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CRPL-F 216 PART A

FOR OFFICIAL USE

PART A

IONOSPHERIC DATA

ISSUED  
**AUGUST 1962**

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



## IONOSPHERIC DATA

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## IONOSPHERIC DATA

The CRPL-F series bulletins are issued as part of the responsibility of the Central Radio Propagation Laboratory for the exchange and dissemination of ionospheric and related geophysical data. While originally a by-product of the collection of data by the CRPL for use in radio propagation studies, the CRPL-F series bulletins, Part A, "Ionospheric Data," and Part B, "Solar-Geophysical Data," have provided useful service by collecting and making available a wide variety of data in convenient form for use in research, not only on radio propagation and the ionosphere, but also on a wide variety of geophysical problems. Beginning with CRPL-F 211, Part A, "Ionospheric Data," a number of changes have been made in the tables of ionospheric data which, by providing more information, should increase their usefulness.

The current form of the tables of ionospheric data provides the monthly medians and, in addition, the number of values entering into median determination (count) for all ionospheric characteristics listed. Also, the upper and lower quartile values, indicated by UQ and LQ in the tables, are listed for foF<sub>2</sub>, h'F<sub>2</sub>, h'F, and (M3000)F<sub>2</sub>. Quartile values are not listed for the other characteristics because of space limitations. The tables are prepared by IEM machine methods, which, by improving the speed and efficiency of preparation, permit earlier publication of the data.

Graphs of critical frequencies and (M3000)F<sub>2</sub> will continue to appear. Graphs of percentage of time of occurrence for fEs and virtual heights of the regular ionospheric layers are no longer included. This change was necessary to provide space for the enlarged tables. Data on percentage of time of occurrence of fEs above 3, 5, and 7 Mc are still available from the CRPL and the IGY World Data Center A for Airglow and Ionosphere.

For many years, the tables of ionospheric data appearing in the F-series, Part A, listed values of medians recomputed at CRPL. While this practice enforced a certain uniformity, it was subject to some valid criticism for tampering with original data. The tables and graphs now show the ionospheric data just as they are provided by the originating laboratory. Responsibility for the accuracy and reliability of the data now rests entirely with the originator.

Gaps in the tables when data normally might be expected indicate the data were not provided by the originator. Following the recommendation of the World-Wide Soundings Committee, only values of median foEs are listed. In the few cases where fEs is still reported instead of foEs, the data will not be printed. Data will appear in the F-series, Part A, only when the complete daily-hourly tabulations have been received by the CRPL or the IGY World Data Center A for Airglow and Ionosphere.

Information on symbols, terminology, and conventions may be found in the "URSI Handbook of Ionogram Interpretation and Reduction, of the World-Wide Soundings Committee," edited by W. R. Piggott and K. Rawer (Elsevier, 1961), which supersedes previous documents. A list of symbols is available from CRPL on request.

The following table contains the latest available information on smoothed observed Zurich sunspot numbers, beginning with the minimum of April 1954. Final numbers are listed through June 1961, the succeeding values being based on provisional data.

Smoothed Observed Zurich Sunspot Number

Month	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1954				3	4	4	5	7	8	8	9	12
1955	14	16	19	23	29	35	40	46	55	64	73	81
1956	89	98	109	119	127	137	146	150	151	156	160	164
1957	170	172	174	181	186	188	191	194	197	200	201	200
1958	199	201	201	197	191	187	185	185	184	182	181	180
1959	179	177	174	169	165	161	156	151	146	141	137	132
1960	129	125	122	120	117	114	109	102	98	93	88	84
1961	80	75	69	64	60	56	53	52	52	51	50	48
1962	44											

Units of Ionospheric Data Tables

foF2, foEs - - - Tenth of a megacycle

foF1, FoE - - - Hundredths of a megacycle

h'F2, h'F, h'E - Kilometers

(M3000)F2 - - - Hundredths

NOTE: Occasionally, when the median falls between two of the observed values, the median is carried an extra decimal place beyond these units. Those cases are easily identifiable by the extra digit appearing to the right of the number, in a column usually left blank.

MED - Median

CNT - Count

UQ - Upper Quartile

LQ - Lower Quartile

## WORLD - WIDE SOURCES OF IONOSPHERIC DATA

The ionospheric data given here in tables 1 to 100 and figures 1 to 100 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  
Tucuman, Argentina

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

Belgian Royal Meteorological Institute:  
Dourbes, Belgium

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

Defence Research Board, Canada:  
Clyde, Baffin I.  
Eureka, Canada  
Frobisher Bay, Canada  
Meanook, Canada  
Ottawa, Canada  
Victoria, Canada

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

Danish National Committee of URSI:  
Godhavn, Greenland  
Narssarssuaq, Greenland

French National Center for Telecommunications Studies:  
Casablanca, Morocco  
Dakar, French West Africa  
Djibouti, French Somaliland  
Poitiers, France  
Tamanrasset, French West Africa  
Tananarive, Madagascar  
Terre Adelie

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

The Royal Netherlands Meteorological Institute:  
De Bilt, Holland

Icelandic Post and Telegraph Administration:  
Reykjavik, Iceland

Manila Observatory:  
Baguio, P. I.

South African Council for Scientific and Industrial Research:  
Salisbury, Southern Rhodesia (University College of Rhodesia and  
Nyasaland)

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

United States Army Signal Corps:  
Adak, Alaska  
Grand Bahama I.  
White Sands, New Mexico

National Bureau of Standards (Central Radio Propagation Laboratory):  
Anchorage, Alaska  
Boulder, Colorado  
Byrd Station, Antarctica  
Fairbanks (College), Alaska (Geophysical Institute of the  
University of Alaska)  
Maui, Hawaii  
Point Barrow, Alaska  
Pole Station, Antarctica

SPECIAL NOTICE

Termination of Hourly Electron Density Profile Tabulations

Hourly N(h) profiles for the Puerto Rico station have been published in the CRPL-F Reports, Part A, since May 1959, starting with the data for February 1959. This program terminated with the publication in CRPL-F215 of the data for March 1962. It is believed that this program has satisfied the objective of making available a large volume of profiles produced by methods of conventional accuracy. However, in anticipation of the increasing precision required by modern applications, we intend to concentrate further work on the calculation of more accurate profiles, inevitably in smaller volume.

## TABLES OF IONOSPHERIC DATA

1

2

1957

HOUR				
6 F	F2			
	N' F2			
		N' F		
			M 5000/F	
				F1
				E
				N' E
				Ea

MC TO 25.0 MC IN 13.5 SECONDS.

$16 \times 2$	$h^1 F^2$	$h^1 F$	$(M30)$	$f_0 F$	$f_0 E$	$h^1 E$	$f_0 EA$
---------------	-----------	---------	---------	---------	---------	---------	----------

TABLE 5

TIME 160.0W														
HOUR		00	01	02	03	04	05	06	07	08	09	10	11	
fo F2	MEO	44	415	39	38	40	41	49	52	53	52	53	53	53
	CNT	21	20	22	29	31	31	31	31	31	30	30	31	31
	UO	46	42	43	40	49	43	49	58	58	56	55	56	54
	LO	41	34	32	35	41	41	49	49	49	50	50	51	51
h' F2	MEO													49
	CNT													57
	UO													53
	LO													45
fo E	MEO	389	395	405	391	391	395	394	410	405	393	398	390	397
	CNT	406	427	432	410	410	425	425	430	430	435	430	425	424
	UO	388	363	363	352	352	356	343	366	374	363	360	349	356
	LO	328	312	312	303	303	308	308	314	314	314	314	314	314
N F	MEO	362	275	280	287	260	251	284	250	215	211	203	209	253
	CNT	311	311	311	302	302	288	288	288	288	288	288	288	256
	UO	286	296	296	300	300	284	284	284	284	284	284	284	274
	LO	249	267	270	275	276	264	264	264	264	264	264	264	233
(M3000)F2	MEO	280	280	280	275	275	285	285	290	285	285	290	290	290
	CNT	19	18	22	28	31	30	31	26	25	22	29	29	30
	UO	260	255	250	285	285	285	285	285	285	285	285	285	285
	LO	260	265	270	273	273	275	275	275	275	275	275	275	200
fo F1	MEO													
	CNT													
fo E	MEO	400	200	240	280	280	275	275	285	285	285	295	295	295
	CNT	4	11	20	22	20	15	15	11	9	11	15	18	12
h' E	MEO													
fo E*	MEO	311	311	311	311	311	311	311	311	311	311	311	311	311
	CNT	311	311	311	311	311	311	311	311	311	311	311	311	311
fo E	MEO	320	360	390	420	430	440	440	450	450	450	440	440	395
	CNT	27	21	24	28	28	22	22	22	22	22	22	22	21
fo E	MEO	200	240	270	300	320	320	320	320	320	320	320	320	225
	CNT	4	11	20	22	20	15	15	11	10	9	11	15	12
h' E	MEO													
fo E	MEO	175	110	102	101	101	100	100	100	100	100	103	105	116
	CNT	13	30	31	31	30	30	30	31	31	31	31	31	31
fo E*	MEO	177	117	23	29	33	36	36	35	40	37	35	34	32
	CNT	31	31	31	31	31	31	31	31	31	31	31	31	31
fo E	MEO	200	240	270	300	320	320	320	320	320	320	320	320	225
	CNT	4	11	20	22	20	15	15	11	10	9	11	15	12
fo E	MEO													
fo E	MEO	175	110	102	101	101	100	100	100	100	100	103	105	116
	CNT	13	30	31	31	30	30	30	31	31	31	31	31	31
fo E*	MEO	177	117	23	29	33	36	36	35	40	37	35	34	32
	CNT	31	31	31	31	31	31	31	31	31	31	31	31	31
fo E	MEO	200	240	270	300	320	320	320	320	320	320	320	320	225
	CNT	4	11	20	22	20	15	15	11	10	9	11	15	12
fo E	MEO													
fo E	MEO	175	110	102	101	101	100	100	100	100	100	103	105	116
	CNT	13	30	31	31	30	30	30	31	31	31	31	31	31
fo E*	MEO	177	117	23	29	33	36	36	35	40	37	35	34	32
	CNT	31	31	31	31	31	31	31	31	31	31	31	31	31
fo E	MEO	200	240	270	300	320	320	320	320	320	320	320	320	225
	CNT	4	11	20	22	20	15	15	11	10	9	11	15	12
fo E	MEO													
fo E	MEO	175	110	102	101	101	100	100	100	100	100	103	105	116
	CNT	13	30	31	31	30	30	30	31	31	31	31	31	31
fo E*	MEO	177	117	23	29	33	36	36	35	40	37	35	34	32
	CNT	31	31	31	31	31	31	31	31	31	31	31	31	31
fo E	MEO	200	240	270	300	320	320	320	320	320	320	320	320	225
	CNT	4	11	20	22	20	15	15	11	10	9	11	15	12
fo E	MEO													
fo E	MEO	175	110	102	101	101	100	100	100	100	100	103	105	116
	CNT	13	30	31	31	30	30	30	31	31	31	31	31	31
fo E*	MEO	177	117	23	29	33	36	36	35	40	37	35	34	32
	CNT	31	31	31	31	31	31	31	31	31	31	31	31	31
fo E	MEO	200	240	270	300	320	320	320	320	320	320	320	320	225
	CNT	4	11	20	22	20	15	15	11	10	9	11	15	12
fo E	MEO													
fo E	MEO	175	110	102	101	101	100	100	100	100	100	103	105	116
	CNT	13	30	31	31	30	30	30	31	31	31	31	31	31
fo E*	MEO	177	117	23	29	33	36	36	35	40	37	35	34	32
	CNT	31	31	31	31	31	31	31	31	31	31	31	31	31
fo E	MEO	200	240	270	300	320	320	320	320	320	320	320	320	225
	CNT	4	11	20	22	20	15	15	11	10	9	11	15	12
fo E	MEO													
fo E	MEO	175	110	102	101	101	100	100	100	100	100	103	105	116
	CNT	13	30	31	31	30	30	30	31	31	31	31	31	31
fo E*	MEO	177	117	23	29	33	36	36	35	40	37	35	34	32
	CNT	31	31	31	31	31	31	31	31	31	31	31	31	31
fo E	MEO	200	240	270	300	320	320	320	320	320	320	320	320	225
	CNT	4	11	20	22	20	15	15	11	10	9	11	15	12
fo E	MEO													
fo E	MEO	175	110	102	101	101	100	100	100	100	100	103	105	116
	CNT	13	30	31	31	30	30	30	31	31	31	31	31	31
fo E*	MEO	177	117	23	29	33	36	36	35	40	37	35	34	32
	CNT	31	31	31	31	31	31	31	31	31	31	31	31	31
fo E	MEO	200	240	270	300	320	320	320	320	320	320	320	320	225
	CNT	4	11	20	22	20	15	15	11	10	9	11	15	12
fo E	MEO													
fo E	MEO	175	110	102	101	101	100	100	100	100	100	103	105	116
	CNT	13	30	31	31	30	30	30	31	31	31	31	31	31
fo E*	MEO	177	117	23	29	33	36	36	35	40	37	35	34	32
	CNT	31	31	31	31	31	31	31	31	31	31	31	31	31
fo E	MEO	200	240	270	300	320	320	320	320	320	320	320	320	225
	CNT	4	11	20	22	20	15	15	11	10	9	11	15	12
fo E	MEO													
fo E	MEO	175	110	102	101	101	100	100	100	100	100	103	105	116
	CNT	13	30	31	31	30	30	30	31	31	31	31	31	31
fo E*	MEO	177	117	23	29	33	36	36	35	40	37	35	34	32
	CNT	31	31	31	31	31	31	31	31	31	31	31	31	31
fo E	MEO	200	240	270	300	320	320	320	320	320	320	320	320	225
	CNT	4	11	20	22	20	15	15	11	10	9	11	15	12
fo E	MEO													
fo E	MEO	175	110	102	101	101	100	100	100	100	100	103	105	116
	CNT	13	30	31	31	30	30	30	31	31	31	31	31	31
fo E*	MEO	177	117	23	29	33	36	36	35	40	37	35	34	32
	CNT	31	31	31	31	31	31	31	31	31	31	31	31	31
fo E	MEO	200	240	270	300	320	320	320	320	320	320	320	320	225
	CNT	4	11	20	22	20	15	15	11	10	9	11	15	12
fo E	MEO													
fo E	MEO	175	110	102	101	101	100	100	100	100	100	103	105	116
	CNT	13	30	31	31	30	30	30	31	31	31	31	31	31
fo E*	MEO	177	117	23	29	33	36	36	35	40	37	3		

TABLE 9

TABLE 10

TO MC TO 25,0 MC IN 13.5 SECONDS.

SEARCH 1961

TABLE 13

TIME 150-0W

## REYKJAVIK\*, ICELAND (64°41'N., 21°48'W.)

POINT BARROW*, ALASKA (71°33'N., 156°8'W.)																		
TIME 150-0W																		
HOUR	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17
fo F2	MED	U	425	U	40	U	51	39	U	34	U	39	U	50	48	U	43	U
	CNT	42	40	3	40	2	5	3	5	4	6	13	6	53	65	62	58	56
	UD	42	40	50	46	42	38	44	38	46	38	63	16	20	19	17	15	13
	LO	36	38	36	31	29	30	45	38	46	38	76	80	92	95	78	72	67
h F2	MED																	
	CNT																	
	UD																	
	LO																	
h F	MED	2	1	3	4	3	5	6	3	4	5	10	25	25	25	25	25	25
	CNT	365	395	325	315	290	270	270	310	290	270	270	295	295	295	295	295	295
	UD	285	285	290	270	270	270	270	270	270	270	270	270	270	270	270	270	270
	LO																	
(M300)F2	MED	1	1	3	2	3	3	3	3	3	3	120	320	325	320	320	320	320
	CNT	295	295	275	275	270	270	270	270	270	270	270	310	310	310	310	310	310
	UD	280	280	280	275	275	275	275	275	275	275	275	310	310	310	310	310	310
	LO																	
fo F1	MED																	
	CNT																	
fo E	MED																	
	CNT																	
h E	MED																	
fo Es	MED	31	4	4	U	35	6	6	5	3	3	12	15	18	16	13	16	11
	CNT	5	4	4	35	9	40	38	40	38	40	50	50	56	56	55	55	50
	UD	40	40	38	40	38	40	38	40	38	40	50	50	56	56	55	55	50
	LO																	

SWEEP 1.0 MC TO 25.0 MC IN 16.2 SECONDS\*

NOVEMBER \* 1960

SWEEP 1.0 MC TO 25.0 MC IN 13.5 SECONDS\*

JUNE \* 1960

TABLE 14

TIME 150-0W

## GODHÅVN\*, GREENLAND (69°23'N., 53°45'W.)

FAIRBANKS*, ALASKA (64°49'N., 147°8'W.)																		
TIME 150-0W																		
HOUR	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17
fo F2	MED	U	48	46	44	42	40	38	36	34	32	30	28	26	24	22	20	18
	CNT	48	46	44	42	40	38	36	34	32	30	28	26	24	22	20	18	16
	UD	48	46	44	42	40	38	36	34	32	30	28	26	24	22	20	18	16
	LO	40	40	38	40	38	40	38	40	38	40	38	40	38	40	38	40	38
h F2	MED																	
	CNT																	
	UD																	
	LO																	
h F	MED	2	4	10	14	18	19	18	13	19	17	20	18	17	21	20	13	7
	CNT	310	390	400	430	450	460	470	450	470	480	470	460	450	470	480	490	310
	UD	310	390	400	430	450	460	470	450	470	480	470	460	450	470	480	490	310
	LO																	
(M300)F2	MED	20	25	20	25	265	275	240	26	25	265	265	275	275	275	275	275	275
	CNT	17	17	11	15	12	13	9	3	11	10	8	11	12	11	15	19	11
	UD	300	300	300	300	290	290	290	270	290	285	285	280	285	280	285	290	290
	LO	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210
fo F1	MED	2	4	10	14	18	19	18	13	19	17	20	18	17	21	20	13	7
	CNT	310	390	400	430	450	460	470	450	470	480	470	460	450	470	480	490	310
	UD	310	390	400	430	450	460	470	450	470	480	470	460	450	470	480	490	310
	LO																	
(M300)F2	MED	20	25	20	25	265	275	240	26	25	265	265	275	275	275	275	275	275
	CNT	17	17	11	15	12	13	9	3	11	10	8	11	12	11	15	19	11
	UD	300	300	300	300	290	290	290	270	290	285	285	280	285	280	285	290	290
	LO	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210
h F1	MED	2	4	10	14	18	19	18	13	19	17	20	18	17	21	20	13	7
	CNT	310	390	400	430	450	460	470	450	470	480	470	460	450	470	480	490	310
	UD	310	390	400	430	450	460	470	450	470	480	470	460	450	470	480	490	310
	LO																	
(M300)F2	MED	20	25	20	25	265	275	240	26	25	265	265	275	275	275	275	275	275
	CNT	17	17	11	15	12	13	9	3	11	10	8	11	12	11	15	19	11
	UD	300	300	300	300	290	290	290	270	290	285	285	280	285	280	285	290	290
	LO	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210
fo E	MED	27	25	26	26	24	22	20	16	23	22	20	25	23	27	25	28	28
	CNT	27	25	26	26	24	22	20	16	23	22	20	25	23	27	25	28	28
	UD	27	25	26	26	24	22	20	16	23	22	20	25	23	27	25	28	28
	LO																	

SWEEP 1.0 MC TO 20.0 MC IN 18 SECONDS\*

JUNE \* 1960

TIME 150-0W

## SWEEP 1.0 MC TO 25.0 MC IN 18 SECONDS\*

JUNE \* 1960

## SWEEP 1.0 MC TO 25.0 MC IN 13.5 SECONDS\*

JUNE \* 1960

TABLE 17

TABLE 18

三

TABLE 20

REP 1.0 MC TO 25.0 MC IN 13.5 SECONDS

JUNE • 1961

-ABLE 21

TABLE II

SMEP 1.0 MC TO 250 MC IN 27 SECONDS

80

TABLE 24

10

TABLE 23

10

TABLE 24

10

TABLE 24

10

TABLE 24

10

TABLE 24

10

BLE 25

TABLE 26

May 1960

054

SWEET 1.0 MC TO 25.0 MC IN 16.2 SECONDS.

1174 1960

TABLE 29

MARSSASSUAO, GREENLAND 161°2N. 45°4W.

TABLE 31

JULIUSRUH/RUGEN, GERMANY (54°06'N. 13°46'E)

TABLE 32

TIME 7:50 AM  
OTTAWA, CANADA (45°44'N 75°49'W)

NOVEMBER 1959

TABLE 33

TABLE 34

NOVEMBER 1959

186

TIME 75

TOBER • 1959

TABLE 37

OE BILLY - HOLLAND (52°14'N, 5°22'E)																TIME 45.00									
HOUR	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
10 F2	MED	67	63	58	55	51	62	64	67	70	71	71	72	73	72	73	75	73	71	71	72	72	72	69	
	CNT	71	63	55	51	49	62	69	70	70	71	70	70	71	70	71	71	71	71	71	71	71	71	71	
	UO	72	68	63	61	62	69	74	76	78	76	78	76	77	76	77	76	77	76	77	76	77	77	77	
	LO	58	55	50	49	50	55	56	57	62	63	62	63	62	63	62	63	62	63	62	63	62	63	62	
10 F2	MED	555	595	400	390	380	400	405	395	415	405	420	425	415	405	395	380	335	300	295	275	250	220	200	
	CNT	31	31	31	31	31	31	31	31	30	29	29	28	27	28	27	28	27	26	25	24	23	22	21	
10 F	MED	300	300	300	280	255	240	230	220	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	
	CNT	28	27	28	27	31	31	31	31	30	31	31	30	31	30	31	30	31	31	31	31	31	31	31	
(M3000)F2	MED	260	225	255	260	265	275	210	210	260	210	265	260	260	265	275	275	285	280	275	270	260	250	240	
	CNT	28	27	28	27	31	31	31	31	30	31	31	30	31	30	31	30	31	31	30	31	31	30	31	
10 F1	MED	320	410	470	500	520	540	560	580	550	550	550	550	550	550	550	550	550	550	550	550	550	550	550	
	CNT	111	116	122	128	126	125	127	127	126	125	126	125	126	125	126	125	126	125	126	125	126	125	126	
10 E	MED	190	240	300	330	360	370	360	400	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	
	CNT	22	26	29	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	
10 E	MED	110	120	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	
	CNT	17	27	29	30	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	
10 Es	MED																								

SWEEP 1+0 MC TO 16+0 MC IN 40 SECONDS.

JULY 1 1959

TABLE 39

SAO PAULO, BRAZIL (23°55'S, 46°59'W)																TIME 45.00									
HOUR	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
10 F2	MED	126	116	105	86	73	83	90	98	100	110	110	110	110	110	110	110	110	110	110	110	110	110	110	
	CNT	15	18	18	15	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	
	UO	144	155	135	109	95	88	94	100	101	116	116	116	116	116	116	116	116	116	116	116	116	116	116	
	LO	115	93	94	90	74	70	80	86	96	106	106	106	106	106	106	106	106	106	106	106	106	106	106	
10 F2	MED	500	240	260	275	260	240	245	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240	
	CNT	21	21	21	21	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	
10 F	MED	220	300	280	260	240	250	245	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240	
	CNT	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	
(M3000)F2	MED	250	260	260	275	260	260	260	260	260	260	260	260	260	260	260	260	260	260	260	260	260	260	260	
	CNT	17	15	14	20	20	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	
10 F1	MED	275	280	285	290	285	280	285	280	285	280	285	280	285	280	285	280	285	280	285	280	285	280	285	
	CNT	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	
10 E	MED	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	
	CNT	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	
10 Es	MED	36	34	25	18	16	11	5	2	3	2	3	3	3	3	3	3	3	3	3	3	3	3	3	

SWEEP 1+0 MC TO 20+0 MC IN 2 MINUTES 30 SECONDS.

JULY 1 1959

TABLE 40

CANBERRA, AUSTRALIA (35°15'S, 149°05'E)																TIME 150.00									
HOUR	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
10 F2	MED	0	100	105	116	123	130	137	132	132	134	132	132	132	132	132	132	132	132	132	132	132	132	132	
	CNT	25	28	30	32	34	36	38	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	
	UO	70	73	75	77	79	81	83	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	
	LO	73	65	60	55	50	45	40	35	30	25	20	15	10	5	0	0	0	0	0	0	0	0		
10 F2	MED	275	280	285	290	285	280	285	280	285	280	285	280	285	280	285	280	285	280	285	280	285	280	285	
	CNT	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	
10 E	MED	275	280	285	290	285	280	285	280	285	280	285	280	285	280	285	280	285	280	285	280	285	280	285	
	CNT	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	
10 Es	MED	36	34	25	18	16	11	5	2	3	2	3	3	3	3	3	3	3	3	3	3	3	3	3	

SWEEP 1+0 MC TO 20+0 MC IN 1 MINUTE 55 SECONDS.

DECEMBER 1 1959

TABLE 41

OTTAWA, CANADA (45°24'N, 75°54'W)																TIME 150.00									
HOUR	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
10 F2	MED	0	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110	115	120	125	130	135	140	145	
	CNT	25	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	
	UO	70	75	78	80	82	84	86	88	90	92	94	96	98	100	102	104	106	108	110	112	114	116	118	
	LO	70	65	60	55	50	45	40	35	30	25	20	15	10	5	0	0	0	0	0	0	0	0	0	
10 F2	MED	275	280	285	290	285	280	285	2																

TABLE 41

PROBLIMER BATT., CANADA 163.8N, 68.4W

TIME 75.0W																								
hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
fo F2	MED	58	58	51	52	55	55	62	71	90	110	122	109	96	81	77	73	63	66	67	70	67	66	60
	CNT	29	30	28	29	30	30	29	28	26	27	28	29	29	29	28	27	28	27	28	27	28	27	28
h' F2	MED	290	280	300	290	290	270	270	270	260	250	250	260	250	250	260	250	250	250	250	250	250	250	250
	CNT	29	29	28	29	27	27	28	27	26	27	28	28	29	28	27	28	27	28	27	28	27	28	27
fo F2	MED	290	280	300	290	290	270	270	270	260	250	250	260	250	250	260	250	250	250	250	250	250	250	250
	CNT	29	29	28	29	27	27	28	27	26	27	28	28	29	28	27	28	27	28	27	28	27	28	27
(M3000)F2	MED	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300
	CNT	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
fo F1	MED	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300
	CNT	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
fo E	MED	220	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210
	CNT	26	26	29	26	29	26	29	26	29	26	29	26	29	26	29	26	29	26	29	26	29	26	29
h' E	MED	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110
	CNT	1	3	6	5	6	5	6	5	6	5	6	5	6	5	6	5	6	5	6	5	6	5	6
fo Es	MED	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110
	CNT	1	3	6	5	6	5	6	5	6	5	6	5	6	5	6	5	6	5	6	5	6	5	6

SWEEP 1.6 MC TO 20.0 MC IN 15 SECONDS.

