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PART A

IONOSPHERIC DATA

ISSUED
SEPTEMBER 1960

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

IONOSPHERIC DATA

CONTENTS

	<u>Page</u>
Symbols, Terminology, Conventions	ii
World-Wide Sources of Ionospheric Data.	v
Tabulations of Electron Density Data.	viii
Tables of Ionospheric Data.	1
Graphs of Ionospheric Data.	13
Index of Tables and Graphs of Ionospheric Data in CRPL-F193 (Part A).	49

SYMBOLS, TERMINOLOGY, CONVENTIONS

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

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

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

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

There was an expansion in meaning of the following:

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

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

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

a. For all ionospheric characteristics:

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

b. For critical frequencies and virtual heights:

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

Values missing because of G are counted:

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

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

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

c. For MUF factor (M-factors):

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

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

d. For sporadic E (Es):

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

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

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

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

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

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

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

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

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

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

Smoothed Observed Sunspot Number

WORLD - WIDE SOURCES OF IONOSPHERIC DATA

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

Republica Argentina, Ministerio de Marina:

Trelew, Argentina
Ushuaia, Argentina

Meteorological Service, Province of Macau, Asia:

Macau

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

Canberra, Australia

Meteorological Service of the Belgian Congo and Ruanda-Urundi:

Bunia, Belgian Congo
Elisabethville, Belgian Congo
Leopoldville, Belgian Congo

Belgian Royal Meteorological Institute:

Dourbes, Belgium

Universidad Mayor de San Andres:

La Paz, Bolivia

Electronics Directorate of the Brazilian Navy:

Natal, Brazil

Escola Politecnica, University of Sao Paulo:

Sao Paulo, Brazil

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

Falkland Is.

Defence Research Board, Canada:

Eureka, Canada
Meenook, Canada
Ottawa, Canada
Resolute Bay, Canada
Winnipeg, Canada
Yellowknife, Canada

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

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

The Finnish Academy of Sciences and Letters:
Sodankyla, Finland

French National Center for Telecommunications Studies:
Dakar, French West Africa
Djibouti, French Somaliland
Rabat, Morocco
Tahiti, Society Is.
Tamanrasset, French West Africa
Tananarive, Madagascar

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

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

Ionospheric Institute, Breisach, Germany:
Freiburg, Germany

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

Central Institute of Meteorology, Budapest, Hungary:
Budapest, Hungary

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

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

General Directorate of Telecommunications, Mexico:
El Cerillo, Mexico

Norwegian Defence Research Establishment, Kjeller per Lillestrom,

Norway:

Tromso, Norway

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:

Sottens, Switzerland

United States Army Signal Corps:

Ft. Monmouth, New Jersey

Grand Bahama I.

Thule, Greenland

White Sands, New Mexico

National Bureau of Standards (Central Radio Propagation Laboratory):

Boulder, Colorado

Byrd Station, Antarctica

Huancayo, Peru (Instituto Geofisico de Huancayo)

Pole Station, Antarctica

Talara, Peru (Instituto Geofisico de Huancayo)

TABULATIONS OF ELECTRON DENSITY DATA

Reduction of hourly ionospheric vertical soundings to electron density profiles has become a part of the systematic ionospheric data program of the Central Radio Propagation Laboratory, National Bureau of Standards. Scalings of ionograms for this purpose are being provided by ionosphere stations operated by CRPL and the U. S. Army Signal Corps. For the present, the hourly profile data from one CRPL station, Puerto Rico, are appearing in the monthly CRPL-F Reports, Part A. These data are in place of the standard ionogram reductions formerly provided by this Station. The very considerable task of scaling the ionograms for this purpose is being undertaken by T. R. Gilliland, Engineer in Charge, Puerto Rico Ionosphere Sounding Station; the computations are performed at the NBS Boulder Laboratories by a group headed by J. W. Wright. Basic conversion of virtual to true heights uses the well-known matrix method developed by K. G. Budden of the Cavendish Laboratory, Cambridge University, programmed for an IBM 704 computer.

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)	$\times 10^3 = \text{electrons/cm}^3$	Body of table; given at each 10 km of height.
NMAX	$\times 10^3 = \text{electrons/cm}^3$	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.
SCAT	Kilometers	One half of the half-thickness of the parabola best fitting the upper portion of the F region profile. Approximates the scale height near the level HMAX.
HMAX	Kilometers	The height of maximum electron density, determined by fitting a parabola to the upper portion of the profile.
SHMAX	$\times 10^{10} = \text{electrons/cm}^2 \text{ column.}$	Obtained by integration of the profile between the limits HMIN and HMAX.

Tabulations of the average electron densities each hour, at each 10 km level, for the quiet ionosphere, are also given. These averages include the profiles obtained when the magnetic character figure K_p is less than 4+. The number of profiles entering the average for each hour is given by CNT. The other parameters of the layer, HMIN, SCAT, HMAX, SHMAX, are averaged in a similar way.

Before the averaging process, the individual profiles are extrapolated above HMAX by a Chapman distribution of 100 km scale height. This assumed model seems to agree well with the few published measurements dealing with the topside profile of the F-region.* Extrapolation is necessary in order to calculate homogeneous averages near HMAX and the average profiles are, in fact, given up to 950 km. Also given are the average estimated integrated electron densities to infinity, SHINF (same units as SHMAX); this is an approximation to the total electron content in a column of the ionosphere.

*See Wright, J.W. "A Model of the F-Region Above HMAX F2" J.Geophys.Res. V.65 pp 185-191.

ELECTRON DENSITY																
PUERTO RICO				60 W				3 MAY 1960								
TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300				
QUAL				C		A										
HMIN	108	110		100	110	199	224	199	240	262	257					
SCAT	71.5	60.0		60.	70.4	67.0	60.9	76.7	47.0	52.9	59.5					
HMAXF	350	333		320	330	364	347	344	385	393	398					
SHMAX	2070	184%		1534	1457	1330	968	1127	758	814	829					
KM																
400									1072	1096	1038					
370									1072	1050	1095	1034				
340									1063	1047	1079	1015				
310									1046	1024	1044	982				
280	1786								1045	1019	972	989	935			
350	1786								1430	1240	983	903	917	875		
340	1777	1801							1367	1400	1236	940	820	824	794	
330	1752	179							1555	1367	1353	1216	895	716	716	687
320	1709	1779							1555	1360	1290	1180	870	608	589	561
310	1648	1734							1545	1338	1209	1125	742	488	455	431
300	1570	1663							1513	1303	1117	1057	563	362	320	302
290	1475	1570							1461	1255	1004	967	556	252	198	193
280	1365	1446							1376	1189	961	948	459	169	97.2	112
270	1230	1310							1277	1116	707	706	3n2	112	45.6	60.0
260	1071	1155							1171	1024	540	549	267	71.4		19.3
250	917	75							1050	917	389	335	179	45.5		
240	779	811							903	784	286	179	124			
230	649	670							754	643	198	60.0	84.3			
220	650	595							625	525	127		61.7			
210	483	48							508	430	71.4		42.4			
200	434	434							417	362	12.4		4.1			
190	396	395							352	305						
180	366	364							310	262						
170	337	335							277	228						
160	308	307							246	198						
150	278	278							216	172						
140	24	24							179	147						
130	216	217							158	127						
120	202	199							147	116						
110	134	4							60.0	40.0						

ELECTRON DEN 176												
PUERTO RICO						60 W.						
TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	
QUAL										A	A	
HMIN	5	144	177	232	241	251	278	110	110	110	109	
SAT	54.6	56.9	58.0	51.2	47.1	47.8	47.9	56.2	56.7	47.5	71.9	
HMAXF	7.7	304	351	353	77	351	327	77	77	335	346	
SHMAX	71.0	69.9	60.3	49.3	40	36.5	34.6	57.0	6.7	11.96	14.34	
RH												
380	120											
370	298	66										
360	175	55	814	707	616	608						
350	34	41	813	706	614	608						
340	58.0	51.5	400	695	59	198						
330	106	7	731	671	573	572						
320	100	2	754	632	520	531						
310	26	147	712	583	477	477	716					
300	42	23	654	517	40	400	1					
290	186	47	572	427	310	110	138					
280	14	3	468	335	21	119	606	314	804	778	9.5	
270	81.1	9	348	236	13	123	813	7	7	765	849	
260	47.0	47.0	226	143	77	60.0	446	606	716	7.5	765	
250			47.0	120	83.8	47.0	15	757	712	679	685	
240			55.5	7	47.6			759	6	7	634	608
230								722	610	595	540	
220								673	545	514	477	
210								597	466	412	428	
200								495	362	432	385	
190								325	315	384	347	
180								219	280	315	313	
170								167	247	292	286	
160								136	211	257	255	
150								112	175	225	226	
140								74.1	143	191	179	
130								41.4	125	165	178	
120								85.3	117	110	147	
110								12.4	42.6	40.2	60.0	

ELECTRON DENSITY

ELECTION DEFINITION

ELECTRON DENSITY

PUERTO PICO		60 W				6 MAY 1960						
TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL						A	A	A	A			B
HMIN	218	256	246	240	270	229	128	115	101	100	100	100
SCAT	64.3	65.4	59.6	54.8	60.5	49.6	56.8	56.3	44.7	49.1	70.4	
HMAXF	360	377	380	367	395	438	369	302	361	367	300	
SHMAX	R 91	815	728	580	634	469	621	758	13.7	1984	1822	
KM												
400						814						
390						917	81					
380						917	800					
370	1096	1024	911	784	778		764		970	1460	1477	
360	1096	1010	892	780	743		759		950	1458	1473	
350	1089	983	860	764	700		744		956	1447	1466	
340	1069	946	814	735	641	707	718		964	1427	1444	
330	1036	899	754	693	565	703	681		96	1398	1407	
320	988	874	686	638	468	685	635		900	1359	1355	
310	932	735	599	566	354	652	573	906	848	107	1283	
300	858	608	490	477	240	608	504	906	810	1249	1201	
290	739	460	362	174	127	544	417	897	740	1194	1109	
280	599	296	240	270	641	462	323	873	744	1113	1004	
270	427	117	133	171		364	140	846	698	1029	899	
260	386	45*	714	974		262	143	786	648	936	794	
250	250	166	274	516		118	118	716	57	834	701	
240	97.4					672	58	627	544	736	621	
230	56.7					12.4	13.4	523	41	618	559	
220	1.4							405	44	552	513	
210								310	392	482	477	
200								237	343	421	443	
190								179	237	368	405	
180								138	245	319	362	
170								112	216	283	310	
160								88	141	226	269	
150								75	153	223	233	
140								68	120	197	208	
130								65	112	159	19	
120								61.2	103	147	180	
110								57.8	47.2	127		

ELECTRON DENSITY

ELECTRON DENSITY										
PUERTO RICO		60° W					7 MAY 1960			
TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	.1000
QUAL					A	A	A	A	A	A
HMIN	107	109	108				198			
SCAT	534.7	644.6	644.5				564.9			
HMAXF	346	344	337				349			
SHMAX	2277	2513	2307				1255			
KM										
350	2327	2413					1612			
340	2325	2411	2260				1604			
330	2299	238	2254				1573			
320	2215	215	2223				1517			
310	2095	2249	2163				1435			
300	1439	214	2076				1333			
290	1750	200	1960				1200			
280	1543	182	1820				1036			
270	1321	1624	1653				834			
260	1131	1411	1461				608			
250	940	1184	125				403			
240	794	97	1066				262			
230	667	794	846				161			
220	573	655	654				74.5			
210	504	545	524				55.0			
200	453	470	439				17.4			
190	412	414	389							
180	377	473	352							
170	345	337	318							
160	315	307	280							
150	290	283	240							
140	258	256	211							
130	219	275	195							
120	194	204	186							
110	179	183.8	143							

ELECTRON DENSITY												8 MAY 1960	
PUERTO RICO												60 W	
TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	
QUAL	A				A			A		A		A	
HMIN	235	242	257	340	338	272	316	116	107	109		109	
SCAT	64.0	65.2	67.2	60.8	54.7	70.8	75.7	90.1	1.54	101		150	
HMAXF	37.1	39.8	40.6	47.7	46.8	42.5	47.8	3.27	3.48	3.64		373	
SHMAX	650	599	571	472	460	600	389	407	652	831		755	
KM													
480					557			375					
470					555	592		374					
460					546	596		370					
450					528	583		363					
440					505	561		352					
430					473	527	643	338					
420					435	485	642	321					
410				643	389	437	635	301					
400		601	641	339	371	623	277		2.18				
390		595	634	282	302	603	749		2.18				
380	794	644	619	219	232	578	216		2.17				
370	794	631	596	161	167	546	183		2.15	4.42		368	
360	789	607	569	102	112	508	149		2.13	4.72		368	
350	775	572	531	65.8	60.0	460	117		2.10	4.90		366	
340	751	534	484		13.4	40.8	8.0		2.07	4.85		364	
330	720	484	424			335	5.4	298	2.1	4.79		360	
320	679	425	350			258	16.0	297	2.14	4.69		353	
310	624	34.6	276				183		2.05	4.58		345	
300	55.2	297	207				117		2.01	4.00	4.43	338	
290	456	279	143				68.6		2.05	2.3	4.26	330	
280	341	158	90.4			43.2			2.07	2.45	4.07	321	
270	2.2	93.8	55.0						2.09	2.38	3.86	313	
260	127	53.7	18.1						2.00	2.32	3.63	306	
250	71.4	9.8							2.06	2.25	3.40	299	
240	33.1								2.09	2.19	3.19	292	
230									2.11	2.16	3.00	285	
220									194	2.12	2.83	282	
210									178	2.09	2.71	278	
200									163	2.06	2.60	274	
190									148	2.03	2.54	270	
180									133	1.99	2.48	267	
170									118	1.88	2.41	263	
160									104	1.70	2.21	226	
150									91.9	1.47	2.00	189	
140									82.2	1.27	1.77	170	
130									76.8	1.12	1.54	158	
120									71.4	1.04	1.38	151	
110									97.2	1.12	1.43	143	

ELECTRON DENSITY												
PUERTO RICO		60 W 8 MAY 1960										
TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL	A	A	A	A	A	A	A	A	A	A	A	A
HMIN	114	105	108	110	111			258	265	220	268	
SCAT	87.5	75.5	71.4	10.3	104			61.7	64.1	66.0	60.0	
HMAXF	371	340	280	293	346			370	404	368	408	
SHMAX	78.0	110.5	61.3	57.7	70.0			54.6	64.3	55.0	47.2	
KM												
410										75.4		56.5
400										67.9	75.4	56.2
390										67.9	74.6	55.2
380		59.0								67.5	72.8	53.3
370		59.0								66.2	70.0	66.1
360		58.8								63.9	66.5	65.8
350		58.2	89.6							60.9	62.1	64.8
340		57.2	89.6							56.9	56.6	63.1
330		55.6	89.2							51.9	45.5	60.6
320		54.7	88.0							45.5	41.7	57.3
310		51.7	86.1							37.4	32.9	53.4
300		49.7	84.1		41.7	43.9				28.6	23.5	48.3
290		46.7	80.6	57.3	41.6	42.8				17.9	14.9	42.1
280		43.9	75.4	57.3	41.4	41.5				10.7	80.4	35.5
270		41.7	68.9	57.1	40.2	39.7				60.0	36.2	28.6
260		38.9	61.4	56.3	40.3	37.9				12.4		21.1
250		36.1	52.9	54.9	39.4	36.0						14.3
240		34.9	44.6	53.0	38.3	34.0						8.6
230		33.3	38.6	51.1	37.0	32.1						4.9
220		32.1	35.5	40.0	35.7	30.0						4.6
210		31.0	33.4	43.2	34.0	28.0						
200		30.4	31.7	36.9	32.2	25.8						
190		29.4	29.7	32.0	30.3	23.5						
180		29.	27.1	28.0	28.3	21.1						
170		28.6	24.3	24.8	26.0	18.7						
160		27.2	22.4	21.9	23.4	16.3						
150		25.4	20.7	19.8	20.8	14.3						
140		22.7	19.7	18.3	18.1	12.4						
130		19.6	19.0	17.3	16.1	11.1						
120		18.0	18.3	16.5	14	10.3						

FLECTION OF N. I^T

PUERTO RICO		60 W				9 MAY 1960			
TIME	0 0 00	0 0 30	0 0 31	0 0 41	0 0 51	0 1 00	0 1 10	0 1 20	0 1 30
QUAL						A	A	A	A
HMIN	5	10	14	16	25	21	114	104	
SCAT	•	600	•	•	•	•	107	74	
MAXT	88	86	80	82	35	30	800	360	
CHAX	117	122	174	229	14	104	114	114	
KM									
410		330	473						
400		330	402						
3 0	43	52	30	40					
340	431	363	311	316					
370	421	371	305	381					
360	40	36	177	366	41		114	176	
350	67	4	34	34	31		84	176	
340	35	2	11	30	42		2	176	
330	71	31	17	21	1		47	176	
320	76	55	1	52	31		38	176	
310	19	24	4	11	9		4	64	
300	16	10	174	13	9		10	74	
290	12	10	177	13	9		10	74	
280	6	1	1	1	1		1	74	
270	30	6	7	7	10		1	114	
260	31	1	1	17	4	1	1	114	
250							1	1	
240							1	1	
230							1	1	
220							1	1	
210							1	1	
200							1	1	
190							1	1	
180							1	1	
170							1	1	
160							1	1	
150							1	1	
140							1	1	
130							1	1	
120							1	1	
110							1	1	

ELLE TRON FDN ITY

P R I M A R Y		60° W				9 MAY 1960							
IME	1 0	12	140	140°	16°	17	17 0	100	1	2	11	220	230
QUAL						A	A						
HMIN	17	117	109	109	110	127	124	234	234	247			
SCAT	65	72.8	66.	70.	70.	70.	70.	70.	70.	70.	70.	70.	70.
HMAXF		353	346	331	324								
SHMAX		2277	2424	2138	1872	1777							
Y/M													
430													1050
420													1045
410													1042
400													1026
390													1002
380													968
370													924
360		3	2128			1500	1240	1103	1143	1044	875		
350		2699	2127	1969		1500	1234	10	1134	1024	812		
340		266	2111	1965	172	1400	1211	1004	1006	988	744		
330		251	2074	1947	171	1465	1167	938	920	935	671		
320		15	20	1872	170	1417	1104	956	917	866	591		
310		147	174	184	184	1663	1393	10	70	801	786	503	
300		174	184	1731	162	133	902	6	657	688	401		
290		16	173	1621	1534	136	771	540	503	566	286		
280		164	119	1484	149	1180	604	426	335	430	230		
270		17	1436	1324	1341	1101	417	31	198	272	106		
260		12	125	1163	1207	921	179	276	109	150	75.9		
250		17	1075	974	1050	875			11	11	71.6		
240		7	951	817	89	741			68.4	46.9	20.7		
230		6	72	670	737	64			36.4				
220		54	524	560	50	517							
210		426	50	493	487	417							
200		47	43	43	40	44							
190		6	38	381	381	275							
180		27	385	352	310	228							
170		34	327	329	277	188							
160		31	298	202	24	153							
150		28	260	266	21	137							
140		16	236	233	147	100							
130		16	204	197	17	95							
120		16	187	183	162	84							
110		161	71	67.3	57.2	60							

ELECTRON DENSITY

ELECTRON DENSITY

PUERTO RICO				60° W.				10 MAY 1961				
TIME	100°	130°	140°	150°	160°	170°	180°	190°	200°	210°	220°	230°
QUAL	A											
HMIN	11	14	108	107	104		108	231	240	261	260	241
SCAT	6	6	68	64	64		60	706	706	56	57	65
HMAX	44	34	35	36	33		44	77	67	407	388	392
SHMAX	177	236	250	240	219		171	1433	111	111	985	956
YR												
410										1376	1441	
400										1248	1337	1131
390										1460	1374	1317
380										1460	1245	1200
370										1457	1201	1224
360										1433	1143	1158
350	2046	21	2850	348			1043	1401	1071	1066	1178	1016
340	2078	21	2346	2181			1082	1558	981	942	1026	944
330	208	218	2111	215	215		1071	1802	875	794	982	856
320	2040	211	213	2173	212		1046	1243	756	634	844	756
310	1969	201	2041	2104	206		1050	1163	671	477	679	637
300	1865	1881	1923	2101	1984		1030	1060	497	310	508	497
290	1735	161	178	1977	1884		1060	924	345	179	335	362
280	1581	155	1617	1717	1750		1069	770	220	972	179	234
270	1417	132	164	161	1584		1153	591	122	406	714	127
260	1241	1183	122	1384	1391		1028	389	68	5	71	1
250	1050	9	1018	1165	1193		903	209	17	16	41	
240	483	416	840	947	979		756	82				
230	740	716	70	756	794		600					
220	530	615	608	608	643		460					
210	546	542	535	501	520		356					
200	484	489	481	434	440		270					
190	436	446	438	380	374		206					
180	498	406	400	352	324		164					
170	364	36	364	322	28		134					
160	330	320	320	293	248		112					
150	291	271	298	262	21		96					
140	251	265	268	232	191		64					
130	22	231	232	206	144		204					
120	67	209	211	188	146		74					
110	54	141	123	12	1		10					

ELECTRON DENSITY													
PU	RTO	PL	O	60	W		12	MAY	1960				
TIME	0000	0	00	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL		F	A								A	R	R
HMIN	365	257	246	268	220	190	212	111	111				
SCAT	55.4	60.4	47.0	55.4	51.7	77.7	50.6	61.2	82.6				
HMAXF	390	387	354	385	347	336	326	287	376				
SHMAX	404	433	301	343	310	311	222	514	803				
V.M.													
400	632												
300	632	632			439								
380	628	629			438								
370	616	610			431								
360	606	502	477	416									
350	463	477	476	393	446								
340	426	443	464	366	444	310							
330	376	405	438	320	426	300	316		616				
320	319	358	400	288	417	307	315		624				
310	76	303	15	240	38	301	308		630				
300	193	246		198	192	354	293	795		610			
270	127	165	240	147	310	192	276	540	470				
280	71.0	101	170	97.0	257	168	260	430	577				
270	33.0	60.0	117	56.0	198	253	210	430	493				
260	1	6.6	12.0	4.4	142	235	182	416	524				
250		26.8			97.7	214	140	493	402				
240					57.7	182	176	466	450				
230					6.4	156	170	427	423				
220						121	171	378	380				
210						31.8		324	355				
200						49.6		270	316				
190								722	282				
180								184	268				
170								155	215				
160								134	186				
150								114	161				
140								98.3	131				
130								71.3	121				
120								84.0	113				

ELECTRON DENSITY

PUERTO RICO 60 W 13 MAY 1960

TIME 0000 0100 0200 0300 0400 0500 0600 0700 0800 0900 1000 1100

QUAL	A
HMIN	251 231 213 220 217 214 218 107 114 110 111 112
SCAT	61.0 58.4 57.7 65.7 67.1 43.5 48.0 68.9 52.1 69.3 87.6 74.0
HMAXF	180 351 320 361 351 323 305 290 270 307 351 367
SHMAX	1087 94.7 682 712 625 358 371 648 672 994 1446 2004
KM	320 1393
380 1303	
420 1384 834	
360 1357 1252 834 735	
350 1310 1249 828 735	
340 1246 1229 812 731	
330 1166 1219 1172 784 718 582	
320 1060 1134 1172 751 697 591	
310 117 1061 1062 709 667 643	
300 736 960 1045 652 636 540	
290 525 834 978 573 584 497 628 661	
280 310 670 907 484 423 462 501 650	
270 143 477 794 381 441 376 504 647	
260 60.0 178 455 270 381 284 504 628	
250 127 465 170 251 194 398 602	
240 60.0 240 97.2 143 119 262 576 772 668 156 656	
230 10.0 53.0 71.0 71.4 112 536 719 617 584 582	
220 49.6 19.0 40.0 26.0 487 64.3 461 51.1 52.1	
210 430 540 505 463 472	
200 365 447 450 417 432	
190 292 340 400 382 398	
180 225 262 352 349 366	
170 169 210 307 316 337	
160 137 174 267 283 364	
150 109 154 229 245 278	
140 15.6 138 192 207 249	
130 89.4 127 173 191 219	
120 82.0 101 162 180 198	
110 63.7 40.0	

ELECTRON DENSITY

PUERTO RICO 60 W 13 MAY 1960

TIME 1 01 13 140 1500 1600 1700 1800 1900 2100 2200 2300

QUAL	A	A	A	A	A	A	A	A	A	A	A	A
HMIN	109 112 110 110											
SCAT	6.0 6.0 6.0 64.0 64.0											
HMAXF	180 337 369 347											
SHMAX	2.0 3.0 347 2436 13.0											
KM	420											
410												
400												
390												
370 192 202 212 222												
360 19.5 20.5 21.5 22.5												
350 19.1 20.1 21.1 22.1												
340 18.8 19.8 20.8 21.8												
330 18.4 19.4 20.4 21.4												
320 17.9 18.9 19.9 20.9												
310 16.7 17.7 18.7 19.7												
300 15.5 16.5 17.5 18.5												
290 14.3 15.3 16.3 17.3												
280 13.2 14.2 15.2 16.2												
270 12.2 13.2 14.2 15.2												
260 11.2 12.2 13.2 14.2												
250 10.2 11.2 12.2 13.2												
240 9.2 10.2 11.2 12.2												
230 8.2 9.2 10.2 11.2												
220 7.2 8.2 9.2 10.2												
210 6.2 7.2 8.2 9.2												
200 5.2 6.2 7.2 8.2												
190 4.2 5.2 6.2 7.2												
180 3.2 4.2 5.2 6.2												
170 2.2 3.2 4.2 5.2												
160 1.2 2.2 3.2 4.2												
150 0.2 1.2 2.2 3.2												
140 0.0 0.2 1.2 2.2												
130 0.0 0.0 0.2 1.2												
120 0.0 0.0 0.0 0.2												
110 0.0 0.0 0.0 0.0												

ELECTRON DENSITY

PUERTO RICO 60 W 14 MAY 1960

TIME 0000 0100 0200 0300 0400 0500 0600 0700 0800 0900 1000 1100

QUAL	A	A	A	A	A	A	A	A	A	A	A	A
HMIN	238 219 258 236 251 247 258 110 111											
SCAT	60.6 40.4 57.0 58.4 71.0 61.4 68.4 96.5											
HMAXF	363 333 376 361 391 379 381 390											
SHMAX	1276 721 914 774 811 691 684 1042											
KM	400 906 906 814 756											
390 906 814 756												
380 1265 901 865 814 733												
370 1669 1261 1027 887 844 795 717												
360 1668 1240 1017 863 844 791 713												
350 1650 1191 1018 834 817 771 703												
340 1609 1240 1143 992 794 744 685												
330 1545 1231 1061 956 739 729 662												
320 1476 1214 944 902 673 660 650 617												
310 1365 1151 794 828 58 573 579 608												
300 1217 1052 608 729 489 477 494 573												
290 1027 917 434 604 370 367 496 540												
280 756 734 219 477 246 257 276 502												
270 477 555 83.0 335 127 136 127 464												
260 219 362 22.0 191 60.0 71.4 78.0 424												
250 81.0 198 90.0 20.0 20.0 382 382												
240 23.0 10.0 40.0 339												
230 5.0 4.0 297												
220 4.0 256												
210 219												
200 183												
190 155												
180 130												
170 110												
160 94.7												
150 83.5												
140 78.0												
130 74.3												
120 53.7												

ELECTRON DENSITY

PUERTO RICO 60 W 14 MAY 1960

TIME 1200 1300 1400 1500 1600 1700 1800 1900 2000 2100 2200 2300

QUAL	A	A	A	A	A	A	A	A	A	A	A	A
HMIN	11.0 11.0 11.0											
SCAT	79.0 61.0 61.0 74.0 74.0											
HMAXF	376 340 31.0 327											
SHMAX	214.0 21.0 157.0 1359											
KM	410											
400												
390												
380 1669 1667												
370 1657 1257												
360 1645 1228												
350 1626 2033												
340 1586 2010												
330 1533 1533												
320 1466 1133												
310 1386 18.0 1664 1249												
300 1294 1717 1638 1220												
290 1179 1571 1599 1194												
280 1056 1415 1511 1149												
270 971 1155 1436 1087												
260 766 1050 1311 1004												
250 679 661 1182 994												
240 589 704 1023 794												
230 520 620 934 670												
220 469 472 643 559												
210 431 446 477 446												
200 397 410 371 367												
190 365 387 324 294												
180 323 350 288 250												
170 294 313 265 213												
160 266 286 273 170												
150 240 252 193 154												
140 221 226 177 131												
130 210 211 158 114												
120 200 200 140 104												
110 111 40.0 127												

ELECTRON DENSITY

PUERTO RICO											
60 W 17 MAY 1960											
TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000
QUAL							A	A	A	A	A
HMIN	235	221	208	228	234	252	208	199	110		
SCAT	402.1	582.1	554.8	434.5	472	542.6	424	81.6	582.1		
HMAXF	331	342	337	338	340	375	461	385	31		
SHMAX	971	1156	791	537	561	536	597	1098	1180		
KM											
390							928				
380							679	927			
370							678	920			
360							668	906			
350							656	886			
340	1786	1555	1050	875	217	618	754	404			
330	1765	1510	1045	867	196	745	919	1214			
320	1751	1501	1024	836	877	916	725	779	1214		
310	1662	1410	986	740	834	464	624	744	1203		
300	1526	1356	936	706	761	349	653	684	1174		
290	1341	1254	859	688	646	310	599	641	1174		
280	1033	1110	767	495	551	240	435	573	1070		
270	716	932	656	362	36	150	458	519	979		
260	362	676	431	219	194	714	367	400	673		
250	143	340	400	118	93	162	401	776			
240	40.6	171	751	645	451	161	342	670			
230	71.4	134	124	12	2	773	567				
220	68.1			7.4	179	445					
210		12.4		12.4	89.1	34.3					
200				12.4	32.7						
190					24.3						
180					2.4						
170					210						
160					1.1						
150					1.6						
140					1.6						
130					1.6						
120					1.7						
110					71.4						

ELECTRON DENSITY

PUERTO RICO											
60 W 17 MAY 1960											
TIME	1200	1300	1400	1500	160	1700	180	1900	20	1	2200
QUAL							A	A	A	A	A
HMIN	109	110	109	110	109	109	111	217	217	226	262
SCAT	76.1	61.7	47.2	51.9	61.4	43.2	26.7	42.4	52.1	56.1	57.5
HMAXF	171	351	348	132	140	111	67	110	111	112	117
SHMAX	1407	175	64	190	191	191	167	173	174	175	179
KM											
390							1191				
380							732	636	665		
370							643	643	683		
360							643	643	683		
350							643	643	683		
340							643	643	683		
330							643	643	683		
320							643	643	683		
310							643	643	683		
300							643	643	683		
290							643	643	683		
280							643	643	683		
270							643	643	683		
260							643	643	683		
250							643	643	683		
240							643	643	683		
230							643	643	683		
220							643	643	683		
210							643	643	683		
200							643	643	683		
190							643	643	683		
180							643	643	683		
170							643	643	683		
160							643	643	683		
150							643	643	683		
140							643	643	683		
130							643	643	683		
120							643	643	683		
110							643	643	683		

ELECTRON DENSITY

PUERTO RICO											
60 W 18 MAY 1960											
TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000
QUAL							A	A	A	A	A
HMIN	266	262	246	244	217	219	222	111	112	108	110
SCAT	42.8	60.7	47.2	51.9	61.4	43.2	26.7	42.4	52.1	56.1	58.2
HMAXF	173	397	356	361	360	373	300	268	113	217	363
SHMAX	426	534	400	391	400	293	261	517	419	784	1512
KM											
400											
390											
380											
370											
360											
350											
340											
330											
320											
310											
300											
290											
280											
270											
260											
250											
240											
230											
220											
210											
200											
190											
180											
170											
160											
150											
140											
130											
120											
110											

ELECTRON DENSITY

PUERTO RICO											
60 W 18 MAY 1960											
TIME	1200	1300	1400	1500	160	1700	180	1900	20	1	2200
QUAL							A	A	A	A	A
HMIN	109	110	109	110	109	109	111	217	217	226	262
SCAT	76.1	61.7	47.2	51.9	61.4	43.2	26.7	42.4	52.1	56.1	58.2
HMAXF	171	351	348	132	140	111	67	110	111	112	117
SHMAX	1407	175	64	190	191	191	167	173	174	175	179
KM											
390							1191				
380							1234	636	665	693	
370							1234	1172	1049	1049	
360							1234	1172	1049	1049	
350							1234	1172	1049	1049	
340							1234	1172	1049	1049	
330							1234	1172	1049	1049	
320							1234	1172	1049	1049	
310							1234	1172	1049	1049	
300							1234	1172	1049	1049	
290							1234	1172	1049	1049	
280							1234	1172	1049	1049	
270							1234	1172	1049	1049	
260							1234	1172	1049	1049	
250							1234	1172	1049	1049	
240							1234	1172	1049	1049	
230							1234	1172	1049	1049	
220							1234	1172	1049	1049	
210							1234	1172	1049	1049	
200							1234	117			

ELECTRON DENSITY

ELECTRON DENSITY

PUERTO RICO		60 W										19 MAY 1960											
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												QUAL											
HMIN	248	217	204	228	240	257	245	110	117	113	111	110	HMIN	105	104	113	109	110	209	201	228	236	233
SCAT	47.9	36.1	31.6	56.4	57.8	52.2	51.1	47.4	46.4	46.0	46.2	46.3	SCAT	65.7	55.1	56.2	68.1	63.0	56.4	58.1	53.6	59.9	58.0
HMAXF	364	321	354	370	391	386	285	304	335	359	346	347	HMAXF	347	334	347	354	345	336	362	352	379	375
SHMAX	773	557	490	425	390	370	467	759	1070	1416	1988	1996	SHMAX	2095	209%	1971	2205	1974	1438	1234	1045	991	886
KM												KM											
400												400											
300												300											
200												200											
100												100											
0												0											
370	1191											370	1937										
360	118	557	490	438	518							360	1931	2227	1969	2030	1961						
350	1166	556	484	412	498							350	1703	2224	1954	1970	1940						
340	1114	445	463	375	477							340	1854	2193	1903	1977	1890						
330	104	707	526	434	329	439						330	177	2125	1834	1822	1815						
320	741	707	493	398	275	389						320	1686	2021	1721	1713	1717						
310	407	1094	699	464	354	219	335					310	1570	1891	1544	1586	1593						
300	64	1091	678	417	30	165	274					300	1425	1704	1426	1435	1445						
290	46	1050	643	356	247	116	211	1096	1102	1061	1143	1419	290	1260	149	1254	1262	1260					
280	286	781	598	286	197	76.5	157	1091	107	1004	1050	1329	280	1060	1265	1096	1050	1057					
270	141	857	533	219	132	50.8	116	1000	1039	935	947	1224	270	896	1059	938	853	834					
260	67.4	679	446	148	75.8	17.5	43.8	1004	974	875	854	1115	260	754	834	794	698	679					
250	17.4	493	153	90.0	47.1	51.9	905	898	806	768	1004	250	623	657	654	573	540						
240	28	254	53.4	28	3	768	809	735	693	975		240	526	540	551	451							
230	97.2	161	12.4			608	635	660	630	746		230	455	458	473	410	397						
220	17.4	80.9				458	573	573	573	633		220	40	408	417	366	350						
210	40.2					340	458	489	524	531		210	376	374	375	315							
200						266	370	410	477	446		200	354	351	340	315	283						
190						217	307	352	427	393		190	337	332	310	298	253						
180						179	258	315	376	355		180	313	313	283	272	225						
170						150	219	289	331	329		170	277	287	262	249	198						
160						125	182	262	295	310		160	240	247	225	219	170						
150						107	152	227	264	290		150	216	213	196	189	143						
140						95.6	131	191	237	262		140	201	191	182	170	134						
130						89.1	120	161	210	219		130	83.8	161									
120						80.0	112	146	184	188		120	124	49.6	83.8								
110						71.4						110											

ELECTRON DENSITY

ELECTRON DENSITY

PUERTO RICO		60 W										20 MAY 1960										
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								A	A	A	A	QUAL				S	A	A	A	S		
HMIN	255	231	24	251	211	209	199	111	110	109	109	HMIN	111	112	112	200	201	256	261	256		
SCAT	50.7	48.2	47.3	48.6	48.6	53.0	41.0	42.4	87.4	65.8	47.3	SCAT	55.7	64.5	64.5	64.9	65.3	44.6	61.5	50.0		
HMAXF	380	361	349	362	304	307	287	35	336	303	303	HMAXF	325	339	339	353	374	364	404	375		
SHMAX	75	747	624	647	572	346	297	1243	1403	1315	1315	SHMAX	1840	1800	1800	1312	1240	883	1199	879		
KM								410				KM				400						
300	1072							300				300				390						
200	107							200				200				190						
100	1061	1095	993					100				100				90						
0	102	1095	993					0				0				0						
370	174	1081	98	978				370				370				360						
340	100	1043	973	943				340				340				350						
330	814	980	942	889				330				330				340						
320	704	891	887	810				320				320				330						
310	573	787	814	700	896	816		310				310				320						
300	417	657	710	573	895	612		300				300				310						
290	262	508	58	417	880	590	540	290				290				300						
280	161	363	437	262	850	552	536	280				280				290						
270	78	2.5	271	138	805	493	517	270				270				280						
260	34.0	110	143	60.0	747	410	485	260				260				270						
250	80.4	56.9	573	65	317	437	628	754	1078			250				260						
240	46.2	573	198	362	553	656	909	240				240				250						
230		335	105	262	535	567	744	230				230				240						
220		117	56.4	151	497	490	598	220				220				230						
210		4.9	714	440	424	484		210				210				220						
200		12.4			349	371	414	200				200				210						
190					342	374	367	200				190				200						
180					246	281	335	190				180				190						
170					228	240	307	190				170				180						
160					182	202	282	180				160				170						
150					147	149	253	170				150				160						
140					116	130	215	160				140				150						
130					107	122	173	150				130				140						
120					101	116	153	140				120				130						
110					49.6	83.8	130	120				110				120						

ELECTRON DENSITY

PUERTO RICO		60 W		21 MAY 1960								
TIME	0000	0110	0200	0310	0400	0510	0600	0700	0800	0900	1000	1100
QUAL												
HMIN	249	211	196	206	230	27	0	240	110	107	110	
SCAT	54 ^a	44 ^a	41 ^a	42 ^a	5 ^a	47 ^a	76 ^a	40 ^a	77 ^a	70 ^a	71 ^a	
MAXF	163	30 ^a	29 ^a	30 ^a	167	1	3	35	62	34	32 ^a	
SHMX	88 ^a	68 ^a	46 ^a	278	6	49	7 ^a	45 ^a	7 ^a	7	122 ^a	
YM												
370	1290											
360	1289											
350	1269											
340	1227											
330	1161											
320	1076											
310	26 ^a	125										
300	784	125	574	61 ^a	9	31 ^a	6	57	74 ^a	74 ^a	1064	
290	581	127 ^a	814	445 ^a	26	57 ^a	410	74 ^a	74 ^a	74 ^a	1017	
280	489	127	81	420 ^a	214 ^a	14 ^a	30 ^a	30 ^a	74 ^a	74 ^a	976	
270	67	127	776	336 ^a	18 ^a	47 ^a	6	50	71 ^a	72 ^a	860	
260	87 ^a	66	72	354 ^a	120 ^a	141 ^a	30 ^a	587	68 ^a	68 ^a	800	
250	124 ^a	75 ^a	634 ^a	301 ^a	73 ^a	127 ^a	21 ^a	570	61 ^a	61 ^a	726	
240	477	508 ^a	212 ^a	45 ^a	79 ^a	8 ^a	12 ^a	540	57 ^a	57 ^a	649	
230	199	36 ^a	154 ^a		48 ^a			44 ^a	47 ^a	46 ^a	46 ^a	
220	73 ^a	11 ^a	40 ^a	6				38 ^a	41 ^a	41 ^a	48 ^a	
210		10 ^a	40 ^a	2				310	38 ^a	41 ^a		
200		47 ^a							248	36 ^a	35 ^a	
190									15 ^a	20 ^a		
180									19 ^a	24 ^a		
170									15 ^a	24 ^a		
160									123	19 ^a		
150									100	167	198	
140									88 ^a	129	176	
130									80 ^a	123	141	
120									73 ^a	11 ^a	129	
110									49 ^a	7 ^a	49 ^a	

ELECTRON DENSITY

PUERTO RICO		60° W				21 MAY 1960						
TIME	120°	13	140	150°	16	170°	180	190°	200°	210	220	230°
QUAL						A	A	A	A			
HMIN						110	110	198	110	26.9	263	237
SCAT						61+	61+	74+	64+	64+	52+	441
HMAXF						110	147	211	117	381	347	
SHMAX						2.54	1.73	1.15	1.15	5.00	7.11	
KM												
320										1290	1240	
380										1290	1240	
370										279	1226	
360										1367	1259	1196
350										1366	1211	1143
340										1366	1155	1111
330										1367	1073	114
320										1369	916	1049
310										1371	851	1223
300										1374	742	930
290										1376	626	816
280										1375	573	664
270										1379	417	759
260										1382	715	6040
250										1384	161	207
240										1385	310	323
230										1387	106	115
220										1388	50	640
210										1389	107	61
200										1390	127	1946
190										1391	542	
180										1393	121	
170										1395	216	
160										1397	186	
150										1399	158	
140										1401	138	
130										1402	124	
120										1404	116	
110										1404	104	

ELECTRON DENSITY

PUERTO RICO		60° W										22 MAY 1960			
TIME	0000	0110	0200	0300	0400	0510	0600	0710	0800	0900	1000	1100	A	A	A
QUAL	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
HMIN	246	211	209	230	241	206	227	111	110						
SCAT	4	1	51	3	42	2	5	41	2	4	16	72	1		
MAXE	33	33	34	30	35	31	36	32	30	30	31	30	3		
SHMAX	758	740	624	425	404	219	276	85	114						
KM															
360															
350															
340	1240	1121													
330	1131	1112													
320	1196	1110													
310	1136	1061													
300	1556	1006	764	607	654	417	417								
290	126	17	761	350	406	419	394	135	94						
280	756	805	740	286	344	402	361	735	96						
270	540	657	697	211	270	376	310	725	9						
260	186	477	638	136	165	19	446	829	84						
250	60	17	547	81.0	71.0	6.0	165	603	746						
240	93	424	494	6	114	148	591	701							
230	1	24	26			133	140	508	608						
220		11			71.4			417	708						
210		17.0			26.2			329	417						
200								258	353						
190								20	305						
180								170	266						
170								138	231						
160								112	178						
150								14.2	168						
140								83.1	143						
130								74.5	126						
120								74.0	118						
110									49.6						

ELECTRON DENSITY

PUERTO RICO		60° W.				12 MAY 1960							
TIME		10	13	14 ⁰⁰	15 ⁰⁰	16	1700	1800	1900	2000	2100	2200	2300
QUAL				A									A
HMIN	0	104	115	106		109		111	120	128	131	136	1240
-CAT	65.0	61.0	61.0	64.0		64.0		64.0	74.0	74.0	74.0	84.0	60.0
HMAXF	36	34	34	34		36		36	37	36	36	34.0	37.0
SHMAX	2.46	1.9	1.9	2.110		1.6	4	1.6	1.7	1.7	1.6	1.6	1.250
KM													
390													1252
380													125
370		1786											1167
360		1786											1158
350	1	174	1	184	2	181	2	186	1	181	1	177	1127
340	1	174	1	184	2	181	2	186	1	181	1	177	1127
330	1	168	1	167	1	165	1	164	1	162	1	159	1071
320	1	161	1	164	1	164	1	164	1	164	1	163	995
310	1	12	1	183	1	184	1	187	1	184	1	184	82
300	140	137	137	171	181	181	181	186	110	106	106	94.0	754
290	126	126	126	151	161	161	161	161	101	96	96	67	608
280	111	149	149	149	151	151	151	151	9.74	819	51.0	465	347
270	16	125	125	125	134	134	134	134	136	136	136	136	122
260	92	105	105	105	10.6	1240		1240	431	431	431	555	78.0
250	70	94	97	97	02	1072		1072	462	462	462	71.4	47.4
240	60	67	71	71	75	875		875	240	143	143	9.07	
230	524	554	554	584		705		705	83.0	65.0	65.0		
220	464	464	488	488	477	540		540					
210	421	421	421	422	412	407		407					
200	38	371	379	369		318		318					
190	366	346	346	337		266		266					
180	350	352	362	314		233		233					
170	337	311	308	296		236		236					
160	315	28	292	274		179		179					
150	290	26	273	245		152		152					
140	257	224	247	210		120		120					
130	228	199	219	142		113		113					
122	191	7	198	170		104		104					
110	14	14	14	14		10		10					

ELECTRON		WAVELET		60 W				23 MAY 1960				
TIME	DURATION	PERIOD	POL	030	040	0500	06	0700	0700	0900	1000	1100
DUAL			A									
HMIN	4.4	3.	309	218	14	241	13	110	14	112	109	
SCAT	4.7	4.7	47.8	47.1	44.6	46.7	4.4	61.0	68.0	64.4	80.3	S
MAXF	354	354	319	344	340	333	330	321	32	319	361	
SHMAX	753	743	566	518	436	427	434	926	137	1485	1975	
KM												
370												1528
360	126	E										1528
350	126			764	707							1520
340	123			763	700	670	643					1500
330	1170	130		747	675	678	644	928	1341			146.7
320	107	199	EAE	716	632	667	638	928	1340	1528	1476	
310	940	126	E	678	665	573	641	921	931	13.4	1520	1371
300	940	126	E	852	597	491	603	59	903	1301	1493	1301
290	573	110	E	807	512	395	547	553	872	12	1445	1273
280	16	97	E	745	417	180	466	04	830	11	1376	1131
270	151	154	E	653	319	17	362	429	777	1131	1409	1039
260	83.6	50	E	640	97	250	357	716	1050	1811	1050	860
250	2.60	267	E	601	143	40	127	240	566	941	1050	860
240	1.12	254	E	83.6		6040	7	566	827	917	771	
230				127	52.5			477	710	754	679	
220				67	12.4			396	546	607	574	
210				1.04				315	449	477	508	
200								255	371	397	436	
190								214	303	338	376	
180								170	257	297	328	
170								150	219	262	289	
160								126	183	231	249	
150								107	149	200	210	
140								92.3	115	167	177	
130								81.6	107	142	150	
120								75.5	102	132	136	
110								12.4	49.4		112	

ELECTRON DENSITY													
PUERTO RICO		60 W							24 MAY 1960				
TIME		1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL	A	A	A	A	A	A	A	A	A	A	A	A	
HMIN	106		11^		108		249	233	253	289	289	289	
SCAT	75.0		55.0		61.0		03.8	66.0	51.8	66.2	54.8	54.8	
HMAXF	372		318		321		393	418	385	428	428	404	
SHMAX	1526		1025		868		590	768	582	777	777	596	
KM													
430												917	
420												914	
410												900	
400												824	
390													
380	1143												
370	1143												
360	1136												
350	1119												
340	1092												
330	1059												
320	1013	917											
310	950	912											
300	881	893											
290	805	857											
280	725	807											
270	643	746											
260	559	679											
250	491	611											
240	438	546											
230	399	488											
220	377	439											
210	357	401											
200	334	372											
190	316	349											
180	307	329											
170	289	312											
160	270	293											
150	246	267											
140	213	225											
130	186	196											
120	172	185											
110	161	71.6											
							83.8						

