

13 Apr 78

FLIGHT FOLDER CHECKLIST

H78-13/H-129

DET CHECK	LCA CHECK	
		80 K
✓		I. FLIGHT FOLDER CHECK LIST: (AFCRL FORM 25)
		II. FLIGHT REQUIREMENT INFORMATION
✓		A. FLIGHT REQUIREMENTS DOCUMENT (AFCRL FORM 24 OR 24A)
✓		B. SCHEDULE REQUEST (STEWs NR FORM 1)
NA		C. SCIENTIFIC BALLOON USER DOCUMENT (AFCRL FORM 104)
		III. PRE-LAUNCH AND LAUNCH INFORMATION
✓		A. PRE-FLIGHT BRIEFING (AFCRL FORM 99)
✓		B. CREW CHIEF REPORT (AFCRL FORM 22)
✓		C. HELIUM INFLATION COMPUTATION SHEET (AFCRL FORM 21)
✓		D. BALLOON LAUNCH/LAYOUT DIAGRAM
✓		E. FAA BALLOON FLIGHT NOTIFICATION RECORD (AFCRL FORM 97)
✓		F. BALLOON METEOROLOGICAL FORECAST (AFCRL FORM 96)
✓		G. PIBAL DATA SHEET (AFCRL FORM 95)
✓		H. PRE-FLIGHT COMMAND RECEIVER TEST DATA (AFCRL FORM 101)
NA		I. DATA TRANSMITTER TEST SHEET (AFCRL FORM 102)
✓		J. BALLOON SPECIFICATION/PRODUCTION/REPAIR SHEETS
✓		K. GROSS WEIGHT VS. ALTITUDE GRAPH
		IV. FLIGHT INFORMATION
✓		A. CONTROL CENTER (OR COMMUNICATIONS) LOG
✓		B. BAROCODER CALIBRATION SHEET (AFCRL FORM 103)
✓		C. BAROCODER CODE SHEET (ALTITUDE VS. TIME DATA)
✓		D. BALLOON TRACK LOG (AFCRL FORM 98)
✓		E. BALLOON TRAJECTORY MAP (Photos)
✓		F. HEIGHT VS. TIME GRAPH
✓		G. AIRCRAFT OBSERVER'S REPORT
NA		H. ON-BOARD CAMERA DATA
✓		I. RADIOSONDE DATA (WILL SEND LATER) CAME 8 MAY 78
		V. POST-FLIGHT INFORMATION
✓		A. BALLOON FLIGHT SUMMARY (AFCRL FORM 20)
✓		B. MEMO(S) FOR RECORD
✓		C. RECOVERY REPORT
		VI. MISCELLANEOUS
NA		A. MALFUNCTION REPORT(S)
NA		B. AF BALLOON INFORMATION SHEET (DET 3 ONLY)
✓		C. NOAA FORMS 17-501 THRU 17-505
✓		D. OTHER (Specify)
		Advance Flight Information, Balloon Mission, Public Information Release

HOLLOMAN AIR FORCE BASE, NEW MEXICO 88330

1. The following personnel are assigned to support a scheduled balloon launch at
0600 hours, 11 April 78. Personnel will report on dates and times
indicated. A pre-flight briefing will be conducted in the Conference Room at
1245 hours 7 April 78.

Project Officer Mr. Ground Launch Officer/NCO NA
Test Coordinator _____ Scientific Investigator NA

LAUNCH CREW (REPORT 0300).

Crew Chief Mr. Fumerola Asst Crew Chief _____
Launch Vehicle Driver Mr. Wofford Mr. Stauber
Mr. Butko Mr. Bean
Instrumentation Mr. Cordery
Mr. Mares

CONTROL CENTER

Control Center Coordinator

Meteorologist/Flight Controller

TIME	NAME	TIME	NAME
<u>0430-0800</u>	<u>MSgt Dobbins</u>	<u>0001-0800</u>	<u>TSgt Fultz</u>
<u>0800-Comp</u>	<u>Mr. Ground</u>	<u>0500-Comp</u>	<u>Mr. Gildenberg</u>

COMMUNICATIONS COORDINATOR

COMMAND TECHNICIANS

TIME	NAME	TIME	NAME
<u>0800-Comp</u>	<u>Mr. Wofford</u>	<u>0300-1100</u>	<u>Sgt Harris</u>
		<u>1100-Comp</u>	<u>Sgt Lemieux</u>

TRACKING SUPPORT (THEODOLITE)

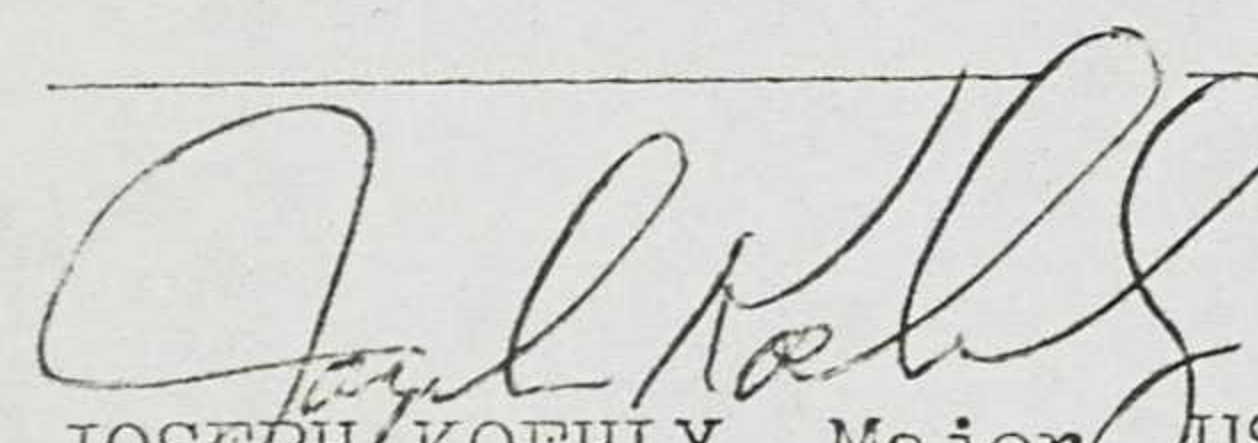
DATA REDUCTION/TM GROUND STATION

TIME	NAME	TIME	NAME

AIRCRAFT OBSERVERS (REPORT 0930)

Capt Wilson

RECOVERY CREW (REPORT NA)


JOSEPH KOEHLI, Major, USAF *
Commander, Det 1, AFGL

SCHEDULED LAUNCH DATE 10-14 Apr 78		BALLOON FLIGHT REQUIREMENTS		LAUNCH SITE Holloman AFB NM	
I. GENERAL					
1. PROJECT NUMBER & TITLE Ash Can		2. PROJECT OFFICER Mr. Ground/PSL		3. EXPERIMENTER DOE	
4. FLIGHT OBJECTIVES A. 80K Sampling Mission B. C.					
5. REQUIRED FLIGHT PROFILE Climbout to 80K - Sample 6 hrs - Terminate				6. DESIGN CEILING ALTITUDE 81 Kft	
7. FLIGHT DURATION 8 hrs		8. PAYLOAD RECOVERY Aerial/Mandatory		9. DOCUMENTARY PHOTOGRAPHY LAUNCH: STILL ☒ MOTION ☒ RECOVERY: STILL ☐ MOTION ☐	
10. TELEMETRY RANGE: MOBILE VAN ☐ FIXED STATION ☐ AFCL: MOBILE VAN ☐ FIXED STATION ☒					
II. BALLOON					
1. BALLOON NUMBER <u>3</u> OF <u>4</u> , ITEM <u>2</u> , S/N <u>26</u> , CONTRACT <u>F29651-77-90051</u>				2. MANUFACTURER Winzen	
3. VOLUME(S) .516 x 10 ⁶		4. MODEL NUMBER(S) LTV-009		5. BUBBLE TO BE DOWNWIND OF PAYLOAD	
6. PULL OUT LOWER ☐ FT OF DUCTS		7. CUT OFF LOWER ☐ FT OF DUCTS		8. ☒ DO NOT USE CORNSTARCH ON LAUNCH ARM	
9. OTHER					
III. WEIGHTS					
1. BALLOON(S) 330		2. TOP MOUNTED PAYLOAD N/A		3. SUSPENDED PAYLOAD (Incl. Ballast, Rigging, Chutes) 800	
4. GROSS WEIGHT 1130		5. MINIMUM DROPPABLE BALLAST 80 lbs		6. DESIRED DROPPABLE BALLAST 80 lbs	
7. DEAD WEIGHT BALLAST 30 lbs		8. % FREE LIFT 10			
IV. INSTRUMENTATION					
1. PACKAGE TYPE(S) SCADS-2		2. ALTITUDE SENSOR(S) B-60 and Rosemount		3. RADIOSONDE Laping Modified STANDARD ☐ EXTENDED ☒ OMEGA ☐	
4. PRIMARY COMMANDS: IRIG ☐ SEQUENCED ☒					
(1) Encoder Key		(4) Beacon off (Antenna drop)		(7) Valve Failsafe	
(2) Beacon On (Latch)		(5) Sampler On		(8) Pour Ballast	
(3) Blow Ballast		(6) Sampler Off		(9) Terminate	
5. BACK-UP COMMANDS: SEQUENCED ☐ NON-SEQUENCED ☒					
(1) Terminate		(2) Valve Failsafe		(3) Ballast	
6. DROPPABLE BALLAST (Type, Container, Total Flow Rate) Glass/2 hoppers/37 ppm					
V. MISCELLANEOUS					
1. PARACHUTE(S) QUANTITY <u>3</u> TYPE <u>Mark V</u> DIAMETER(S) <u>29'</u>				2. SEPARATION DEVICE ☒ Cannon Cutters	
3. BURST SWITCH YES ☒ NO ☐		4. IMPACT SWITCHES QUANTITY ☐ TYPE <u>N/A</u>		5. CAMERA(S) UP ☐ DOWN <u>N/A</u> OTHER ☐	
6. FLASHING LIGHT LOCATIONS Package and BTEF		7. RECOVERY BEACON YES ☒ NO ☐		8. TRANSPONDER YES ☒ NO ☐	
9. REEL DOWN PACKAGE WEIGHT ☐ DISTANCE TO BE LOWERED <u>N/A</u>				10. ATTACHED DOCUMENTS <u>N/A</u>	
REQUIREMENTS INITIATED BY T. Danaher				DATE 28 March 1978	
COORDINATION LCB: BY <u>J. Payne</u>		DATE <u>30 Mar 78</u>		LCC: BY <u>[Signature]</u>	
				DATE <u>MAR 29 1978</u>	

SPECIAL REQUIREMENTS AND REMARKS

1. Samplers

a. DFS (DOE) PR-3 flowsensors, and UTMT doors inlet and outlet. Filter IPC

1478.

b. C-14 (DOE) use nitrogen gas. Regulator setting 35 psi. 450 lohm orifice.

