270			2.1	2.45	

Time: 0.0°.

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

Table 20

Ellsworth (77.7°S, 41.1°W)								October 1958	
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00			(6.65)	340				145	1.60
01			(7.35)	350				135	1.85
02			(7.1)	350				129	1.70
03			(430)	(7.0)	330	---		121	1.90
04			405	(8.35)	300	(3.6)		111	2.15
05			490	(7.75)	270	(4.0)		111	2.50
06			450	8.0	250	4.4		109	2.60
07			(415)	7.2	245	(4.5)		109	2.70
08			(440)	7.15	245	4.5		105	2.95
09			(430)	7.5	240	5.0		105	3.00
10			(560)	7.95	235	4.8		105	2.55
11			---	8.3	235	---		105	3.10
12			(435)	8.4	230	---		101	3.20
13			---	9.4	235	---		105	3.00
14			---	9.35	235	---		105	2.80
15			---	9.5	235	---		105	2.85
16			---	9.85	235	---		105	2.85
17			---	10.0	240	---		109	2.60
18			---	9.95	245	---		113	2.35
19			---	10.1	250	---		121	2.05
20			---	10.1	265	---		136	2.00
21			---	9.7	270	---		145	1.90
22			---	9.25	290	---		170	2.55
23			---	(8.0)	330	---		E	(2.40)

Time: 45.0°W.

Sweep: 1.4 Mc to 25.0 Mc in 13.5 seconds.

Table 22

Baker Lake, Canada (64.3°N, 96.0°W)								September 1958	
Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2	
00			6.4	280				6.0	
01			6.3	280				5.6	---
02			6.4	270				5.3	
03			6.3	280				5.0	
04			5.4	280				4.5	
05			5.1	300				4.3	---
06			5.3	290	---	120	2.0	3.0	
07			5.9	270	3.8	120	2.4	---	
08			(450)	6.0	250	4.5	115	2.8	
09			(470)	6.2	250	4.4	110	3.2	(2.7)
10			460	6.5	240	4.8	110	3.3	(2.6)
11			460	7.0	240	5.0	110	3.5	(2.5)
12			430	7.4	240	5.0	110	3.5	2.6
13			440	7.7	240	5.0	110	3.5	2.5
14			420	8.2	240	5.1	115	3.3	(2.6)
15			440	8.2	250	5.0	110	3.3	---
16			(480)	8.0	250	4.7	120	3.0	---
17			(540)	8.0	270	4.2	120	2.8	---
18			---	7.7	270	---	120	2.3	---
19			---	7.0	290	---	130	2.0	3.4
20			---	6.8	290	---	135	1.8	6.4
21			---	6.4	270	---	130	1.5	6.0
22			---	6.3	280	---	122	1.5	6.0
23			---	6.4	290	---	120	1.5	6.0

Time: 90.0°W.

Sweep: 1.0 Mc to 16.0 Mc in 16 seconds.

Table 24

Winnipeg, Canada (49.9°N, 97.4°W)								September 1958	
Time	h'F2	foF2	h'F	foF1	h'E	foE</th			

Table 25

Schwarzenburg, Switzerland (46.8°N, 7.3°E)								September 1958	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2	
00	280	7.3					2.9		
01	300	7.1					2.9		
02	300	6.8					2.9		
03	300	6.6					3.0		
04	290	6.3					3.0		
05	260	6.1					3.0		
06	250	6.2					3.2		
07	220	7.6					3.4		
08	230	8.9	210	5.0	100	2.4	3.4	3.35	
09	240	9.4	210	5.5	100	3.3	4.2	3.3	
10	250	10.8	210	6.0	100	3.5	4.4	3.2	
11	290	10.8	210	6.6	100	3.7	5.0	3.1	
12	300	11.2	210	6.8	100	3.8	5.2	3.0	
13	340	11.0	210	6.8	100	3.7	4.6	3.0	
14	340	10.8	210	6.8	100	3.6	4.6	3.0	
15	320	10.4	210	6.5	100	3.5	4.4	3.0	
16	300	9.5	220	6.0	100	3.5		3.0	
17	240	9.2	230	5.2	100	3.0	3.6	3.0	
18	240	9.1				2.5	3.2	(3.1)	
19	250	8.9				2.8		(3.2)	
20	240	9.0				3.6		3.1	
21	240	8.4						3.1	
22	260	8.0						3.0	
23	290	7.7						2.9	

Time: 15.0°E.

Sweep: 1.0 Mc to 25.0 Mc in 30 seconds.

Table 27

Tortosa, Spain (40.8°N, 0.5°E)								September 1958	
Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2	
00		8.4	290			2.3	2.38		
01		8.2	300			2.2	(2.45)		
02		8.1	290			2.0	2.58		
03		7.6	285			2.1	2.53		
04		7.0	(280)			1.9	2.55		
05		6.6	255			2.0	2.62		
06		R.2	240		130	2.00	2.6	2.88	
07		9.8	240		105	2.00	3.2	3.05	
08		10.5	230		100	3.25	3.7	2.94	
09		11.3	(225)		100	3.60	4.1	2.84	
10		(355)	11.4	<225	6.7	100	3.80	4.2	2.74
11		360	11.7	230	7.3	100	3.90	4.4	2.61
12		365	11.8	<220	7.5	100	3.90	4.2	2.60
13		370	11.8	230	7.4	100	3.90	4.1	2.60
14		360	11.7	230	7.0	100	3.85	3.9	2.62
15		(360)	11.8	240	6.5	100	3.60	3.8	(2.58)
16		---	11.5	<250		105	3.20	3.7	(2.64)
17		---	11.0	250		<115	2.50	3.1	----
18		>10.0	255				2.8	----	
19		9.7	250				2.4	(2.82)	
20		9.1	260				2.6	(2.74)	
21		B.B	(280)				2.6	----	
22		B.6	285				2.3	(2.44)	
23		8.5	285				2.4	(2.33)	

Time: Local.

Table 29

Elizabethtown, Belgian Congo (11.6°S, 27.5°E)								September 1958	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2	
00	240	7.4					2.54		
01	260	6.7					2.56		
02	260	6.4				1.6	2.70		
03	245	5.7				1.7	2.84		
04	260	6.4				1.5	2.80		
05	250	10.3	250		120	2.7		2.93	
06	260	11.5	240		115	3.4		2.80	
07	265	12.2	230		110	3.9		2.61	
08	310	12.4	230		110	4.0		2.52	
09	345	12.4	250		110	4.2		2.36	
10	390	12.3	245		110	4.2		2.29	
11	410	12.7	250	6.6	110	4.0	4.8	2.23	
12	420	12.6	250	6.2	110	4.0		2.21	
13	405	12.8	250	6.2	110	3.8	4.0	2.20	
14	390	13.0	250		115	3.5	3.7	2.22	
15	350	13.0	260		120	3.0	3.5	2.26	
16	300	13.2	290			2.7		2.37	
17	295	13.2				3.0		(2.49)	
18	275	(13.6)				2.6		<2.57	
19	250	>14.1				2.0		(2.58)	
20	235	13.8				2.0		<2.64	
21	230	12.0						2.62	
22	225	11.8						2.69	
23	220	9.1						2.64	

Time: 0.0°.

Sweep: 1.0 Mc to 20.0 Mc in 7 seconds.

Table 26

Ottawa, Canada (45.4°N, 75.9°W)								September 1958	
Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2	
00			6.8		300				---
01			6.3		300				---
02			5.8		300				---
03			5.6		300				---
04			5.2		300				---
05			5.0		300				---
06			6.0		270			110	2.0
07			7.6		240			110	2.8
08			9.0		230			110	3.3
			(480)		9.0			110	(2.85)
09					230			5.2	110
10					500			5.6	110
11					410			5.8	110
12					530			5.9	110
13					450			6.4	110
14					(500)			6.0	110
15					10.2			3.8	
16					(460)			5.6	110
17					10.2			3.3	
18					10.2			2.0	
19					250				---
20					260				---
21					8.2				---
22					7.4				---
23					7.0				---

Time: 75.0°W.

Sweep: 1.0 Mc to 20.0 Mc in 16 seconds.

Table 28

Bunia, Belgian Congo (1.5°N, 30.2°E)								September 1958	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2	
00		250	10.8						2.63
01		240	(10,6)						(2.71)
02		230	10.2						2.81
03		230	B.B						3.04
04		260	8.1						2.05
05		270	11.0		250				2.83
06		(265)	13.0		245				2.61
07		13.8	235			115			2.41
08		(450)	14.5		230				2.13
09		(475)	>14.5		230				2.04
10		500	15.0		250				1.94
11		(480)	>14.5		245				<1.99
12		520	>14.0		245				1.94
13		520	14.2		250				1.93
14		530	>14.3		255				1.97
15		520	14.2		270				1.94
16		---	(13.7)		320				1.90
17		430							1.90
18		370							1.90
19		290							1.90
20		260							1.6
21		240							1.9
22		240							1.6
23		260	(11.4)						(2.52)

Time: 0.0°.

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

Table 30

Christchurch, New Zealand (43.6°S, 172.8°E)								September 1958	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2	
00		7.6	300						1.7
01		(7.3)	290						2.65
02		7.0	270						2.60
03		6.7	270						1.6
04		6.2	270						2.60
05		5.8	280						1.2
06		5.8	290						2.65
07									

Table 31

Cape Hallett (72.3°S, 170.3°E)								September 1958	
Time	h°F2	foF2	h°F	foF1	h°E	foE	foEs	(M3000)F2	
00	(6.0)	290	---	---	1.1		(2.40)		
01	(5.1)	300	---	---	1.2		(2.50)		
02	(4.5)	310	227	1.4			(2.45)		
03	(4.6)	315	161	1.5			(2.50)		
04	(5.1)	350	155	(1.6)	1.7		(2.45)		
05	(5.4)	310	129	(1.6)	<1.8		(2.55)		
06	(6.1)	270	117	(1.8)			(2.85)		
07	(7.6)	275	112	2.2			(2.75)		
08	(9.2)	250	111	2.5			2.80		
09	(10.0)	250	113	2.8			(2.70)		
10	9.4	255	111	2.9			2.85		
11	(9.6)	240	111	2.9			(2.85)		
12	9.6	240	111	2.9			2.80		
13	(400)	10.2	250	---	1.1		2.80		
14	10.4	250	111	2.7			2.70		
15	10.3	255	111	2.6	3.3		2.70		
16	10.4	260	112	2.3	<2.5		2.65		
17	10.8	260	116	1.9			2.65		
18	(10.3)	255	157	1.4			(2.60)		
19	(10.3)	260	E				(2.60)		
20	(9.1)	270	E				(2.50)		
21	(9.8)	260	E				(2.60)		
22	(7.2)	265	E				(2.50)		
23	(6.1)	200	---	1.1			(2.40)		

Time: 165.0°E.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 33

Tromso, Norway (69.7°N, 19.0°E)								August 1958	
Time	h°F2	foF2	h°F	foF1	h°E	foE	foEs	(M3000)F2	
00	5.7	(300)	---	---	4.3		(2.35)		
01	(5.3)	(350)	---	---	4.2		(2.40)		
02	5.4	(350)	---	---	4.0		(2.40)		
03	5.4	(320)	---	---	4.0		2.40		
04	5.9	(290)	---	---	2.30	4.0	2.50		
05	5.9	260	---	110	2.70		2.55		
06	6.2	250	---	100	2.90		2.55		
07	(500)	6.5	245	4.70	100	3.10	2.50		
08	(445)	7.0	245	4.90	100	3.30	2.55		
09	490	7.3	240	5.20	105	3.35	2.50		
10	(460)	7.3	240	5.25	100	3.50	2.50		
11	(490)	7.4	230	5.20	100	3.60	2.50		
12	(480)	7.4	225	5.45	100	3.50	2.40		
13	(450)	7.3	230	5.35	100	3.60	2.55		
14	(460)	7.2	235	5.25	105	3.55	2.55		
15	7.2	245	---	105	3.40		2.55		
16	7.0	250	---	105	3.20		2.55		
17	7.0	250	---	105	3.10		2.70		
18	6.8	255	---	105	3.2		2.70		
19	6.8	280	---	105	2.60	3.1	2.70		
20	(295)	6.6	310	105	---	3.1	2.60		
21	---	(6.1)	330	---	---	3.0	(2.50)		
22	---	(5.9)	350	---	---	4.3	(2.45)		
23	5.4	(350)	---	---	4.0		2.40		

Time: 15.0°E.

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

Table 35

Sodankyla, Finland (67.4°N, 26.6°E)								August 1958	
Time	h°F2	foF2	h°F	foF1	h°E	foE	foEs	(M3000)F2	
00	5.6	375	---	---	4.4		2.50		
01	5.6	370	---	---	4.0		2.45		
02	5.6	370	---	---	4.0		2.40		
03	5.5	370	---	---	4.0		2.40		
04	5.6	325	---	---	4.4		2.45		
05	5.7	290	130	2.20	4.4		2.50		
06	6.1	250	100	2.65	4.5		2.50		
07	6.3	250	---	105	2.95	5.0	2.55		
08	6.8	240	---	110	3.15	5.3	2.55		
09	7.1	230	---	110	3.30	5.2	2.50		
10	7.4	225	---	105	3.45	5.4	2.55		
11	7.6	220	---	105	3.55	5.3	2.60		
12	7.5	220	---	100	3.60	5.4	2.60		
13	7.4	220	---	105	3.60	5.4	2.60		
14	7.4	220	---	110	3.60	5.6	2.60		
15	7.4	225	---	110	3.45	5.4	2.60		
16	7.2	240	---	110	3.30	5.4	2.60		
17	7.2	240	---	110	3.10	5.2	2.70		
18	7.3	250	---	110	2.80	4.6	2.75		
19	7.1	260	120	2.45	4.2		2.80		
20	7.0	260	130	2.10	3.9		2.80		
21	6.8	285	---	---	3.8		2.70		
22	6.3	305	---	---	3.6		2.60		
23	5.9	330	---	---	3.5		2.55		

Time: 30.0°E.

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

Table 32

Resolute Bay, Canada (74.7°N, 94.9°W)								August 1958	
Time	h°F2	foF2	h°F	foF1	h°E	foE	foEs	(M3000)F2	
00			6.2	280		110	1.8	2.6	
01			6.0	280		115	1.8	(2.6)	
02			6.0	280		130	1.9	(2.65)	
03			6.0	270		110	2.1	2.7	
04			6.0	270		110	2.3	2.7	
05			6.0	260		110	2.5	2.7	
06			400	250	4.1	110	2.8	2.5	
07			460	240	4.4	100	2.9	2.55	
08			470	230	4.5	100	3.0	2.5	
09			450	230	4.8	100	3.1	2.5	
10			490	230	4.7	100	3.3	2.5	
11			500	220	4.9	100	3.4	2.5	
12			500	220	4.8	100	3.4	(2.4)	
13			500	210	4.9	100	3.4	2.4	
14			510	210	4.8	100	3.4	2.4	
15			510	230	4.8	100	3.2	2.4	
16			480	230	4.6	100	3.1	2.5	
17			480	230	4.5	100	3.0	(2.5)	
18			420	220	4.8	100	3.4	2.5	
19			420	210	4.5	100	3.4	2.5	
20			420	200	4.3	110	2.7	2.5	
21			6.0	280		110	2.5	2.5	
22			6.2	280		120	2.0	2.6	
23			6.1	280		130	1.9	2.6	

Time: 90.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 34

Kiruna, Sweden (67.0°N, 20.3°E)								August 1958	
Time	h°F2	foF2	h°F	foF1	h°E	foE	foEs	(M3000)F2	
00			5.6	365				4.0	2.4
01			5.6	370				4.5	2.4
02			5.5	390				3.6	2.4
03			5.2	340				4.0	2.4
04			5.8	285				2.0	3.4
05			(475)	6.0	260	4.0	110	2.2	2.5
06			(475)	6.3	250	4.3	105	2.6	2.5
07			415	6.4	245	4.7	105	3.0	2.6
08			460	7.0	240	5.3	105	3.2	2.5
09			425	7.3	230	5.3	105	3.2	2.5
10			475	7.2	230	5.3	105	3.2	2.5
11			465	7.2	230	5.5	105	3.2	2.5
12			455	7.2	225	5.5	105	3.2	2.5
13			455	7.2	225	5.5	105	3.2	2.5
14			440	7.2	230	5.4	105	3.1	2.6
09			450	7.4	240	5.3	110	(3.4)	2.5
10			450	7.7	235	5.5	110	(3.3)	2.5
11			440	7.6	230	5.5	110	---	2.5
12			455	7.7	235	5.6	110	3.6	2.5
13			435	7.6	230	5.5	110	3.7	2.55
14			440	7.5	240	5.5	110	3.5	2.6
15			7.4	230	5.3	120	3.3	2.6	2.6
16			7.4	250	---	120	3.2	2.6	2.6
17			7.4	250	---	120	2.8	3.1	2.7
18			7.4	260	---	130	2.6	2.8	2.7
19			7.2	270	---	130	2.2	2.5	2.6
20			6.9	290	---	130	1.9	2.6	2.6
21			6.4	290	---	---	1.7	2.5	2.5
22			>6.0	315	---	---	---	<1.8	<2.45
23			(5.9)	325	---	---	---	<2.4	(2.4)

Time: 15.0°E.

Sweep: 0.6 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 37

Oslo, Norway (60.0°N, 11.1°E)								August 1950	
Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2	
00		6.6	310			1.4	2.40		
01		6.1	310			1.4	2.40		
02		5.7	320			2.2	2.45		
03		5.1	330			1.4	2.40		
04		5.5	315			2.9	2.55		
05	---	5.6	290	---	110	2.20	2.5	2.55	
06	---	6.0	260	---	110	2.50	2.9	2.65	
07	(470)	6.6	250	4.50	110	2.95	3.2	2.55	
08	---	7.0	250	---	110	3.25	3.5	2.60	
09	(540)	7.4	240	5.05	110	3.45	4.0	2.55	
10	500	7.8	240	5.40	105	3.60	4.0	2.55	
11	485	7.8	240	5.40	110	3.75	4.1	2.55	
12	485	7.8	235	5.45	105	3.80	4.0	2.55	
13	530	7.8	235	5.65	105	3.80		2.55	
14	470	7.7	240	5.60	105	3.80		2.55	
15	495	7.6	240	5.20	105	3.70		2.55	
16	(480)	7.7	245	5.15	110	3.45		2.55	
17	---	7.9	250	---	110	3.15	3.5	2.55	
18		8.1	250		115	2.75	3.4	2.70	
19		8.2	270		110	2.35	3.2	2.70	
20		8.1	270	---	1.80	3.1	2.70		
21		7.5	280	---	---	1.6	2.70		
22		6.9	290				2.45		
23		6.6	300				2.45		

Time: 15.0°E.

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

Table 39

Winnipeg, Canada (49.9°N, 97.4°W)								August 1950	
Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2	
00			5.1	280			2.2	(2.8)	
01			4.8	300			2.0	(2.7)	
02			4.4	320			---		
03			4.2	320			2.6	(2.6)	
04			4.1	340			2.6	---	
05			4.4	300			2.2	(2.8)	
06	---		5.1	250	---	110	2.3	3.0	
07	(600)		5.8	230	4.2	105	2.8	2.9	
08	480		5.9	220	4.8	100	3.2	2.8	
09	470		6.3	210	5.0	100	3.5	2.7	
10	480		6.9	210	5.3	100	3.8	2.6	
11	460		7.1	200	5.5	100	4.0	2.6	
12	460		7.2	210	5.6	100	4.0	2.6	
13	460		7.4	210	5.6	100	4.0	2.6	
14	460		7.4	210	5.6	100	4.0	2.6	
15	440		7.4	220	5.5	100	3.9	2.6	
16	430		7.4	220	5.3	100	3.6	2.6	
17	400		7.2	220	5.0	100	3.2	2.7	
18	(370)		7.2	240	4.6	100	2.8	2.8	
19			7.2	260		110	2.3	2.9	
20			7.0	260	---	1.8	2.9		
21			6.8	260			2.8		
22			6.3	260			2.8		
23			5.8	270			(2.8)		

Time: 90.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 41

Ottawa, Canada (45.4°N, 75.9°W)								August 1950	
Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2	
00			6.0	300					
01			5.5	300					
02			4.9	300					
03			4.3	310					
04			4.3	300					
05			4.6	290		120	1.8	---	
06	---	5.7	270	---	110	2.6	---		
07	(370)	6.2	240	4.7	110	3.0	---		
08	330	6.9	220	5.0	110	3.5	---		
09	420	7.2	220	5.5	110	3.8	---		
10	470	7.3	210	5.6	110	4.0	---		
11	470	7.2	220	5.8	110	4.0	6		
12	480	7.6	220	5.8	110	4.0	---		
13	490	7.5	220	5.7	110	4.0	---		
14	470	7.6	220	5.8	110	4.0	---		
15	460	7.6	230	5.5	110	3.9	(2.6)		
16	440	7.8	230	5.3	110	3.6	(2.5)		
17	390	7.5	240	5.0	110	3.2	(2.6)		
18	---	7.7	260		115	2.7	(2.7)		
19		7.8	290		115	2.0	2.7		
20		7.7	290	---	---	(2.7)			
21		7.3	290						
22		6.9	280						
23		6.3	290				---		

Time: 75.0°W.

Sweep: 1.0 Mc to 20.0 Mc in 16 seconds.

Table 38

Upsala, Sweden (59.8°N, 17.6°E)								August 1950	
Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2	
00			6.2	320					3.2
01			5.6	315					3.2
02			5.4	320					3.3
03			5.1	315					2.4
04		(430)	5.1	300	3.20	---	E	3.5	2.5
05		(390)	5.6	270	4.00	125	E	3.5	2.6
06		410	6.3	250	4.40	110	2.65	5.2	2.6
07		390	6.6	240	5.00	110	3.00	5.7	2.6
08		395	7.2	240	5.40	105	3.30	5.7	2.6
09		410	7.6	240	5.50	105	3.50	6.3	2.6
10		415	7.9	235	5.60	105	3.70	5.7	2.6
11		415	7.8	230	5.70	105	3.70	6.1	2.6
12		420	7.9	230	5.80	105	3.75	5.8	2.55
13		425	7.9	225	5.70	105	3.75	6.2	2.6
14		400	7.8	225	5.70	105	3.70	6.5	2.6
15		390	7.6	235	5.50	105	3.50	6.0	2.6
16		380	7.7	240	5.30	105	3.30	4.8	2.7
17		340	7.7	250	4.80	110	2.60	5.4	2.7
18		(350)	7.8	270	4.40	115	2.00	4.2	2.7
19		7.8	270	---	130	2.00			
20		7.7	270	---	E	3.4			
21		7.3	270	---	E	3.0			
22		7.0	280				3.0		
23		6.6	290				3.0		

Time: 15.0°E.

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

Table 40

Schwarzenburg, Switzerland (46.8°N, 7.3°E)								August 1950	
Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2	
00			290	7.1					3.4
01			300	7.0					2.8
02			300	6.8					2.9
03			300	6.6					2.9
04			300	6.1					2.8
05			300	5.8					2.95
06			260	6.6	260	3.8	110	2.1	2.6
07			230	7.2	220	4.8	100	2.8	3.4
08			250	8.0	220	4.8	100	3.2	3.4
09			300	8.4	210	5.8	100	3.6	5.2
10			330	8.5	200	6.0	100	3.7	5.0
11			320	8.8	200	5.9	100	3.9	4.7
12			380	8.7	200	6.2	100	3.9	4.4
13			390	8.8	200	6.2	100	4.0	4.5
14			380	8.9	200	6.1	100	3.9	2.9
15			360	8.7	210	6.0	100	3.9	3.0
16			340	8.5	210	5.8	100	3.6	4.4
17			320	8.3	220	5.6	100	3.3	4.1
18			250	8.3	230	4.7	100	2.8	4.1
19			260	8.4			100	2.1	3.5
20			260	8.2			---	4.0	3.2
21			260	7.8				4.4	3.0
22			260	7.5				4.3	3.0
23			300	7.4				3.8	2.9

Time: 15.0°E.

Sweep: 1.0 Mc to 25.0 Mc in 30 seconds.

Table 42

Wakkanai, Japan (45.4°N, 141.7°E)								August 1950	
Time									

Table 43

Rome, Italy (41.8°N, 12.5°E)							August 1958	
Time	h°F2	foF2	h°F	foFl	h°E	foE	foEs	(M3000)F2
00			7.8	310		3.9	2.45	
01			(7.8)	320		3.3	(2.45)	
02			(7.4)	310		3.2	(2.45)	
03			7.3	310		2.4	2.50	
04			6.8	310		2.45		
05			6.5	310	---	1.6	2.55	
06			7.7	260	120	2.2	3.2	2.80
07			8.4	250	110	3.0	4.1	2.85
08			9.4	240	110	3.5	4.6	2.90
09			9.3	240	110	3.7	5.4	2.70
10			(370)	9.4	230	110	3.9	5.5
11			(430)	9.9	220	6.0	110	4.0
12			420	10.0	230	6.2	110	4.0
13			400	9.9	230	6.2	110	4.0
14			410	9.9	<240	6.1	110	4.0
15			(410)	10.0	240	(5.9)	110	3.9
16			---	9.6	240	---	110	3.6
17			9.6	250		110	3.2	2.65
18			9.3	260	120	2.6	3.8	2.70
19			9.2	270	120	2.0	3.2	2.80
20			9.0	270			3.3	2.70
21			8.4	270			3.1	2.55
22			8.2	300			4.1	2.55
23			7.0	310			3.8	2.55

Time: 15.0°E.

Sweep: 1.4 Mc to 15.0 Mc in 5 minutes, automatic operation.

Table 45

Akita, Japan (39.7°N, 140.1°E)							August 1958	
Time	h°F2	foF2	h°F	foFl	h°E	foE	foEs	(M3000)F2
00			9.1	310			4.1	2.55
01			7.9	310			4.0	2.60
02			7.6	305			3.0	2.55
03			7.2	310			2.5	2.50
04			7.1	330			2.50	
05			7.7	295			2.60	
06			340	9.2	250	---	2.60	3.0
07			320	9.7	250	(5.2)	3.15	2.75
08			350	9.7	245	(5.7)	3.55	2.70
09			350	9.6	245	6.0	3.90	2.60
10			380	9.8	250	(6.0)	4.00	6.5
11			395	10.0	250	6.3	---	6.1
12			395	10.0	245	6.4	---	5.6
13			390	9.9	245	6.2	(4.10)	4.0
14			390	9.7	245	6.1	4.00	4.9
15			380	9.4	250	5.8	3.75	4.8
16			350	9.3	250	5.5	3.50	5.0
17			(345)	9.0	255	---	2.95	5.8
18			---	9.1	290	---	5.8	2.75
19			8.6	285			5.6	2.70
20			8.4	300			6.5	2.50
21			0.4	300			6.7	2.35
22			8.3	310			5.1	2.50
23			8.2	320			4.3	2.55

Time: 135.0°E.

Sweep: 1.6 Mc to 20.0 Mc in 20 seconds.

Table 47

Yamagawa, Japan (31.2°N, 130.6°E)							August 1958	
Time	h°F2	foF2	h°F	foFl	h°E	foE	foEs	(M3000)F2
00			(9.3)	300			3.6	(2.65)
01			9.2	290			3.6	2.65
02			0.7	270			3.4	2.70
03			8.0	280			2.9	2.70
04			7.5	295			3.1	2.70
05			7.4	290			2.8	2.65
06			8.2	250	1.85	2.8	2.90	
07			10.0	240	2.80	3.6	3.10	
08			10.2	230	3.40	5.0	3.05	
09			---	9.9	225	---	3.80	6.4
10			(385)	10.3	220	6.7	4.00	5.9
11			365	11.1	215	6.6	4.15	5.9
12			375	11.8	215	6.9	4.30	5.7
13			380	11.6	225	6.6	4.30	5.7
14			375	12.1	225	6.6	4.20	5.4
15			370	11.9	240	6.5	4.05	5.6
16			350	12.2	250	6.3	3.80	5.8
17			330	11.7	255	6.2	3.40	6.5
18			---	11.4	275	2.60	6.0	2.80
19			10.6	275			5.0	2.80
20			9.4	280			5.1	2.65
21			9.3	295			4.1	2.60
22			9.3	300			3.3	2.60
23			9.3	300			3.8	2.60

Time: 135.0°E.

Sweep: 1.0 Mc to 20.0 Mc in 1 minute.

Table 44

Tortosa, Spain (40.8°N, 0.5°E)							August 1958	
Time	h°F2	foF2	h°F	foFl	h°E	foE	foEs	(M3000)F2
00			8.0		315			2.4 (2.42)
01			7.8		320			2.8 (2.45)
02			7.6		310			2.4 2.50
03			7.4		310			2.5 2.51
04			6.8		300			2.5 2.50
05			---		6.8	295	---	<140 1.65
06			---		8.2	255	---	112 2.40
07			---		8.5	(240)	---	100 3.10
08			(300)		9.0	(230)	6.0	100 3.50
09			(350)		9.2	220	6.4	100 4.5
10			<370		9.7	215	6.3	100 3.95
11			400		9.6	215	6.0	100 4.05
12			395		9.9	225	6.4	100 4.20
13			400		9.8	(230)	6.6	100 4.10
14			375		9.6	230	6.2	100 3.85
15			355		9.4	<240	6.0	100 4.1
16			(350)		9.3	<250	---	105 3.15
17			400		9.2	(270)	115	2.40
18			9.2		270			3.2 2.72
19			8.9		270			
20			8.8		<270			2.7 (2.75)
21			8.5		(285)			2.4 (2.64)
22			8.3		<300			4.0 (2.54)
23			8.3		300			3.2 2.50

Time: Local.

Table 46

Tokyo, Japan (35.7°N, 139.5°E)							August 1958	
Time	h°F2	foF2	h°F	foFl	h°E	foE	foEs	(M3000)F2
00			8.4		320			4.0 2.50
01			8.2		310			3.4 2.55
02			7.7		300			3.0 2.50
03			7.3		300			2.4 2.50
04			7.0		310			2.50
05			7.4		300			2.50
06			9.2		255	---	2.60	3.0 2.80
07			300	10.1	250	---	3.20	4.9 2.05
08			330	10.1	240	---	3.60	5.9 2.75
09			380	10.0	240	---	3.80	5.5 2.65
10			375	10.3	235	---	(4.00)	6.0 2.60
11			390	10.6	250	---	(4.15)	6.5 2.55
12			390	10.8	245	---	(4.20)	6.4 2.55
13			400	10.6	(250)	6.4	2.00	5.5 2.55
14			390	10.0	240	6.0	4.10	5.6 2.55
15			380	10.4	250	5.8	3.90	5.2 2.60
16			350	10.1	255	---	3.50	5.2 2.60
17			345	10.0	260	---	2.90	6.0 2.70
18			(9.8)	295				5.8 (2.70)
19			8.9	290				4.5 2.60
20			8.6	320				5.4 2.50
21			(8.6)	310				4.5 (2.45)
22			8.4	345				5.1 2.45
23			8.5	340				4.9 2.50

Time: 135.0°E.

Sweep: 1.0 Mc to 20.0 Mc in 20 seconds.

Table 48

Formosa, China (25.0°N, 121.5°E)							August 1958	
Time	h°F2	foF2	h°F	foFl	h°E	foE	foEs	(M3000)F2
00			>14.8		280			2.85
01			13.6		260			2.2 2.85
02			12.0		240			2.85
03			11.0		240			2.80
04			9.7		260			2.80
05			8.6		240			2.0 2.90
06			9.7		250			2.3 2.95
07			10.2		<240			3.7 3.10
08			11.0		(230)	---	---	4.8 2.85
09			12.4		240	---	---	5.2 2.60
10			(400)	13.5	(240)	---	---	6.2 2.55
11			400	14.2				

Table 49

Bunia, Belgian Congo (1.5°N, 30.2°E)								August 1958	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2	
00	245	(8.0)					2.5	(2.62)	
01	240	---					3.0	---	
02	230	8.8					2.9	2.79	
03	230	7.1					3.0	2.98	
04	260	6.8					2.9	2.81	
05	270	11.0	255	---	120	2.7	3.6	2.80	
06	290	13.9	245	---	110	3.4	4.5	2.81	
07	300	13.6	240	---	110	3.9	4.4	2.67	
08	350	13.8	230	---	110	4.0		2.50	
09	390	14.1	225	---	110	4.0		2.37	
10	440	14.0	220	---	110	4.1		2.28	
11	475	13.8	230	6.6	110	4.1		2.15	
12	495	13.7	240	6.6	110	4.1		2.08	
13	475	13.4	245	6.1	120	4.0		2.01	
14	505	13.2	250	---	120	---	4.0	2.02	
15	(490)	13.2	260	---	120	2.9	3.7	<1.98	
16	---	(13.3)	300	---	---	---	3.0	<2.08	
17	375	(12.8)					3.0	1.98	
18	380	---					1.9	----	
19	300	---					1.6		
20	260	---					1.7		
21	260	---					2.0		
22	255	---					2.3		
23	240	---					2.9	----	

Time: 0.0°.

Sweep: 1.0 Mc to 20.0 Mc in 7 seconds.

Table 51

Elisabethville, Belgian Congo (11.6°S, 27.5°E)								August 1958	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2	
00	215	5.0						2.62	
01	255	3.8						2.66	
02	265	3.5						2.66	
03	260	3.3					1.5	2.66	
04	265	4.0						2.64	
05	250	9.0	250	---	125	2.5	3.1	2.98	
06	250	11.0	240	---	110	3.2		2.88	
07	260	12.1	230	---	110	3.7		2.72	
08	265	12.0	225	---	110	4.0		2.63	
09	310	12.0	235	---	110	4.0		2.54	
10	340	11.8	240	---	110	4.1		2.44	
11	380	11.4	240	6.5	110	4.0		2.34	
12	390	11.4	250	6.4	110	4.0	4.0	2.28	
13	395	11.3	245	6.0	110	3.9	4.0	2.26	
14	365	11.4	245	---	115	3.5	3.7	2.27	
15	335	11.5	255	---	120	2.9	3.5	2.34	
16	275	11.7	265	---	---	---	3.0	2.49	
17	260	11.8					2.6	2.63	
18	260	11.8					2.6	2.65	
19	240	12.5					2.0	2.62	
20	230	12.5					1.8	2.67	
21	225	11.2						2.80	
22	215	9.2						2.76	
23	220	6.5						2.79	

Time: 0.0°.

Sweep: 1.0 Mc to 20.0 Mc in 7 seconds.

Table 53

Oslo, Norway (60.0°N, 11.1°E)								July 1958	
Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2	
00		6.4	315				>1.3	2.40	
01		6.2	315				1.5	2.50	
02		5.8	325				1.40	2.40	
03		5.7	315				1.50	2.40	
04		5.6	295	---	115	2.05	2.0	2.45	
05		5.6	260	3.00	110	2.40	2.6	2.55	
06		(480)	5.8	250	4.40	110	2.80	2.8	2.55
07		495	6.2	240	4.60	110	3.10	3.2	2.55
08		460	6.5	240	4.95	105	3.35	2.55	
09		475	6.9	235	5.15	105	3.50	3.6	2.55
10		460	6.9	235	5.40	105	3.65	3.6	2.55
11		460	6.9	220	5.40	105	3.75	4.0	2.55
12		470	7.0	225	5.45	105	3.75		2.55
13		480	7.0	230	5.50	105	3.85		2.45
14		490	7.0	230	5.40	105	3.85		2.50
15		490	6.9	230	5.40	105	3.75		2.55
16		450	7.0	240	5.30	105	3.55		2.55
17		(400)	7.3	245	5.00	105	3.35	3.4	2.55
18			6.9	250	115	3.00	3.6	2.70	
19			6.9	250	110	2.65	3.2	2.70	
20			6.9	270	110	2.20	2.5	2.70	
21			6.8	290	---	1.60	2.0	2.60	
22			6.6	300	---	---	2.55		
23			6.6	300	---	---	2.50		

Time: 15.0°E.

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

Table 50

Leopoldville, Belgian Congo (4.4°S, 15.2°E)								August 1958	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2	
00		200	11.7					2.0	2.73
01		220	9.5					2.0	2.61
02		230	8.2					2.7	2.64
03		240	6.1					2.4	2.73
04		240	5.0					2.7	2.84
05		270	6.4	---				2.8	2.80
06		260	10.1	250	---	120	2.8	3.4	2.82
07		290	11.8	240	---	115	3.5	3.5	2.76
08		290	12.4	235	---	110	3.8		2.62
09		320	12.5	240	---	110	4.0	4.4	2.50
10		360	12.6	250	---	110	4.2		2.36
11		400	12.5	250	---	110	4.3		2.26
12		440	12.3	250	6.4	110	4.2		2.14
13		450	13.0	250	6.3	110	4.1		2.11
14		440	13.9	240	---	115	3.4	3.4	2.12
15		440	13.9	240	---	115	4.0		2.11
16		385	13.8	260	---	120	2.7	3.8	2.16
17		285	14.6	300	---			3.2	2.33
18		300	15.9					3.0	<2.36
19		300	---					2.8	
20		240	---					2.0	
21		220	---						
22		220	(16.0)						(2.53)
23		215	13.6						2.62

Time: 0.0°.

Sweep: 1.0 Mc to 20.0 Mc in 7 seconds.

Table 52

Baker Lake, Canada (64.3°N, 96.0°W)								July 1958	
Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2	
00			5.5	290		130	1.7	3.0	
01		5.2	300			130	1.6	4.1	
02		5.4	300	---		130	1.8	4.1	
03		5.0	290	---		110	1.9		
04		5.0	280	3.5		115	2.1	3.6	---
05		390	5.0	240	3.8	110	2.4	4.0	
06		500	4.9	240	4.1	110	2.8	3.0	---
07		580	5.0	220	4.4	110	3.2		G
08		750	5.0	210	4.6	110	3.4	5.2	G
09		G	5.0	220	4.7	105	3.6	5.1	G
10		590	5.3	220	4.8	105	3.8	4.4	G
11		640	5.4	220	5.0	105	3.9	5.0	G
12		550	5.8	220	5.0	105	3.9		G
13		520	6.3	210	5.0	105	3.9		(2.41)
14		470	6.4	210	5.0	105	3.7		---
15		470	6.7	210	5.0	105	3.7		(2.5)
16		460	6.0	220	4.9	110	3.5		---
17		450	6.0	220	4.8	110	3.3		---
18		420	5.9	220	4.6	110	3.2	4.8	---
19		400	6.0	240	4.3	110	2.9	6.0	---
20		(420)	6.0	270	3.7	125	2.5	6.5	---
21		5.9	290			125	2.1	6.2	
22		5.6	300	---			2.0	7.0	
23		5.6	300	---		140	1.7	4.3	

Time: 90.0°W.

