

PROJECT 10073 RECORD

1. DATE - TIME GROUP 16 Jul 64 19/0355Z	2. LOCATION Lynn, Massachusetts
3. SOURCE Civilian	10. CONCLUSION BALLOON
4. NUMBER OF OBJECTS One	Sighting descriptive of a balloon observation.
5. LENGTH OF OBSERVATION More than 10 minutes	11. BRIEF SUMMARY AND ANALYSIS Object resembling Star with same mag as ECHO II moving SSW. Moved at same speed as ECHO. Object then slowed down and stopped. Moved back overhead. Maintained starlike appearance. Object moved away steadily to the NNE.
6. TYPE OF OBSERVATION Ground-Visual	
7. COURSE Varied	
8. PHOTOS ☐ Yes ☒ No	
9. PHYSICAL EVIDENCE ☐ Yes ☒ No	

610-12

*Identification

WEAS, DORSET 22, MASS.
 42° 22' N 71° 02' W
 Pibal THEODOLITE
 75th MER ELEV 11' MSL

U.S. DEPARTMENT OF COMMERCE
 WEATHER BUREAU

WINDS-ALOFT COMPUTATION SHEET
 (LAND STATION FORM)

WBAN-20

	Year	Month	Day	Time
Actual (local standard)	1964	July	19	062
Scheduled (G.M.T.)	1964	July	19	120

Ascension No. 648

Type of balloon

100 GR

Orientation, 360° = South

Slant range (m.) (yds.)	Pibal ht. above sfc. (m.) 30 90m 100 90m	Minute	Rawin ht. above surface (m.)	Elevation angle°		Distance from observation point (m.)	Azimuth angle °	Minute	Wind		Rawinsonde Time-Altitude Data				
				Observed	Smoothed				Direction° 360°= N.	Speed (m.p.s.)	Con- tact	Pressure (mb.)	Altitude (m., m.s.l.)	Elapsed time (min.)	
															sfc.
	216	1		38.6		440	253.7	1	279	12.0	+				
	350														
	414	2		25.2		1425	278.6	2	294	16.6	5				
	670														
	612	3		22.7		2345	286.8	3	298	15.1	10				
	900														
	901	4		21.9		3195	289.5	4	291	13.1	15				
	1205														
	990	5		22.1		3905	288.5	5	276	11.8	20				
	1505														
	1170	6		22.4		4560	285.3	6	264	11.2	25				
	1800														
	1350	7		22.8		5160	282.2	7	258	10.8	30				
	2170														
	1530	8		23.2		5730	279.5	8	254	11.1	35				
	2455														
	1710	9		23.3		6360	276.7	9	256	12.0	40				
	2740														
	1990	10		23.1		7080	274.9	10	262	11.1	45				
	3020														
	2070	11		23.3		7665	274.1	11	265	9.9	50				
	3300														
	2250	12						12			55				
	3580														
	2430	13						13			60				
	3855														
	2610	14						14			65				
	4130														
	2790	15						15			70				
	4405														
	2970	16						16			75				
	4675														
	3150	17						17			80				
	4945														
	3930	18						18			85				
	5215														
	3510	19						19			90				
	5405														
	3680	20						20			95				

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3870	21						21		
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4050	23						23		
6205	24						24		
4230	25						25		
6553	26						26		
4410	27						27		
6835	28						28		
4590	29						29		
7105	30						30		
4770	31						31		
7375	32						32		
4950	33						33		
7645	34						34		
5130	35						35		
7915	36						36		
5310	37						37		
8185	38						38		
5490	39						39		
8455	40						40		
5670	41						41		
8730	42						42		
5850	43						43		
9005	44						44		
6030	45						45		
9295	46						46		
6210	47						47		
9565	48						48		
6390	49						49		
9850	50						50		
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Coded Data for Transmission

72509	12462	2822	17930	3030	12726	2823	12722	2621	02521
2623	02621	013912	02509	014111	01	5			

100			
105			
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135			
140			
x			

Punched Card Data

Altitude	Direction (degrees)	Speed (m.p.s.)	Card columns	Altitude	Direction (degrees)	Speed
Card No. 1			15	Card No. 2		
Type of equipment	0		16	Type of equipment		
sfc.	260	8	17-21	7		
150 m.	208	9	22-26	8		
300 m.	277	12	27-31	9		
0.5	285	14	32-36	10		
1.0	298	15	37-41	11		
1.5	280	12	42-46	12		
2.0	263	11	47-51	13		
2.5	255	11	52-56	14		
3	262	11	57-61	15		
4			62-66	16		
5			67-71	17		
6			72-76	18		

Maximum Wind Speed Data

Min. alt. wind speed 45 m.p.s. or more (m.)		
Alt. of maximum wind speed (m.)		
Max. wind speed (m.p.s.) and dir. (degrees)		
Max. alt. wind speed 45 m.p.s. or more (m.)		
Enter check if additional levels appear on reverse side.		

50, 100

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Stamp the following:
 Name of station
 Lat. and long.
 Local Standard Time, _____th meridian
 El. of Station
 Method of obs., e.g., rawinsonde, rawin, pibal
 Type of equip., e.g., WBNT-57, GND-1A, GND-1, SCR-450, theodolite

*Identification

Nantucket, Mass. (Memorial Airport)
 41° 15' N 70° 04' W 75th Meridian Time
 Station Elev. 14 M Method Obs. *Rabal*
 Type of Equipment *Theodolite - WBNT-57*

U.S. DEPARTMENT OF COMMERCE
WEATHER BUREAUWINDS-ALOFT COMPUTATION SHEET
(LAND STATION FORM)

WBAN-20

Actual time th. met.	Year	Month	Day	Time
75	1964	JUL	16	1815
Scheduled (G.M.T.)	1964	JUL	17	00
Ascension No. 651				

Type of balloon *1200 gram*

Orientation, 360° = South

Slant range (m.) (yds.)	Pibal ht. above sfc. (m.) 30 gram 100 gram	Minute	Rawin ht. above surface (m.)	Elevation angle°		Distance from observation point (m.)	Azimuth angle °	Minute	Wind		Rawinsonde Time-Altitude Data			
				Observed	Smoothed				Direction° 360° = N.	Speed (m.p.s.)	Contact	Pressure (mb.)	Altitude (m., m.s.l.)	Elapsed time (min.)
	216 350	1	250	25.4		530	250.2	1	255	9.4	2.8	1020	14	0
	414 670	2	310	24.6		1120	254.9	2	258	9.7	5	981	350	1.4
	612 980	3	260	23.8		1720	256.3	3	263	9.6	10	900	1100	4.4
	801 1285	4	1820	23.4		2300	259.1	4	264	10.5	15	822	1870	7.5
	990 1585	5	1500	22.5		2800	259.6	5	262	10.9	20	751	2600	10.7
	1170 1880	6	1220	22.3		3200	260.4	6	267	10.4	25	683	3400	13.7
	1350 2170	7	1020	21.9		3600	262.2	7	272	9.6	30	620	4180	16.7
	1530 2455	8	1120	22.2		4000	263.2	8	271	9.2	35	562	4970	19.9
	1710 2740	9	1220	22.2		4400	263.8	9	264	9.5	40	508	5740	23.3
	1890 3020	10	1400	22.1		4800	263.2	10	259	10.3	45	459	6550	26.4
	2070 3300	11	2160	22.0		5200	263.0	11	267	9.4	50	413	7370	29.4
	2250 3580	12	1100	22.3		5600	263.8	12	273	8.6	55	372	8130	32.4
	2430 3855	13	2020	22.5		6000	264.4	13	273	9.2	60	334	8900	34.9
	2610 4130	14	1420	22.7		6400	265.1	14	270	8.1	65	299	9650	37.6
	2790 4405	15	1220	23.0		6800	264.9	15	261	8.4	70	268	10400	40.1
	2970 4675	16	4000	23.0		7200	264.5	16	265	11.0	75	240	11140	42.5
	3150 4945	17	4200	22.9		7600	264.6	17	265	10.5	80	215	11850	45.0
	3330 5215	18	4400	23.0		8000	264.5	18	261	10.1	85	192	12610	47.4
	3510 5485	19	4140	22.8		8400	264.2	19	259	10.6	90	172	13310	49.7