ELECTRON DENSITY

ELENT ON DFN 111

ELECTRON DENSITY

PUERTO RICO		60 W										26 MAY 1960		
TIME		0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	
QUAL	A	A	A	A	A	A	A	A	A	A	S	A		
HMIN	238	230	218	224	197		225			109				
SCAT	46.0	50.0	60.4	57.2	48.0		0.6			55.4				
IMAF	358	341	359	338	318		335			217				
HMAX	703	578	641	558	416		327			1031				
KM														
360	1050		794											
350	104	47.0	789											
340	1011	875	774	794			492							
330	756	864	749	790			491							
320	88.7	834	712	775	634		481							
310	784	794	664	748	630		461							
300	664	728	608	713	61.		434			116.7				
290	531	643	526	659	571		395			116.7				
280	389	526	427	573	534		335			115				
270	219	38.7	326	468	470		262			117.0				
260	123	240	231	335	380		187			106.0				
250	64.1	127	149	187	291		117			91.7				
240	12.0	60.0	92.6	97.2	207		61.0			90.3				
230			55.6	45.7	133		34.1			71.4				
220			17.4		82.4		1.1			67.9				
210					53.1					56.6				
200					17.6					46.0				
190										36.7				
180										29.2				
170										24.0				
160										20.5				
150										17.3				
140										14.6				
130										12.6				
120										11.7				
110										71.4				

ELECTRON DENSITY

ELECTRON DENSITY												
PUERTO RICO		60 W		27 MAY 1960		PUERTO RICO		60 W		27 MAY 1960		
TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL	S	A	A	A	A	A	A	A	A	A	A	A
HMIN	24.1	1.1	240	108	0	218	146	10	108	109	110	
SCAT	54.0	5.1	32.3	44.8	3.0	78.4	1.0	62.8	7.4	1.1	1.1	
HMAXF	367	64.1	252	214	317	334	141	34	27	298	347	
SHMAX	124	180	710	536	244	367	229	514	8	1031	1447	KM
400												
300												
200												
170	1.9											
160	1284		1050			331						
150	1252	134	1147			320	335					
140	1204	134	1037			305	335					
130	1138	132	1004			289	331					
120	1050	129	955			36	268	321				
110	117	1246	881			246	304					
100	754	1174	777	917	3.1	214	243	524	834	1061	1004	
90	57	1037	643	917	33	181	524	831	1057	947		
80	18	51	495	403	31	151	217	210	814	1039	885	
70	212	76	432	866	244	120	176	202	748	1007	918	
60	105	340	179	810	24	91	140	492	746	963	749	
50	47.6	53	71.9	716	19	70.6	110	466	612	901	679	
40	18	586	137	64.0	86.6	435	633	820	612			
30	71.6	446	87	35.3	67.8	298	564	716	555			
20	12.4	262	51.1	19.9	52.6	356	471	596	508			
10	136	6.8	40.5	40.5	310	431	484	471	190	372	392	350
0	12.4	17.6	26.2	37.4	40.7	43.7	180	34	363	339	318	237
180									170	327	334	319
170									160	300	306	266
160									150	261	261	240
150									140	227	244	233
140									130	195	204	198
130									120	186	186	165
120									110	169	143	143
110												12.4

ELECTRON DENSITY												
PUERTO RICO		60 W		28 MAY 1960		PUERTO RICO		60 W		28 MAY 1960		
TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL	S	A	A	A	A	A	A	A	A	A	A	A
HMIN	265	22	219	217	254	238	208	109	110	108	109	
SCAT	54.0	55.7	61.1	65.9	62.4	47.4	42.7	39.7	49.1	48.1	54.6	
HMAXF	376	33	337	372	343	343	260	21	341	367		
SHMAX	578	655	493	507	46	371	282	571	62	1305	1758	KM
400												
300												
200	354		565									
170	24		565	561								
160	52		565	550								
150	72		560	532								
140	736	13	643	531	47	590		917	1252			
130	66	77	641	508	43	570		714	1204			
120	761	27	631	477	38	554		704	1167			
110	444	27	61	442	35	517		889	1120			
100	124	34	50	392	25	468	716		367	1066		
90	157	737	551	335	17	57	71		938	1004		
80	104	74	504	271	10	310	697		805	929		
70	45.6	501	447	212	55	178	660	617	604	765	849	
60	44	165	156	12	117	603	717	371	721	762		
50	27	257	106	60.0	523	60	72	679	672	280	1104	130
40	12	151	71.4	12.4	382	853	7	621	598	270	1004	1151
30	42	71.4	47.3	20	73	720	177	529	260	895	978	
20	12.4	12.4	12.4	7.2	6.7	6.7	526	473	250	783	817	
10	24.6	530	573	477	430	430	240	679	668	220	508	471
0	389	47	430	298	230	230	230	585	553	210	608	531
100		271	359	401	374	220	508	471	494	508	417	12.4
100		202	306	374	352	210	220	446	417	422	426	335
170		154	251	347	329	200	401	380	376	370	286	
160		121	267	319	301	190	367	356	344	331	250	
150		77	170	286	269	180	34	334	317	300	219	
140		63.4	147	251	236	170	310	315	290	272	189	
130		78.6	121	209	210	160	295	291	262	247	162	
120		73	112	177	171	150	267	257	219	211	142	
110		49.6	49.6	151	151	140	228	223	189	179	129	
							130	198	194	173	158	121
							120	186	187	163	144	115
							110	143	143	49.6	40.2	

ELECTRON DENSITY

PUERTO PICO		60 W		29 MAY 1960								
TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL	C	A	A	A	A	A	A	A	A	A	A	A
HMN	283	231	189	208	256	256	309	106	106			
SAT	55.0	51.0	45.0	64.0	61.0	68.0	50.0	55.0	70.0			
MAXF	42°	36°	31°	30°	36°	39°	47°	41°	32°	31°		
HMAX	119.4	145.7	65.9	94.6	99.7	39.0	24.8	58.1	7.7			
YR												
430	1555						403					
420	1552						402	342				
410	1526						308	340				
400	1474						477	380	332			
390	1391						47*	377	317			
380	1380						46.7	35.0	28.0			
370	116.7						45.0	33.0	26.8			
360	101.4						50.0	43.0	31.3	23.1		
350	83.0	204.0					58.0	40.0	28.2	19.5		
340	64.0	203.0					57.0	47.0	24.6	15.4		
330	32.0	199.0					55.0	33.0	20.0	12.1	5.8	
320	26.0	190.7					54.0	18.0	16.0	5.1	6.4	
310	16.1	178.0					42.0	17.0	1.0	1.0	5.1	6.1
300	8.4	161.1	170.0	45.1	17.0	10.0	11.0	1.0	1.0	5.2	6.2	
290	4.2*	148.1	110.7	40.7	11.0	7.0	6.6			5.2	6.0	
280		100.0	100.4	35.0	7.0	5.6	5.1			4.0	5.8	
270		73.4	105.4	20.1	4.0	4.0	4.0	0.0		4.0	5.7	
260		38.0	98.4	2.1			1.0	0.4		3.0	5.0	
250		17.0	80.0	1.1						3.0	4.2	
240		71.4	75.6	1.14						2.0	4.2	
230			58.3	75.0*						2.0	3.0	
220			38.0	49.6						2.0	3.1	
210			19.0	12.4						1.0	2.6	
200			8.7	8.4						1.0	2.6	
190			1.0	6.4						1.0	2.4	
180										1.0	1.8	
170										1.0	1.6	
160										0.0	1.0	
150										0.0	1.0	
140										0.0	1.1	
130										0.0	1.0	
120										0.0	1.0	
110										1.0	0.8	

LEPTON DENSITY

ELECTRON DENSITY

ELECTRON IDENTITY

PUPILS		60 W		30 MAY 1960			
TIME	1200	1400	1600	1700	1900	2100	2300
QUAL	A	A	A	A	A	A	A
HMIN	100	102	109	204	240	251	258
CAT	47.2	60.7	50.6	56.1	56.6	47.6	61.6
HMAX	20	22	28	351	341	372	406
LMAX	13	140	88	652	51	412	446
LM							592
410							764
400							76
370					814		751
380					814	754	730
370					816	754	697
360					844	746	697
350					844	754	712
340					835	707	608
330	143	141			813	651	467
320	114	133			776	579	530
310	1110	1118			729	445	441
300	1067	1280			667	370	341
290	1055	1225	1134		586	277	240
280	732	1155	220		485	170	149
270	845	1054	948		376	714	83.8
260	749	936	843		262	521	17.4
250	655	794	785		179		
240	556	664	716		121		
230	477	557	643		79.3		
220	417	477	559		49.6		
210	384	423	484		12.4		
200	359	386	417				
190	340	362	370				
180	322	330	335				
170	301	314	307				
160	275	280	283				
150	236	250	260				
140	170	224	230				
130	194	201	203				
120	184	185	184				
110	143	161	97.2				

ELECTRON DENSITY

PUERTO RICO		60 W		31 MAY 1960								
TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
DUAL	S							A	A	A	A	A
HMIN	746	757	267	271	258	260	202	110	109			
SCAT	51.4	50.1	60.7	60.7	52.3	53.3	48.7	51.9	76.4			
HMAXF	380	380	393	414	376	383	371	312	320			
SHMAX	518	436	434	421	393	379	419	623	1065			
KM												
420												
410												
400												
390	697	616	643	488								
380	697	616	534	467	548	519	446					
370	690	611	521	441	547	506	446					
360	667	593	499	408	531	487	443					
350	633	563	472	362	515	459	435					
340	588	5	437	310	483	423	422					
330	634	465	393	252	443	378	402					
320	466	397	335	191	389	323	380	716	949			
310	289	278	267	135	329	256	350	716	945			
300	201	74	198	90.4	267	189	316	707	933			
290	119	170	133	62.0	184	123	277	685	912			
280	143	102	83.8	40.2	117	73.8	234	650	884			
270	91.9	60.0	31.0		60.0	46.4	190	602	849			
260	57.2	1	0.0			12.4		149	540	886		
250	23.9							114	457	748		
240								46.9	366	679		
230								46.6	290	598		
220								48.1	238	500		
210								26.9	209	397		
200										185	326	
190										158	274	
180										131	230	
170										108	194	
160										94.5	164	
150										83.8	139	
140										80.1	121	
130										76.3	109	
120										72.5	103	
110										12.4	71.4	

FLEETRON DENSITY

AVERAGE ELECTRON DENSITY

PUERTO RICO 60 W MAY 1960

ME 0000 0100 0200 0300 0400 0500 0600 0700 0800 0900 1000 1100

TABLES OF IONOSPHERIC DATA

MAY 1960 - FEBRUARY 1958

Table 1

Boulder, Colorado (40° 0' N, 105° 30' W)							May 1960	
Time	h°F2	foF2-Count	h°F	foF1	h°E	foE	foEs	(M3000)F2
00	5.0	17						2.65
01	5.2	17						2.65
02	4.85	18						2.65
03	4.7	17						2.70
04	4.2	14						2.70
05	4.45	14			1.9			2.85
06	5.35	14			2.6			2.80
07	5.75	14			3.3			2.88
08	6.5	14			3.5			2.90
09	6.3	15			4.0			2.60
10	6.25	18			4.1			2.60
11	6.5	21			4.0			2.60
12	6.7	17			4.0			2.68
13	6.8	19			3.9			2.55
14	7.2	21			3.8			2.80
15	7.3	22			>2.9			2.80
16	7.7	20			3.1			2.85
17	7.4	20			3.1			2.85
18	6.0	21			3.0			2.95
19	7.8	20			2.5			3.00
20	7.15	20			2.8			3.00
21	6.6	19						2.90
22	5.8	17						2.75
23	5.2	16						2.70

Time: 105.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 2

Thule, Greenland (76.6° N, 68.7° W)							April 1960	
Time	h°F2	foF2-Count	h°F	foF1	h°E	foE	foEs	(M3000)F2
00		(5.25)	22	270		---	125	----
01		(5.4)	23	270			120	(1.60)
02	---	(5.4)	23	270			1.80	(2.80)
03	---	(5.6)	20	260			(120)	1.95
04	---	(4.9)	21	250	---		118	2.00
05	(400)	(4.7)	15	250	(3.5)	110	2.18	(2.88)
06	(360)	(5.55)	16	240	(3.6)	109	2.42	(3.00)
07	(370)	(5.4)	17	230	4.0	108	2.60	(2.75)
08	(410)	(5.75)	18	240	3.9	107	2.80	(2.75)
09	415	(5.45)	20	235	(4.0)	105	2.85	(2.90)
10	(395)	(6.01)	14	230	4.1	105	3.00	3.2
11	370	(6.4)	17	(230)	4.2	104	3.00	3.1
12	400	(6.25)	18	220	4.1	105	2.85	(2.90)
13	385	(5.9)	16	225	(4.1)	104	2.90	(2.68)
14	395	(5.95)	22	220	4.1	105	2.90	(2.65)
15	380	(6.0)	21	230	4.0	105	2.80	(2.75)
16	<370	(5.8)	19	230	(3.8)	100	2.70	(2.80)
17	<400	(5.7)	23	245	(3.7)	110	2.50	(2.72)
18	(305)	(6.0)	23	250	---	111	2.30	(2.80)
19	---	(5.6)	21	260	120	2.12	2.3	(2.80)
20	---	(5.2)	23	270	(130)	1.90	2.1	(2.85)
21	(5.3)	25	265		125	1.90		(2.80)
22	(5.0)	25	270		120	1.72		(2.85)
23	(5.3)	22	270		<130	----		(2.78)

Time: 75.0°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)							April 1960	
Time	h°F2	foF2-Count	h°F	foF1	h°E	foE	foEs	(M3000)F2
00	5.8	30	310			2.4		2.60
01	5.9	30	310			2.8		2.60
02	5.6	30	300			2.4		2.62
03	5.5	29	295			2.2		2.65
04	5.2	29	300			2.3		2.65
05	5.1	28	310			2.62		
06	---	5.9	29	265	(130)	2.00	2.2	2.95
07	---	7.0	28	240	---	110	2.70	3.00
08	340	7.9	30	225	4.4	107	3.10	2.90
09	370	8.9	29	225	(4.8)	107	(3.38)	4.0
10	425	9.6	27	210	4.7	107	(3.70)	4.1
11	355	10.5	29	210	5.0	107	3.80	4.1
12	340	11.0	29	215	(5.2)	107	3.90	4.0
13	330	11.2	28	220	5.0	105	3.82	4.0
14	320	11.25	30	230	5.0	107	3.80	2.75
15	325	10.8	29	230	---	100	3.60	3.7
16	300	11.0	29	235	---	110	3.20	3.4
17	(475)	10.2	30	240	---	110	2.80	3.1
18		9.75	30	250	---	125	2.20	2.6
19		8.8	29	240			2.2	3.00
20		7.3	29	240			2.3	2.80
21		6.3	30	(270)			2.4	2.70
22		6.0	29	300			2.5	2.60
23		5.8	29	310			2.2	2.60

Time: 105.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 4

Huancayo, Peru (12.0° S, 75.3° W)							April 1960	
Time	h°F2	foF2-Count	h°F	foF1	h°E	foE	foEs	(M3000)F2
00		8.9	23	220				4.3
01		8.3	27	230				3.05
02		7.3	27	240				3.08
03		6.6	25	240				3.00
04		6.2	25	240				3.10
05		5.5	25	240				3.18
06		5.0	26	260				4.0
07		9.4	29	245				3.00
08		11.5	30	235				3.10
09		12.5	30	220				2.60
10		12.55	30	215				2.45
11		12.2	30	210				2.35
12		11.8	30	205				2.35
13		11.9	30	200				2.35
14		12.1	30	200				2.32
15		12.15	30	205				2.30
16		11.95	30	230				2.25
17		11.65	30	255				2.30
18		11.2	30	290				2.25
19		10.6	26	355				2.20
20		9.7	21	315				2.35
21		9.35	18	255				2.65
22		9.1	19	235				4.1
23		9.1	20	225				4.5

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 5

Ft. Monmouth, New Jersey (40.4° N, 74.1° W)							March 1960	
Time	h°F2	foF2-Count	h°F	foF1	h°E	foE	foEs	(M3000)F2
00		5.85	22	270				2.75
01		5.7	19	270				2.75
02		5.25	18	270				2.70
03		5.1	21	270				2.72
04		4.6	23	270				2.75
05		4.3	22	270				2.75
06		4.0	22	260				3.00
07		6.7	25	240	120	2.50		3.20
08	(255)	7.9	28	230	115	2.82		3.20
09	(270)	8.6	27	220	112	3.20		3.15
10		9.4	29	220	112	3.45		3.05
11		275	10.1	28	113	3.60		3.00
12		265	10.4	27	114	(3.65)		2.95
13		270	10.4	28	115	3.60		2.95
14		270	10.55	28	115	3.50		2.95
15		10.35	28	225	115	3.35		2.95
16		10.0	27	230	119	2.90		3.00
17		9.8	27	240	120	2.50		3.00
18		9.5	26	235	---	---		3.05
19		8.7	27	235				2.95
20		7.95	26	240				2.95
21		7.0	26	240				2.90
22		6.4	23	250				2.85
23		6.05	20	265				2.82

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 6

White Sands, New Mexico (32.3° N, 106.5° W)							March 1960	
Time	h°F2	foF2-Count	h°F	foF1	h°E	foE	foEs	(M3000)F2
00		5.0	30	280				2.80
01		5.0	30	290				2.70
02		5.0	31	285				2.70
03		4.9	30	280				2.75
04		4.8	31	275				2.75
05		4.8	31	<285				2.75
06		5.2	31	265				

Table 7

Time	Grand Bahama I. (26.6° N, 78.2° W)	March 1960						
	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	6.35	28	260					2.85
01	6.3	29	270					2.85
02	6.0	29	255					2.90
03	5.7	29	255					2.85
04	5.2	29	260					2.85
05	5.0	29	265					2.80
06	5.2	29	260	---	---			2.80
07	7.8	28	235	115	2.20			3.25
08	9.5	27	225	107	2.90			3.20
09	10.4	25	215	105	3.22			3.15
10	---	>11.0	26	210	---	105	3.50	3.05
11	11.4	27	200	---	105	3.70		3.05
12	(280)	12.0	26	200	---	105	(3.70)	3.00
13	290	12.0	28	210	---	105	3.70	2.90
14	(295)	12.0	27	215	---	105	3.70	2.85
15	(290)	11.05	28	220	---	110	3.50	2.85
16	11.75	28	230	109	3.20	3.3		2.90
17	(11.3)	27	235	110	2.80	2.9		2.95
18	(11.0)	27	230	<119	(2.00)			3.10
19	>9.0	27	210					(3.05)
20	7.8	28	215					2.90
21	7.0	30	245					2.85
22	6.9	29	<260					2.80
23	6.5	28	260					2.85

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 9

Time	Resolute Bay, Canada (74.7° N, 94.9° W)	February 1960						
	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	4.7	29	270	---	---			2.65
01	5.2	29	260	---	---			2.60
02	5.1	29	260	---	---			2.60
03	5.0	29	260	---	---			2.60
04	4.0	29	280	---	---			2.55
05	4.6	29	290	---	---			2.50
06	4.5	29	270	---	1.25			2.50
07	4.9	29	270	---	1.20			2.50
08	4.6	29	280	120	1.30	1.4		2.55
09	5.8	29	280	105	1.50	1.6		2.60
10	6.2	29	270	110	1.65			2.70
11	6.4	29	260	110	1.80			2.70
12	6.3	29	270	---	110	1.90		2.75
13	---	6.9	29	270	---	110	1.90	2.70
14	6.9	29	265	110	1.80			2.75
15	6.5	29	260	110	1.70			2.70
16	6.5	29	250	115	1.40	1.8		2.75
17	6.6	29	250	110	1.30	1.4		2.60
18	6.2	29	250	---	1.20			2.65
19	6.1	29	260	---	---			2.65
20	5.9	29	250	---	---			2.70
21	5.3	29	260	---	---			2.60
22	5.1	29	260	---	---			2.60
23	4.9	29	260	---	---			2.60

Time: 90.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 27 seconds.

Table 11

Time	Kiruna, Sweden (67.8° N, 20.3° E)	February 1960						
	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	(5.2)	8	330				3.0	(2.6)
01	(5.1)	6	320				3.2	(2.6)
02	(4.8)	8	340				3.0	(2.6)
03	4.4	11	310				2.6	
04	4.3	13	300				2.6	
05	3.6	14	290				2.6	
06	3.6	17	290				2.6	
07	4.3	25	275	---	1.4			2.8
08	5.8	26	250	---	1.6			2.95
09	7.0	29	245	110	2.0			3.0
10	8.0	27	240	125	2.1			3.0
11	---	9.3	27	240	---	120	2.2	3.0
12	9.8	28	240	125	2.3			3.0
13	10.1	29	240	130	2.2			3.2
14	10.0	27	230	125	2.2			3.1
15	9.4	25	240	---	2.0			3.15
16	0.3	17	240	---	1.5			3.15
17	7.2	12	245	---	---	2.2		3.0
18	6.5	12	270			3.0		3.0
19	5.4	16	275			3.3		2.8
20	4.7	13	300			3.0		2.7
21	5.0	11	350			4.1		(2.6)
22	(5.2)	7	365			3.2		(2.4)
23	(5.2)	6	340			4.4		(2.6)

Time: 15.0°E.

Sweep: 0.0 Mc to 15.0 Mc in 30 seconds.

Table 7

Table 8

Time	Talara, Peru (4.6° S, 81.3° W)	March 1960						
	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	(12.3)	17	215					3.2
01	10.35	20	220					2.1
02	9.25	20	235					3.00
03	7.6	21	230					3.10
04	6.1	24	230					3.25
05	4.6	22	250					3.25
06	4.8	19	260					3.12
07	7.7	30	250					3.15
08	10.6	31	235					3.05
09	12.1	31	225					2.80
10	12.8	31	215					2.60
11	12.6	31	205					2.35
12	13.1	31	205					2.30
13	13.4	31	205					2.30
14	13.4	31	205					2.30
15	13.7	31	210					2.32
16	13.45	30	215					2.35
17	13.4	31	230					2.35
18	(115)	30	260					(2.32)
19	>13.0	31	310					2.30
20	(12.25)	22	380					(2.35)
21	(12.9)	9	310					(2.60)
22	(12.9)	7	(250)					(2.70)
23	12.9	13	220					2.95

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 9

Time	Tromso, Norway (69.7° N, 19.0° E)	February 1960						
	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	---	0	---					3.7
01	(6.4)	2	---					(3.6)
02	(3.5)	1	---					(3.3)
03	(4.0)	5	---					(3.3)
04	(4.1)	3	---					(3.2)
05	(4.2)	5	---					3.6
06	(3.5)	14	290					1.7
07	4.2	21	280					2.70
08	5.9	23	260					2.90
09	7.1	25	250					2.90
10	(250)	8.4	26	250				2.90
11	250	9.2	28	---				2.90
12	245	9.8	27	---				2.90
13	245	10.1	27	(250)				2.90
14	(240)	9.1	22	245				3.05
15	7.6	23	245					2.90
16	7.5	17	250					1.70
17	(7.6)	7	235					3.6
18	(5.3)	9	(235)					3.4
19	(5.5)	11	(240)					3.8
20	(5.1)	6	(260)					3.0
21	(4.7)	4	---					3.0
22	(4.9)	4	(310)					4.1
23	(4.8)	4	---					3.5

Time: 15.0°E.

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

Table 11

Time	Sodankyla, Finland (67.4° N, 26.6° E)	February 1960						
	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	(5.0)	1	330					(3.2)
01	(5.4)	2	310					3.4
02	(5.2)	2	320					3.5
03	(4.9)	3	315					3.3
04	(4.5)	3	315					2.9
05	(4.3)	5	310					3.2
06	(4.0)	2	290					3.0
07	(3.6)	4	290					3.0
08	5.1	11	265					2.95
09	6.6	17	245					3.05
10	7.5	18	240					3.00
11	9.0	21	235					3.00
12	9.8	23	235					3.00
13	10.6	20	235					3.00
14	10.3	24	230</td					

Table 13

Lulea, Sweden	(65.6° N, 22.1° E)	February 1960						
Time	h°F2	foF2-Count	h°F	foF1	h°E	foE	foEs	(M3000)F2
00	5.1	21	325					2.6
01	4.8	20	320					2.6
02	4.6	24	325	---	---			2.6
03	4.8	26	320	---	---			2.6
04	4.4	24	300	---	---			2.6
05	3.9	26	280	---	---			2.7
06	4.0	22	280	---	---			2.8
07	4.7	23	250	---	---			3.0
08	6.2	26	250	125	1.8			3.0
09	7.3	27	245	135	2.2			3.0
10	6.8	20	240	135	2.4			3.1
11	10.0	20	245	130	2.5			3.05
12	(10.0)	27	240	135	2.6			4.0
13	11.3	29	240	135	2.4			3.1
14	11.0	29	240	140	2.3			3.1
15	10.5	27	230	150	2.0			3.1
16	9.2	25	230	---	1.8			3.0
17	8.0	22	235	---	---			3.0
18	(6.7)	23	250	---	---			2.8
19	5.1	20	240	---	---			2.05
20	5.4	18	260	---	---			2.7
21	5.0	21	300	---	---	1.8		2.6
22	4.7	17	300	---	---	1.7		2.6
23	4.8	17	325	---	<1.7			2.55

Time: 15.0°E.

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

Table 15

Uppsala, Sweden	(59.8° N, 17.6° E)	February 1960						
Time	h°F2	foF2-Count	h°F	foF1	h°E	foE	foEs	(M3000)F2
00	3.8	20	290	110	(0.80)	2.2		2.65
01	3.7	22	295	105	0.80	2.2		2.6
C2	3.2	21	300	105	0.80	2.3		2.6
03	3.0	22	295	105	0.90	2.2		2.6
04	2.8	24	280	110	0.85	2.3		2.6
05	2.8	26	275	110	0.85	2.2		2.7
06	3.0	26	260	110	0.90	2.2		2.7
07	4.2	28	255	110	1.40	2.4		2.9
08	6.1	29	235	110	1.80	2.8		3.1
09	8.0	29	230	110	2.20	3.0		3.1
10	9.1	29	225	(110)	2.45	3.8		3.2
11	10.8	29	225	(110)	2.65	4.3		3.1
12	11.2	29	230	(110)	2.70	3.3		3.1
13	11.9	29	230	(110)	2.65	2.9		3.1
14	11.8	28	225	(110)	2.60	3.0		3.1
15	11.0	28	225	(115)	2.30	2.8		3.1
16	9.8	20	220	<120	2.00	2.6		3.1
17	9.1	26	215	110	1.50	2.5		3.1
18	8.2	27	215	105	1.00	2.2		3.05
19	6.8	28	225	110	0.90			3.0
20	5.2	26	240	105	0.90			2.8
21	4.4	25	260	110	(0.90)			2.7
22	3.9	21	280	105	(0.90)			2.6
23	3.6	18	300	105	(0.05)			2.6

Time: 15.0°E.

Sweep: 0.3 Mc to 20.0 Mc in 3 minutes, automatic operation.

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

Table 17

Winnipeg, Canada	(49.9° N, 97.4° W)	February 1960						
Time	h°F2	foF2-Count	h°F	foF1	h°E	foE	foEs	(M3000)F2
00	4.6	27	260					(2.05)
01	4.5	27	290					(2.85)
02	3.9	27	300					(2.90)
03	4.0	20	310					(2.80)
04	4.0	26	300					(2.80)
05	4.0	25	290					(2.05)
06	3.8	24	300					(2.70)
07	3.8	27	290					---
08	5.5	27	250	120	1.90			3.20
09	7.2	26	230	115	2.40			3.20
10	8.3	25	225	110	2.80			3.05
11	(275)	9.8	28	230	110	3.00		2.95
12	---	10.6	27	230	110	3.20		(3.00)
13	---	11.1	26	225	110	3.10		(3.00)
14	---	11.7	25	230	110	3.00		(3.00)
15	---	11.8	25	230	110	3.00		(3.00)
16	11.5	25	230	110	2.60			---
17	11.0	28	230	120	2.10			---
18	10.5	27	220	---	---			---
19	9.0	28	220					(3.05)
20	7.8	29	220					3.00
21	6.3	27	230					3.00
22	5.2	27	240					3.00
23	4.8	26	250					(3.00)

Time: 90.0°W.

Sweep: 1.6 Mc to 20.0 Mc in 15 seconds.

Table 14

Nurmijarvi, Finland	(60.5° N, 24.6° E)	February 1960						
Time	h°F2	foF2-Count	h°F	foF1	h°E	foE	foEs	(M3000)F2
00			(3,2)	3				----
01			(3,0)	5				(2,70)
02			(3,4)	6				(2,60)
03			(3,2)	4				----
04			(3,1)	9				(2,70)
05			(3,0)	6				(2,80)
06			(3,1)	0				(2,70)
07			3.2	12				2.75
08			5.2	10				3.10
09			7.0	21				3.10
10			6.9	23				3.10
11			10.4	26				3.10
12			11.2	25				3.10
13			12.0	27				3.10
14			12.1	25				3.15
15			11.2	22				3.10
16			10.4	22				3.10
17			9.8	22				3.10
18			9.2	16				3.10
19			7.8	12				3.10
20			(5.5)	8				(2.90)
21			(4.8)	8				(2.75)
22			(4.0)	7				(2.70)
23			(3.5)	3				----

Time: 30.0°E.

Sweep: 1.0 Mc to 25.0 Mc in 1 minute.

Table 16

Delft, Holland	(52.1° N, 5.2° E)	February 1960						
Time	h°F2	foF2-Count	h°F	foF1	h°E	foE	foEs	(M3000)F2
00			4.4	33	<300			2.80
01			4.2	25	<320			2.80
02			4.2	23	(320)			2.70
03			3.9	26	<330			2.80
04			3.7	24	(300)			2.80
05			3.4	24	(280)			3.00
06			3.5	23	<295			3.00
07			(5.7)	26	230			3.25
08			---	6.4	28	220		2.8
09			---	10.0	27	220		3.25
10			(245)	11.0	24	220		3.25
11			(240)	11.3	25	220		3.15
12			(250)	11.7	25	240		3.20
13			11.0	20	230			3.2
14			---	(11.5)	21	230		3.20
15			---	(11.0)	23	230		3.20
16			---	(6.0)	21	(250)		(3.00)
17			5.1	20	<275			2.95
18			(4.8)	25	(280)			2.90
19			(4.7)	23	<300			(2.85)

Time: 0.0°E.

Sweep: 1.4 Mc to 16.0 Mc in 40 seconds.

Table 18

Sottens, Switzerland	(46.6° N, 6.7° E)	February 1960						
Time	h°F2	foF2-Count	h°F1	foF1	h°E	foE	foEs	(M3000)F2
00			280	5.0	22			2.8
01			270	5.1	26			2.8
02			300	4.7	28			2.75
03			300	4.7	28			2.8
04			300	4.6	28			2.8
05			280	4.5	28			2.8
06			240	4.0	28			2.9
07			230	4.2	27			3.0
08			220	7.0	26			3.2
09			210	9.0	19			3.25
10			210	9.5	21			3.25
11			200	10.0	18			3.3
12			210	10.3	15			3.2
13			210	9.8	12			3.2
14			210	9.7	14			(3.25)
15			210	9.6	12			3.2
16			220	9.5	14			3.2
17			210	9.0	15			3.0
18			200	7.9	15			----
19			210	7.5	17			3.3
20			220	7.0				

Table 19

Ottawa, Canada (45.4° N, 75.9° W)								February 1960		
Time	h'F2	foF2-Count	h'F	foFl	h'E	foE	foEs	(M3000)F2		
00	5.1	29	270					2.8		
01	5.0	29	290					2.8		
02	4.6	29	295					(2.6)		
03	4.4	29	295					--		
04	4.3	29	290					(2.9)		
05	4.1	29	280					(2.8)		
06	4.0	27	270					--		
07	5.0	29	260					--		
08	7.5	29	235					(3.0)		
09	9.5	29	230					3.3		
10	--	10.2	29	220				11.0	3.0	
11	(250)	11.1	29	220				11.0	3.3	
12	(290)	12.0	29	220	(5.0)			11.0	3.3	
13	--	12.2	29	220				11.0	3.3	
14	--	12.2	29	225				11.0	3.2	
15	--	12.1	29	240				11.0	3.0	
16	--	12.0	29	240				11.5	2.7	
17	--	11.2	29	230				13.0	2.6	
18	--	10.2	29	230				13.0	2.6	
19	--	9.0	29	230				13.0	2.6	
20	--	8.0	28	230				(3.0)	2.9	
21	--	7.0	28	250				(3.0)	2.9	
22	--	6.0	28	255				(3.0)	2.9	
23	--	5.6	28	260				(3.0)	2.9	

Time: 75.0°W.
Sweep: 1.0 Mc to 20.0 Mc in 16 seconds.

Table 21

Genoa (Monte Capellino), Italy (44.6° N, 9.0° E)								February 1960		
Time	h'F2	foF2-Count	h'F	foFl	h'E	foE	foEs	(M3000)F2		
00	5.8	28	290							
01	5.8	28	280							
02	5.6	28	295							
03	5.4	28	305							
04	5.2	27	300							
05	5.1	27	280							
06	4.4	26	260							
07	4.8	27	255							
08	8.3	27	240							
09	11.0	29	230							
10	11.6	29	230							
11	12.2	27	230							
12	12.7	25	230							
13	12.4	26	230							
14	12.4	26	230							
15	12.5	27	235							
16	12.6	27	240							
17	11.4	27	235							
18	10.4	27	230							
19	9.2	27	235							
20	7.0	29	250							
21	6.7	28	250							
22	6.4	28	265							
23	6.0	28	275							

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

Table 23

Akita, Japan (39.7° N, 140.1° E)								February 1960		
Time	h'F2	foF2-Count	h'F	foFl	h'E	foE	foEs	(M3000)F2		
00	5.0	29	290					2.70		
01	4.9	29	290					2.75		
02	4.7	29	290					2.70		
03	4.6	29	300					2.65		
04	4.6	29	290					2.65		
05	4.5	29	295					2.65		
06	4.9	29	270					2.90		
07	8.4	29	240					3.25		
08	10.8	29	225					3.30		
09	--	11.6	28	225				3.15		
10	(245)	12.6	28	230				3.30		
11	(250)	13.6	28	220				3.50		
12	250	13.6	28	235				3.55		
13	(245)	13.1	28	230				3.50		
14	--	12.6	28	230				3.30		
15	--	12.0	28	240				3.00		
16	--	11.5	29	240				3.10		
17	--	10.5	29	225				3.10		
18	--	0.7	29	220				3.10		
19	--	7.4	29	240				3.05		
20	--	6.2	29	245				3.00		
21	--	5.6	29	250				2.95		
22	--	5.1	29	280				2.75		
23	--	5.1	29	290				2.75		

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

Table 20

Wakkanai, Japan (45.4° N, 141.7° E)								February 1960		
Time	h'F2	foF2-Count	h'F	foFl	h'E	foE	foEs	(M3000)F2		
00			5.0		28	300				2.65
01			5.0		28	280				2.65
02			4.8		27	290				2.65
03			4.7		27	300				2.60
04			4.5		27	290				2.65
05			4.4		28	290				2.60
06			4.8		28	260				2.85
07			7.6		28	230				3.20
08			10.3		27	220				3.20
09			11.8		27	225				3.15
10			12.6		26	225				3.05
11			13.0		26	230				3.35
12			12.8		26	230				3.35
13			12.5		27	230				3.05
14			9.1		28	220				3.00
15			8.0		28	220				2.95
16			11.3		28	230				3.00
17			11.2		28	230				3.05
18			9.0		28	220				3.00
19			6.8		28	230				3.00
20			5.8		28	245				2.90
21			5.3		28	260				2.80
22			5.2		28	290				2.70
23			5.2		28	300				2.70

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

Table 22

Rome, Italy (41.8° N, 12.5° E)								February 1960		
Time	h'F2	foF2-Count	h'F	foFl	h'E	foE	foEs	(M3000)F2		
00			(5.5)		24	280				2.75
01			(5.5)		22	280				(2.70)
02			(5.3)		23	290				(2.70)
03			(5.1)		22	300				(2.70)
04			(5.2)		23	290				(2.70)
05			(5.0)		23	260				(2.75)
06			(4.5)		22	260				(2.90)
07			(6.1)		21	240				(3.10)
08			(9.3)		9	240				(3.30)
09			(11.6)		10	230				(3.30)
10			(12.6)		16	230				(3.20)
11			(12.5)		17	220				(3.15)
12			(12.6)		18	220				(3.00)
13			(12.7)		17	230				(3.05)
14			(12.4)		10	240				(3.00)
15			(12.5)		17	240				(3.00)
16			(12.2)		18	240				(3.00)
17			(9.4)		9	220				(3.20)
18			(9.0)		9	240				(3.00)
19			(9.0)		15	240				(3.00)
20			(6.5)		14	240				(3.05)
21			(6.5)		16	260				(2.90)
22			(5.7)		20	260				(2.90)
23			(5.8)		20	260				(2.70)

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

Table 24

Tokyo, Japan (35.7° N, 139.5° E)								February 1960		
Time	h'F2	foF2-Count	h'F	foFl	h'E	foE	foEs	(M3000)F2		
00			(4.8)		27	300				(2.75)
01			4.9		27	300				

Table 25

Yamagawa, Japan (31.2° N, 130.6° E)							February 1960			
Time	h°F2	foF2—Count	h°F	foF1	h°E	foE	foEs	(M3000)F2		
00	6.2	25	275			2.75				
01	5.9	26	255			2.80				
02	5.3	27	260			2.75				
03	4.8	28	270			2.80				
04	4.4	28	250			2.80				
05	3.9	28	300			2.65				
06	4.0	28	318			2.65				
07	6.4	27	255			3.00				
08	9.9	27	240			3.25				
09	11.4	29	240			3.10				
10	13.0	29	235			3.40				
11	13.5	29	230			3.65	3.6			
12	14.1	29	225			3.70				
13	14.6	26	230			3.75				
14	14.6	26	235			3.70				
15	14.3	25	240			3.50	3.5			
16	13.2	25	240			3.10				
17	12.7	26	245			2.50				
18	11.9	26	230			2.95				
19	10.5	27	230			3.00				
20	(9.3)	25	240			3.80				
21	9.1	23	240			2.90				
22	8.1	25	250			2.75				
23	6.7	25	265			2.75				

Time: 135.0°E.

Sweep: 1.0 Mc to 20.3 Mc in 30 seconds.

Table 27

Leopoldville, Belgian Congo (4.4° S, 15.2° E)							February 1960			
Time	h°F2	foF2—Count	h°F1	foF1	h°E	foE	foEs	(M3000)F2		
00	250	>8.1	6					(2,50)		
01	260	(8.5)	7					(2,48)		
02	250	0.2	10					<2.62		
03	240	7.5	15					2.67		
04	230	6.5	22			1.4		2.92		
05	240	5.5	25			2.0		2.83		
06	250	8.3	17	250	130	---	2.6	2.99		
07	260	>9.1	24	230	115	3.2		2.84		
08	(280)	9.9	17	225	110	3.6		2.55		
09	(295)	11.0	19	225	110	3.9		2.34		
10	-->11.5	8	240		110	---		<2.29		
11	(350)	>13.0	10	240	110	---		2.30		
12	395	13.2	16	---	110	---		2.26		
13	400	>13.0	22	240	110	4.0		<2.25		
14	410	14.0	22	235	115	3.6		<2.27		
15	395	14.4	19	245	115	3.4	3.6	2.26		
16	(385)	>13.9	10	250	120	2.8		<2.34		
17	(275)	(13.6)	6	275	140	---	2.0	<2.40		
18	320	>14.1	3			2.8		----		
19	310	----	0							
20	260	(14.0)	1					----		
21	230	(14.5)	4					----		
22	220	14.3	15					2.77		
23	220	(13.5)	6					(2.71)		

Time: 0.0°.

Sweep: 1.0 Mc to 20.0 Mc in 7 seconds.

Table 29

La Paz, Bolivia (16.5° S, 68.1° W)							February 1960			
Time	h°F2	foF2—Count	h°F	foF1	h°E	foE	foEs	(M3000)F2		
00	>9.0	7				2.6		----		
01	(8.8)	9				2.8		(3.00)		
02	(8.5)	8				2.8		(2.90)		
03	8.1	11				3.3		2.90		
04	7.8	13				3.3		2.88		
05	7.8	13				2.9		2.95		
06	0.3	15				----		3.10		
07	>10.0	18				2.45		3.12		
08	11.6	20				3.05	4.2	3.00		
09	(12.75)	20				3.50	6.0	(2.85)		
10	13.2	21				7.3		(2.65)		
11	(13.55)	20				7.4		(2.48)		
12	(13.4)	21				7.5		(2.35)		
13	>13.0	21				7.6		(2.30)		
14	>12.8	21				7.4		(2.32)		
15	(12.8)	20				(3.95)	7.2	(2.32)		
16	(12.3)	20				(3.70)	6.6	(2.30)		
17	(12.6)	21				(3.20)	6.0	(2.35)		
18	(11.5)	19				(2.70)	5.6	(2.40)		
19	>10.0	19				1.80	3.8	(2.30)		
20	9.0	19						(2.20)		
21	(0.9)	11						(2.25)		
22	(9.5)	9						(2.60)		
23	(10.8)	8						(2.60)		

Time: 60.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 25

Table 26

Bunia, Belgian Congo (1.5° N, 30.2° E)							February 1960			
Time	h°F2	foF2—Count	h°F1	foF1	h°E	foE	foEs	(M3000)F2		
00	260	9.1	16						1.5	2.58
01	260	9.1	19						1.5	2.67
02	240	9.0	24						1.6	2.84
03	220	8.3	26						2.0	3.04
04	220	5.0	23						2.0	3.14
05	250	8.6	28						2.5	2.96
06	---	10.1	26						115	3.0
07	---	11.0	27						3.5	2.45
08	---	11.6	25						118	3.9
09	---	12.4	22						110	4.0
10	---	13.1	19						110	4.0
11	---	13.4	22						110	4.0
12	---	13.2	22						110	4.0
13	(485)	13.2	23						110	3.6
14	(490)	13.4	20						115	3.3
15	---	13.3	15						120	2.8
16	---	(13.2)	8							(2.15)
17	350	>13.5	5							<1.97
18	370	(13.4)	3							----
19	300	>13.4	3							----
20	240	(14.3)	3							----
21	220	(13.3)	5							(2.77)
22	220	>10.8	7							<2.72
23	258	9.3	11							2.55

Time: 0.0°.

Sweep: 1.0 Mc to 20.0 Mc in 7 seconds.

Table 28

Elisabethville, Belgian Congo (11.6° S, 27.5° E)							February 1960			
Time	h°F2	foF2—Count	h°F1	foF1	h°E	foE	foEs	(M3000)F2		
00	250	>6.5	15							2.58
01	260	6.4	17							2.59
02	255	6.0	20							<2.75
03	255	5.5	22							2.70
04	275	5.4	20							2.70
05	255	8.4	14						2.0	2.90
06	280	9.4	21						2.0	2.88
07	(290)	10.1	21						115	3.5
08	(300)	10.6	20						110	3.9
09	320	11.1	21						110	4.0
10	(340)	11.6	18						110	4.0
11	340	12.2	21						110	4.0
12	360	12.4	19						110	4.0
13	350	12.5	22						110	3.8
14	350	12.2	19						115	3.5
15	330	12.4	18						120	3.0
16	(280)	12.4	18						125	2.8
17	275	(12.2)	9							2.3
18	280	>11.0	4							2.0
19	270	(12.1)	8							1.8
20	250	11.6	14							2.64
21	250	10.8	16							2.68
22	250	9.5	14							2.70
23	240	8.4	10							2.58

Time: 0.0°.

Sweep: 1.0 Mc to 20.0 Mc in 7 seconds.

Table 30

Nurmijarvi, Finland (60.5° N, 24.6° E)							December 1959			
Time	h°F2	foF2—Count	h°F	foF1	h°E	foE	foEs	(M3000)F2		
00	---	---	0							----
01	(2.4)	2								----
02	(2.6)	2								----
03	(3.0)	4								----
04	(2.6)	2								----
05	(2.4)	5								(2.80)
06	(2.4)	6								(2

Table 31

Macau (22.2° N, 113.6° E)							November 1959			
Time	h'F2	foF2-Count	h'F1	foF1	h'E	foE	fEs	(M3000)F2		
00	350	(13.5)	5					(2.55)		
01	390	(13.2)	6					(2.35)		
02	370	(10.5)	8					(2.60)		
03	350	9.2	15					2.40		
04	340	(8.4)	8					(2.40)		
05	380	---	0					---		
06	(455)	(8.0)	1					---		
07	445	8.8	18					2.15		
08	430	10.6	28	---	---	180	2.8	3.3		
09	425	13.1	26	425	8.0	170	3.0	4.0		
10	500	14.4	28	400	8.0	170	3.3	3.8		
11	600	14.6	25	400	9.0	---	---	3.2		
12	600	14.8	25	390	8.5			2.20		
13	600	14.8	24	400	9.0	---		2.20		
14	600	15.0	22	400	8.4	---		2.10		
15	570	14.8	23	400	8.2	170	3.0	4.5		
16	560	14.9	14	430	8.0	175	2.9	4.0		
17	440	14.8	10			---	---	3.2		
18	460	(15.0)	2			---	---	2.8		
19	470	(14.8)	2					---		
20	435	---	0							
21	400	(14.8)	2					---		
22	365	(14.8)	7					2.50		
23	365	(15.0)	5					2.40		

Time: 120.0°E.

Sweep: 1.6 Mc to 20.0 Mc in 15 seconds.

Table 33

Natal, Brazil (5.3° S, 35.1° W)							October 1959			
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	fEs	(M3000)F2		
00	(9.8)	18	215					(3.10)		
01	(9.2)	22	220					(3.15)		
02	8.5	19	235					3.00		
03	(8.2)	25	240					(3.02)		
04	7.4	23	230					2.0		
05	6.6	25	220					3.15		
06	7.0	23	240	---	1.60	3.2		3.15		
07	10.3	23	240	113	2.70	4.0		3.20		
08	11.8	23	225	107	3.30	4.5		3.00		
09	12.0	24	215	(107)	3.65	6.6		2.75		
10	13.4	23	210	(107)	3.90	7.4		2.50		
11	13.4	25	<205	---	4.02	8.0		2.40		
12	13.05	24	200	(107)	4.15	8.4		2.35		
13	13.1	25	195	(107)	(4.05)	7.8		2.35		
14	13.6	25	200	(107)	3.92	7.8		2.35		
15	14.5	25	210	(107)	3.70	6.6		2.40		
16	14.55	26	225	(109)	3.35	6.0		2.40		
17	14.5	25	245	109	2.88	5.8		2.30		
18	13.2	23	280	---	2.00	4.2		2.20		
19	(11.2)	22	395					(2.00)		
20	(9.1)	6	420					(2.10)		
21	(9.01)	3	380					---		
22	(9.1)	3	315					---		
23	(9.3)	12	230					(2.95)		

Time: 30.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 32.4 seconds.

Table 35

Budapest, Hungary (47.4° N, 19.2° E)							September 1959			
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	fEs	(M3000)F2		
00	5.8	26	325							
01	5.5	24	315							
02	>5.2	26	315							
03	4.9	25	310							
04	>4.8	24	295	---	---	1.7				
05	6.0	27	<260	120	2.2	3.0				
06	---	7.0	28	240	---	110	2.8	3.5		
07	200	7.2	29	235	4.4	110	3.1	3.7		
08	290	6.5	26	220	4.9	110	3.4			
09	200	9.0	30	230	5.1	105	3.5	3.7		
10	310	9.3	29	220	5.4	105	3.5	3.7		
11	295	0.5	29	220	5.6	105	3.6			
12	320	9.6	29	225	5.8	105	3.6			
13	---	>9.3	29	225	---	105	3.4			
14	---	>9.2	28	235	---	110	3.2	3.4		
15	---	>9.1	28	240	100	2.9	3.4			
16	0.0	29	245	120	2.2	3.3				
17	0.0	24	250	---	---	3.0				
18	0.4	24	250			2.0				
19	7.3	23	250							
20	6.0	25	260							
21	6.2	27	295							
22	6.0	24	325							
23	6.0	27	330							

T1: 0.0°.

Sweep: 1.0 Mc to 20.0 Mc in 35 seconds.