Sweep: 1.0 Mc to 16.0 Mc in 16 seconds.

Table 54

Upsala, Sweden (59.8°N, 17.6°E)

Table 55

Wakkanai, Japan (45.4°N, 141.7°E)							July 1958
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs (M3000)F2
00			7.4	315		2.8	2.50
01			7.2	310		3.1	2.50
02			7.1	305		3.1	2.50
03			6.7	305	---	3.0	2.50
04	---		6.8	310	---	1.55	3.1
05	(405)		7.3	270	3.7	2.35	3.4
06	410		7.9	255	4.5	2.95	3.5
07	405		7.8	250	4.9	3.35	5.0
08	460		7.7	245	5.2	3.55	4.7
09	450		7.3	250	5.3	3.70	6.1
10	500		7.1	245	5.4	3.75	6.0
11	470		7.2	230	5.5	3.80	5.2
12	480		7.2	230	5.5	3.75	5.5
13	450		7.3	240	5.5	3.80	5.3
14	445		7.3	240	5.5	3.70	5.3
15	430		7.4	235	5.4	3.65	4.5
16	420		7.5	250	5.1	3.50	4.6
17	(355)		7.3	260	4.8	3.10	5.2
18	---		7.5	270		2.50	5.2
19			7.5	290	---	4.8	2.70
20			7.5	300		4.3	2.55
21			(7.7)	315		4.1	(2.50)
22			(7.6)	320		3.5	(2.50)
23			7.5	310		2.6	2.50

Time: 135.0°E.

Sweep: 1.0 Mc to 20.7 Mc in 1 minute.

Table 57

Tokyo, Japan (35.7°N, 139.5°E)							July 1958
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs (M3000)F2
00		0.6	340			4.2	2.50
01		8.4	315			3.5	2.55
02		7.9	305			3.2	2.60
03		7.4	300			2.5	2.55
04		7.1	305			2.2	2.55
05	---	7.5	270	---	---	2.60	
06	365	8.5	250	---	2.70	3.2	2.60
07	330	9.1	250	5.1	3.20	5.6	2.75
08	350	8.7	240	5.5	3.60	6.2	2.65
09	400	8.0	(250)	5.9	3.80	7.1	2.55
10	415	9.1	235	6.0	(3.95)	6.7	2.55
11	400	9.5	245	5.8	(4.05)	7.0	2.50
12	410	9.0	240	6.0	(4.15)	5.8	2.50
13	400	9.9	235	5.0	(4.10)	5.4	2.55
14	400	10.0	240	5.7	(4.05)	5.4	2.60
15	380	9.6	240	5.8	(3.90)	5.2	2.60
16	355	9.2	250	5.4	3.60	5.1	2.65
17	350	9.2	(250)	---	3.10	5.0	2.70
18	325	8.8	275		2.30	5.4	2.70
19		8.6	280			4.9	2.65
20		8.2	305			4.5	2.50
21		(8.3)	350			4.0	(2.45)
22		(8.7)	350			5.6	(2.45)
23		(8.6)	350			4.9	(2.50)

Time: 135.0°E.

Sweep: 1.0 Mc to 20.0 Mc in 20 seconds.

Table 59

Bunia, Belgian Congo (1.5°N, 30.2°E)							July 1958
Time	h'F2	foF2	h'F1	foF1	h'E	foE	foEs (M3000)F2
00	260	---				2.9	---
01	250	(7.8)				3.0	(2.06)
02	240	7.3				3.0	2.90
03	240	6.6				3.0	3.02
04	280	7.0	---	---	---	3.0	2.83
05	280	11.0	260	---	120	2.8	4.0
06	290	13.3	245	---	110	3.3	4.5
07	310	13.8	240	---	110	3.7	2.68
08	360	14.2	240	---	110	4.0	2.52
09	400	14.2	250	---	110	4.0	2.41
10	435	14.1	250	---	115	4.0	2.26
11	490	13.4	265	6.6	115	4.0	2.16
12	535	13.2	250	6.6	120	4.0	2.06
13	540	12.0	250	6.0	115	3.9	2.07
14	520	12.8	250	---	115	3.5	2.06
15	500	13.1	260	---	120	2.9	3.7
16	---	13.3	290	---	---	3.0	2.23
17	330	(12.9)				3.0	2.24
18	340	---				2.0	----
19	290	---				2.0	----
20	270	---				2.2	----
21	250	---				3.0	----
22	260	---				2.6	----
23	260	---				3.0	----

Time: 0.0°.

Sweep: 1.0 Mc to 20.0 Mc in 7 seconds.

Table 56

Akita, Japan (39.7°N, 140.1°E)

Akita, Japan (39.7°N, 140.1°E)							July 1958
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs (M3000)F2
00			8.1	310			3.4
01			7.9	325			3.3
02			7.6	300			2.4
03			7.4	300			2.6
04			7.0	300			2.55
05	380		7.6	280	---	2.20	2.5
06	350	8.4	250	4.6		2.80	3.9
07	345	8.7	250	5.0		3.40	5.2
08	370	8.5	240	5.4		3.65	6.4
09	425	8.4	(240)	5.6		3.90	6.6
10	420	8.4	245	5.7		4.00	6.4
11	405	8.5	245	5.8		(4.00)	6.2
12	410	8.6	240	5.8		4.05	6.0
13	410	8.8	250	5.8		4.10	6.2
14	400	8.7	245	5.6		4.00	5.2
15	395	8.5	250	5.6		3.90	4.9
16	390	8.5	250	5.3		3.55	5.9
17	350	8.4	250	5.0		3.10	6.7
18	320	8.4	(270)	---		2.45	6.8
19		8.3	295				5.7
20		7.9	300				6.4
21		8.2	340				4.6
22		8.5	340				5.9
23		8.5	325				4.9

Time: 135.0°E.

Sweep: 1.6 Mc to 20.0 Mc in 20 seconds.

Table 58

Yamagawa, Japan (31.2°N, 130.6°E)							July 1958
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs (M3000)F2
00	(9.0)	305					4.1
01	9.2	300					3.6
02	8.0	285					3.6
03	8.2	270					3.0
04	7.3	270					2.65
05	7.1	290					2.8
06	---	7.9	250	---	2.20	2.8	2.85
07	(285)	8.9	240	---	2.90	3.8	2.95
08	(280)	8.7	230	---	3.45	4.8	2.80
09	385	8.9	230	6.1		3.75	5.4
10	375	9.5	235	6.2		4.00	6.6
11	395	9.6	230	6.3		4.10	6.7
12	390	10.5	215	6.2		4.20	6.2
13	390	10.5	230	6.2		4.20	5.9
14	360	11.0	220	6.1		4.10	5.6
15	365	11.0	230	6.1		4.00	5.6
16	350	10.9	230	6.0		3.70	4.9
17	330	10.5	245	5.6		3.40	5.2
18	300	10.0	250	5.0		2.80	5.6
19		9.4	275			1.80	4.2
20		8.9	290				4.0
21		8.8	300				4.3
22		9.0	325				3.8
23		9.0	330				4.4

Time: 135.0°E.

Sweep: 1.0 Mc to 20.0 Mc in 1 minute.

Table 60

Rarotonga I. (21.2°S, 159.8°W)							July 1958
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs (M3000)F2
00	6.6	250					2.75
01	6.2	250					2.80
02	5.8	240					2.85
03	4.7	240					2.85
04	4.0	250					2.60
05	4.2	270					2.70
06	5.8	250					2.70
07	10.3	250					3.10
08	12.2	250					3.10
09	13.2	240					3.10
10	12.2	230					3.00
11	11.6	210					2.80
12	330	11.6	200				2.75
13	360	11.7	220	---	110	3.8	4.4
14	350	11.4	230	110	3.6	4.2	2.65
15	---	11.7	250	110	3.4	4.6	2.60
16	---	(12.0)	250	115	2.8	3.9	(2.75)
17	---	(12.0)	250	---	---	4.0	(2.75)
18	---	(10.9)	240	---	---	3.7	(2.00)
19	---	(9.6)	<250	---	---	3.1	(2.70)
20	---	(9.0)	250	---	---	2.9	(2.70)
21	---	(0.7)					

Table 61

Johannesburg, Union of S. Africa (26.2°S, 20.0°E)								July 1958
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	3.0	<290			<1.7	2.00		
01	3.0	<305			<1.7	2.70		
02	3.1	<300			<1.7	2.00		
03	3.0	<270			<1.7	2.90		
04	2.0	<260			<1.8	2.80		
05	2.0	<295			<1.8	2.00		
06	2.9	<290			<1.6	2.80		
07	6.2	240		<2.1		3.20		
08	---	9.3	230		2.8	3.20		
09	---	>11.0	230		3.2	3.15		
10	(250)	11.9	225		3.6	3.05		
11	---	11.9	210		3.8	2.95		
12	---	11.4	215		3.9	4.0	2.90	
13	---	11.2	215		3.9	2.80		
14	---	11.3	225		3.7	3.9	2.75	
15	---	11.2	230		3.4	3.7	2.00	
16	10.9	235			3.0	2.00		
17	10.7	235			2.4	2.05		
18	9.5	220		<1.8	<2.1	3.00		
19	7.6	220			<1.9	3.10		
20	5.8	(235)			1.9	3.10		
21	>4.6	235			<1.9	(3.15)		
22	3.8	<250			<1.8	3.00		
23	3.2	<200			<1.7	2.85		

Time: 30.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 7 seconds.

Table 63

Cape Hallett (72.3°S, 170.3°E)								July 1958
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	(3.9)	260		---	1.1	(2.50)		
01	(3.6)	295		---	1.2	(2.70)		
02	(3.0)	275		---	1.2	(2.80)		
03	(3.7)	200		---	1.3	(2.80)		
04	(3.6)	(295)		---	1.2	(2.70)		
05	(3.7)	300		---	1.2	(2.60)		
06	(3.9)	290		---	1.2	(2.70)		
07	(4.2)	270		---	1.4	(1.4)	(2.80)	
08	(4.6)	275		120	(1.5)	1.9	(2.85)	
09	(5.2)	(265)		115	1.4	(1.7)	(2.80)	
10	(5.8)	255		116	1.5	<1.8	(2.90)	
11	(5.6)	235		114	(1.5)	<1.9	(3.00)	
12	(6.4)	240		111	1.8	2.3	(2.95)	
13	(6.2)	245		113	1.6	2.9	(2.95)	
14	(7.2)	250		120	1.5	3.4	(2.00)	
15	(6.7)	280		---	(1.4)	4.4	(2.80)	
16	(6.4)	260		---	1.2	2.4	(2.75)	
17	(7.0)	(245)		---	2.4	(2.65)		
18	(8.5)	245		---	2.0	(2.75)		
19	(6.4)	245		---	E	2.0	(2.60)	
20	(7.3)	260		---	E	(2.75)		
21	(7.0)	235		---	E	<1.3	(2.80)	
22	(5.5)	245		---	E	(2.60)		
23	(4.6)	255		---	1.1	(2.65)		

Time: 165.0°E.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 65

Bogota, Colombia (4.5°N, 74.2°W)								January 1958
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	11.0	220					2.90	
01	>9.0	225					3.00	
02	7.6	230					2.95	
03	5.8	230					2.90	
04	5.55	250					2.6	2.90
05	5.8	265					2.7	2.80
06	6.0	285		---	---	2.2	2.75	
07	12.2	255		119	2.70	3.8	2.90	
08	14.35	240		112	3.40		2.82	
09	---	14.2	225	---	3.90	4.0	2.70	
10	---	14.2	215	---	4.10	4.2	2.60	
11	435	14.2	210	7.3	111	4.30	2.50	
12	460	14.6	205	7.2	111	4.30	2.40	
13	470	14.5	(235)	6.6	111	(4.25)	4.8	2.35
14	450	14.85	240	6.6	113	(4.15)	4.6	2.40
15	440	14.05	245	(6.5)	113	3.95	4.4	2.40
16	430	13.5	250	---	113	3.60	4.4	2.45
17	---	13.1	(265)	---	119	2.95	4.5	2.50
18	13.2	290		---	---	3.4	2.65	
19	13.2	275				3.2	(2.70)	
20	13.6	270					2.70	
21	>14.0	260					2.65	
22	>14.1	240					(2.70)	
23	>14.0	230					2.90	

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 62

Christchurch, New Zealand (43.6°S, 172.8°E)								July 1958
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00			4.0	300				<1.7
01			4.6	310				2.55
02			4.4	310				2.55
03			4.4	300				2.60
04			4.2	300				2.65
05			4.1	260				2.65
06			3.5	260				2.70
07			3.5	260				2.70
08			5.9	260				3.05
09			8.8	250				3.15
10			10.1	250				3.15
11			10.8	250				3.05
12			11.0	250				3.05
13			10.9	250				2.90
14			11.0	250				3.00
15			(10.6)	250				2.80
16			(10.3)	250				(2.85)
17			(8.3)	250				<2.3
18			8.3	250				2.85
19			7.5	250				(1.8)
20			6.6	260				2.80
21			5.8	280				2.70
22			5.3	300				2.65
23			5.2	300				2.60

Time: 180.0°E.

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

Table 64

Tromso, Norway (69.7°N, 19.0°E)								May 1958
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	---		5.9	---				4.0
01	---		5.7	(370)				3.2
02	---		5.9	(310)				2.40
03	---		6.4	(300)				3.40
04	---		6.8	290				2.40
05	(460)	6.7	255	4.15	110	2.50	2.9	2.40
06	(450)	6.8	250	4.55	105	2.90	2.40	
07	(490)	7.1	250	4.85	105	3.15	2.40	
08	500	7.2	245	5.10	105	3.30	2.40	
09	515	7.3	245	5.15	105	(3.40)	2.35	
10	520	7.2	240	5.15	105	3.60	2.35	
11	500	7.3	240	5.30	105	3.65	2.40	
12	510	7.3	240	5.30	105	3.60	2.40	
13	480	7.5	230	5.30	105	3.60	2.40	
14	480	7.6	240	5.30	105	3.50	2.40	
15	470	7.4	245	5.05	105	3.40	2.40	
16	465	7.0	250	4.80	105	3.25	2.50	
17	---	7.3	255	---	105	3.10	2.55	
18	---	7.0	260	---	105	2.85	3.2	(2.55)
19	---	7.0	260	---	105	2.60	3.8	(2.55)
20	(300)	6.5	300	---	105	2.50	3.2	(2.55)
21	---	6.4	320	---	120	2.50	4.4	2.55
22	---	6.4	340	---	2.20	4.0	2.50	
23	---	6.0	360	---	2.20	4.0	2.50	

Time: 15.0°E.

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

Table 66

Little America (78.2°S, 162.2°W)								December 1957
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	(540)	(5.0)	260	(3.9)	101	(2.70)		(2.25)
01	(600)	(5.0)	250	(4.0)	101	(2.75)		(2.25)
02	(740)	(4.65)	250	(4.0)	101	(2.90)		(2.10)
03	(720)	(4.7)	275	(4.1)	101	(3.00)		2.00
04	(640)	5.05	260	(4.5)	101	3.12		(2.20)
05	775	5.4	260	4.6	101	3.30		2.20
06	580	5.7	250	(4.6)	101	(3.35)		2.30
07	580	(5.9)	250	(4.8)	101	(3.40)		(2.30)
08	(560)	(6.3)	245	(4.9)	101	3.50		(2.30)
09	555	(6.45)	240	(5.0)	101	3.50		(2.30)
10	580	(6.2)	235	(5.0)	99	3.55		(2.25)
11	575	(6.0)	230	(4.9)	9			

Table 67

Byrd Station (80.0°S, 120.0°W)								December 1957
Time	h°F2	f°F2	h°F	f°F1	h°E	f°E	f°Es	(M3000)F2
00	550	(5.25)	(290)	4.0	111	(3.00)	2.15	
01	540	5.2	(290)	4.0	110	3.00	3.3	2.15
02	530	5.3	295	4.0	107	3.00	2.16	
03	640	5.2	(275)	4.3	103	3.00	3.5	2.15
04	630	5.3	270	4.4	105	(3.05)	2.15	
05	735	5.25	270	4.5	105	----	2.05	
06	640	5.45	<265	4.6	105	(3.30)	2.15	
07	650	5.6	260	4.8	105	(3.32)	2.16	
08	640	5.75	250	4.9	<103	(3.40)	2.15	
09	590	6.1	245	5.0	101	(3.40)	2.16	
10	570	6.25	245	5.0	101	(3.45)	2.20	
11	530	6.6	250	5.1	101	(3.50)	2.20	
12	550	6.8	240	5.1	101	3.50	2.22	
13	550	6.8	250	5.0	101	3.50	2.20	
14	570	6.6	250	4.9	101	(3.45)	2.20	
15	575	6.3	250	4.9	101	(3.50)	2.15	
16	570	6.3	(260)	(4.9)	101	(3.40)	2.25	
17	550	6.35	270	4.7	103	(3.40)	2.20	
18	600	(6.5)	(270)	4.7	105	3.20	2.15	
19	590	(5.8)	260	4.5	107	(3.00)	2.15	
20	580	5.9	<300	4.5	<111	(3.00)	3.8	2.15
21	540	(6.1)	270	4.3	109	3.00	2.10	
22	550	(5.9)	(285)	4.2	109	(2.90)	2.15	
23	540	(5.9)	<300	4.1	109	(3.00)	4.0	2.10

Time: 120.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 69

Byrd Station (80.0°S, 120.0°W)								September 1957
Time	h°F2	f°F2	h°F	f°F1	h°E	f°E	f°Es	(M3000)F2
00	(6.4)	400				3.3	(2.25)	
01	(7.0)	(410)				2.9	(2.30)	
02	(6.75)	405				3.4	(2.25)	
03	6.2	370	---	---	---	2.4	2.30	
04	(5.7)	355	---	---	---	3.1	(2.42)	
05	6.0	340	---	---	---	2.50		
06	6.0	310	---	---	---	2.50		
07	6.0	300	---	131	----	2.70		
08	7.0	300	---	135	(2.25)	2.68		
09	0.1	300	---	121	(2.25)	2.70		
10	8.7	300	---	131	2.32	2.60		
11	9.4	300	---	<141	(2.50)	2.65		
12	9.1	315	---	<139	(2.70)	2.65		
13	(9.8)	310	---	131	(2.35)	(2.65)		
14	9.1	315	---	121	(2.35)	2.68		
15	0.0	325	---	131	(2.40)	2.50		
16	(7.8)	<360	---	135	----	(2.50)		
17	(6.7)	370	---	---	---	(2.50)		
18	(7.55)	355	---	---	---	2.4	----	
19	(7.1)	335	---	---	---	2.4	----	
20	(6.2)	345	---	---	---	1.5	----	
21	(6.2)	360	---			3.6	----	
22	(4.7)	(410)	---			2.8	(2.40)	
23	(5.5)	<300	---			3.2	(2.25)	

Time: 120.8°W.

Sweep: 1.0 Mc to 25.8 Mc in 13.5 seconds.

Table 71

Byrd Station (00.0°S, 120.0°W)								August 1957
Time	h°F2	f°F2	h°F	f°F1	h°E	f°E	f°Es	(M3000)F2
00	(5.15)	430				3.2	----	
01	(5.15)	400				3.4	(2.42)	
02	(4.4)	<415				3.2	(2.30)	
03	(4.9)	355				3.2	(2.45)	
04	(4.5)	330				2.9	(2.60)	
05	(3.75)	340				2.1	(2.60)	
06	(3.5)	335				2.0	(2.60)	
07	3.1	310	---	---	---	2.60		
08	3.9	315	---	---	---	2.70		
09	4.75	320	---	---	---	2.70		
10	5.6	300	---			2.75		
11	(5.95)	300	---	<149	(1.62)	2.78		
12	(5.8)	300	---	<131	----	(2.80)		
13	(6.0)	315	---	129	----	2.0	(2.80)	
14	(5.1)	330	---	131	(1.65)	2.2	(2.60)	
15	(6.0)	365	---	---	---	2.0	(2.65)	
16	(4.85)	375	---			2.5	(2.52)	
17	(4.4)	405	---			3.2	(2.50)	
18	(3.6)	(350)	---			3.2	(2.30)	
19	(4.2)	400	---			3.6	----	
20	(5.4)	360	---			3.1	----	
21	---	355	---			3.9		
22	---	360	---			4.0	----	
23	(4.85)	395	---			3.1	(2.30)	

Time: 120.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 68

Byrd Station (00.0°S, 120.0°W)								November 1957
Time	h°F2	f°F2	h°F	f°F1	h°E	f°E	f°Es	(M3000)F2
00	550	(6.0)	(390)		3.8	129	----	3.3
01	600	(5.7)	(370)		3.6	127	----	3.7
02	685	5.3	(360)		3.8	<131	(2.62)	3.6
03	695	5.35	(350)		4.0	118	2.90	3.5
04	<640	5.6	320		4.3	(129)	2.75	3.02
05	(700)	6.2	310		4.5	122	(2.95)	2.18
06	700	6.0	320		4.5	121	3.00	2.10
07	610	6.05	<300		4.8	121	3.10	2.22
08	595	6.3	300		5.0	122	3.15	2.12
09	630	6.6	290		5.0	121	(3.20)	2.15
10	590	7.0	290		5.0	121	3.20	2.15
11	590	7.0	290		5.1	121	3.30	2.10
12	590	7.3	290		5.0	121	3.40	2.15
13	570	7.6	280		5.1	121	3.35	2.10
14	570	7.2	300		4.7	121	3.30	2.15
15	600	7.4	305		5.0	121	(3.25)	2.15
16	590	6.85	310		4.8	121	(3.20)	2.12
17	655	7.0	315		4.8	121	(3.20)	2.15
18	625	6.15	340		4.6	125	3.15	3.2
19	590	(6.6)	330		4.4	123	(2.90)	2.10
20	610	(6.6)	335		(4.4)	123	(2.70)	(2.15)
21	580	(7.0)	330		(4.2)	130	(2.60)	3.4
22	(600)	(5.7)	350		(4.0)	129	(2.50)	3.2
23	570	(6.35)	360		(3.9)	129	----	3.6

Time: 120.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 70

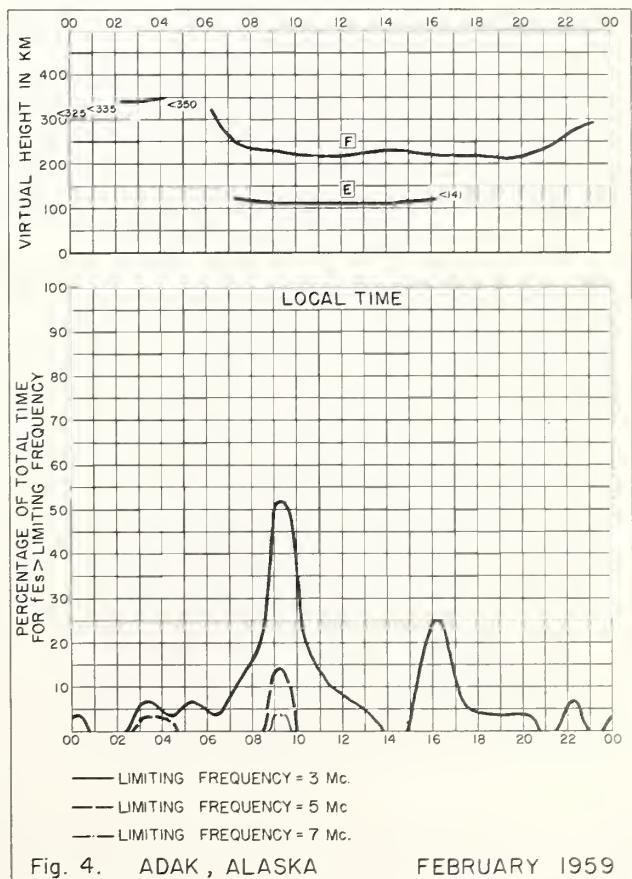
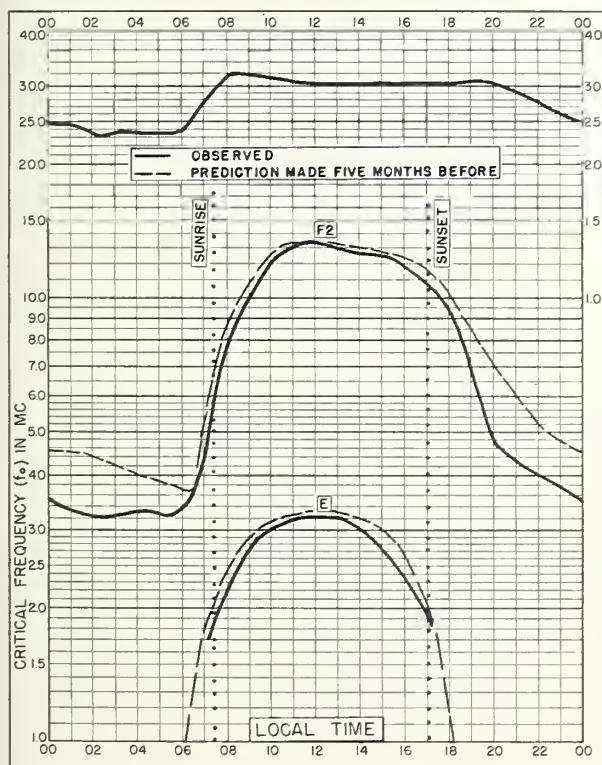
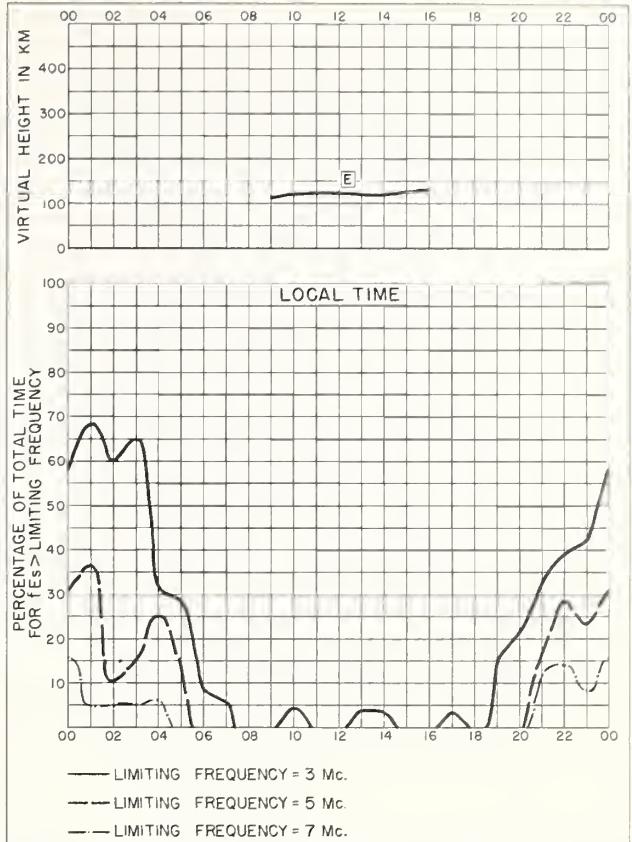
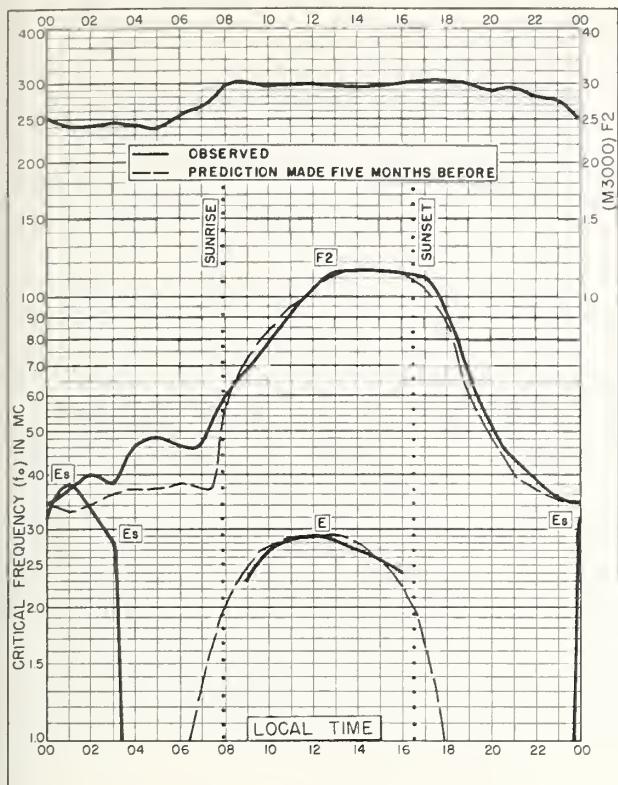
Freiburg, Germany (40.1°N, 7.6°E)								August 1957
Time	h°F2	f°F2	h°F	f°F1	h°E	f°E	f°Es	(M3000)F2
00	6.6	295						3.1
01	6.2	300						2.55
02	5.9	300						2.55
03	5.6	300						2.55
04	5.4	290						2.65
05	6.1	260						2.4
06	7.2	240						3.05
07	(375)	7.6	230		4.9	107	3.10	3.9
08	325	8.2	220		5.1	103	3.45	4.1
09	335	0.5	215		5.3	103	3.65	4.4
10	370	8.6	215		5.6	103	3.80	4.4
11	355	9.0	215		5.6	101	4.00	2.75
12	360	8.6	220		5.6	101	3.95	4.0
13	355	8.6	220		5.6	103	3.90	2.75
14	360	0.5	220		5.5	103	3.75	2.80
15	350	8.3	230		5.2	104	3.50	2.80
16	(325)	8.4	230		5.0	106	3.25	3.4
17	8.4	245				107	2.75	3.2
18	8.4	260				119	2.15	2.8
19	8.4	255						2.3
20	8.1	260						(2.7)
21	7.4	260						2.75
22	7.1	280						2.4
23	6.8	295						2.60

Time: 0.0°.

Sweep: 1.25 Mc to 20.0 Mc in 3 minutes.

Table 72

Leopoldville, Belgian Congo (4.3°S, 15.3°E)								June 1952
Time	h°F2	f°F2	h°F	f°F1	h°E	f°E	f°Es	(M3000)F2
00	220	4.8						3.1
01	210	(4.8)						(3.05)
02	230	2.9						2.9
03	220	2.7						2.8
04	230	(2.9)						(2.9)
05	250	3.8						2.6
06	250	6.6	235		---	110	2.2	3.05
07	260	7.4</						