Reason for termination

compared 24 1/2% to 100%

Verilias 177-178-179

3690	5755	20	42.0	22.8	18700	263.9	20	260	8.7
3870	6025	21	42.0	22.7	18800	263.8	21	266	10.0
4050	6295	22	44.0	22.6	18900	264.1	22	267	11.4
4230	6565	23	46.0	22.5	19000	264.2	23	267	8.7
4410	6835	24	48.0	22.5	19100	264.2	24	264	10.1
4590	7105	25	50.0	22.4	19200	264.2	25	262	10.8
4770	7375	26	52.0	22.6	19300	264.0	26	256	10.6
4950	7645	27	54.0	22.4	19400	263.5	27	254	12.7
5130	7915	28	56.0	22.2	19500	263.0	28	247	12.6
5310	8185	29	58.0	22.0	19600	262.0	29		
5490	8455	30		21.7		261.0	30	242	17.5
5670	8720	31	60.0	21.5	19800	259.9	31		
5850	9005	32		21.4		258.9	32	238	14.0
6030	9285	33	63.0	21.2	20000	258.4	33		
6210	9565	34		21.0		257.9	34	247	16.5
6390	9850	35	65.0	20.8	20200	257.5	35		
6570	10135	36		20.6		257.3	36	252	16.6
6750	10420	37	67.0	20.4	20400	257.1	37		
6930	10710	38		20.2		257.1	38	255	17.3
7110	11005	39	70.0	20.0	20600	257.1	39		
7290	11300	40		19.7		257.0	40	253	20.4
7470	11595	41	72.0	19.4	20800	256.9	41		
7650	11890	42		19.15		256.8	42	251	22.3
7830	12195	43	74.0	18.85	21000	256.5	43		
8010	12480	44		18.65		256.3	44	252	24.4
8190	12775	45		18.25	21200	256.3	45		
8370	13075	46		18.05		256.1	46	252	21.5
8550	13375	47	76.0	17.90	21400	255.9	47		
8730	13675	48		17.75		255.6	48	245	21.7
8910	13975	49	78.0	17.65	21600	255.3	49		
9090	14275	50	80.0	17.75	21800	254.8	50	230	14.2

Coded Data for Transmission

22566	00711	1518	22619	2617	42621	4120	62719	8618	82620
2617	02117	22116	41620	62017	81710	02121	831526	52432	72532
52511	62516	52422	02419	32449					
00000	71521	00117	71996	02906	00912	00925	00137	00134	40932

95	153	14000	51.9
100	136	14500	54.0
105	121	15520	56.5
110	107	16240	59.0
115	93	17110	61.7
120	80	18050	64.8
125	68	19080	68.4
130	55	20420	72.5
135	42	22200	77.7
140	29	24600	84.6
145	16	28600	96.6
150	10	31785	106.3

Punched Card Data

Altitudes	Direction (degrees)	Speed (m.p.s.)	Card columns	Altitudes	Direction (degrees)	Speed (m.p.s.)
Card No. 1			15	Card No. 2		
Type of equipment	2		16	Type of equipment	2	
sfc.	240	3	17-21	7	247	1
150 m.	245	6	22-26	8	248	18
300 m.	247	7	27-31	9	249	12
0.5	250	10	32-36	10	255	7
1.0	252	10	37-41	11	257	21
1.5	254	10	42-46	12	258	2
2.0	261	7	47-51	13	260	18
2.5	261	10	52-56	14	262	14
3	261	7	57-61	15	262	10
4	262	11	62-66	16	268	1
5	262	9	67-71	17	269	3
6	263	11	72-76	18	270	

Maximum Wind Speed Data

Min. alt. wind speed 45 m.p.s. or more (m.)		
Alt. of maximum wind speed (m.)		
Max. wind speed (m.p.s.) and dir. (degrees)		
Dir. (degrees) and speed (m.p.s.) of Max. wind		
Enter check if additional levels appear on reverse side.		

Identification Portland, Maine (City Airport) 43° 30'N 70° 19'W 7513 Mer. Rawin V... 20m	U.S. DEPARTMENT OF COMMERCE WEATHER BUREAU WINDS-ALOFT COMPUTATION SHEET (LAND STATION FORM) WBAN-20		Year	Month	Day	Time	
			Actual time	1964	JUL	18	
			Scheduled (G.M.T.)	1964	JUL	18	
			Ascension No. 798				

Type of balloon			Orientation, 360° = South							Rawinsonde Time-Altitude Data			
Slant range (m.) (yds.)	Pibal ht. above surface (m.)	Minutes	Elevation angle °		Distance from observation point (m.)	Azimuth angle °	Minute	Wind		Contact	Pressure (mb.)	Altitude (m., m.s.l.)	Elapsed time (min.)
			Observed	Smoothed				Direction ° 360° = N.	Speed (m.p.s.)				
	210	1	21		400	211.2	1	213	6.4	5	981	250	0.9
	414	2	22.2		750	212.9	2	245	4.4	10	982	1010	2.5
	612	3	25.0		850	230.3	3	253	4.1	15	982	1250	5.0
	801	4	25.8		1140	232.6	4	259	4.3	20	983	2390	8.1
	1000	5	25.5		1410	232.5	5	239	4.8	25	711	3050	11.2
	1190	6	25.1		1710	233.7	6	245	5.6	30	654	3760	14.3
	1380	7	25.2		2070	234.2	7	270	5.0	35	601	4420	15.7
	1570	8	24.8		2150	243.2	8	290	3.4	40	551	5100	18.0
	1760	9	47.3		2330	244.5	9	285	4.0	45	504	5500	20.3
	1950	10	49.5		2580	250.2	10	281	4.5	50	461	6300	22.6
	2140	11	49.2		2790	253.0	11	268	3.3	55	421	7190	24.7
	2330	12	28.6		2920	252.8	12	257	2.6	60	384	7770	26.7
	2520	13	43.5		3110	251.3	13	256	4.5	65	350	8550	28.7
	2710	14	47.7		3500	253.1	14	265	6.8	70	319	9190	30.6
	2900	15	47.3		3900	253.9	15	265	7.6	75	291	9820	32.5
	3090	16	46.1		4400	255.1	16	266	7.5	80	264	10500	34.5
	3280	17	45.0		4800	256.3	17	265	7.5	85	240	11130	36.3
	3470	18	44.8		5300	256.5	18	266	9.3	90	216	11810	38.0
	3660	19	42.1		5800	258.3	19	272	9.3	95	195	12470	39.9
	3850	20	41.7		6200	259.5	20	278	9.4	100	174	13200	41.7
	4040	21	41.9		7200	261.2	21	280	8.7	105	154	13970	43.6
	4230	22	41.6		7400	262.2	22	272	7.5	110	135	14800	45.2
	4420	23	40.6		7900	262.2	23	261	5.1	115	116	15770	48.0
	4610	24	40.7		8200	262.0	24	252	2.3	120	98		
	4800	25	41.2		8100	261.1	25			125			
	4990	26	41.0			262.2	26	242	8.6	130			
	5180	27	41.7		9100	259.4	27			135			
	5370	28	41.0			259.4	28	274	2.9	140			

