

PROJECT 10073 RECORD CARD

1. DATE 18 May 64	2. LOCATION Mount Vernon, Virginia		12. CONCLUSIONS <input type="checkbox"/> Was Balloon <input type="checkbox"/> Probably Balloon <input type="checkbox"/> Possibly Balloon <input type="checkbox"/> Was Aircraft <input type="checkbox"/> Probably Aircraft <input type="checkbox"/> Possibly Aircraft <input type="checkbox"/> Was Astronomical <input type="checkbox"/> Probably Astronomical <input type="checkbox"/> Possibly Astronomical <input type="checkbox"/> Other <u>UNIDENTIFIED</u> <input type="checkbox"/> Insufficient Data for Evaluation <input checked="" type="checkbox"/> Unknown
3. DATE-TIME GROUP Local _____ GMT 18/2315Z	4. TYPE OF OBSERVATION <input checked="" type="checkbox"/> Ground-Visual <input type="checkbox"/> Ground-Radar <input type="checkbox"/> Air-Visual <input type="checkbox"/> Air-Intercept Radar		
5. PHOTOS <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6. SOURCE <u>civilian</u>		
7. LENGTH OF OBSERVATION 17 minutes	8. NUMBER OF OBJECTS one/two	9. COURSE West	
10. BRIEF SUMMARY OF SIGHTING Small oval obj with white glow brighter than the brightest star visible observed in diameter from the Moon at the moon's 3 o'clock position. Obj gradually moved around moon to 12 o'clock position of moon 3 diameter's length. This motion took 15 mins. Then obj moved to W about 15 diameters of Moon in one min. Then obj grew dim, split in two particles with one being a grey cloud-like followed with BX. No longer visible to naked eye. Obj split in two again and gradually faded. This sequence consumed one min. Total duration 17 min. Sighting at dusk toward setting sun.		11. COMMENTS Possibility of research balloon with pkg breaking. Data not sufficient to support this evaluation. Case regarded as UNIDENTIFIED. <i>(Balloon Ruled out: Motion AGAINST WIND) 08T: ACTION</i>	

(2) 50 DEGREES ABOVE HORIZON -- APPROX 1 DIAMETER OF MOON SOUTH OF MOON, S 3 0, CLOCK POSITION.

(3) 50 DEGREES ABOVE HORIZON -- APPROX 3 DIAMETERS OF MOON WEST OF 12 0, CLOCK POSITION.

(4) OBJECT OBSERVED AT 3 0, CLOCK POSITION OF MOON -- GRADUALLY MOVED AROUND MOON TO 12 OCLOCK POSITION. THIS MOVEMENT TOOK APPROXIMATELY 15 MINUTES. THEN RATE OF MOVEMENT INCREASED AND OBJECT MOVED TOWARD WEST, 12 TO 15 DIAMETERS OF MOON. THIS MOVEMENT REQUIRED APPROXIMATELY ONE MINUTE.

(5) OBJECT BEGAN TO GROW DIM AND THEN SPLIT IN TWO, BOTH OBJECT REMAINED DIM AND A YELLOWISH-GRAY CLOUD FORMED. OBJECTS THEN HAD TO BE OBSERVED WITH BINOCULARS AND ONLY ONE OBJECT FOLLOWED. OBJECT SPLIT IN TWO AGAIN AND GRADUALLY FADED OUT OF SIGHT.

(6) APPROXIMATELY 17 MINUTES.

C. (1) GROUND VISUAL.

(2) BINOCULARS.

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(3) N/A.

D. (1) 19/0015Z, MAY 64.

(2) DUSK, SUN SETTING.

E. 77 07 WEST; 38 43 NORTH -- APPROXIMATELY 1 MILE WEST OF MOUNT VERNON ESTATES, VIRGINIA.

F. MR. ~~XXXXXXXXXXXXXXXXXXXX~~ DRIVE, ALEXANDIRA, VA. CIVIL ENGINEER WITH GIMRADA, FORT BELVOIR, VA. SOUNDED RELIABLE.

G. (1) HIGH, THIN, BROKEN; VISIBILITY 10 72/57 CALM/014

(2) PIBAL. SFC - 2611; 6M - 2711; 10M - 3216; 16M - 3020; 20M - 3023; 30M - 3223; 50M - 3127; 80M - NOT AVAILABLE.

18 May Dusk

1915 Local

Check Holoman for Queen
MOUNT VERNON, VIRGINIA

20 MAY 64 00 19z

NNNN

SQW004WPA002CZCSQA517ZCJYX435

PP RUCDSQ

DE RUEAGL 151 19/2114Z

ZNR

P 192113Z

FM 1001 ABW ANDREWS AFB MD

TO RUEASN/26 ADIV HANCOCK FLD NY

RUCDSQ/AFSC FTD WPAFB OHIO

ZEN/CSAF WASHDC

ZEN/OSAF WASHDC

BT

UNCLAS 1001 AB WG (DOOT) 19-E-115. CSAF FOR AFNIN. OSAF FOR
SAFOI. UFO. REFERENCE PARA 14, AFR 200-2.

A. (1) OVAL.

(2) HEAD OF A PIN.

(3) WHITE GLOW, BRIGHTER THAN THE BRIGHTEST STAR.

(4) ONE.

(5) N/A.

(6) N/A.

(7) NONE.

(8) NONE.

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(9) NONE

B. (1) VISUAL SIGHTING.

PRIORITY

~~1-5 E (UFO)~~

1-5 E (UFO)

(3) UNLIMITED.

(4) 10 MILES.

(5) THIN, BROKEN, CLOUDS TRANSPARENT.

(6) NONE.

(7) STRONG SUBSIDENCE 780 MBS, APPROXIMATELY 7,000 FT.

QUASI STABLE GRADIENT 780 MBS TO TROPOPAUSE. AVERAGE TEMPERATURE, SFC TO TROPOPAUSE ABOVE STANDARD LAPSE RATE ABOUT PLUS 60 DEGREE C.

H. NO UNUSUAL METEOROLOGICAL CONDITIONS EXISTED AT THIS

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TIME.

I. NONE.

J. NONE.

K. CAPT WILLIAM W. MCLEAN, ASST BASE OPS OFFICER, ANDREWS AFB, WASHINGTON, DC 20331. INFORMATION INDICATES IT MIGHT HAVE BEEN A MISSILE SIGHTING WITH SEPARATION OF VARIOUS STAGES. HOWEVER, NO CONTRAIL WAS EVIDENCED AND MR. MEYER WAS SPECIFICALLY ASKED THIS QUESTION.

L. NONE.

BT

NNNN

Washington, D.C., QD&D

STATION (Sterling, Va.)

DATE 1964 MAY 18

U.S. DEPARTMENT OF COMMERCE - WEATHER BUREAU

SURFACE WEATHER OBSERVATIONS

Visibility (Statute Miles)		Weather and obstructions to vision (5)	Sea level press. (Mba.) (6)	Temp. (°F) (7)	Dew pt. (°F) (8)	Wind			Altimeter setting (Inch.) (12)	Remarks and supplemental coded data (13)	(14a)	(14b)	Observer initials (15)
Surface (4)	Tower (4a)					Direction (9)	Speed (Kts) (10)	Character and shifts (11)					
1/8		F	187	56	56	00	00		007	F6/ 303	82		HLC
6		GF	192	58	58	35	07		008				SH
6		GF	194	58	57	35	08		009				SH
5		GF	203	54	54	00	00		011	212			SH
5		GF	211	51	51	00	00		014				SH
7			216	52	52	00	00		015				SG
12			224	61	59	00	00		018	224	51		EH
15			231	66	58	00	00		020				EH
157			233	72	52	01	07		021				EH
157			233	74	53	36	04		021	108			EH
157			231	77	52	28	07		020				EH
157			227	79	54	34	10		019				EH
157			224	80	53	29	07		018	708 1101 51			EH
157			223	81	48	33	05		018				TP
157			220	83	47	36	07		016				TP
157			216	83	48	36	05		015	710 1100			TP
157			215	83	54	36	05		015				TP
157			213	81	60	00	00		014				TP
157			214	72	60	00	00		015	500 1005 83			TP
12			217	66	61	00	00		016				HLC
12			223	61	59	00	00		018				HLC
12			226	60	57	00	00		019	114 1006			HLC
12			226	60	57	00	00		019				HLC
15			226	57	56	00	00		019				HLC

WBAF FORM 10A
(REV. 11-1-60)

U.S. DEPARTMENT OF COMMERCE - WEATHER BUREAU

STATION Washington, D.C.
(Sterling, Va.)