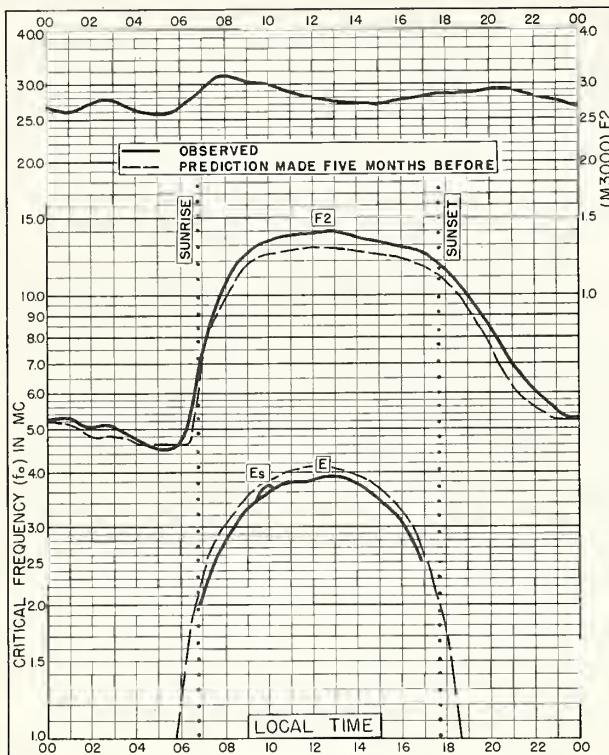


Fig. 5. WHITE SANDS, NEW MEXICO
32.3°N, 106.5°W FEBRUARY 1959

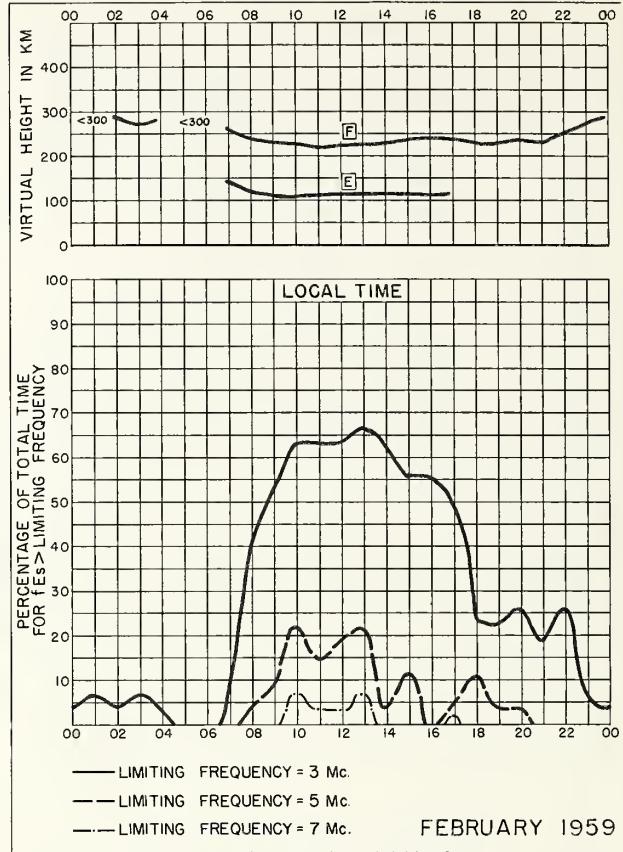


Fig. 6. WHITE SANDS, NEW MEXICO

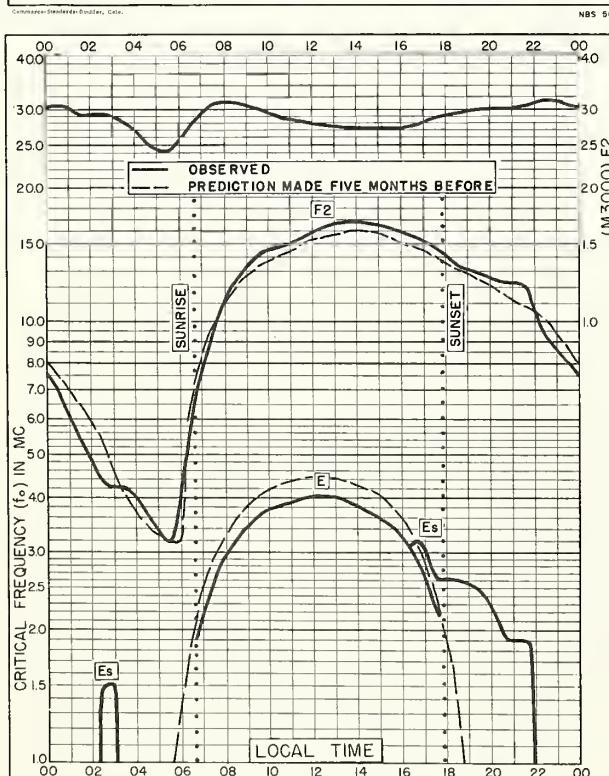


Fig. 7. MAUI, HAWAII
20.8°N, 156.5°W FEBRUARY 1959

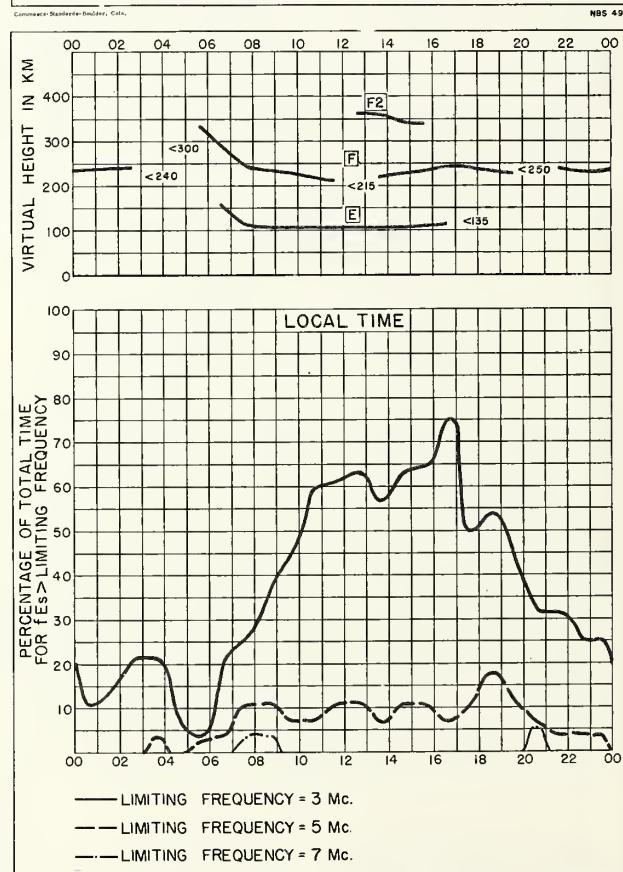


Fig. 8. MAUI, HAWAII FEBRUARY 1959

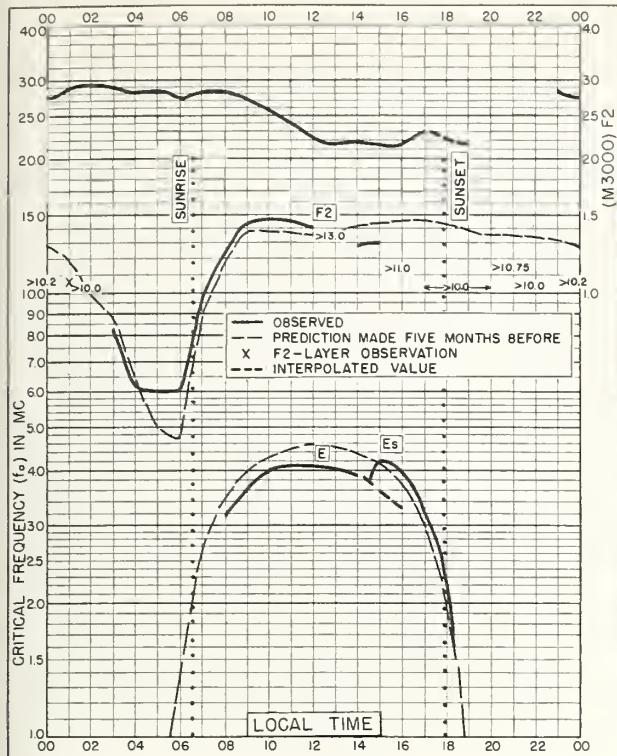


Fig. 9. BAGUIO, P.I.
16.4°N, 120.6°E FEBRUARY 1959

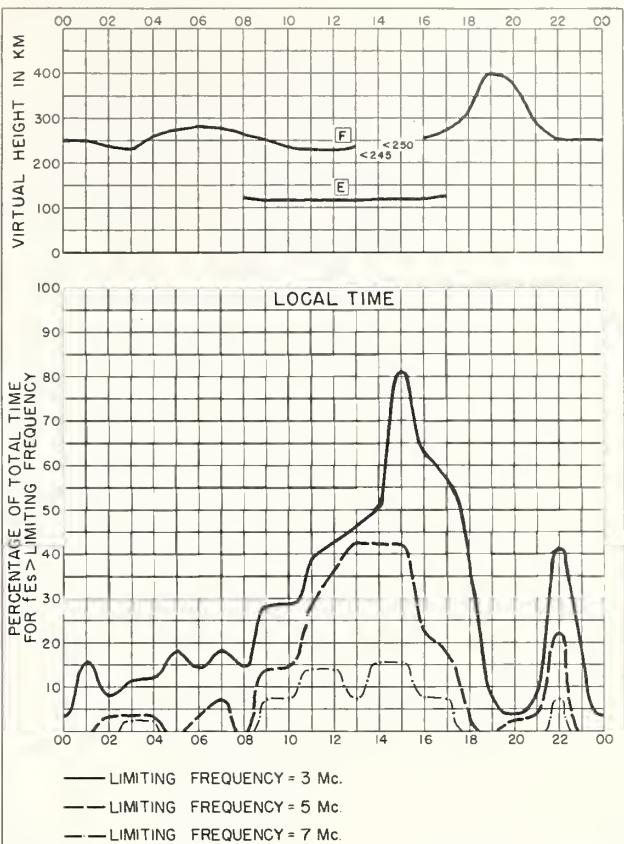


Fig. 10. BAGUIO, P.I. FEBRUARY 1959

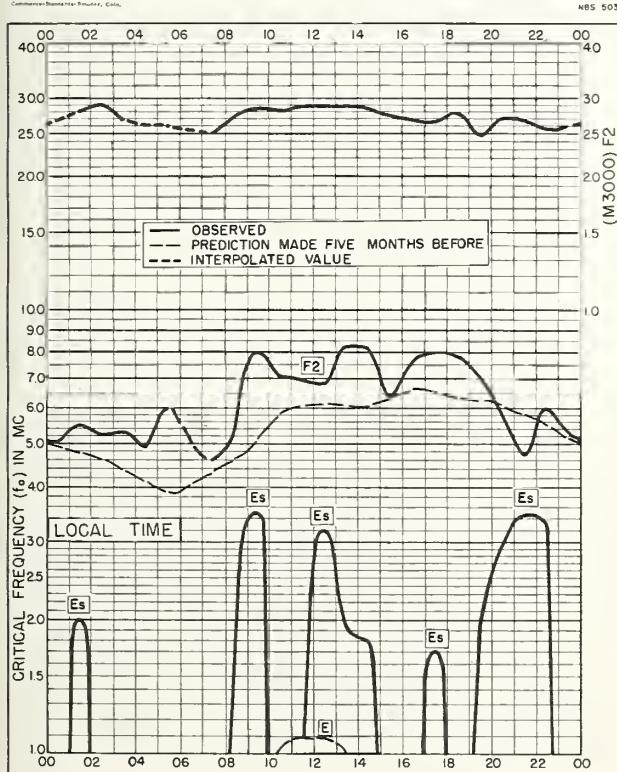


Fig. 11. THULE, GREENLAND
76.6°N, 68.7°W JANUARY 1959

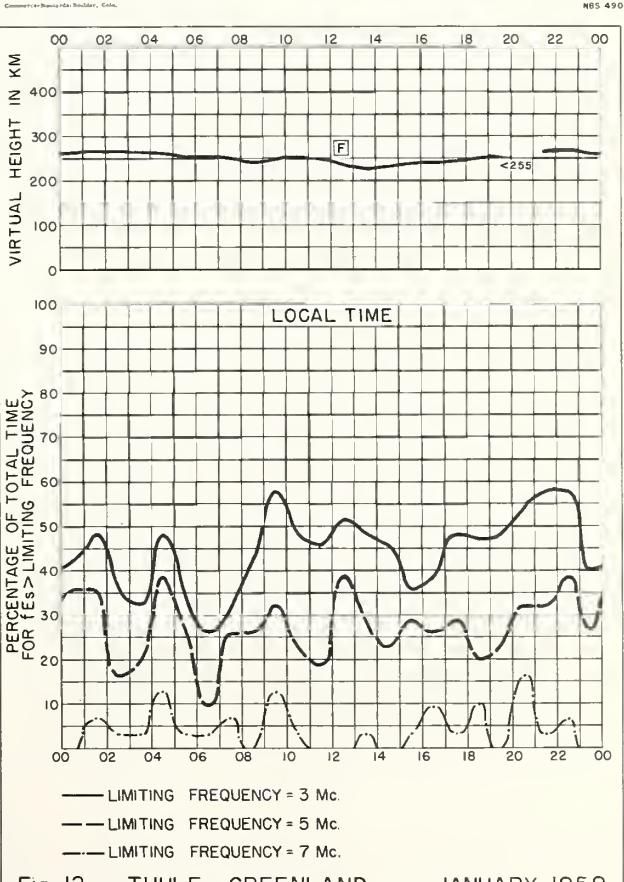


Fig. 12. THULE, GREENLAND JANUARY 1959

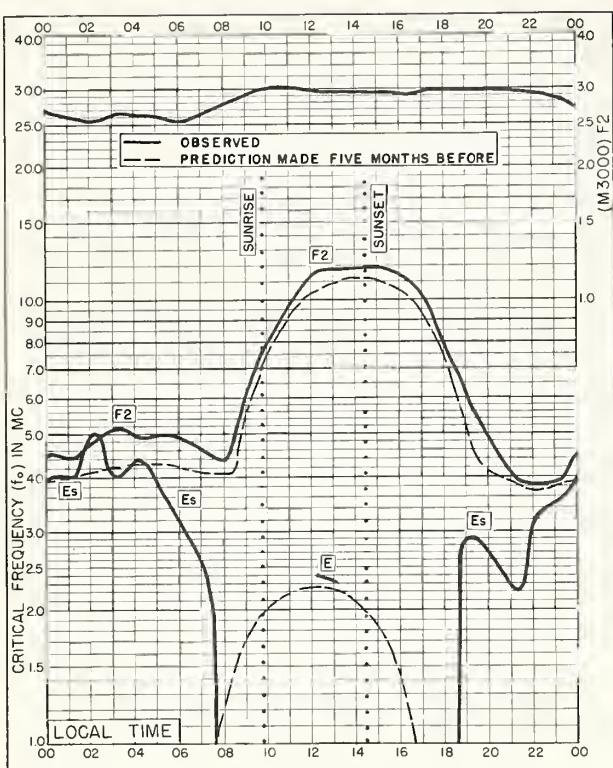


Fig. 13. FAIRBANKS, ALASKA

64.9°N, 147.8°W

JANUARY 1959

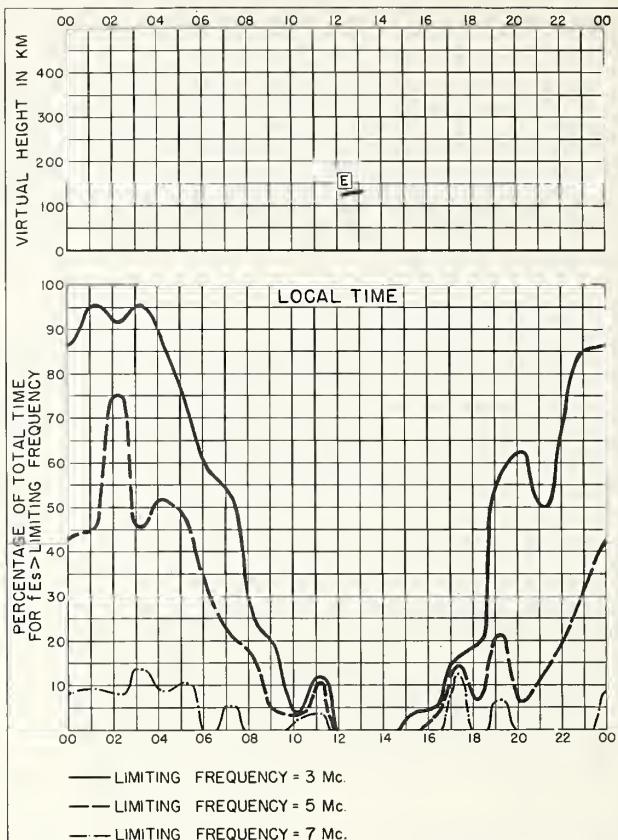


Fig. 14. FAIRBANKS, ALASKA

JANUARY 1959

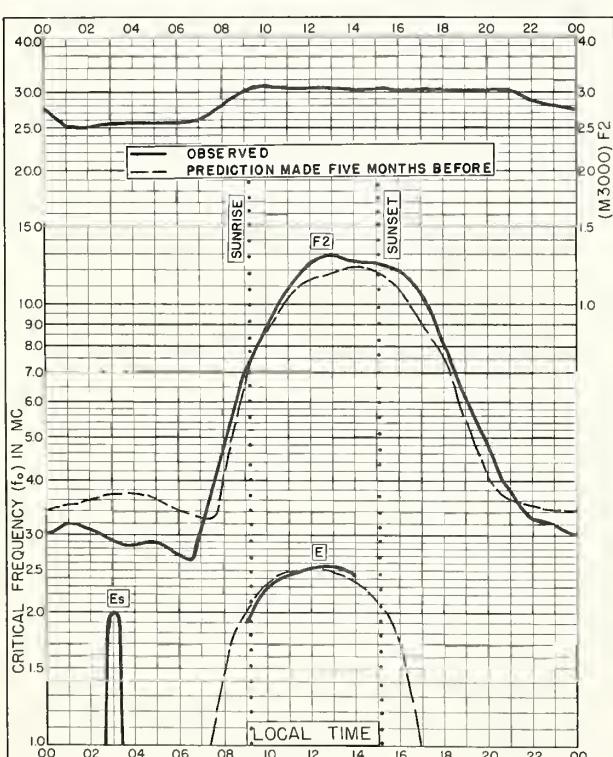


Fig. 15. ANCHORAGE, ALASKA

61.2°N, 149.9°W

JANUARY 1959

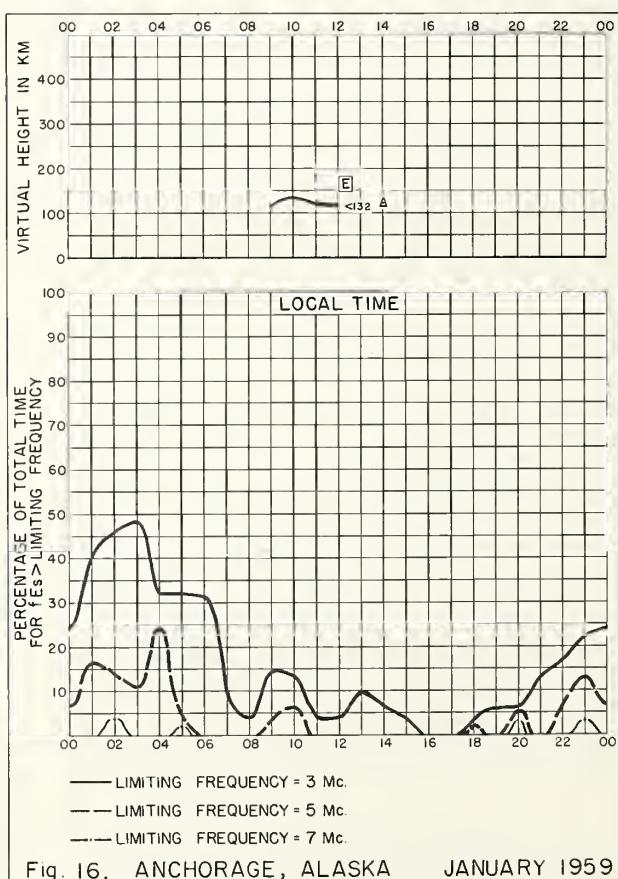


Fig. 16. ANCHORAGE, ALASKA

JANUARY 1959

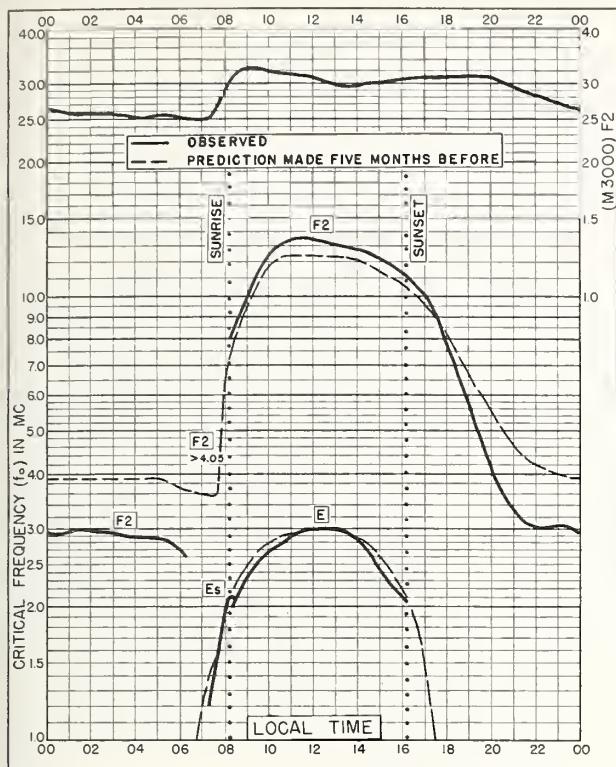


Fig. 17. ADAK, ALASKA
51.9°N, 176.6°W

JANUARY 1959

Commerce-Standard-Boulder, Colo.

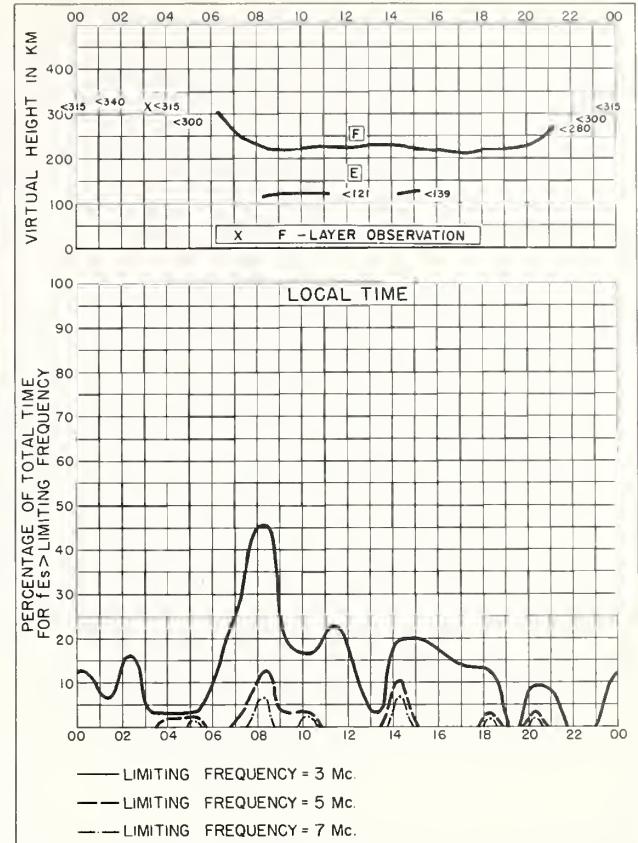


Fig. 18. ADAK, ALASKA

JANUARY 1959

NBS 503

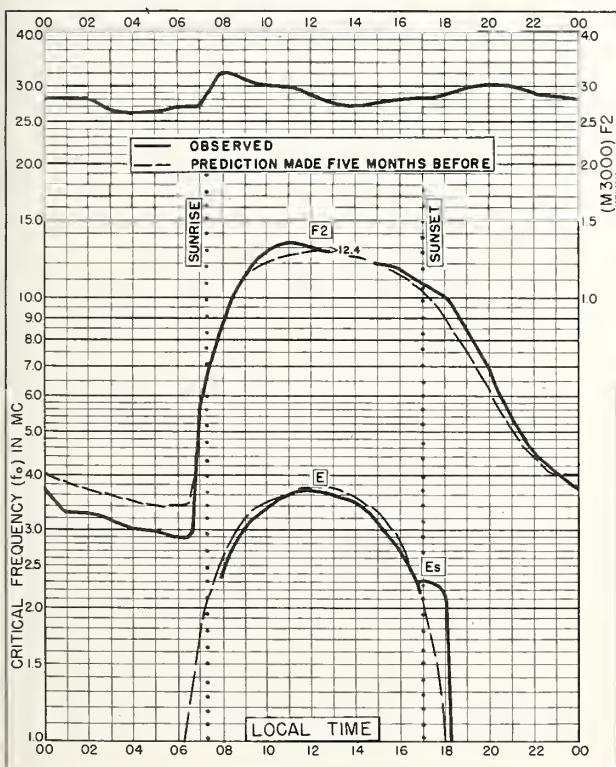


Fig. 19. SAN FRANCISCO, CALIFORNIA

37.4°N, 122.2°W

JANUARY 1959

Commerce-Standard-Boulder, Colo.

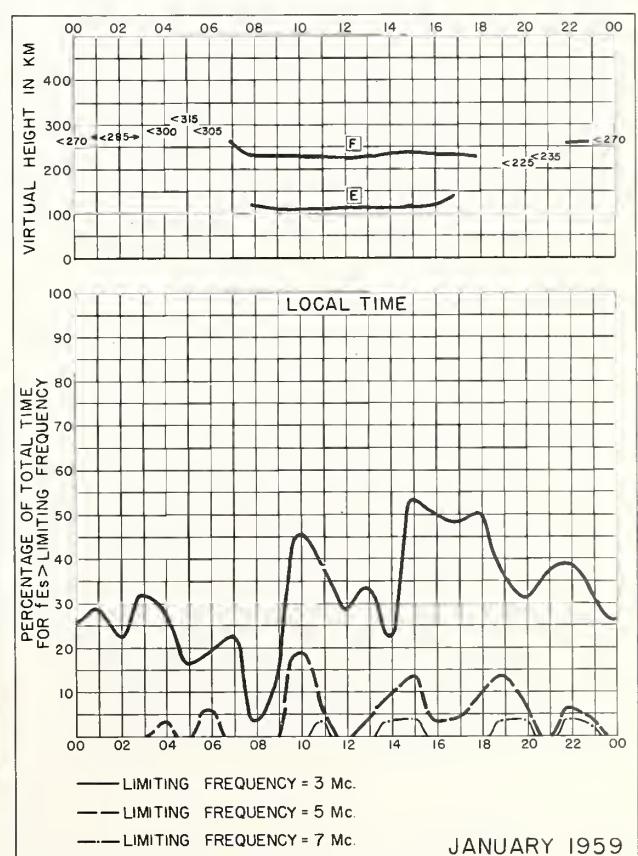
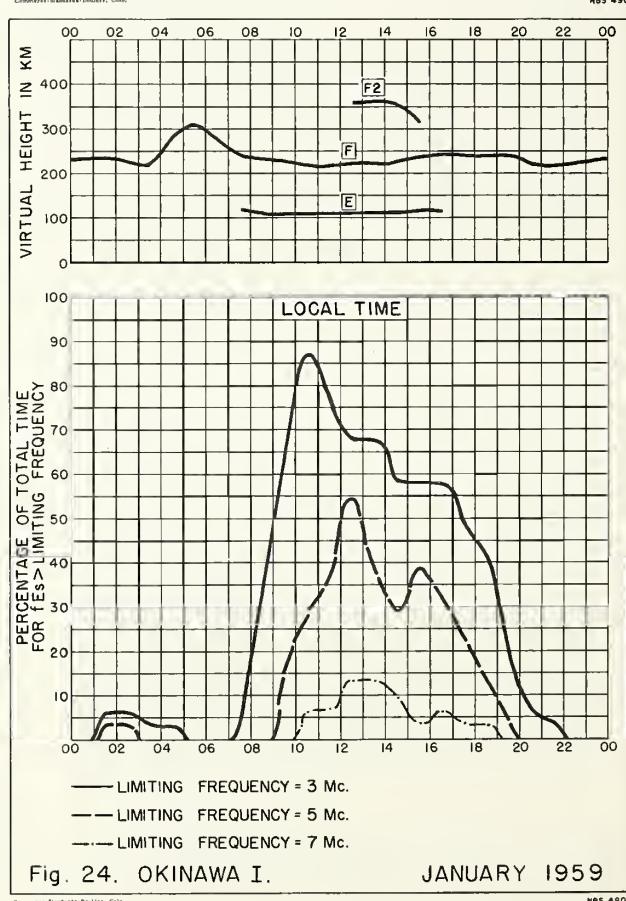
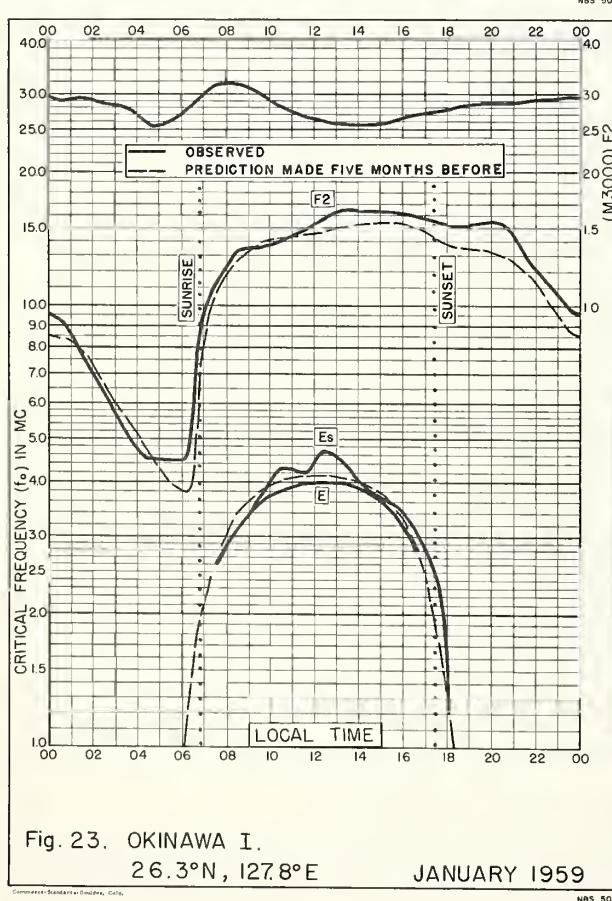
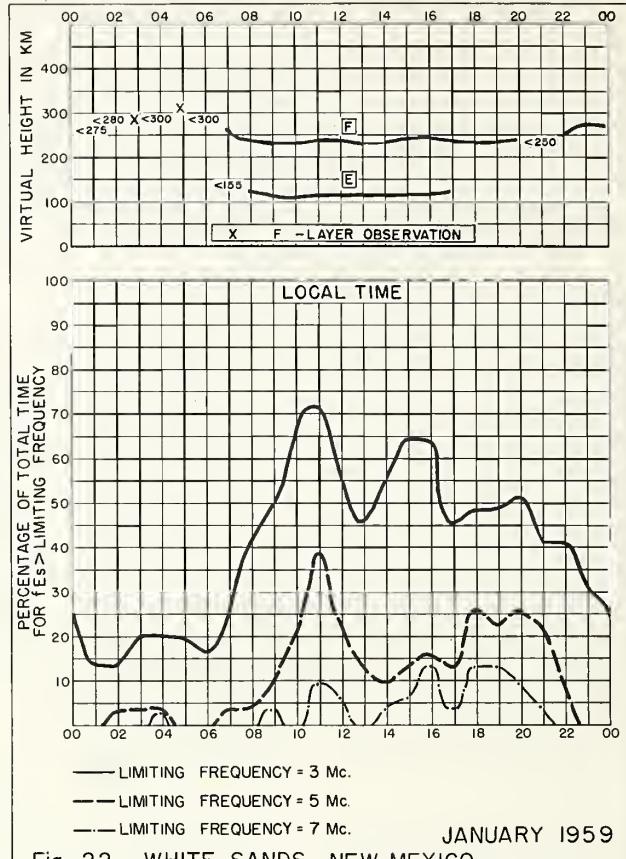
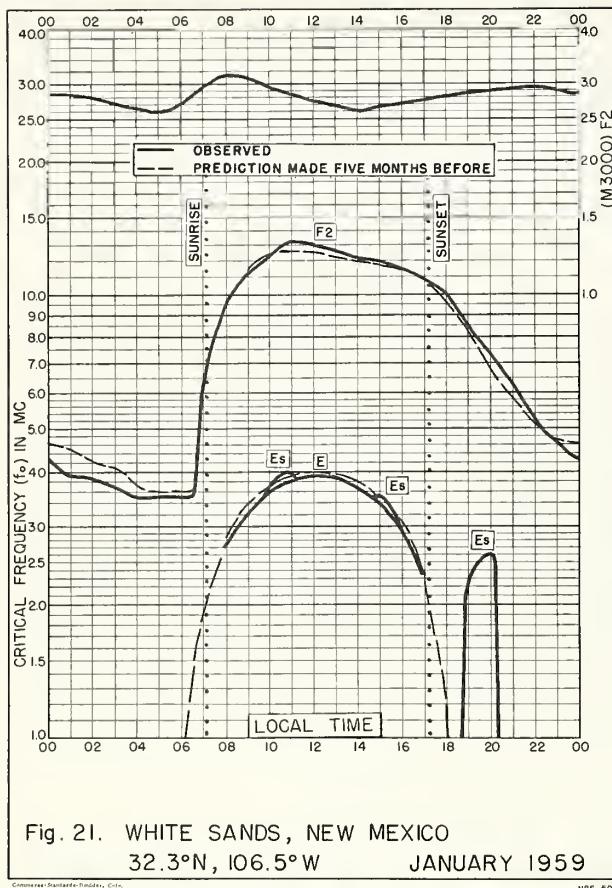