7175	25								
4770			410			1002	26	242	8.6
7378	26								
4950		7710	409		9100	7594	27		
7611	27								
5130			410			757.9	28	229	7.9
7918	28								
5510		8580	410		9900	7563	29		
6135	29								
5490			411			7552	30	224	3.9
8455	30								
5670		7270	412		16200	7550	31		
8730	31								
5880			413			7550	32	278	1.9
8005	32								
6030		7020	415		10300	7556	33		
9285	33								
6210			415			7565	34	349	4.2
9565	34								
6540		10250	417		10500	7581	35		
9860	35								
6870			417			7610	36	3	8.6
10135	36								
6750		11490	481		10500	7658	37		
10420	37								
6930			489			7650	38	342	2.7
10710	38								
7110		15200	494		12400	7650	39		
11005	39								
7290			504			7640	40	240	8.6
11200	40								
7470		17940	505		10700	7656	41		
11595	41								
7650		13350	510		10800	7662	42	260	1.9
11690	42								
7830		13780	515		10900	7653	43		
12185	43								
8010		14180	518		11300	7656	44	226	4.6
12480	44								
8190			520			7648	45		
12775	45								
8370		14940	520		11700	7677	46	222	7.7
13075	46								
8550			515			7614	47		
13375	47								
8730		15720	511		12700	7624	48	232	9.6
13675	48								
8910									
13975	49								
9090									
14275	50								

140			
140	110	11000	42.8

Maximum Wind Speed Data		
Min. alt. wind speed 45 m.p.s. or more (m.)		
Alt. of maximum wind speed (m.)		
Dir. (degrees) and speed (m.p.s.) of Max. wind		
Max. alt. wind speed 45 m.p.s. or more (m.)		
Enter check if additional levels appear on reverse side.		

Identification Portland, Maine (City Airport) 13. 25° 21' 15" N 75° 15' W Rawin WORT 03 Elev. 20m.	U.S. DEPARTMENT OF COMMERCE WEATHER BUREAU		Year	Month	Day	Time	
	WINDS-ALOFT COMPUTATION SHEET (LANDSTATION FORM)		Actual time 15th mer.	1964	JUL	18	1700
	WBAN-20		Scheduled (G.A.T.)	1964	JUL	18	0700
	Ascension No. 777						

Type of balloon		Orientation, 360° = South										Rawinsonde Time-Altitude Data			
Start range (m.) (yds.)	Pilot alt. above sfc. (m.) 30 gram 100 gram	Minute	Rawin ht. above surface (m.)	Elevation angle °		Distance from observation point (m.)	Azimuth angle °	Minute	Wind		Correct	Pressure (mb.)	Altitude (m., m.s.l.)	Elapsed time (min.)	
				Observed	Smoothed				Direction ° 360° = N.	Speed (m.p.h.)					
	210	1	210	22.0		630	275.0	1	242	12.3	5	984	230	0.2	
	250	2	530	21.5		1490	277.0	2	253	12.8	10	905	1030	3.2	
	414	3	530	21.7		2200	275.1	3	256	12.6	15	832	1700	6.4	
	612	4	1180	21.6		2960	274.5	4	258	13.0	20	762	2490	8.4	
	880	5	1530	21.4		3740	250.7	5	261	13.2	25	690	3250	11.6	
	1001	6	1780	21.2		4540	252.9	6	269	14.3	30	634	4000	16.4	
	1285	7	2030	20.4		5400	250.3	7	273	15.0	35	577	4760	19.2	
	1580	8	2280	20.0		6250	259.0	8	273	15.7	40	525	5490	19.9	
	1870	9	2550	19.60		7200	260.5	9	271	13.0	45	477	6210	22.4	
	2170	10	2820	19.80		7800	266.6	10	269	10.0	50	433	6900	24.6	
	2485	11	3070	20.0		8400	261.9	11	269	10.0	55	392	7700	27.4	
	2800	12	3350	20.3		9000	262.3	12	266	11.7	60	355	8400	30.0	
	3120	13	3630	20.2		9800	262.3	13	257	11.7	65	321	9110	32.8	
	3450	14	3880	20.5		10400	261.7	14	257	10.0	70	291	9800	35.2	
	3780	15	4150	20.6		11000	261.4	15	263	12.0	75	260	10500	37.7	
	4100	16	4440	20.9		11600	261.9	16	264	9.1	80	235	11140	40.2	
	4420	17	4710	21.2		12100	262.0	17	260	8.3	85	215	11800	42.5	
	4740	18	4970	21.4		12600	262.2	18	276	8.5	90	194	12470	44.9	
	5060	19	5200	21.8		13100	263.2	19	288	10.0	95	175	13125	47.1	
	5380	20	5340	22.0		13700	264.6	20	293	9.6	100	157	13760	49.4	
	5700	21	5810	22.4		14100	265.6	21	293	8.6	105	139	14520	52.0	
	6020	22	6110	22.7		14600	266.6	22	293	9.2	110	123	15370	54.6	
	6340	23	6410	22.9		15100	267.8	23	292	8.3	115	108	16150	57.4	
	6660	24	6700	23.3		15500	268.1	24	289	7.6	120	94	17050	60.4	
	6980	25	7000	23.6		15950	268.2	25			125	79	18120	63.7	
	7300	26		23.8			269.2	26	295	7.9	130	64	19440	67.5	
	7620	27	7520	24.1		16200	270.1	27			135	50	21030	72.2	
	7940			24.2				28			140	35	23370	78.6	
	8260							29			145	20	27040	89.0	

7520	27	24.1	10300	2704	27		
7515	28	24.2		271.0	28	247	7.1
5310	29	24.5	17600	271.6	29		
5305	30	24.4		272.2	30	287	10.9
5300	31	24.5	18900	272.6	31		
5295	32	24.8		272.6	32	277	7.5
5290	33	24.9	19800	272.8	33		
5285	34	25.0		273.5	34	294	12.0
5280	35	25.2	21200	274.4	35		
5275	36	24.3		275.5	36	317	9.9
5270	37	24.9	22000	276.2	37		
5265	38	24.9		277.2	38	302	13.0
5260	39	24.7	23500	278.1	39		
5255	40	24.5		279.1	40	317	9.8
5250	41	24.9	24400	280.0	41		
5245	42	24.5		281.2	42	320	14.0
5240	43	24.5	25700	282.5	43		
5235	44	25.0		284.1	44	345	14.2
5230	45	25.1	26500	285.7	45		
5225	46	25.2		287.1	46	328	13.4
5220	47	25.2	27000	287.9	47		
5215	48	25.4	28100	288.3	48	317	7.2
5210	49	25.5	28400	288.7	49		
5205	50	25.5	29900	288.4	50	277	7.0

