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STABILITY CONDITIONS OF THE LOWER ATMOSPHERE AND THEIR IMPLICATIONS REGARDING DIFFUSION AT CAPE KENNEDY, FLORIDA

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ABSTRACT

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This report describes the atmospheric stability conditions at Air Force Station 700 on Cape Kennedy. The data are presented by time of day, month, season, and annually. Results are categorized and presented graphically and tabularly to indicate qualitatively the diffusion conditions and best months and hours for handling toxic fuels or launching vehicles that use toxic fuels.

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BY JAMES R. SCOGGINS AND MARGARET ALEXANDER

SUMMARY

The stability of the atmosphere is determined by the variation of temperature with height and plays a very important role in diffusion processes. This report describes the atmospheric stability conditions at Air Force Station 700 on Cape Kennedy, Florida. Data concerning the period of August 1962 thru July 1964 are presented by time of day, month, season, and annually. The results are categorized and presented graphically and tabularly to indicate qualitatively the diffusion conditions and best months and hours for handling toxic fuels or launching vehicles that use toxic fuels.

I. INTRODUCTION

The stability of the atmosphere is determined by the variation of temperature with height. Near the ground if the temperature increases with height the atmosphere is stable, and if the temperature decreases with height the atmosphere is unstable. Stability in this case has the same connotation as in other sciences; i.e., when the atmosphere is stable a parcel of air if displaced from its original position will return to that position. Conversely, when the atmosphere is unstable a parcel of air if displaced from its original position will not return to that position.

Atmospheric stability plays a very important role in diffusion processes (References 1, 2, and 3). When the atmosphere is unstable, the separation between adjacent parcels increases with time. This is easily visualized from the definition of stability. Thus, a cloud of smoke, say, initially of some given size will become larger in time. If no additional smoke is added to the volume as it expands, then obviously the concentration of smoke particles per unit volume must decrease. This process is generally referred to as atmospheric diffusion. The rate at which the

cloud grows and the concentration of particles within the cloud are greatly influenced by the stability of the atmosphere. Other factors such as winds, surface features, and solar heating are important; however, in this report we shall consider only stability conditions and how they affect diffusion conditions near the ground.

Stability conditions at Cape Kennedy, Florida are discussed and some data presented by Haugen and Taylor (Reference 2). Because it was not the purpose of Haugen and Taylor's report to present a thorough and comprehensive treatment of stability conditions for Cape Kennedy, there are many questions regarding the use of toxic fuel, for example, that cannot be answered from that study.

This report presents a study of atmospheric stability conditions at Air Force Station 700 on Cape Kennedy. Data are presented by time of day, month, season, and annually. The results are categorized and presented graphically and tabularly to indicate qualitatively the diffusion conditions.

II. DISCUSSION OF DATA

The temperature measurements used in this report are from Air Force Station 700 on Cape Kennedy from August 1, 1962 thru July 31, 1964. Station 700 is a 204-ft. tower located near the beach between Launch Complexes 15 and 16. Figure 1 shows the location of this station and the temperature measurement heights. All temperature measurements used in this study represent an average over time intervals ranging from 5 to 30 minutes. The averaging period is not too important since temperature measured with existing instrumentation does not vary rapidly in time. The data are believed to be sufficiently accurate for conducting stability analyses. The months of each season and daytime and nighttime hours are as follows:

Season	EST Daytime	EST Nighttime
Summer (June, July, August)	0540 to 1900	1900 to 0540
Fall (September, October, November)	0630 to 1805	1805 to 0630
Winter (December, January, February)	0715 to 1750	1750 to 0715
Spring (March, April, May)	0600 to 1845	1845 to 0600

III. INDICATED STABILITY CONDITIONS AT AIR FORCE STATION 700

Stability conditions for Station 700 are shown graphically in Figures 2, 3, and 4 and tabularly in Tables 1 thru 17. The data are presented as a function of hour of the day, month, season, and annually.

Figure 2 covers the period August 1962 thru July 1963, Figure 3 covers the period August 1963 thru July 1964, and Figure 4 is a composite of Figures 2 and 3. Stability conditions appearing in Figures 2, 3, and 4 represent the highest percentage frequency value occurring in Tables 1 thru 17.

Table 1 is a compilation of the number of observations and percentage frequency of stability conditions at Station 700 for August during 1962, 1963, and a composite of the two years. In a similar manner Tables 2 thru 12 cover September thru July and Tables 13 thru 17 cover the seasons and annual.

In all figures and tables the following definition of stability is used:

Symbol (Figures)	Symbol (Tables)	Stability Condition	Temperature Difference (T_2-T_1)*
0	VS	Very Stable	$\Delta T \geq +1.67°C$
1	MS	Moderately Stable	$+1.67°C > \Delta T \geq 0°C$
2	MU	Moderately Unstable	$0°C > \Delta T > -1.67°C$
3	VU	Very Unstable	$\Delta T \leq -1.67°C$

* (T_2-T_1) is temperature at upper level minus temperature at lower level. A negative lapse rate means a decrease of temperature with height.

The data from August 1962 thru July 1963 show that from approximately 1900 EST until 0700 EST the atmosphere is generally moderately stable. The only notable exceptions are that the atmosphere is very stable at night during the months of May and December and moderately unstable during August, November, and January. During the hours between 0700 and 1900 EST the atmosphere, being most unstable between approximately 1000 and 1600 EST, is moderately to very unstable. During these hours (1000 and 1600 EST) the atmosphere is most unstable from November thru January, April thru June, and during August. The stability conditions show that for all seasons the atmosphere is moderately to very unstable during the day and moderately stable at night except in winter when it is moderately to very stable during nighttime. Between the hours of 1100 and 1500 EST the atmosphere is generally very unstable during all seasons. The annual conditions show the atmosphere to be most unstable from 1000 to 1600 EST.

Since the stability conditions from August 1962 thru July 1963 differ considerably from those from August 1963 thru July 1964, these years show that stability conditions vary considerably from year to year. Data from August 1963 thru July 1964 show that the atmosphere is

generally stable from approximately 2000 to 0700 EST except for June and July when the atmosphere was moderately unstable except just before sunrise and for January which was generally stable from 1700 thru 0900 EST. There are other features in 1963-64 which are different from those in the previous year. For example, in 1962-63 during January between 1100 and 1500 EST the atmosphere is very unstable while in 1963-64 between the same hours the atmosphere is moderately stable to moderately unstable. From the seasonal stability conditions, on the average, the atmosphere for the 1962-63 period is more stable than for the year 1963-64.

The composite of particular months, seasons, and years is probably more representative of stability conditions at the Cape than either single year of data since the composite covers a longer period of time. As shown in the composites the atmosphere is generally moderately stable from near sunset to sunrise and moderately to very unstable during the daytime. The atmosphere is most unstable between the hours of 1100 and 1500 EST from November thru January and March thru August. The summer is logically the most unstable period because of strong solar heating of the earth's surface.

IV. CONCLUSIONS AND COMMENTS

The percentage frequency of stability conditions have been presented from temperature measurements made on the Cape at Station 700. The stability conditions indicated from these temperature measurements show a trend which would normally be expected. The atmosphere is moderately stable most of the time at night and moderately to very unstable during the daytime. There are relatively few measured cases of very stable conditions. Very unstable conditions occur during the day and primarily during the summer season. The rate at which atmospheric diffusion takes place depends on the degree of stability; the rate increases as the stability decreases. Therefore, a cloud of toxic gases, for example, grows faster and decreases in concentration faster during the daytime than at night and more during the summer than any other season. The months of April thru August between the hours of 1100 and 1500 EST show the largest instability, and would be the best months and times for handling toxic fuels or launching vehicles that use toxic fuels.

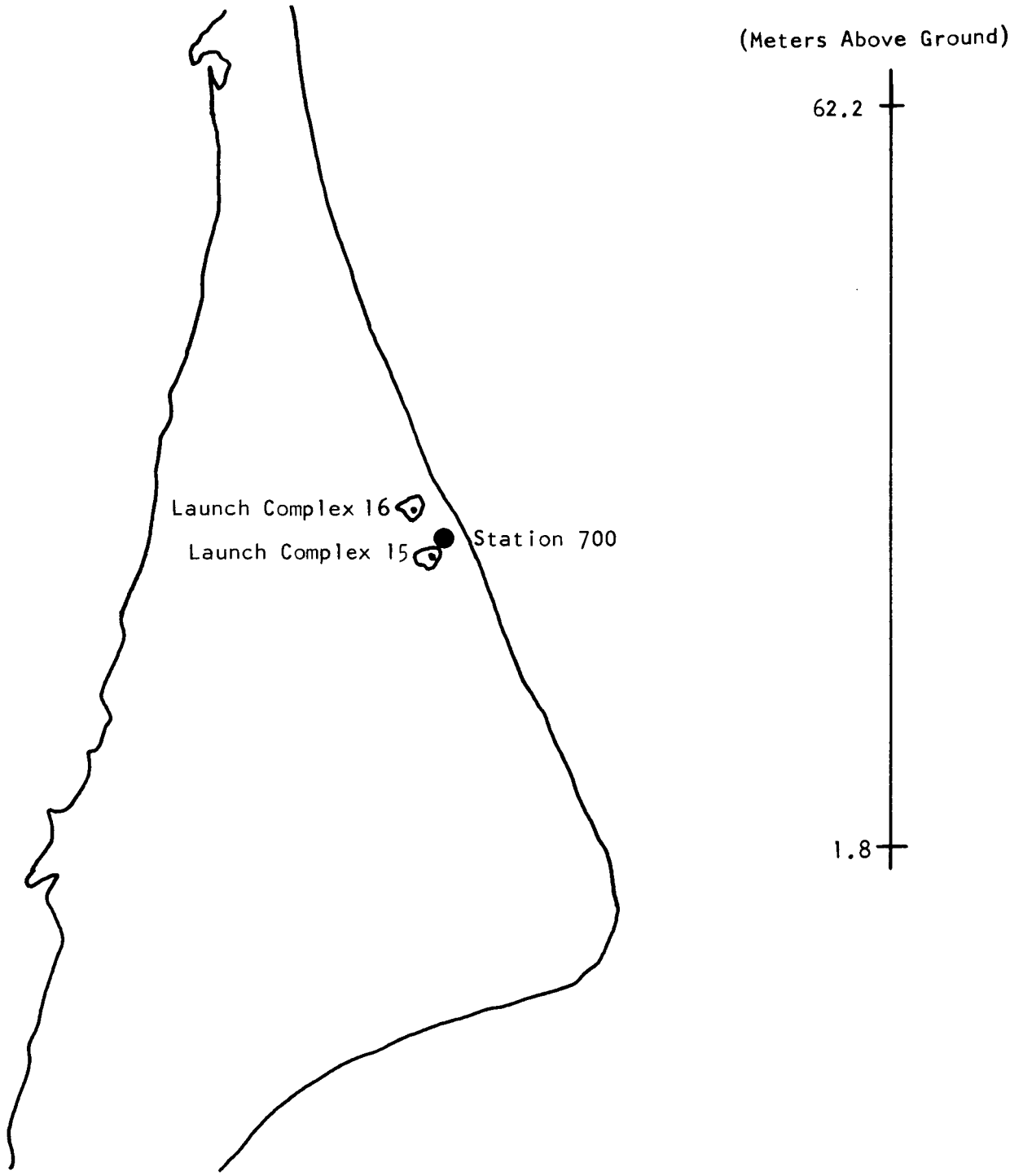

Figure 1. Location of Air Force Station 700 Tower and Heights of Temperature Measurements