Fig. 20. SAN FRANCISCO, CALIFORNIA

JANUARY 1959

NBS 490



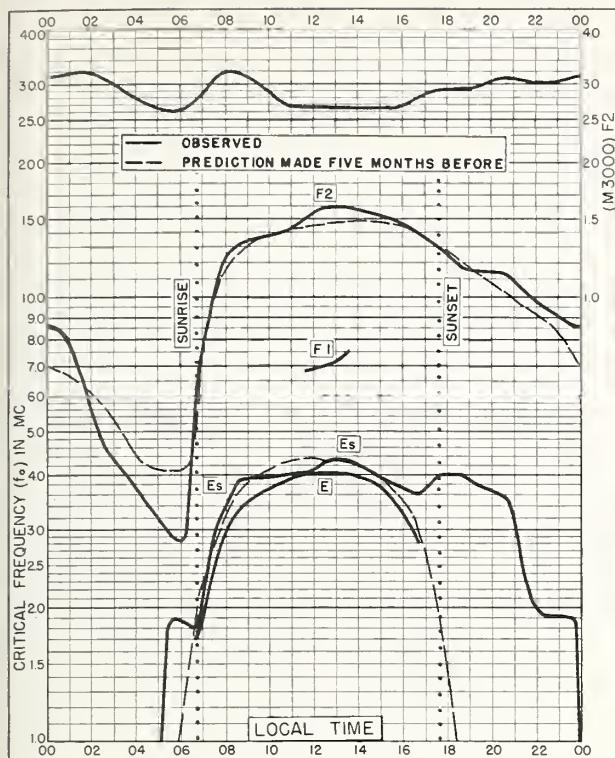


Fig. 25. MAUI, HAWAII
20.8°N, 156.5°W JANUARY 1959

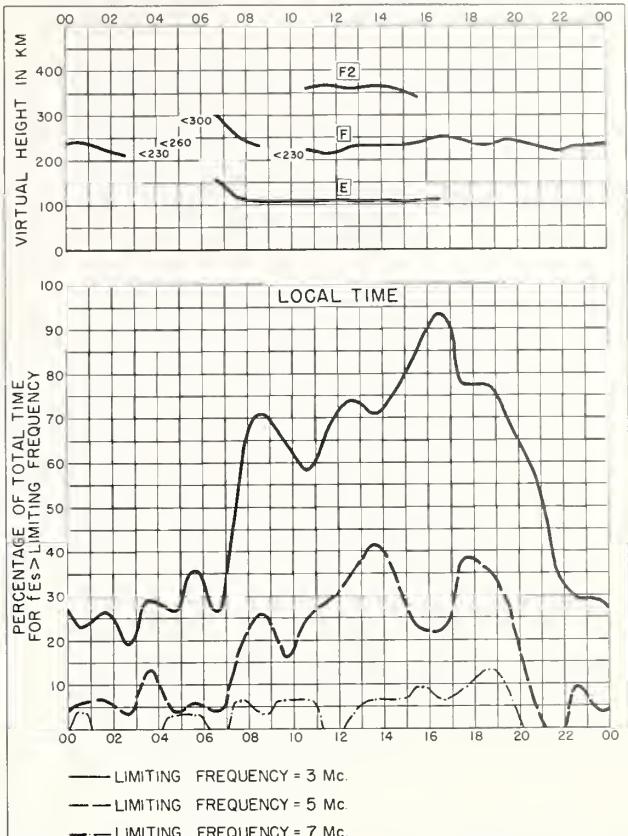


Fig. 26. MAUI, HAWAII JANUARY 1959

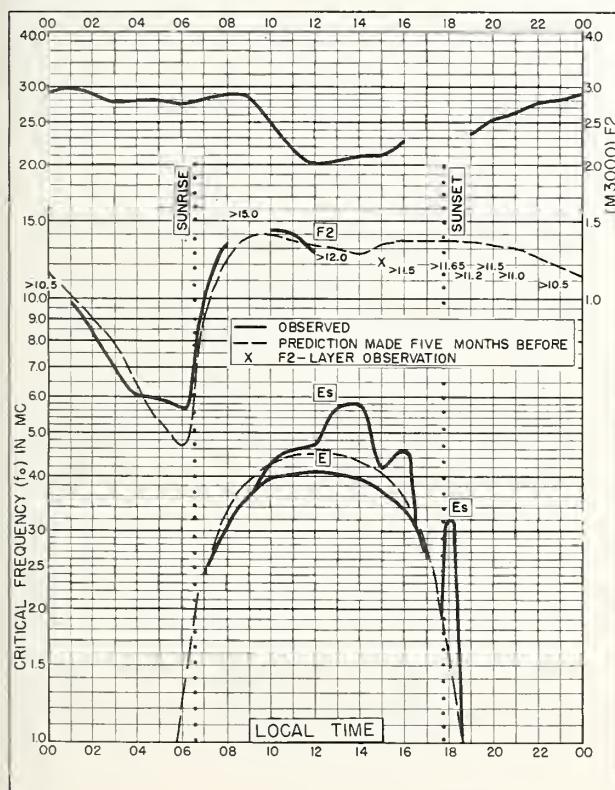


Fig. 27. BAGUIO, P. I.
16.4°N, 120.6°E JANUARY 1959

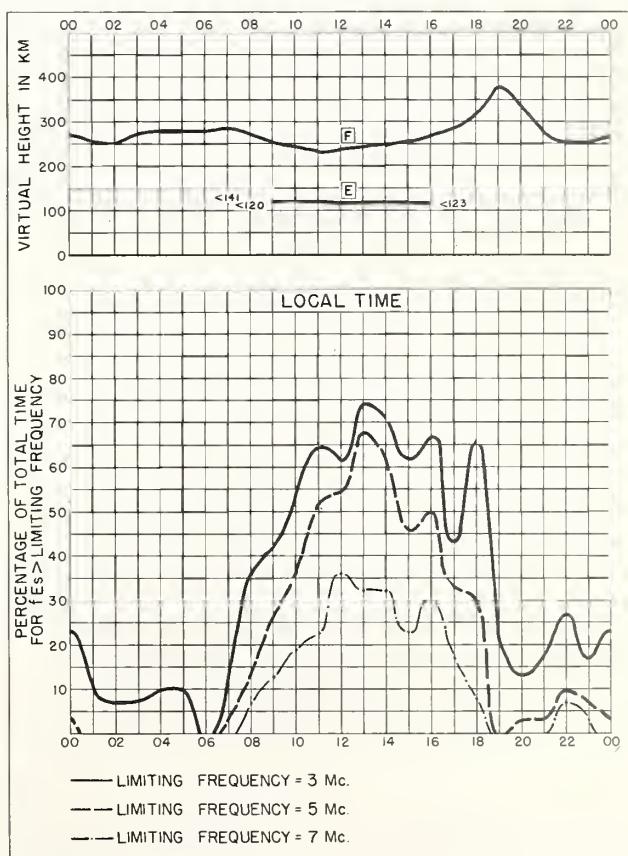


Fig. 28. BAGUIO, P. I. JANUARY 1959

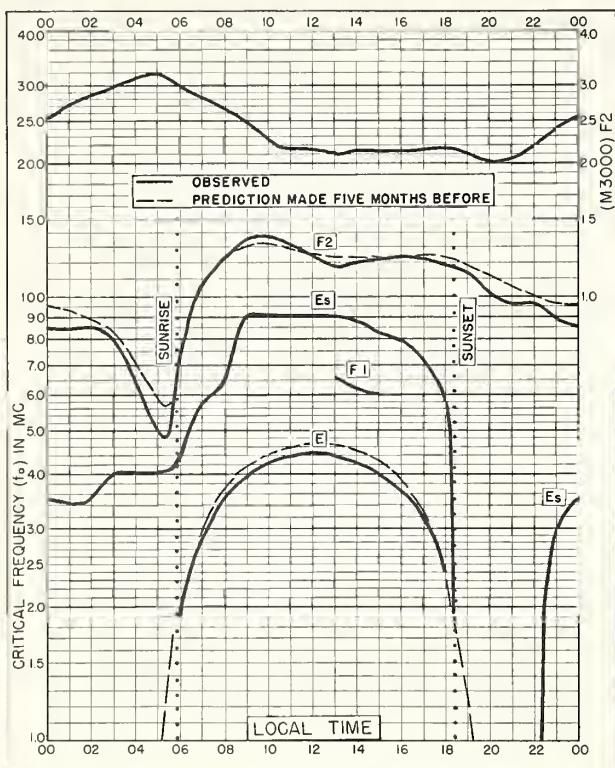


Fig. 29. HUANCAYO, PERU

12.0°S, 75.3°W

JANUARY 1959

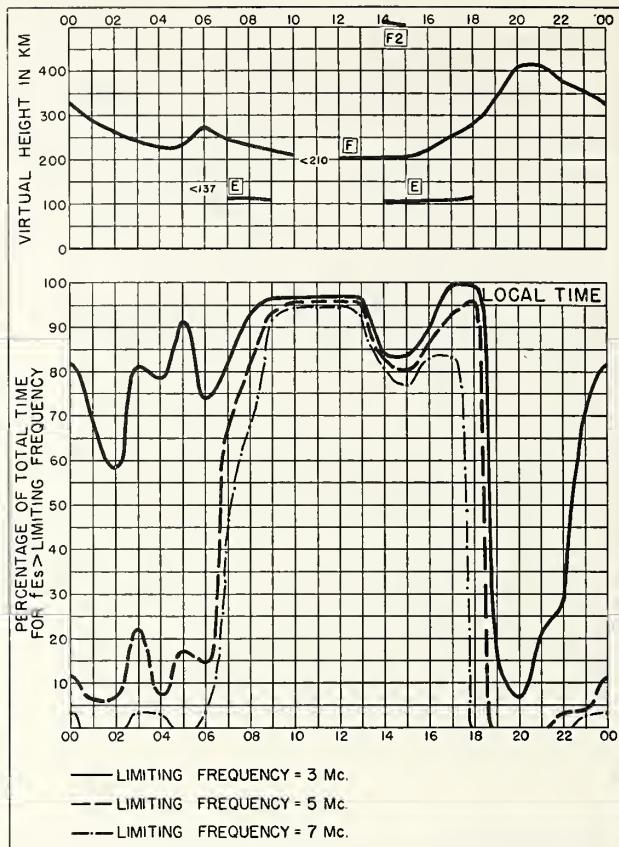


Fig. 30. HUANCAYO, PERU

JANUARY 1959

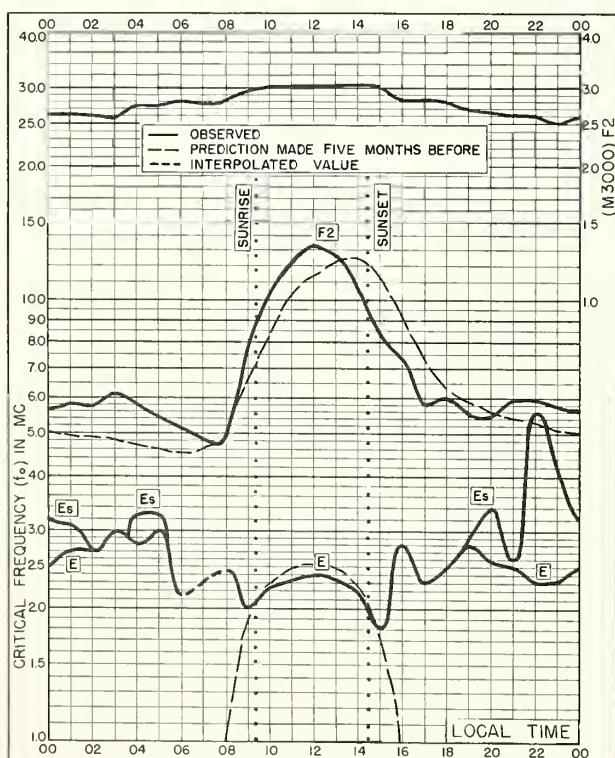


Fig. 31. NARSARSSUAK, GREENLAND

61.2°N, 45.4°W

DECEMBER 1958

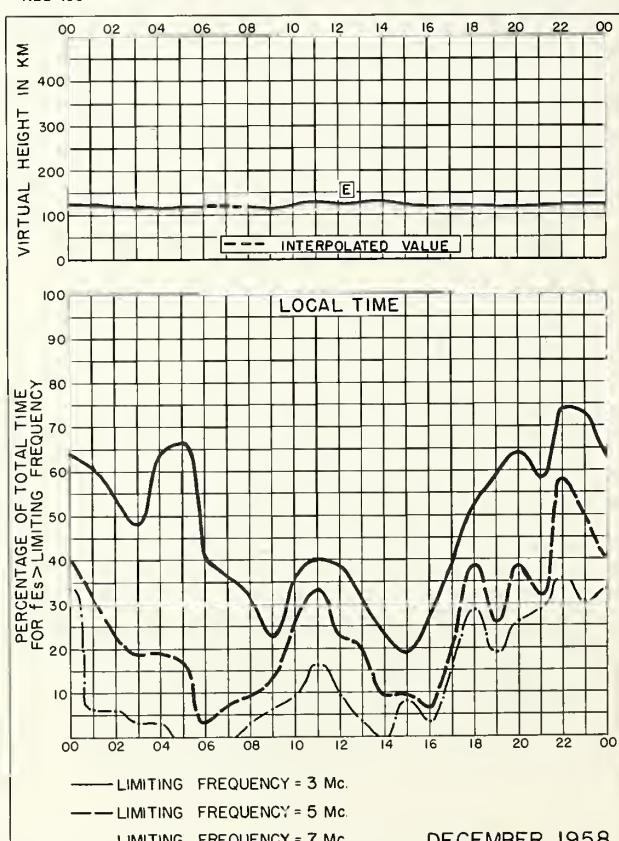


Fig. 32. NARSARSSUAK, GREENLAND

DECEMBER 1958

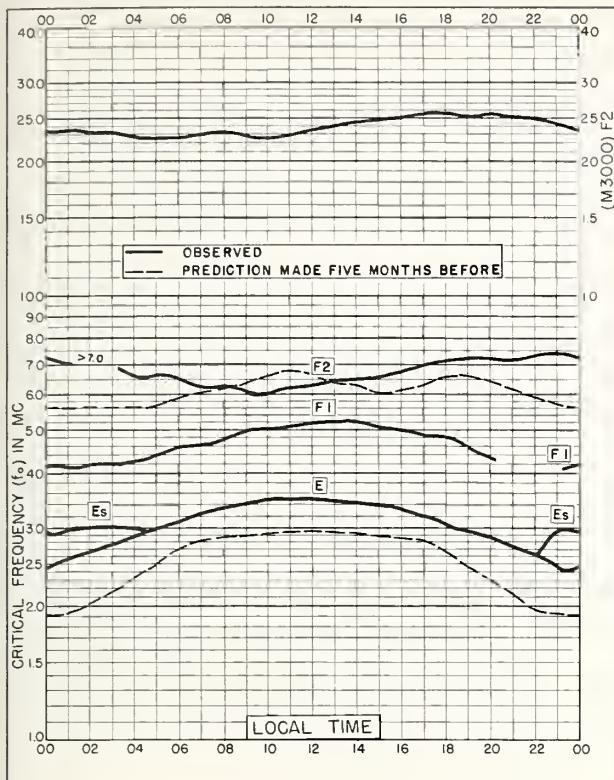


Fig. 33. ELLSWORTH
77.7°S, 41.1°W DECEMBER 1958

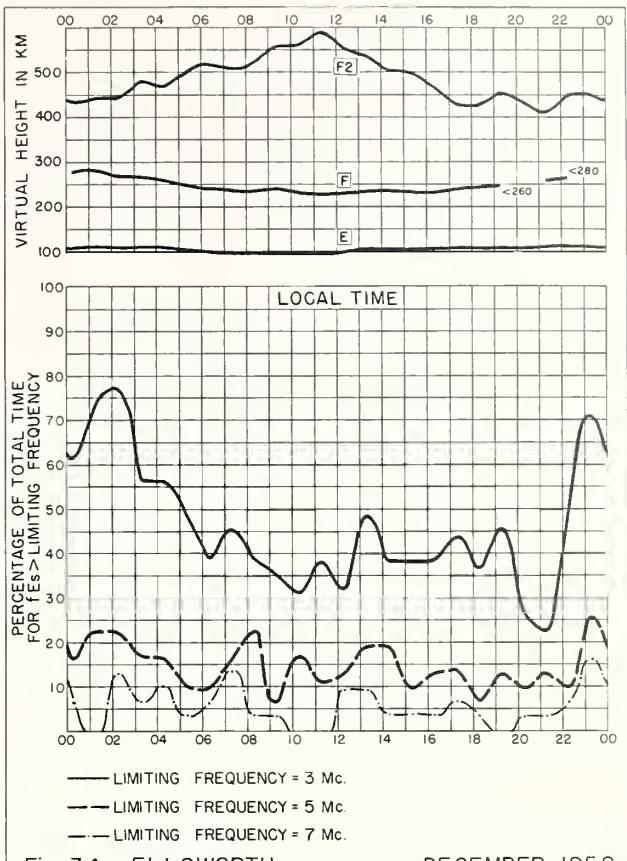


Fig. 34. ELLSWORTH DECEMBER 1958

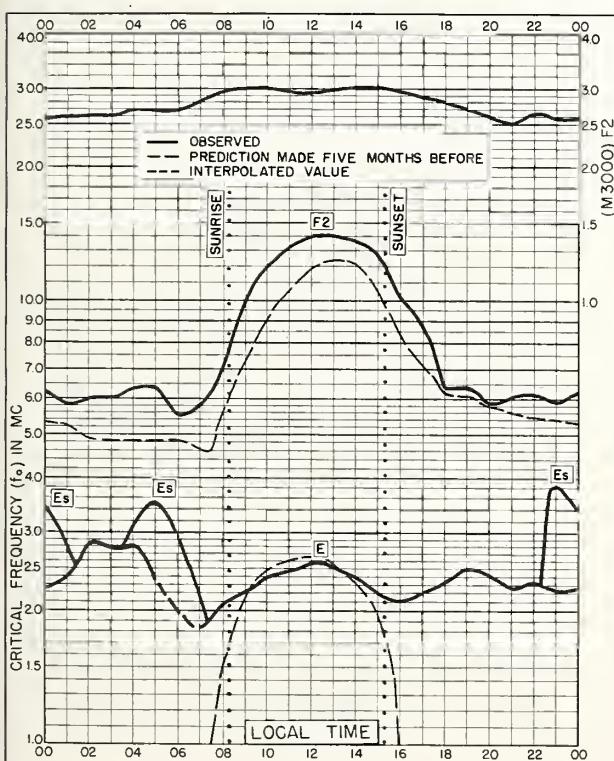


Fig. 35. NARSARSSUAK, GREENLAND
61.2°N, 45.4°W NOVEMBER 1958

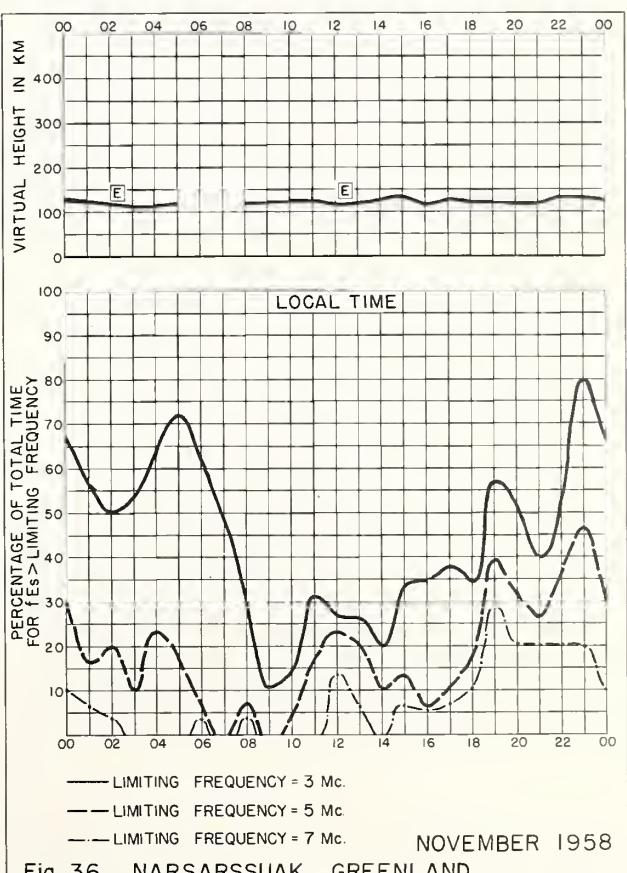


Fig. 36. NARSARSSUAK, GREENLAND NOVEMBER 1958

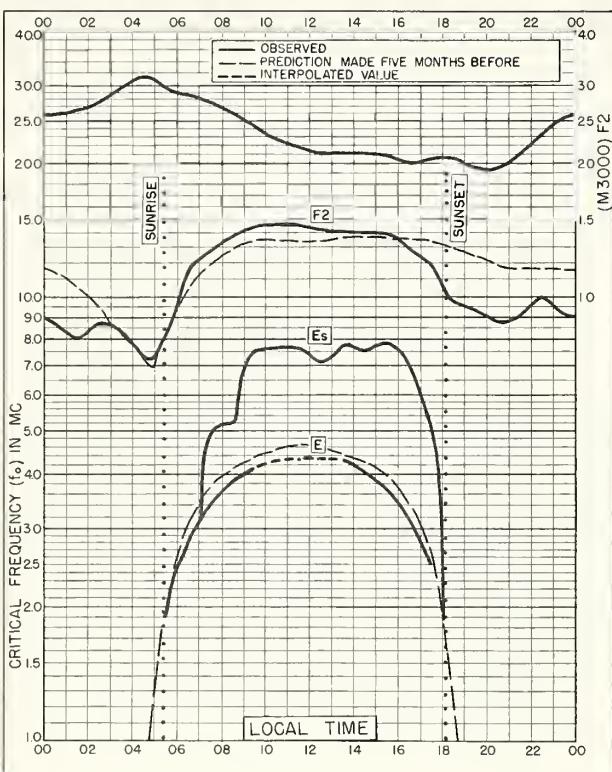


Fig. 37. La PAZ, BOLIVIA
16.5°S, 68.0°W NOVEMBER 1958

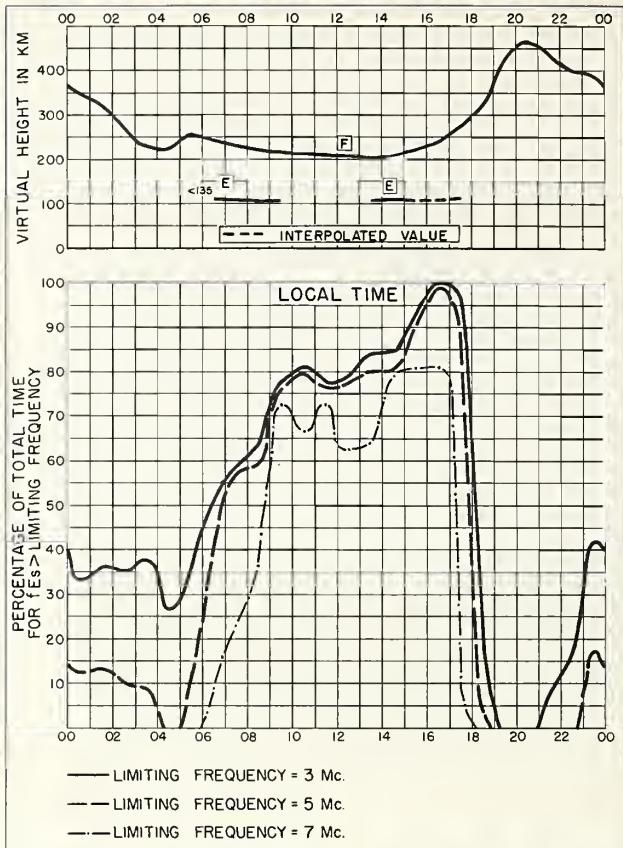


Fig. 38. La PAZ, BOLIVIA NOVEMBER 1958

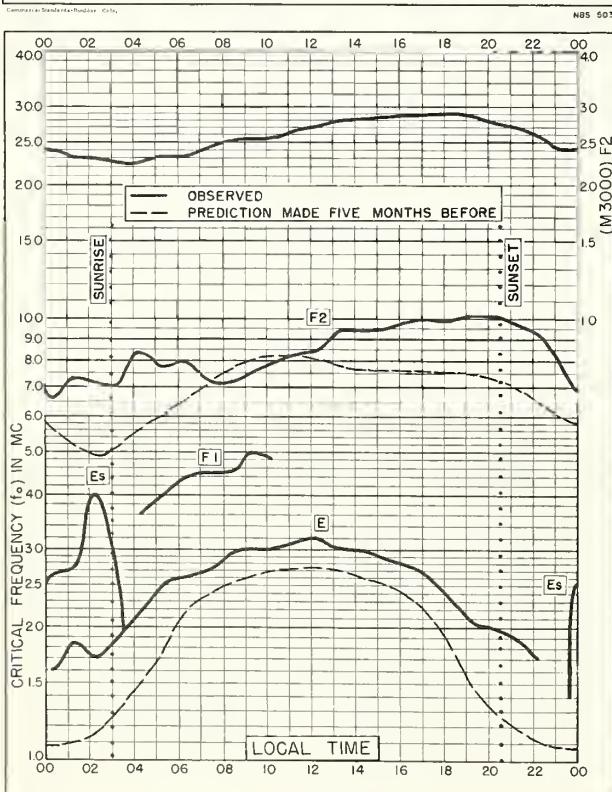


Fig. 39. ELLSWORTH
77.7°S, 41.1°W OCTOBER 1958

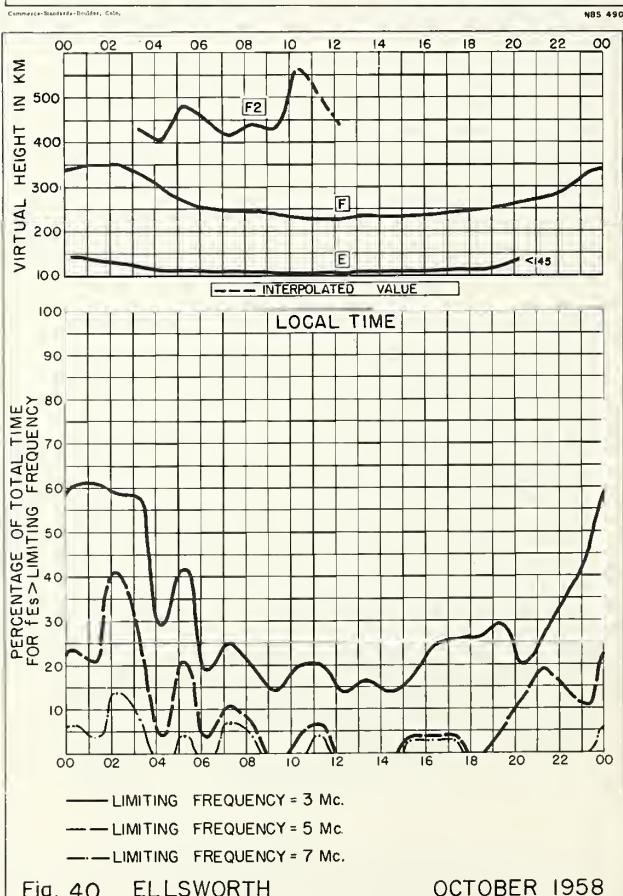
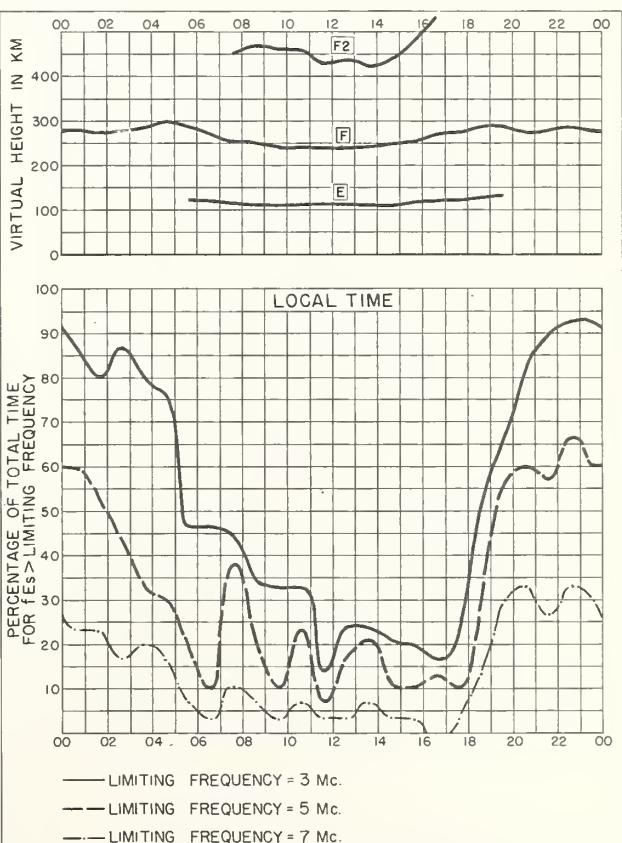
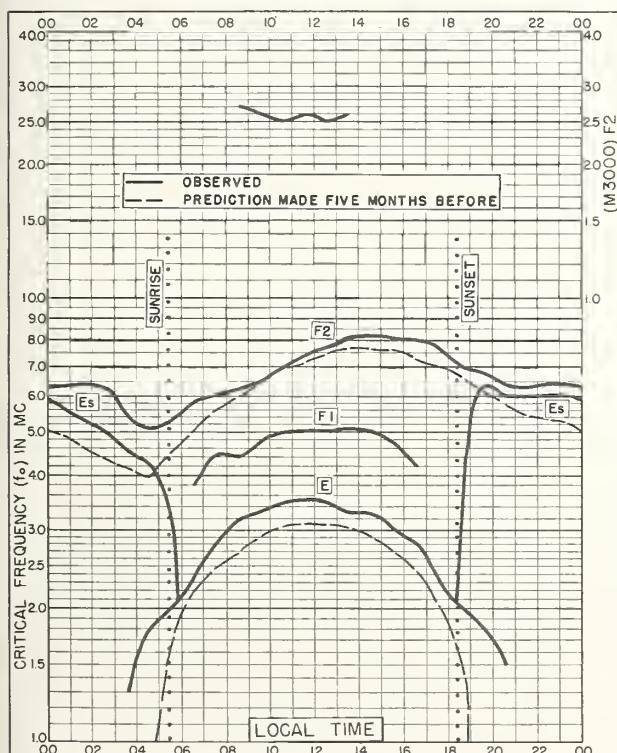
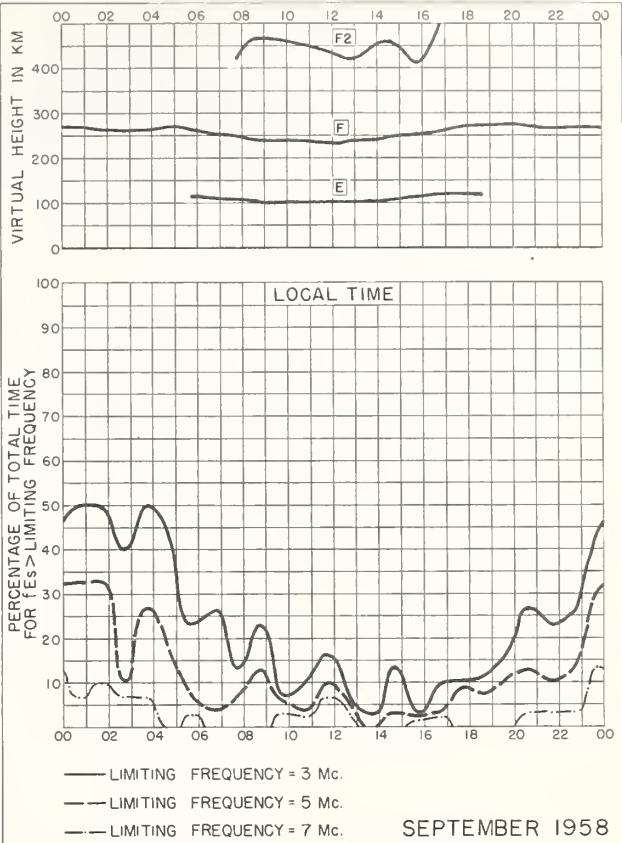
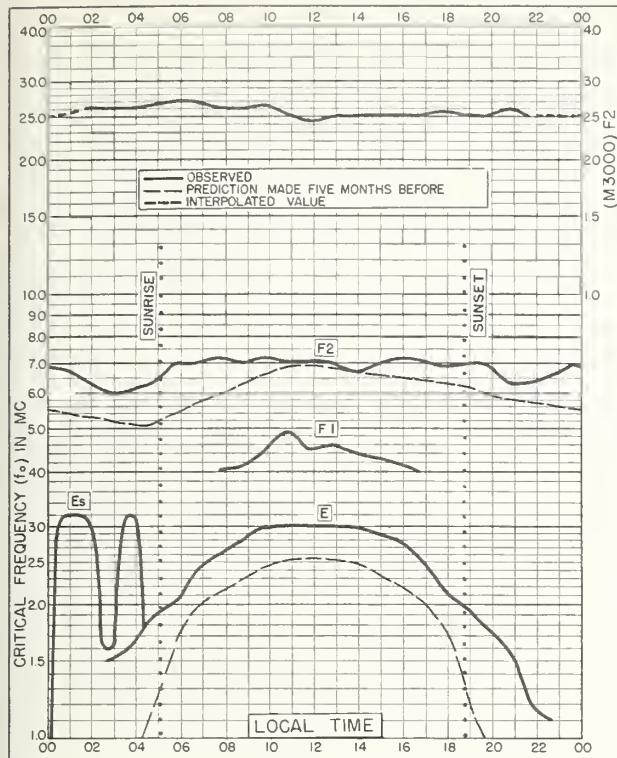


Fig. 40. ELLSWORTH OCTOBER 1958



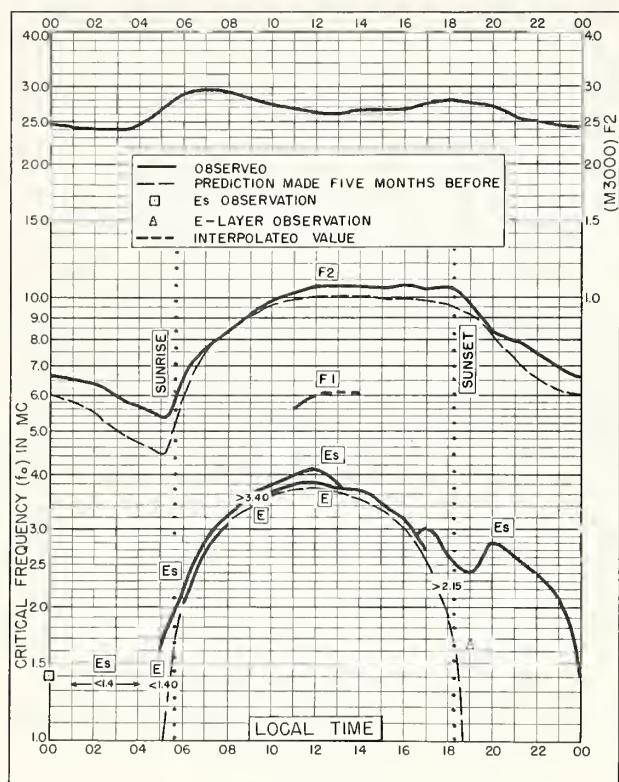


Fig. 45. SLOUGH, ENGLAND
51.5°N, 0.6°W SEPTEMBER 1958

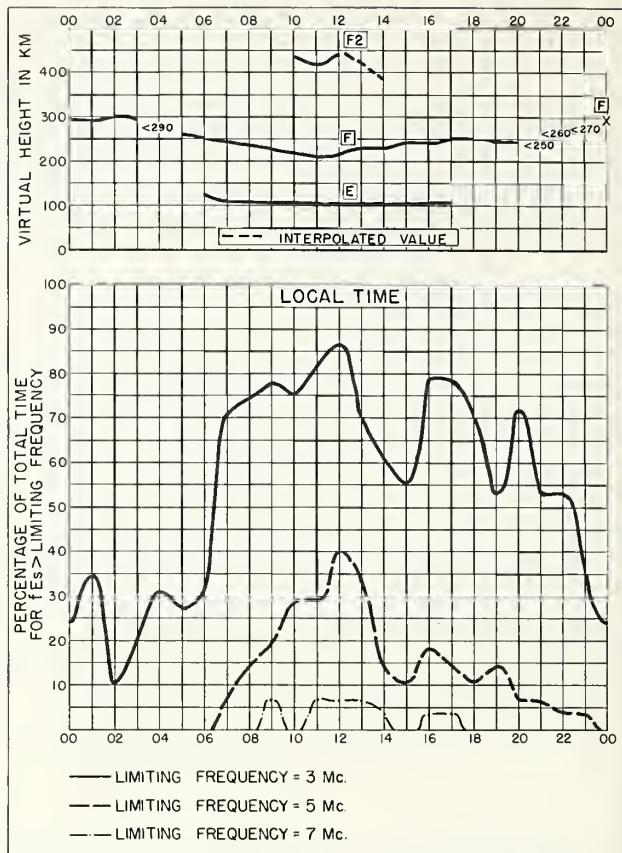


Fig. 46. SLOUGH, ENGLAND SEPTEMBER 1958

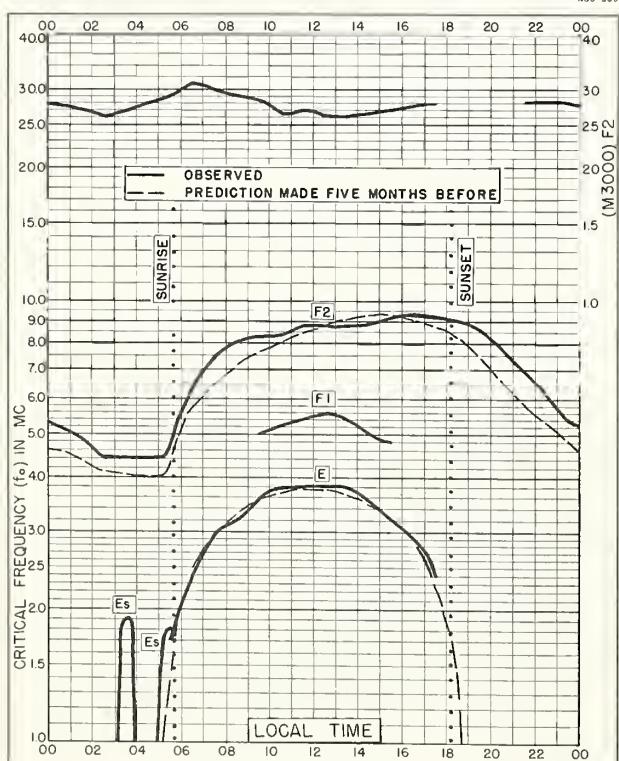


Fig. 47. WINNIPEG, CANADA
49.9°N, 97.4°W SEPTEMBER 1958

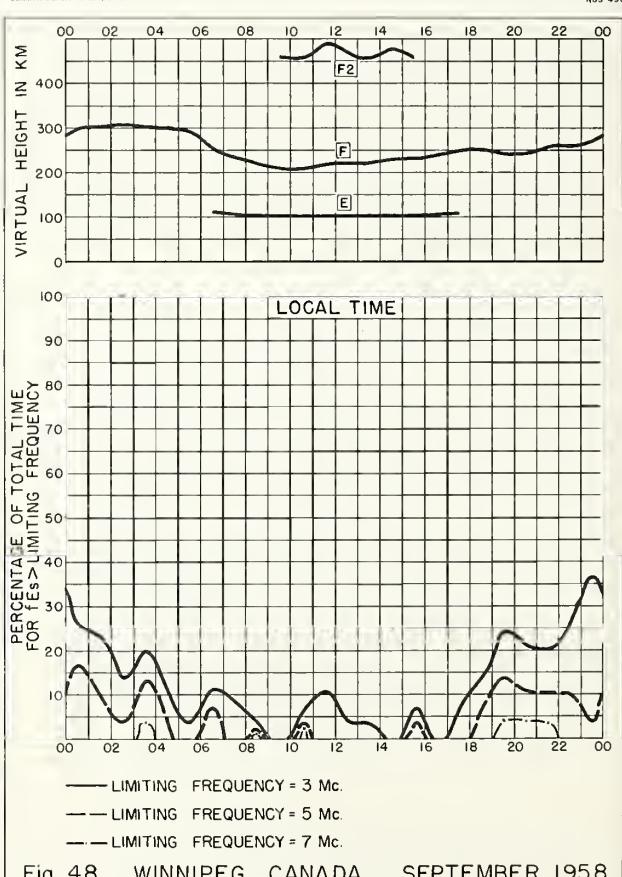
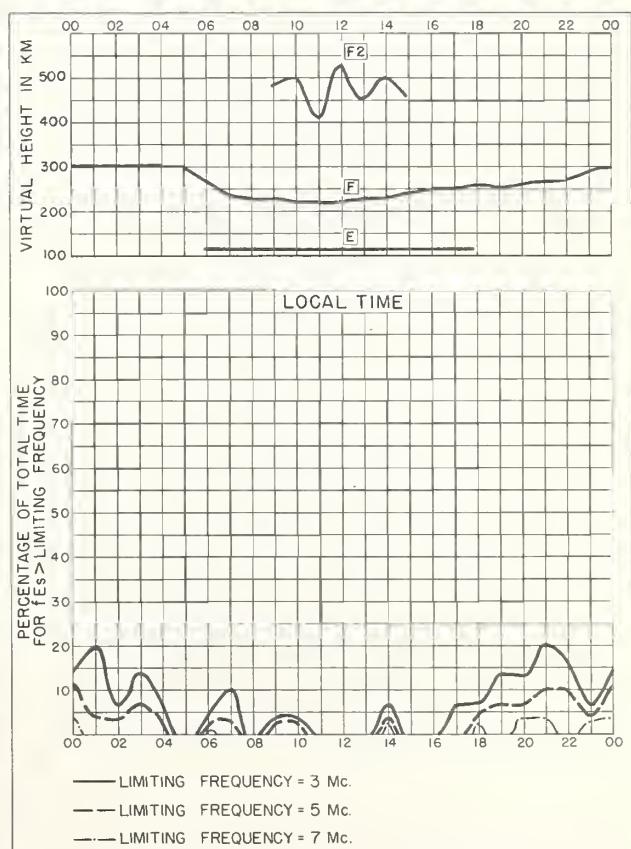
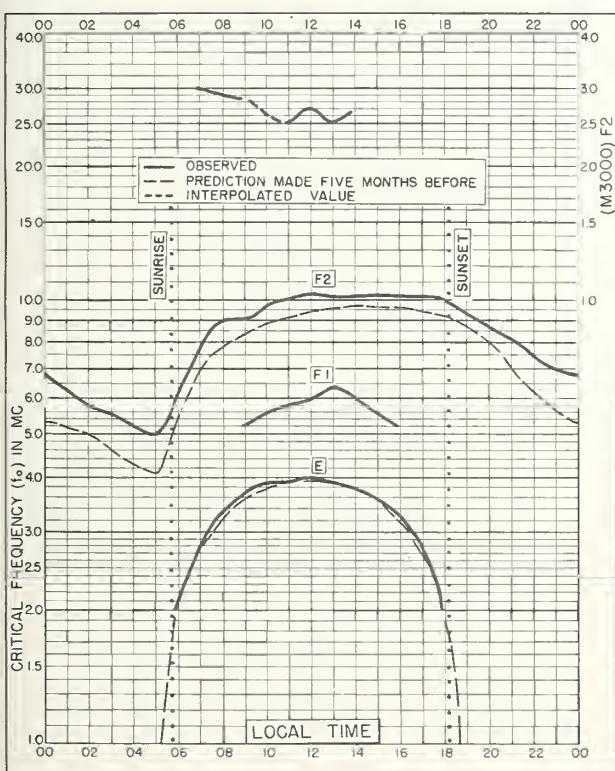
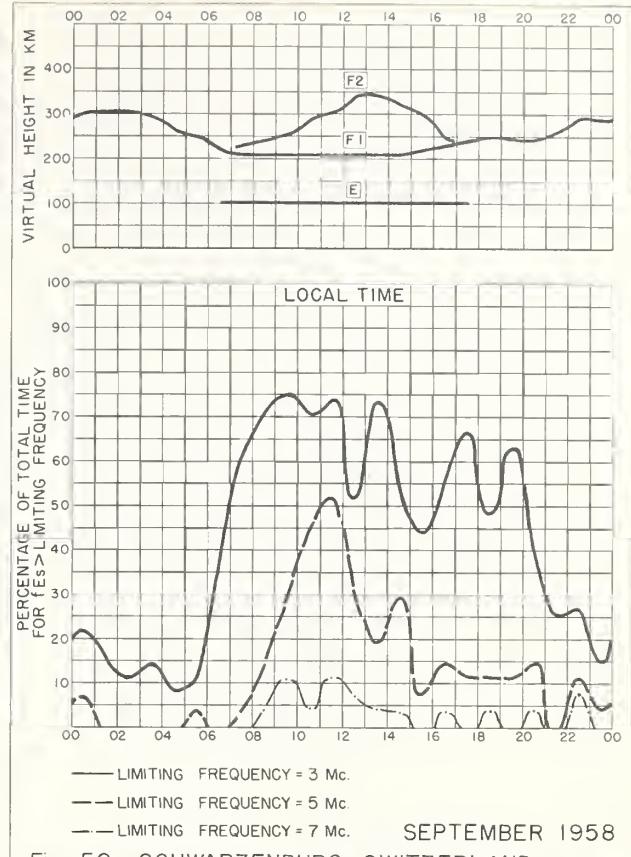
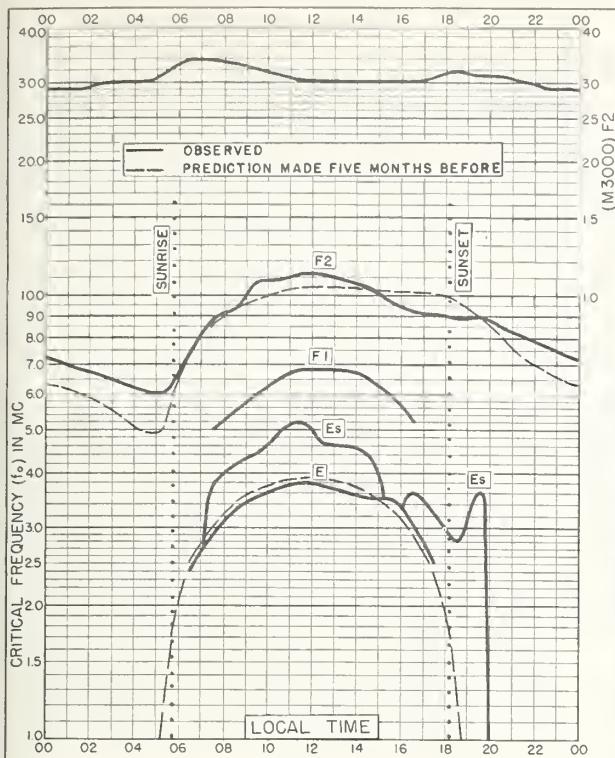


