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TEMPERATURE, PRESSURE, DENSITY, AND WIND MEASUREMENTS IN THE STRATOSPHERE AND MESOSPHERE, 1967

by
W. S. Smith, J. S. Theon, P. C. Swartz
Goddard Space Flight Center

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and
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University Of Michigan

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ABSTRACT

Complete data from a total of 39 rocket soundings conducted during 1967 from Wallops Island, Virginia, Churchill, Canada, Barrow, Alaska, and Natal, Brazil are presented. Temperature, pressure, density and wind profiles from 33 acoustic grenade experiments and temperature, pressure and density profiles from 6 pitot static tube experiments covering the altitude range of approximately 30 to 90 kilometers are tabulated. No attempt has been made to analyze the meteorological significance of these data here. An error analysis for each of the 33 acoustic grenade soundings has been included.

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INTRODUCTION

During 1967, 33 acoustic grenade and 6 pitot-static tube experiments were performed by the Goddard Space Flight Center and the University of Michigan under contract to Goddard. These soundings were conducted from Barrow, Alaska (71°N); Churchill, Canada (59° N); Wallops Island, Virginia (38° N); and Natal, Brazil (6° S). This report presents the data obtained from these soundings and is intended to serve as a basis for further investigation and interpretation of the structure of the upper atmosphere. These data are the unsmoothed measurements and no analysis of their meteorological significance is included.

These soundings were conducted as part of the Meteorological Sounding Rocket Program, the objectives of which are to observe the structure of the mesosphere and lower thermosphere and to investigate specific phenomena which occur in these regions. In order to extend the coverage over the widest possible geographic area and to permit more accurate analyses, the GSFC soundings are coordinated with soundings in other parts of the world whenever possible.

EXPERIMENTAL METHODS

The acoustic grenade and pitot-static tube techniques were employed to obtain the data reported here. These techniques are described only briefly since the details, the theory, instrumentation, and data reduction have been published elsewhere (References 1, 2, and 3).

In the grenade experiments 1, 2, and 3 pound explosive charges (grenades) are carried aloft in the nose cone of a Nike-Cajun sounding rocket. The grenades are ejected and exploded at

2 to 5 km intervals as the rocket ascends. The current payload carries 19 grenades, permitting an average vertical resolution in the data of approximately 3 km. The position of the rocket and therefore of each explosion is determined by a Doppler tracking system, a precision radar such as the AN/FPS-16, or both. The time of each explosion is detected by sensors in the payload and telemetered to the ground. A ground-based array of hot-wire microphones capable of responding to frequencies in the 4 hertz range is used to detect and record the sound waves generated by the exploding grenades. The measured experimental parameters are the times and positions of the grenade explosions, and the arrival times of the sound waves at the ground-based microphones.

The elevation and azimuth angles of the normal to each arriving sound wave are computed by applying a least-squares-fit to the arrival times at the various microphones. Each wave is then analytically traced along its path of propagation through the atmosphere by means of Snell's Law. Data from balloonsondes and rocketsondes obtained near the time of the grenade sounding are utilized to account for the influence of wind and temperature in retracing the path of the sound wave from the ground to the first explosion; above this altitude, the results of the experiment itself are used for each succeeding explosion. The position of the wave as determined by tracing is compared with the known position of the wave source, the grenade explosion. The amount by which the sound wave has been displaced horizontally from one explosion to the next is a measure of the average wind velocity vector in the layer bounded by two adjacent explosions. The average speed of sound and hence the average temperature of the atmosphere between two adjacent explosions may also be determined. The temperature profile consists of discrete points, each of which represents the average temperature of the vertical layer between consecutive explosions. The pressure and density are profiles derived from the temperature profile, using a pressure value measured by an accompanying balloonsonde near the top of its ascent as a reference. Pressure is calculated from the barometric equation by performing an integration upward over the temperature profile, and the density is calculated using the equation of state (Reference 4).

In the pitot-static tube experiment, a radioactive ionization gage and a hot filament gage which are mounted in the forward tip of the payload measure ambient density, and a second ionization gage mounted further aft measures ambient pressure as the rocket ascends. The gage outputs are telemetered to ground based receiving and recording equipment. The trajectory of the rocket is provided by Doppler tracking, radar tracking, or both, to determine the altitude of the measurements and the velocity of the rocket. The measured experimental parameters are ram pressure, static pressure, and velocity and position of the payload in space. Ram pressure is related to density by the Rayleigh equation and the equation of state in the continium region, and by a modified thermal transpiration equation in the free-molecular flow region. The temperature profile is computed from the pressure and density profiles with the equation of state, or by integrating the density profile using a form of the hydrostatic equation.

RESULTS

The launch sites of Barrow, Alaska (71° N), Churchill, Canada (59° N), Wallops Island, Virginia (38° N) and Natal, Brazil (6° S) were chosen because they are typical arctic, sub-arctic,

temperate, and tropical locations, respectively. Table 1 summarizes the date, time and location of each of the 33 grenade soundings and the 6 pitot-static tube soundings conducted during 1967. These data include: two series of soundings (Barrow and Churchill) intended to explore the short term variability of the winter mesosphere; two series of soundings (Barrow and Wallops) intended to observe the transition in the mesosphere from winter into summer circulation regimes; four series of soundings launched over 12 hour intervals to determine the diurnal effects in the mesosphere (Natal); a pair of soundings conducted in the presence and absence of noctilucent

Table 1

Summary of Soundings.

Figure	Date	Time (GMT)	Location	Experiment
1	31 January	1911	Wallops	grenade
2	31 January	2317	Churchill	pitot
3	31 January	2348	Barrow	grenade
4	1 February	0141	Barrow	grenade
5	1 February	0418	Barrow	grenade
6	1 February	0538	Churchill	pitot
7	1 February	0741	Barrow	grenade
8	1 February	0826	Churchill	pitot
9	1 February	0956	Barrow	grenade
10	1 February	1158	Churchill	pitot
11	1 February	1426	Barrow	grenade
12	3 February	1752	Wallops	grenade
13	31 March	1719	Wallops	grenade
14	4 April	0010	Barrow	grenade
15	10 April	2100	Barrow	grenade
16	11 April	1715	Wallops	grenade
17	18 April	2207	Barrow	grenade
18	20 April	1732	Wallops	grenade
19	29 April	1139	Wallops	grenade
20	30 April	0140	Barrow	grenade
21	4 May	2007	Wallops	grenade
22	9 May	0720	Barrow	grenade
23	11 May	0825	Wallops	grenade
24	15 May	1140	Barrow	grenade
25	24 June	0826	Natal	grenade
26	24 June	2035	Natal	grenade
27	25 June	0834	Natal	grenade
28	3 August	1110	Barrow	pitot
29	5 August	0956	Barrow	pitot
30	26 August	1139	Natal	grenade
31	26 August	2339	Natal	grenade
32	28 August	0030	Natal	grenade
33	14 October	1120	Natal	grenade
34	15 October	1115	Natal	grenade
35	15 October	2315	Natal	grenade
36	12 December	2200	Wallops	grenade
37	18 December	1300	Natal	grenade
38	19 December	0100	Natal	grenade
39	19 December	1310	Natal	grenade

clouds (Barrow), one of which did not obtain data above 70 km due to a pressure gage malfunction; and three soundings conducted in coordination with other rocket probes which measured the electron density and the nitric oxide concentration in the D-region (Wallops).

The results of the soundings are given in Figures 1 through 39. In the grenade soundings, the directly measured parameters (temperature and wind) are tabulated on the left hand page. Tables of interpolated temperature, computed pressure, computed density, and pressure and density deviations in percent from the 1962 U. S. Standard Atmosphere (Reference 5) are tabulated on the right hand page as functions of geometric altitude. The winds interpolated at 5 km intervals are tabulated in component form on the left hand page. The pitot-static results give measured pressure and density, derived temperature, and the deviation of the pressure and density in percent from the 1962 U. S. Standard Atmosphere. Balloonsonde and rocketsonde observations which accompanied the soundings are also plotted to provide essentially continuous temperature and wind profiles from the earth's surface to the mesopause (Reference 6).

ERROR ANALYSIS

An error analysis was performed for each grenade sounding reported here. In one Natal experiment, data recovery was adequate to produce a solution, but since it was not redundant, no error analysis was possible. The error analysis is based on a study (Reference 7) which demonstrated that more than 90 percent of the experimental error is the result of inaccuracies in the determination of sound arrival times at the various microphones. These inaccuracies produce errors in the computed azimuth and zenith angles of the normal to the sound wave. Thus, by treating only azimuth and zenith errors, a good approximation of the total error is obtained.

The problem of obtaining the temperature and wind errors was then performed in two parts. Separate calculations were made, first for the even-numbered layers between grenades, and then for the odd numbered layers. For each layer, a single azimuth and zenith deviation was computed from the formulas

$$\sigma_{az} = \sqrt{\sigma^2_{az_U} + \sigma^2_{az_L}}$$

and

$$\sigma_{zen} = \sqrt{\sigma^2_{zen_U} + \sigma^2_{zen_L}} ,$$

where the subscripts U and L indicate the azimuth and zenith deviations from the upper and lower grenades bounding a given layer. The calculation is divided into two sections so that the deviations of one layer will not influence the temperature and wind of any other layer significantly.

The error for a given temperature point was computed from the formula

$$\text{Temperature error} = \sqrt{(\Delta T_{az})^2 + (\Delta T_{zen})^2} ,$$

where ΔT_{az} is the change in temperature induced by the azimuth deviation alone, and ΔT_{zen} is the change in temperature caused by the zenith deviation alone. A similar formula is applied to compute wind error.

ACKNOWLEDGMENTS

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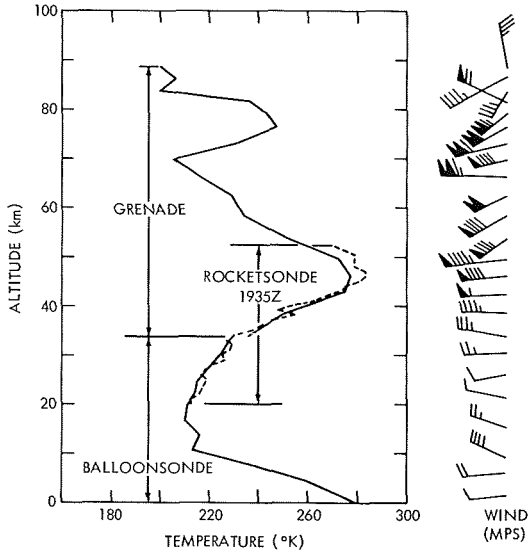
FIGURE 1
WALLOPS IS., JAN. 31, 1967 1911 GMT.

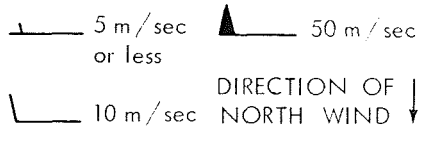
WIND DIRECTION degrees	WIND SPEED m/sec	ERROR m/sec (±)	TEMPERATURE degrees Kelvin	ERROR degrees Kelvin (±)	HEIGHT meters
288.81	37.14	.94	236.26	.50	33858.45
273.43	44.99	1.18	250.96	.67	38711.35
266.90	56.65	1.67	274.90	1.05	42814.75
259.01	87.71	1.77	277.09	1.19	46196.19
259.41	94.55	1.66	272.73	1.18	49492.99
242.71	84.37	1.22	251.90	.66	53771.94
247.15	90.30	1.53	234.13	.78	58423.89
251.86	100.53	1.54	229.40	.69	62364.14
272.25	115.15	2.26	216.27	.74	66147.54
263.51	90.50	2.74	205.06	.87	69767.99
261.88	111.25	3.67	231.63	1.24	73237.64
245.95	98.70	3.77	247.07	1.40	76585.84
238.83	113.10	7.14	242.72	2.56	79393.74
296.12	69.25	8.92	235.83	2.83	81668.19
193.86	35.50	6.81	199.88	1.82	83865.04
249.20	44.57	4.07	206.05	1.19	86311.99
350.97	33.76	9.92	200.30	3.18	88655.29



WIND COMPONENTS
m/sec

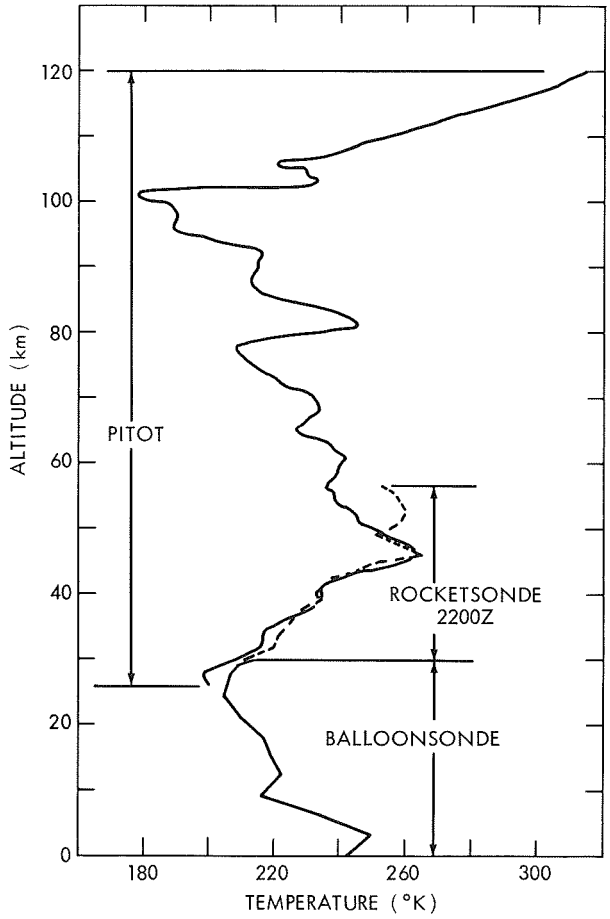
HEIGHT meters	SOUTH component (+)	WEST component (+)
35000.00	-9.79	37.45
40000.00	-.88	48.57
45000.00	11.89	75.65
50000.00	19.90	90.81
55000.00	37.72	77.15
60000.00	33.55	88.14
65000.00	6.48	109.14
70000.00	10.59	91.27
75000.00	28.61	99.60
80000.00	34.80	87.55
85000.00	25.82	23.88

LEGEND



HEIGHT meters	PRESSURE nt/sq meter		DENSITY kg/cu meter		TEMPERATURE degrees Kelvin	PRESSURE deviation (%)	DENSITY deviation (%)
33000.00	.7157799	03	.1091462	01-	228.47	6.71-	5.68-
34000.00	.6189927	03	.9111000	02-	236.68	6.69-	7.85-
35000.00	.5371629	03	.7806633	02-	239.71	6.51-	7.76-
36000.00	.4670020	03	.6702287	02-	242.74	6.32-	7.65-
37000.00	.4067279	03	.5765307	02-	245.77	6.12-	7.54-
38000.00	.3548485	03	.4968686	02-	248.80	5.91-	7.41-
39000.00	.3101782	03	.4277208	02-	252.64	5.66-	7.55-
40000.00	.2718328	03	.3663837	02-	258.47	5.33-	8.30-
41000.00	.2389402	03	.3149415	02-	264.31	4.85-	8.88-
42000.00	.2106283	03	.2716285	02-	270.14	4.24-	9.30-
43000.00	.1861389	03	.2357932	02-	275.02	3.53-	9.27-
44000.00	.1647080	03	.2081552	02-	275.66	2.82-	7.85-
45000.00	.1457918	03	.1838173	02-	276.31	2.21-	6.51-
46000.00	.1290898	03	.1623785	02-	276.96	1.71-	5.26-
47000.00	.1142981	03	.1442599	02-	276.02	1.34-	3.60-
48000.00	.1011546	03	.1282857	02-	274.70	1.11-	2.57-
49000.00	.8947319	02	.1140201	02-	273.38	.95-	1.94-
50000.00	.7906439	02	.1019188	02-	270.26	.89-	.75-
51000.00	.6974036	02	.9154856	03-	265.39	1.01-	.94
52000.00	.6137558	02	.8207352	03-	260.52	1.37-	2.46
53000.00	.5388626	02	.7343062	03-	255.65	1.94-	3.38
54000.00	.4719752	02	.6550187	03-	251.02	2.67-	3.74
55000.00	.4124799	02	.5812953	03-	247.20	3.51-	3.66
56000.00	.3597441	02	.5149332	03-	243.38	4.46-	3.47
57000.00	.3130859	02	.4552929	03-	239.56	5.52-	3.19
58000.00	.2718834	02	.4017822	03-	235.75	6.68-	2.79
59000.00	.2356792	02	.3517281	03-	233.43	7.91-	1.67
60000.00	.2040850	02	.3061513	03-	232.23	9.13-	.07
61000.00	.1766024	02	.2663007	03-	231.03	10.31-	1.47-
62000.00	.1527125	02	.2314796	03-	229.83	11.44-	3.27-
63000.00	.1318989	02	.2022571	03-	227.19	12.50-	4.82-
64000.00	.1137010	02	.1770566	03-	223.72	13.53-	6.00-
65000.00	.9779123	01	.1546811	03-	220.25	14.56-	7.18-
66000.00	.8391051	01	.1348501	03-	216.78	15.58-	8.34-
67000.00	.7183418	01	.1171456	03-	213.63	16.59-	9.63-
68000.00	.6135827	01	.1015333	03-	210.53	17.58-	10.92-
69000.00	.5229044	01	.8781979	04-	207.43	18.53-	12.18-
70000.00	.4450148	01	.7495576	04-	206.83	19.38-	14.37-
71000.00	.3797642	01	.6168164	04-	214.49	19.79-	19.30-
72000.00	.3259042	01	.5110897	04-	222.15	19.53-	23.25-
73000.00	.2811494	01	.4262123	04-	229.81	18.61-	26.34-
74000.00	.2435565	01	.3608453	04-	235.14	17.08-	28.04-
75000.00	.2116350	01	.3075207	04-	239.75	15.02-	29.06-
76000.00	.1843981	01	.2628872	04-	244.36	12.38-	29.63-
77000.00	.1609749	01	.2275757	04-	246.42	9.18-	29.10-
78000.00	.1405529	01	.1999614	04-	244.88	5.52-	27.28-
79000.00	.1226211	01	.1755609	04-	243.33	1.44-	25.26-
80000.00	.1068612	01	.1545508	04-	240.88	3.08	22.68-
81000.00	.9298439	00	.1361939	04-	237.85	7.86	18.05-
82000.00	.8066075	00	.1219657	04-	230.39	12.51	11.74-
83000.00	.6943869	00	.1130247	04-	214.03	16.46	1.71-
84000.00	.5913276	00	.1028912	04-	200.22	19.23	7.59
85000.00	.5013573	00	.8615139	05-	202.74	21.54	8.29
86000.00	.4259656	00	.7229718	05-	205.26	24.14	9.26
87000.00	.3621625	00	.6173936	05-	204.36	26.87	12.17
88000.00	.3075191	00	.5306117	05-	201.90	29.50	15.87

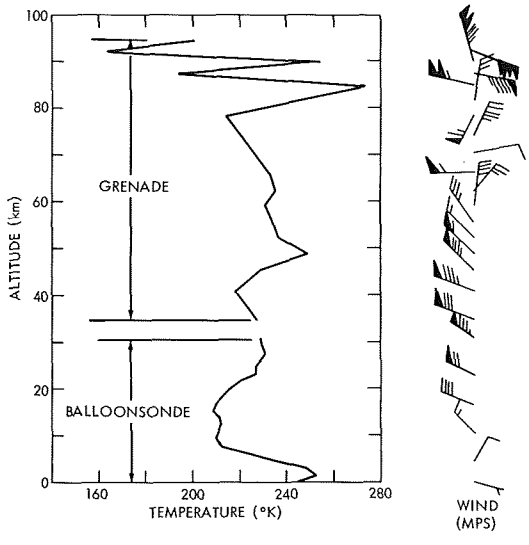
FIGURE 2
CHURCHILL, JAN. 31, 1967 2317 GMT.



HEIGHT meters	PRESSURE nt/sq meter		DENSITY kg/cu meter		TEMPERATURE degrees Kelvin	PRESSURE deviation (%)	DENSITY deviation (%)
26000.00	.1839843	04	.3200000	01-	200.30	15.92-	6.58-
27000.00	.1546535	04	.2720000	01-	198.70	17.73-	7.16-
28000.00	.1309222	04	.2290000	01-	199.10	18.99-	8.67-
29000.00	.1105239	04	.1890000	01-	203.80	20.51-	12.00-
30000.00	.9385868	03	.1560000	01-	209.50	21.59-	15.26-
31000.00	.7985987	03	.1310000	01-	212.50	22.56-	17.04-
32000.00	.6826085	03	.1100000	01-	216.10	23.22-	18.84-
33000.00	.5839503	03	.9379999	02-	216.60	23.89-	18.95-
34000.00	.4986242	03	.7999999	02-	217.30	24.84-	19.09-
35000.00	.4279635	03	.6799999	02-	218.89	25.51-	19.65-
36000.00	.3666354	03	.5719999	02-	223.19	26.45-	21.19-
37000.00	.3159731	03	.4809999	02-	228.60	27.06-	22.86-
38000.00	.2733100	03	.4099999	02-	231.60	27.53-	23.60-
39000.00	.2359799	03	.3510000	02-	234.00	28.23-	24.13-
40000.00	.2039826	03	.3030000	02-	234.80	28.96-	24.16-
41000.00	.1773182	03	.2630000	02-	234.39	29.39-	23.90-
42000.00	.1533203	03	.2250000	02-	237.50	30.29-	24.87-
43000.00	.1333220	03	.1910000	02-	243.00	30.90-	26.50-
44000.00	.1162568	03	.1600000	02-	253.10	31.41-	29.16-
45000.00	.1019913	03	.1360000	02-	261.39	31.59-	30.83-
46000.00	.8972569	02	.1190000	02-	262.70	31.68-	30.57-
47000.00	.7892661	02	.1050000	02-	261.80	31.87-	29.83-
48000.00	.6932743	02	.9399999	03-	256.80	32.22-	28.61-
49000.00	.6079482	02	.8369999	03-	252.80	32.70-	28.01-
50000.00	.5319547	02	.7409999	03-	249.69	33.32-	27.84-
51000.00	.4639605	02	.6559999	03-	246.30	34.15-	27.66-
52000.00	.4052988	02	.5749999	03-	245.10	34.86-	28.21-
53000.00	.3519700	02	.5079999	03-	241.70	35.95-	28.48-
54000.00	.3066405	02	.4480000	03-	238.19	36.76-	29.04-
55000.00	.2666440	02	.3900000	03-	237.50	37.63-	30.45-
56000.00	.2306470	02	.3400000	03-	236.40	38.75-	31.67-
57000.00	.1999830	02	.2939999	03-	237.20	39.65-	33.36-
58000.00	.1733186	02	.2530000	03-	239.40	40.51-	35.27-
59000.00	.1506538	02	.2190000	03-	240.50	41.13-	36.69-
60000.00	.1315888	02	.1900000	03-	241.20	41.41-	37.89-
61000.00	.1145236	02	.1650000	03-	241.70	41.84-	38.95-
62000.00	.9959152	01	.1450000	03-	239.30	42.25-	39.40-
63000.00	.8652596	01	.1270000	03-	237.40	42.60-	40.24-
64000.00	.7506027	01	.1130000	03-	231.19	42.92-	40.01-
65000.00	.6479448	01	.9949999	04-	226.89	43.39-	40.29-
66000.00	.5599523	01	.8519999	04-	228.80	43.67-	42.09-
67000.00	.4839588	01	.7279999	04-	231.40	43.81-	43.84-
68000.00	.4186310	01	.6229999	04-	234.19	43.76-	45.34-
69000.00	.3626358	01	.5400000	04-	234.19	43.50-	46.00-
70000.00	.3146399	01	.4699999	04-	233.20	43.00-	46.30-
71000.00	.2719768	01	.4150000	04-	228.50	42.56-	45.71-
72000.00	.2346467	01	.3670000	04-	222.89	42.06-	44.88-
73000.00	.2026494	01	.3200000	04-	219.90	41.33-	44.69-
74000.00	.1733186	01	.2800000	04-	215.60	40.99-	44.16-
75000.00	.1479874	01	.2420000	04-	213.40	40.57-	44.17-
76000.00	.1266559	01	.2100000	04-	210.10	39.81-	43.79-
77000.00	.1079908	01	.1810000	04-	207.80	39.07-	43.61-
78000.00	.9212549	00	.1530000	04-	209.60	38.07-	44.36-
79000.00	.7879329	00	.1260000	04-	217.80	36.67-	46.36-
80000.00	.6799420	00	.1010000	04-	234.30	34.40-	49.47-
81000.00	.5919495	00	.8419999	05-	244.70	31.33-	49.33-
82000.00	.5159560	00	.7389999	05-	243.30	28.03-	46.52-
83000.00	.4492950	00	.6559999	05-	238.69	24.64-	42.95-
84000.00	.3906334	00	.5889999	05-	230.69	21.23-	38.40-
85000.00	.3373046	00	.5259999	05-	223.00	18.22-	33.87-
86000.00	.2893087	00	.4659999	05-	216.30	15.68-	29.57-
87000.00	.2479789	00	.4059999	05-	212.60	13.12-	26.23-
88000.00	.2119819	00	.3469999	05-	212.60	10.73-	24.21-
89000.00	.1813179	00	.2949999	05-	213.90	8.22-	22.57-
90000.00	.1546535	00	.2510000	05-	215.19	5.91-	20.82-
91000.00	.1329220	00	.2150000	05-	215.30	2.96-	17.24-
92000.00	.1138570	00	.1840000	05-	215.60	.55-	13.89-
93000.00	.9732505	01-	.1630000	05-	208.00	1.40	7.54-
94000.00	.8265962	01-	.1440000	05-	200.00	2.45	1.30-
95000.00	.6972739	01-	.1260000	05-	192.90	2.52	4.04
96000.00	.5866167	01-	.1080000	05-	189.10	2.05	7.14
97000.00	.4932913	01-	.9059999	06-	189.60	1.27	7.66
98000.00	.4146313	01-	.7580000	06-	190.40	.20	7.60
99000.00	.3479703	01-	.6389999	06-	189.70	1.24-	8.10
100000.00	.2919751	01-	.5529999	06-	183.60	2.91-	11.17
101000.00	.2426460	01-	.4759999	06-	177.50	5.76-	14.45
102000.00	.2026494	01-	.3479999	06-	202.90	8.39-	.37-
103000.00	.1746518	01-	.2599999	06-	234.39	8.43-	11.71-
104000.00	.1519870	01-	.2300000	06-	230.00	7.88-	7.70-
105000.00	.1313221	01-	.2000000	06-	228.80	8.28-	5.52-
106000.00	.1134570	01-	.1790000	06-	220.80	8.95-	.77-
107000.00	.9785833	02-	.1460000	06-	233.60	10.04-	5.38-
108000.00	.8532606	02-	.1230000	06-	241.50	10.39-	7.03-
109000.00	.7452698	02-	.1050000	06-	247.00	10.83-	7.81-
110000.00	.6532776	02-	.8929999	07-	254.60	11.17-	9.14-
111000.00	.5746177	02-	.7649999	07-	261.50	11.53-	8.49-
112000.00	.5066234	02-	.6599999	07-	267.60	12.08-	7.73-
113000.00	.4492950	02-	.5699998	07-	274.30	12.48-	7.36-
114000.00	.3986326	02-	.4929999	07-	281.60	13.18-	7.34-
115000.00	.3546364	02-	.4299999	07-	287.60	13.97-	6.98-
116000.00	.3173063	02-	.3739999	07-	295.30	14.55-	7.31-
117000.00	.2839758	02-	.3289999	07-	300.60	15.39-	6.95-
118000.00	.2546450	02-	.2900000	07-	305.90	16.30-	6.81-
119000.00	.2293138	02-	.2570000	07-	310.20	17.10-	6.47-
120000.00	.2066491	02-	.2270000	07-	316.00	18.05-	6.81-

FIGURE 3
POINT BARROW, JAN. 31, 1967 2348 GMT.

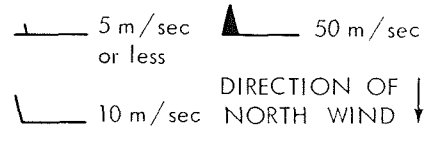
WIND DIRECTION degrees	WIND SPEED m/sec	ERROR m/sec (±)	TEMPERATURE degrees Kelvin	ERROR degrees Kelvin (±)	HEIGHT meters
309.19	82.31	2.19	227.23	.84	35152.69
310.46	84.58	3.80	218.18	1.36	40972.24
314.25	84.51	6.45	228.48	2.59	45339.04
318.81	61.13	4.88	249.24	2.32	48978.44
317.71	13.31	6.02	236.37	3.18	52526.89
327.35	33.08	8.75	234.11	3.80	55981.99
1.81	40.71	11.19	231.66	4.17	59350.99
39.50	23.72	14.45	235.58	5.06	62628.99
267.30	55.61	12.56	233.55	4.33	66336.24
73.17	10.35	20.33	226.31	7.47	70436.04
25.12	43.55	24.29	220.42	7.40	74377.95
213.98	64.60	21.25	214.01	6.37	78186.59
.54	26.55	16.79	249.52	7.67	81834.14
279.63	106.23	18.37	273.64	6.77	84888.99
98.30	93.26	14.86	194.31	4.86	87410.34
344.45	136.45	49.04	254.23	20.17	89838.94
107.58	199.15	47.60	163.51	14.08	92176.04
188.06	455.55	172.45	200.69	22.95	94374.50



WIND COMPONENTS
m/sec

HEIGHT meters	SOUTH component (+)	WEST component (+)
40000.00	-54.40	64.26
45000.00	-58.65	60.83
50000.00	-35.59	31.24
55000.00	-22.73	15.32
60000.00	-36.25	-4.01
65000.00	-4.92	30.08
70000.00	-2.39	-2.94
75000.00	-24.24	-9.57
80000.00	13.73	18.03
85000.00	-16.39	96.05
90000.00	-118.25	20.97

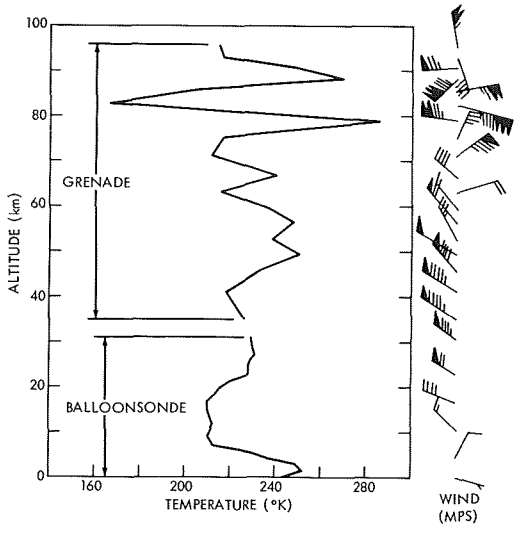
LEGEND



HEIGHT meters	PRESSURE nt/sq meter		DENSITY kg/cu meter		TEMPERATURE degrees Kelvin	PRESSURE deviation (%)	DENSITY deviation (%)
34000.00	.5847025	03	.8943134	02-	227.77	11.86-	9.55-
35000.00	.5038383	03	.7722289	02-	227.30	12.31-	8.75-
36000.00	.4339128	03	.6691458	02-	225.91	12.96-	7.80-
37000.00	.3733447	03	.5797331	02-	224.35	13.82-	7.02-
38000.00	.3209105	03	.5017909	02-	222.80	14.91-	6.49-
39000.00	.2755611	03	.4339090	02-	221.24	16.19-	6.21-
40000.00	.2363775	03	.3748437	02-	219.69	17.68-	6.18-
41000.00	.2025623	03	.3233491	02-	218.24	19.34-	6.45-
42000.00	.1736487	03	.2742306	02-	220.60	21.05-	8.43-
43000.00	.1491132	03	.2329924	02-	222.96	22.72-	10.35-
44000.00	.1282559	03	.1983046	02-	225.32	24.33-	12.21-
45000.00	.1104944	03	.1690726	02-	227.68	25.89-	14.01-
46000.00	.9541064	02	.1431195	02-	232.25	27.35-	16.50-
47000.00	.8265411	02	.1210121	02-	237.95	28.65-	19.13-
48000.00	.7185015	02	.1027316	02-	243.65	29.76-	21.97-
49000.00	.6266040	02	.8761328	03-	249.16	30.63-	24.65-
50000.00	.5467688	02	.7757982	03-	245.53	31.46-	24.45-
51000.00	.4761592	02	.6857412	03-	241.90	32.42-	24.38-
52000.00	.4138209	02	.6050360	03-	238.28	33.49-	24.46-
53000.00	.3590387	02	.5298782	03-	236.06	34.66-	25.39-
54000.00	.3112532	02	.4606316	03-	235.40	35.81-	27.04-
55000.00	.2697321	02	.4002958	03-	234.75	36.90-	28.61-
56000.00	.2336671	02	.3477444	03-	234.09	37.94-	30.11-
57000.00	.2023471	02	.3020722	03-	233.36	38.94-	31.53-
58000.00	.1751544	02	.2622952	03-	232.64	39.88-	32.89-
59000.00	.1515544	02	.2276657	03-	231.91	40.78-	34.19-
60000.00	.1311320	02	.1965456	03-	232.43	41.61-	35.75-
61000.00	.1135271	02	.1692877	03-	233.63	42.34-	37.36-
62000.00	.9836248	01	.1459278	03-	234.82	42.96-	39.02-
63000.00	.8527262	01	.1262130	03-	235.37	43.43-	40.61-
64000.00	.7392792	01	.1096767	03-	234.83	43.78-	41.77-
65000.00	.6407404	01	.9528005	04-	234.28	44.02-	42.82-
66000.00	.5551742	01	.8274950	04-	233.73	44.15-	43.75-
67000.00	.4807748	01	.7207843	04-	232.37	44.18-	44.40-
68000.00	.4159607	01	.6283893	04-	230.61	44.12-	44.87-
69000.00	.3595001	01	.5472856	04-	228.84	43.99-	45.27-
70000.00	.3103665	01	.4761614	04-	227.07	43.77-	45.60-
71000.00	.2676667	01	.4135889	04-	225.46	43.47-	45.89-
72000.00	.2306159	01	.3587166	04-	223.97	43.06-	46.13-
73000.00	.1985050	01	.3108427	04-	222.47	42.53-	46.28-
74000.00	.1707005	01	.2691106	04-	220.98	41.89-	46.34-
75000.00	.1466414	01	.2328797	04-	219.37	41.11-	46.28-
76000.00	.1258351	01	.2013824	04-	217.69	40.20-	46.09-
77000.00	.1078579	01	.1739571	04-	216.00	39.15-	45.80-
78000.00	.9234199	00	.1501020	04-	214.32	37.93-	45.41-
79000.00	.7922762	00	.1243716	04-	221.92	36.32-	47.05-
80000.00	.6837753	00	.1028283	04-	231.66	34.03-	48.56-
81000.00	.5937486	00	.8568890	05-	241.40	31.12-	48.44-
82000.00	.5184399	00	.7200751	05-	250.83	27.68-	47.89-
83000.00	.4547965	00	.6124018	05-	258.72	23.72-	46.74-
84000.00	.4005557	00	.5233918	05-	266.62	19.23-	45.26-
85000.00	.3537548	00	.4562052	05-	270.14	14.24-	42.65-
86000.00	.3102592	00	.4528559	05-	238.68	9.57-	31.56-
87000.00	.2671169	00	.4490832	05-	207.22	6.41-	18.40-
88000.00	.2275905	00	.3796296	05-	208.85	4.15-	17.09-
89000.00	.1957473	00	.2920176	05-	233.53	.91-	23.35-
90000.00	.1704584	00	.2394768	05-	247.97	3.69	24.45-
91000.00	.1473072	00	.2453591	05-	209.16	7.53	5.55-
92000.00	.1235382	00	.2526587	05-	170.34	7.90	18.23
93000.00	.1020270	00	.2003136	05-	177.44	6.30	13.62
94000.00	.8530539	01-	.1529099	05-	194.35	5.72	4.80

FIGURE 4
POINT BARROW, FEB. 1, 1967 0141 GMT.