Coded Data for Transmission

2723	02719	27623	02619	02711	02919	02918	532915	53015	02918
3014	03412	53014	02920	02915	①				
2400	7	711	79916	02909	00805	00719	00826	20822	①

145	20	27044	79.0
146	17	25130	92.0

Punched Card Data

Altitude	Direction (degrees)	Speed (m.p.s.)	Card Columns	Altitude	Direction (degrees)	Speed (m.p.s.)
Card No. 1			15	Card No. 2		
Type of equipment	8		16	Type of equipment	8	
sfc.	230	5	17-21	7	291	8
150 M.	233	10	22-26	8	294	8
300 M.	242	12	27-31	9	277	8
0.5	249	13	32-36	10	312	10
1.0	256	13	37-41	11	310	11
1.5	260	13	42-46	12	320	14
2.0	272	15	47-51	13	324	12
2.5	274	14	52-56	14	279	7
3	268	10	57-61	15	280	10
4	256	10	62-66	16	265	5
5	275	5	67-71	17	280	7
6	293	9	72-76	18	280	5

Maximum Wind Speed Data

Min. alt. wind speed 45 m.p.s. or more (m.)		
Alt. of maximum wind speed (m.)		
Dir. (degrees) and speed (m.p.s.) of Max. wind		
Max. alt. wind speed 45 m.p.s. or more (m.)		
Enter check if additional levels appear on reverse side.		

4050	27	9680	26.2	19600	28.4	27		
7415	28		25.7		28.3	28	280	14.3
5130								
7515								
5310	29	10400	25.9	21300	28.0	29		
6165								
5490	30		25.8		279.8	30	278	17.6
6255								
5670	31	11120	25.3	23400	279.6	31		
6750								
5850	32		25.0		279.5	32	279	18.0
6005								
6030	33	11850	24.8	25600	279.5	33		
6205								
6210	34		24.7		279.6	34	283	18.2
6355								
6390	35	12690	24.5	27900	279.8	35		
6850								
6570	36	13190	24.2	29200	279.5	36	284	21.2
10135								
6780	37	13560	23.9	30400	279.6	37		
10420								
6930	38	14000	23.9	31400	280.8	38	293	16.5
10715								
7110	39		24.1		281.2	39		
11005								
7230	40	14820	24.0	33050	281.1	40	279	13.3
11300								
7470	41		24.4		280.9	41		
11595								
7650	42	15670	24.7	33700	280.9	42	266	12.0
11890								
7830	43		24.9		280.8	43		
12185								
8010	44	16480	25.3	34600	280.3	44	283	9.3
12480								
8190	45		25.4		280.2	45		
12775								
8370	46	17400	25.6	36000	280.6	46	296	9.6
13070								
8550	47		26.0		280.8	47		
13375								
8730	48	18290	26.5	36300	281.0	48	304	4.0
13675								
8910	49		26.6		281.2	49		
13975								
9090	50	19130	27.0	36800	281.4	50	296	3.3
14275								

Coded Data for Transmission

7600	09451	2625	27632	2734	42138	2735	62816	2920	82920
7721	02922	27915	42715	62720	83021	03018	32027	53029	02834
7845	02835	52925	62724	37821					
7960	05911	99996	03109	73506	00712	80816	00820	70917	
8075									

145	C		
141418	22800	71.2	

Punched Card Data

Altitude #	Direction (degrees)	Speed (m.p.s.)	Card columns	Altitude #	Direction (degrees)	Speed (m.p.s.)
Card No. 1			15	Card No. 2		
Type of equipment	8		16	Type of equipment	8	
sfc.	250	7	17-21	7	298	15
150 M.	252	10	22-26	8	288	14
300 M.	255	14	27-31	9	279	16
0.5	258	16	32-36	10	280	15
1.0	268	18	37-41	11	281	18
1.5	270	19	42-46	12	283	18
2.0	280	11	47-51	13	284	21
2.5	288	10	52-56	14	294	17
3	289	11	57-61	15	277	13
4	256	5	62-66	16	272	11
5	257	11	67-71	17	288	10
6	295	9	72-76	18	302	6

Maximum Wind Speed Data

Min. alt. wind speed 45 m.p.s. or more (m.)		
Alt. of maximum wind speed (m.)		
Dir. (degrees) and speed (m.p.s.) of Max. wind		
Max. alt. wind speed 45 m.p.s. or more (m.)		
Enter check if additional levels appear on reverse side.		

September 16, 1964

Dear Mr. [REDACTED]

This is in reply to your recent letter in which you detailed the observation of an Unidentified Flying Object.

Our Project Blue Book office at Wright-Patterson Air Force Base, Ohio, has attempted an evaluation of this observation from the details you gave. The motion and description of the object is comparable to that of a radiosonde or a rawinsonde balloon with a light attached.

Inclosed is a summary of information on Project Blue Book, the program for the investigation and evaluation of UFO reports. We think this information will be of interest to you.

Sincerely,

MASTON M. JACKS
Major, USAF
Public Information Division
Office of Information

Inclosure

Mr. [REDACTED]
[REDACTED]
Lynn, Massachusetts

*Identification Portland, Maine (City Airport) 43° 39'N 70° 19'W 75th Mer. Rawin WBRT 60 Elev. 20m.	U.S. DEPARTMENT OF COMMERCE WEATHER BUREAU			
	WINDS-ALOFT COMPUTATION SHEET (LANDSTATION FORM) WBAN-20			
	Actual time th mer.	Year	Month	Day
Scheduled (G.M.T.)	1964	JUL	17	11
Ascension No. 795				

Type of balloon		Orientation, 360° = South		Rawinsonde Time-Altitude Data										
Slant range (m.) (yds.)	Pibal ht. above sfc. (m.)	Minute	Rawin ht. above surface (m.)	Elevation angle °		Distance from observation point (m.)	Azimuth angle °	Minute	Wind		Contact	Pressure (mb.)	Altitude (m., m.s.l.)	Elapsed time (min)
	30 gram			100 gram	Observed				Smoothed	Direction ° 360° = N.				
	210	1	300	24.1		670	212.0	1	205	9.9	5	774	400	1.3
	350										10	885	1200	4.1
	414	2	600	21.0		1170	204.8	2	213	7.5	15	801	2090	7.0
	670										20	774	7160	9.9
	612	3	900	20.2		1540	211.2	3	239	7.0	25	653	5170	12.8
	980										30	589	4620	15.6
	801	4	1190	21.4		1940	217.8	4	242	7.3	35	530	5430	18.5
	1295										40	477	6260	21.2
	900	5	1480	21.8		2370	221.9	5	239	7.7	45	424	7180	24.0
	1505										50	385	7540	26.7
	1170	6	1780	21.9		2840	221.2	6	241	5.7	55	345	8080	29.5
	1380										60	309	9470	31.7
	1350	7	2080	24.4		3030	226.2	7	255	2.6	65	277	10220	34.1
	2170										70	248	10950	36.4
	1530	8	2360	35.2		3150	225.8	8	212	2.0	75	222	11700	38.6
	2455										80	200	12360	40.3
	1710	9	2650	38.9		3260	224.7	9	208	2.0	85	179	13060	42.5
	2740										90	161	13710	44.7
	1860	10	2730	40.3		3370	224.7	10	226	1.6	95	140	14430	47.1
	3020										100	129	15110	49.4
	2070	11	3210	42.7		3450	225.8	11	243	1.8	105	115	15810	51.6
	3300													
	2250	12	3530	45.3		3470	226.1	12	268	1.1				
	3580													
	2430	13	3800	47.5		3450	227.7	13	298	1.0				
	3855													
	2610	14	4100	49.7		3500	227.8	14	248	1.3				
	4130													
	2700	15	4400	51.0		3600	227.4	15	252	1.9				
	4400													
	2970	16	4700	52.1		3700	227.4	16	254	1.8				
	4625													
	3150	17	5010	53.0		3800	227.8	17	265	1.6				
	4945													
	3330	18	5310	53.0		3850	231.1	18	292	1.7				
	5215													
	3510	19	5600	54.8		3900	232.4	19	269	2.6				
	5485													