SURFACE WEATHER OBSERVATIONS

DATE 1964 MAY

Type (1)	Time (LST) (2)	Sky and ceiling (Hundreds of Feet) (3)	Visibility (Statute Miles)		Weather and obstructions to vision (5)	Sea level press. (Mbs.) (6)	Temp. (°F) (7)	Dew pt. (°F) (8)	Wind			Altim- eter set- ting (Inch.) (12)	Remarks and supplemental codes (13)
			Surface (4)	Tower (4a)					Dirac- tion (9)	Speed (Kts) (10)	Charac- ter and shifts (11)		
R	0055	-X	1/8		F	187	56	56	00	00		009	F6/ 303
R	0158	0	6		GF	192	56	52	35	07		009	
R	0255	0	6		GF	194	58	57	35	08		009	
R	0355	0	5		GF	203	54	54	00	00		011	212
R	0455	0	5		GF	211	51	51	00	00		014	
R	0555	0	7			216	52	52	00	00		015	
R	0658	0	12			224	61	57	00	00		018	224
R	0758	0	15			231	66	55	00	00		020	
R	0858	0	15			233	72	52	01	07		021	
R	0958	0	15			233	74	53	36	04		021	108
R	1058	0	15			231	77	52	28	07		020	
R	1158	400 / -0	15			227	79	54	34	10		019	
R	1258	400 / -0	15			224	80	53	29	07		018	708 1101
R	1359	400	15			223	81	48	33	05		018	
R	1455	400	15			220	83	47	36	07		016	
R	1555	400	15			216	83	48	36	05		015	710 1100
R	1655	1-0	15			215	83	54	36	05		015	
R	1759	0	15			213	81	60	00	00		014	
R	1859	1-0	15			214	72	60	00	00		015	500 1005
R	1958	1-0	12			214	66	61	00	00		016	
R	2058	1-0	12			223	61	59	00	00		018	
R	2158	1-0	12			226	60	57	00	00		019	114 1006
R	2256	1-0	12			226	60	57	00	00		019	
R	2355	1-0	15			226	57	56	00	00		019	

A synoptic observation, in WMO code format FM11A, is entered on line following related aviation observation.

U. S. DEPARTMENT OF COMMERCE, WEATHER BUREAU

SURFACE WEATHER OBSERVATIONS

Washington, D.C., ~~ORND~~

DATE 1964 MAY 18

STATION

REL. HUMIDITY (%)	TOTAL SKY COVER	CLOUDS AND OBSCURING PHENOMENA												TOTAL OPAQUE SKY COVER	PRESSURE TENDENCY	NET 3-HR. CHANGE	SUN-SHINE (MINUTES)	PRECIPITATION (INCHES)		
		LOWEST LAYER			SECOND LAYER			SUMMATION TOTAL	THIRD LAYER			SUMMATION TOTAL	FOURTH LAYER							
		AMT.	TYPE & DIR.	HEIGHT	AMT.	TYPE & DIR.	HEIGHT		AMT.	TYPE & DIR.	HEIGHT		AMT.						TYPE & DIR.	HEIGHT
20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
	6	6	F	—	0			6	0			6	0			6	3	010		
	0	0			0			0	0			0	0			0				
	0	0			0			0	0			0	0			0	2	035		
	0	0			0			0	0			0	0			0				
	0	0			0			0	0			0	0			0	2	070		
	0	0			0			0	0			0	0			0				
	0	0			0			0	0			0	0			0	1	105		
	0	0			0			0	0			0	0			0				
	2	1	cu	40	1	ci	1	2	0			2	0			1				
	4	1	cu	40	3	ci	1	4	0			4	0			1	7	025		
	3	3	cu	40	0			3	0			3	0			3				
	2	2	cu	40	0			2	0			2	0			2				
	1	1	cu	40	0			1	0			1	0			1	7	030		
	1	0	cu	40	1	ci	1	1	0			1	0			0				
	0	0			0			0	0			0	0			0				
	4	4	ci	1	0			4	0			4	0			1	1000			
	6	6	ci	1	0			6	0			6	0			2				
	8	8	ci	1	0			8	0			8	0			3				
	8	8	ci	1	0			8	0			8	0			3	040			
	6	6	ci	1	0			6	0			6	0			3				
	4	4	cs	1	0			4	0			4	0			2				

SYNOPTIC OBSERVATIONS

WIND (KTS)	MAX. TEMP. (°F.)	MIN. TEMP. (°F.)	HGT. 850 MB. SURFACE	STATE OF GRND.	SEA STATE & DIR.	SWELL HGT. & DIR.	SWELL PERIOD	SURF H ₂ O, H ₂ P, D ₂ O	WATER TEMP.	SOIL TEMP.	STATION PRESSURE COMPUTATIONS									
											TIME (L.S.T.)	0555	0655	1255	1855					
58	56																			
70	56																			
61	51																			
80	61																			
83	72																			
72	57																			

WIND (KTS)	PEAK GUST			THICKNESS OF ICE ON WATER (INS.)	FROZEN GRND. LAYER (INS.)		RIVER GAGE	24-HR. MAX. R. H.	24-HR. MIN. R. H.	WATER EQUIV. (INS.)	PRECIP. & THDRSTM.	BEGAN	ENDED	DUR. Hrs. Mins.	OBSTR. TO VIS.	BEGAN	ENDED	DUR. Hrs. Mins.	
	SPEED	DI-RECTION	TIME L.S.T.		TOP	BASE													
14	14	14	1245																

U. S. DEPARTMENT OF COMMERCE, WEATHER BUREAU

SURFACE WEATHER OBSERVATIONS

STATION Washington, D.C. 0000 DATE 1964 MAY 18

TIME (L.S.T.)	STATION PRESSURE (INS.)	DRY BULB (°F.)	WET BULB (°F.)	REL. HUMIDITY (%)	TOTAL SKY COVER	CLOUDS AND OBSCURING PHENOMENA										TOTAL OPAQUE SKY COVER	PRESSURE TENDENCY				
						LOWEST LAYER			SECOND LAYER			SUMMATION TOTAL	THIRD LAYER					SUMMATION TOTAL	FOURTH LAYER		
						AMT.	TYPE & DIR.	HEIGHT	AMT.	TYPE & DIR.	HEIGHT		AMT.	TYPE & DIR.	HEIGHT				AMT.	TYPE & DIR.	HEIGHT
0055	29.785	56			6	6	F	-	0			6	0		6	0		6	3		
0158	29.790	57			0	0			0			0	0		0	0		0			
0255	29.785	57			0	0			0			0	0		0	0		0			
0358	29.820	54			0	0			0			0	0		0	0		0	2		
0455	29.850	51			0	0			0			0	0		0	0		0			
0555	29.860	52			0	0			0			0	0		0	0		0			
0658	29.890	61			0	0			0			0	0		0	0		0	2		
0758	29.910	66			0	0			0			0	0		0	0		0			
0858	29.915	72			0	0			0			0	0		0	0		0			
0958	29.915	74			0	0			0			0	0		0	0		0	1		
1058	29.910	77			0	0			0			0	0		0	0		0			
1158	29.900	79			2	1	Cu	40	1	Ci	1	2	0		2	0		1			
1258	29.890	80			4	1	Cu	40	3	Ci	1	4	0		4	0		1	7		
1359	29.885	81			3	3	Cu	40	0			3	0		3	0		3			
1455	29.875	83			2	2	Cu	40	0			2	0		2	0		2			
1555	29.860	83			1	1	Cu	40	0			1	0		1	0		1	7		
1655	29.860	83			1	0	Cu	40	1	Ci	1	1	0		1	0		0			
1759	29.855	81			0	0			0			0	0		0	0		0			
1859	29.860	72			4	4	Ci	1	0			4	0		4	0		1			
1958	29.870	66			6	6	Ci	1	0			6	0		6	0		2			
2058	29.890	61			8	8	Ci	1	0			8	0		8	0		3			
2158	29.900	60			8	8	Ci	1	0			8	0		8	0		3			
2256	29.900	60			6	6	Ci	1	0			6	0		6	0		3			
2355	29.900	57			4	4	Cs	1	0			4	0		4	0		2			