WIND DIRECTION degrees	WIND SPEED m/sec	ERROR m/sec (±)	TEMPERATURE degrees Kelvin	ERROR degrees Kelvin (±)	HEIGHT meters
309.51	92.56	10.79	225.87	.72	35288.04
308.43	96.55	9.55	218.15	1.09	41205.64
325.97	91.87	5.91	232.92	2.20	45639.29
310.87	49.50	6.25	251.18	2.36	49321.85
333.15	35.32	7.14	239.48	3.10	52935.64
322.33	70.96	7.42	248.42	5.05	56450.24
324.60	14.09	6.19	235.73	5.21	59878.09
71.37	22.03	15.38	215.93	4.92	63221.59
306.97	38.17	15.49	240.47	5.65	66995.39
57.75	82.57	19.69	211.86	4.97	71160.64
22.22	33.76	3.68	216.92	4.60	75174.39
272.54	126.04	26.45	286.24	5.06	79059.79
125.88	193.04	7.44	166.29	3.00	82798.14
76.75	115.46	25.27	205.04	7.59	85936.14
238.45	183.97	106.33	270.52	21.93	88516.04
266.70	76.65	158.24	245.17	30.72	90997.20
167.53	39.74	176.37	217.62	26.04	93390.09
350.81	105.90	26.68	214.76	25.03	95659.54



WIND COMPONENTS
m/sec

HEIGHT meters	SOUTH component (+)	WEST component (+)
40000.00	-59.78	74.77
45000.00	-73.81	54.90
50000.00	-32.22	33.40
55000.00	-45.99	32.05
60000.00	-11.32	7.10
65000.00	-14.53	3.33
70000.00	-38.18	-41.87
75000.00	-31.80	-15.24
80000.00	24.27	54.91
85000.00	15.18	-125.52
90000.00	41.32	108.77
95000.00	-62.88	9.50

LEGEND

5 m/sec or less

50 m/sec

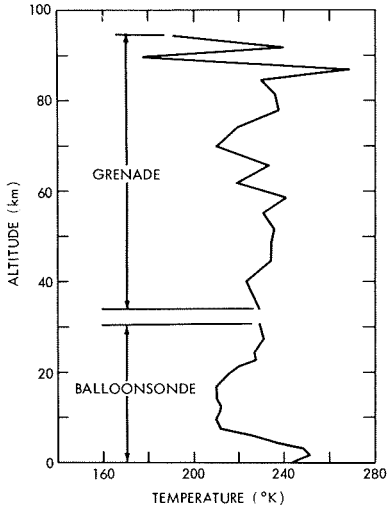
10 m/sec

DIRECTION OF NORTH WIND

HEIGHT meters	PRESSURE nt/sq meter		DENSITY kg/cu meter		TEMPERATURE degrees Kelvin	PRESSURE deviation (%)	DENSITY deviation (%)
34000.00	.5839588	03	.8970371	02-	226.79	11.97-	9.27-
35000.00	.5028328	03	.7748657	02-	226.07	12.48-	8.44-
36000.00	.4327322	03	.6702062	02-	224.94	13.19-	7.65-
37000.00	.3721179	03	.5796901	02-	223.63	14.11-	7.03-
38000.00	.3197266	03	.5009969	02-	222.33	15.22-	6.64-
39000.00	.2744797	03	.4326355	02-	221.02	16.52-	6.49-
40000.00	.2354343	03	.3732954	02-	219.72	18.00-	6.57-
41000.00	.2017686	03	.3218272	02-	218.41	19.65-	6.89-
42000.00	.1729904	03	.2729533	02-	220.79	21.35-	8.85-
43000.00	.1486167	03	.2310098	02-	224.12	22.97-	11.11-
44000.00	.1279696	03	.1960026	02-	227.45	24.50-	13.23-
45000.00	.1104359	03	.1667059	02-	230.79	25.93-	15.21-
46000.00	.9552786	02	.1417945	02-	234.70	27.26-	17.27-
47000.00	.8286030	02	.1204471	02-	239.66	28.47-	19.51-
48000.00	.7208535	02	.1026605	02-	244.62	29.53-	22.03-
49000.00	.6288979	02	.8778521	03-	249.58	30.38-	24.50-
50000.00	.5493527	02	.7686652	03-	248.98	31.14-	25.14-
51000.00	.4793852	02	.6796025	03-	245.74	31.96-	25.06-
52000.00	.4175918	02	.5999042	03-	242.50	32.89-	25.10-
53000.00	.3631446	02	.5279244	03-	239.64	33.91-	25.67-
54000.00	.3157811	02	.4542478	03-	242.18	34.87-	28.05-
55000.00	.2750081	02	.3914845	03-	244.73	35.67-	30.18-
56000.00	.2398524	02	.3379268	03-	247.27	36.30-	32.09-
57000.00	.2092955	02	.2959405	03-	246.38	36.84-	32.92-
58000.00	.1824055	02	.2618528	03-	242.68	37.39-	33.00-
59000.00	.1586414	02	.2312661	03-	238.98	38.01-	33.14-
60000.00	.1376679	02	.2040837	03-	235.00	38.70-	33.28-
61000.00	.1191115	02	.1811394	03-	229.08	39.51-	32.98-
62000.00	.1026709	02	.1602807	03-	223.16	40.46-	33.02-
63000.00	.8815093	01	.1413647	03-	217.24	41.52-	33.48-
64000.00	.7563127	01	.1192294	03-	220.99	42.48-	36.70-
65000.00	.6511991	01	.9972431	04-	227.49	43.10-	40.16-
66000.00	.5630895	01	.8383490	04-	233.99	43.35-	43.02-
67000.00	.4888583	01	.7083333	04-	240.43	43.24-	45.36-
68000.00	.4243767	01	.6329852	04-	233.57	42.99-	44.47-
69000.00	.3668648	01	.5637820	04-	226.70	42.84-	43.62-
70000.00	.3157437	01	.5003822	04-	219.83	42.80-	42.83-
71000.00	.2704676	01	.4424544	04-	212.96	42.87-	42.11-
72000.00	.2311091	01	.3781486	04-	212.91	42.93-	43.21-
73000.00	.1975826	01	.3213886	04-	214.17	42.80-	44.46-
74000.00	.1690834	01	.2734222	04-	215.44	42.44-	45.48-
75000.00	.1448334	01	.2328454	04-	216.70	41.84-	46.28-
76000.00	.1247565	01	.1876244	04-	231.65	40.71-	49.78-
77000.00	.1085645	01	.1515972	04-	249.49	38.75-	52.77-
78000.00	.9538975	00	.1243108	04-	267.33	35.88-	54.79-
79000.00	.8452070	00	.1032553	04-	285.17	32.06-	56.04-
80000.00	.7469903	00	.1016275	04-	256.07	27.93-	49.16-
81000.00	.6498538	00	.1010773	04-	223.98	24.61-	39.18-
82000.00	.5533094	00	.1004507	04-	191.89	22.82-	27.31-
83000.00	.4597321	00	.9489315	05-	168.78	22.89-	17.48-
84000.00	.3799010	00	.7306929	05-	181.13	23.39-	23.59-
85000.00	.3179254	00	.5724627	05-	193.48	22.92-	28.03-
86000.00	.2691145	00	.4536666	05-	206.66	21.57-	31.44-
87000.00	.2311439	00	.3470360	05-	232.04	19.02-	36.94-
88000.00	.2017017	00	.2729739	05-	257.42	15.05-	40.38-
89000.00	.1775795	00	.2329504	05-	265.57	10.11-	38.85-
90000.00	.1562686	00	.2131964	05-	255.35	4.93-	32.74-
91000.00	.1368045	00	.1944234	05-	245.13	.12-	25.16-
92000.00	.1190480	00	.1775260	05-	233.62	3.98	16.92-
93000.00	.1028754	00	.1613612	05-	222.11	7.18	8.47-
94000.00	.8841153	01-	.1420381	05-	216.85	9.57	2.64-
95000.00	.7581196	01-	.1225081	05-	215.59	11.46	1.16

FIGURE 5
POINT BARROW, FEB. 1, 1967 0418 GMT.

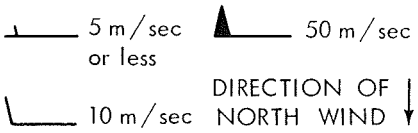
WIND DIRECTION degrees	WIND SPEED m/sec	ERROR m/sec (±)	TEMPERATURE degrees Kelvin	ERROR degrees Kelvin (±)	HEIGHT meters
307.78	88.68	1.19	229.49	.52	34135.49
310.52	94.11	3.89	223.61	1.78	40024.14
325.44	80.74	6.61	233.99	3.12	44442.29
308.72	67.40	5.40	234.18	2.56	48124.99
304.21	43.80	8.81	235.57	4.36	51725.19
264.03	16.06	12.62	231.21	5.22	55227.54
327.84	80.20	11.29	242.67	4.88	58639.39
223.13	16.84	12.16	218.89	4.75	61958.29
325.47	59.85	13.37	232.57	5.42	65714.29
78.24	33.86	13.78	210.26	5.29	69867.14
1.30	89.89	15.93	219.19	5.45	73857.95
178.58	66.40	15.82	236.86	5.73	77723.70
327.26	37.52	13.35	235.84	5.86	81434.79
164.63	69.37	48.89	230.11	10.79	84535.64
333.15	128.58	45.02	268.23	17.21	87095.54
89.05	135.40	29.05	178.44	10.29	89570.09
299.59	68.41	49.30	239.78	21.91	91961.39
77.58	45.89	49.95	191.32	17.96	94223.14



WIND COMPONENTS
m/sec

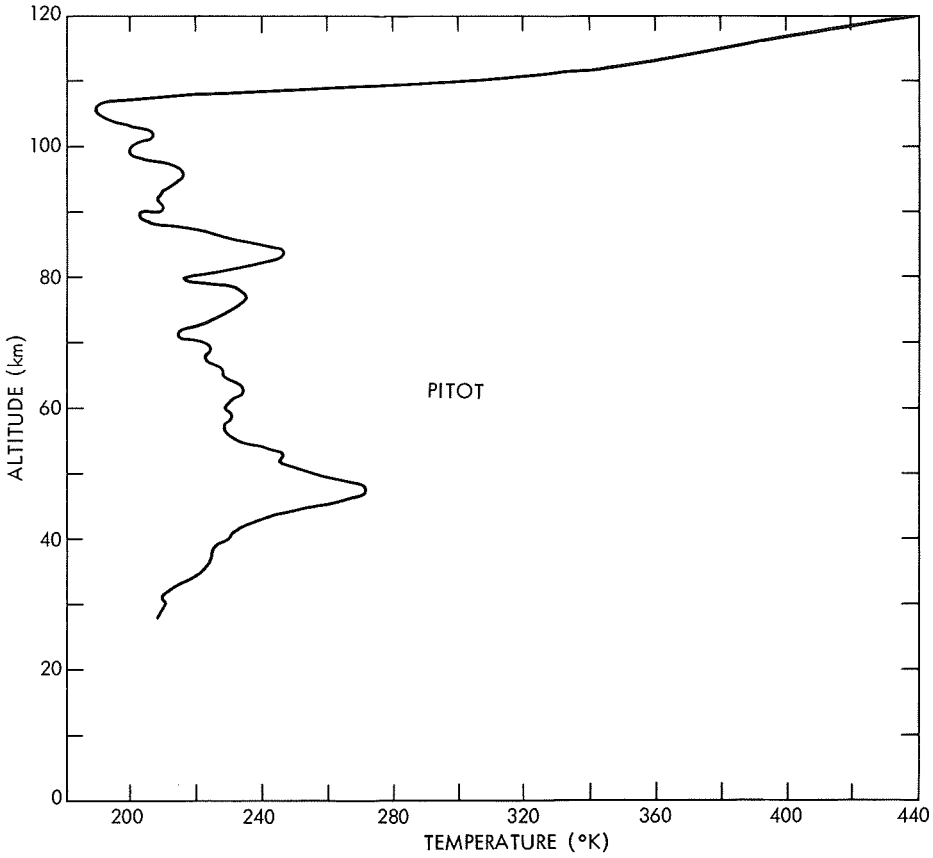
HEIGHT meters	SOUTH component (+)	WEST component (+)
35000.00	-55.33	70.30
40000.00	-61.11	71.53
45000.00	-62.80	46.82
50000.00	-33.02	44.06
55000.00	-.03	17.28
60000.00	-35.02	29.90
65000.00	-37.59	29.66
70000.00	-9.66	-32.11
75000.00	-43.70	-1.92
80000.00	6.30	11.81
85000.00	33.94	-4.51
90000.00	-7.91	-100.34

LEGEND



HEIGHT meters	PRESSURE nt/sq meter		DENSITY kg/cu meter		TEMPERATURE degrees Kelvin	PRESSURE deviation (%)	DENSITY deviation (%)
33000.00	.6791826	03	.1030843	01-	229.53	11.48-	10.92-
34000.00	.5859591	03	.8895107	02-	229.49	11.67-	10.03-
35000.00	.5054221	03	.7701678	02-	228.62	12.03-	9.00-
36000.00	.4357106	03	.6668532	02-	227.62	12.60-	8.12-
37000.00	.3753869	03	.5770595	02-	226.62	13.35-	7.45-
38000.00	.3232170	03	.4990607	02-	225.63	14.29-	7.00-
39000.00	.2781260	03	.4313473	02-	224.63	15.41-	6.77-
40000.00	.2391767	03	.3725967	02-	223.63	16.70-	6.75-
41000.00	.2057792	03	.3173499	02-	225.90	18.06-	8.18-
42000.00	.1773244	03	.2706525	02-	228.25	19.38-	9.62-
43000.00	.1530443	03	.2312136	02-	230.60	20.68-	11.03-
44000.00	.1322921	03	.1978462	02-	232.95	21.95-	12.41-
45000.00	.1144811	03	.1704282	02-	234.01	23.21-	13.32-
46000.00	.9910934	02	.1475117	02-	234.07	24.54-	13.94-
47000.00	.8580742	02	.1276853	02-	234.12	25.93-	14.67-
48000.00	.7429532	02	.1105304	02-	234.17	27.37-	16.05-
49000.00	.6433847	02	.9557692	03-	234.51	28.78-	17.80-
50000.00	.5573099	02	.8265415	03-	234.90	30.14-	19.51-
51000.00	.4828853	02	.7149879	03-	235.29	31.46-	21.16-
52000.00	.4184511	02	.6197464	03-	235.22	32.75-	22.62-
53000.00	.3624928	02	.5397259	03-	233.98	34.03-	24.01-
54000.00	.3137914	02	.4697121	03-	232.73	35.28-	25.60-
55000.00	.2714352	02	.4084943	03-	231.49	36.50-	27.15-
56000.00	.2348849	02	.3499937	03-	233.80	37.62-	29.66-
57000.00	.2036193	02	.2991089	03-	237.16	38.55-	32.20-
58000.00	.1768782	02	.2561988	03-	240.52	39.29-	34.45-
59000.00	.1537873	02	.2231575	03-	240.08	39.91-	35.49-
60000.00	.1334153	02	.1995514	03-	232.92	40.60-	34.76-
61000.00	.1152344	02	.1778283	03-	225.75	41.48-	34.20-
62000.00	.9908185	01	.1575887	03-	219.04	42.54-	34.14-
63000.00	.8510872	01	.1331506	03-	222.68	43.54-	37.34-
64000.00	.7329012	01	.1128155	03-	226.32	44.26-	40.11-
65000.00	.6326639	01	.9584359	04-	229.96	44.72-	42.48-
66000.00	.5469836	01	.8248112	04-	231.03	44.97-	43.94-
67000.00	.4722764	01	.7291122	04-	225.66	45.16-	43.76-
68000.00	.4063512	01	.6426341	04-	220.29	45.41-	43.62-
69000.00	.3483499	01	.5646771	04-	214.91	45.73-	43.53-
70000.00	.2975924	01	.4923905	04-	210.55	46.09-	43.74-
71000.00	.2540435	01	.4159155	04-	212.79	46.34-	45.59-
72000.00	.2172373	01	.3519560	04-	215.03	46.36-	47.14-
73000.00	.1860738	01	.2983619	04-	217.27	46.13-	48.43-
74000.00	.1596600	01	.2530166	04-	219.83	45.64-	49.55-
75000.00	.1373391	01	.2132111	04-	224.41	44.85-	50.81-
76000.00	.1185034	01	.1802974	04-	228.98	43.69-	51.74-
77000.00	.1025542	01	.1529776	04-	233.55	42.14-	52.34-
78000.00	.8896877	00	.1309011	04-	236.78	40.19-	52.39-
79000.00	.7725490	00	.1137984	04-	236.50	37.90-	51.55-
80000.00	.6707527	00	.9891852	05-	236.23	35.29-	50.51-
81000.00	.5822987	00	.8597388	05-	235.95	32.45-	48.27-
82000.00	.5053147	00	.7497738	05-	234.79	29.51-	45.74-
83000.00	.4381274	00	.6552399	05-	232.94	26.51-	43.02-
84000.00	.3794590	00	.5720363	05-	231.10	23.48-	40.18-
85000.00	.3290709	00	.4836749	05-	237.02	20.22-	39.19-
86000.00	.2871120	00	.3970577	05-	251.91	16.32-	39.99-
87000.00	.2524839	00	.3296812	05-	266.80	11.54-	40.10-
88000.00	.2210752	00	.3271682	05-	235.41	6.90-	28.55-
89000.00	.1895887	00	.3316982	05-	199.12	4.03-	12.94-
90000.00	.1597265	00	.2936971	05-	189.46	2.83-	7.35-
91000.00	.1354643	00	.2193834	05-	215.11	1.10-	15.55-
92000.00	.1169815	00	.1705547	05-	238.95	2.17	20.19-
93000.00	.1011059	00	.1619282	05-	217.52	5.34	8.15-
94000.00	.8607649	01-	.1529197	05-	196.10	6.68	4.81

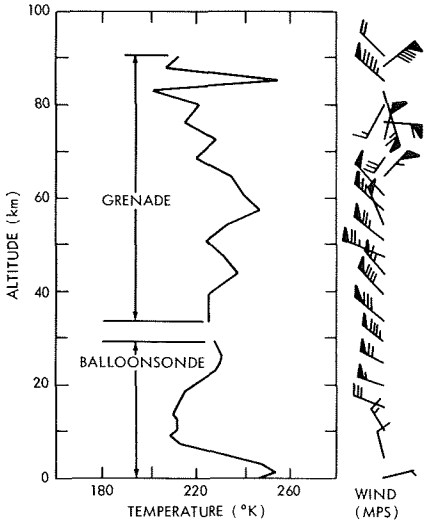
FIGURE 6
CHURCHILL, FEB, 1, 1967 0538 GMT.



HEIGHT meters	PRESSURE nt/sq meter		DENSITY kg/cu meter		TEMPERATURE degrees Kelvin	PRESSURE deviation (%)	DENSITY deviation (%)
28000.00	.1306555	04	.2190000	01-	207.80	19.15-	12.66-
29000.00	.1111905	04	.1850000	01-	209.20	20.03-	13.86-
30000.00	.9452529	03	.1570000	01-	209.80	21.03-	14.72-
31000.00	.8052648	03	.1340000	01-	209.20	21.91-	15.14-
32000.00	.6852750	03	.1130000	01-	211.10	22.92-	16.63-
33000.00	.5839503	03	.9499999	02-	214.30	23.89-	17.91-
34000.00	.4999574	03	.7939999	02-	219.40	24.64-	19.69-
35000.00	.4292967	03	.6729999	02-	222.10	25.28-	20.48-
36000.00	.3693019	03	.5759999	02-	222.89	25.92-	20.63-
37000.00	.3173063	03	.4929999	02-	223.90	26.76-	20.93-
38000.00	.2719768	03	.4229999	02-	224.40	27.88-	21.17-
39000.00	.2346467	03	.3610000	02-	226.40	28.64-	21.97-
40000.00	.2026494	03	.3080000	02-	228.70	29.42-	22.91-
41000.00	.1746518	03	.2630000	02-	231.30	30.45-	23.90-
42000.00	.1506538	03	.2240000	02-	235.00	31.51-	25.20-
43000.00	.1310555	03	.1910000	02-	239.00	32.07-	26.50-
44000.00	.1139903	03	.1620000	02-	245.00	32.74-	28.28-
45000.00	.9945820	02	.1370000	02-	253.00	33.29-	30.32-
46000.00	.8732590	02	.1150000	02-	264.50	33.51-	32.91-
47000.00	.7706010	02	.9889999	03-	271.40	33.48-	33.91-
48000.00	.6812753	02	.8739998	03-	271.30	33.40-	33.62-
49000.00	.5999489	02	.7899999	03-	264.70	33.58-	32.06-
50000.00	.5279550	02	.7199999	03-	255.20	33.82-	29.88-
51000.00	.4612940	02	.6459999	03-	248.90	34.53-	28.76-
52000.00	.4026323	02	.5719999	03-	245.30	35.29-	28.58-
53000.00	.3506368	02	.4979999	03-	245.60	36.19-	29.88-
54000.00	.3053073	02	.4420000	03-	241.10	37.03-	29.99-
55000.00	.2653107	02	.3989999	03-	231.60	37.94-	28.84-
56000.00	.2293138	02	.3500000	03-	228.20	39.10-	29.66-
57000.00	.1973165	02	.3020000	03-	228.20	40.46-	31.55-
58000.00	.1706521	02	.2590000	03-	229.80	41.43-	33.73-
59000.00	.1479874	02	.2240000	03-	229.70	42.17-	35.24-
60000.00	.1275891	02	.1950000	03-	227.90	43.19-	36.25-
61000.00	.1102573	02	.1660000	03-	231.30	44.00-	38.58-
62000.00	.9545853	01	.1420000	03-	234.10	44.64-	40.66-
63000.00	.8279294	01	.1230000	03-	234.39	45.08-	42.12-
64000.00	.7172723	01	.1080000	03-	231.19	45.45-	42.66-
65000.00	.6199472	01	.9460000	04-	228.20	45.83-	43.23-
66000.00	.5346211	01	.8249999	04-	225.80	46.21-	43.92-
67000.00	.4612940	01	.7189999	04-	223.30	46.44-	44.53-
68000.00	.3972995	01	.6189999	04-	223.30	46.63-	45.69-
69000.00	.3413043	01	.5319999	04-	223.69	46.82-	46.80-
70000.00	.2946416	01	.4599999	04-	222.80	46.62-	47.44-
71000.00	.2533117	01	.4100000	04-	215.00	46.50-	46.36-
72000.00	.2159816	01	.3510000	04-	214.89	46.67-	47.29-
73000.00	.1853175	01	.2919999	04-	221.70	46.35-	49.53-
74000.00	.1599864	01	.2460000	04-	226.69	45.53-	50.94-
75000.00	.1386549	01	.2090000	04-	230.60	44.32-	51.78-
76000.00	.1198565	01	.1790000	04-	233.20	43.04-	52.08-
77000.00	.1039911	01	.1540000	04-	235.10	41.33-	52.02-
78000.00	.9012565	00	.1350000	04-	232.60	39.42-	50.90-
79000.00	.7786003	00	.1210000	04-	224.30	37.42-	48.48-
80000.00	.6692763	00	.1080000	04-	215.69	35.43-	45.97-
81000.00	.5759509	00	.8779999	05-	228.20	33.18-	47.17-
82000.00	.4986242	00	.7349999	05-	236.20	30.44-	46.81-
83000.00	.4346296	00	.6159999	05-	245.40	27.10-	46.43-
84000.00	.3786344	00	.5369999	05-	245.89	23.65-	43.84-
85000.00	.3306385	00	.4819999	05-	238.90	19.84-	39.40-
86000.00	.2866422	00	.4349999	05-	229.70	16.46-	34.26-
87000.00	.2479789	00	.3839999	05-	224.70	13.12-	30.23-
88000.00	.2133152	00	.3460000	05-	214.30	10.16-	24.43-
89000.00	.1813179	00	.3110000	05-	203.30	8.22-	18.37-
90000.00	.1546535	00	.2640000	05-	203.30	5.91-	16.72-
91000.00	.1311888	00	.2180000	05-	209.70	4.22-	16.08-
92000.00	.1119905	00	.1880000	05-	207.50	2.18-	12.02-
93000.00	.9545853	01-	.1590000	05-	209.20	.54-	9.81-
94000.00	.8145973	01-	.1340000	05-	211.90	.96	8.15-
95000.00	.6972739	01-	.1130000	05-	215.10	2.52	6.68-
96000.00	.5972824	01-	.9679999	06-	215.10	3.90	3.96-
97000.00	.5119564	01-	.8390000	06-	212.60	5.10	.29-
98000.00	.4372961	01-	.7409999	06-	205.50	5.68	5.19
99000.00	.3706351	01-	.6479999	06-	199.50	5.19	9.62
100000.00	.3146399	01-	.5469999	06-	200.10	4.61	9.97
101000.00	.2666439	01-	.4539999	06-	204.50	3.55	9.16
102000.00	.2266473	01-	.3839999	06-	205.70	2.44	9.93
103000.00	.1933169	01-	.3330000	06-	201.70	1.35	13.07
104000.00	.1626528	01-	.2939999	06-	193.10	1.42-	17.97
105000.00	.1373216	01-	.2510000	06-	190.30	4.09-	18.56
106000.00	.1151902	01-	.2120000	06-	189.20	7.56-	17.51
107000.00	.9692507	02-	.1730000	06-	195.10	10.90-	12.12
108000.00	.8225966	02-	.1340000	06-	214.00	13.61-	1.28
109000.00	.7146057	02-	.9549999	07-	260.80	14.49-	16.15-
110000.00	.6359458	02-	.7349999	07-	301.50	13.52-	25.22-
111000.00	.5719512	02-	.6169999	07-	323.10	11.94-	26.19-
112000.00	.5186224	02-	.5269999	07-	342.60	9.99-	26.32-
113000.00	.4719597	02-	.4599999	07-	357.20	8.06-	25.23-
114000.00	.4306299	02-	.4089999	07-	366.69	6.22-	23.00-
115000.00	.3946330	02-	.3629999	07-	378.19	4.27-	21.48-
116000.00	.3613025	02-	.3229999	07-	390.10	2.71-	19.95-
117000.00	.3333049	02-	.2900000	07-	399.70	.69-	17.98-
118000.00	.3066405	02-	.2590000	07-	412.69	.78	16.77-
119000.00	.2839758	02-	.2310000	07-	427.89	2.65	15.93-
120000.00	.2626443	02-	.2090000	07-	438.30	4.15	14.20-

FIGURE 7
POINT BARROW, FEB. 1, 1967 0741 GMT.

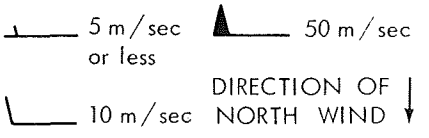
WIND DIRECTION degrees	WIND SPEED m/sec	ERROR m/sec (±)	TEMPERATURE degrees Kelvin	ERROR degrees Kelvin (±)	HEIGHT meters
310.39	78.21	1.34	224.69	.61	33648.25
318.62	91.93	2.06	224.68	1.17	39426.00
318.17	64.81	4.04	237.47	2.25	43768.94
300.05	77.38	5.14	231.64	2.26	47380.69
311.51	76.77	3.65	224.00	1.42	50914.14
331.03	48.67	8.17	232.96	3.30	54346.44
312.97	64.96	12.22	246.54	4.59	57672.14
319.98	49.41	12.71	240.39	5.06	60920.49
41.13	53.08	9.19	234.80	3.83	64590.94
219.07	28.31	12.27	219.70	4.52	68644.79
15.02	50.65	19.94	228.41	7.34	72540.84
92.10	58.39	21.71	215.00	9.37	76311.59
211.09	17.30	31.39	220.97	9.83	79927.84
160.07	64.52	45.75	201.74	12.86	82944.09
310.72	95.60	51.80	254.90	22.86	85427.59
50.65	91.77	43.27	207.11	14.51	87834.74
316.38	18.59	51.42	212.78	21.12	90156.59



WIND COMPONENTS
m/sec

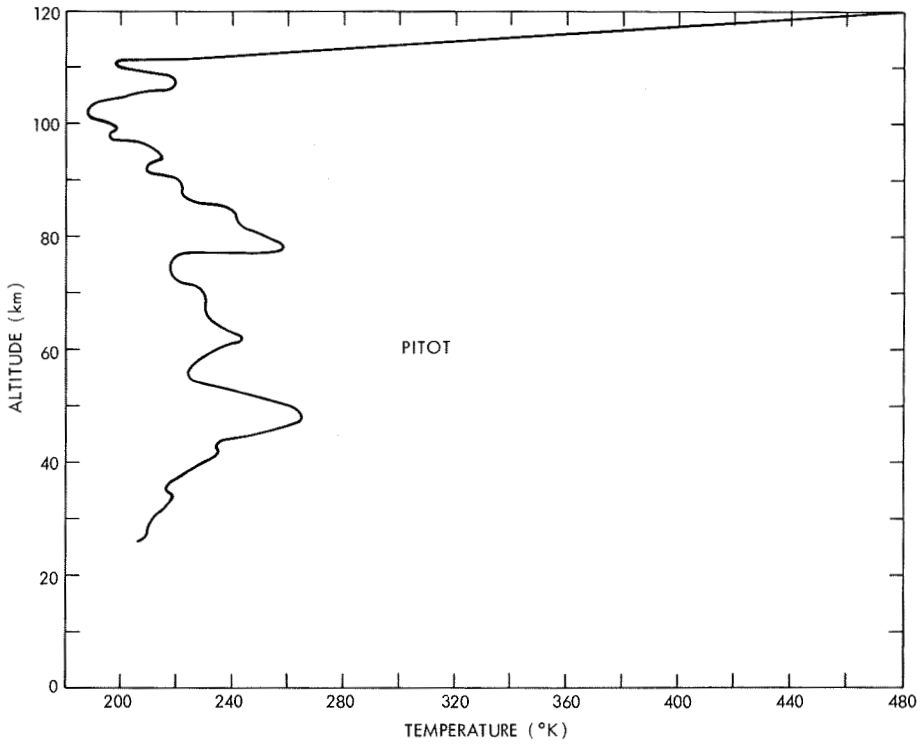
HEIGHT meters	SOUTH component (+)	WEST component (+)
35000.00	-54.96	59.85
40000.00	-66.24	58.45
45000.00	-45.04	51.32
50000.00	-47.74	59.94
55000.00	-42.91	28.28
60000.00	-39.66	36.23
65000.00	-33.72	-29.59
70000.00	-2.68	7.07
75000.00	-15.62	-42.62
80000.00	15.91	8.19
85000.00	-41.18	56.19
90000.00	-16.47	7.17

LEGEND



HEIGHT meters	PRESSURE nt/sq meter		DENSITY kg/cu meter		TEMPERATURE degrees Kelvin	PRESSURE deviation (%)	DENSITY deviation (%)
32000.00	.7938803	03	.1223792	01-	225.99	10.70-	9.71-
33000.00	.6831505	03	.1056811	01-	225.20	10.96-	8.68-
34000.00	.5876355	03	.9111369	02-	224.68	11.42-	7.84-
35000.00	.5053453	03	.7835510	02-	224.68	12.05-	7.41-
36000.00	.4345278	03	.6737517	02-	224.68	12.83-	7.17-
37000.00	.3736520	03	.5793660	02-	224.68	13.75-	7.08-
38000.00	.3213726	03	.4983080	02-	224.68	14.78-	7.14-
39000.00	.2763754	03	.4285404	02-	224.68	15.94-	7.37-
40000.00	.2378929	03	.3661170	02-	226.37	17.15-	8.37-
41000.00	.2050903	03	.3115803	02-	229.31	18.33-	9.85-
42000.00	.1771539	03	.2657258	02-	232.26	19.46-	11.27-
43000.00	.1533124	03	.2270848	02-	235.20	20.54-	12.62-
44000.00	.1328822	03	.1952535	02-	237.09	21.60-	13.56-
45000.00	.1151891	03	.1704160	02-	235.48	22.74-	13.33-
46000.00	.9975826	02	.1486055	02-	233.86	24.04-	13.30-
47000.00	.8631236	02	.1294694	02-	232.25	25.49-	13.48-
48000.00	.7459882	02	.1128481	02-	230.30	27.07-	14.29-
49000.00	.6439349	02	.9833342	03-	228.13	28.71-	15.43-
50000.00	.5550905	02	.8557730	03-	225.97	30.42-	16.66-
51000.00	.4779091	02	.7425421	03-	224.22	32.17-	18.12-
52000.00	.4115955	02	.6321490	03-	226.83	33.85-	21.07-
53000.00	.3551062	02	.5391847	03-	229.44	35.38-	24.08-
54000.00	.3068958	02	.4607412	03-	232.05	36.71-	27.02-
55000.00	.2657543	02	.3929256	03-	235.62	37.83-	29.92-
56000.00	.2306723	02	.3352461	03-	239.71	38.74-	32.63-
57000.00	.2007094	02	.2868141	03-	243.79	39.43-	34.99-
58000.00	.1749548	02	.2478514	03-	245.91	39.95-	36.58-
59000.00	.1525211	02	.2177470	03-	244.02	40.40-	37.05-
60000.00	.1328277	02	.1911144	03-	242.13	40.86-	37.52-
61000.00	.1155576	02	.1675557	03-	240.26	41.31-	38.00-
62000.00	.1004384	02	.1465623	03-	238.74	41.76-	38.75-
63000.00	.8722290	01	.1280949	03-	237.22	42.14-	39.72-
64000.00	.7568078	01	.1118624	03-	235.70	42.45-	40.61-
65000.00	.6559049	01	.9795542	04-	233.27	42.69-	41.22-
66000.00	.5674001	01	.8611278	04-	229.55	42.92-	41.47-
67000.00	.4896976	01	.7554594	04-	225.82	43.14-	41.72-
68000.00	.4216217	01	.6613467	04-	222.10	43.36-	41.98-
69000.00	.3623732	01	.5725551	04-	220.49	43.54-	42.74-
70000.00	.3115322	01	.4872850	04-	222.73	43.56-	44.33-
71000.00	.2682413	01	.4154018	04-	224.96	43.35-	45.65-
72000.00	.2313188	01	.3546983	04-	227.20	42.88-	46.73-
73000.00	.1996053	01	.3066416	04-	226.77	42.21-	47.00-
74000.00	.1720229	01	.2684788	04-	223.22	41.44-	46.46-
75000.00	.1479053	01	.2345752	04-	219.66	40.61-	45.88-
76000.00	.1268618	01	.2045117	04-	216.10	39.71-	45.25-
77000.00	.1086832	01	.1751833	04-	216.13	38.68-	45.42-
78000.00	.9316841	00	.1490370	04-	217.78	37.37-	45.80-
79000.00	.7996509	00	.1269540	04-	219.43	35.73-	45.95-
80000.00	.6870112	00	.1085410	04-	220.51	33.72-	45.70-
81000.00	.5891667	00	.9585392	05-	214.13	31.65-	42.32-
82000.00	.5029408	00	.8433645	05-	207.75	29.84-	38.97-
83000.00	.4275096	00	.7339105	05-	202.93	28.30-	36.18-
84000.00	.3656631	00	.5678433	05-	224.34	26.26-	40.62-
85000.00	.3172670	00	.4497738	05-	245.74	23.08-	43.46-
86000.00	.2768509	00	.3960422	05-	243.53	19.31-	40.14-
87000.00	.2400239	00	.3738361	05-	223.68	15.91-	32.08-
88000.00	.2056431	00	.3452438	05-	207.51	13.39-	24.60-
89000.00	.1753152	00	.2909044	05-	209.95	11.26-	23.64-
90000.00	.1497433	00	.2456156	05-	212.39	8.90-	22.51-

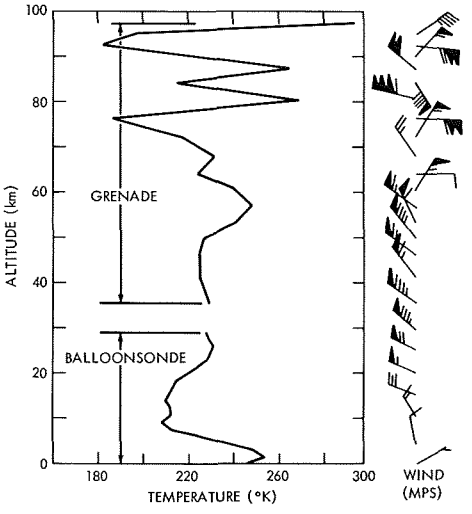
FIGURE 8
CHURCHILL, FEB, 1 1967 0826 GMT.



HEIGHT meters	PRESSURE nt/sq meter		DENSITY kg/cu meter		TEMPERATURE degrees Kelvin	PRESSURE deviation (%)	DENSITY deviation (%)
26000.00	.1773182	04	.2999999	01-	206.40	18.97-	12.42-
27000.00	.1506538	04	.2520000	01-	208.60	19.86-	13.98-
28000.00	.1282557	04	.2130000	01-	209.80	20.64-	15.05-
29000.00	.1091907	04	.1800000	01-	211.30	21.46-	16.19-
30000.00	.9305875	03	.1530000	01-	211.90	22.25-	16.89-
31000.00	.7932658	03	.1290000	01-	214.30	23.07-	18.31-
32000.00	.6786089	03	.1090000	01-	216.70	23.67-	19.58-
33000.00	.5799506	03	.9259999	02-	218.30	24.41-	19.98-
34000.00	.4972910	03	.7909999	02-	218.89	25.04-	20.00-
35000.00	.4252971	03	.6819999	02-	217.40	25.98-	19.41-
36000.00	.3639690	03	.5829999	02-	217.80	26.99-	19.67-
37000.00	.3119734	03	.4939999	02-	220.20	27.99-	20.77-
38000.00	.2679772	03	.4189999	02-	222.89	28.94-	21.92-
39000.00	.2306470	03	.3540000	02-	227.00	29.85-	23.48-
40000.00	.1986497	03	.3020000	02-	229.40	30.81-	24.42-
41000.00	.1719853	03	.2560000	02-	234.00	31.51-	25.93-
42000.00	.1493206	03	.2200000	02-	235.90	32.11-	26.53-
43000.00	.1291890	03	.1910000	02-	235.50	33.04-	26.50-
44000.00	.1121238	03	.1620000	02-	241.00	33.84-	28.28-
45000.00	.9772502	02	.1360000	02-	250.30	34.45-	30.83-
46000.00	.8559271	02	.1150000	02-	259.40	34.83-	32.91-
47000.00	.7532692	02	.9959998	03-	263.30	34.98-	33.44-
48000.00	.6626102	02	.8719998	03-	264.70	35.22-	33.77-
49000.00	.5839503	02	.7719999	03-	263.20	35.35-	33.60-
50000.00	.5132896	02	.6889999	03-	259.30	35.66-	32.90-
51000.00	.4492951	02	.6219999	03-	251.90	36.23-	31.41-
52000.00	.3932998	02	.5589999	03-	244.80	36.79-	30.21-
53000.00	.3413042	02	.5019999	03-	237.10	37.89-	29.32-
54000.00	.2959748	02	.4480000	03-	230.00	38.96-	29.04-
55000.00	.2546450	02	.3960000	03-	224.40	40.43-	29.38-
56000.00	.2199813	02	.3400000	03-	225.00	41.58-	31.67-
57000.00	.1893172	02	.2909999	03-	226.50	42.87-	34.04-
58000.00	.1639860	02	.2480000	03-	229.30	43.72-	36.55-
59000.00	.1413213	02	.2120000	03-	232.00	44.78-	38.71-
60000.00	.1222562	02	.1810000	03-	235.40	45.56-	40.83-
61000.00	.1062576	02	.1530000	03-	241.90	46.03-	43.39-
62000.00	.9252545	01	.1320000	03-	244.20	46.34-	44.84-
63000.00	.8065979	01	.1170000	03-	240.10	46.49-	44.94-
64000.00	.7012736	01	.1030000	03-	237.00	46.67-	45.32-
65000.00	.6079482	01	.9080000	04-	233.10	46.88-	45.51-
66000.00	.5252886	01	.7919999	04-	231.30	47.15-	46.17-
67000.00	.4546279	01	.6849999	04-	231.40	47.21-	47.16-
68000.00	.3932998	01	.5929999	04-	231.30	47.17-	47.97-
69000.00	.3413043	01	.5129999	04-	231.30	46.82-	48.70-
70000.00	.2946416	01	.4459999	04-	230.20	46.62-	49.04-
71000.00	.2546450	01	.3910000	04-	226.80	46.22-	48.85-
72000.00	.2199813	01	.3420000	04-	223.50	45.68-	48.64-
73000.00	.1893172	01	.2990000	04-	219.90	45.19-	48.33-
74000.00	.1626528	01	.2580000	04-	218.80	44.63-	48.55-
75000.00	.1386549	01	.2210000	04-	219.30	44.32-	49.02-
76000.00	.1195898	01	.1890000	04-	220.40	43.17-	49.41-
77000.00	.1033245	01	.1490000	04-	241.40	41.70-	53.58-
78000.00	.9052562	00	.1220000	04-	258.30	39.15-	55.63-
79000.00	.7945989	00	.1090000	04-	253.89	36.13-	53.59-
80000.00	.6959407	00	.9649999	05-	251.20	32.86-	51.72-
81000.00	.6092814	00	.8569999	05-	247.50	29.32-	48.43-
82000.00	.5319546	00	.7579999	05-	244.40	25.79-	45.15-
83000.00	.4639605	00	.6669999	05-	242.10	22.18-	42.00-
84000.00	.4039656	00	.5859999	05-	240.00	18.54-	38.72-
85000.00	.3519700	00	.5129999	05-	238.50	14.67-	35.51-
86000.00	.3053073	00	.4619999	05-	229.80	11.02-	30.18-
87000.00	.2626443	00	.4099999	05-	223.60	7.98-	25.50-
88000.00	.2266473	00	.3549999	05-	222.40	4.55-	22.47-
89000.00	.1946501	00	.3060000	05-	222.10	1.47-	19.68-
90000.00	.1679857	00	.2659999	05-	219.90	2.19	16.08-
91000.00	.1439877	00	.2330000	05-	215.60	5.11	10.31-
92000.00	.1233228	00	.2050000	05-	209.50	7.71	4.07-
93000.00	.1053244	00	.1730000	05-	212.10	9.73	1.87-
94000.00	.9025897	01-	.1460000	05-	215.30	11.86	.06
95000.00	.7732675	01-	.1260000	05-	213.70	13.69	4.04
96000.00	.6612770	01-	.1090000	05-	211.39	15.03	8.13
97000.00	.5639519	01-	.9589999	06-	204.90	15.78	13.96
98000.00	.4772927	01-	.8479999	06-	196.19	15.35	20.38
99000.00	.4039656	01-	.7059999	06-	199.20	14.64	19.43
100000.00	.3413043	01-	.6069999	06-	196.10	13.48	22.03
101000.00	.2879754	01-	.5259999	06-	190.70	11.84	26.47
102000.00	.2413128	01-	.4469999	06-	188.40	9.07	27.97
103000.00	.2026494	01-	.3729999	06-	189.40	6.24	26.65
104000.00	.1706521	01-	.3059999	06-	194.10	3.42	22.79
105000.00	.1439877	01-	.2469999	06-	203.60	.56	16.67
106000.00	.1231895	01-	.2020000	06-	212.50	1.14-	11.97
107000.00	.1057243	01-	.1680000	06-	219.30	2.81-	8.87
108000.00	.9092558	02-	.1450000	06-	218.50	4.51-	9.59
109000.00	.7799335	02-	.1280000	06-	212.30	6.68-	12.38
110000.00	.6652766	02-	.1150000	06-	201.50	9.54-	17.00
111000.00	.5639519	02-	.9899999	07-	198.30	13.17-	18.42
112000.00	.4826255	02-	.7349999	07-	228.50	16.24-	2.75
113000.00	.4212974	02-	.5519998	07-	266.19	17.93-	10.28-
114000.00	.3746348	02-	.4369999	07-	299.10	18.41-	17.87-
115000.00	.3373046	02-	.3559999	07-	330.50	18.17-	22.99-
116000.00	.3066405	02-	.2970000	07-	360.00	17.43-	26.39-
117000.00	.2813094	02-	.2500000	07-	391.70	16.18-	29.29-
118000.00	.2586446	02-	.2160000	07-	417.90	14.99-	30.59-
119000.00	.2399795	02-	.1870000	07-	447.30	13.24-	31.95-
120000.00	.2239809	02-	.1640000	07-	474.90	11.17-	32.67-

FIGURE 9
POINT BARROW, FEB. 1, 1967 0956 GMT.