Stamp the
following:

1. Name of
Station

2. Lat. and
long.

3. Local
Standard
time, _____ th
meridian

4. El. of Station

5. Method of
obs., e.g.,
rawinsonde,
rawin, pibal

6. Type of
equip., e.g.,
WBRT-57,
GMD-1A,
GMD-1,
SCR-650,
theodolite

Reason for termination Exclusion

2520

14

Verifier

Punched Card Data

Altitude	Direction (degrees)	Speed (m.p.s.)	Card columns	Altitude	Direction (degrees)	Speed
Card No. 1			15	Card No. 2		
Type of equipment		8	16	Type of equipment		8
sfc.	200	5	17-21	7	249	4
150 M.	202	7	22-26	8	354	3
300 M.	205	10	27-31	9	74	1
0.5	208	8	32-36	10	64	1
1.0	240	7	37-41	11	68	1
1.5	238	8	42-46	12	65	1
2.0	236	3	47-51	13	51	1
2.5	210	2	52-56	14	107	1
3	230	2	57-61	15	117	1
4	265	1	62-66	16	277	1
5	263	2	67-71	17	296	1
6	270	4	72-76	18	262	1

Maximum Wind Speed Data

Min. alt. wind speed 45 m.p.s. or more (m.)		
Alt. of maximum wind speed (m.)		
Dir. (degrees) and speed (m.p.s.) of Max. wind		
Max. alt. wind speed 45 m.p.s. or more (m.)		
Enter check, if additional levels appear on reverse side.		

*Identification Portland, Maine (City Airport) 43° 39'N 70° 19'W 7500' Msl. Rawin WBRT 60 Eol. 2000.	U.S. DEPARTMENT OF COMMERCE, WEATHER BUREAU			
	WINDS-ALOFT COMPUTATION SHEET (LANDSTATION FORM) WBAN-20			
	Actual time th mer.	Year	Month	Day
	Scheduled (G.M.T.)	1964	JUL	18
Ascension No.		796		

Type of balloon		Orientation,		360° = South		Rawinsonde Time-Altitude Data								
Slant range (m.) (yds.)	Pibal ht. above sfc. (m.) 30 gram 100 gram	Minute	Rawin ht. above surface (m.)	Elevation angle °		Distance from observation point (m.)	Azimuth angle °	Minute	Wind		Con- tact	Pressure (mb.)	Altitude (m., m.s.l.)	Elapsed time (min.)
				Observed	Smoothed				Direction ° 360° = N. sfc.	Speed (m.p.s.)				
	216 350	1	380	23.0		890	228.7	1	226	12.6	5	979	370	14
	414 670	2	710	29.0		1510	226.2	2	232	10.0	10	903	1070	20
	812 980	3	1050	26.6		2090	229.5	3	243	9.6	15	831	1770	5.2
	601 1235	4	1370	27.9		2570	233.6	4	254	9.5	20	766	2470	7.4
	990 1505	5	1690	28.0		3160	238.4	5	267	9.1	25	703	3170	9.5
	1170 1800	6	2010	37.7		3840	243.6	6	284	5.1	30	647	3950	11.9
	1355 2170	7	2330	32.2		3620	245.6	7	292	2.9	35	593	4570	13.9
	1530 2455	8	2650	33.2		3770	247.5	8	292	3.1	40	544	5250	15.9
	1710 2740	9	3000	37.4		3890	249.4	9	288	3.3	45	498	5940	17.7
	1890 3020	10	3330	38.0		4080	251.1	10	264	2.7	50	456	6620	19.5
	2070 3300	11	3670	41.0		4200	250.5	11	261	2.7	55	417	7290	21.7
	2250 3580	12	4020	42.7		4400	252.0	12	274	2.7	60	381	7970	23.0
	2430 3955	13	4350	44.0		4560	252.1	13	253	2.8	65	347	8650	25.0
	2610 4130	14	4730	44.9		4750	252.0	14	231	2.8	70	317	9250	27.0
	2790 4406	15	5040	46.4		4800	250.8	15	183	3.3	75	287	9730	29.0
	2970 4675	16	5370	47.4		4900	247.5	16	194	4.1	80	262	10000	31.0
	3160 4945	17	5680	48.0		5100	246.1	17	233	3.3	85	237	11270	32.5
	3330 5215	18	6000	48.6		5200	246.6	18	276	3.8	90	214	11920	34.7
	3610 5485	19	6350	49.2		5500	248.6	19	292	5.1	95	192	12040	36.7
											100	171	13350	38.7
											105	151	14100	40.4

Stamp the following:
Name of Station
Lat. and long.
Local Standard time, _____th meridian
El. of Station
Method of obs., e.g., rawinsonde, rawin, pibal
Type of equip., e.g., WBRT-57, CMD-1A, CMD-1, SCR-658, theodolite

Reason for termination: *See 10/11/11*

Verifier

Coded Data for Transmission

110	131	15000	43.5
115	113	15720	46.1
120	94	17070	49.7
125	76	18390	53.5
130	58	20100	58.2
135	46	22450	64.1
140	23	26170	73.2
1410	19	27440	76.0

Altitude #	Direction (degrees)	Speed (m.p.s.)	Card columns	Altitude #	Direction (degrees)	Speed
Card No. 1			15	Card No. 2		
Type of equipment		8	16	Type of equipment		6
sfc.	240	3	17-21	7	256	4
150 M.	235	6	22-26	8	207	3
300 M.	229	9	27-31	9	209	7
0.5	227	12	32-36	10	202	10
1.0	240	9	37-41	11	20	13
1.5	259	9	42-46	12	71	14
2.0	279	6	47-51	13	74	13
2.5	292	3	52-56	14	130	5
3	289	3	57-61	15	202	5
4	271	3	62-66	16	249	5
5	191	3	67-71	17	220	5
6	271	4	72-76	18	264	6

Min. alt. wind speed 45 m.p.s. or more (m.)		
Alt. of maximum wind speed (m.)		
Dir. (degrees) and speed (m.p.s.) of Max. wind		
Max. alt. wind speed 45 m.p.s. or more (m.)		
Enter check if additional levels appear on reverse side.		