Fig. 48. WINNIPEG, CANADA SEPTEMBER 1958



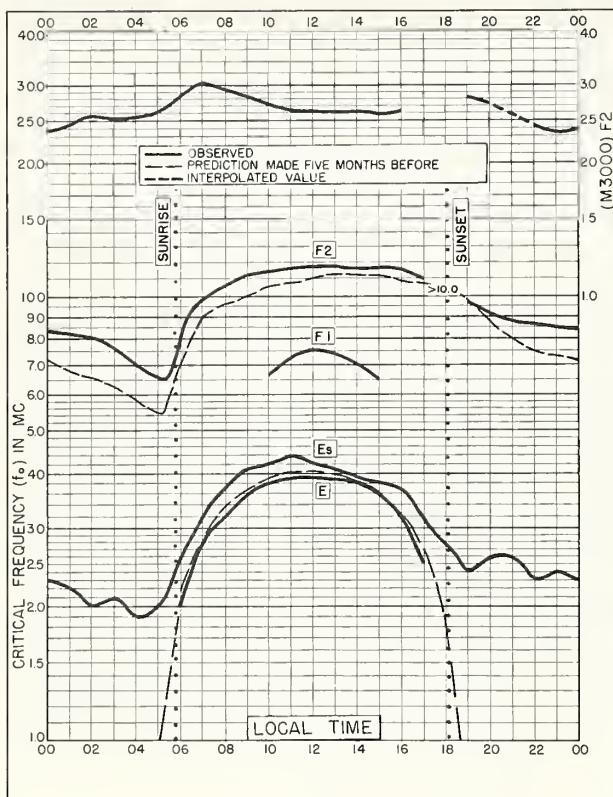


Fig. 53. TORTOSA, SPAIN
40.8°N, 0.5°E SEPTEMBER 1958

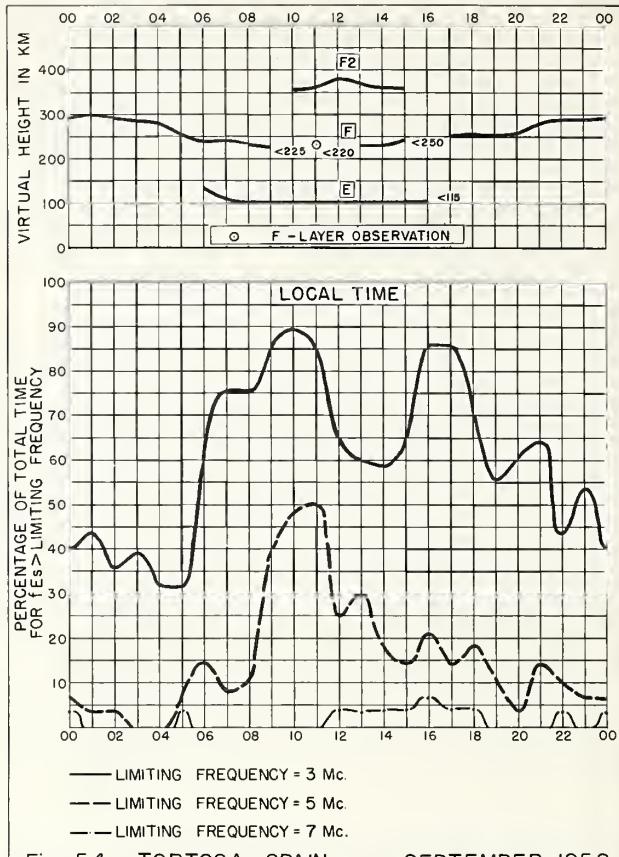


Fig. 54. TORTOSA, SPAIN SEPTEMBER 1958

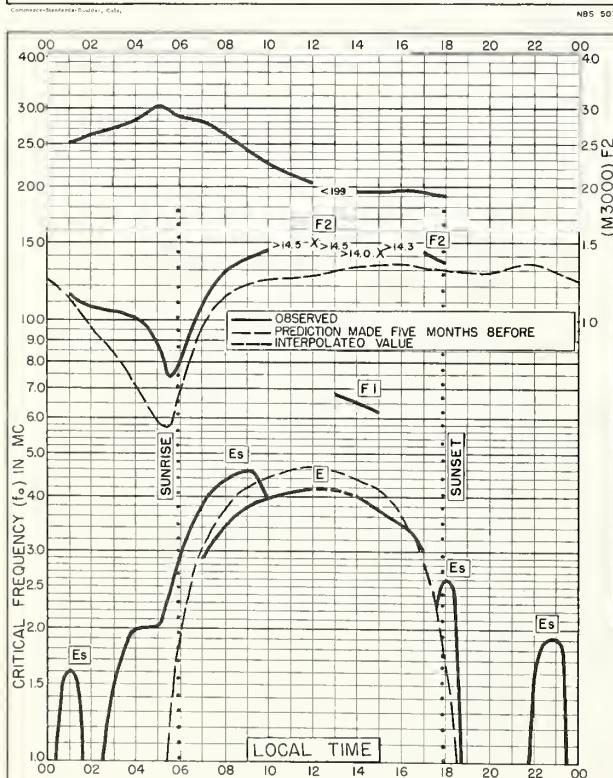


Fig. 55. BUNIA, BELGIAN CONGO
1.5°N, 30.2°E SEPTEMBER 1958

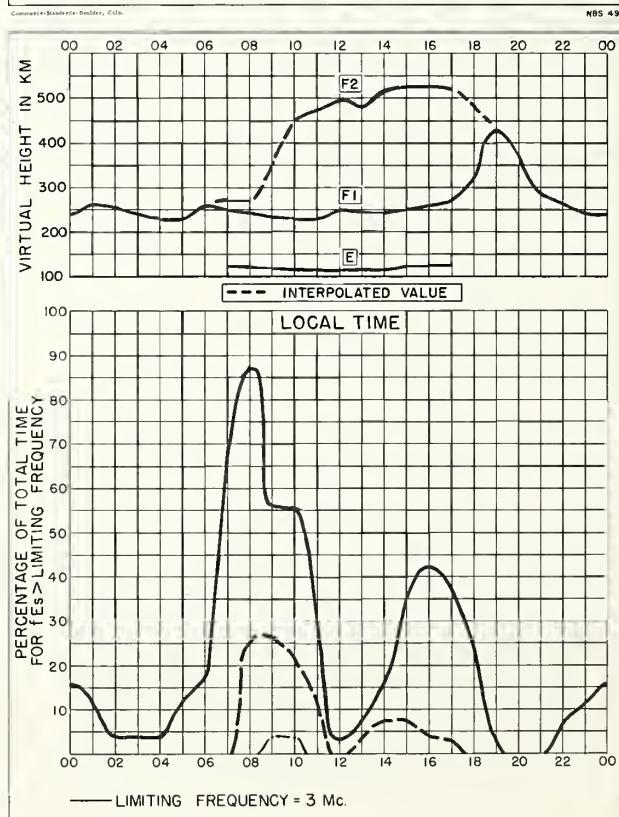


Fig. 56. BUNIA, BELGIAN CONGO SEPTEMBER 1958

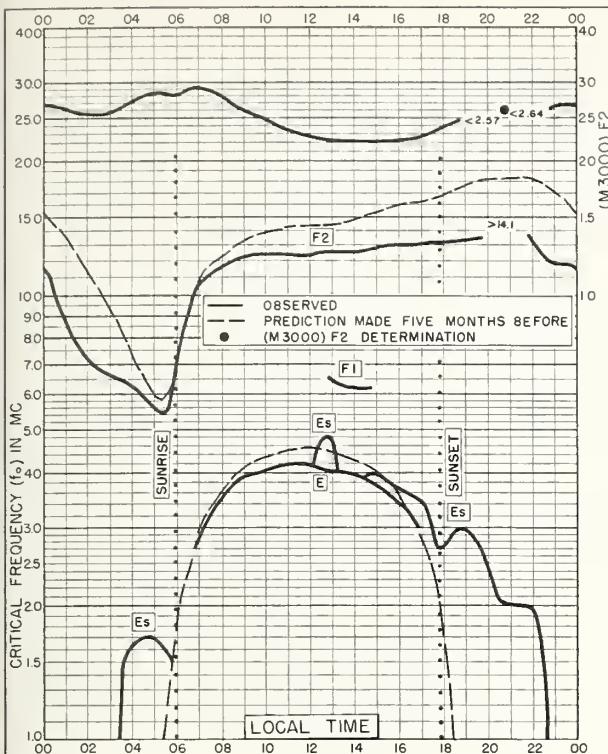


Fig. 57. ELISABETHVILLE, BELGIAN CONGO
II.6°S, 27.5°E SEPTEMBER 1958

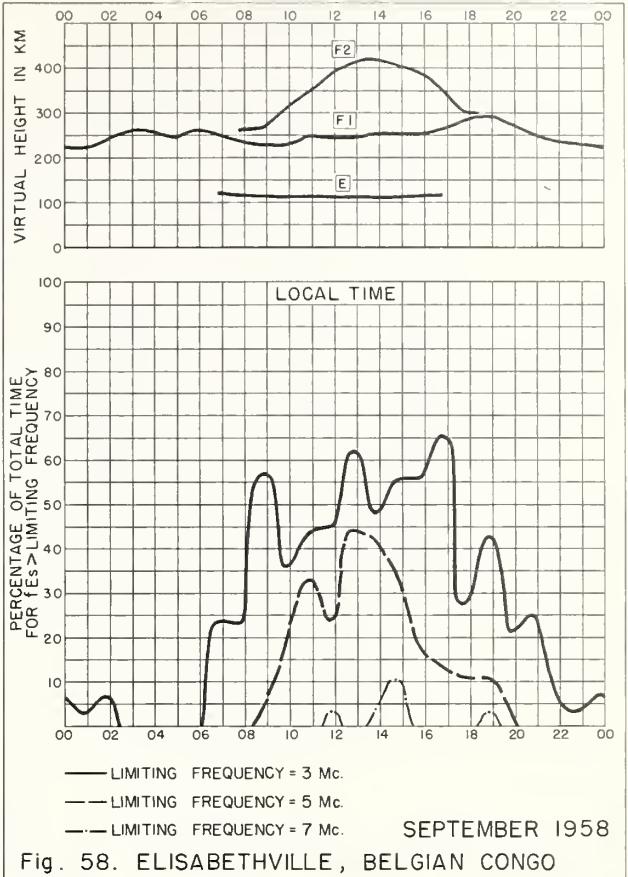


Fig. 58. ELISABETHVILLE, BELGIAN CONGO

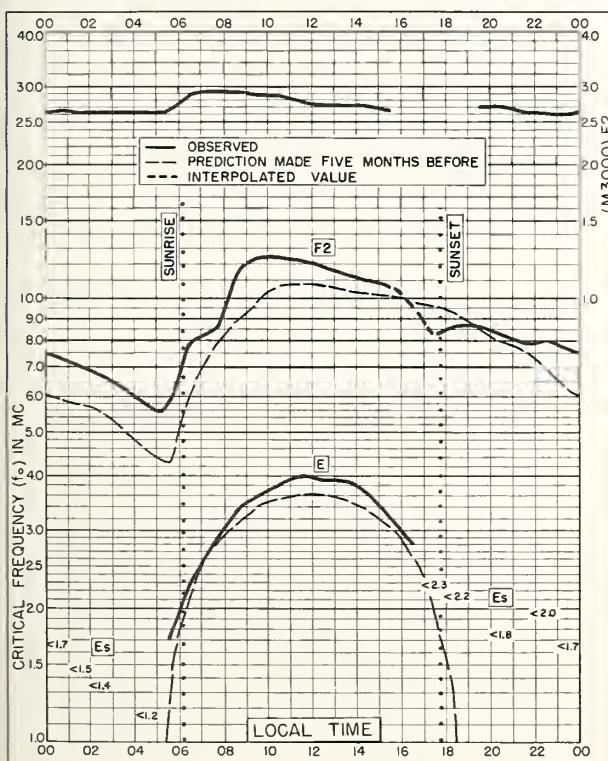


Fig. 59. CHRISTCHURCH, NEW ZEALAND
43.6°S, 172.8°E SEPTEMBER 1958

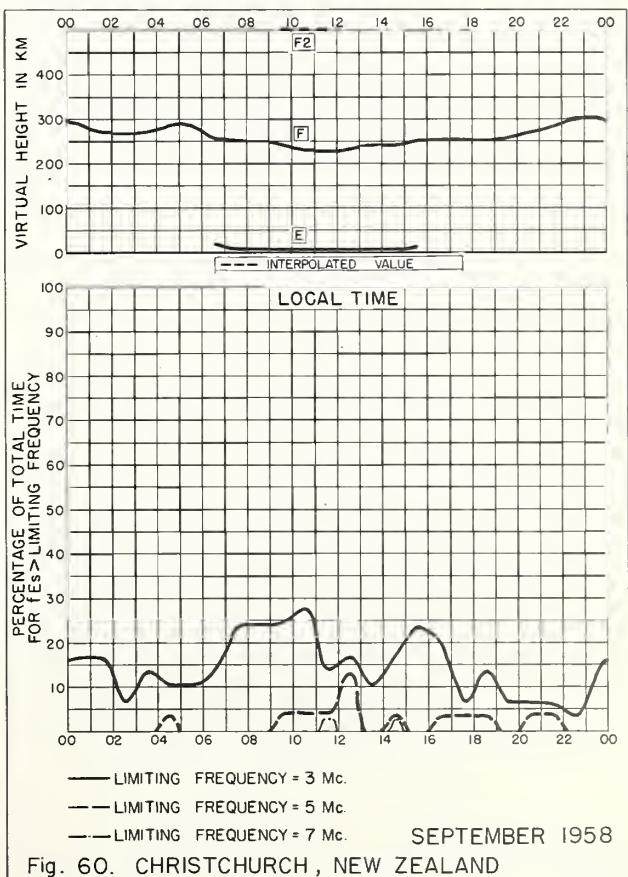
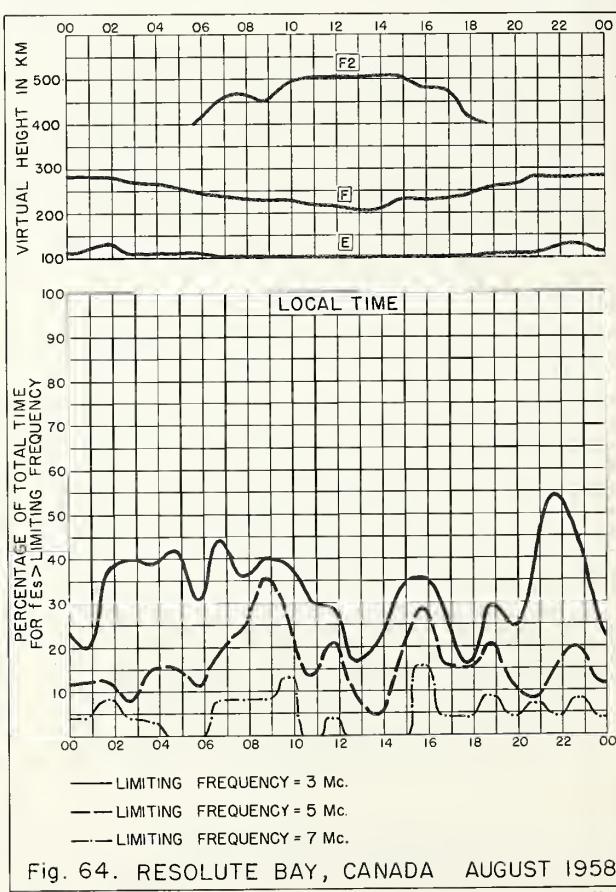
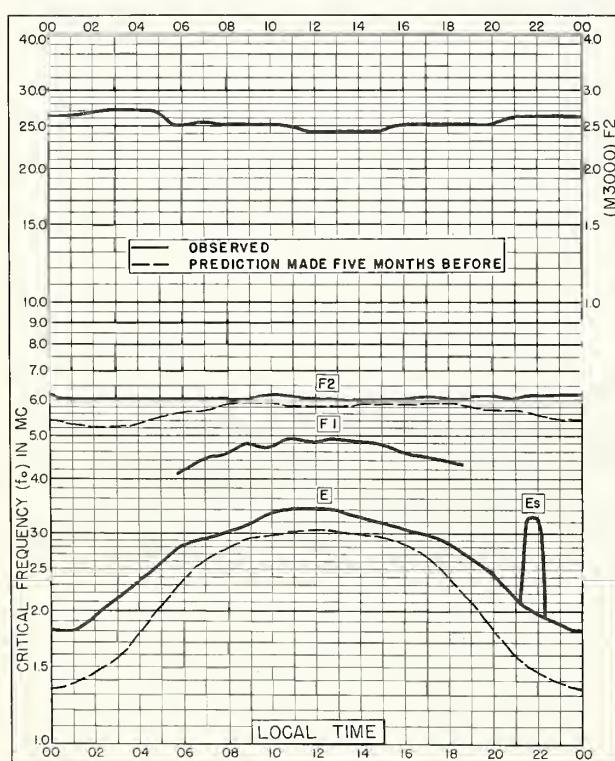
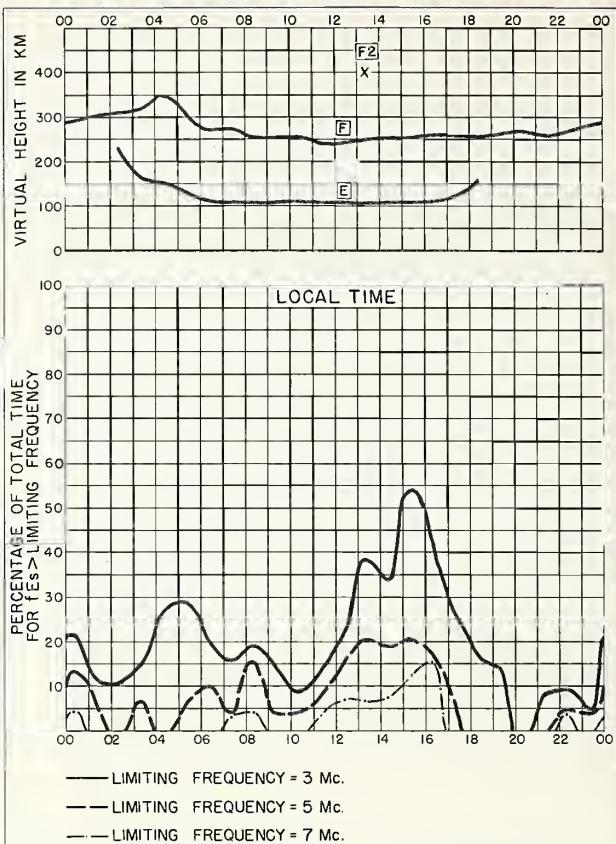
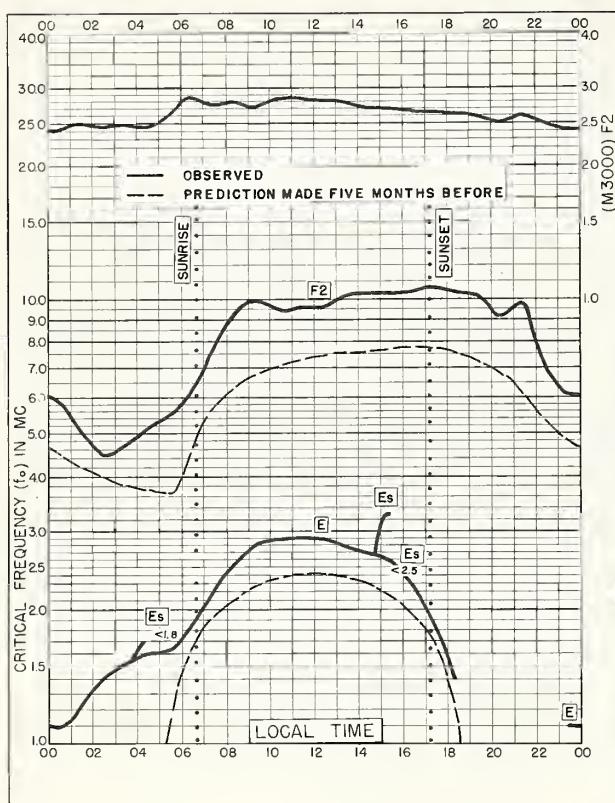


Fig. 60. CHRISTCHURCH, NEW ZEALAND



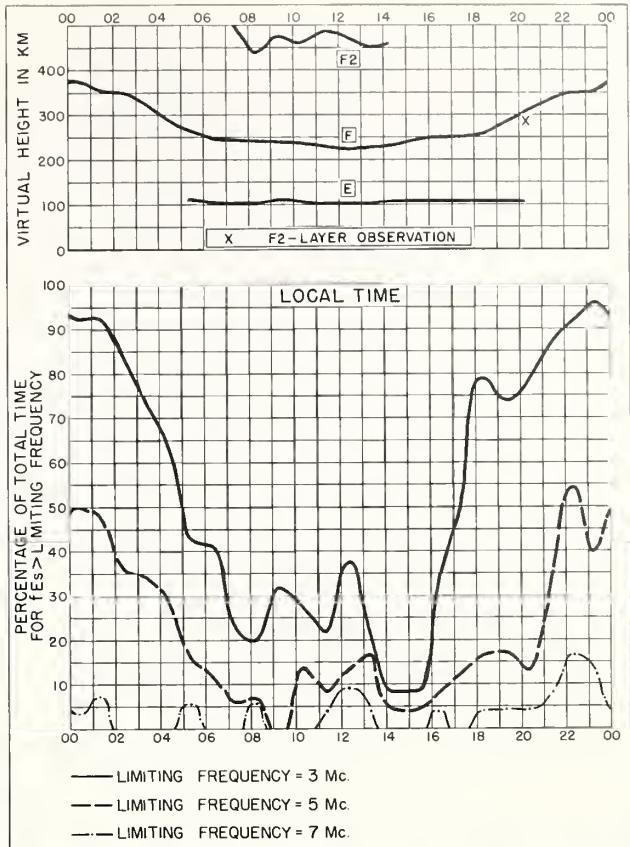
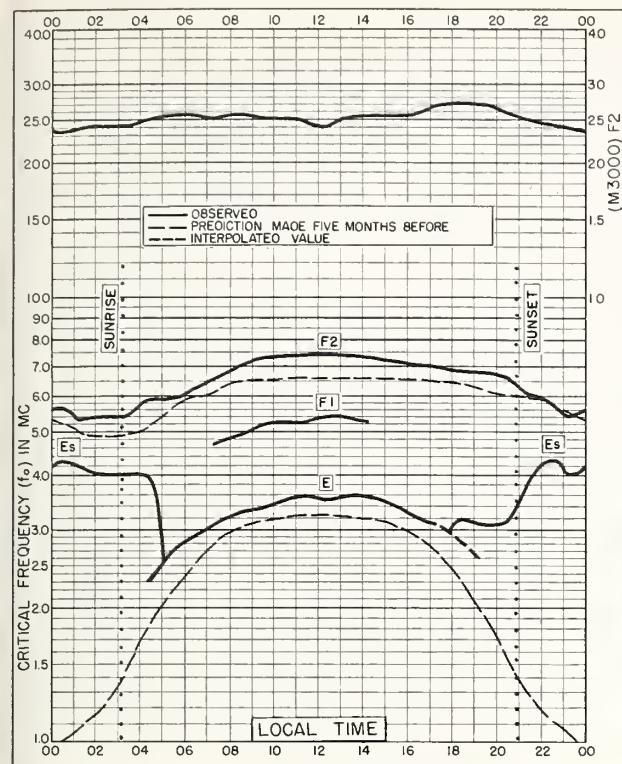


Fig. 66. TROMSO, NORWAY AUGUST 1958

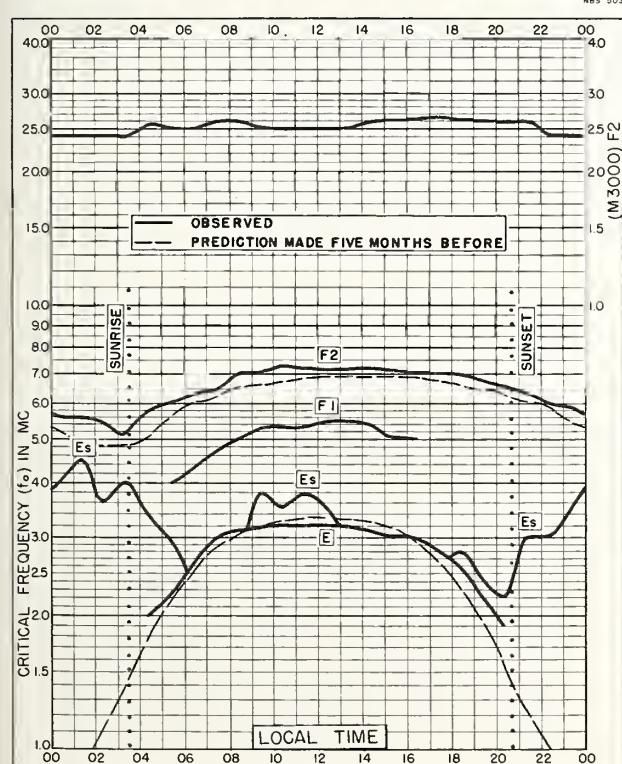
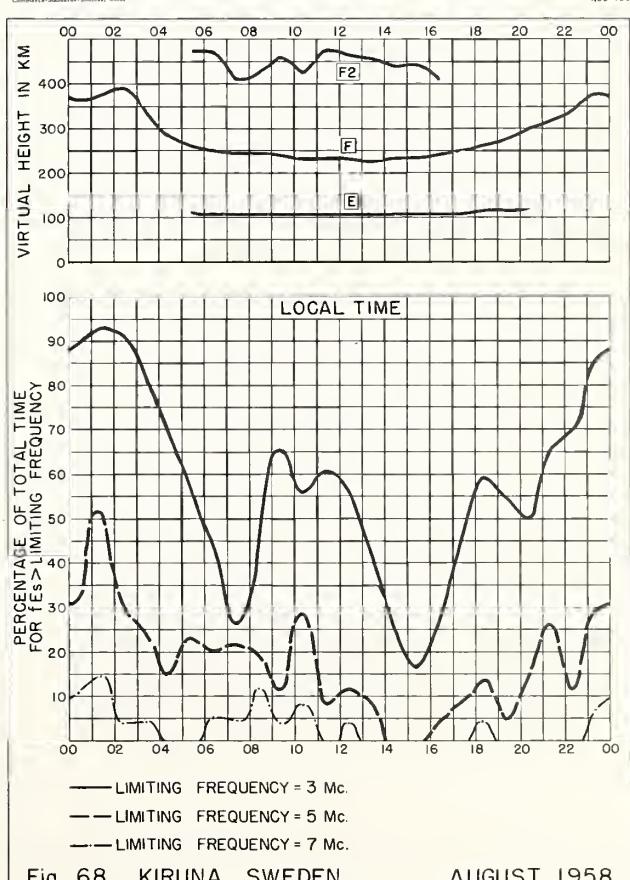