WIND DIRECTION degrees	WIND SPEED m/sec	ERROR m/sec (±)	TEMPERATURE degrees Kelvin	ERROR degrees Kelvin (±)	HEIGHT meters
310.72	86.95	1.08	229.31	.63	35462.25
319.58	67.47	3.15	224.57	1.56	41487.49
308.06	65.86	5.79	224.40	2.44	46024.99
317.47	84.31	6.64	227.22	2.73	49816.74
337.64	61.77	8.87	242.07	3.61	53509.99
303.14	62.84	10.29	248.33	4.27	57114.14
34.92	53.29	11.27	240.28	4.50	60631.09
90.95	11.72	13.56	223.67	4.96	64047.99
331.32	24.46	9.80	232.14	4.38	67910.34
29.00	54.84	12.41	216.85	3.99	72190.25
92.09	108.47	23.62	186.96	8.11	76311.14
282.75	160.30	47.66	269.23	16.93	80298.59
153.72	89.20	20.80	215.09	6.97	84136.24
308.72	101.29	20.65	264.28	8.08	87336.14
39.01	55.32	22.17	220.96	7.17	89974.64
96.25	119.39	20.72	182.11	6.63	92541.29
57.39	43.02	23.46	197.96	7.35	95013.04
326.75	304.76	63.90	293.06	26.28	97344.69



WIND COMPONENTS
m/sec

HEIGHT meters	SOUTH component (+)	WEST component (+)
40000.00	-52.68	49.21
45000.00	-43.03	50.02
50000.00	-61.88	55.33
55000.00	-47.71	35.53
60000.00	-42.01	-15.58
65000.00	-5.14	-5.93
70000.00	-34.40	-6.97
75000.00	-12.56	-82.36
80000.00	-32.43	136.52
85000.00	41.28	-7.50
90000.00	-42.43	-35.65
95000.00	-22.99	-36.67

LEGEND

5 m/sec or less

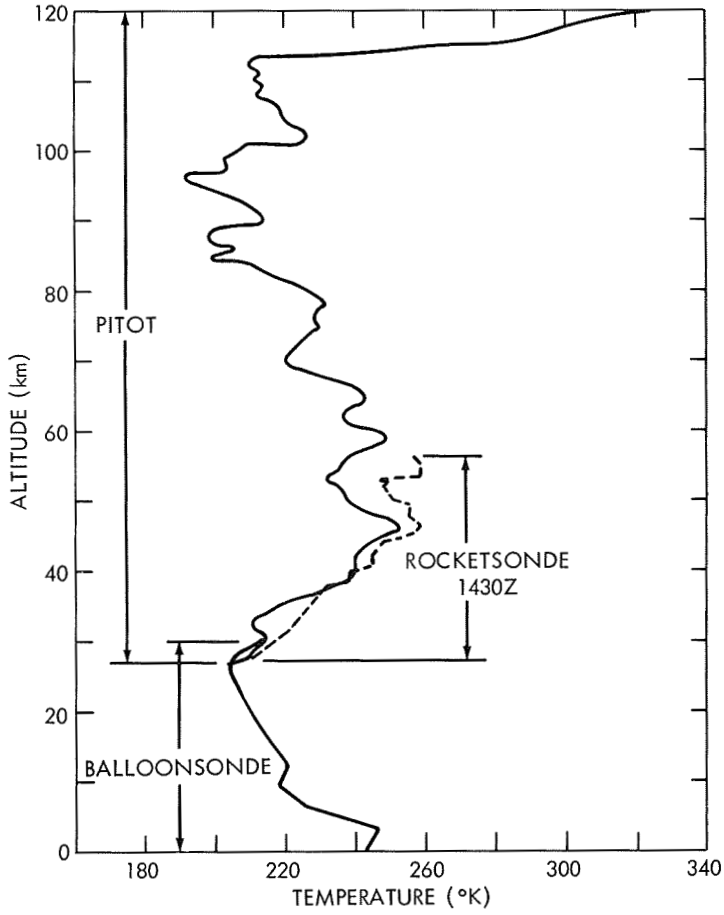
50 m/sec

10 m/sec

DIRECTION OF NORTH WIND

HEIGHT meters	PRESSURE nt/sq meter		DENSITY kg/cu meter		TEMPERATURE degrees Kelvin	PRESSURE deviation (%)	DENSITY deviation (%)
34000.00	.5921321	03	.9004353	02-	229.09	10.74-	8.93-
35000.00	.5107845	03	.7762451	02-	229.24	11.10-	8.28-
36000.00	.4406000	03	.6706278	02-	228.88	11.61-	7.60-
37000.00	.3799370	03	.5802886	02-	228.10	12.30-	6.93-
38000.00	.3274738	03	.5018910	02-	227.31	13.16-	6.47-
39000.00	.2821228	03	.4338869	02-	226.52	14.20-	6.22-
40000.00	.2429378	03	.3749250	02-	225.74	15.39-	6.16-
41000.00	.2090957	03	.3238252	02-	224.95	16.74-	6.31-
42000.00	.1799051	03	.2791175	02-	224.55	18.21-	6.79-
43000.00	.1547705	03	.2401620	02-	224.51	19.78-	7.59-
44000.00	.1331476	03	.2066436	02-	224.47	21.44-	8.52-
45000.00	.1145502	03	.1778102	02-	224.43	23.17-	9.57-
46000.00	.9855226	02	.1530031	02-	224.40	24.96-	10.73-
47000.00	.8481459	02	.1312517	02-	225.12	26.79-	12.29-
48000.00	.7303097	02	.1126442	02-	225.86	28.60-	14.45-
49000.00	.6291836	02	.9672785	03-	226.61	30.35-	16.81-
50000.00	.5424558	02	.8290293	03-	227.95	32.00-	19.26-
51000.00	.4685122	02	.7036113	03-	231.97	33.50-	22.41-
52000.00	.4056865	02	.5988794	03-	235.99	34.80-	25.23-
53000.00	.3521566	02	.5111491	03-	240.01	35.91-	28.03-
54000.00	.3063244	02	.4393135	03-	242.92	36.83-	30.41-
55000.00	.2668227	02	.3799458	03-	244.65	37.58-	32.24-
56000.00	.2326518	02	.3289523	03-	246.39	38.21-	33.89-
57000.00	.2030610	02	.2851034	03-	248.13	38.72-	35.38-
58000.00	.1772366	02	.2506935	03-	246.30	39.17-	35.86-
59000.00	.1545264	02	.2206212	03-	244.01	39.62-	36.22-
60000.00	.1345579	02	.1939308	03-	241.72	40.09-	36.60-
61000.00	.1169884	02	.1708980	03-	238.48	40.59-	36.77-
62000.00	.1014733	02	.1513177	03-	233.62	41.16-	36.76-
63000.00	.8775688	01	.1336445	03-	228.76	41.78-	37.11-
64000.00	.7566166	01	.1177263	03-	223.90	42.46-	37.50-
65000.00	.6517221	01	.1005722	03-	225.75	43.06-	39.65-
66000.00	.5621431	01	.8591404	04-	227.95	43.45-	41.60-
67000.00	.4855856	01	.7350636	04-	230.14	43.62-	43.30-
68000.00	.4199882	01	.6311680	04-	231.82	43.58-	44.62-
69000.00	.3630504	01	.5541403	04-	228.24	43.44-	44.58-
70000.00	.3131256	01	.4855374	04-	224.67	43.28-	44.53-
71000.00	.2694390	01	.4245470	04-	221.10	43.09-	44.46-
72000.00	.2312917	01	.3704246	04-	217.52	42.89-	44.37-
73000.00	.1978383	01	.3266887	04-	210.97	42.72-	43.54-
74000.00	.1683533	01	.2878982	04-	203.72	42.68-	42.59-
75000.00	.1424342	01	.2525667	04-	196.47	42.80-	41.73-
76000.00	.1197564	01	.2204943	04-	189.21	43.09-	40.98-
77000.00	.1009018	01	.1747382	04-	201.17	43.07-	45.56-
78000.00	.8614296	00	.1353027	04-	221.80	42.09-	50.79-
79000.00	.7458868	00	.1071844	04-	242.43	40.05-	54.37-
80000.00	.6535149	00	.8654524	05-	263.07	36.95-	56.70-
81000.00	.5750984	00	.7725734	05-	259.33	33.28-	53.51-
82000.00	.5038133	00	.7157468	05-	245.22	29.72-	48.20-
83000.00	.4379352	00	.6601330	05-	231.11	26.55-	42.59-
84000.00	.3773426	00	.6057737	05-	217.01	23.91-	36.65-
85000.00	.3248552	00	.4955787	05-	228.36	21.24-	37.70-
86000.00	.2820571	00	.4031508	05-	243.74	17.79-	39.07-
87000.00	.2470333	00	.3321428	05-	259.11	13.45-	39.65-
88000.00	.2169151	00	.2982463	05-	253.38	8.65-	34.86-
89000.00	.1893529	00	.2783887	05-	236.96	4.15-	26.93-
90000.00	.1636963	00	.2585465	05-	220.57	.41-	18.44-
91000.00	.1400065	00	.2374228	05-	205.44	2.21	8.61-
92000.00	.1183266	00	.2166179	05-	190.30	3.35	1.36
93000.00	.9910684	01-	.1865818	05-	185.05	3.26	5.83
94000.00	.8305844	01-	.1511315	05-	191.46	2.94	3.58
95000.00	.7001877	01-	.1232760	05-	197.87	2.95	1.79
96000.00	.6009428	01-	.8788659	06-	238.21	4.54	12.81-
97000.00	.5283537	01-	.6597458	06-	279.00	8.47	21.59-

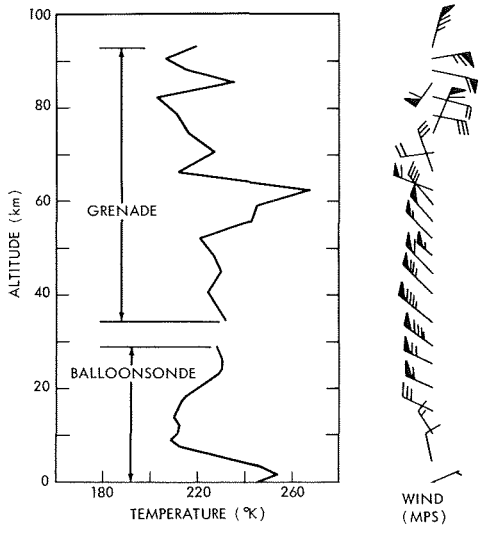
FIGURE 10
CHURCHILL, FEB. 1, 1967 1158 GMT.



HEIGHT meters	PRESSURE nt/sq meter		DENSITY kg/cu meter		TEMPERATURE degrees Kelvin	PRESSURE deviation (%)	DENSITY deviation (%)
27000.00	.1519870	04	.2590000	01-	203.90	19.15-	11.59-
28000.00	.1287890	04	.2140000	01-	209.50	20.31-	14.65-
29000.00	.1095906	04	.1800000	01-	212.19	21.18-	16.19-
30000.00	.9345871	03	.1520000	01-	214.30	21.92-	17.43-
31000.00	.7985987	03	.1300000	01-	213.90	22.56-	17.68-
32000.00	.6812753	03	.1120000	01-	211.69	23.37-	17.37-
33000.00	.5799506	03	.9519999	02-	212.40	24.41-	17.73-
34000.00	.4959577	03	.8039999	02-	214.70	25.24-	18.68-
35000.00	.4239639	03	.6779999	02-	217.70	26.21-	19.89-
36000.00	.3639690	03	.5699999	02-	222.10	26.99-	21.46-
37000.00	.3133066	03	.4759999	02-	229.00	27.68-	23.66-
38000.00	.2706436	03	.4019999	02-	234.39	28.23-	25.09-
39000.00	.2346467	03	.3430000	02-	238.00	28.64-	25.86-
40000.00	.2039826	03	.2960000	02-	239.50	28.96-	25.92-
41000.00	.1773182	03	.2570000	02-	239.60	29.39-	25.64-
42000.00	.1533203	03	.2230000	02-	239.90	30.29-	25.53-
43000.00	.1333220	03	.1920000	02-	242.19	30.90-	26.12-
44000.00	.1162568	03	.1650000	02-	245.40	31.41-	26.95-
45000.00	.1014580	03	.1420000	02-	248.80	31.95-	27.78-
46000.00	.8865912	02	.1220000	02-	253.20	32.49-	28.82-
47000.00	.7759339	02	.1080000	02-	250.30	33.02-	27.83-
48000.00	.6772756	02	.9549999	03-	247.20	33.79-	27.47-
49000.00	.5906164	02	.8499998	03-	242.10	34.62-	26.90-
50000.00	.5132896	02	.7499998	03-	238.50	35.66-	26.96-
51000.00	.4452954	02	.6549999	03-	237.10	36.80-	27.77-
52000.00	.3866337	02	.5719999	03-	235.50	37.86-	28.58-
53000.00	.3346382	02	.4999999	03-	233.40	39.10-	29.60-
54000.00	.2893087	02	.4309999	03-	234.69	40.33-	31.73-
55000.00	.2519785	02	.3710000	03-	236.10	41.06-	33.83-
56000.00	.2186480	02	.3200000	03-	237.50	41.93-	35.69-
57000.00	.1893172	02	.2740000	03-	241.10	42.87-	32.56
58000.00	.1653192	02	.2330000	03-	247.10	43.26-	40.38-
59000.00	.1439877	02	.2020000	03-	248.90	43.74-	41.60-
60000.00	.1259893	02	.1800000	03-	243.90	43.90-	41.16-
61000.00	.1097240	02	.1600000	03-	238.80	44.28-	40.80-
62000.00	.9519188	01	.1400000	03-	237.00	44.80-	41.49-
63000.00	.8265962	01	.1210000	03-	238.00	45.17-	43.06-
64000.00	.7186055	01	.1030000	03-	243.19	45.35-	45.32-
65000.00	.6266133	01	.8969999	04-	243.30	45.25-	46.17-
66000.00	.5452869	01	.7899999	04-	240.60	45.14-	46.30-
67000.00	.4732930	01	.7019999	04-	235.19	45.04-	45.85-
68000.00	.4106317	01	.6239999	04-	229.10	44.84-	45.25-
69000.00	.3546365	01	.5499999	04-	224.20	44.75-	45.00-
70000.00	.3053073	01	.4800000	04-	221.10	44.69-	45.16-
71000.00	.2613111	01	.4110000	04-	222.00	44.81-	46.23-
72000.00	.2253141	01	.3510000	04-	223.80	44.36-	47.29-
73000.00	.1946501	01	.3000000	04-	225.80	43.65-	48.15-
74000.00	.1679857	01	.2560000	04-	228.40	42.81-	48.95-
75000.00	.1453209	01	.2200000	04-	229.80	41.64-	49.25-
76000.00	.1254560	01	.1910000	04-	228.90	40.38-	48.87-
77000.00	.1085241	01	.1640000	04-	230.50	38.77-	48.91-
78000.00	.9399198	00	.1410000	04-	232.10	36.82-	48.72-
79000.00	.8132640	00	.1230000	04-	230.30	34.63-	47.63-
80000.00	.7026068	00	.1080000	04-	226.69	32.22-	45.97-
81000.00	.6066150	00	.9449999	05-	223.60	29.63-	43.14-
82000.00	.5212889	00	.8329999	05-	218.20	27.28-	39.72-
83000.00	.4466286	00	.7259999	05-	214.50	25.09-	36.87-
84000.00	.3826341	00	.6349999	05-	209.60	22.84-	33.59-
85000.00	.3253056	00	.5629999	05-	201.30	21.13-	29.22-
86000.00	.2759765	00	.4669999	05-	206.00	19.57-	29.42-
87000.00	.2346467	00	.4079999	05-	200.19	17.79-	25.87-
88000.00	.1986497	00	.3470000	05-	199.39	16.34-	24.21-
89000.00	.1679857	00	.2870000	05-	204.30	14.97-	24.67-
90000.00	.1439877	00	.2340000	05-	213.90	12.40-	26.18-
91000.00	.1230562	00	.2010000	05-	213.30	10.16-	22.63-
92000.00	.1051910	00	.1740000	05-	210.70	8.12-	18.57-
93000.00	.8972569	01-	.1520000	05-	205.60	6.51-	13.78-
94000.00	.7612685	01-	.1320000	05-	201.00	5.64-	9.52-
95000.00	.6452783	01-	.1140000	05-	197.00	5.12-	5.86-
96000.00	.5439537	01-	.9819999	06-	192.90	5.37-	2.57-
97000.00	.4586276	01-	.7869999	06-	203.10	5.84-	6.47-
98000.00	.3906334	01-	.6649999	06-	204.50	5.59-	5.59-
99000.00	.3319717	01-	.5689999	06-	203.10	5.78-	3.73-
100000.00	.2826426	01-	.4749999	06-	206.90	6.02-	4.50-
101000.00	.2399795	01-	.4010000	06-	209.00	6.79-	3.58-
102000.00	.2066490	01-	.3180000	06-	226.10	6.59-	8.96-
103000.00	.1786514	01-	.2759999	06-	225.10	6.33-	6.28-
104000.00	.1533203	01-	.2409999	06-	222.40	7.07-	3.29-
105000.00	.1325220	01-	.2100000	06-	219.80	7.44-	.80-
106000.00	.1139903	01-	.1810000	06-	219.30	8.52-	.33
107000.00	.9785833	02-	.1580000	06-	215.80	10.04-	2.39
108000.00	.8399284	02-	.1370000	06-	213.40	11.79-	3.55
109000.00	.7186054	02-	.1170000	06-	214.10	14.02-	2.72
110000.00	.6159475	02-	.1010000	06-	212.50	16.24-	2.75
111000.00	.5279550	02-	.8619999	07-	213.30	18.71-	3.11
112000.00	.4519615	02-	.7479999	07-	210.40	21.56-	4.57
113000.00	.3866337	02-	.6339999	07-	212.19	24.68-	3.03
114000.00	.3319717	02-	.4999998	07-	231.60	27.70-	6.03-
115000.00	.2906419	02-	.3799999	07-	266.90	29.49-	17.80-
116000.00	.2586446	02-	.3119999	07-	288.69	30.35-	22.67-
117000.00	.2306470	02-	.2700000	07-	298.20	31.28-	23.64-
118000.00	.2066491	02-	.2380000	07-	303.10	32.08-	23.52-
119000.00	.1853175	02-	.2080000	07-	311.60	33.00-	24.30-
120000.00	.1679857	02-	.1800000	07-	324.70	33.38-	26.10-

FIGURE 11
POINT BARROW , FEB. 1, 1967 1426 GMT.

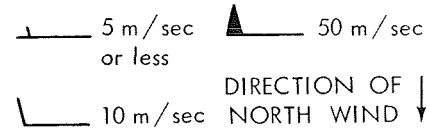
WIND DIRECTION degrees	WIND SPEED m/sec	ERROR m/sec (±)	TEMPERATURE degrees Kelvin	ERROR degrees Kelvin (±)	HEIGHT meters
310.66	82.51	1.87	231.56	.84	34493.45
315.33	72.23	3.41	224.30	1.61	40433.45
317.84	60.47	5.68	230.43	2.22	44894.19
311.97	56.82	6.78	226.91	4.95	48615.20
318.70	54.12	10.75	221.42	4.43	52242.85
323.58	52.36	12.66	243.15	5.52	55783.85
325.37	38.39	11.63	245.21	5.55	59234.35
299.04	59.91	16.55	267.71	7.23	62595.79
334.19	32.27	11.24	212.15	4.27	66403.45
256.25	18.56	27.40	227.91	11.81	70602.45
24.86	61.48	34.62	216.48	11.60	74648.34
109.14	60.38	23.32	211.92	8.85	78572.29
112.93	92.52	26.07	203.31	9.10	82335.14
215.33	85.56	23.83	236.33	6.76	85487.39
99.37	61.92	25.21	215.72	8.63	88090.64
80.51	65.19	66.16	206.62	18.00	90606.75
13.80	76.99	36.79	219.12	18.67	93033.59



WIND COMPONENTS
m/sec

HEIGHT meters	SOUTH component (+)	WEST component (+)
35000.00	-53.55	61.58
40000.00	-51.54	51.64
45000.00	-44.63	40.63
50000.00	-39.01	39.75
55000.00	-41.80	32.11
60000.00	-31.01	28.77
65000.00	-29.06	28.17
70000.00	-.39	17.45
75000.00	-49.01	-28.64
80000.00	25.96	-67.72
85000.00	64.58	28.65
90000.00	-5.72	-63.52

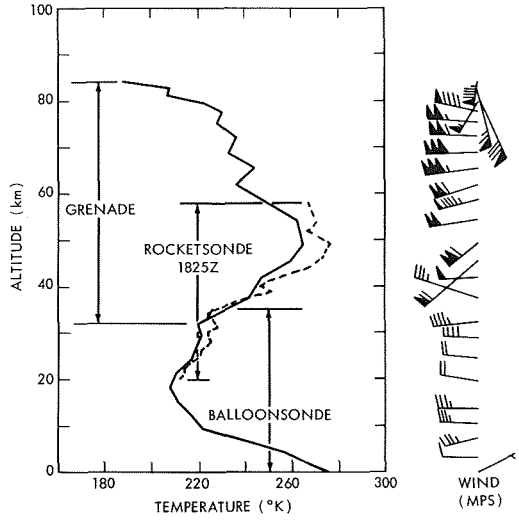
LEGEND



HEIGHT meters	PRESSURE nt/sq meter		DENSITY kg/cu meter		TEMPERATURE degrees Kelvin	PRESSURE deviation (%)	DENSITY deviation (%)
33000.00	.6880631	03	.1039076	01-	230.69	10.32-	10.21-
34000.00	.5941977	03	.8950795	02-	231.27	10.43-	9.47-
35000.00	.5131984	03	.7741812	02-	230.94	10.68-	8.52-
36000.00	.4430428	03	.6719046	02-	229.71	11.13-	7.42-
37000.00	.3821954	03	.5827257	02-	228.49	11.78-	6.54-
38000.00	.3294586	03	.5050204	02-	227.27	12.64-	5.89-
39000.00	.2837847	03	.4373598	02-	226.05	13.69-	5.47-
40000.00	.2442566	03	.3784868	02-	224.82	14.93-	5.27-
41000.00	.2101771	03	.3253191	02-	225.07	16.30-	5.87-
42000.00	.1809577	03	.2783926	02-	226.45	17.73-	7.04-
43000.00	.1559489	03	.2384709	02-	227.82	19.17-	8.24-
44000.00	.1345228	03	.2044736	02-	229.20	20.63-	9.48-
45000.00	.1161394	03	.1756659	02-	230.33	22.10-	10.66-
46000.00	.1002783	03	.1523009	02-	229.38	23.65-	11.14-
47000.00	.8653494	02	.1319719	02-	228.43	25.30-	11.81-
48000.00	.7463291	02	.1142938	02-	227.49	27.04-	13.19-
49000.00	.6432655	02	.9901724	03-	226.32	28.79-	14.84-
50000.00	.5539715	02	.8584633	03-	224.81	30.56-	16.40-
51000.00	.4766134	02	.7435908	03-	223.30	32.35-	18.00-
52000.00	.4096581	02	.6434912	03-	221.78	34.16-	19.66-
53000.00	.3524534	02	.5431550	03-	226.06	35.86-	23.53-
54000.00	.3042877	02	.4565355	03-	232.20	37.25-	27.69-
55000.00	.2637249	02	.3854897	03-	238.33	38.31-	31.25-
56000.00	.2293332	02	.3284131	03-	243.27	39.10-	34.00-
57000.00	.1997532	02	.2853533	03-	243.87	39.72-	35.32-
58000.00	.1740547	02	.2480350	03-	244.47	40.26-	36.54-
59000.00	.1517197	02	.2156800	03-	245.07	40.72-	37.65-
60000.00	.1324707	02	.1843557	03-	250.33	41.02-	39.73-
61000.00	.1160387	02	.1572823	03-	257.02	41.07-	41.80-
62000.00	.1019958	02	.1347392	03-	263.72	40.85-	43.69-
63000.00	.8976176	01	.1194429	03-	261.81	40.45-	43.79-
64000.00	.7866908	01	.1108609	03-	247.22	40.17-	41.14-
65000.00	.6839895	01	.1024341	03-	232.62	40.24-	38.53-
66000.00	.5893564	01	.9416860	04-	218.03	40.71-	35.99-
67000.00	.5046864	01	.8201197	04-	214.38	41.40-	36.73-
68000.00	.4322177	01	.6902729	04-	218.14	41.94-	39.44-
69000.00	.3711525	01	.5827227	04-	221.89	42.18-	41.72-
70000.00	.3195450	01	.4933523	04-	225.64	42.11-	43.64-
71000.00	.2755727	01	.4233276	04-	226.78	41.80-	44.62-
72000.00	.2375301	01	.3694902	04-	223.96	41.35-	44.51-
73000.00	.2043630	01	.3219583	04-	221.13	40.84-	44.36-
74000.00	.1754957	01	.2800579	04-	218.31	40.25-	44.15-
75000.00	.1504460	01	.2425726	04-	216.07	39.59-	44.04-
76000.00	.1288213	01	.2088289	04-	214.91	38.78-	44.10-
77000.00	.1102175	01	.1796422	04-	213.74	37.81-	44.03-
78000.00	.9422482	00	.1544155	04-	212.58	36.66-	43.84-
79000.00	.8047299	00	.1329066	04-	210.94	35.32-	43.42-
80000.00	.6863001	00	.1145901	04-	208.65	33.79-	42.67-
81000.00	.5843019	00	.9864146	05-	206.36	32.22-	40.64-
82000.00	.4965960	00	.8477499	05-	204.07	30.73-	38.65-
83000.00	.4227201	00	.7003651	05-	210.27	29.10-	39.09-
84000.00	.3620937	00	.5714514	05-	220.74	26.98-	40.24-
85000.00	.3124110	00	.4707068	05-	231.22	24.26-	40.82-
86000.00	.2705551	00	.4058054	05-	232.27	21.15-	38.67-
87000.00	.2338074	00	.3630627	05-	224.35	18.09-	34.03-
88000.00	.2010034	00	.3235407	05-	216.43	15.35-	29.34-
89000.00	.1720874	00	.2822209	05-	212.43	12.89-	25.92-
90000.00	.1469250	00	.2451283	05-	208.81	10.61-	22.67-
91000.00	.1252681	00	.2091653	05-	208.64	8.55-	19.48-
92000.00	.1070095	00	.1743735	05-	213.79	6.53-	18.40-
93000.00	.9176009	01-	.1460068	05-	218.94	4.39-	17.18-

FIGURE 12
WALLOPS IS., FEB. 3, 1967 1752 GMT.

WIND DIRECTION degrees	WIND SPEED m/sec	ERROR m/sec (±)	TEMPERATURE degrees Kelvin	ERROR degrees Kelvin (±)	HEIGHT meters
259.78	44.03	.85	221.36	.28	32375.29
289.44	35.63	.84	241.85	.60	37906.39
263.34	49.42	1.66	247.37	.86	42080.04
240.23	69.56	2.38	259.72	1.84	45531.04
243.84	109.39	1.52	264.97	.75	49407.39
255.44	100.20	2.18	262.44	.85	54294.99
251.42	94.35	3.59	247.83	1.58	58504.45
245.42	109.20	3.51	236.27	1.02	61959.95
259.40	153.16	4.64	243.92	1.40	65323.94
268.09	150.86	4.04	232.92	1.01	68556.34
271.11	110.59	4.86	236.14	1.48	72103.39
272.27	104.71	9.04	228.29	2.68	75120.34
276.43	87.72	8.08	230.66	2.46	77644.89
218.48	54.17	13.79	221.66	3.96	79657.94
160.69	78.78	15.99	206.57	4.22	81191.44
175.18	64.32	14.87	206.93	3.54	82697.14
182.37	96.16	12.78	187.89	2.79	84153.69



WIND COMPONENTS
m/sec

HEIGHT meters	SOUTH component (+)	WEST component (+)
35000.00	-1.52	38.71
40000.00	-3.03	41.36
45000.00	30.10	58.64
50000.00	45.43	98.03
55000.00	26.00	95.71
60000.00	36.71	93.70
65000.00	29.83	145.61
70000.00	2.11	134.41
75000.00	-4.06	104.86
80000.00	49.53	20.37

LEGEND

5 m/sec or less

50 m/sec

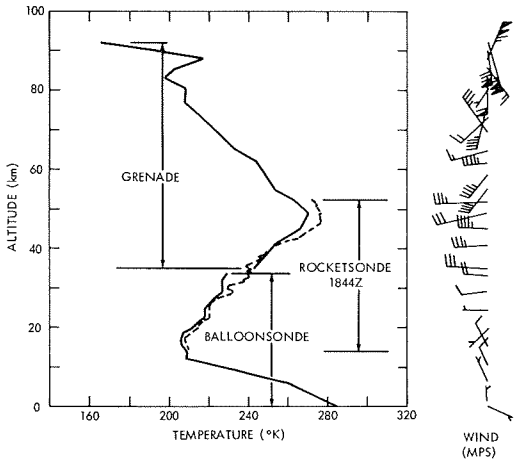
10 m/sec

DIRECTION OF NORTH WIND

HEIGHT meters	PRESSURE nt/sq meter		DENSITY kg/cu meter		TEMPERATURE degrees Kelvin	PRESSURE deviation (%)	DENSITY deviation (%)
32000.00	.8107799	03	.1284856	01-	219.84	8.80-	5.21-
33000.00	.6961687	03	.1084318	01-	223.67	9.27-	6.30-
34000.00	.5993117	03	.9182502	02-	227.37	9.66-	7.13-
35000.00	.5172047	03	.7797441	02-	231.08	9.98-	7.86-
36000.00	.4474138	03	.6638839	02-	234.78	10.25-	8.52-
37000.00	.3879371	03	.5666895	02-	238.49	10.45-	9.11-
38000.00	.3371002	03	.4853430	02-	241.97	10.61-	9.56-
39000.00	.2933462	03	.4200519	02-	243.29	10.78-	9.21-
40000.00	.2554747	03	.3638446	02-	244.61	11.02-	8.94-
41000.00	.2226679	03	.3154162	02-	245.94	11.33-	8.74-
42000.00	.1942255	03	.2736550	02-	247.26	11.70-	8.62-
43000.00	.1696425	03	.2357784	02-	250.66	12.08-	9.27-
44000.00	.1484545	03	.2034258	02-	254.24	12.41-	9.94-
45000.00	.1301606	03	.1758822	02-	257.81	12.70-	10.55-
46000.00	.1143031	03	.1529502	02-	260.35	12.97-	10.77-
47000.00	.1004788	03	.1337560	02-	261.71	13.26-	10.62-
48000.00	.8838883	02	.1170562	02-	263.06	13.59-	11.09-
49000.00	.7780785	02	.1025157	02-	264.41	13.87-	11.83-
50000.00	.6852268	02	.9019842	03-	264.66	14.11-	12.16-
51000.00	.6034384	02	.7958803	03-	264.14	14.35-	12.24-
52000.00	.5313007	02	.7021132	03-	263.62	14.62-	12.34-
53000.00	.4676876	02	.6192645	03-	263.11	14.89-	12.81-
54000.00	.4116046	02	.5460794	03-	262.59	15.11-	13.50-
55000.00	.3619851	02	.4850508	03-	259.99	15.32-	13.49-
56000.00	.3178798	02	.4317139	03-	256.52	15.58-	13.24-
57000.00	.2786661	02	.3836484	03-	253.05	15.91-	13.04-
58000.00	.2438562	02	.3403931	03-	249.58	16.30-	12.91-
59000.00	.2130088	02	.3014510	03-	246.17	16.77-	12.86-
60000.00	.1857242	02	.2664588	03-	242.82	17.31-	12.90-
61000.00	.1616339	02	.2351358	03-	239.48	17.91-	13.00-
62000.00	.1404092	02	.2069559	03-	236.36	18.58-	13.52-
63000.00	.1219465	02	.1780299	03-	238.63	19.10-	16.22-
64000.00	.1060578	02	.1533724	03-	240.90	19.35-	18.57-
65000.00	.9236432	01	.1323210	03-	243.18	19.30-	20.60-
66000.00	.8045857	01	.1160109	03-	241.62	19.06-	21.15-
67000.00	.6999035	01	.1023587	03-	238.21	18.74-	21.04-
68000.00	.6076480	01	.9015455	04-	234.81	18.38-	20.91-
69000.00	.5267979	01	.7865841	04-	233.32	17.93-	21.34-
70000.00	.4566449	01	.6791931	04-	234.23	17.28-	22.41-
71000.00	.3960709	01	.5868238	04-	235.13	16.35-	23.23-
72000.00	.3437357	01	.5073245	04-	236.04	15.13-	23.81-
73000.00	.2982083	01	.4443450	04-	233.80	13.67-	23.21-
74000.00	.2583400	01	.3892714	04-	231.20	12.05-	22.38-
75000.00	.2234486	01	.3405287	04-	228.60	10.27-	21.44-
76000.00	.1931510	01	.2936974	04-	229.11	8.22-	21.38-
77000.00	.1670458	01	.2529664	04-	230.05	5.75-	21.19-
78000.00	.1444731	01	.2197215	04-	229.07	2.88-	20.10-
79000.00	.1247380	01	.1934836	04-	224.60	.25	17.63-
80000.00	.1073189	01	.1712744	04-	218.29	3.53	14.32-
81000.00	.9181115	00	.1534418	04-	208.45	6.50	7.67-
82000.00	.7821062	00	.1317803	04-	206.76	9.09	4.64-
83000.00	.6648514	00	.1141166	04-	202.97	11.50	.76-
84000.00	.5612460	00	.1029648	04-	189.89	13.17	7.67

FIGURE 13
WALLOPS IS., MAR. 31, 1967 1719 GMT.

WIND DIRECTION degrees	WIND SPEED m/sec	ERROR m/sec (±)	TEMPERATURE degrees Kelvin	ERROR degrees Kelvin (±)	HEIGHT meters
276.02	28.78	6.60	242.92	6.04	35272.84
263.36	36.08	8.87	252.77	6.80	40902.04
274.33	43.42	7.32	266.20	8.85	45124.54
254.42	32.23	11.32	270.36	7.36	48635.04
264.62	33.60	8.01	263.43	6.28	52067.29
230.86	41.80	12.38	252.96	5.19	55408.34
231.17	43.36	14.81	248.09	5.38	58640.45
254.34	46.51	14.50	244.22	5.49	61788.44
244.67	15.72	11.88	233.93	3.30	65349.59
323.93	34.25	19.37	224.79	4.45	69274.39
233.32	16.54	25.17	216.35	5.01	73042.95
195.52	43.37	22.62	208.11	4.03	76679.95
209.16	5.10	28.77	208.57	3.96	80149.75
181.09	59.80	53.96	198.44	7.15	83044.84
146.15	16.98	67.95	201.93	8.31	85430.94
20.53	116.91	71.49	217.28	11.69	87734.14
173.85	81.65	113.25	194.76	13.65	89950.79
168.25	115.61	145.02	165.75	14.33	92031.04



WIND COMPONENTS
m/sec

HEIGHT meters	SOUTH component (+)	WEST component (+)
40000.00	3.02	34.68
45000.00	-3.05	43.07
50000.00	6.46	32.00
55000.00	23.54	32.54
60000.00	20.86	38.53
65000.00	7.29	17.21
70000.00	-20.45	18.83
75000.00	27.05	12.37
80000.00	6.06	2.87
85000.00	22.35	-7.54
90000.00	81.93	-9.09

LEGEND

5 m/sec or less

50 m/sec

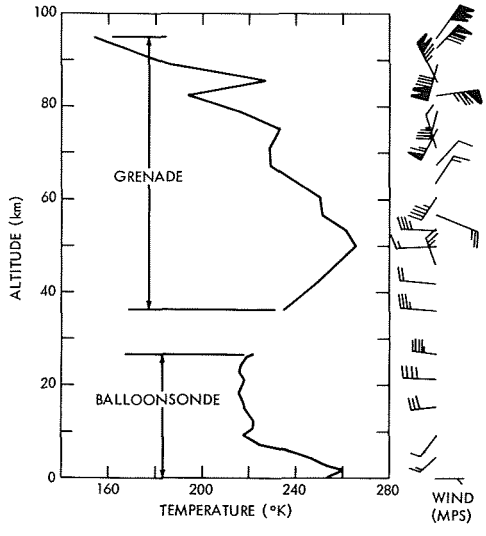
10 m/sec

DIRECTION OF NORTH WIND

HEIGHT meters	PRESSURE nt/sq meter		DENSITY kg/cu meter		TEMPERATURE degrees Kelvin	PRESSURE deviation (%)	DENSITY deviation (%)
34000.00	.6568268	03	.9745201	02-	234.81	.99-	1.43-
35000.00	.5699213	03	.8232439	02-	241.18	.81-	2.72-
36000.00	.4958976	03	.7074863	02-	244.19	.52-	2.52-
37000.00	.4320909	03	.6120688	02-	245.94	.26-	1.84-
38000.00	.3768782	03	.5300870	02-	247.69	.06-	1.22-
39000.00	.3290509	03	.4595704	02-	249.44	.06	.67-
40000.00	.2875779	03	.3988491	02-	251.19	.15	.18-
41000.00	.2515871	03	.3463268	02-	253.08	.18	.19
42000.00	.2204025	03	.2996334	02-	256.26	.19	.05
43000.00	.1934065	03	.2597095	02-	259.44	.23	.06-
44000.00	.1699945	03	.2255069	02-	262.62	.29	.16-
45000.00	.1496547	03	.1961495	02-	265.80	.37	.24-
46000.00	.1318994	03	.1719506	02-	267.23	.42	.31
47000.00	.1163269	03	.1509801	02-	268.42	.41	.88
48000.00	.1026538	03	.1326482	02-	269.60	.35	.74
49000.00	.9062451	02	.1170973	02-	269.62	.31	.70
50000.00	.7996362	02	.1041017	02-	267.60	.23	1.37
51000.00	.7049278	02	.9246969	03-	265.58	.04	1.96
52000.00	.6208634	02	.8206634	03-	263.56	.22-	2.45
53000.00	.5461731	02	.7304137	03-	260.50	.61-	2.83
54000.00	.4797515	02	.6493980	03-	257.37	1.06-	2.85
55000.00	.4207559	02	.5765609	03-	254.23	1.58-	2.82
56000.00	.3685236	02	.5093366	03-	252.06	2.13-	2.35
57000.00	.3224759	02	.4483743	03-	250.56	2.69-	1.62
58000.00	.2819667	02	.3944217	03-	249.05	3.22-	.91
59000.00	.2463624	02	.3465756	03-	247.64	3.74-	.18
60000.00	.2151080	02	.3041174	03-	246.41	4.22-	.58-
61000.00	.1876993	02	.2666977	03-	245.18	4.68-	1.32-
62000.00	.1636616	02	.2340519	03-	243.60	5.10-	2.19-
63000.00	.1425278	02	.2062753	03-	240.71	5.45-	2.93-
64000.00	.1239214	02	.1815259	03-	237.82	5.76-	3.63-
65000.00	.1075647	02	.1595036	03-	234.94	6.02-	4.28-
66000.00	.9321805	01	.1397312	03-	232.41	6.22-	5.02-
67000.00	.8066731	01	.1221419	03-	230.08	6.34-	5.78-
68000.00	.6970695	01	.1066255	03-	227.75	6.36-	6.46-
69000.00	.6014817	01	.9295460	04-	225.42	6.29-	7.04-
70000.00	.5182425	01	.8090314	04-	223.16	6.12-	7.57-
71000.00	.4458696	01	.7031056	04-	220.92	5.83-	8.02-
72000.00	.3830343	01	.6102045	04-	218.68	5.42-	8.36-
73000.00	.3285557	01	.5288315	04-	216.44	4.88-	8.61-
74000.00	.2813871	01	.4576991	04-	214.18	4.21-	8.73-
75000.00	.2406052	01	.3955482	04-	211.91	3.38-	8.75-
76000.00	.2053980	01	.3413176	04-	209.65	2.40-	8.64-
77000.00	.1751017	01	.2930671	04-	208.15	1.21-	8.70-
78000.00	.1492045	01	.2495641	04-	208.28	.29	9.24-
79000.00	.1271567	01	.2125509	04-	208.41	2.19	9.51-
80000.00	.1083835	01	.1810552	04-	208.55	4.55	9.42-
81000.00	.9228500	00	.1563784	04-	205.59	7.05	5.91-
82000.00	.7838174	00	.1351187	04-	202.09	9.33	2.23-
83000.00	.6638689	00	.1164577	04-	198.59	11.34	1.26
84000.00	.5617787	00	.9793715	05-	199.83	13.28	2.41
85000.00	.4759475	00	.8237096	05-	201.29	15.38	3.54
86000.00	.4042158	00	.6845252	05-	205.72	17.80	3.45
87000.00	.3447998	00	.5655836	05-	212.38	20.79	2.75
88000.00	.2951067	00	.4791265	05-	214.57	24.27	4.63
89000.00	.2518339	00	.4291905	05-	204.41	27.47	12.64
90000.00	.2131700	00	.3826638	05-	194.07	29.68	20.71
91000.00	.1785025	00	.3452395	05-	180.12	30.31	32.88
92000.00	.1473580	00	.3089199	05-	166.18	28.70	44.55

FIGURE 14
POINT BARROW, APR. 4, 1967 0010 GMT.