Table 31

Table 32

Falkland Is. (51.7° S, 57.8° W)							November 1959			
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	fEs	(M3000)F2		
00			9.1	30	300				<1.4	2.45
01			9.1	29	310					2.4
02			8.9	29	305					2.4
03			8.7	29	310					2.45
04	---		8.9	29	295	---	---	---		2.45
05	445	9.8	28	250	---	115	2.20			2.45
06	380	10.2	28	245	---	110	2.75	3.1		2.55
07	425	10.6	27	245	5.1	105	3.20	3.4		2.5
08	385	10.7	28	240	5.2	105	3.40	3.9		2.55
09	350	10.8	30	230	5.2	105	3.70	4.3		2.55
10	400	11.5	30	235	5.6	105	3.80	4.3		2.6
11	340	11.7	29	230	---	105	3.90	4.5		2.65
12	330	11.8	28	220	5.6	105	3.90	4.3		2.7
13	330	11.2	28	230	5.6	105	3.80	4.2		2.75
14	390	10.8	26	230	5.3	105	3.70	4.0		2.8
15	320	10.6	27	235	---	105	3.50	3.8		2.8
16	300	10.3	28	240	---	105	3.30	3.4		2.9
17	9.8	30	250			110	2.90	2.9		2.9
18	9.6	30	255			115	2.40	2.7		2.9
19	9.0	30	260			105	2.60	2.6		2.85
20	8.6	30	270							2.85
21	9.0	30	300							2.55
22	9.2	30	300							2.45
23	9.2	30	305							2.4

Time: 60.0°N.

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

Table 33

Falkland Is. (51.7° S, 57.8° W)							October 1959			
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	fEs	(M3000)F2		
00			7.8	28	315					2.40
01			7.8	20	320					2.45
02			7.7	28	300					2.50
03			7.5	27	295					2.50
04			7.1	27	280	---	E			2.40
05			8.0	27	255	---	E			2.55
06			8.8	27	240	120	2.30			2.90
07			9.4	27	235	110	2.90			2.90
08			11.0	26	240	110	3.25	3.4		2.80
09			12.0	28	230	105	3.45	3.7		2.90
10			12.9	29	230	105	3.60	3.8		2.95
11			12.8	28	230	105	3.70	3.9		2.95
12			12.8	28	225	105	3.70	3.7		2.85
13			13.0	28	225	105	3.70	3.7		2.90
14			12.4	28	235	105	3.50	3.6		2.90
15			11.5	27	235	105	3.30	3.6		2.95
16			10.8	27	245	110	3.00			2.95
17			10.1	28	250	120	2.55			3.05
18			9.4	28	250	120	2.00	2.4		2.95
19			9.7	27	250	110	4.0			2.00
20			8.3	29	260					2.60
21			8.1	29	260					2.50
22			0.0	29	290					2.50
23			8.1	29	300					2.4

Time: 60.0°N.

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

Table 35

Bunia, Belgian Congo (1.5° N, 30.2° E)			
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Table 37

Leopoldville, Belgian Congo (4.4° S, 15.2° E)							September 1959		
Time	h'F2	foF2-Count	h'F1	foF1	h'E	foE	fEs	(M3000)F2	
00	220	10.8	10				2.64		
01	245	(10.2)	12				2.68		
02	240	0.6	13				2.75		
03	235	7.8	14			1.4	2.88		
04	230	5.6	20			1.9	2.88		
05	255	7.0	22			2.0	2.91		
06	250	10.0	21	240	---	2.7	2.86		
07	--	11.0	27	235	---	2.8	2.62		
08	(285)	12.2	30	235	---	3.0	2.47		
09	--	12.8	29	250	---	4.0	4.9		
10	(350)	13.4	26	250	---	110	2.41		
11	(370)	14.0	30	245	---	110	2.30		
12	385	14.0	29	240	---	110	2.23		
13	415	14.0	30	245	---	110	2.19		
14	430	14.3	28	250	6.0	115	2.19		
15	(400)	14.4	26	250	---	115	3.2	<2.23	
16	--	14.6	25	260	---	120	2.6		
17	290	>15.0	17	---	---		3.1		
18	325	14.4	3				2.35		
19	285	----	0				2.8	----	
20	230	----	0				1.8		
21	220	>15.0	1				----		
22	220	(16.7)	9				<2.64		
23	220	13.6	11				2.71		

Time: 0.0°.

Sweep: 1.0 Mc to 20.0 Mc in 7 seconds.

Table 39

Formosa, China (25.0° N, 121.5° E)							July 1959		
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	fEs	(M3000)F2	
00	12.2	26	310				2.8	2.65	
01	12.2	27	270			2.1	2.05		
02	9.5	29	250				2.80		
03	8.9	27	260				2.70		
04	8.0	28	<280				2.55		
05	7.2	26	200				2.70		
06	8.2	28	250			3.4	2.90		
07	9.2	29	240			4.4	2.95		
08	9.4	29	240			5.2	2.80		
09	(420)	9.8	29	240	(6.20)	5.3	2.65		
10	--	10.8	30	(240)	---	6.4	2.45		
11	(400)	>11.5	28	(240)	(6.20)	5.8	2.50		
12	400	>12.4	26	<200	(6.20)	5.6	2.55		
13	410	13.0	29	<300	6.00	5.5	(2.55)		
14	400	>13.4	29	<250	6.00	>5.0	2.60		
15	380	13.2	30	(250)	(5.80)	5.0	(2.65)		
16	360	13.6	30	(240)	---	5.0	(2.70)		
17	--	14.2	30	<260	---	4.9	2.70		
18	>14.0	27	(280)			4.8	2.70		
19	13.5	29	290			4.4	(2.65)		
20	12.2	30	300			3.4	(2.55)		
21	11.8	28	320			3.0	2.45		
22	11.3	27	340			2.8	2.50		
23	>12.0	26	320			2.4	(2.50)		

Time: 120.0°E.

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

Table 41

Pole Station (90.0° S)							April 1959		
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	fEs	(M3000)F2	
00	(6.7)	21	250			3.3	(2.70)		
01	(6.8)	17	265			3.5	(2.70)		
02	(6.8)	23	265	---	---	1.8	(2.60)		
03	(7.0)	25	280	---	---		(2.50)		
04	(7.15)	20	270	---	---		(2.50)		
05	(7.5)	22	270	---	---		(2.58)		
06	(7.0)	17	300	---	---		(2.58)		
07	(5.6)	21	300	---	---		(2.30)		
08	(6.15)	18	330	---	---	2.0	(2.42)		
09	(5.1)	26	<320	---	---	2.9	(2.40)		
10	(4.7)	21	320	---	(2.05)	2.8	(2.45)		
11	(4.9)	18	(325)	113	2.20	3.0	(2.50)		
12	(4.7)	17	325	104	(2.50)	2.8	(2.50)		
13	(5.05)	20	320	109	2.50		(2.58)		
14	(5.3)	27	315	113	2.40		(2.68)		
15	(6.0)	25	285	107	2.35		(2.70)		
16	(6.0)	19	270	109	1.98		(2.75)		
17	(7.2)	19	280	135	(1.80)	2.0	(2.70)		
18	(4.7)	15	255	---	---	2.0	(2.68)		
19	(4.2)	11	300	---	---	3.6	(2.70)		
20	(3.9)	13	(255)	---	---	3.7	(2.65)		
21	(3.7)	12	270	129	1.90	4.2	(2.80)		
22	(4.2)	18	230	---	---	3.4	(2.80)		
23	(5.2)	19	255	---	---	2.6	(2.65)		

Time: 0.0°.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 30

Elisabethville, Belgian Congo (11.6° S, 27.5° E)							September 1959		
Time	h'F2	foF2-Count	h'F1	foF1	h'E	foE	fEs	(M3000)F2	
00	260	5.5	21						
01	280	5.6	25					1.4	
02	260	5.0	26					2.78	
03	250	4.8	25					1.5	
04	270	5.4	22					2.81	
05	250	9.3	27	250	---	125	2.6	3.00	
06	255	10.8	26	240	---	115	3.2	2.08	
07	(275)	11.5	26	235	---	110	3.6	2.68	
08	280	12.3	28	230	---	110	3.9	2.58	
09	(310)	12.5	27	250	---	110	4.0	2.54	
10	(315)	12.4	28	250	---	110	4.0	2.46	
11	370	12.1	28	250	---	110	4.0	2.36	
12	370	12.2	29	250	6.0	110	3.9	2.31	
13	365	12.5	27	250	---	110	3.7	2.31	
14	(345)	12.6	29	250	---	115	3.3	2.34	
15	--	12.9	29	260	---	120	2.7	2.45	
16	280	12.9	20	---	---	---	2.8	2.52	
17	275	(12.7)	5				2.9	(2.54)	
18	260	12.9	14				2.5	<2.66	
19	240	12.7	15				2.5	2.69	
20	230	11.2	10				2.5	2.71	
21	240	10.6	22				1.3	2.78	
22	230	9.1	19				1.4	2.80	
23	230	6.5	23				1.5	2.71	

Time: 0.0°.

Sweep: 1.0 Mc to 20.0 Mc in 7 seconds.

Table 40

Byrd Station (80.0° S, 120.0° W)							April 1959		
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	fEs	(M3000)F2	
00	(5.2)	10	345	---	---		2.8		
01	(6.2)	10	360	---	---		2.8		
02	(5.45)	10	350	---	---	3.1	(2.55)		
03	(5.6)	18	(370)	---	---	>3.1	2.30		
04	(6.65)	14	(310)	---	---	2.4	(2.50)		
05	5.7	10	(310)	---	---		2.60		
06	(5.7)	16	280	---	---		>1.9	(2.60)	
07	6.0	21	<275	---	---		2.78		
08	6.65	26	265	---	---		2.80		
09	7.8	26	<270	---	---		2.85		
10	8.8	25	255	---	---		2.95		
11	9.45	26	255	---	---		2.95		
12	>10.0	24	250	---	---		3.00		
13	0.0	23	270	---		<133	>2.00	2.98	
14	(7.7)	19	290	---	---		2.92		
15	>5.45	20	310	---	---		2.9	2.88	
16	(5.0)	21	305	---	---	3.0	2.72		
17	5.85	14	320	---	---	3.5	(2.62)		
18	(6.05)	12	360	---	---		3.0		
19	>7.5	11	330	---	---		>3.1		
20	>5.9	12	320	---	---		3.6	(2.50)	
21	(7.0)	3	325	---	---		3.7		
22	(6.0)	8	330	---	---		3.1		
23	(6.65)	8	<355	---	---		3.0		

Time: 120.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 42

Byrd Station (80.0° S, 120.0° W)							March 1959		
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	fEs	(M3000)F2	
00	6.25	16	300	---	---		3.0	2.35	
01	(6.0)	19	380	---	---		2.7	2.38	
02	6.7	20	365	---	---		3.0	2.38	
03	6.35	16	350	---	---		3.0	2.45	
04	6.8	17	315	---	---			2.55	
05	6.6	19	275	---	---			2.70	
06	7.0	21	265	---	125	2.00		2.80	
07	7.0	22	260	---	---			2.65	
08	7.15	26	255	---	<127	2.15		2.80	
09	7.65	26	250						

Table 43

Pole Station (90° 0' S)										March 1959							
Time	h°F2	foF2-Count	h°F	foF1	h'E	foE	foEs	(M3000)F2		h°F2	foF2-Count	h°F	foF1	h'E	foE	foEs	(M3000)F2
00	---	(6.5)	23	275		129	2,10	3.4	(2,80)	00	4.6	23	<305				
01	---	(6.75)	28	275		<131	2,00	3.2	(2,62)	01	4.1	23	<310	E			2,45
02	---	(7.0)	29	275		<127	1,90	2.5	(2,58)	02	3.8	23	<330	E	1.0		2,40
03	---	(7.1)	29	290	---	(129)	2,00	2.6	(2,55)	03	3.0	24	<315	E			2,40
04	---	(7.55)	26	285	---	129	2,00		(2,50)	04	3.5	26	<305	E			2,40
05	---	(7.05)	26	280	---	121	2,00		(2,50)	05	3.1	23	<300	E			2,50
06	(470)	(6.75)	28	290	---	<134	(2,00)		(2,40)	06	3.4	24	<300	E			2,50
07	(480)	(7.3)	23	300	3.4	<145	---		(2,45)	07	4.8	24	280	1.60			2,55
08	(410)	(6.4)	23	<300	---	124	(2,10)		(2,40)	08	7.4	27	260	2,10			2,95
09	---	(6.4)	23	<300	---	119	---		(2,40)	09	9.7	27	240	2,70			2,90
10	(610)	(5.5)	23	310	---	117	2,60		(2,42)	10	11.2	24	240	2,90			2,85
11	---	(5.3)	22	310	---	117	2,60		(2,58)	11	12.0	24	235	3.15			2,85
12	---	(5.4)	25	310	---	113	2,65		(2,70)	12	13.2	26	230	3,20			2,80
13	---	(6.5)	22	300	---	119	2,60		(2,68)	13	13.2	26	235	3,20			2,85
14	---	6.45	24	290	---	119	2,70		2,80	14	13.0	26	235	3,05			2,80
15	---	7.1	26	280	---	<121	2,30		2,75	15	12.7	27	235	2,80			2,80
16	---	(0,2)	29	280	---	(116)	2,25		(2,70)	16	12.3	26	230	2,50			2,90
17	---	(7.15)	26	290	---	119	2,00		(2,65)	17	11.5	25	235	2,00			2,85
18	---	(6,3)	23	265	---	(123)	(2,10)		(2,90)	18	9.8	27	230	---			2,80
19	---	(5,95)	24	270	---	<127	2,02		(2,75)	19	8.3	26	(230)				2,80
20	---	(5,2)	23	280	---	<137	2,30	2.5	(2,75)	20	6.9	26	<250				2,80
21	---	5.35	26	280	---	126	2,25	3.1	2,80	21	5.0	26	<270				2,60
22	---	(5,75)	24	285	---	<134	2,25	2.6	(2,90)	22	5.1	25	<295				2,55
23	---	(5,05)	22	275	---	<132	(2,15)	2.5	(2,65)	23	5.0	24	<305				2,50

Time: 0.0°.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 45

Lindau/Harz, Germany (51.6° N, 10.1° E)										February 1959							
Time	h°F2	foF2-Count	h°F	foF1	h'E	foE	foEs	(M3000)F2		h°F2	foF2-Count	h°F	foF1	h'E	foE	foEs	(M3000)F2
00		5.06	28	291						00	4.5	20	290				
01		4.73	28	296						01	4.8	18	310				
02		4.54	27	315						02	4.6	20	300				
03		4.42	28	312						03	(4.5)	20	290				
04		4.36	26	301						04	3.9	19	290				
05		3.78	27	290						05	3.6	19	290				
06		3.51	26	282						06	4.1	19	280				
07		4.52	28	277	---	E				07	6.4	19	245				
08		7.65	27	240	---	1.81	2.7			08	(9.7)	19	230				
09		10.22	27	233	---	113	2.57	3.2		09	11.8	19	225				
10		12.30	28	232	---	112	2.88	3.2		10	12.5	20	230				
11	---	13.42	27	230	---	112	3.15	3.6		11	12.9	21	225				
12	---	13.45	28	230	---	110	3.26	3.6		12	13.1	20	230				
13	---	13.42	28	230	---	109	3.27	3.4		13	12.8	21	225				
14	---	13.20	28	228	---	3.18				14	12.6	22	230				
15	---	13.15	28	233	---	2.98				15	12.3	21	230				
16	---	12.70	27	232	---	2.61	3.3			16	11.6	22	230				
17	---	11.70	27	230	---	2.04	2.9			17	10.6	21	230				
18	---	10.50	28	228	---	E	2.3			18	(9.4)	20	225				
19	---	8.60	28	224	---					19	(7.9)	22	225				
20	---	7.26	27	232	---					20	(6.8)	22	235				
21	---	6.36	26	240	---					21	(6.1)	20	255				
22	---	5.88	26	262	---					22	(5.4)	20	280				
23	---	5.30	27	280	---					23	(5.2)	19	280				

Time: 15.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 4 minutes.

Table 47

Budapest, Hungary (47.4° N, 19.2° E)										February 1959								
Time	h°F2	foF2-Count	h°F	foF1	h'E	foE	foEs	(M3000)F2		h°F2	foF2-Count	h°F	foF1	h'E	foE	foEs	(M3000)F2	
00		5.2	26	310						00	230	6.7	25					2,95
01		4.8	28	330						01	250	5.8	25					2,90
02		4.7	27	335						02	245	5.4	24					2,90
03		4.4	28	330						03	235	5.4	24					3,00
04		4.0	28	320						04	230	4.2	24					2,85
05		4.2	25	320						05	(290)	3.7	24					2,55
06		>6.0	27	255						06	(310)	3.8	24					2,65
07	---	(9.2)	28	240	---	130	2.7			07	280	5.4	23					2,70
08	---	>10.9	28	235	---	125	3.0			08	215	10.0	24					3,25
09	---	13.0	28	240	---	125	3.2			09	230	12.4	24					3,15
10	---	13.5	27	240	---	120	3.4			10	220	13.6	25					3,10
11	---	>13.5	28	240	---	120	3.4			11	215	14.1	24					3,05
12	---	>12.5	26	240	---	120	3.4			12	210	13.9	22					2,85
13	---	(12.8)	28	240	---	125	3.2			13	210	13.4	23					2,75
14	---	>11.5	28	245	---	130	2.9			14	215	13.4	23					2,75
15	---	>10.0	28	245	---	135	2.6			15	225	13.2	25					2,70
16	---	(8.8)	25	245	---					16	220	12.8	25					2,70
17	---	>6.8	23	240	---					17	230	12.5	26					2,80
18	---	>6.0	25	250	---					18	230	11.8	26					2,90
19	---	>5.0	26	265	---					19	230	11.4	25					2,95
20	---	>5.5	24	290	---					20	230	10.0	26					2,95
21	---	5.2	27	305	---					21	230	9.0	26					2,90
22	---	(4.7)	27	320	---					22	240	8.7	25					2,90
23	---	5.0	28	315	---					23	230	7.8	25					3,10

Time: 0.0°.

Sweep: 1.0 Mc to 20.0 Mc in 35 seconds.

Table 44

Juliusruh/Rügen, Germany (54.6° N, 13.4° E)										February 1959								
Time	h°F2	foF2-Count	h°F	foF1	h'E	foE	foEs	(M3000)F2		h°F2	foF2-Count	h°F	foF1	h'E	foE	foEs	(M3000)F2	
00		4.6	23	<305						00	4.1	23	<310	E				2,40
01		4.1	23</															

Table 49

Oakar, French W. Africa (14.8° N, 17.4° W)							February 1959										
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	>15.0	3	240	---	---	2.5	---		00	(11.0)	8	<255	---	---	(3.5)	---	
01	>14.8	3	220	---	E	2.2			01	11.5	10	245			3.5	(2.85)	
02	>12.4	5	215	---	E	---			02	(10.9)	10	235			3.5	(3.00)	
03	>11.3	8	220	---	E	2.2			03	9.0	15	230	---	---	3.5	(3.00)	
04	9.4	10	210	---	E	2.2		(3.15)	04	7.6	19	230	---	---	3.5	3.10	
05	6.8	11	215	---	---	---		(3.10)	05	6.2	20	230	---	---	3.5	3.20	
06	6.5	13	240	---	E	3.0			06	5.2	21	230	---	---	2.1	3.25	
07	6.5	11	250	---	E	2.5			07	8.6	26	260			3.5	(3.05)	
08	>10.1	10	250	120	2.20	2.8		(3.35)	08	>11.5	20	245	115	3.00	5.8	(2.85)	
09	(12.6)	5	230	105	3.05	(3.2)		(3.40)	09	>12.0	11	230	110	(3.50)	(6.9)	(2.60)	
10	(14.6)	6	220	100	3.50	3.6		(3.20)	10	>12.0	13	220	---	3.85	(9.0)	(2.45)	
11	(15.0)	2	(205)	100	3.80	3.8			11	12.4	17	220	110	4.05	(8.4)	(2.30)	
12	(15.6)	5	(210)	105	4.00	(4.3)			12	>11.8	18	215	---	(4.30)	(8.8)	2.30	
13	>14.8	4	200	100	4.20				13	12.2	21	215	---	(4.20)	(8.6)	2.20	
14	>14.9	2	<210	110	4.00				14	12.8	17	220	---	(4.00)	(8.4)	(2.20)	
15	>15.0	4	210	110	4.00				15	>(13.2)	17	230	---	(3.80)	(8.4)	(2.35)	
16	>14.7	4	220	105	3.75				16	>12.6	10	240	115	(3.45)	(7.0)	(2.25)	
17	>14.7	4	230	110	3.50				17	>12.5	13	250	---	(2.90)	(6.5)	(2.25)	
18	(13.6)	2	245	110	2.85				18	>12.0	13	260	---	(1.90)	3.6	(2.05)	
19	---	0	265	---	2.00	3.0			19	>11.3	15	380	---	E	(2.1)	(2.05)	
20	>14.5	1	370	---	E	2.4			20	>9.5	7	(330)	---	---	2.0	(2.05)	
21	0	1	345	---	---	2.2			21	(11.4)	8	(310)	---	---	2.1	---	
22	D	1	290	---	---	2.2			22	>11.5	8	280	---	(3.5)	---		
23	>13.5	1	250	---	---	2.5			23	(10.8)	9	270	---	3.5	---		

Tlme: 0.0°.

Sweep: 1.2 Mc to 17.0 Mc.

Table 51

Tahiti, Society Is. (17.7° S, 149.3° W)							February 1959										
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	12.6	26	260	---	E	2.8			00	8.3	25	265	---	---	2.5	2.70	
01	10.4	26	250	---	E	2.7			01	7.5	27	250	---	E	2.7	2.70	
02	8.4	23	<270	---	E	2.8			02	6.8	28	260	---	E	2.8	2.60	
03	8.0	19	300	---	E	2.8			03	6.3	28	275	---	E	1.8	2.65	
04	8.2	24	<290	---	E	3.0			04	5.9	28	<275	---	E	2.1	2.65	
05	7.5	24	280	---	E	2.8			05	5.5	28	<290	---	E	2.4	2.55	
06	8.5	23	200	---	1.45	3.1			06	7.0	28	270	135	1.95	2.2	2.90	
07	10.6	25	245	110	2.80	3.2			07	---	9.2	27	250	<115	2.90	2.90	
08	11.6	23	240	110	3.35	4.0			08	---	10.9	20	245	110	3.40	2.85	
09	13.0	23	230	105	3.75	4.8			09	---	11.4	27	240	110	3.00	3.8	
10	14.0	26	225	110	(4.05)	4.8			10	---	12.4	26	<230	110	4.05	2.60	
11	15.7	25	230	110	(4.30)	5.0			11	---	13.0	27	---	110	---	2.55	
12	410	0	225	110	---	5.0			12	(370)	13.4	27	---	---	---	2.55	
13	405	D	27	225	105	4.9			13	---	13.2	25	---	---	---	2.55	
14	390	0	225	110	(4.30)	4.6		(2.55)	14	(390)	12.8	28	---	110	(4.15)	2.50	
15	380	17.0	26	230	110	(4.00)	4.2		15	(395)	12.6	28	240	110	3.90	2.50	
16	300	16.0	27	240	110	3.60	3.9		16	---	12.1	27	245	110	3.50	3.8	
17	---	16.0	25	250	110	3.05	3.8		17	11.6	27	250	115	3.00	3.4		
18	15.4	24	275	---	2.20	3.1			18	11.4	24	270	---	2.10	3.0	2.60	
19	15.0	24	325	---	E	3.1			19	11.1	24	270	---	---	3.0	2.65	
20	14.8	25	345	---	E	3.1			20	(10.8)	16	275	---	---	2.8	(2.65)	
21	14.5	23	330	---	E	3.1			21	(10.4)	19	270	---	---	3.1	2.70	
22	>15.0	24	300	---	E	3.1			22	9.2	24	<275	---	---	3.0	2.70	
23	14.4	22	280	---	---	3.0			23	9.1	25	270	---	E	2.9	2.75	

Tlme: 150.0°W.

Sweep: 1.2 Mc to 20.0 Mc.

Table 53

Sao Paulo, Brazil (23.5° S, 46.5° W)							February 1959										
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	(14.5)	17	265	---	---	---		(3.3)	00	>7.5	25	255	---	---	3.5	2.60	
01	(14.5)	20	250	---	---	---		(3.25)	01	>7.0	26	250	---	---	3.0	2.65	
02	14.0	21	230	---	---	---		3.25	02	(6.8)	26	265	---	---	1.8	2.60	
03	10.6	19	230	---	---	---		3.0	03	>6.0	26	260	---	---	2.60		
04	9.1	20	245	---	---	---		2.75	04	(5.6)	27	265	---	---	2.1	2.55	
05	7.9	19	255	---	---	---		2.6	05	(5.7)	27	260	---	---	E	2.60	
06	8.0	20	260	---	---	---		2.75	06	>6.0	27	230	---	2.00	2.0	2.80	
07	9.4	21	240	---	---	---		2.85	07	---	7.0	26	200	---	2.80	2.90	
08	10.2	22	235	---	---	2.8			08	450	7.5	27	200	5.0	3.35	3.7	2.80
09	11.0	18	235	---	---	2.65			09	440	8.5	23	200	5.5	3.70	4.4	2.70
10	>11.5	9	(240)	---	---	2.65		(2.55)	10	400	8.8	25	200	5.6	4.00	4.3	2.75
11	---	(12.4)	12	<255	---	2.6			11	410	>9.0	23	195	6.0	4.10	4.2	2.70
12	---	(13.9)	13	<265	---	2.65		(2.55)	12	405	>9.0	24	200	5.8	4.15	2.60	
13	(430)	(14.2)	12	<255	---	2.6		(2.6)	13	390	>9.0	23	200	5.8	4.05	4.2	2.65
14	415	(14.3)	16	<250	---	2.65		(2.65)	14	385	>9.0	22	200	5.8	4.00	2.70	
15	400	(14.5)	13	<250	---	2.65		(2.65)	15	375	>9.0	25	200	5.8	3.00	2.60	
16	395	(14.4)	14	(235)	---	2.65		(2.65)	16	390	>9.1	26	200	5.4	3.60	2.60	
17	(410)	(14.2)	15	<245	---	3.2		(2.65)	17	350	>9.0	25	200	5.0	3.20	2.70	
18	(14.0)	20	260	---	---	3.0			18	8.7	27	215	---	2.60	2.7	2.80	
19	(13.8)	19	305	---	---	2.8		(2.65)	19	>8.5	27	230	---	<1.60	2.1	2.80	
20	>13.0	15	390	---	---	2.65		(2.55)	20	>8.0	24	240	---	---	2.60		
21	>14.0	11	315	---	---	2.8			21	(8.0)	27	260	---	3.1	(2.55)		
22	>14.0	11	265	---	---	2.95			22	>7.7	26	270	---	2.2	(2.60)		
23	>14.0	17	275	---	---	(3.05)			23	>7.5	25	250	---	3.0	2.60		

Time: 45.0°W.

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

Table 49

Table 50

Djibouti, French Somaliland (11.6° N, 43.2° E)							February 1959			
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Table 55

Trelew, Argentina (43° 20' S, 65° 30' W)							February 1959			
Time	h°F2	foF2-Count	h°F	foF1	h°E	foE	foEs	(MS3000)F2		
00	9.6	12	330			3.2	2.45			
01	9.3	12	330			3.0	(2.50)			
02	9.3	11	350			3.1	2.40			
03	9.0	12	335	---	---	2.6	2.40	03		
04	8.8	12	340				2.35	04		
05	8.5	13	325	---	E		2.35	05		
06	8.8	10	(260)	---	2.15	2.9	(2.45)	06		
07	>9.2	11	240	99	2.95	3.6	(2.60)	07		
08	>9.8	9	(230)	95	---	(4.1)		08		
09	---	>10.0	9 (210)	95	---	(4.7)		09		
10	---	>10.0	9 (225)	95	---	(5.6)		10		
11	---	>10.0	12 (235)	---	95	5.8		11		
12	(360)	>10.0	10 (225)	---	95	5.4		12		
13	(360)	>10.8	10 (220)	---	96	5.1		13		
14	---	>10.3	8	---	95	5.6		14		
15	(370)	>10.0	12	---	95	5.9		15		
16	(330)	>10.0	12 (225)	---	95	5.1		16		
17	---	>10.0	14	---	97	6.0		17		
18	---	(10.0)	13	250	97	5.2		18		
19	---	>9.3	13 (255)	---	---	4.4		19		
20	---	>9.0	9 (275)	---	---	5.8		20		
21	8.9	6	---			(6.5)		21		
22	>9.0	7	---			(6.0)		22		
23	(9.1)	11	(340)			3.6	(2.50)			

Time: 60.0°W.

Sweep: 1.3 Mc to 18.0 Mc in 30 seconds.

Table 57

Pole Station (90.0° S)							February 1959			
Time	h°F2	foF2-Count	h°F	foF1	h°E	foE	foEs	(MS3000)F2		
00	(490)	(5.8)	25	250	---	106	2.55	3.2	(2.60)	
01	(490)	(6.35)	24	260	(4.3)	105	(2.50)	3.6	(2.50)	
02	450	(6.5)	24	260	(4.3)	105	2.60	3.0	(2.50)	
03	470	(6.6)	27	260	4.0	103	2.60		(2.40)	
04	480	(6.3)	25	270	(4.2)	103	2.60	2.6	(2.40)	
05	(465)	(6.2)	23	260	4.1	105	2.62		(2.40)	
06	470	(6.1)	22	270	4.0	103	2.75		(2.38)	
07	500	(6.1)	20	250	(4.2)	105	2.70		(2.42)	
08	(500)	(5.75)	20	260	4.0	105	2.70		(2.40)	
09	570	(5.5)	15	260	3.9	101	2.80	2.9	(2.20)	
10	670	(4.9)	15	265	3.8	103	2.70		(2.20)	
11	(815)	4.8	13	260	3.8	103	2.75		2.25	
12	---	5.25	10	270	---	109	2.70		2.75	
13	<500	5.45	14	275	4.0	106	2.90		2.55	
14	(500)	5.5	17	260	(4.0)	105	2.95		2.40	
15	<500	6.1	22	<270	(4.3)	105	2.58		2.38	
16	500	(6.0)	25	270	(4.0)	103	2.55		(2.40)	
17	(480)	6.15	20	265	(4.0)	102	2.70		2.60	
18	(440)	5.7	19	260	---	103	(2.50)		2.65	
19	<400	(5.6)	21	260	---	105	2.52		(2.62)	
20	(500)	5.75	24	270	---	103	2.65		2.65	
21	(400)	(5.0)	25	250	---	103	2.60	2.9	(2.70)	
22	---	6.0	27	255	---	103	(2.50)	2.5	2.70	
23	---	6.0	26	255	---	103	2.60	3.0	2.80	

Time: 0.0°.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 59

Tahiti, Society Is. (17.7° S, 149.3° W)							January 1959			
Time	h°F2	foF2-Count	h°F	foF1	h°E	foE	foEs	(MS3000)F2		
00	10.0	23	295	---	---	3.1	2.50			
01	9.2	24	295	---	---	3.1	2.50			
02	9.0	25	300	---	E	2.8	2.50			
03	8.4	23	295	---	E	2.7	2.55			
04	7.6	20	(270)	---	E	2.8	2.50			
05	7.4	24	300	---	E	3.0	2.55			
06	8.4	24	270	---	2.10	3.2	2.70			
07	10.0	23	250	---	110	3.00	5.5	2.85		
08	---	11.0	20	240	---	110	3.70	5.7	2.40	
09	---	12.2	16	240	---	110	4.05	5.6	2.20	
10	---	13.0	19	230	---	110	(4.30)	5.3	2.25	
11	---	14.5	23	225	---	105	(4.35)		2.20	
12	455	15.8	23	225	(6.8)	105	(4.40)	5.2	2.25	
13	425	16.5	22	230	(6.5)	110	(4.30)	5.1	2.30	
14	400	15.7	22	230	(6.5)	105	(4.30)		2.35	
15	420	14.5	21	240	6.5	105	4.10	4.6	2.30	
16	435	14.0	19	240	(6.4)	105	3.65	5.0	2.25	
17	425	13.7	22	250	---	110	3.10	4.0	2.30	
18	---	13.5	20	285	---	120	2.30	4.2	2.30	
19	---	12.2	15	350	---	E	4.0	2.25		
20	---	11.2	19	300	---	E	3.1	2.25		
21	---	11.0	21	365	---	E	3.1	2.30		
22	---	11.5	21	<350	---	---	3.1	2.40		
23	---	11.2	20	300	---	---	3.1	2.50		

Time: 150.0°W.

Sweep: 1.2 Mc to 17.0 Mc.

Table 56

Ushuaia, Argentina (54.0° S, 68.3° W)							February 1959			
Time	h°F2	foF2-Count	h°F	foF1	h°E	foE	foEs	(MS3000)F2		
00	9.0	25	340	---	E	3.0			2.30	
01	8.9	25	350	---	E	2.2			2.30	
02	8.6	26	360	---	E	2.3			2.30	
03	8.3	25	345	---	E	2.4			2.30	
04	7.8	26	370	---	E	2.5			2.25	
05	8.0	25	350	---	E	1.50			2.25	
06	8.0	26	290	---	145	2.10	2.7		2.35	
07	8.8	26	280	---	120	3.6	2.40			
08	(400)	8.9	25	265	---	111	4.1		2.45	
09	360	>9.0	25	255	---	111	4.5		2.60	
10	(445)	9.0	19	(260)	---	109	5.0		(2.45)	
11	(400)	>9.0	16	(255)	---	109	4.2		(2.55)	
12	(390)	>9.2	14	---	109	5.0			(2.60)	
13	---	>9.6	12	(260)	---	109	5.1			
14	(420)	>9.0	13	(260)	---	109				
15	---	(9.2)	13	(260)	---	109			(2.70)	
16	---	(9.3)	19	270	---	109	4.4		(2.60)	
17	9.1	21	270	---	111	4.3			2.65	
18	9.1	26	280	---	115	4.1			2.70	
19	9.0	25	290	---	117	4.9			2.65	
20	8.8	25	300	---	109	3.5			2.60	
21	8.9	25	310	---	109	3.2			2.40	
22	9.0	26	315	---	109	3.8			2.35	
23	9.0	24	345	---	E	3.0			2.40	

Time: 60.0°W.

Sweep: 1.5 Mc to 18.0 Mc in 30 seconds.

Table 58

Dakar, French W. Africa (14.0° N, 17.4° W)							January 1959			
Time	h°F2	foF2-Count	h°F	foF1	h°E	foE	foEs	(MS3000)F2		
00	(12.5)	5	235	---	E	3.1				
01	(13.3)	9	240	---	E	3.1				
02	(12.6)	6	225	---	E	3.0				
03	---	>11.3	7	220	---	E	3.25		(3.25)	
04	9.0	10	215	---	E	3.1			(3.10)	
05	7.7	19	225	---	E	3.0			3.25	
06	6.2	20	<230	---	E	3.0			3.40	
07	---	>4.4	22	230	---	E	3.1		3.25	
08	9.2	22	250	---	E	2.25			3.25	
09	13.9	22	240	---	E	3.0			3.30	
10	14.7	18	230	---	E	3.50			3.30	
11	14.6	16	<220	---	E	3.80			4.5	
12	(14.4)	9	205	---	E	4.00			(2.60)	
13	(14.1)	7	200	---	E	4.00				
14	(13.2)	10	<210	---	E	4.05			(2.05)	
15	(13.7)	13	220	---	E	4.00			2.10	
16	12.9	11	220	---	E	3.80			2.15	
17	(13.5)	9	235	---	E	3.4				

Table 61

Yellowknife, Canada (62.4° N, 114.4° W)								December 1958	
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	fEs	(M3000)F2	
00	5.0	20	310	---	---	5.0			
01	4.6	20	330	---	---	5.7			
02	4.9	18	300	---	---	4.4			
03	4.5	25	320	---	---	4.1			
04	5.0	20	340	---	---	4.0			
05	4.6	24	320	---	---	4.0			
06	4.4	22	350	---	(2.0)	3.9			
07	4.8	22	300	115	(2.8)	4.0			
08	4.9	21	300	---	---	4.0			
09	5.9	19	300	---	---	4.0			
10	7.1	26	290	---	(2.0)	2.0			
11	9.7	29	250	---	(2.0)				
12	11.2	29	250	---	(2.1)				
13	---	12.1	29	240	---	(2.1)			
14	13.2	26	240	---	2.1				
15	13.2	28	240	---	2.0				
16	12.5	30	230	---	E				
17	10.7	27	250	---					
18	8.6	29	270	---		2.3			
19	6.9	22	280	---		2.8			
20	5.5	25	290	---		3.0			
21	5.2	22	300	---	(2.5)	3.8			
22	5.0	24	310	---	---	3.9			
23	5.0	21	300	---	---	4.0			

Time: 105.0°W.

Sweep: 1.6 Mc to 20.0 Mc in 15 seconds.

Table 63

Eureka, Canada (80.0° N, 85.9° W)								February 1958	
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	fEs	(M3000)F2	
00	6.0	25	280						
01	5.6	25	280						
02	4.7	26	280						
03	5.4	25	270						
04	5.3	24	270						
05	5.0	24	270						
06	4.7	24	270						
07	4.8	22	270						
08	5.2	23	260						
09	5.2	23	260	---	---				
10	6.1	25	250	---	---				
11	6.7	25	260	---	---				
12	7.0	24	260	---	---				
13	7.0	25	250	---	---				
14	8.2	26	260	---	---				
15	8.4	26	250	---	---				
16	8.3	26	250	---	---				
17	7.5	27	250	---	---				
18	6.8	27	260						
19	7.4	24	260						
20	5.4	24	270						
21	6.0	23	260						
22	5.2	24	270						
23	5.7	25	270						

Time: 75.0°W.

Sweep: 1.6 Mc to 20.0 Mc in 15 seconds.

Table 64

Meenook, Canada (54.6° N, 113.3° W)								December 1958	
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	fEs	(M3000)F2	
00			4.4	26	280				3.1
01			4.3	25	290				3.3
02			4.2	24	300				4.1
03			4.2	25	310				3.9
04			4.2	25	310				4.0
05			4.4	26	300				4.0
06			4.2	24	290				3.0
07			4.0	26	280				
08			4.7	24	270				E
09			7.4	26	240				
10			10.0	26	230				2.3
11			12.3	26	220				2.7
12			13.2	27	220				2.8
13			13.8	27	220				
14			14.2	28	220				2.6
15			14.1	29	220				2.3
16			13.2	28	220				1.9
17			12.2	28	210				
18			10.2	29	220				
19			8.5	29	220				
20			6.9	28	230				
21			5.5	27	230				
22			5.0	25	250				
23			4.5	26	270				

Time: 105.0°W.

Sweep: 1.6 Mc to 20.0 Mc in 15 seconds.

Table 65

Lulea, Sweden (65.6° N, 22.1° E)								February 1950	
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00			(6.0)	11	400				3.6
01			(5.3)	11	370				3.2
02			(5.1)	14	355				2.7
03			(5.2)	11	360				1.7
04			(5.8)	13	330				
05			(5.0)	14	310				
06			(5.6)	17	300				
07			(5.5)	19	280				(2.75)
08			6.4	22	260	(200)	1.8		2.8
09			8.1	23	255	155	2.2		3.0
10			9.4	22	250	140	2.4		3.0
11			10.6	22	250	---	2.6		2.9
12			11.4	19	250	140	2.6		2.9
13			12.0	20	245	140	2.5		2.9
14			12.0	18	245	140	2.3		2.95
15			11.0	16	240	140	2.1		3.0
16			9.8	16	235	---	1.7		3.0
17			(7.0)	15	245	---	---		(3.0)
18			(4.5)	16	280			2.0	(2.85)
19			(4.6)	14	270			2.2	
20			(4.8)	12	315			3.7	
21			(5.0)	13	340			3.6	
22			(4.6)	12	(370)			3.6	
23			(4.9)	10	380			3.3	

Time: 15.0°E.

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

Table 66

Freiburg, Germany (48.1° N, 7.6° E)								February 1958	
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00			5.0	28	295				2.40
01			4.8	26	300				2.40
02			4.8	26	<310				2.45
03			4.6	26	310				2.45
04			4.2	26	285				2.55
05			3.9	26	270				2.55
06			4.5	26	260				2.50
07			7.7	27	240	120	1.75	2.0	2.95
08			10.8	27	230	113	2.55		3.00
09			12.6	27	225	110	3.00		2.95
10			(13.4)	27	225	109	3.25		(2.90)
11			13.6	27	225	108	3.40		2.85
12			13.5	27	230	<109	3.45		2.80
13			13.4	27	230	108	3.35		2.80
14			(13.2)	27	230	111	3.15		(2.80)
15			13.0	27	230	113	2.85	2.9	(2.85)
16			12.4	27	225	118	2.30	2.6	2.90
17			11.4	27	225	---	1.30	1.8	2.95
18			9.2	28	215			1.5	2.95
19			7.8	28	225				2.85
20			6.6	28	<245				2.75
21			5.7	28	260				2.55
22			5.3	28	280				2.45
23			5.2	27	290				2.40

Time: 0.0°.

Sweep: 1.25 Mc to 20.0 Mc in 3 minutes.

Table 67

Rabat, Morocco (30° 0' N., 6° 8' W.)		February 1958					
Time	h°F2	foF2-Count	h°F	foF1	h'E	foE	foEs (M3000)F2
00	>7.5	23	<260			2.0	2.70
01	(6.1)	21	<260			2.2	2.80
02	7.5	21	<255			2.0	2.80
03	6.8	24	<275			2.2	2.80
04	6.6	22	<275			1.8	2.65
05	6.4	22	<270				2.70
06	4.8	23	<250				2.75
07	5.7	22	260	---	---	2.1	2.95
08	9.4	22	235	115	2.50	3.1	3.20
09	12.0	21	230	110	3.05		3.20
10	13.3	23	230	105	3.50		3.00
11	14.2	24	230	105	3.70		2.95
12	(250)	14.0	26	230	105	3.90	2.85
13	13.6	26	230	---	---	3.00	2.80
14	(250)	13.5	23	230	105	3.80	2.75
15	(320)	13.4	26	235	110	3.60	2.75
16	13.2	24	240	110	3.20		2.80
17	12.8	25	245	115	2.60	3.4	2.90
18	(12.0)	26	245	---	---	3.2	(2.95)
19	(10.0)	25	<245			2.5	(2.90)
20	9.0	26	<240			2.4	(2.75)
21	(6.6)	24	<250			2.3	(2.70)
22	8.2	25	<270			2.2	2.80
23	8.0	25	<260			2.0	2.00

Time: 0.0°.

Sweep: 1.6 Mc to 17.0 Mc in 1 minute.

Table 69

Dakar, French W. Africa (14° 7' N., 17° 4' W.)		February 1958					
Time	h°F2	foF2-Count	h°F	foF1	h'E	foE	foEs (M3000)F2
00	(15.5)	3	240				----
01	(16.3)	8	215				----
02	(14.7)	6	210				----
03	(9.2)	12	200			1.8	(3.20)
04	7.0	13	190			2.5	2.95
05	6.0	16	220	---	---	2.0	2.90
06	5.6	17	235	---	---	3.4	2.95
07	5.6	16	235	---	---	3.4	3.15
08	(10.4)	12	240	115	2.15	3.5	3.20
09	(13.6)	7	220	105	3.00	3.9	(3.25)
10	(15.9)	14	210	100	(3.55)	4.4	(2.95)
11	(16.5)	17	200	100	3.90	4.0	(2.85)
12	>16.6	12	190	95	4.05		(2.70)
13	(16.0)	8	190	95	4.10		(2.55)
14	(15.8)	9	190	95	4.15		(2.55)
15	(305)	(15.6)	10	200	100	4.00	(2.50)
16	---	(15.7)	8	<210	100	(3.70)	3.8
17	---	(15.6)	6	215	100	3.35	4.2
18	---	(15.6)	4	230	105	2.80	3.5
19	---	(15.3)	1	260	130	1.80	3.4
20	---	0	<340	---	E	3.2	----
21	(6.9)	1	335	---	---	3.2	----
22	(10.7)	2	310			3.0	----
23	(10.6)	2	270			3.2	----

Time: 0.0°.

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

Table 71

Tahiti, Society Is. (17° 7' S., 149° 30' W.)		February 1958					
Time	h°F2	foF2-Count	h°F	foF1	h'E	foE	foEs (M3000)F2
00	11.6	21	250	---	(0.90)	3.1	2.95
01	10.2	21	245	---	(0.90)	3.1	2.65
02	8.9	20	265	---	---	3.1	2.50
03	8.3	21	300	---	(1.10)	3.1	2.45
04	8.2	20	330	---	E	2.0	2.50
05	8.7	20	300	---	---	3.0	2.50
06	9.3	23	200	<120	1.75	3.1	2.70
07	11.5	19	250	105	2.80	3.3	3.05
08	12.9	19	240	100	(3.50)	3.8	2.90
09	13.6	18	230	100	3.70	4.1	2.65
10	14.7	22	225	100	(4.10)	4.2	2.50
11	16.0	22	215	100	(4.30)		2.30
12	395	0	22	<220	100	---	2.50
13	395	16.3	20	220	(7.3)	100	(4.40)
14	400	15.9	22	<225	7.2	100	(4.25)
15	395	15.2	21	230	7.0	100	3.95
16	405	15.0	23	240	6.7	100	3.60
17	(405)	14.8	21	250	105	3.05	4.0
18	14.3	22	275	120	2.05	3.9	2.45
19	14.4	22	335	---	---	4.0	2.40
20	14.4	23	340	---	---	3.1	2.40
21	15.3	23	325	---	---	3.1	2.50
22	15.2	22	280	---	---	3.1	2.60
23	14.5	21	265	---	---	3.1	2.80

Time: 150° 0'W.

Sweep: 1.2 Mc to 17.0 Mc in 1 minute.

Table 68

Tamanrasset, French W. Africa (22° 0' N., 5° 5' E.)		February 1958					
Time	h°F2	foF2-Count	h°F	foF1	h'E	foE	foEs (M3000)F2
00	>15.2	16	240				2.4
01	(14.5)	15	225	---	---	2.4	----
02	>11.5	15	225			2.2	----
03	8.5	15	210			2.0	(3.20)
04	>5.7	15	230			2.2	2.85
05	>5.5	15	260			2.5	2.90
06	(6.2)	13	280	---	E	2.4	(3.00)
07	>11.0	11	250			2.4	----
08	13.5	13	235			3.4	3.10
09	>15.1	14	230			3.8	(2.95)
10	>16.0	13	220			3.85	4.2
11	>16.0	15	220			4.00	----
12	(390)	0	15	210		4.10	----
13	385	0	15	220		3.95	----
14	(375)	0	13	235		3.80	----
15	(350)	0	13	235		3.55	3.7
16	---	0	17	245		3.00	----
17	0	18	260			3.3	----
18	>16.0	20	265			2.7	----
19	>16.2	19	300			2.2	----
20	0	16	270			2.3	----
21	>16.3	15	250			2.2	----
22	0	18	250			2.0	----
23	>16.0	19	260			2.1	----

Time: 0.0°.

Sweep: 1.2 Mc to 17.0 Mc in 1 minute.