Fig. 67. KIRUNA, SWEDEN
67° 8' N. 20° 3' E AUGUST 1958



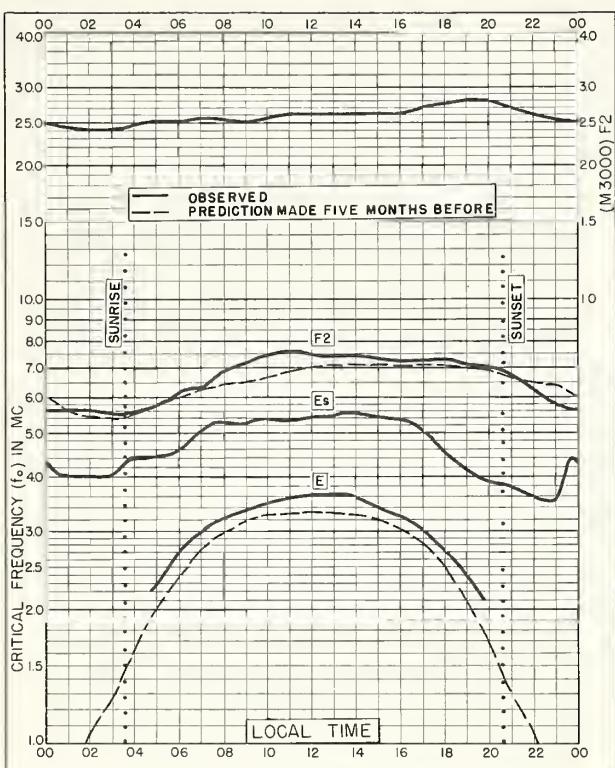


Fig. 69. SODANKYLA, FINLAND

67.4°N, 26.6°E AUGUST 1958

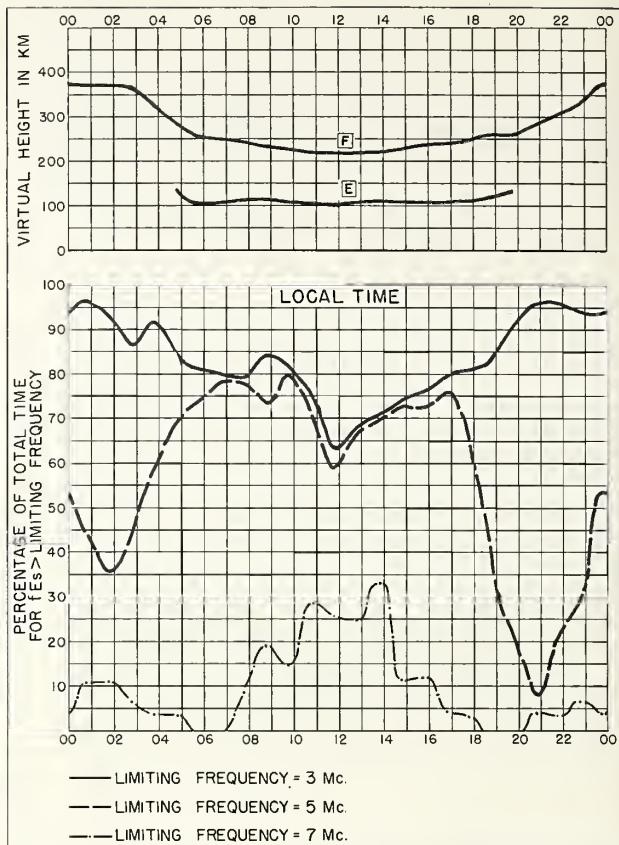


Fig. 70. SODANKYLA, FINLAND

AUGUST 1958

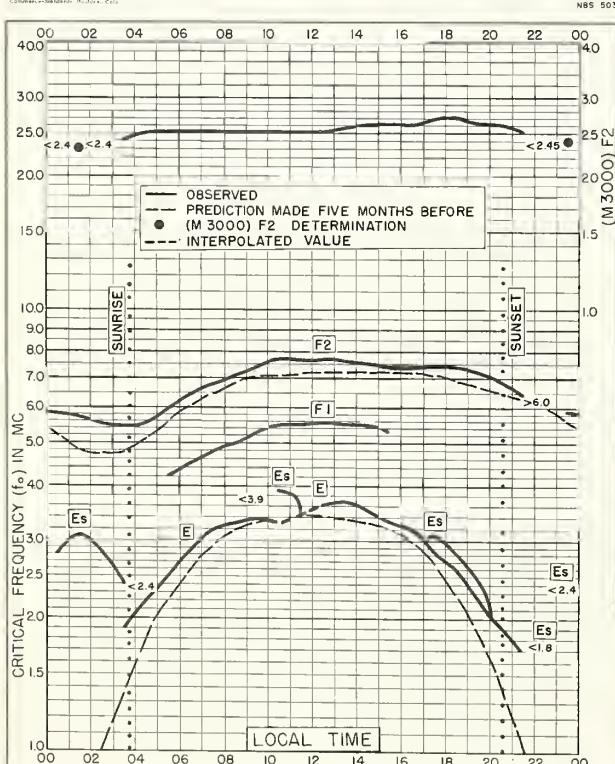


Fig. 71. LULEA, SWEDEN

65.6°N, 22.1°E AUGUST 1958

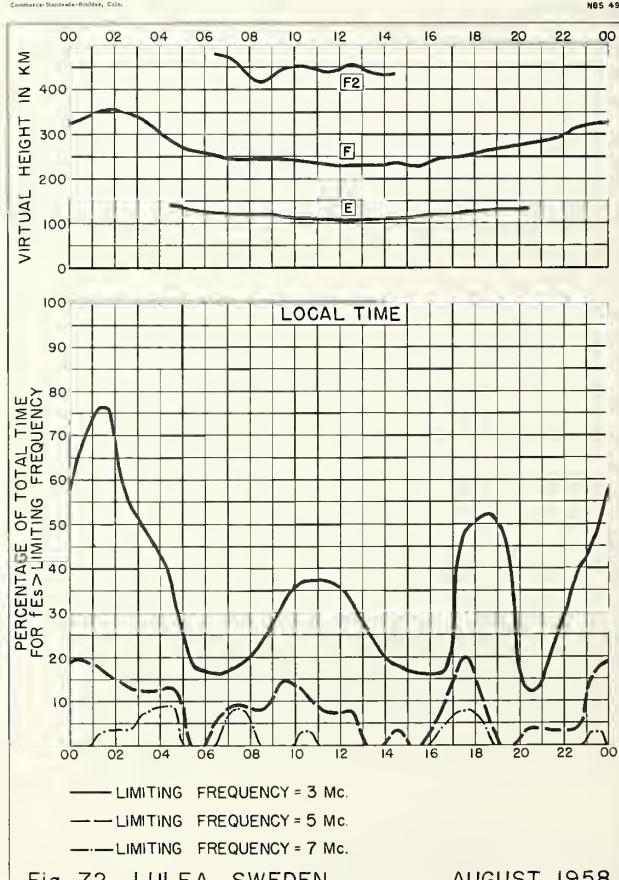


Fig. 72. LULEA, SWEDEN

AUGUST 1958

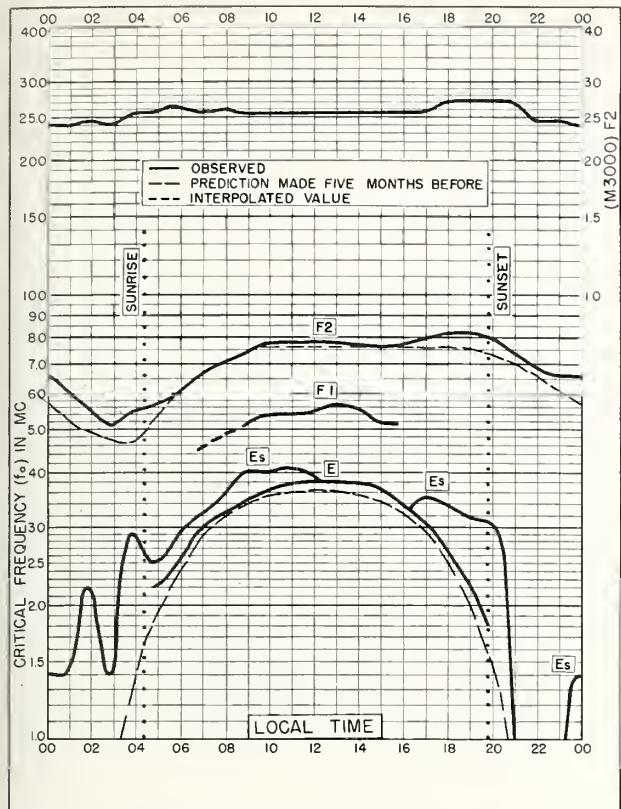


Fig. 73. OSLO, NORWAY
 60.0°N, 11.1°E AUGUST 1958

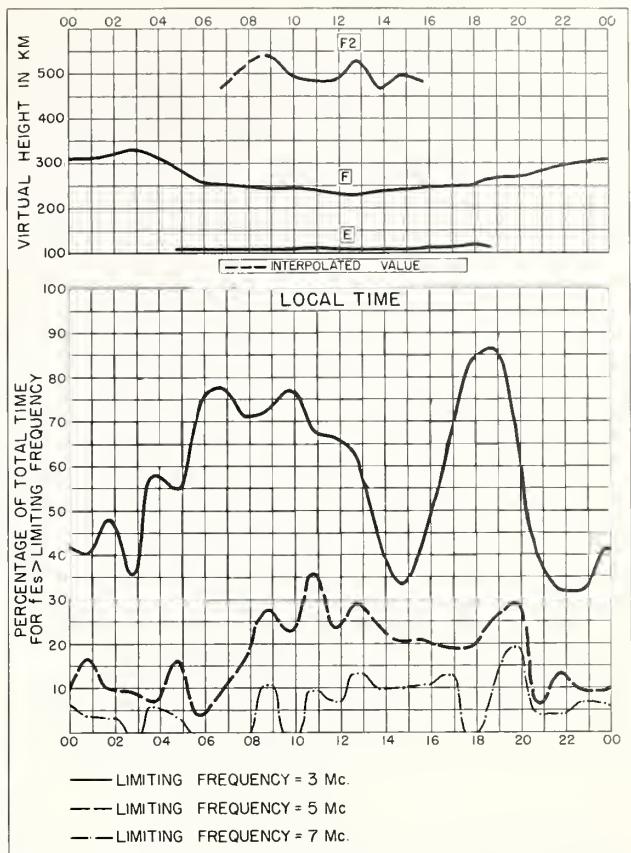


Fig. 74. OSLO, NORWAY AUGUST 1958

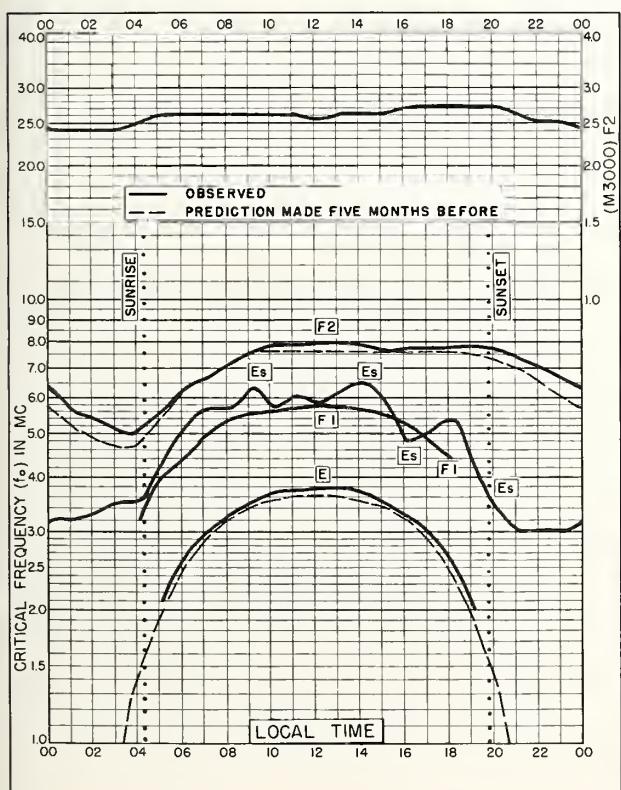


Fig. 75. UPSALA, SWEDEN
 59.8°N, 17.6°E AUGUST 1958

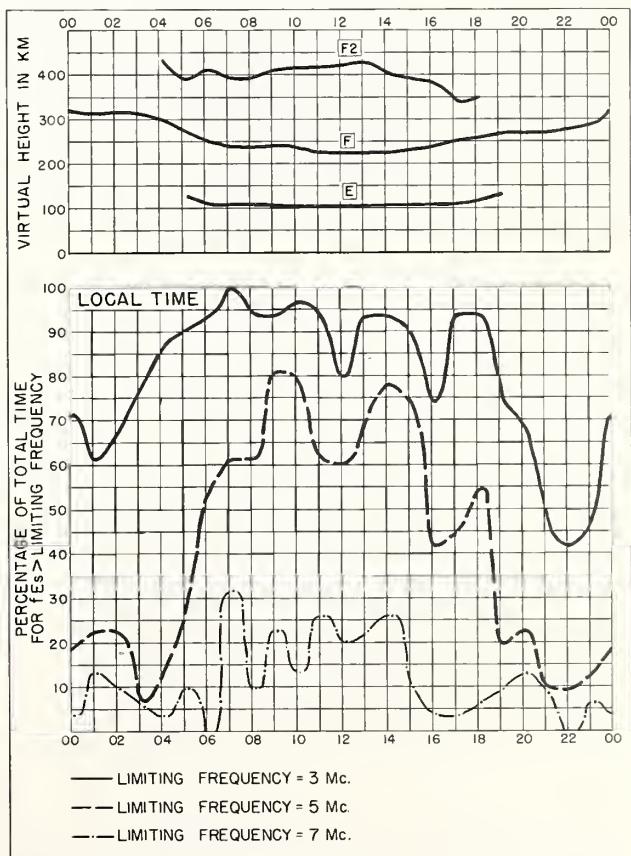


Fig. 76. UPSALA, SWEDEN AUGUST 1958

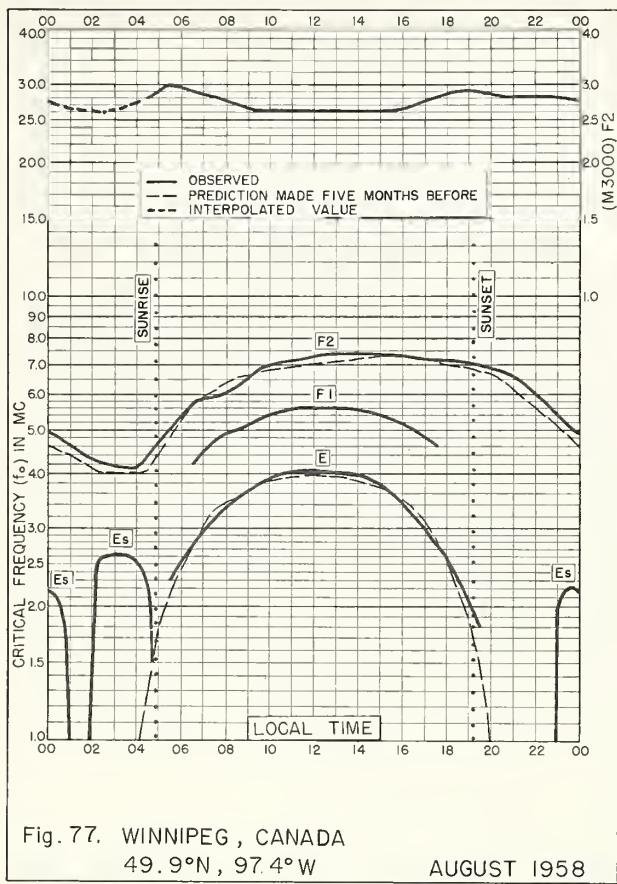


Fig. 77. WINNIPEG, CANADA

49.9°N, 97.4°W AUGUST 1958

NBS 503

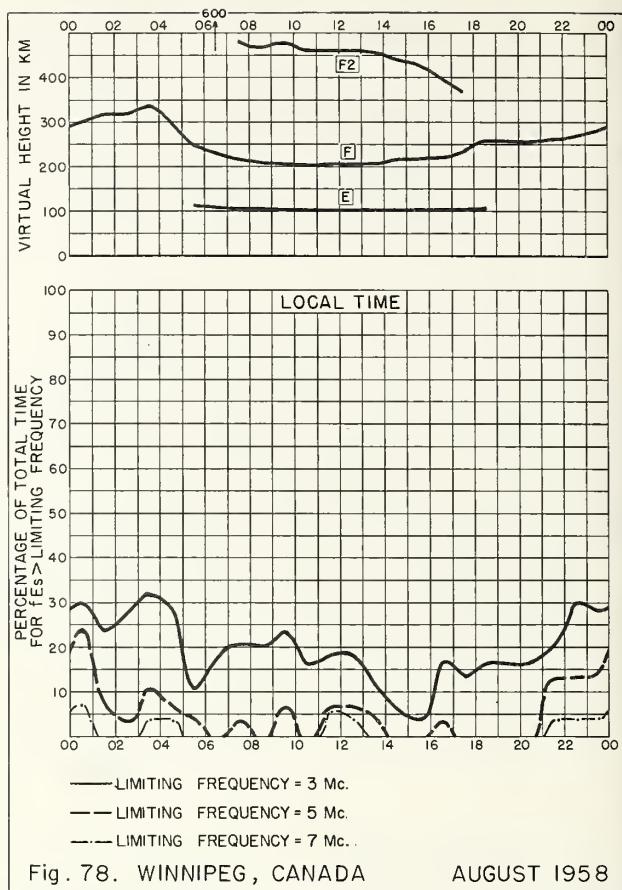


Fig. 78. WINNIPEG, CANADA

AUGUST 1958

NBS 490

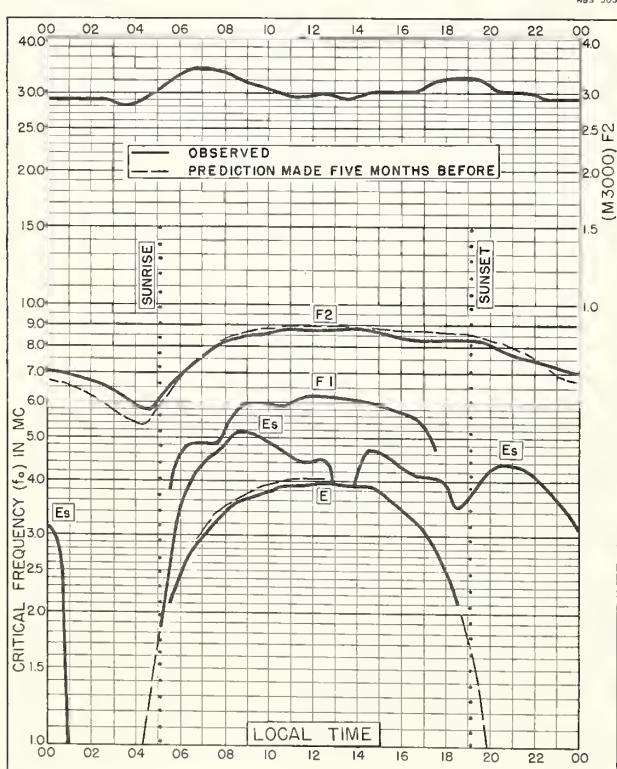


Fig. 79. SCHWARZENBURG, SWITZERLAND

46.8°N, 7.3°E AUGUST 1958

NBS 503

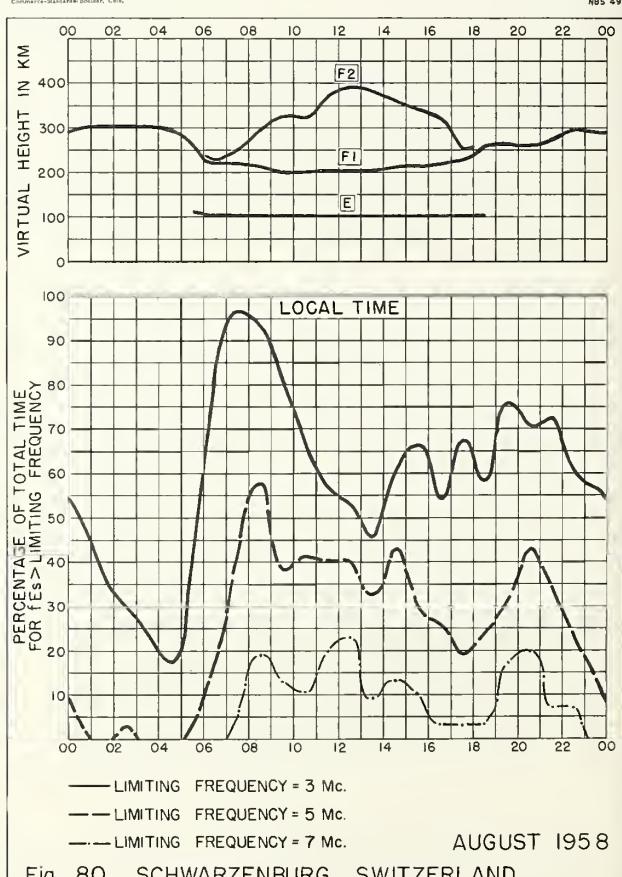


Fig. 80. SCHWARZENBURG, SWITZERLAND

AUGUST 1958

NBS 490

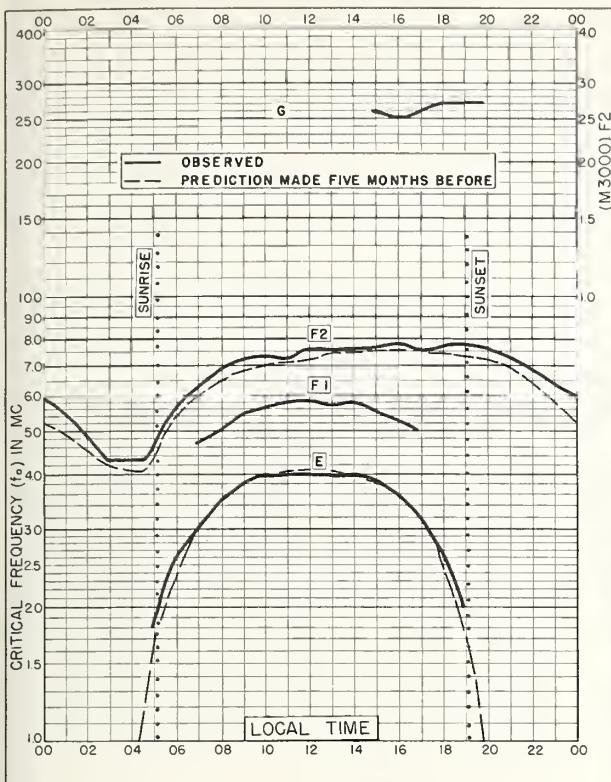


Fig. 81. OTTAWA, CANADA
45.4°N, 75.9°W AUGUST 1958

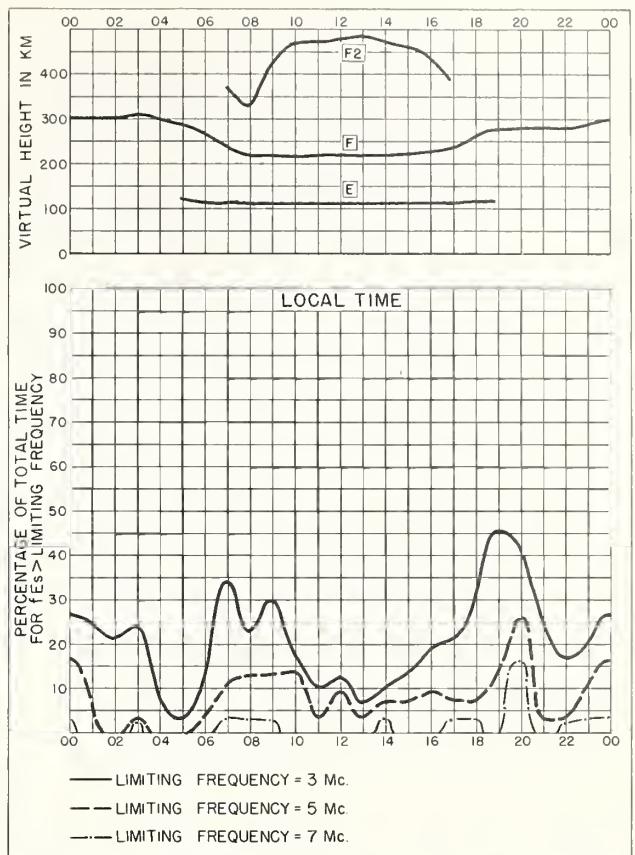


Fig. 82. OTTAWA, CANADA AUGUST 1958

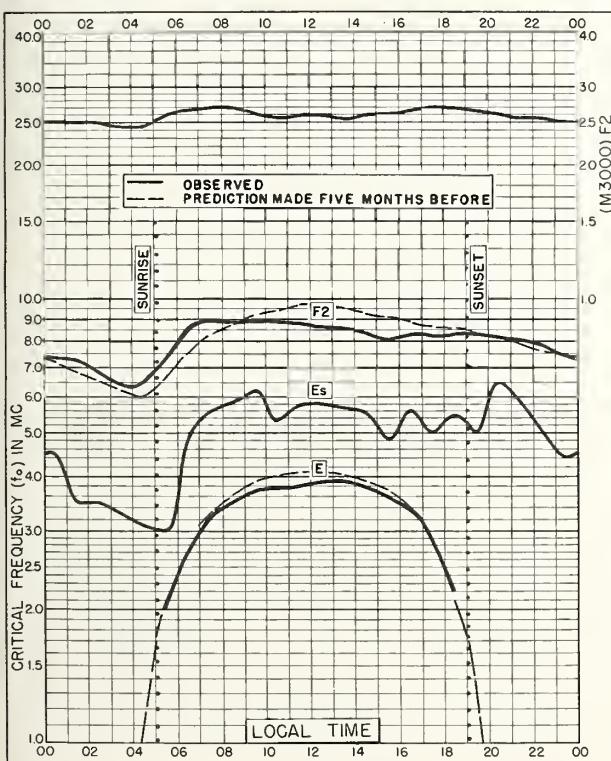


Fig. 83. WAKKANAI, JAPAN
45.4°N, 141.7°E AUGUST 1958

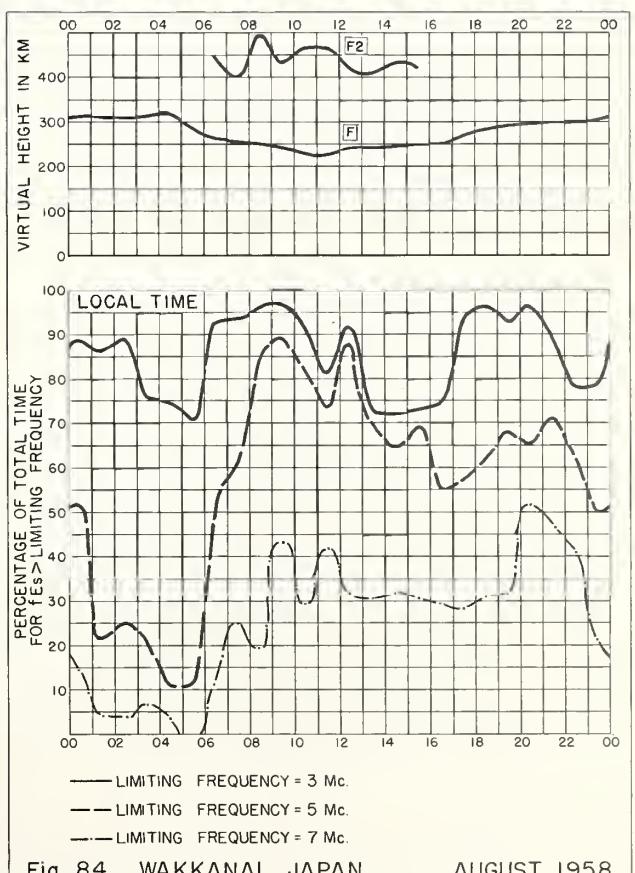
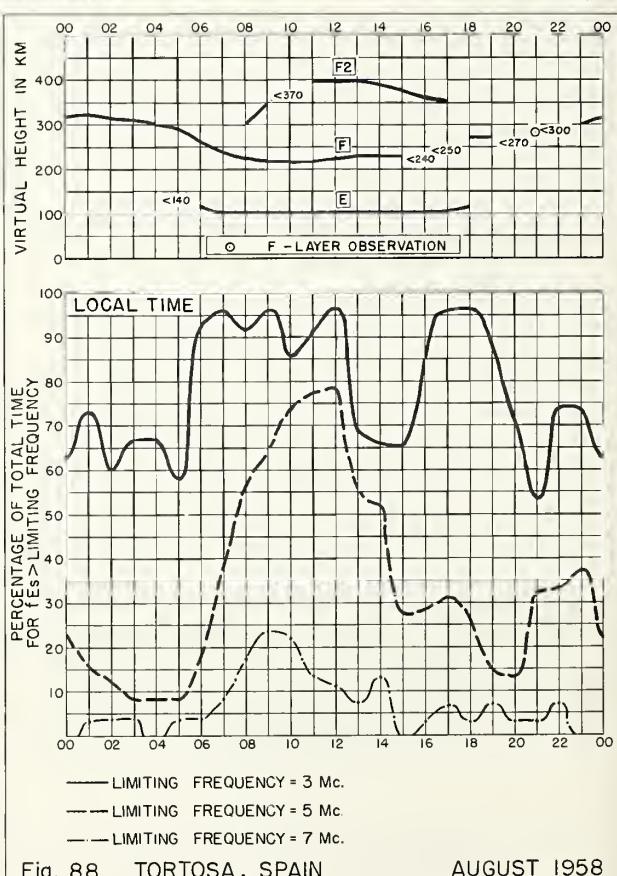
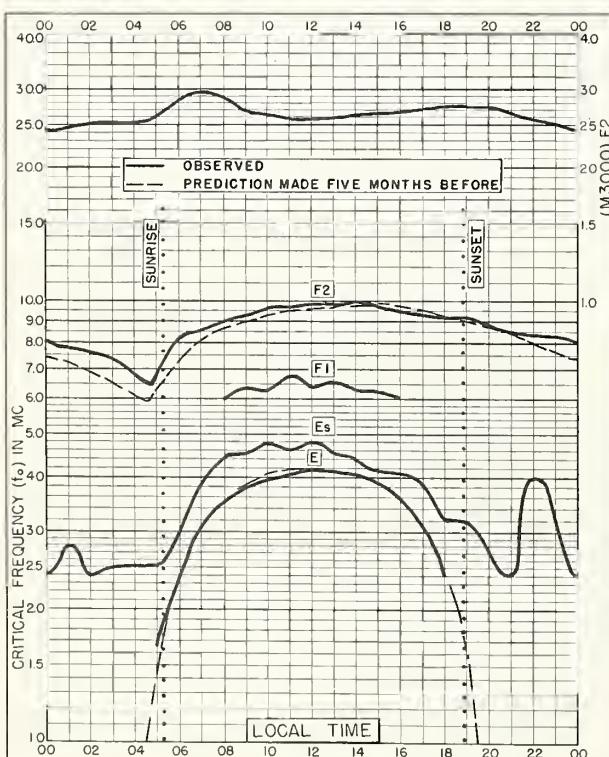
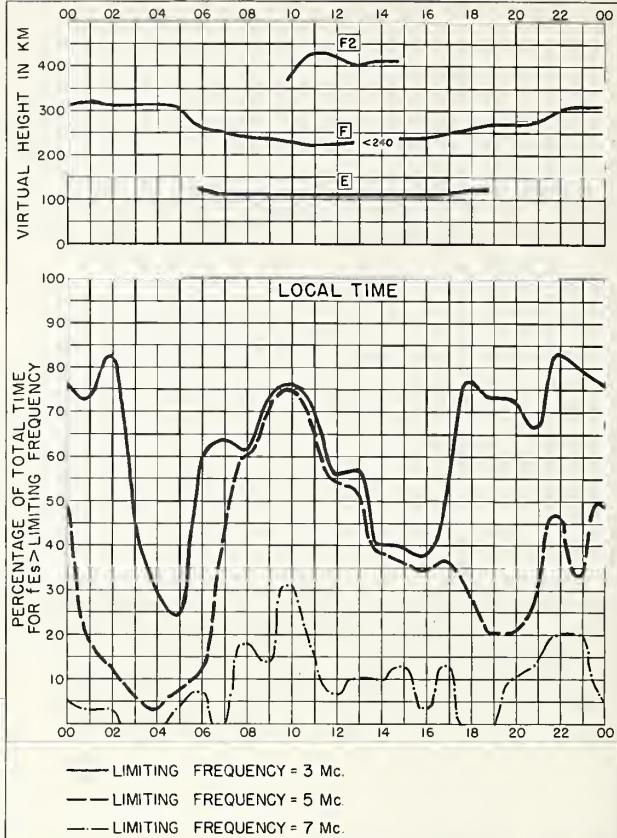
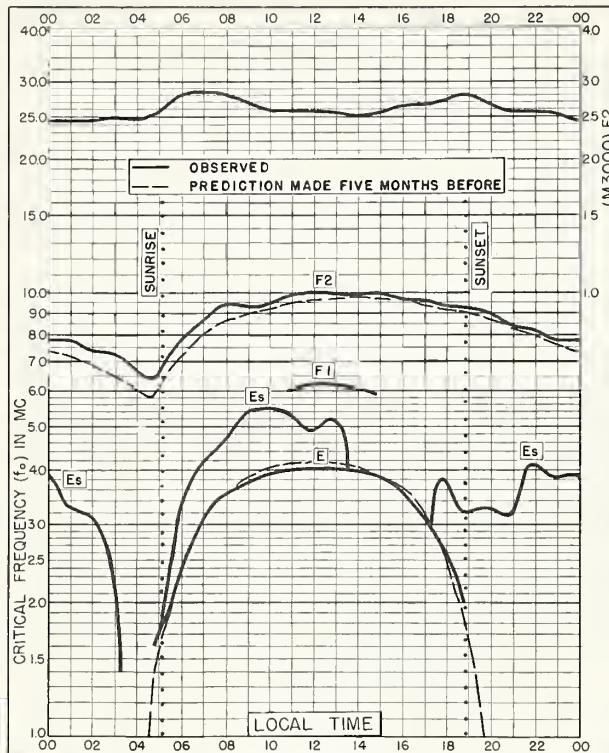


Fig. 84. WAKKANAI, JAPAN AUGUST 1958



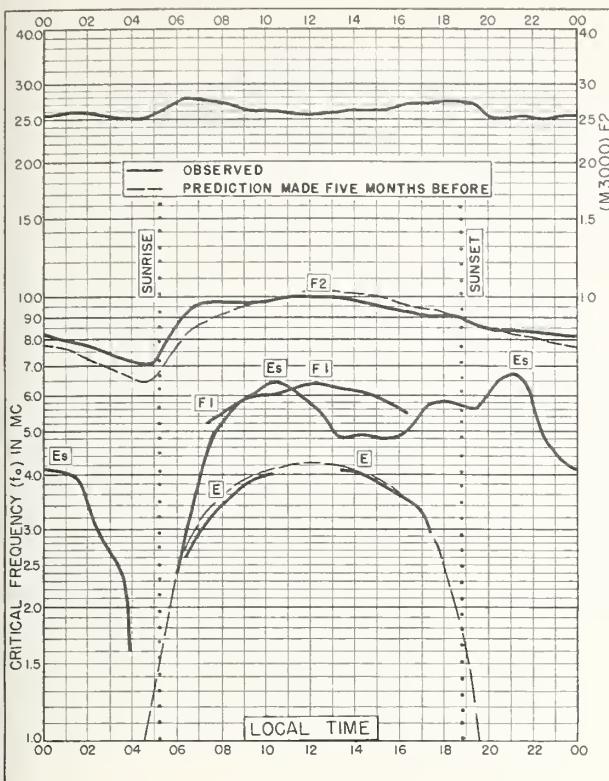


Fig. 89. AKITA, JAPAN

39.7°N, 140.1°E

AUGUST 1958

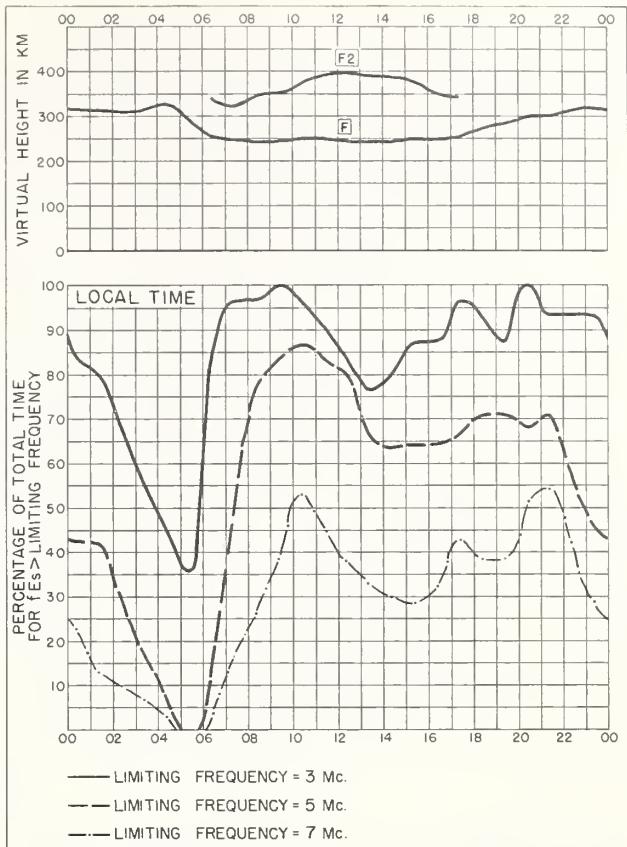


Fig. 90. AKITA, JAPAN

AUGUST 1958

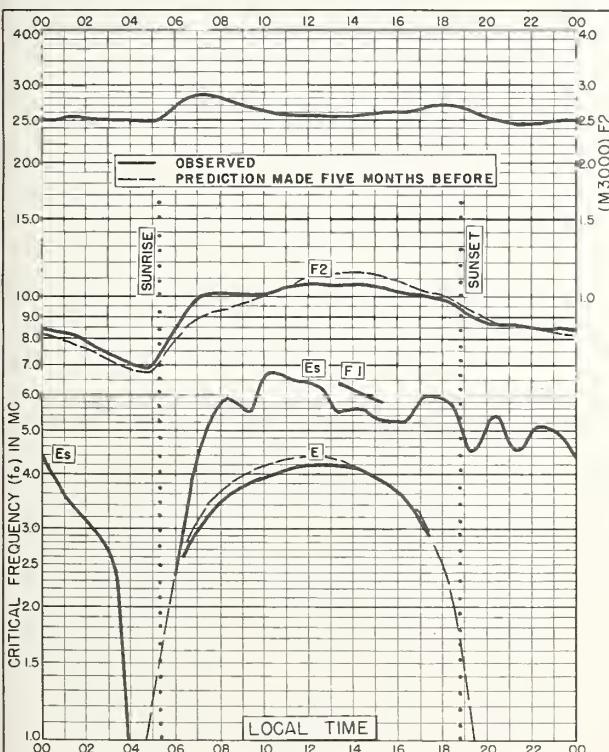


Fig. 91. TOKYO, JAPAN

35.7°N, 139.5°E

AUGUST 1958

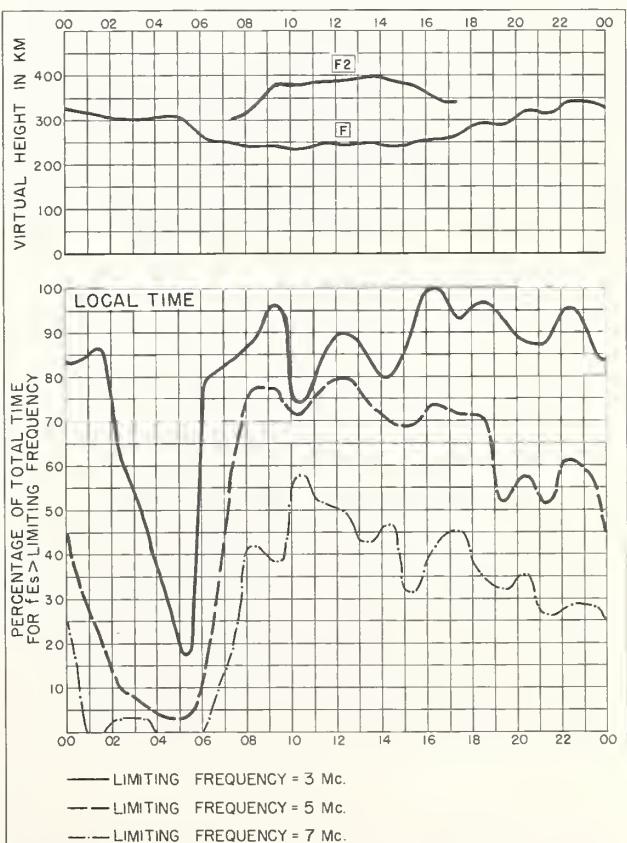


Fig. 92. TOKYO, JAPAN

AUGUST 1958

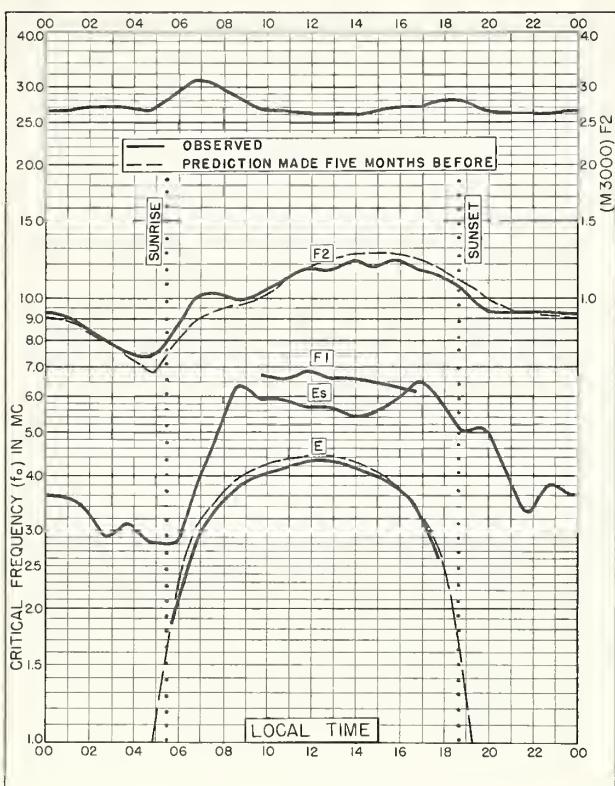


Fig. 93. YAMAGAWA, JAPAN

31.2°N, 130.6°E

AUGUST 1958

Commerce Standards Products, Wash.

NBS 503

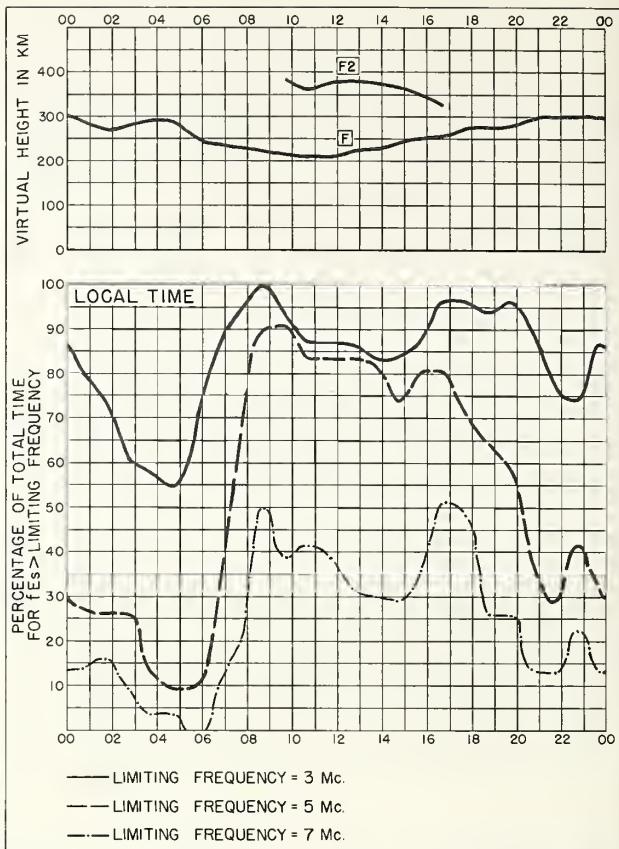


Fig. 94. YAMAGAWA, JAPAN

AUGUST 1958

Commerce Standards Products, Wash.