NOVEMBER, 1958

TABLE 43

TIME 105.0W																								
hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
fo F2	MED	50	48	47	46	45	46	47	48	49	50	48	47	46	45	44	43	42	41	40	39	38	37	36
	CNT	29	28	29	28	27	29	30	28	29	30	30	30	30	30	30	29	28	27	26	25	24	23	22
h' F2	MED	270	270	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300
	CNT	28	30	28	30	28	30	29	28	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
(M3000)F2	MED	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300
	CNT	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
fo F1	MED	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300
	CNT	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
fo E	MED	220	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210
	CNT	27	26	27	26	27	26	27	26	27	26	27	26	27	26	27	26	27	26	27	26	27	26	27
h' E	MED	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110
	CNT	1	3	14	23	26	24	29	23	25	24	29	23	25	24	29	23	25	24	29	23	25	24	29
fo Es	MED	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110
	CNT	1	3	14	23	26	24	29	23	25	24	29	23	25	24	29	23	25	24	29	23	25	24	29

SWEEP 1.6 MC TO 20.0 MC IN 15 SECONDS.

NOVEMBER, 1958

TABLE 44

TIME 123.4W																									
hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
fo F2	MED	49	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	
	CNT	28	27	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	
h' F2	MED	250	260	250	260	250	260	250	260	250	260	250	260	250	260	250	260	250	260	250	260	250	260	250	
	CNT	26	25	26	25	26	25	26	25	26	25	26	25	26	25	26	25	26	25	26	25	26	25	26	
(M3000)F2	MED	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	
	CNT	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	
fo F1	MED	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	
	CNT	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	
fo E	MED	220	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	
	CNT	23	24	23	24	23	24	23	24	23	24	23	24	23	24	23	24	23	24	23	24	23	24	23	24
h' E	MED	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	
	CNT	1	13	14	13	14	13	14	13	14	13	14	13	14	13	14	13	14	13	14	13	14	13	14	
fo Es	MED	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	
	CNT	1	13	14	13	14	13	14	13	14	13	14	13	14	13	14	13	14	13	14	13	14	13	14	

SWEEP 1.6 MC TO 20.0 MC IN 15 SECONDS.

NOVEMBER, 1958

SWEEP 1.6 MC TO 20.0 MC IN 15 SECONDS.

NOVEMBER, 1958

TABLE 4

SÃO PAULO, 1

11月 45°04'

TABLE 46

CONTRIBUTION OF AUSLANDER																			
	000	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18
HOUR	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	
fo F2	MEO	U	79	76	74	72	70	68	66	64	62	60	58	56	54	52	50	48	46
	CAT	U	88	82	79	76	72	69	66	63	60	58	55	52	49	46	43	40	37
	LQ	U	79	74	81	76	73	69	66	63	60	58	55	52	49	46	43	40	37
h' F2	MED	420	400	425	400	420	400	420	400	420	400	420	400	420	400	420	400	420	400
	CAT	U	210	260	270	280	290	285	295	280	270	280	270	280	270	280	270	280	270
	LQ	U	260	26	26	29	29	29	29	27	22	20	16	21	25	27	23	26	24
h F	MEO	210	260	270	280	290	285	295	280	270	280	270	280	270	280	270	280	270	280
	CAT	U	210	260	270	280	290	285	295	280	270	280	270	280	270	280	270	280	270
	LQ	U	260	26	26	29	29	29	29	27	22	20	16	21	25	27	23	26	24
(M3000)F2	MEO	210	260	270	280	290	285	295	280	270	280	270	280	270	280	270	280	270	280
	CAT	U	210	260	270	280	290	285	295	280	270	280	270	280	270	280	270	280	270
	LQ	U	260	26	26	29	29	29	29	27	22	20	16	21	25	27	23	26	24
fo F1	MED	1	50	9	10	14	17	24	23	20	17	24	23	20	17	24	23	20	17
	CAT	U	160	270	325	365	400	405	405	400	405	400	405	400	405	400	405	400	405
	LQ	U	20	25	27	29	29	22	25	23	25	20	25	24	25	20	25	23	25
h' E	MED	105	105	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	CAT	U	229	229	28	29	29	24	26	28	29	24	26	28	29	24	26	28	29
fo E4	MED	18	33	27	16	12	19	20	17	26	18	24	26	16	15	14	13	12	11
	CAT	U	18	33	29	16	12	19	20	17	26	18	24	26	16	15	14	13	12

NOVEMBER • 1998

NOVEMBER 1958

TABLE 47

NOVEMBER • 1958

48

Ergonomics

SWEEP 1, 8 MC TO 20.0 MC IN 15 SECONDS

OCTOBER • 1958

OCTOBER, 1958

TABLE 49

FISHERMAN BAY, CANADA (50°46'N., 68°48'W.)

TIME 75.0\*

HOUR	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
fo F2	MEO CNT UO LO	56 27 27 27	55 26 26 27	50 27 28 28	46 25 25 27	45 25 25 27	50 26 26 28	54 25 25 27	69 30 30 29	69 29 29 28	69 30 30 29	77 28 28 27	86 28 28 27	92 28 28 27	84 28 28 27	80 28 28 27	79 28 28 27	76 28 28 27	70 28 28 27	72 28 28 27	71 28 28 27	69 28 28 27	68 28 28 27	69 28 28 27	68 28 28 27
h F2	MEO CNT UO LO																								
fo E	MEO CNT UO LO	300 16 16	290 17 17	310 12 12	300 13 13	300 12 12	300 13 13	280 14 14	260 14 14	260 14 14	270 14 14	260 14 14													
(M3000)F2	MEO CNT UO LO																								
fo F1	MEO CNT																								
fo E	MEO CNT	230 9	250 11	280 12	300 18	300 16	300 19	300 24	300 25	300 23	300 21	300 20													
h E	MEO CNT																								
fo E	MEO CNT																								

SWEEP 1.6 MC TO 20.0 MC IN 15 SECONDS.\*

OCTOBER 1958

TABLE 50

MEANOK, CANADA (54°46'N., 113°34'W.)

TIME 105.0\*

HOUR	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
fo F2	MEO CNT UO LO	56 27 27 27	55 26 26 27	50 25 25 27	46 25 25 27	45 25 25 27	50 25 25 27	54 25 25 27	69 30 30 29	69 28 28 27	69 30 30 29	77 28 28 27	86 28 28 27	92 28 28 27	84 28 28 27	80 28 28 27	79 28 28 27	76 28 28 27	71 28 28 27	69 28 28 27	68 28 28 27	69 28 28 27	68 28 28 27	69 28 28 27	68 28 28 27
h F2	MEO CNT UO LO																								
fo E	MEO CNT																								
h E	MEO CNT																								
fo E	MEO CNT																								

SWEEP 1.6 MC TO 20.0 MC IN 15 SECONDS.\*

OCTOBER 1958

TABLE 51

VICTORIA, CANADA (49°45'N., 123°44'W.)

TIME 120.0\*

HOUR	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
fo F2	MEO CNT UO LO	56 27 27 27	55 26 26 27	50 25 25 27	46 25 25 27	45 25 25 27	50 25 25 27	54 25 25 27	69 30 30 29	69 28 28 27	69 30 30 29	77 28 28 27	86 28 28 27	92 28 28 27	84 28 28 27	80 28 28 27	79 28 28 27	76 28 28 27	71 28 28 27	69 28 28 27	68 28 28 27	69 28 28 27	68 28 28 27	69 28 28 27	68 28 28 27
h F2	MEO CNT UO LO																								
fo E	MEO CNT																								
h E	MEO CNT																								
fo E	MEO CNT																								

SWEEP 1.6 MC TO 20.0 MC IN 15 SECONDS.\*

OCTOBER 1958

TABLE 52

MEANOK, CANADA (54°46'N., 113°34'W.)

TIME 120.0\*

HOUR	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
fo F2	MEO CNT UO LO	56 27 27 27	55 26 26 27	50 25 25 27	46 25 25 27	45 25 25 27	50 25 25 27	54 25 25 27	69 30 30 29	69 28 28 27	69 30 30 29	77 28 28 27	86 28 28 27	92 28 28 27	84 28 28 27	80 28 28 27	79 28 28 27	76 28 28 27	71 28 28 27	69 28 28 27	68 28 28 27	69 28 28 27	68 28 28 27	69 28 28 27	68 28 28 27
h F2	MEO CNT UO LO																								
fo E	MEO CNT																								
h E	MEO CNT																								
fo E	MEO CNT																								

SWEEP 1.6 MC TO 20.0 MC IN 15 SECONDS.\*

OCTOBER 1958

SWEEP 1.6 MC TO 20.0 MC IN 30 SECONDS.\*

OCTOBER 1958

TABLE 53  
SALISBURY, SOUTHERN RHODESIA (17°45'S., 31°0E)

TIME 30.0E																
HOUR	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
fo F2	MEO	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
INT	CNT	1	5	3	2	1	5	3	2	1	5	3	2	1	5	3
LO	LO															
h F2	MEO															
INT	CNT															
LO	LO															
h F	MEO															
INT	CNT															
LO	LO															
(W300)F2	MEO	300	320	290	360	330	355	340	360	330	340	355	340	360	330	355
INT	CNT	1	2	3	2	1	4	5	6	5	4	3	2	1	4	5
LO	LO															
fo F1	MEO															
INT	CNT															
LO	LO															
fo E	MEO															
INT	CNT															
LO	LO															
fo E	MEO	13	E	E	E	E	E	E	G	G	G	G	G	G	G	G
INT	CNT	3	8	6	9	11	11	11	21	25	24	21	15	2	4	11
LO	LO															
SWEET 1.0 MC TO 16.0 MC IN 7 SECONDS*																

OCTOBER 1958

TABLE 55

TIME 45.0W																
HOUR	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
fo F2	MEO	144	125	135	120	130	105	72	75	105	120	130	135	140	144	U
INT	CNT	133	153	99	111	111	111	111	111	111	111	111	111	111	111	111
LO	LO	124	125	79	68	66	101	116	127	132	132	134	134	134	134	134
h F2	MEO															
INT	CNT															
LO	LO															
(W300)F2	MEO	330	320	285	280	290	300	285	280	270	265	265	265	265	265	U
INT	CNT	18	18	20	22	23	22	25	25	24	22	22	24	24	24	24
LO	LO															
fo F1	MEO															
INT	CNT															
LO	LO															
fo E	MEO															
INT	CNT															
LO	LO															
(W300)F	MEO	330	320	285	280	290	300	285	280	270	265	265	265	265	265	U
INT	CNT	18	18	20	22	23	22	25	25	24	22	22	24	24	24	24
LO	LO															
fo E	MEO															
INT	CNT															
LO	LO															
SWEET 1.0 MC TO 16.0 MC IN 2 MINUTES 30 SECONDS*																

OCTOBER 1958

TABLE 55

TIME 45.0W																
HOUR	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
fo F2	MEO	140	125	135	120	130	105	72	75	105	120	130	135	140	144	U
INT	CNT	133	153	99	111	111	111	111	111	111	111	111	111	111	111	111
LO	LO	124	125	79	68	66	101	116	127	132	132	134	134	134	134	134
h F2	MEO															
INT	CNT															
LO	LO															
(W300)F2	MEO	330	320	285	280	290	300	285	280	270	265	265	265	265	265	U
INT	CNT	18	18	20	22	23	22	25	25	24	22	22	24	24	24	24
LO	LO															
fo F1	MEO															
INT	CNT															
LO	LO															
fo E	MEO															
INT	CNT															
LO	LO															
fo E	MEO															
INT	CNT															
LO	LO															
SWEET 1.0 MC TO 16.0 MC IN 2 MINUTES 30 SECONDS*																

OCTOBER 1958

TIME 45.0W																
HOUR	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
fo F2	MEO	140	125	135	120	130	105	72	75	105	120	130	135	140	144	U
INT	CNT	133	153	99	111	111	111	111	111	111	111	111	111	111	111	111
LO	LO	124	125	79	68	66	101	116	127	132	132	134	134	134	134	134
h F2	MEO															
INT	CNT															
LO	LO															
(M300)F2	MEO	330	320	285	280	290	300	285	280	270	265	265	265	265	265	U
INT	CNT	18	18	20	22	23	22	25	25	24	22	22	24	24	24	24
LO	LO															
fo F1	MEO															
INT	CNT															
LO	LO															
fo E	MEO															
INT	CNT															
LO	LO															
fo E	MEO															
INT	CNT															
LO	LO															
SWEET 1.0 MC TO 16.0 MC IN 2 MINUTES 30 SECONDS*																

OCTOBER 1958

TABLE 55

SEPTEMBER 1958

TABLE 56

OCTOBER 1958

TABLE 57

OCTOBER 1958

TABLE 58

OCTOBER 1958

TABLE 59

OCTOBER 1958

TABLE 60

OCTOBER 1958

TABLE 61

OCTOBER 1958

TABLE 62

OCTOBER 1958

TABLE 63

OCTOBER 1958

TABLE 64

OCTOBER 1958

TABLE 65

OCTOBER 1958

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OCTOBER 1958

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OCTOBER 1958

TABLE 68

OCTOBER 1958

TABLE 69

OCTOBER 1958

TABLE 70

OCTOBER 1958

TABLE 71

OCTOBER 1958

TABLE 72

OCTOBER 1958

TABLE 73

OCTOBER 1958

TABLE 74

OCTOBER 1958

TABLE 75

OCTOBER 1958

TABLE 76

OCTOBER 1958

TABLE 77

OCTOBER 1958

TABLE 78

OCTOBER 1958

TABLE 79

OCTOBER 1958

TABLE 80

OCTOBER 1958

TABLE 81

OCTOBER 1958

TABLE 82

ABLE 57

TABLE 58

(EP 1.00 WC TO 25.0 MC IN 30 SECONDS.

SLEEP 1-6 TO 20-0 MC IN 15 SECONDS.  
AUGUST

A8LE 59

TABLE 6C

EEP 1.6 MC TO 20.0 MC IN 15 SECONDS.

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TABLE 6C

SWEET 16 MC TO 20.0 MC IN 15 SECONDS

JULY • 1958 51

TABLE 62

TRELLW. ARGENTINA (43°25' S., 65°3' W.)												TIME 80.0 W												
HOUR	0C	01	02	C3	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
fo F2	MED	65	67	66	71	60	55	64	90	94	98	96	104	100	99	93	90	90	90	90	90	90	90	90
CNT	CNT	24	26	26	27	26	27	25	25	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26
UQ	UQ																							
LO	LO																							
h' F2	MED	300	280	310	295	300	260	340	290	220	220	220	210	220	225	230	230	235	230	230	230	230	230	230
CNT	CNT	19	18	23	21	24	21	18	22	10	8	6	2	5	9	14	18	13	13	13	13	13	13	14
UQ	UQ																							
LO	LO																							
N F	MED	250	245	245	245	245	240	240	265	275														
CNT	CNT	13	13	13	11	15	13	12	13															
UQ	UQ																							
LO	LO																							
(M3000)F2	MED	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300
CNT	CNT	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
UQ	UQ																							
LO	LO																							
fo F1	MED																							
CNT	CNT																							
UQ	UQ																							
fo E	MED																							
CNT	CNT																							
UQ	UQ																							
LO	LO																							
h' E	MED																							
CNT	CNT																							
UQ	UQ																							
lo E*	MED																							
CNT	CNT																							
UQ	UQ																							
LO	LO																							

MARCH 1958

TABLE 63

DOUBLES, BELGIUM (50°1' N., 4°46' E.)												TIME 0.0 W												
HOUR	00	01	02	C3	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
fo F2	MED	47	45	45	44	39	36	64	96	118	120	132	131	133	132	130	122	115	91	75	62	50	51	51
CNT	CNT	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28
UQ	UQ	51	50	48	46	44	40	42	70	105	126	138	140	135	134	132	128	120	107	84	76	63	59	57
LO	LO	45	43	43	36	33	35	41	88	111	124	124	124	124	124	124	124	124	124	124	124	124	124	
h' F2	MED																							
CNT	CNT																							
UQ	UQ																							
LO	LO																							
(M3000)F2	MED	250	250	250	250	255	260	265	275	280	280	280	280	280	280	280	280	280	280	280	280	280	280	280
CNT	CNT	265	265	265	265	265	265	265	265	265	265	265	265	265	265	265	265	265	265	265	265	265	265	265
UQ	UQ	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255
LO	LO	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230
fo F1	MED																							
CNT	CNT																							
UQ	UQ																							
fo E	MED																							
CNT	CNT																							
UQ	UQ																							
LO	LO																							
h' E	MED																							
CNT	CNT																							
UQ	UQ																							
lo E*	MED																							
CNT	CNT																							
UQ	UQ																							
LO	LO																							
fo E*	MED																							
CNT	CNT																							
UQ	UQ																							
LO	LO																							

MARCH 1958

CLYDE, BRITAIN (170°25' N., 68°46' W.)												TIME 75.0 W												
HOUR	00	01	02	C3	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
fo F2	MED	47	45	45	44	39	36	64	96	118	120	132	131	133	132	130	122	115	91	75	62	50	51	51
CNT	CNT	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28
UQ	UQ	51	50	48	46	44	40	42	70	105	126	138	140	135	134	132	128	120	107	84	76	63	59	57
LO	LO	45	43	43	36	33	35	41	88	111	124	126	126	125	125	125	125	125	125	125	125	125	125	
h' F2	MED																							
CNT	CNT																							
UQ	UQ																							
LO	LO																							
(M3000)F2	MED	250	250	250	250	255	260	265	275	280	280	280	280	280	280	280	280	280	280	280	280	280	280	280
CNT	CNT	265	265	265	265	265	265	265	265	265	265	265	265	265	265	265	265	265	265	265	265	265	265	265
UQ	UQ	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255
LO	LO	230	230	230	23																			

65

TIME 6000

ECP 1.0 MC TO 250 MC IN 30 SECONDS \*

TABLE 66

SOUTIENS - FINANCE (44,6 MN - 0,2E)

SUGG 1 & MC 10 14-8 MC IN 3 MINUTE-

67

CANADA - FRENCH - AEROBIC - 140,2N - 174,6W

EP 1.06 MC TO 16.0 MC IN 1 MINUTE 15 SECONDS.

TABLE 69

TABLE 70

EEEP 1.25 MC TO 20.0 MC IN 10 MINUTES.

71

Table 72

JUNE • 1957

Table 72

JUNE • 195

**EEG 1.06 MC TO 16.00 MC IN 1 MINUTE.**

1957

MAY • 195

TABLE 73

DAKAR, FRENCH AFRICA (14°47'N, 17°4W)													
TIME LOCAL													
HOUR	00	01	02	03	04	05	06	07	08	09	10	11	12
fo F2	MED	102	86	81	69	61	59	54	107	120	126	133	140
CAT	CAT	23	25	24	27	21	28	29	28	29	27	25	24
UQ	UQ	102	86	81	69	61	59	54	107	120	126	133	140
LO	LO	102	86	81	69	61	59	54	107	120	126	133	140
h' F2	MED	260	330	385	425	450	460	470	480	490	495	495	495
CAT	CAT	11	13	25	27	24	27	24	27	24	27	24	27
UQ	UQ	260	330	385	425	450	460	470	480	490	495	495	495
LO	LO	260	330	385	425	450	460	470	480	490	495	495	495
h' F	MED	330	390	295	250	210	20	19	21	20	21	22	23
CAT	CAT	28	26	26	27	24	28	29	28	29	26	27	28
UQ	UQ	330	390	295	250	210	20	19	21	20	21	22	23
LO	LO	330	390	295	250	210	20	19	21	20	21	22	23
(M3000)F2	MED	245	250	275	280	290	270	260	250	240	235	235	235
CAT	CAT	16	17	22	20	27	29	26	28	26	23	11	14
UQ	UQ	245	250	275	280	290	270	260	250	240	235	235	235
LO	LO	245	250	275	280	290	270	260	250	240	235	235	235
fo F1	MED	550	535	570	570	645	640	620	600	590	590	590	590
CAT	CAT	7	23	21	23	22	22	24	21	19	12	4	4
UQ	UQ	550	535	570	570	645	640	620	600	590	590	590	590
LO	LO	550	535	570	570	645	640	620	600	590	590	590	590
fo E	MED	195	295	340	410	425	430	435	435	450	450	450	450
CAT	CAT	15	20	15	13	13	13	13	13	13	13	13	13
UQ	UQ	195	295	340	410	425	430	435	435	450	450	450	450
LO	LO	195	295	340	410	425	430	435	435	450	450	450	450
h' E	MED	129	109	107	107	107	107	107	109	111	111	111	111
CAT	CAT	8	10	14	13	14	14	14	14	14	14	14	14
UQ	UQ	129	109	107	107	107	107	107	109	111	111	111	111
LO	LO	129	109	107	107	107	107	107	109	111	111	111	111
fo E*	MED												
CAT	CAT												
UQ	UQ												
LO	LO												

SWEEP 1+25 MC TO 20+0 MC IN 10 MINUTES\*

NA\* 1957

TABLE 75

TANANARIVE, MADAGASCAR (18°05'S, 47°5E)													
TIME LOCAL													
HOUR	00	01	02	03	04	05	06	07	08	09	10	11	12
fo F2	MED	44	39	37	34	32	31	42	90	120	134	132	125
CAT	CAT	28	28	28	28	28	30	30	30	30	30	30	30
UQ	UQ	44	39	37	34	32	31	42	90	120	130	130	125
LO	LO	44	39	37	34	32	31	42	90	120	130	130	125
h' F2	MED	245	250	250	255	260	270	270	325	320	320	320	320
CAT	CAT	26	26	26	26	29	30	31	30	30	30	30	30
UQ	UQ	245	250	250	255	260	270	270	325	320	320	320	320
LO	LO	245	250	250	255	260	270	270	325	320	320	320	320
(M3000)F2	MED	295	290	285	280	270	280	330	305	320	320	320	320
CAT	CAT	28	28	28	28	27	28	29	28	29	28	29	28
UQ	UQ	295	290	285	280	270	280	330	305	320	320	320	320
LO	LO	295	290	285	280	270	280	330	305	320	320	320	320
fo F1	MED	850	E	235	305	375	395	405	392	380	375	370	360
CAT	CAT	1	30	30	31	31	30	30	19	18	17	16	15
UQ	UQ	850	E	235	305	375	395	405	392	380	375	370	360
LO	LO	850	E	235	305	375	395	405	392	380	375	370	360
fo E	MED	118	110	105	105	105	105	105	110	118	E	E	E
CAT	CAT	14	16	16	19	27	26	22	24	23	22	21	20
UQ	UQ	118	110	105	105	105	105	105	110	118	E	E	E
LO	LO	118	110	105	105	105	105	105	110	118	E	E	E
h' E	MED												
CAT	CAT												
UQ	UQ												
LO	LO												
fo E*	MED												
CAT	CAT												
UQ	UQ												
LO	LO												

SWEEP 1+25 MC TO 20+0 MC IN 10 MINUTES\*

NA\* 1957

SWEEP 1+25 MC TO 20+0 MC IN 10 MINUTES\*

NA\* 1957

TABLE 74

DJIBOUTI, FRENCH SOMALILAND (11°47'N, 43°2E)													
TIME LOCAL													
HOUR	00	01	02	03	04	05	06	07	08	09	10	11	12
fo F2	MED	102	86	81	69	61	59	54	107	120	126	133	140
CAT	CAT	23	25	24	27	21	26	27	25	29	28	26	15
UQ	UQ	102	86	81	69	61	59	54	107	120	126	133	140
LO	LO	102	86	81	69	61	59	54	107	120	126	133	140
h' F2	MED	260	330	385	425	450	460	470	480	490	495	495	495
CAT	CAT	11	13	25	27	24	27	25	27	24	22	21	14
UQ	UQ	260	330	385	425	450	460	470	480	490	495	495	495
LO	LO	260	330	385	425	450	460	470	480	490	495	495	495
fo E	MED	102	86	81	69	61	59	54	107	120	126	133	140
CAT	CAT	22	27	24	28	26	27	25	27	24	22	21	14
UQ	UQ	102	86	81	69	61	59	54	107	120	126	133	140
LO	LO	102	86	81	69	61	59	54	107	120	126	133	140
h' E	MED	260	330	385	425	450	460	470	480	490	495	495	495
CAT	CAT	11	13	25	27	24	27	25	27	24	22	21	14
UQ	UQ	260	330	385	425	450	460	470	480	490	495	495	495
LO	LO	260	330	385	425	450	460	470	480	490	495	495	495
fo E*	MED												
CAT	CAT												
UQ	UQ												
LO	LO												

NA\* 1957

APRIL 1957



TABLE 81

TABLE 82

POITIERS, FRANCE (46°6'N - 0°3'E)

• 25 MC TO 200 MC IN 10 MINUTES.

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TABLE

IEEE P-160 MC TO 160 MC IN 1 MINUTE 15 SECONDS.

SEPTEMBER 16 MC 17.3 MC IN 1 MINUTE

— 16 —

00

LINE 0.0

HOUR	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22
10 F2	MED CNT UD LO	66 31 31	61 31 31	56 31 31	53 31 31	45 31 31	54 31 31	78 29	93 24	116 30	129 28	130 26	126 28	124 29	124 31	122 30	113 14	U 14	07 10	71 13	69 10	68 28	
11 F2	MED CNT UD LO							1	260 186	250 217	270 222	270 200	290 14	290 277	290 270								
11 F	MED CNT UD LO	310 31 31	315 31 31	325 31 31	315 31 31	290 31 31	300 31 31	260 31 31	235 31 31	230 31 31	230 31 31	225 31 31	225 31 31	225 31 31	235 31 31	240 31 31	240 31 31	245 31 31	240 31 31	245 31 31	240 31 31	245 31 31	
(M3000)F2	MED CNT UD LO	240 8 10	250 14 14	240 14 14	250 14 14	250 20 21	250 20 21	285 15	305 8	290 8	280 6	280 9	275 7	280 9	270 6	275 8	270 4	270 1	270 1	270 1	270 1	270 1	
10 F1	MED CNT								3	550 7	470 12	670 10											
10 E	MED CNT								180 15	230 31	330 31	340 31	360 28	370 27	370 31	360 30	340 30	310 31	250 31	180 20			
11 E	MED CNT								E 160 14	E 115 24	E 105 31	E 100 30	E 100 29	E 100 27	E 100 26	E 100 27	E 100 26	E 100 27	E 100 26	E 100 27	E 100 26		
10 E	MED CNT	31 31	30 31	34 31	36 31	38 31	G G	G G	G G	G G	25 31	26 31	19 31	E E	E E	E E							

ARCH. 1957

0.0  
10

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MARCM, 1957

אogle 85

TABLE 86

AOLE 87

TIME O												
POTTER'S FINANCIAL STATEMENT												
HEURE	00	01	02	03	04	05	06	07	08	09	10	11
16 F2	MEO	53	52	50	47	46	40	39	62	86	114	126
	CNT	27	27	25	26	26	26	27	27	27	30	130
	LQ	.	.	.	.	.	.	.	.	.	27	27
n°F2	MEO								U	U	U	U
	CNT								U	U	U	U
	LQ								U	U	U	U
n°F	MEO	6	5	4	3	2	1	E	25	20	25	25
	CNT	28	30	32	30	29	28	26	26	26	25	25
	LQ	.	.	.	.	.	.	.	U	U	U	U
(M3000)F2	MEO	270	260	265	260	260	270	270	300	320	325	325
	CNT	11	7	10	12	7	14	14	4	3	30	310
	LQ	.	.	.	.	.	.	.	U	U	U	U
16 F1	MEO								U	U	U	U
	CNT								U	U	U	U
	LQ								U	U	U	U
fe E	MEO								U	U	U	U
	CNT								U	U	U	U
n°E	MEO								U	U	U	U
	CNT								U	U	U	U
fe Es	MEO								U	U	U	U

TAKI

SWEET 1.025 MC TO 20.0 MC IN 10 MINUTES.