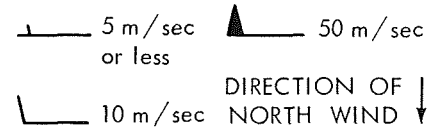
WIND DIRECTION degrees	WIND SPEED m/sec	ERROR m/sec (±)	TEMPERATURE degrees Kelvin	ERROR degrees Kelvin (±)	HEIGHT meters
277.67	34.33	3.03	235.43	1.16	36138.70
278.80	19.31	3.43	247.83	1.41	41904.60
337.88	24.46	6.03	257.36	1.66	46239.54
267.89	16.75	10.00	265.06	3.14	49855.95
272.12	36.26	9.54	261.10	3.42	53378.70
125.68	24.00	7.27	251.40	1.97	56827.20
216.29	43.67	15.26	250.41	3.47	60254.75
34.27	13.70	8.32	241.31	3.51	63578.64
39.88	10.55	6.82	228.92	3.16	67244.94
335.83	11.63	3.04	229.51	4.29	71287.64
208.35	66.14	72.03	233.48	14.21	75177.94
198.11	46.60	91.39	215.85	16.51	78933.64
77.58	84.75	23.62	192.56	8.18	82578.09
334.12	123.05	26.22	227.36	5.86	85636.49
193.74	140.74	43.28	184.62	7.27	89272.44
38.48	92.70	52.04	165.27	13.21	92770.25
33.97	148.65	85.74	153.98	14.72	94927.64



WIND COMPONENTS m/sec

HEIGHT meters	SOUTH component (+)	WEST component (+)
40000.00	-3.49	24.01
45000.00	-17.02	12.03
50000.00	.53	17.53
55000.00	5.87	10.03
60000.00	33.62	22.47
65000.00	-10.07	-7.34
70000.00	-9.81	1.09
75000.00	55.06	30.18
80000.00	25.99	-13.97
85000.00	-91.46	25.30
90000.00	93.18	14.47

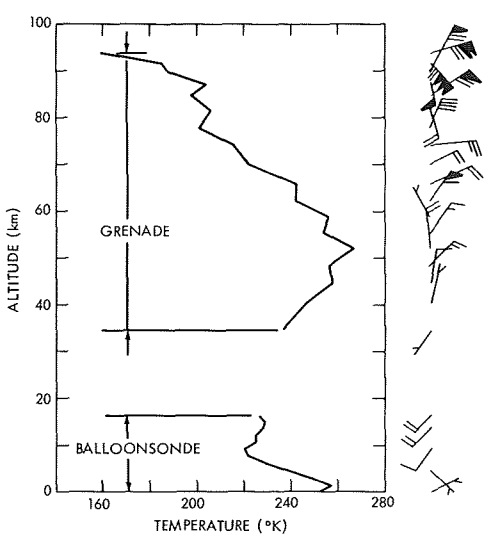
LEGEND



HEIGHT meters	PRESSURE nt/sq meter		DENSITY kg/cu meter		TEMPERATURE degrees Kelvin	PRESSURE deviation (%)	DENSITY deviation (%)
35000.00	.5306847	03	.7913733	02-	233.62	7.64-	6.49-
36000.00	.4593142	03	.6803193	02-	235.21	7.86-	6.26-
37000.00	.3980050	03	.5843613	02-	237.28	8.13-	6.28-
38000.00	.3453326	03	.5024721	02-	239.43	8.43-	6.37-
39000.00	.3000245	03	.4326611	02-	241.58	8.75-	6.48-
40000.00	.2609974	03	.3730597	02-	243.73	9.10-	6.63-
41000.00	.2273348	03	.3221016	02-	245.88	9.47-	6.81-
42000.00	.1982609	03	.2784672	02-	248.04	9.86-	7.01-
43000.00	.1731195	03	.2410187	02-	250.23	10.27-	7.26-
44000.00	.1513519	03	.2088785	02-	252.43	10.70-	7.53-
45000.00	.1324811	03	.1812567	02-	254.63	11.14-	7.81-
46000.00	.1161007	03	.1574859	02-	256.83	11.60-	8.12-
47000.00	.1018630	03	.1370282	02-	258.97	12.07-	8.43-
48000.00	.8947108	02	.1193769	02-	261.10	12.53-	9.33-
49000.00	.7867262	02	.1041200	02-	263.23	12.91-	10.45-
50000.00	.6924413	02	.9106728	03-	264.89	13.20-	11.31-
51000.00	.6095582	02	.8050844	03-	263.77	13.48-	11.22-
52000.00	.5363253	02	.7113927	03-	262.65	13.81-	11.18-
53000.00	.4716504	02	.6282957	03-	261.52	14.17-	11.54-
54000.00	.4144541	02	.5567298	03-	259.35	14.53-	11.82-
55000.00	.3637538	02	.4939822	03-	256.54	14.91-	11.90-
56000.00	.3188097	02	.4377473	03-	253.72	15.33-	12.03-
57000.00	.2790521	02	.3867804	03-	251.35	15.79-	12.33-
58000.00	.2440900	02	.3387104	03-	251.06	16.22-	13.34-
59000.00	.2134839	02	.2965811	03-	250.77	16.58-	14.26-
60000.00	.1866946	02	.2596634	03-	250.48	16.88-	15.12-
61000.00	.1631686	02	.2288738	03-	248.36	17.13-	15.32-
62000.00	.1424246	02	.2020033	03-	245.63	17.41-	15.58-
63000.00	.1241338	02	.1780456	03-	242.89	17.65-	16.22-
64000.00	.1080198	02	.1568760	03-	239.88	17.85-	16.72-
65000.00	.9382655	01	.1382104	03-	236.50	18.02-	17.06-
66000.00	.8133677	01	.1215492	03-	233.12	18.17-	17.38-
67000.00	.7036581	01	.1067010	03-	229.74	18.30-	17.69-
68000.00	.6079876	01	.9248263	04-	229.02	18.33-	18.86-
69000.00	.5252567	01	.7984733	04-	229.17	18.17-	20.15-
70000.00	.4538435	01	.6894749	04-	229.32	17.79-	21.23-
71000.00	.3921949	01	.5954400	04-	229.46	17.17-	22.10-
72000.00	.3390334	01	.5130097	04-	230.23	16.29-	22.96-
73000.00	.2932565	01	.4417842	04-	231.25	15.10-	23.65-
74000.00	.2538341	01	.3807152	04-	232.27	13.59-	24.08-
75000.00	.2198602	01	.3283167	04-	233.29	11.71-	24.26-
76000.00	.1902841	01	.2887015	04-	229.62	9.58-	22.72-
77000.00	.1642562	01	.2544126	04-	224.92	7.33-	20.74-
78000.00	.1413559	01	.2236096	04-	220.23	4.98-	18.68-
79000.00	.1212563	01	.1960942	04-	215.42	2.54-	16.52-
80000.00	.1035992	01	.1726613	04-	209.03	.05-	13.62-
81000.00	.8808627	00	.1514366	04-	202.64	2.18	8.88-
82000.00	.7451176	00	.1322708	04-	196.25	3.93	4.29-
83000.00	.6289195	00	.1110178	04-	197.36	5.48	3.46-
84000.00	.5336201	00	.8906073	05-	208.73	7.60	6.87-
85000.00	.4567503	00	.7229063	05-	220.11	10.72	9.12-
86000.00	.3929588	00	.6136647	05-	223.08	14.52	7.25-
87000.00	.3370538	00	.5556380	05-	211.33	18.08	.95
88000.00	.2865880	00	.5002707	05-	199.57	20.68	9.25
89000.00	.2413029	00	.4475826	05-	187.82	22.14	17.47
90000.00	.2013988	00	.3885161	05-	180.59	22.52	22.56
91000.00	.1670182	00	.3323742	05-	175.06	21.92	27.93
92000.00	.1376847	00	.2829403	05-	169.53	20.25	32.40
93000.00	.1127898	00	.2394998	05-	164.06	17.51	35.84
94000.00	.9179363	01-	.2013381	05-	158.83	13.77	37.99

FIGURE 15
POINT BARROW, APR. 10, 1967 2100 GMT.

WIND DIRECTION degrees	WIND SPEED m/sec	ERROR m/sec (±)	TEMPERATURE degrees Kelvin	ERROR degrees Kelvin (±)	HEIGHT meters
214.50	5.15	1.11	237.01	.31	34619.80
7.84	5.23	1.99	246.98	.53	40457.54
4.53	8.00	3.98	257.69	1.04	44855.04
39.19	15.31	5.89	257.31	1.78	48510.64
359.67	21.63	11.72	267.18	3.07	52078.19
35.94	17.29	10.10	254.12	3.01	55554.29
329.61	2.24	12.24	255.70	3.30	58945.80
37.41	57.77	14.11	242.35	3.62	62247.99
67.19	17.95	9.65	242.12	2.63	65969.14
62.69	19.02	8.36	222.22	2.30	70087.45
77.20	22.58	6.82	216.30	1.59	74049.79
16.39	41.34	7.28	201.15	1.39	77870.64
174.61	18.81	9.32	206.26	1.73	81526.59
50.70	72.06	23.79	197.58	4.17	84583.14
171.04	52.03	46.89	203.92	5.54	87102.24
23.39	69.84	45.17	187.81	5.58	89548.14
160.91	173.95	53.51	185.18	7.51	91908.29
77.40	122.44	41.96	159.55	8.24	94113.75



WIND COMPONENTS
m/sec

HEIGHT meters	SOUTH component (+)	WEST component (+)
35000.00	3.63	2.68
40000.00	-4.44	-.42
45000.00	-8.12	-.99
50000.00	-15.94	-5.58
55000.00	-15.21	-8.51
60000.00	-15.96	-10.43
65000.00	-17.09	-21.37
70000.00	-8.68	-16.89
75000.00	-13.62	-19.44
80000.00	-5.65	-5.90
85000.00	-29.58	-47.87
90000.00	-20.35	-33.30

LEGEND

5 m/sec or less

50 m/sec

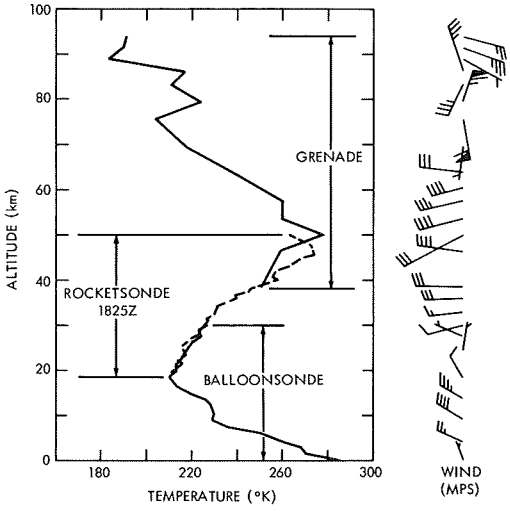
10 m/sec

DIRECTION OF NORTH WIND

HEIGHT meters	PRESSURE nt/sq meter		DENSITY kg/cu meter		TEMPERATURE degrees Kelvin	PRESSURE deviation (%)	DENSITY deviation (%)
33000.00	.8011617	03	.1181876	01-	236.16	4.41	2.12
34000.00	.6942055	03	.1021824	01-	236.68	4.64	3.34
35000.00	.6018271	03	.8822162	02-	237.66	4.74	4.23
36000.00	.5221830	03	.7600047	02-	239.36	4.74	4.71
37000.00	.4535561	03	.6554461	02-	241.07	4.68	5.11
38000.00	.3943578	03	.5658881	02-	242.78	4.56	5.44
39000.00	.3432373	03	.4890916	02-	244.49	4.38	5.71
40000.00	.2990451	03	.4231646	02-	246.19	4.14	5.90
41000.00	.2608305	03	.3659637	02-	248.30	3.86	5.88
42000.00	.2277919	03	.3165037	02-	250.73	3.55	5.68
43000.00	.1992072	03	.2741243	02-	253.17	3.24	5.47
44000.00	.1744405	03	.2377562	02-	255.60	2.91	5.25
45000.00	.1529372	03	.2067756	02-	257.67	2.57	5.16
46000.00	.1341564	03	.1814565	02-	257.57	2.14	5.86
47000.00	.1176798	03	.1592350	02-	257.46	1.57	6.40
48000.00	.1032260	03	.1397337	02-	257.36	.90	6.12
49000.00	.9057951	02	.1219979	02-	258.66	.26	4.91
50000.00	.7956676	02	.1060312	02-	261.43	.26-	3.25
51000.00	.6999118	02	.9229400	03-	264.19	.66-	1.76
52000.00	.6165273	02	.8045597	03-	266.96	.92-	.44
53000.00	.5430353	02	.7173790	03-	263.71	1.18-	.99
54000.00	.4775114	02	.6399353	03-	259.96	1.52-	1.35
55000.00	.4191253	02	.5699264	03-	256.20	1.96-	1.63
56000.00	.3673649	02	.5032251	03-	254.32	2.44-	1.12
57000.00	.3218931	02	.4401306	03-	254.79	2.86-	.24-
58000.00	.2821293	02	.3850567	03-	255.25	3.17-	1.48-
59000.00	.2473321	02	.3372720	03-	255.48	3.36-	2.50-
60000.00	.2166194	02	.3001404	03-	251.43	3.55-	1.88-
61000.00	.1893211	02	.2666034	03-	247.39	3.85-	1.36-
62000.00	.1651031	02	.2363619	03-	243.35	4.26-	1.23-
63000.00	.1437830	02	.2067313	03-	242.30	4.62-	2.72-
64000.00	.1251819	02	.1800324	03-	242.24	4.80-	4.42-
65000.00	.1089867	02	.1567811	03-	242.18	4.78-	5.92-
66000.00	.9488428	01	.1366122	03-	241.97	4.54-	7.14-
67000.00	.8248983	01	.1211870	03-	237.13	4.22-	6.52-
68000.00	.7151120	01	.1072434	03-	232.30	3.94-	5.91-
69000.00	.6181069	01	.9466487	04-	227.47	3.70-	5.33-
70000.00	.5326153	01	.8334197	04-	222.64	3.52-	4.79-
71000.00	.4579535	01	.7223858	04-	220.85	3.28-	5.50-
72000.00	.3933336	01	.6246790	04-	219.36	2.88-	6.19-
73000.00	.3374969	01	.5396767	04-	217.86	2.30-	6.73-
74000.00	.2892956	01	.4657943	04-	216.37	1.51-	7.12-
75000.00	.2475146	01	.4057271	04-	212.53	.61-	6.40-
76000.00	.2111665	01	.3527257	04-	208.56	.34	5.58-
77000.00	.1796168	01	.3058405	04-	204.60	1.33	4.72-
78000.00	.1523488	01	.2636252	04-	201.33	2.40	4.13-
79000.00	.1291288	01	.2219047	04-	202.72	3.78	5.53-
80000.00	.1095779	01	.1870175	04-	204.12	5.70	6.44-
81000.00	.9309610	00	.1578073	04-	205.52	7.99	5.05-
82000.00	.7912193	00	.1345179	04-	204.91	10.36	2.66-
83000.00	.6715611	00	.1157789	04-	202.07	12.63	.67
84000.00	.5687072	00	.9944414	05-	199.23	14.67	3.98
85000.00	.4809386	00	.8435384	05-	198.62	16.59	6.03
86000.00	.4070620	00	.7050299	05-	201.14	18.63	6.54
87000.00	.3452664	00	.5906103	05-	203.66	20.96	7.30
88000.00	.2924876	00	.5146187	05-	198.00	23.17	12.38
89000.00	.2464998	00	.4486284	05-	191.42	24.77	17.75
90000.00	.2067543	00	.3845563	05-	187.30	25.77	21.31
91000.00	.1730016	00	.3237032	05-	186.19	26.29	24.59
92000.00	.1445447	00	.2735099	05-	184.11	26.25	27.98
93000.00	.1199370	00	.2422367	05-	172.49	24.96	37.40
94000.00	.9823723	01-	.2127424	05-	160.87	21.75	45.81

FIGURE 16
WALLOPS IS., APR. 11, 1967 1715 GMT.

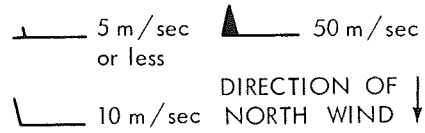
WIND DIRECTION degrees	WIND SPEED m/sec	ERROR m/sec (±)	TEMPERATURE degrees Kelvin	ERROR degrees Kelvin (±)	HEIGHT meters
271.52	29.02	.35	250.81	.19	38613.79
277.33	38.30	1.13	259.66	.87	46325.35
241.98	32.16	1.73	278.22	1.02	50007.50
254.63	39.12	1.49	260.39	.88	53596.14
260.17	32.58	1.44	260.69	.90	57093.99
255.67	42.23	1.38	250.36	.81	60521.80
279.82	30.87	1.77	239.12	.89	63864.49
182.66	6.29	1.56	217.49	.38	69656.09
177.26	62.20	3.27	204.04	.78	75763.19
19.32	66.03	3.20	224.14	.89	79625.39
205.07	35.43	2.86	210.89	.82	83333.04
349.92	35.57	18.79	216.98	12.08	86427.64
128.46	6.94	55.62	183.57	10.05	88967.94
118.96	33.15	6.45	189.55	1.55	91424.29
114.95	24.95	8.69	191.14	2.11	93802.95



WIND COMPONENTS
m/sec

HEIGHT meters	SOUTH component (+)	WEST component (+)
40000.00	-1.51	30.62
45000.00	-4.17	36.44
50000.00	15.06	28.41
55000.00	8.44	35.46
60000.00	9.70	39.57
65000.00	-3.00	24.51
70000.00	9.42	.10
75000.00	55.15	-2.56
80000.00	-52.77	-18.12
85000.00	-4.06	10.27
90000.00	9.24	-15.33

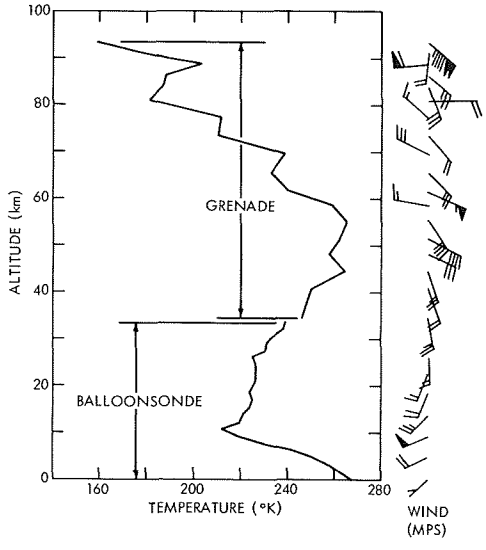
LEGEND



HEIGHT meters	PRESSURE nt/sq meter		DENSITY kg/cu meter		TEMPERATURE degrees Kelvin	PRESSURE deviation (%)	DENSITY deviation (%)
36000.00	.5075606	03	.7263564	02-	243.44	1.81	.07
37000.00	.4421992	03	.6255762	02-	246.26	2.06	.32
38000.00	.3858760	03	.5397185	02-	249.08	2.31	.56
39000.00	.3371994	03	.4675556	02-	251.25	2.54	1.05
40000.00	.2949377	03	.4070968	02-	252.40	2.71	1.88
41000.00	.2581403	03	.3546934	02-	253.54	2.79	2.61
42000.00	.2260792	03	.3092406	02-	254.69	2.77	3.25
43000.00	.1981262	03	.2697897	02-	255.84	2.68	3.80
44000.00	.1737391	03	.2355252	02-	256.99	2.50	4.26
45000.00	.1524491	03	.2057452	02-	258.13	2.24	4.63
46000.00	.1338512	03	.1798458	02-	259.28	1.91	4.92
47000.00	.1176706	03	.1558369	02-	263.06	1.57	4.13
48000.00	.1036713	03	.1347157	02-	268.10	1.34	2.31
49000.00	.9155686	02	.1167780	02-	273.14	1.35	.42
50000.00	.8104504	02	.1014975	02-	278.18	1.58	1.16-
51000.00	.7174514	02	.9145951	03-	273.28	1.82	.84
52000.00	.6337404	02	.8228411	03-	268.32	1.84	2.73
53000.00	.5585220	02	.7388599	03-	263.35	1.63	4.02
54000.00	.4913154	02	.6572590	03-	260.42	1.32	4.10
55000.00	.4319174	02	.5776089	03-	260.51	1.03	3.00
56000.00	.3797291	02	.5076497	03-	260.59	.83	2.01
57000.00	.3338757	02	.4462026	03-	260.68	.74	1.13
58000.00	.2933753	02	.3962141	03-	257.95	.68	1.36
59000.00	.2574256	02	.3517723	03-	254.94	.58	1.68
60000.00	.2255395	02	.3118866	03-	251.93	.41	1.95
61000.00	.1972882	02	.2763075	03-	248.75	.18	2.23
62000.00	.1722773	02	.2445854	03-	245.38	.10-	2.20
63000.00	.1501625	02	.2161504	03-	242.02	.39-	1.70
64000.00	.1306388	02	.1907369	03-	238.61	.65-	1.25
65000.00	.1134198	02	.1682297	03-	234.87	.91-	.94
66000.00	.9825191	01	.1480866	03-	231.14	1.16-	.65
67000.00	.8491746	01	.1300907	03-	227.41	1.40-	.34
68000.00	.7321906	01	.1140420	03-	223.67	1.65-	.04
69000.00	.6297782	01	.9975647	04-	219.94	1.89-	.24-
70000.00	.5404204	01	.8686919	04-	216.73	2.10-	.76-
71000.00	.4628750	01	.7516807	04-	214.53	2.24-	1.66-
72000.00	.3958426	01	.6494919	04-	212.32	2.26-	2.46-
73000.00	.3379825	01	.5603685	04-	210.12	2.15-	3.16-
74000.00	.2881141	01	.4827473	04-	207.92	1.92-	3.74-
75000.00	.2451986	01	.4152389	04-	205.72	1.54-	4.21-
76000.00	.2084690	01	.3538092	04-	205.27	.94-	5.29-
77000.00	.1775784	01	.2939303	04-	210.47	.18	8.43-
78000.00	.1518663	01	.2453056	04-	215.68	2.08	10.79-
79000.00	.1303685	01	.2056193	04-	220.88	4.78	12.46-
80000.00	.1121943	01	.1754330	04-	222.80	8.23	12.24-
81000.00	.9650354	00	.1533579	04-	219.22	11.94	7.72-
82000.00	.8280584	00	.1337710	04-	215.65	15.50	3.20-
83000.00	.7087430	00	.1164252	04-	212.08	18.86	1.24
84000.00	.6058878	00	.9947177	05-	212.20	22.17	4.01
85000.00	.5183790	00	.8432299	05-	214.17	25.66	6.00
86000.00	.4441638	00	.7159281	05-	216.13	29.44	8.19
87000.00	.3799362	00	.6319517	05-	209.45	33.10	14.81
88000.00	.3225259	00	.5724030	05-	196.30	35.82	25.00
89000.00	.2707751	00	.5136658	05-	183.64	37.06	34.82
90000.00	.2262590	00	.4236024	05-	186.08	37.64	33.62
91000.00	.1895137	00	.3502258	05-	188.51	38.35	34.80
92000.00	.1590315	00	.2917003	05-	189.93	38.90	36.50
93000.00	.1335879	00	.2441715	05-	190.60	39.18	38.49

FIGURE 17
POINT BARROW , APR. 18, 1967 2207 GMT.

WIND DIRECTION degrees	WIND SPEED m/sec	ERROR m/sec (±)	TEMPERATURE degrees Kelvin	ERROR degrees Kelvin (±)	HEIGHT meters
166.54	23.49	1.05	246.23	.34	34605.40
154.28	20.02	3.15	249.82	.95	40402.45
158.69	23.68	7.30	264.35	2.35	44724.64
104.90	29.16	10.18	258.30	3.20	48342.74
112.41	39.68	10.08	262.48	3.20	51874.64
145.67	33.07	10.81	265.36	3.08	55314.70
275.83	14.19	10.75	259.10	4.20	58663.54
115.00	54.33	13.30	240.37	3.64	61911.99
135.56	26.08	11.31	233.04	2.68	65593.99
299.30	30.61	13.32	237.97	5.65	69670.09
140.40	21.86	30.43	210.10	6.17	73573.79
307.36	13.67	15.65	211.23	8.23	77350.59
88.59	18.77	31.26	180.96	5.99	80982.44
156.34	29.25	17.01	187.64	3.44	84013.89
130.04	25.63	32.99	188.14	6.23	86504.24
263.51	62.44	40.60	203.00	9.55	88915.74
182.63	18.81	41.11	177.03	7.96	91242.14
131.68	142.92	27.56	158.82	5.95	93422.69



WIND COMPONENTS
m/sec

HEIGHT meters	SOUTH component (+)	WEST component (+)
35000.00	22.51	-5.68
40000.00	18.37	-8.46
45000.00	20.95	-10.09
50000.00	11.07	-32.17
55000.00	26.19	-20.30
60000.00	8.60	-11.95
65000.00	19.32	-23.26
70000.00	-12.29	23.26
75000.00	7.35	-4.56
80000.00	-2.58	-10.74
85000.00	22.71	-14.86
90000.00	12.52	33.52

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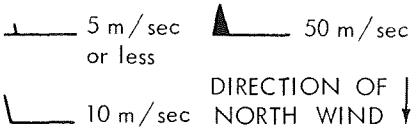
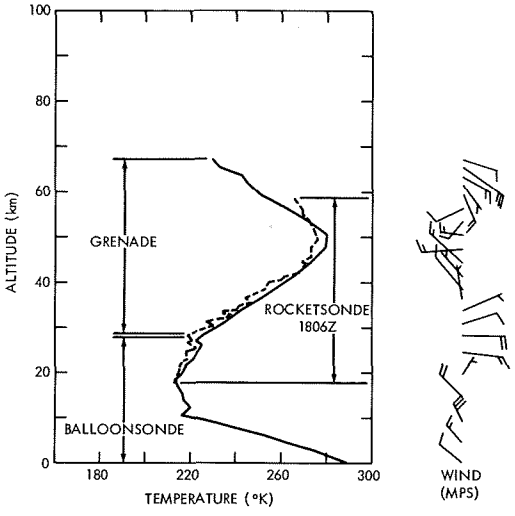


HEIGHT meters	PRESSURE nt/sq meter		DENSITY kg/cu meter		TEMPERATURE degrees Kelvin	PRESSURE deviation (%)	DENSITY deviation (%)
33000.00	.7993800	03	.1166797	01-	238.68	4.18	.82
34000.00	.6945579	03	.9942064	02-	243.38	4.69	.55
35000.00	.6048599	03	.8549510	02-	246.47	5.26	1.01
36000.00	.5273184	03	.7434803	02-	247.09	5.77	2.43
37000.00	.4598943	03	.6467963	02-	247.71	6.15	3.72
38000.00	.4012455	03	.5629053	02-	248.33	6.39	4.89
39000.00	.3502095	03	.4900849	02-	248.95	6.50	5.92
40000.00	.3057813	03	.4268502	02-	249.57	6.49	6.82
41000.00	.2672082	03	.3696601	02-	251.82	6.40	6.95
42000.00	.2338596	03	.3192632	02-	255.19	6.31	6.60
43000.00	.2050388	03	.2762778	02-	258.55	6.26	6.30
44000.00	.1800829	03	.2395367	02-	261.91	6.24	6.04
45000.00	.1583796	03	.2090910	02-	263.88	6.22	6.33
46000.00	.1393077	03	.1850853	02-	262.21	6.06	7.97
47000.00	.1224368	03	.1637145	02-	260.54	5.68	9.39
48000.00	.1075240	03	.1447027	02-	258.87	5.11	9.89
49000.00	.9439701	02	.1269364	02-	259.07	4.49	9.16
50000.00	.8290463	02	.1109755	02-	260.26	3.91	8.06
51000.00	.7285722	02	.9708468	03-	261.44	3.40	7.05
52000.00	.6406671	02	.8500036	03-	262.58	2.95	6.12
53000.00	.5636633	02	.7454623	03-	263.42	2.57	4.95
54000.00	.4961361	02	.6540767	03-	264.25	2.31	3.59
55000.00	.4368919	02	.5741536	03-	265.09	2.19	2.39
56000.00	.3847201	02	.5075389	03-	264.07	2.16	1.99
57000.00	.3385557	02	.4498210	03-	262.21	2.16	1.95
58000.00	.2976704	02	.3983386	03-	260.34	2.16	1.91
59000.00	.2614044	02	.3541341	03-	257.16	2.13	2.36
60000.00	.2290412	02	.3174071	03-	251.39	1.97	3.75
61000.00	.2000787	02	.2837792	03-	245.62	1.60	4.99
62000.00	.1742422	02	.2527249	03-	240.19	1.03	5.60
63000.00	.1514241	02	.2214645	03-	238.20	.44	4.20
64000.00	.1314450	02	.1938645	03-	236.21	.04-	2.91
65000.00	.1139705	02	.1695204	03-	234.22	.43-	1.72
66000.00	.9874260	01	.1473052	03-	233.53	.66-	.11
67000.00	.8556695	01	.1269919	03-	234.74	.65-	2.04-
68000.00	.7420722	01	.1095681	03-	235.95	.32-	3.87-
69000.00	.6440532	01	.9461051	04-	237.16	.33	5.39-
70000.00	.5589492	01	.8264723	04-	235.61	1.25	5.58-
71000.00	.4838223	01	.7377428	04-	228.47	2.17	3.49-
72000.00	.4168975	01	.6561991	04-	221.33	2.93	1.46-
73000.00	.3574977	01	.5814590	04-	214.19	3.49	.48
74000.00	.3053481	01	.5060156	04-	210.22	3.94	.89
75000.00	.2604620	01	.4310179	04-	210.52	4.58	.57-
76000.00	.2222353	01	.3672378	04-	210.82	5.60	1.70-
77000.00	.1896713	01	.3129824	04-	211.12	7.00	2.49-
78000.00	.1615770	01	.2734990	04-	205.81	8.60	.54-
79000.00	.1369047	01	.2415168	04-	197.48	10.03	2.81
80000.00	.1151800	01	.2121452	04-	189.14	11.11	6.12
81000.00	.9616515	00	.1850974	04-	180.99	11.55	11.37
82000.00	.8006001	00	.1522450	04-	183.20	11.67	10.16
83000.00	.6680203	00	.1255233	04-	185.40	12.03	9.15
84000.00	.5586205	00	.1037338	04-	187.61	12.64	8.47
85000.00	.4677061	00	.8674567	05-	187.83	13.38	9.04
86000.00	.3916883	00	.7256904	05-	188.03	14.15	9.67
87000.00	.3285574	00	.5986777	05-	191.19	15.10	8.77
88000.00	.2767777	00	.4885809	05-	197.35	16.55	6.70
89000.00	.2342620	00	.4039068	05-	202.05	18.57	6.01
90000.00	.1977370	00	.3608686	05-	190.89	20.29	13.83
91000.00	.1652195	00	.3202519	05-	179.73	20.61	23.26
92000.00	.1366376	00	.2788639	05-	170.70	19.34	30.49
93000.00	.1118926	00	.2401085	05-	162.35	16.58	36.19

FIGURE 18
WALLOPS IS., APR. 20, 1967 1732 GMT.

WIND DIRECTION degrees	WIND SPEED m/sec	ERROR m/sec (±)	TEMPERATURE degrees Kelvin	ERROR degrees Kelvin (±)	HEIGHT meters
93.10	19.03	2.09	226.10	.99	28232.64
72.77	11.91	2.60	234.03	1.06	30939.49
64.58	6.34	2.43	242.18	.94	33609.60
352.50	4.94	2.01	251.22	.99	36219.14
328.33	10.73	1.52	258.57	.88	38918.79
327.11	4.30	1.22	265.94	.85	41579.09
309.16	13.55	.98	273.65	.64	44425.54
263.39	14.27	1.08	279.22	.65	47611.54
274.29	12.53	.93	280.47	.65	50703.84
220.39	9.38	1.36	270.69	.57	53721.89
239.31	10.07	1.05	260.76	.48	56790.45
168.84	13.49	2.07	250.70	.62	59399.09
150.77	6.35	2.22	246.18	.65	61453.14
115.46	14.72	2.48	243.24	.86	63456.20
126.69	27.49	2.94	232.92	.85	65415.09
109.80	11.97	2.49	230.33	.76	67256.09



WIND COMPONENTS
m/sec

HEIGHT meters	SOUTH component (+)	WEST component (+)
30000.00	-1.94	-14.02
35000.00	-3.88	-2.33
40000.00	-6.88	4.29
45000.00	-6.71	11.16
50000.00	-.35	12.87
55000.00	6.31	7.15
60000.00	10.98	-2.75
65000.00	14.28	-20.18

LEGEND

5 m/sec or less

50 m/sec

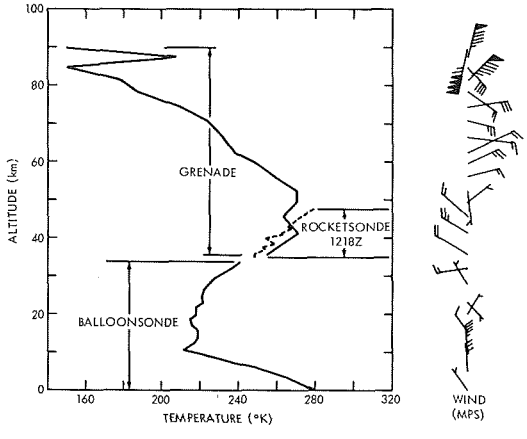
10 m/sec

DIRECTION OF NORTH WIND

HEIGHT meters	PRESSURE nt/sq meter		DENSITY kg/cu meter		TEMPERATURE degrees Kelvin	PRESSURE deviation (%)	DENSITY deviation (%)
28000.00	.1653870	04	.2564455	01-	224.68	2.33	2.26
29000.00	.1424367	04	.2173116	01-	228.34	2.44	1.17
30000.00	.1229404	04	.1851907	01-	231.27	2.70	.59
31000.00	.1063145	04	.1581381	01-	234.21	3.09	.13
32000.00	.9211103	03	.1352485	01-	237.26	3.60	.22-
33000.00	.7995506	03	.1159085	01-	240.31	4.20	.15
34000.00	.6953365	03	.9947098	02-	243.53	4.81	.60
35000.00	.6058821	03	.8545851	02-	246.99	5.44	.97
36000.00	.5289720	03	.7357851	02-	250.46	6.10	1.37
37000.00	.4626353	03	.6361843	02-	253.34	6.78	2.02
38000.00	.4052317	03	.5513221	02-	256.06	7.44	2.73
39000.00	.3554633	03	.4785167	02-	258.79	8.10	3.42
40000.00	.3122516	03	.4158941	02-	261.56	8.74	4.08
41000.00	.2746787	03	.3620158	02-	264.33	9.37	4.73
42000.00	.2419583	03	.3156147	02-	267.08	9.99	5.38
43000.00	.2134187	03	.2755921	02-	269.78	10.60	6.04
44000.00	.1884889	03	.2409803	02-	272.49	11.20	6.68
45000.00	.1666616	03	.2114011	02-	274.65	11.77	7.51
46000.00	.1474962	03	.1859075	02-	276.40	12.30	8.45
47000.00	.1306402	03	.1636269	02-	278.15	12.76	9.34
48000.00	.1157900	03	.1443904	02-	279.37	13.19	9.66
49000.00	.1026678	03	.1278421	02-	279.78	13.65	9.94
50000.00	.9105190	02	.1132144	02-	280.18	14.13	10.24
51000.00	.8074841	02	.1006455	02-	279.51	14.60	10.97
52000.00	.7155295	02	.9023029	03-	276.27	14.98	12.65
53000.00	.6331669	02	.8079178	03-	273.02	15.21	13.74
54000.00	.5594889	02	.7224766	03-	269.79	15.37	14.43
55000.00	.4936658	02	.6452175	03-	266.55	15.47	15.06
56000.00	.4349384	02	.5754472	03-	263.31	15.50	15.64
57000.00	.3826006	02	.5127562	03-	259.95	15.45	16.21
58000.00	.3359708	02	.4570439	03-	256.09	15.30	16.93
59000.00	.2944549	02	.4066911	03-	252.23	15.04	17.56
60000.00	.2576246	02	.3599050	03-	249.37	14.70	17.64
61000.00	.2251038	02	.3172727	03-	247.17	14.31	17.38
62000.00	.1964811	02	.2789617	03-	245.37	13.93	16.56
63000.00	.1713495	02	.2447440	03-	243.90	13.66	15.16
64000.00	.1492275	02	.2162806	03-	240.37	13.47	14.81
65000.00	.1296346	02	.1920941	03-	235.10	13.25	15.26
66000.00	.1123391	02	.1686241	03-	232.09	13.00	14.60
67000.00	.9722270	01	.1468238	03-	230.69	12.87	13.25

FIGURE 19
WALLOPS IS., APRIL 29, 1967 1139 GMT.