Table 70

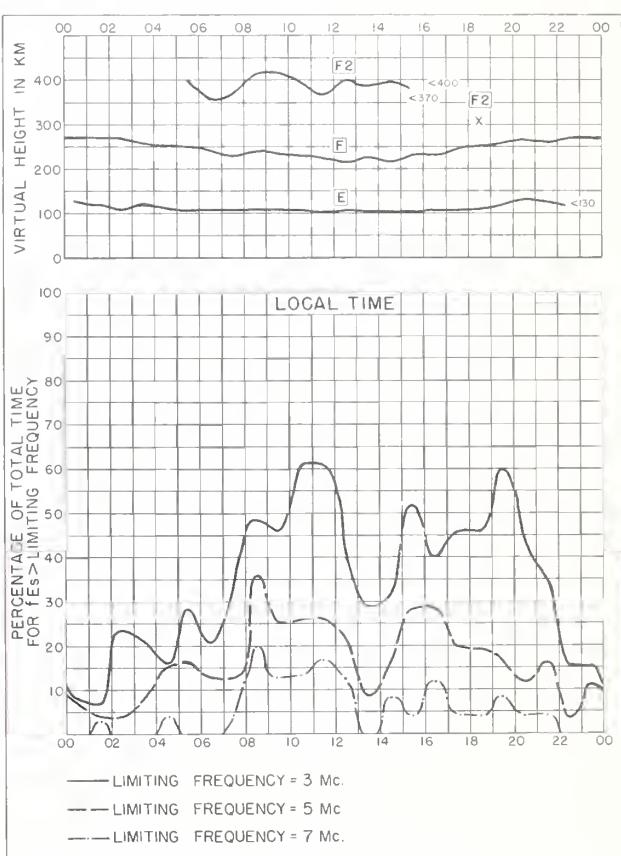
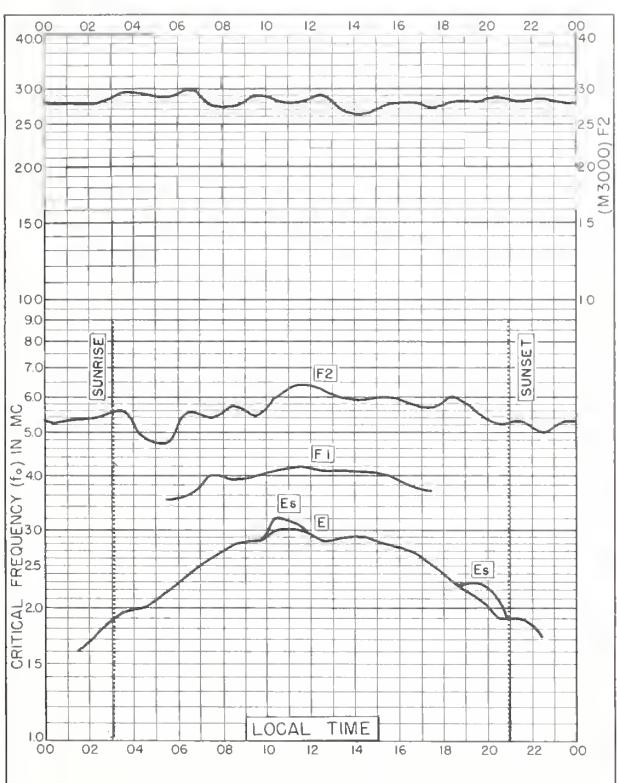
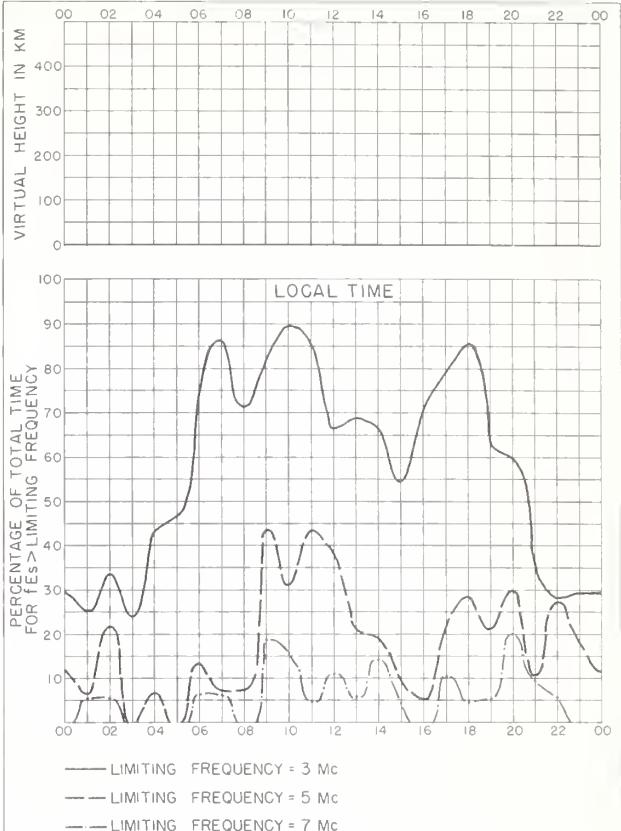
Paramaribo, Surinam (5° 8' N., 55° 20' W.)		February 1958					
Time	h°F2	foF2-Count	h°F	foF1	h'E	foE	foEs (M3000)F2
00	15.9	25	260				3.2
01	15.4	24	250				2.70
02	15.7	25	240				2.80
03	15.4	26	240				3.1
04	13.0	25	225				3.00
05	11.4	26	215				2.8
06	8.7	26	215				3.05
07	6.3	25	225				3.1
08	6.4	26	250				2.90
09	6.0	26	250				2.65
10	8.0	26	250				2.65
11	11.5	26	245				3.15
12	(250)	14.0	27	220			3.4
13	255	14.3	27	220			4.7
14	270	14.3	27	210			2.65
15	350	14.8	27	210			2.70
16	350	15.0	27	210			2.65
17	375	14.0	27	215			2.55
18	380	15.0	26	225			2.50
19	380	14.8	26	230			2.55
20	360	14.6	26	240			2.50
21	360	14.6	26	250			2.50
22	350	14.8	26	250			2.55
23	15.1	26	290				2.60

Time: 0.0°.

Sweep: 1.4 Mc to 20.0 Mc in 40 seconds.

Table 72

Ushuaia, Argentina (54° 8' S., 68° 30' W.)		February 1958					
Time	h°F2	foF2-Count	h°F	foF1	h'E	foE	foEs (M3000)F2
00	>8.2	22	325				2.2
01	>8.0	20	310				2.4
02	8.1	21	310				2.50
03	7.4	20	310				2.45
04	7.0	20	345				2.35
05	7.1	21	345				2.30
06	>8.0	22	200				2.35
07	>8.4	23	250				2.65
08	(300)	8.6	23	235			3.0
09	(390)	8.1	21	(230)	5.7	101	----
10	(380)	8.3	21	----	101		4.6
11	320	8.5	16	----	----		4.0
12	375	8.2	12	----	----		5.1
13	370	8.6	13	6.0	----		----
14	(365)	8.9	12	----	----		----
15	>9.0	11	----	----	----		----
16	>8.3	14	(230)	----	101		----
17	>8.5	25	250	----	101		2.



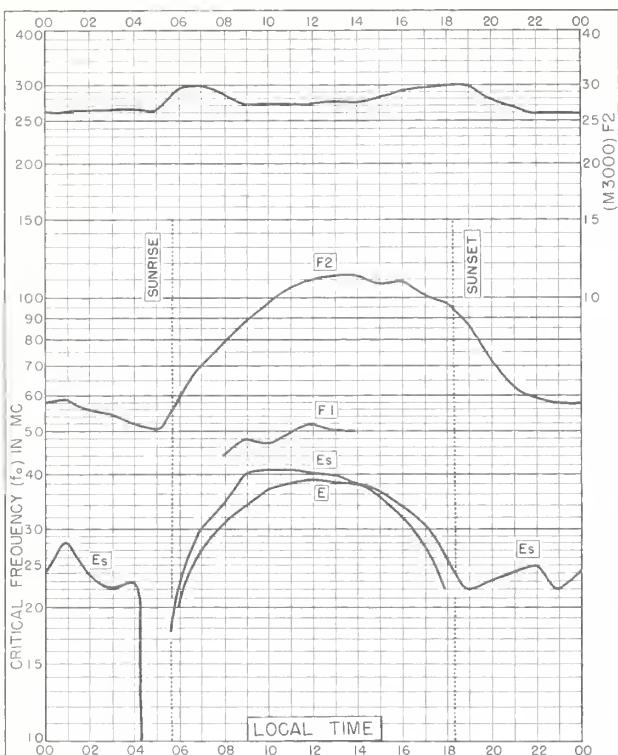


Fig. 5. WHITE SANDS, NEW MEXICO
32.3°N, 106.5°W APRIL 1960

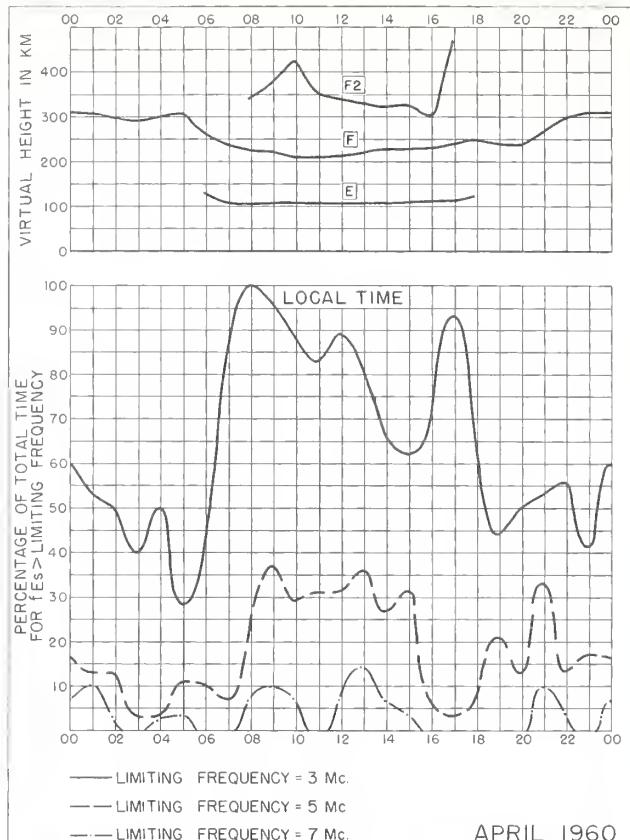


Fig. 6. WHITE SANDS, NEW MEXICO APRIL 1960

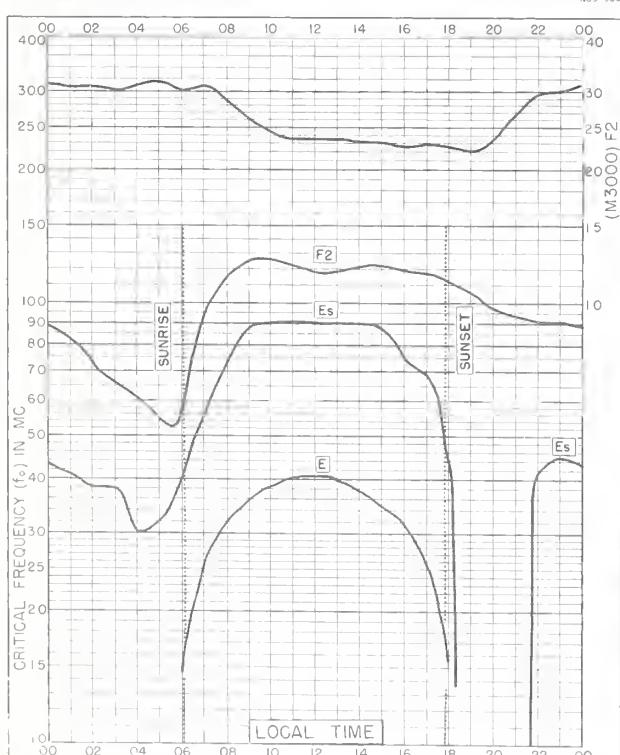


Fig. 7. HUANCAYO, PERU
12.0°S, 75.3°W APRIL 1960

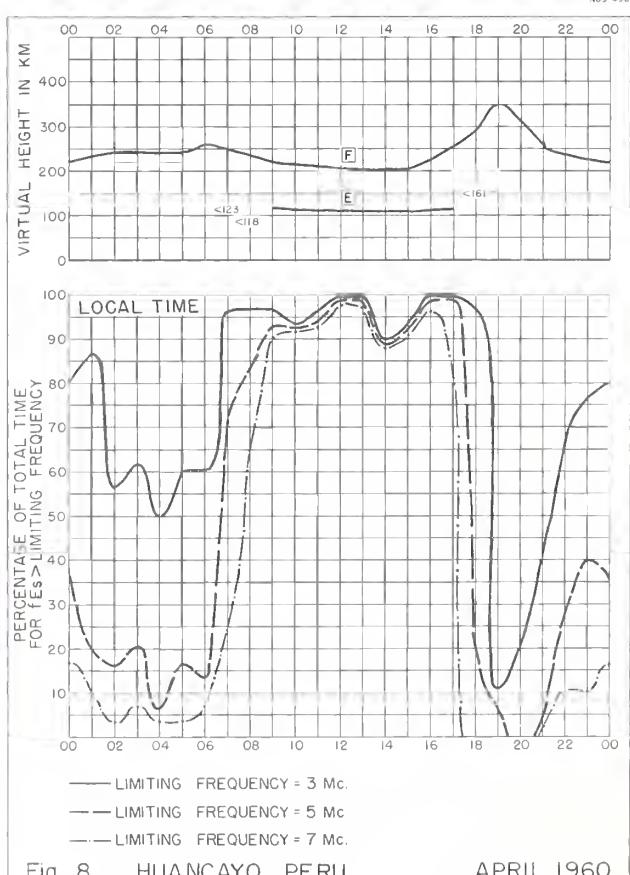
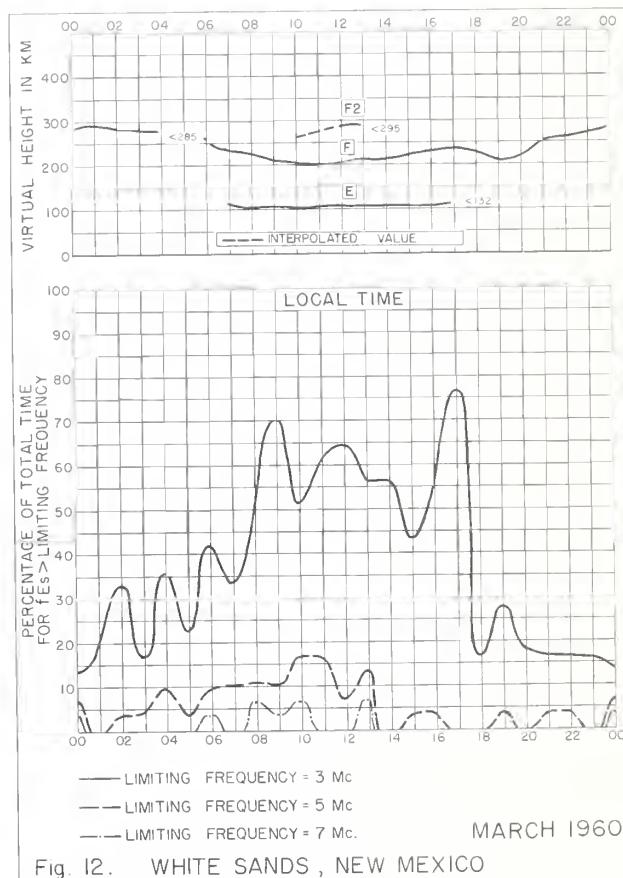
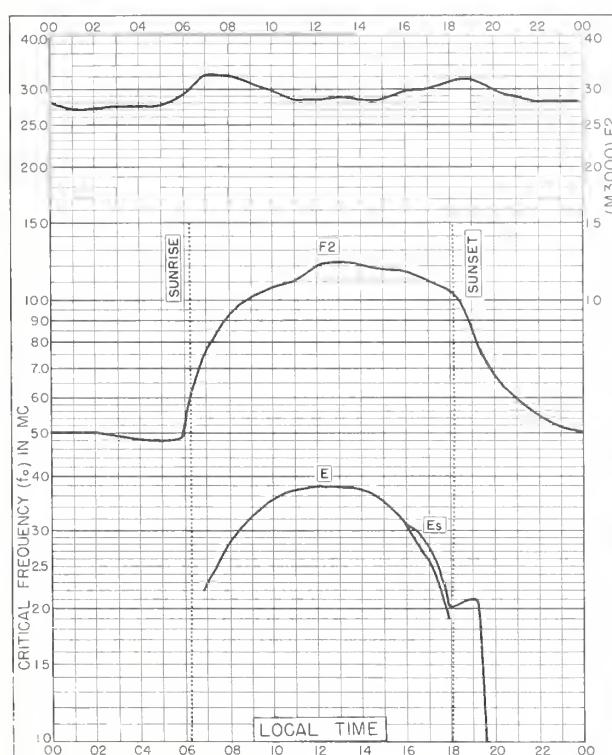
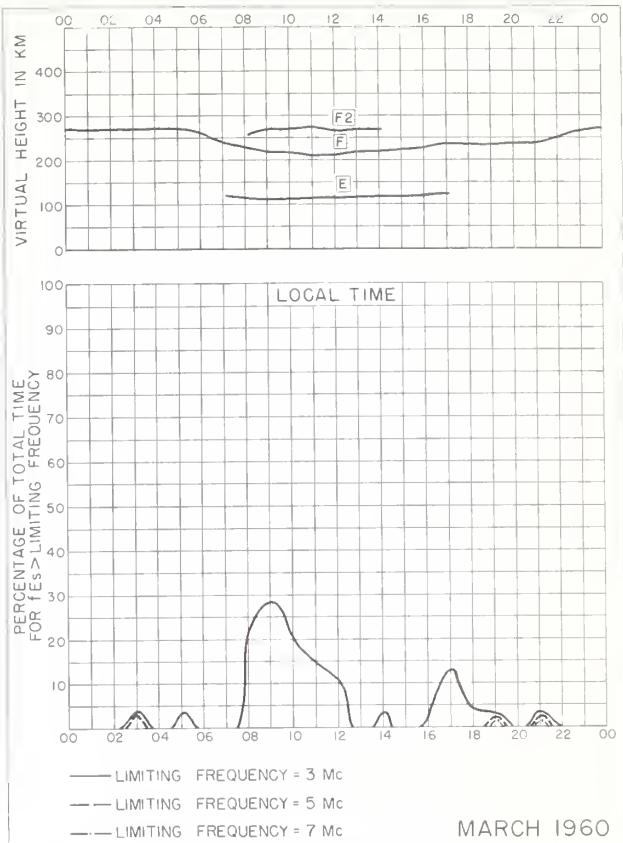
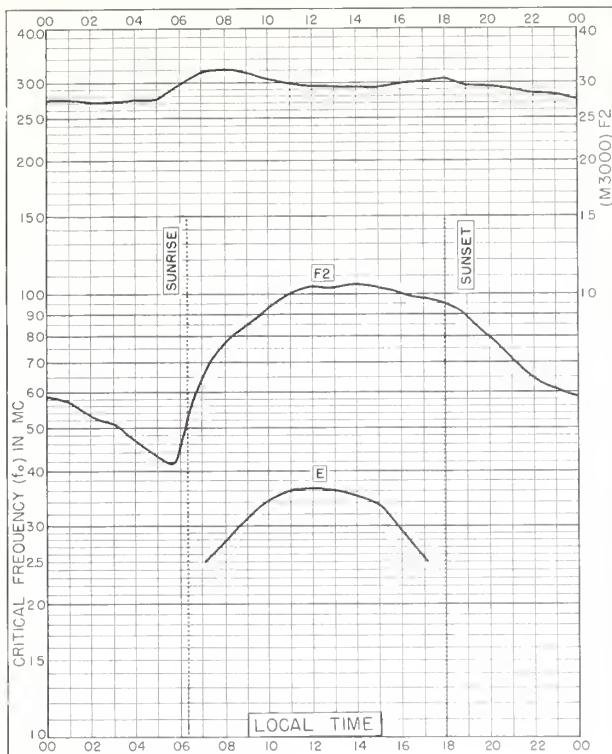
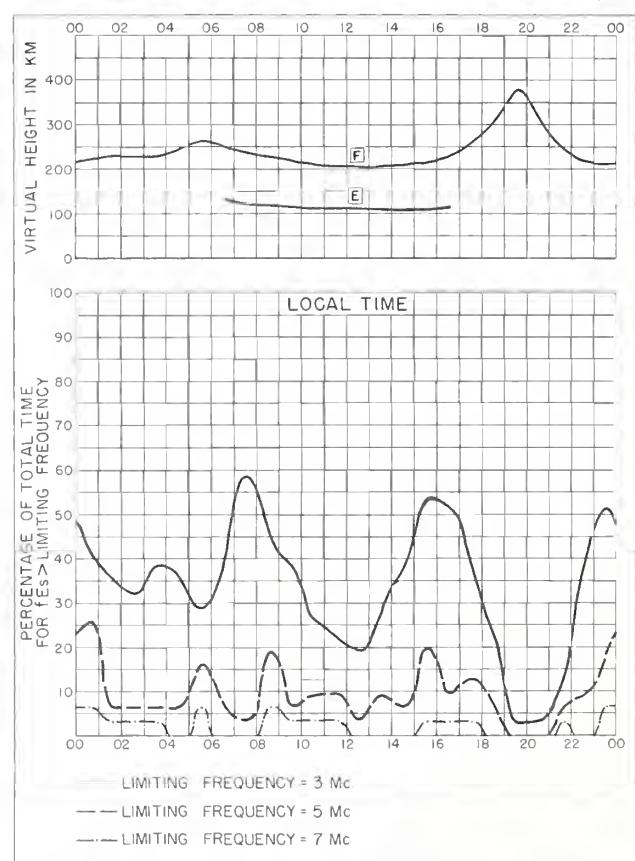
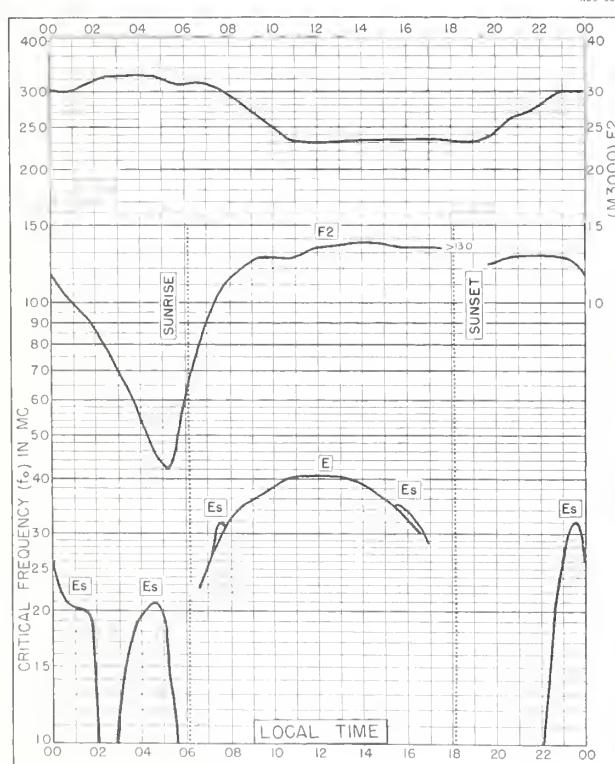
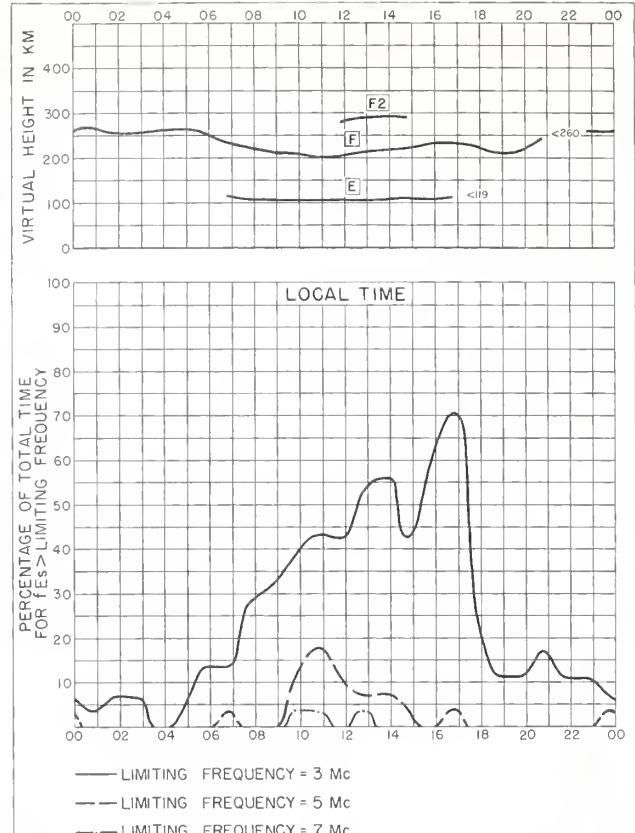
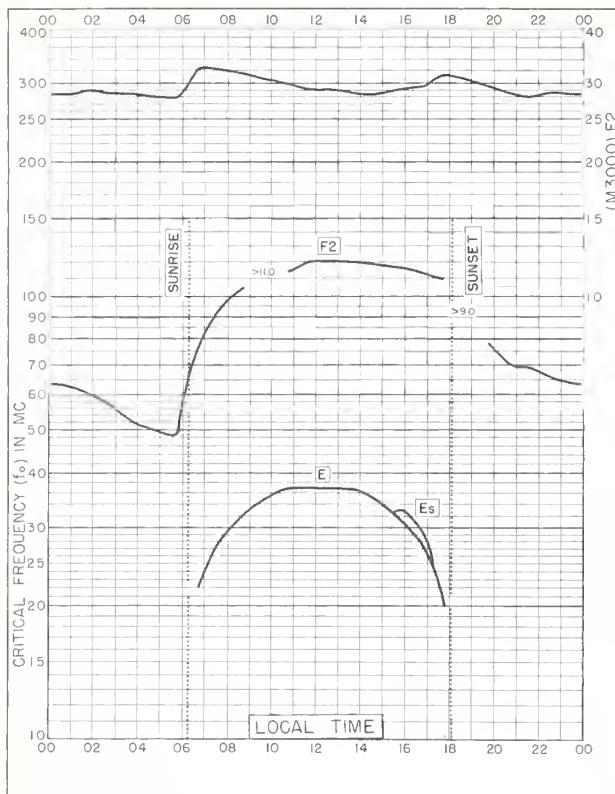