One small sphere pressurized to 1200 psi.

2. Batteries

a. Dual 24V pack BB-405s - DFS power (tapped 22.5V)

b. Single 12V pack BB-405s - Primary Instrumentation

c. Single 12V pack BB-405s - Auxiliary

d. Single 24V pack 6HG's - Backup

e. Single 12V pack 6HE - Balloon strobe

f. Single 15V pack 25AH - Primary instrumentation

g. Single 12V pack 10HG's - Primary instrumentation

3. UTMT doors operated from 1000 in³ flask pressurized to 150 psi.

4. Sampling period 360 min. Controlled program IAW SCADS-2 check list.

5. Altitude Sensors

a. B-60 (densimeter) TLM Ch #1

b. Rosemount

6. Save 3B gondola will be flown with two 10K nylon straps; used to form basket for gondola.

NATIONAL RANGE SCHEDULE										DATE 11 Apr 78		DAY CODE							
INDEX		SVC		O D NUMBER		OPERATIONAL TITLE				MISSILE NO.									
		F		36301B		Stratospheric Composition													
TIME		EVENT		TIME		EVENT		LAUNCH/INTERCEPT/IMPACT/SOURCE		AIRCRAFT/TARGET		XPDR							
0300		PTM						Rnwy 04		P-A/C		242.0							
0600		Launch																	
1200		Drop						Roswell, NM		C-130									
1300		CTM																	
1500		Practice						ALTITUDE/QE/AZ/RANGE		PATTERN									
		Aerial Catch																	
1600		Complete						80K											
								VOICE		PAS		SUR							
								P-4874		148.515		MS							
								P-5708		138.06		TV							
								P-8964				RTDS							
												TIM							
												DP							
INST SYSTEM		SOUTH RG		MID RG		NORTH RG		GREENRIVER		MOBILE		PROJECT							
TELEMETRY												P-138.06 MHz P-9019.5 KHz							
RADAR												P-40.35 P-1746							
O P T I C		CINE										IDC NO.							
		TELE																	
		FIXED																	
C M D R		TWS																	
		NRM																	
E L E C T		AME										TARGET RADARS							
		ELSS																	
		DECS																	
		DME																	
LASER																			
COMPUTER		RECOVERY		OCC		PLOT		OP HAZ		SILENCE		EVACUATIONS/RD BLKS							
		Project		Bldg 850				#1 (29 Mar 66)											
REMARKS																			
1) 30 min slide																			
2) Request 20 mi x 20 mi, surface to 20,000 ft. airspace for practice aerial catch																			
SURVEILLANCE RADAR																			
		1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
C H E C K																			
NR-D								ROM						SURV					
TWS								NR-M						FT B					
RTDS								NR-A						OCC					
RUM								ARMY						AA					
MET SUP								NAVY						NR					
NR-E								AF											

PRE-FLIGHT BRIEFING

BRIEFING DATE/TIME 7 Apr 78/1300 MST

FLIGHT NUMBER H78-13/H-129

I. GENERAL DATA

1. PROJECT NO. & TITLE

Ash Can

2. PROJECT OFFICER
Mr. Ground

3. EXPERIMENTER
DOE/EML

4. FLIGHT OBJECTIVES: A. Collect Two DFS Filters for DOE
B. Collect C-14 Sample for DOE c.

5. REQUIRED FLIGHT PROFILE

Climbout to 80Kft - Sample (4) hrs - Terminate

6. TEST COORDINATOR
N/A

7. LAUNCH CREW CHIEF
Mr. Fumerola

8. MISSION CODE
BE

9. SCHEDULED LAUNCH: A. SITE Holloman AFB, NM
B. DATE/TIME 11 Apr 78/0600 MST

10. TERMINATION DATE/TIME
11 Apr 78/1200 MST

11. PAYLOAD
800 lbs

12. FREELIFT
10%

II. BALLOON DATA

1. BALLOON NO. 3 OF 4 ITEM 2 S/N 26 CONTRACT F29651-77-90051

2. MANUFACTURER
Winzen

3. DIAMETER(S)
108.08 ft

4. LENGTH(S)
155.42 ft

5. VOLUME(S)
 $0.516 \times 10^6 \text{ ft}^3$

6. WEIGHT(S)
330 lbs

7. MATERIEL & THICKNESS
Stratofilm/1.5 mil

8. MODEL NO. (S)
LTV-009

9. VALVE & VALVE MOTOR S/N
BX0234/299

10. BALLOON DESTRUCT
Valve and dual ripline

11. REFLECTIVE TAPES
yes

III. PARACHUTE DATA

1. SERIAL NO. (S)
N/A

2. QUANTITY/TYPE/DIAMETER(S)/WEIGHT(S)
3/MK-5/29 ft/112 lbs

3. LENGTH(S) 60 ea +
(2) 100 ft ldl

4. BURST SWITCH
☐ YES ☒ NO

5. PLANNED DESCENT LOAD
725 lbs

IV. INSTRUMENTATION DATA

1. PACKAGE TYPE
Scads-1A

2. ALTITUDE SENSORS (TYPE, S/N)
B-60 (026) B-34 (018)

3. ANTENNA DEPLOY ANEROID ALT.
7.5 Kft

4. BURST/IMPACT SWITCH ARM ALT.
N/A

5. RADIOSONDE
☐ STANDARD ☒ EXTENDED

☐ OMEGASONDE

FREQUENCIES: COORDINATION WITH DET 1/DET 3: DATE/TIME N/A

6. COMMAND RECEIVER A. PRIMARY (1) 138.06 MHz
(2) B. BACK-UP 9019.5 KHz

7. TRANSMITTER A. PRIMARY 40.35 MHz
B. BACK-UP 1746 KHz

8. TRANSMITTER ANTENNA LENGTH
A. PRIMARY 16 ft

B. BACK-UP 216 ft

9. PRIMARY COMMANDS ARE: IRIG/SEQUENCED. CHANNELS & FUNCTIONS:

CH 1 Ballast (pour)

CH 4 Terminate

CH 7

CH 2 Sample On

CH 5 Antenna Drop

CH 8

CH 3 Sample Off

CH 6 Ballast (blow)

CH 9

10. BACK-UP COMMANDS ARE (NON) SEQUENCED. CHANNELS & FUNCTIONS:

CH 1 Terminate

CH 2 Valve Failsafe

CH 3 Valve Latch

11. DROPPABLE BALLAST			
A. TYPE Glass		B. WEIGHT 50 lbs	C. HOPPERS 2
D. BLOW (CMD)	E. SLUGS N/A	F. TOTAL FLOW RATE 37 LB/MIN	G. ORIFICE SIZE None
12. SAFETY TIMER: N/A MINUTES BELOW KFT			
13. TERMINATION TIMERS: A. PRIMARY N/A		B. SECONDARY 9 hrs	
14. IMPACT SWITCHES N/A		A. ARM ALTITUDE	
15. RADAR REFLECTORS Not Required		16. FLASHING LIGHT LOCATIONS Package & BTEF	
V. VOICE COMMUNICATIONS DATA			
1. FREQUENCIES:			
A. HF (1) 4874 (2) 5708 (3) 8964		B. VHF (1) 148.515	
(2) 138.06	C. UHF (1) N/A (2) N/A	D. SPECIAL N/A	
2. CALL SIGNS:			
A. CONTROL CENTER Fishhead Control		B. VAN N/A	
C. RECOVERY N/A	D. AIRCRAFT King-60		
VI. REPORTING TIMES			
1. LAUNCH PERSONNEL AT BLDG 850 AT 0300 MST		2. CONTROL CENTER OPEN 0300 MST	
3. REMOTE RENDEZVOUS: A. TIME N/A		B. PLACE N/A	
VII. AIRCRAFT SUPPORT			
1. A. TYPE C-130		B. TAIL NO. 50989	C. TAKE-OFF TIME 1030 MST
2. A. TYPE N/A		B. TAIL NO. N/A	C. TAKE-OFF TIME N/A
VIII. LAUNCH SITE SUPPORT			
1. METEOROLOGY Pibal	2. DOC PHOTO S & M	3. OTHER N/A	
IX. RANGE SUPPORT			
1. RADAR A. TRACKING N/A TO		B. TRANSPONDER N/A TO	
C. DIGITAL N/A TO	2. OPTICS N/A TO		
3. OTHER N/A			
X. TRACKING SUPPORT			
1. THEODOLITE ☒ YES ☐ NO	2. FAA NARCO AT50A Code 4400 ☒ YES ☐ NO	3. GMD ☒ YES ☐ NO	4. RADAR ☐ YES ☒ NO
5. VOR ☐ YES ☒ NO	6. AIRCRAFT ☒ YES ☐ NO	7. OTHER	
XI. SPECIAL TEST REQUIREMENTS EQUIPMENT			
1. Sampler. One DFS and one C-14.			
2. Timer. Delay altitude 66 Kft. Sample on delay plus 30 minutes. Sampler off delay plus 270 minutes.			
XII. REMARKS			
3. Latch valve must be executed before termination on primary.			
4. Blow ballast must be executed before termination on backup.			