TABLE 89

TIME 0-0 CASABLANCA, MOROCCO (33°46'N., 7°48'W.)																		
HOUR		00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
fo F2	MED	73	70	69	65	60	52	44	37	30	23	17	12	7	1	1	1	1
CNT	UQ	21	20	25	24	22	18	21	19	17	12	9	7	4	1	1	1	1
LO																		
h' F2	MED																	
CNT	UQ																	
LO																		
h' F	MED	109	102	98	90	84	76	68	60	52	44	37	30	23	17	12	7	1
CNT	UQ	28	26	26	25	25	22	23	25	24	21	17	12	9	7	4	1	1
LO																		
(M3000)F2	MED	270	280	275	270	250	275	290	330	320	305	295	290	285	280	265	270	270
CNT	UQ	14	20	21	16	12	12	19	16	9	6	8	11	20	21	14	8	17
LO																		
fo F1	MED																	
CNT	UQ																	
LO																		
fo E	MED																	
CNT	UQ																	
LO																		
h' E	MED																	
CNT	UQ																	
LO																		
fo E*	MED																	
CNT	UQ																	
LO																		

SWEEP 1+6 MC TO 16+0 MC IN 1 MINUTE 15 SECONDS.

FEBRUARY 1957

TABLE 91

TIME LOCAL DAKAR, FRENCH W. AFRICA (11°47'N., 17°44'W.)																		
HOUR		00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
fo F2	MED	154	143	110	73	59	51	50	17+	136	154	155	156	152	152	146	145	150
CNT	UQ	28	28	28	27	26	28	28	27	26	28	27	28	27	27	27	27	27
LO																		
h' F2	MED																	
CNT	UQ																	
LO																		
h' F	MED																	
CNT	UQ																	
LO																		
(M3000)F2	MED	320	310	300	290	280	270	260	255	250	245	235	210	215	210	205	200	205
CNT	UQ	26	27	27	27	28	26	26	27	26	25	25	23	23	22	21	21	21
LO																		
fo F1	MED																	
CNT	UQ																	
LO																		
fo E	MED																	
CNT	UQ																	
LO																		

SWEEP 1+6 MC TO 17+0 MC IN 1 MINUTE \*

FEBRUARY 1957

TABLE 92

TIME LOCAL DJIBOUTI, FRENCH SOMALILAND (11°16'N., 43°32'E.)																		
HOUR		00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
fo F2	MED	109	102	98	90	84	76	68	60	52	44	37	30	23	17	12	7	1
CNT	UQ	28	26	26	25	25	22	23	22	21	19	17	14	11	7	4	1	1
LO																		
h' F2	MED																	
CNT	UQ																	
LO																		
h' F	MED																	
CNT	UQ																	
LO																		
(M3000)F2	MED	270	275	270	265	260	260	255	250	245	240	235	230	220	215	210	205	200
CNT	UQ	26	26	26	27	27	28	28	27	27	26	26	25	25	24	23	23	23
LO																		
fo F1	MED																	
CNT	UQ																	
LO																		
fo E	MED																	
CNT	UQ																	
LO																		
h' E	MED																	
CNT	UQ																	
LO																		
fo Es	MED																	
CNT	UQ																	
LO																		

SWEEP 1+25 MC TO 20+0 MC IN 10 MINUTES, AUTOMATIC OPERATION\*

FEBRUARY 1957

TIME LOCAL TUNISIA, FRENCH TUNISIA (36°40'N., 9°30'E.)																		
HOUR		00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
fo F2	MED	154	143	110	73	59	51	50	17+	136	154	155	156	152	152	146	145	150
CNT	UQ	28	28	28	27	26	28	28	27	26	28	27	28	27	27	27	27	27
LO																		
h' F2	MED																	
CNT	UQ																	
LO																		
h' F	MED																	
CNT	UQ																	
LO																		
(M3000)F2	MED	320	310	300	290	280	270	260	255	250	245	235	210	205	200	195	190	195
CNT	UQ	26	27	27	27	28	26	26	27	26	25	23	23	22	21	20	19	19
LO																		
fo F1	MED																	
CNT	UQ																	
LO																		
fo E	MED																	
CNT	UQ																	
LO																		
h' E	MED																	
CNT	UQ																	
LO																		
fo Es	MED																	
CNT	UQ																	
LO																		

SWEEP 1+25 MC TO 20+0 MC IN 10 MINUTES\*

FEBRUARY 1957

TIME LOCAL TUNISIA, FRENCH TUNISIA (36°40'N., 9°30'E.)																	
HOUR		00	01	02	03	04	05	06	07	08	09	10	11	12	13</th		

BLE 93

THE ECONOMY OF THE UNITED STATES

1,25 MC TO 20.0 MC IN 10 MINUTES.

L'ESPRESSO - NOVEMBRE

FEBRUARY, 1957

SWEET 16 MC TO 16.0 MC IN 1 MINUTE.

JANUARY, 1957

TABLE 97

TABLE 98

P 1.25 MC TO 20.0 MC IN 10 MINUTES. AUTOMATIC OPERATION.

99

SEP 1.25 MC TO 20.0 MC IN 10 MINUTES.