HOUR EST	MONTHS												SEASONS				ANNUAL	NO. OBS.
	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	SUM	FALL	WIN	SPR		
0000	1	1	1	2	0	2	1	1	1	0	1	1	1	1	1	1	1	342
0100	2	1	0	2	0	2	01	1	1	0	1	01	1	1	0	1	1	344
0200	1	0	1	2	0	2	1	0	1	0	1	1	1	0	1	1	1	345
0300	1	1	0	2	0	12*	1	1	1	0	1	1	1	0	1	1	1	344
0400	2	1	01	2	1	2	01	0	1	0	1	0	1	1	1	01	1	340
0500	2	1	1	2	0	0	0	0	1	0	1	0	1	1	0	01	1	340
0600	2	1	1	2	1	02	1	0	1	0	0	0	1	0	0	0	0	342
0700	2	1	1	2	0	02	2	0	1	1	2	1	2	1	0	1	1	344
0800	3	1	1	2	0	2	1	1	2	2	2	2	2	1	2	1	2	345
0900	3	1	2	2	3	2	2	2	2	3	3	2	3	2	3	2	2	329
1000	3	2	23	3	3	3	2	2	2	3	3	2	3	2	3	2	3	341
1100	3	2	23	3	3	3	3	3	3	3	3	2	3	3	3	3	3	332
1200	3	2	23	3	3	3	3	3	3	3	3	3	3	3	3	3	3	327
1300	3	2	3	3	3	3	2	2	3	3	3	3	3	3	3	3	3	333
1400	3	2	2	3	3	3	3	23	3	3	3	23	3	3	3	3	3	339
1500	3	2	2	3	3	3	3	2	3	3	3	2	3	3	3	3	3	327
1600	3	2	2	3	3	3	2	2	3	3	3	2	3	2	3	3	3	330
1700	3	1	1	2	3	3	2	2	2	3	3	2	3	2	3	2	2	332
1800	3	1	1	2	1	2	2	1	2	2	2	1	2	1	2	2	2	337
1900	3	1	1	2	0	1	2	1	2	2	2	1	2	1	1	1	1	344
2000	2	1	1	2	0	2	02	1	1	12	1	1	1	1	2	1	1	343
2100	2	1	1	2	0	2	2	1	1	0	1	1	1	1	02	1	1	337
2200	2	1	1	2	0	2	1	1	1	0	1	1	1	1	0	1	1	335
2300	2	1	1	2	0	2	1	1	1	0	1	1	1	1	0	1	1	337

SYMBOL	STABILITY CONDITION	TEMPERATURE DIFFERENCE
0	Very Stable	$\Delta T \geq +1.67°C$
1	Moderately Stable	$+1.67°C > \Delta T \geq 0°C$
2	Moderately Unstable	$0°C > \Delta T > -1.67°C$
3	Very Unstable	$\Delta T \leq -1.67°C$

ΔT = temperature at upper level (62.2 m) minus temperatue at lower level (1.8 m).

*Multiple symbols (example 12) indicate stability conditions are equally distributed between the categories.

Figure 2. Stability Conditions For Station 700 From August 1962 Thru July 1963

HOUR EST	MONTHS												SEASONS				ANNUAL	NO. OBS.
	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	SUM	FALL	WIN	SPR		
0000	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	350
0100	0	12*	1	1	1	0	1	1	1	1	1	2	1	1	1	1	1	351
0200	0	2	2	1	1	0	1	1	1	1	1	3	1	1	1	1	1	352
0300	0	1	1	1	1	01	1	1	1	0	1	3	1	1	1	1	1	349
0400	0	1	1	1	1	0	1	1	1	0	1	2	1	1	1	1	1	351
0500	1	2	1	1	1	0	1	1	1	0	1	1	1	1	1	1	1	351
0600	1	0	1	1	0	0	1	012	1	0	1	1	1	1	1	1	1	349
0700	1	2	1	1	0	01	1	2	1	1	2	3	2	1	1	1	1	349
0800	2	2	2	1	0	0	1	2	2	2	3	3	3	2	1	2	2	348
0900	2	2	2	2	2	1	2	2	2	2	3	3	3	2	2	2	2	339
1000	3	3	2	2	2	2	2	2	2	2	3	3	3	2	2	2	3	332
1100	3	3	3	2	3	2	2	3	3	3	3	3	3	3	2	3	3	338
1200	3	3	3	3	3	1	2	3	3	3	3	3	3	3	2	3	3	346
1300	3	3	3	2	3	2	2	3	3	3	3	3	3	3	2	3	3	342
1400	3	3	2	3	3	2	2	3	3	3	3	3	3	3	3	3	3	339
1500	3	3	2	2	3	2	2	3	3	3	3	3	3	2	2	3	3	343
1600	3	2	2	2	2	2	2	3	3	3	3	3	3	2	2	3	3	339
1700	2	2	2	2	2	1	2	2	2	2	3	3	3	2	2	2	2	346
1800	2	2	2	1	1	1	1	2	2	2	3	3	3	2	1	2	2	342
1900	2	2	2	1	0	0	1	2	1	2	2	2	2	2	1	2	2	347
2000	1	2	2	1	0	0	1	2	1	2	2	2	2	2	1	1	1	346
2100	1	2	2	1	1	0	1	2	1	1	2	2	2	2	1	1	1	348
2200	1	2	1	1	01	1	1	1	1	1	2	1	1	1	1	1	1	346
2300	1	2	1	1	1	0	1	1	1	1	2	23	1	1	1	1	1	347

SYMBOL	STABILITY CONDITION	TEMPERATURE DIFFERENCE
0	Very Stable	$\Delta T \geq +1.67°C$
1	Moderately Stable	$+1.67°C > \Delta T \geq 0°C$
2	Moderately Unstable	$0°C > \Delta T > -1.67°C$
3	Very Unstable	$\Delta T \leq -1.67°C$

ΔT = temperature at upper level (62.2 m) minus temperature at lower level (1.8 m).

*Multiple symbols (example 12) indicate stability conditions are equally distributed between the categories.

Figure 3. Stability Conditions For Station 700 From August 1963 Thru July 1964

HOUR EST	MONTHS												SEASONS				ANNUAL	NO. OBS.
	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	SUM	FALL	WIN	SPR		
0000	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	692
0100	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	695
0200	1	0	12*	1	1	0	1	1	1	0	1	1	1	1	1	1	1	697
0300	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	693
0400	1	1	1	1	1	0	1	1	1	0	1	01	1	1	1	1	1	691
0500	1	0	1	1	1	0	1	1	1	0	1	01	1	1	1	1	1	691
0600	1	1	1	0	1	0	1	0	1	0	1	01	1	1	1	0	1	691
0700	1	1	1	2	0	0	1	0	1	1	2	1	2	1	0	1	1	693
0800	2	1	2	2	0	0	1	1	2	2	3	2	2	2	01	2	2	693
0900	3	2	2	2	3	2	2	2	2	2	3	3	3	2	2	2	2	668
1000	3	2	2	2	3	3	2	2	2	3	3	3	3	2	3	2	3	673
1100	3	3	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	670
1200	3	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	673
1300	3	3	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	675
1400	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	678
1500	3	2	2	3	3	3	2	3	3	3	3	3	3	2	3	3	3	670
1600	3	2	2	2	3	2	2	3	3	3	3	3	3	2	2	3	3	669
1700	3	2	2	2	2	1	2	2	2	2	3	3	3	2	2	2	2	678
1800	2	2	1	2	1	1	1	2	2	2	3	1	2	2	1	2	2	679
1900	2	2	12	2	0	1	1	1	1	2	2	1	2	2	1	1	2	691
2000	2	1	12	1	0	0	1	1	1	2	2	1	1	1	0	1	1	689
2100	1	1	1	1	0	0	1	1	1	1	12	1	1	1	0	1	1	685
2200	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	681
2300	1	1	1	1	0	0	1	1	1	2	1	1	1	1	1	1	1	684

SYMBOL	STABILITY CONDITION	TEMPERATURE DIFFERENCE
0	Very Stable	$\Delta T \geq +1.67°C$
1	Moderately Stable	$+1.67°C > \Delta T \geq 0°C$
2	Moderately Unstable	$0°C > \Delta T > -1.67°C$
3	Very Unstable	$\Delta T < -1.67°C$

ΔT = temperature at upper level (62.2 m) minus temperature at lower level (1.8 m).

*Multiple symbols (example 12) indicate stability conditions are equally distributed between the categories.

Figure 4. Composite Stability Conditions For Station 700 From August 1962 Thru July 1964

August

Percentage Frequency of Stability Conditions

HOUR EST	NUMBER OF OBSERVATIONS			1962				1963				COMPOSITE			
	1962	1963	TOTAL	VS	MS	MU	VU	VS	MS	MU	VU	VS	MS	MU	VU
0000	31	31	62	3.22	48.39	25.81	22.58	38.71	45.16	16.13	0	20.97	46.77	20.97	11.29
0100	30	31	61	3.33	36.67	43.33	16.67	51.61	41.94	6.45	0	27.87	39.34	24.59	8.20
0200	31	31	62	9.68	38.71	29.03	22.58	51.61	41.94	6.45	0	30.65	40.32	17.74	11.29
0300	31	31	62	0	41.94	38.71	19.35	48.39	45.16	6.45	0	24.19	43.55	22.58	9.68
0400	30	31	61	0	40.00	43.33	16.67	51.61	45.16	3.23	0	26.22	42.62	22.95	8.20
0500	29	31	60	3.45	37.93	41.38	17.24	35.48	64.52	0	0	20.00	51.67	20.00	8.33
0600	30	31	61	3.33	40.00	43.33	13.33	45.16	54.84	0	0	24.59	47.54	21.31	6.56
0700	29	31	60	0	20.69	58.62	20.69	3.23	80.69	16.13	0	1.67	51.67	36.67	10.00
0800	30	30	60	0	0	36.67	63.33	0	26.67	73.33	0	0	13.33	55.00	31.67
0900	28	31	59	0	0	0	100.00	0	12.90	58.06	29.03	0	6.78	30.51	62.71
1000	31	30	61	0	0	3.23	96.77	0	10.00	23.33	66.67	0	4.92	13.11	81.97
1100	30	30	60	0	0	3.33	96.67	0	10.00	16.67	73.33	0	5.00	10.00	85.00
1200	31	30	61	0	0	6.45	93.55	0	6.67	20.00	73.33	0	3.28	13.11	83.61
1300	31	30	61	0	0	0	100.00	0	10.00	16.67	73.33	0	4.92	8.20	86.89
1400	30	29	59	0	0	10.00	90.00	0	20.69	6.90	72.41	0	10.17	8.47	81.36
1500	28	30	58	0	0	7.14	92.86	3.33	13.33	20.00	63.33	1.72	6.90	13.79	77.59
1600	28	29	57	0	3.57	7.14	89.29	0	17.24	24.14	58.62	0	10.53	15.79	73.68
1700	27	30	57	0	3.70	18.52	77.78	3.33	13.33	50.00	33.33	1.75	8.77	35.09	54.39
1800	27	31	58	0	0	37.04	62.96	6.45	6.45	83.87	3.23	3.45	3.45	62.07	31.03
1900	29	31	60	0	27.59	31.03	41.38	0	48.39	51.61	0	0	38.33	41.67	20.00
2000	29	31	60	0	27.59	41.38	31.03	12.90	45.16	41.94	0	6.67	36.67	41.67	15.00
2100	29	31	60	0	27.59	48.27	24.14	12.90	64.52	22.58	0	6.67	46.67	35.00	11.67
2200	29	31	60	0	31.03	48.28	20.69	16.13	64.52	16.35	0	8.33	48.33	33.33	10.00
2300	29	30	59	6.90	31.03	41.38	20.69	30.00	53.33	16.67	0	18.64	42.37	28.81	10.17