EW CHIEF REPORT					DATE
PROJECT NO. Ash Can	BALLOON FLIGHT NO. H78-13/H-129	BALLOON NO. 3 of 4	ITEM 002	AF CONTRACT NO. F29651-77-90051	
MANUFACTURER Winzen	SERIAL NUMBER 26	BALLOON DIA 108.08 ft	VOLUME .516 MCF	TAPES (No. & Type) 54 Tailored	
MATERIAL & THICKNESS Stratofilm/1.5 mil		BALLOON LENGTH 155.42 ft	NO. INFLATION TUBES 1	NO. DUCTS 2	
TORQUE VALUES TOP 44" lbs BOTTOM N/A		RELEASE VEHICLE Crane	LAUNCH PLATFORM 119L		
ITEM		WEIGHT/LBS	ITEM		WEIGHT/LBS
VALVE TYPE & WEIGHT EV-13 & Lite		9.0	BALLAST		
BALLOON LAUNCH			Glass Ballast		50.0
BALLOON MAIN		337.0	Nitrogen Gas		20.0
SEPARATION DEVICE Cannon Cutter in Chute wt			Dead Wt		25.0
CHUTE SIZE 29 ft SER NO. 13514					
3 ea Chute 200 ft 10K Line		112.0			
			GROSS WEIGHT		1173.00
BALLOON BRANCH INSTRUMENTATION			FREE LIFT 12 %		140.76
Main Package & Backup			GROSS INFLATION		1313.76
1 ea C-14, 2 ea DFS & Light Sphere S/N 1000 Radiosonde			CORRECTION FACTOR .97		- 39.41
FAA Transponder		505.0	CORRECTED GROSS INFLATION		1274.34
CONTRACTOR INSTRUMENTATION RIGGING					
SAVE 3B Gondola & Hardware					
S/N 07		91.0	LAUNCH CREW-CHIEF		
UTMT Bottle		24.0	Joe Fumerola		

AFCRL FORM 22
OCT 71

INFLATION COMPUTATION SHEET

PRELIMINARY INFORMATION

1. FLIGHT NUMBER H78-13/H-129	2. DATE 13 APR 78	3. TRAILER NUMBER 59L 1152	4. GROSS LOAD 1173	5. FREE LIFT 12
6. NO. TUBES OPEN 24	7. INITIAL PRESSURE 605 PSI	TEMPERATURE		
		8. AIR °C 56 °F	9. TRAILER °C 55 °F	10. USED °C 55.4 °F

COMPUTATIONS

SINGLE OR PARTIAL TRAILER		MULTI-TRAILER FOR 200 PSI CUTOFF, 1 220 PSI RECOVERY PRESS.			
11. GROSS LOAD 1173 LBS		REFERENCE INFORMATION			
12. MULTIPLY BY FREE LIFT 12 %		27. TRAILER NO. 59L 1154			
13. FREE LIFT 140.76 LBS		28. AMBIENT TEMP °C 56 °F	°C °F	°C °F	°C °F
14. ADD GROSS LOAD (11) 1173 LBS		29. TRAILER TEMP. °C 55 °F	°C °F	°C °F	°C °F
15. GROSS INFLATION 1313.76 LBS		30. USED TEMP. °C 55.4 °F	°C °F	°C °F	°C °F
16. MULTIPLY BY CYLINDER FACTOR .97		31. INITIAL PRESSURE 860			
17. CORRECTED GROSS INFLATION 1274.35 LBS		COMPUTATIONS			
18. LIFT PER TUBE (7, 10) (Handbook) 23.2 LBS		32. LIFT PER TUBE (Handbook) (30, 31) 32.7			
19. MULTIPLY BY NO. TUBES OPEN (6) 24		33. SUBTRACT 220 PSI LIFT (30) 8.4			
20. TOTAL LIFT AVAILABLE 556.8		34. AVAILABLE LIFT PER TUBE 24.3			
1274.35 - 923.47 LBS		35. MULTIPLY BY NO. TUBES OPEN 38			
21. SUBTRACT CORRECTED GROSS INFLATION (17 or 50) 350.95 LBS		36. TOTAL LIFT PER TRAILER 923.4			
22. TOTAL LIFT REMAINING IN TRAILER 205.85 LBS		CROSS CHECK			
23. LBS TUBE REMAINING IN TRAILER (19) 8,577 = TUBE (22) 24 / 205.85		37. COPY LINE 32 32.7			
		38. MULTIPLY BY LINE 35 38			
		39. AVAILABLE LIFT PER TRAILER 1242.6			
		40. COPY LINE 33 8.4			
		41. MULTIPLY BY LINE 35 38			
		42. TOTAL 220 PSI LIFT 319.2			
		43. COPY LINE 39 1242.6			
		44. SUBTRACT LINE 42 319.2			
		45. TOTAL LIFT PER TRAILER 923.4			
24. PSI EQUIVALENT (10, 23) (Handbook) 225		SUMMATION			
25. VALVING FROM (7) 605 860 PSI TO (24) 225 220 PSI RECOVERY GRAPH SAYS SUBTRACT 5 7 PSI CUTOFF PRESSURE 220 210		46. LIFT IN 59L 1154 NO. 923.4 LBS			
		47. TOTALS 1 NO. 923.4 LBS			
26. CROSS CHECK (18) 23.2 MINUS (23) 8,577 14.63 MULTIPLY BY (6) 24 EQUALS (17) 350.95 4923.4 1274.35		48. GROSS MANIFOLD INFLATION (Line 17)			
		49. SUBTRACT TOTAL FULL TRAILERS LIFT			
		50. PARTIAL TRAILER LIFT REQUIRED (Insert in Line 21)			
		HISTORICAL DATA			
		INFLATION TIMES		53. GAUGE NO.	
		51. START	52. COMPLETE	54. MAXIMUM CONTROL VALVE PRESSURE PSI	

1 Inflation stops at 200 PSI. Gauge should indicate a recovery to 220 PSI in 2 - 5 minutes.
Additional computations can be made on reverse side.

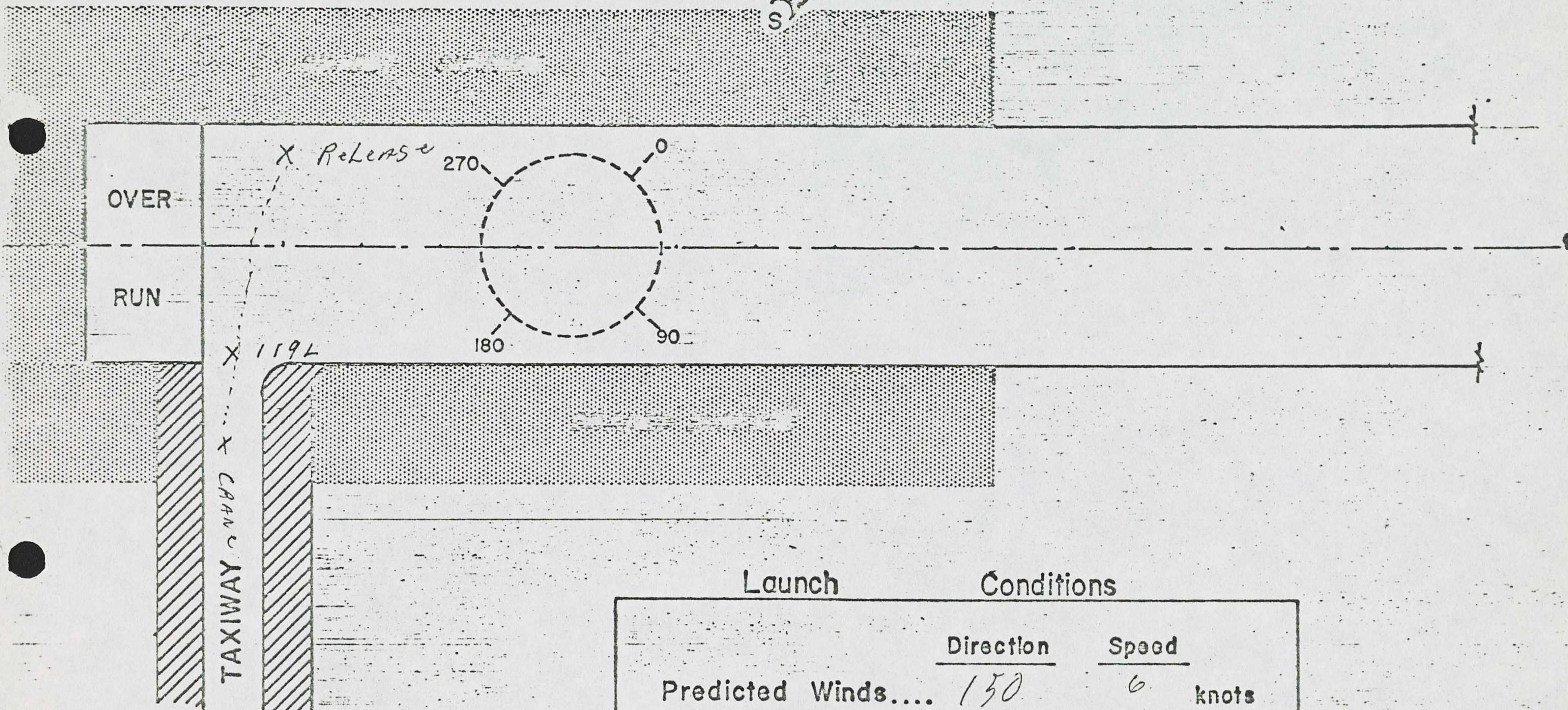
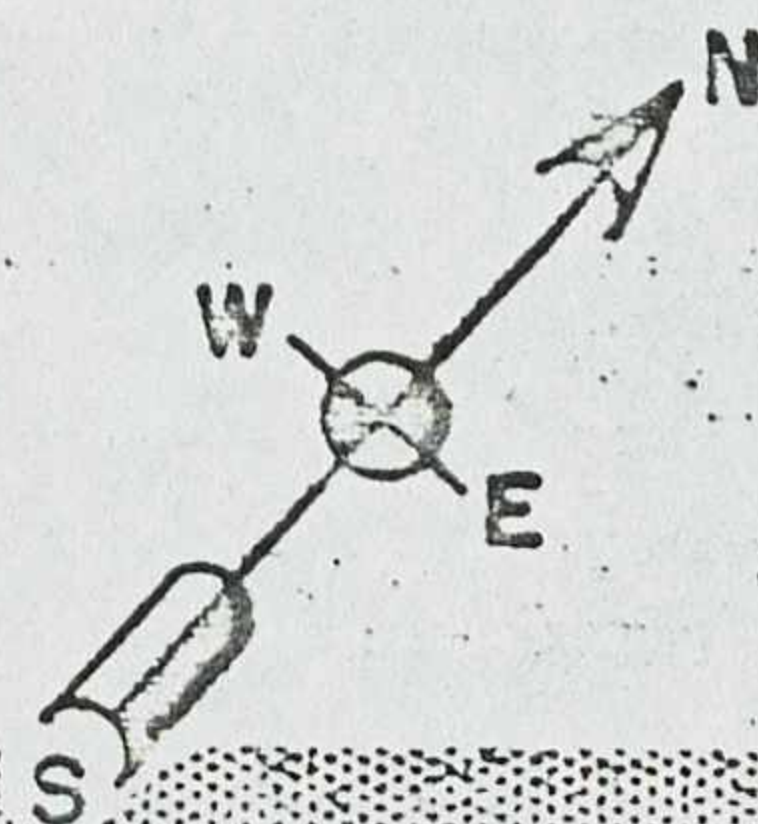
SIGNATURE