TABLE 100

JANUARY • 1957

TIME LOCAL  
y<sub>B</sub>  
TABLE

## GRAPHS OF IONOSPHERIC DATA

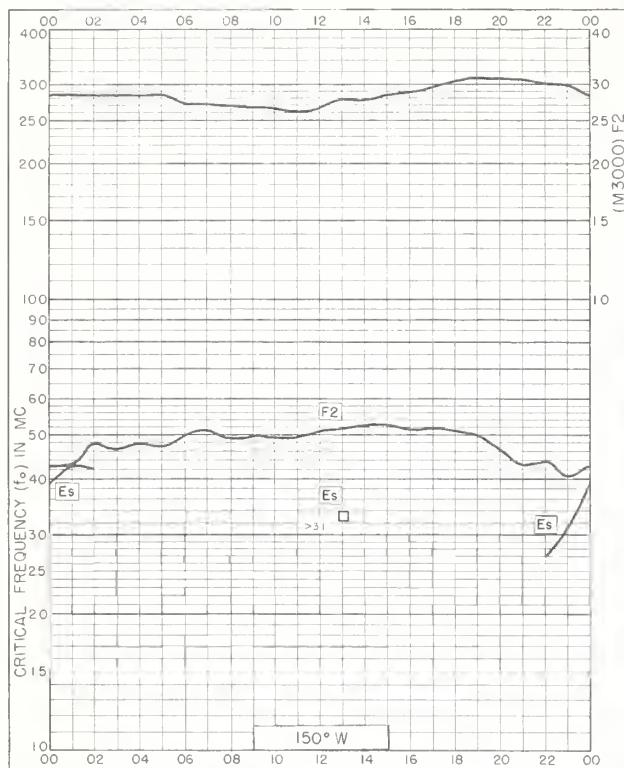


Fig. 1. FAIRBANKS, ALASKA  
64.9°N, 147.8°W JULY 1961

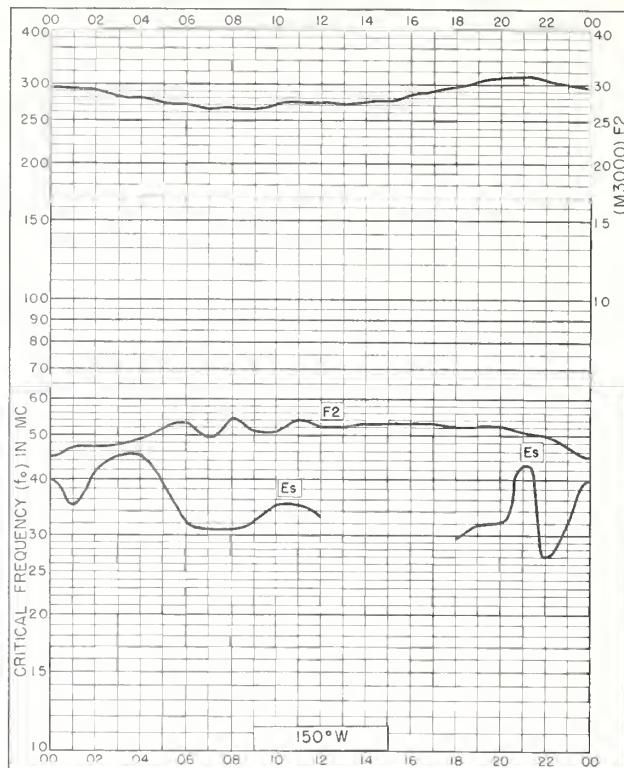


Fig. 2. FAIRBANKS, ALASKA  
64.9°N, 147.8°W JUNE 1961

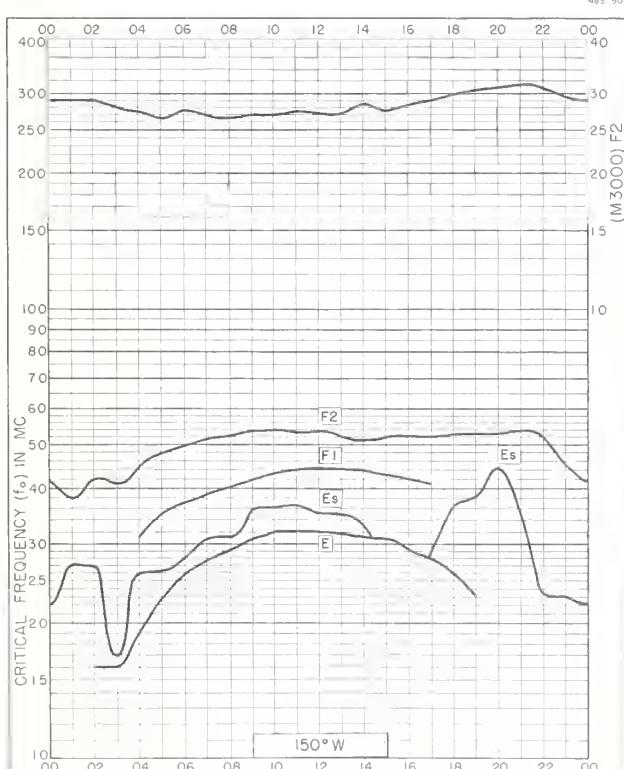


Fig. 3. ANCHORAGE, ALASKA  
61.2°N, 149.9°W JUNE 1961



Fig. 4. FAIRBANKS, ALASKA  
64.9°N, 147.8°W MAY 1961

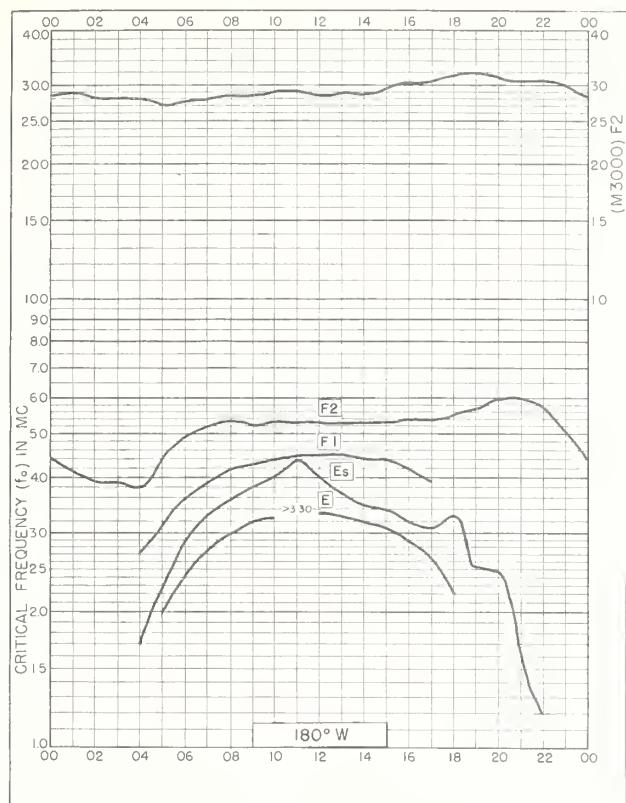


Fig. 5. ADAK , ALASKA  
51.9°N, 176.6°W MAY 1961

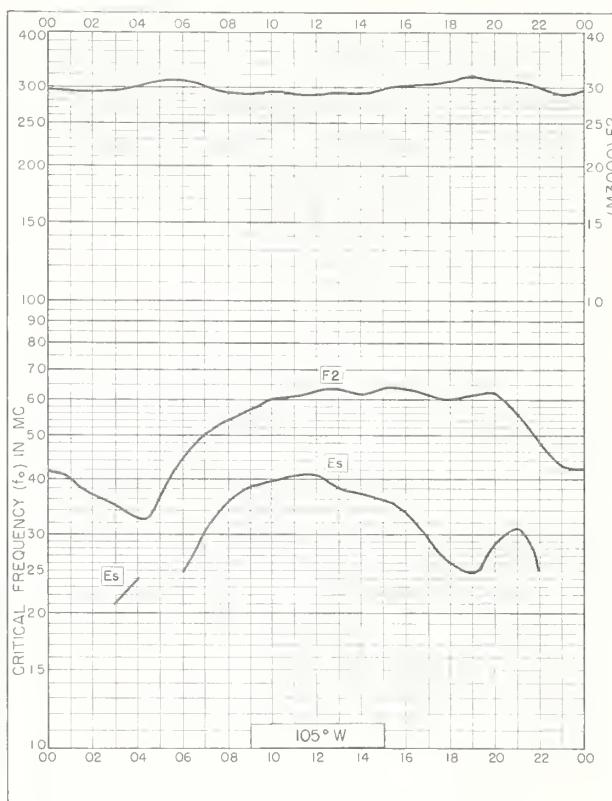


Fig. 6. BOULDER , COLORADO  
40.0°N, 105.3°W MAY 1961

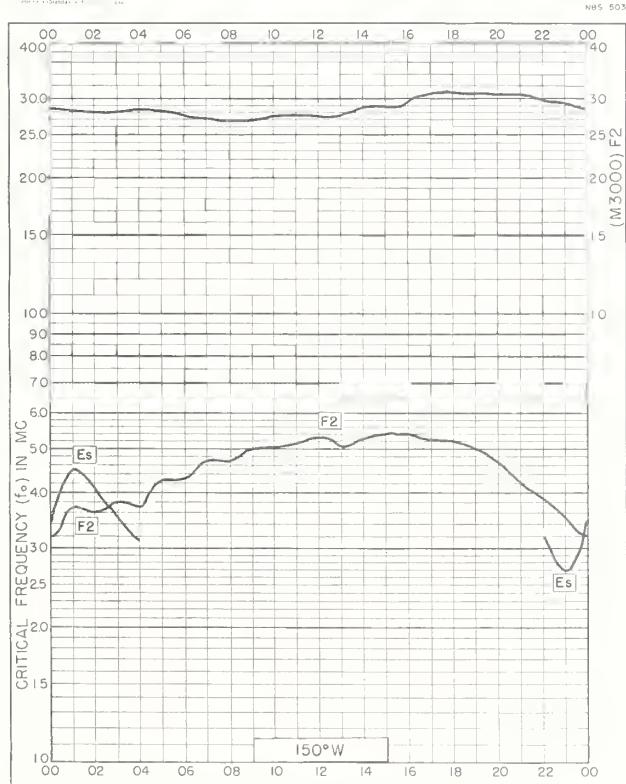


Fig. 7. FAIRBANKS , ALASKA  
64.9°N, 147.8°W APRIL 1961

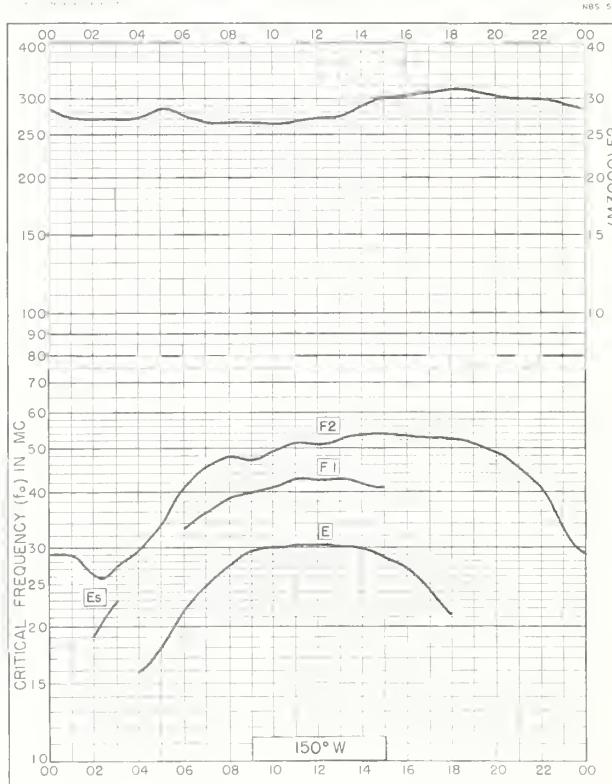


Fig. 8. ANCHORAGE , ALASKA  
61.2°N, 149.9°W APRIL 1961

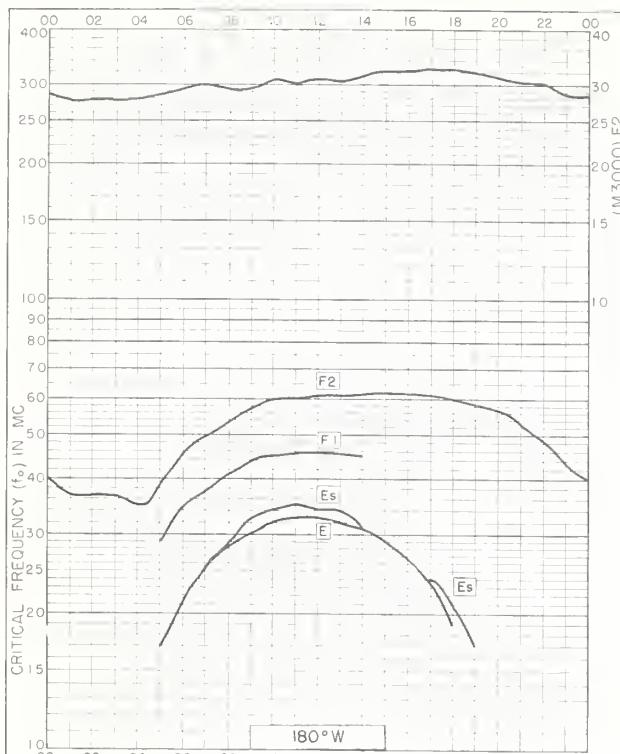


Fig. 9 ADAK, ALASKA  
51.9°N, 176.6°W      APRIL 1961

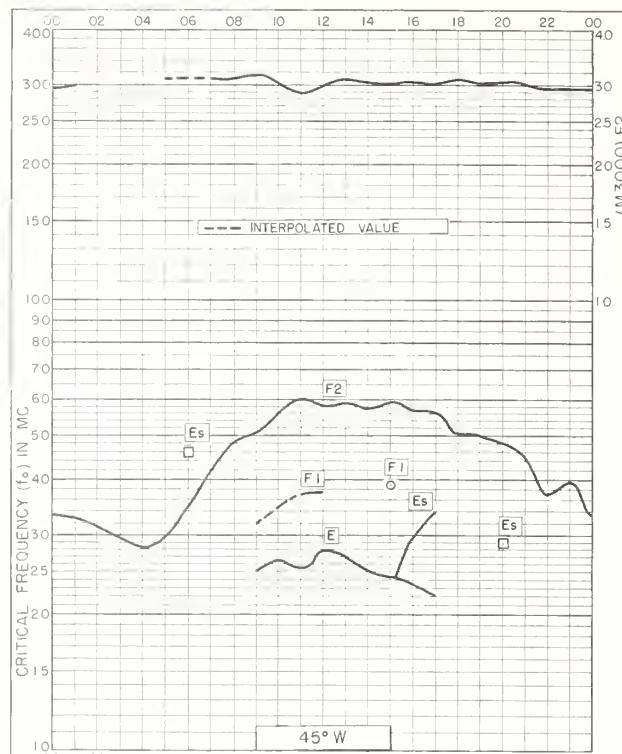


Fig. 10 GODHAVN, GREENLAND  
69.3°N, 53.5°W      MARCH 1961

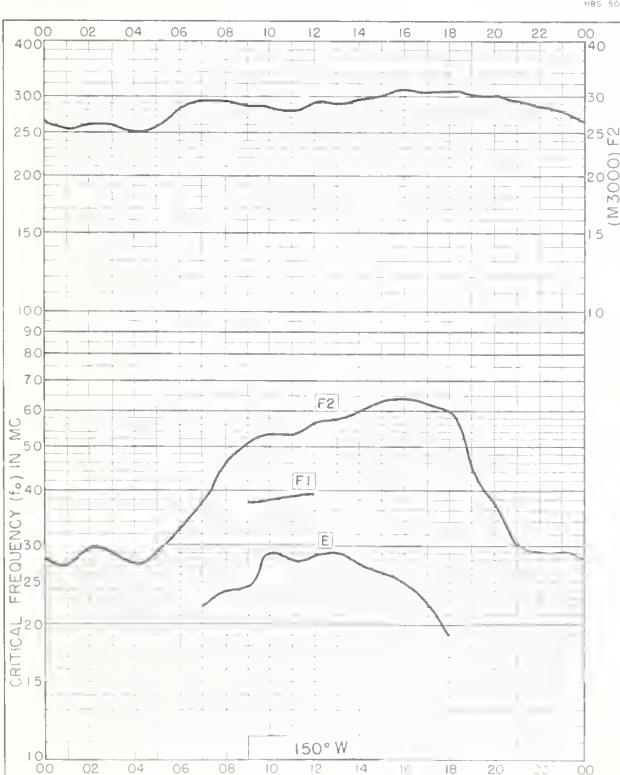


Fig. 11. ANCHORAGE, ALASKA  
61.2°N, 149.9°W      MARCH 1961

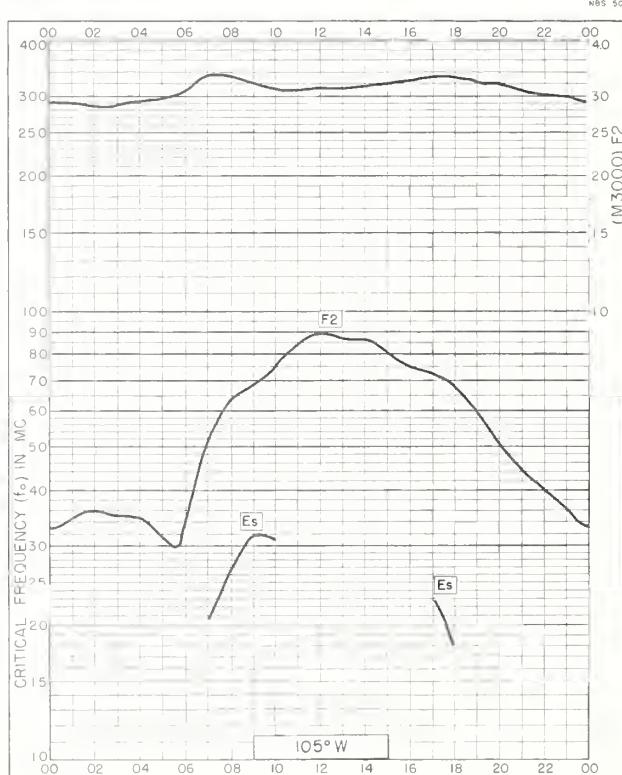


Fig. 12 BOULDER, COLORADO  
40.0°N, 105.3°W      MARCH 1961

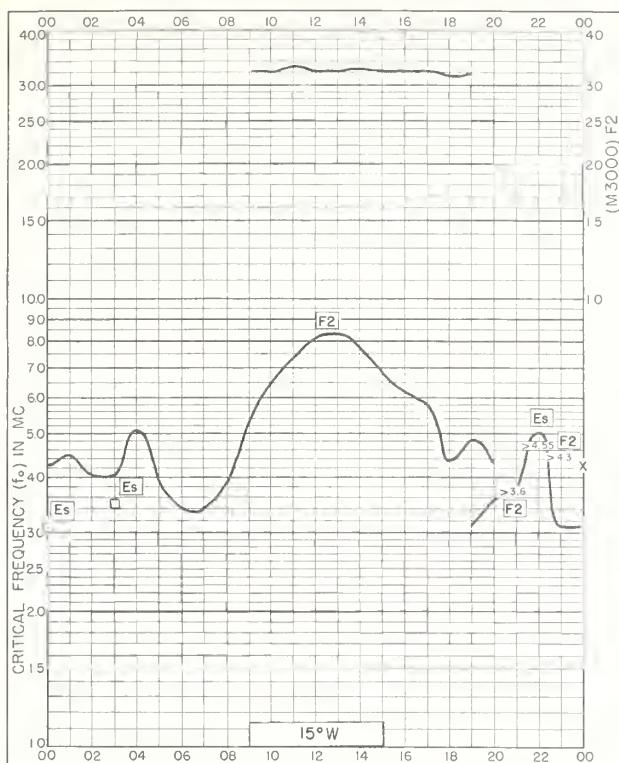


Fig. 13. REYKJAVIK, ICELAND  
64.1°N, 21.8°W NOVEMBER 1960

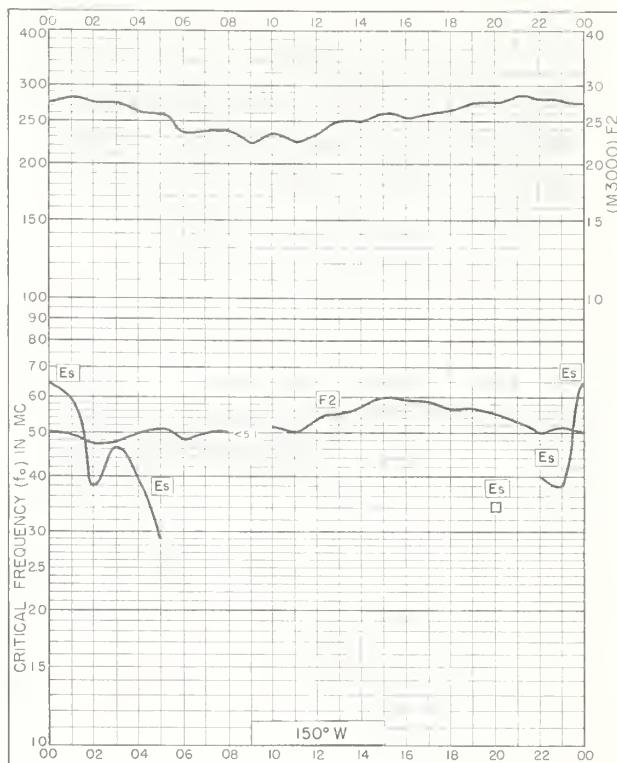


Fig. 14. POINT BARROW, ALASKA  
71.3°N, 156.8°W JUNE 1960

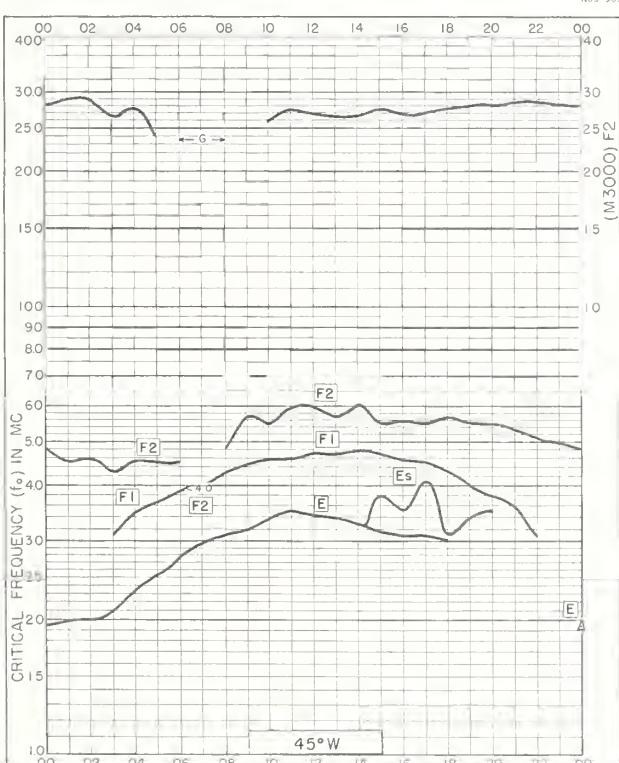


Fig. 15. GODHAVN, GREENLAND  
69.3°N, 53.5°W JUNE 1960

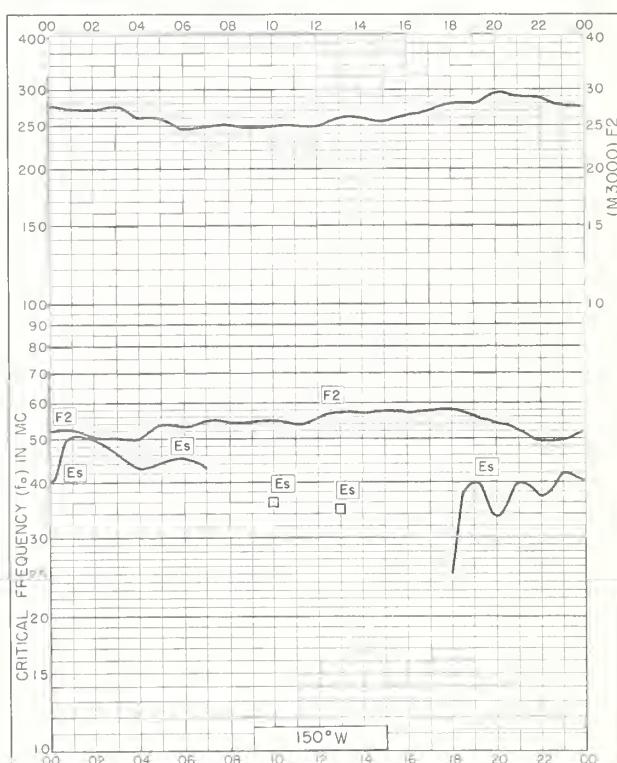
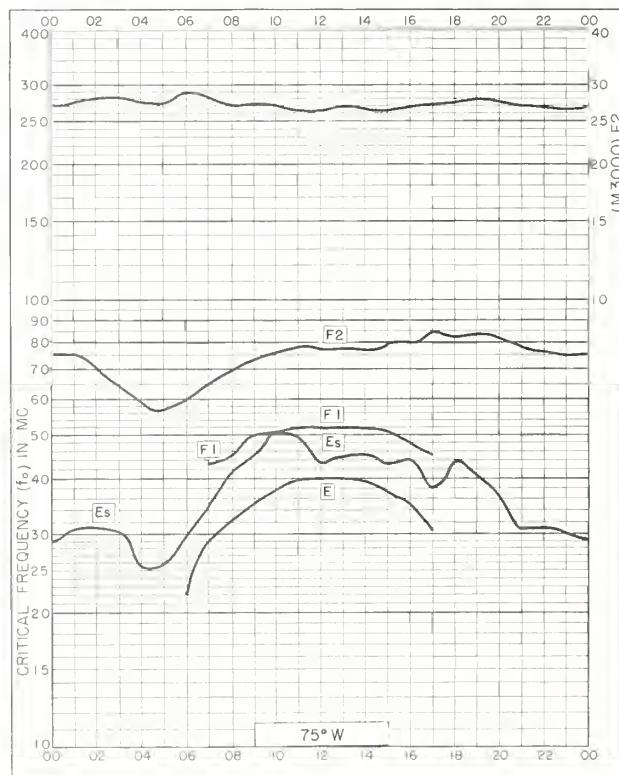
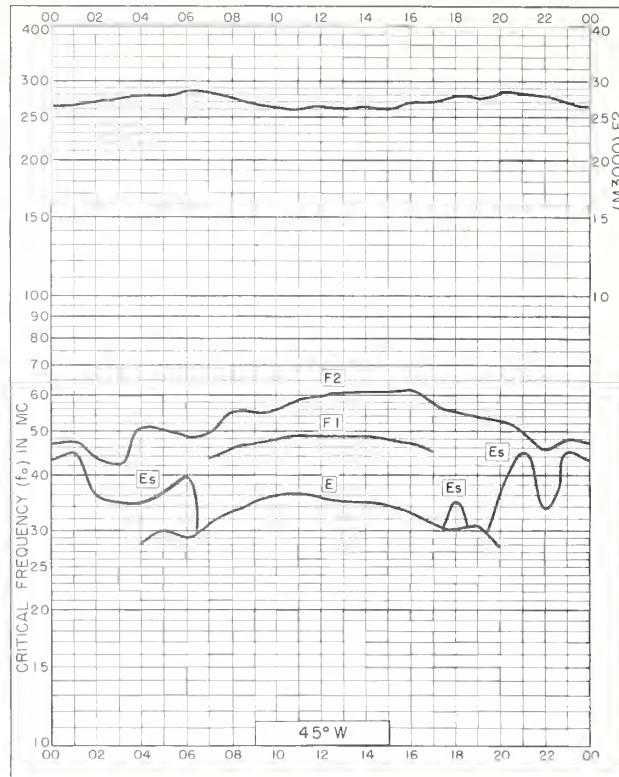
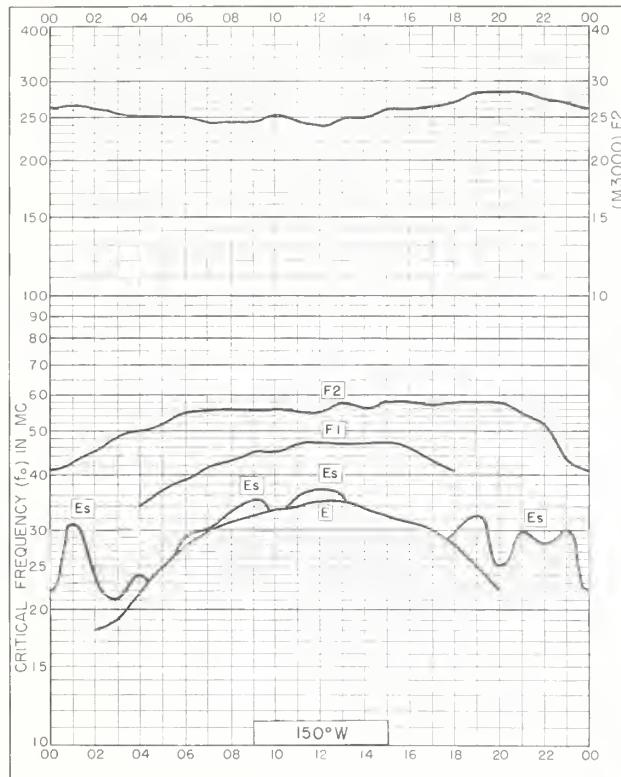