WIND DIRECTION degrees	WIND SPEED m/sec	ERROR m/sec (±)	TEMPERATURE degrees Kelvin	ERROR degrees Kelvin (±)	HEIGHT meters
300.70	17.93	.48	255.20	.38	35459.44
299.23	25.11	.56	270.74	.44	41244.39
310.56	15.66	.92	262.92	.62	45594.54
53.00	3.76	.89	270.48	.62	49201.49
179.57	1.65	1.09	270.51	.59	52724.80
74.53	15.09	.84	259.38	.49	56164.20
62.67	24.22	1.02	248.66	.50	59519.49
63.91	16.92	1.23	238.44	.56	62776.94
96.99	16.73	.77	232.48	.40	66453.34
101.71	23.35	.99	224.44	.48	70524.45
85.03	30.55	1.73	209.26	.94	74436.25
118.07	15.73	2.68	187.83	.89	78214.44
44.78	92.82	17.70	178.40	5.79	81833.74
137.20	39.85	51.62	150.90	10.66	84859.54
24.65	96.05	52.53	208.05	20.83	87353.45
197.81	213.86	65.16	150.00	14.44	89763.99



WIND COMPONENTS
m/sec

HEIGHT meters	SOUTH component (+)	WEST component (+)
40000.00	-11.59	20.51
45000.00	-10.46	13.26
50000.00	-1.37	-2.32
55000.00	-2.10	-9.62
60000.00	-10.57	-20.58
65000.00	-1.71	-16.04
70000.00	4.39	-22.05
75000.00	-1.14	-27.96
80000.00	-28.75	-39.28
85000.00	22.67	-27.80

LEGEND

5 m/sec or less

50 m/sec

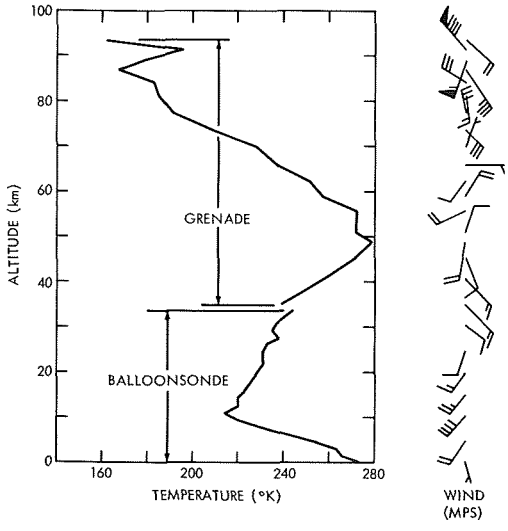
10 m/sec

DIRECTION OF NORTH WIND

HEIGHT meters	PRESSURE nt/sq meter		DENSITY kg/cu meter		TEMPERATURE degrees Kelvin	PRESSURE deviation (%)	DENSITY deviation (%)
33000.00	.7728500	03	.1124681	01-	239.40	.72	2.81-
34000.00	.6723775	03	.9528985	02-	245.82	1.35	3.62-
35000.00	.5870969	03	.8108479	02-	252.24	2.17	4.19-
36000.00	.5141377	03	.6978994	02-	256.65	3.13	3.84-
37000.00	.4510862	03	.6059698	02-	259.33	4.11	2.82-
38000.00	.3963172	03	.5269373	02-	262.02	5.08	1.81-
39000.00	.3486718	03	.4588842	02-	264.71	6.03	.81-
40000.00	.3071635	03	.4001943	02-	267.39	6.97	.15
41000.00	.2709503	03	.3495021	02-	270.08	7.89	1.11
42000.00	.2391262	03	.3092554	02-	269.38	8.71	3.26
43000.00	.2109254	03	.2746166	02-	267.58	9.31	5.66
44000.00	.1859004	03	.2436721	02-	265.78	9.67	7.87
45000.00	.1637106	03	.2160476	02-	263.98	9.79	9.87
46000.00	.1441047	03	.1903318	02-	263.77	9.71	11.03
47000.00	.1269097	03	.1662994	02-	265.86	9.54	11.12
48000.00	.1118824	03	.1454612	02-	267.96	9.37	10.47
49000.00	.9873518	02	.1273719	02-	270.05	9.29	9.53
50000.00	.8718739	02	.1122964	02-	270.48	9.28	9.35
51000.00	.7701173	02	.9918714	03-	270.49	9.30	9.37
52000.00	.6802631	02	.8761162	03-	270.50	9.31	9.38
53000.00	.6007110	02	.7761982	03-	269.61	9.31	9.27
54000.00	.5299753	02	.6931172	03-	266.38	9.29	9.77
55000.00	.4668719	02	.6180974	03-	263.14	9.20	10.22
56000.00	.4106539	02	.5504386	03-	259.91	9.05	10.61
57000.00	.3606428	02	.4894329	03-	256.70	8.82	10.93
58000.00	.3162199	02	.4345546	03-	253.51	8.52	11.17
59000.00	.2768185	02	.3852639	03-	250.31	8.15	11.36
60000.00	.2419246	02	.3410149	03-	247.15	7.71	11.47
61000.00	.2110728	02	.3013519	03-	244.01	7.18	11.49
62000.00	.1838385	02	.2658877	03-	240.87	6.60	11.10
63000.00	.1598513	02	.2339130	03-	238.07	6.03	10.06
64000.00	.1388191	02	.2045290	03-	236.45	5.56	8.57
65000.00	.1204426	02	.1786791	03-	234.83	5.22	7.21
66000.00	.1044007	02	.1559571	03-	233.21	5.02	5.99
67000.00	.9040379	01	.1361071	03-	231.40	4.96	4.98
68000.00	.7819437	01	.1187386	03-	229.42	5.03	4.16
69000.00	.6755218	01	.1034690	03-	227.45	5.23	3.47
70000.00	.5828663	01	.9005905	04-	225.47	5.58	2.88
71000.00	.5021387	01	.7859001	04-	222.59	6.04	2.81
72000.00	.4316246	01	.6875239	04-	218.71	6.57	3.24
73000.00	.3700266	01	.6000525	04-	214.83	7.11	3.69
74000.00	.3163456	01	.5224377	04-	210.95	7.68	4.17
75000.00	.2695747	01	.4557626	04-	206.06	8.24	5.13
76000.00	.2287767	01	.3977344	04-	200.39	8.70	6.46
77000.00	.1932505	01	.3457578	04-	194.71	9.02	7.71
78000.00	.1624373	01	.2993477	04-	189.04	9.18	8.85
79000.00	.1359817	01	.2549954	04-	185.78	9.29	8.55
80000.00	.1135199	01	.2159025	04-	183.17	9.51	8.00
81000.00	.9452900	00	.1823779	04-	180.57	9.65	9.73
82000.00	.7846625	00	.1545399	04-	176.88	9.45	11.82
83000.00	.6468645	00	.1343008	04-	167.80	8.49	16.78
84000.00	.5275939	00	.1158106	04-	158.71	6.38	21.10
85000.00	.4265410	00	.9641918	05-	154.11	3.40	21.20
86000.00	.3488388	00	.6864750	05-	177.03	1.66	3.74
87000.00	.2923872	00	.5094412	05-	199.95	2.43	7.44-
88000.00	.2468391	00	.4467729	05-	192.48	3.94	2.43-
89000.00	.2052838	00	.4246937	05-	168.39	3.90	11.46

FIGURE 20
POINT BARROW, APRIL 30, 1967 0140 GMT.

WIND DIRECTION degrees	WIND SPEED m/sec	ERROR m/sec (±)	TEMPERATURE degrees Kelvin	ERROR degrees Kelvin (±)	HEIGHT meters
134.47	14.30	1.19	239.25	.28	35067.29
136.50	16.62	1.88	257.71	.39	40812.29
151.47	7.90	4.24	271.08	.89	45141.20
200.97	18.71	5.85	279.36	1.42	48747.49
27.19	10.02	5.72	272.26	1.42	52255.44
244.48	21.03	5.92	271.98	1.41	55671.14
33.18	19.39	7.28	257.05	1.64	59014.54
210.61	10.20	6.16	250.74	1.31	62257.14
89.77	17.49	2.37	237.66	.53	65911.99
15.37	6.65	6.14	228.29	1.20	69962.44
135.99	27.58	15.91	207.68	2.52	73849.99
350.10	28.64	15.78	191.51	2.79	77600.99
177.15	16.01	19.44	185.16	2.70	81214.39
298.30	28.72	15.86	183.35	3.11	84234.69
150.30	33.48	20.76	167.95	2.84	86705.19
201.90	55.19	26.39	179.01	4.23	89092.54
318.04	90.81	22.29	194.77	4.55	91400.74
131.37	20.39	27.43	161.79	3.95	93564.84



WIND COMPONENTS
m/sec

HEIGHT meters	SOUTH component (+)	WEST component (+)
40000.00	11.76	-11.26
45000.00	7.10	-4.02
50000.00	8.05	2.67
55000.00	5.52	14.35
60000.00	-8.62	-5.80
65000.00	2.13	-11.83
70000.00	-6.15	-1.93
75000.00	5.10	-11.77
80000.00	1.13	1.12
85000.00	-.38	12.31
90000.00	4.52	36.36

LEGEND

5 m/sec or less

50 m/sec

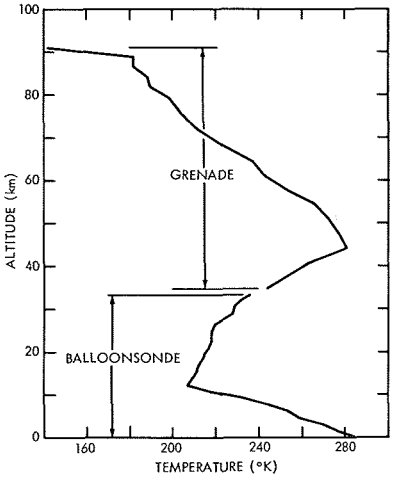
10 m/sec

DIRECTION OF NORTH WIND

HEIGHT meters	PRESSURE nt/sq meter		DENSITY kg/cu meter		TEMPERATURE degrees Kelvin	PRESSURE deviation (%)	DENSITY deviation (%)
33000.00	.8541599	03	.1224591	01-	243.00	11.31	5.81
34000.00	.7426146	03	.1072678	01-	241.18	11.93	8.48
35000.00	.6449826	03	.9387127	02-	239.37	12.25	10.91
36000.00	.5603848	03	.8059091	02-	242.24	12.40	11.03
37000.00	.4877593	03	.6922812	02-	245.46	12.58	11.02
38000.00	.4253312	03	.5958762	02-	248.67	12.77	11.03
39000.00	.3715617	03	.5139062	02-	251.88	12.99	11.07
40000.00	.3251596	03	.4440629	02-	255.10	13.24	11.13
41000.00	.2850380	03	.3844623	02-	258.29	13.50	11.23
42000.00	.2502751	03	.3335849	02-	261.37	13.77	11.38
43000.00	.2200967	03	.2899349	02-	264.46	14.06	11.56
44000.00	.1938538	03	.2524172	02-	267.55	14.37	11.74
45000.00	.1709957	03	.2201127	02-	270.64	14.68	11.94
46000.00	.1510301	03	.1926978	02-	273.05	14.99	12.42
47000.00	.1335431	03	.1689655	02-	275.34	15.27	12.90
48000.00	.1182060	03	.1483234	02-	277.64	15.55	12.64
49000.00	.1047147	03	.1308269	02-	278.84	15.91	12.51
50000.00	.9275000	02	.1167258	02-	276.82	16.25	13.66
51000.00	.8208242	02	.1040615	02-	274.80	16.49	14.74
52000.00	.7257898	02	.9269606	03-	272.77	16.63	15.73
53000.00	.6414061	02	.8209274	03-	272.19	16.71	15.57
54000.00	.5667629	02	.7256112	03-	272.11	16.87	14.92
55000.00	.5008085	02	.6413648	03-	272.03	17.14	14.37
56000.00	.4423885	02	.5697396	03-	270.51	17.47	14.49
57000.00	.3902570	02	.5110368	03-	266.04	17.76	15.82
58000.00	.3435523	02	.4575577	03-	261.58	17.90	17.06
59000.00	.3017863	02	.4089125	03-	257.11	17.91	18.20
60000.00	.2646769	02	.3614172	03-	255.13	17.84	18.14
61000.00	.2319051	02	.3191010	03-	253.18	17.76	18.06
62000.00	.2029921	02	.2814803	03-	251.24	17.70	17.62
63000.00	.1774495	02	.2491947	03-	248.08	17.70	17.25
64000.00	.1548423	02	.2206299	03-	244.50	17.74	17.12
65000.00	.1348498	02	.1949974	03-	240.92	17.81	17.01
66000.00	.1172049	02	.1719571	03-	237.45	17.90	16.87
67000.00	.1016988	02	.1506753	03-	235.14	18.07	16.22
68000.00	.8812436	01	.1318608	03-	232.82	18.37	15.67
69000.00	.7625603	01	.1152472	03-	230.51	18.79	15.24
70000.00	.6589052	01	.1006406	03-	228.09	19.35	14.97
71000.00	.5679395	01	.8881083	04-	222.79	19.94	16.18
72000.00	.4878066	01	.7813957	04-	217.48	20.44	17.33
73000.00	.4174304	01	.6853700	04-	212.18	20.84	18.44
74000.00	.3558398	01	.5987873	04-	207.03	21.13	19.39
75000.00	.3022364	01	.5194013	04-	202.72	21.36	19.81
76000.00	.2558216	01	.4491882	04-	198.41	21.55	20.23
77000.00	.2157545	01	.3872496	04-	194.10	21.72	20.63
78000.00	.1813619	01	.3311357	04-	190.80	21.90	20.41
79000.00	.1521089	01	.2803064	04-	189.05	22.25	19.33
80000.00	.1273719	01	.2369233	04-	187.29	22.87	18.52
81000.00	.1064854	01	.1999486	04-	185.53	23.52	20.30
82000.00	.8891677	00	.1677260	04-	184.68	24.02	21.36
83000.00	.7419839	00	.1404180	04-	184.09	24.44	22.10
84000.00	.6188325	00	.1174945	04-	183.49	24.78	22.86
85000.00	.5147220	00	.1004152	04-	178.58	24.78	26.22
86000.00	.4256510	00	.8604211	05-	172.34	24.04	30.03
87000.00	.3502112	00	.7205942	05-	169.31	22.69	30.92
88000.00	.2884199	00	.5776472	05-	173.94	21.46	26.15
89000.00	.2387603	00	.4657837	05-	178.58	20.85	22.25
90000.00	.1988194	00	.3739916	05-	185.20	20.95	17.97
91000.00	.1666534	00	.3023393	05-	192.03	21.66	16.37
92000.00	.1397275	00	.2622252	05-	185.63	22.04	22.70
93000.00	.1158996	00	.2369605	05-	170.39	20.75	34.40

FIGURE 21
WALLOPS IS., MAY 4, 1967 2007 GMT.

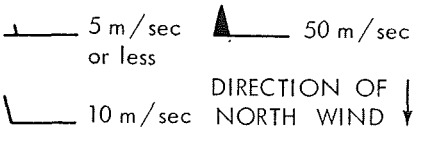
WIND DIRECTION degrees	WIND SPEED m/sec	ERROR m/sec (±)	TEMPERATURE degrees Kelvin	ERROR degrees Kelvin (±)	HEIGHT meters
276.35	25.65	.87	243.74	.37	34643.54
262.78	13.66	1.18	262.24	.54	40201.39
334.51	4.43	1.34	281.46	.69	44388.99
89.72	8.53	.93	276.88	.55	47869.34
97.22	15.27	.87	271.81	.44	51251.39
111.38	23.29	.70	265.62	.29	54551.74
98.97	20.68	.67	253.62	.29	57797.89
109.69	20.03	1.24	243.47	.49	60948.20
112.86	36.05	.94	237.84	.36	64469.74
116.09	33.10	.79	223.08	.23	68365.24
105.08	46.46	.94	211.25	.28	72109.44
87.21	57.81	.90	204.21	.26	75720.49
74.72	46.15	1.10	199.63	.26	79204.44
56.03	20.12	2.47	189.91	.59	82088.14
8.31	38.65	5.38	188.84	.89	84440.69
160.19	8.52	5.48	181.60	.92	86715.79
40.84	80.43	18.34	182.43	4.56	88882.29
148.36	74.01	64.42	141.68	10.09	90927.84



WIND COMPONENTS
m/sec

HEIGHT meters	SOUTH component (+)	WEST component (+)
35000.00	-2.54	24.72
40000.00	1.55	13.98
45000.00	-3.30	.07
50000.00	1.19	-12.70
55000.00	7.76	-21.51
60000.00	5.68	-19.33
65000.00	14.08	-32.74
70000.00	13.47	-36.33
75000.00	.15	-55.17
80000.00	-11.90	-36.84
85000.00	-26.87	-4.92
90000.00	6.82	-45.07

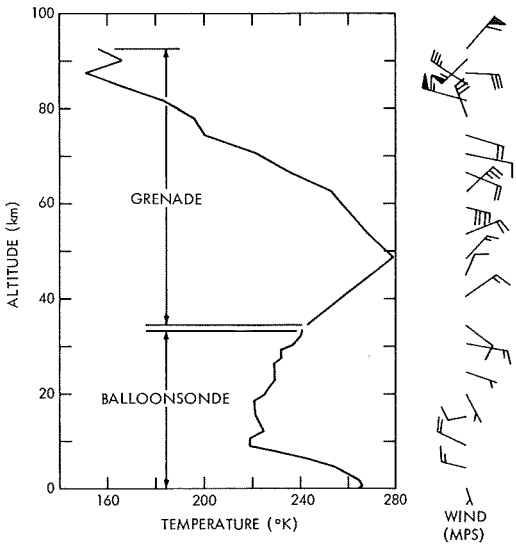
LEGEND



HEIGHT meters	PRESSURE nt/sq meter		DENSITY kg/cu meter		TEMPERATURE degrees Kelvin	PRESSURE deviation (%)	DENSITY deviation (%)
33000.00	.7624199	03	.1129315	01-	235.19	.63-	2.41-
34000.00	.6614376	03	.9585607	02-	240.39	.29-	3.05-
35000.00	.5754926	03	.8185817	02-	244.92	.15	3.28-
36000.00	.5018492	03	.7042602	02-	248.25	.66	2.96-
37000.00	.4384470	03	.6071453	02-	251.58	1.20	2.63-
38000.00	.3837513	03	.5244657	02-	254.91	1.75	2.27-
39000.00	.3364738	03	.4539251	02-	258.24	2.32	1.89-
40000.00	.2955299	03	.3936155	02-	261.57	2.92	1.49-
41000.00	.2600682	03	.3407362	02-	265.90	3.55	1.42-
42000.00	.2293579	03	.2954013	02-	270.49	4.26	1.36-
43000.00	.2027100	03	.2567241	02-	275.08	5.05	1.21-
44000.00	.1795315	03	.2236381	02-	279.67	5.92	.99-
45000.00	.1592019	03	.1976206	02-	280.65	6.77	.50
46000.00	.1411693	03	.1760619	02-	279.34	7.48	2.71
47000.00	.1251128	03	.1567753	02-	278.02	7.99	4.76
48000.00	.1108227	03	.1395413	02-	276.68	8.33	5.97
49000.00	.9810732	02	.1242038	02-	275.18	8.60	6.81
50000.00	.8679632	02	.1104859	02-	273.68	8.79	7.59
51000.00	.7674067	02	.9822378	03-	272.18	8.91	8.30
52000.00	.6780215	02	.8735452	03-	270.40	8.95	9.06
53000.00	.5985676	02	.7765652	03-	268.53	8.92	9.33
54000.00	.5279836	02	.6898095	03-	266.65	8.88	9.25
55000.00	.4652384	02	.6140317	03-	263.96	8.82	9.50
56000.00	.4093340	02	.5479214	03-	260.26	8.70	10.10
57000.00	.3595029	02	.4881525	03-	256.57	8.48	10.63
58000.00	.3151646	02	.4340389	03-	252.96	8.16	11.04
59000.00	.2758130	02	.3847448	03-	249.74	7.76	11.21
60000.00	.2409673	02	.3405300	03-	246.52	7.28	11.31
61000.00	.2101642	02	.3008287	03-	243.38	6.72	11.30
62000.00	.1830621	02	.2637674	03-	241.78	6.15	10.22
63000.00	.1593159	02	.2310804	03-	240.18	5.67	8.73
64000.00	.1385274	02	.2022739	03-	238.59	5.34	7.38
65000.00	.1203021	02	.1777177	03-	235.83	5.10	6.64
66000.00	.1042729	02	.1565537	03-	232.04	4.89	6.40
67000.00	.9017102	01	.1376287	03-	228.25	4.69	6.16
68000.00	.7779041	01	.1207363	03-	224.46	4.48	5.91
69000.00	.6695335	01	.1055096	03-	221.07	4.30	5.50
70000.00	.5749991	01	.9192603	04-	217.91	4.15	5.01
71000.00	.4927395	01	.7993402	04-	214.75	4.06	4.56
72000.00	.4213032	01	.6936589	04-	211.59	4.02	4.16
73000.00	.3595402	01	.5978512	04-	209.51	4.08	3.31
74000.00	.3063772	01	.5142356	04-	207.56	4.29	2.53
75000.00	.2606941	01	.4417082	04-	205.61	4.67	1.89
76000.00	.2215086	01	.3785768	04-	203.84	5.25	1.33
77000.00	.1879900	01	.3233762	04-	202.52	6.05	.74
78000.00	.1593813	01	.2759553	04-	201.21	7.13	.34
79000.00	.1349871	01	.2352558	04-	199.89	8.49	.15
80000.00	.1141283	01	.2018827	04-	196.94	10.09	.99
81000.00	.9623591	00	.1731968	04-	193.57	11.63	4.20
82000.00	.8091024	00	.1481955	04-	190.20	12.86	7.23
83000.00	.6790237	00	.1248374	04-	189.49	13.88	8.55
84000.00	.5695799	00	.1049683	04-	189.04	14.85	9.76
85000.00	.4772589	00	.8888554	05-	187.06	15.69	11.73
86000.00	.3989401	00	.7558516	05-	183.87	16.26	14.22
87000.00	.3326193	00	.6377192	05-	181.70	16.52	15.86
88000.00	.2770935	00	.5301438	05-	182.09	16.69	15.77
89000.00	.2306598	00	.4462236	05-	180.08	16.75	17.11
90000.00	.1897205	00	.4126751	05-	160.16	15.41	30.18

FIGURE 22
POINT BARROW, MAY 9, 1967 0720 GMT.

WIND DIRECTION degrees	WIND SPEED m/sec	ERROR m/sec (±)	TEMPERATURE degrees Kelvin	ERROR degrees Kelvin (±)	HEIGHT meters
123.09	10.30	2.01	242.69	.42	34532.79
58.74	14.14	4.71	258.48	1.12	40406.34
26.18	8.52	7.70	269.30	1.92	44834.59
34.54	15.89	8.46	279.13	1.84	48511.64
69.70	18.34	5.10	268.04	1.18	53848.74
86.98	41.15	11.47	258.08	2.56	59114.14
49.31	24.55	8.98	253.51	1.66	62485.64
116.23	22.05	5.94	236.21	1.08	66204.59
103.93	10.46	14.52	221.70	2.26	70337.20
120.29	21.84	16.51	199.86	2.35	74330.29
341.95	28.54	10.24	195.13	1.91	78180.99
293.92	66.71	11.54	183.16	1.70	81876.79
304.45	35.96	11.16	165.22	1.72	84970.44
92.66	27.71	4.34	151.19	.64	87513.29
223.73	55.66	3.73	166.12	.52	89966.59
41.29	57.90	12.42	156.29	1.86	92314.79



WIND COMPONENTS
m/sec

HEIGHT meters	SOUTH component (+)	WEST component (+)
35000.00	4.59	-8.90
40000.00	-6.44	-11.84
45000.00	-7.89	-3.99
50000.00	-11.21	-11.29
55000.00	-5.44	-22.42
60000.00	-5.80	-35.18
65000.00	1.40	-19.40
70000.00	3.10	-10.93
75000.00	4.38	-14.04
80000.00	-27.09	34.50
85000.00	-20.09	28.98
90000.00	39.02	37.38

LEGEND

5 m/sec or less

10 m/sec

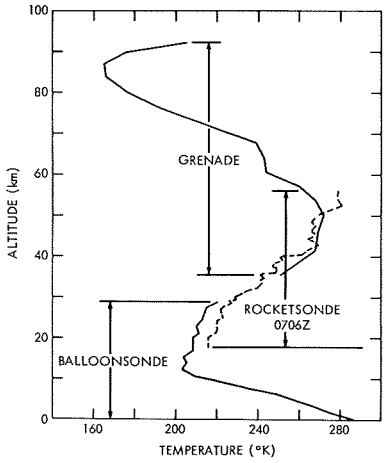
50 m/sec

DIRECTION OF NORTH WIND

HEIGHT meters	PRESSURE nt/sq meter		DENSITY kg/cu meter		TEMPERATURE degrees Kelvin	PRESSURE deviation (%)	DENSITY deviation (%)
33000.00	.8267400	03	.1198398	01-	240.34	7.74	3.55
34000.00	.7183648	03	.1034703	01-	241.87	8.28	4.64
35000.00	.6248742	03	.8923948	02-	243.94	8.75	5.44
36000.00	.5443102	03	.7688669	02-	246.63	9.18	5.93
37000.00	.4748633	03	.6635369	02-	249.32	9.60	6.41
38000.00	.4149014	03	.5735664	02-	252.01	10.01	6.87
39000.00	.3630457	03	.4965829	02-	254.69	10.40	7.33
40000.00	.3181297	03	.4306008	02-	257.38	10.79	7.76
41000.00	.2791548	03	.3741503	02-	259.93	11.15	8.24
42000.00	.2452705	03	.3256739	02-	262.37	11.50	8.74
43000.00	.2157665	03	.2838545	02-	264.81	11.82	9.22
44000.00	.1900426	03	.2477273	02-	267.26	12.12	9.66
45000.00	.1675870	03	.2164461	02-	269.74	12.39	10.07
46000.00	.1479674	03	.1892310	02-	272.41	12.66	10.39
47000.00	.1308086	03	.1656615	02-	275.08	12.91	10.69
48000.00	.1157819	03	.1452198	02-	277.76	13.18	10.29
49000.00	.1025538	03	.1284651	02-	278.11	13.52	10.47
50000.00	.9080576	02	.1146051	02-	276.03	13.82	11.60
51000.00	.8033272	02	.1021561	02-	273.95	14.01	12.64
52000.00	.7100404	02	.9098328	03-	271.88	14.10	13.59
53000.00	.6270166	02	.8096355	03-	269.80	14.09	13.98
54000.00	.5531938	02	.7197799	03-	267.75	14.08	14.00
55000.00	.4876305	02	.6389875	03-	265.86	14.06	13.95
56000.00	.4294675	02	.5668039	03-	263.97	14.04	13.90
57000.00	.3779118	02	.5023614	03-	262.07	14.03	13.85
58000.00	.3322504	02	.4448744	03-	260.18	14.02	13.81
59000.00	.2918437	02	.3936325	03-	258.29	14.02	13.78
60000.00	.2561479	02	.3473921	03-	256.88	14.04	13.55
61000.00	.2246687	02	.3063159	03-	255.52	14.09	13.33
62000.00	.1969288	02	.2699268	03-	254.16	14.19	12.79
63000.00	.1724226	02	.2392081	03-	251.11	14.37	12.55
64000.00	.1506617	02	.2129635	03-	246.46	14.56	13.05
65000.00	.1313148	02	.1891870	03-	241.81	14.72	13.52
66000.00	.1141521	02	.1676863	03-	237.16	14.83	13.97
67000.00	.9898940	01	.1477454	03-	233.41	14.93	13.96
68000.00	.8565323	01	.1297930	03-	229.90	15.05	13.86
69000.00	.7395228	01	.1138002	03-	226.39	15.20	13.80
70000.00	.6370628	01	.9957762	04-	222.88	15.40	13.75
71000.00	.5472805	01	.8743044	04-	218.07	15.58	14.37
72000.00	.4684716	01	.7676571	04-	212.60	15.66	15.27
73000.00	.3994092	01	.6717703	04-	207.13	15.62	16.09
74000.00	.3390949	01	.5857951	04-	201.66	15.43	16.80
75000.00	.2869547	01	.5022696	04-	199.03	15.22	15.86
76000.00	.2424510	01	.4270082	04-	197.80	15.20	14.29
77000.00	.2046451	01	.3626760	04-	196.58	15.45	12.98
78000.00	.1725600	01	.3077371	04-	195.35	15.99	11.90
79000.00	.1452505	01	.2629035	04-	192.47	16.74	11.92
80000.00	.1219327	01	.2244753	04-	189.23	17.62	12.29
81000.00	.1020550	01	.1911525	04-	186.00	18.38	15.01
82000.00	.8514269	00	.1625820	04-	182.44	18.76	17.64
83000.00	.7070198	00	.1394391	04-	176.64	18.57	21.25
84000.00	.5835083	00	.1189862	04-	170.84	17.66	24.42
85000.00	.4784227	00	.1009802	04-	165.05	15.98	26.93
86000.00	.3895831	00	.8507270	05-	159.54	13.53	28.56
87000.00	.3149756	00	.7124465	05-	154.02	10.34	29.44
88000.00	.2537351	00	.5734422	05-	154.15	6.85	25.23
89000.00	.2052842	00	.4463229	05-	160.23	3.90	17.14
90000.00	.1673773	00	.3513166	05-	165.98	1.82	10.82
91000.00	.1366124	00	.2941616	05-	161.79	.26-	13.22
92000.00	.1109172	00	.2451770	05-	157.60	3.12-	14.73

FIGURE 23
WALLOPS IS., MAY 11, 1967 0825 GMT.

WIND DIRECTION degrees	WIND SPEED m/sec	ERROR m/sec (±)	TEMPERATURE degrees Kelvin	ERROR degrees Kelvin (±)	HEIGHT meters
5.61	10.98	.64	251.67	.33	35572.25
359.97	13.34	1.13	267.52	.42	41580.10
63.27	17.73	1.20	269.31	.58	46100.70
96.44	19.89	1.12	272.34	.58	49861.24
99.63	20.77	1.22	267.76	.57	53525.84
104.92	17.35	1.28	259.76	.66	57107.84
93.87	23.55	2.48	243.73	.66	60599.14
128.67	36.15	1.96	242.63	.51	64003.29
117.62	32.25	1.11	239.22	.36	67838.44
93.85	38.74	.95	214.80	.29	72081.54
82.17	26.53	.89	191.91	.23	76177.34
85.35	18.46	.96	175.47	.23	80121.24
337.56	44.00	3.04	166.30	.41	83919.19
29.49	90.17	25.55	165.01	5.28	87109.24
136.26	77.67	45.95	175.60	7.85	89727.69
55.90	61.74	24.78	205.53	8.68	92261.64



WIND COMPONENTS
m/sec

HEIGHT meters	SOUTH component (+)	WEST component (+)
40000.00	-12.70	-.27
45000.00	-9.28	-11.97
50000.00	2.27	-19.79
55000.00	3.88	-18.95
60000.00	2.08	-22.34
65000.00	20.60	-28.31
70000.00	8.66	-33.70
75000.00	-1.82	-29.83
80000.00	-1.56	-18.64
85000.00	-53.48	-3.93
90000.00	46.36	-53.42

LEGEND

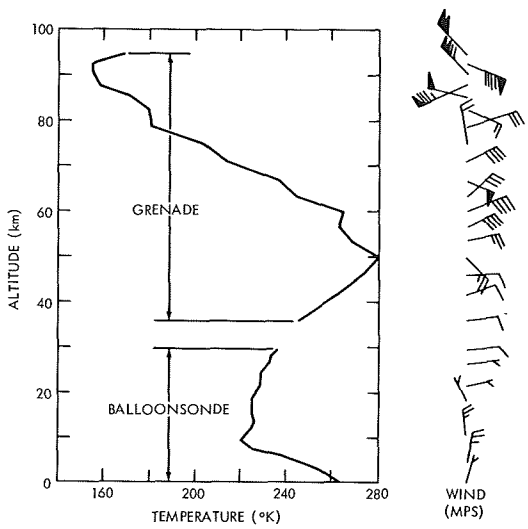
5 m/sec or less — 50 m/sec

10 m/sec — DIRECTION OF NORTH WIND

HEIGHT meters	PRESSURE nt/sq meter		DENSITY kg/cu meter		TEMPERATURE degrees Kelvin	PRESSURE deviation (%)	DENSITY deviation (%)
34000.00	.5837557	03	.8318036	02-	244.49	12.00-	15.87-
35000.00	.5090847	03	.7121103	02-	249.05	11.40-	15.86-
36000.00	.4449910	03	.6132463	02-	252.79	10.73-	15.50-
37000.00	.3896408	03	.5314217	02-	255.43	10.06-	14.77-
38000.00	.3416553	03	.4612118	02-	258.07	9.40-	14.05-
39000.00	.2999923	03	.4008716	02-	260.71	8.76-	13.35-
40000.00	.2637656	03	.3489320	02-	263.35	8.14-	12.67-
41000.00	.2322205	03	.3041544	02-	265.99	7.53-	12.00-
42000.00	.2046679	03	.2663679	02-	267.68	6.95-	11.05-
43000.00	.1804807	03	.2345421	02-	268.08	6.46-	9.75-
44000.00	.1591879	03	.2065662	02-	268.47	6.08-	8.55-
45000.00	.1404384	03	.1819680	02-	268.87	5.81-	7.45-
46000.00	.1239249	03	.1603351	02-	269.27	5.64-	6.46-
47000.00	.1093869	03	.1411250	02-	270.03	5.58-	5.69-
48000.00	.9659308	02	.1242484	02-	270.84	5.57-	5.63-
49000.00	.8533043	02	.1094356	02-	271.64	5.54-	5.88-
50000.00	.7540674	02	.9652360	03-	272.16	5.48-	6.00-
51000.00	.6662847	02	.8568053	03-	270.91	5.43-	5.52-
52000.00	.5884067	02	.7601652	03-	269.66	5.44-	5.09-
53000.00	.5193518	02	.6740770	03-	268.41	5.49-	5.09-
54000.00	.4581021	02	.5984059	03-	266.70	5.53-	5.22-
55000.00	.4037147	02	.5318146	03-	264.46	5.56-	5.16-
56000.00	.3554173	02	.4721799	03-	262.23	5.61-	5.11-
57000.00	.3125696	02	.4188227	03-	260.00	5.68-	5.07-
58000.00	.2744483	02	.3739811	03-	255.66	5.80-	4.31-
59000.00	.2404344	02	.3336231	03-	251.07	6.05-	3.56-
60000.00	.2101311	02	.2970061	03-	246.48	6.44-	2.91-
61000.00	.1832785	02	.2621149	03-	243.60	6.92-	3.02-
62000.00	.1597205	02	.2287269	03-	243.27	7.38-	4.42-
63000.00	.1391707	02	.1995637	03-	242.95	7.68-	6.09-
64000.00	.1212479	02	.1740949	03-	242.63	7.79-	7.57-
65000.00	.1056016	02	.1521856	03-	241.74	7.74-	8.68-
66000.00	.9193163	01	.1329744	03-	240.85	7.52-	9.62-
67000.00	.7999366	01	.1161355	03-	239.96	7.12-	10.41-
68000.00	.6955702	01	.1016935	03-	238.29	6.57-	10.78-
69000.00	.6035101	01	.9041792	04-	232.53	5.98-	9.58-
70000.00	.5217980	01	.8015976	04-	226.77	5.48-	8.42-
71000.00	.4494860	01	.7084905	04-	221.02	5.07-	7.31-
72000.00	.3856925	01	.6241908	04-	215.26	4.77-	6.26-
73000.00	.3296179	01	.5476950	04-	209.66	4.58-	5.35-
74000.00	.2805151	01	.4788698	04-	204.07	4.50-	4.51-
75000.00	.2376724	01	.4171564	04-	198.48	4.56-	3.77-
76000.00	.2004326	01	.3619861	04-	192.90	4.76-	3.10-
77000.00	.1682833	01	.3110515	04-	188.48	5.05-	3.09-
78000.00	.1407306	01	.2660067	04-	184.31	5.40-	3.27-
79000.00	.1172153	01	.2266853	04-	180.14	5.79-	3.49-
80000.00	.9721792	00	.1924654	04-	175.97	6.21-	3.71-
81000.00	.8034441	00	.1614709	04-	173.34	6.79-	2.84-
82000.00	.6621842	00	.1349613	04-	170.93	7.63-	2.34-
83000.00	.5442943	00	.1125232	04-	168.51	8.71-	2.15-
84000.00	.4461991	00	.9349320	05-	166.26	10.02-	2.23-
85000.00	.3652252	00	.7671312	05-	165.86	11.46-	3.56-
86000.00	.2988188	00	.6291828	05-	165.45	12.91-	4.91-
87000.00	.2443815	00	.5158221	05-	165.05	14.38-	6.28-
88000.00	.2002530	00	.4137587	05-	168.61	15.66-	9.64-
89000.00	.1648321	00	.3325952	05-	172.65	16.56-	12.70-
90000.00	.1364520	00	.2658463	05-	178.81	16.99-	16.13-
91000.00	.1140027	00	.2083466	05-	190.62	16.77-	19.80-
92000.00	.9628696	01-	.1657029	05-	202.44	15.90-	22.46-

FIGURE 24
POINT BARROW, MAY 15, 1967 1140 GMT.