Fig. 8. HUANCAYO, PERU APRIL 1960





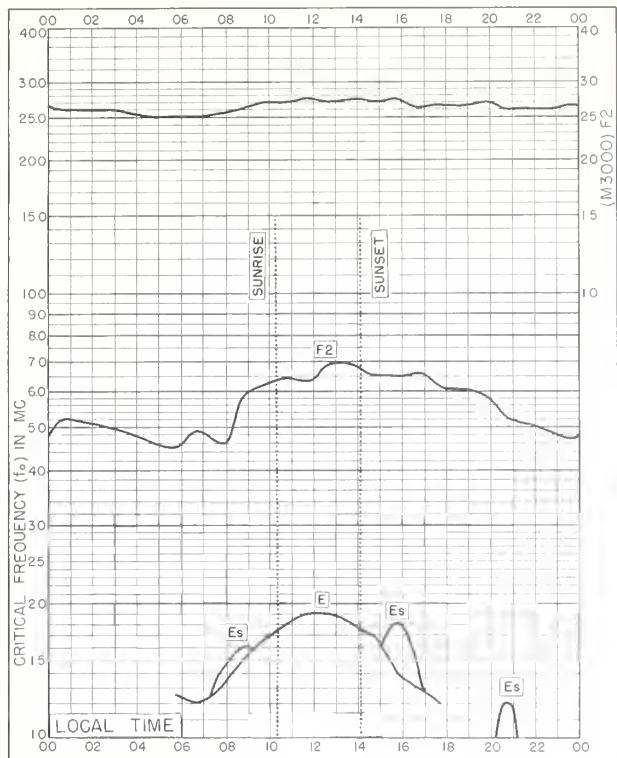


Fig. 17. RESOLUTE BAY, CANADA
74.7°N, 94.9°W FEBRUARY 1960

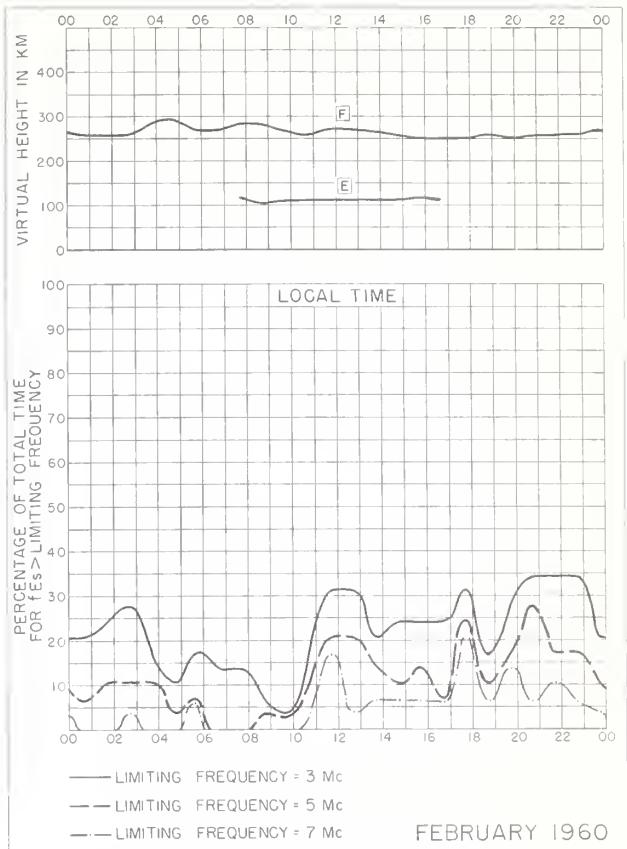


Fig. 18. RESOLUTE BAY, CANADA FEBRUARY 1960

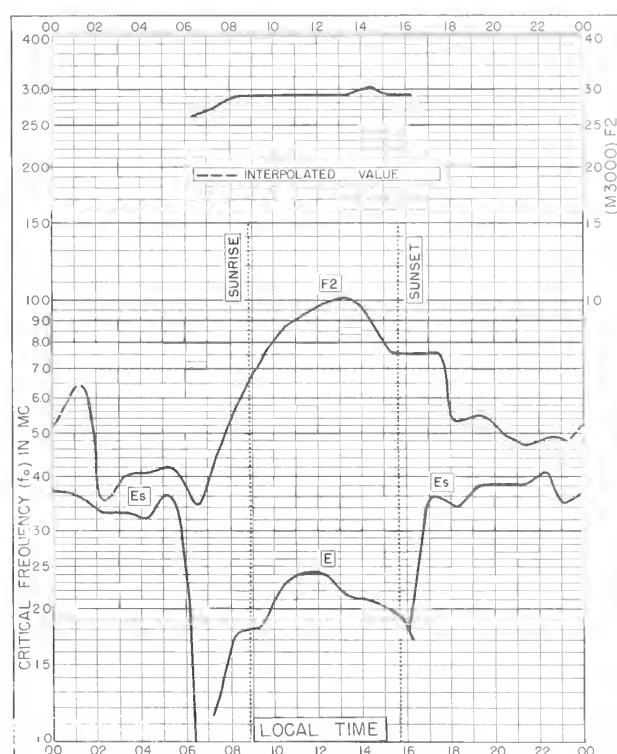


Fig. 19. TROMSO , NORWAY
69.7°N, 19.0°E FEBRUARY 1960

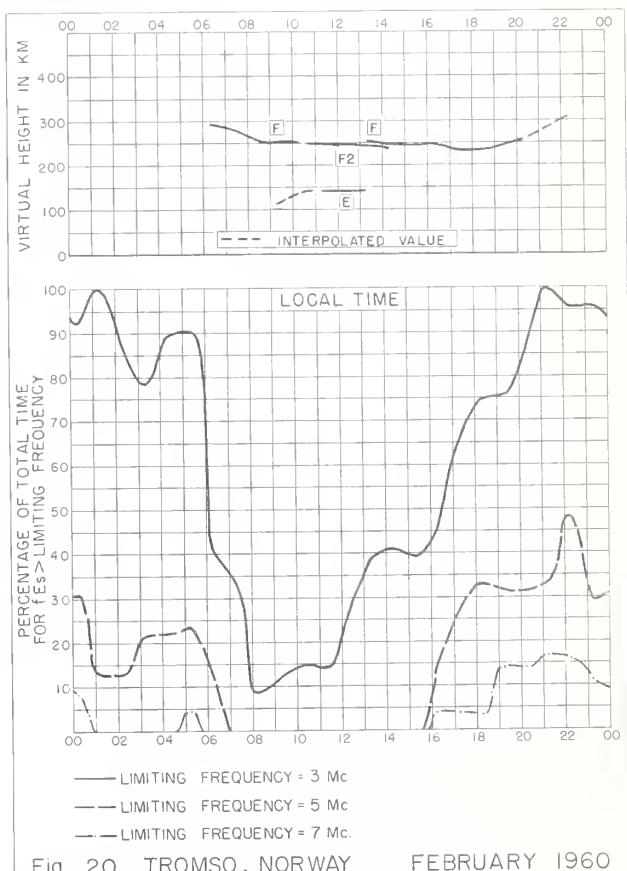


Fig. 20. TROMSO , NORWAY FEBRUARY 1960

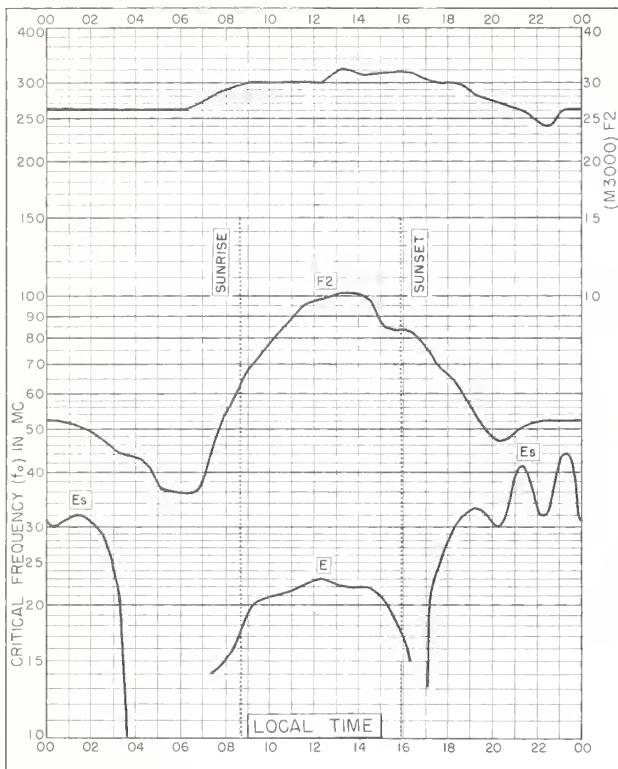


Fig. 21. KIRUNA, SWEDEN
67.8°N, 20.3°E FEBRUARY 1960

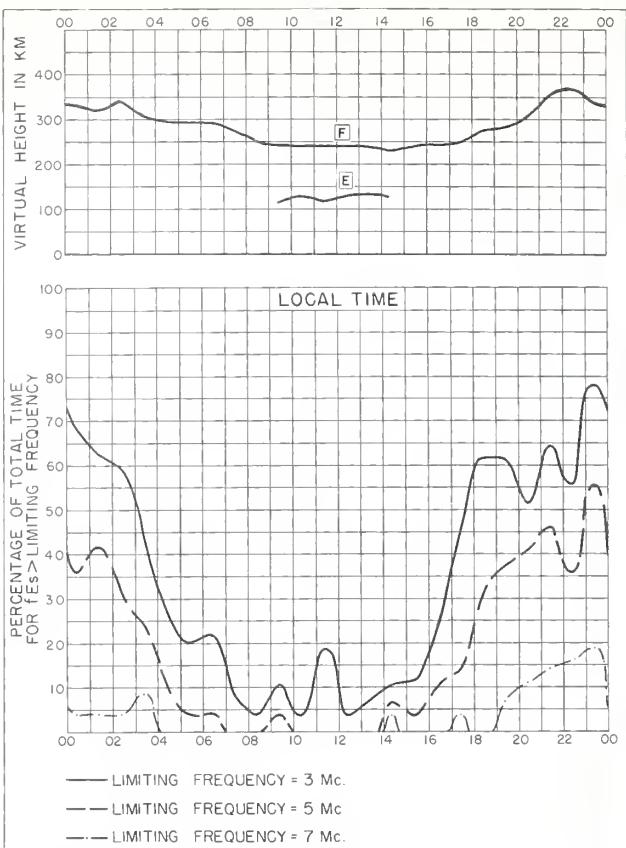


Fig. 22. KIRUNA, SWEDEN FEBRUARY 1960

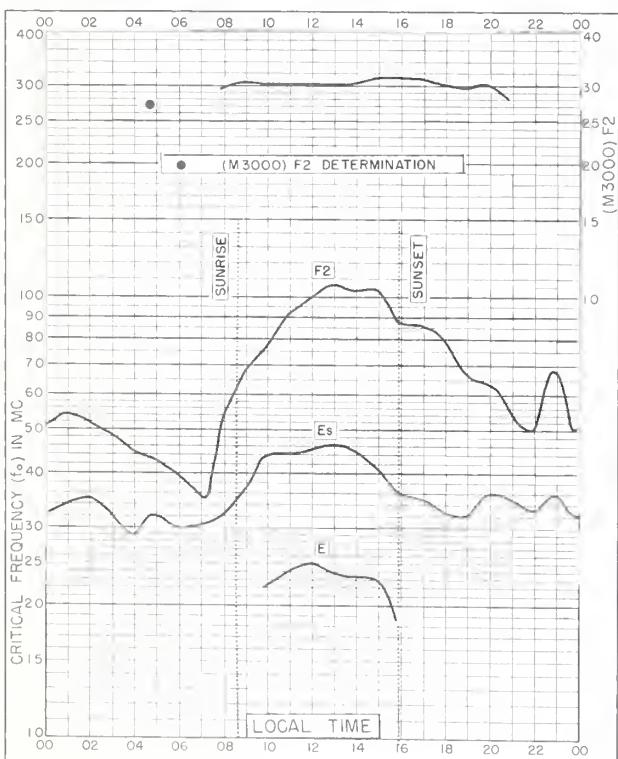


Fig. 23. SODANKYLA, FINLAND
67.4°N, 26.6°E FEBRUARY 1960

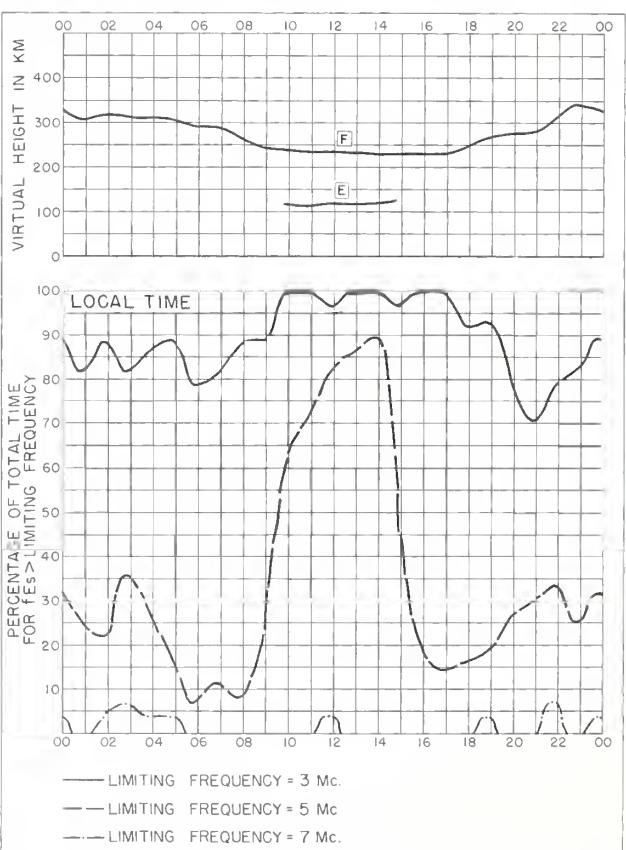


Fig. 24. SODANKYLA, FINLAND FEBRUARY 1960

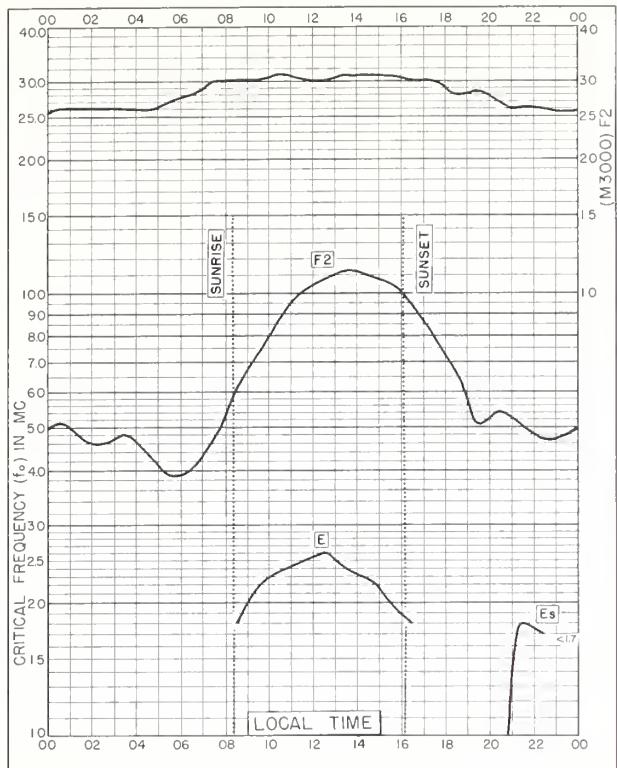


Fig. 25. LULEA, SWEDEN
65.6°N, 22.1°E FEBRUARY 1960

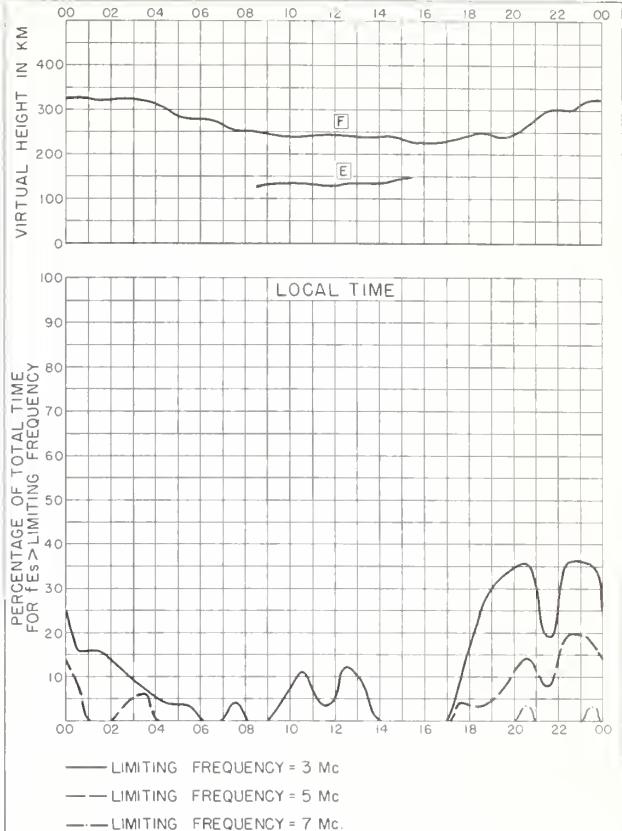


Fig. 26. LULEA, SWEDEN FEBRUARY 1960

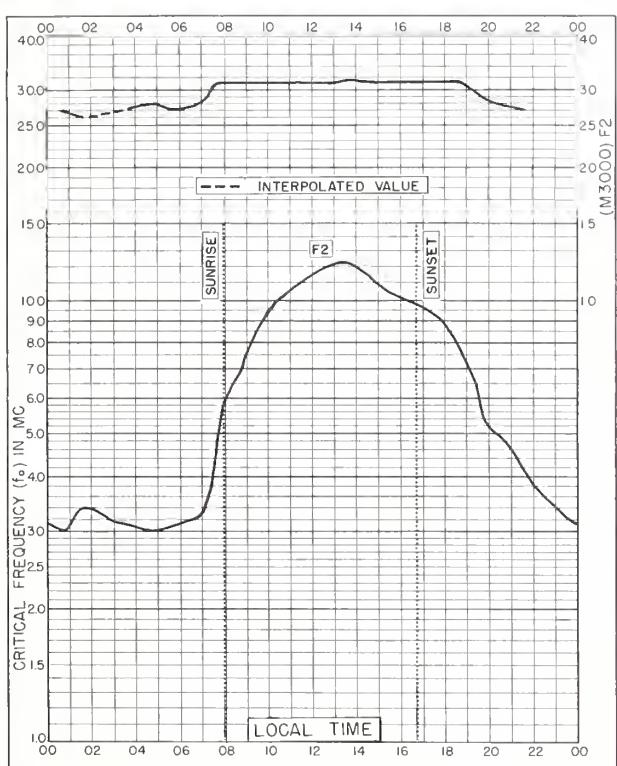


Fig. 27. NURMIJARVI, FINLAND
60.5°N, 24.6°E FEBRUARY 1960

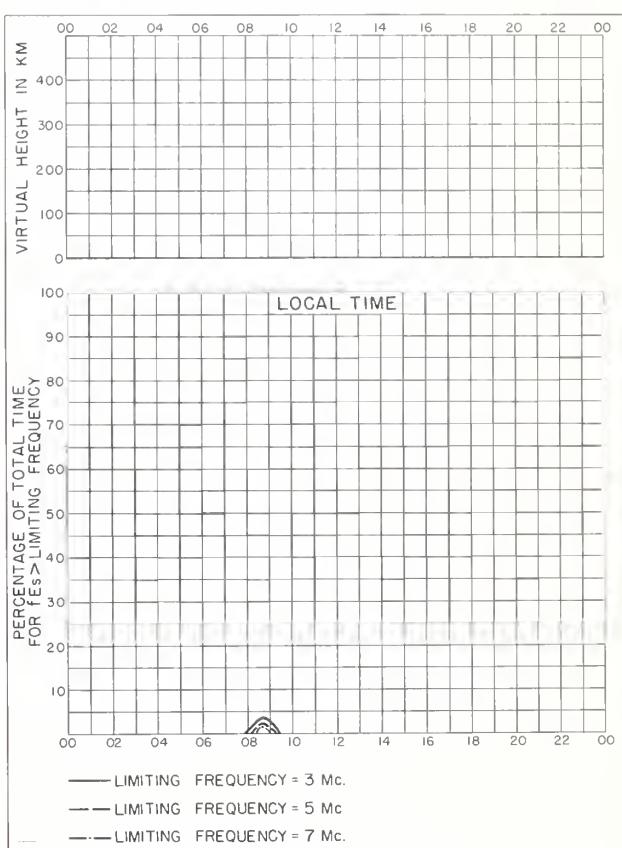


Fig. 28. NURMIJARVI, FINLAND FEBRUARY 1960

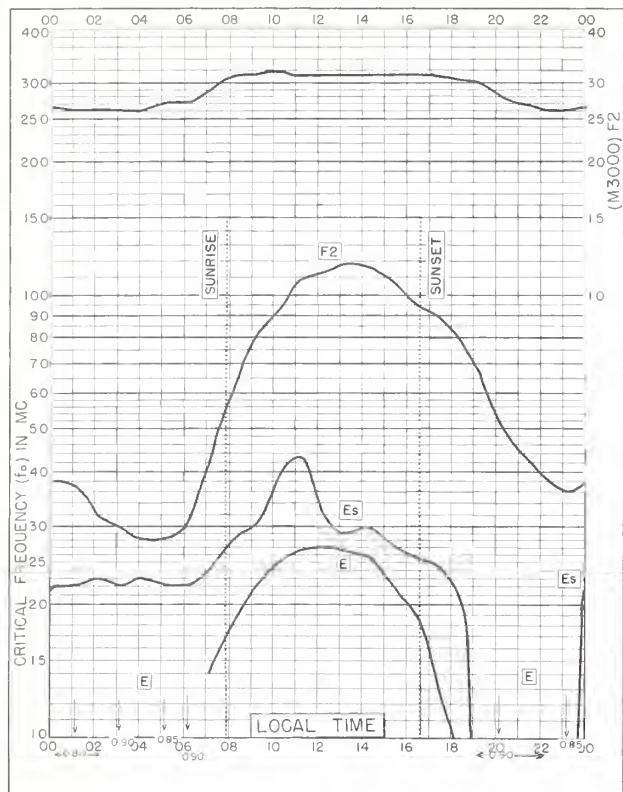


Fig. 29. UPSALA, SWEDEN
59.8°N, 17.6°E FEBRUARY 1960

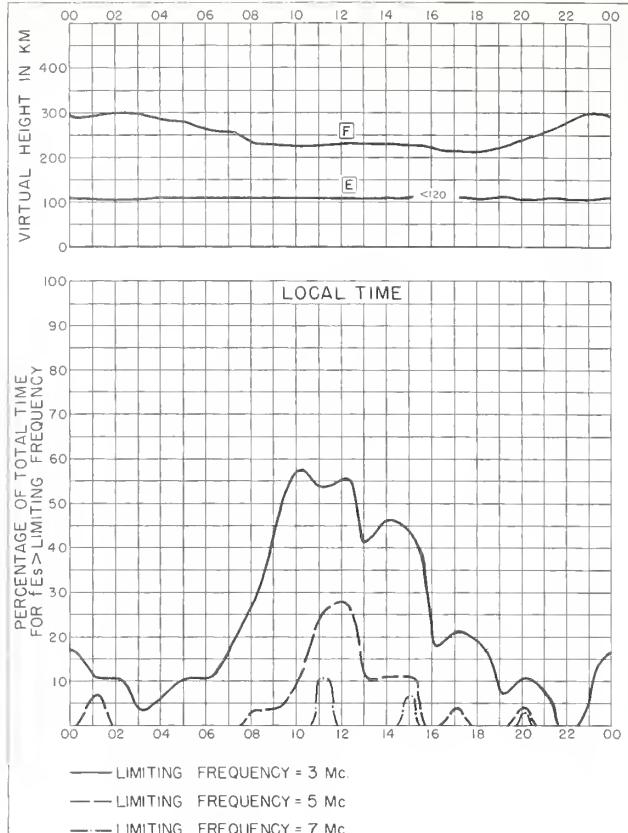


Fig. 30. UPSALA, SWEDEN FEBRUARY 1960



Fig. 31. De BILT, HOLLAND
52.1°N, 5.2°E FEBRUARY 1960

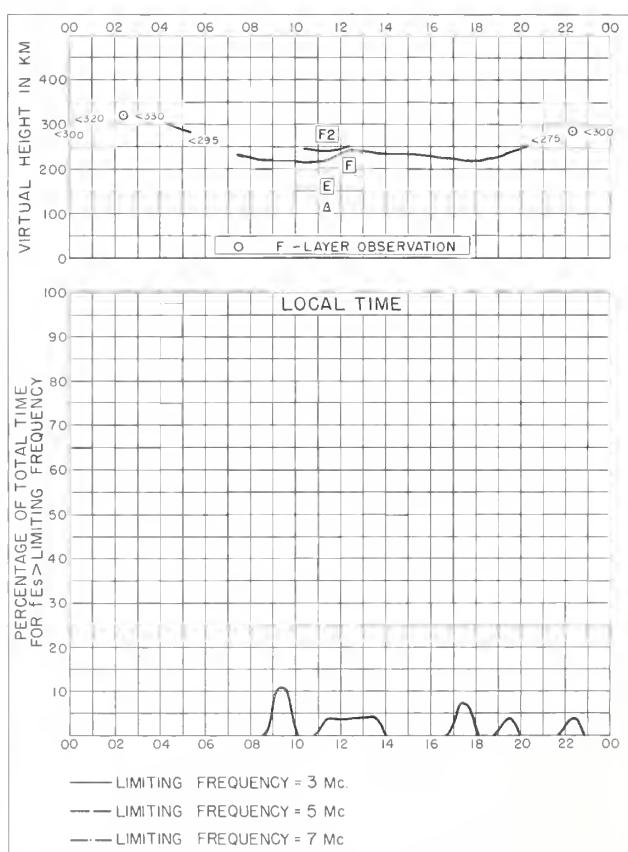
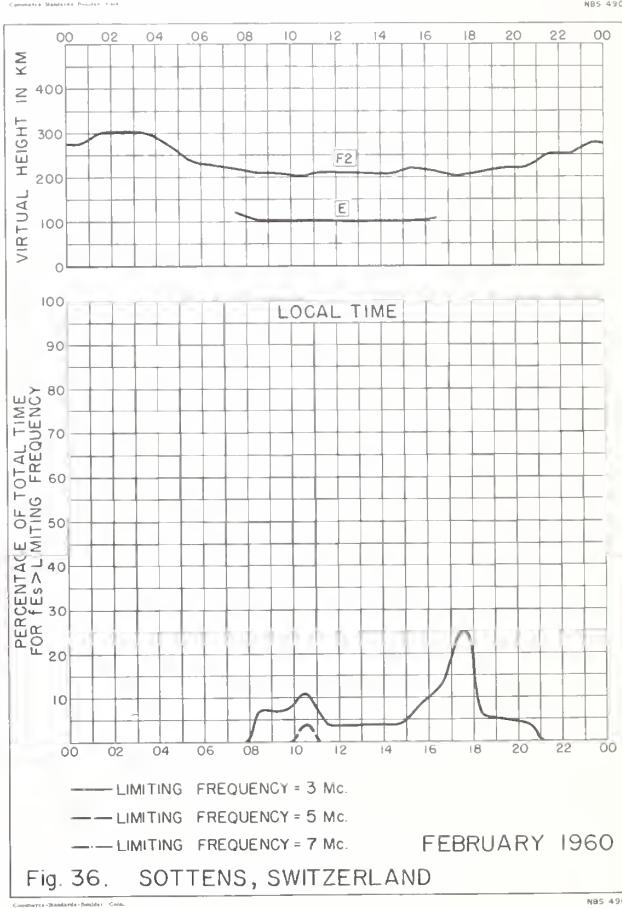
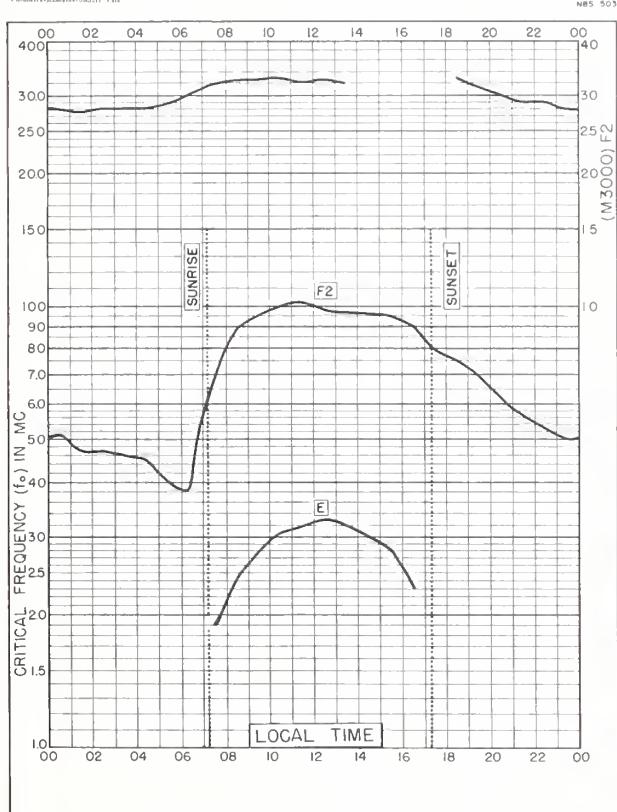
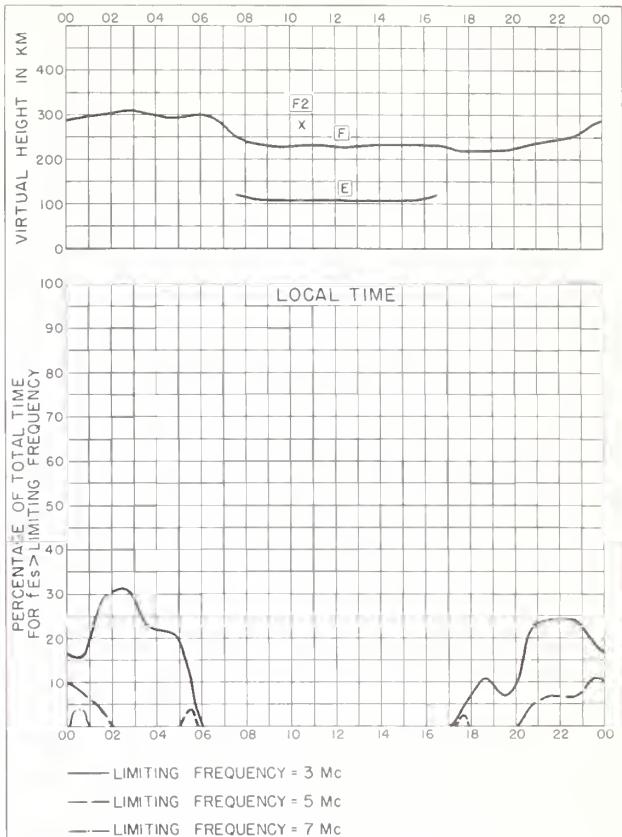
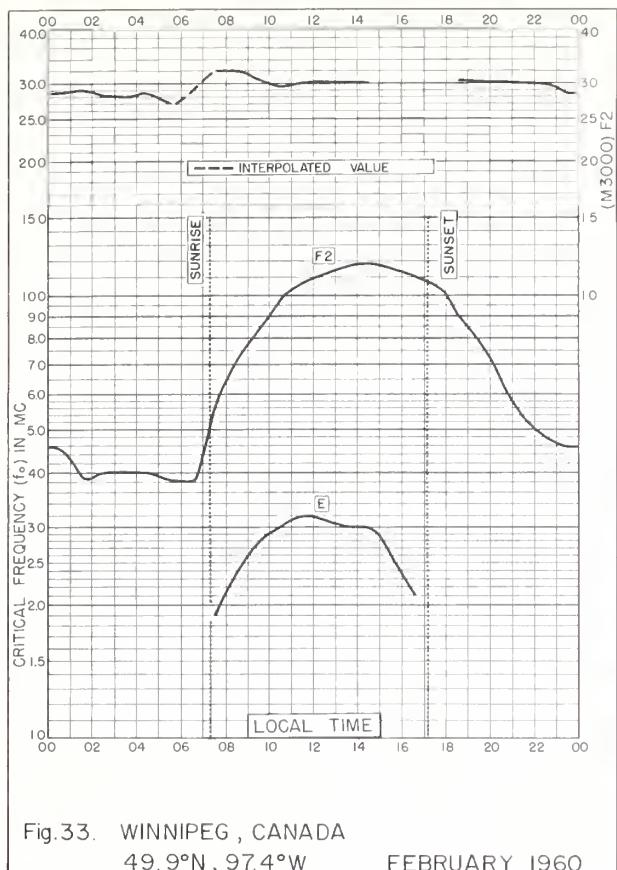


Fig. 32. De BILT, HOLLAND FEBRUARY 1960



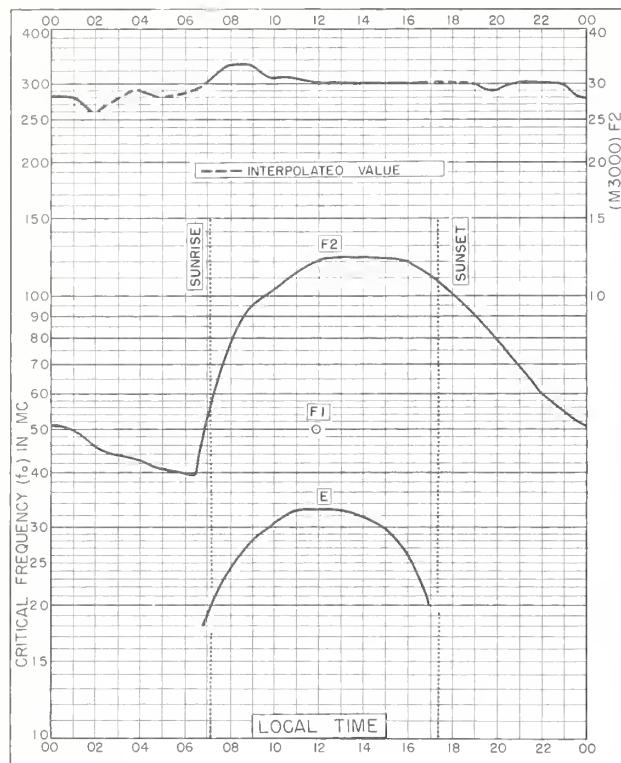


Fig. 37. OTTAWA, CANADA
45.4°N, 75.9°W FEBRUARY 1960

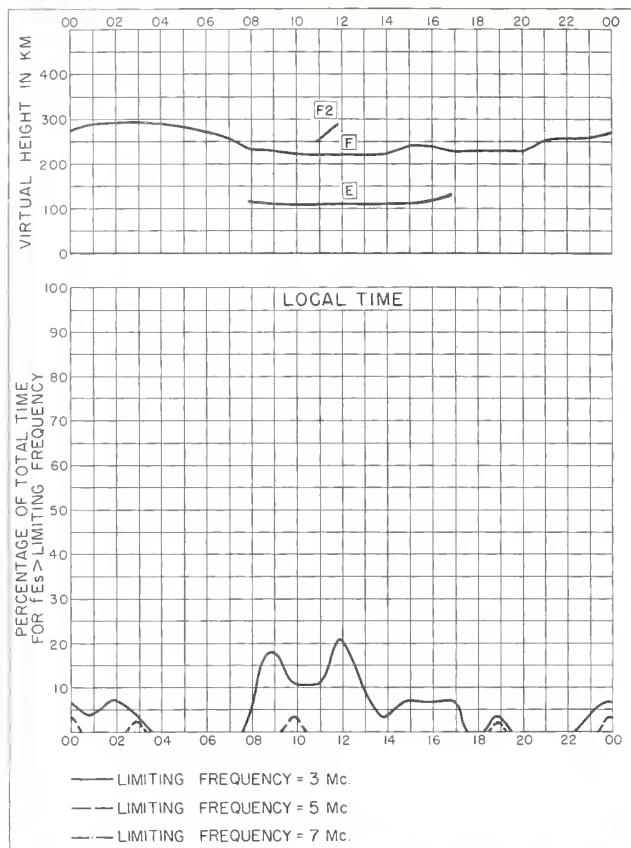


Fig. 38. OTTAWA, CANADA FEBRUARY 1960

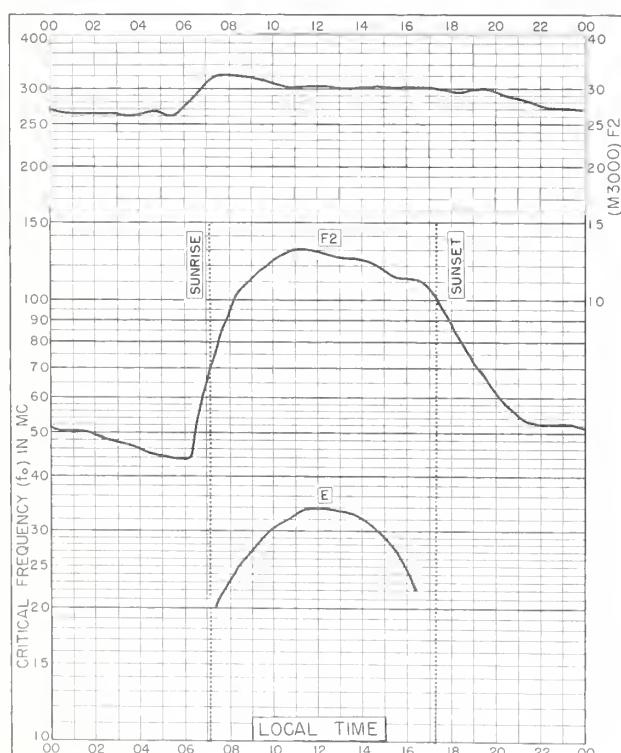


Fig. 39. WAKKANAI, JAPAN
45.4°N, 141.7°E FEBRUARY 1960

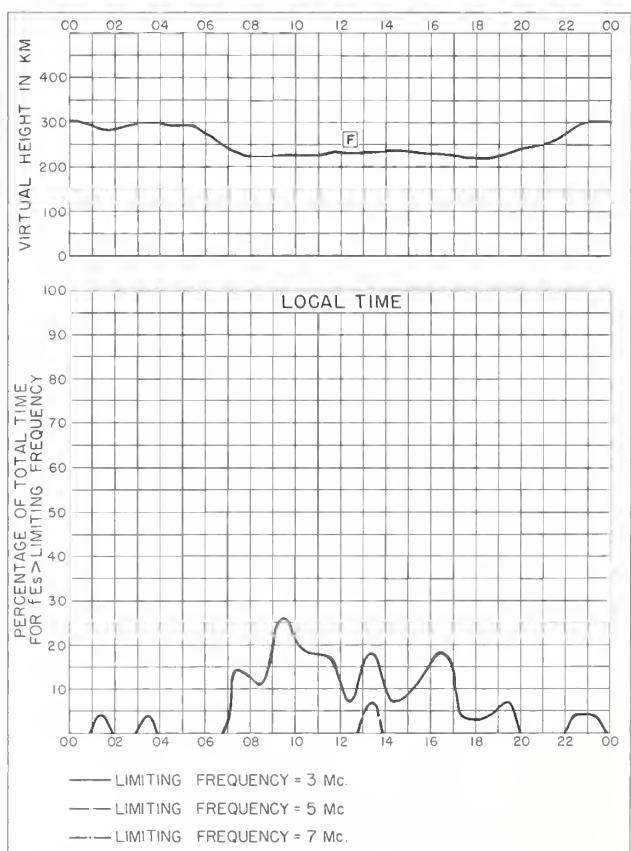
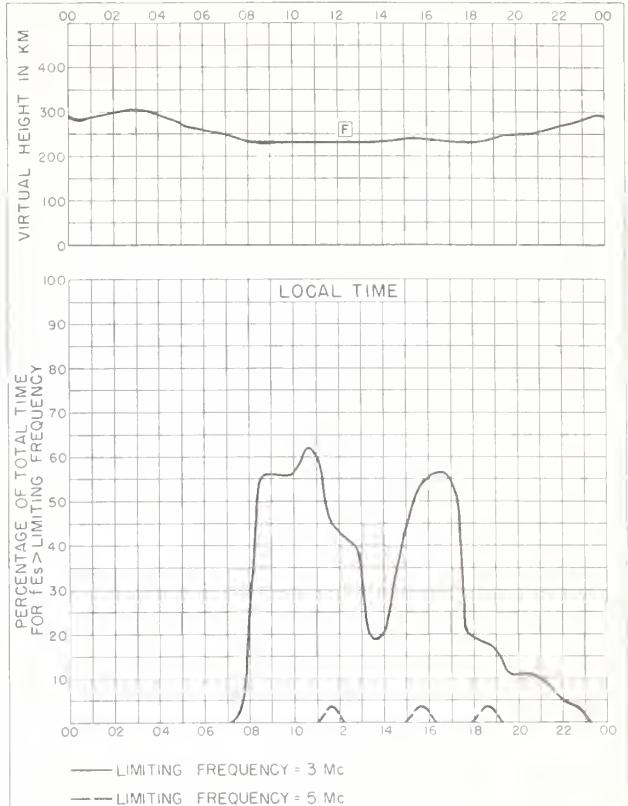


Fig. 40. WAKKANAI, JAPAN FEBRUARY 1960



Fig. 41. GENOA(MONTE CAPELLINO), ITALY
44.6°N, 9.0°E FEBRUARY 1960



FEBRUARY 1960
Fig. 42. GENOA(MONTE CAPELLINO), ITALY

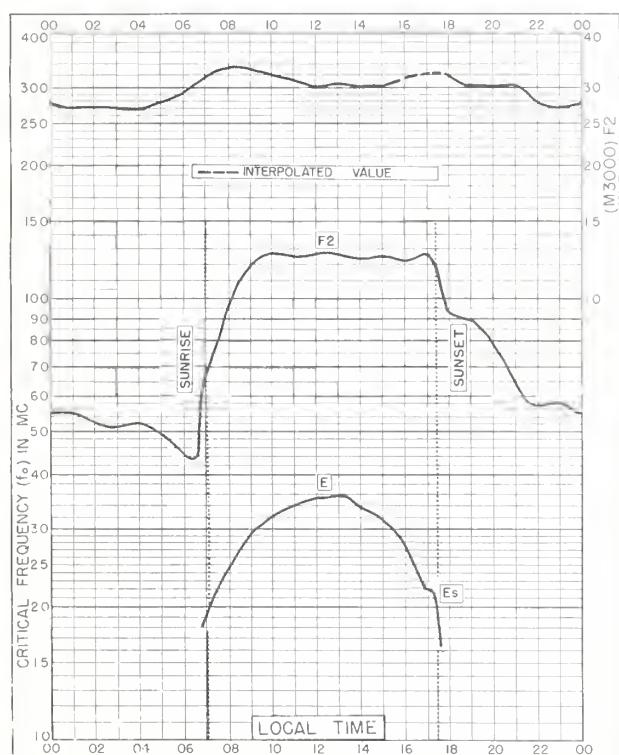
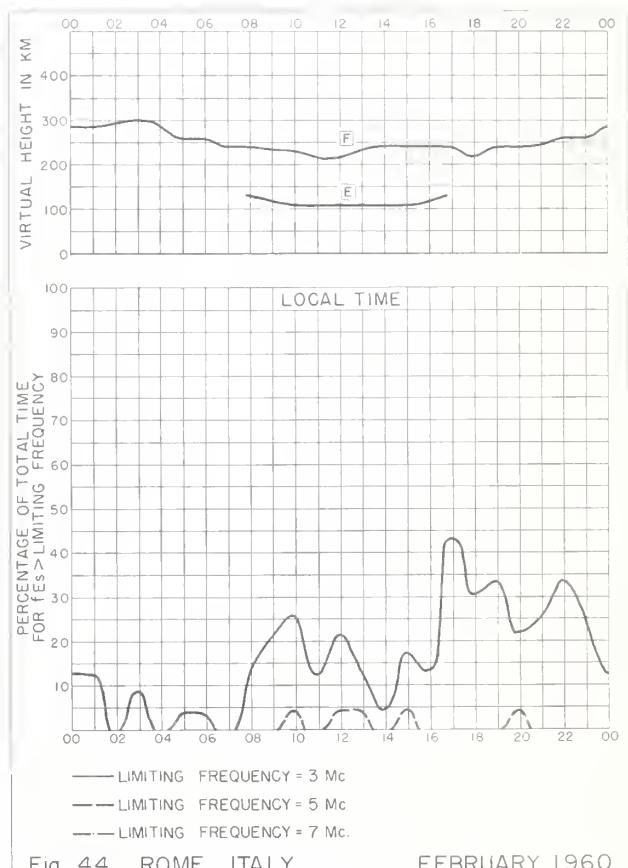
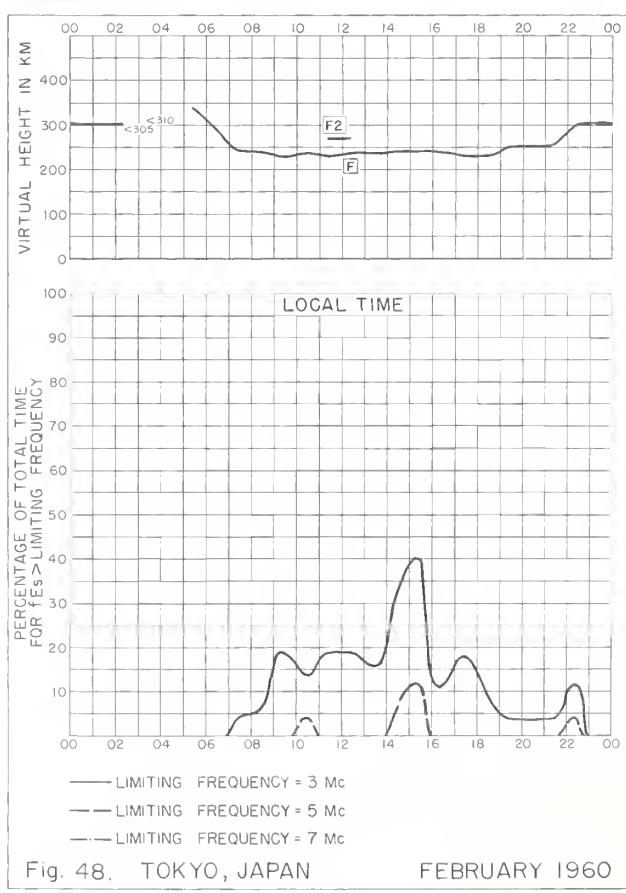
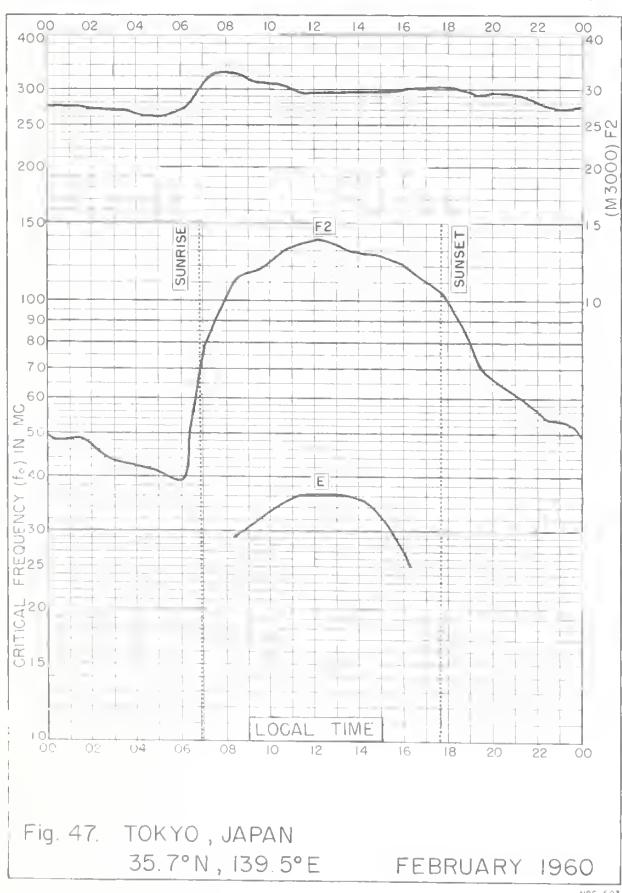
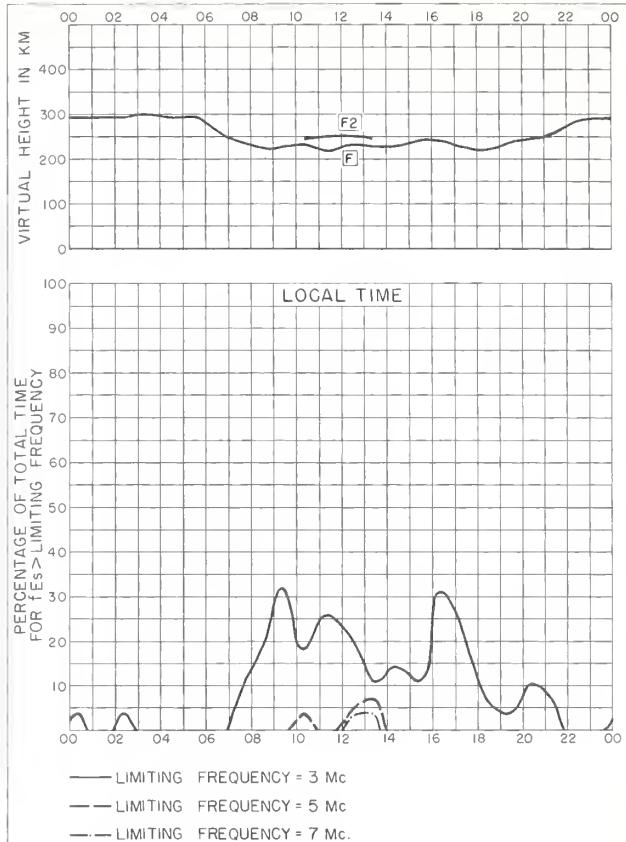
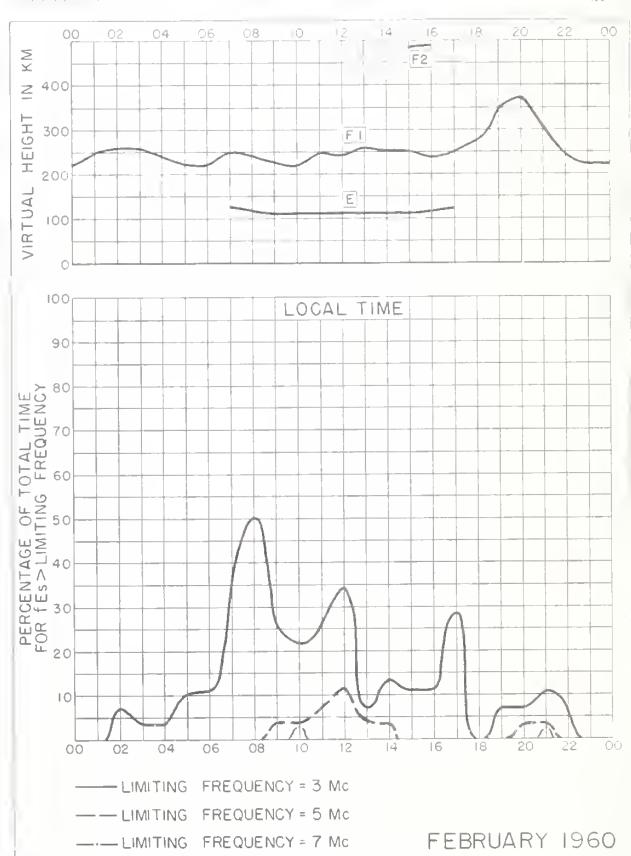
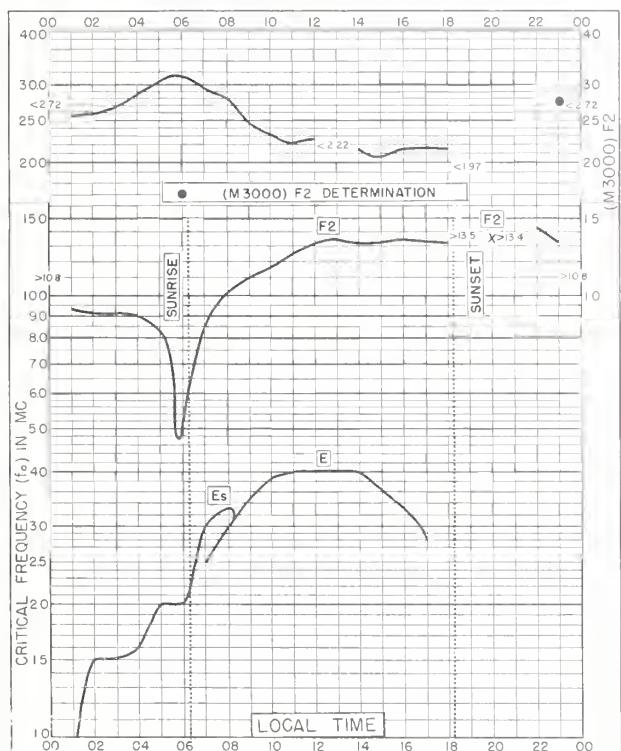
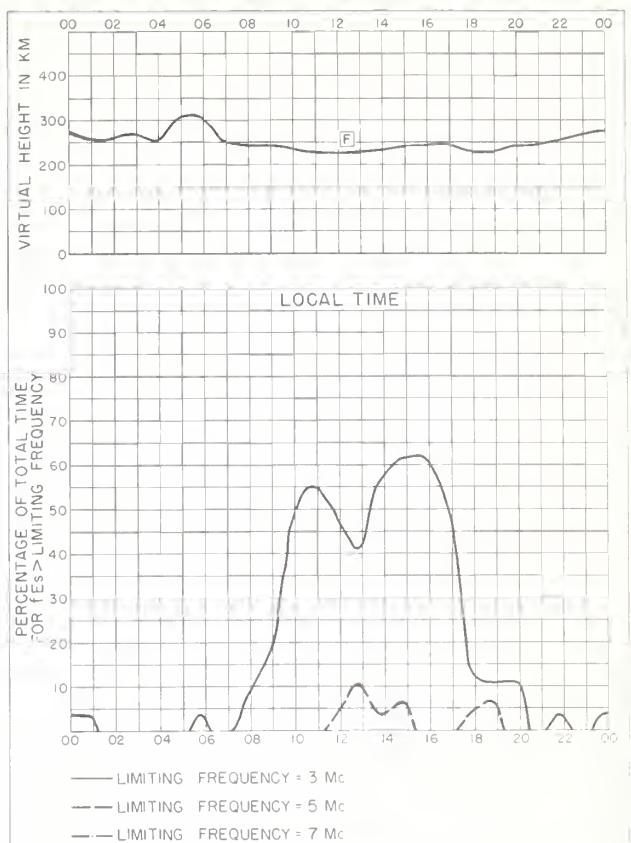
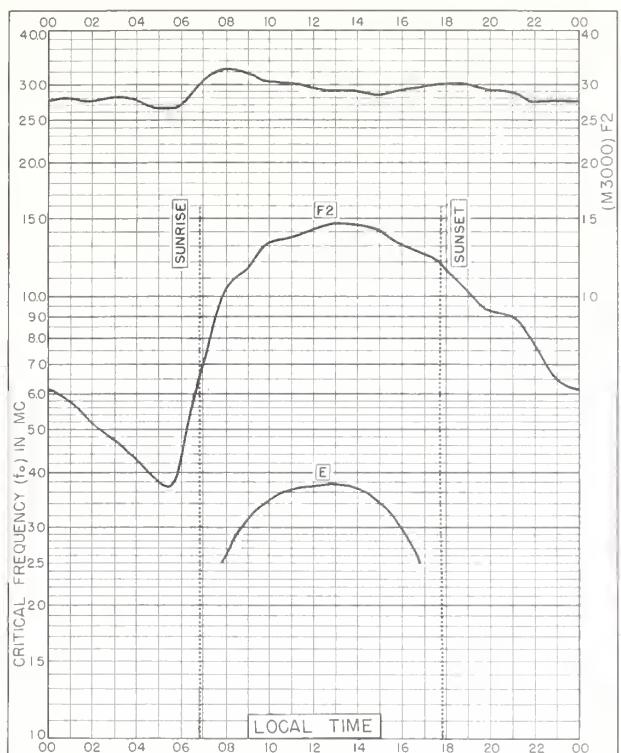