Fig. 16. FAIRBANKS, ALASKA  
64.9°N, 147.8°W JUNE 1960



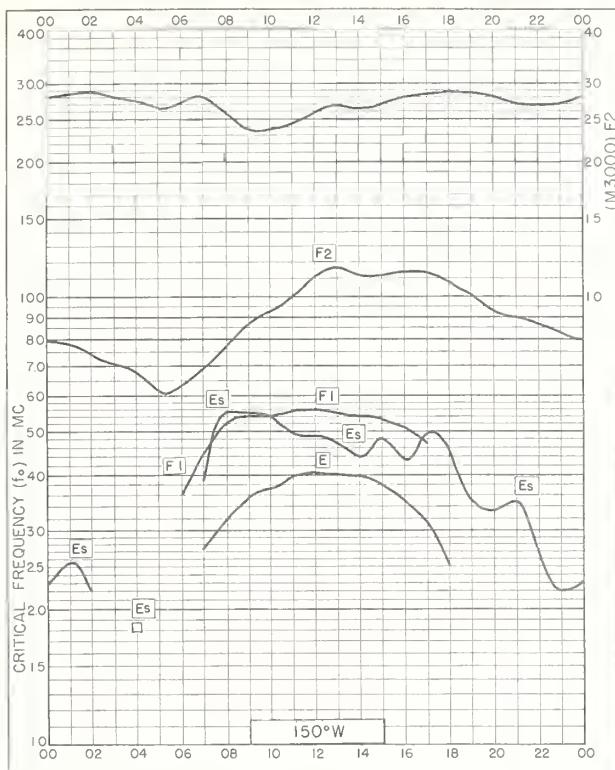


Fig. 21. MAUI, HAWAII  
20.8°N, 156.5°W JUNE 1960

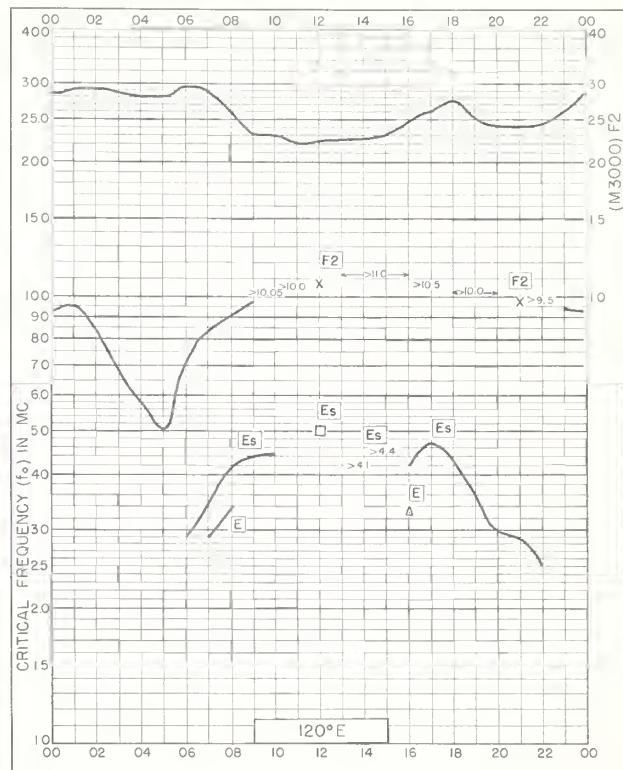


Fig. 22. BAGUIO, P.I.  
16.4°N, 120.6°E JUNE 1960

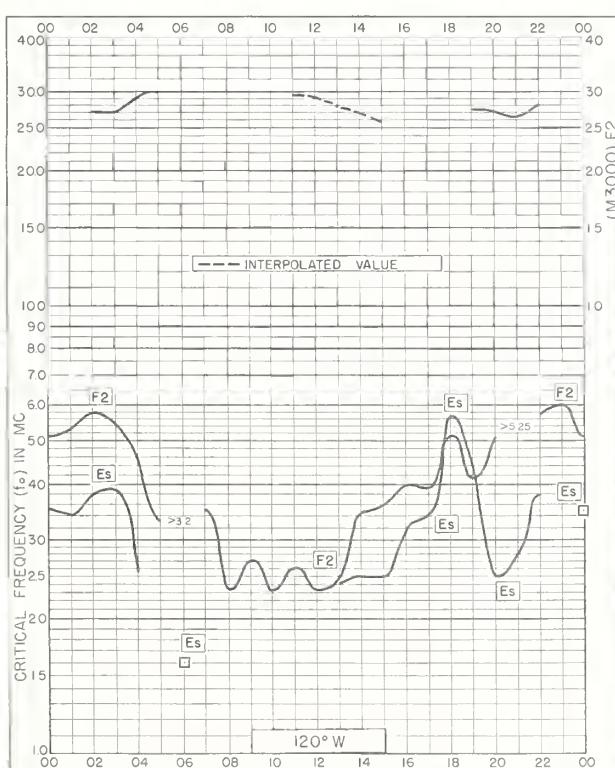


Fig. 23. BYRD STATION  
80.0°S, 120.0°W JUNE 1960

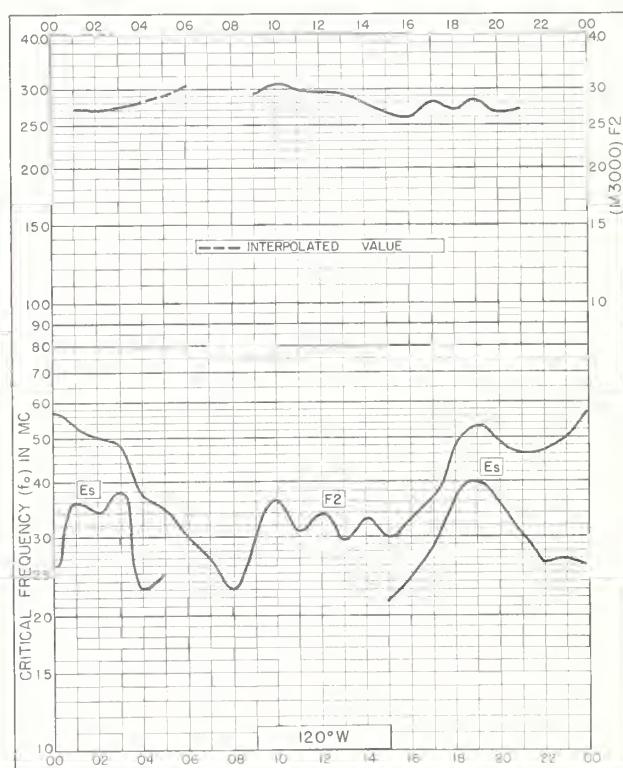


Fig. 24. BYRD STATION  
80.0°S, 120.0°W MAY 1960

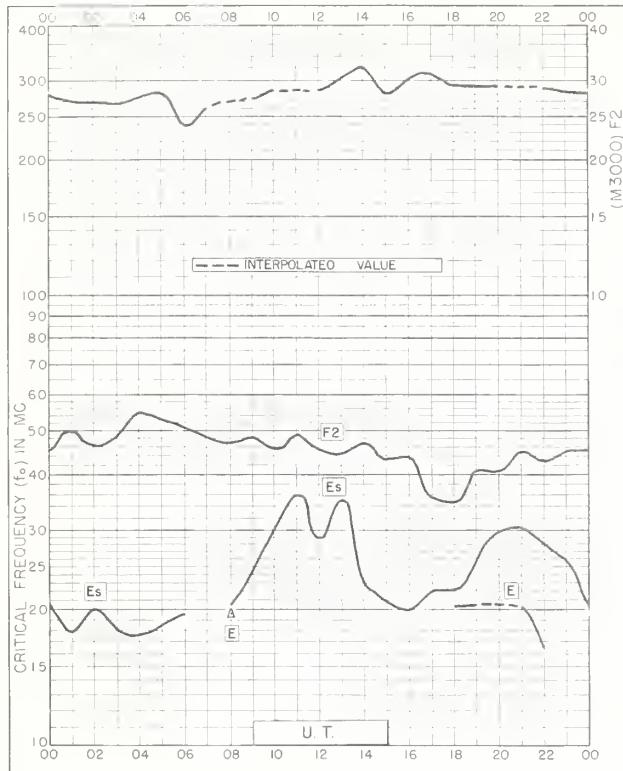


Fig. 25. POLE STATION  
90.0°S MAY 1960

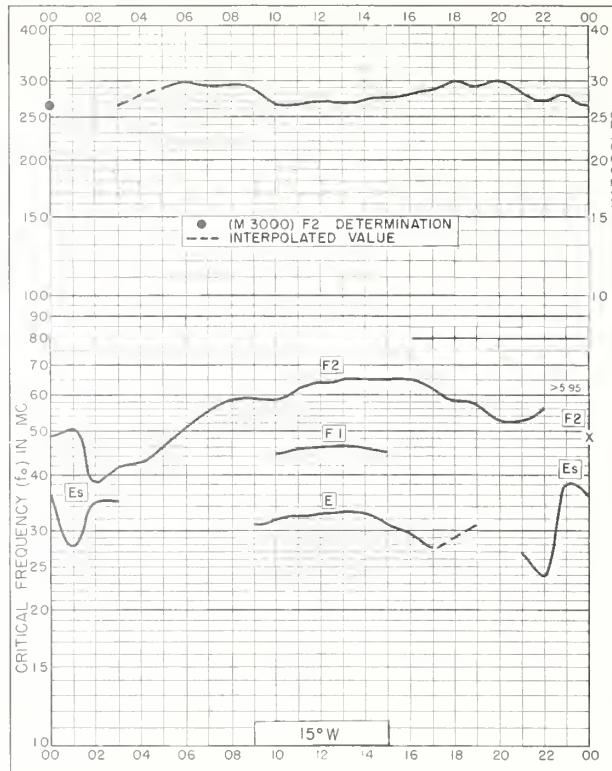


Fig. 26. REYKJAVIK, ICELAND  
64.1°N, 21.8°W APRIL 1960

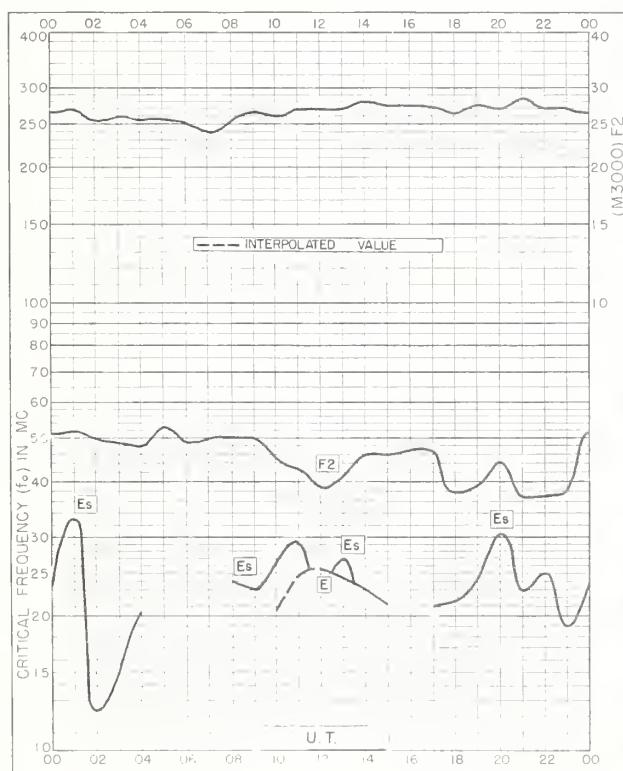


Fig. 27. POLE STATION  
90.0°S APRIL 1960

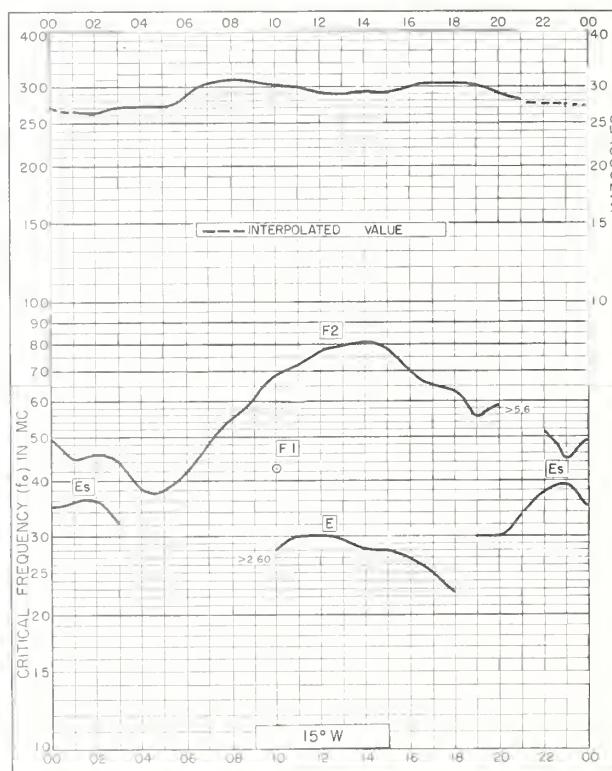


Fig. 28. REYKJAVIK, ICELAND  
64.1°N, 21.8°W MARCH 1960

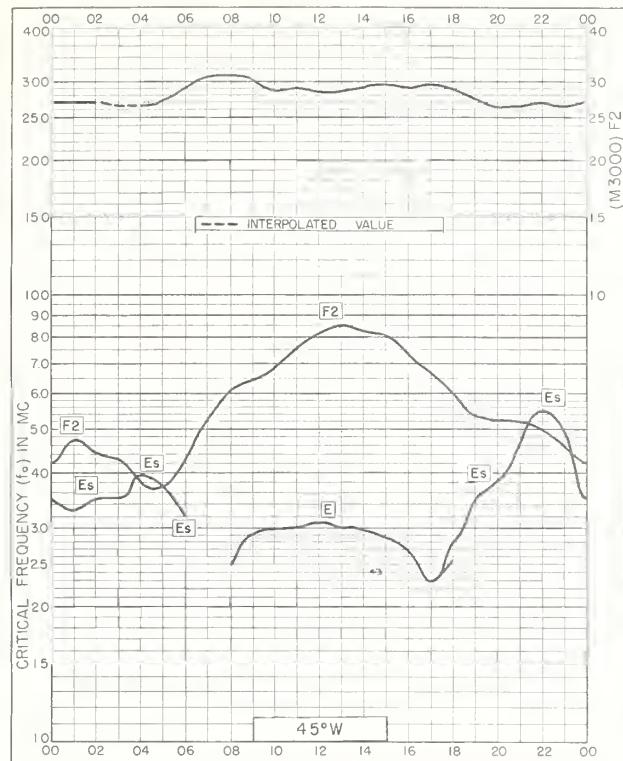


Fig. 29. NARSSARSSUAQ , GREENLAND  
61.2°N , 45.4°W      MARCH 1960

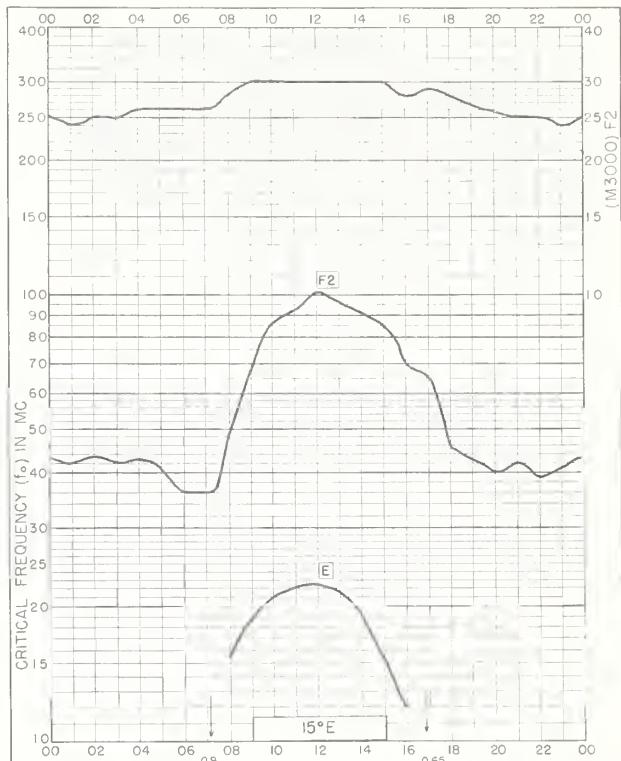


Fig. 30. LYCKSELE , SWEDEN  
64.7°N , 18.8°E      NOVEMBER 1959

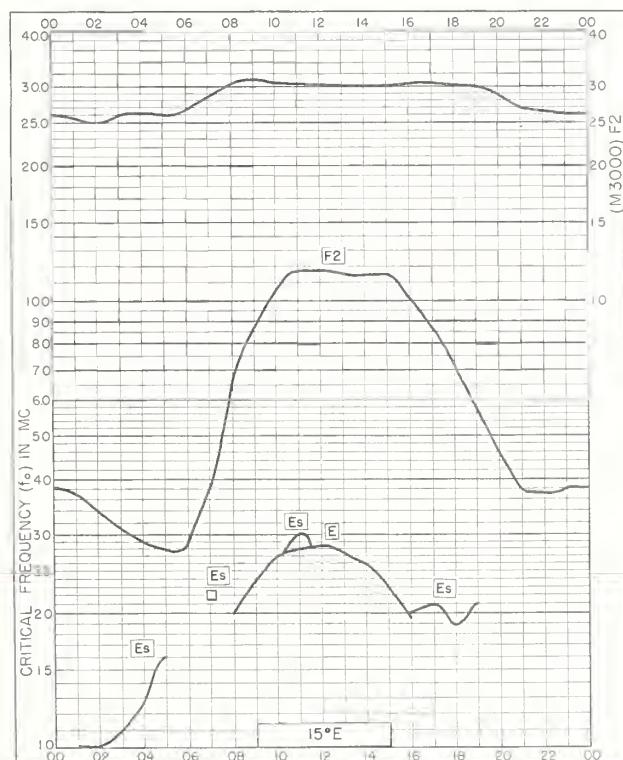


Fig. 31. JULIUSRUH / RUGEN , GERMANY  
54.6°N , 13.4°E      NOVEMBER 1959

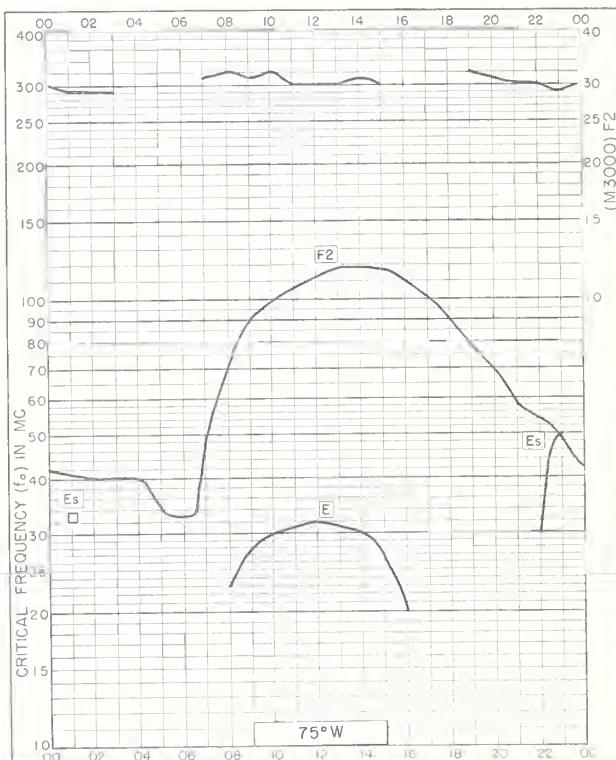


Fig. 32. OTTAWA , CANADA  
45.4°N , 75.9°W      NOVEMBER 1959

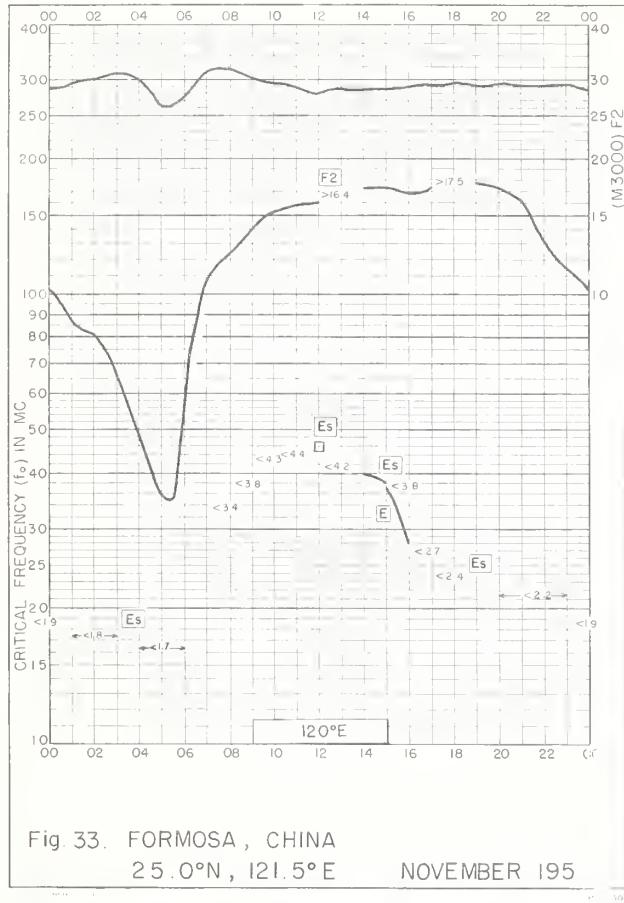


Fig. 33. FORMOSA, CHINA  
25.0°N, 121.5°E NOVEMBER 1959

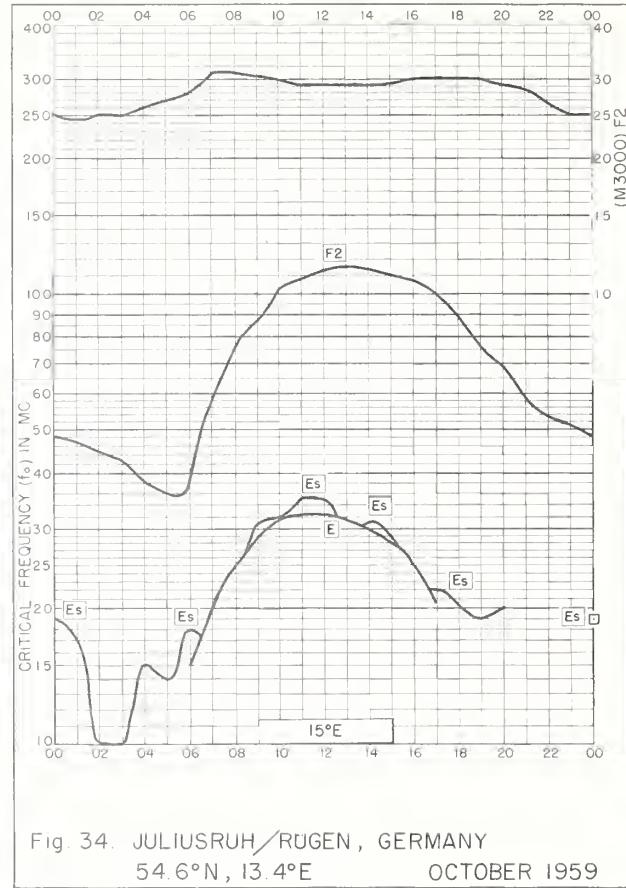


Fig. 34. JULIUSRUH/RUGEN, GERMANY  
54.6°N, 13.4°E OCTOBER 1959

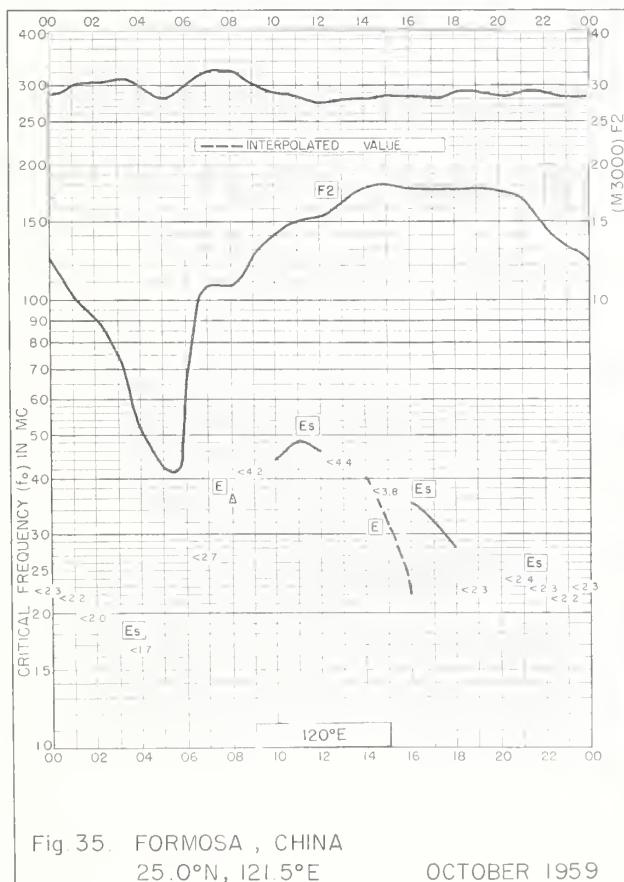


Fig. 35. FORMOSA, CHINA  
25.0°N, 121.5°E OCTOBER 1959

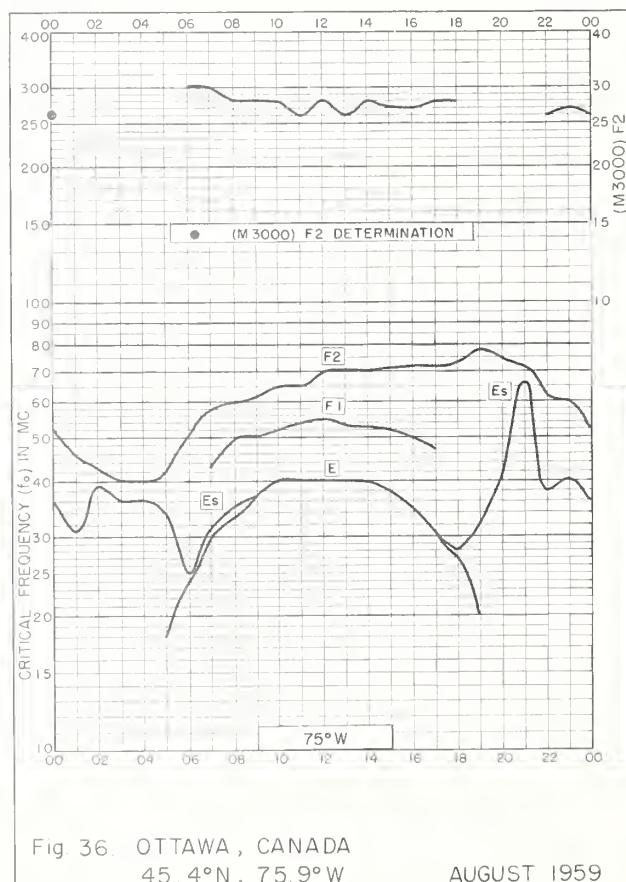
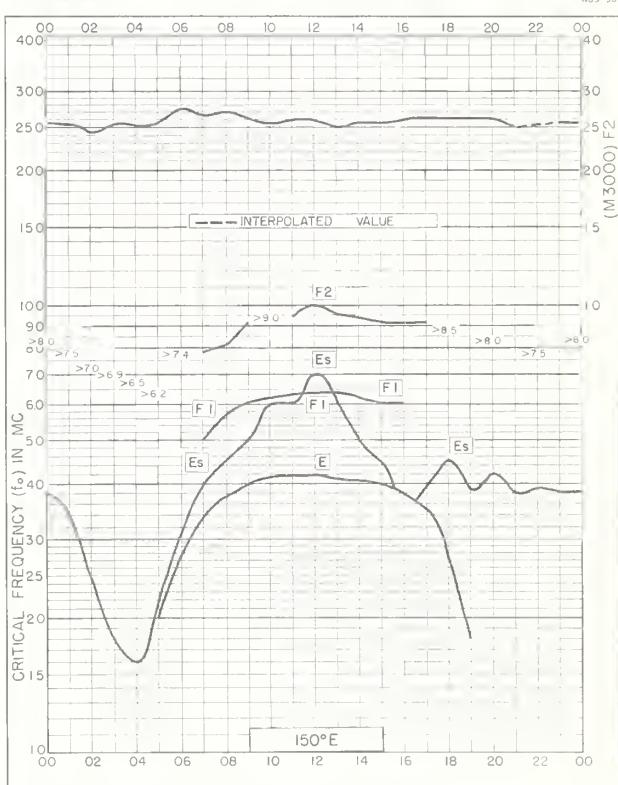
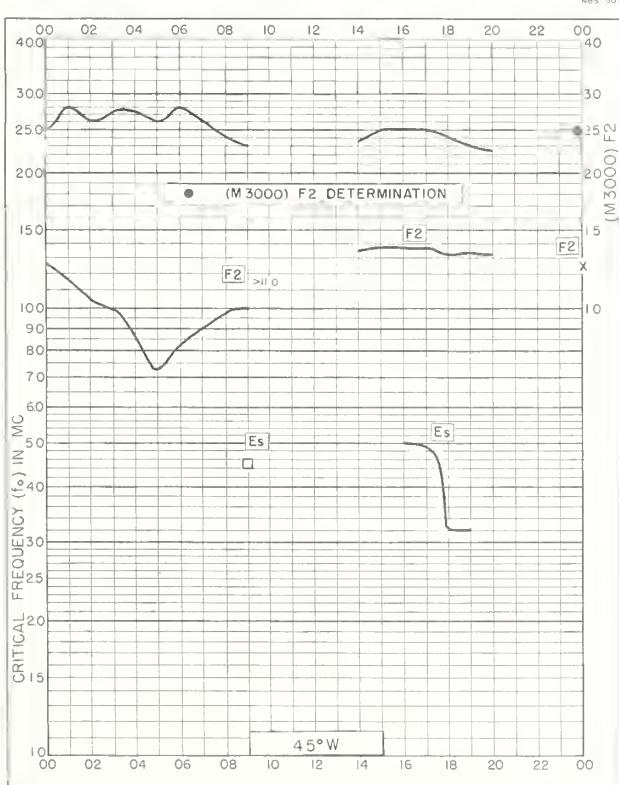
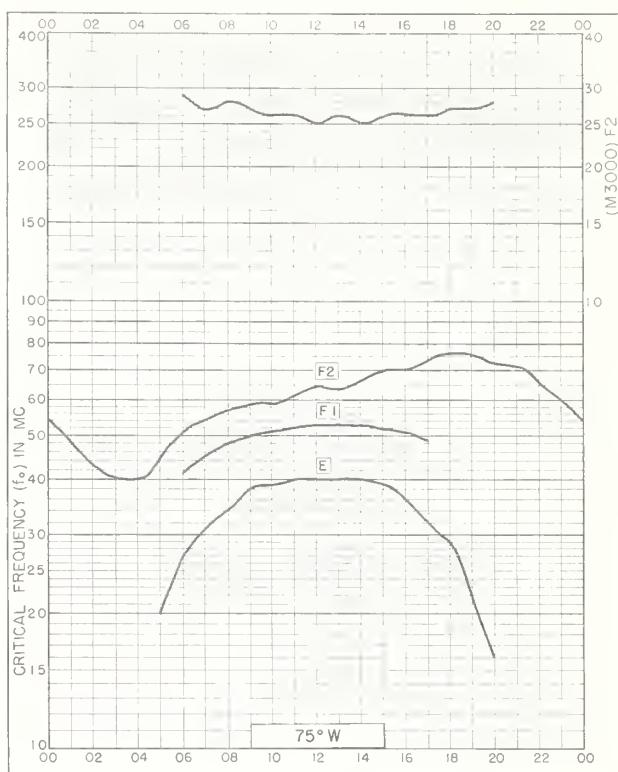
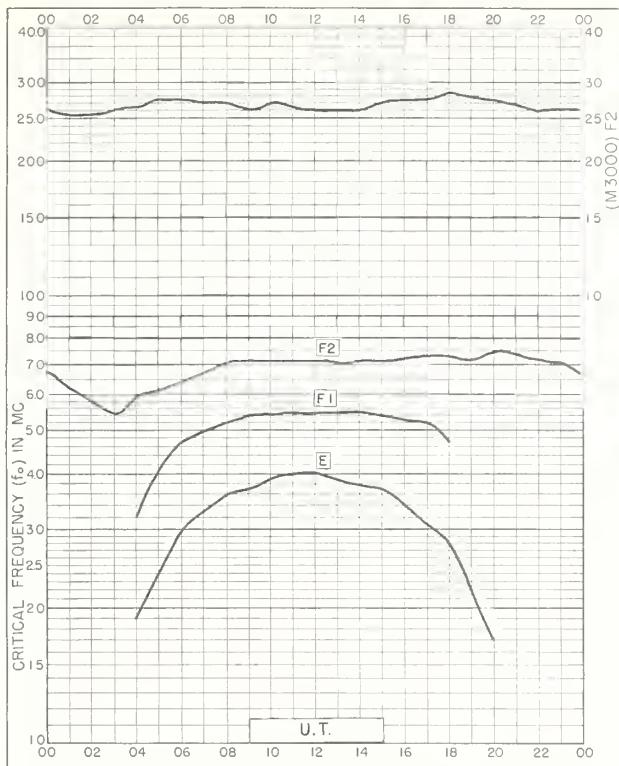