SYMBOL	STABILITY CONDITION	TEMPERATURE DIFFERENCE
VS	Very Stable	$\Delta T \geq +1.67°C$
MS	Moderately Stable	$+1.67°C > \Delta T \geq 0°C$
MU	Moderately Unstable	$0°C > \Delta T > -1.67°C$
VU	Very Unstable	$\Delta T \leq -1.67°C$

(ΔT = Temperature at 62.2 m level minus temperature at 1.8 m level)

Table 1. Number of Observations and Percentage Frequency of Stability Conditions at Station 700 for August

September

Percentage Frequency of Stability Conditions

HOUR EST	NUMBER OF OBSERVATIONS			1962				1963				COMPOSITE			
	1962	1963	TOTAL	VS	MS	MU	VU	VS	MS	MU	VU	VS	MS	MU	VU
0000	29	25	54	27.59	58.62	3.45	10.34	8.00	52.00	40.00	0	18.52	55.56	20.37	5.56
0100	30	25	55	40.00	43.33	10.00	6.67	20.00	40.00	40.00	0	30.91	41.82	23.64	3.64
0200	30	26	56	50.00	40.00	6.67	3.33	26.92	30.77	42.31	0	39.29	35.71	23.21	1.79
0300	30	25	55	40.00	43.33	13.33	3.33	32.00	36.00	32.00	0	36.36	40.00	21.82	1.82
0400	29	26	55	37.93	51.72	10.35	0	30.77	46.15	23.08	0	34.55	49.09	16.36	0
0500	29	25	54	37.93	51.72	10.35	0	40.00	16.00	44.00	0	38.89	35.19	25.93	0
0600	28	25	53	43.86	50.00	7.14	0	40.00	36.00	24.00	0	41.51	43.40	15.09	0
0700	29	25	54	37.93	48.27	6.90	6.90	28.00	32.00	40.00	0	33.33	40.74	22.22	3.70
0800	29	24	53	0	79.31	6.90	13.79	0	16.67	79.17	4.17	0	50.94	39.62	9.43
0900	28	26	54	3.57	50.00	28.57	17.86	0	3.85	61.54	34.62	1.85	27.78	44.44	25.93
1000	28	23	51	0	28.57	53.57	17.86	0	0	39.13	60.87	0	15.69	47.06	37.25
1100	24	25	49	0	20.83	54.17	25.00	0	4.00	28.00	68.00	0	12.24	40.82	46.94
1200	25	26	51	0	12.00	64.00	24.00	0	3.85	30.77	65.38	0	7.84	47.06	45.10
1300	24	26	50	0	12.50	66.67	20.83	0	3.85	23.08	73.08	0	8.00	44.00	48.00
1400	26	25	51	0	15.38	50.00	34.62	0	0	28.00	72.00	0	7.84	39.22	52.94
1500	26	26	52	0	19.23	61.54	19.23	0	0	30.77	69.23	0	9.62	46.15	44.23
1600	25	24	49	0	32.00	52.00	16.00	0	0	62.50	37.50	0	16.33	57.14	26.53
1700	26	25	51	3.85	61.54	19.23	15.38	0	8.00	56.00	36.00	1.96	35.29	37.25	25.49
1800	27	25	52	3.70	70.37	7.41	18.52	0	8.00	92.00	0	1.92	40.38	48.08	9.62
1900	28	25	53	14.29	60.71	10.71	14.29	0	20.00	80.00	0	7.55	41.51	43.40	7.55
2000	28	25	53	17.86	67.86	0	14.29	0	24.00	76.00	0	9.43	47.17	35.85	7.55
2100	28	25	53	35.71	50.00	3.57	10.72	0	28.00	72.00	0	18.87	39.62	35.85	5.66
2200	29	24	53	24.14	62.07	3.45	10.34	4.17	25.00	70.83	0	15.09	45.28	33.96	5.66
2300	29	25	54	24.14	58.62	3.45	13.79	8.00	44.00	48.00	0	16.67	51.85	24.07	7.41

SYMBOL	STABILITY CONDITION	TEMPERATURE DIFFERENCE
VS	Very Stable	$\Delta T \geq +1.67°C$
MS	Moderately Stable	$+1.67°C > \Delta T \geq 0°C$
MU	Moderately Unstable	$0°C > \Delta T > -1.67°C$
VU	Very Unstable	$\Delta T \leq -1.67°C$

(ΔT = Temperature at 62.2 m level minus temperature at 1.8 m level)

Table 2. Number of Observations and Percentage Frequency of Stability Conditions at Station 700 for September

October

Percentage Frequency of Stability Conditions

HOUR EST	NUMBER OF OBSERVATIONS			1962				1963				COMPOSITE			
	1962	1963	TOTAL	VS	MS	MU	VU	VS	MS	MU	VU	VS	MS	MU	VU
0000	31	30	61	32.26	38.71	25.81	3.22	13.33	53.33	33.33	0	22.95	45.90	29.51	1.64
0100	31	30	61	41.94	35.48	22.58	0	16.67	46.67	36.67	0	29.51	40.98	29.51	0
0200	31	30	61	35.48	38.71	25.81	0	20.00	33.33	46.67	0	27.87	36.07	36.07	0
0300	31	28	59	38.71	35.48	25.81	0	21.43	60.71	17.86	0	30.51	47.46	22.03	0
0400	31	29	60	41.94	41.94	16.12	0	17.24	58.62	24.14	0	30.00	50.00	20.00	0
0500	30	30	60	33.33	46.67	20.00	0	20.00	50.00	30.00	0	26.67	48.33	25.00	0
0600	31	30	61	38.71	41.94	19.35	0	20.00	53.33	26.67	0	29.51	47.54	22.95	0
0700	31	30	61	32.25	41.94	25.81	0	23.33	50.00	26.67	0	27.87	45.90	26.23	0
0800	30	29	59	0	56.67	43.33	0	3.45	27.59	68.97	0	1.69	42.37	55.93	0
0900	28	27	55	7.14	32.14	46.43	14.29	0	0	96.30	3.70	3.64	16.36	70.91	9.09
1000	28	26	54	3.57	25.00	35.71	35.71	0	3.85	61.54	34.62	1.85	14.81	48.15	35.19
1100	28	28	56	0	14.28	42.86	42.86	3.57	0	42.86	53.57	1.79	7.14	42.86	48.21
1200	28	30	58	0	7.14	46.43	46.43	0	0	46.67	53.33	0	3.45	46.55	50.00
1300	27	29	56	0	14.82	33.33	51.85	0	0	44.83	55.17	0	7.14	39.29	53.57
1400	30	30	60	0	13.33	46.67	40.00	0	3.33	56.67	40.00	0	8.33	51.67	40.00
1500	28	30	58	0	17.86	46.43	35.71	0	0	70.00	30.00	0	8.62	58.62	32.76
1600	30	28	58	0	23.33	53.33	23.33	0	0	64.29	35.71	0	12.07	58.62	29.31
1700	29	29	58	0	51.72	41.38	6.90	0	17.24	82.76	0	0	34.48	62.07	3.45
1800	31	29	60	0	64.52	32.26	3.22	6.90	34.48	58.62	0	3.33	50.00	45.00	1.67
1900	31	30	61	3.23	58.06	38.71	0	13.33	33.33	53.33	0	8.20	45.90	45.90	0
2000	31	30	61	3.23	64.51	32.26	0	13.33	26.67	60.00	0	8.20	45.90	45.90	0
2100	31	30	61	12.90	54.84	32.26	0	13.33	33.33	53.33	0	13.11	44.26	42.62	0
2200	30	29	59	16.67	53.33	30.00	0	6.90	58.62	34.48	0	11.86	55.93	32.20	0
2300	31	28	59	22.58	51.61	25.81	0	14.29	50.00	35.71	0	18.64	50.85	30.51	0

SYMBOL	STABILITY CONDITION	TEMPERATURE DIFFERENCE	SYMBOL	STABILITY CONDITION	TEMPERATURE DIFFERENCE
VS	Very Stable	$\Delta T \geq +1.67°C$	MU	Moderately Unstable	$0°C > \Delta T > -1.67°C$
MS	Moderately Stable	$+1.67°C > \Delta T \geq 0°C$	VU	Very Unstable	$\Delta T \leq -1.67°C$

(ΔT = Temperature at 62.2 m level minus temperature at 1.8 m level)

Table 3. Number of Observations and Percentage Frequency of Stability Conditions at Station 700 for October