BALLOON LAUNCH/LAYOUT DIAGRAM

HOLLOMAN RUNWAY D3L

Ash CAN
80K
13 Apr 78



Launch

Conditions

	Direction	Speed
Predicted Winds....	150	6 knots
Actual Winds.....	170	-3-5 knots
Approx. dist. traveled by launch vehicle.....	405 ft.	

FAA BALLOON FLIGHT NOTIFICATION RECORD

LOCATION

4MN

DATE

13 APR 78

I. PRE-LAUNCH NOTIFICATION

FLIGHT NUMBER H78-13	LAUNCH SITE 4MN	EST LAUNCH TIME (Z) 13/1300	FLOAT ALT RANGE (FT) 80K	BALLOON LENGTH (FT) 155							
MAX DIAMETER (FT) 108	LOAD TRAIN LENGTH (FT) 110	PAY LOAD WEIGHT (LB) 800	ANTENNA LENGTH (FT) 216								
ASCENT THRU 60K		ESTIMATED IMPACT		FLIGHT DURATION	TIME FLD	INITIALS					
TIME(Z) 1400	DIST (NM) 25	DIRECTION E	FROM 4MN	TIME (Z) 2000	DIST (NM) 25	DIRECTION SSW	FROM Row	HOURS 7	MINUTES 00	0845Z	BN MF

II. LAUNCH MINUS TWO HOUR OR UPDATE NOTIFICATION

FLT NO.	EST LCH TIME(Z)	ASCENT THRU 60K				ESTIMATED IMPACT				TIME FLD	INITIALS
		TIME (Z)	DIST (NM)	DIRECTION	FROM	TIME(Z)	DIST (NM)	DIRECTION	FROM		

III. DELAY OR CANCELLATION NOTIFICATION

FLIGHT NUMBER	☐ CANCELLED	Z	☐ DELAYED UNTIL	Z	TIME FLD	INITIALS
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IV. LAUNCH NOTIFICATION

FLIGHT NUMBER H78-13	LAUNCH TIME(Z) 1303Z	TIME FILED 1323	INITIALS BN / G
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V. TWO HOUR POSITIONS

LNCH PLUS	DIST(NM)	DIRECTION	FROM	TIME(Z)	ALT (K)	LNCH PLUS	DIST (NM)	DIRECTION	FROM	TIME (Z)	ALT (K)
2 HOURS						14 HOURS					
4 HOURS						16 HOURS					
6 HOURS						18 HOURS					
8 HOURS						20 HOURS					
10 HOURS						22 HOURS					
12 HOURS						24 HOURS					

VI. TERMINATION MINUS ONE HOUR

FLIGHT NUMBER H78-13	LOCATION					PARACHUTE DATA		DESCEND THRU 60K	
	TIME(Z) 1430	DIST (NM) 35	DIRECTION NE	FROM 4MN	ALTITUDE(K) 77	DIA(FT) 3-29	LOAD(LB) 725	TIME(Z) 1850	
TRAJECTORY			ESTIMATED IMPACT					TIME FLD	INITIALS
HEADING(DEG) 070	DIST TO IMPACT(NM) 35	TIME(Z) 1950	DIST(NM) 20	DIRECTION NW	FROM Row			1832	RS G

VII. COMPLETION NOTIFICATION

FLIGHT NUMBER H78-13	IMPACT TIME(Z) 2028	DIST(NM) 25	DIRECTION NW	FROM Row	TIME FLD RS	INITIALS G
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VIII. NOTRAK NOTAM

FLIGHT NUMBER	LAST KNOWN POSITION				EST FLIGHT HEADING	SPEED	ALT(K)
	TIME(Z)	DIST(NM)	DIRECTION	FROM			
DESCEND THRU 60K	ESTIMATED IMPACT				TIME FLD	INITIALS	
	TIME(Z)	DIST(NM)	DIRECTION	FROM			

IX. ADDITIONAL NOTAMS

FLIGHT NUMBER H78-13	Delay Termination until 2000Z		TIME FLD	INT: RS1	G
LIGHT NUMBER			TIME FLD	INT	1

X. TETHERED BALLOON PRE-LAUNCH NOTIFICATION

OPERATING AGENCY	ADDRESS	LOCATION	EST LCH - DATE TIME (Z)			
LN LENGTH(FT)	BLN DIAMETER(FT)	TETHER ALT(FT AGL)	FLIGHT DURATION		TIME FLD	INITIALS
			HOURS	MINUTES		

BALLOON METEOROLOGICAL FORECAST	LOCATION HMN	DATE 13 APR	SCHD LNCH TIME(Z) 1300	FLIGHT NUMBER H78-13/H-129
---------------------------------	-----------------	----------------	---------------------------	-------------------------------

I. LAUNCH SITE FORECAST

DATE/TIME (Z)	CLOUD COVER (Amt in tenths - type - height each layer)	VISIBILITY (Miles)	WEATHER	PRECIP (Prob %)	TEMP (°C)	SURFACE WIND (Deg) (Kts)		
13/1300	3C1250	7+	NONE	0	+09	150	06	FCST
	1 AC 140 5 ci 200	40	NONE	0	+14	170		OBSVD
								FCST
								OBSVD
								FCST
								OBSVD

INVERSIONS		MAXIMUM WINDS			SIGNIFICANT WIND SHEARS		
HEIGHT	TEMP(°C)	DEG	KTS	HEIGHT	KTS/1000FT	HEIGHT (K FT)	
SFC TO 1000 FT AGL	+10	SURFACE	150	08			FCST
SFC TO 1000 FT AGL	+3						OBSVD
TO K FT		BUBBLE HT	170	12	200 FT AGL		FCST
TO K FT			170	09			OBSVD
TO K FT		SFC-60K	270	64	37 K FT		FCST
TO K FT			250	85	35 K FT		OBSVD

TROPOPAUSES		MINIMUM WINDS		FLOAT WINDS		MINIMUM TEMP		
HEIGHT(KFT)	TEMP(°C)	DEG	KTS	HEIGHT(KFT)	DEG	KTS	HEIGHT(KFT)	TEMP(°C)
41	-62	50 - 80 K	180	05	80	180	05	80
200M B 391K	-62.3		240	06	75	230	06	80

II. TRAJECTORY

	FORECAST				OBSERVED			
	TIME (Z)	MILES	DIRECTION	LOCATION	TIME(Z)	MILES	DIRECTION	LOCATION
60K	1400	44	E	HMN	1400	30	ENE	HMN
FLOAT	1420	42	E	HMN	1420	30	E	HMN
TERMINATION	1820	40	ENE	HMN	2011	28	WNW	LOW
IMPACT	1900	DRIVE TO ROW				N/A		
PARACHUTE DESCENT	TIME (min) 22	VECTOR (deg/nm) 072 -15NM			TIME (min)	VECTOR (deg/nm)		
ENROUTE WEATHER	2AC100 5C1250							

III. IMPACT SITE FORECAST

DATE/TIME (Z)	CLOUD COVER (Amt in tenths - type - height each layer)	VISIBILITY (miles)	WEATHER	PRECIP PROB %	TEMP (°C)	SURFACE WINDS (deg) (Kts)		
13/1900	2AC100 5C1250	7+	NONE	0	+27	230	10G19	FCST
	3 Cu 120	7+			20	010	05	OBSVD
								FCST
								OBSVD

REMARKS (General situation, significant weather and recommendations).