Fig. 43. ROME , ITALY
41.8°N, 12.5°E FEBRUARY 1960



FEBRUARY 1960
Fig. 44. ROME , ITALY





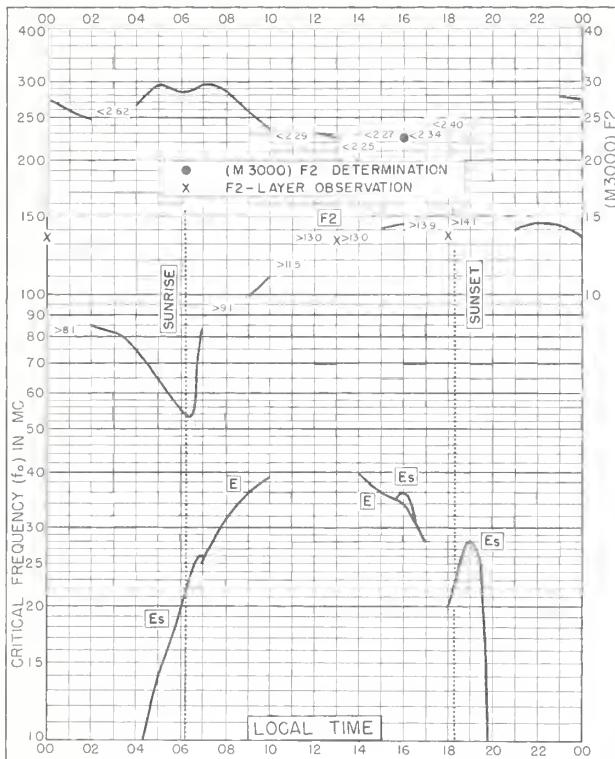


Fig. 53. LEOPOLDVILLE, BELGIAN CONGO
 4.4°S, 15.2°E FEBRUARY 1960

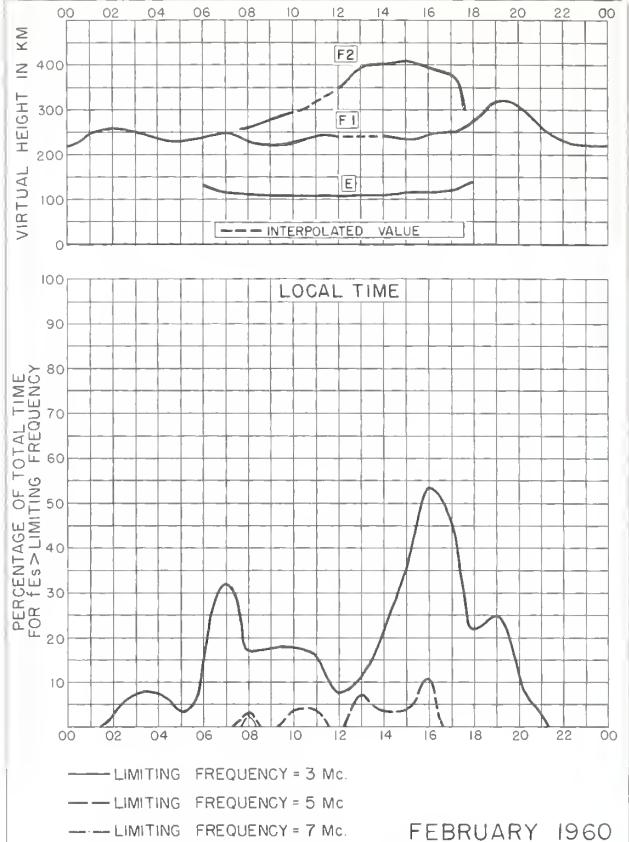


Fig. 54. LEOPOLDVILLE, BELGIAN CONGO

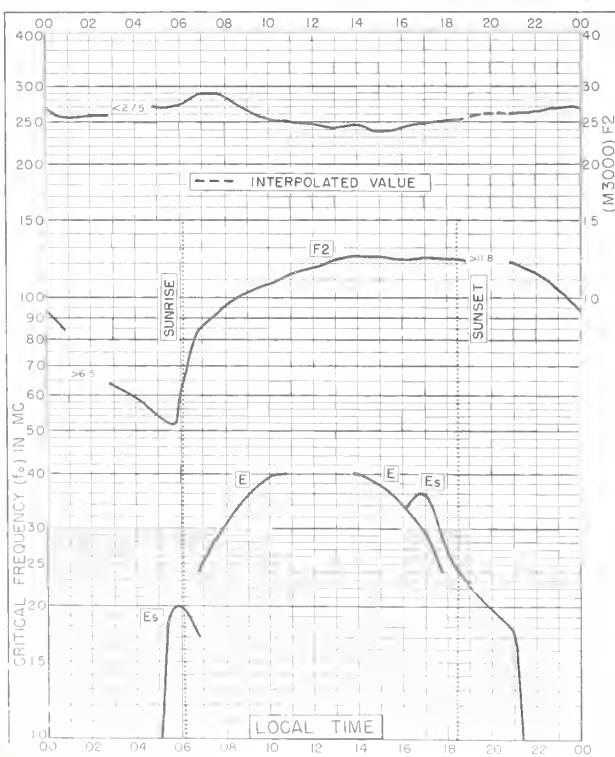


Fig 55. ELISABETHVILLE, BELGIAN CONGO
 11.6°S, 27.5°E FEBRUARY 1960

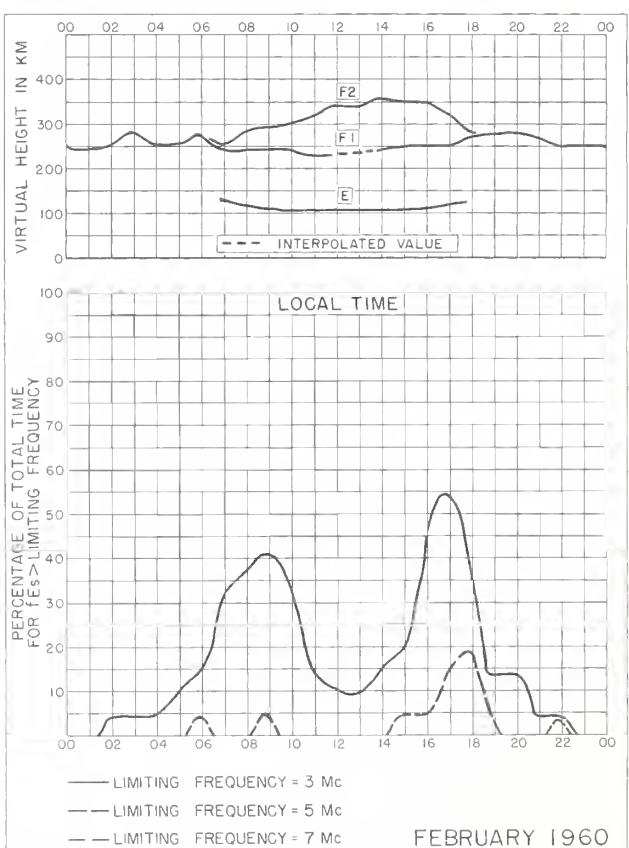


Fig. 56. ELISABETHVILLE, BELGIAN CONGO

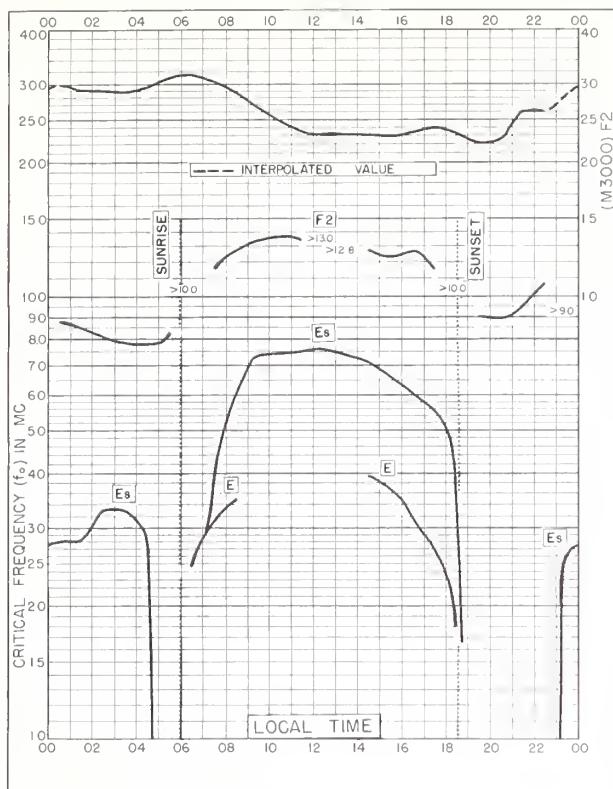


Fig. 57. La PAZ, BOLIVIA
16.5°S, 68.1°W FEBRUARY 1960

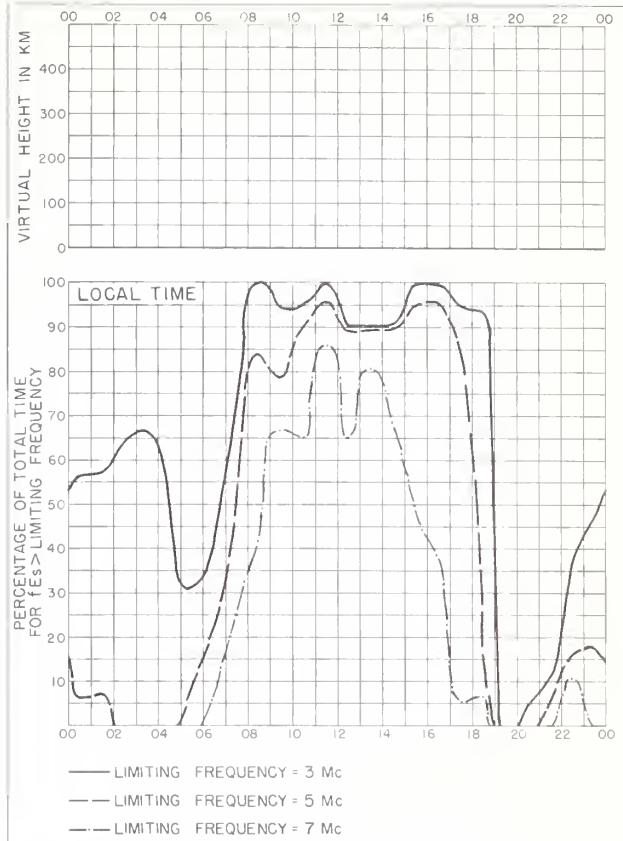


Fig. 58. La PAZ, BOLIVIA FEBRUARY 1960

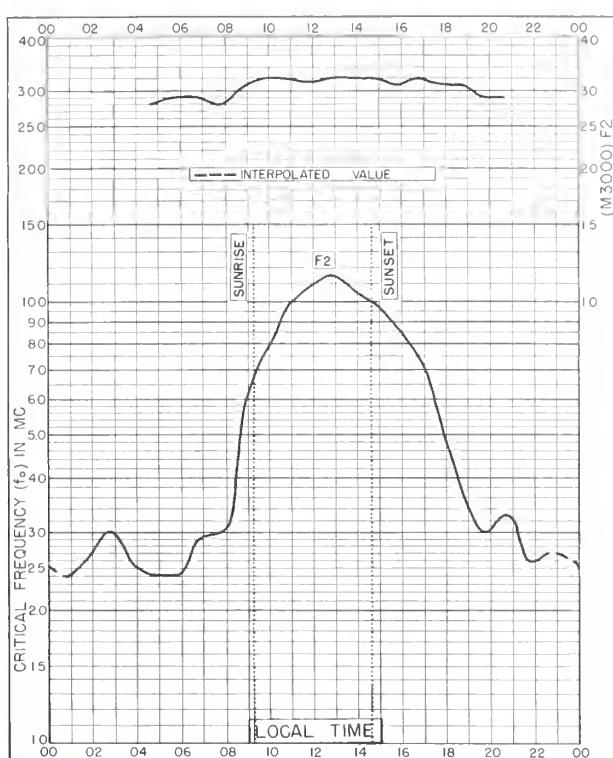


Fig. 59. NURMIJARVI, FINLAND
60.5°N, 24.6°E DECEMBER 1959

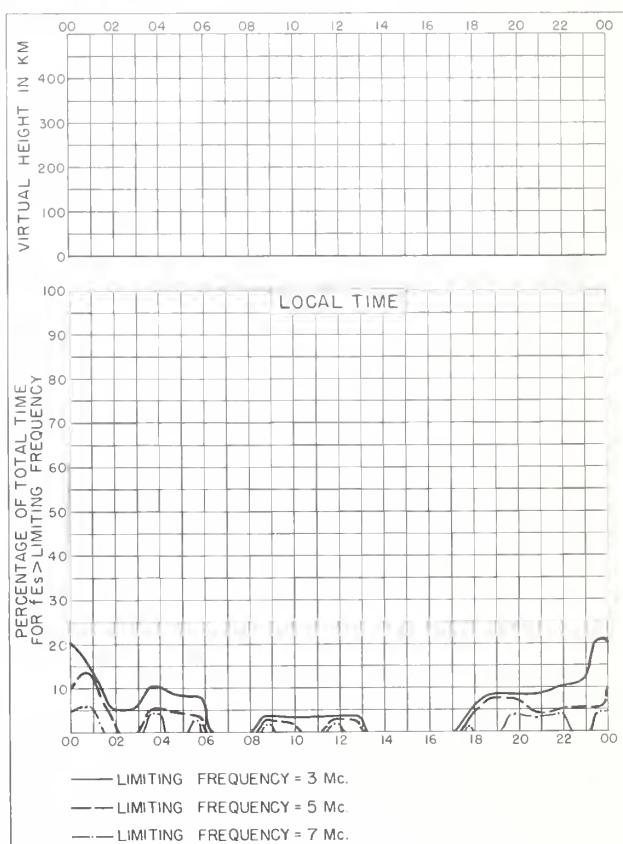


Fig. 60. NURMIJARVI, FINLAND DECEMBER 1959

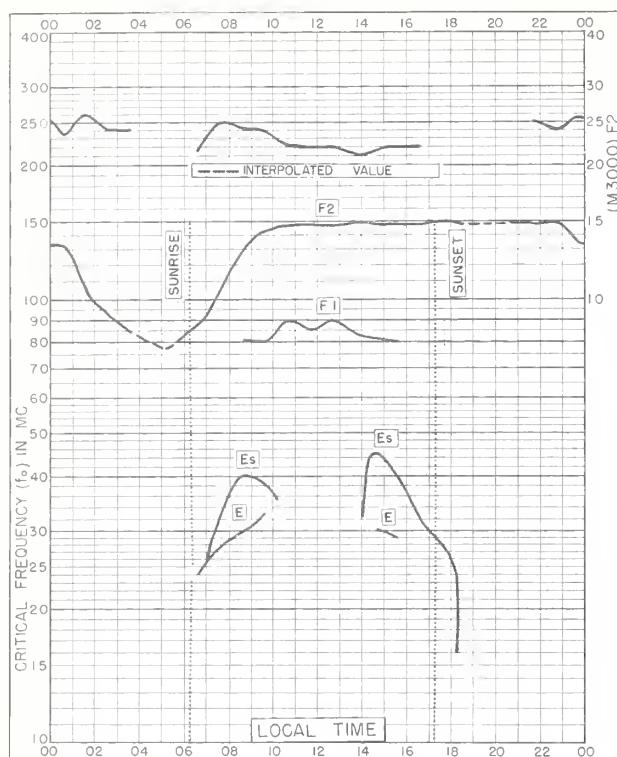


Fig. 61. MACAU
22.2°N, 113.6°E NOVEMBER 1959

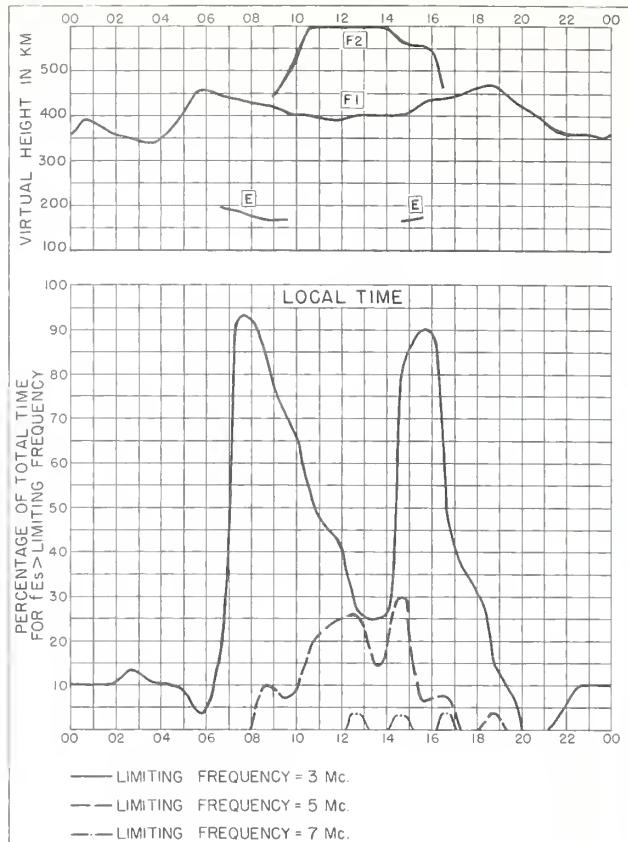


Fig. 62. MACAU NOVEMBER 1959

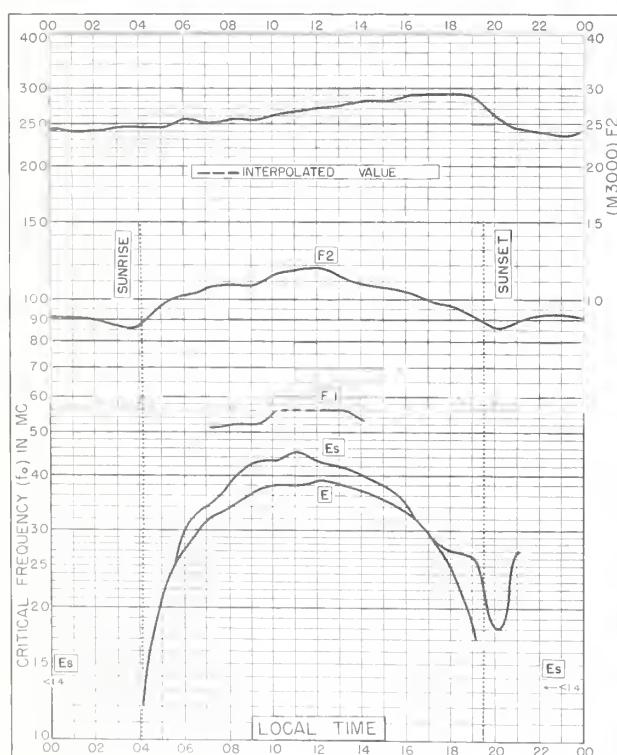


Fig. 63. FALKLAND IS.
51.7°S, 57.8°W NOVEMBER 1959

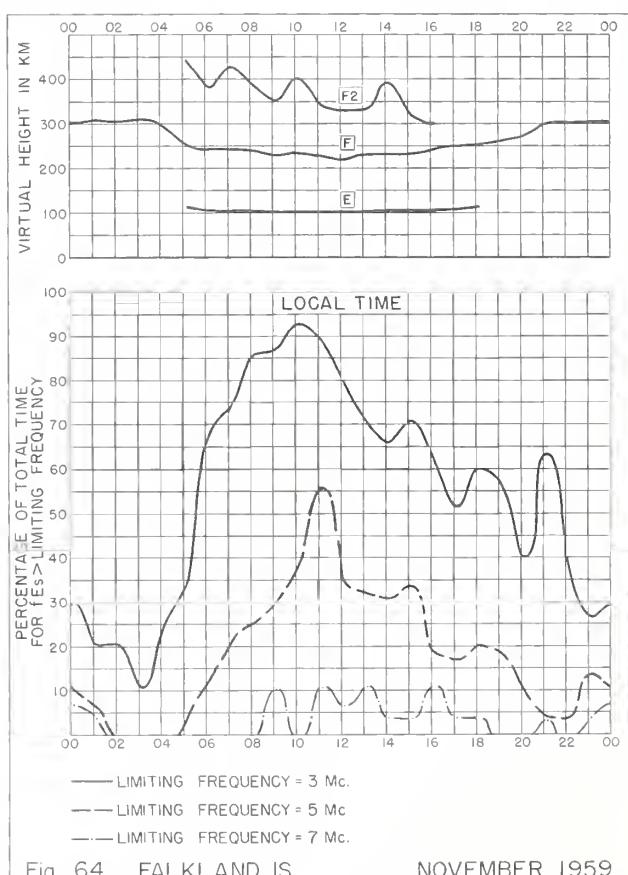
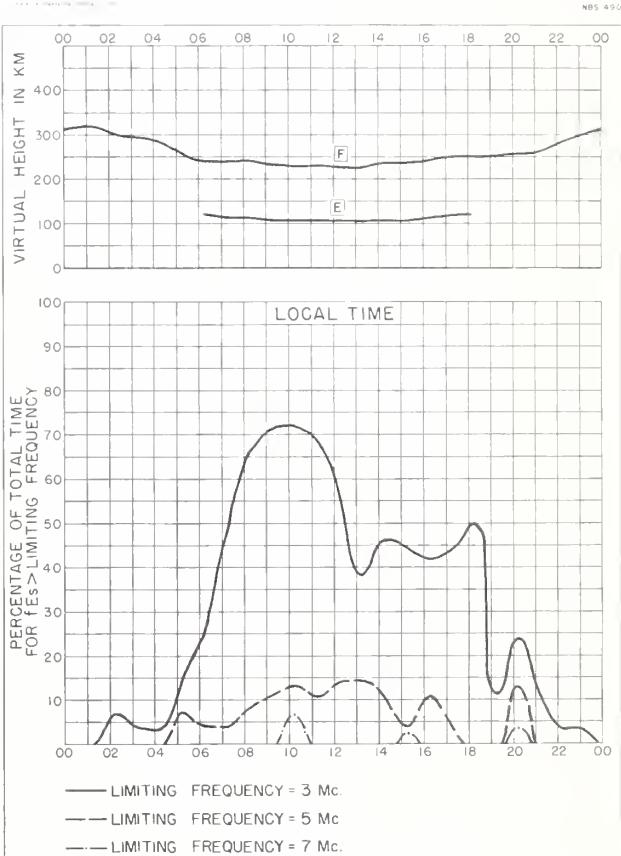
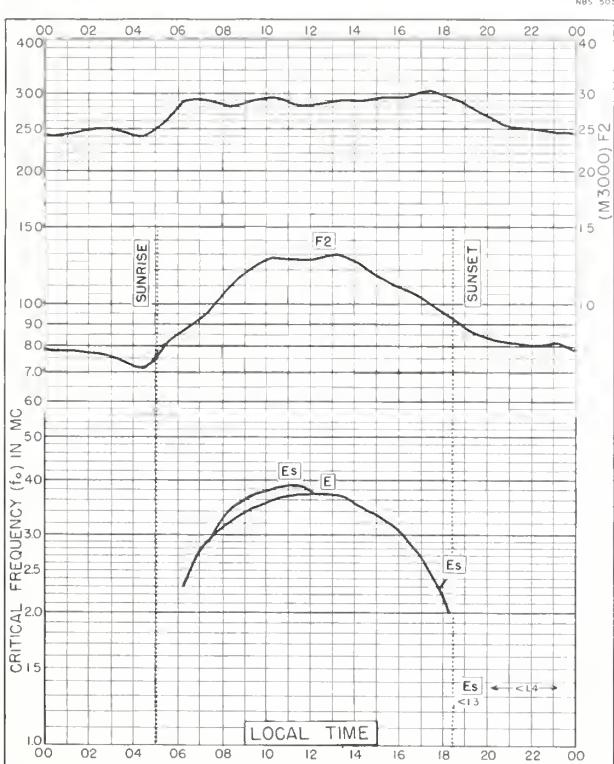
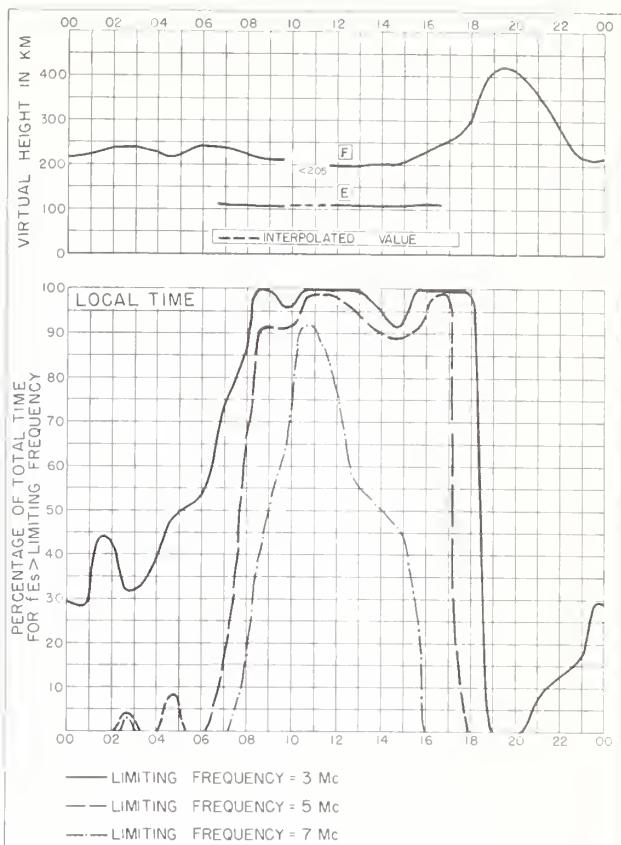
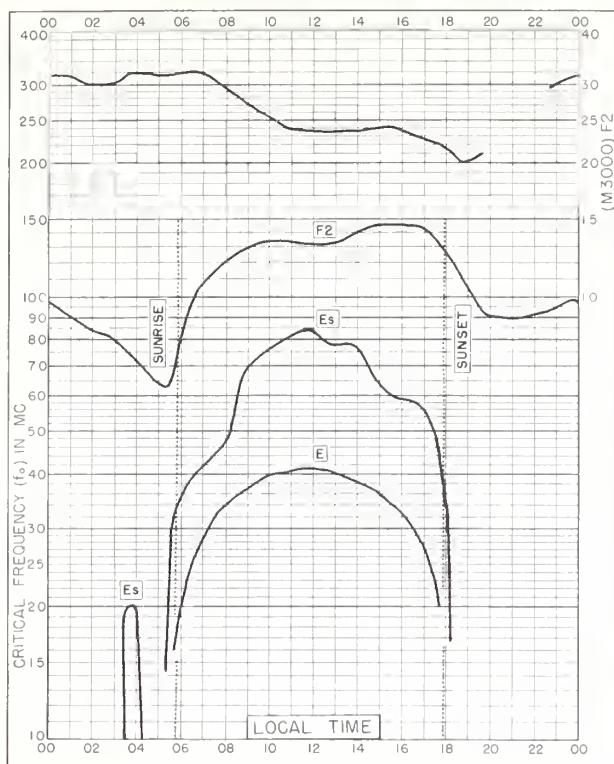


Fig. 64. FALKLAND IS. NOVEMBER 1959



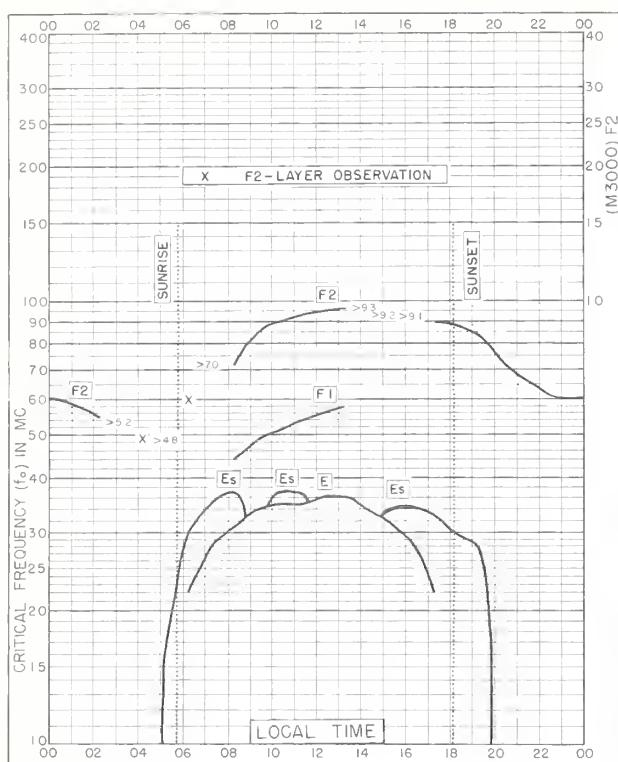


Fig. 69. BUDAPEST, HUNGARY
47.4°N, 19.2°E SEPTEMBER 1959

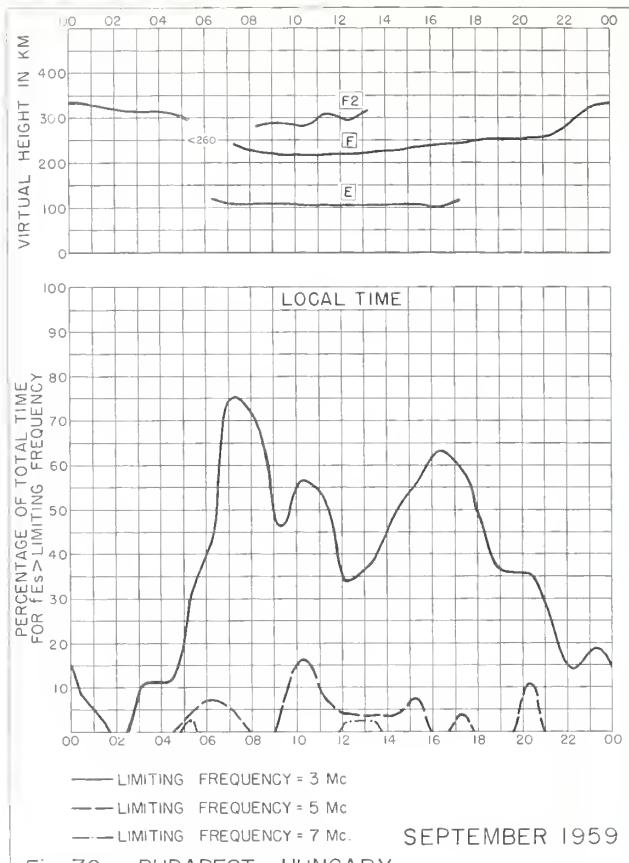


Fig. 70. BUDAPEST, HUNGARY

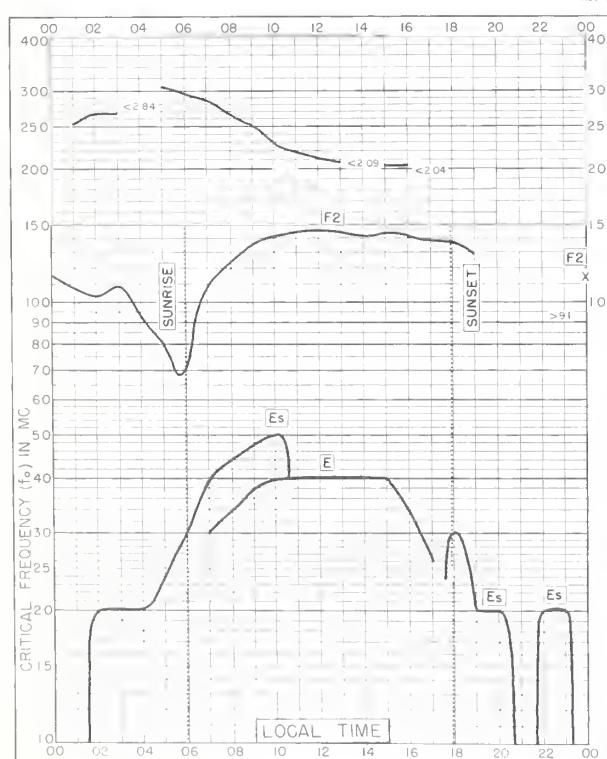


Fig. 71. BUNIA, BELGIAN CONGO
1.5°N, 30.2°E SEPTEMBER 1959

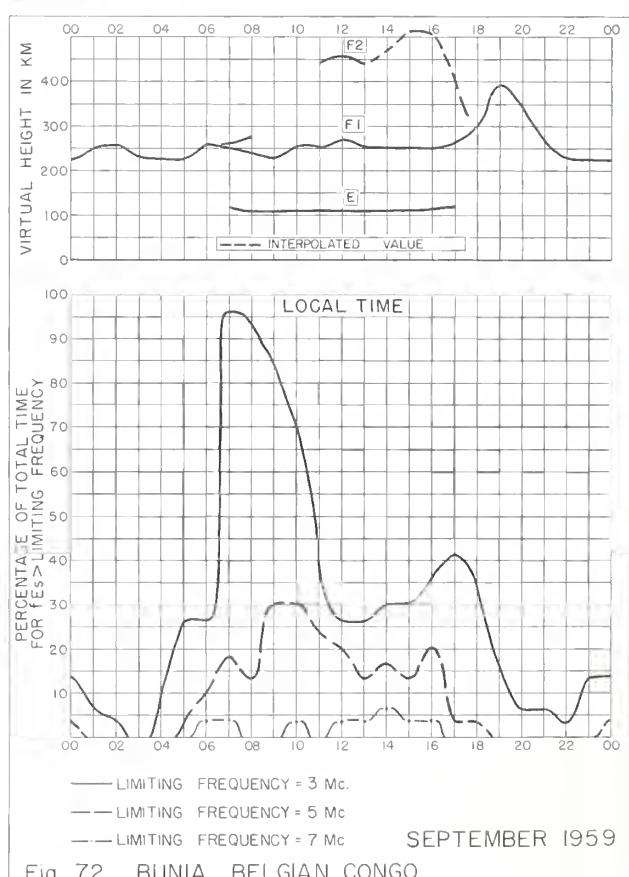


Fig. 72. BUNIA, BELGIAN CONGO

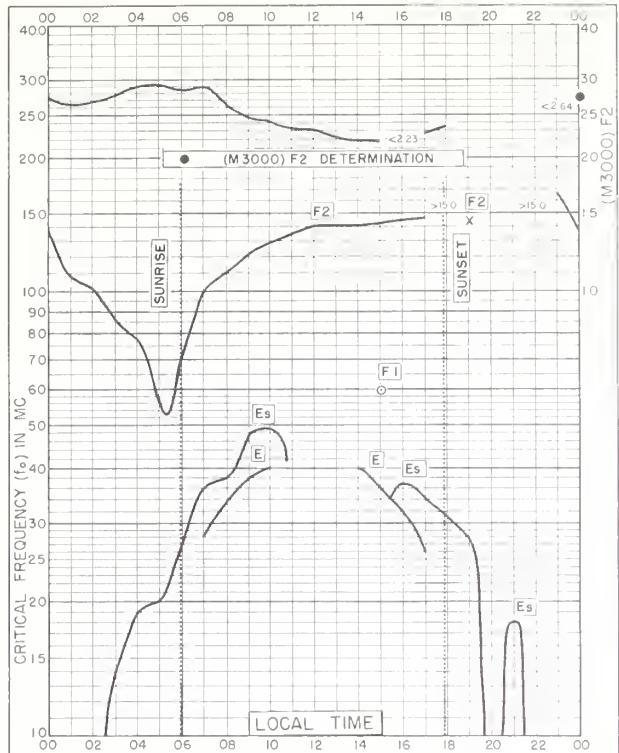
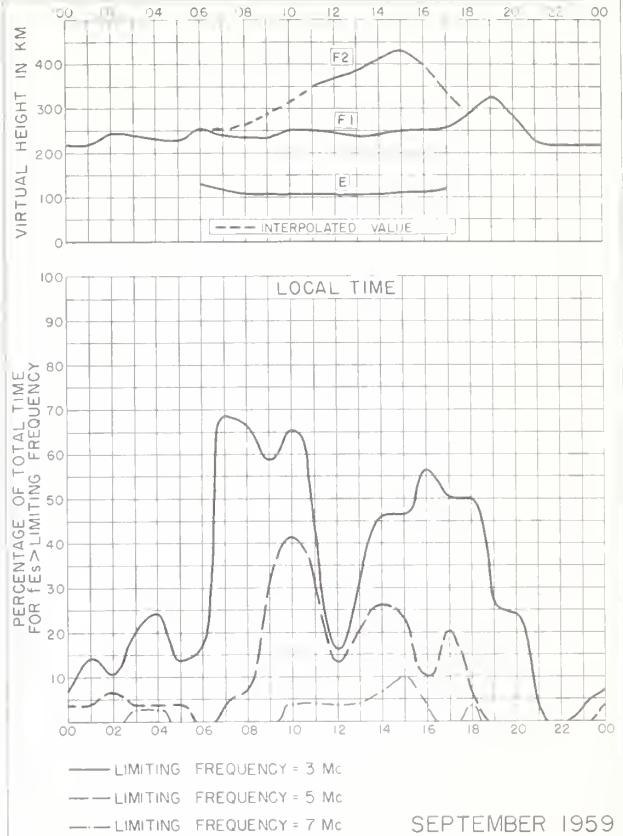


Fig. 73. LEOPOLDVILLE, BELGIAN CONGO
4.4°S, 15.2°E SEPTEMBER 1959

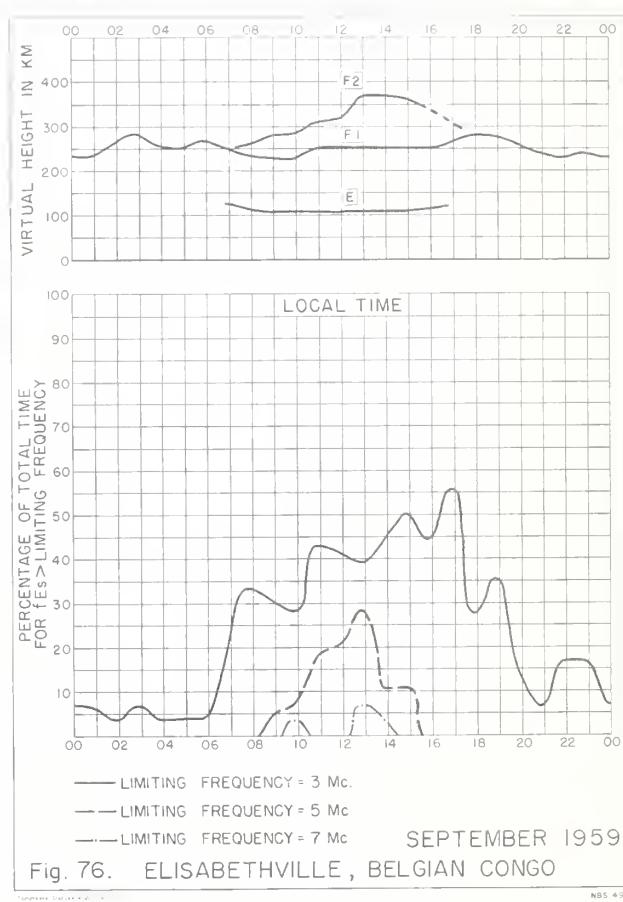


SEPTEMBER 1959

Fig. 74. LEOPOLDVILLE, BELGIAN CONGO



Fig. 75. ELISABETHVILLE, BELGIAN CONGO
II.6°S, 27.5°E SEPTEMBER 1959



SEPTEMBER 1959

Fig. 76. ELISABETHVILLE, BELGIAN CONGO

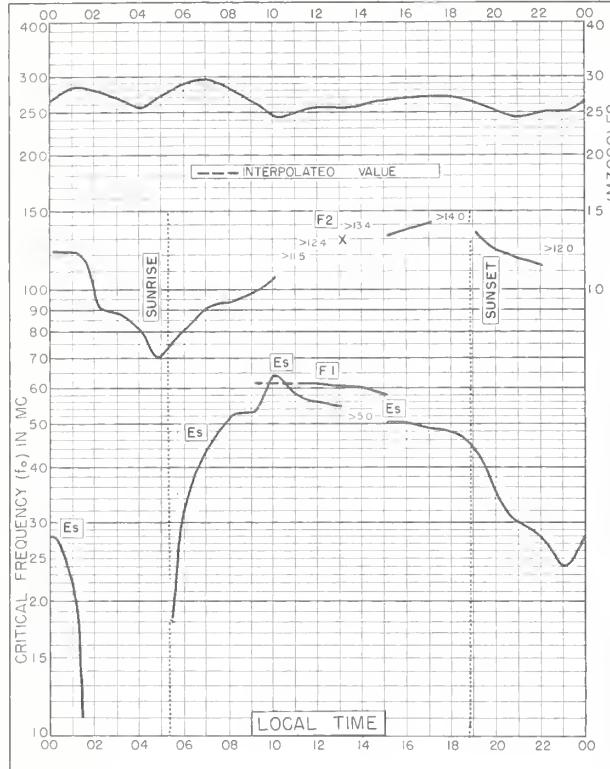


Fig. 77. FORMOSA, CHINA
25.0°N, 121.5°E JULY 1959

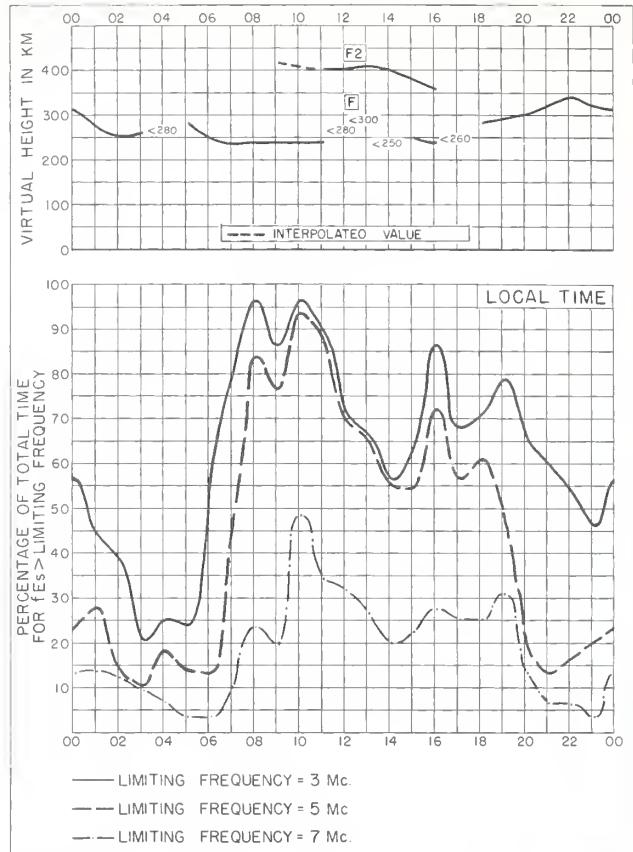


Fig. 78. FORMOSA, CHINA JULY 1959

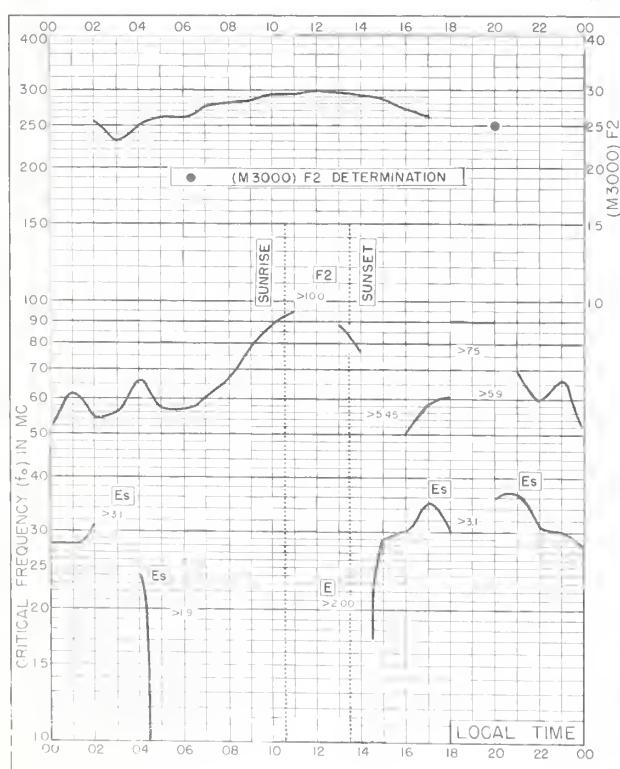


Fig. 79. BYRD STATION
80.0°S, 120.0°W APRIL 1959

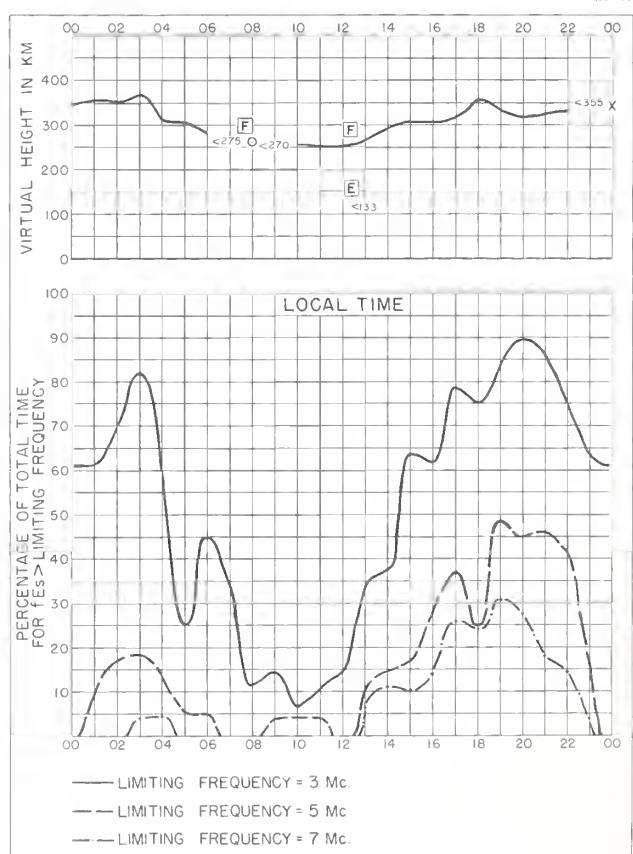


Fig. 80. BYRD STATION APRIL 1959

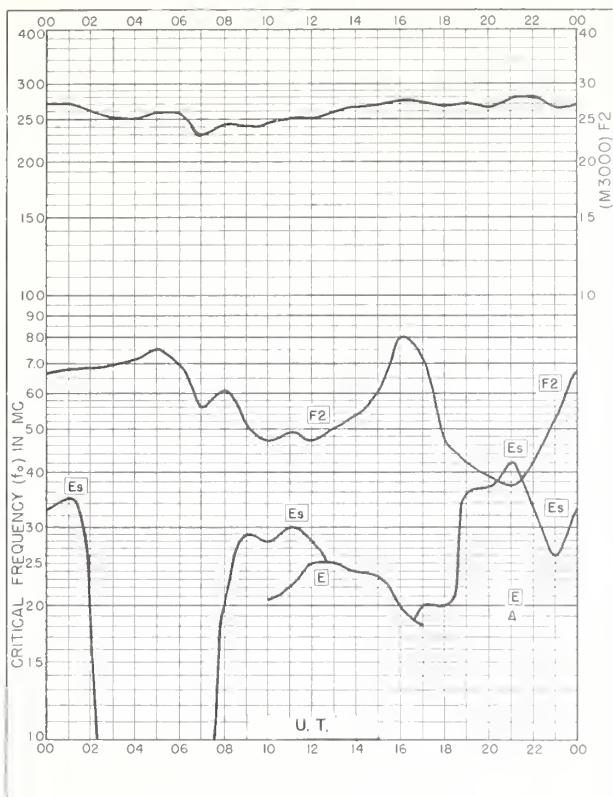


Fig. 81. POLE STATION

90.0°S

APRIL 1959

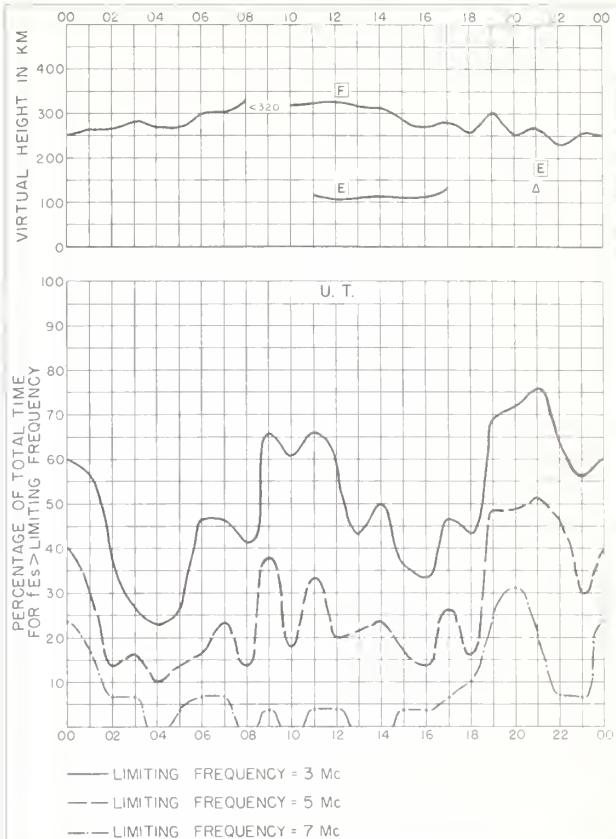


Fig. 82. POLE STATION

APRIL 1959

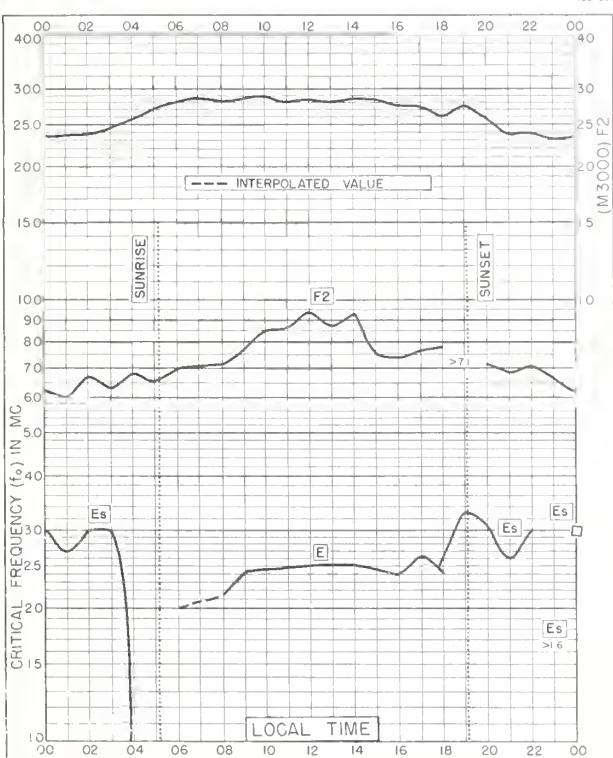


Fig. 83. BYRD STATION

80.0°S, 120.0°W

MARCH 1959

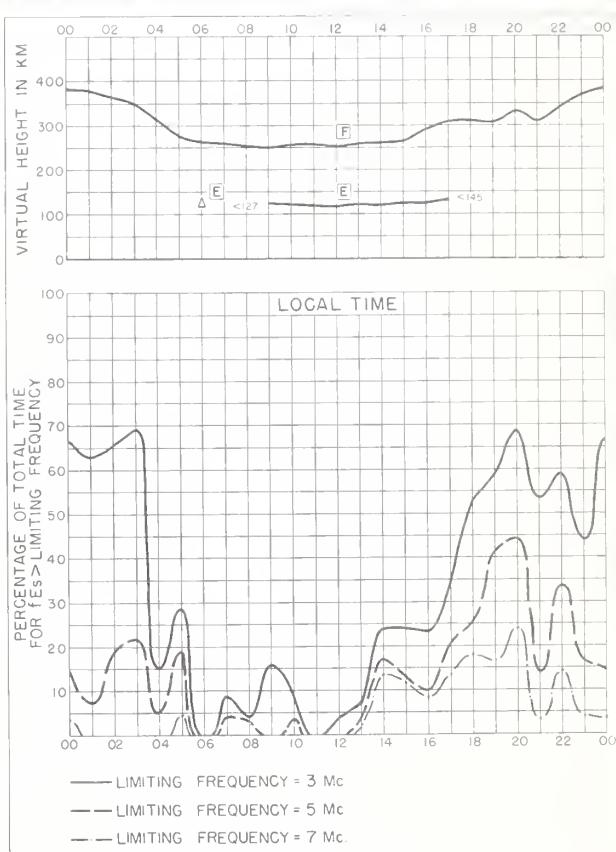
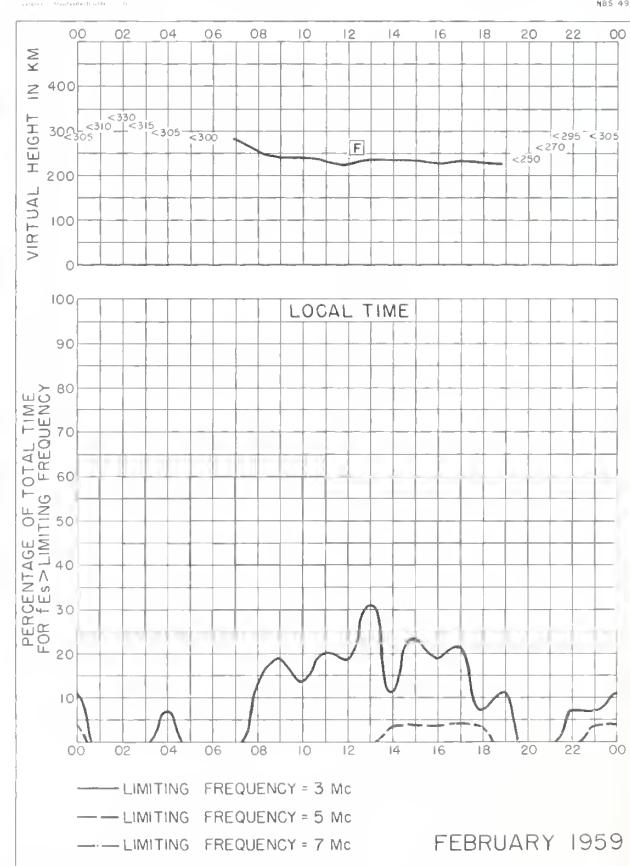
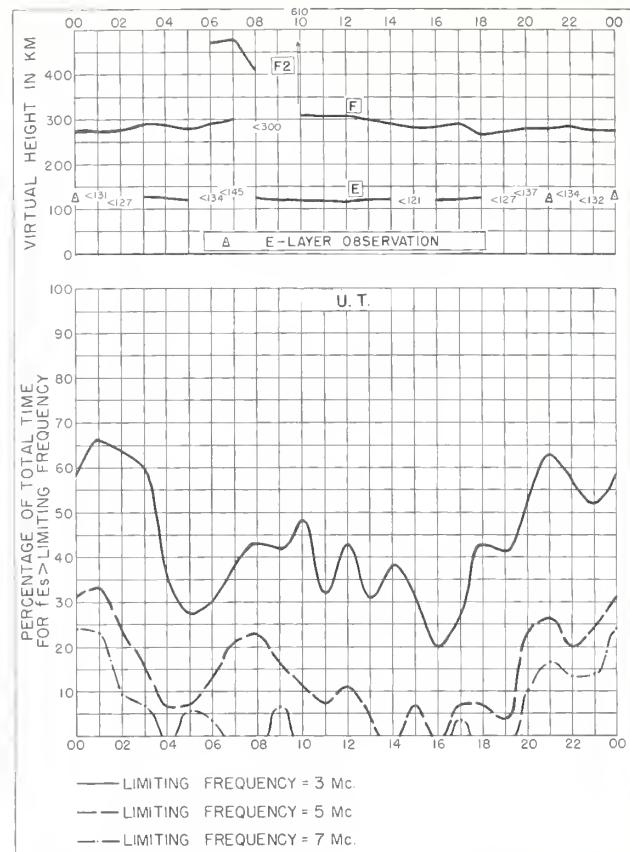
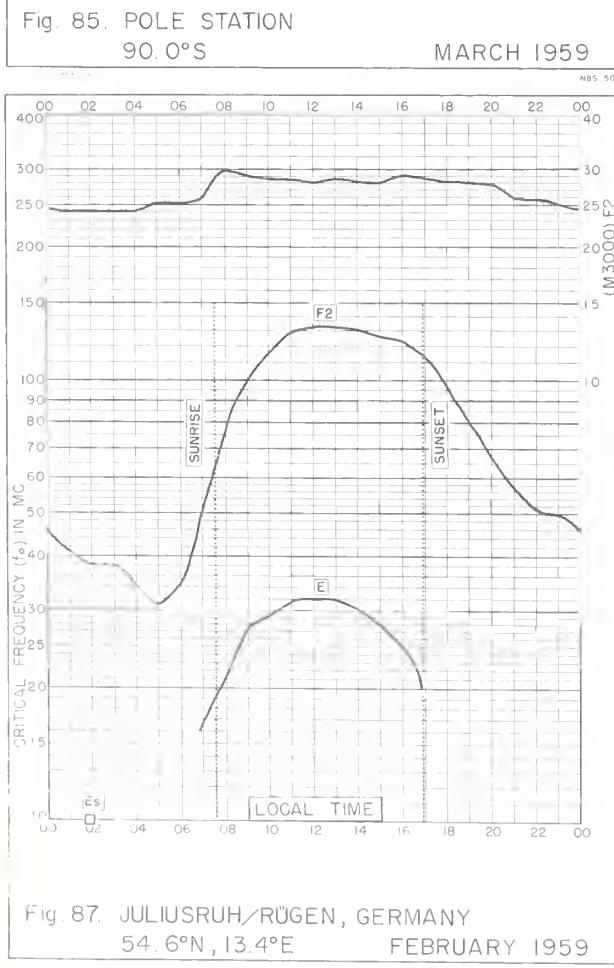
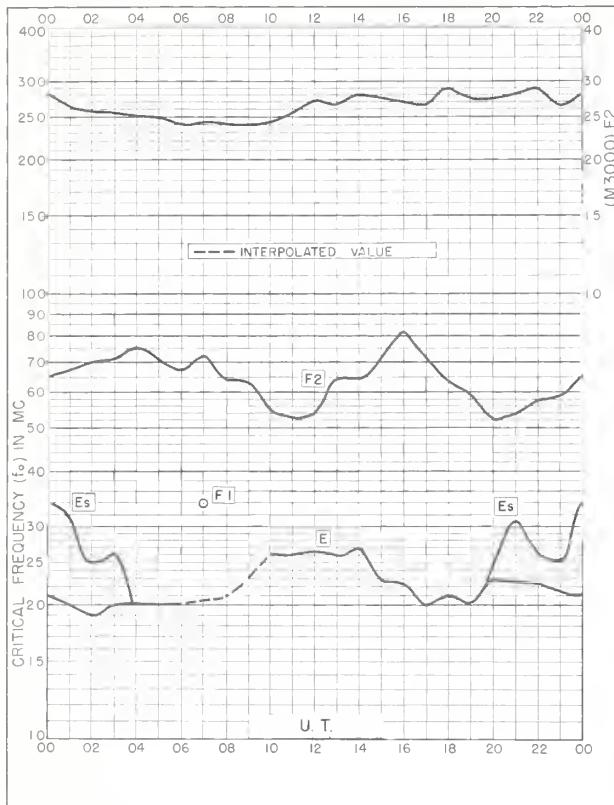
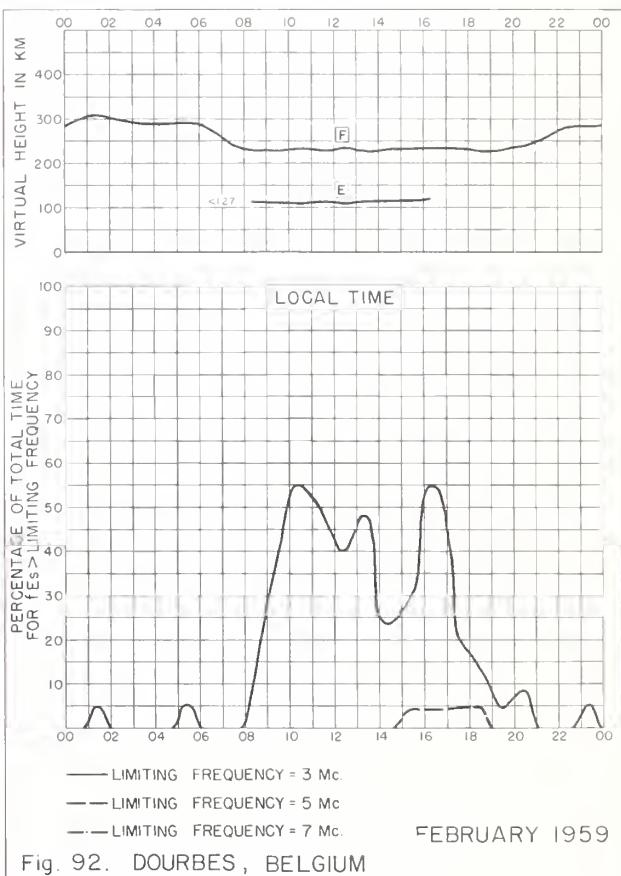
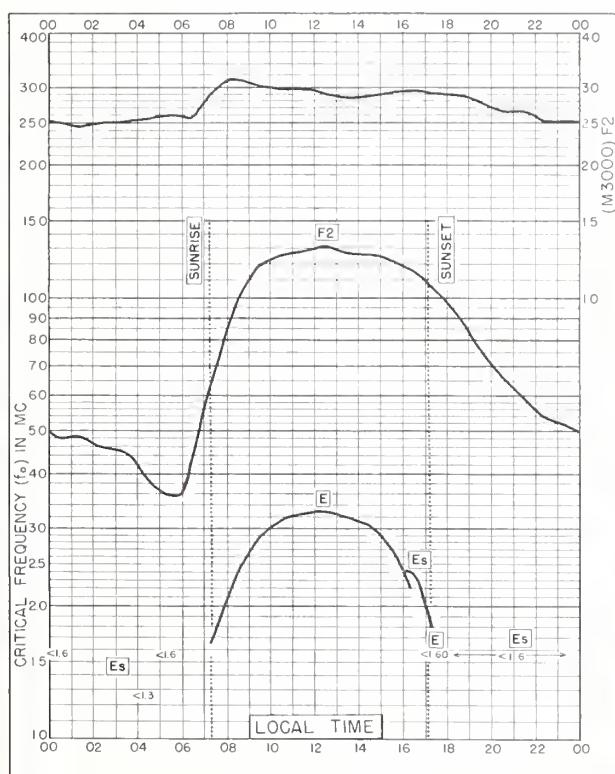
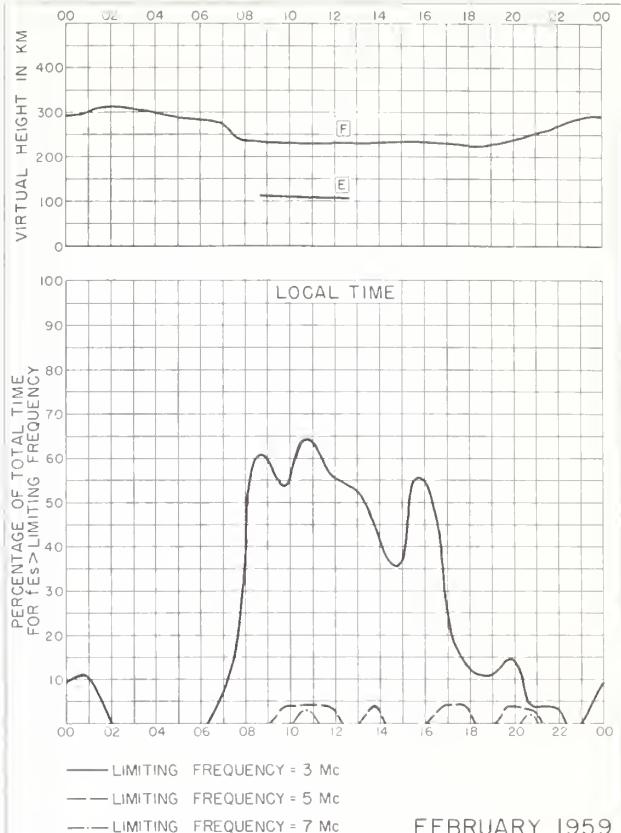