SYNOPTIC OBSERVATIONS

TIME (G. C. T.)	TIME (L. S. T.)	NO.	PRECIP. (INS.)	SNOW FALL (INS.)	SNOW DEPTH (INS.)	MAX. TEMP. (°F.)	MIN. TEMP. (°F.)	HGT. 850 MB. SURFACE	STATE OF GRND.	SEA STATE & DIR.	SWELL HGT. & DIR.	SWELL PERIOD	SURF H ₂ O M ₂ P ₂ D ₂	WATER TEMP.	SOIL TEMP.	STATION PRESSURE	
41	48	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58
	MID. TO 0055	X	0	0	X	58	56	X	X	X	X	X	X	X	X	X	TIME (L.S.T.) 0055 06.1
	0055	1	0	0	0	70	56										ATT. THERM. -
	0655	2	0	0	0	61	51										OBSRVD. BAR. 1008.6 101.
	0855	3	0	0	0	80	61										TOTAL CORR. -
	1857	4	0	0	0	83	72										STA. PRESS. 29.785 29.
	MID.	X	0	0	0	72	57	X	X	X	X	X	X	X	X	X	BAROGRAPH 29.785 29.
																	BAR. CORR. ± 0 ±

SUMMARY OF DAY (MIDNIGHT TO MIDNIGHT)

24-HR. MAX. TEMP. (°F.)	24-HR. MIN. TEMP. (°F.)	24-HR. PRECIP. WATER EQUIV. (INS.)	24-HR. SNOWFALL UNMLTD. (INS.)	SNOW DEPTH (INS.)	PEAK GUST			THICKNESS OF ICE ON WATER (INS.)	FROZEN GRND. LAYER (INS.)		RIVER GAGE	24-HR. MAX. R. H.	24-HR. MIN. R. H.	WATER EQUIV. (INS.)	PRECIP. & THDRSTM.	BEGAN	ENDED	DUR. Hrs. Mins.	OBSTR. TO VIS.
					SPEED (KNOTS)	DI. REC-TION	TIME L.S.T.		TOP	BASE									
83	51	0	0	0	14	11	245												GF 0.

90 REMARKS, NOTES AND MISCELLANEOUS PHENOMENA

Total sunshine _____ Sunrise _____ Sunset _____
 Fastest observed 1-minute wind speed _____ m. p. h., or
 Fastest mile _____ m. p. h.; associated direction _____ and time: _____
 Excessive precipitation:

At (MINUTES)	5	10	15	20	30	45	60	80	100	120	150	180
PRECIPITATION (INCHES)												

LAT. 33° 50' N LONG. 77° 28' W
 ORIENTATION 360=S
 95 meters ABOVE SEA LEVEL

U.S. DEPARTMENT OF COMMERCE
WEATHER BUREAU

WINDS-ALOFT COMPUTATION SHEET
(LANDSTATION FORM)
WBAN-20

Year: 1964 Month: MAY Day: 18 Time: 0020
 Scheduled (G.M.T.): 1964 MAY 18 06
 Ascension No.: 549

Minute	Rawin ht. above surface (m.)	Elevation angle °		Distance from observation point (m.)	Azimuth angle °	Minute	Wind	
		Observed	Smoothed				Direction ° 360=N.	Speed (m.p.s.)
1	250	35.6		490	307.2	1	320	9.5
2	700	31.3		1150	320.1	2	334	9.7
3	1010	31.3		1650	326.5	3	345	8.7
4	1400	32.8		2160	332.3	4	344	6.8
5	1700	34.6		2450	332.0	5	308	6.0
6	2100	36.6		2800	326.5	6	286	8.1
7	2410	37.6		3200	319.5	7	250	8.7
8	2800	37.2		3700	316.9	8	284	11.5
9	3160	36.2		4400	305.0	9	282	13.2
10	3520	35.2		5100	306.5	10	294	12.0
11	3900	33.7		5800	305.7	11	304	13.5
12	4300	32.8		6700	305.9	12	314	14.3
13	4700	32.1		7500	307.4	13	325	16.0
14	5100	31.0		8500	310.7	14	328	20.9
15	5500	27.0		9900	312.3	15	314	24.0
16	5900	27.4		11400	311.5	16	302	23.8
17	6290	26.2		12700	310.0	17	301	23.0
18	6700	25.5		14000	309.6	18	310	22.5
19	7080	24.7		15400	310.0	19		
20		23.7			310.3	20	313	22.0
21	7810	23.2		18100	310.7	21		
22		22.6			310.7	22	309	25.5
23	8610	22.0		21200	310.1	23		
24		21.5			310.5	24	317	26.0
25	9470	21.2		24300	311.1	25		
26		20.6			311.6	26	319	29.0
27	10170	20.0		27700	312.2	27		
28		19.50			312.6	28	318	30.5
29	10900	19.05		31400	312.9	29		
30		18.70			313.6	30	330	27.0
31	11660	18.50		34500	314.4	31		
32		18.35			314.3	32	303	24.0
33	12420	18.25		37300	313.5	33		
34		17.80			312.9	34	309	28.0
35	13220	17.70		40900	313.1	35		
36	13670	17.75		42200	312.5	36	304	18.0
37	14070	17.50		43000	312.5	37		
38	14520	18.75		43500	312.0	38	284	14.0
39		18.50			311.2	39		
40	15200	18.70		45300	310.9	40	285	13.8
41		18.75			310.5	41		
42	16400	19.70		46500	310.0	42	276	10.5
43		19.05			309.5	43		
44	17200	19.75		47300	309.0	44	281	6.5
45		20.1			309.0	45		
46	18010	20.4		47800	309.0	46	313	5.2
47		20.6			308.7	47		
48	18860	21.0		48500	309.1	48	321	5.0
49		21.3			309.0	49		
50	19720	21.6		49300	309.3	50	325	3.5

Rawinsonde Time-Altitude Data			
Contact	Pressure (mb.)	Altitude (m., m.s.l.)	Elapsed time (min.)
5	1010		
10	935	710	2.0
15	864	1390	4.0
20	788	2060	5.7
25	734	2710	7.1
30	674	3410	9.6
35	616	4140	11.4
40	564	4810	13.2
45	514	5510	15.1
50	466	6270	16.9
55	422	7000	18.7
60	381	7720	20.7
65	342	8500	22.6
70	306	9290	24.5
75	273	10040	26.6
80	242	10820	28.6
85	214	11610	30.7
90	188	12400	32.7
95	164	13280	34.7
100	143	14130	37.0
105	123	15090	39.2
110	104	16100	41.3
115	88	17140	43.5
120	73	18330	46.5
125	59	19680	49.0
130	47	21110	53.1
135	34	23200	58.1
140	21	26360	65.2
144	10	31370	
145	7	33870	
146	19	22000	65.8

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.	00	00	17-21	7	311	22
150 M.	320	5	22-26	8	311	24
300 M.	320	8	27-31	9	317	26
0.5	320	10	32-36	10	317	27
1.0	342	9	37-41	11	325	29
1.5	343	7	42-46	12	326	25
2.0	286	7	47-51	13	310	26
2.5	280	9	52-56	14	297	17
3	284	12	57-61	15	284	14
4	286	14	62-66	16	281	12
5	326	19	67-71	17	280	8
6	306	24	72-76	18	310	5

Coded Data for Transmission

1	2	3	4	5	6	7	8
3319	3418	3516	3413	3112	2916	2917	
3224	3127	3334	3245	3045	3144	3251	
3354	53034	02827	32822	23110	71802	01102	80802

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**
 WASHINGTON, D. C.
 (STERLING, VA.) LAT. 38° 50' N LONG. 77° 23' W
 RAWIN WERE-60 ORIENTATION 360=S
 OBSERVATION POINT 95 meters ABOVE SEA LEVEL

U.S. DEPARTMENT OF COMMERCE
 WEATHER BUREAU
WINDS-ALOFT COMPUTATION SHEET
 (LANDSTATION FORM)
 WBAN-20

Year
 Actual time 7⁵⁵th mer. 1964
 Scheduled (G.M.T.) 1964
 Ascension No.