METEOROLOGIST(s) TSGT FULTZ	DATE TIME ISSUED 13/1000Z	TEST DIRECTOR MR. J. GROUND
--------------------------------	------------------------------	--------------------------------

PIBAL DATA SHEET

LAUNCH SITE

HMN

FLIGHT NUMBER

H78-13/H-129

DATE

13 APR 78

TIME

LOCAL

0300

0330

0400

0430

0500

0530

ALTITUDE

DDD

FF

DDD

FF

DDD

FF

DDD

FF

DDD

FF

DDD

FF

DDD

FF

DDD

FF

SURFACE

165

03

170

04

160

03

150

04

155

02

150

04

300

180

08

140

02

180

09

090

02

180

04

170

03

600

XXX

XX

XXX

XX

XXX

XX

XXX

XX

XXX

XX

XXX

XX

900

180

08

XXX

XX

215

12

210

10

230

06

210

03

1200

190

06

180

10

195

10

230

11

255

07

280

05

1500

235

07

180

08

210

10

235

07

285

07

260

10

1800

250

06

200

04

215

10

220

08

270

14

250

08

2100

270

06

310

06

255

08

265

04

265

15

250

09

2400

265

10

320

06

255

09

260

09

260

13

270

08

2700

265

09

275

12

215

08

265

15

260

13

280

07

3000

280

10

275

12

XXX

XX

250

16

250

13

290

10

3300

3600

3900

4200

4500

4800

5100

5400

5700

6000

REMARKS

FLIGHT COMMAND RECEIVER TEST

TYPE BCR-3A SERIAL NO. 1016 MOD. CODE ALL DATE 4/3/78

TESTED BY Mares SITE Holloman FLIGHT NO. _____

TEST SUPPLY VOLTAGE = 12.6 VDC ✓

TEST CARRIER HI 9019.5

SWITCHING TIME N/A sec. (4A,B only)

FREQUENCY (MEASURED) LO _____

SIGNAL GENERATOR	MODULATING TONES (NON-SEQUENTIAL)	RF INPUT TO EFFECT CLOSURE (NO DELAY)	TIME DELAY FOR CLOSURE WITH 10 uv INPUT
30% MODULATED HIGH CARRIER FREQUENCY	A & B (CH. 1)	128 uv	10 sec.
	A & C (CH. 2)	129 uv	10 sec.
	B & C (CH. 3)	129 uv	10 sec.
30 % MODULATED LOW CARRIER FREQUENCY	A & B (CH. 1)	uv	
	A & C (CH. 2)	uv	
	B & C (CH. 3)	uv	

SIGNAL GENERATOR	MODULATING TONES (NON-SEQUENTIAL)	CURRENT DRAIN MODULATED CARRIER	CURRENT DRAIN UNMODULATED CARRIER
30% MODULATED HIGH CARRIER FREQ. 10 uv input	A & C (CH. 2)	60 ma	30 ma
30% MODULATED HIGH CARRIER FREQ. 10 uv INPUT	A & C (CH. 2)	ma	ma

AGC UNIT COMPRESSOR - 400 HZ @ 30% MODULATION

RF INPUT	AGC VOLTAGE		DETECTOR OUTPUT VOLTAGE		AUDIO OUTPUT VOLTAGE	
	HIGH FREQ.	LOW FREQ.	HIGH FREQ.	LOW FREQ.	HIGH FREQ.	LOW FREQ.
* 0 uv	-1.35 v	v	-150 mv	mv	0 v	v
1 uv	-1.25 v	v	100 mv	mv	2 v	v
10 uv	-95 v	v	1.1 mv	v	3 v	v
1000 uv	-45 v	v	1.9 v	v	3 v	v

* RF INPUT CABLE DISCONNECTED

COPY TO BE PLACED IN FLIGHT FOLDER
AFGL FORM 0-101 REVISED 10/77

BALLOON SPECIFICATIONS

No./P.O. No. F296517790051

Date: JUNE 10, 1977

MANUFACTURER: WINZEN RESEARCH INC. | 2. PROPOSAL NO.: 13075 | 3. PROJECT NAME: HOLLOMAN AFB

MATERIAL: STRATOFILM® | b) Gauge: Shell: 1.5 mil Cap(s): - | c) Manufacturer: WINZEN RESEARCH

BALLOON DESIGN: Nominal Load: 800 lbs | b) Nominal Altitude: 81,000 ft. MSL at 45° Lat. | c) Rec. suspended Weights: 400 lbs Min; 1200 lbs.

Volume: .516 MCF | e) Type (tailored, taped, etc.): Natural shape, tailored, taped | f) Sigma val: -

No. of gores: 54 | h) Gore Width: Top: 0 Max: 75.22" Base: 2" | i) Gore length: 155.42 ft.

Surface area: 31,668 ft.² | k) Inflated - Height: 91.59 ft. Dia.: 108.08 ft. | l) Mfg. Model No.: SF 108.08-150-NSR-

WEIGHTS: Balloon: 337 lbs. | b) Partial Bubble Weights: 109 lbs. @ 55 F

125 lbs. @ 60 Ft. | 140 lbs. @ 65 Ft. | 154 lbs. @ 70 F

169 lbs. @ 75 Ft. | 183 lbs. @ 80 Ft. | 197 lbs. @ 85 F

LOAD TAPES: Type and Ultimate Tensile Strength: Polyester filaments, 200 lb. dead load test, Lundy r

INFLATION TUBE(S): 1 | b) Material and Gauge: STRATOFILM® 3 mil | c) Location from top: 20 ft.

Diameter: 12.7" ea. | e) Length: 120 ft. | f) Horizontal Location: Gore #1

DUCT(S): 2 | b) Material & Gauge: STRATOFILM® 1.5 mil | c) Area each duct: 10 ft.²

Distance from bottom end fitting: 75 ft. | e) Type of duct: Tailored, attached.

TOP FITTING: Type: Plate, hoop & segmented clamp ring | b) Valve: Provision for one.

Dimensions: 27" D. plate | d) Weight: 17.3 lbs.

BOTTOM FITTING: Type: Banded collar and wedges | b) Dimensions: 6.0" O.D. collar

Weight: 5.9 lbs. | d) Load Attachments: 3/4" eyenut C

SHIPPING INFORMATION: Gross Wt. 573 lbs. | b) Box Dimensions: 48" L. x 48" W. x 32" H. | c) Box Volume: 43 Cu. ft.

OTHER

Destruct device (304843) located 10' from the apex on gores 26 and 53.
 Valve cable assy consists of four #16 wires contained in a StratoFilm® sheath. Sheath
 sealed to gore seam #54 for full gore length.
 A 1' x 5' strip of red poly will be inserted 4' into each duct. On each strip the respec-
 tive duct number and the number of ducts will be noted.

OK

BALLOON PRODUCTION RECORD SUMMARY
AFCRL Specification No. 761013.04
AFCRL Model No. LTV-009

Manufacturer: Winzen Research Inc. Plant Location: Sulphur Springs, Texas

Contract No: F29651-77-90051, Balloon No. 3 of 4, Item No. 002

Material: Stratofilm, 1.5 mil, Vendor's Order No: 1-9520

Load Tape Vendor: Winzen Research Inc., Order No: 1-9520

Number of Gore Reseals: 0

Number of Heat Sealed Patches: 0

Number of Adhesive Patches: 12

Number of Repairs Within Thirty-Five (35) Feet of Apex: 6

COMMENTS AND DEVIATIONS: See Attached Sheets

Gore Layup Started: 5-26-77; Balloon Packaged: JUNE 10, 1977

Balloon Weight: 337 pounds

Partial Weights:

Box Dimensions and Gross Weight:

55	feet	109	✓ pounds	L	48	inches
60	feet	125	✓ pounds	W	48	inches
65	feet	140	✓ pounds	H	32	inches
70	feet	154	✓ pounds	Wt	573	pounds
75	feet	169	✓ pounds			
80	feet	183	✓ pounds			
85	feet	197	✓ pounds			

October 1973

OK

15 March 1977

DEVIATION FROM DRAWINGS OR SPECIFICATIONS

No. 940213

ect No. 1-9520

/I.P.T.O. —

ntity 4 Balloons, S/N 24 thru 27

Description of Deviation

All tape ends shall be rounded.

Other Action Required:

- ☒ None Required
- ☐ Update Drawings/Specifications to Conform.
- ☐ _____

Date _____

t. Coordination Required ☒ Yes ☐ No ..

t. Inspector _____ Date _____

Approval J. K. Nelson Date 3/15/77

15 March 1977

DEVIATION FROM DRAWINGS OR SPECIFICATIONS

No. 303644

ect No. 1-9520

/I.P.T.O. _____

ntity 4 Balloons, S/N 24 thru 27

Description of Deviation

tem 2: Breakaway line is 54" long, 50 lb. test braided
nylon line and Detail 1 and note 13; Dimension is
48" for destruct device, 304843.

er Action Required:

- ☒ None Required
- ☐ Update Drawings/Specifications to Conform.
- ☐ _____

_____ Date _____

t. Coordination Required ☒ Yes ☐ No ..

t. Inspector _____ Date _____

Approval J. R. Nelson Date 3/15/77

Date 15 March 1977

DEVIATION FROM DRAWINGS OR SPECIFICATIONS

No. 940213

ect No. 1-9520

/I.P.T.O. —

ntity 4 Balloons, S/N 24 thru 27

Description of Deviation

DUCT SHALL BE MARKED AT 5 FOOT INCREMENTS (MEASURED ALONG THE DUCT

ACHMENT HEM) BY A LINE THAT EXTENDS FROM THE DUCT ATTACHMENT HEM TO

OPPOSITE EDGE OF THE LAYFLAT DUCT TUBE. THIS LINE SHALL BE NOT LESS

N $\frac{1}{4}$ " WIDE, PERPENDICULAR TO THE LENGTH DIRECTION OF THE DUCT AND SHALL:

MADE WITH A PALE BUT VISIBLE MARKING INK THAT HAS NO DETRIMENTAL EFFECT

THE MATERIAL. MARKINGS SHALL BEGIN 5 FEET BELOW THE LOWER LIP OF THE

T ELLIPTICAL OPENING IN THE BALLOON WALL. EVERY SECOND MARK (10 FEET)

LL BE CLEARLY LABELED USING THE AFOREMENTIONED MARKING INK, E.G., 10, 20, 30, ETC.

Other Action Required:

- ☒ None Required
- ☐ Update Drawings/Specifications to Conform.
- ☐ _____

_____ Date _____

t. Coordination Required ☒ Yes ☐ No

t. Inspector _____ Date _____

Approval JR Nelson Date 18 April 1977

ITEM 002

BALLOON SPECIFICATION SHEET
SPECIFICATION NO. 761013.04
AFGL MODEL NO. LTV-009
(POLYETHYLENE)

1. PERFORMANCE

MINIMUM PAYLOAD: 400 POUNDS. FLOATS AT 90,900 FEET.