WIND DIRECTION degrees	WIND SPEED m/sec	ERROR m/sec (±)	TEMPERATURE degrees Kelvin	ERROR degrees Kelvin (±)	HEIGHT meters
76.87	8.49	2.46	246.16	.54	35824.94
68.55	10.21	3.48	263.53	.80	41614.29
84.56	8.70	2.04	274.00	.46	45956.99
133.35	24.59	8.92	281.50	1.79	49601.74
80.03	20.82	9.48	268.70	2.00	53153.24
66.01	40.91	3.95	263.55	.83	56589.05
77.43	40.51	2.31	265.00	.46	59946.29
44.70	28.57	2.66	244.70	.45	63208.79
108.80	47.73	4.39	236.98	.69	66878.59
61.69	40.60	8.77	214.32	1.34	70944.64
355.06	22.34	11.78	203.68	1.44	74844.89
74.11	29.18	11.95	181.41	1.58	78626.84
110.29	13.61	15.09	180.15	1.57	82249.09
278.74	48.39	5.71	172.20	.72	85273.09
240.62	86.12	4.39	158.48	.52	87769.25
313.88	118.67	3.17	155.63	.39	90172.95
115.05	88.00	8.02	155.35	1.11	92495.49
318.62	99.90	30.56	169.28	5.61	94665.14



WIND COMPONENTS
m/sec

HEIGHT meters	SOUTH component (+)	WEST component (+)
40000.00	-3.23	-9.15
45000.00	-1.46	-8.84
50000.00	14.58	-18.17
55000.00	-10.60	-29.57
60000.00	-9.00	-39.21
65000.00	-2.88	-32.34
70000.00	-11.20	-37.93
75000.00	-21.67	.69
80000.00	-3.17	-22.26
85000.00	-6.26	42.35
90000.00	-73.29	84.78

LEGEND

5 m/sec or less

50 m/sec

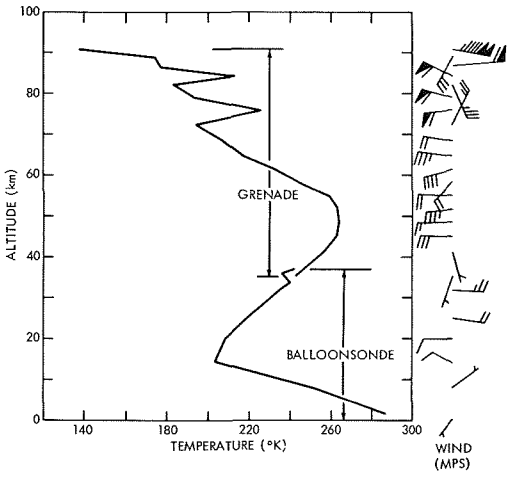
10 m/sec

DIRECTION OF NORTH WIND

HEIGHT meters	PRESSURE nt/sq meter		DENSITY kg/cu meter		TEMPERATURE degrees Kelvin	PRESSURE deviation (%)	DENSITY deviation (%)
34000.00	.7583994	03	.1086073	01-	243.27	14.31	9.84
35000.00	.6601348	03	.9392483	02-	244.85	14.88	10.97
36000.00	.5751802	03	.8123047	02-	246.68	15.37	11.92
37000.00	.5018517	03	.7002290	02-	249.68	15.83	12.29
38000.00	.4386040	03	.6047136	02-	252.68	16.29	12.68
39000.00	.3839533	03	.5231535	02-	255.68	16.76	13.07
40000.00	.3366480	03	.4533779	02-	258.68	17.24	13.46
41000.00	.2956309	03	.3935736	02-	261.68	17.71	13.86
42000.00	.2599922	03	.3424986	02-	264.46	18.19	14.36
43000.00	.2289458	03	.2988751	02-	266.87	18.65	15.00
44000.00	.2018452	03	.2611378	02-	269.28	19.08	15.60
45000.00	.1781595	03	.2284489	02-	271.69	19.48	16.18
46000.00	.1574323	03	.2001064	02-	274.08	19.86	16.74
47000.00	.1392611	03	.1756907	02-	276.14	20.20	17.40
48000.00	.1233042	03	.1544090	02-	278.20	20.53	17.27
49000.00	.1092778	03	.1358395	02-	280.26	20.96	16.82
50000.00	.9688909	02	.1205243	02-	280.06	21.44	17.36
51000.00	.8583766	02	.1081690	02-	276.46	21.82	19.27
52000.00	.7592890	02	.9694628	03-	272.85	22.01	21.03
53000.00	.6705712	02	.8676482	03-	269.25	22.02	22.15
54000.00	.5914998	02	.7705511	03-	267.43	21.98	22.04
55000.00	.5213654	02	.6830147	03-	265.93	21.95	21.80
56000.00	.4592373	02	.6050340	03-	264.43	21.95	21.58
57000.00	.4043141	02	.5340989	03-	263.72	22.00	21.05
58000.00	.3559510	02	.4694425	03-	264.16	22.16	20.10
59000.00	.3134508	02	.4127167	03-	264.59	22.47	19.30
60000.00	.2760715	02	.3633975	03-	264.66	22.91	18.78
61000.00	.2427932	02	.3272871	03-	258.44	23.29	21.09
62000.00	.2128677	02	.2940262	03-	252.22	23.43	22.86
63000.00	.1860261	02	.2634502	03-	245.99	23.39	23.96
64000.00	.1621659	02	.2324599	03-	243.03	23.31	23.40
65000.00	.1411692	02	.2041286	03-	240.93	23.33	22.49
66000.00	.1227471	02	.1790538	03-	238.82	23.48	21.69
67000.00	.1065883	02	.1571440	03-	236.30	23.75	21.21
68000.00	.9233412	01	.1394170	03-	230.73	24.02	22.30
69000.00	.7970952	01	.1233338	03-	225.15	24.17	23.33
70000.00	.6856115	01	.1087764	03-	219.58	24.19	24.26
71000.00	.5875017	01	.9556764	04-	214.16	24.07	25.02
72000.00	.5019734	01	.8270844	04-	211.44	23.94	24.20
73000.00	.4280419	01	.7144884	04-	208.71	23.91	23.47
74000.00	.3642531	01	.6160644	04-	205.98	23.99	22.84
75000.00	.3092590	01	.5313543	04-	202.76	24.18	22.57
76000.00	.2616017	01	.4629151	04-	196.87	24.30	23.90
77000.00	.2201784	01	.4016273	04-	190.99	24.21	25.11
78000.00	.1843267	01	.3469264	04-	185.10	23.90	26.15
79000.00	.1535975	01	.2951835	04-	181.28	23.45	25.66
80000.00	.1277309	01	.2459451	04-	180.93	23.22	23.03
81000.00	.1061888	01	.2048597	04-	180.58	23.18	23.26
82000.00	.8825334	00	.1705871	04-	180.23	23.10	23.43
83000.00	.7326024	00	.1432444	04-	178.17	22.87	24.56
84000.00	.6066780	00	.1203991	04-	175.54	22.33	25.90
85000.00	.5010002	00	.1009383	04-	172.91	21.45	26.88
86000.00	.4120510	00	.8534368	05-	168.20	20.08	28.97
87000.00	.3368756	00	.7213044	05-	162.70	18.02	31.05
88000.00	.2737115	00	.6027361	05-	158.20	15.26	31.63
89000.00	.2215762	00	.4916141	05-	157.02	12.15	29.03
90000.00	.1790962	00	.4003865	05-	155.83	8.95	26.30
91000.00	.1446223	00	.3239503	05-	155.53	5.58	24.69
92000.00	.1167570	00	.2617358	05-	155.40	1.97	22.47
93000.00	.9446393	01-	.2075155	05-	158.58	1.57-	17.70
94000.00	.7691259	01-	.1623852	05-	165.00	4.67-	11.29

FIGURE 25
NATAL, JUNE 24, 1967 0826 GMT.

WIND DIRECTION degrees	WIND SPEED m/sec	ERROR m/sec (±)	TEMPERATURE degrees Kelvin	ERROR degrees Kelvin (±)	HEIGHT meters
195.75	3.69	3.19	242.55	.57	35417.04
171.51	6.39	3.80	256.94	.68	40923.09
273.66	28.52	7.38	263.13	1.28	45052.69
268.73	16.93	9.02	264.45	1.72	48499.35
264.76	33.24	9.42	263.23	1.86	51846.69
272.05	22.34	13.60	259.49	2.76	55088.54
226.94	18.21	13.09	244.96	3.89	58252.74
256.40	41.26	18.31	233.51	3.74	61327.74
280.94	34.35	11.15	216.88	2.10	64787.09
280.29	20.76	9.66	206.51	1.82	68613.09
17.91	25.81	15.72	194.23	3.47	72252.29
262.29	58.97	24.43	225.91	5.47	75803.69
294.60	57.85	34.90	193.16	7.36	79228.04
156.60	34.13	48.35	182.62	17.79	82029.84
296.50	60.73	41.66	212.75	10.97	84342.59
86.34	60.82	64.17	176.66	13.38	86577.95
206.13	30.44	69.48	174.30	14.07	88722.34
100.87	145.75	143.81	138.39	25.20	90731.79



WIND COMPONENTS m/sec

HEIGHT meters	SOUTH component (+)	WEST component (+)
40000.00	5.85	-.61
45000.00	-1.71	28.08
50000.00	1.56	24.17
55000.00	-.69	22.62
60000.00	10.88	28.53
65000.00	-6.36	32.98
70000.00	-11.66	9.61
75000.00	.55	43.41
80000.00	-8.81	34.37
85000.00	-20.27	20.51
90000.00	27.42	-86.12

LEGEND

5 m/sec or less

50 m/sec

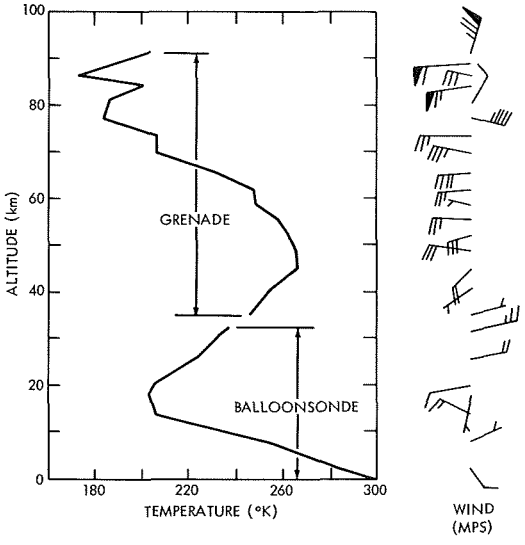
10 m/sec

DIRECTION OF NORTH WIND

HEIGHT meters	PRESSURE nt/sq meter		DENSITY kg/cu meter		TEMPERATURE degrees Kelvin	PRESSURE deviation (%)	DENSITY deviation (%)
34000.00	.6500000	03	.9421268	02-	240.36	2.02-	4.71-
35000.00	.5652015	03	.8139839	02-	241.90	1.63-	3.82-
36000.00	.4920118	03	.7022843	02-	244.07	1.30-	3.23-
37000.00	.4288969	03	.6057100	02-	246.68	1.00-	2.86-
38000.00	.3744356	03	.5232535	02-	249.30	.71-	2.49-
39000.00	.3273667	03	.4527311	02-	251.91	.44-	2.14-
40000.00	.2866237	03	.3923156	02-	254.52	.18-	1.81-
41000.00	.2512972	03	.3405802	02-	257.05	.06	1.46-
42000.00	.2205602	03	.2971897	02-	258.55	.27	.76-
43000.00	.1937367	03	.2595422	02-	260.05	.40	.13-
44000.00	.1703090	03	.2268494	02-	261.55	.48	.42
45000.00	.1498306	03	.1984353	02-	263.05	.48	.91
46000.00	.1318823	03	.1743717	02-	263.49	.41	1.72
47000.00	.1161117	03	.1532974	02-	263.87	.22	2.43
48000.00	.1022502	03	.1348009	02-	264.25	.04-	2.37
49000.00	.9006656	02	.1187348	02-	264.26	.29-	2.11
50000.00	.7932089	02	.1047132	02-	263.90	.57-	1.97
51000.00	.6984777	02	.9233504	03-	263.53	.86-	1.81
52000.00	.6149577	02	.8144417	03-	263.05	1.17-	1.68
53000.00	.5412517	02	.7199574	03-	261.90	1.51-	1.36
54000.00	.4760950	02	.6361133	03-	260.74	1.81-	.75
55000.00	.4185761	02	.5617474	03-	259.59	2.09-	.17
56000.00	.3675200	02	.5015111	03-	255.30	2.40-	.78
57000.00	.3219687	02	.4473998	03-	250.71	2.84-	1.40
58000.00	.2813859	02	.3983021	03-	246.12	3.42-	1.90
59000.00	.2453506	02	.3529486	03-	242.17	4.13-	2.02
60000.00	.2134722	02	.3118854	03-	238.45	4.95-	1.95
61000.00	.1853376	02	.2750758	03-	234.73	5.88-	1.77
62000.00	.1605185	02	.2428456	03-	230.27	6.92-	1.47
63000.00	.1386237	02	.2141929	03-	225.47	8.04-	.78
64000.00	.1193432	02	.1884191	03-	220.66	9.24-	.02
65000.00	.1024269	02	.1649719	03-	216.30	10.51-	1.00-
66000.00	.8769217	01	.1430319	03-	213.59	11.78-	2.78-
67000.00	.7493200	01	.1237901	03-	210.88	13.00-	4.51-
68000.00	.6390162	01	.1069420	03-	208.17	14.16-	6.18-
69000.00	.5437860	01	.9232079	04-	205.20	15.28-	7.67-
70000.00	.4616087	01	.7967947	04-	201.82	16.38-	8.97-
71000.00	.3907893	01	.6860209	04-	198.45	17.46-	10.25-
72000.00	.3299087	01	.5891642	04-	195.08	18.54-	11.52-
73000.00	.2788163	01	.4835002	04-	200.90	19.28-	16.44-
74000.00	.2370723	01	.3936330	04-	209.82	19.29-	21.51-
75000.00	.2029539	01	.3232406	04-	218.74	18.50-	25.43-
76000.00	.1746252	01	.2715526	04-	224.03	17.02-	27.31-
77000.00	.1500352	01	.2437179	04-	214.46	15.35-	24.07-
78000.00	.1280246	01	.2176704	04-	204.90	13.94-	20.84-
79000.00	.1084231	01	.1933690	04-	195.34	12.85-	17.68-
80000.00	.9125190	00	.1670944	04-	190.25	11.97-	16.41-
81000.00	.7649432	00	.1428967	04-	186.49	11.26-	14.02-
82000.00	.6389684	00	.1218211	04-	182.73	10.87-	11.85-
83000.00	.5359696	00	.9562846	05-	195.26	10.10-	16.84-
84000.00	.4546306	00	.7604225	05-	208.28	8.32-	20.48-
85000.00	.3867369	00	.6665460	05-	202.13	6.24-	16.21-
86000.00	.3259292	00	.6105056	05-	185.99	5.01-	7.73-
87000.00	.2713695	00	.5365675	05-	176.19	4.92-	2.51-
88000.00	.2246858	00	.4470542	05-	175.09	5.38-	2.36-
89000.00	.1853432	00	.3813120	05-	169.33	6.18-	.08
90000.00	.1507176	00	.3466592	05-	151.46	8.31-	9.35

FIGURE 26
NATAL, JUNE 24, 1967 2035 GMT.

WIND DIRECTION degrees	WIND SPEED m/sec	ERROR m/sec (±)	TEMPERATURE degrees Kelvin	ERROR degrees Kelvin (±)	HEIGHT meters
71.24	3.21	2.08	245.73	.33	35138.30
237.66	4.40	4.01	255.44	1.03	40877.25
221.45	18.43	7.38	265.54	1.73	45183.20
292.55	29.40	8.82	264.96	1.62	48754.49
260.66	30.36	9.78	262.35	1.85	52236.89
272.00	22.71	12.57	257.69	2.41	55630.88
283.64	6.95	4.66	248.01	2.51	58929.89
267.76	24.75	11.27	246.65	2.19	62157.64
266.77	38.06	15.38	230.12	2.92	65794.54
288.70	35.18	17.34	206.10	3.31	69796.14
271.51	25.86	14.66	206.24	2.77	73653.84
107.00	46.89	11.15	183.06	2.08	77397.64
23.28	9.88	14.83	184.79	3.38	80967.94
261.84	65.73	39.21	200.42	7.42	83928.70
281.62	29.43	26.86	173.23	5.29	86378.99
265.72	59.99	40.79	188.81	7.77	88756.49
6.62	76.48	43.42	202.63	11.39	91051.29



WIND COMPONENTS
m/sec

HEIGHT meters	SOUTH component (+)	WEST component (+)
40000.00	1.83	2.68
45000.00	13.32	11.83
50000.00	-5.48	28.15
55000.00	.27	24.05
60000.00	-.77	12.71
65000.00	1.88	35.10
70000.00	-10.71	32.92
75000.00	4.49	.43
80000.00	-2.89	-15.00
85000.00	2.65	49.22
90000.00	-39.11	22.63

LEGEND

5 m/sec or less

50 m/sec

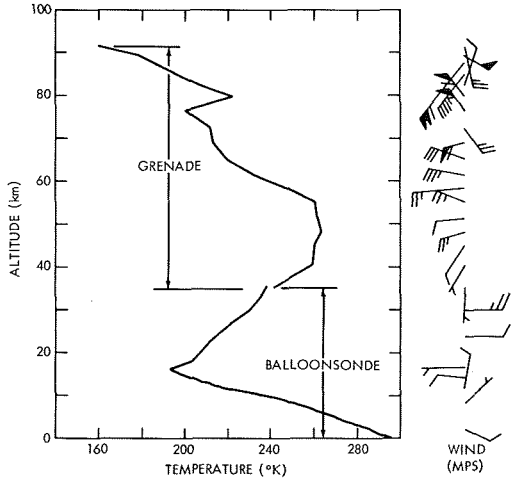
10 m/sec

DIRECTION OF NORTH WIND

HEIGHT meters	PRESSURE nt/sq meter		DENSITY kg/cu meter		TEMPERATURE degrees Kelvin	PRESSURE deviation (%)	DENSITY deviation (%)
34000.00	.6557565	03	.9442929	02-	241.93	1.15-	4.49-
35000.00	.5710138	03	.8110783	02-	245.26	.62-	4.16-
36000.00	.4979790	03	.7018461	02-	247.18	.10-	3.29-
37000.00	.4347373	03	.6085485	02-	248.88	.34	2.40-
38000.00	.3798922	03	.5281853	02-	250.57	.73	1.58-
39000.00	.3322816	03	.4588910	02-	252.26	1.05	.81-
40000.00	.2909102	03	.3990793	02-	253.95	1.31	.12-
41000.00	.2549306	03	.3472978	02-	255.72	1.51	.48
42000.00	.2236463	03	.3019094	02-	258.07	1.67	.81
43000.00	.1964417	03	.2627962	02-	260.42	1.80	1.11
44000.00	.1727540	03	.2290443	02-	262.76	1.92	1.39
45000.00	.1521023	03	.1998792	02-	265.11	2.01	1.65
46000.00	.1340101	03	.1759070	02-	265.40	2.03	2.62
47000.00	.1180771	03	.1550875	02-	265.24	1.92	3.63
48000.00	.1040343	03	.1367268	02-	265.08	1.70	3.84
49000.00	.9165574	02	.1205978	02-	264.77	1.46	3.71
50000.00	.8073271	02	.1065271	02-	264.02	1.19	3.73
51000.00	.7108862	02	.9406874	03-	263.27	.89	3.72
52000.00	.6257637	02	.8304122	03-	262.52	.55	3.67
53000.00	.5505914	02	.7340819	03-	261.30	.19	3.35
54000.00	.4841598	02	.6489210	03-	259.92	.15-	2.77
55000.00	.4254709	02	.5732883	03-	258.55	.47-	2.23
56000.00	.3735997	02	.5072199	03-	256.60	.78-	1.92
57000.00	.3276575	02	.4499919	03-	253.67	1.12-	1.99
58000.00	.2869384	02	.3986813	03-	250.73	1.52-	2.00
59000.00	.2509098	02	.3524993	03-	247.98	1.96-	1.89
60000.00	.2192255	02	.3085108	03-	247.55	2.39-	.84
61000.00	.1915058	02	.2699611	03-	247.13	2.74-	.11-
62000.00	.1672599	02	.2361848	03-	246.71	3.01-	1.30-
63000.00	.1459154	02	.2093497	03-	242.82	3.21-	1.49-
64000.00	.1269955	02	.1856802	03-	238.27	3.42-	1.42-
65000.00	.1102384	02	.1643139	03-	233.73	3.69-	1.40-
66000.00	.9542221	01	.1452403	03-	228.88	4.00-	1.28-
67000.00	.8231510	01	.1286645	03-	222.88	4.43-	.75-
68000.00	.7072580	01	.1136092	03-	216.88	5.00-	.33-
69000.00	.6051285	01	.9997071	04-	210.87	5.73-	.02-
70000.00	.5156919	01	.8716758	04-	206.10	6.58-	.42-
71000.00	.4386955	01	.7413979	04-	206.14	7.35-	3.01-
72000.00	.3732294	01	.6306488	04-	206.18	7.84-	5.29-
73000.00	.3175573	01	.5364849	04-	206.21	8.07-	7.28-
74000.00	.2699760	01	.4608371	04-	204.09	8.09-	8.10-
75000.00	.2287642	01	.4027070	04-	197.90	8.14-	7.10-
76000.00	.1928355	01	.3504229	04-	191.71	8.37-	6.20-
77000.00	.1616493	01	.3055544	04-	185.52	8.80-	5.43-
78000.00	.1349752	01	.2564642	04-	183.35	9.27-	6.74-
79000.00	.1126162	01	.2134163	04-	183.83	9.48-	9.14-
80000.00	.9401114	00	.1776899	04-	184.32	9.30-	11.11-
81000.00	.7852721	00	.1479116	04-	184.95	8.90-	11.00-
82000.00	.6578273	00	.1204681	04-	190.23	8.24-	12.83-
83000.00	.5537733	00	.9867449	05-	195.51	7.12-	14.19-
84000.00	.4681163	00	.8169375	05-	199.62	5.60-	14.57-
85000.00	.3945186	00	.7290216	05-	188.53	4.35-	8.35-
86000.00	.3290773	00	.6461239	05-	177.43	4.09-	2.35-
87000.00	.2729482	00	.5363284	05-	177.29	4.37-	2.55-
88000.00	.2271568	00	.4304413	05-	183.85	4.33-	5.99-
89000.00	.1902664	00	.3483655	05-	190.27	3.69-	8.56-
90000.00	.1602880	00	.2844733	05-	196.29	2.49-	10.26-
91000.00	.1357414	00	.2337379	05-	202.32	.90-	10.03-

FIGURE 27
NATAL, JUNE 25, 1967 0834 GMT.

WIND DIRECTION degrees	WIND SPEED m/sec	ERROR m/sec (±)	TEMPERATURE degrees Kelvin	ERROR degrees Kelvin (±)	HEIGHT meters
184.20	1.43	3.46	242.12	.32	35080.35
218.74	5.80	5.60	258.71	.79	40697.29
215.83	8.89	9.46	259.68	1.34	44922.55
244.74	25.08	11.63	263.14	1.46	48433.25
254.37	8.12	7.01	261.17	1.28	51849.70
300.82	26.78	13.01	259.99	2.18	55171.70
255.48	22.98	19.71	246.70	4.68	58411.14
290.80	34.31	19.66	232.03	5.40	61561.94
302.11	32.02	16.54	218.72	3.00	65104.14
259.16	59.58	34.26	213.21	4.52	69022.99
141.29	24.03	40.61	211.57	5.21	72785.44
346.56	56.62	16.93	199.75	2.99	76408.94
344.99	57.82	13.89	222.14	2.87	79884.94
15.35	7.83	30.37	206.51	4.90	82776.74
218.50	42.69	34.15	195.51	6.40	85153.19
217.27	107.63	45.16	185.61	8.01	87454.45
121.76	48.60	71.68	177.62	8.53	89666.24
172.34	25.91	66.74	159.78	7.52	91740.64



WIND COMPONENTS
m/sec

HEIGHT meters	SOUTH component (+)	WEST component (+)
40000.00	4.13	3.19
45000.00	7.28	5.59
50000.00	6.79	15.86
55000.00	-12.89	22.21
60000.00	-3.28	27.20
65000.00	-16.87	27.26
70000.00	13.16	39.41
75000.00	-26.36	2.20
80000.00	-53.92	14.29
85000.00	30.76	24.72
90000.00	25.59	-35.23

LEGEND

5 m/sec or less

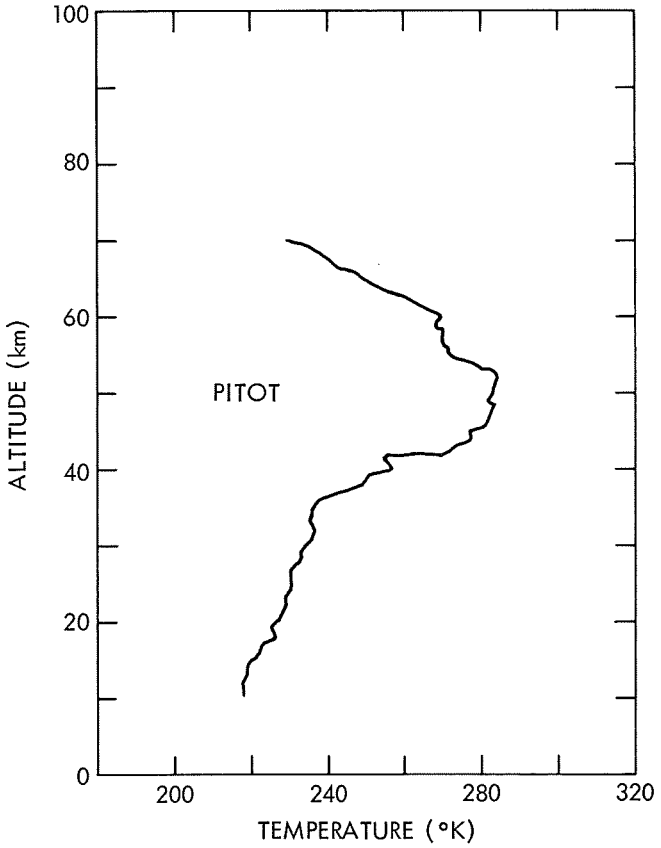
50 m/sec

10 m/sec

DIRECTION OF NORTH WIND

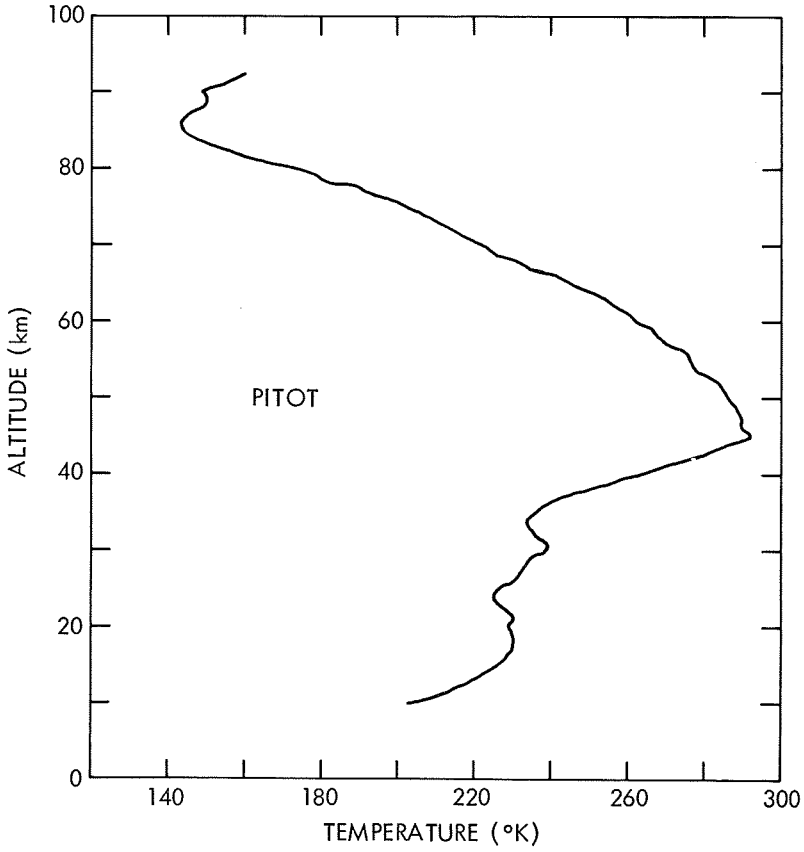
HEIGHT meters	PRESSURE nt/sq meter		DENSITY kg/cu meter		TEMPERATURE degrees Kelvin	PRESSURE deviation (%)	DENSITY deviation (%)
34000.00	.6500000	03	.9609165	02-	235.66	2.02-	2.81-
35000.00	.5643757	03	.8136891	02-	241.64	1.77-	3.85-
36000.00	.4913620	03	.6991720	02-	244.83	1.43-	3.66-
37000.00	.4285531	03	.6025310	02-	247.78	1.08-	3.37-
38000.00	.3743948	03	.5201859	02-	250.74	.72-	3.07-
39000.00	.3276122	03	.4498866	02-	253.69	.36-	2.76-
40000.00	.2871305	03	.3897583	02-	256.65	.00-	2.45-
41000.00	.2519888	03	.3392421	02-	258.78	.34	1.85-
42000.00	.2212894	03	.2976486	02-	259.01	.60	.61-
43000.00	.1943599	03	.2611951	02-	259.23	.73	.50
44000.00	.1707345	03	.2292426	02-	259.46	.73	1.48
45000.00	.1500061	03	.2011875	02-	259.75	.60	2.31
46000.00	.1318410	03	.1761562	02-	260.74	.38	2.76
47000.00	.1159368	03	.1543229	02-	261.72	.07	3.12
48000.00	.1020045	03	.1352683	02-	262.71	.28-	2.73
49000.00	.8977461	02	.1190048	02-	262.81	.62-	2.34
50000.00	.7900416	02	.1049578	02-	262.23	.97-	2.20
51000.00	.6950898	02	.9254690	03-	261.65	1.34-	2.04
52000.00	.6114066	02	.8157439	03-	261.11	1.74-	1.84
53000.00	.5377018	02	.7183835	03-	260.76	2.15-	1.13
54000.00	.4728170	02	.6325575	03-	260.40	2.49-	.18
55000.00	.4157062	02	.5569115	03-	260.05	2.76-	.68-
56000.00	.3651610	02	.4957922	03-	256.59	3.03-	.36-
57000.00	.3201572	02	.4417520	03-	252.48	3.39-	.12
58000.00	.2801073	02	.3928749	03-	248.38	3.86-	.51
59000.00	.2445108	02	.3491731	03-	243.95	4.46-	.93
60000.00	.2129024	02	.3099502	03-	239.30	5.21-	1.31
61000.00	.1848847	02	.2745018	03-	234.64	6.11-	1.56
62000.00	.1601274	02	.2421428	03-	230.38	7.15-	1.18
63000.00	.1383422	02	.2126682	03-	226.62	8.23-	.06
64000.00	.1192345	02	.1863850	03-	222.86	9.33-	1.05-
65000.00	.1025114	02	.1629917	03-	219.11	10.44-	2.19-
66000.00	.8797332	01	.1409383	03-	217.46	11.50-	4.20-
67000.00	.7541926	01	.1216123	03-	216.05	12.43-	6.19-
68000.00	.6459484	01	.1048404	03-	214.64	13.23-	8.02-
69000.00	.5527032	01	.9029773	04-	213.24	13.89-	9.70-
70000.00	.4726185	01	.7738018	04-	212.78	14.38-	11.60-
71000.00	.4040251	01	.6628541	04-	212.34	14.67-	13.28-
72000.00	.3452917	01	.5676596	04-	211.91	14.74-	14.75-
73000.00	.2949492	01	.4872933	04-	210.87	14.61-	15.78-
74000.00	.2515503	01	.4221228	04-	207.60	14.36-	15.82-
75000.00	.2140077	01	.3648560	04-	204.34	14.06-	15.83-
76000.00	.1816046	01	.3146353	04-	201.08	13.70-	15.78-
77000.00	.1540664	01	.2636816	04-	203.55	13.08-	17.85-
78000.00	.1311734	01	.2176144	04-	209.99	11.82-	20.86-
79000.00	.1122316	01	.1806492	04-	216.44	9.79-	23.09-
80000.00	.9642473	00	.1516483	04-	221.51	6.98-	24.13-
81000.00	.8283855	00	.1335394	04-	216.11	3.90-	19.65-
82000.00	.7089685	00	.1172205	04-	210.70	1.10-	15.18-
83000.00	.6043869	00	.1024734	04-	205.47	1.36	10.89-
84000.00	.5132676	00	.8902971	05-	200.84	3.49	6.90-
85000.00	.4342504	00	.7710052	05-	196.21	5.27	3.07-
86000.00	.3659989	00	.6645654	05-	191.86	6.66	.43
87000.00	.3072904	00	.5707624	05-	187.56	7.65	3.70
88000.00	.2570157	00	.4875874	05-	183.64	8.23	6.48
89000.00	.2141839	00	.4144842	05-	180.02	8.41	8.78
90000.00	.1776855	00	.3542371	05-	174.74	8.09	11.74
91000.00	.1462947	00	.3067523	05-	166.15	6.80	18.07

FIGURE 28
POINT BARROW, AUG. 3, 1967 1110 GMT.



HEIGHT meters	PRESSURE nt/sq meter		DENSITY kg/cu meter		TEMPERATURE degrees Kelvin	PRESSURE deviation (%)	DENSITY deviation (%)
11000.00	.2253142	05	.3600000	00	218.20	.74-	1.31-
12000.00	.1919836	05	.3080000	00	218.19	1.03-	1.26-
13000.00	.1639860	05	.2630000	00	218.69	1.09-	1.35-
14000.00	.1413213	05	.2250000	00	218.89	.27-	1.25-
15000.00	.1209230	05	.1920000	00	219.60	.16-	1.41-
16000.00	.1037245	05	.1630000	00	221.70	.18	2.08-
17000.00	.8892576	04	.1390000	00	223.10	.48	2.31-
18000.00	.7639349	04	.1180000	00	225.90	.98	3.00-
19000.00	.6572774	04	.1020000	00	224.70	1.62	1.92-
20000.00	.5652852	04	.8699999	01-	226.60	2.23	2.14-
21000.00	.4866252	04	.7449999	01-	227.90	2.90	1.60-
22000.00	.4199642	04	.6399999	01-	228.60	3.75	.79-
23000.00	.3613026	04	.5500000	01-	229.40	4.21	.01-
24000.00	.3119734	04	.4730000	01-	230.10	4.98	.77
25000.00	.2693104	04	.4080000	01-	230.20	5.64	1.78
26000.00	.2319802	04	.3520000	01-	230.30	6.00	2.75
27000.00	.1999830	04	.3030000	01-	231.00	6.37	3.42
28000.00	.1733186	04	.2600000	01-	232.60	7.23	3.68
29000.00	.1493206	04	.2240000	01-	233.40	7.39	4.29
30000.00	.1297223	04	.1930000	01-	234.30	8.37	4.83
31000.00	.1123904	04	.1660000	01-	235.80	8.98	5.11
32000.00	.9732505	03	.1430000	01-	237.30	9.46	5.49
33000.00	.8439282	03	.1250000	01-	235.19	9.98	8.01
34000.00	.7306044	03	.1080000	01-	235.90	10.12	9.23
35000.00	.6332794	03	.9349999	02-	236.20	10.21	10.47
36000.00	.5492866	03	.8049999	02-	237.90	10.18	10.91
37000.00	.4772927	03	.6839999	02-	243.40	10.16	9.69
38000.00	.4159645	03	.5839999	02-	248.50	10.29	8.82
39000.00	.3639690	03	.5059999	02-	250.50	10.68	9.36
40000.00	.3186395	03	.4319999	02-	256.90	10.97	8.11
41000.00	.2799761	03	.3680000	02-	265.00	11.48	6.46
42000.00	.2466456	03	.3180000	02-	270.50	12.12	6.18
43000.00	.2173148	03	.2780000	02-	273.39	12.62	6.96
44000.00	.1919836	03	.2430000	02-	276.70	13.26	7.57
45000.00	.1706521	03	.2130000	02-	276.60	14.45	8.32
46000.00	.1506538	03	.1880000	02-	281.00	14.70	9.67
47000.00	.1333220	03	.1660000	02-	282.40	15.08	10.92
48000.00	.1194565	03	.1470000	02-	283.10	16.77	11.64
49000.00	.1059910	03	.1310000	02-	282.10	17.32	12.65
50000.00	.9412532	02	.1160000	02-	282.90	17.98	12.96
51000.00	.8359288	02	.1030000	02-	282.90	18.64	13.57
52000.00	.7426035	02	.9129999	03-	283.50	19.33	13.98
53000.00	.6586105	02	.8199999	03-	280.20	19.84	15.44
54000.00	.5839502	02	.7379999	03-	275.90	20.42	16.88
55000.00	.5159561	02	.6629999	03-	271.70	20.68	18.23
56000.00	.4559611	02	.5869999	03-	271.10	21.08	17.96
57000.00	.4026323	02	.5199999	03-	270.40	21.49	17.85
58000.00	.3559697	02	.4599999	03-	270.00	22.17	17.68
59000.00	.3146399	02	.4090000	03-	268.10	22.93	18.22
60000.00	.2773097	02	.3599999	03-	268.80	23.46	17.67
61000.00	.2439792	02	.3210000	03-	265.90	23.90	18.76
62000.00	.2146484	02	.2870000	03-	261.90	24.46	19.92
63000.00	.1893172	02	.2570000	03-	257.10	25.58	20.93
64000.00	.1653192	02	.2290000	03-	253.10	25.71	21.56
65000.00	.1453209	02	.2040000	03-	248.50	26.95	22.41
66000.00	.1270558	02	.1810000	03-	244.50	27.81	23.02
67000.00	.1106572	02	.1600000	03-	241.20	28.47	23.41
68000.00	.9625845	01	.1410000	03-	238.00	29.29	23.69
69000.00	.8359288	01	.1240000	03-	234.90	30.22	24.00
70000.00	.7239383	01	.1100000	03-	229.20	31.13	25.66

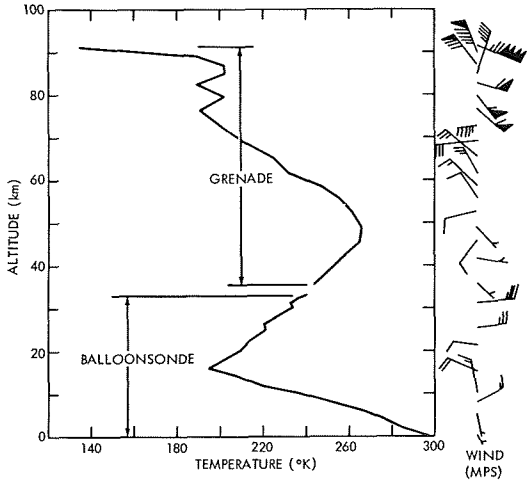
FIGURE 29
POINT BARROW, AUG . 5, 1967 0956 GMT.