Page 1

Type of balloon 1000

Orientation, 360° = South

Rawinsonde

Slant range (m.) (yds.)	Pibal ht. above sfc. (m.)		Minute	Rawin ht. above surface (m.)	Elevation angle °		Distance from observation point (m.)	Azimuth angle °	Wind		Contact	Pressure (mb.)	
	30 gram	100 gram			Observed	Smoothed			Direction ° 360°= N.	Speed (m.p.s.)			
	216	350	1	350	35.6		490	307.2	1	320	9.5	5	1010
	414	470	2	700	31.3		1150	320.1	2	334	9.7	10	935
	612	680	3	1010	31.3		1650	326.5	3	345	8.7	15	764
	801	885	4	1400	32.8		2160	332.3	4	344	6.4	20	738
	990	1170	5	1700	34.6		2450	332.0	5	308	6.0	25	734
	1170	1350	6	2100	36.6		2800	326.5	6	286	8.1	30	774
	1350	1530	7	2410	37.6		3200	319.5	7	250	8.7	35	615
	1530	1710	8	2800	37.2		3700	316.9	8	284	11.5	40	564
	1710	1890	9	3160	36.2		4400	305.0	9	282	13.2	45	514
	1890	2070	10	3520	35.2		5100	306.5	10	294	12.0	50	466
	2070	2250	11	3900	33.7		5800	305.7	11	304	13.5	55	422
	2250	2430	12	4300	32.8		6700	315.9	12	314	14.3	60	381
	2430	2610	13	4700	32.1		7500	307.4	13	325	16.0	65	342
	2610	2790	14	5100	31.0		8500	310.7	14	328	20.9	70	306
	2790	2970	15	5500	27.0		9900	312.3	15	314	24.0	75	273
	2970	3150	16	5900	27.4		11400	311.5	16	302	23.4	80	242
	3150	3330	17	6290	26.2		12700	310.0	17	301	22.0	85	214
	3330	3510	18	6700	25.5		14000	309.6	18	311	22.5	90	188
	3510	3690	19	7090	24.7		15400	310.1	19			95	164
	3690	3870	20		22.7			310.3	20	313	22.0	100	142
	3870	4050	21	7810	22.2		18100	310.7	21			105	122
	4050	4230	22		22.6			310.2	22	307	25.5	110	102
	4230	4410	23	8610	22.0		21200	310.1	23			115	77
	4410	4590	24		21.5			310.5	24	317	26.0	120	57
	4590	4770	25	9470	21.2		24300	311.1	25			125	34
	4770	4950	26		20.6			311.6	26	319	29.0	130	21
	4950	5130	27	10170	20.0		27700	312.2	27			135	
	5130	5310	28		19.50			312.6	28	318	30.5	140	
	5310	5490	29	10900	19.05		31400	312.9	29				
	5490	5670	30		18.70			313.6	30	330	27.0	144	10
	5670	5850	31	11660	18.50		34500	314.4	31			145	7
	5850	6030	32		18.35			314.3	32	303	24.0	146	19
	6030	6210	33	12420	18.25		37300	313.5	33				
	6210	6390	34		17.80			312.9	34	309	28.0		
	6390	6570	35	13220	17.70		40900	312.1	35				
	6570	6750	36	13670	17.75		42200	312.9	36	304	18.0		
	6750	6930	37	14070	17.90		43000	312.5	37				
	6930	7110	38	14520	18.25		43500	312.0	38	284	14.0		
	7110	7290	39		18.00			311.2	39				
	7290	7470	40	15200	18.70		45300	310.9	40	285	13.8		
	7470	7650	41		18.75			310.5	41				
	7650	7830	42	16400	19.20		46500	310.0	42	276	10.5		
	7830	8010	43		19.65			309.5	43				
	8010	8190	44	17200	19.25		47300	309.0	44	281	6.5		
	8190	8370	45		20.1			309.0	45				
	8370	8550	46	18010	20.4		47800	309.0	46	313	5.2		
	8550	8730	47		20.4			308.9	47				
	8730	8910	48	18860	21.0		48500	309.1	48	321	5.0		
	8910	9090	49		21.3			309.0	49				
	9090	9270	50	19720	21.6		49300	309.3	50	325	3.5		

Altitude #	Direction (degrees)	Speed
5	1010	
10	935	
15	764	
20	738	
25	734	
30	774	
35	615	
40	564	
45	514	
50	466	
55	422	
60	381	
65	342	
70	306	
75	273	
80	242	
85	214	
90	188	
95	164	
100	142	
105	122	
110	102	
115	77	
120	57	
125	34	
130	21	
135		
140		
144	10	
145	7	
146	19	

Card No. 1

Type of equipment	sfc.	150 M.	300 M.	0.5	1.0	1.5	2.0	2.5	3	4	5	6
	0	320	320	322	342	343	376	380	384	385	326	326

Coded Date for Transmission

PP72403	05900	3313	2 3319	3418	4 3516	3413	6 3112	2916	8 2917
2920	0 2921	2 2924	4 3127	6 3334	8 3245	0 3045	3 3144	5 3144	7 3251
53259	0 3046	2 3154	5 3034	0 2827	3 2822	0 3110	7 1802	0 1102	8 0802
00802	50802								

Maxim
 Min. alt. wind 45 m.p.s. or mo
 Alt. of maximum wind speed (m.)
 Dir. (degrees) c (m.p.s.) of Max.
 Max. alt. wind 45 m.p.s. or mo
 Enter check if appear on rever

Name of Station
 Lat. and long.
 Local Standard time, 7⁵⁵th meridian
 El. of Station
 Method of obs., e.g., rawinsonde, rawin, albal
 Type of equip., e.g., WBRT-57, GAD-1A, GAD-1, SCR-658, theodolite

Termination
 Alt. for 150 & 300 m. are with respect to ground, alt. for other standard levels are in km., msl.