Fig. 84. BYRD STATION

MARCH 1959





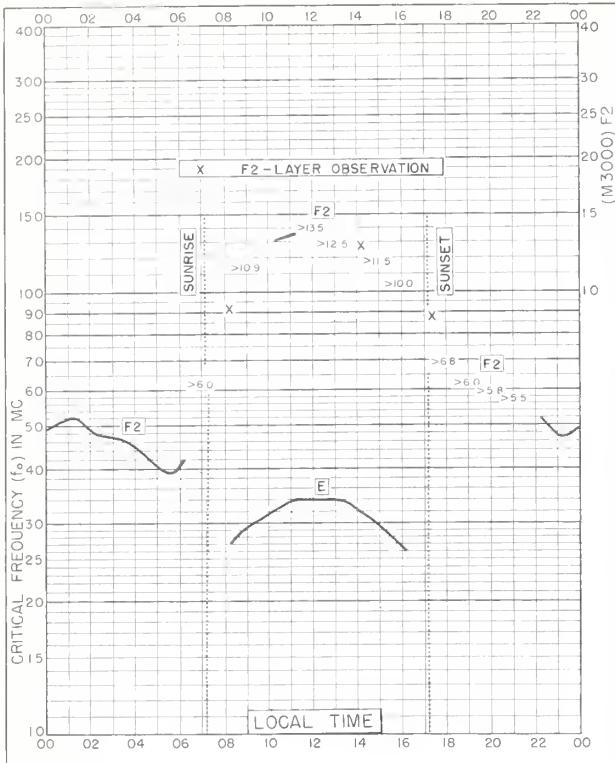


Fig. 93. BUDAPEST, HUNGARY
47.4°N, 19.2°E FEBRUARY 1959

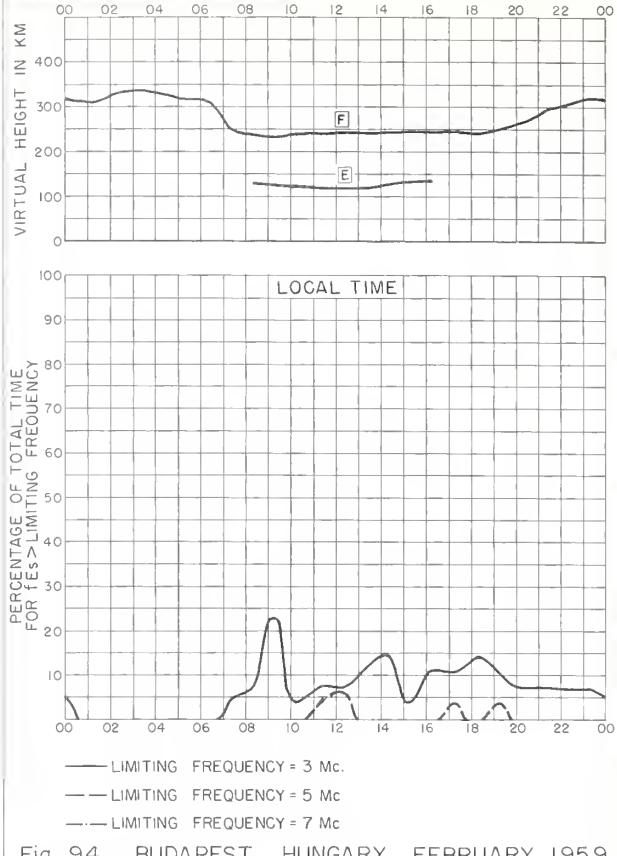


Fig. 94. BUDAPEST, HUNGARY FEBRUARY 1959

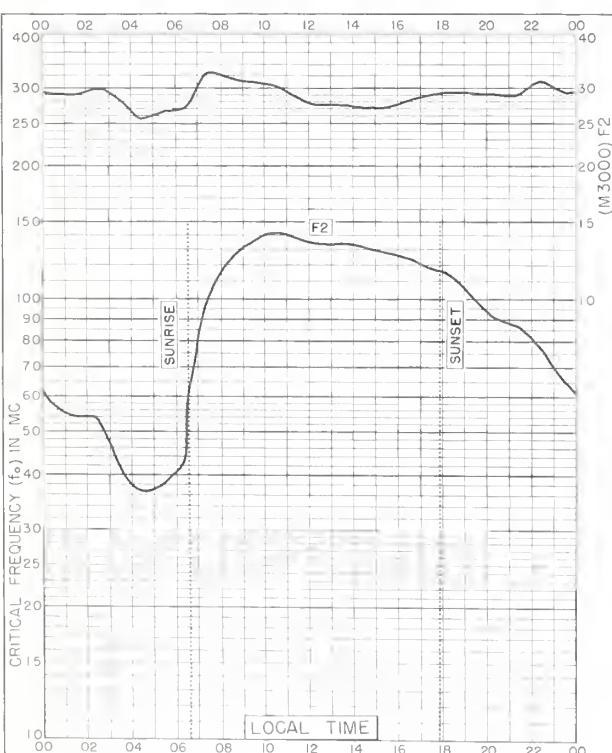


Fig. 95. EL CERILLO, MEXICO
19.3°N, 99.5°W FEBRUARY 1959

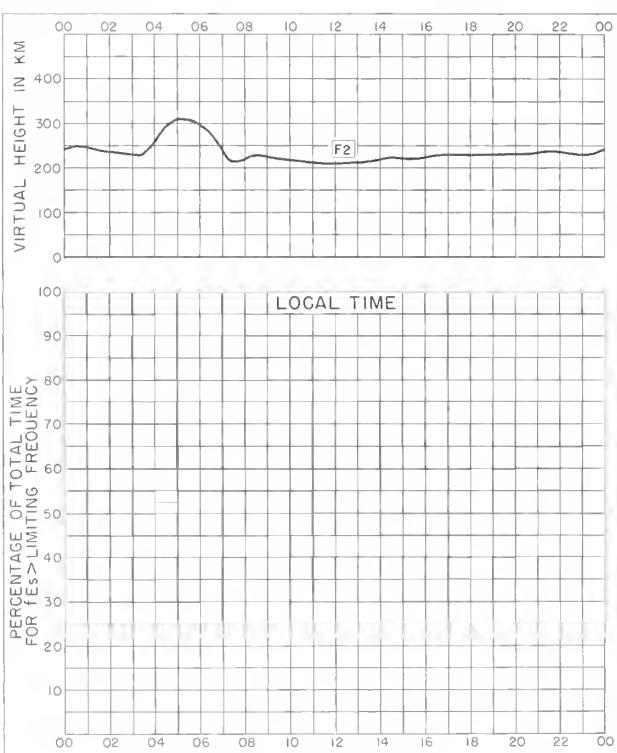


Fig. 96. EL CERILLO, MEXICO FEBRUARY 1959

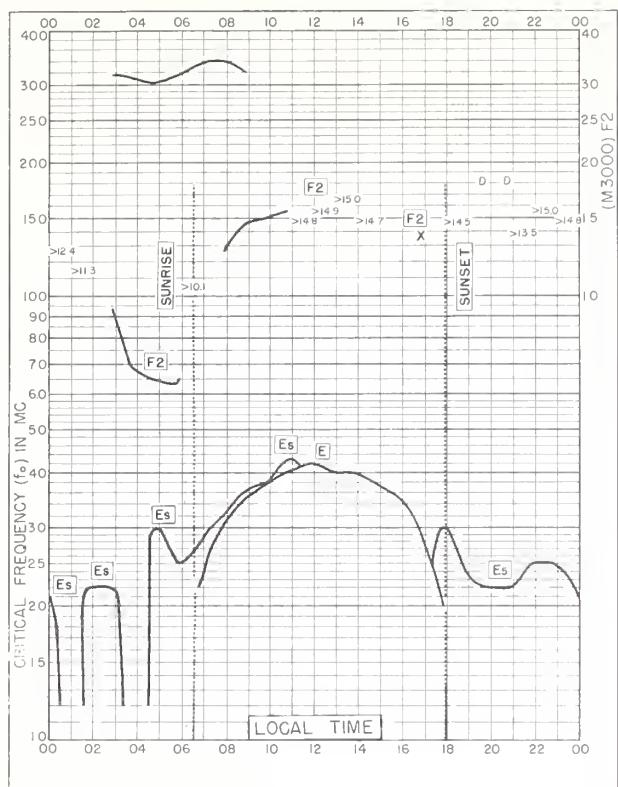


Fig. 97. DAKAR, FRENCH W. AFRICA
 14.8°N, 17.4°W FEBRUARY 1959

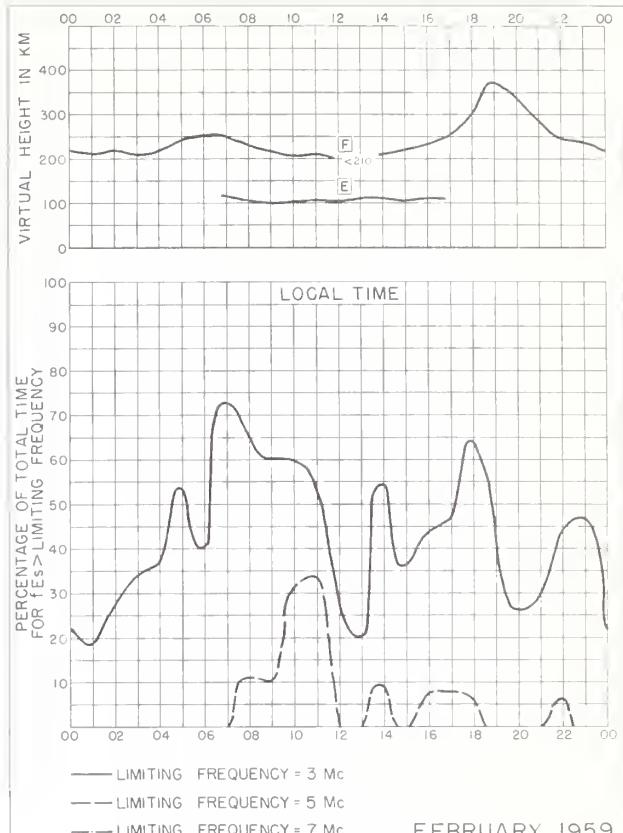


Fig. 98. DAKAR, FRENCH W. AFRICA

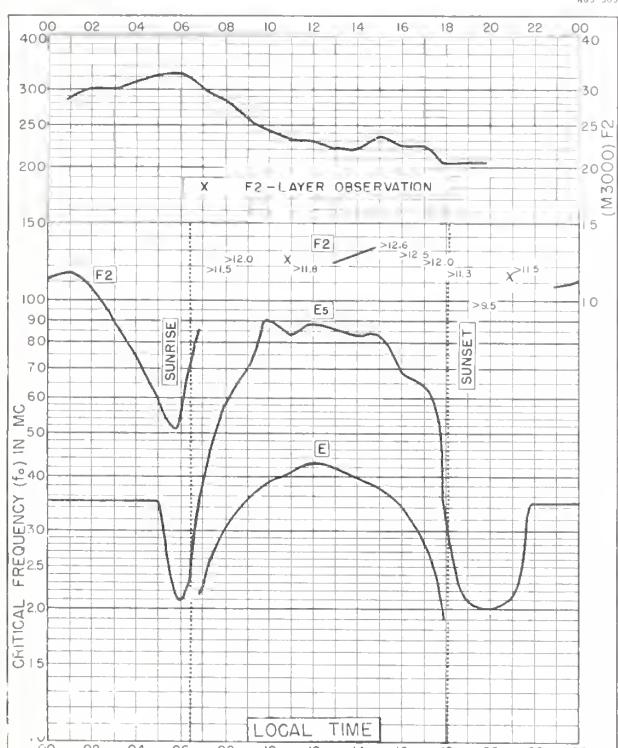


Fig. 99. DJIBOUTI, FRENCH SOMALILAND
11.6°N., 43.2°E. FEBRUARY 1959

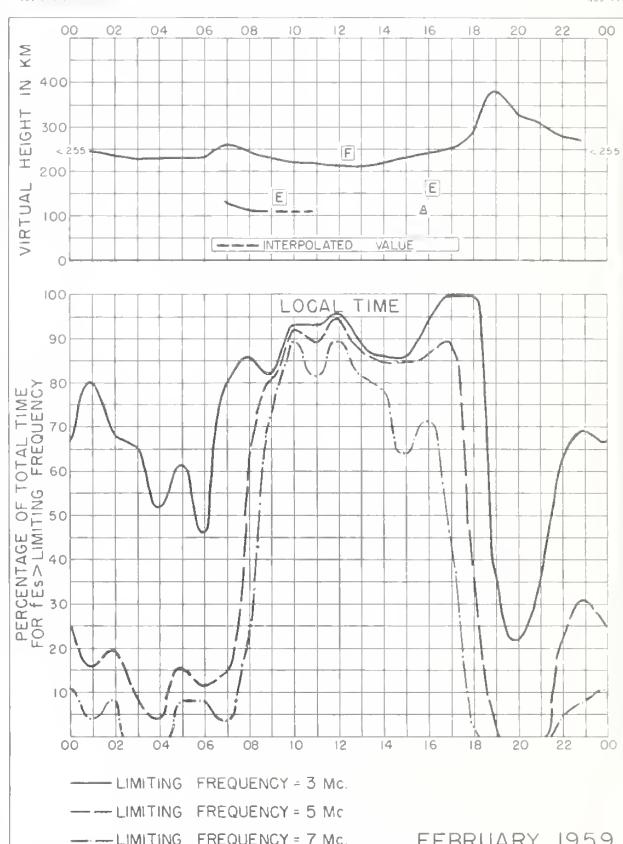
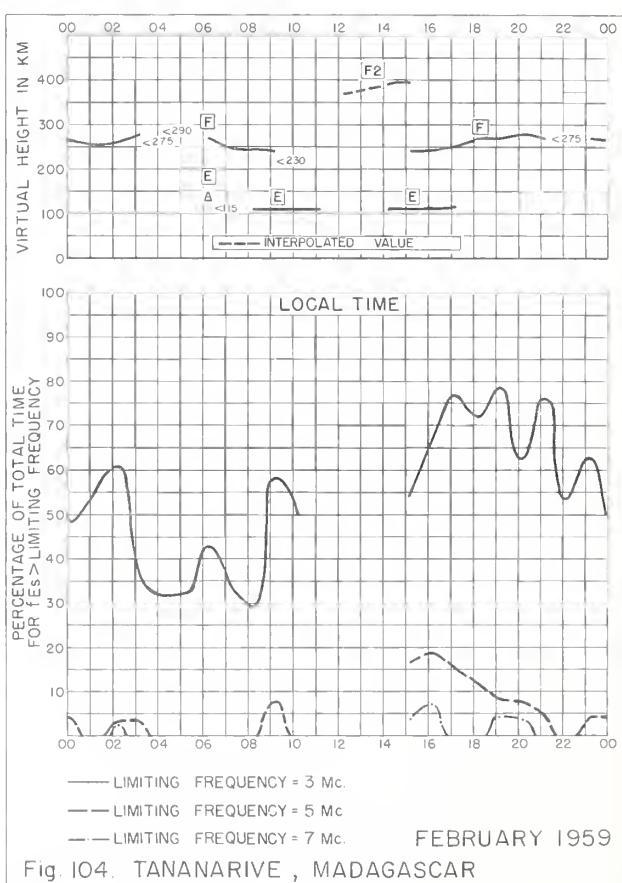
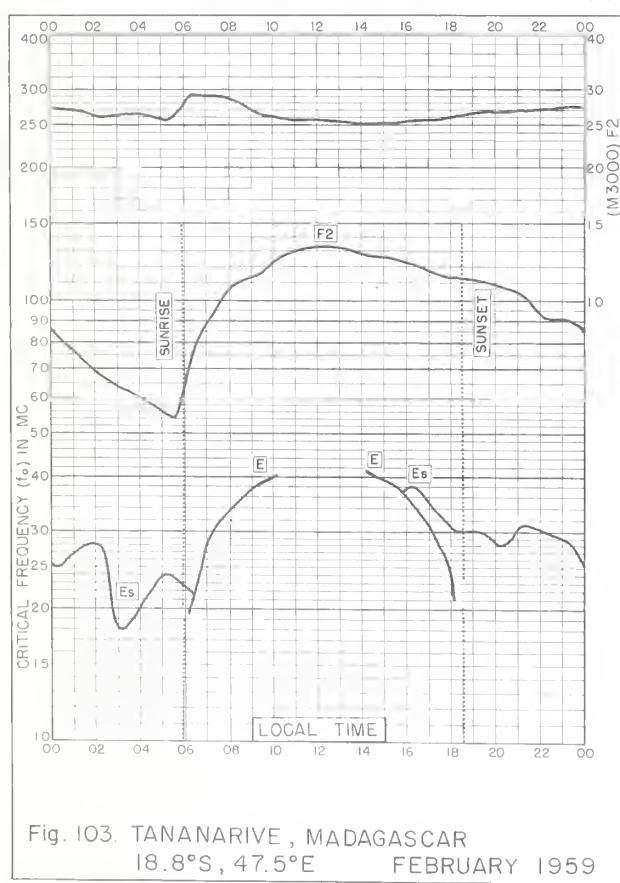
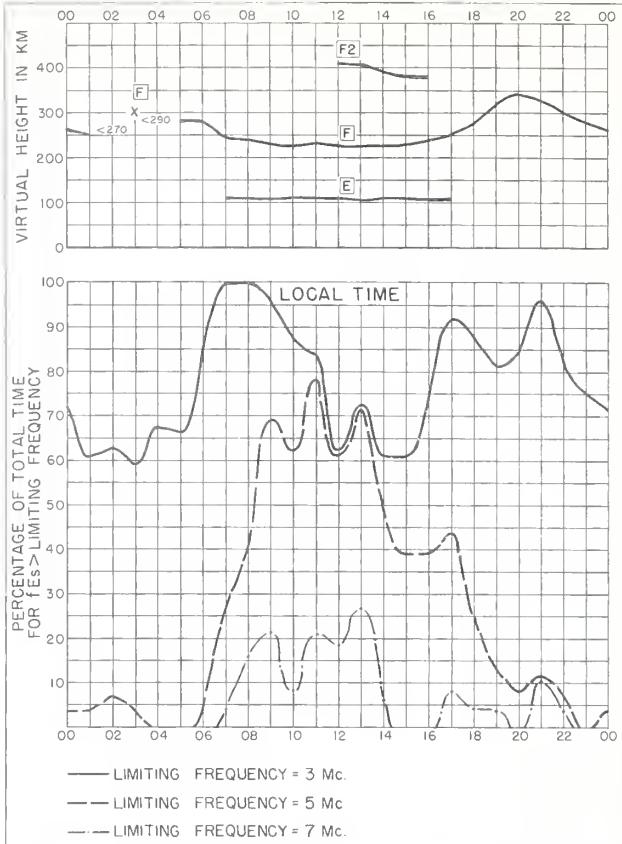
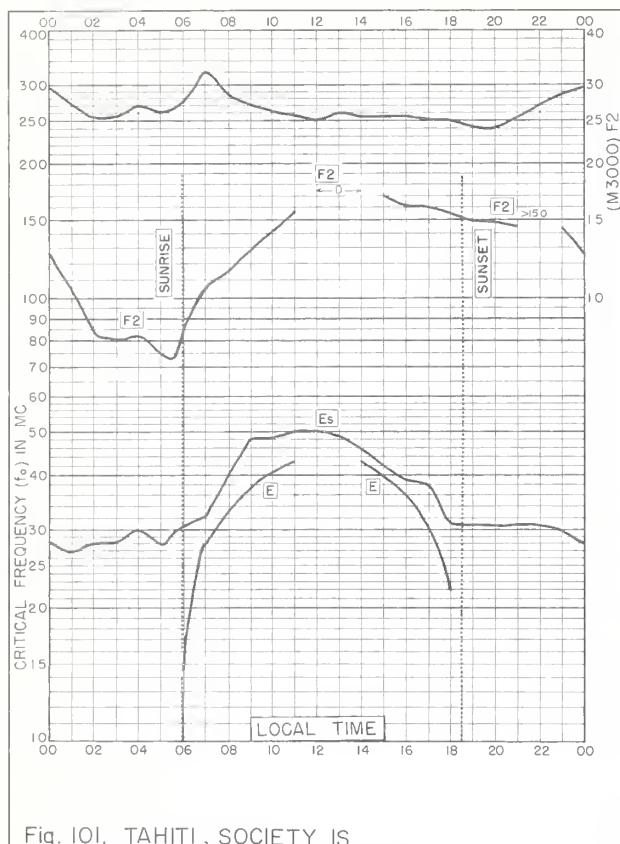


Fig. 100. DJIBOUTI, FRENCH SOMALILAND



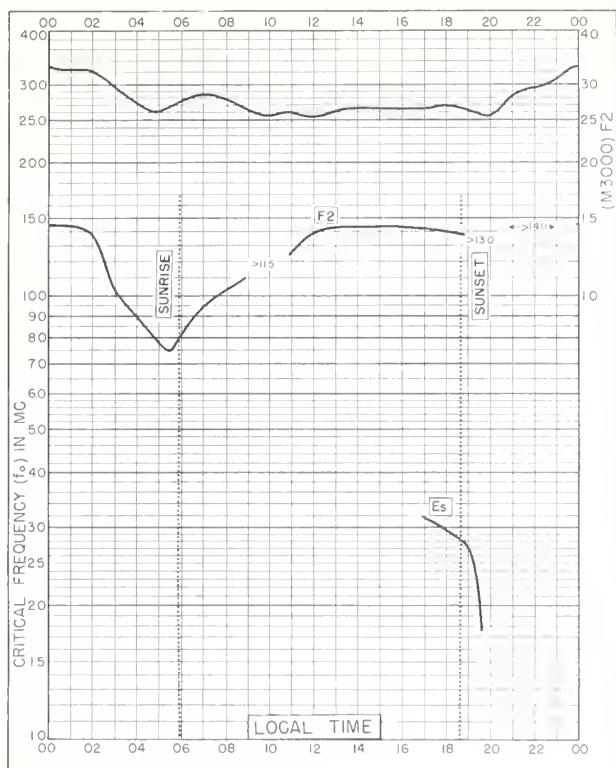


Fig. 105. SAO PAULO, BRAZIL
23 5°S, 46.5°W FEBRUARY 1959

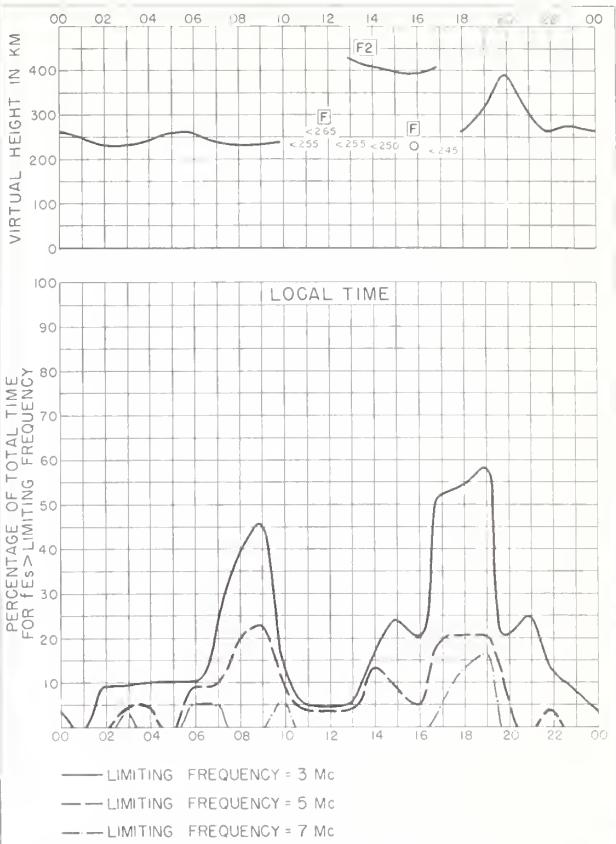


Fig. 106. SAO PAULO, BRAZIL FEBRUARY 1959

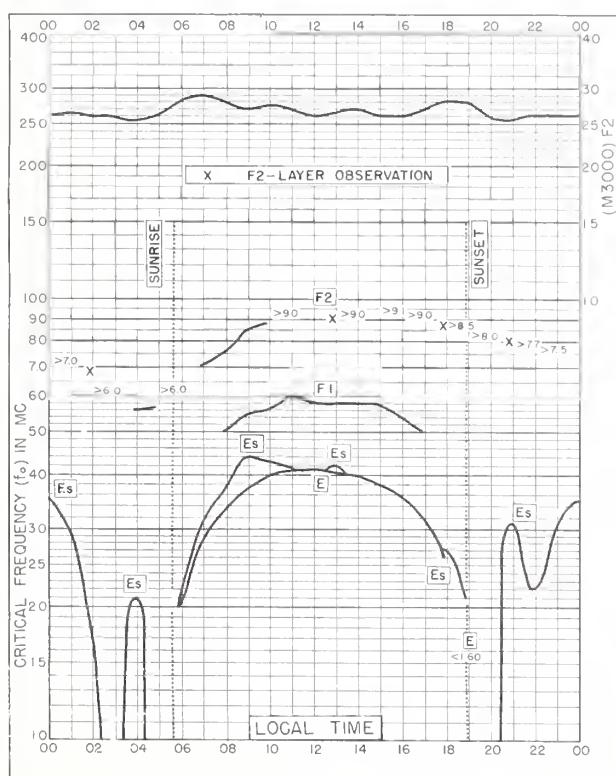


Fig. 107. CANBERRA, AUSTRALIA
35.3°S, 149.0°E FEBRUARY 1959

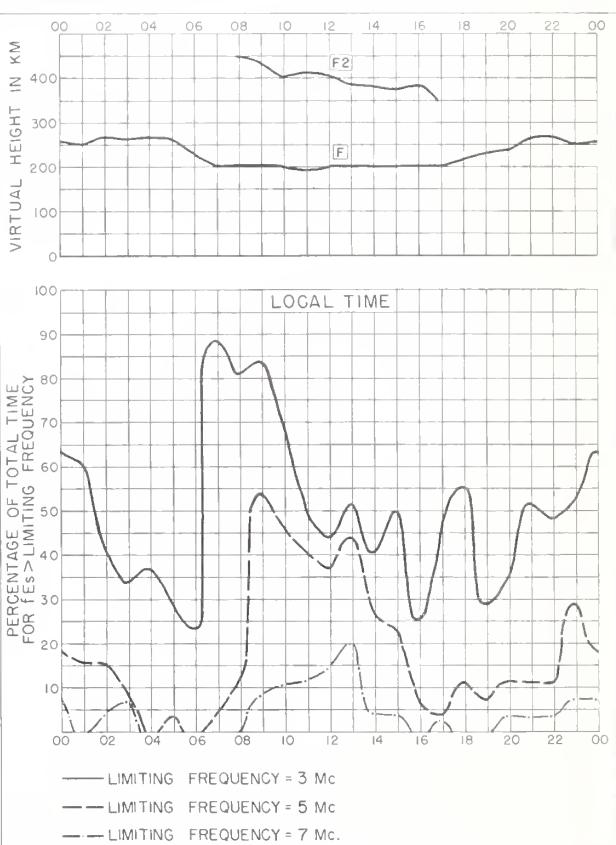


Fig. 108. CANBERRA, AUSTRALIA FEBRUARY 1959

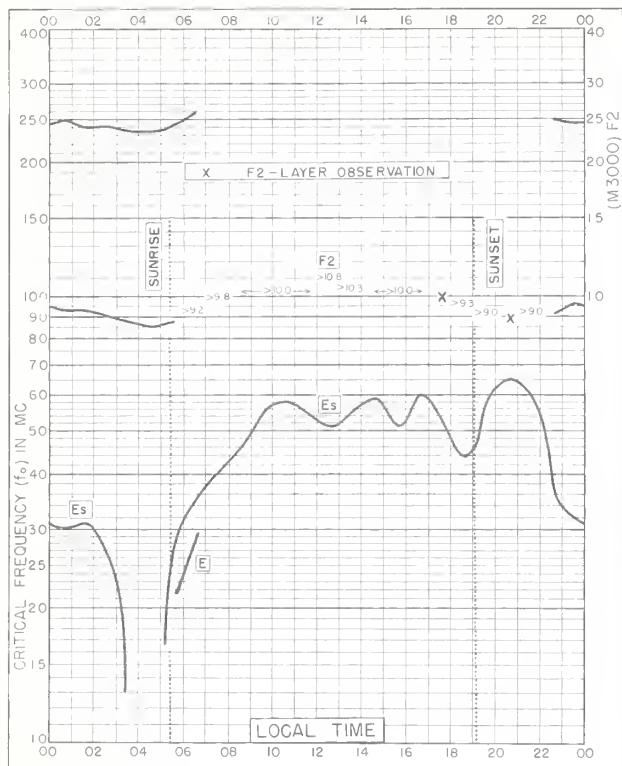


Fig. 109. TRELEW, ARGENTINA

43.2°S, 65.3°W FEBRUARY 1959

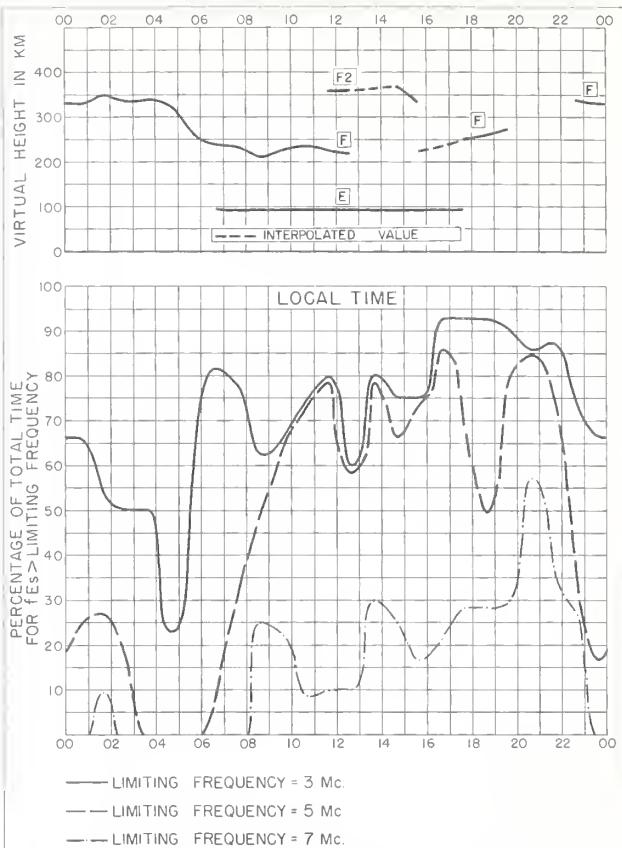


Fig. 110. TRELEW, ARGENTINA FEBRUARY 1959

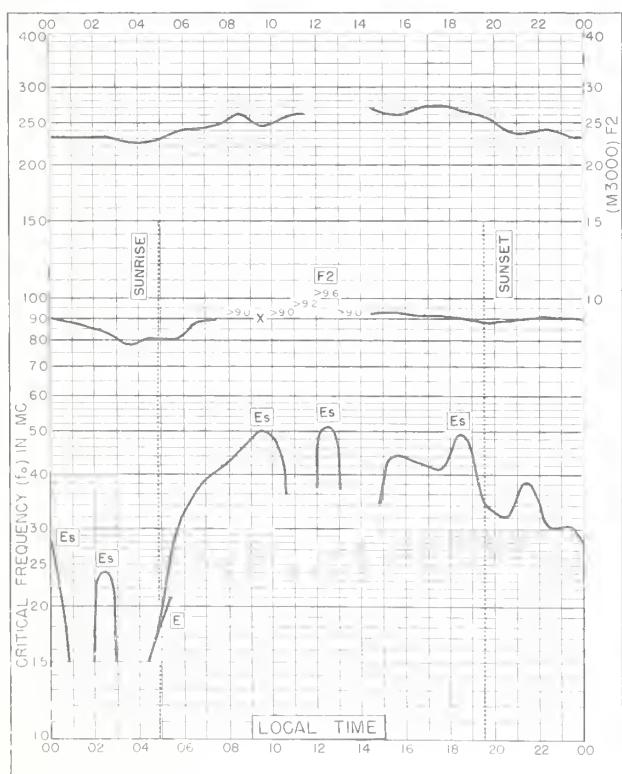


Fig. III. USHUAIA, ARGENTINA

54.8°S, 68.3°W FEBRUARY 1959

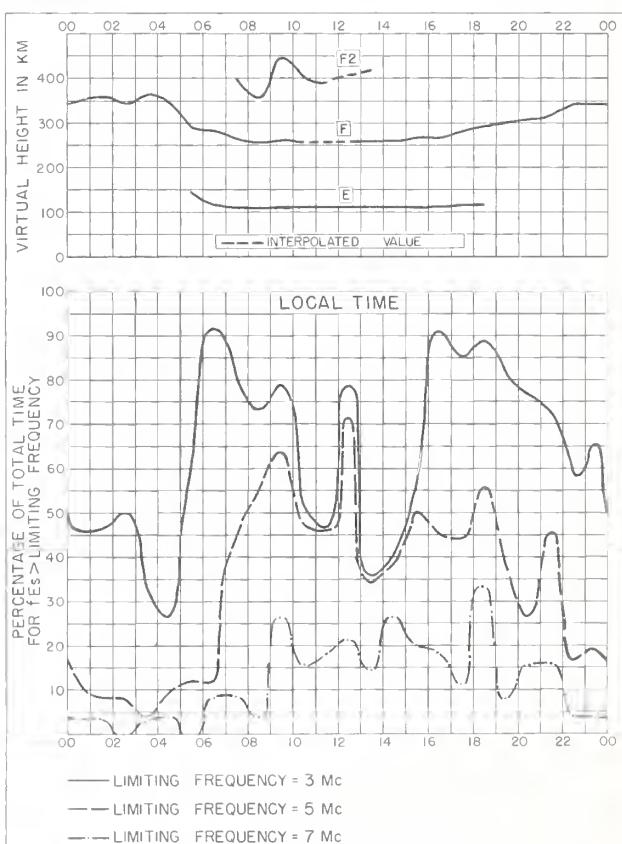
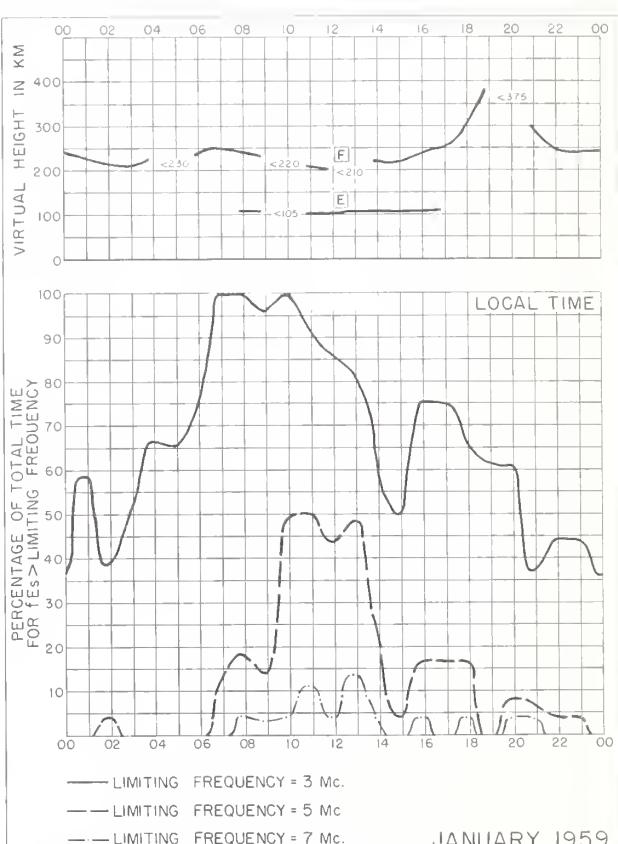
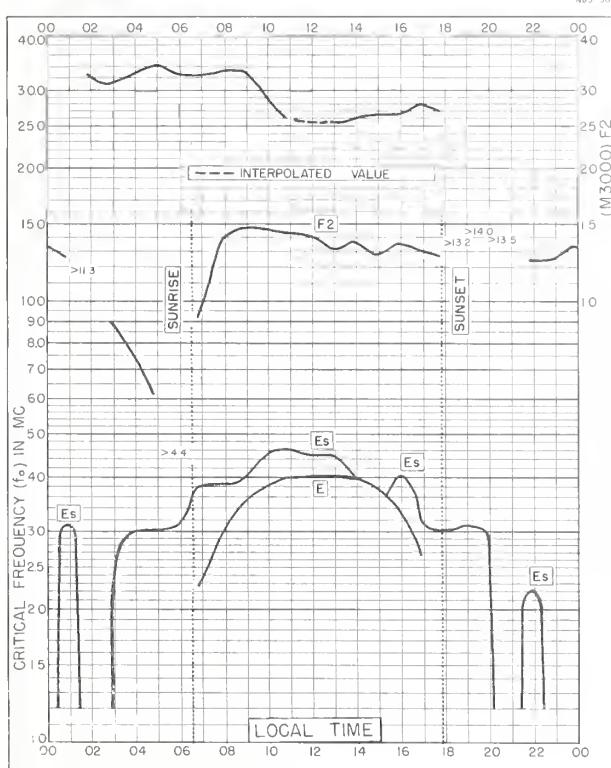
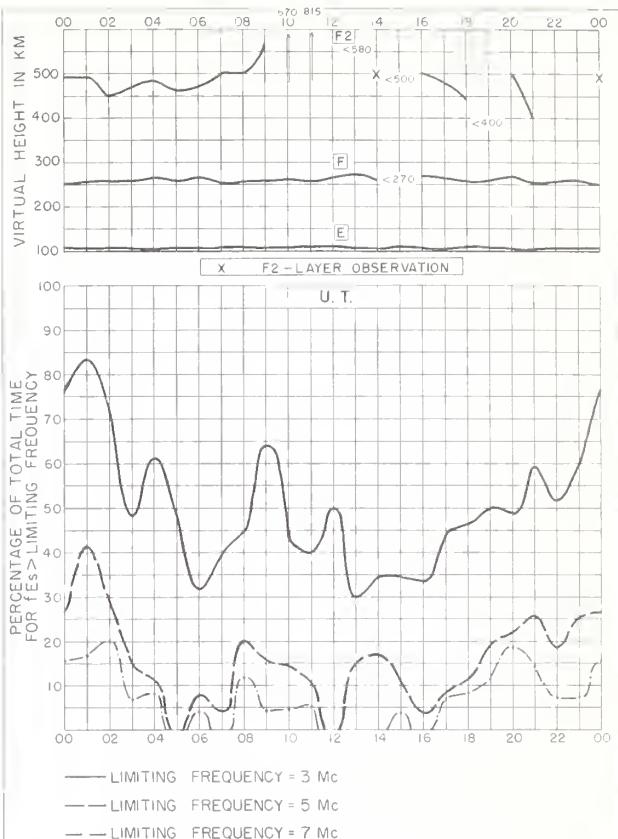
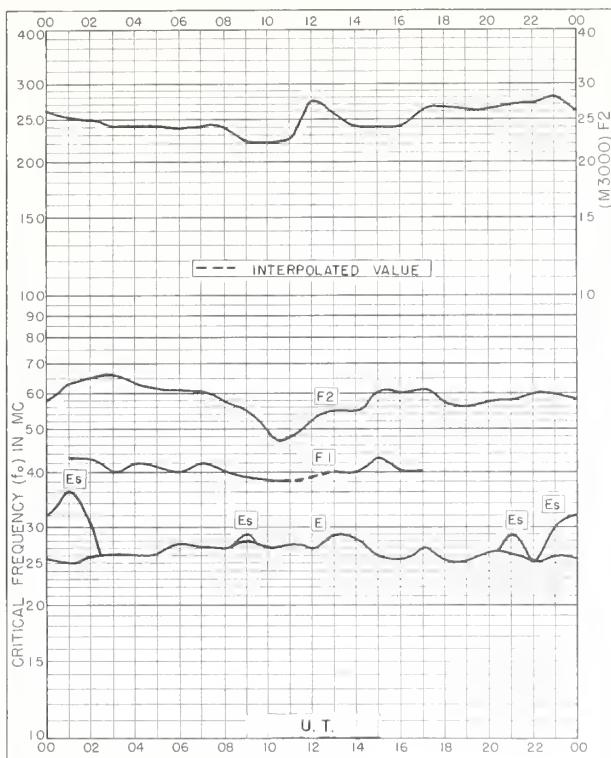