NBS 490

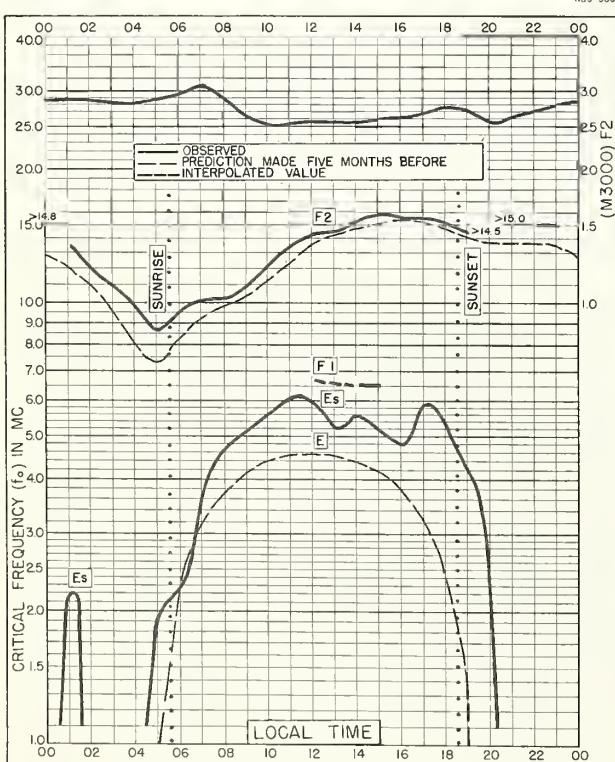


Fig. 95. FORMOSA, CHINA

25.0°N, 121.5°E

AUGUST 1958

NBS 503

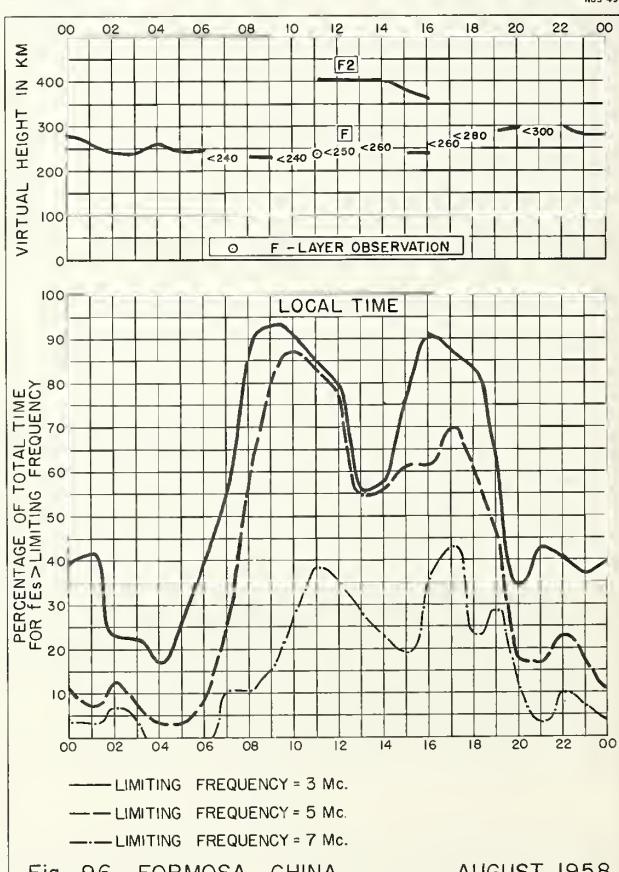


Fig. 96. FORMOSA, CHINA

AUGUST 1958

NBS 490

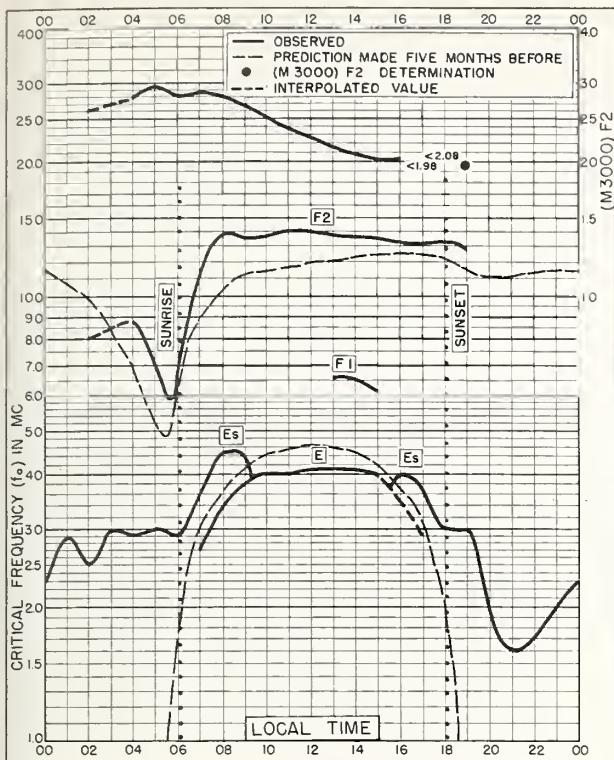


Fig. 97. BUNIA, BELGIAN CONGO
1.5°N, 30.2°E AUGUST 1958

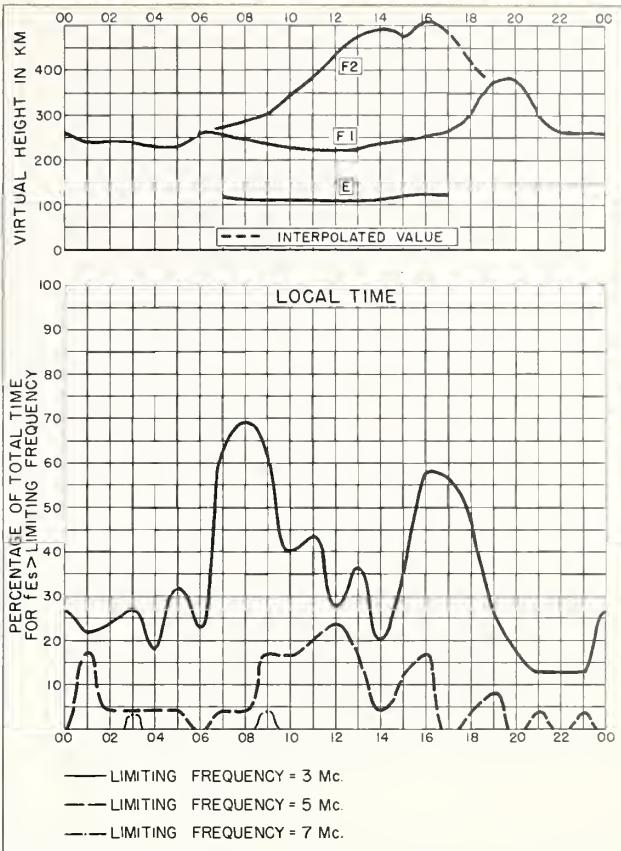


Fig. 98. BUNIA, BELGIAN CONGO AUGUST 1958

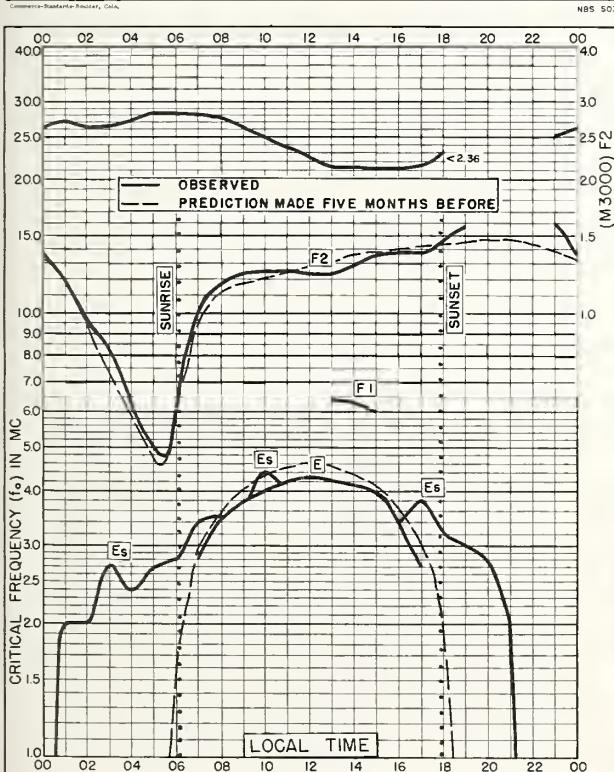


Fig. 99. LEOPOLDVILLE, BELGIAN CONGO
4.4°S, 15.2°E AUGUST 1958

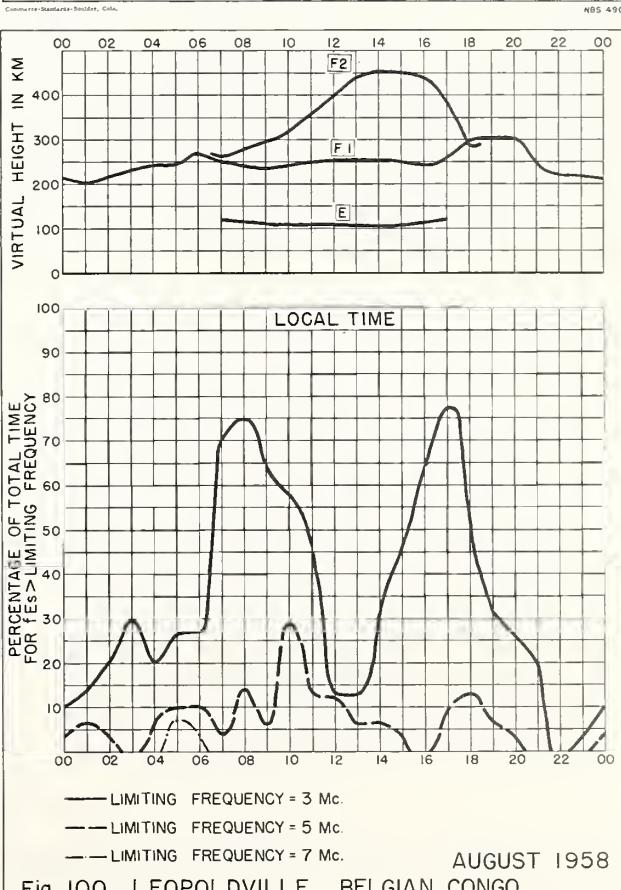


Fig. 100. LEOPOLDVILLE, BELGIAN CONGO

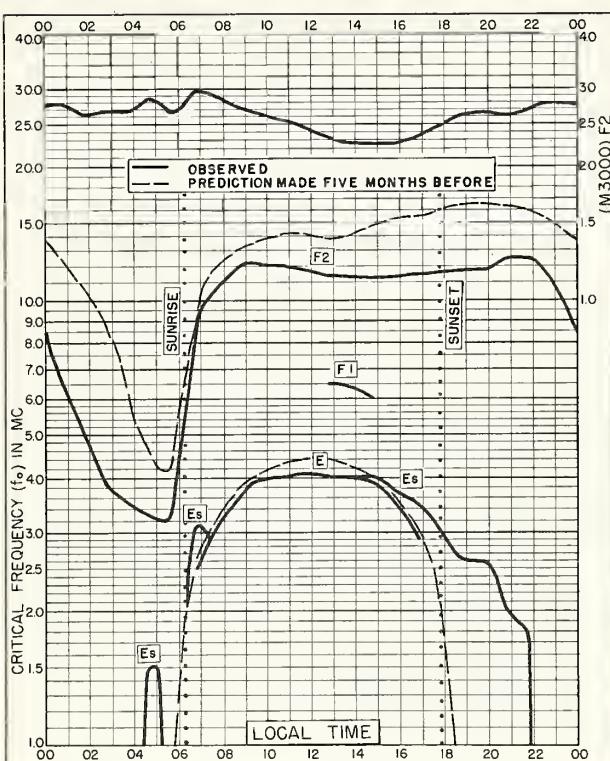
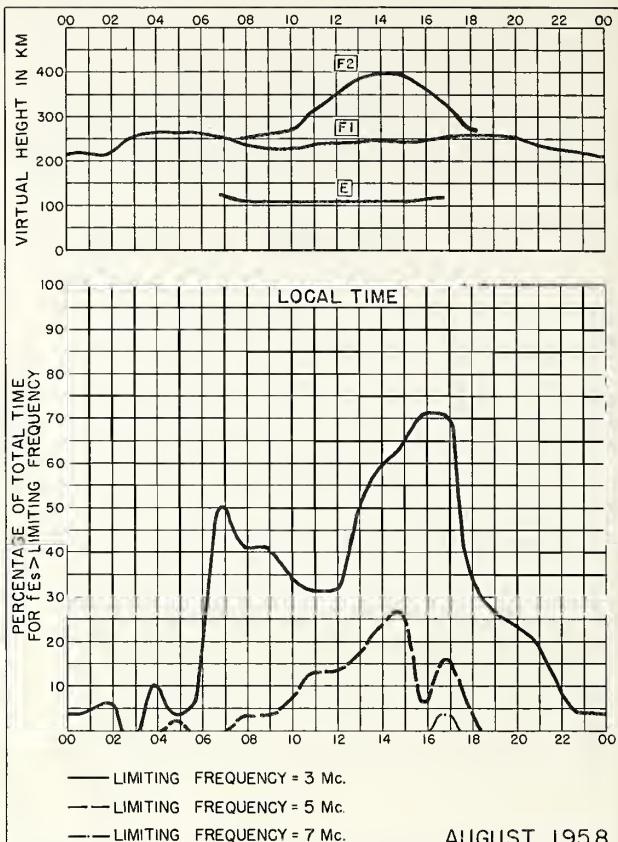


Fig. 101. ELISABETHVILLE, BELGIAN CONGO
II. 6°S, 27.5°E AUGUST 1958



AUGUST 1958
Fig. 102. ELISABETHVILLE, BELGIAN CONGO

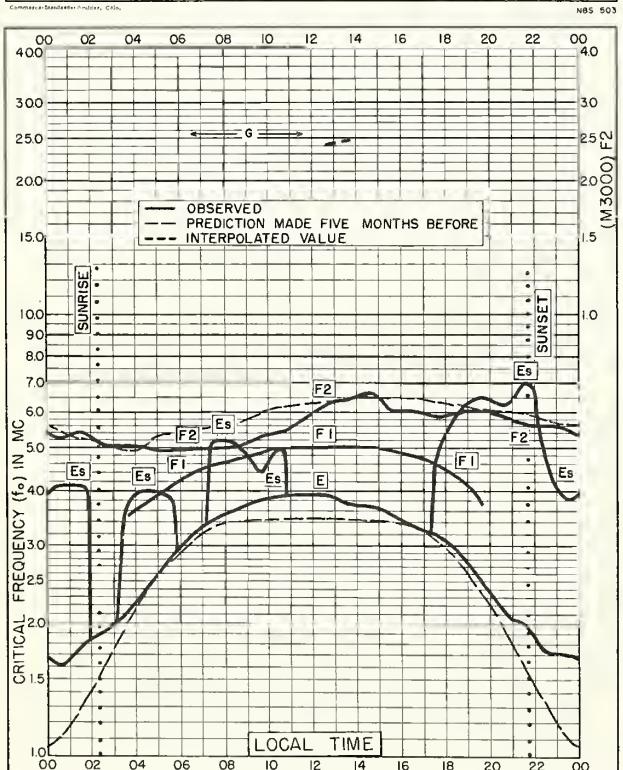
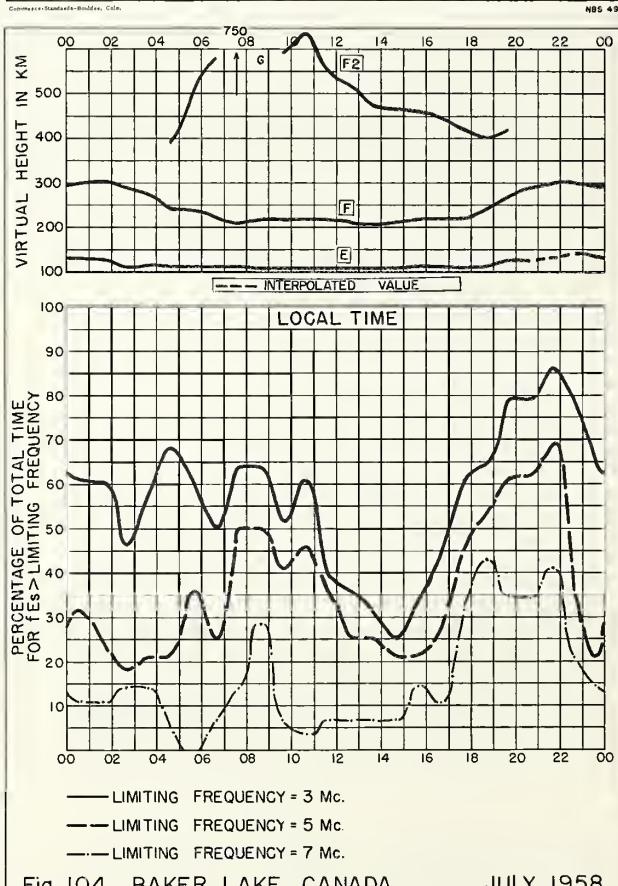


Fig. 103. BAKER LAKE, CANADA
64.3°N, 96.0°W JULY 1958



JULY 1958
Fig. 104. BAKER LAKE, CANADA

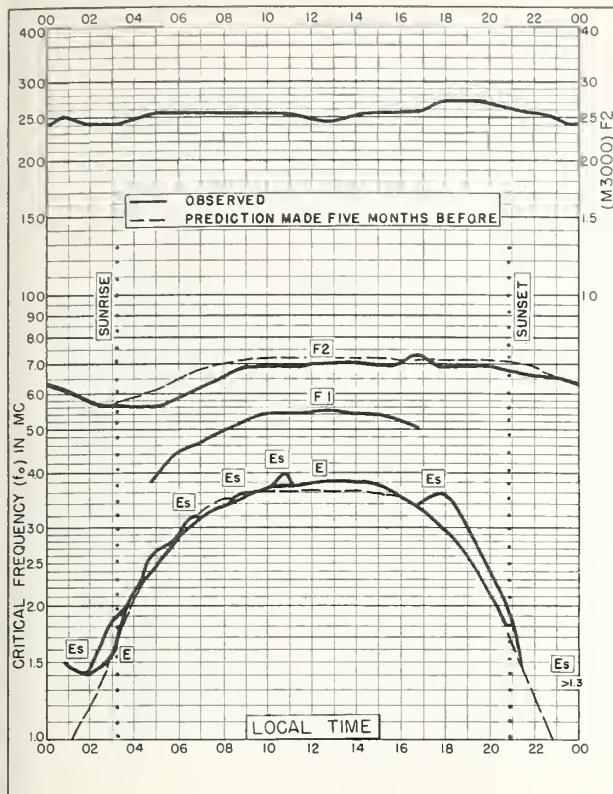


Fig. 105. OSLO, NORWAY

60.0°N, 11.1°E

JULY 1958

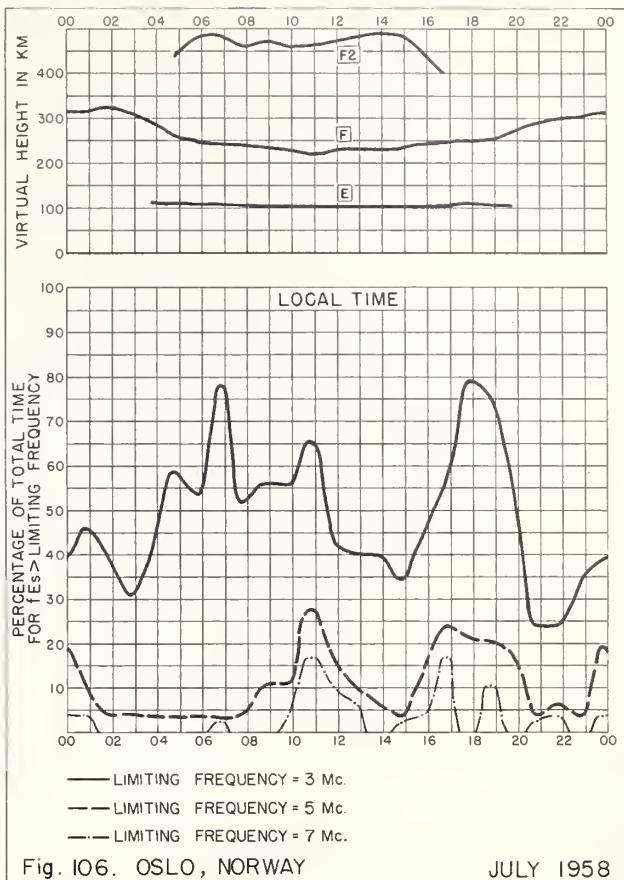


Fig. 106. OSLO, NORWAY

JULY 1958

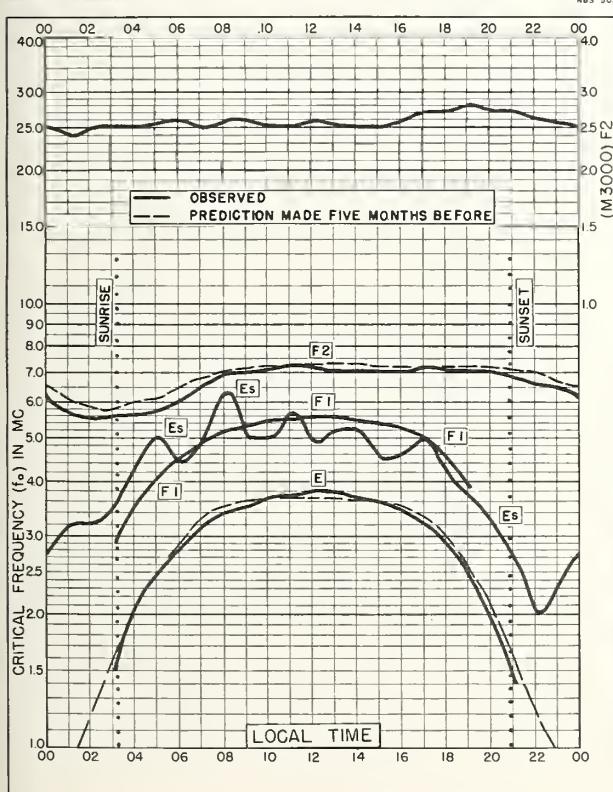


Fig. 107. UPSALA, SWEDEN

59.8°N, 17.6°E

JULY 1958

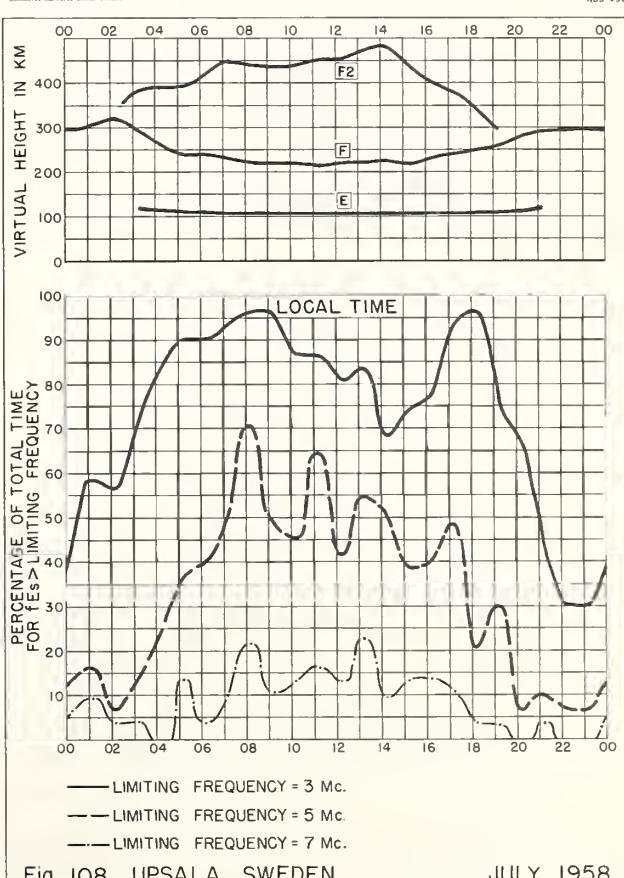
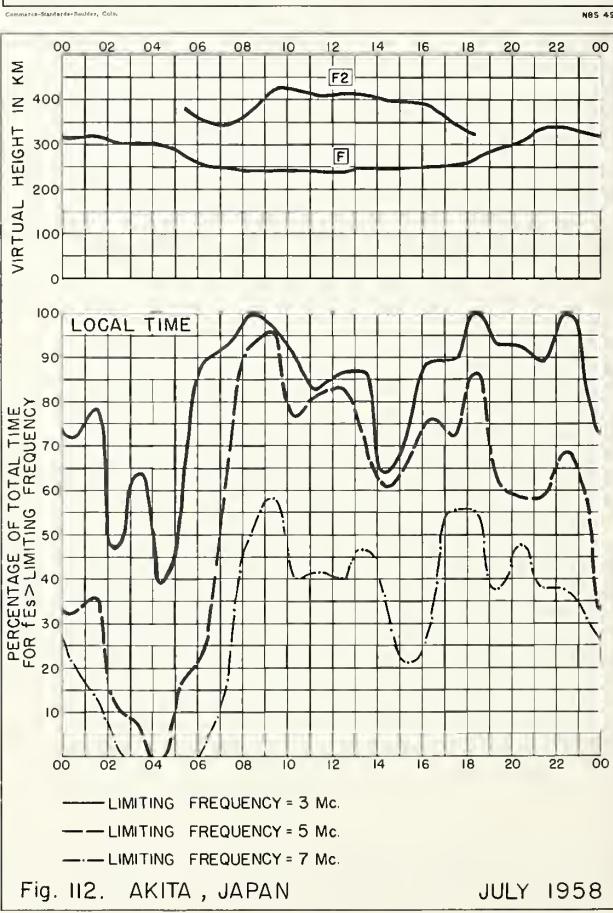
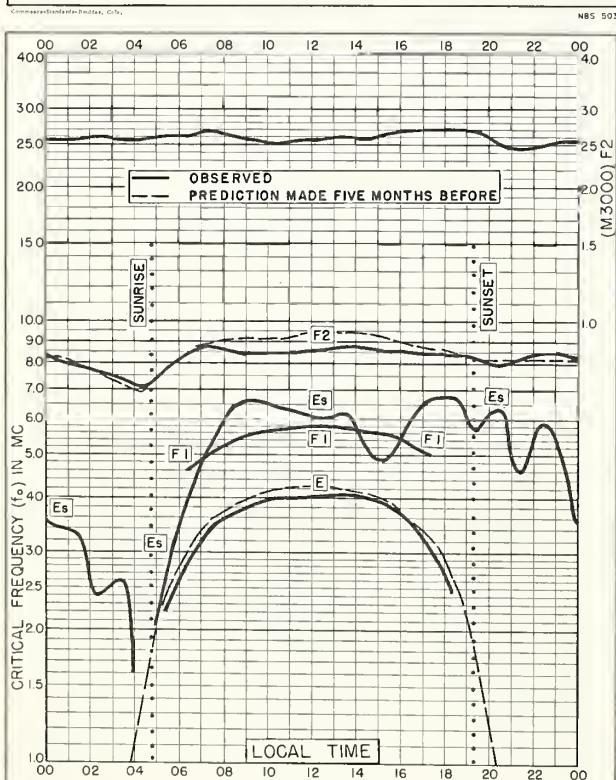
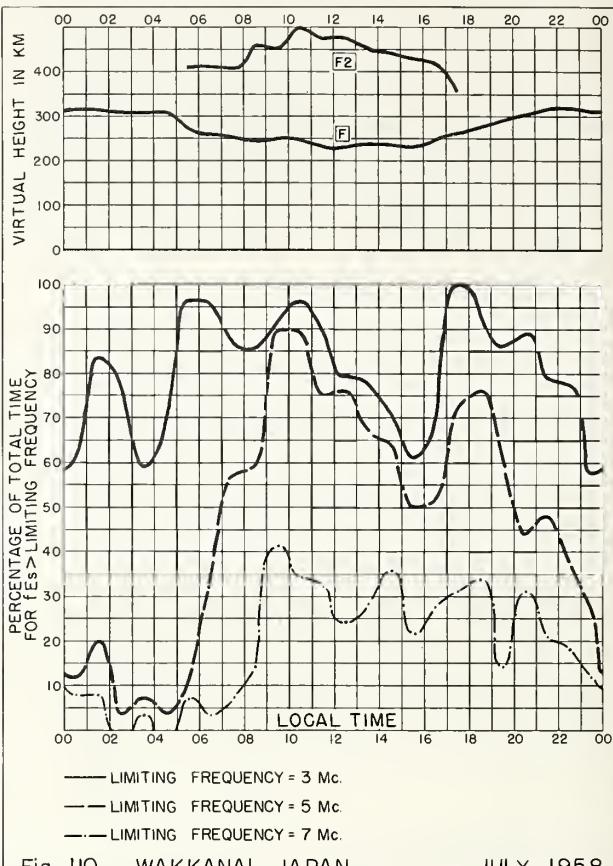
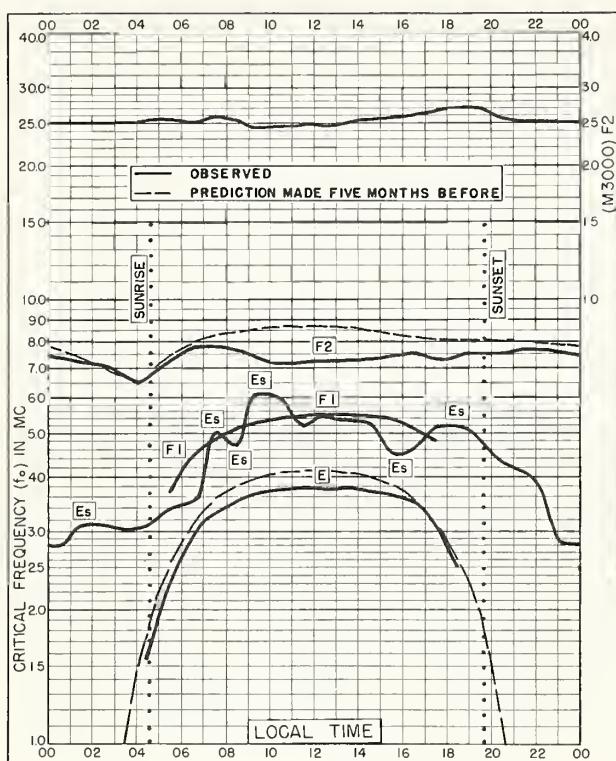
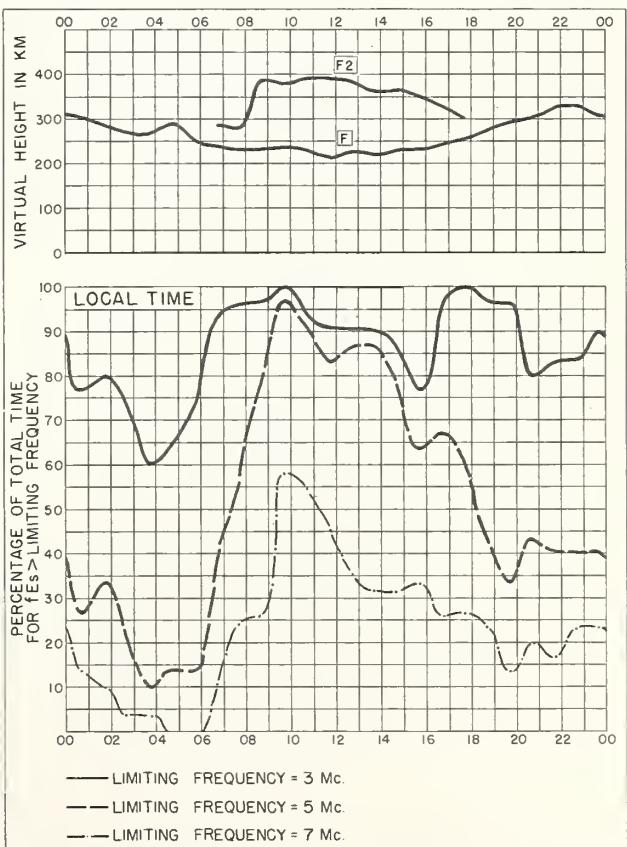
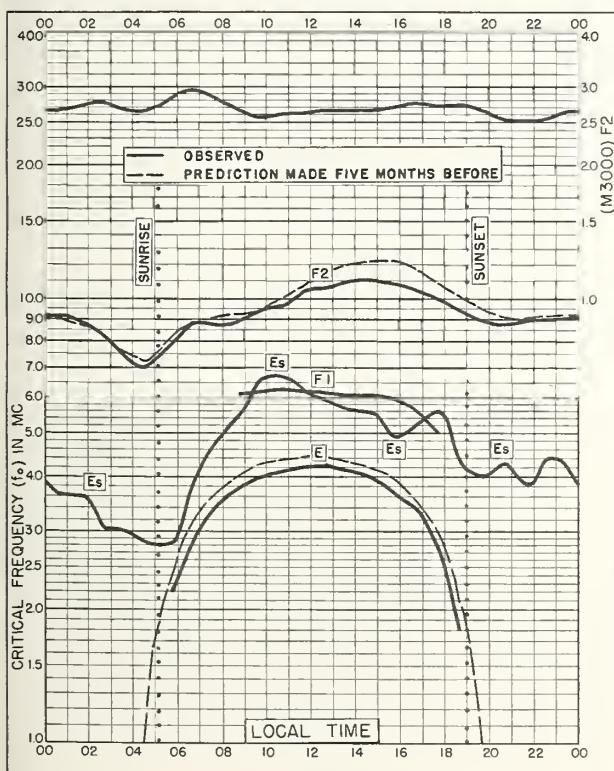
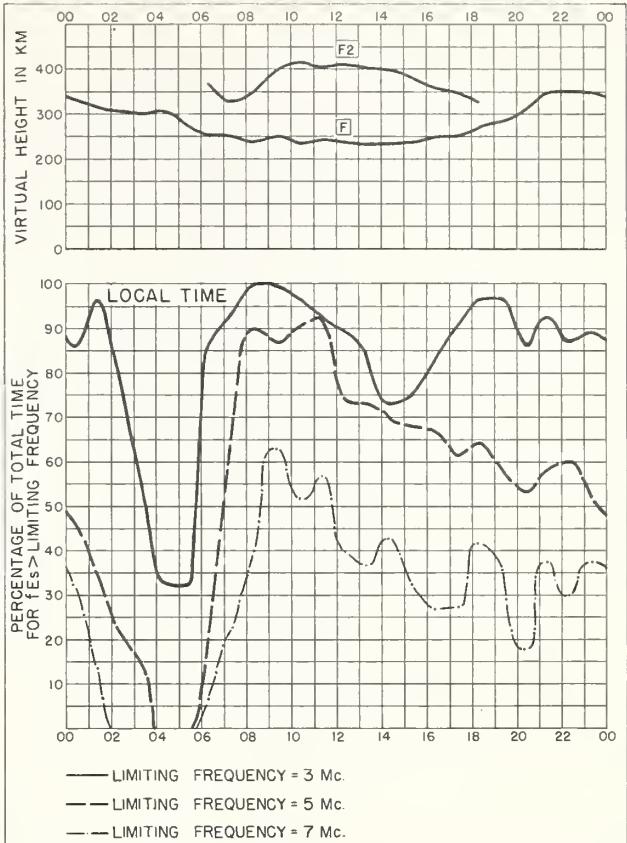
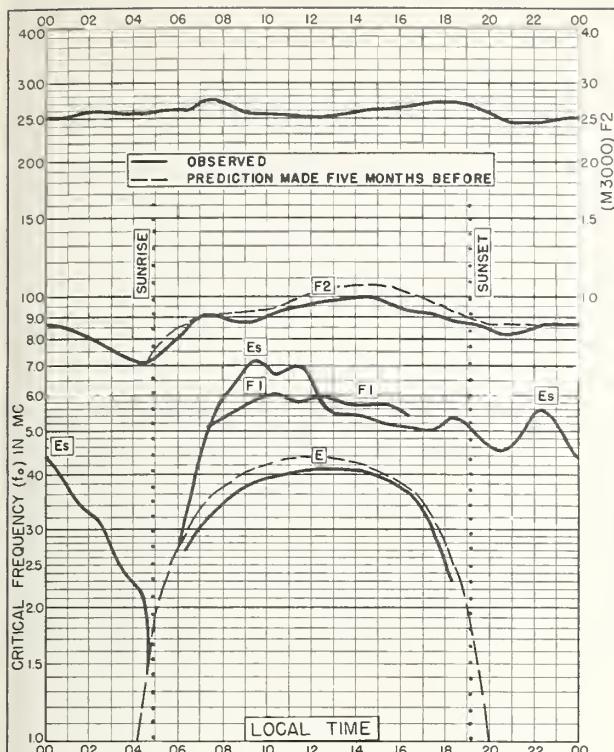


Fig. 108. UPSALA, SWEDEN

JULY 1958





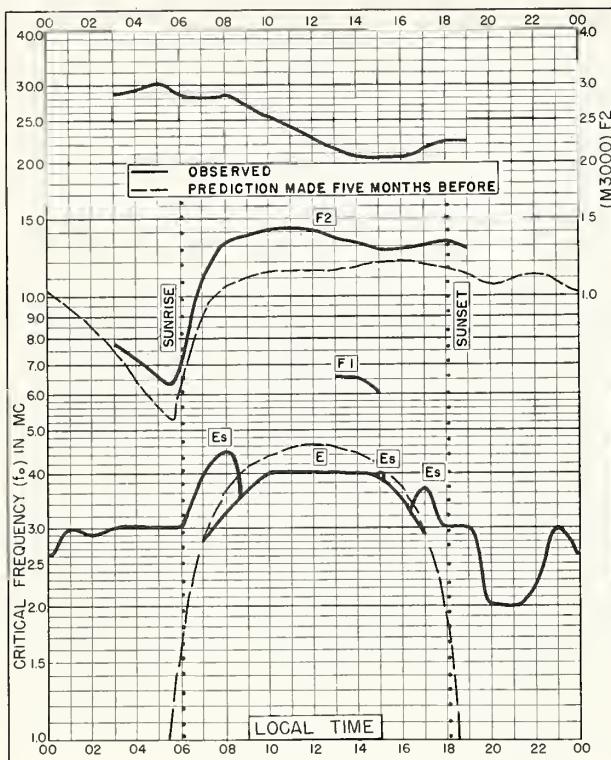


Fig. 117. BUNIA, BELGIAN CONGO

1.5°N, 30.2°E

JULY 1958

Commerce-Standard-Boulder, Colo. NBS 503

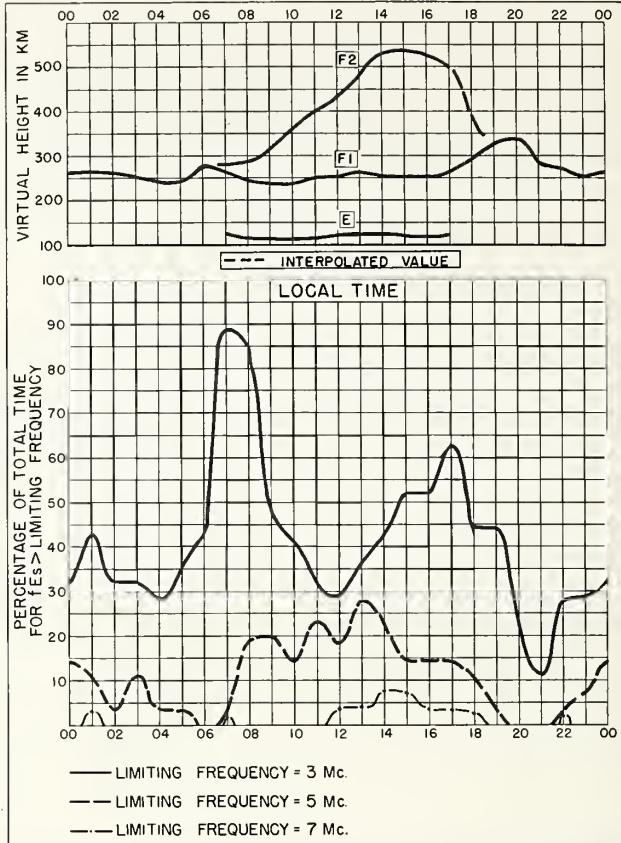


Fig. 118. BUNIA, BELGIAN CONGO

JULY 1958

NBS 490

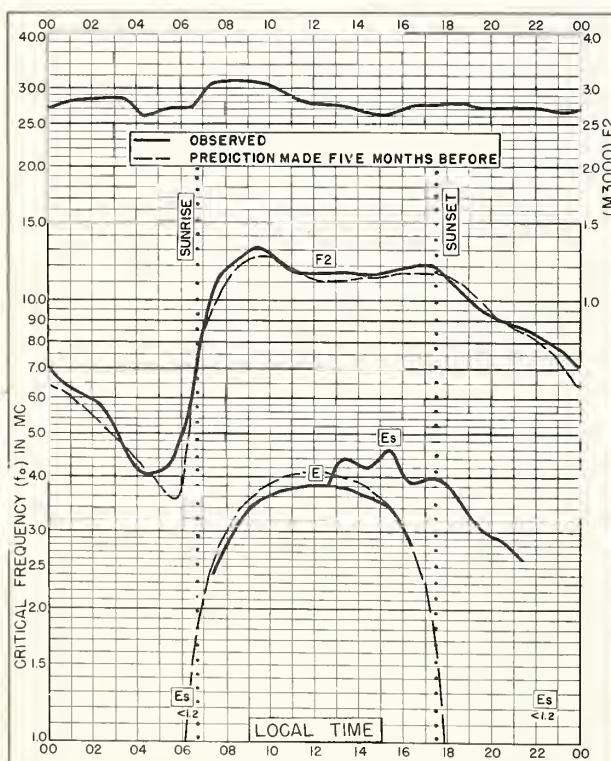


Fig. 119. RAROTONGA I.

21.2°S, 159.8°W

JULY 1958

NBS 503

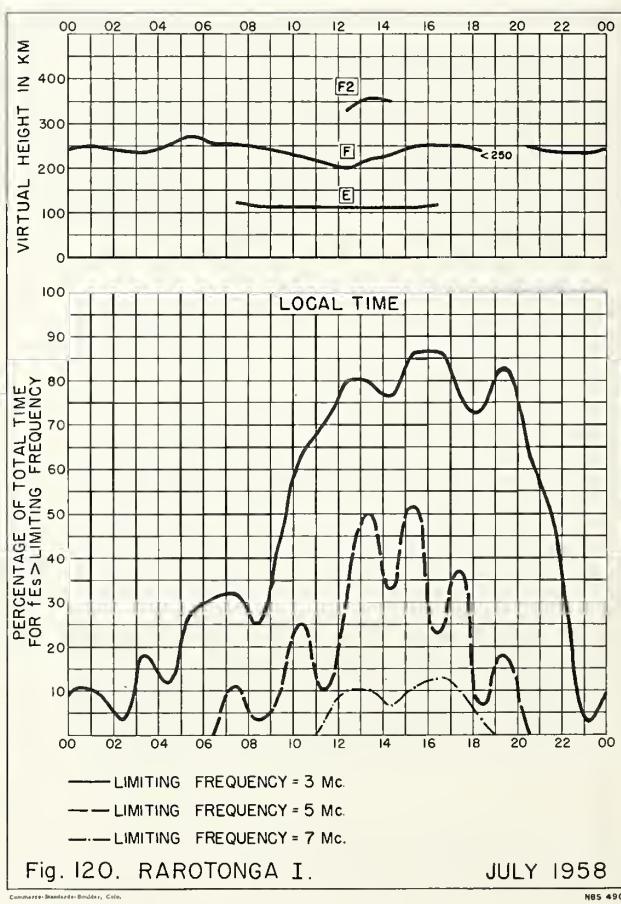


Fig. 120. RAROTONGA I.