*Identification Portland, Maine (City Airport) 43° 39'N 70° 19'W 75th Mer. Rawin WDRT 60 Elev. 20m	U.S. DEPARTMENT OF COMMERCE WEATHER BUREAU				
	WINDS-ALOFT COMPUTATION SHEET (LAND STATION FORM) WBAN-20				
	Actual time th mer.	Year	Month	Day	Time
Scheduled (G.M.T.)	1964	JUL	18	06	
Ascension No. 797					

Type of balloon		Orientation,		360° = South		Rawinsonde Time-Altitude Data								
Slant range (m.) (yds.)	Pibal ht. above sfc. (m.) 30 gram 100 gram	Minutes	Rawin ht. above surface (m.)	Elevation angle °		Distance from observation point (m.)	Azimuth angle °	Minutes	Wind		Con- tact	Pressure (mb.)	Altitude (m., m.s.l.)	Elapsed time (min)
				Observed	Smoothed				Direction ° 360° = N. sfc.	Speed (m.p.s.)				
	216 350	1	280	84.2		420	275.7	1	276	8.2	5	993	320	1.5
	414 620	2	550	29.1		1000	276.5	2	269	9.0	10	999	1100	4.2
	612 980	3	800	28.3		1490	274.1	3	248	7.0	15	871	1830	7.1
	801 1285	4	1080	29.8		1760	262.9	4	242	7.0	20	749	2660	10.0
	990 1555	5	1340	30.5		2230	258.4	5	244	6.0	25	681	3400	13.0
	1170 1680	6	1570	32.1		2480	257.6	6	276	3.5	30	619	4220	16.4
	1350 2170	7	1700	34.0		2620	260.5	7	296	3.6	35	560	5000	19.6
	1530 2455	8	2050	35.5		2800	263.5	8	300	4.0	40	507	5790	22.6
	1710 2740	9	2290	36.6		3050	266.1	9	304	4.1	45	457	6550	25.4
	1680 3020	10	2540	38.3		3170	269.5	10	326	4.2	50	413	7320	28.2
	2070 3100	11	2790	38.8		3310	274.1	11	338	4.6	55	372	8100	31.1
	2260 3580	12	320	41.0		3400	277.3	12	330	4.6	60	335	8560	33.7
	2430 3855	13	3280	41.5		3650	281.2	13	312	5.3	65	302	9580	36.2
	2610 4130	14	3560	41.6		3950	283.2	14	299	4.8	70	271	10300	39.6
	2790 4495	15	4170	42.2		4200	285.4	15	288	4.3	75	243	11100	42.7
	2970 4675	16	4070	41.3		4500	283.3	16	287	5.0	80	218	11720	42.9
	3150 4935	17	4370	41.5		4800	285.3	17	285	4.1	85	195	12480	45.1
	3330 5215	18	4620	41.1		5000	284.0	18	295	2.9	90	174	13200	47.7
	3510 5495	19	4870	41.5		5100	284.5	19	293	4.0	95	157	13900	49.7
											100	137	14700	51.0
											105	170	15510	53.0

- * Sample the following:
1. Name of Station
 2. Lat. and long.
 3. Local Standard time, _____ th meridian
 4. El. of Station
 5. Method of obs., e.g., rawinsonde, rawin, pibal
 6. Type of equip., e.g., JBR-57, GMD-1A, GMD-1, SCR-55B, theodolite

Reason for termination

[illegible]Verifiziert ✓

Coded Data for Transmission

110	105		
115	87		
120	74		
125	60		
130	44		
135	27		
140	14		
145	10	11080	55.5

Altitude #	Direction (degrees)	Speed (m.p.s.)	Card columns	Altitude #	Direction (degrees)	Speed
Card No. 1			15	Card No. 2		
Type of equipment		8	16	Type of equipment		6
etc.	270	3	17-21	7	230	6
150 M.	272	6	22-26	8	216	6
300 M.	279	7	27-31	9	273	6
0.5	272	9	32-36	10	147	4
1.0	245	7	37-41	11	133	4
1.5	270	4	42-46	12	120	3
2.0	300	4	47-51	13	153	5
2.5	335	4	52-56	14	176	5
3	330	5	57-61	15	222	6
4	286	5	62-66	16		
5	281	5	67-71	17		
6	442	7	72-76	18		

Min. alt. wind speed 45 m.p.s. or more (m.)		
Alt. of maximum wind speed (m.)		
Dir. (degrees) and speed (m.p.s.) of Max. wind		
Max. alt. wind speed 45 m.p.s. or more (m.)		
Enter check if additional levels appear on reverse side.		

1830-67
LYNN, Mass.

9/19/64

Lynn, Mass.

Dear Major Jacks,

I have received the
evaluation of the UFO report which
was submitted by me, and forward-
ed to Dayton, Ohio, by Major Geo-
V. Kent of Hanscom AFB. If this
evaluation is a joke, I'll go along
with it for laughs, but if it
represents a serious belief in
this matter, then there is really
great cause for concern over the
intelligence of those responsible
for such an evaluation. I consider
this wply a gross affront to the
intelligence of those involved in
this sighting. You know better
than to believe this, and so do I.
over

2

As you may be aware, I have been involved in several other U.F.O. cases among which, was a daylight sighting wherein a disc shaped object stopped dead in the sky directly overhead, then reversed. This case was discussed by myself and a person who held the position of Director of Flight Testing on Project S.H.G.F., so I am already aware that these so-called U.F.O. are actually alien spacecraft from elsewhere. I felt that since several of these craft have appeared and maneuvered over my home over a period of time, that a pattern of interest had perhaps been shown to exist on the part of the occupants of said craft. If so, I feel that some good use could be made of this fact, if it is a fact.

Sincerely,



1894
[REDACTED]
Lynn, Mass.
July 22, 1964

Dear Sir,

On Saturday night at 10:55 P.M. a U.F.O. maneuvered over Lynn, Mass. This object ~~which~~ resembled a star of the same magnitude as the Echo II satellite. My wife and I watched this object as it traveled South South West. It moved at the same apparent speed as Echo 1 or 2 and I thought that it was either one of these. As we watched this object, it slowed down and stopped, then moved backward until it arrived at a point directly overhead, where it stopped again. It remained motionless this time, and could easily have been mistaken for a star as this is what it looked like to the naked eye. We watch

object in it, so I used my binoculars which my wife had brought out. This time the object continued to move steadily away to the E.N.E. and I watched it until it faded from view.

I was called on the telephone at 10.55 or thereabouts, by my sister who lives about a quarter mile from my home, and she told me she and her husband had watched this object maneuver in the sky for 10 minutes before she called me to go out and see it.

This same object had accelerated very rapidly over her place becoming very bright, lighting up the immediate area and giving the sky a dark blue color. The object also stopped and reversed while they observed it prior to calling me. When my wife and I were observing this object, it stopped and hovered directly over our yard where

² I used this object for a couple of minutes and it remained motionless. I told my wife to keep her eyes on it, while I went in to bring out my telescope, a 4" reflector type.