Computer
 Verifier
 Reason for termination

59° N LONG. 77° 28' W
 LATITUDE 360=S
 FEET ABOVE SEA LEVEL

**U.S. DEPARTMENT OF COMMERCE
 WEATHER BUREAU**
WINDS-ALOFT COMPUTATION SHEET
 (LANDSTATION FORM)
 WBAN-20

Year	1964	Month	MAY	Day	18	Time	000
Scheduled (G.M.T.)	1964	MAY	18				12

Actual time 23th mer.
 Ascension No. 550

Orientation, 360°= South

Rawinsonde Time-Altitude Data

Rawin above surface (m.)	Elevation angle °		Distance from observation point (m.)	Azimuth angle °	Minute	Wind	
	Observed	Smoothed				Direction ° 360°= N.	Speed (m.p.s.)
270	41.5		300	347.5	1	16	4.2
530	46.4		500	157.7	2	38	5.1
800	44.3		820	22.0	3	26	5.4
1070	43.8		1120	23.6	4	14	6.1
1380	41.9		1540	18.7	5	2	6.7
1750	40.6		1910	15.0	6	360	6.0
2120	39.6		2300	12.6	7	360	7.8
2500	37.9		2810	9.7	8	360	9.2
2880	36.3		3350	8.0	9	354	11.0
3250	33.5		4080	4.5	10	347	14.8
3600	30.5		5050	0.7	11	341	16.7
3960	28.9		5950	336.8	12	332	13.6
4360	28.5		6500	353.9	13	332	10.3
4770	28.4		7100	352.7	14	336	12.4
5170	27.5		7850	351.0	15	340	17.0
5570	26.0		7900	349.7	16	337	20.4
5960	24.5		10400	347.3	17	327	21.0
6300	23.4		11520	345.1	18	325	19.3
6600	22.6		12600	343.4	19	327	20.8
6900	21.9		13900	341.9	20	324	20.6
7290	21.4		14900	340.5	21	323	18.5
7640	20.9		16000	339.4	22	327	20.1
7900	20.2		17300	338.7	23	331	22.3
8200	19.65		18600	338.1	24	328	22.3
8500	19.25		19900	337.4	25		
	18.95			336.7	26	325	23.3
8820	18.60		22500	335.9	27		
	18.20			335.2	28	322	24.0
9220	17.85		25300	334.3	29		
	17.50			333.7	30	328	27.2
9820	17.05		28500	333.7	31		
	16.60			333.2	32	323	29.5
10420	16.25		32000	332.6	33		
	15.90			332.2	34	327	27.0
11000	15.65		35300	332.1	35		
	15.35			331.9	36	327	30.2
11600	15.05		38900	331.7	37		
	14.87			331.6	38	323	27.8
12200	14.65		41200	330.9	39		
	14.49			330.3	40	323	26.0
12800	14.36		45300	330.2	41		
	14.16			330.1	42	326	30.5
13400	13.99		49000	330.1	43		
	13.83			329.9	44	320	27.0
14000	13.79		52000	329.5	45		
	13.76			329.5	46	321	17.3
14600	13.58		54100	329.2	47		
15200	13.42		55000	328.8	48	307	16.5
15800	14.00		55900	328.6	49		
16400	14.03		56900	328.3	50	298	13.7

Contact	Pressure (mb.)	Altitude (m., m.s.l.)	Elapsed time (min.)
5	1010	120	0.3
10	999	720	2.3
15	982	1330	4.7
20	967	1960	6.7
25	947	2600	9.2
30	927	3180	11.6
35	906	3950	13.7
40	884	4580	16.1
45	866	5250	18.5
50	848	5920	21.0
55	824	6660	23.7
60	800	7450	26.2
65	782	8150	28.7
70	766	8900	31.1
75	750	9700	33.7
80	730	10450	36.5
85	729	11280	39.0
90	700	12110	41.6
95	715	12950	44.7
100	752	13780	47.2
105	730	14770	50.5
110	710	15800	54.0
115	723	16850	57.5
120	77	18020	61.2
125	62	19380	65.2
130	49	20880	69.7
135	36	22880	74.7
140	23	25800	81.1
145	10	31420	92.0
MS. 6	9	32151	93.6

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.	00	00	17-21	7	327	22
150 M.	16	3	22-26	8	322	24
300 M.	18	4	27-31	9	325	25
0.5	25	5	32-36	10	324	26
1.0	22	6	37-41	11	323	27
1.5	1	7	42-46	12	325	20
2.0	260	8	47-51	13	314	23
2.5	355	11	52-56	14	299	16
3	341	16	57-61	15	296	14
4	336	13	62-66	16	213	12
5	326	20	67-71	17	308	9
6	323	19	72-76	18	290	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.	

Coded Data for Transmission

2	20410	0311	40112	3613	63613	3617	83620
3	43432	62240	83243	03238	93334	53246	03257
4	03026	73123					
5	1602912	03507	00536	00802	00802	30802	D

*Identification
 WASHINGTON, D. C.
 (SPRINGFIELD, VA.) LAT. 38° 59' N LONG. 77° 28' W
 RAWIN WBR-50 ORIENTATION 360=S
 OBSERVATION POINT 65 METERS ABOVE SEA LEVEL

U.S. DEPARTMENT OF COMMERCE
 WEATHER BUREAU
 WINDS-ALOFT COMPUTATION SHEET
 (LANDSTATION FORM)
 WBAN-20

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Page
1

Type of balloon *600* 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		Cor tac
				Observed	Smoothed				Direction ° 360° = N.	Speed (m.p.s.)	
	216	1	270	41.5		300	347.5	1	16	4.2	
	350										
	414	2	530	46.4		500	15.7	2	38	5.1	
	670										
	612	3	600	44.3		820	22.0	3	26	5.4	
	980										
	801	4	1090	43.8		1120	23.6	4	14	6.1	
	1285										
	990	5	1380	41.9		1570	18.7	5	2	6.7	
	1585										
	1170	6	1650	40.6		1910	15.0	6	360	6.0	
	1880										
	1350	7	1920	39.6		2300	12.6	7	360	7.8	
	2170										
	1530	8	2200	37.9		2810	9.7	8	360	9.2	
	2485										
	1710	9	2480	36.3		3350	8.0	9	354	11.6	
	2740										
	1890	10	2730	33.5		4080	4.5	10	347	14.8	
	3020										
	2070	11	3000	30.5		5050	0.7	11	341	16.7	
	3300										
	2250	12	3260	28.9		5750	336.8	12	332	13.6	
	3580										
	2430	13	3560	28.5		6500	353.9	13	332	10.3	
	3855										
	2610	14	3870	28.4		7100	352.7	14	336	12.4	
	4130										
	2790	15	4170	27.5		7900	351.0	15	340	17.0	
	4405										
	2970	16	4470	26.0		7900	349.7	16	337	20.4	
	4675										
	3150	17	4760	24.5		10700	347.3	17	327	21.0	
	4945										
	3330	18	5000	23.4		11520	345.1	18	325	19.3	
	5215										
	3510	19	5300	22.6		12000	343.4	19	327	20.8	
	5485										
	3690	20	5600	21.9		13900	341.9	20	324	20.6	
	5755										
	3870	21	5890	21.4		14900	340.5	21	323	18.5	
	6025										
	4050	22	6140	20.9		16000	339.4	22	327	20.1	
	6295										
	4230	23	6400	20.2		17300	338.7	23	331	22.3	
	6565										
	4410	24	6700	19.65		18600	338.1	24	328	22.3	
	6835										
	4590	25	7000	19.25		19900	337.4	25			
	7105										
	4770	26		18.95			336.7	26	325	23.3	
	7375										
	4950	27	7620	18.60		22500	335.9	27			
	7645										
	5130	28		18.20			335.2	28	322	24.0	
	7915										
	5310	29	8220	17.85		25300	334.3	29			
	8185										
	5490	30		17.50			333.9	30	328	27.2	
	8455										
	5670	31	8820	17.05		28500	333.7	31			
	8730										
	5850	32		16.60			333.2	32	323	24.5	
	9005										
	6030	33	9420	16.25		32000	332.6	33			
	9285										
	6210	34		15.90			332.2	34	327	27.0	
	9565										
	6390	35	10000	15.65		35300	332.1	35			
	9850										
	6570	36		15.35			331.9	36	327	30.2	
	10135										
	6750	37	10600	15.05		38900	331.7	37			
	10420										
	6930	38		14.87			331.6	38	323	27.9	
	10710										
	7110	39	11200	14.65		40200	330.9	39			
	11005										
	7290	40		14.49			330.3	40	323	26.0	
	11300										
	7470	41	11800	14.36		45300	330.2	41			
	11595										
	7650	42		14.16			330.1	42	326	30.5	
	11890										
	7830	43	12400	13.99		49000	330.1	43			
	12185										
	8010	44		13.83			329.9	44	320	27.0	
	12480										
	8190	45	13000	13.79		52000	329.5	45			
	12775										
	8370	46		13.76			329.5	46	321	17.3	
	13075										
	8550	47	13600	13.84		54100	329.2	47			
	13375										
	8730	48	13900	13.92		55000	328.8	48	307	16.5	
	13675										
	8910	49	14300	14.00		55900	328.6	49			
	13975										
	9090	50	14000	14.03		56900	328.3	50	298	13.7	
	14275										

Coded Data for Transmission

00724	11100	0207	20410	0311	40112	3613	63613	3617	83620
3527	03402	23320	43432	63240	83340	03233	53334	53246	03257
53356	03357	53053	03026	73123					
1511	72103	11911	97776	02412	03507	00506	00802	00802	D

Stamp the following:
 Name of Station
 Lat. and long.
 Local Standard time, 75th meridian
 El. of Station
 Method of obs., e.g., rawinsonde, rawin, pibal
 Type of equip., e.g., WBRT-57, GMD-1A, GMD-1, SCR-658, theodolite

Termination
 Alt. for 150 & 300 m. are with respect to ground, alt. for other standard levels are in km., msl.