Fig. 36. OTTAWA, CANADA  
45.4°N, 75.9°W AUGUST 1959



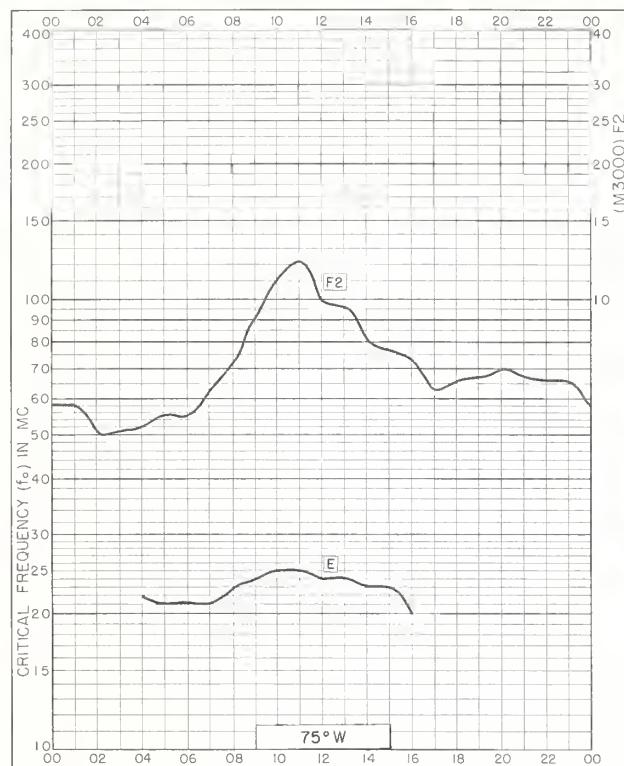


Fig. 41. FROBISHER BAY, CANADA  
63.8°N, 68.6°W NOVEMBER 1958

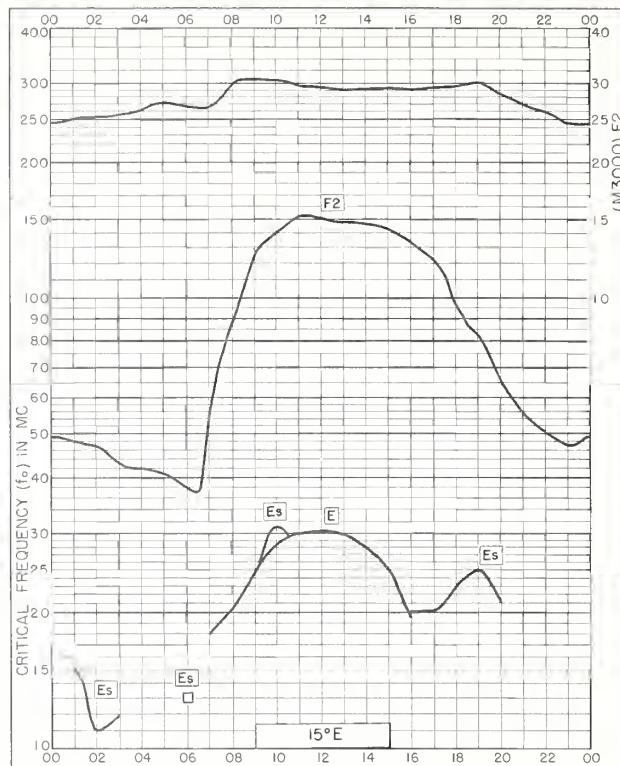


Fig. 42. JULIUSRUH/RÜGEN, GERMANY  
54.6°N, 13.4°E NOVEMBER 1958



Fig. 43. MEANOOK, CANADA  
54.6°N, 113.3°W NOVEMBER 1958



Fig. 44. VICTORIA, CANADA  
48.4°N, 123.4°W NOVEMBER 1958

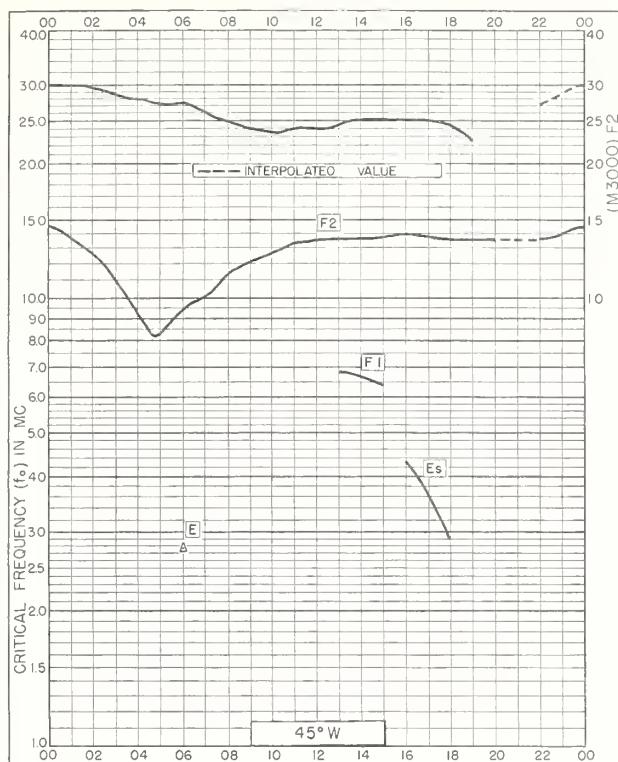


Fig. 45. SAO PAULO, BRAZIL  
23.5°S, 46.5°W NOVEMBER 1958

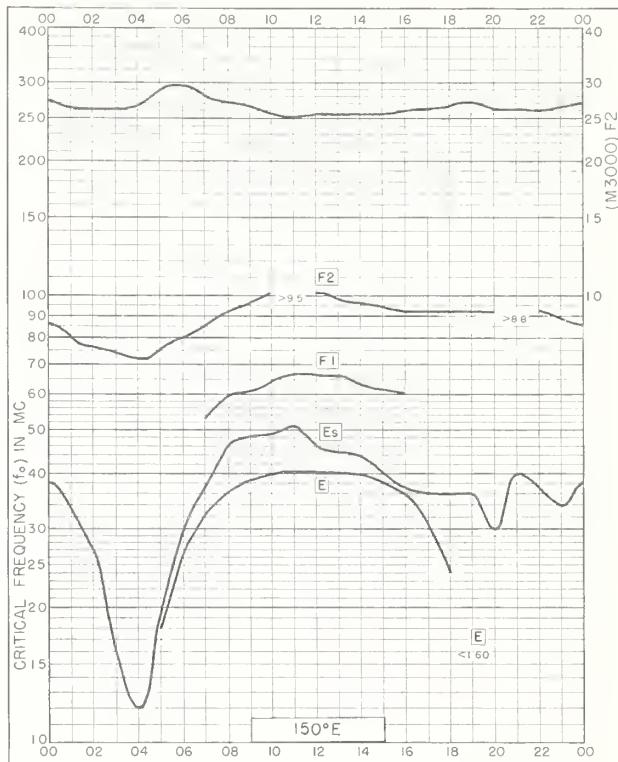


Fig. 46. CANBERRA, AUSTRALIA  
35.3°S, 149.0°E NOVEMBER 1958

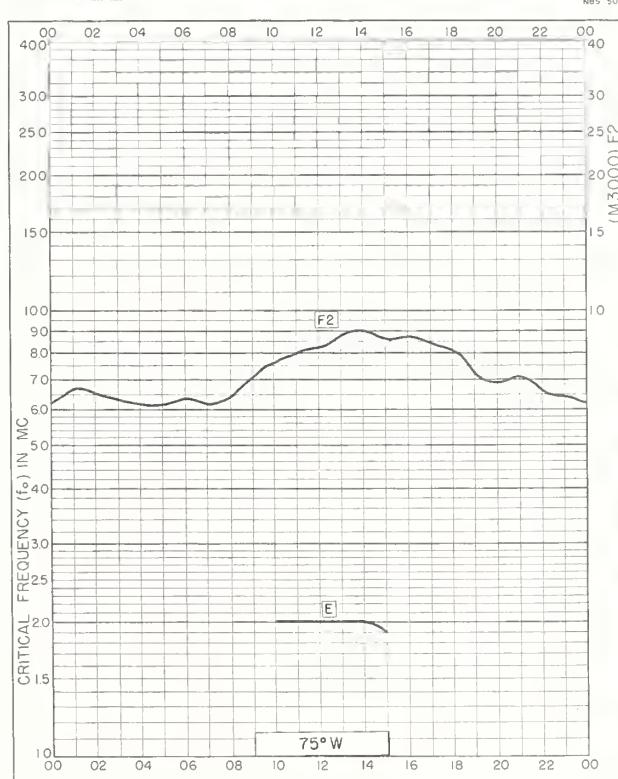


Fig. 47. EUREKA, CANADA  
80.0°N, 85.9°W OCTOBER 1958

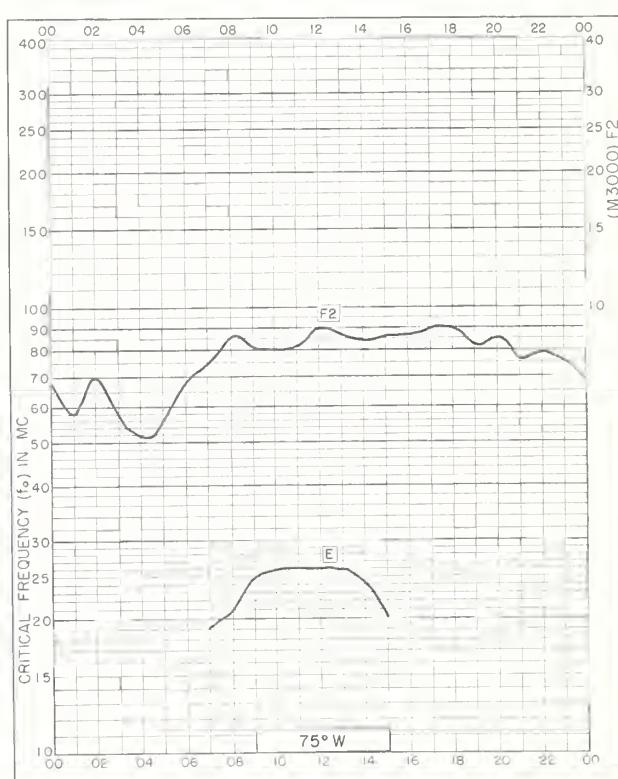


Fig. 48. CLYDE, BAFFIN I.  
70.5°N, 68.6°W OCTOBER 1958

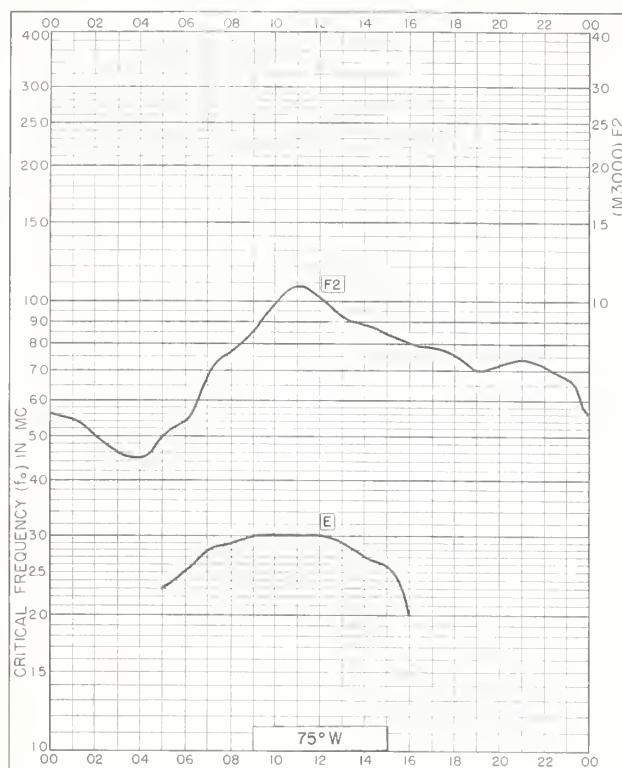


Fig. 49. FROBISHER BAY, CANADA  
63.8°N, 68.6°W OCTOBER 1958

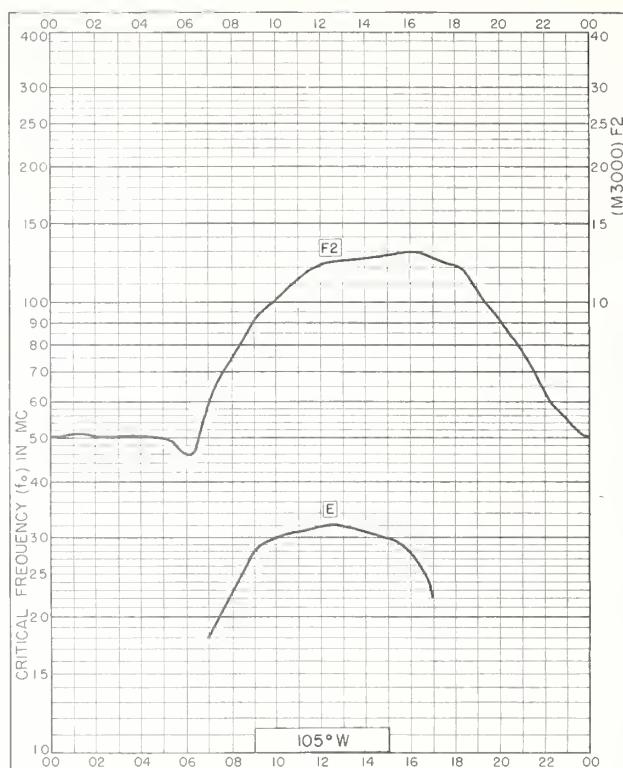


Fig. 50. MEANOOK, CANADA  
54.6°N, 113.3°W OCTOBER 1958

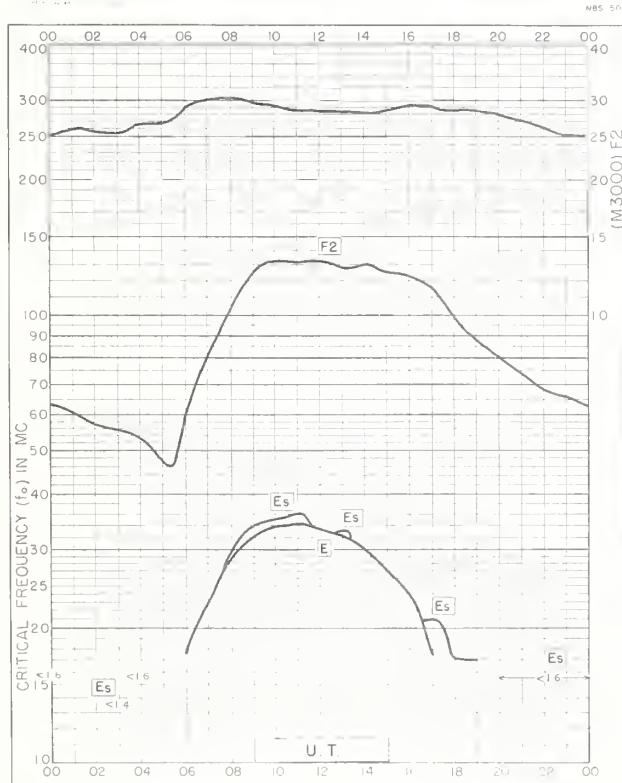


Fig. 51. DOURBES, BELGIUM  
50.1°N, 4.6°E OCTOBER 1958

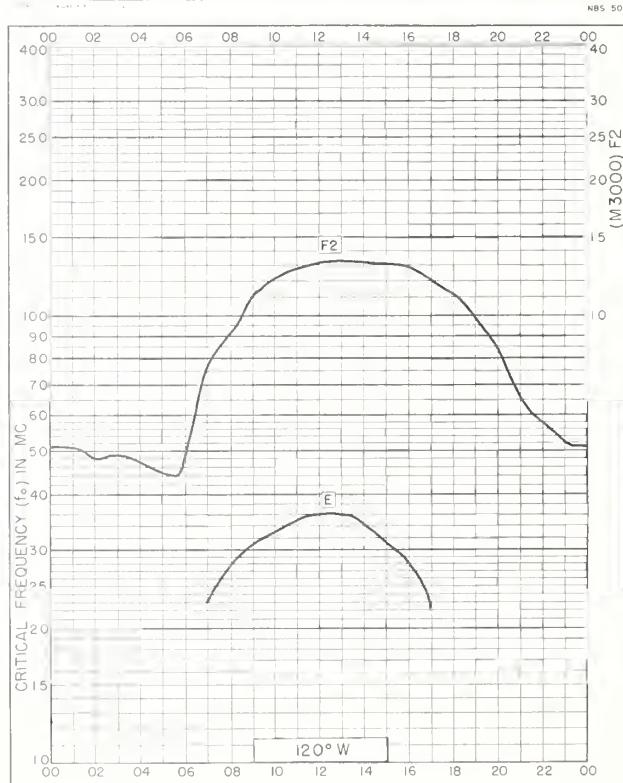


Fig. 52. VICTORIA, CANADA  
48.4°N, 123.4°W OCTOBER 1958

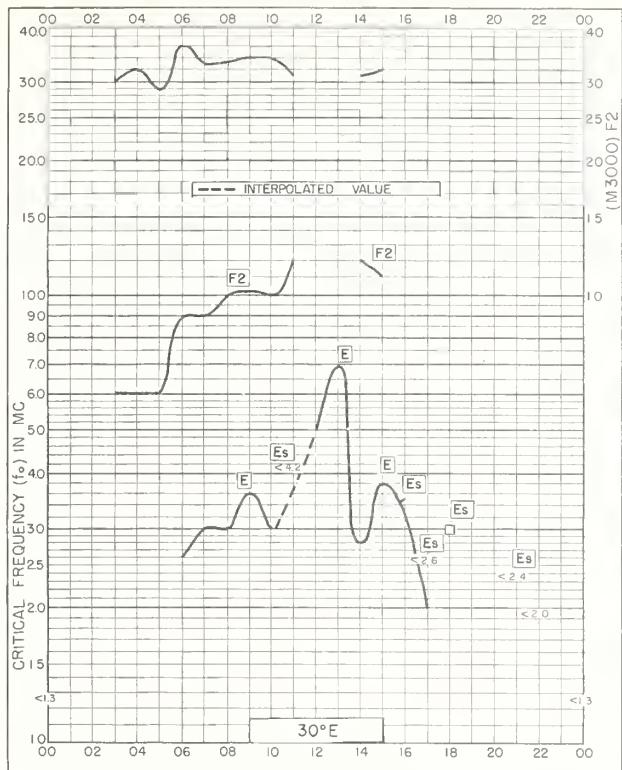


Fig. 53. SALISBURY, SOUTHERN RHODESIA  
17.8°S, 31.0°E OCTOBER 1958

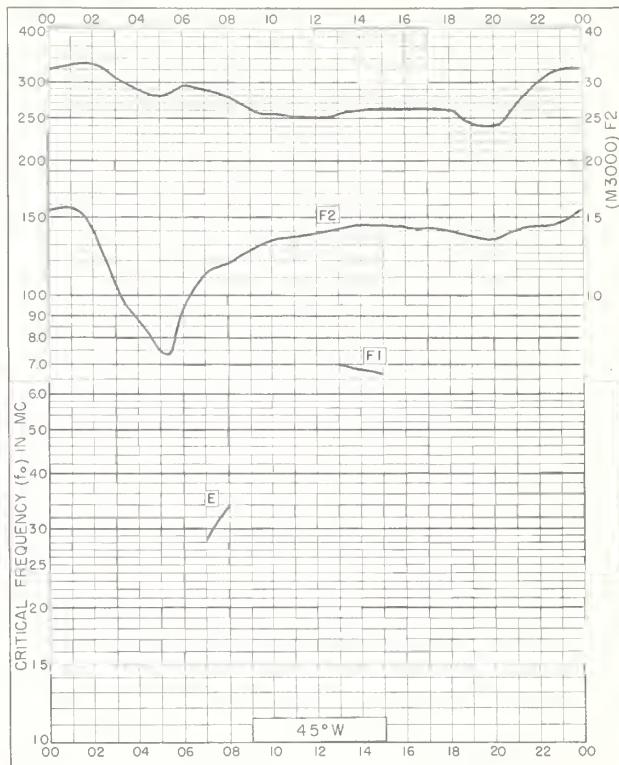


Fig. 54. SAO PAULO, BRAZIL  
23.5°S, 46.5°W OCTOBER 1958

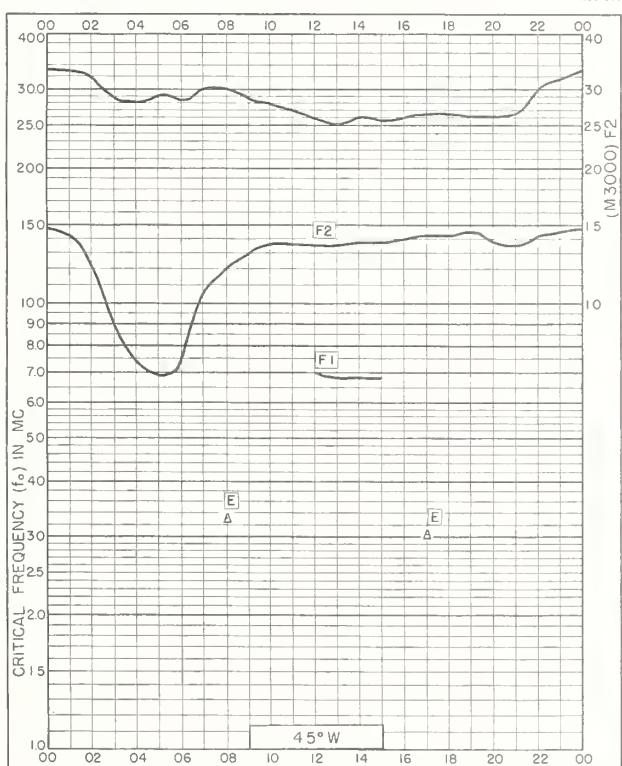


Fig. 55. SAO PAULO, BRAZIL  
23.5°S, 46.5°W SEPTEMBER 1958

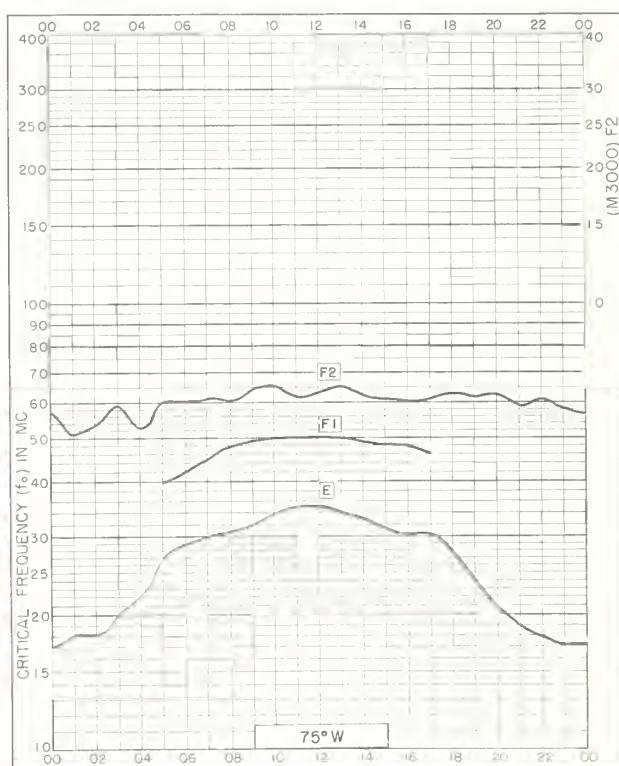


Fig. 56. CLYDE, BAFFIN I.  
70.5°N, 68.6°W AUGUST 1958

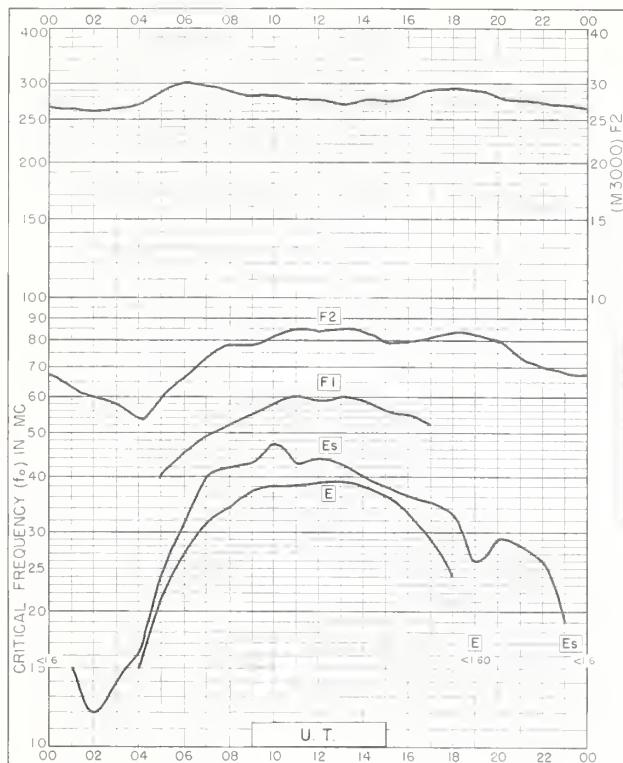


Fig. 57. DOURBES, BELGIUM  
50.1°N, 4.6°E AUGUST 1958

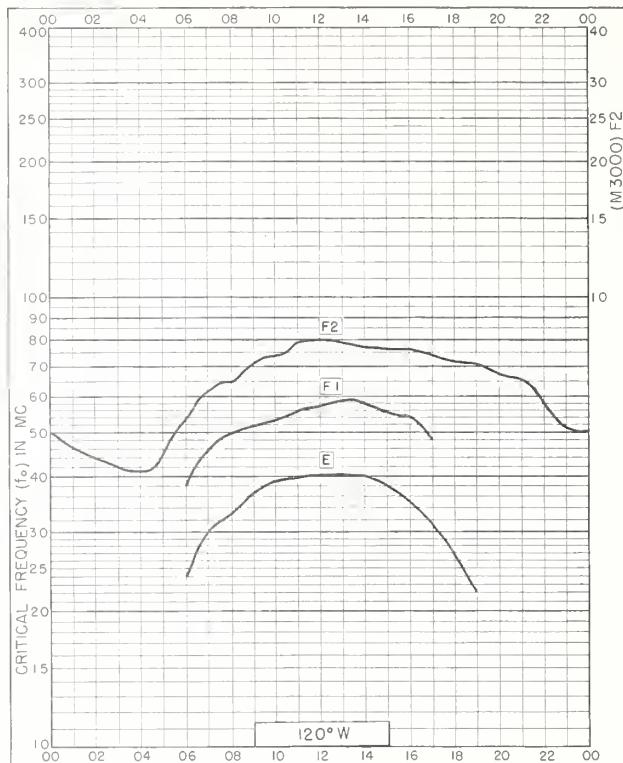


Fig. 58. VICTORIA, CANADA  
48.4°N, 123.4°W AUGUST 1958

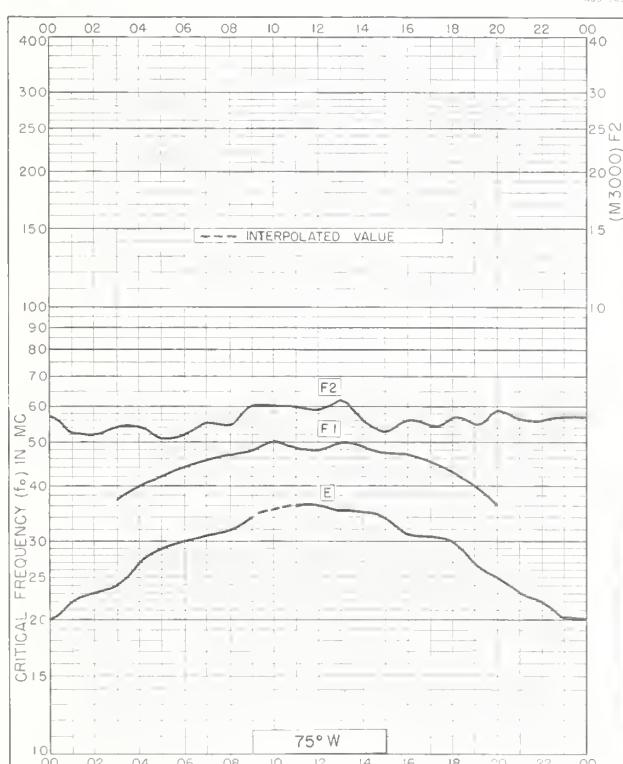


Fig. 59. CLYDE, BAFFIN I  
70.5°N, 68.6°W JULY 1958

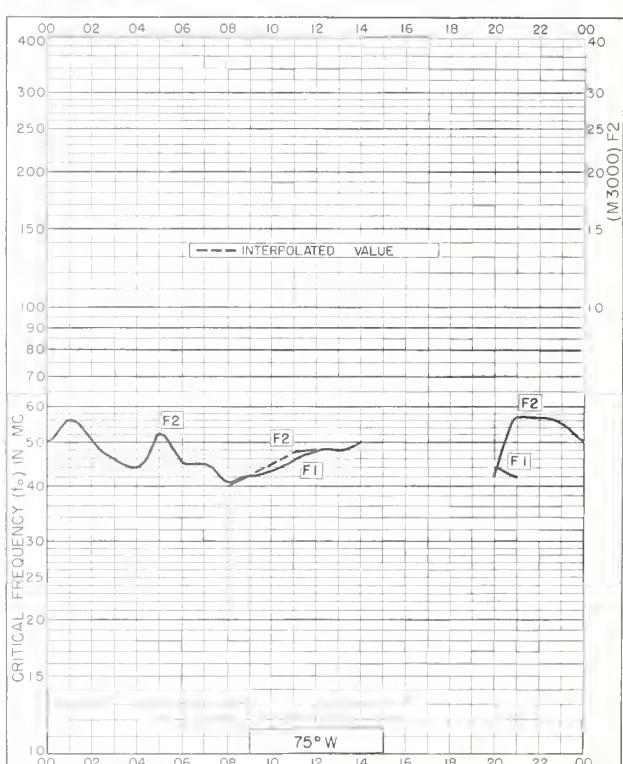


Fig. 60. FROBISHER BAY, CANADA  
63.8°N, 68.6°W JULY 1958

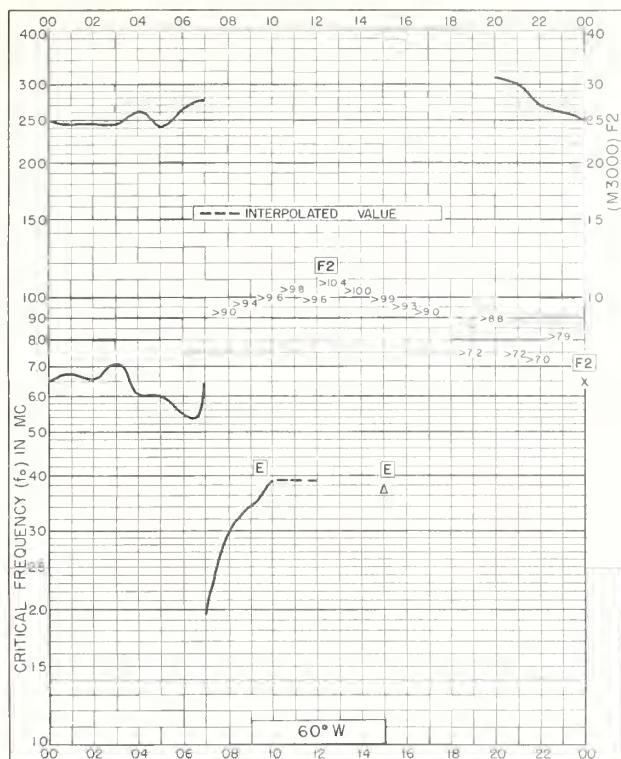


Fig. 61. TRELEW, ARGENTINA  
 43.2°S, 65.3°W

MAY 1958

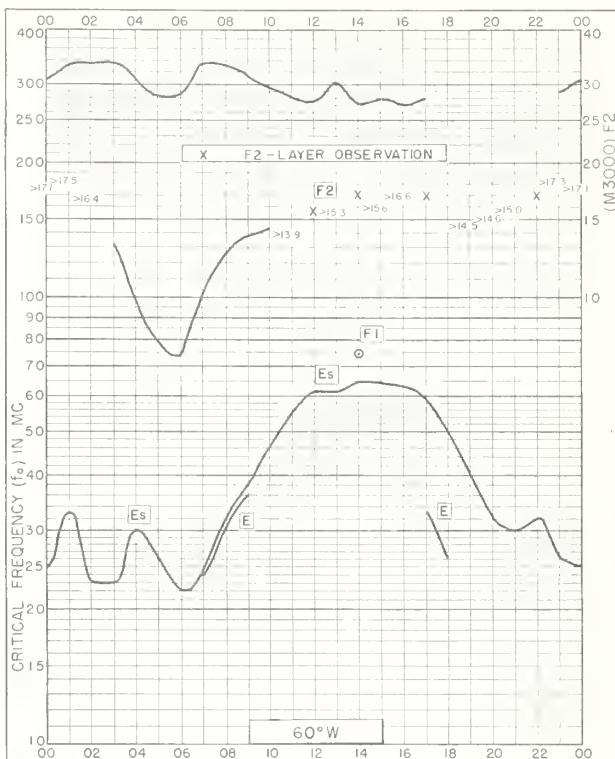


Fig. 62. TUCUMAN, ARGENTINA  
26.9°S, 65.4°W

MARCH 1958

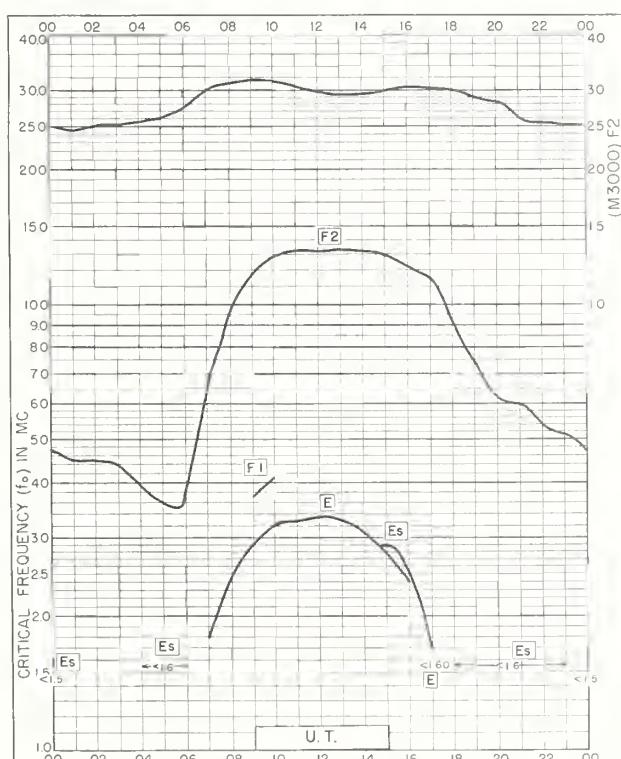


Fig. 63. DOURBES, BELGIUM  
50.1°N, 4.6°E

FEBRUARY 1958

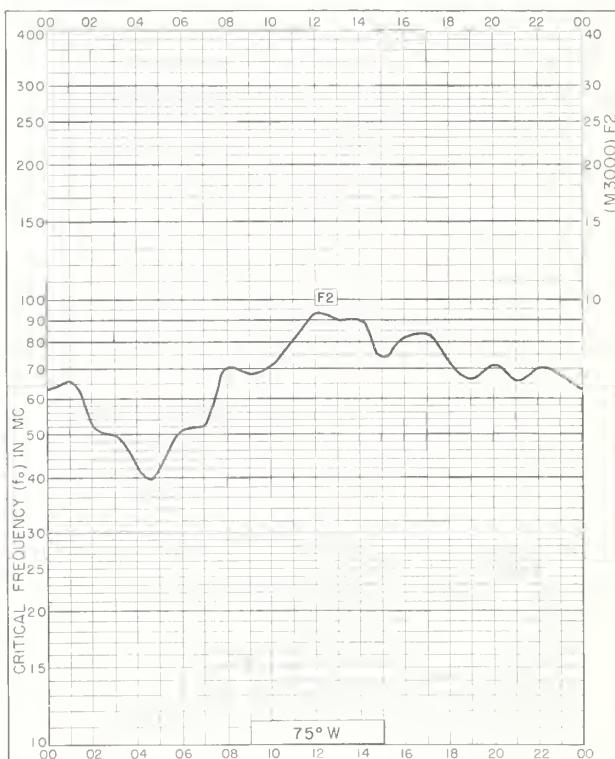


Fig. 64. CLYDE, BAFFIN I.  
70.5°N., 68.6°W.