Fig. II2. USHUAIA, ARGENTINA FEBRUARY 1959



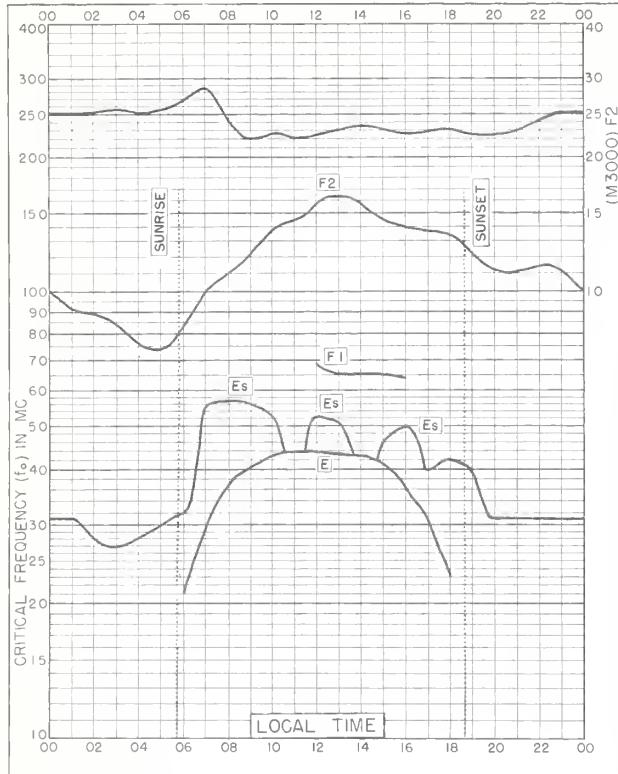


Fig. II7. TAHITI, SOCIETY IS.
17.7°S, 149.3°W JANUARY 1959

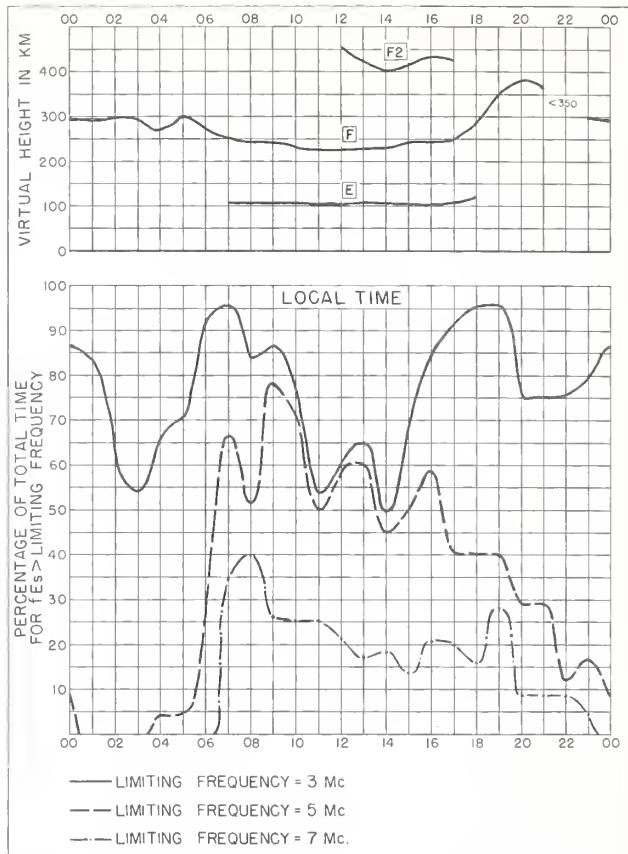


Fig. II8. TAHITI, SOCIETY IS. JANUARY 1959



Fig. II9. POLE STATION
90.0°S JANUARY 1959

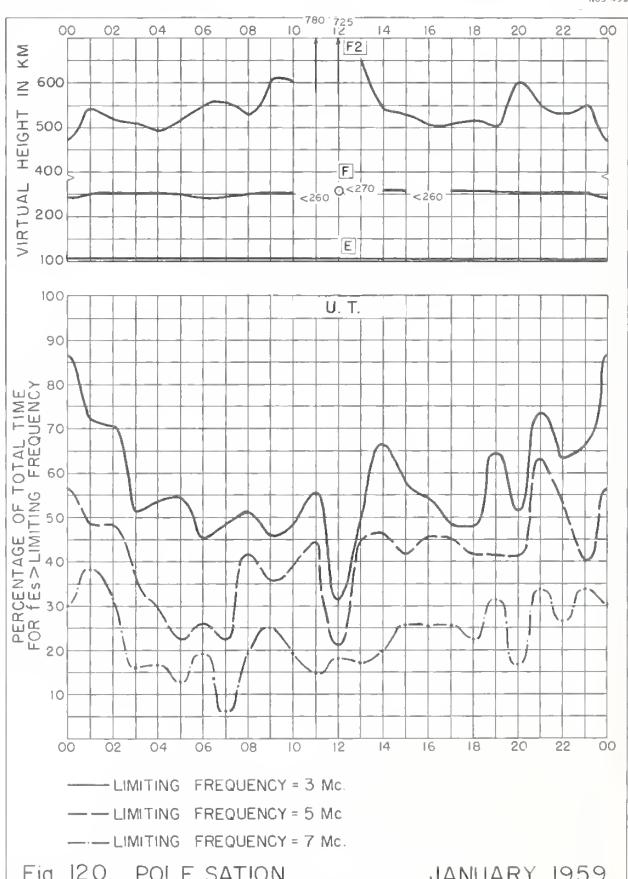


Fig. I20. POLE SATION JANUARY 1959

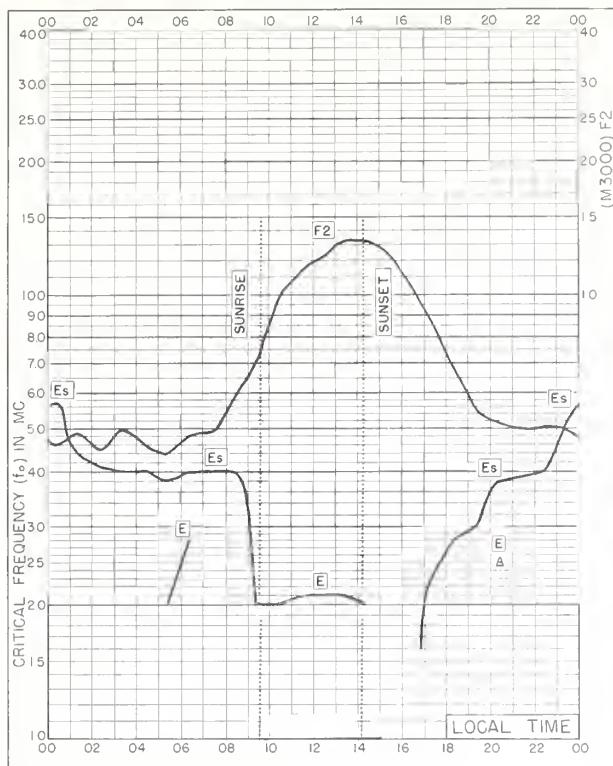


Fig. I21. YELLOWKNIFE, CANADA
62.4°N, 114.4°W DECEMBER 1958

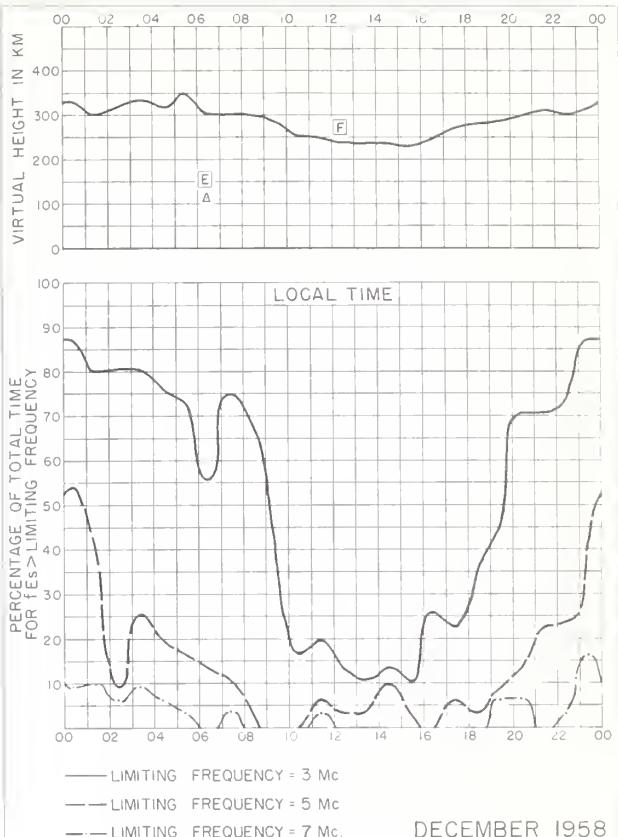


Fig. I22. YELLOWKNIFE, CANADA DECEMBER 1958

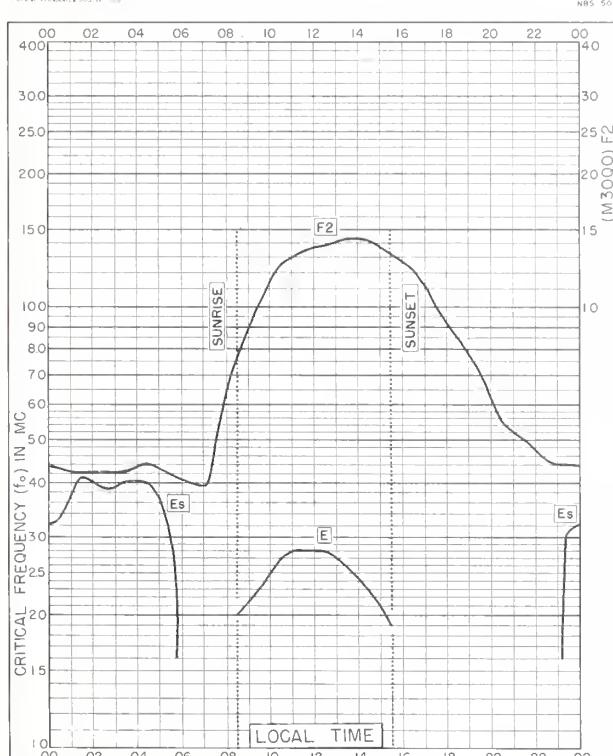


Fig. I23. MEANOOK, CANADA
54.6°N, 113.3°W DECEMBER 1958

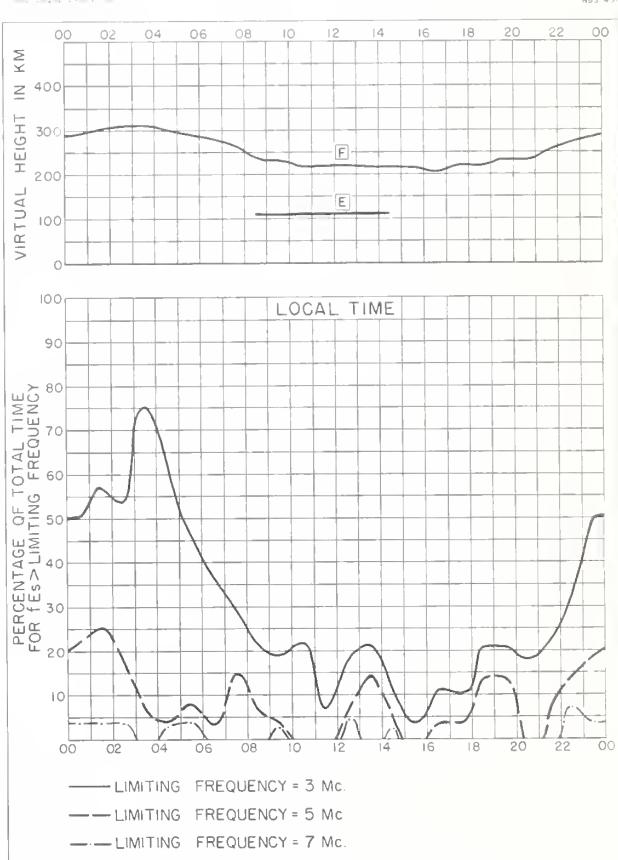


Fig. I24. MEANOOK, CANADA DECEMBER 1958

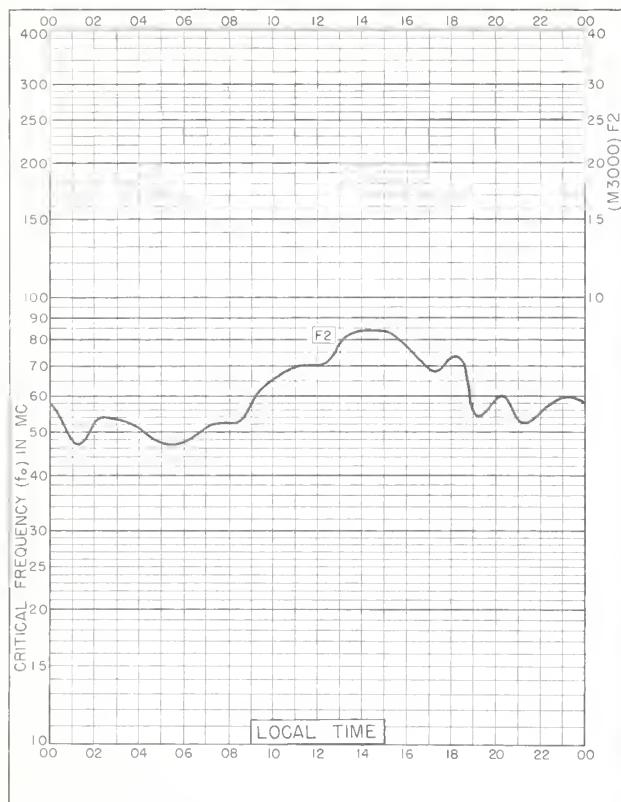


Fig. I25. EUREKA, CANADA
80.0°N, 85.9°W FEBRUARY 1958

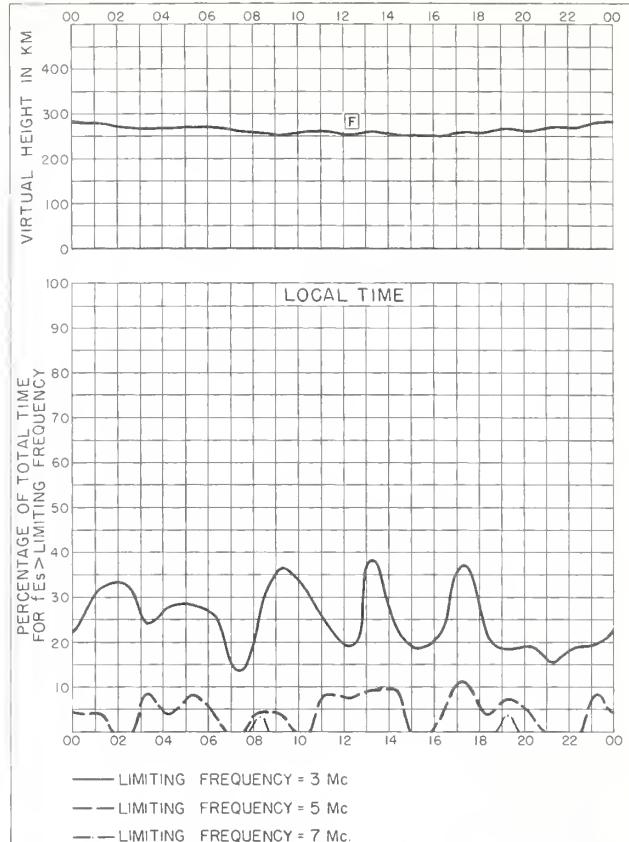


Fig. I26. EUREKA, CANADA FEBRUARY 1958

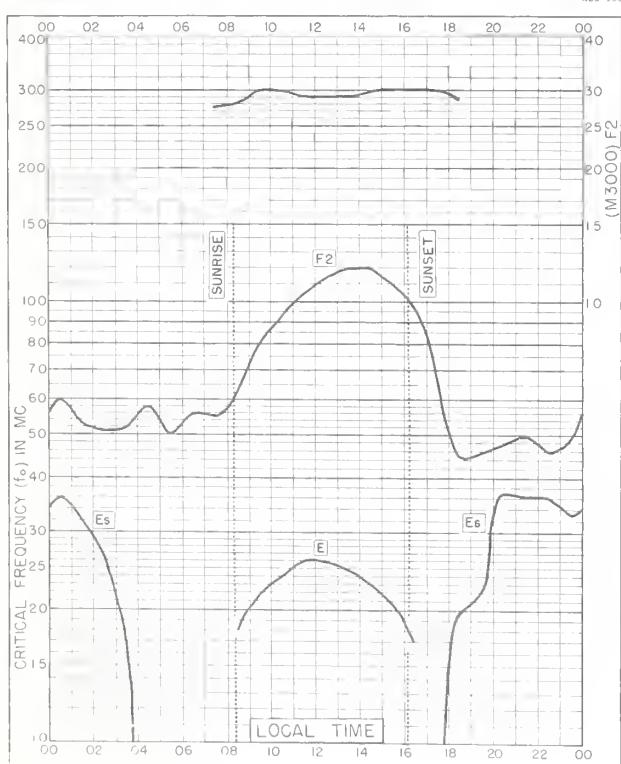


Fig. I27. LULEA, SWEDEN
65.6°N, 22.1°E FEBRUARY 1958

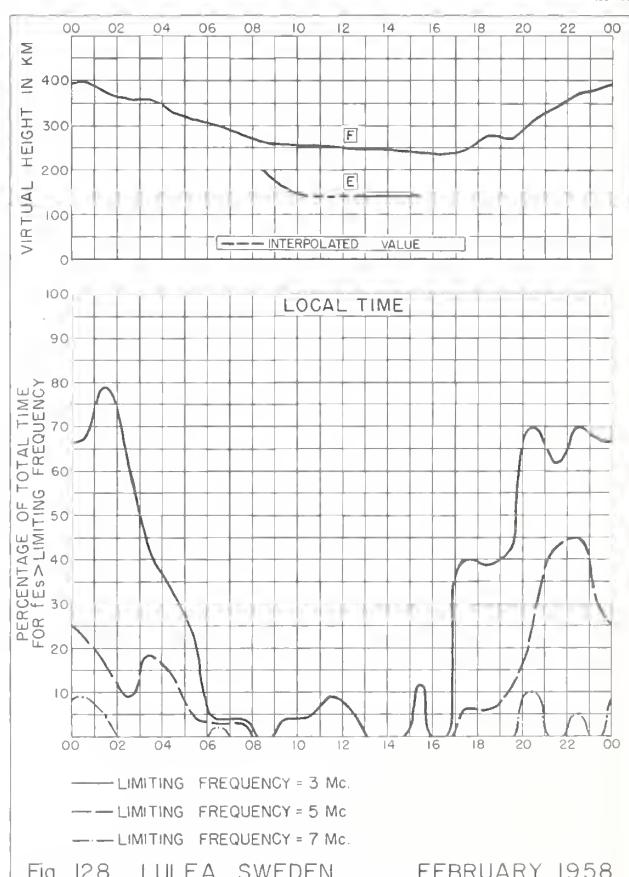


Fig. I28. LULEA, SWEDEN FEBRUARY 1958

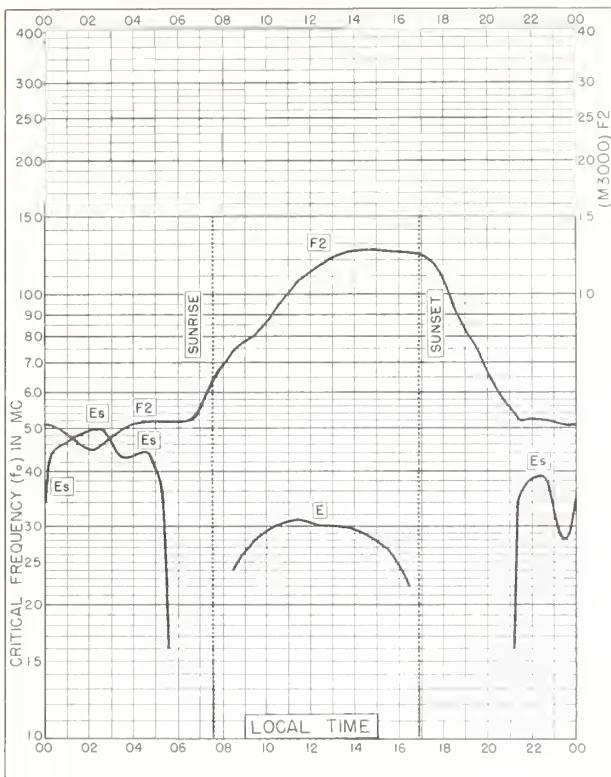


Fig. I29. MEANOOK, CANADA
54.6°N, 113.3°W FEBRUARY 1958

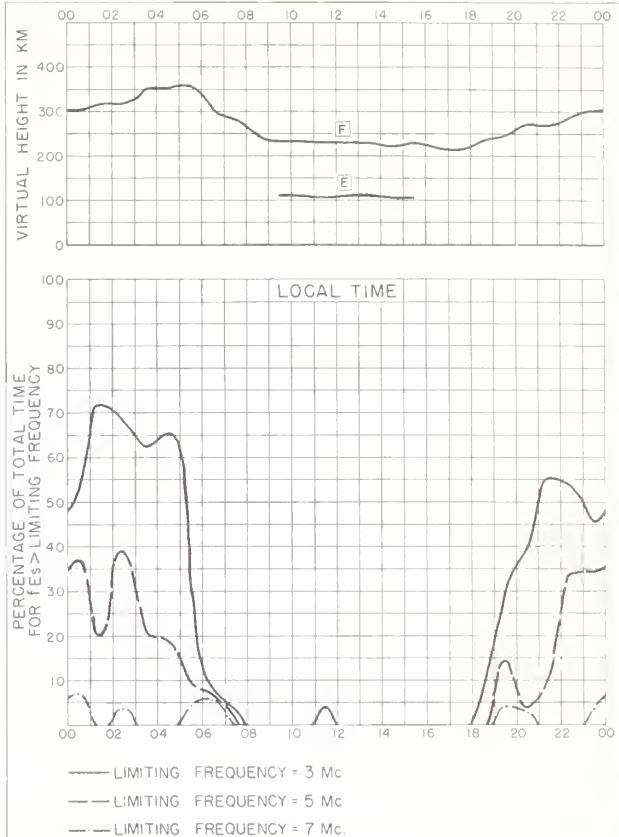


Fig. I30. MEANOOK, CANADA FEBRUARY 1958



Fig. I31. FREIBURG, GERMANY
48.1°N, 7.6°E FEBRUARY 1958

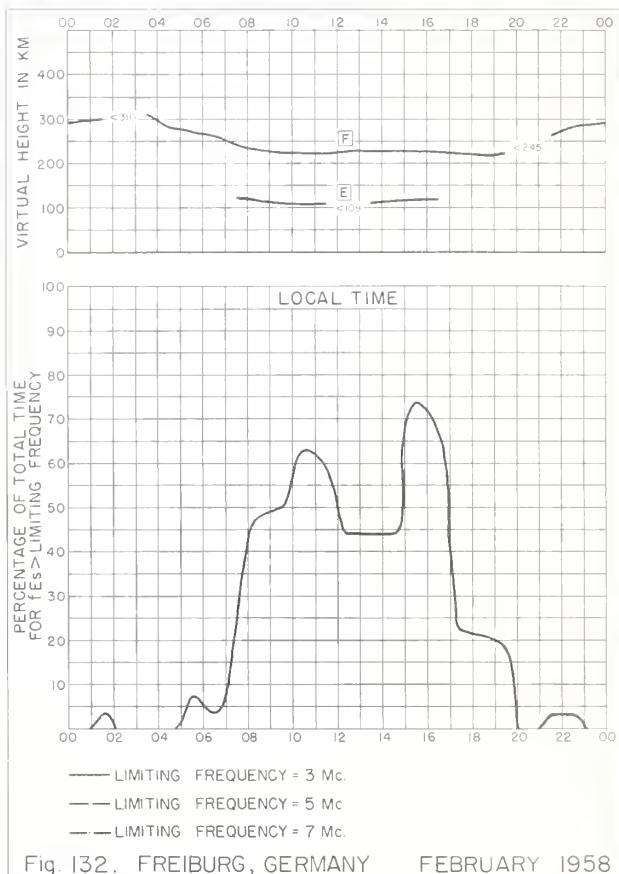


Fig. I32. FREIBURG, GERMANY FEBRUARY 1958

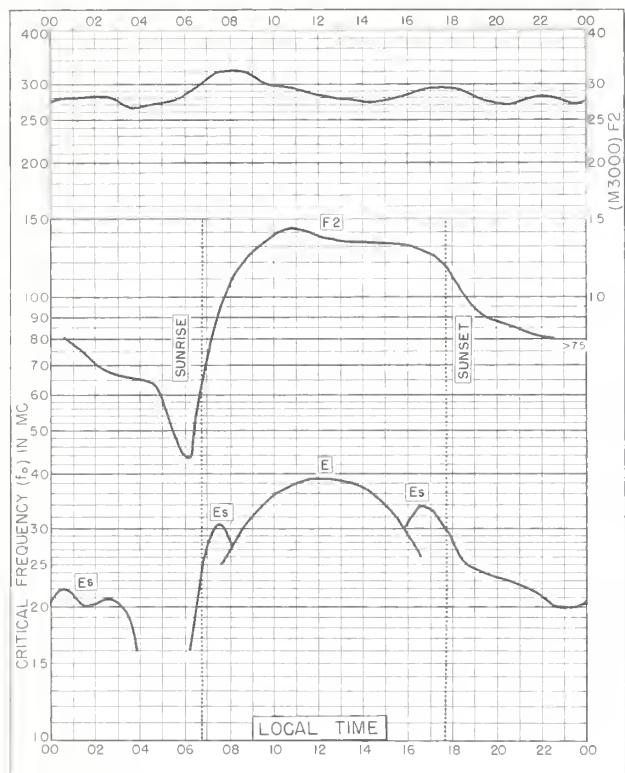


Fig. 133. RABAT, MOROCCO
 30.9°N, 6.8°W FEBRUARY 1958

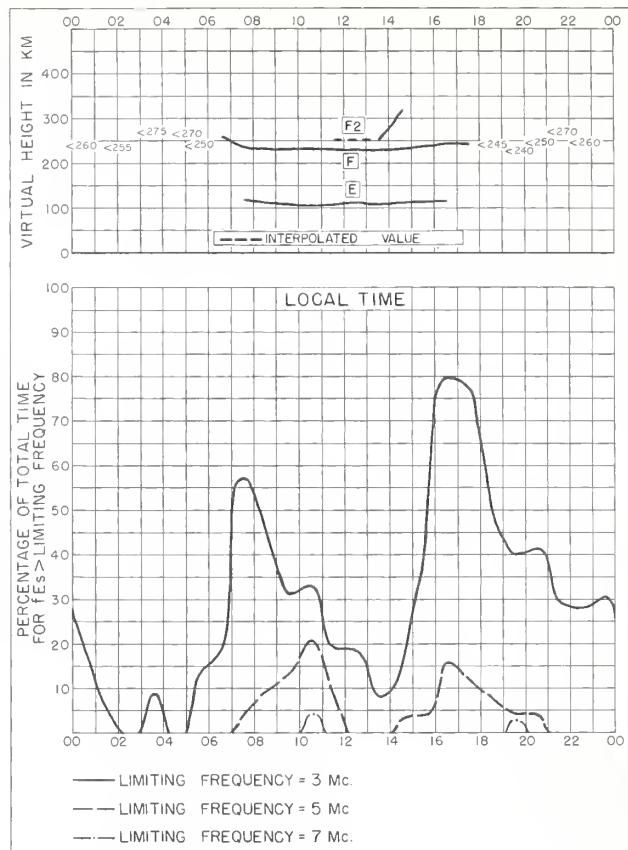


Fig. I34. RABAT, MOROCCO FEBRUARY 1958

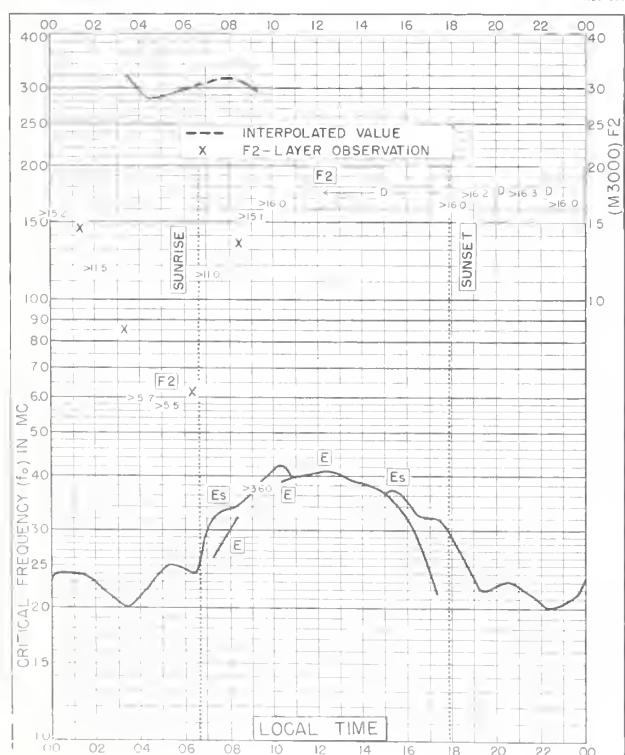
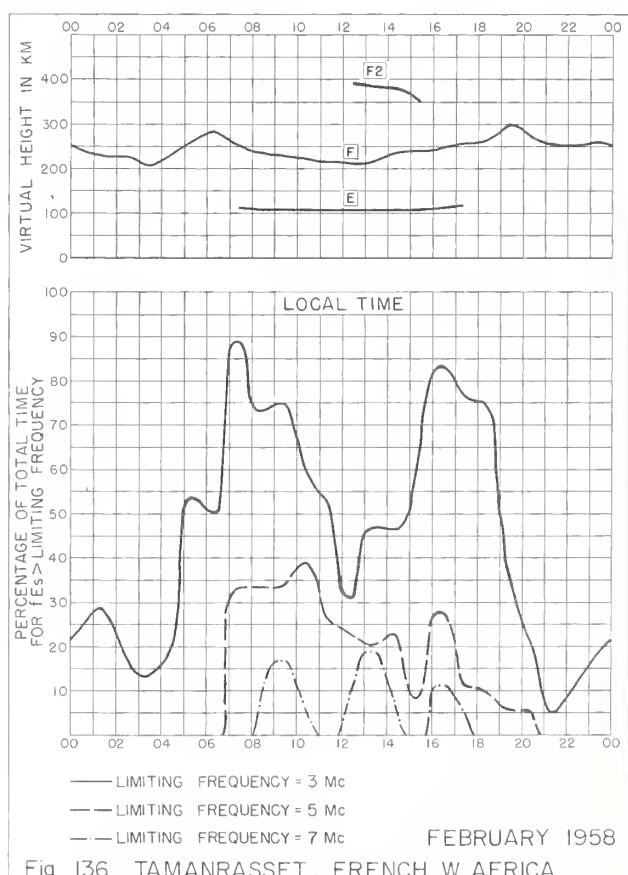


Fig 135. TAMANRASSET, FRENCH W. AFRICA
 22.8°N, 5.5°E FEBRUARY 1958



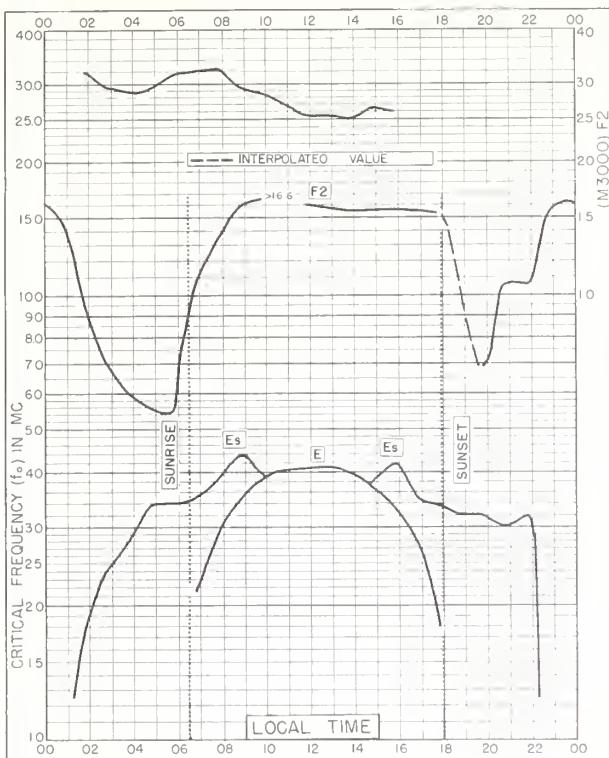


Fig. 137. DAKAR, FRENCH W. AFRICA
14.7°N, 17.4°W FEBRUARY 1958

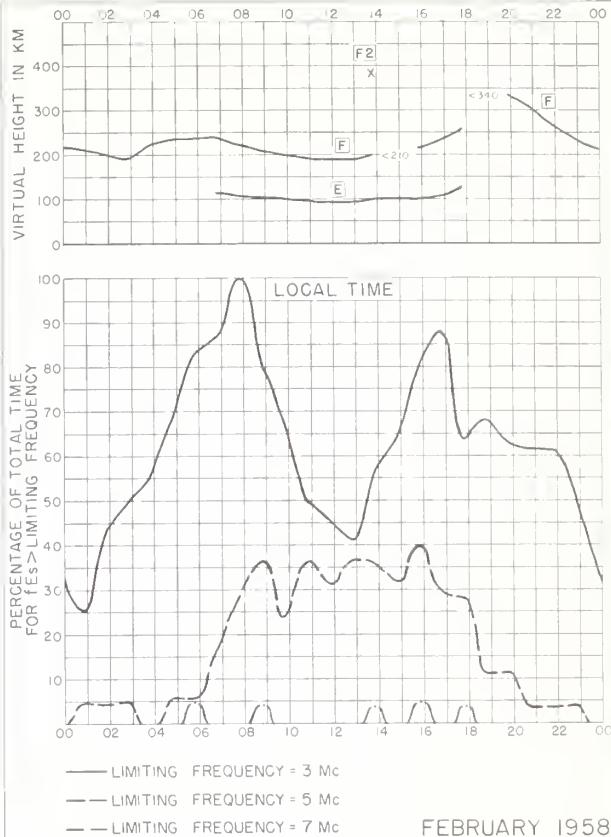


Fig. 138. DAKAR, FRENCH W. AFRICA FEBRUARY 1958

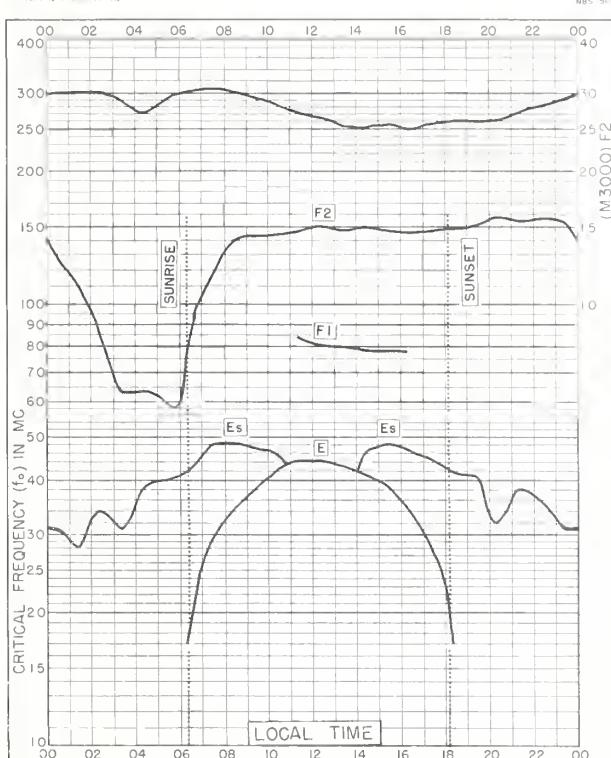


Fig. 139. PARAMARIBO, SURINAM
5.8°N, 55.2°W FEBRUARY 1958

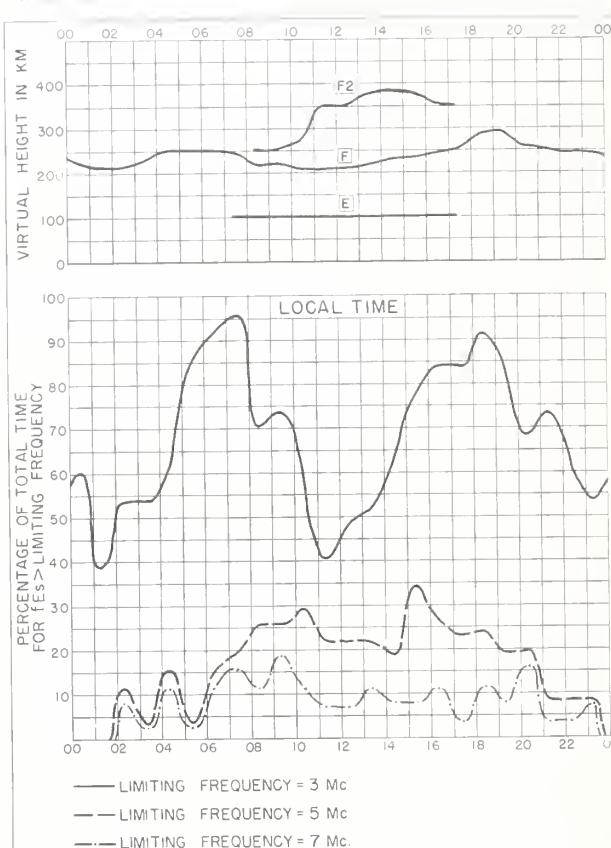


Fig. 140. PARAMARIBO, SURINAM FEBRUARY 1958

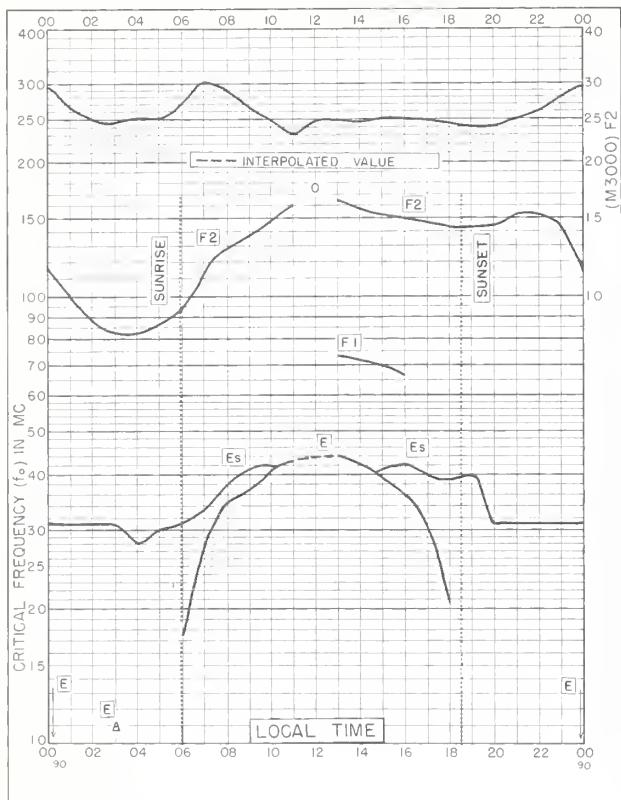


Fig. 141. TAHITI, SOCIETY IS.

17.7° S, 149.3° W FEBRUARY 1958

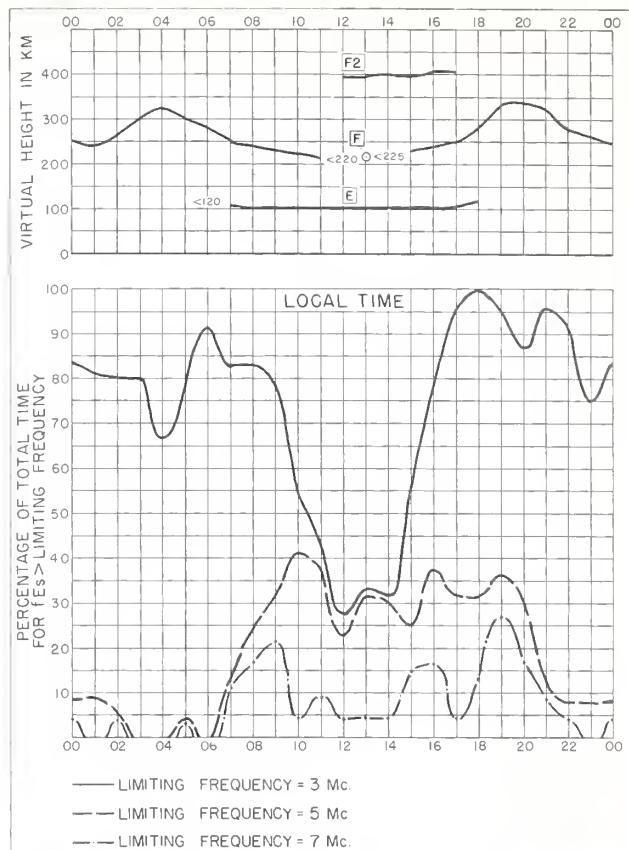


Fig. 142. TAHITI, SOCIETY IS. FEBRUARY 1958

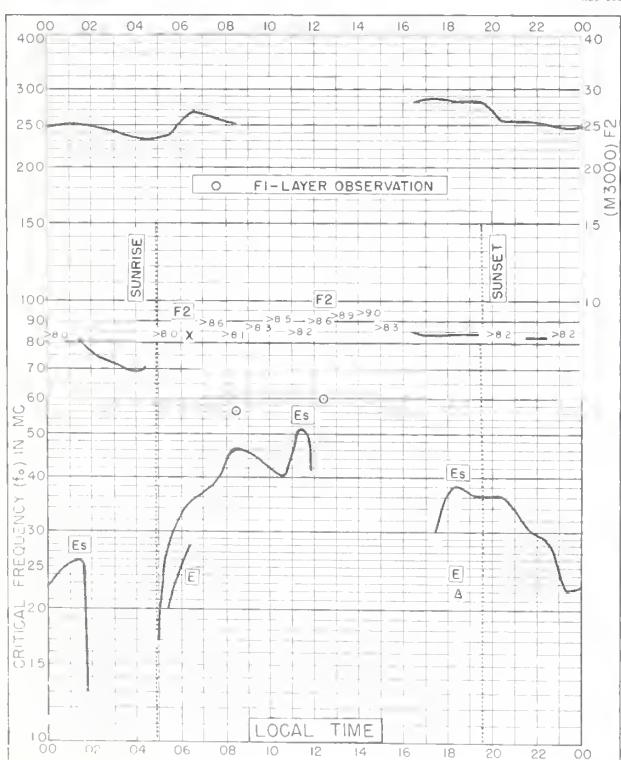


Fig. 143. USHUAIA, ARGENTINA

54.8° S, 68.3° W FEBRUARY 1958

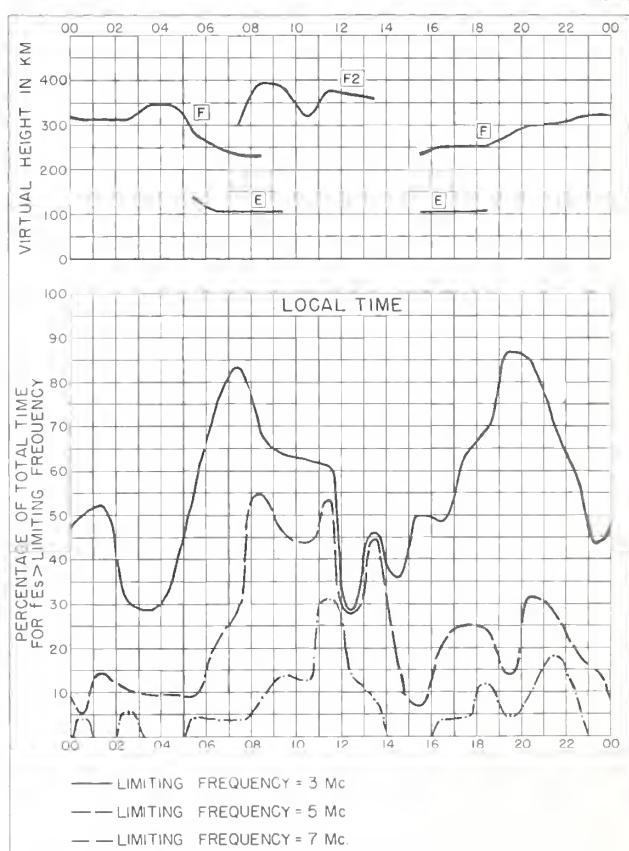


Fig. 144. USHUAIA, ARGENTINA FEBRUARY 1958

Index of Tables and Graphs of Ionospheric Data
in CRPL-F193 (Part A)

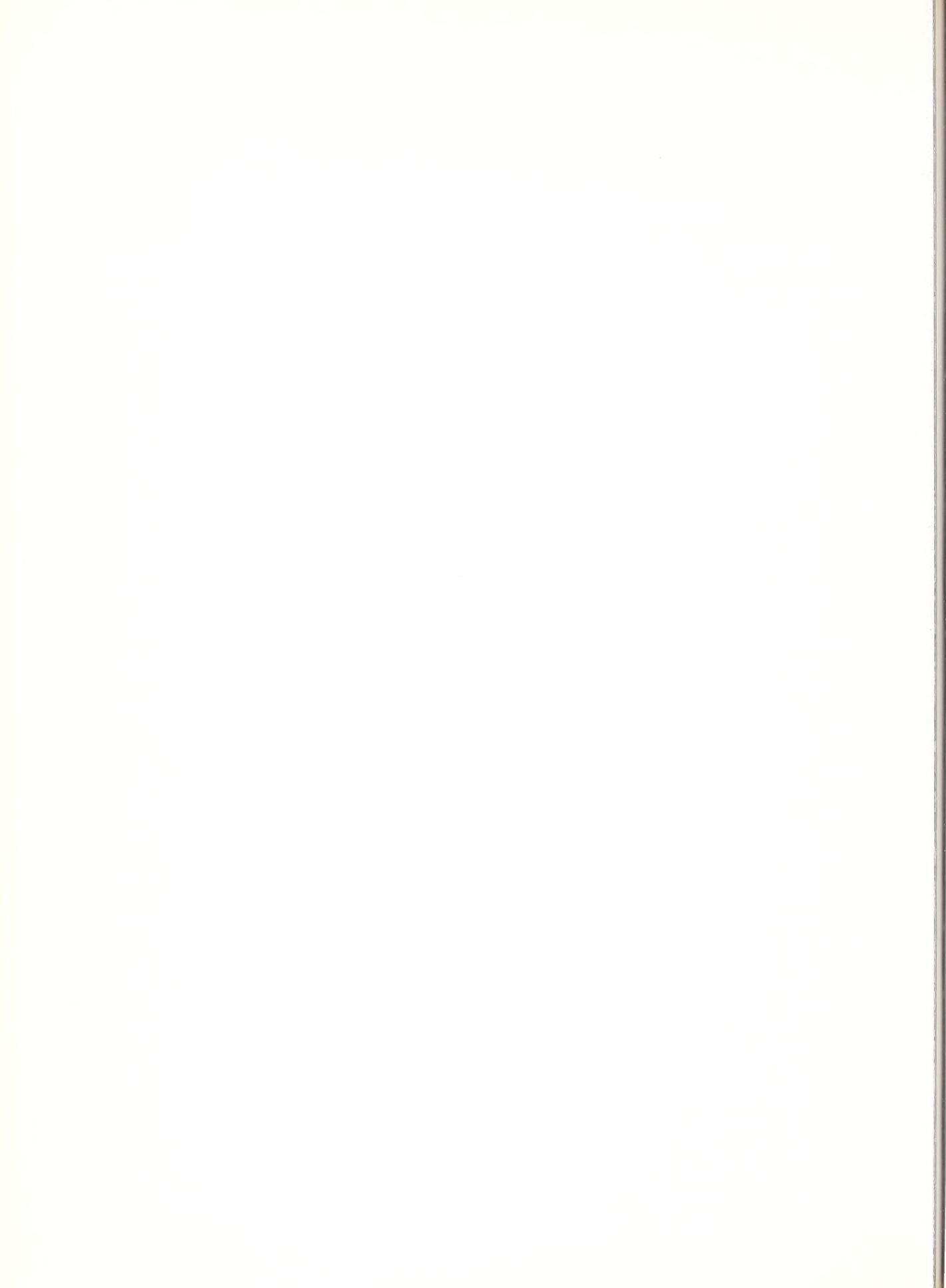
	<u>Table</u>	<u>Page</u>	<u>Figure</u>	<u>page</u>
Akita, Japan				
February 1960	4			24
Boulder, Colorado				
May 1960	1			13
Budapest, Hungary				
September 1959	6			30
February 1959	8			36
Bunia, Belgian Congo				
February 1960	5			25
September 1959	6			30
Byrd Station				
April 1959	7			32
March 1959	7			33
Canberra, Australia				
February 1959	9			39
Dakar, French W. Africa				
February 1959	9			37
January 1959	10			41
February 1958	12			47
De Bilt, Holland				
February 1960	3			20
Djibouti, French Somaliland				
February 1959	9			37
Dourbes, Belgium				
February 1959	8			35
El Cerillo, Mexico				
February 1959	8			36
Elisabethville, Belgian Congo				
February 1960	5			26
September 1959	7			31
Eureka, Canada				
February 1958	11			44
Falkland Is.				
November 1959	6			28
October 1959	6			29
Formosa, China				
July 1959	7			32
Ft. Monmouth, New Jersey				
March 1960	1			15

Index (CRPL-F193 (Part A), continued)

	<u>Table page</u>	<u>Figure page</u>
Freiburg, Germany		
February 1958	11	45
Genoa (Monte Capellino), Italy		
February 1960	4	23
Grand Bahama I.		
March 1960	2	16
Huancayo, Peru		
April 1960	1	14
Juliusruh/Rügen, Germany		
February 1959	8	34
Kiruna, Sweden		
February 1960	2	18
La Paz, Bolivia		
February 1960	5	27
Leopoldville, Belgian Congo		
February 1960	5	26
September 1959	7	31
Lindau/Harz, Germany		
February 1959	8	35
Lulea, Sweden		
February 1960	3	19
February 1958	11	44
Macau		
November 1959	6	28
Meanook, Canada		
December 1958	11	43
February 1958	11	45
Natal, Brazil		
October 1959	6	29
Nurmijarvi, Finland		
February 1960	3	19
December 1959	5	27
Ottawa, Canada		
February 1960	4	22
Paramaribo, Surinam		
February 1958	12	47
Pole Station		
April 1959	7	33
March 1959	8	34
February 1959	10	41
January 1959	10	42
Rabat, Morocco		
February 1958	12	46

Index (CRPL-E193 (Part A), concluded)

	<u>Table page</u>	<u>Figure page</u>
Resolute Bay, Canada		
February 1960	2	17
Rome, Italy		
February 1960	4	23
Sao Paulo, Brazil		
February 1959	9	39
Sodankyla, Finland		
February 1960	2	18
Sottens, Switzerland		
February 1960	3	21
Tahiti, Society Is.		
February 1959	9	38
January 1959	10	42
February 1958	12	48
Talara, Peru		
March 1960	2	16
Tamanrasset, French W. Africa		
February 1958	12	46
Tananarive, Madagascar		
February 1959	9	38
Thule, Greenland		
April 1960	1	13
Tokyo, Japan		
February 1960	4	24
Trelew, Argentina		
February 1959	10	40
Tromso, Norway		
February 1960	2	17
Upsala, Sweden		
February 1960	3	20
Ushuaia, Argentina		
February 1959	10	40
February 1958	12	48
Wakkanai, Japan		
February 1960	4	22
White Sands, New Mexico		
April 1960	1	14
March 1960	1	15
Winnipeg, Canada		
February 1960	3	21
Yamagawa, Japan		
February 1960	5	25
Yellowknife, Canada		
December 1958	11	43



CRPL Reports

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

Daily:

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

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

Semiweekly:

CRPL—J. North Atlantic Radio Propagation Forecast (of days most likely to be disturbed during following month).

CRPL—Jp. North Pacific Radio Propagation Forecast (of days most likely to be disturbed during following month).

Semimonthly:

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

Monthly:

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

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Catalog of Data:

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

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