Reason for termination
BURST
 Computer
F. G. HARRIGAN
 Verifier
P. P. PATRICK

1. LAT. 53° 59' N LONG. 77° 28' W
 ORIENTATION 360=S
 WINDS 65 METERS ABOVE SEA LEVEL

U.S. DEPARTMENT OF COMMERCE
 WEATHER BUREAU
WINDS-ALOFT COMPUTATION SHEET
 (LAND STATION FORM)
 WBAN-20

Actual time	Year	Month	Day	Time
21 st Mar.	1964	MAY	10	1220
Scheduled (G.M.T.)	1964	MAY		18

Ascension No. 551

Minute	Raw in ht. above surface (m.)	Elevation angle °		Distance from observation point (m.)	Azimuth angle °	Minute	Wind	
		Observed	Smoothed				Direction ° 360°= N.	Speed (m.p.s.)
1	350	50.7		2800	325.8	1	318	5.0
2	900	51.4		6000	318.2	2	302	5.0
3	1400	58.2		8700	310.5	3	306	5.5
4	1890	55.8		12800	311.5	4	326	7.0
5	2240	52.6		17000	318.1	5	335	10.2
6	2590	46.6		24500	323.3	6	337	12.0
7	2940	43.2		31000	326.4	7	339	10.3
8	3290	41.7		36000	328.5	8	344	10.7
9	3670	39.8		47000	332.0	9	343	12.1
10	4080	38.3		51000	332.5	10	343	12.8
11	4500	37.7		59000	334.6	11	349	14.5
12	4900	35.8		68000	336.9	12	345	17.5
13	5300	33.7		80000	337.1	13	335	18.0
14	5700	32.6		90000	336.7	14	332	15.5
15	6100	31.6		99000	336.2	15	332	16.0
16	6500	30.9		109000	335.9	16	332	15.7
17	6900	30.3		118000	335.5	17		
18		29.6			334.2	18	323	18.0
19	7710	28.8		140000	333.5	19		
20		27.9			332.8	20	327	20.7
21	8400	27.0		165000	332.6	21		
22		26.2			332.6	22	326	20.9
23	9060	25.3		190000	331.8	23		
24		24.4			331.8	24	333	24.0
25	9790	23.9		219000	332.1	25		
26		23.5			332.1	26	334	21.0
27	10610	23.3		245000	332.3	27		
28		22.9			332.6	28	337	23.4
29	11400	21.6		285000	333.0	29		
30		21.2			333.5	30	344	30.0
31	12240	20.6		323000	334.3	31		
32		20.6			334.5	32	325	18.0
33	13070	20.6		345000	333.8	33		
34	13550	20.6		356000	333.0	34	312	14.0
35	13990	20.9		365000	332.4	35		
36	14430	21.2		368000	331.0	36	301	16.0
37		21.2			330.2	37		
38	15400	21.3		391000	329.7	38	309	16.0
39		21.5			329.0	39		
40	16390	21.8		400000	328.6	40	305	10.0
41		22.2			328.1	41		
42	17320	22.5		410000	328.0	42	309	10.0
43		22.5			328.0	43		
44	18280	22.9		427500	327.6	44	303	8.0
45		23.2			327.0	45		
46	19260	23.6		435000	326.7	46	300	6.0
47		23.0			326.8	47		
48	20150	24.3		442000	326.6	48	316	4.0
49		25.1			326.5	49		
50	21100	25.2		445000	326.5	50	113	2.4

Rawinsonde Time-Altitude Data			
Contact	Pressure (mb.)	Altitude (m., m.s.l.)	Elapsed time (min.)
5	1011	100	0.1
10	936	750	1.6
15	866	1380	2.8
20	800	2060	4.4
25	736	2730	6.4
30	676	3410	8.2
35	620	4100	9.9
40	564	4850	11.9
45	516	5550	13.7
50	468	6290	15.5
55	423	7040	17.4
60	380	7510	19.3
65	342	8570	21.4
70	305	9310	23.8
75	272	10140	25.8
80	240	10970	27.9
85	211	11780	30.3
90	184	12640	32.0
95	161	13410	34.0
100	138	14380	35.9
105	118	15350	37.8
110	100	16390	39.9
115	84	17490	42.1
120	70	18640	44.7
125	55	20140	47.8
130	42	21890	51.6
135	30	24060	57.5
140	1		
1474	25	25260	59.4

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	f	16	Type of equipment	g		
sfc.	310	4	21-21	7	328	17
150 M.	314	5	22-26	8	326	20
300 M.	317	5	27-31	9	330	22
0.5	319	5	32-35	10	334	22
1.0	302	5	37-41	11	336	33
1.5	306	5	42-46	12	341	28
2.0	324	7	47-51	13	320	16
2.5	335	11	52-56	14	308	15
3	340	10	57-61	15	305	16
4	344	12	62-66	16	308	12
5	345	17	67-71	17	309	10
6	333	16	72-76	18	305	9

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.			

Coded Data for Transmission														
2207	2	3210	3110	4	3010	3111	6	3212	3315	8	3421			
3423	4	3425	6	3532	8	3334	0	3331	3	3332	5	3236	0	3344
3449	5	3128	0	3131	3	3122	0	3016	7	3507	0	1104	8	1104

***Identification**
WASHINGTON, D. C.
(STERLING, VA.) LAT. 38° 59' N LONG. 77° 28' W
RAWIN WBAN-00 ORIENTATION 360=S
OBSERVATION POINT 85 METERS ABOVE SEA LEVEL