I arrived outside with it and set it up, the object still remaining motionless. As the object was directly overhead, the telescope was pointed straight up, making it very difficult to get my eye to the eyepiece, so I suggest I move to the back of the yard, so I could get an angle shot at it. We walked to the rear of the property and I again set the scope up. This gave me an angle view so I could locate the object in the finder scope. As I was focusing it in the eyepiece ($\frac{3}{4}$ ") the star-like object again began to move, though this time to the E.N.E. As my scope has a narrow field, it is very difficult if not impossible to locate a moving

HEADQUARTERS
FOREIGN TECHNOLOGY DIVISION
AIR FORCE SYSTEMS COMMAND
UNITED STATES AIR FORCE
WRIGHT-PATTERSON AIR FORCE BASE, OHIO



REPLY TO
ATTN OF: TDEW

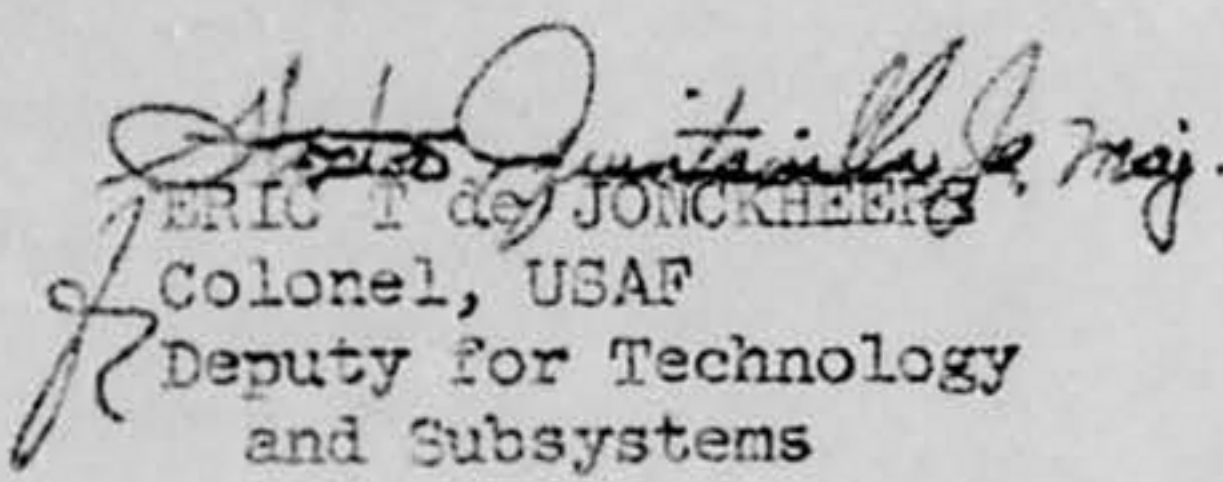
SUBJECT: UFO Sighting, 18 Jul 64, Lynn, Massachusetts

4 Sep 64

TO: Hq USAF SAFOT PB (Mrs Gaiser)
Wash D C 20330

1. Reference the attached letter from Mr [REDACTED] regarding a satellite-like observation on 18 Jul 64 at Lynn, Massachusetts.
2. The direction of motion to the SSW is contrary to normal orbital flights. The motion and description of the object is comparable with a radiosonde or a rawinsonde balloon with a light attached. With the exception of the lighting up of the immediate area, which was not observed by Mr [REDACTED], but reported by his sister, no association can be established between the object observed by him and his wife or that of his sister. It is suggested that Mr [REDACTED] be informed that his sighting has been evaluated as a probable balloon observation and that a Fact Sheet be forwarded to explain the Air Force's position on unidentified flying objects.

FOR THE COMMANDER


ERIC T de JONCKHEERE
Colonel, USAF
Deputy for Technology
and Subsystems

1 Atch
Ltr, [REDACTED],
22 Jul 64



YOU - THE NUCLEUS OF SECURITY!

I had been to Hayden Planetarium on Tuesday, July 14, 1964, as I had an appointment to talk to Mr. Walter N. Webb, director of the Planetarium. The purpose of this appointment had been to discuss a lunar observation made by myself and a friend. At this time Mr. Webb brought up the subject of the U.F.O. and mentioned a recent reported sighting over the Highlands area of Lynn, in which the object made a near landing. He also said he was interested in getting recent sightings.

Four days after this request is pretty quick service.

I have sent this report to Mr. Webb, and have asked for a meeting with him, to fully discuss the U.F.O. situation.

His policy is to tell the truth and let the chips fall where they may. as Before ~~_____~~

HEADQUARTERS
FOREIGN TECHNOLOGY DIVISION
AIR FORCE SYSTEMS COMMAND
UNITED STATES AIR FORCE
WRIGHT-PATTERSON AIR FORCE BASE, OHIO

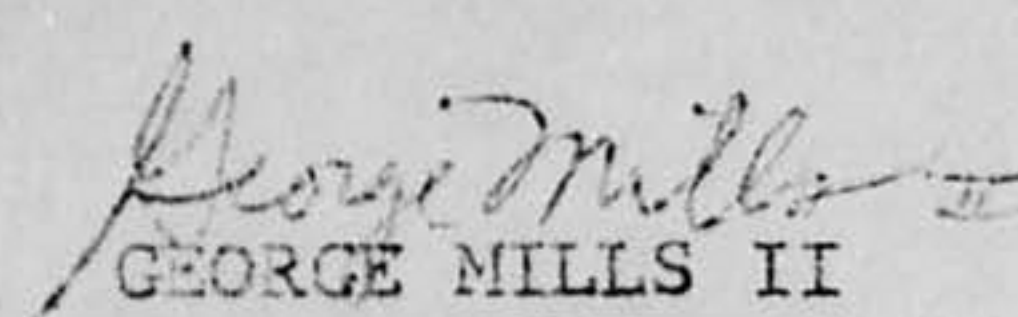


REPLY TO
ATTN OF: TDFCC/Maj Mills/57223
SUBJECT: Meteorological Data

DEC 3 1964

TO: TDEW (Maj Quintanilla)
(TSgt Moody)

1. Reference your November request for meteorological data. The attached data are for 1964 dates: 2 Apr, 18 May, 9-10 and 18-19 July.
2. I have extracted the wind data for Boston and Cleveland areas.
3. Please call if any further explanations are needed.


GEORGE MILLS II
Major, USAF
Meteorologist

- 6 Atch
- ① Boston and Cleveland winds, 18-19 Jul 64
 - ② Madison, Wisconsin, 2 Apr Surface Data
 - ③ Washington, D.C. 18 May Surface Data
 - ④ Portland, Me., Boston, Mass. and Nantucket, Mass. July 16-19 Upper Wind Data
 - ⑤ Toledo, Ohio and Pittsburgh, Pa., 17-18 July Upper Wind Data
 - ⑥ Adiabatic Charts for Missouri area, 9-10 July



Boston Area Winds 18-19 July 1964, Local Times

Directions in degrees from which wind blows, e.g., 240 is a SW wind 270 is from the west. Speed in knots.