HEIGHT meters	PRESSURE nt/sq meter		DENSITY kg/cu meter		TEMPERATURE degrees Kelvin	PRESSURE deviation (%)	DENSITY deviation (%)
10000.00	.2653108	05	.4540000	00	203.50	.11	9.79
11000.00	.2239809	05	.3720000	00	210.70	1.32-	1.97
12000.00	.1906504	05	.3100000	00	215.40	1.72-	.62-
13000.00	.1639860	05	.2600000	00	219.69	1.09-	2.47-
14000.00	.1399881	05	.2200000	00	222.60	1.21-	3.45-
15000.00	.1207897	05	.1860000	00	226.20	.27-	4.49-
16000.00	.1039911	05	.1590000	00	227.90	.44	4.48-
17000.00	.8959237	04	.1360000	00	229.70	1.23	4.42-
18000.00	.7732675	04	.1170000	00	230.39	2.21	3.82-
19000.00	.6679431	04	.1010000	00	230.39	3.27	2.88-
20000.00	.5759509	04	.8779999	01-	228.70	4.16	1.24-
21000.00	.4959577	04	.7539999	01-	229.60	4.87	.41-
22000.00	.4279635	04	.6529999	01-	228.60	5.73	1.22
23000.00	.3693018	04	.5670000	01-	226.89	6.52	3.07
24000.00	.3173063	04	.4920000	01-	225.10	6.77	4.81
25000.00	.2733100	04	.4200000	01-	227.00	7.21	4.78
26000.00	.2359799	04	.3580000	01-	229.50	7.83	4.50
27000.00	.2026494	04	.3060000	01-	231.90	7.79	4.44
28000.00	.1759850	04	.2620000	01-	234.19	8.88	4.48
29000.00	.1519870	04	.2260000	01-	235.00	9.31	5.22
30000.00	.1321221	04	.1930000	01-	238.50	10.37	4.83
31000.00	.1146569	04	.1670000	01-	239.30	11.18	5.74
32000.00	.9945820	03	.1470000	01-	235.90	11.86	8.44
33000.00	.8612600	03	.1280000	01-	234.60	12.24	10.60
34000.00	.7466031	03	.1110000	01-	234.30	12.54	12.26
35000.00	.6466117	03	.9559999	02-	235.60	12.53	12.95
36000.00	.5599523	03	.8209999	02-	237.80	12.32	13.11
37000.00	.4866252	03	.6999999	02-	242.30	12.32	12.26
38000.00	.4239639	03	.5939999	02-	248.90	12.41	10.68
39000.00	.3706351	03	.5079999	02-	254.50	12.71	9.79
40000.00	.3255056	03	.4329999	02-	262.00	13.29	8.36
41000.00	.2866422	03	.3720000	02-	268.50	14.13	7.62
42000.00	.2533117	03	.3210000	02-	274.90	15.15	7.18
43000.00	.2239809	03	.2780000	02-	281.19	16.08	6.96
44000.00	.1986498	03	.2420000	02-	287.00	17.20	7.13
45000.00	.1773182	03	.2120000	02-	291.70	18.92	7.81
46000.00	.1573199	03	.1900000	02-	290.00	19.78	10.84
47000.00	.1399881	03	.1690000	02-	290.20	20.83	12.93
48000.00	.1253227	03	.1510000	02-	289.19	22.51	14.68
49000.00	.1114572	03	.1350000	02-	287.80	23.37	16.09
50000.00	.9919155	02	.1210000	02-	285.69	24.33	17.83
51000.00	.8812583	02	.1080000	02-	284.50	25.07	19.08
52000.00	.7826000	02	.9619999	03-	283.80	25.76	20.10
53000.00	.6959407	02	.8619999	03-	281.19	26.64	21.35
54000.00	.6159475	02	.7749999	03-	277.40	27.02	22.74
55000.00	.5466201	02	.6899999	03-	275.90	27.86	23.04
56000.00	.4826256	02	.6129999	03-	274.90	28.16	23.18
57000.00	.4266303	02	.5499999	03-	270.90	28.73	24.65
58000.00	.3773012	02	.4899999	03-	268.50	29.49	25.36
59000.00	.3319717	02	.4369999	03-	265.60	29.70	26.32
60000.00	.2933084	02	.3900000	03-	262.00	30.58	27.48
61000.00	.2573114	02	.3459999	03-	259.70	30.67	28.01
62000.00	.2266473	02	.3079999	03-	256.30	31.42	28.70
63000.00	.1986497	02	.2730000	03-	253.50	31.77	28.45
64000.00	.1733186	02	.2420000	03-	250.30	31.79	28.47
65000.00	.1519870	02	.2160000	03-	245.00	32.78	29.61
66000.00	.1323887	02	.1910000	03-	241.40	33.17	29.81
67000.00	.1149235	02	.1710000	03-	234.30	33.42	31.90
68000.00	.9959152	01	.1510000	03-	229.80	33.77	32.46
69000.00	.8585934	01	.1330000	03-	225.20	33.75	32.99
70000.00	.7399369	01	.1160000	03-	222.20	34.03	32.51
71000.00	.6346126	01	.1020000	03-	217.00	34.02	33.43
72000.00	.5439536	01	.8879999	04-	213.50	34.30	33.34
73000.00	.4639604	01	.7709999	04-	210.00	34.31	33.23
74000.00	.3959663	01	.6679999	04-	206.50	34.79	33.19
75000.00	.3359714	01	.5800000	04-	202.00	34.90	33.79
76000.00	.2839758	01	.5029999	04-	197.00	34.93	34.63
77000.00	.2386463	01	.4370000	04-	190.90	34.63	36.13
78000.00	.1999830	01	.3750000	04-	186.50	34.42	36.36
79000.00	.1666525	01	.3249999	04-	179.40	33.94	38.35
80000.00	.1373216	01	.2790000	04-	173.00	32.47	39.57
81000.00	.1137236	01	.2400000	04-	165.19	31.92	44.40
82000.00	.9252545	00	.2060000	04-	156.50	29.06	49.05
83000.00	.7452697	00	.1720000	04-	151.00	24.99	49.56
84000.00	.5959492	00	.1420000	04-	146.19	20.17	48.48
85000.00	.4732930	00	.1150000	04-	143.50	14.73	44.56
86000.00	.3746347	00	.9149999	05-	142.90	9.18	38.28
87000.00	.2973080	00	.7129999	05-	145.69	4.15	29.54
88000.00	.2373131	00	.5579999	05-	148.50	.06-	21.86
89000.00	.1893172	00	.4430000	05-	149.69	4.17-	16.27
90000.00	.1519870	00	.3559999	05-	149.10	7.53-	12.30
91000.00	.1222563	00	.2760000	05-	154.40	10.75-	6.23
92000.00	.9892490	01-	.2180000	05-	158.00	13.59-	2.01

FIGURE 30
NATAL, AUG. 26, 1967 1139 GMT.

WIND DIRECTION degrees	WIND SPEED m/sec	ERROR m/sec (±)	TEMPERATURE degrees Kelvin	ERROR degrees Kelvin (±)	HEIGHT meters
128.78	4.31	3.95	244.19	.73	35633.05
97.88	3.97	3.65	256.28	.75	41194.50
215.38	10.31	3.26	264.86	.92	45356.89
142.59	1.86	5.74	266.27	1.09	48801.29
255.64	7.94	7.20	262.43	2.72	52151.44
327.50	11.45	3.26	255.69	3.11	55403.09
297.10	15.44	14.02	246.78	3.06	58585.74
343.95	23.45	9.39	232.04	4.44	61680.69
300.01	27.07	14.57	225.41	3.03	65151.75
263.60	27.54	8.11	211.55	1.80	68984.70
260.82	43.87	14.25	201.22	3.21	72663.64
128.35	60.26	14.86	191.23	3.21	76205.20
142.37	55.84	26.64	202.04	5.60	79589.09
110.34	60.43	39.20	189.26	7.54	82406.49
6.45	46.42	16.37	201.74	4.53	84708.84
320.84	79.27	47.68	201.88	11.23	86935.84
338.71	95.79	39.15	189.38	14.60	89082.94
101.05	225.36	59.61	135.40	11.38	91078.64



WIND COMPONENTS m/sec

HEIGHT meters	SOUTH component (+)	WEST component (+)
40000.00	1.00	-3.81
45000.00	7.73	5.12
50000.00	1.65	2.02
55000.00	-8.21	6.34
60000.00	-14.12	10.42
65000.00	-13.93	22.70
70000.00	4.15	31.76
75000.00	27.04	-16.43
80000.00	40.83	-37.38
85000.00	-48.13	2.01
90000.00	-28.39	-82.83

LEGEND

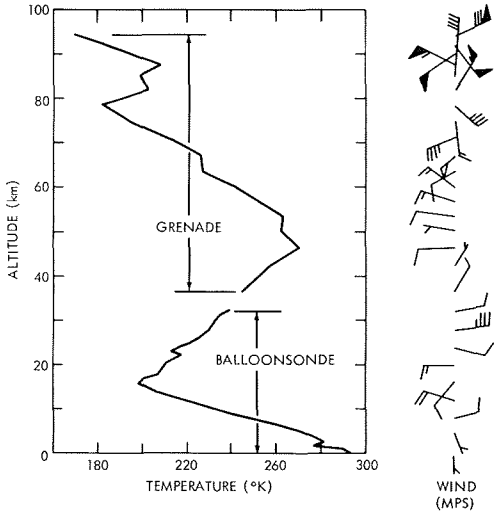
5 m/sec or less — 50 m/sec

10 m/sec — DIRECTION OF NORTH WIND

HEIGHT meters	PRESSURE nt/sq meter		DENSITY kg/cu meter		TEMPERATURE degrees Kelvin	PRESSURE deviation (%)	DENSITY deviation (%)
33000.00	.7812100	03	.1138511	01-	239.05	1.81	1.62-
34000.00	.6788259	03	.9812863	02-	241.00	2.32	.75-
35000.00	.5905545	03	.8468251	02-	242.95	2.77	.05
36000.00	.5143688	03	.7314565	02-	244.98	3.17	.78
37000.00	.4485599	03	.6322629	02-	247.16	3.53	1.39
38000.00	.3916566	03	.5472421	02-	249.33	3.85	1.97
39000.00	.3423890	03	.4742679	02-	251.51	4.12	2.50
40000.00	.2996781	03	.4115488	02-	253.68	4.36	2.99
41000.00	.2626042	03	.3575710	02-	255.85	4.56	3.45
42000.00	.2303783	03	.3111576	02-	257.94	4.73	3.89
43000.00	.2023269	03	.2711039	02-	260.00	4.85	4.31
44000.00	.1778806	03	.2364727	02-	262.06	4.94	4.68
45000.00	.1565521	03	.2064946	02-	264.12	4.99	5.01
46000.00	.1378884	03	.1811917	02-	265.12	4.98	5.70
47000.00	.1214956	03	.1594046	02-	265.53	4.87	6.51
48000.00	.1070767	03	.1402705	02-	265.94	4.67	6.53
49000.00	.9438529	02	.1235981	02-	266.04	4.48	6.29
50000.00	.8317951	02	.1093954	02-	264.89	4.26	6.53
51000.00	.7326680	02	.9677724	03-	263.74	3.98	6.71
52000.00	.6450235	02	.8557228	03-	262.60	3.65	6.83
53000.00	.5674602	02	.7584042	03-	260.67	3.26	6.77
54000.00	.4987508	02	.6719180	03-	258.59	2.85	6.42
55000.00	.4379235	02	.5947383	03-	256.52	2.43	6.06
56000.00	.3840820	02	.5267640	03-	254.01	1.99	5.85
57000.00	.3364102	02	.4665243	03-	251.21	1.51	5.73
58000.00	.2942302	02	.4126286	03-	248.42	.98	5.57
59000.00	.2569017	02	.3655959	03-	244.80	.37	5.68
60000.00	.2237931	02	.3247980	03-	240.04	.36-	6.17
61000.00	.1944216	02	.2878819	03-	235.28	1.26-	6.51
62000.00	.1684747	02	.2536139	03-	231.43	2.30-	5.97
63000.00	.1457362	02	.2212102	03-	229.52	3.32-	4.08
64000.00	.1259198	02	.1927352	03-	227.61	4.24-	2.31
65000.00	.1086689	02	.1677383	03-	225.70	5.06-	.65
66000.00	.9362322	01	.1466962	03-	222.34	5.81-	.29-
67000.00	.8047464	01	.1281786	03-	218.72	6.56-	1.12-
68000.00	.6900166	01	.1117521	03-	215.11	7.31-	1.96-
69000.00	.5901339	01	.9720397	04-	211.50	8.06-	2.79-
70000.00	.5035325	01	.8405530	04-	208.69	8.78-	3.97-
71000.00	.4287384	01	.7254587	04-	205.89	9.45-	5.09-
72000.00	.3642674	01	.6248908	04-	203.08	10.06-	6.16-
73000.00	.3088050	01	.5371853	04-	200.27	10.60-	7.16-
74000.00	.2611891	01	.4608453	04-	197.45	11.08-	8.10-
75000.00	.2203951	01	.3945038	04-	194.62	11.50-	8.99-
76000.00	.1855219	01	.3369650	04-	191.80	11.84-	9.80-
77000.00	.1561155	01	.2806854	04-	193.76	11.92-	12.55-
78000.00	.1316762	01	.2329053	04-	196.96	11.49-	15.30-
79000.00	.1113731	01	.1938498	04-	200.15	10.48-	17.47-
80000.00	.9433733	00	.1641836	04-	200.17	8.99-	17.86-
81000.00	.7975546	00	.1420238	04-	195.64	7.48-	14.54-
82000.00	.6716601	00	.1224442	04-	191.10	6.31-	11.40-
83000.00	.5648722	00	.1022420	04-	192.47	5.26-	11.09-
84000.00	.4765165	00	.8388713	05-	197.89	3.91-	12.28-
85000.00	.4035950	00	.6969035	05-	201.75	2.15-	12.39-
86000.00	.3424078	00	.5910649	05-	201.82	.21-	10.67-
87000.00	.2904779	00	.5022066	05-	201.50	1.76	8.75-
88000.00	.2458089	00	.4376220	05-	195.68	3.51	4.42-
89000.00	.2069736	00	.3797810	05-	189.86	4.76	.32-
90000.00	.1716210	00	.3632994	05-	164.57	4.40	14.60
91000.00	.1377431	00	.3489317	05-	137.52	.55	34.30

FIGURE 31
NATAL, AUG. 26, 1967 2339 GMT.

WIND DIRECTION degrees	WIND SPEED m/sec	ERROR m/sec (±)	TEMPERATURE degrees Kelvin	ERROR degrees Kelvin (±)	HEIGHT meters
25.43	8.00	1.41	244.60	.21	36624.14
27.46	6.24	2.67	257.42	.42	42322.54
266.42	8.62	4.84	269.83	.92	46606.49
280.67	5.67	4.29	262.06	1.19	50153.69
277.22	11.82	8.58	262.84	1.54	53606.79
291.37	16.29	8.10	252.40	1.28	56969.04
310.89	14.04	7.84	242.06	1.30	60248.55
248.90	9.39	6.81	227.15	1.58	63453.70
232.50	50.33	5.92	226.57	1.52	67060.75
246.00	35.12	6.71	211.80	1.38	71039.79
173.49	16.19	1.86	193.86	.54	74871.74
131.35	35.62	8.88	182.13	1.23	78574.29
25.43	56.44	10.23	202.22	1.75	82124.34
2.38	40.68	15.12	198.80	2.84	85077.50
295.92	53.02	27.14	208.14	3.92	87505.64
237.98	50.37	21.66	195.25	5.34	89848.19
143.53	48.18	31.19	183.27	5.29	92099.99
65.81	80.65	37.06	170.51	5.50	94214.45



WIND COMPONENTS
m/sec

HEIGHT meters	SOUTH component (+)	WEST component (+)
40000.00	-6.22	-3.10
45000.00	-1.74	4.29
50000.00	-.98	5.70
55000.00	-3.33	13.15
60000.00	-8.94	10.95
65000.00	15.06	22.12
70000.00	18.55	34.13
75000.00	16.34	-2.69
80000.00	-6.38	-25.73
85000.00	-40.91	-2.28
90000.00	27.51	37.89

LEGEND

5 m/sec or less

10 m/sec

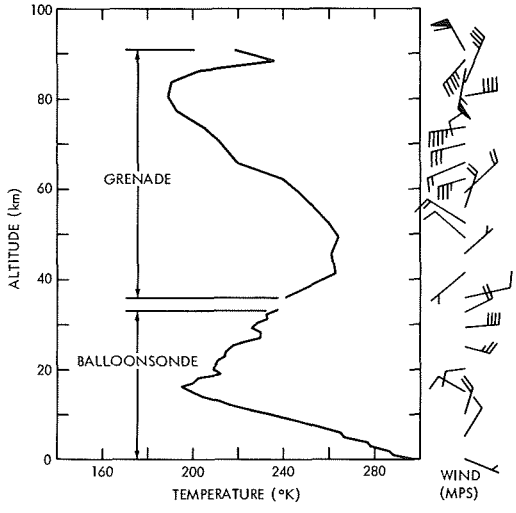
50 m/sec

DIRECTION OF NORTH WIND

HEIGHT meters	PRESSURE nt/sq meter		DENSITY kg/cu meter		TEMPERATURE degrees Kelvin	PRESSURE deviation (%)	DENSITY deviation (%)
34000.00	.6957048	03	.1005354	01-	241.08	4.86	1.68
35000.00	.6051603	03	.8696728	02-	242.42	5.32	2.75
36000.00	.5268279	03	.7529374	02-	243.76	5.67	3.74
37000.00	.4590473	03	.6515689	02-	245.44	5.95	4.49
38000.00	.4004436	03	.5632248	02-	247.69	6.17	4.94
39000.00	.3497679	03	.4875212	02-	249.94	6.37	5.37
40000.00	.3058886	03	.4225569	02-	252.19	6.52	5.75
41000.00	.2678438	03	.3667301	02-	254.44	6.65	6.10
42000.00	.2348148	03	.3186892	02-	256.69	6.75	6.41
43000.00	.2061264	03	.2768542	02-	259.38	6.82	6.52
44000.00	.1812028	03	.2406905	02-	262.27	6.90	6.55
45000.00	.1595248	03	.2095810	02-	265.17	6.99	6.58
46000.00	.1406404	03	.1827742	02-	268.07	7.08	6.63
47000.00	.1241068	03	.1607508	02-	268.96	7.12	7.41
48000.00	.1094879	03	.1429799	02-	266.77	7.03	8.58
49000.00	.9649507	02	.1270558	02-	264.58	6.81	9.26
50000.00	.8495817	02	.1127989	02-	262.39	6.49	9.84
51000.00	.7476093	02	.9931513	03-	262.25	6.10	9.51
52000.00	.6579209	02	.8732539	03-	262.47	5.72	9.02
53000.00	.5790790	02	.7679467	03-	262.70	5.37	8.11
54000.00	.5095965	02	.6786022	03-	261.61	5.08	7.48
55000.00	.4480070	02	.6037525	03-	258.51	4.79	7.66
56000.00	.3932646	02	.5364224	03-	255.40	4.43	7.79
57000.00	.3446752	02	.4759343	03-	252.30	4.00	7.87
58000.00	.3016050	02	.4217322	03-	249.15	3.51	7.89
59000.00	.2634795	02	.3731436	03-	245.99	2.94	7.86
60000.00	.2297822	02	.3296461	03-	242.84	2.30	7.75
61000.00	.1999800	02	.2920380	03-	238.56	1.55	8.05
62000.00	.1735942	02	.2585473	03-	233.91	.66	8.03
63000.00	.1502687	02	.2283481	03-	229.26	.32-	7.44
64000.00	.1298024	02	.1991572	03-	227.06	1.29-	5.72
65000.00	.1120431	02	.1720308	03-	226.90	2.11-	3.22
66000.00	.9670790	01	.1485905	03-	226.74	2.71-	.99
67000.00	.8346663	01	.1283364	03-	226.57	3.09-	1.00-
68000.00	.7195559	01	.1123712	03-	223.08	3.34-	1.42-
69000.00	.6188514	01	.9827979	04-	219.37	3.59-	1.72-
70000.00	.5308985	01	.8576318	04-	215.65	3.83-	2.02-
71000.00	.4542571	01	.7466744	04-	211.94	4.06-	2.32-
72000.00	.3874921	01	.6511967	04-	207.30	4.32-	2.21-
73000.00	.3293633	01	.5662979	04-	202.62	4.65-	2.13-
74000.00	.2789073	01	.4908875	04-	197.94	5.05-	2.11-
75000.00	.2352750	01	.4236987	04-	193.45	5.52-	2.26-
76000.00	.1978074	01	.3621554	04-	190.28	6.00-	3.06-
77000.00	.1658319	01	.3087536	04-	187.11	6.44-	3.81-
78000.00	.1386151	01	.2625248	04-	183.95	6.82-	4.53-
79000.00	.1157269	01	.2184762	04-	184.53	6.98-	6.99-
80000.00	.9691327	00	.1775150	04-	190.19	6.50-	11.19-
81000.00	.8158577	00	.1451219	04-	195.85	5.35-	12.68-
82000.00	.6902365	00	.1193289	04-	201.51	3.72-	13.65-
83000.00	.5852910	00	.1013420	04-	201.20	1.83-	11.87-
84000.00	.4960283	00	.8638351	05-	200.04	.02	9.66-
85000.00	.4199972	00	.7356855	05-	198.89	1.81	7.51-
86000.00	.3559766	00	.6128860	05-	202.34	3.74	7.37-
87000.00	.3026233	00	.5113077	05-	206.19	6.02	7.10-
88000.00	.2575920	00	.4368661	05-	205.41	8.47	4.59-
89000.00	.2187242	00	.3811579	05-	199.91	10.71	.04
90000.00	.1848870	00	.3312637	05-	194.44	12.47	4.50
91000.00	.1555554	00	.2865503	05-	189.12	13.56	10.29
92000.00	.1302406	00	.2468623	05-	183.80	13.75	15.51
93000.00	.1084486	00	.2124496	05-	177.83	12.99	20.50
94000.00	.8974239	01-	.1819794	05-	171.80	11.22	24.72

FIGURE 32
NATAL , AUG. 28, 1967 0030 GMT.

WIND DIRECTION degrees	WIND SPEED m/sec	ERROR m/sec (±)	TEMPERATURE degrees Kelvin	ERROR degrees Kelvin (±)	HEIGHT meters
77.43	7.74	2.97	241.54	.53	35700.44
233.91	2.23	3.07	262.56	.83	41312.24
47.30	5.81	4.16	261.40	.89	45545.14
310.28	10.64	4.81	263.91	1.99	49069.69
304.25	15.14	7.37	259.89	3.30	52486.79
6.52	17.82	14.02	253.79	3.31	55812.49
39.27	19.07	11.35	246.88	2.51	59049.94
256.72	33.35	8.89	240.13	1.73	62215.69
250.10	16.90	6.57	220.13	1.32	65789.39
258.23	28.31	8.86	213.06	1.67	69734.59
262.70	46.22	6.33	205.53	1.19	73526.25
242.16	10.84	8.90	193.47	1.88	77180.70
78.32	39.71	9.63	188.81	1.93	80687.39
19.55	37.26	33.83	190.59	7.28	83608.54
186.84	55.96	45.88	202.70	10.91	86021.64
215.58	46.65	43.97	236.14	14.64	88345.49
325.93	58.80	24.98	219.45	11.66	90574.34



WIND COMPONENTS
m/sec

HEIGHT meters	SOUTH component (+)	WEST component (+)
40000.00	.61	-.38
45000.00	-3.26	-3.48
50000.00	-7.32	9.31
55000.00	-15.46	1.52
60000.00	-8.03	1.29
65000.00	6.17	19.55
70000.00	5.78	28.98
75000.00	5.54	31.22
80000.00	-5.47	-29.38
85000.00	17.17	-1.43
90000.00	-26.37	31.44

LEGEND

5 m/sec or less

50 m/sec

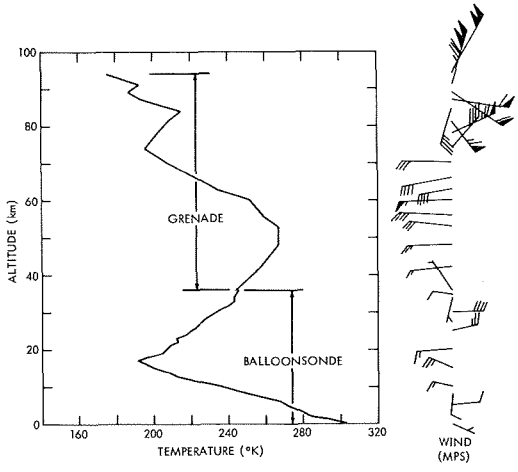
10 m/sec

DIRECTION OF NORTH WIND

HEIGHT meters	PRESSURE nt/sq meter		DENSITY kg/cu meter		TEMPERATURE degrees Kelvin	PRESSURE deviation (%)	DENSITY deviation (%)
33000.00	.7888899	03	.1161805	01-	236.56	2.81	.38
34000.00	.6844685	03	.1000225	01-	238.40	3.17	1.16
35000.00	.5945451	03	.8621496	02-	240.24	3.47	1.86
36000.00	.5170996	03	.7423872	02-	242.66	3.72	2.28
37000.00	.4505519	03	.6370135	02-	246.40	3.99	2.15
38000.00	.3934020	03	.5478835	02-	250.15	4.31	2.09
39000.00	.3442086	03	.4723009	02-	253.89	4.67	2.08
40000.00	.3017689	03	.4080481	02-	257.64	5.09	2.12
41000.00	.2650755	03	.3532955	02-	261.39	5.55	2.21
42000.00	.2331264	03	.3095515	02-	262.37	5.98	3.36
43000.00	.2050709	03	.2725834	02-	262.09	6.28	4.88
44000.00	.1803745	03	.2400075	02-	261.82	6.41	6.25
45000.00	.1586378	03	.2113056	02-	261.54	6.39	7.46
46000.00	.1395230	03	.1857209	02-	261.72	6.23	8.34
47000.00	.1227431	03	.1629415	02-	262.43	5.94	8.88
48000.00	.1080229	03	.1430124	02-	263.14	5.59	8.61
49000.00	.9510477	02	.1255701	02-	263.86	5.27	7.98
50000.00	.8372787	02	.1109883	02-	262.81	4.94	8.08
51000.00	.7367510	02	.9810165	03-	261.63	4.56	8.17
52000.00	.6479458	02	.8666652	03-	260.46	4.12	8.20
53000.00	.5694883	02	.7661774	03-	258.94	3.63	7.86
54000.00	.5001322	02	.6776673	03-	257.11	3.13	7.33
55000.00	.4388324	02	.5988797	03-	255.28	2.64	6.79
56000.00	.3846932	02	.5289123	03-	253.39	2.15	6.28
57000.00	.3368931	02	.4671271	03-	251.25	1.65	5.87
58000.00	.2947110	02	.4121396	03-	249.12	1.14	5.44
59000.00	.2575246	02	.3632483	03-	246.98	.61	5.00
60000.00	.2247767	02	.3198172	03-	244.85	.07	4.54
61000.00	.1959683	02	.2812773	03-	242.72	.48-	4.06
62000.00	.1706527	02	.2471122	03-	240.59	1.04-	3.26
63000.00	.1483125	02	.2191803	03-	235.74	1.62-	3.13
64000.00	.1284974	02	.1945148	03-	230.14	2.28-	3.26
65000.00	.1109424	02	.1721262	03-	224.54	3.07-	3.28
66000.00	.9546181	01	.1513401	03-	219.75	3.96-	2.86
67000.00	.8196002	01	.1310034	03-	217.96	4.84-	1.05
68000.00	.7028270	01	.1132698	03-	216.16	5.59-	.63-
69000.00	.6019495	01	.9782307	04-	214.37	6.22-	2.17-
70000.00	.5148962	01	.8440180	04-	212.53	6.73-	3.58-
71000.00	.4398317	01	.7277726	04-	210.54	7.11-	4.79-
72000.00	.3751683	01	.6266876	04-	208.56	7.36-	5.89-
73000.00	.3195410	01	.5388984	04-	206.57	7.49-	6.87-
74000.00	.2716867	01	.4640530	04-	203.96	7.51-	7.47-
75000.00	.2304640	01	.4001165	04-	200.66	7.45-	7.70-
76000.00	.1949733	01	.3441598	04-	197.36	7.35-	7.88-
77000.00	.1644922	01	.2952932	04-	194.06	7.19-	8.00-
78000.00	.1384802	01	.2507743	04-	192.38	6.91-	8.80-
79000.00	.1164302	01	.2123105	04-	191.05	6.42-	9.61-
80000.00	.9777801	00	.1795471	04-	189.72	5.67-	10.18-
81000.00	.8204075	00	.1512255	04-	189.00	4.82-	9.01-
82000.00	.6883668	00	.1264787	04-	189.61	3.98-	8.48-
83000.00	.5779345	00	.1058480	04-	190.21	3.07-	7.95-
84000.00	.4858961	00	.8791195	05-	192.55	2.02-	8.07-
85000.00	.4098716	00	.7227340	05-	197.57	.63-	9.14-
86000.00	.3472387	00	.5971250	05-	202.59	1.19	9.75-
87000.00	.2964185	00	.4763729	05-	216.77	3.84	13.45-
88000.00	.2556165	00	.3852286	05-	231.16	7.64	15.87-
89000.00	.2214789	00	.3336796	05-	231.23	12.10	12.42-
90000.00	.1914550	00	.2980990	05-	223.75	16.47	5.96-

FIGURE 33
NATAL, OCT. 14, 1967 1120 GMT.

WIND DIRECTION degrees	WIND SPEED m/sec	ERROR m/sec (±)	TEMPERATURE degrees Kelvin	ERROR degrees Kelvin (±)	HEIGHT meters
325.46	3.91	1.89	243.66	.34	35914.54
257.71	16.34	3.95	258.30	.57	41588.94
262.87	23.52	4.27	267.44	.68	47615.89
287.34	30.71	11.24	266.65	1.84	52872.30
273.66	39.26	10.03	259.16	1.70	56250.50
268.77	57.01	24.17	252.80	4.47	59528.79
255.14	38.78	19.53	234.43	4.25	62715.39
254.12	42.09	7.26	223.22	1.35	66335.85
276.24	30.90	8.22	208.99	1.43	70346.00
42.95	37.92	7.85	196.41	1.56	74188.00
63.13	72.53	12.31	201.89	2.39	77897.95
133.15	63.22	19.28	207.97	3.26	81457.45
207.99	32.99	18.78	214.65	4.01	84405.54
119.87	60.23	16.25	194.35	2.45	86834.14
137.57	57.79	47.12	187.20	6.67	89200.39
13.08	133.71	51.12	192.08	9.94	91469.64
23.34	100.20	76.59	174.58	12.03	93594.04



WIND COMPONENTS
m/sec

HEIGHT meters	SOUTH component (+)	WEST component (+)
40000.00	1.60	12.11
45000.00	3.16	20.13
50000.00	-2.55	26.04
55000.00	-4.96	35.52
60000.00	2.51	54.11
65000.00	10.93	39.37
70000.00	-2.07	31.56
75000.00	-28.85	-34.34
80000.00	12.11	-53.72
85000.00	29.34	-1.09
90000.00	-18.26	-35.91

LEGEND

5 m/sec or less

50 m/sec

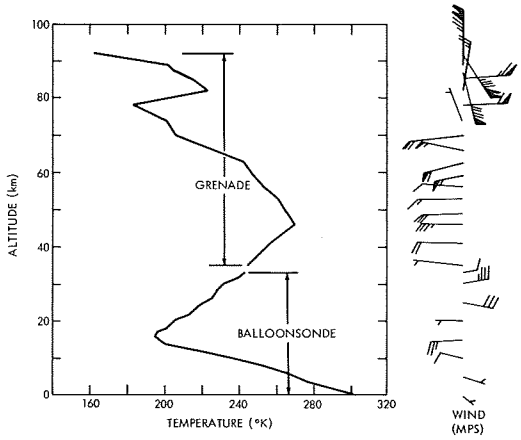
10 m/sec

DIRECTION OF NORTH WIND

HEIGHT meters	PRESSURE nt/sq meter		DENSITY kg/cu meter		TEMPERATURE degrees Kelvin	PRESSURE deviation (%)	DENSITY deviation (%)
34000.00	.6773899	03	.9715994	02-	242.89	2.10	1.73-
35000.00	.5896835	03	.8444014	02-	243.29	2.62	.22-
36000.00	.5134989	03	.7335346	02-	243.88	3.00	1.06
37000.00	.4475751	03	.6326693	02-	246.46	3.30	1.46
38000.00	.3906899	03	.5465381	02-	249.04	3.59	1.84
39000.00	.3415271	03	.4728651	02-	251.62	3.86	2.20
40000.00	.2989730	03	.4097450	02-	254.20	4.12	2.54
41000.00	.2620838	03	.3555792	02-	256.78	4.36	2.87
42000.00	.2300330	03	.3095118	02-	258.92	4.57	3.35
43000.00	.2020956	03	.2703583	02-	260.44	4.74	4.02
44000.00	.1776918	03	.2363179	02-	261.95	4.83	4.61
45000.00	.1563573	03	.2067475	02-	263.47	4.86	5.14
46000.00	.1376907	03	.1810232	02-	264.99	4.83	5.60
47000.00	.1213454	03	.1586261	02-	266.50	4.74	5.99
48000.00	.1070052	03	.1394218	02-	267.38	4.60	5.88
49000.00	.9437934	02	.1230401	02-	267.23	4.47	5.81
50000.00	.8324046	02	.1085797	02-	267.08	4.33	5.73
51000.00	.7341364	02	.9581539	03-	266.93	4.19	5.65
52000.00	.6474512	02	.8454933	03-	266.78	4.04	5.55
53000.00	.5709476	02	.7467483	03-	266.36	3.89	5.13
54000.00	.5031910	02	.6636528	03-	264.15	3.76	5.11
55000.00	.4430208	02	.5892408	03-	261.93	3.62	5.08
56000.00	.3896393	02	.5226648	03-	259.71	3.47	5.03
57000.00	.3423443	02	.4628038	03-	257.70	3.30	4.89
58000.00	.3005031	02	.4093215	03-	255.76	3.13	4.72
59000.00	.2635248	02	.3616961	03-	253.82	2.96	4.55
60000.00	.2307640	02	.3214704	03-	250.08	2.74	5.08
61000.00	.2015685	02	.2874247	03-	244.31	2.36	6.34
62000.00	.1755066	02	.2563096	03-	238.55	1.76	7.10
63000.00	.1523393	02	.2272441	03-	233.54	1.05	6.92
64000.00	.1319100	02	.1994136	03-	230.45	.30	5.86
65000.00	.1140033	02	.1746904	03-	227.35	.40-	4.82
66000.00	.9833505	01	.1527619	03-	224.26	1.07-	3.82
67000.00	.8464134	01	.1335111	03-	220.86	1.72-	2.98
68000.00	.7268499	01	.1165236	03-	217.31	2.36-	2.22
69000.00	.6226428	01	.1014748	03-	213.76	3.00-	1.47
70000.00	.5320218	01	.8816947	04-	210.21	3.62-	.72
71000.00	.4534282	01	.7636849	04-	206.84	4.24-	.09-
72000.00	.3854658	01	.6596616	04-	203.57	4.82-	.94-
73000.00	.3268450	01	.5684853	04-	200.30	5.38-	1.75-
74000.00	.2764009	01	.4887368	04-	197.02	5.90-	2.54-
75000.00	.2334885	01	.4116386	04-	197.60	6.24-	5.04-
76000.00	.1974215	01	.3454704	04-	199.08	6.19-	7.53-
77000.00	.1671417	01	.2903292	04-	200.56	5.70-	9.55-
78000.00	.1416875	01	.2442869	04-	202.06	4.76-	11.16-
79000.00	.1202729	01	.2056273	04-	203.77	3.33-	12.46-
80000.00	.1022398	01	.1733436	04-	205.48	1.37-	13.28-
81000.00	.8703181	00	.1463424	04-	207.18	.96	11.94-
82000.00	.7419622	00	.1235605	04-	209.20	3.49	10.59-
83000.00	.6335940	00	.1043831	04-	211.46	6.26	9.23-
84000.00	.5419914	00	.8834519	05-	213.73	9.29	7.61-
85000.00	.4633479	00	.7698503	05-	209.68	12.32	3.22-
86000.00	.3942582	00	.6822555	05-	201.32	14.90	3.10
87000.00	.3333255	00	.5990509	05-	193.84	16.77	8.84
88000.00	.2805418	00	.5121718	05-	190.82	18.14	11.85
89000.00	.2354806	00	.4368226	05-	187.80	19.19	14.65
90000.00	.1974935	00	.3641952	05-	188.91	20.14	14.88
91000.00	.1658937	00	.3024792	05-	191.07	21.10	16.42
92000.00	.1392795	00	.2584972	05-	187.71	21.65	20.96
93000.00	.1162946	00	.2257447	05-	179.47	21.16	28.04

FIGURE 34
NATAL, OCT. 15, 1967 1115 GMT.

WIND DIRECTION degrees	WIND SPEED m/sec	ERROR m/sec (±)	TEMPERATURE degrees Kelvin	ERROR degrees Kelvin (±)	HEIGHT meters
292.08	6.39	1.39	244.97	.21	35497.59
273.91	18.83	.88	257.10	.15	41239.64
273.30	34.73	1.56	269.90	.29	45559.85
264.55	28.94	6.68	266.50	1.41	49157.14
266.37	12.92	7.31	261.26	1.64	52651.59
288.95	11.47	11.16	253.61	2.41	56062.20
256.21	56.08	15.61	248.41	3.48	59387.54
248.93	59.00	14.62	241.90	3.11	62623.79
291.97	53.15	8.43	226.48	1.68	66286.19
251.97	28.25	9.06	206.65	2.05	70327.99
331.65	3.08	11.35	201.00	2.93	74209.99
84.91	62.02	11.89	183.25	2.39	77956.54
9.69	25.34	7.95	223.19	2.25	81544.39
76.58	63.46	16.53	214.85	3.66	84547.94
148.14	91.79	14.82	205.47	2.97	87021.29
.78	124.01	13.19	201.70	3.10	89410.79
133.63	136.13	20.73	163.27	3.30	91707.64



WIND COMPONENTS
m/sec

HEIGHT meters	SOUTH component (+)	WEST component (+)
40000.00	-1.52	16.00
45000.00	-1.90	32.61
50000.00	2.28	24.97
55000.00	-2.31	11.48
60000.00	14.85	54.57
65000.00	-5.45	51.31
70000.00	6.42	28.68
75000.00	-3.29	-11.87
80000.00	-16.59	-29.02
85000.00	2.21	-59.30
90000.00	-68.09	-26.53

LEGEND

5 m/sec or less

10 m/sec

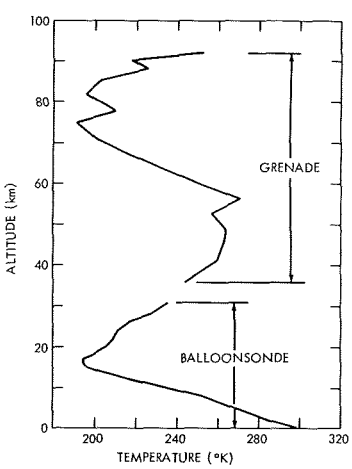
50 m/sec

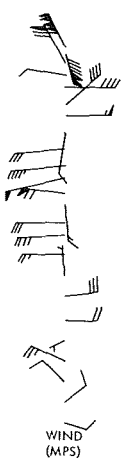
DIRECTION OF NORTH WIND

HEIGHT meters	PRESSURE nt/sq meter		DENSITY kg/cu meter		TEMPERATURE degrees Kelvin	PRESSURE deviation (%)	DENSITY deviation (%)
33000.00	.7736399	03	.1116087	01-	241.49	.82	3.56-
34000.00	.6730915	03	.9654606	02-	242.88	1.46	2.35-
35000.00	.5861029	03	.8358918	02-	244.27	2.00	1.23-
36000.00	.5108319	03	.7233455	02-	246.03	2.46	.33-
37000.00	.4457257	03	.6257811	02-	248.14	2.88	.35
38000.00	.3893836	03	.5420644	02-	250.25	3.24	1.00
39000.00	.3405641	03	.4701338	02-	252.36	3.57	1.61
40000.00	.2982107	03	.4082495	02-	254.48	3.85	2.17
41000.00	.2614220	03	.3549395	02-	256.59	4.09	2.69
42000.00	.2294661	03	.3082377	02-	259.35	4.31	2.92
43000.00	.2017126	03	.2678966	02-	262.31	4.54	3.08
44000.00	.1775799	03	.2332116	02-	265.27	4.76	3.24
45000.00	.1565620	03	.2033382	02-	268.24	5.00	3.41
46000.00	.1381732	03	.1786279	02-	269.48	5.20	4.21
47000.00	.1219574	03	.1582192	02-	268.53	5.27	5.72
48000.00	.1076013	03	.1400877	02-	267.59	5.18	6.39
49000.00	.9489684	02	.1239855	02-	266.64	5.04	6.62
50000.00	.8364907	02	.1098719	02-	265.23	4.85	6.99
51000.00	.7368622	02	.9733612	03-	263.73	4.58	7.32
52000.00	.6486561	02	.8617447	03-	262.23	4.23	7.58
53000.00	.5705782	02	.7631352	03-	260.47	3.82	7.44
54000.00	.5014220	02	.6764655	03-	258.23	3.40	7.14
55000.00	.4401692	02	.5990328	03-	255.99	2.95	6.82
56000.00	.3859720	02	.5299180	03-	253.75	2.49	6.49
57000.00	.3381236	02	.4671819	03-	252.14	2.03	5.88
58000.00	.2959722	02	.4114937	03-	250.57	1.57	5.27
59000.00	.2588703	02	.3621706	03-	249.01	1.14	4.69
60000.00	.2262212	02	.3188465	03-	247.17	.71	4.22
61000.00	.1974898	02	.2806351	03-	245.16	.29	3.83
62000.00	.1722219	02	.2467538	03-	243.15	.13-	3.11
63000.00	.1499872	02	.2174351	03-	240.31	.50-	2.31
64000.00	.1303616	02	.1923541	03-	236.10	.86-	2.11
65000.00	.1130234	02	.1697989	03-	231.89	1.25-	1.88
66000.00	.9773977	01	.1495530	03-	227.68	1.67-	1.64
67000.00	.8428397	01	.1316865	03-	222.97	2.14-	1.57
68000.00	.7244970	01	.1157432	03-	218.07	2.68-	1.53
69000.00	.6206600	01	.1014367	03-	213.16	3.31-	1.43
70000.00	.5298194	01	.8863025	04-	208.25	4.02-	1.25
71000.00	.4510053	01	.7639500	04-	205.67	4.75-	.06-
72000.00	.3833260	01	.6539366	04-	204.21	5.35-	1.80-
73000.00	.3254405	01	.5591719	04-	202.76	5.79-	3.36-
74000.00	.2759847	01	.4776253	04-	201.30	6.05-	4.76-
75000.00	.2335233	01	.4124352	04-	197.25	6.23-	4.86-
76000.00	.1968620	01	.3562423	04-	192.51	6.45-	4.64-
77000.00	.1652605	01	.3066012	04-	187.78	6.76-	4.48-
78000.00	.1381669	01	.2619831	04-	183.73	7.12-	4.73-
79000.00	.1159042	01	.2072151	04-	194.86	6.84-	11.78-
80000.00	.9818757	00	.1660550	04-	205.99	5.28-	16.93-
81000.00	.8391270	00	.1346376	04-	217.13	2.65-	18.99-
82000.00	.7212849	00	.1132294	04-	221.92	.61	18.06-
83000.00	.6204525	00	.9863452	05-	219.14	4.06	14.23-
84000.00	.5327174	00	.8577390	05-	216.37	7.42	10.30-
85000.00	.4564348	00	.7460724	05-	213.13	10.65	6.21-
86000.00	.3900897	00	.6491782	05-	209.34	13.68	1.89-
87000.00	.3324487	00	.5634609	05-	205.55	16.46	2.37
88000.00	.2827413	00	.4830312	05-	203.92	19.06	5.48
89000.00	.2401715	00	.4135047	05-	202.34	21.56	8.53
90000.00	.2029957	00	.3686401	05-	191.84	23.49	16.29
91000.00	.1694415	00	.3371066	05-	175.11	23.69	29.75

FIGURE 35
NATAL, OCT. 15, 1967 2315 GMT.