November

Percentage Frequency of Stability Conditions

HOUR EST	NUMBER OF OBSERVATIONS			1962				1963				COMPOSITE			
	1962	1963	TOTAL	VS	MS	MU	VU	VS	MS	MU	VU	VS	MS	MU	VU
0000	27	30	57	25.93	29.63	44.44	0	10.00	70.00	20.00	0	17.54	50.88	31.58	0
0100	29	30	59	20.69	31.03	48.28	0	20.00	56.67	23.33	0	20.34	44.07	35.59	0
0200	29	30	59	24.14	20.69	55.17	0	23.33	66.67	10.00	0	23.73	44.07	32.20	0
0300	29	30	59	24.14	20.69	55.17	0	20.00	60.00	20.00	0	22.03	40.68	37.29	0
0400	27	30	57	33.33	22.22	44.44	0	16.67	66.67	16.67	0	24.56	45.61	29.82	0
0500	28	30	58	28.57	25.00	42.86	3.57	23.33	50.00	26.67	0	25.86	37.93	34.48	1.72
0600	27	30	57	33.33	18.52	48.15	0	36.67	43.33	20.00	0	35.09	31.58	33.33	0
0700	30	29	59	30.00	16.67	46.67	6.67	31.03	41.38	27.59	0	30.51	28.81	37.29	3.39
0800	29	30	59	13.79	20.69	58.62	6.90	16.67	56.67	26.67	0	15.25	38.98	42.37	3.39
0900	28	29	57	0	7.14	64.29	28.57	0	41.38	55.17	3.45	0	24.56	59.65	15.79
1000	27	29	56	0	0	40.74	59.26	0	20.69	55.17	24.14	0	10.71	48.21	41.07
1100	29	28	57	0	0	24.14	75.86	0	25.00	42.86	32.14	0	12.28	33.33	54.39
1200	30	30	60	0	0	13.33	86.67	0	23.33	33.33	43.33	0	11.67	23.33	65.00
1300	28	28	56	0	0	10.71	89.29	0	14.29	46.43	39.29	0	7.14	28.57	64.29
1400	28	29	57	0	0	14.29	85.71	0	20.69	31.03	48.28	0	10.53	22.81	66.67
1500	28	29	57	0	0	14.29	85.71	0	13.79	55.17	31.03	0	7.02	35.09	57.89
1600	30	30	60	0	0	36.67	63.33	0	23.33	73.33	3.33	0	11.67	55.00	33.33
1700	28	30	58	0	3.57	92.86	3.57	0	43.33	56.67	0	0	24.14	74.14	1.72
1800	26	30	56	19.23	23.07	53.85	3.85	13.33	53.33	33.33	0	16.07	39.29	42.86	1.79
1900	28	29	57	21.43	25.00	50.00	3.57	24.14	41.38	34.48	0	22.81	33.33	42.11	1.75
2000	27	30	57	25.93	22.22	48.15	3.70	10.00	66.67	23.33	0	17.54	45.61	35.09	1.75
2100	28	30	58	25.00	21.43	53.57	0	20.00	60.00	20.00	0	22.41	41.38	36.21	0
2200	28	30	58	21.43	35.71	42.86	0	20.00	66.67	13.33	0	20.69	51.72	27.59	0
2300	29	30	59	20.69	37.93	41.38	0	20.00	53.33	23.33	3.33	20.34	45.76	32.20	1.69

SYMBOL	STABILITY CONDITION	TEMPERATURE DIFFERENCE
VS	Very Stable	$\Delta T \geq +1.67°C$
MS	Moderately Stable	$+1.67°C > \Delta T \geq 0°C$
MU	Moderately Unstable	$0°C > \Delta T > -1.67°C$
VU	Very Unstable	$\Delta T \leq -1.67°C$

(ΔT = Temperature at 62.2 m level minus temperature at 1.8 m level)

Table 4. Number of Observations and Percentage Frequency of Stability Conditions at Station 700 for November

December

Percentage Frequency of Stability Conditions

HOUR EST	NUMBER OF OBSERVATIONS			1962				1963				COMPOSITE			
	1962	1963	TOTAL	VS	MS	MU	VU	VS	MS	MU	VU	VS	MS	MU	VU
0000	23	26	49	43.48	26.09	21.74	8.70	26.92	61.54	3.85	7.69	34.69	44.90	12.24	8.16
0100	24	27	51	37.50	33.33	12.50	16.67	29.63	59.26	7.41	3.70	33.33	47.06	9.80	9.80
0200	26	27	53	34.62	26.92	26.92	11.54	18.52	66.67	11.11	3.70	26.42	47.17	18.87	7.55
0300	24	27	51	37.50	29.17	25.00	8.33	18.52	66.67	7.41	7.41	27.45	49.02	15.69	7.84
0400	24	27	51	29.17	45.83	8.33	16.67	37.04	44.44	14.81	3.70	33.33	45.10	11.76	9.80
0500	25	26	51	32.00	28.00	24.00	16.00	34.62	42.31	23.08	0	33.33	35.29	23.53	7.84
0600	24	27	51	25.00	33.33	20.83	20.83	40.74	37.04	18.52	3.70	33.33	35.29	19.61	11.76
0700	23	26	49	43.48	17.39	13.04	26.09	50.00	23.08	19.23	7.69	46.94	20.41	16.33	16.33
0800	25	25	50	36.00	16.00	16.00	32.00	44.00	24.00	28.00	4.00	40.00	20.00	22.00	18.00
0900	27	25	52	7.41	22.22	14.81	55.56	8.00	36.00	40.00	16.00	7.69	28.85	26.92	36.54
1000	28	25	53	3.57	7.14	14.29	75.00	0	12.00	56.00	32.00	1.89	9.43	33.96	54.72
1100	26	23	49	0	7.69	11.54	80.77	0	13.04	21.74	65.22	0	10.20	16.33	73.47
1200	26	23	49	0	11.54	11.54	76.92	4.35	17.39	13.04	65.22	2.04	14.29	12.24	71.43
1300	26	24	50	0	11.54	15.38	73.08	0	20.83	16.67	62.50	0	16.00	16.00	68.00
1400	29	24	53	0	13.79	10.34	75.86	4.17	16.67	12.50	66.67	1.89	15.09	11.32	71.70
1500	23	26	49	0	13.04	13.04	73.91	7.69	11.54	30.77	50.00	4.08	12.24	22.45	61.22
1600	23	26	49	0	0	26.09	73.91	3.85	19.23	57.69	19.23	2.04	10.20	42.86	44.90
1700	26	27	53	3.85	15.38	23.08	57.69	3.70	37.04	51.85	7.41	3.77	26.42	37.74	32.08
1800	27	26	53	11.11	37.04	25.93	25.93	23.08	61.54	11.54	3.85	16.98	49.06	18.87	15.09
1900	28	26	54	35.71	28.57	17.86	17.86	42.31	38.46	15.38	3.85	38.89	33.33	16.67	11.11
2000	27	26	53	40.74	25.93	18.52	14.81	46.15	42.31	3.85	7.69	43.40	33.96	11.32	11.32
2100	24	26	50	37.50	20.83	20.83	20.83	38.46	42.31	15.38	3.85	38.00	32.00	18.00	12.00
2200	25	27	52	40.00	16.00	20.00	24.00	44.44	44.44	7.41	3.70	42.31	30.77	13.46	13.46
2300	24	27	51	50.00	12.50	20.83	16.67	33.33	51.85	3.70	11.11	41.18	33.33	11.76	13.73

SYMBOL	STABILITY CONDITION	TEMPERATURE DIFFERENCE
VS	Very Stable	$\Delta T \geq +1.67°C$
MS	Moderately Stable	$+1.67°C > \Delta T \geq 0°C$
MU	Moderately Unstable	$0°C > \Delta T > -1.67°C$
VU	Very Unstable	$\Delta T \leq -1.67°C$

(ΔT = Temperature at 62.2 m level minus temperature at 1.8 m level)

Table 5. Number of Observations and Percentage Frequency of Stability Conditions at Station 700 for December

January

Percentage Frequency of Stability Conditions

HOUR EST	NUMBER OF OBSERVATIONS			1963				1964				COMPOSITE			
	1963	1964	TOTAL	VS	MS	MU	VU	VS	MS	MU	VU	VS	MS	MU	VU
0000	31	30	61	29.03	22.58	41.94	6.45	46.67	40.00	13.33	0	37.70	31.15	27.87	3.28
0100	31	30	61	25.81	22.58	48.39	3.23	46.67	33.33	20.00	0	36.07	27.87	34.43	1.64
0200	30	30	60	23.33	30.00	43.33	3.33	56.67	26.67	16.67	0	40.00	28.33	30.00	1.67
0300	30	31	61	20.00	40.00	40.00	0	41.94	41.94	16.13	0	31.15	40.98	27.87	0
0400	29	29	58	24.14	24.14	41.38	10.34	51.72	31.03	17.24	0	37.93	27.59	29.31	5.17
0500	29	31	60	31.03	20.69	24.14	24.14	51.61	41.94	6.45	0	41.67	31.67	15.00	11.67
0600	30	31	61	36.67	20.00	36.67	6.67	48.39	35.48	16.13	0	42.62	27.87	26.23	3.28
0700	29	31	60	34.48	24.14	34.48	6.90	41.94	41.94	16.13	0	38.33	33.33	25.00	3.33
0800	29	31	60	34.48	17.24	37.93	10.34	45.16	38.71	16.13	0	40.00	28.33	26.67	5.00
0900	30	29	59	3.33	6.67	43.33	46.67	31.03	34.48	31.03	3.45	16.95	20.34	37.29	25.42
1000	31	28	59	0	9.68	19.35	70.97	17.86	35.71	39.29	7.14	8.47	22.03	28.81	40.68
1100	31	29	60	0	12.90	12.90	74.19	20.69	34.48	37.93	6.90	10.00	23.33	25.00	41.67
1200	30	30	60	0	3.33	13.33	83.33	10.00	46.67	33.33	10.00	5.00	25.00	23.33	46.67
1300	30	30	60	0	10.00	6.67	83.33	13.33	30.00	40.00	16.67	6.67	20.00	23.33	50.00
1400	31	30	61	3.23	12.90	3.23	80.64	13.33	23.33	46.67	16.67	8.20	18.03	24.59	49.18
1500	30	30	60	0	10.00	20.00	70.00	16.67	33.33	40.00	10.00	8.33	21.67	30.00	40.00
1600	30	29	59	3.33	13.33	26.67	56.67	13.79	37.93	44.83	3.45	8.45	25.42	35.59	30.51
1700	30	29	59	3.33	16.67	30.00	50.00	13.79	48.28	31.03	6.90	8.45	32.20	30.51	28.81
1800	30	26	56	10.00	33.33	36.67	20.00	38.46	50.00	11.54	0	23.21	41.07	25.00	10.71
1900	30	29	59	10.00	40.00	33.33	16.67	55.17	37.93	6.90	0	32.20	38.98	20.34	8.45
2000	31	27	58	19.35	25.81	45.16	9.68	59.26	33.33	7.41	0	37.93	29.31	27.59	5.17
2100	30	30	60	30.00	16.67	40.00	13.33	56.67	36.67	6.67	0	43.33	26.67	23.33	6.67
2200	30	28	58	26.67	26.67	40.00	6.67	42.86	50.00	7.14	0	34.48	37.93	24.14	3.45
2300	30	29	59	33.33	23.33	36.67	6.67	44.83	41.38	13.79	0	38.98	32.20	25.42	3.39

SYMBOL	STABILITY CONDITION	TEMPERATURE DIFFERENCE
VS	Very Stable	$\Delta T \geq +1.67°C$
MS	Moderately Stable	$+1.67°C > \Delta T \geq 0°C$
MU	Moderately Unstable	$0°C > \Delta T > -1.67°C$
VU	Very Unstable	$\Delta T \leq -1.67°C$

(ΔT = Temperature at 62.2 m level minus temperature at 1.8 m level)

Table 6. Number of Observations and Percentage Frequency of Stability Conditions at Station 700 for January