U.S. DEPARTMENT OF COMMERCE
WEATHER BUREAU

WINDS-ALOFT COMPUTATION SHEET
(LANDSTATION FORM)
WBAN-20

Year 1954
Actual time 21st Mar.
Scheduled (G.M.T.) 150
Ascension No. 55

Type of balloon 1000

Orientation, 360° = South

Rawinsonde

Slant range (m.) (yds.)	Pibal ht. above sfc. (m.)		Rawin ht. above surface (m.)	Elevation angle °		Distance from observation point (m.)	Azimuth angle °	Wind		Contact	Pressure (mb.)	
	30 gram	100 gram		Minute	Observed			Smoothed	Direction ° 360° = N.			Speed (m.p.s.)
	216	350	1	350	50.7	2800	325.8	1	318	5.0	5	1011
	414	470	2	900	51.4	6000	318.2	2	302	5.0	10	936
	612	980	3	1400	58.2	8700	310.5	3	306	5.5	15	866
	801	1285	4	1890	55.8	12800	311.5	4	326	7.0	20	820
	990	1585	5	2240	52.6	17000	318.1	5	335	10.2	25	736
	1170	1880	6	2590	46.6	21200	323.3	6	337	12.0	30	676
	1350	2170	7	2940	43.2	25400	326.4	7	339	10.7	35	620
	1530	2455	8	3290	41.7	29600	328.5	8	344	10.7	40	584
	1710	2740	9	3670	39.8	33800	332.0	9	343	12.1	45	576
	1890	3020	10	4080	38.3	38000	332.5	10	343	12.8	50	468
	2070	3300	11	4500	37.7	42200	334.6	11	349	14.5	55	423
	2250	3580	12	4900	35.8	46400	336.9	12	345	17.5	60	380
	2430	3855	13	5300	33.7	50600	337.1	13	335	18.0	65	342
	2610	4130	14	5700	32.6	54800	336.7	14	332	15.5	70	305
	2790	4405	15	6100	31.6	59000	336.2	15	332	16.0	75	272
	2970	4675	16	6500	30.9	63200	335.9	16	332	15.7	80	240
	3150	4945	17	6900	30.3	67400	335.5	17			85	211
	3330	5215	18		29.6		334.2	18	323	18.0	90	184
	3510	5485	19	7700	28.8	71600	333.5	19			95	161
	3690	5755	20		27.5		332.5	20	327	20.7	100	137
	3870	6025	21	8400	27.0	75800	332.6	21			105	111
	4050	6295	22		26.2		332.6	22	326	20.0	110	100
	4230	6565	23	9000	25.3	80000	331.8	23			115	100
	4410	6835	24		24.4		331.8	24	333	21.0	120	70
	4590	7105	25	9700	23.9	84200	332.1	25			125	55
	4770	7375	26		23.5		332.1	26	334	21.0	130	40
	4950	7645	27	10610	23.3	88400	332.3	27			135	30
	5130	7915	28		22.9		332.6	28	337	23.4	140	10
	5310	8185	29	11400	21.6	92600	333.0	29				
	5490	8455	30		21.2		333.5	30	344	20.0		
	5670	8730	31	12240	20.6	96800	334.3	31			1474	25
	5850	9005	32		20.6		334.5	32	325	18.0		
	6030	9285	33	13070	20.6	101000	333.8	33				
	6210	9565	34	13550	20.6	105200	333.0	34	312	14.0		
	6390	9850	35	13990	20.9	109400	332.6	35				
	6570	10135	36	14430	21.2	113600	331.0	36	301	16.0		
	6750	10420	37		21.2		330.2	37				
	6930	10710	38	15400	21.3	117800	329.7	38	309	16.0		
	7110	11005	39		21.5		329.0	39				
	7290	11300	40	16390	21.8	122000	328.8	40	305	10.0		
	7470	11595	41		22.2		328.1	41				
	7650	11890	42	17320	22.5	126200	328.0	42	309	10.0		
	7830	12185	43		22.5		328.0	43				
	8010	12480	44	18280	22.9	130400	327.6	44	303	8.0		
	8190	12775	45		23.2		327.0	45				
	8370	13070	46	19260	23.6	134600	326.7	46	300	6.0		
	8550	13375	47		23.0		326.8	47				
	8730	13675	48	20150	24.3	138800	326.6	48	316	4.0		
	8910	13975	49		25.1		326.5	49				
	9090	14275	50	21100	25.2	143000	326.5	50	113	2.4		

Altitude #	Direction (degrees)	Speed
5	310	4.1
10	318	5.0
15	302	5.0
20	306	5.5
25	326	7.0
30	335	10.2
35	337	12.0
40	339	10.7
45	344	10.7
50	343	12.1
55	343	12.8
60	349	14.5
65	345	17.5
70	335	18.0
75	336.7	15.5
80	332	16.0
85	335.9	15.7
90	332	18.0
95	332.6	20.7
100	333.8	20.6
105	333.0	14.0
110	332.6	10.0
115	331.0	16.0
120	330.2	16.0
125	329.7	16.0
130	328.8	10.0
135	328.0	10.0
140	328.0	8.0
145	327.6	7.0
150	327.0	11.0
155	326.8	1.0
160	326.6	4.0
165	326.5	1.0
170	326.5	2.4

Card No. 1

Type of equipment	sfc.	150 M.	300 M.	0.5	1.0	1.5	2.0	2.5	3	4	5	6
	310	314	317	319	302	306	324	335	340	344	345	333

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

4417 72403 1111 / 0362 34065 Coded Date for Transmission

00 72403	17771	3209	2 3210	3110	4 3010	3111	6 3212	3315	8 3421
7422	0 3420	2 3423	4 3425	6 3532	8 2334	0 3331	3 3332	5 3236	0 3344
53452	73063	0 3449	5 3128	0 3131	3 3122	0 3016	7 3507	0 1104	8 1104
01104	11104	00							

Name of Station
Lat. and long.
Local Standard time, 25th meridian
El. of Station
Method of obs., e.g., rawinsonde, rawin, pibal
Type of ocuip., e.g., WIRT-57, GAD-1A, GAD-1, SCR-65B, theodolite

Termination
Alt. for 150 & 300 m. are with respect to ground, alt. for other standard levels are in km., msl.

Computer: M.L. CHADAYE
Verifier: M.L. CHADAYE

2.58° 59' N LONG. 77° 28' W
 ORIENTATION 360=S
 100 METERS ABOVE SEA LEVEL

U.S. DEPARTMENT OF COMMERCE
 WEATHER BUREAU
 WINDS-ALOFT COMPUTATION SHEET
 (LANDSTATION FORM)
 WBAN-20

	Year	Month	Day	Time
Actual time th mer.	1964	MAY	18	1800
Scheduled (G.M.T.)	1964	MAY	19	00
Ascension No. 52				

Minute	Raw in ht. above surface (m.)	Elevation angle °		Distance from observation point (m.)	Azimuth angle °	Wind			
		Observed	Smoothed			Minute	Direction ° 360=N.		Speed (m.p.s.)
							sfc.	—	
1	270	69.5		100	12.9	1	347	211	
2	540	66.6		230	347.4	2	327	31.0	
3	860	63.8		420	337.6	3	320	3.4	
4	1120	60.3		640	332.4	4	320	4.6	
5	1400	56.2		980	328.1	5	320	5.4	
6	1660	52.5		1300	325.3	6	313	7.2	
7	1920	48.0		1800	320.9	7	302	7.3	
8	2180	44.5		2200	317.3	8	306	8.4	
9	2440	41.0		2800	315.5	9	325	10.3	
10	2700	38.6		3400	320.0	10	346	10.2	
11	2980	37.3		3900	324.5	11	348	11.0	
12	3280	35.9		4600	327.6	12	342	12.0	
13	3600	34.1		5300	329.4	13	326	12.5	
14	3900	32.8		6100	327.4	14	307	9.6	
15	4180	32.6		6500	325.6	15	308	8.4	
16	4470	32.2		7100	324.5	16	313	11.2	
17	4760	31.0		7800	322.9	17	315	13.6	
18	5060	29.8		8800	322.4	18	313	16.0	
19	5360	28.8		9700	321.4	19	312	15.0	
20	5660	28.0		10600	320.9	20	313	15.0	
21	5930	27.3		11500	320.2	21	313	13.0	
22	6220	26.8		12200	319.8	22	313	14.0	
23	6530	26.2		13200	319.3	23	313	17.0	
24	6840	25.6		14200	318.7	24	317	15.8	
25	7160	25.3		15100	318.1	25			
26	—	25.0		—	320.0	26	332	14.8	
27	7840	24.8		16900	320.5	27			
28		24.4			320.8	28	324	12.4	
29	8310	24.2		18400	320.5	29			
30		24.1			320.7	30	325	11.0	
31	8820	24.0		19700	320.7	31			
32		24.0			320.7	32	332	11.0	
33	9440	24.0		21100	321.4	33			
34		24.2			322.1	34	340	11.5	
35	10120	24.2		22300	322.7	35			
36		24.2			323.1	36	334	14.0	
37	10730	24.0		24000	323.4	37			
38		23.9			323.8	38	340	15.0	
39	11340	23.6		25700	324.8	39			
40		23.3			326.4	40	355	21.0	
41	11950	23.0		27900	327.8	41			
42		22.7			329.0	42	357	20.0	
43	12600	22.6		30000	329.7	43			
44		22.5			330.0	44	324	16.0	
45	13200	22.3		31900	329.6	45			
46		22.0			329.6	46	314	17.0	
47	13800	21.9		34000	329.6	47			
48	14110	21.7		35100	327.7	48	304	15.0	
49	14410	21.6		36000	327.0	49			
50	14730	21.4		37200	326.4	50	313	13.4	