68. 6° W JANUARY 1958

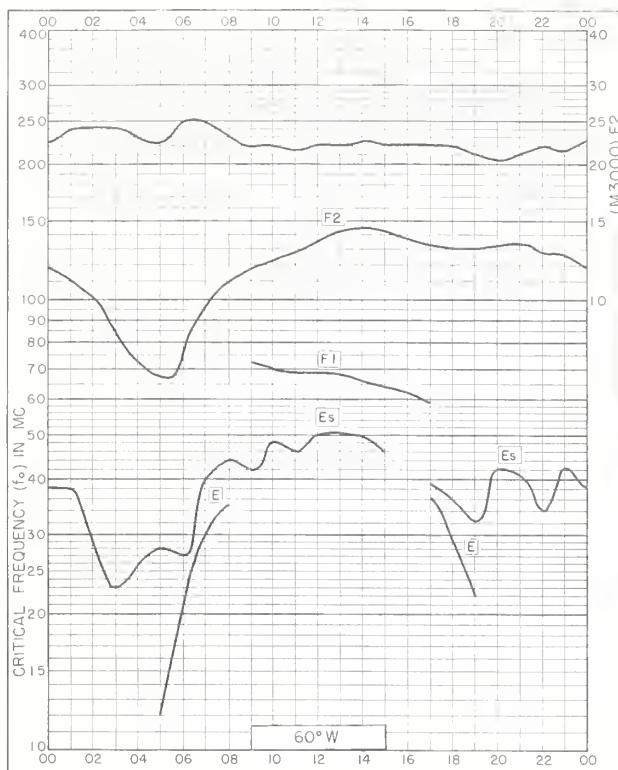


Fig. 65. TUCUMAN , ARGENTINA  
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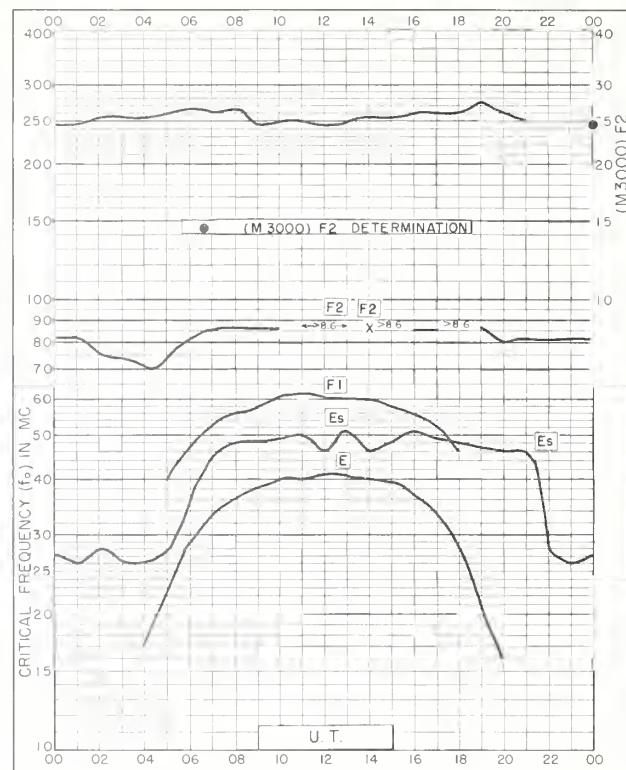


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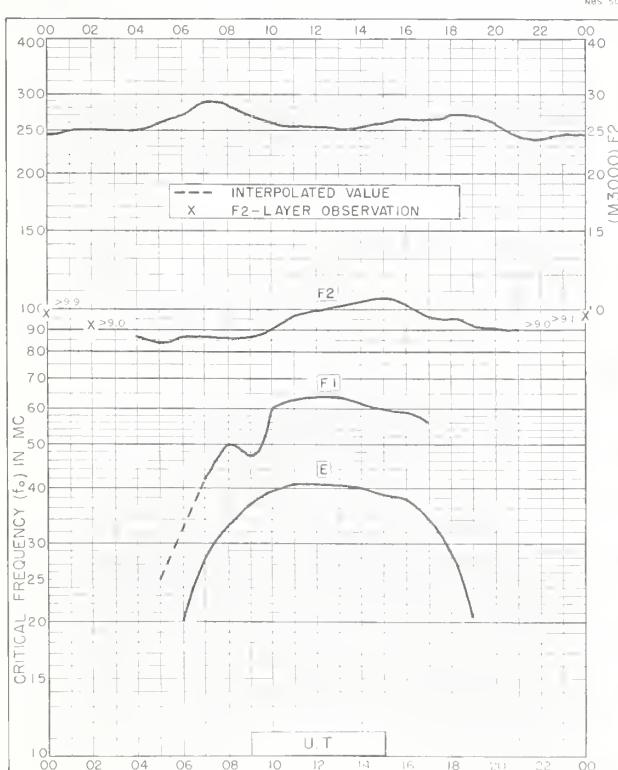


Fig. 67. CASABLANCA , MOROCCO  
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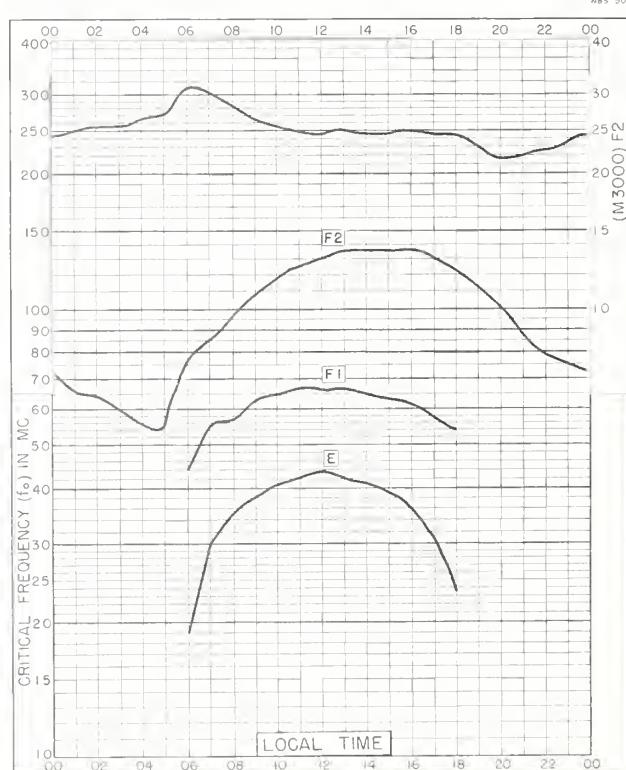


Fig. 68. DAKAR , FRENCH W. AFRICA  
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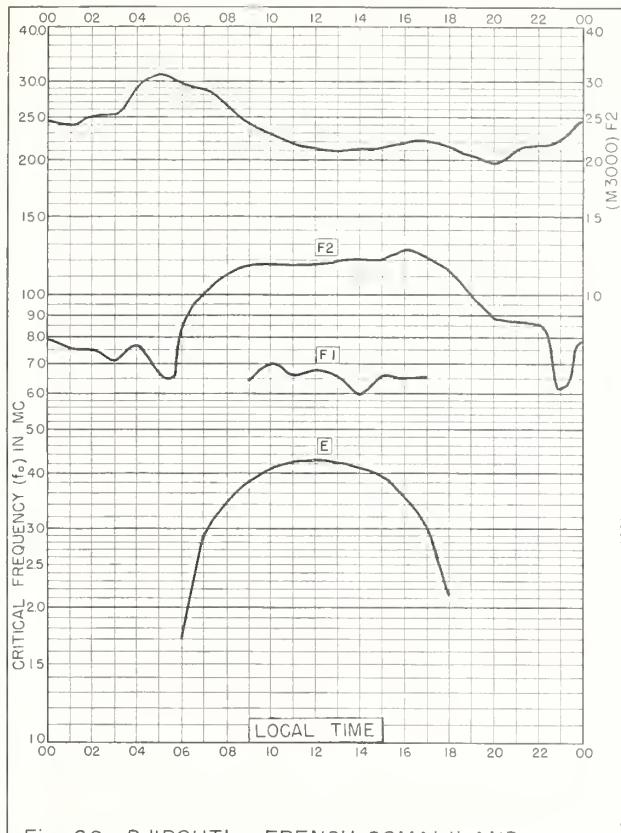


Fig. 69. DJIBOUTI , FRENCH SOMALILAND  
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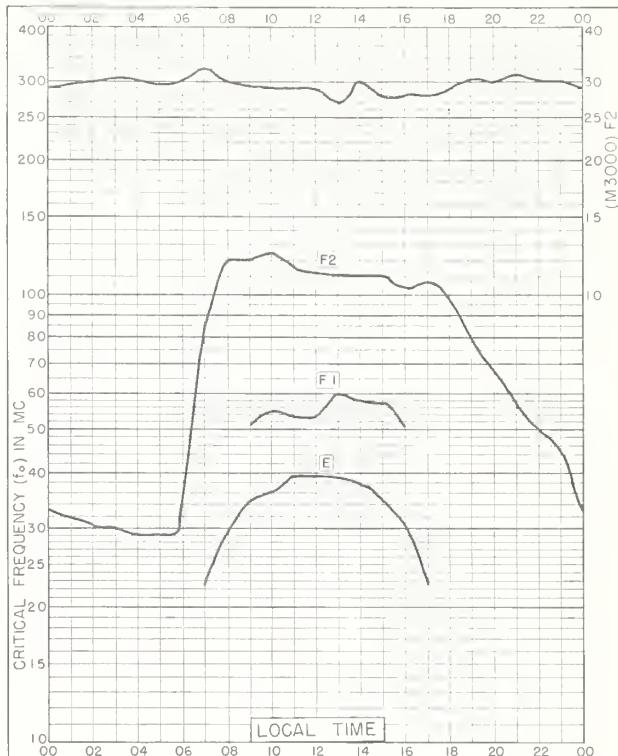


Fig. 70. TANANARIVE , MADAGASCAR  
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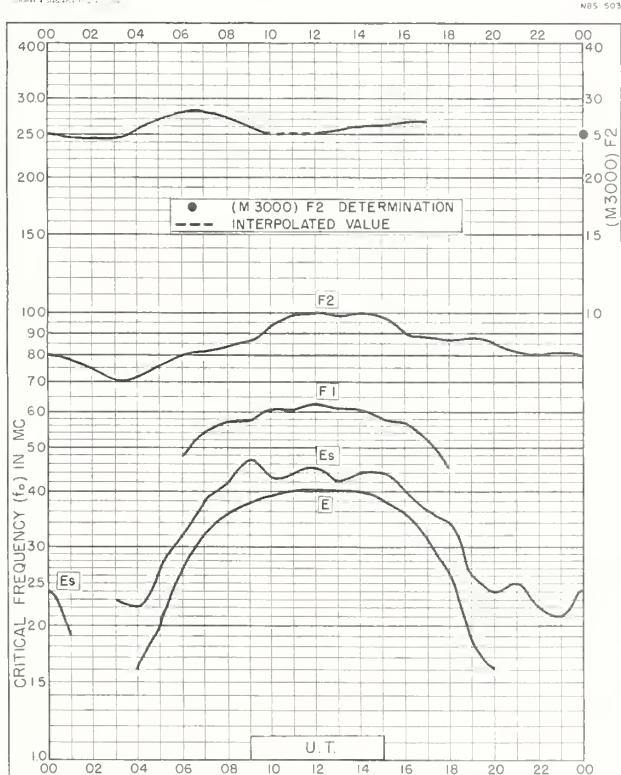


Fig. 71. POITIERS , FRANCE  
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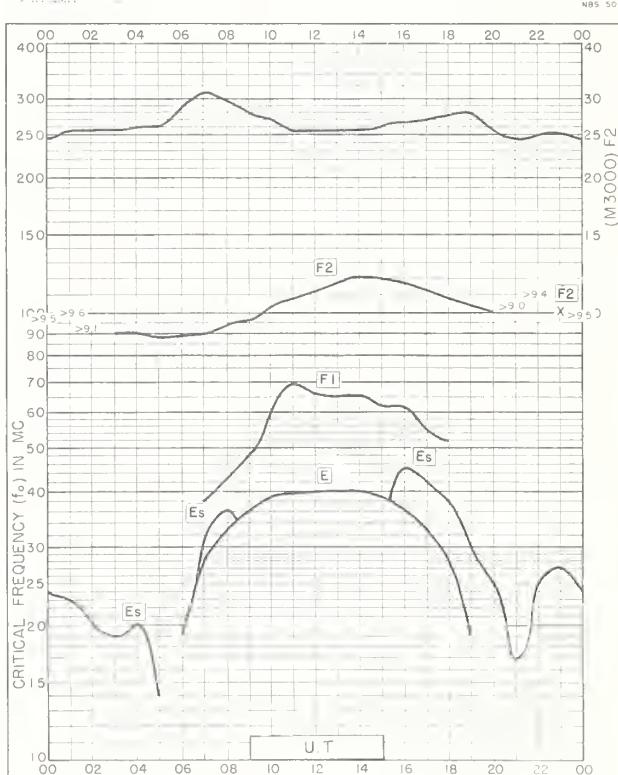


Fig. 72. CASABLANCA , MOROCCO  
33.6°N , 7.6°W MAY 1957

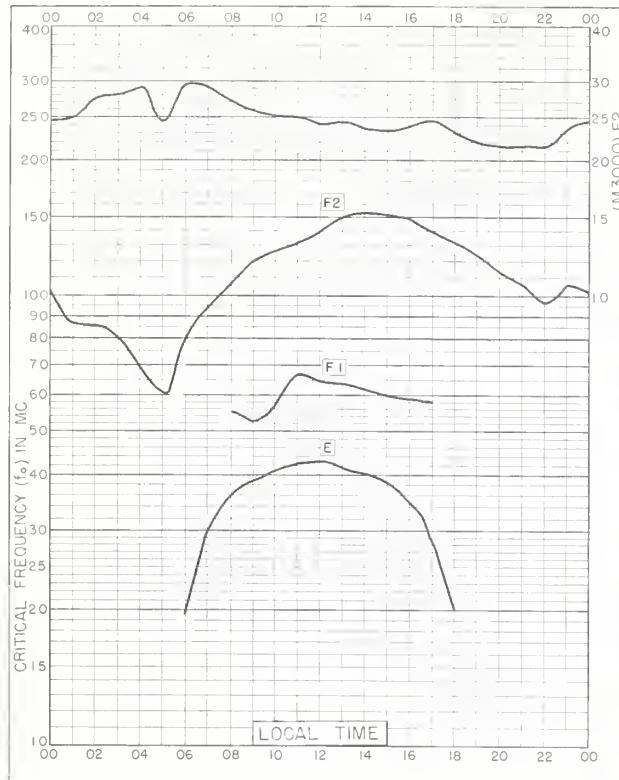


Fig. 73. DAKAR, FRENCH W. AFRICA  
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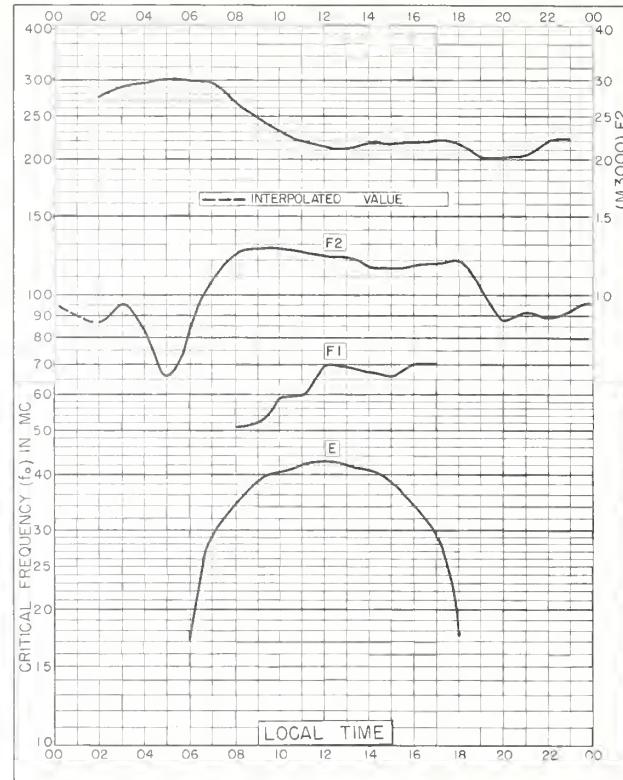


Fig. 74. DJIBOUTI, FRENCH SOMALILAND  
11.6°N, 43.2°E MAY 1957

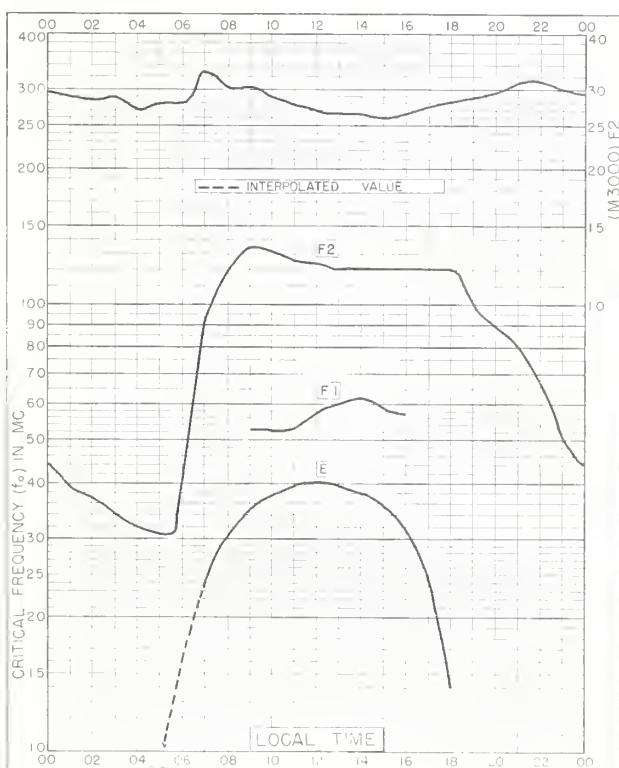


Fig. 75. TANANARIVE, MADAGASCAR  
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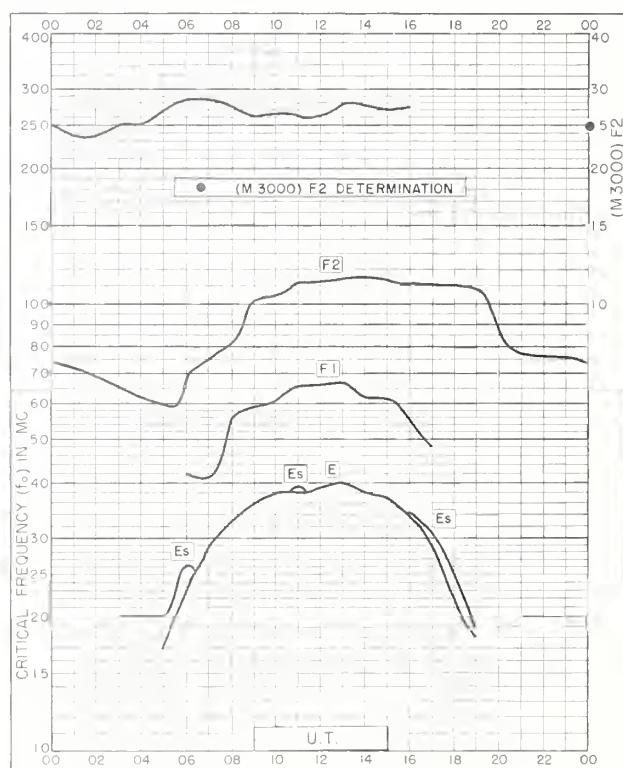


Fig. 76. POITIERS, FRANCE  
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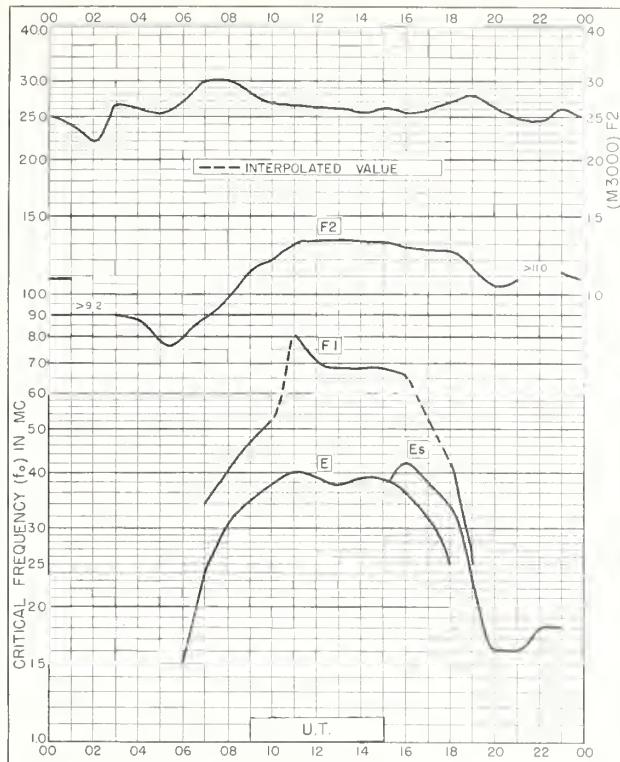


Fig. 77. CASABLANCA, MOROCCO  
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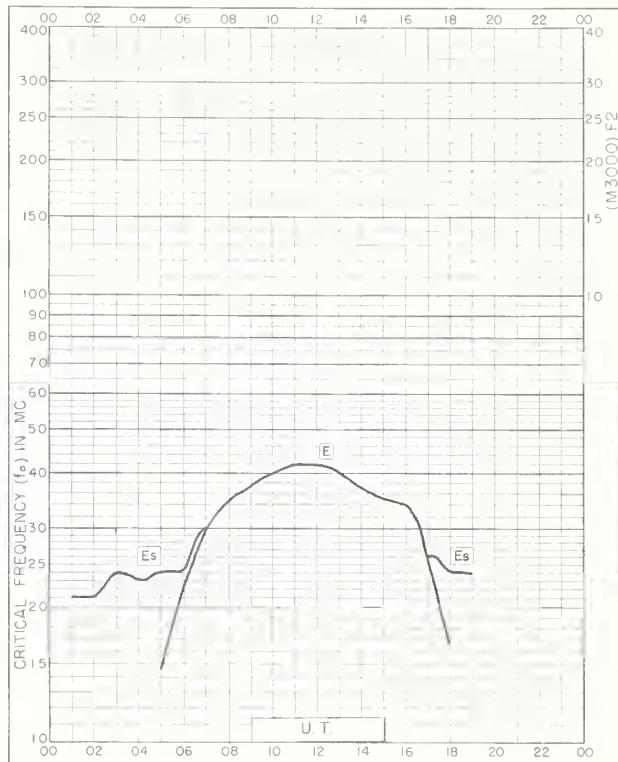


Fig. 78. TAMANRASSET, FRENCH W. AFRICA  
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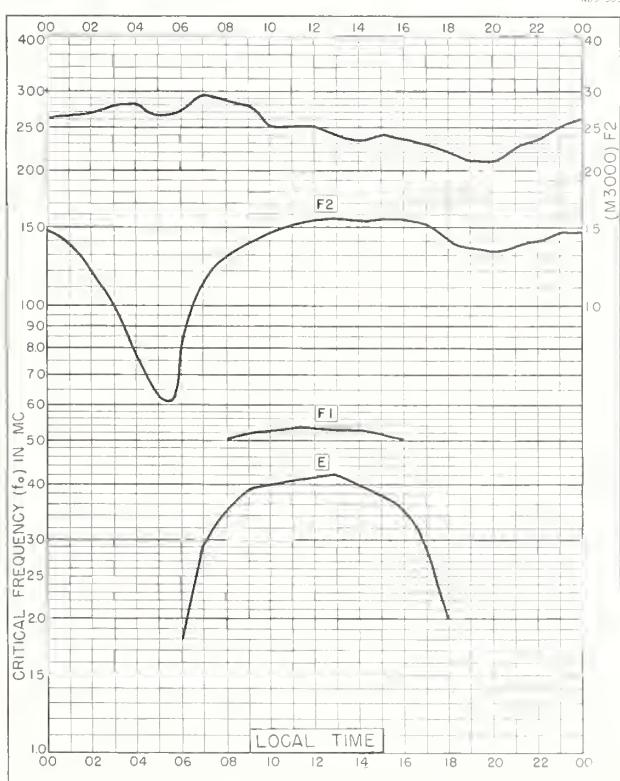


Fig. 79. DAKAR, FRENCH W. AFRICA  
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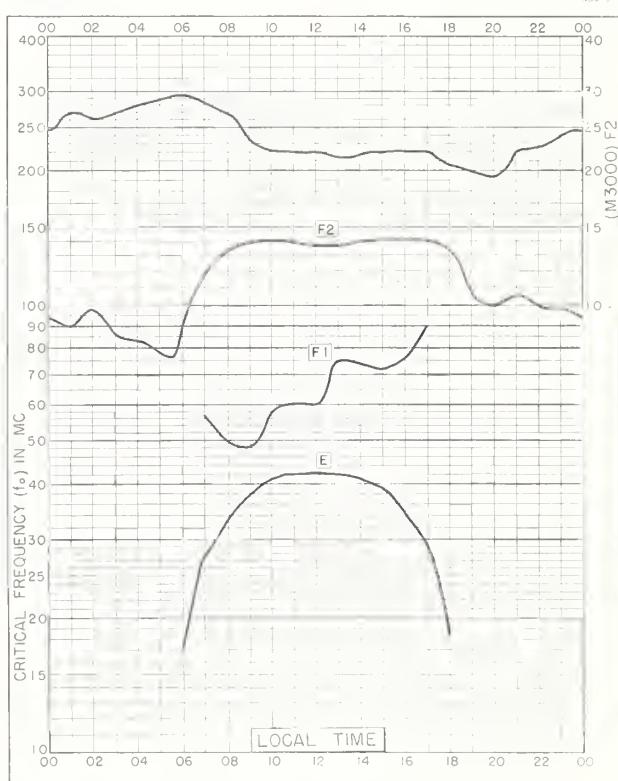


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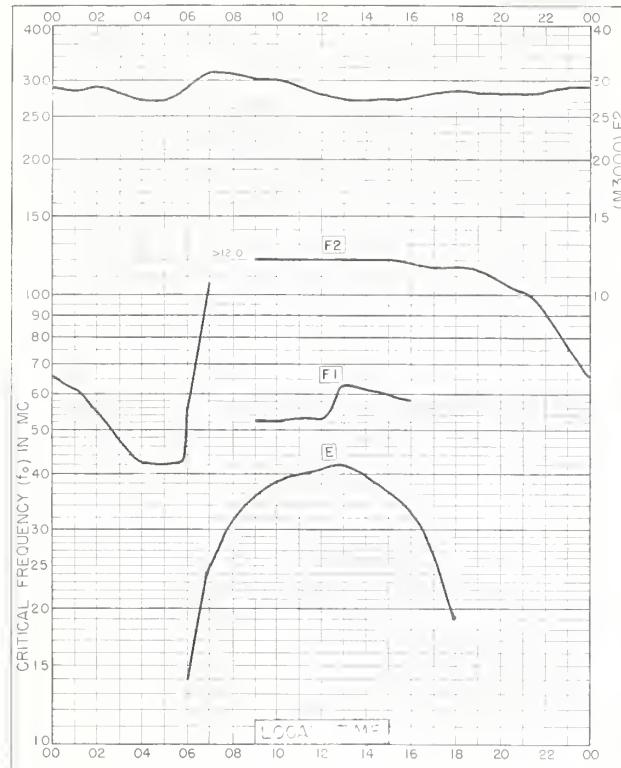


Fig. 81. TANANARIVE, MADAGASCAR  
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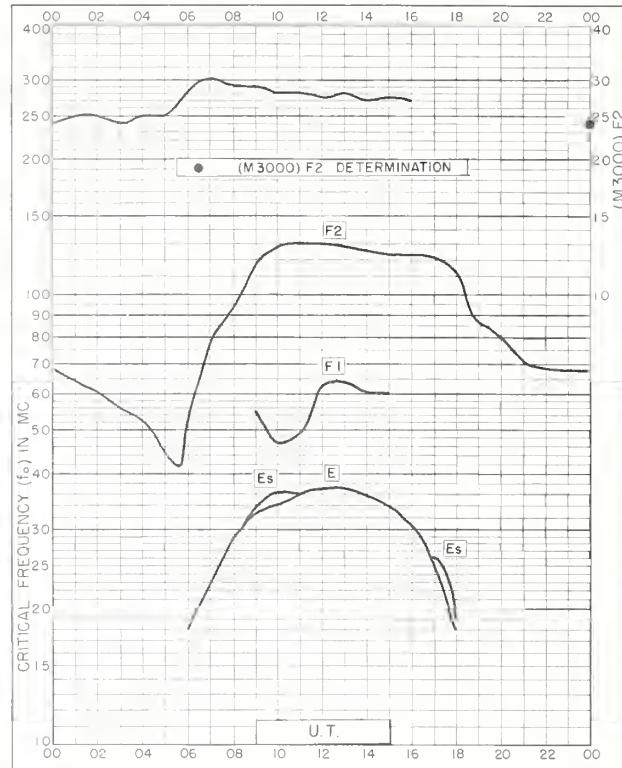


Fig. 82. POITIERS, FRANCE  
46.6°N, 0.3°E MARCH 1957

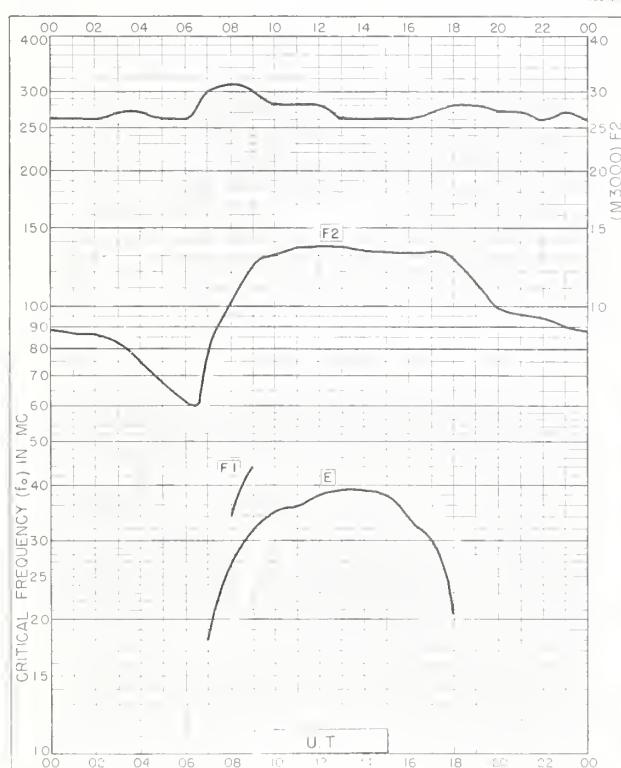


Fig. 83. CASABLANCA, MOROCCO  
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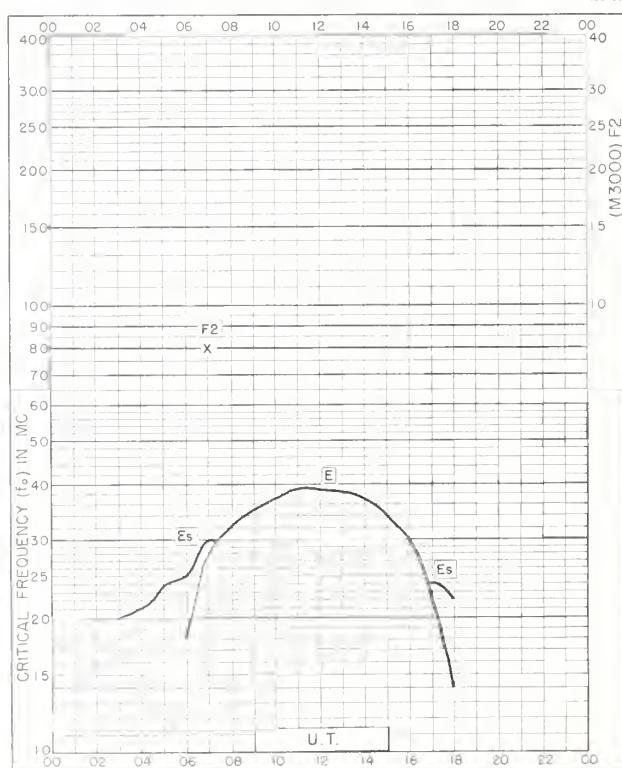