WIND DIRECTION degrees	WIND SPEED m/sec	ERROR m/sec (±)	TEMPERATURE degrees Kelvin	ERROR degrees Kelvin (±)	HEIGHT meters
355.56	3.96	1.57	244.38	.39	35532.29
271.20	26.30	7.98	259.60	1.48	41333.54
262.65	38.72	7.08	263.10	1.42	45687.04
267.79	29.62	16.41	263.70	3.78	49314.29
175.11	16.47	7.03	257.52	1.75	52859.09
283.73	69.03	38.13	271.13	8.11	56309.95
248.66	49.43	16.04	251.12	3.95	59677.85
256.02	42.98	10.69	236.73	2.57	62945.60
255.37	31.70	4.75	217.12	1.00	66643.89
197.81	9.93	4.08	201.95	1.69	70732.54
88.70	53.40	4.35	191.36	.33	74654.44
45.50	41.40	22.87	210.25	6.15	78446.39
91.84	39.95		196.06		82079.49
286.68	10.93		202.48		85117.14
328.27	71.44	14.95	225.58	3.04	87617.54
152.74	138.03		218.53		90025.54
310.31	211.46		253.44		92349.50

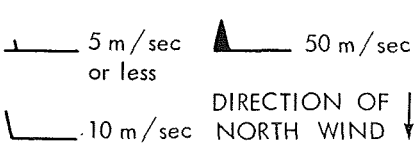




WIND COMPONENTS
m/sec

HEIGHT meters	SOUTH component (+)	WEST component (+)
40000.00	-1.33	20.32
45000.00	4.08	36.49
50000.00	4.09	23.60
55000.00	-3.93	41.06
60000.00	17.23	45.61
65000.00	9.06	35.57
70000.00	9.19	7.98
75000.00	-3.74	-51.21
80000.00	-16.06	-33.97
85000.00	-2.96	8.52
90000.00	120.75	-62.15

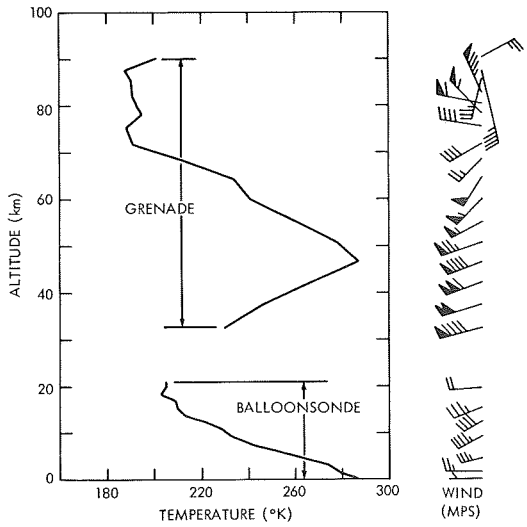
LEGEND



HEIGHT meters	PRESSURE nt/sq meter		DENSITY kg/cu meter		TEMPERATURE degrees Kelvin	PRESSURE deviation (%)	DENSITY deviation (%)
34000.00	.6550200	03	.9448799	02-	241.51	1.26-	4.43-
35000.00	.5699981	03	.8159076	02-	243.38	.80-	3.59-
36000.00	.4966113	03	.7044236	02-	245.60	.38-	2.94-
37000.00	.4332768	03	.6080906	02-	248.23	.00	2.47-
38000.00	.3785783	03	.5257660	02-	250.85	.38	2.03-
39000.00	.3312636	03	.4552941	02-	253.47	.74	1.59-
40000.00	.2902730	03	.3948690	02-	256.10	1.09	1.17-
41000.00	.2547076	03	.3429746	02-	258.72	1.42	.77-
42000.00	.2237365	03	.2996367	02-	260.13	1.71	.05
43000.00	.1966476	03	.2625468	02-	260.94	1.91	1.02
44000.00	.1729142	03	.2301509	02-	261.74	2.01	1.88
45000.00	.1521111	03	.2018417	02-	262.54	2.01	2.65
46000.00	.1338621	03	.1772187	02-	263.15	1.92	3.39
47000.00	.1178291	03	.1558948	02-	263.31	1.70	4.17
48000.00	.1037293	03	.1371538	02-	263.48	1.40	4.16
49000.00	.9132762	02	.1206801	02-	263.64	1.09	3.78
50000.00	.8039234	02	.1066930	02-	262.50	.76	3.89
51000.00	.7071948	02	.9448316	03-	260.76	.37	4.18
52000.00	.6215949	02	.8360575	03-	259.01	.11-	4.38
53000.00	.5460121	02	.7370776	03-	258.07	.64-	3.77
54000.00	.4799975	02	.6382094	03-	262.02	1.01-	1.08
55000.00	.4227942	02	.5538153	03-	265.96	1.10-	1.23-
56000.00	.3731188	02	.4816043	03-	269.90	.91-	3.21-
57000.00	.3293746	02	.4297225	03-	267.03	.61-	2.60-
58000.00	.2901644	02	.3871812	03-	261.08	.41-	.94-
59000.00	.2548875	02	.3480292	03-	255.14	.41-	.60
60000.00	.2232551	02	.3114861	03-	249.70	.60-	1.81
61000.00	.1950419	02	.2770082	03-	245.29	.95-	2.49
62000.00	.1699849	02	.2458342	03-	240.89	1.43-	2.72
63000.00	.1477758	02	.2177398	03-	236.44	1.97-	2.45
64000.00	.1280991	02	.1930772	03-	231.13	2.59-	2.49
65000.00	.1106798	02	.1707389	03-	225.83	3.30-	2.45
66000.00	.9530216	01	.1505515	03-	220.53	4.12-	2.32
67000.00	.8178310	01	.1320301	03-	215.79	5.04-	1.84
68000.00	.6997373	01	.1149413	03-	212.08	6.01-	.83
69000.00	.5970799	01	.9982479	04-	208.37	6.98-	.17-
70000.00	.5080586	01	.8648131	04-	204.66	7.96-	1.20-
71000.00	.4311042	01	.7463671	04-	201.22	8.95-	2.36-
72000.00	.3649035	01	.6403470	04-	198.52	9.90-	3.84-
73000.00	.3081805	01	.5482643	04-	195.82	10.78-	5.25-
74000.00	.2596787	01	.4684371	04-	193.12	11.60-	6.59-
75000.00	.2185549	01	.3943467	04-	193.08	12.24-	9.03-
76000.00	.1843535	01	.3242695	04-	198.06	12.40-	13.20-
77000.00	.1561711	01	.2679583	04-	203.04	11.89-	16.52-
78000.00	.1328367	01	.2224631	04-	208.02	10.71-	19.10-
79000.00	.1132181	01	.1895517	04-	208.08	9.00-	19.30-
80000.00	.9635677	00	.1644080	04-	204.18	7.04-	17.75-
81000.00	.8175572	00	.1422155	04-	200.27	5.16-	14.43-
82000.00	.6914663	00	.1226742	04-	196.37	3.55-	11.23-
83000.00	.5842920	00	.1028042	04-	198.00	2.00-	10.60-
84000.00	.4945379	00	.8609334	05-	200.11	.27-	9.97-
85000.00	.4193267	00	.7223702	05-	202.23	1.65	9.19-
86000.00	.3570614	00	.5905651	05-	210.63	4.06	10.75-
87000.00	.3060651	00	.4849494	05-	219.87	7.22	11.89-
88000.00	.2636300	00	.4091792	05-	224.46	11.02	10.64-
89000.00	.2272155	00	.3573210	05-	221.53	15.01	6.21-
90000.00	.1954529	00	.3114875	05-	218.60	18.90	1.73-
91000.00	.1687833	00	.2521845	05-	233.16	23.21	2.93-
92000.00	.1470796	00	.2064555	05-	248.19	28.46	3.39-

FIGURE 36
WALLOPS IS., DEC. 12, 1967 2200 GMT.

WIND DIRECTION degrees	WIND SPEED m/sec	ERROR m/sec (±)	TEMPERATURE degrees Kelvin	ERROR degrees Kelvin (±)	HEIGHT meters
249.35	90.33	13.64	230.25	11.04	32613.85
250.39	100.62	14.46	246.37	11.36	37444.14
244.21	110.27	11.59	266.09	8.39	42111.89
244.56	88.29	1.47	286.94	.96	46609.49
250.61	76.91	1.89	277.96	1.02	50937.14
241.95	54.27	1.89	260.76	.84	55135.85
222.18	54.44	1.58	240.71	.61	59655.64
216.05	48.92	1.80	233.77	.56	64422.64
227.12	27.12	2.48	212.44	.69	68521.59
234.39	41.45	2.35	190.89	.59	71991.25
281.26	37.73	1.54	188.57	.56	75304.34
319.34	53.23	2.10	195.23	1.06	78115.04
282.82	60.16	84.86	193.22	11.02	80430.29
337.17	86.38	25.15	190.47	11.73	82614.64
197.72	36.07	3.36	190.29	.98	85037.04
177.81	45.80	73.84	188.09	6.56	87690.19
54.97	23.54	132.36	201.47	16.70	90192.34



WIND COMPONENTS
m/sec

HEIGHT meters	SOUTH component (+)	WEST component (+)
35000.00	32.80	89.59
40000.00	41.54	97.24
45000.00	41.52	86.72
50000.00	28.21	74.10
55000.00	25.52	48.69
60000.00	40.28	35.99
65000.00	36.58	27.53
70000.00	20.87	25.76
75000.00	-4.47	36.70
80000.00	-18.37	54.20
85000.00	32.61	11.32
90000.00	-8.95	-17.92

LEGEND

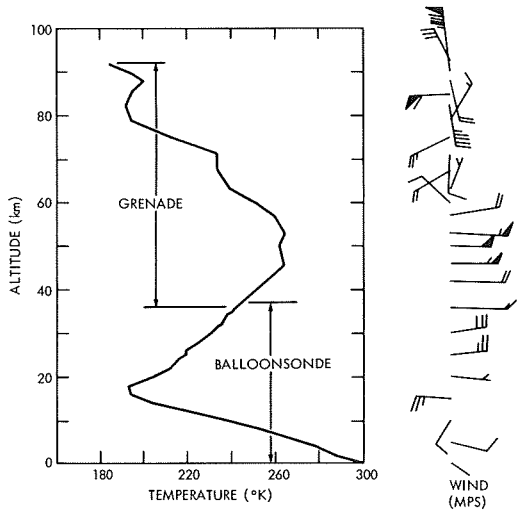
5 m/sec or less — 50 m/sec

10 m/sec — DIRECTION OF NORTH WIND

HEIGHT meters	PRESSURE nt/sq meter		DENSITY kg/cu meter		TEMPERATURE degrees Kelvin	PRESSURE deviation (%)	DENSITY deviation (%)
31000.00	.9702512	03	.1488696	01-	227.05	5.91-	5.73-
32000.00	.8365703	03	.1272498	01-	229.03	5.90-	6.12-
33000.00	.7223816	03	.1086929	01-	231.53	5.85-	6.08-
34000.00	.6249542	03	.9269744	02-	234.87	5.79-	6.24-
35000.00	.5417969	03	.7923714	02-	238.21	5.70-	6.37-
36000.00	.4706595	03	.6788238	02-	241.55	5.58-	6.47-
37000.00	.4096705	03	.5828083	02-	244.88	5.44-	6.53-
38000.00	.3573190	03	.5005027	02-	248.71	5.25-	6.73-
39000.00	.3123553	03	.4302136	02-	252.94	5.00-	7.01-
40000.00	.2736700	03	.3707394	02-	257.16	4.69-	7.21-
41000.00	.2403027	03	.3202754	02-	261.39	4.31-	7.33-
42000.00	.2114525	03	.2773413	02-	265.61	3.87-	7.39-
43000.00	.1864651	03	.2404136	02-	270.20	3.36-	7.49-
44000.00	.1647872	03	.2088802	02-	274.84	2.77-	7.53-
45000.00	.1459364	03	.1819170	02-	279.47	2.12-	7.48-
46000.00	.1295054	03	.1588008	02-	284.11	1.39-	7.35-
47000.00	.1150891	03	.1401295	02-	286.13	.65-	6.36-
48000.00	.1022800	03	.1254432	02-	284.05	.01-	4.72-
49000.00	.9082131	02	.1122091	02-	281.98	.53	3.50-
50000.00	.8057860	02	.1002924	02-	279.90	1.00	2.33-
51000.00	.7142812	02	.8960818	03-	277.70	1.37	1.19-
52000.00	.6323196	02	.8051361	03-	273.60	1.61	.52
53000.00	.5587560	02	.7222813	03-	269.50	1.67	1.68
54000.00	.4928356	02	.6469013	03-	265.41	1.63	2.45
55000.00	.4338613	02	.5784186	03-	261.31	1.48	3.15
56000.00	.3811630	02	.5168445	03-	256.92	1.22	3.86
57000.00	.3341287	02	.4610276	03-	252.49	.82	4.49
58000.00	.2922276	02	.4104237	03-	248.05	.29	5.00
59000.00	.2549746	02	.3646237	03-	243.61	.37-	5.40
60000.00	.2219890	02	.3219593	03-	240.20	1.16-	5.24
61000.00	.1930076	02	.2816334	03-	238.75	1.98-	4.20
62000.00	.1676736	02	.2461675	03-	237.29	2.77-	2.86
63000.00	.1455452	02	.2149991	03-	235.84	3.45-	1.16
64000.00	.1262321	02	.1876281	03-	234.38	4.00-	.39-
65000.00	.1093165	02	.1650338	03-	230.76	4.49-	.97-
66000.00	.9440861	01	.1458157	03-	225.56	5.02-	.89-
67000.00	.8125900	01	.1284697	03-	220.35	5.65-	.90-
68000.00	.6969397	01	.1128505	03-	215.15	6.38-	1.00-
69000.00	.5954283	01	.9903046	04-	209.46	7.24-	.97-
70000.00	.5064234	01	.8680110	04-	203.25	8.26-	.83-
71000.00	.4285863	01	.7577527	04-	197.04	9.48-	.87-
72000.00	.3608062	01	.6585109	04-	190.88	10.91-	1.11-
73000.00	.3028253	01	.5547245	04-	190.18	12.33-	4.13-
74000.00	.2540119	01	.4670262	04-	189.48	13.53-	6.87-
75000.00	.2129397	01	.3929630	04-	188.78	14.49-	9.35-
76000.00	.1785796	01	.3270677	04-	190.21	15.14-	12.45-
77000.00	.1500340	01	.2714056	04-	192.58	15.35-	15.44-
78000.00	.1263268	01	.2257428	04-	194.95	15.08-	17.91-
79000.00	.1064593	01	.1907251	04-	194.46	14.43-	18.80-
80000.00	.8966735	00	.1613621	04-	193.59	13.49-	19.27-
81000.00	.7546229	00	.1365687	04-	192.50	12.46-	17.82-
82000.00	.6344392	00	.1155742	04-	191.24	11.50-	16.37-
83000.00	.5329260	00	.9749085	05-	190.44	10.61-	15.22-
84000.00	.4474974	00	.8189492	05-	190.36	9.76-	14.36-
85000.00	.3757549	00	.6879243	05-	190.29	8.90-	13.52-
86000.00	.3154082	00	.5798845	05-	189.49	8.08-	12.36-
87000.00	.2645679	00	.4885514	05-	188.66	7.31-	11.23-
88000.00	.2219612	00	.4075315	05-	189.74	6.52-	11.00-
89000.00	.1867712	00	.3335216	05-	195.09	5.46-	12.46-
90000.00	.1579037	00	.2744498	05-	200.44	3.94-	13.42-

FIGURE 37
NATAL, DEC. 18, 1967 1300 GMT.

WIND DIRECTION degrees	WIND SPEED m/sec	ERROR m/sec (±)	TEMPERATURE degrees Kelvin	ERROR degrees Kelvin (±)	HEIGHT meters
103.12	13.00	2.22	241.55	.32	36319.85
92.60	22.21	1.86	256.66	.28	42043.64
90.90	56.48	2.36	264.42	.35	46350.49
93.00	51.43	5.07	262.00	.65	49929.89
94.94	55.56	9.08	265.35	1.07	53417.44
59.81	17.83	12.01	259.70	1.33	56812.69
313.27	8.18	1.98	251.01	1.47	60126.80
28.77	1.63	18.70	239.71	1.79	63349.75
238.00	19.90	11.25	234.19	1.53	66979.89
185.67	9.49	17.88	233.60	2.31	70994.59
233.83	24.98	16.28	212.54	2.58	74856.24
18.45	15.50	13.48	193.53	1.78	78589.94
173.23	42.51	9.57	191.57	1.44	82155.34
259.47	58.72	24.89	193.69	2.99	85128.99
168.71	20.55	26.96	199.97	3.79	87580.19
353.39	94.77	18.01	193.66	3.00	89932.24
333.13	32.05	20.31	183.75	6.83	92198.04



WIND COMPONENTS
m/sec

HEIGHT meters	SOUTH component (+)	WEST component (+)
40000.00	1.70	-18.78
45000.00	.92	-45.72
50000.00	2.73	-51.44
55000.00	-1.62	-36.73
60000.00	-5.73	5.13
65000.00	4.01	7.24
70000.00	9.71	4.88
75000.00	13.60	19.20
80000.00	7.80	-4.94
85000.00	12.09	55.00
90000.00	-92.18	11.01

LEGEND

5 m/sec or less

50 m/sec

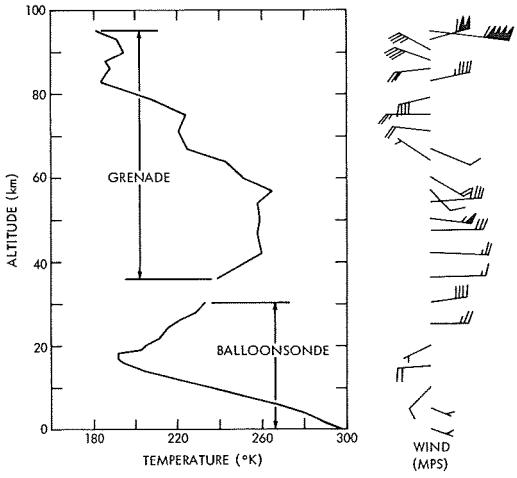
10 m/sec

DIRECTION OF NORTH WIND

HEIGHT meters	PRESSURE nt/sq meter		DENSITY kg/cu meter		TEMPERATURE degrees Kelvin	PRESSURE deviation (%)	DENSITY deviation (%)
35000.00	.5613700	03	.8158365	02-	239.72	2.30-	3.60-
36000.00	.4879512	03	.7050593	02-	241.10	2.12-	2.85-
37000.00	.4245977	03	.6078725	02-	243.34	1.99-	2.51-
38000.00	.3699981	03	.5240208	02-	245.98	1.89-	2.35-
39000.00	.3229073	03	.4524712	02-	248.62	1.79-	2.20-
40000.00	.2822272	03	.3913136	02-	251.26	1.71-	2.06-
41000.00	.2470298	03	.3389506	02-	253.90	1.63-	1.93-
42000.00	.2165289	03	.2940430	02-	256.54	1.56-	1.81-
43000.00	.1900195	03	.2562077	02-	258.38	1.52-	1.41-
44000.00	.1669153	03	.2234972	02-	260.18	1.52-	1.05-
45000.00	.1467573	03	.1951546	02-	261.98	1.57-	.75-
46000.00	.1291529	03	.1705715	02-	263.78	1.66-	.48-
47000.00	.1137199	03	.1500798	02-	263.98	1.83-	.28
48000.00	.1001230	03	.1324748	02-	263.30	2.12-	.61
49000.00	.8812628	02	.1169019	02-	262.62	2.44-	.53
50000.00	.7754678	02	.1030882	02-	262.06	2.79-	.38
51000.00	.6824693	02	.9039397	03-	263.02	3.13-	.32-
52000.00	.6009270	02	.7930398	03-	263.98	3.43-	.99-
53000.00	.5293929	02	.6961038	03-	264.94	3.66-	1.99-
54000.00	.4664350	02	.6146385	03-	264.38	3.81-	2.65-
55000.00	.4107606	02	.5447029	03-	262.71	3.91-	2.86-
56000.00	.3614540	02	.4823737	03-	261.05	4.01-	3.06-
57000.00	.3178047	02	.4271386	03-	259.20	4.10-	3.19-
58000.00	.2791264	02	.3789876	03-	256.58	4.20-	3.03-
59000.00	.2448389	02	.3358656	03-	253.96	4.33-	2.91-
60000.00	.2144802	02	.2972894	03-	251.34	4.50-	2.82-
61000.00	.1875939	02	.2635819	03-	247.94	4.73-	2.47-
62000.00	.1637772	02	.2334185	03-	244.44	5.03-	2.46-
63000.00	.1427101	02	.2063531	03-	240.93	5.33-	2.90-
64000.00	.1241545	02	.1811881	03-	238.72	5.58-	3.81-
65000.00	.1078981	02	.1584734	03-	237.20	5.73-	4.90-
66000.00	.9368993	01	.1384932	03-	235.68	5.75-	5.87-
67000.00	.8128258	01	.1209185	03-	234.18	5.62-	6.72-
68000.00	.7048586	01	.1049228	03-	234.04	5.32-	7.95-
69000.00	.6112059	01	.9103917	04-	233.89	4.78-	8.96-
70000.00	.5299740	01	.7898931	04-	233.74	3.99-	9.76-
71000.00	.4595149	01	.6853933	04-	233.57	2.95-	10.33-
72000.00	.3977461	01	.6074448	04-	228.11	1.79-	8.78-
73000.00	.3430956	01	.5368153	04-	222.66	.67-	7.23-
74000.00	.2948851	01	.4729684	04-	217.20	.38	5.69-
75000.00	.2524919	01	.4153012	04-	211.80	1.38	4.19-
76000.00	.2153643	01	.3629581	04-	206.71	2.33	2.84-
77000.00	.1829781	01	.3161642	04-	201.62	3.23	1.50-
78000.00	.1548235	01	.2744468	04-	196.53	4.06	.20-
79000.00	.1305423	01	.2352704	04-	193.30	4.92	.15
80000.00	.1098915	01	.1986172	04-	192.75	6.01	.64-
81000.00	.9246696	00	.1676022	04-	192.20	7.26	.84
82000.00	.7777105	00	.1413693	04-	191.65	8.48	2.29
83000.00	.6541348	00	.1185864	04-	192.17	9.71	3.11
84000.00	.5505285	00	.9943500	05-	192.88	11.01	3.97
85000.00	.4636516	00	.8343514	05-	193.59	12.40	4.88
86000.00	.3910273	00	.6953174	05-	195.92	13.95	5.08
87000.00	.3304922	00	.5800894	05-	198.48	15.78	5.39
88000.00	.2796903	00	.4900311	05-	198.84	17.78	7.01
89000.00	.2364760	00	.4199840	05-	196.16	19.69	10.23
90000.00	.1994776	00	.3593997	05-	193.36	21.35	13.37
91000.00	.1677400	00	.3092119	05-	188.99	22.45	19.01
92000.00	.1404884	00	.2651118	05-	184.61	22.70	24.05

FIGURE 38
NATAL, DEC. 19, 1967 0100 GMT.

WIND DIRECTION degrees	WIND SPEED m/sec	ERROR m/sec (±)	TEMPERATURE degrees Kelvin	ERROR degrees Kelvin (±)	HEIGHT meters
86.39	13.48	4.08	238.82	.43	36473.19
95.92	23.18	6.69	259.81	.71	42202.69
83.26	29.59	7.97	258.26	.79	46515.14
105.24	57.03	7.30	258.57	.76	50103.85
85.45	39.53	7.63	258.48	.60	53608.75
143.06	10.36	14.43	265.36	1.10	57033.54
135.19	17.85	17.25	251.36	1.17	60363.59
310.27	3.66	15.72	243.34	1.38	63600.94
125.84	8.07	13.60	225.22	.84	67253.24
281.54	21.93	6.32	221.29	.58	71296.89
269.49	24.74	8.73	224.02	.88	75182.49
251.92	38.64	37.51	208.31	5.73	78933.04
65.41	43.11	31.69	184.04	3.57	82524.59
257.71	30.58	24.36	188.35	2.21	85518.14
305.84	38.16	15.39	185.97	2.40	87985.34
313.78	37.38	17.88	194.60	3.51	90371.09
80.33	110.73	31.07	191.68	3.43	92669.94
96.55	207.12	27.94	180.67	2.65	94822.19



WIND COMPONENTS
m/sec

HEIGHT meters	SOUTH component (+)	WEST component (+)
40000.00	1.14	-9.74
45000.00	-1.41	-27.16
50000.00	14.45	-54.28
55000.00	1.50	-25.92
60000.00	12.18	-11.88
65000.00	.35	-.78
70000.00	-1.46	12.49
75000.00	.01	24.58
80000.00	3.10	14.17
85000.00	2.27	17.92
90000.00	-25.31	27.60

LEGEND

5 m/sec or less

50 m/sec

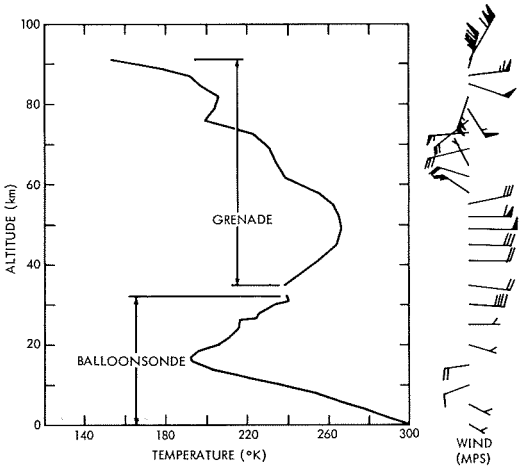
10 m/sec

DIRECTION OF NORTH WIND

HEIGHT meters	PRESSURE nt/sq meter		DENSITY kg/cu meter		TEMPERATURE degrees Kelvin	PRESSURE deviation (%)	DENSITY deviation (%)
35000.00	.5726356	03	.8398668	02-	237.53	.34-	.76-
36000.00	.4970285	03	.7263075	02-	238.40	.30-	.07
37000.00	.4318322	03	.6248949	02-	240.74	.32-	.21
38000.00	.3758571	03	.5357422	02-	244.41	.34-	.17-
39000.00	.3278281	03	.4603815	02-	248.07	.30-	.49-
40000.00	.2865221	03	.3965184	02-	251.74	.21-	.76-
41000.00	.2509188	03	.3422660	02-	255.40	.08-	.97-
42000.00	.2201641	03	.2960683	02-	259.06	.08	1.13-
43000.00	.1933882	03	.2596041	02-	259.52	.22	.10-
44000.00	.1698792	03	.2283620	02-	259.16	.22	1.09
45000.00	.1492071	03	.2008519	02-	258.80	.07	2.14
46000.00	.1310322	03	.1766313	02-	258.44	.23-	3.04
47000.00	.1150611	03	.1551884	02-	258.30	.68-	3.70
48000.00	.1010400	03	.1362320	02-	258.38	1.22-	3.46
49000.00	.8873520	02	.1196014	02-	258.47	1.77-	2.85
50000.00	.7793562	02	.1050101	02-	258.56	2.31-	2.25
51000.00	.6844794	02	.9223146	03-	258.54	2.85-	1.70
52000.00	.6012000	02	.8101788	03-	258.52	3.38-	1.15
53000.00	.5280744	02	.7117052	03-	258.49	3.90-	.20
54000.00	.4639604	02	.6234384	03-	259.26	4.32-	1.25-
55000.00	.4079283	02	.5439318	03-	261.27	4.58-	2.99-
56000.00	.3590310	02	.4750794	03-	263.28	4.65-	4.52-
57000.00	.3163144	02	.4153861	03-	265.29	4.55-	5.85-
58000.00	.2785572	02	.3713970	03-	261.29	4.39-	4.98-
59000.00	.2448239	02	.3317586	03-	257.09	4.34-	4.09-
60000.00	.2147270	02	.2958119	03-	252.88	4.39-	3.30-
61000.00	.1879791	02	.2621828	03-	249.78	4.54-	2.99-
62000.00	.1643244	02	.2314864	03-	247.30	4.71-	3.26-
63000.00	.1434580	02	.2041364	03-	244.82	4.84-	3.94-
64000.00	.1250386	02	.1804832	03-	241.36	4.91-	4.18-
65000.00	.1087248	02	.1602291	03-	236.39	5.01-	3.85-
66000.00	.9426362	01	.1418954	03-	231.43	5.17-	3.55-
67000.00	.8147723	01	.1253348	03-	226.47	5.40-	3.32-
68000.00	.7027089	01	.1090507	03-	224.49	5.61-	4.33-
69000.00	.6054959	01	.9437317	04-	223.52	5.67-	5.62-
70000.00	.5214174	01	.8162352	04-	222.55	5.54-	6.75-
71000.00	.4487412	01	.7055478	04-	221.57	5.23-	7.70-
72000.00	.3861154	01	.6065199	04-	221.78	4.66-	8.92-
73000.00	.3323450	01	.5204074	04-	222.48	3.79-	10.06-
74000.00	.2862113	01	.4467575	04-	223.18	2.56-	10.91-
75000.00	.2466090	01	.3837328	04-	223.89	.97-	11.48-
76000.00	.2123107	01	.3352996	04-	220.59	.88	10.25-
77000.00	.1823226	01	.2935130	04-	216.40	2.86	8.56-
78000.00	.1561124	01	.2562789	04-	212.21	4.93	6.80-
79000.00	.1332550	01	.2233448	04-	207.85	7.10	4.92-
80000.00	.1132605	01	.1962116	04-	201.10	9.26	1.84-
81000.00	.9573758	00	.1716220	04-	194.34	11.05	3.26
82000.00	.8045005	00	.1494124	04-	187.58	12.21	8.11
83000.00	.6730523	00	.1269353	04-	184.72	12.88	10.37
84000.00	.5627301	00	.1053082	04-	186.16	13.47	10.12
85000.00	.4711662	00	.8749641	05-	187.60	14.22	9.98
86000.00	.3948451	00	.7321372	05-	187.88	15.07	10.64
87000.00	.3307968	00	.6165419	05-	186.92	15.89	12.01
88000.00	.2769086	00	.5185946	05-	186.02	16.61	13.25
89000.00	.2321092	00	.4264027	05-	189.64	17.48	11.91
90000.00	.1952180	00	.3519180	05-	193.25	18.76	11.01
91000.00	.1645058	00	.2957216	05-	193.80	20.09	13.82
92000.00	.1385876	00	.2507738	05-	192.53	21.04	17.34
93000.00	.1165245	00	.2144187	05-	189.32	21.40	21.62
94000.00	.9750622	01-	.1864427	05-	182.19	20.85	27.78

FIGURE 39
NATAL, DEC. 19, 1967 1310 GMT.

WIND DIRECTION degrees	WIND SPEED m/sec	ERROR m/sec (±)	TEMPERATURE degrees Kelvin	ERROR degrees Kelvin (±)	HEIGHT meters
110.50	18.54	3.84	238.11	.65	35485.64
91.76	21.06	5.37	255.26	.95	41005.74
94.26	28.55	6.30	264.04	1.12	45165.45
92.69	51.43	9.31	266.25	1.64	48610.00
91.22	60.14	14.84	264.98	2.40	51959.60
65.60	32.11	15.30	261.79	2.37	55230.95
313.22	24.86	6.73	255.32	1.14	58415.64
290.34	21.60	10.10	239.27	1.58	61503.04
341.04	6.80	4.61	235.18	1.43	64986.04
240.69	28.59	12.42	230.89	2.31	68838.64
261.11	54.75	16.50	222.71	2.66	72526.64
219.25	29.36	12.09	198.77	2.81	76067.74
157.22	55.78	18.43	204.30	3.61	79459.95
193.10	105.39	24.63	205.52	5.64	82285.09
121.48	47.94	27.32	195.60	4.68	84596.84
76.09	67.26	26.32	191.57	4.74	86831.50
18.90	95.93	28.39	178.37	5.24	88977.59
31.02	109.80	19.64	153.21	3.34	90981.94



WIND COMPONENTS
m/sec

HEIGHT meters	SOUTH component (+)	WEST component (+)
40000.00	1.71	-20.37
45000.00	2.06	-28.17
50000.00	1.94	-55.00
55000.00	-12.23	-31.42
60000.00	-12.14	19.21
65000.00	-6.35	2.29
70000.00	12.25	34.11
75000.00	18.43	29.28
80000.00	61.22	-12.90
85000.00	17.60	-45.28
90000.00	-92.46	-44.08

LEGEND

5 m/sec or less — 50 m/sec

10 m/sec — DIRECTION OF NORTH WIND

HEIGHT meters	PRESSURE nt/sq meter		DENSITY kg/cu meter		TEMPERATURE degrees Kelvin	PRESSURE deviation (%)	DENSITY deviation (%)
33000.00	.7557472	03	.1099494	01-	239.46	1.50-	4.99-
34000.00	.6563784	03	.9571066	02-	238.91	1.06-	3.20-
35000.00	.5699163	03	.8329312	02-	238.37	.81-	1.58-
36000.00	.4949815	03	.7193902	02-	239.70	.71-	.88-
37000.00	.4304753	03	.6176339	02-	242.81	.64-	.94-
38000.00	.3750569	03	.5313229	02-	245.92	.55-	.99-
39000.00	.3273526	03	.4579572	02-	249.02	.44-	1.01-
40000.00	.2862103	03	.3954666	02-	252.13	.32-	1.02-
41000.00	.2506612	03	.3421314	02-	255.24	.18-	1.01-
42000.00	.2198336	03	.2975867	02-	257.35	.06-	.63-
43000.00	.1930121	03	.2591533	02-	259.46	.03	.28-
44000.00	.1696487	03	.2259457	02-	261.57	.09	.02
45000.00	.1492739	03	.1972183	02-	263.69	.11	.29
46000.00	.1314469	03	.1730848	02-	264.57	.08	.97
47000.00	.1157959	03	.1521072	02-	265.21	.04-	1.64
48000.00	.1020436	03	.1337190	02-	265.85	.24-	1.55
49000.00	.8994711	02	.1177598	02-	266.10	.43-	1.27
50000.00	.7928490	02	.1039488	02-	265.72	.62-	1.22
51000.00	.6987661	02	.9174470	03-	265.34	.82-	1.16
52000.00	.6157568	02	.8096902	03-	264.94	1.04-	1.08
53000.00	.5424527	02	.7159340	03-	263.96	1.28-	.79
54000.00	.4776700	02	.6327707	03-	262.99	1.49-	.22
55000.00	.4204417	02	.5590330	03-	262.01	1.65-	.30-
56000.00	.3698349	02	.4951226	03-	260.22	1.79-	.50-
57000.00	.3250252	02	.4385567	03-	258.19	1.92-	.60-
58000.00	.2853650	02	.3880969	03-	256.16	2.06-	.70-
59000.00	.2501751	02	.3454743	03-	252.28	2.25-	.13-
60000.00	.2188090	02	.3085172	03-	247.08	2.58-	.84
61000.00	.1908392	02	.2748652	03-	241.88	3.08-	1.69
62000.00	.1660550	02	.2423721	03-	238.68	3.71-	1.28
63000.00	.1445116	02	.2116770	03-	237.51	4.27-	.39-
64000.00	.1253336	02	.1847534	03-	236.33	4.69-	1.92-
65000.00	.1087797	02	.1611515	03-	235.16	4.96-	3.29-
66000.00	.9435119	01	.1404414	03-	234.05	5.08-	4.54-
67000.00	.8178463	01	.1223181	03-	232.93	5.04-	5.64-
68000.00	.7084643	01	.1064677	03-	231.82	4.83-	6.59-
69000.00	.6132806	01	.9268001	04-	230.53	4.46-	7.32-
70000.00	.5303231	01	.8092190	04-	228.31	3.93-	7.55-
71000.00	.4579578	01	.7056521	04-	226.09	3.28-	7.68-
72000.00	.3949138	01	.6145383	04-	223.87	2.49-	7.71-
73000.00	.3398148	01	.5393203	04-	219.50	1.62-	6.79-
74000.00	.2912861	01	.4769909	04-	212.75	.84-	4.88-
75000.00	.2484604	01	.4202157	04-	205.98	.23-	3.06-
76000.00	.2108199	01	.3686547	04-	199.22	.17	1.32-
77000.00	.1784753	01	.3104399	04-	200.29	.69	3.29-
78000.00	.1512692	01	.2609932	04-	201.92	1.68	5.09-
79000.00	.1283874	01	.2197399	04-	203.55	3.18	6.45-
80000.00	.1090869	01	.1858091	04-	204.53	5.23	7.05-
81000.00	.9274486	00	.1576407	04-	204.96	7.58	5.15-
82000.00	.7888194	00	.1337956	04-	205.39	10.03	3.18-
83000.00	.6702728	00	.1153420	04-	202.45	12.41	.29
84000.00	.5678962	00	.9984097	05-	198.16	14.51	4.40
85000.00	.4796472	00	.8574892	05-	194.87	16.27	7.79
86000.00	.4042374	00	.7294256	05-	193.07	17.80	10.23
87000.00	.3400426	00	.6217560	05-	190.53	19.13	12.96
88000.00	.2849103	00	.5383265	05-	184.38	19.98	17.56
89000.00	.2372843	00	.4641849	05-	178.08	20.10	21.83
90000.00	.1956456	00	.4117522	05-	165.53	19.02	29.89

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