PAYLOAD: 800 POUNDS. FLOATS AT 81,100 FEET.

NOMINAL BALLOON WEIGHT: 326 POUNDS.

NOMINAL AIR INTAKE ALTITUDE DIFFERENTIAL: 16,000 FEET.

2. DESIGN AND DIMENSIONS

THEORETICAL MAXIMUM VOLUME: 0.516 MILLION CUBIC FEET.

GORE LENGTH: 155.42 FEET. MAXIMUM DIAMETER: 108.08 FEET.

MINIMUM INFLATED HEIGHT: 91.59 FEET. Σ : 0.24

NUMBER OF GORES: 54. MAXIMUM GORE WIDTH: 75.45 INCHES.

GORE PATTERN: Fully Tailored Apex-Tapered Tangent Base.

GORE HALF WIDTH, BASE: <3 INCHES. APEX: 0 INCHES

RATED LOAD TAPE STRENGTH: 200 POUNDS.

NUMBER OF DUCTS: 2. AREA OF EACH DUCT: 10 SQUARE FEET.

SEMI-MAJOR AXIS OF DUCT ELLIPSE: 2.53 FEET.

SEMI-MINOR AXIS OF DUCT ELLIPSE: 1.26 FEET.

BASE MARK LINE TO ELLIPTICAL OPENING: 75 FEET.

BASE MARK LINE TO DETACHMENT POINT: 5 FEET.

LENGTH OF DETACHED DUCT: 5 FEET.

INFLATION TUBE: 1 EACH, 120 FEET LONG, LOCATED ON

GORE 1 AT A DISTANCE 20 FEET FROM THE APEX MARK LINE

PARTIAL WEIGHT MARKS: 55,60,65,70,75,80 AND 85 FEET FROM APEX MARK LINE.

3. MATERIALS

GORES: 1.5 MILS THICK, PER SPECIFICATION MIL-P-4640 (USAF).
DUCTS: 1.5 MILS THICK, PER SPECIFICATION MIL-P-4640 (USAF).
CABLE SHEATH: 1.5 MILS THICK, PER SPECIFICATION MIL-P-4640 (USAF).
INFLATION TUBE: 3 MILS THICK, 20 INCHES FLAT WIDTH, MADE FROM SAME
GRADE RESIN AS USED FOR BALLOON GOES.
LOAD TAPE FILAMENTS: polyester.
REINFORCED ADHESIVE TAPE: 3M COMPANY 890 TAPE.
UNREINFORCED ADHESIVE TAPE: W.R.I. SSA-10 TAPE.

4. APPLICABLE DRAWINGS

APEX END FITTING TYPE PER DRAWING: B-10105.
BASE END FITTING TYPE PER DRAWING: B-10109 or B-10106.
VALVE COVER PLATE ASSEMBLY PER DRAWING: B-10103.
VALVE CABLE PER DRAWINGS: B-10101-01 AND B-10107.
DESTRUCT DEVICE PER DRAWING: SK 720705.01.

5. APPLICABLE SPECIFICATIONS

<u>TITLE OR SUBJECT</u>	<u>NUMBER OF SOURCE</u>
"GENERAL ENGINEERING SPECIFICATIONS FOR BALLOONS FABRICATED FROM HEATSEALABLE PLASTIC FILMS," OCT 73	LCB-01
"BALLOON PACKAGING AND BOXING," OCT 73	LCB-02
"PRODUCTION TENSILE TEST METHODS FOR FIN TYPE BALLOON GORE HEAT SEALS," JULY 1974	LCB-03
TENSILE TESTING OF BALLOON LOAD TAPES	CONTRACTOR
QUALITY CONTROL	MIL-Q-9858A

6. RECORDS (1 SET TO CONTRACTING OFFICER, 1 SET TO BE PACKED IN BALLOON BOX)

"BALLOON PRODUCTION RECORD SUMMARY," OCT 73

"BALLOON SPECIFICATION SHEET"

"PAYLOAD ALTITUDE CURVE"

7. MISCELLANEOUS

BALLOON FOLDING SHALL BE IN ACCORDANCE WITH FIGURE 2, LCB-02

UNLESS SPECIFIC EXCEPTION IS REQUESTED AND APPROVED.

PRIOR TO SEALING BALLOON IN THE RED POLYETHYLENE WRAPPER, BALLOON SHALL BE CHECKED FOR TWISTS. TWISTS, IF FOUND, SHALL BE REMOVED USING SOUND HANDLING PRACTICES.

DESTRUCT DEVICE BUTTONS SHALL BE FABRICATED FROM ALUMINUM. DESTRUCT DEVICE SCREW SHALL BE MADE FROM METAL COMPATIBLE WITH THE BUTTON MATERIAL OVER THE COMPLETE RANGE OF OPERATING TEMPERATURES. THE SCREW STRENGTH SHALL BE CONSISTENT WITH THE DESTRUCT LINE STRENGTH.

A RADAR REFLECTIVE FILAMENT (LUNDY OR EQUIVALENT, SEE LCB-01 SEC. 8) SHALL BE INTEGRALLY INCLUDED IN EACH LOAD TAPE FOR BALLOONS SMALLER THAN 800,000 CUBIC FEET. FOR BALLOONS LARGER THAN 800,000 CUBIC FEET, SUCH RADAR REFLECTIVE ELEMENTS SHALL BE LOCATED IN EVERY n TH LOAD TAPE (APPROXIMATELY EVENLY DISTRIBUTED) ACCORDING TO THE FOLLOWING FORMULA $(M \cdot S) / n \geq 4000$ WHERE M IS THE NUMBER OF GORES, S IS THE GORE LENGTH IN FEET AND n IS THE LARGEST INTEGER SOLUTION.

APEX FITTING SHALL ACCOMMODATE 1 EACH EV-13 VALVE(S).

EACH DUCT SHALL BE MARKED AT 5 FOOT INCREMENTS (MEASURED ALONG THE DUCT ATTACHMENT HEM) BY A LINE THAT EXTENDS FROM THE DUCT ATTACHMENT HEM TO THE OPPOSITE EDGE OF THE LAYFLAT DUCT TUBE. THIS LINE SHALL BE NOT LESS THAN $\frac{1}{4}$ " WIDE, PERPENDICULAR TO THE LENGTH DIRECTION OF THE DUCT AND SHALL BE MADE WITH A PALE BUT VISIBLE MARKING INK THAT HAS NO DETRIMENTAL EFFECT ON THE MATERIAL. MARKINGS SHALL BEGIN 5 FEET BELOW THE LOWER LIP OF THE DUCT ELLIPTICAL OPENING IN THE BALLOON WALL. EVERY SECOND MARK (10 FEET) SHALL BE CLEARLY LABELED USING THE AFOREMENTIONED MARKING INK, E.G., 10, 20, 30, ETC.

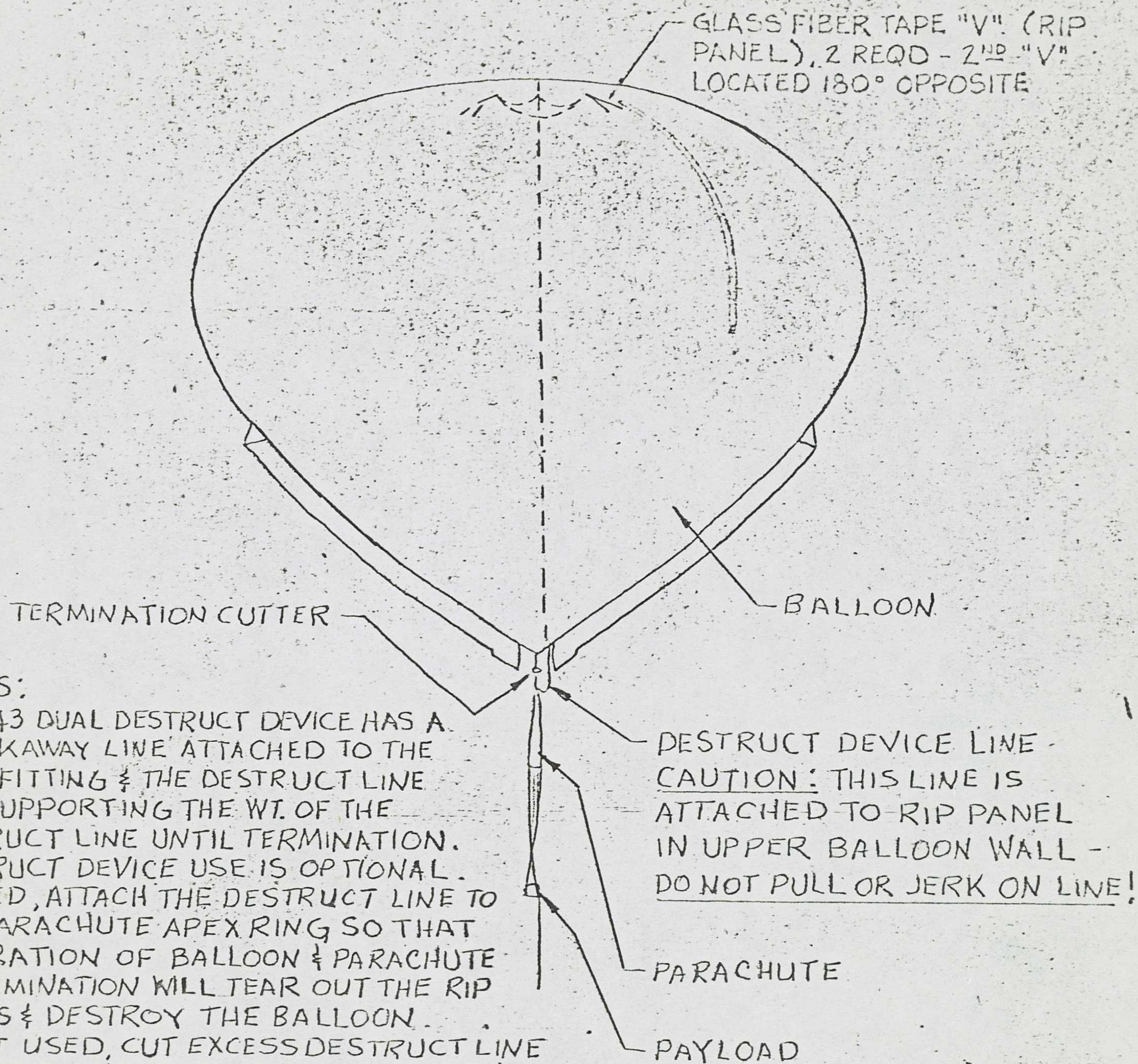
8. COMPONENT LOCATIONS

DUCT LOCATIONS - CORE SEAMS 14 & 41 :