1000 Ft Level	18 July 1800L		19 July 0000L		19 July 0620L	
	Degrees	Knots	Degrees	Knots	Degrees	Knots
Surface	240	23	240	30	280	22
2	250	25	260	37	290	30
3	260	24	260	33	300	30
4	260	25	260	25	290	26
5	260	25	260	19	280	23
6	270	28	270	18	270	22
7	270	29	270	17	260	21
8	270	28	270	16	250	21
9	270	23	270	14	260	23
10	270	19	290	22	260	21
12	260	23	290	15		
14	260	19	270	15		
16	270	16	270	20		
18	290	19	300	21		
20	290	18	300	18		
23	290	15	300	27		
25	300	15	300	29		
30	280	18	280	34		

Cleveland Area Winds 18 July 1964 estimated for 0245 GMT

Surface	220	11
2	220	20
3	230	20
4	240	20
5	240	16
6	250	15
7	260	14
8	280	11
9	300	9
10	300	6

610-12

*Identification

WAS, BOSTON-20, MASS.
 42° 22'N 71° 02'W
 PIRAL THEODOLITE
 7540 MSL ELEV. 11' MSL

U.S. DEPARTMENT OF COMMERCE
WEATHER BUREAUWINDS-ALOFT COMPUTATION SHEET
(LAND STATION FORM)

WBAN-20

	Year	Month	Day	Time
Actual (local standard)	1964	JUL	12	180
Scheduled (G.M.T.)	1964	JUL	17	000
Ascension No. 645				

Type of balloon 100 Gy

Orientation, 360° = South

Slant range (m.) (yds.)	Pibal ht. above sfc. (m.) 30 gram 100 gram	Minute	Rawin ht. above surface (m.)	Elevation angle°		Distance from observation point (m.)	Azimuth angle °	Minute	Wind		Rawinsonde Time-Altitude Data			
				Observed	Smoothed				Direction° 360° = N.	Speed (m.p.s.)	Con- tact	Pressure (mb.)	Altitude (m., m.s.l.)	Elapsed time (min.)
									sfc. 212	7.7				
	216	1		21.7		880	215.5	1	219	15.0	+			
	350													
	414	2		20.6		1785	219.3	2	233	15.5	5			
	670													
	612	3		19.7		2735	227.4	3	248	15.1	10			
	980													
	801	4		20.1		3512	233.7	4	263	12.9	15			
	1285													
	990	5		21.2		4085	239.9	5	273	11.9	20			
	1585													
	1170	6						6			25			
	1880													
	1350	7						7			30			
	2170													
	1530	8						8			35			
	2455													
	1710	9						9			40			
	2740													
	1890	10						10			45			
	3020													
	2070	11						11			50			
	3300													
	2250	12						12			55			
	3580													
	2430	13						13			60			
	3955													
	2610	14						14			65			
	4130													
	2790	15						15			70			
	4405													
	2970	16						16			75			
	4675													
	3150	17						17			80			
	4945													
	3330	18						18			85			
	5215													
	3510	19						19			90			
	5485													
	3690	20						20			95			
	5755													
	3970													

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 MB-1,
 CR-658,
 eodolite

Verifier John Green

[illegible]

Punched Card Data						
Altitude	Direction (degrees)	Speed (m.p.s.)	Card columns	Altitude	Direction (degrees)	Speed
Card No. 1			15	Card No. 2		
Type of equipment		0	16	Type of equipment		
sfc.	212	8	17-21	7		
150 m.	215	11	22-26	8		
300 m.	217	14	27-31	9		
0.5	225	15	32-36	10		
1.0	248	15	37-41	11		
1.5	269	12	42-46	12		
2.0			47-51	13		
2.5			52-56	14		
3			57-61	15		
4			62-66	16		
5			67-71	17		
6			72-76	18		

Min. alt. wind speed 45 m.p.s. or more (m.)		
Alt. of maximum wind speed (m.)		
Max. wind speed (m.p.s.) and dir. (degrees)		
Max. alt. wind speed 45 m.p.s. or more (m.)		
Enter check if additional levels appear on reverse side.		

610 12

*Identification

 WBAS, BOSTON 23, MASS.
 43° 22' N 71° 02' W
 PIBAL THEODOLITE
 75th MBR JULY 11' MSL

 U.S. DEPARTMENT OF COMMERCE
 WEATHER BUREAU

 WINDS-ALOFT COMPUTATION SHEET
 (LAND STATION FORM)

WBAN-20

	Year	Month	Day	Time
Actual (local standard)	1944	Jul	19	002
Scheduled (G.M.T.)	1944	Jul	19	0500
Ascension No. 647				

Type of balloon

100 GR

Orientation, 360° = South

Slant range (m.) (yds.)	Pibal ht. above sfc. (m.)	Minute	Rowin ht. above surface (m.)	Elevation angle°		Distance from observation point (m.)	Azimuth angle °	Minute	Wind		Rowinsonde Time-Altitude Data			
				Observed	Smoothed				Direction° 360° = N.	Speed (m.p.s.)	Contact	Pressure (mb.)	Altitude (m., m.s.l.)	Elapsed time (min.)
									sfc. 270	7.7				
	216 350	1		24.0		785	238.6	1	245	17.1	+			
	414 670	2		18.1		2050	244.8	2	259	20.0	5			
	612 980	3		17.4		3125	252.1	3	265	16.0	10			
	801 1285	4		18.2		3910	254.5	4	263	11.8	15			
	990 1585	5		19.3		4575	255.5	5	263	9.8	20			
	1170 1880	6		20.4		5055	256.3	6	266	9.1	25			
	1350 2170	7		21.2		5595	257.5	7	270	8.8	30			
	1530 2455	8		22.0		6075	258.8	8	271	7.9	35			
	1710 2740	9		22.8		6520	259.4	9	267	7.0	40			
	1890 3020	10		23.6		6910	259.8	10	265	6.8	45			
	2070 3300	11						11			50			
	2250 3580	12						12			55			
	2430 3855	13						13			60			
	2610 4130	14						14			65			
	2790 4405	15						15			70			
	2970 4675	16						16			75			
	3150 4945	17						17			80			
	3330 5215	18						18			85			
	3510 5485	19						19			90			
	3690 5755	20						20			95			

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 MB-1,
 CR-658,
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3870	21					21			
6025	22					22			
4050	23					23			
6295	24					24			
4230	25					25			
6565	26					26			
4410	27					27			
6835	28					28			
4590	29					29			
7105	30					30			
4770	31					31			
7175	32					32			
4950	33					33			
7645	34					34			
5130	35					35			
7915	36					36			
5310	37					37			
8165	38					38			
5490	39					39			
6455	40					40			
5670	41					41			
6730	42					42			
5850	43					43			
9005	44					44			
6030	45					45			
9265	46					46			
6210	47					47			
9565	48					48			
6390	49					49			
9850	50					50			
6570									
10135									
6750									
10420									
6930									
10710									
7110									
11005									
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12185									
8010									
12480									
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13975									
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Coded Data for Transmission

72509	06452	2430	22637	2633	42625	2619	62718	2717	82716
2714	0	2	4	6	8	0	5		
	QQ06	72509	XMTD						

100		
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140		
*		

Punched Card Data

Altitude	Direction (degrees)	Speed (m.p.s.)	Card columns	Altitude	Direction (degrees)	Speed
Card No. 1			15	Card No. 2		
Type of equipment	0		16	Type of equipment		
sfc.	220	8	17-21	7		
150 m.	230	12	22-26	8		
300 m.	241	16	27-31	9		
0.5	251	18	32-36	10		
1.0	265	16	37-41	11		
1.5	263	10	42-46	12		
2.0	268	9	47-51	13		
2.5	271	8	52-56	14		
3	266	7	57-61	15		
4			62-66	16		
5			67-71	17		
6			72-76	18		

Maximum Wind Speed Data

Min. alt. wind speed 45 m.p.s. or more (m.)	
Alt. of maximum wind speed (m.)	
Max. wind speed (m.p.s.) and dir. (degrees)	
Max. alt. wind speed 45 m.p.s. or more (m.)	
Enter check if additional levels appear on reverse side.	

Computer J.M. Cohen
Verifier J.P. Perry