February

Percentage Frequency of Stability Conditions

HOUR EST	NUMBER OF OBSERVATIONS			1963				1964				COMPOSITE			
	1963	1964	TOTAL	VS	MS	MU	VU	VS	MS	MU	VU	VS	MS	MU	VU
0000	27	29	56	25.93	51.85	14.81	7.41	27.59	68.97	3.45	0	26.79	60.71	8.93	3.57
0100	26	29	55	38.46	38.46	11.54	11.54	31.03	58.62	10.34	0	34.55	49.09	10.91	5.45
0200	27	29	56	33.33	37.04	18.52	11.11	24.14	65.52	10.34	0	28.57	51.79	14.29	5.36
0300	27	29	56	33.33	40.74	18.52	7.41	27.59	65.52	6.90	0	30.36	53.57	12.50	3.57
0400	26	29	55	34.62	34.62	23.08	7.69	27.59	62.07	6.90	3.45	30.91	49.09	14.55	5.45
0500	28	29	57	35.71	32.14	28.57	3.57	31.03	62.07	6.90	0	33.33	47.37	17.54	1.75
0600	27	28	55	29.63	33.33	29.63	7.41	21.43	64.29	14.29	0	26.45	49.09	21.82	3.64
0700	27	28	55	29.63	29.63	33.33	7.41	25.00	64.29	10.71	0	27.27	47.27	21.82	3.64
0800	26	29	55	15.38	38.46	34.62	11.54	17.24	55.17	27.59	0	16.36	47.27	30.91	5.45
0900	25	27	52	8.00	20.00	48.00	24.00	3.70	44.44	51.85	0	5.77	32.69	50.00	11.54
1000	27	27	54	7.41	18.52	48.15	25.93	3.70	29.63	51.85	14.81	5.56	24.07	50.00	20.37
1100	25	28	53	8.00	16.00	32.00	44.00	0	17.86	60.71	21.43	3.77	16.98	47.17	32.08
1200	25	29	54	0	16.00	24.00	60.00	0	24.14	51.72	24.14	0	20.37	38.89	40.74
1300	24	29	53	8.33	12.50	45.83	33.33	6.90	17.24	51.72	24.14	7.55	15.09	49.06	28.30
1400	26	27	53	3.85	19.23	23.08	53.85	0	22.22	44.44	33.33	1.89	20.75	33.96	43.40
1500	26	29	55	7.69	23.08	26.92	42.31	6.90	20.69	51.72	20.69	7.27	21.82	40.00	30.91
1600	27	29	56	7.41	29.63	40.74	22.22	3.45	17.24	58.62	20.69	5.36	23.21	50.00	21.43
1700	28	29	57	7.14	28.57	42.86	21.43	3.45	41.38	55.17	0	5.26	35.09	49.12	10.53
1800	27	29	56	11.11	25.93	48.15	14.81	6.90	65.52	27.59	0	8.93	46.43	37.50	7.14
1900	27	29	56	25.93	29.63	37.04	7.41	20.69	62.07	17.24	0	23.21	46.43	26.79	3.57
2000	26	29	55	34.62	23.08	34.62	7.69	31.03	58.62	10.34	0	32.73	41.82	21.82	3.64
2100	25	29	54	32.00	28.00	36.00	4.00	27.59	68.97	3.45	0	29.63	50.00	18.52	1.85
2200	26	29	55	30.77	34.62	26.92	7.69	31.03	65.52	3.45	0	30.91	50.91	14.55	3.64
2300	26	29	55	26.92	38.46	26.92	7.69	34.48	55.17	10.34	0	30.91	47.27	18.18	3.64

SYMBOL	STABILITY CONDITION	TEMPERATURE DIFFERENCE
VS	Very Stable	$\Delta T \geq +1.67°C$
MS	Moderately Stable	$+1.67°C > \Delta T \geq 0°C$
MU	Moderately Unstable	$0°C > \Delta T > -1.67°C$
VU	Very Unstable	$\Delta T \leq -1.67$ C

(ΔT = Temperature at 62.2 m level minus temperature at 1.8 m level)

Table 7. Number of Observations and Percentage Frequency of Stability Conditions at Station 700 for February

March

Percentage Frequency of Stability Conditions

HOUR EST	NUMBER OF OBSERVATIONS			1963				1964				COMPOSITE			
	1963	1964	TOTAL	VS	MS	MU	VU	VS	MS	MU	VU	VS	MS	MU	VU
0000	29	31	60	37.93	58.62	3.45	0	35.48	41.94	22.58	0	36.67	50.00	13.33	0
0100	28	31	59	39.29	60.71	0	0	32.26	48.39	19.35	0	35.59	54.24	10.17	0
0200	28	31	59	50.00	46.43	3.57	0	29.03	45.16	25.81	0	38.98	45.76	15.25	0
0300	29	31	60	44.83	48.28	6.90	0	35.48	48.39	16.13	0	40.00	48.33	11.67	0
0400	29	31	60	55.17	37.93	6.90	0	29.03	51.61	19.35	0	41.67	45.00	13.33	0
0500	29	31	60	48.28	44.83	6.90	0	29.03	48.39	22.58	0	38.33	46.67	15.00	0
0600	28	30	58	50.00	35.71	14.29	0	33.33	33.33	33.33	0	41.38	34.48	24.14	0
0700	26	31	57	50.00	34.62	15.38	0	25.81	35.48	38.71	0	36.84	35.09	28.07	0
0800	27	31	58	14.81	62.96	22.22	0	9.68	29.03	58.06	3.23	12.07	44.83	41.38	1.72
0900	27	29	56	3.70	37.04	59.26	0	0	27.59	51.72	20.69	1.79	32.14	55.36	10.71
1000	28	29	57	0	21.43	60.71	17.86	0	3.45	51.72	44.83	0	12.28	56.14	31.58
1100	29	29	58	3.45	17.24	37.93	41.38	0	10.34	27.59	62.07	1.72	13.79	32.76	51.72
1200	28	30	58	3.57	21.43	28.57	46.43	0	6.67	33.33	60.00	1.72	13.79	31.03	53.45
1300	31	30	61	3.23	16.13	45.16	35.48	0	3.33	30.00	66.67	1.64	9.84	37.70	50.82
1400	30	30	60	6.67	13.33	40.00	40.00	0	0	26.67	73.33	3.33	6.67	33.33	56.67
1500	29	29	58	3.45	17.24	41.38	37.93	0	3.45	31.03	65.52	1.72	10.34	36.21	51.72
1600	29	30	59	3.45	27.59	37.93	31.03	0	10.00	30.00	60.00	1.69	18.64	33.90	45.76
1700	28	31	59	3.57	32.14	46.43	17.86	0	19.35	45.16	35.48	1.69	25.42	45.76	27.12
1800	29	31	60	6.90	48.28	44.83	0	0	25.81	64.52	9.68	3.33	36.67	55.00	5.00
1900	29	31	60	13.79	62.07	24.14	0	3.23	35.48	58.06	3.23	8.33	48.33	41.67	1.67
2000	27	31	58	7.41	85.18	7.41	0	16.13	38.71	45.16	0	12.07	60.34	27.59	0
2100	27	31	58	7.4	77.78	14.81	0	19.35	38.71	41.94	0	13.79	56.90	29.31	0
2200	28	31	59	17.86	71.43	10.71	0	16.13	51.61	32.26	0	16.95	61.02	22.03	0
2300	27	31	58	33.33	55.56	11.11	0	32.26	45.16	22.58	0	32.76	50.00	17.24	0

SYMBOL	STABILITY CONDITION	TEMPERATURE DIFFERENCE
VS	Very Stable	$\Delta T \geq +1.67°C$
MS	Moderately Stable	$+1.67°C > \Delta T \geq 0°C$
MU	Moderately Unstable	$0°C > \Delta T > -1.67°C$
VU	Very Unstable	$\Delta T \leq -1.67°C$

(ΔT = Temperature at 62.2 m level minus temperature at 1.8 m level)

Table 8. Number of Observations and Percentage Frequency of Stability Conditions at Station 700 for March

April

Percentage Frequency of Stability Conditions

HOUR EST	NUMBER OF OBSERVATIONS			1963				1964				COMPOSITE			
	1963	1964	TOTAL	VS	MS	MU	VU	VS	MS	MU	VU	VS	MS	MU	VU
0000	26	29	55	19.23	69.23	11.54	0	6.90	79.31	13.79	0	12.73	74.55	12.73	0
0100	28	30	58	21.43	64.29	14.29	0	13.33	66.67	20.00	0	17.24	65.52	17.24	0
0200	29	30	59	20.69	68.97	10.34	0	13.33	73.33	13.33	0	16.95	71.19	11.86	0
0300	29	30	59	20.69	68.97	10.34	0	20.00	60.00	20.00	0	20.34	64.41	15.25	0
0400	28	30	58	25.00	71.43	3.57	0	13.33	76.67	10.00	0	18.97	74.14	6.90	0
0500	28	30	58	17.86	75.00	7.14	0	20.00	66.67	13.33	0	18.97	70.69	10.34	0
0600	28	30	58	28.57	64.29	7.14	0	23.33	66.67	10.00	0	25.86	65.52	8.62	0
0700	28	30	58	21.43	57.14	21.43	0	10.00	73.33	16.67	0	15.52	65.52	18.97	0
0800	28	30	58	0	46.43	53.57	0	0	30.00	66.67	3.33	0	37.93	60.34	1.72
0900	25	30	55	0	8.00	48.00	44.00	0	6.67	76.67	16.67	0	7.27	63.64	29.09
1000	28	29	57	0	7.14	50.00	42.86	0	6.90	55.17	37.93	0	7.02	52.63	40.35
1100	27	30	57	0	3.70	25.93	70.37	0	3.33	40.00	56.67	0	3.51	33.33	63.16
1200	25	30	55	0	4.00	24.00	72.00	0	0	30.00	70.00	0	1.82	27.27	70.91
1300	28	30	58	0	7.14	17.86	75.00	0	3.33	20.00	76.67	0	5.17	18.97	75.86
1400	27	30	57	0	3.70	22.22	74.07	0	3.33	20.00	76.67	0	3.51	21.05	75.44
1500	26	30	56	0	0	15.38	84.62	0	3.33	30.00	66.67	0	1.79	23.21	75.00
1600	26	30	56	0	0	19.23	80.77	0	10.00	40.00	50.00	0	5.36	30.36	64.29
1700	26	30	56	0	0	57.69	42.31	0	10.00	63.33	26.67	0	5.36	60.71	33.93
1800	26	30	56	0	0	88.46	11.54	0	23.33	73.33	3.33	0	12.50	80.36	7.14
1900	26	30	56	0	38.46	61.54	0	0	63.33	36.67	0	0	51.79	48.21	0
2000	27	30	57	7.41	55.56	37.04	0	0	70.00	30.00	0	3.51	63.16	33.33	0
2100	26	30	56	7.69	57.69	34.62	0	6.67	73.33	20.00	0	7.14	66.07	26.79	0
2200	24	30	54	8.33	50.00	41.67	0	6.67	76.67	16.67	0	7.41	64.81	27.78	0
2300	24	30	54	16.67	66.67	16.67	0	3.33	83.33	13.33	0	9.26	75.93	14.81	0

SYMBOL	STABILITY CONDITION	TEMPERATURE DIFFERENCE
VS	Very Stable	$\Delta T \geq +1.67°C$
MS	Moderately Stable	$+1.67°C > \Delta T \geq 0°C$
MU	Moderately Unstable	$0°C > \Delta T > -1.67°C$
VU	Very Unstable	$\Delta T \leq -1.67°C$

(ΔT = Temperature at 62.2 m level minus temperature at 1.8 m level)

Table 9. Number of Observations and Percentage Frequency of Stability Conditions at Station 700 for April