DESTRUCT LOCATIONS, GORES 26 & 53

INFLATION TUBE LOCATIONS, GORES 1

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL



NOTES:

304843 DUAL DESTRUCT DEVICE HAS A BREAKAWAY LINE ATTACHED TO THE APEX FITTING & THE DESTRUCT LINE FOR SUPPORTING THE WT. OF THE DESTRUCT LINE UNTIL TERMINATION. DESTRUCT DEVICE USE IS OPTIONAL. IF USED, ATTACH THE DESTRUCT LINE TO THE PARACHUTE APEX RING SO THAT SEPARATION OF BALLOON & PARACHUTE AT TERMINATION WILL TEAR OUT THE RIP PANELS & DESTROY THE BALLOON. IF NOT USED, CUT EXCESS DESTRUCT LINE AT EXIT POINT THRU BALLOON WALL & PUSH BALANCE OF ATTACHED LINE INTO BALLOON OVER EXIT HOLE WITH A 2" X 2" PC. OF WRI SA-10 TAPE OR EQUAL.

LESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON			DR 19 June 74	TITLE TYPICAL BALLOON & FLIGHT TRAIN SHOWING 304843 WEBBED DUAL DESTRUCT DEVICE SYSTEM	WINZEN RESEARCH INC. 401 W. 84th St Minneapolis, Minn. 55420	
POSITIONS	DECIMALS	ANGLES	CH 6-19-74			
	+	+	APP 6-19-74			
CH. FINISH				SCALE NONE		
SERIAL						
SPECS.				DRG. NO.		

1-4520

WRI BALLOON PERFORMANCE

Balloon Model No. SF102.02-150-NSR-02 Volume: 0.516 MCF

Serial No. 26 Balloons 374

LAUNCH OPERATION

Date: _____

Site: _____

Ground Wind: _____

Launched By: _____

Remarks:

BALLOON PERFORMANCE

Suspended Payload: _____ Lbs.

Gross Inflation: _____ Lbs.

Free Lift: _____ % (or) _____ Lbs.

Float Altitude(s): _____ Feet

Duration of Flight: _____

Remarks:

PLEASE FILL IN DATA AND RETURN TO WINZEN RESEARCH INC. IN
ATTACHED SELF-ADDRESSED ENVELOPE.

WINZEN RESEARCH INC

BALLOON PERFORMANCE @ LATITUDE 45°

BALLOON MODEL SF-108.08-150-NS-

BALLOON DESIGN VOLUME - .516 MM CU.FT.

ISSUE NO	NOMINAL BALLOON WT	RECOMMENDED MAXIMUM PAYLOAD	RECOMMENDED MINIMUM PAYLOAD
-01	326 LBS.	1200 LBS.	400 LBS.
-02	326 LBS.	"	"

PRESSURE ALTITUDE - FT X 10⁻³

72
70
88
86
84
82
80
78
76
74

800 900 1000 1100 1200 1300 1400 1500

GROSS AIRBORNE WT - LBS
(INCLUDES BALLOON WT)

100956R

10x10 TO THE CM.

CONTROL CENTER LOG

K-60 snatched near RSW

Date 13 April 1978 Flight No H78-13/H-129 Page 1 Of

<u>TIME (MST)</u>	<u>REMARKS</u>
0300	Balloon Control Center open; Sgt. Lemieux on duty
0330	Command checks started
0342	Command checks complete
0439	Vehicles cleared to 04 by Tower: T.R.
0448	All vehicles on RNWY 04
0539	Cleared to start inflation
0542	Inflation started
0553	Inflation complete
0555	Cleared to launch in 5 min: T.R.
0603	Launch
0614	Crew leaving RNWY
0617	Clear of RNWYs & Taxiways
0640	Altitude 43 Kft
0700	Altitude 63.2 Kft - FAA says no squawk from transponder
0715	Altitude 77.2 Kft
0721	Float altitude 80.4 Kft, Sector 89 has lost contact (Radar)
0724	Samplers on
0749	17.9; 69.5; HMN THEOD 37.6
0800	Wofford on duty
0805	FH 13 halfway up to Cloudcroft on way to Pinion
0810	Signal intermittent - 40 meg
0824	Range has us not scheduled to use our 242 Beacon. We scheduled it.
0830	Range ok's our 242, 40 meg ok
0847	Chase plane here now
0915	FH60 Taxiing - Airborne; Primary HF Freq 89.64; FH60 5/5 on 89.64
0935	FH 13 4 mi from Pinion; FH 60 in contact w/FH13
1025	FH 60 recovered the valve from 4-12-78 flight; no balloon; the rancher picked it up. FH13 & FH60 inroute to Roswell; K60 on RNWY Kirtland will be airborne shortly s/s 8964
1030	K60 Airborne
1037	78.1 Kft; FH60 on ground, Roswell will stay down until K60 spots the balloon down
1050	RAPCON has the transponder intermittent ABQ center is vectoring K60 to the balloon
1106	K60 has transponder weak; they are trying to get on top of clouds
1120	B60 76.7 Kft
1121	K60 27 Kft have visual
1124	K60 29 Kft and level
1125	Samplers of 75.9 Kft
1127	Valve down 4.5 min
1130	76 Kft B-34
1131	Valve closed; 75 Kft
1135	73.3 Kft B-34; B-60 not solid now
1152	69.1 Kft

<u>TIME (MST)</u>	<u>REMARKS</u>
1215	GMD lost track 65.4K; expect to cut down 1245-1300; FH60 will get up and track the balloon down
1220	64.1 Kft
1221	63.8 Kft
1230	61.7 Kft
1243	FH60 and K60 good command
1245	Expect to cut at 1300
1246	FH13 at Roswell
1249	K60 training the balloon at 285°/50 mi Roswell
1256	Change balloon cut to 1310
1300	K60 balloon position 295°/45 mi Roswell VOR; commands will be we will blow ballast, latch valve, and K60 will terminate
1305	K60 balloon position 10 NE Capitan Peak
1307	Blow ballast
1309	Latch valve
1310	T-30 sec balloon cut; 37 cut 3 good chutes, balloon destruct
1312	44.8 Kft
1314	FH13 going to Riverside
1316	34.4 Kft
1318	29.5 Kft
1321	25.3 visual contact balloon and payload
1324	19.4 Kft; <u>K60 circling payload now</u> ; FH60 at 8 Kft, no visual on balloon
1325	16.9 Kft payload; K60 at 16.5 Kft
1326	Balloon down via FH60 335°/22.8 mi Roswell VOR
1327	Payload 13.1 Kft; hot inbound
1328	11.7 Kft intrail
1333	Complete mission except for freq, notified range
1341	1st chute on board
1408	Payload on board
1424	FH13 in the area with a rancher; he will take FH13 into the balloon; FH60 has no need of control center; FH13 will RON Hobbs FH60 will return HAFB approximately 1730
1451	K60 unloaded payload and leaving for Albuquerque
1500	Range control complete

82K

B-34

SECTION 1. CHECK FOR CHECK LIST AND CALIBRATION

FORM NO. 018 DATE CALIBRATED 28 MAR 78

Clean and polish relay contacts() Clean and polish plug arm() Clean
: pin arm contacts()
Visually inspect bellows assembly; Leakage() Mounting() Wiring()
Connect antenna() Apply power using Alt. Tx. Calibration Cable() Check
Crystal Freq. KC() Tune Tx for 5 Watts output() Check Freq.
shift using 6V battery tap() Check Blower Code using Sampler Voltage
battery tap() Blower Code is ()

APPROX ALT.	APPROX MB	ACTUAL MB	ACTUAL ALT.	WORSE CODE	APPROX ALT.	APPROX MB	ACTUAL MB	ACTUAL ALT.	WORSE CODE
87K				NKSI	90K	17.610			SMI
10K	696.9			PSI	95K	13.996			NEE
20K	466.0			RII	REAR-6 TRANSMITTER ONLY				
30K	301.5			HAI	100K	11.143			
40K	188.2			OIE	105K	8.885			
50K	116.6			LUI	110K	7.104			
60K	72.32			UNI	115K	5.703			
65K	56.95			FMII	120K	4.597			
70K	40.82			EMI	125K	3.720			
75K	35.427			ZDI	130K	3.021			
80K	28.315			BTI	135K	2.462			
85K	22.102			HTI	140K	2.013			

Recheck Ground Code upon returning transmitter to ground level()
Prepare Altitude Calibration Graph in two (2) copies()
Take ground seam of transmitter case IMMEDIATELY after calibration()