Rawinsonde Time-Altitude Data				
Con-tact	Pressure (mb.)	Altitude (m., m.s.l.)	Elapsed time (min.)	
5	1010	100	0.1	
10	938	730	2.4	
15	870	1380	4.7	
20	806	2030	7.1	
25	746	2670	9.4	
30	687	3330	11.8	
35	632	4000	14.2	
40	580	4680	16.6	
45	532	5350	19.1	
50	484	6100	21.5	
55	440	6800	23.7	
60	399	7560	25.9	
65	360	8260	28.8	
70	324	9000	31.6	
75	288	9800	33.7	
80	256	10600	36.0	
85	227	11410	38.7	
90	200	12200	41.5	
95	175	13020	44.1	
100	152	13860	46.9	
105	130	14810	49.9	
110	111	15800	53.1	
115	94	16830	56.5	
120	78	17910	60.0	
125	64	19220	64.2	
130	50	20780	68.6	
135	35	23100	74.4	
140	21	26400	82.4	
		14200=15	28670	

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.	0	0	17-21	7	319	16
150 M.	347	1	22-26	8	326	13
300 M.	342	2	27-31	9	328	11
0.5	334	3	32-36	10	340	12
1.0	321	4	37-41	11	340	15
1.5	318	6	42-46	12	356	21
2.0	302	8	47-51	13	324	16
2.5	323	10	52-56	14	308	15
3	347	11	57-61	15	316	17
4	308	10	62-66	16	318	13
5	313	15	67-71	17	316	13
6	314	13	72-76	18	338	10

Coded Data for Transmission							
3503	23306	3208	3210	3212	3116	3017	3219
23324	43117	63227	83131	03126	83323	53329	03322
53133	03230	33224	00				
23911	03116	03418	00302	03404	00314	20315	0

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 **01, D. C.**
(STERLING, VA.) LAT. **38° 59' N** LONG. **77° 28' W**
RAWIN WIND-30 ORIENTATION **360=S**
OBSERVATION POINT **63 meters ABOVE SEA LEVEL**

U.S. DEPARTMENT OF COMMERCE
WEATHER BUREAU
WINDS-ALOFT COMPUTATION SHEET
(LANDSTATION FORM)
WBAN-20

Year **1964**
Actual time **21st mer.**
Scheduled (G.M.T.) **1954**
Ascension No. **552**

Type of balloon **600**

Orientation, **360° = South**

Rawinsonde

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.)	Alt. (m)
	30 gram	100 gram			Observed	Smoothed				Direction ° 360° = N.	Speed (m.p.s.)			
	216	350	1	270	69.5		100	12.9	1	347	2.1	5	1010	
	414	470	2	540	66.6		230	347.4	2	327	3.0	10	938	
	612	580	3	860	63.8		420	337.6	3	320	3.4	15	870	1
	801	680	4	1120	60.3		640	332.4	4	320	4.6	20	806	2
	1285	990	5	1400	56.2		980	328.1	5	320	5.4	25	746	2
	1555	1170	6	1660	52.5		1300	325.3	6	313	7.2	30	687	3
	1880	1350	7	1920	48.0		1800	320.9	7	302	7.3	35	632	4
	2170	1530	8	2180	44.5		2200	317.3	8	306	8.4	40	580	4
	2455	1710	9	2440	41.0		2800	315.5	9	325	10.3	45	532	5
	2740	1890	10	2720	38.6		3400	320.0	10	346	10.2	50	484	6
	3020	2070	11	2980	37.3		3900	324.5	11	348	11.0	55	440	6
	3300	2250	12	3280	35.9		4600	327.6	12	342	12.0	60	399	7
	3580	2430	13	3600	34.1		5300	329.4	13	326	12.5	65	360	8
	3855	2610	14	3900	32.8		6100	327.4	14	307	9.6	70	324	9
	4130	2790	15	4180	32.6		6500	325.6	15	308	8.4	75	288	9
	4405	2970	16	4470	32.2		7100	324.5	16	313	11.2	80	256	1
	4675	3150	17	4760	31.0		7800	322.9	17	315	13.6	85	227	1
	4945	3330	18	5060	29.8		8800	322.4	18	313	16.0	90	200	1
	5215	3510	19	5360	28.8		9700	321.4	19	312	15.0	95	175	1
	5485	3690	20	5660	28.0		10600	320.7	20	313	15.0	100	152	1
	5755	3870	21	5930	27.3		11500	320.2	21	313	13.0	105	130	1
	6025	4050	22	6220	26.8		12200	319.8	22	313	14.0	110	111	1
	6295	4230	23	6530	26.2		13200	319.3	23	313	17.0	115	94	1
	6565	4410	24	6840	25.6		14200	318.7	24	317	15.8	120	78	1
	6835	4590	25	7160	25.3		15100	319.1	25			125	64	1
	7105	4770	26	—	25.0		—	320.0	26	332	14.8	130	50	2
	7375	4950	27	7840	24.8		16900	320.5	27			135	35	2
	7645	5130	28	—	24.4		—	320.8	28	324	12.4	140	21	2
	7915	5310	29	8310	24.2		18400	320.5	29					
	8185	5490	30	—	24.1		—	320.7	30	325	11.0			
	8455	5670	31	8820	24.0		19700	320.7	31					
	8730	5850	32	—	24.0		—	320.7	32	332	11.0			
	9005	6030	33	9440	24.0		21100	321.4	33					
	9285	6210	34	—	24.2		—	322.1	34	340	11.5			
	9565	6390	35	10120	24.2		22300	322.7	35					
	9850	6570	36	—	24.2		—	323.1	36	334	14.0			
	10135	6750	37	10730	24.0		24000	323.4	37					
	10420	6930	38	—	23.9		—	323.8	38	340	15.0			
	10710	7110	39	11340	23.6		25700	324.8	39					
	11005	7290	40	—	23.3		—	326.4	40	355	21.0			
	11300	7470	41	11950	23.0		27900	327.8	41					
	11595	7650	42	—	22.7		—	329.0	42	357	20.0			
	11890	7830	43	12600	22.6		30000	329.7	43					
	12185	8010	44	—	22.5		—	330.0	44	324	16.0			
	12480	8190	45	13200	22.3		31900	329.6	45					
	12775	8370	46	—	22.0		—	329.6	46	314	17.0			
	13075	8550	47	13800	21.9		34000	329.6	47					
	13375	8730	48	14110	21.7		35100	327.7	48	304	15.0			
	13675	8910	49	14410	21.6		36000	327.0	49					
	13975	9090	50	14730	21.4		37200	326.4	50	313	13.4			

Altitude #	Direction (degrees)	Speed
5		
10		
15		
20		
25		
30		
35		
40		
45		
50		
55		
60		
65		
70		
75		
80		
85		
90		
95		
100		
105		
110		
115		
120		
125		
130		
135		
140		

Altitude #	Direction (degrees)	Speed
142.0		15.0
145.0		
150.0		
155.0		
160.0		
165.0		
170.0		
175.0		
180.0		
185.0		
190.0		
195.0		
200.0		
205.0		
210.0		
215.0		
220.0		
225.0		
230.0		
235.0		
240.0		
245.0		
250.0		
255.0		
260.0		
265.0		
270.0		
275.0		
280.0		
285.0		
290.0		
295.0		
300.0		

Coded Data for Transmission

240	23900	3503	23306	3200	3210	3212	3116	3017	3219
3420	03500	23324	43117	03227	83131	03126	83323	53329	03322
53428	03640	53133	03230	33224	0				
0013	03000	23911	99996	03418	00302	03404	00314	20316	0

Maxim
Min. alt. wind s
45 m.p.s. or mo
Alt. of maximum
wind speed (m.)
Dir. (degrees) o
(m.p.s.) of Max.
Max. alt. wind s
45 m.p.s. or mo
Enter check if
appear on rever

Name of Station
Local Standard time, 25th meridian
Elev. of Station
Method of obs., e.g., rawinsonde, rawin, pibal
Type of equip., e.g., WBRT-57, GMD-1A, GMD-1, SCR-658, theodolite

Termination
Alt. for 150 & 300 m. are with respect to ground, alt. for other standard levels are in km., msl.

Reason for Termination
Computer H.L. CHAPMAN
Verifier J. L. ...