May

Percentage Frequency of Stability Conditions

HOUR EST	NUMBER OF OBSERVATIONS			1963				1964				COMPOSITE			
	1963	1964	TOTAL	VS	MS	MU	VU	VS	MS	MU	VU	VS	MS	MU	VU
0000	27	31	58	55.56	14.81	25.93	3.70	9.68	54.84	35.48	0	31.03	36.21	31.03	1.72
0100	28	31	59	50.00	25.00	21.43	3.57	19.35	58.06	22.58	0	33.90	42.37	22.03	1.69
0200	28	31	59	53.57	25.00	17.86	3.57	32.26	41.94	25.81	0	42.37	33.90	22.03	1.69
0300	27	30	57	51.85	29.63	14.81	3.70	40.00	36.67	20.00	3.33	45.61	33.33	17.54	3.51
0400	28	31	59	53.57	25.00	17.86	3.57	48.39	29.03	22.58	0	50.85	27.12	20.34	1.69
0500	28	30	58	64.29	10.71	21.43	3.57	50.00	30.00	20.00	0	56.90	20.69	20.69	1.72
0600	30	30	60	60.00	10.00	26.67	3.33	50.00	26.67	23.33	0	55.00	18.33	25.00	1.67
0700	31	31	62	22.58	45.16	25.81	6.45	9.68	54.84	35.48	0	16.13	50.00	30.65	3.23
0800	31	31	62	3.23	32.26	48.39	16.13	0	29.03	54.84	16.13	1.61	30.65	51.61	16.13
0900	28	31	59	0	10.71	39.29	50.00	0	19.35	48.39	32.26	0	15.25	44.07	40.68
1000	29	30	59	0	10.34	31.03	58.62	0	6.67	53.33	40.00	0	8.47	42.37	49.15
1100	29	31	60	0	3.45	17.24	79.31	0	6.45	41.94	51.61	0	5.00	30.00	65.00
1200	27	31	58	0	7.41	25.93	66.67	0	3.23	35.48	61.29	0	5.17	31.03	63.79
1300	29	31	60	0	6.90	13.79	79.31	3.23	3.23	25.81	67.74	1.67	5.00	20.00	73.33
1400	29	30	59	3.45	3.45	10.34	82.76	0	6.67	26.67	66.67	1.69	5.08	18.64	74.58
1500	30	29	59	3.33	3.33	16.67	76.67	0	3.45	31.03	65.52	1.69	3.39	23.73	71.19
1600	30	29	59	3.33	6.67	23.33	66.67	0	6.90	34.48	58.62	1.69	6.78	28.81	62.71
1700	30	30	60	3.33	13.33	36.67	46.67	0	13.33	56.67	30.00	1.67	13.33	46.67	38.33
1800	30	30	60	6.67	23.33	36.67	33.33	0	20.00	66.67	13.33	3.33	21.67	51.67	23.33
1900	30	31	61	20.00	26.67	30.00	23.33	0	41.94	54.84	3.23	9.84	34.43	42.62	13.11
2000	30	31	61	23.33	30.00	30.00	16.67	0	45.16	54.84	0	11.48	37.70	42.62	8.20
2100	30	31	61	40.00	26.67	23.33	10.00	3.23	51.61	45.16	0	21.31	39.34	34.43	4.92
2200	27	31	58	44.44	29.63	18.52	7.41	3.23	58.06	38.71	0	22.41	44.83	29.31	3.45
2300	28	31	59	46.43	14.29	32.14	7.14	3.23	54.84	41.94	0	23.73	35.59	37.29	3.39

SYMBOL	STABILITY CONDITION	TEMPERATURE DIFFERENCE	SYMBOL	STABILITY CONDITION	TEMPERATURE DIFFERENCE
VS	Very Stable	$\Delta T \geq +1.67°C$	MU	Moderately Unstable	$0°C > \Delta T > -1.67°C$
MS	Moderately Stable	$+1.67°C > \Delta T \geq 0°C$	VU	Very Unstable	$\Delta T \leq -1.67°C$

(ΔT = Temperature at 62.2 m level minus temperature at 1.8 m level)

Table 10. Number of Observations and Percentage Frequency of Stability Conditions at Station 700 for May

June

Percentage Frequency of Stability Conditions

HOUR EST	NUMBER OF OBSERVATIONS			1963				1964				COMPOSITE			
	1963	1964	TOTAL	VS	MS	MU	VU	VS	MS	MU	VU	VS	MS	MU	VU
0000	30	30	60	20.00	56.67	23.33	0	10.00	43.33	30.00	16.67	15.00	50.00	26.67	8.33
0100	29	29	58	13.79	68.97	17.24	0	10.34	44.83	34.48	10.34	12.07	56.90	25.86	5.17
0200	27	29	56	18.52	66.67	14.81	0	3.45	55.17	34.48	6.90	10.71	60.71	25.00	3.57
0300	27	29	56	22.22	66.67	11.11	0	10.34	48.28	31.03	10.34	16.07	57.14	21.43	5.36
0400	29	30	59	24.14	58.62	17.24	0	13.33	60.00	26.67	0	18.64	59.32	22.03	0
0500	29	30	59	34.48	48.28	17.24	0	10.00	60.00	20.00	10.00	22.03	54.24	18.64	5.08
0600	29	30	59	41.38	34.48	24.14	0	13.33	46.67	33.33	6.67	27.12	40.68	28.81	3.39
0700	30	30	60	3.33	36.67	60.00	0	0	6.67	56.67	36.67	1.67	21.67	58.33	18.33
0800	30	30	60	0	20.00	66.67	13.33	0	6.67	10.00	83.33	0	13.33	38.33	48.33
0900	27	29	56	0	14.81	29.63	55.56	0	3.45	24.14	72.41	0	8.93	26.78	64.29
1000	26	29	55	0	7.69	26.92	65.38	0	6.90	10.34	82.76	0	7.27	18.18	74.55
1100	25	30	55	0	8.00	8.00	84.00	0	0	10.00	90.00	0	3.64	9.09	87.27
1200	24	30	54	0	4.17	16.67	79.17	0	0	10.00	90.00	0	1.85	12.96	85.19
1300	26	29	55	0	7.69	23.08	69.23	0	0	3.45	96.55	0	3.64	12.73	83.64
1400	25	29	54	0	4.00	24.00	72.00	0	0	0	100.00	0	1.85	11.11	87.04
1500	26	30	56	0	3.85	30.77	65.38	0	0	6.67	93.33	0	1.79	17.86	80.36
1600	24	29	53	0	4.17	25.00	70.83	0	0	3.45	96.55	0	1.89	13.21	84.91
1700	25	30	55	4.00	8.00	36.00	52.00	0	0	10.00	90.00	1.82	3.64	21.82	72.73
1800	28	30	58	0	17.86	60.71	21.43	0	0	23.33	76.67	0	8.62	41.38	50.00
1900	29	30	59	0	31.03	65.52	3.45	0	0	70.00	30.00	0	15.25	67.80	16.95
2000	30	30	60	3.33	56.67	40.00	0	0	13.33	63.33	23.33	1.67	35.00	51.67	11.67
2100	29	30	59	6.90	65.52	27.59	0	0	23.33	60.00	16.67	3.39	44.07	44.07	8.47
2200	29	30	59	13.79	62.07	24.14	0	3.33	40.00	46.67	10.00	8.47	50.85	35.59	5.08
2300	29	30	59	13.79	55.17	27.59	3.45	3.33	36.67	43.33	16.67	8.47	45.76	35.59	10.17

SYMBOL	STABILITY CONDITION	TEMPERATURE DIFFERENCE
VS	Very Stable	$\Delta T \geq +1.67°C$
MS	Moderately Stable	$+1.67°C > \Delta T \geq 0°C$
MU	Moderately Unstable	$0°C > \Delta T > -1.67°C$
VU	Very Unstable	$\Delta T \leq -1.67°C$

(ΔT = Temperature at 62.2 m level minus temperature at 1.8 m level)

Table 11. Number of Observations and Percentage Frequency of Stability Conditions at Station 700 for June

July

Percentage Frequency of Stability Conditions

HOUR EST	NUMBER OF OBSERVATIONS			1963				1964				COMPOSITE			
	1963	1964	TOTAL	VS	MS	MU	VU	VS	MS	MU	VU	VS	MS	MU	VU
0000	31	28	59	45.16	54.84	0	0	7.14	39.29	32.14	21.43	27.12	47.46	15.25	10.17
0100	30	28	58	50.00	50.00	0	0	10.71	32.14	42.86	14.29	31.03	41.38	20.69	6.90
0200	29	28	57	41.38	58.62	0	0	17.86	25.00	25.00	32.14	29.82	42.11	12.28	15.79
0300	30	28	58	46.67	53.33	0	0	14.29	28.57	25.00	32.14	31.03	41.38	12.07	15.52
0400	30	28	58	60.00	40.00	0	0	14.29	35.71	39.29	10.71	37.93	37.93	18.97	5.17
0500	28	28	56	57.14	42.86	0	0	17.86	32.14	25.00	25.00	37.50	37.50	12.50	12.50
0600	30	27	57	56.67	43.33	0	0	18.52	33.33	29.63	18.52	38.60	38.60	14.04	8.77
0700	31	27	58	22.58	54.84	22.58	0	14.81	7.41	37.04	40.74	18.97	32.76	29.31	18.97
0800	31	28	59	6.45	32.26	58.06	3.23	10.71	3.57	21.43	64.29	8.47	18.64	40.68	32.20
0900	28	26	54	0	17.86	64.29	17.86	3.85	3.85	19.23	73.08	1.85	11.11	42.59	44.44
1000	30	27	57	0	6.67	66.67	26.67	7.41	3.70	14.81	74.07	3.51	5.26	42.11	49.12
1100	29	27	56	0	17.24	44.83	37.93	7.41	3.70	0	88.89	3.57	10.71	23.21	62.50
1200	28	27	55	0	10.71	42.86	46.43	0	22.22	3.70	74.07	0	16.36	23.64	60.00
1300	29	26	55	6.90	10.34	37.93	44.83	0	15.38	11.54	73.08	3.64	12.73	25.45	58.18
1400	28	26	54	0	21.43	39.29	39.29	0	15.38	3.85	80.77	0	18.52	22.22	59.26
1500	27	25	52	3.70	11.11	51.85	33.33	0	12.00	8.00	80.00	1.92	11.54	30.77	55.77
1600	28	26	54	0	21.43	46.43	32.14	3.85	11.54	7.69	76.92	1.85	16.67	27.78	53.70
1700	29	26	55	6.90	24.14	48.28	20.69	0	15.38	11.54	73.08	3.64	20.00	30.91	45.45
1800	29	25	54	3.45	48.28	41.38	6.90	4.00	16.00	20.00	60.00	3.70	33.33	31.48	31.48
1900	29	26	55	10.34	62.07	27.59	0	7.69	11.54	42.31	38.46	9.09	38.18	34.55	18.18
2000	30	26	56	16.67	73.33	10.00	0	11.54	19.23	38.46	30.77	14.29	48.21	23.21	14.29
2100	30	25	55	26.67	60.00	13.33	0	16.00	16.00	44.00	24.00	21.82	40.00	27.27	10.91
2200	30	26	56	40.00	46.67	13.33	0	15.38	34.62	23.08	26.92	28.57	41.07	17.86	12.50
2300	31	27	58	38.71	54.84	6.45	0	14.81	25.93	29.63	29.63	27.59	41.38	17.24	13.79