JULY 1958

NBS 490

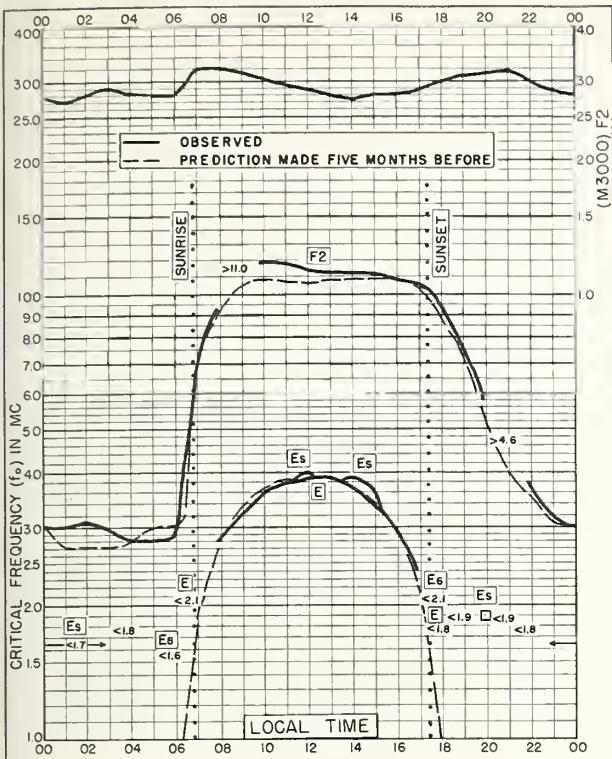


Fig. 121. JOHANNESBURG, UNION OF S. AFRICA
26.2°S, 28.0°E JULY 1958

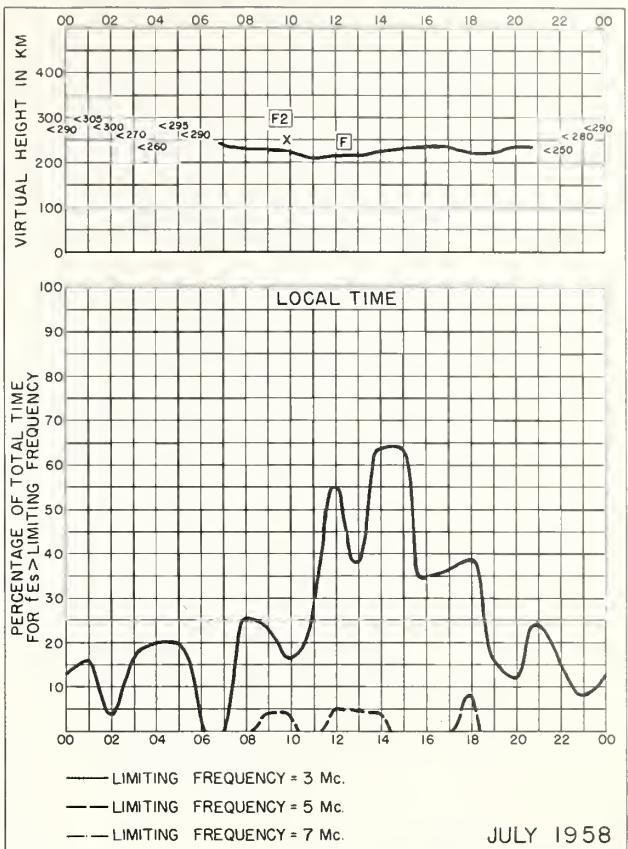


Fig. 122. JOHANNESBURG, UNION OF S. AFRICA JULY 1958

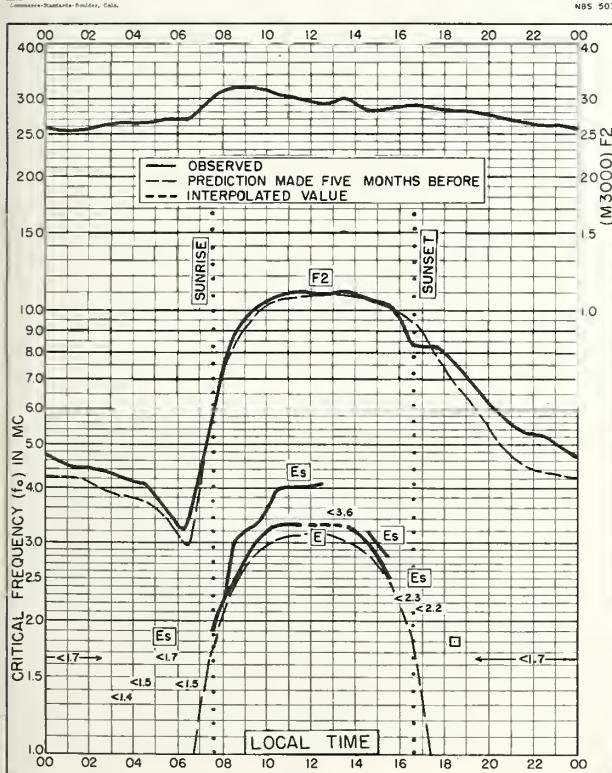


Fig. 123. CHRISTCHURCH, NEW ZEALAND
43.6°S, 172.8°E JULY 1958

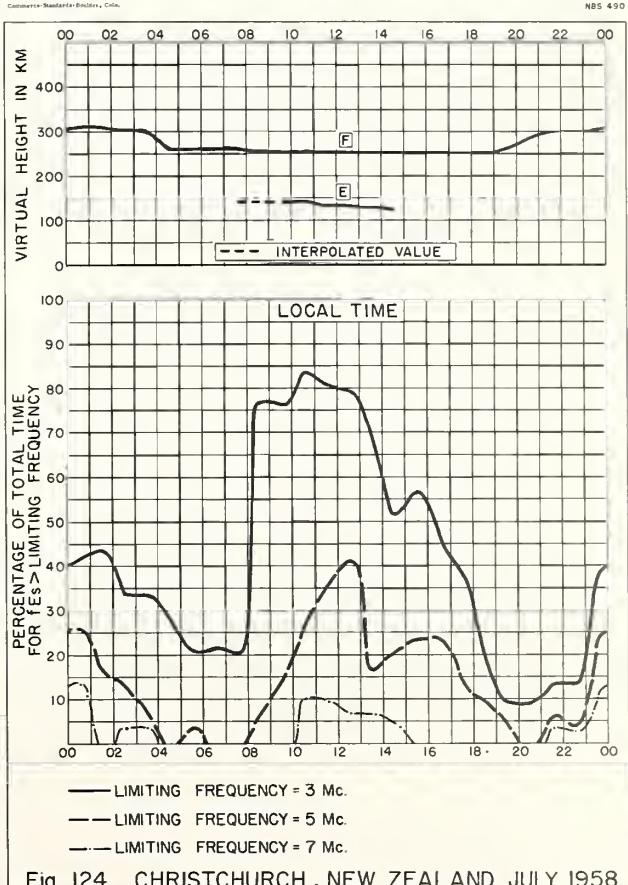


Fig. 124. CHRISTCHURCH, NEW ZEALAND JULY 1958

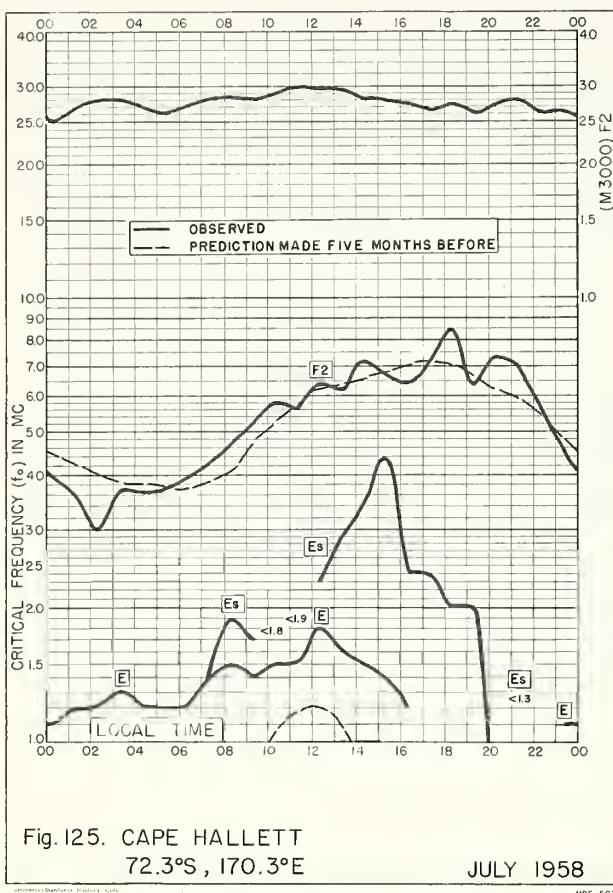


Fig. 125. CAPE HALLETT
72.3°S, 170.3°E JULY 1958

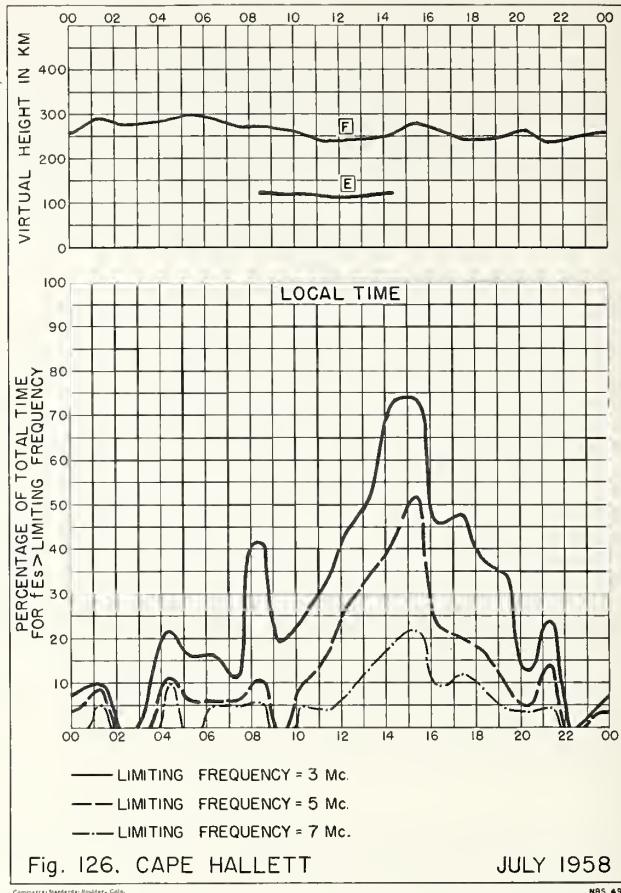


Fig. 126. CAPE HALLETT JULY 1958

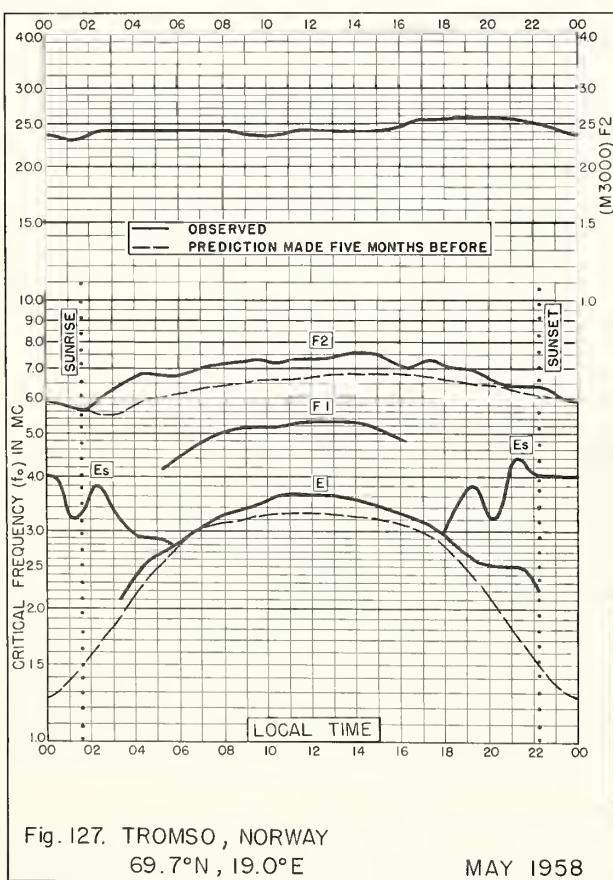


Fig. 127. TROMSO, NORWAY
69.7°N, 19.0°E MAY 1958

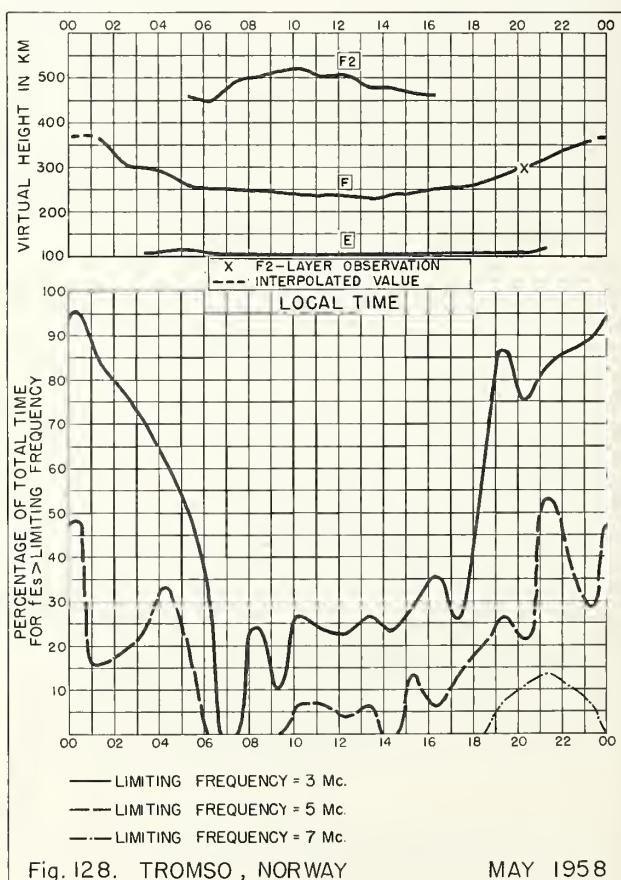
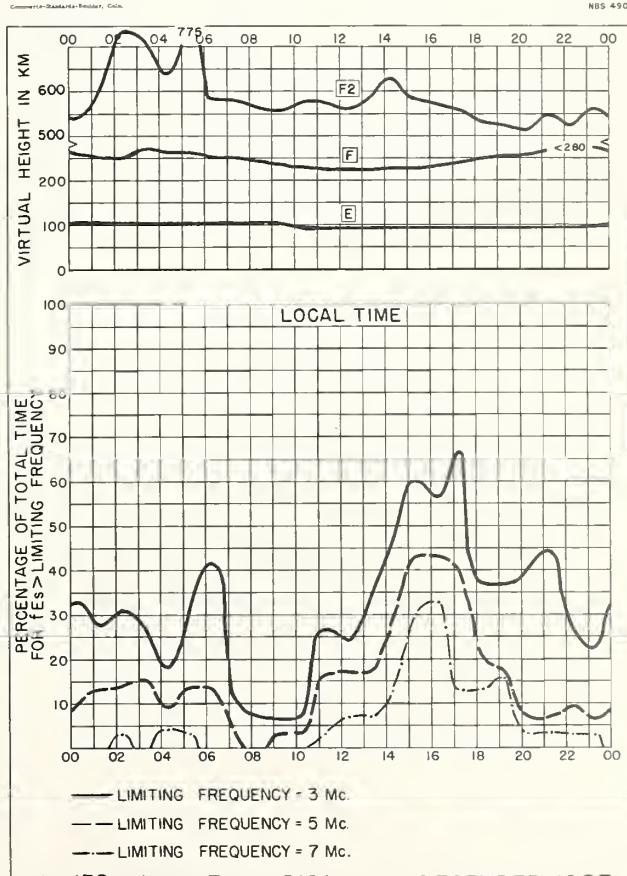
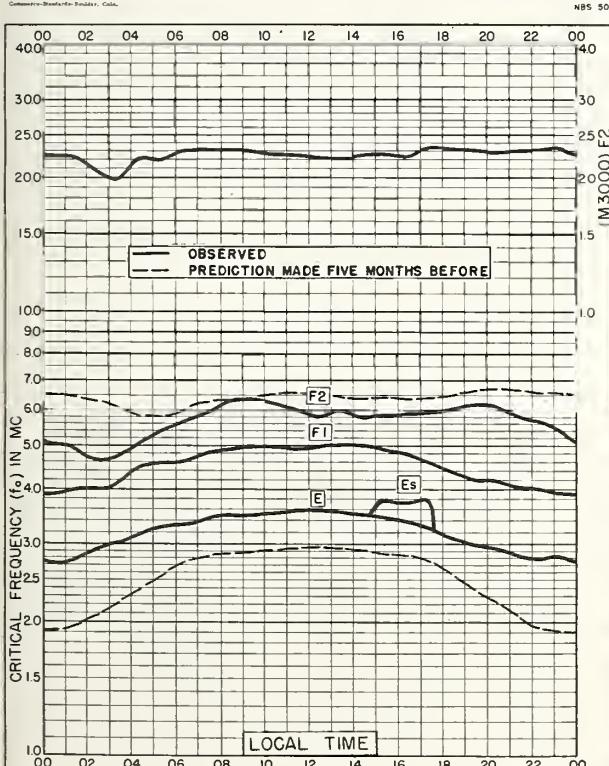
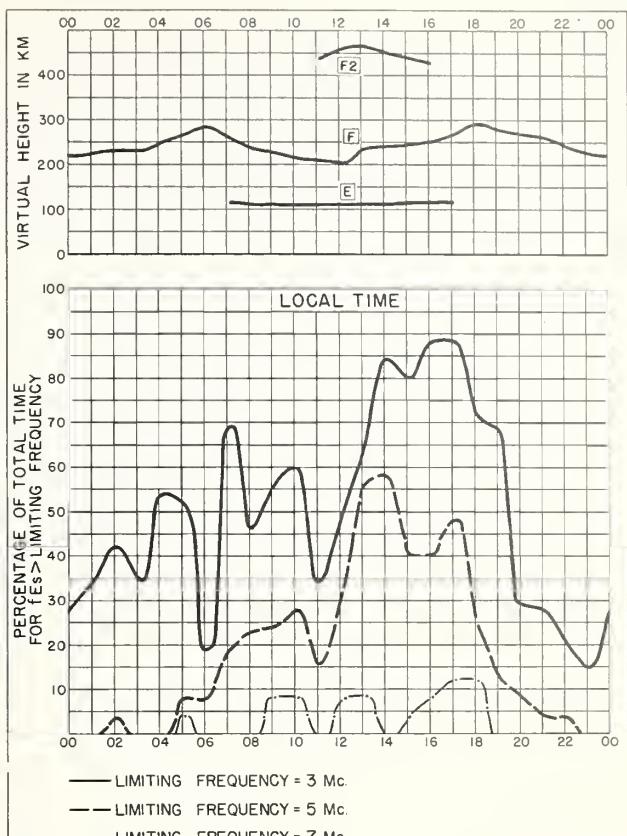
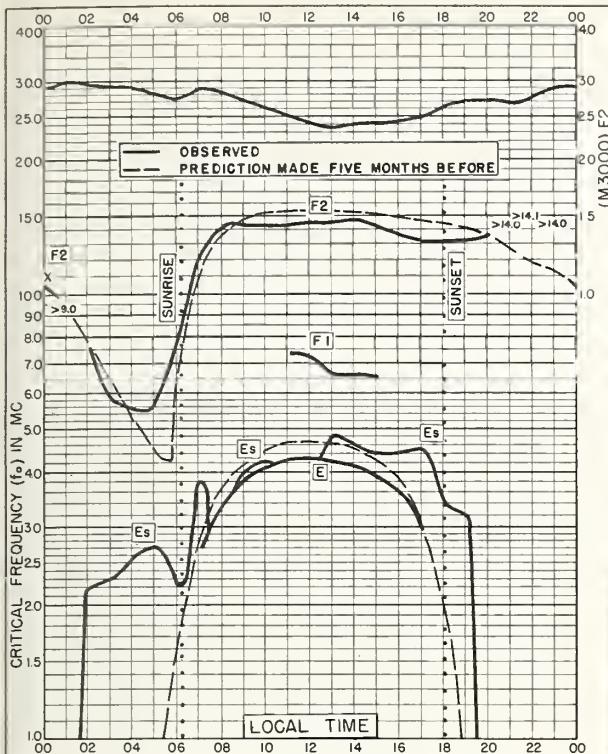


Fig. 128. TROMSO, NORWAY MAY 1958



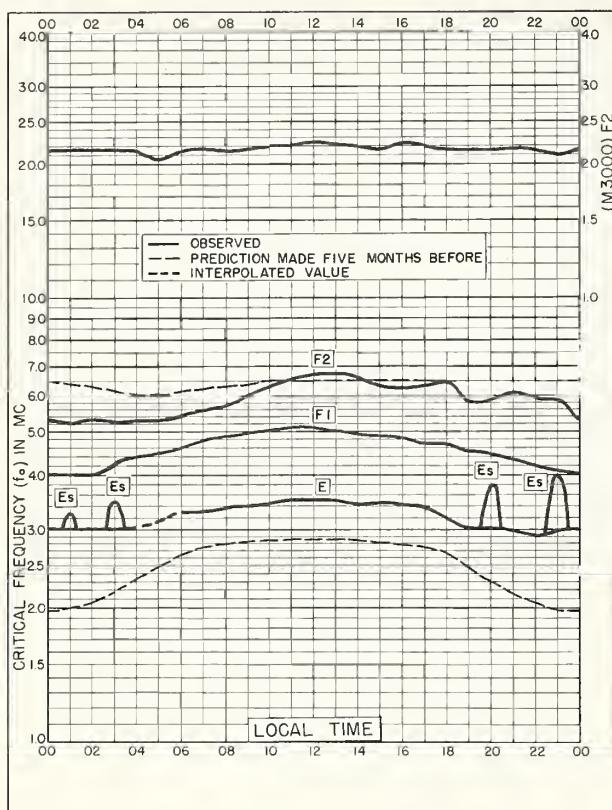


Fig. 133. BYRD STATION
80.0°S, 120.0°W DECEMBER 1957

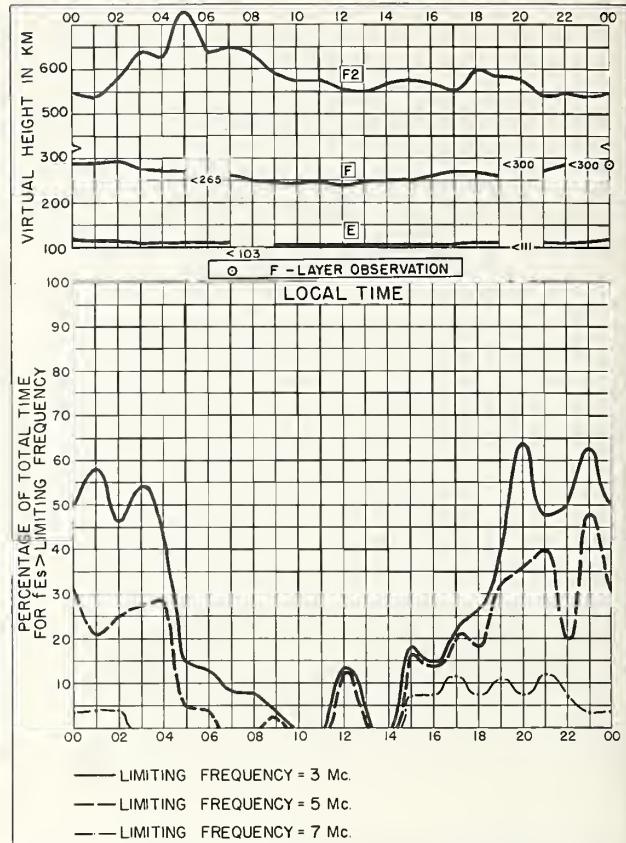


Fig. 134. BYRD STATION DECEMBER 1957

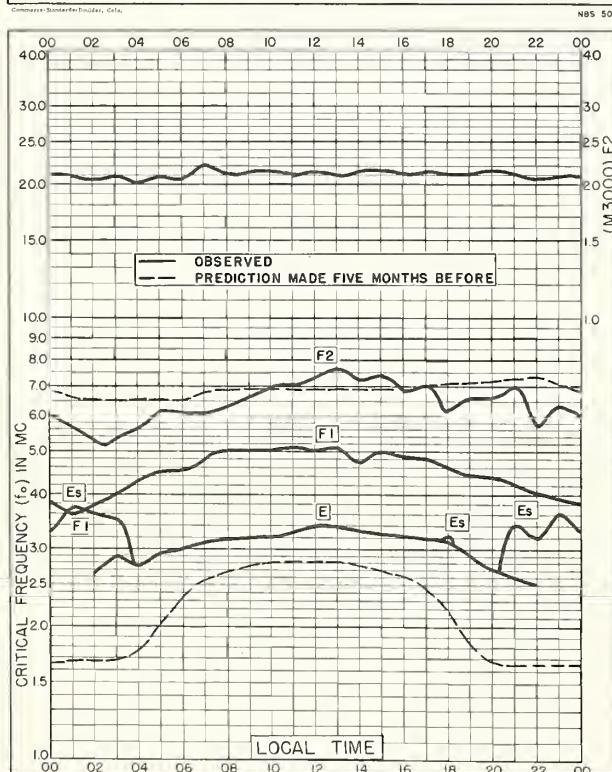


Fig. 135. BYRD STATION
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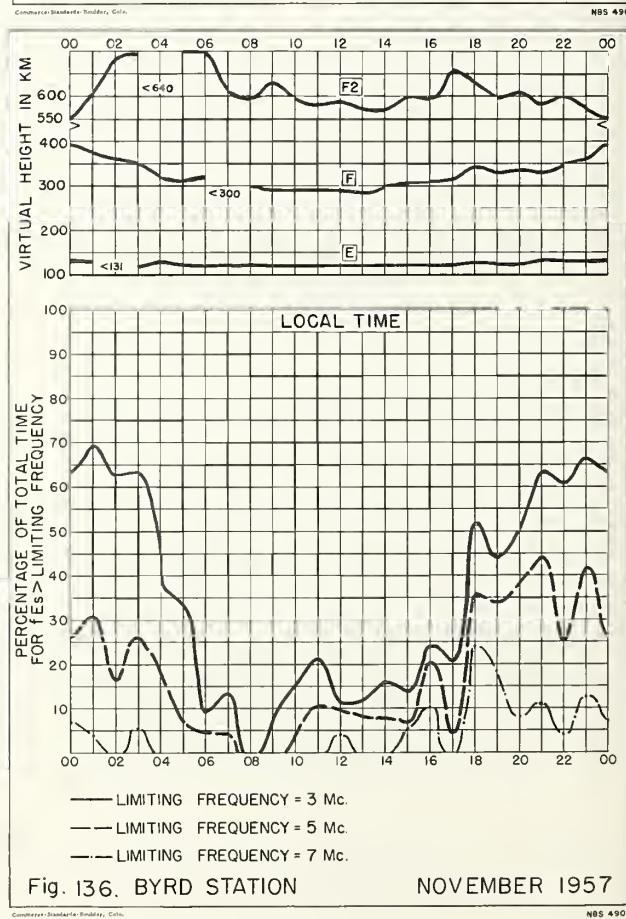


Fig. 136. BYRD STATION NOVEMBER 1957

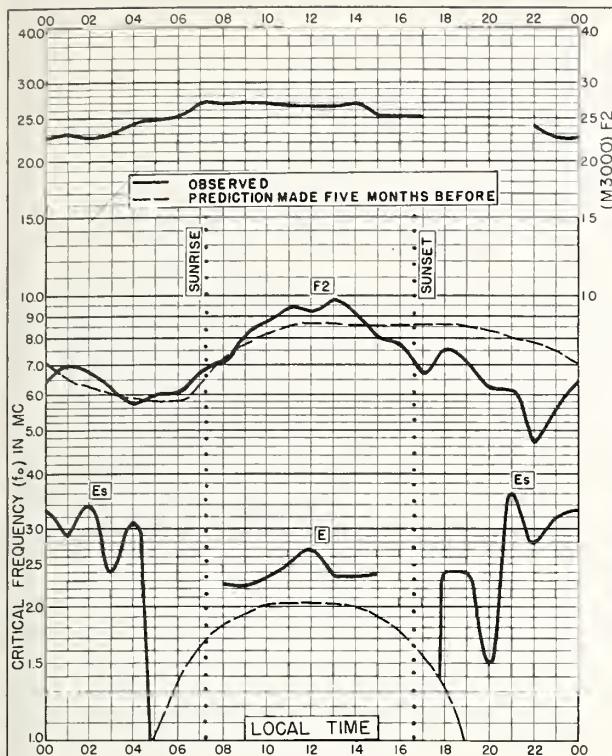


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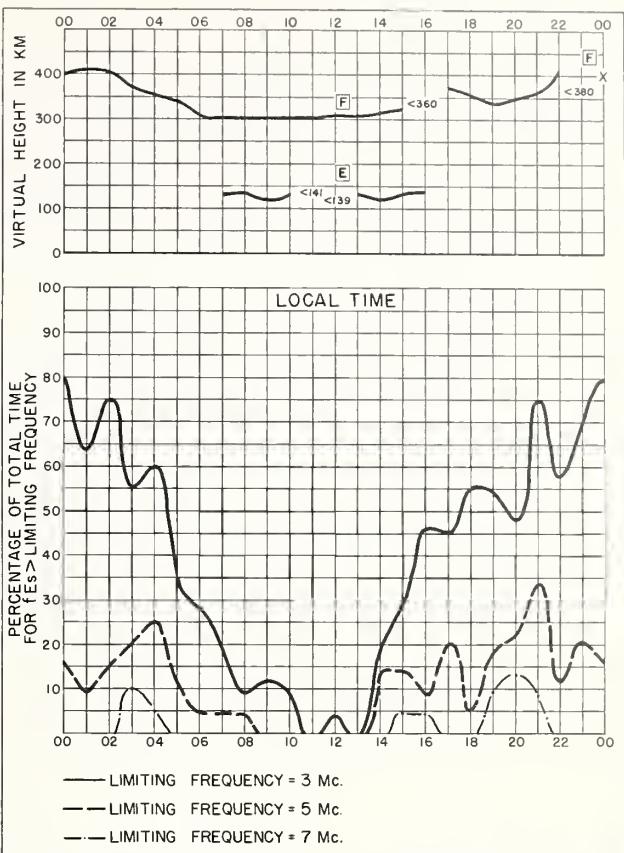


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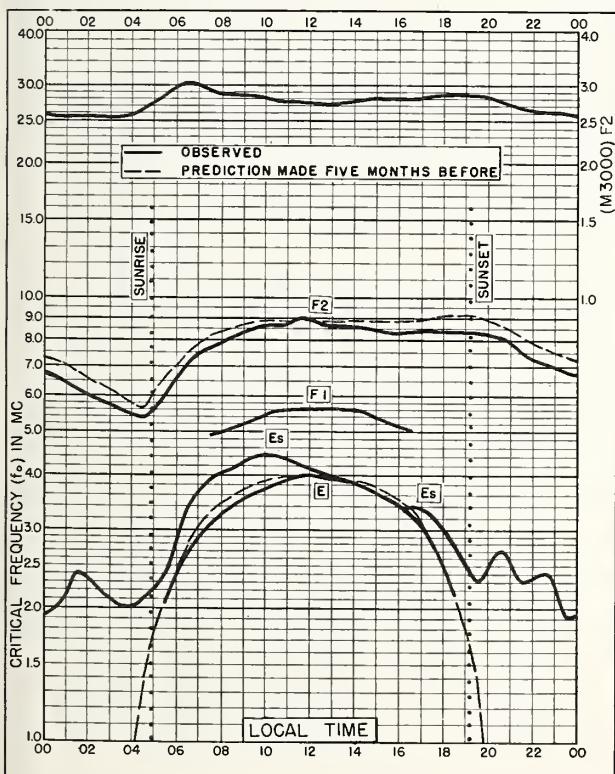


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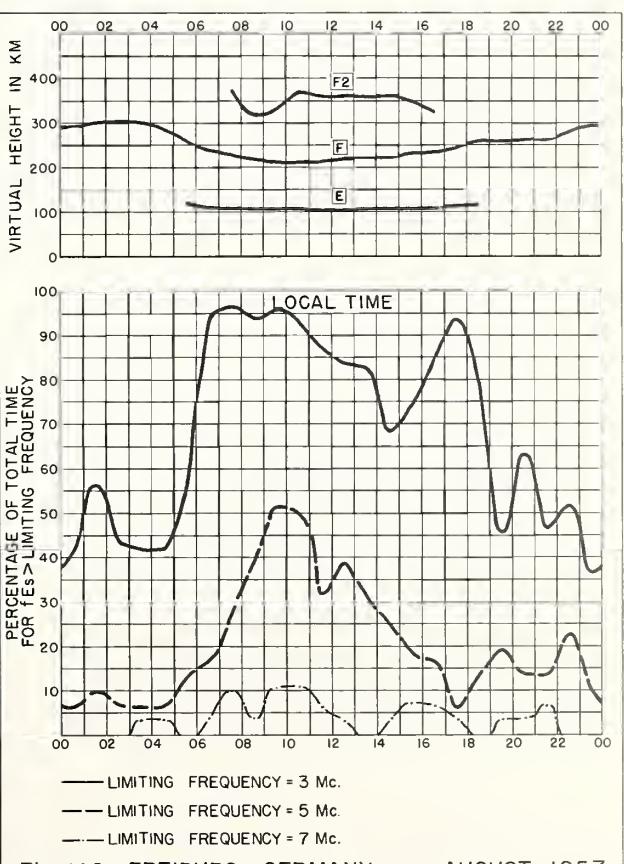


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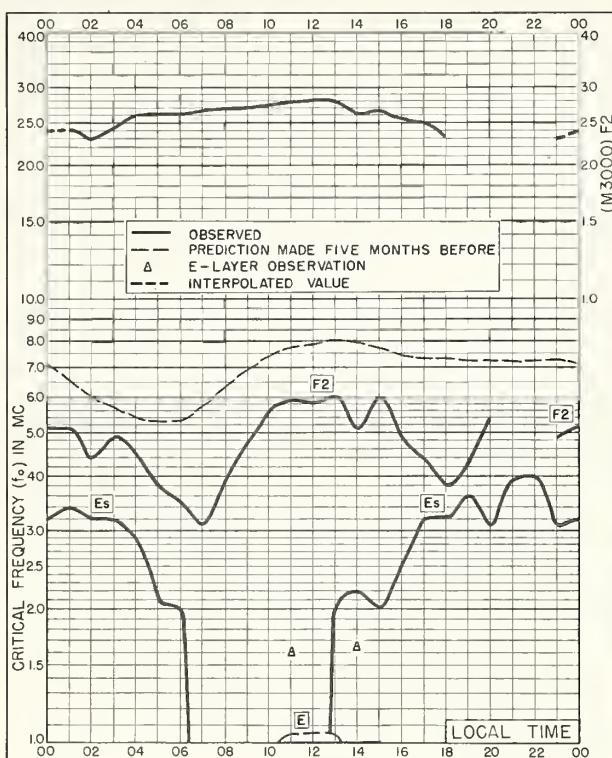


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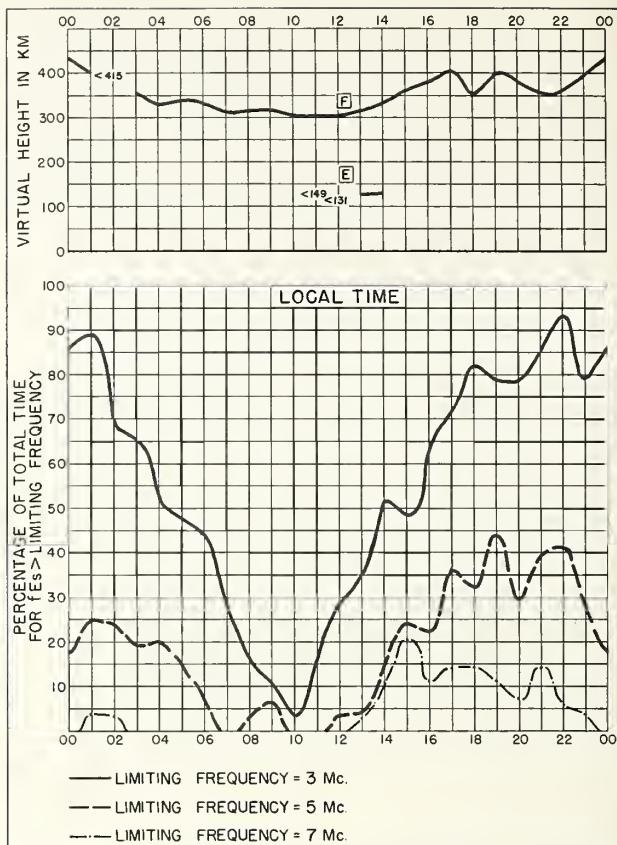


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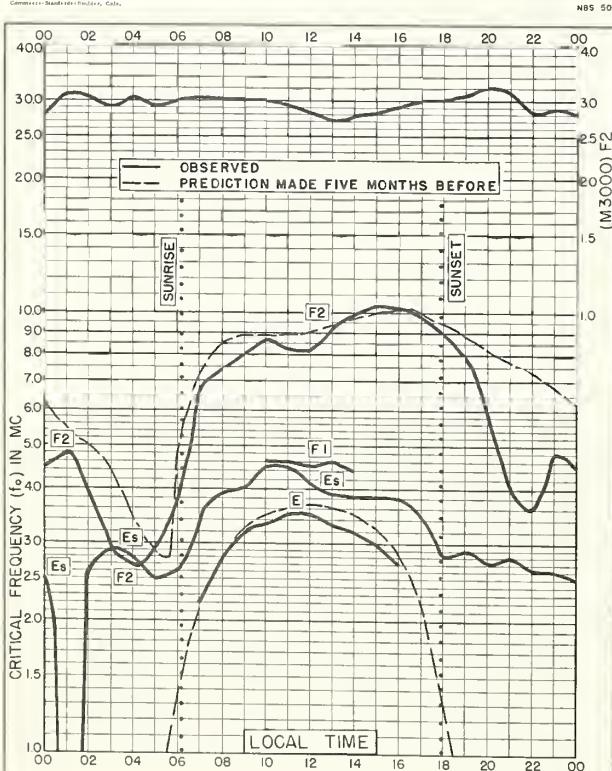
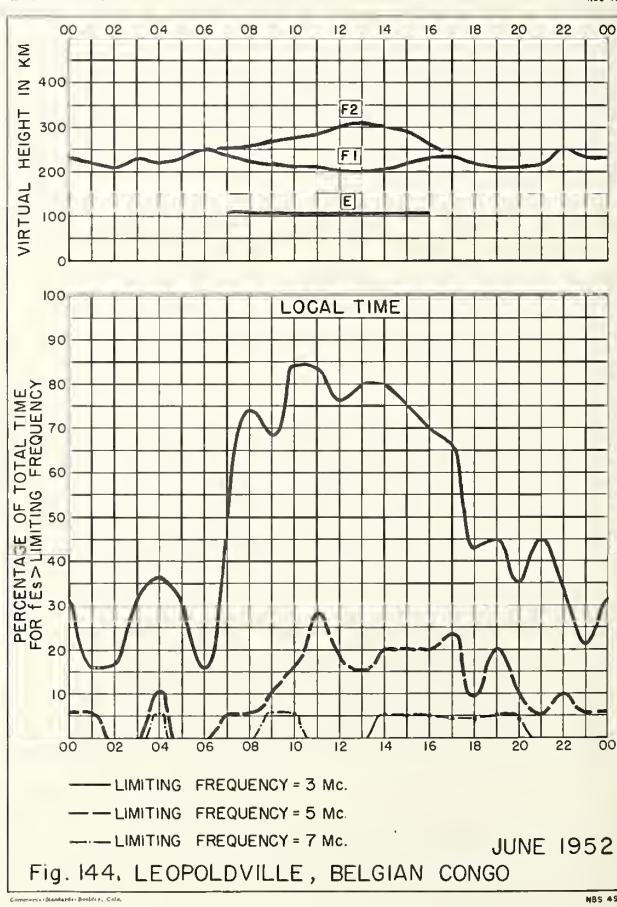


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JUNE 1952
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