Fig. 84. TAMANRASSET, FRENCH W AFRICA  
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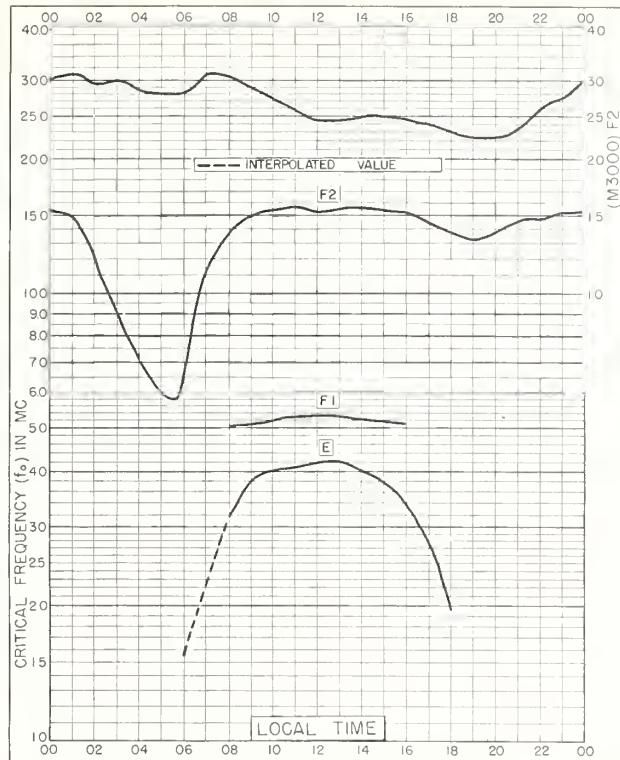


Fig. 85. DAKAR, FRENCH W. AFRICA  
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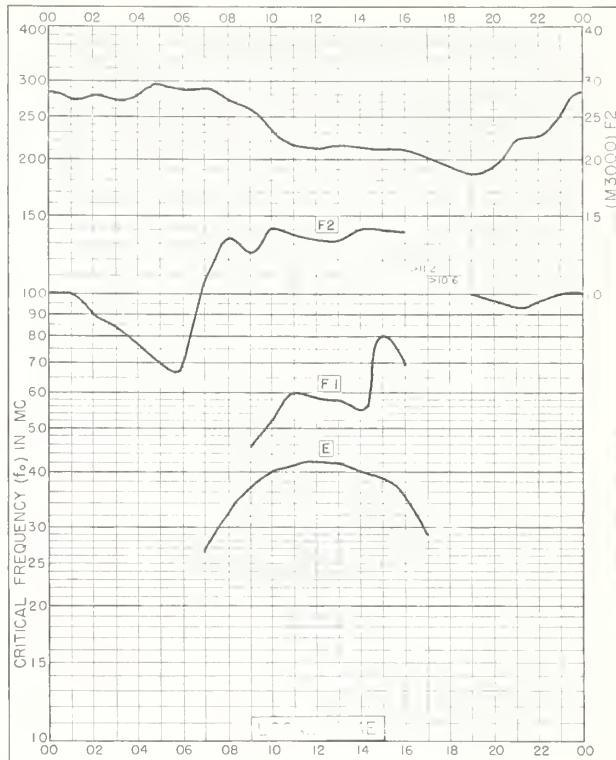


Fig. 86. DJIBOUTI, FRENCH SOMALILAND  
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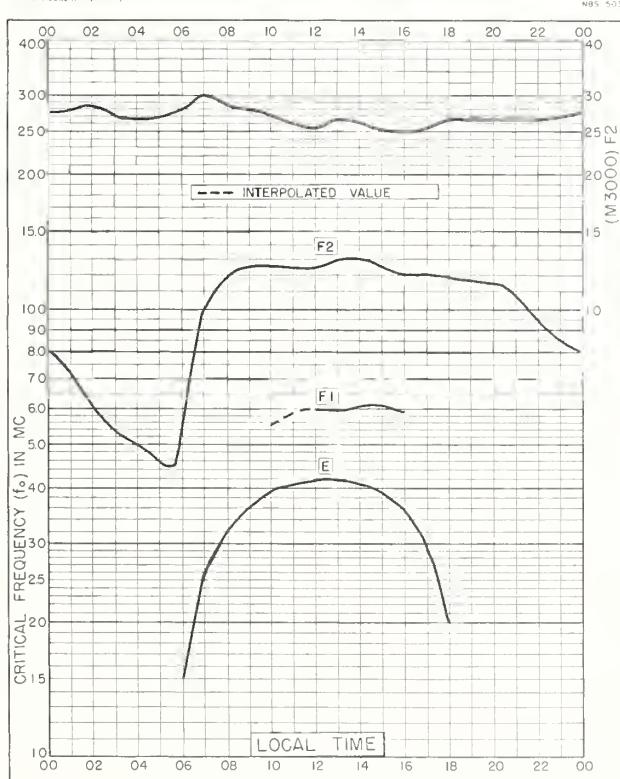


Fig. 87. TANANARIVE, MADAGASCAR  
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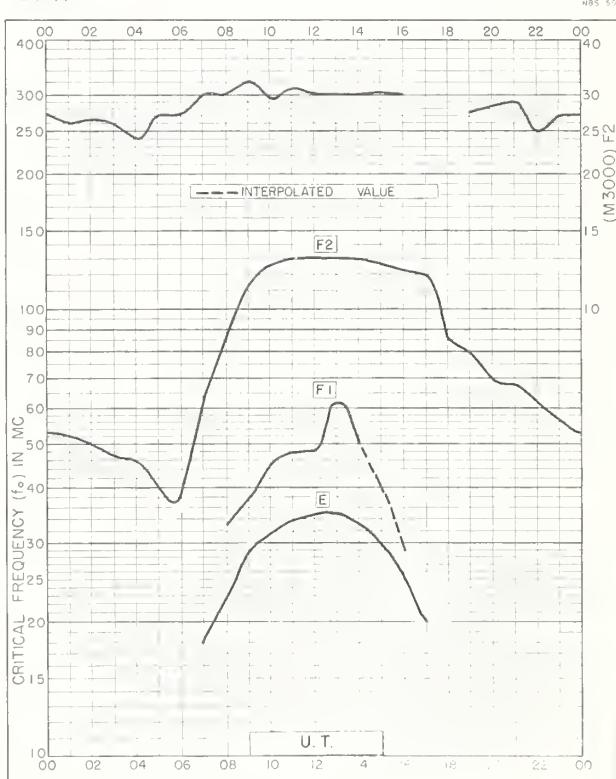


Fig. 88. POITIERS, FRANCE  
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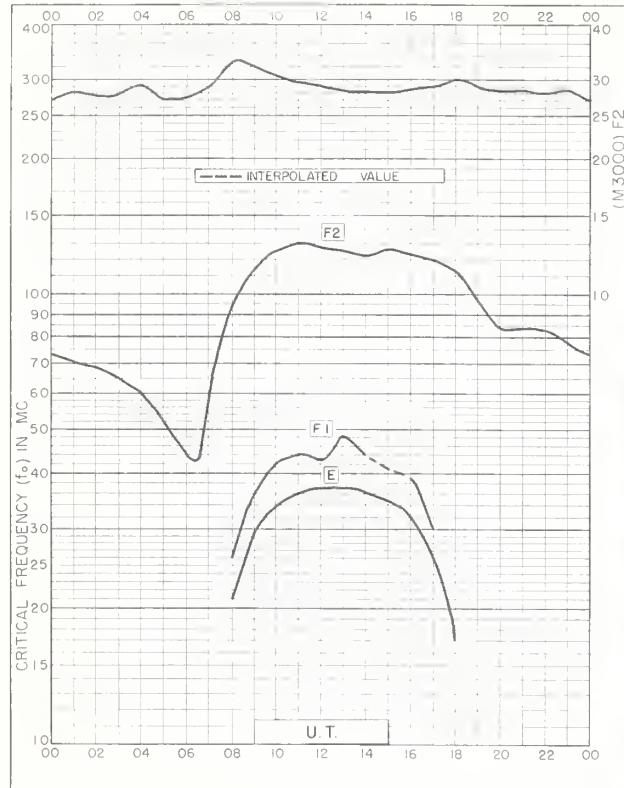


Fig. 89. CASABLANCA, MOROCCO  
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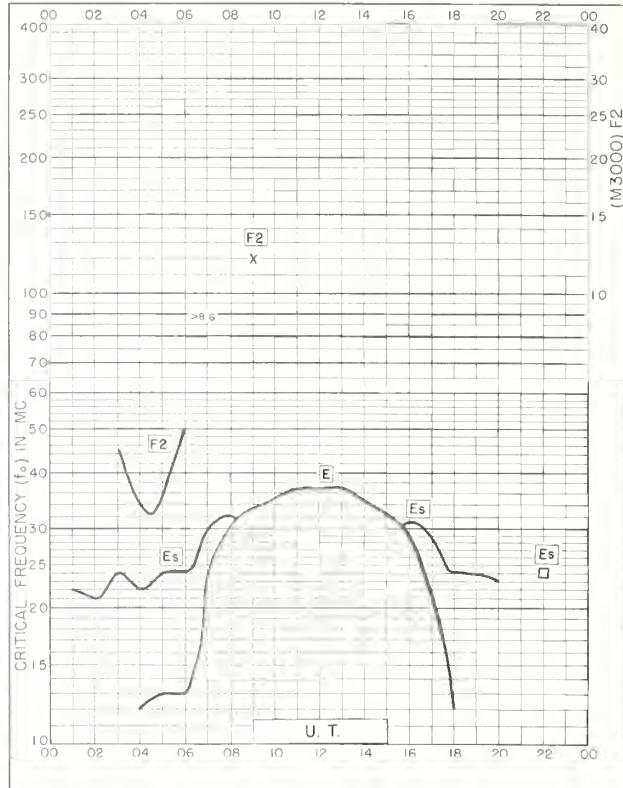


Fig. 90. TAMANRASSET, FRENCH W. AFRICA  
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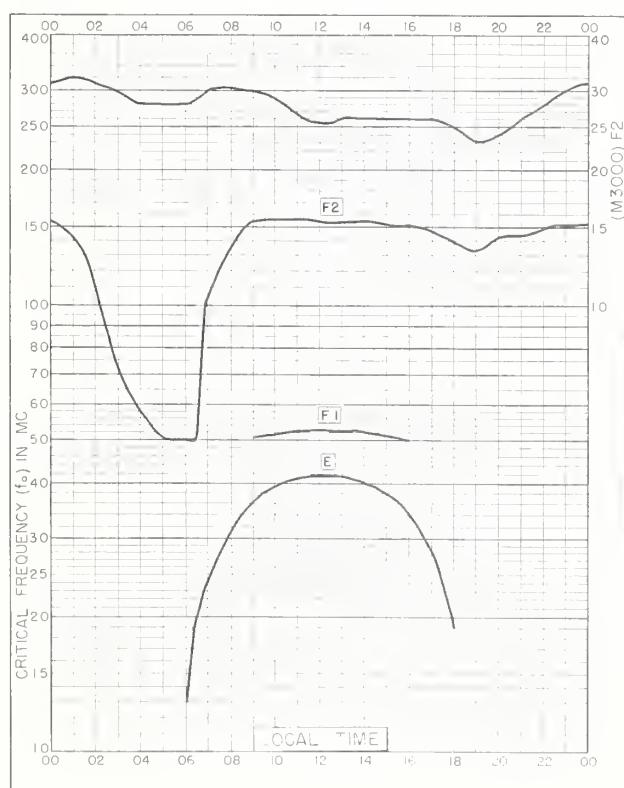


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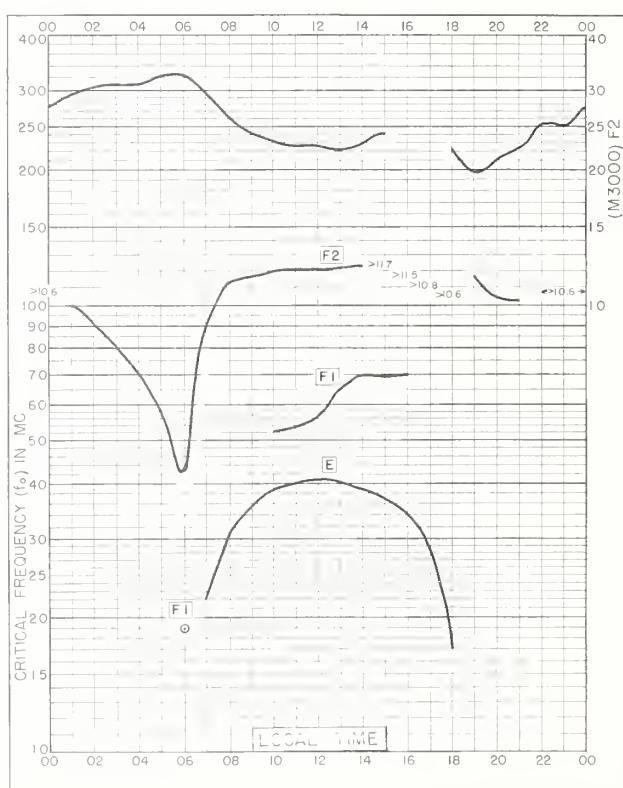


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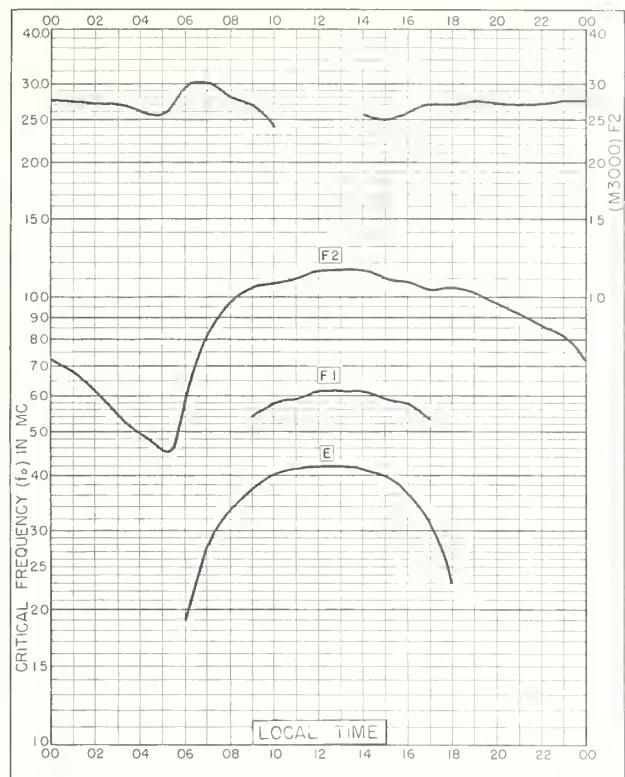


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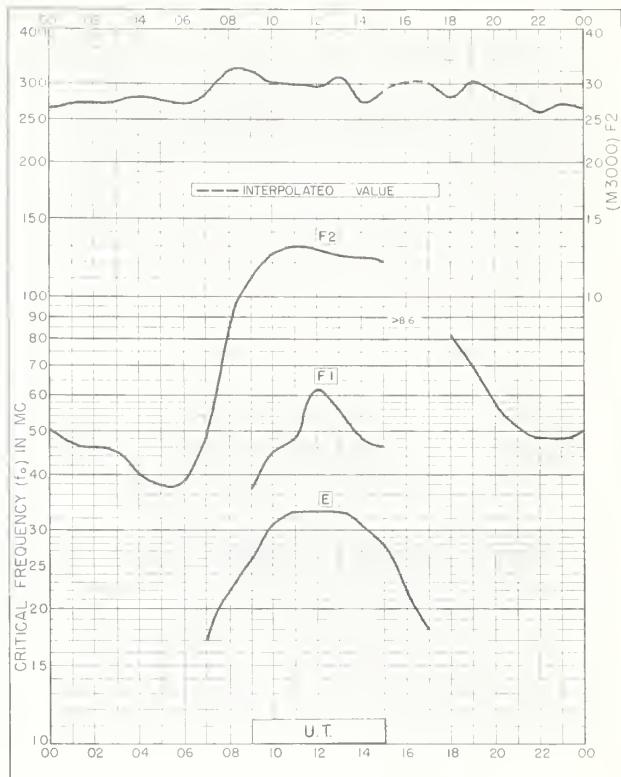


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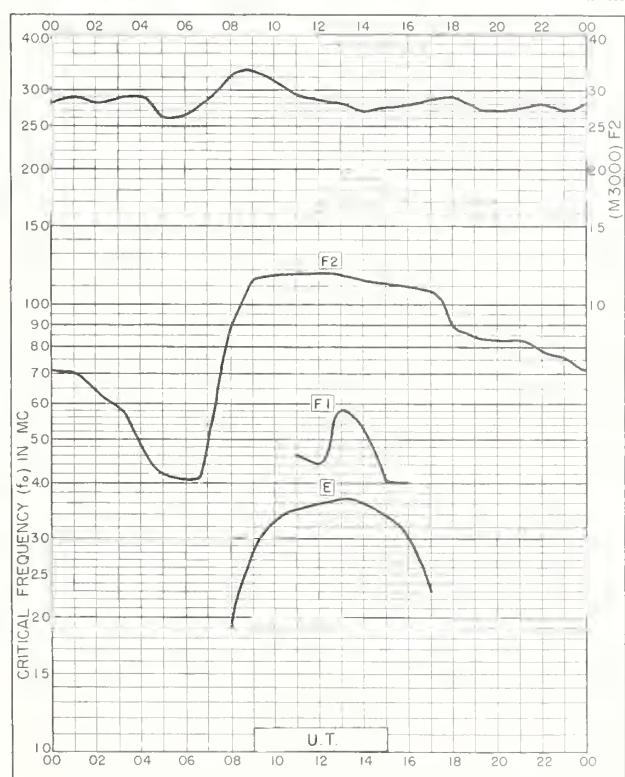


Fig. 95. CASABLANCA, MOROCCO  
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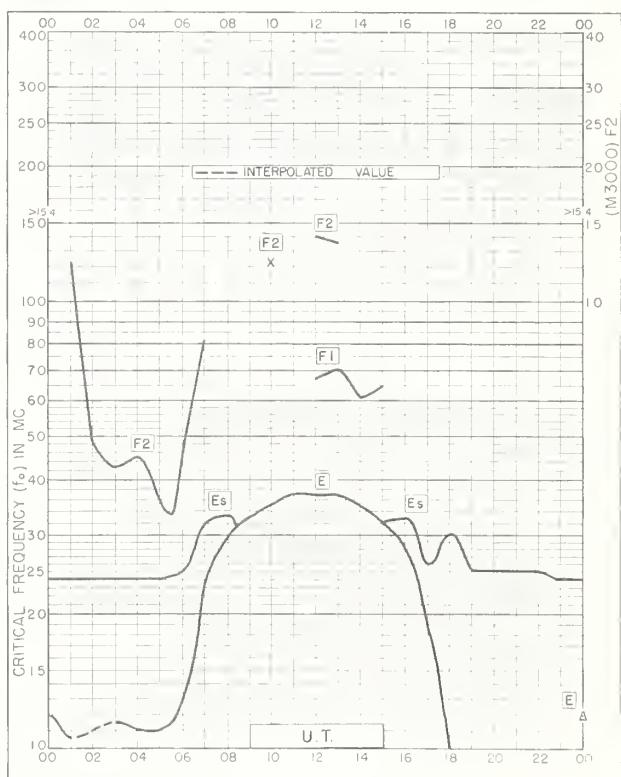
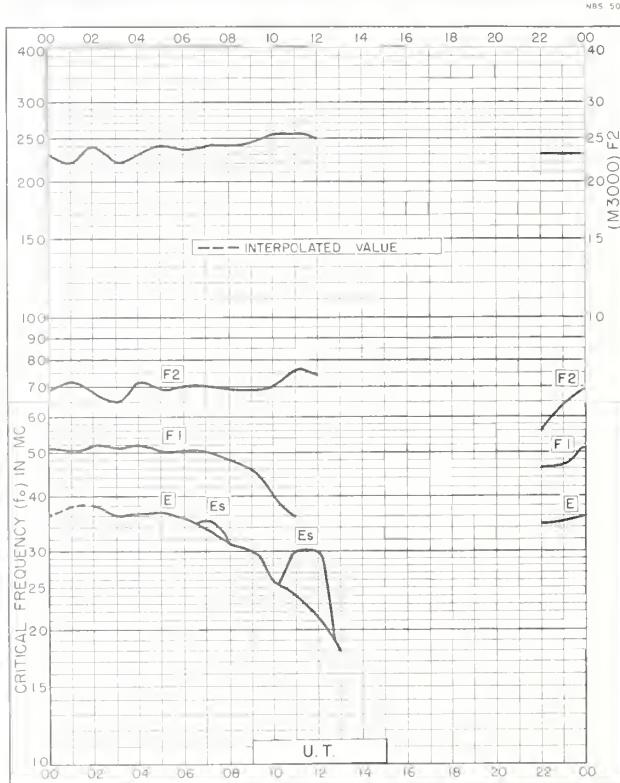
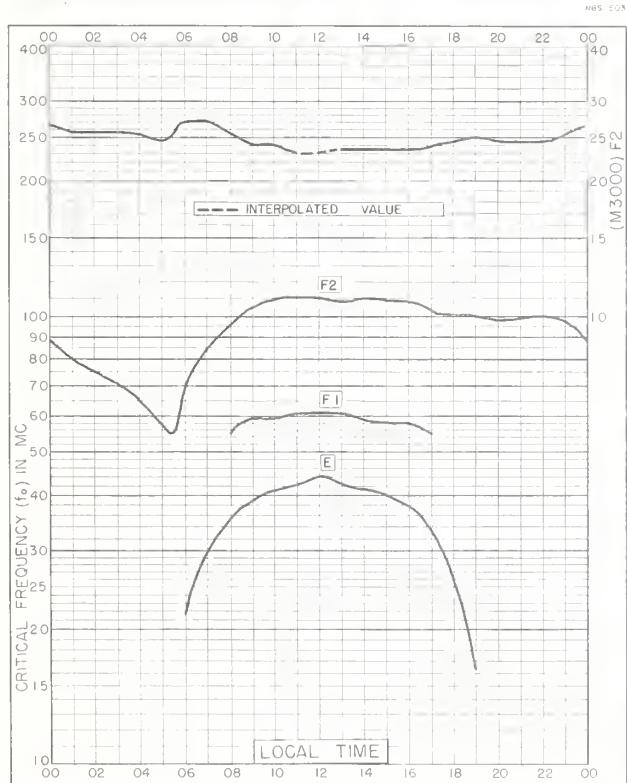
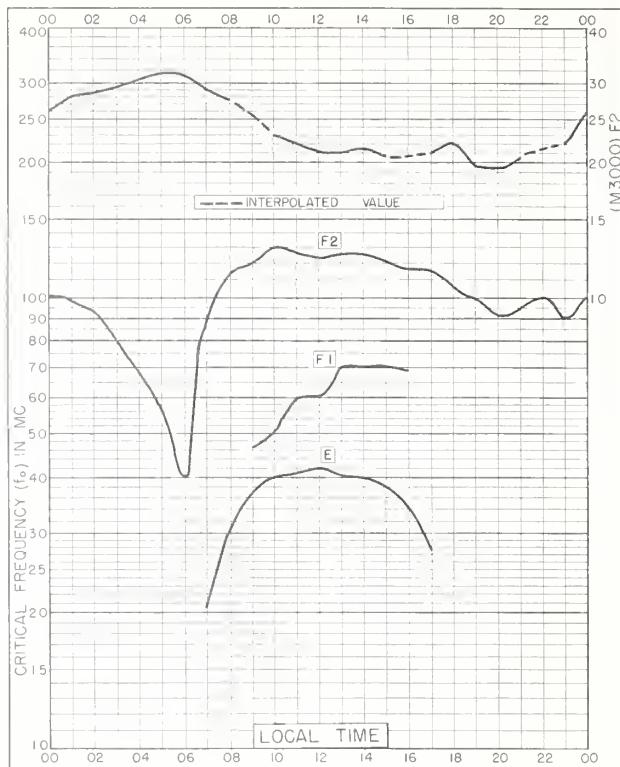
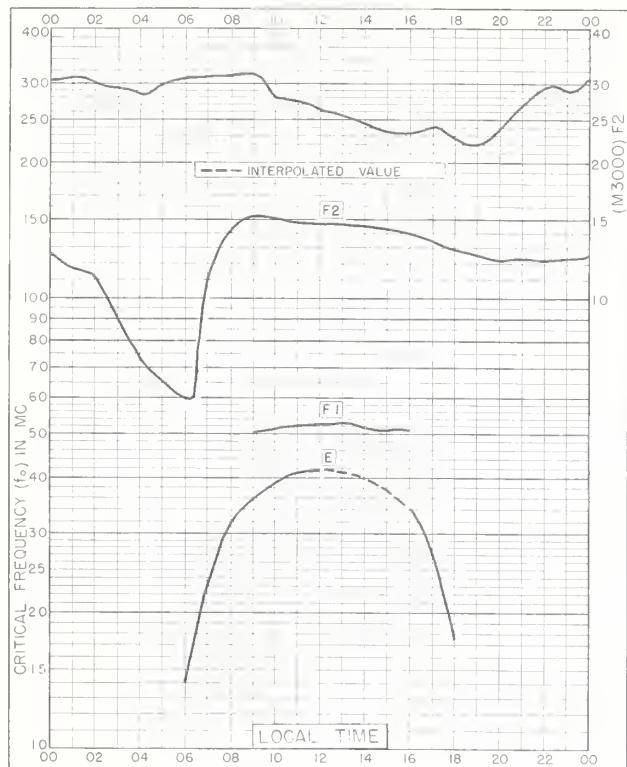


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