SYMBOL	STABILITY CONDITION	TEMPERATURE DIFFERENCE
VS	Very Stable	$\Delta T \geq +1.67^\circ C$
MS	Moderately Stable	$+1.67^\circ C > \Delta T \geq 0^\circ C$
MU	Moderately Unstable	$0^\circ C > \Delta T > -1.67^\circ C$
VU	Very Unstable	$\Delta T \leq -1.67^\circ C$

(ΔT = Temperature at 62.2 m level minus temperature at 1.8 m level)

Table 12. Number of Observations and Percentage Frequency of Stability Conditions at Station 700 for July

Summer (June, July, August)

Percentage Frequency of Stability Conditions

HOUR EST	NUMBER OF OBSERVATIONS			Aug. 62, June & July 63				Aug. 63, June & July 64				COMPOSITE			
	1962-3	1963-4	TOTAL	VS	MS	MU	VU	VS	MS	MU	VU	VS	MS	MU	VU
0000	92	89	181	22.83	53.26	16.30	7.61	19.10	42.70	25.84	12.36	20.99	48.07	20.99	9.94
0100	89	88	177	22.47	51.69	20.22	5.62	25.00	39.77	27.27	7.95	23.73	45.76	23.73	6.78
0200	87	88	175	22.99	54.02	14.94	8.05	25.00	40.91	21.59	12.50	24.00	47.43	18.29	10.29
0300	88	88	176	22.73	53.41	17.04	6.82	25.00	40.91	20.45	13.64	23.86	47.16	18.75	10.23
0400	89	89	178	28.09	46.07	20.22	5.62	26.97	47.19	22.47	3.37	27.53	46.63	21.35	4.49
0500	86	89	175	31.40	43.02	19.77	5.81	21.35	52.81	14.61	11.24	26.29	48.00	17.14	8.57
0600	89	88	177	33.71	39.33	22.47	4.49	26.14	45.45	20.45	7.95	29.94	42.37	21.47	6.21
0700	90	88	178	8.89	37.78	46.67	6.67	5.68	32.95	36.36	25.00	7.30	35.39	41.57	15.73
0800	91	88	179	2.20	17.58	53.85	26.37	3.41	12.50	35.23	48.86	2.79	15.08	44.69	37.43
0900	83	86	169	0	10.84	31.33	57.83	1.16	6.98	34.88	56.98	0.59	8.88	33.14	57.40
1000	87	86	173	0	4.60	32.18	63.22	2.33	6.98	16.28	74.42	1.16	5.78	24.28	68.79
1100	84	87	171	0	8.33	19.05	72.62	2.30	4.60	9.20	83.91	1.17	6.43	14.04	78.36
1200	83	87	170	0	4.82	21.69	73.49	0	9.20	11.49	79.31	0	7.06	16.47	76.47
1300	86	85	171	2.33	5.81	19.77	72.09	0	8.24	10.59	81.18	1.17	7.02	15.20	76.61
1400	83	84	167	0	8.43	24.10	67.47	0	11.90	3.57	84.52	0	10.18	13.77	76.05
1500	81	85	166	1.23	4.94	29.63	64.20	1.18	8.24	11.76	78.82	1.20	6.63	20.48	71.69
1600	80	84	164	0	10.00	26.25	63.75	1.19	9.52	11.90	77.38	0.61	9.76	18.90	70.73
1700	81	86	167	3.70	12.35	34.57	49.38	1.16	9.30	24.42	65.12	2.40	10.78	29.34	57.48
1800	84	86	170	1.19	22.62	46.43	29.76	3.49	6.98	44.19	45.35	2.35	14.71	45.29	37.65
1900	87	87	174	3.45	40.23	41.38	14.94	2.30	20.69	55.17	21.84	2.87	30.46	48.28	18.39
2000	89	87	176	6.74	52.81	30.34	10.11	8.05	26.44	48.28	17.24	7.39	39.77	39.20	13.64
2100	88	86	174	11.36	51.14	29.55	7.95	9.30	36.05	41.86	12.79	10.34	43.68	35.63	10.34
2200	88	87	175	18.18	46.59	28.41	6.82	11.49	47.13	29.88	11.49	14.86	46.86	29.14	9.14
2300	89	87	176	20.22	47.19	24.72	7.87	16.09	39.08	29.88	14.94	18.18	43.18	27.27	11.36

SYMBOL	STABILITY CONDITION	TEMPERATURE DIFFERENCE
VS	Very Stable	$\Delta T \geq +1.67°C$
MS	Moderately Stable	$+1.67°C > \Delta T \geq 0°C$
MU	Moderately Unstable	$0°C > \Delta T > -1.67°C$
VU	Very Unstable	$\Delta T \leq -1.67°C$

(ΔT = Temperature at 62.2 m level minus temperature at 1.8 m level)

Table 13. Number of Observations and Percentage Frequency of Stability Conditions at Station 700 for Summer

Fall (Sept., Oct., Nov.)

Percentage Frequency of Stability Conditions

HOUR EST	NUMBER OF OBSERVATIONS			1962				1963				COMPOSITE			
	1962	1963	TOTAL	VS	MS	MU	VU	VS	MS	MU	VU	VS	MS	MU	VU
0000	87	85	172	28.74	42.53	24.14	4.60	10.59	58.82	30.59	0	19.77	50.58	27.33	2.33
0100	90	85	175	34.44	36.67	26.67	2.22	18.82	48.24	32.94	0	26.86	42.29	29.71	1.14
0200	90	86	176	36.67	33.33	28.89	1.11	23.26	44.19	32.56	0	30.11	38.64	30.68	0.57
0300	90	83	173	34.44	33.33	31.11	1.11	24.10	53.01	22.89	0	29.48	42.77	27.17	0.58
0400	87	85	172	37.93	39.08	22.99	0	21.18	57.65	21.18	0	29.65	48.26	22.09	0
0500	87	85	172	33.33	41.38	24.14	1.15	27.06	40.00	32.94	0	30.23	40.70	28.49	0.58
0600	86	85	171	38.37	37.21	24.42	0	31.76	44.71	23.53	0	35.09	40.94	23.98	0
0700	90	84	174	33.33	35.56	26.67	4.44	27.38	41.67	30.95	0	30.46	38.51	28.74	2.30
0800	88	83	171	4.55	52.27	36.36	6.82	7.23	34.94	56.63	1.20	5.85	43.86	46.20	4.09
0900	84	82	166	3.57	29.76	46.43	20.24	0	15.85	70.73	13.41	1.81	22.89	58.43	16.87
1000	83	78	161	1.20	18.07	43.37	37.35	0	8.97	52.56	38.46	0.62	13.66	47.83	37.89
1100	81	81	162	0	11.11	39.51	49.38	1.23	9.88	38.27	50.62	0.62	10.49	38.89	50.00
1200	83	86	169	0	6.02	39.76	54.22	0	9.30	37.21	53.49	0	7.69	38.46	53.85
1300	79	83	162	0	8.86	35.44	55.70	0	6.02	38.55	55.42	0	7.41	37.04	55.56
1400	84	84	168	0	9.52	36.90	53.57	0	8.33	39.29	52.38	0	8.93	38.10	52.98
1500	82	85	167	0	12.20	40.24	47.56	0	4.71	52.94	42.35	0	8.38	46.71	44.91
1600	85	82	167	0	17.65	47.06	35.29	0	8.54	67.07	24.39	0	13.17	56.89	29.94
1700	83	84	167	1.20	38.55	51.81	8.43	0	23.81	65.48	10.71	0.60	31.14	58.68	9.58
1800	84	84	168	7.14	53.57	30.95	8.33	7.14	33.33	59.52	0	7.14	43.45	45.24	4.17
1900	87	84	171	12.64	48.28	33.33	5.75	13.10	32.14	54.76	0	12.87	40.35	43.86	2.92
2000	86	85	171	15.12	52.33	26.74	5.81	8.24	40.00	51.76	0	11.70	46.20	39.18	2.92
2100	87	85	172	24.14	42.53	29.88	3.45	11.76	41.18	47.06	0	18.02	41.86	38.37	1.74
2200	87	83	170	20.69	50.57	25.29	3.45	10.84	51.81	37.35	0	15.88	51.18	31.18	1.76
2300	89	83	172	22.47	49.44	23.60	4.49	14.46	49.40	34.94	1.20	18.60	49.42	29.07	2.91

SYMBOL	STABILITY CONDITION	TEMPERATURE DIFFERENCE
VS	Very Stable	$\Delta T \geq +1.67°C$
MS	Moderately Stable	$+1.67°C > \Delta T \geq 0°C$
MU	Moderately Unstable	$0°C > \Delta T > -1.67°C$
VU	Very Stable	$\Delta T \leq -1.67°C$

(ΔT = Temperature at 62.2 m level minus temperature at 1.8 m level)

Table 14. Number of Observations and Percentage Frequency of Stability Conditions at Station 700 for Fall

Winter (Dec., Jan., Feb.)

Percentage Frequency of Stability Conditions

HOUR EST	NUMBER OF OBSERVATIONS			1962-3				1963-4				COMPOSITE			
	1962-3	1963-4	TOTAL	VS	MS	MU	VU	VS	MS	MU	VU	VS	MS	MU	VU
0000	81	85	166	32.10	33.33	27.16	7.41	34.12	56.47	7.06	2.35	33.13	45.18	16.87	4.82
0100	81	86	167	33.33	30.86	25.93	9.88	36.05	50.00	12.79	1.16	34.73	40.72	19.16	5.39
0200	83	86	169	30.12	31.33	30.12	8.43	33.72	52.33	12.79	1.16	31.95	42.01	21.30	4.73
0300	81	87	168	29.63	37.04	28.40	4.94	29.88	57.47	10.34	2.30	29.76	47.62	19.05	3.57
0400	79	85	164	29.11	34.18	25.32	11.39	38.82	45.88	12.94	2.35	34.15	40.24	18.90	6.71
0500	82	86	168	32.93	26.83	25.61	14.63	39.53	48.84	11.63	0	36.31	38.10	18.45	7.14
0600	81	86	167	30.86	28.40	29.63	11.11	37.21	45.35	16.28	1.16	34.13	37.13	22.75	5.99
0700	79	85	164	35.44	24.05	27.85	12.66	38.82	43.53	15.29	2.35	37.20	34.15	21.34	7.32
0800	80	85	165	28.75	23.75	30.00	17.50	35.29	40.00	23.53	1.18	32.12	32.12	26.67	9.09
0900	82	81	163	6.10	15.85	35.37	42.68	14.81	38.27	40.74	6.17	10.43	26.99	38.04	24.54
1000	86	80	166	3.49	11.63	26.74	58.14	7.50	26.25	48.75	17.50	5.43	18.67	37.35	38.55
1100	82	80	162	2.44	12.20	18.29	67.07	7.50	22.50	41.25	28.75	4.94	17.28	29.63	48.15
1200	81	82	163	0	9.88	16.05	74.07	4.88	30.49	34.15	30.49	2.45	20.25	25.15	52.15
1300	80	83	163	2.50	11.25	21.25	65.00	7.23	22.89	37.35	32.53	4.91	17.18	29.45	48.47
1400	86	81	167	2.33	15.12	11.63	70.93	5.49	18.68	31.87	43.96	4.19	17.96	23.35	54.49
1500	79	85	164	2.53	15.19	20.25	62.03	10.59	22.35	41.18	25.88	6.71	18.90	31.10	43.29
1600	80	84	164	3.75	15.00	31.25	50.00	7.14	25.00	53.57	14.29	5.49	20.12	42.68	31.71
1700	84	85	169	4.76	20.24	32.14	42.86	7.06	42.35	45.88	4.71	5.92	31.36	39.05	23.67
1800	84	81	165	10.71	32.14	36.90	20.24	22.22	59.26	17.28	1.23	16.36	45.45	27.27	10.91
1900	85	84	169	23.53	32.94	29.41	14.12	39.29	46.43	13.10	1.19	31.36	39.64	21.30	7.69
2000	84	82	166	30.95	25.00	33.33	10.71	45.12	45.12	7.32	2.44	37.95	34.94	20.48	6.63
2100	79	85	164	32.91	21.52	32.91	12.66	41.18	49.41	8.24	1.18	37.20	35.98	20.12	6.71
2200	81	84	165	32.10	25.93	29.63	12.35	39.29	53.57	5.95	1.19	35.76	40.00	17.58	6.67
2300	80	85	165	36.25	25.00	28.75	10.00	37.65	49.41	9.41	3.53	36.97	37.58	18.79	6.67

SYMBOL	STABILITY CONDITION	TEMPERATURE DIFFERENCE	SYMBOL	STABILITY CONDITION	TEMPERATURE DIFFERENCE
VS	Very Stable	$\Delta T \geq +1.67°C$	MU	Moderately Unstable	$0°C > \Delta T > -1.67°C$
MS	Moderately Stable	$+1.67°C > \Delta T \geq 0°C$	VU	Very Unstable	$\Delta T \leq -1.67°C$

(ΔT = Temperature at 62.2 m level minus temperature at 1.8 m level)

Table 15. Number of Observations and Percentage Frequency of Stability Conditions at Station 700 for Winter

Spring (March, April, May)

Percentage Frequency of Stability Conditions

HOUR EST	NUMBER OF OBSERVATIONS			1963				1964				COMPOSITE			
	1963	1964	TOTAL	VS	MS	MU	VU	VS	MS	MU	VU	VS	MS	MU	VU
0000	82	91	173	37.80	47.56	13.41	1.22	17.58	58.24	24.18	0	27.17	53.18	19.08	0.58
0100	84	92	176	36.90	50.00	11.90	1.19	21.74	57.61	20.65	0	28.98	53.98	16.48	0.57
0200	85	92	177	41.18	47.06	10.58	1.18	25.00	53.26	21.74	0	32.77	50.28	16.38	0.56
0300	85	91	176	38.82	49.41	10.59	1.18	31.87	48.35	18.68	1.10	35.23	48.86	14.77	1.14
0400	85	92	177	44.71	44.71	9.41	1.18	30.43	52.17	17.39	0	37.29	48.59	13.56	0.56
0500	85	91	176	43.53	43.53	11.76	1.18	32.97	48.35	18.68	0	38.07	46.02	15.34	0.57
0600	86	90	176	46.51	36.05	16.28	1.16	35.56	42.22	22.22	0	40.91	39.20	19.32	0.57
0700	85	92	177	30.59	45.88	21.18	2.35	15.22	54.35	30.43	0	22.60	50.28	25.99	1.13
0800	86	92	178	5.81	46.51	41.86	5.81	3.26	29.35	59.78	7.61	4.49	37.64	51.12	6.74
0900	80	90	170	1.25	18.75	48.75	31.25	0	17.78	58.89	23.33	0.59	18.24	54.12	27.06
1000	85	88	173	0	12.94	47.06	40.00	0	5.68	53.41	40.91	0	9.25	50.29	40.46
1100	85	90	175	1.18	8.24	27.06	63.53	0	6.67	36.67	56.67	0.57	7.43	32.00	60.00
1200	80	91	171	1.25	11.25	26.25	61.25	0	3.30	32.97	63.74	0.58	7.02	29.82	62.57
1300	88	91	179	1.14	10.23	26.14	62.50	1.10	3.30	25.27	70.33	1.12	6.70	25.70	66.48
1400	86	90	176	3.49	6.98	24.42	65.12	0	3.33	24.44	72.22	1.70	5.11	24.43	68.75
1500	85	88	173	2.35	7.06	24.71	65.88	0	3.41	30.68	65.91	1.16	5.20	27.75	65.90
1600	85	89	174	2.35	11.76	27.06	58.82	0	8.99	34.83	56.18	1.15	10.34	31.03	57.47
1700	84	91	175	2.38	15.48	46.43	35.71	0	14.29	54.94	30.77	1.14	14.86	50.86	33.14
1800	85	91	176	4.71	24.71	55.29	15.29	0	23.08	68.13	8.79	2.27	23.86	61.93	11.93
1900	85	92	177	11.76	42.35	37.65	8.24	1.09	46.74	50.00	2.17	6.22	44.63	44.07	5.08
2000	84	92	176	13.10	55.95	25.00	5.95	5.43	51.09	43.48	0	9.09	53.41	34.66	2.84
2100	83	92	175	19.28	53.01	24.10	3.61	9.78	54.35	35.87	0	14.29	53.71	30.29	1.71
2200	79	92	171	24.05	50.63	22.78	2.53	8.70	61.96	29.35	0	15.79	56.73	26.32	1.17
2300	79	92	171	32.91	44.30	20.25	2.53	13.04	60.87	26.09	0	22.22	53.22	23.39	1.17

SYMBOL	STABILITY CONDITION	TEMPERATURE DIFFERENCE
VS	Very Stable	$\Delta T \geq +1.67°C$
MS	Moderately Stable	$+1.67°C > \Delta T \geq 0°C$
MU	Moderately Unstable	$0°C > \Delta T > -1.67°C$
VU	Very Unstable	$\Delta T \leq -1.67°C$

(ΔT = Temperature at 62.2 m level minus temperature at 1.8 m level)

Table 16. Number of Observations and Percentage Frequency of Stability Conditions at Station 700 for Spring

Annual

Percentage Frequency of Stability Conditions

HOUR EST	NUMBER OF OBSERVATIONS			1962-3				1963-4				COMPOSITE			
	1962-3	1963-4	TOTAL	VS	MS	MU	VU	VS	MS	MU	VU	VS	MS	MU	VU
0000	342	350	692	30.12	44.44	20.18	5.26	20.29	54.00	22.00	3.71	25.14	49.28	21.10	4.48
0100	344	351	695	31.69	42.44	21.22	4.65	25.36	49.00	23.36	2.28	28.49	45.76	22.30	3.45
0200	345	352	697	32.75	41.45	21.16	4.64	26.70	47.73	22.16	3.41	29.70	44.62	21.66	4.02
0300	344	349	693	31.40	43.31	21.80	3.49	27.79	49.86	18.05	4.30	29.58	46.61	19.91	3.90
0400	340	351	691	35.00	41.18	19.41	4.41	29.34	50.71	18.52	1.42	32.13	46.02	18.96	2.89
0500	340	351	691	35.29	38.82	20.29	5.59	30.20	47.58	19.37	2.85	32.71	43.27	19.83	4.20
0600	342	349	691	37.43	35.38	23.10	4.09	32.66	44.41	20.63	2.29	35.02	39.94	21.85	3.18
0700	344	349	693	26.74	36.05	30.81	6.40	21.49	43.27	28.37	6.88	24.10	39.68	29.58	6.64
0800	345	348	693	9.86	35.07	40.87	14.20	12.07	29.02	43.97	14.94	10.97	32.03	42.42	14.57
0900	329	339	668	2.74	18.84	40.43	37.99	3.83	19.47	51.33	25.37	3.29	19.16	45.96	31.59
1000	341	332	673	1.17	11.73	37.24	49.85	2.41	11.75	42.47	43.37	1.78	11.74	39.82	46.66
1100	332	338	670	0.90	9.94	25.90	63.25	2.66	10.65	31.06	55.62	1.79	10.30	28.51	59.40
1200	327	346	673	0.31	7.95	25.99	65.75	1.16	12.72	28.90	57.23	0.74	10.40	27.49	61.37
1300	333	342	675	1.50	9.01	25.53	63.96	2.05	9.94	27.78	60.23	1.78	9.48	26.67	62.07
1400	339	339	678	1.47	10.03	24.19	64.31	1.43	10.60	24.93	63.04	1.48	10.47	24.93	63.13
1500	327	343	670	1.53	9.79	28.75	59.94	2.92	9.62	34.11	53.35	2.24	9.70	31.49	56.57
1600	330	339	669	1.52	13.64	33.03	51.82	2.06	12.98	41.59	43.36	1.79	13.30	37.37	47.53
1700	332	346	678	3.01	21.69	41.26	34.04	2.02	22.25	47.69	28.03	2.51	21.98	44.54	30.97
1800	337	342	679	5.93	33.23	42.43	18.40	7.89	30.12	47.95	14.04	6.92	31.66	54.21	16.20
1900	344	347	691	12.79	40.99	35.47	10.76	13.54	36.60	43.52	6.34	13.17	38.78	39.51	8.54
2000	343	346	689	16.33	46.65	28.86	8.16	16.18	40.75	38.15	4.91	16.26	43.69	33.53	6.53
2100	337	348	685	21.66	42.43	29.08	6.82	17.82	45.40	33.33	3.45	19.71	43.94	31.24	5.11
2200	335	346	681	23.58	43.58	26.57	6.27	17.34	53.76	25.72	3.18	20.41	48.75	26.14	4.70
2300	337	347	684	27.60	41.84	24.33	6.23	20.17	49.86	25.07	4.90	23.83	45.91	24.71	5.56

SYMBOL	STABILITY CONDITION	TEMPERATURE DIFFERENCE	SYMBOL	STABILITY CONDITION	TEMPERATURE DIFFERENCE
VS	Very Stable	$\Delta T \geq +1.67°C$	MU	Moderately Unstable	$0°C > \Delta T > -1.67°C$
MS	Moderately Stable	$+1.67°C > \Delta T \geq 0°C$	VU	Very Unstable	$\Delta T \leq -1.67°C$

(ΔT = Temperature at 62.2 m level minus temperature at 1.8 m level)

Table 17. Number of Observations and Percentage Frequency of Stability Conditions at Station for Annual

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STABILITY CONDITIONS OF THE LOWER ATMOSPHERE AND THEIR IMPLICATIONS REGARDING DIFFUSION AT CAPE KENNEDY, FLORIDA

By James R. Scoggins and Margaret B. Alexander

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