REMARKS:
NMTI - 6.3.2
TMTI - 6.3.4

KSI	4.1	PMI	10.3	RDI	16.9	YVI	27.3	XVI	36.9
KSE	4.2	PMF	10.9	RDE	17.1	YVE	27.7	XVE	37.0
KIE	4.4	PUE	11.1	RRE	17.2	YDE	27.8	XME	37.2
KII	4.5	PUI	11.2	RRI	17.4	YDI	28.0	XHI	37.4
KEI	4.6	PAI	11.4	RSI	17.5	YMI	28.2	XDI	37.6
KEE	4.7	PAE	11.6	RSE	17.7	YME	28.3	XDE	37.8
VEE	4.9	PTC	11.7	RRIE	17.8	YUE	28.5	XNE	38.0
VEI	5.0	PTI	11.9	RRII	17.9	YUI	28.7	XHI	38.1
VII	5.1	CTI	12.0	REI	17.9	YAI	28.8	XSI	38.3
VIE	5.2	CTE	12.2	REE	17.9	YAE	28.9	XSE	38.5
VSE	5.4	GAE	12.3	NEE	17.9	YTE	29.0	XIE	38.7
VSI	5.5	GAI	12.5	NEI	17.9	ITI	29.2	XII	38.9
VMI	5.6	GUI	12.7	NEI	17.9	ITI	29.3	XEI	39.1
VNE	5.7	GUE	12.8	NEI	17.9	ITI	29.5	XEE	39.3
VDE	5.9	GNE	13.0	NEI	17.9	ITE	29.7	XEE	39.3
VDI	6.0	GNI	13.1	NEI	17.9	ITE	29.8	XEE	39.4
VMI	6.1	GDI	13.3	NEI	17.9	ITE	29.9	XEE	39.6
VNE	6.2	GDE	13.4	NEI	17.9	ITE	30.0	XEE	39.8
VUE	6.4	GUE	13.6	NEI	17.9	ITE	30.2	XEE	40.0
VUI	6.5	GNI	13.7	NEI	17.9	ITE	30.4	XEE	40.2
VAI	6.6	GSI	13.9	NEI	17.9	ITE	30.6	XEE	40.4
VAE	6.7	GSE	14.1	NEI	17.9	ITE	30.7	XEE	40.7
VTE	6.9	GIE	14.2	NEI	17.9	ITE	30.9	XEE	40.9
VTI	7.0	GII	14.4	NEI	17.9	ITE	31.1	XEE	41.1
NTI	7.1	GFI	14.5	NEI	17.9	ITE	31.3	XEE	41.3
NTE	7.2	GEE	14.7	NEI	17.9	ITE	31.5	XEE	41.5
NAC	7.4	FEE	14.8	NEI	17.9	ITE	31.7	XEE	41.7
NAI	7.5	FBI	15.0	NEI	17.9	ITE	31.9	XEE	42.0
NUI	7.6	FII	15.2	NEI	17.9	ITE	32.0	XEE	42.2
NUE	7.7	FIE	15.3	NEI	17.9	ITE	32.2	XEE	42.4
NNE	7.9	FSE	15.5	NEI	17.9	ITE	32.4	XEE	42.6
NMI	8.0	FSI	15.6	NEI	17.9	ITE	32.6	XEE	42.8
NDI	8.1	FNI	15.8	NEI	17.9	ITE	32.8	XEE	43.0
NDE	8.2	FNE	15.9	NEI	17.9	ITE	33.0	XEE	43.3
NNE	8.4	FDE	16.1	NEI	17.9	ITE	33.1	XEE	43.5
NMI	8.5	FDI	16.2	NEI	17.9	ITE	33.3	XEE	43.7
NSE	8.6	FMI	16.4	NEI	17.9	ITE	33.5	XEE	43.9
NSE	8.7	FNE	16.6	NEI	17.9	ITE	33.7	XEE	44.1
NIE	8.9	FUE	16.7	NEI	17.9	ITE	33.9	XEE	44.3
NII	9.0	FUI	16.9	NEI	17.9	ITE	34.1	XEE	44.5
NFI	9.1	FAI	17.0	NEI	17.9	ITE	34.3	XEE	44.8
NFE	9.2	FAE	17.2	NEI	17.9	ITE	34.4	XEE	45.0
NTE	9.3	FTI	17.3	NEI	17.9	ITE	34.6	XEE	45.2
NTE	9.4	FTI	17.5	NEI	17.9	ITE	34.8	XEE	45.4
NTE	9.5	RTI	17.7	NEI	17.9	ITE	35.0	XEE	45.7
NTE	9.6	RTE	17.8	NEI	17.9	ITE	35.2	XEE	45.9
NTE	9.7	RAE	18.0	NEI	17.9	ITE	35.4	XEE	46.1
NTE	9.8	RAI	18.1	NEI	17.9	ITE	35.6	XEE	46.3
NTE	9.9	RUI	18.3	NEI	17.9	ITE	35.7	XEE	46.5
NTE	10.0	RUE	18.4	NEI	17.9	ITE	35.9	XEE	46.7
NTE	10.1	RNE	18.5	NEI	17.9	ITE	36.1	XEE	47.0
NTE	10.2	RMI	18.7	NEI	17.9	ITE	36.3	XEE	47.2
NTE	10.3			NEI	17.9	ITE	36.5	XEE	47.4
NTE	10.4			NEI	17.9	ITE	36.7	XEE	47.6

B-34 SN 18

CODE N

CALIBRATED

4/ 4/ 73

LII 47.6
 LIE 47.9
 LSE 48.0
 LSI 48.3
 LTI 48.5
 LNE 48.7
 LDE 48.9
 LDI 49.1
 LMI 49.3
 LME 49.6
 LUE 49.8
 LUI 50.0
 LAI 50.1
 LAE 50.2
 LTE 50.3
 LTI 50.5
 DTI 50.6
 DTE 50.7
 DAE 50.8
 DAI 50.9
 DUI 51.0
 DUE 51.1
 DME 51.2
 DMI 51.4
 DDI 51.5
 DDE 51.6
 DNE 51.7
 DNI 51.8
 DSI 51.9
 DSE 52.0
 DIE 52.2
 DII 52.3
 DEI 52.4
 DEE 52.5
 EEE 52.6
 EEI 52.7
 ETI 52.8
 EIE 53.0
 ESE 53.1
 ESI 53.2
 ENI 53.3
 ENE 53.4
 EDE 53.5
 EDI 53.6
 EMI 53.7
 EME 53.9
 EUE 54.0
 EUI 54.1
 EAI 54.2
 EAE 54.3
 ETE 54.4
 ETI 54.5

TTI 54.7
 TTE 54.8
 TAE 54.9
 TAI 55.0
 TUI 55.1
 TUE 55.2
 THE 55.3
 THI 55.5
 TBI 55.6
 TDE 55.7
 THE 55.8
 THI 55.9
 TSI 56.0
 TSE 56.1
 TIE 56.2
 TTI 56.4
 TEI 56.5
 TEE 56.6
 AEE 56.7
 AEI 56.8
 AII 56.9
 AIE 57.0
 ASE 57.2
 ASI 57.3
 AHI 57.4
 AHE 57.5
 ADE 57.6
 ADI 57.7
 AHI 57.8
 AHE 58.0
 AUE 58.1
 AUI 58.2
 AAI 58.3
 AAE 58.4
 ATE 58.5
 ATI 58.6
 UTI 58.7
 UTE 58.9
 UAE 59.0
 UAI 59.1
 UUI 59.2
 UUE 59.3
 UME 59.4
 UMI 59.5
 UDI 59.7
 UDE 59.8
 UME 59.9
 UUI 60.0

B-34 SN 18

CODE N

CALIBRATED

UHI 60.0
 USI 60.1
 USE 60.3
 UIE 60.4
 UJI 60.5
 UEI 60.7
 UEE 60.8
 UEE 60.9
 UHI 61.1
 UJI 61.2
 UIE 61.3
 USE 61.5
 USI 61.6
 UMI 61.7
 UME 61.9
 UDE 62.0
 UDI 62.1
 UMI 62.3
 UME 62.4
 UUE 62.5
 UUI 62.7
 UAI 62.8
 UAE 62.9
 UTE 63.1
 UTI 63.2

D-36 SM 18

CODE T

CALIBRATED 4/ 4/ 78

D-34 SM 18

CODE T

CALIBRATED 4/ 4/ 78

MTI	65.0
NIE	64.0
NSE	64.8
NSI	64.7
NHI	64.6
NHE	64.5
NDE	64.4
NDI	64.3
NHI	64.1
NHE	64.0
NUE	63.9
MUI	63.8
HAI	63.7
MAE	63.6
HTE	63.5
HTI	63.4

NEE	95.0	ITE	85.3	XIE	73.3	LHE	73.0	THE	63.0
NEI	94.3	ITI	85.2	XJI	73.2	LUI	72.9	TSI	62.5
NJI	94.6	HTI	85.0	XLI	73.1	LAI	72.8	TSI	62.4
NIE	94.4	HTE	84.9	XEE	73.0	LAE	72.8	TSL	62.4
NSE	94.2	PAE	84.7	OLE	77.9	LTE	72.7	TIE	62.3
NSI	94.0	PAI	84.6	OFI	77.8	LTi	72.6	TII	62.2
NHI	93.8	HUI	84.4	OII	77.7	DTI	72.5	TEI	62.1
NHF	93.5	HUE	84.3	OIE	77.6	DTE	72.4	TEE	62.0
NDE	93.4	HME	84.1	OSE	77.4	DAE	72.3	ALE	62.0
NDI	93.2	HMI	84.0	OSI	77.3	DAI	72.2	AEI	67.9
NMI	93.0	PDI	83.9	OHl	77.2	DUI	72.1	AIi	67.8
NME	92.3	HDE	83.7	ONE	77.1	DUL	72.1	ATe	67.7
NUE	92.6	HNE	83.6	ODE	77.0	DME	72.0	ASE	67.7
NUI	92.4	HNI	83.4	ODI	76.9	DNI	71.9	ASI	67.6
NAI	92.2	HSI	83.3	OHl	76.8	DDI	71.8	ANI	67.5
NAE	92.0	HSE	83.1	ONE	76.7	DDE	71.7	ANE	67.4
NTE	91.3	HJE	83.0	QUE	76.6	DNE	71.6	ADE	67.3
NTI	91.6	HII	82.9	QUI	76.4	DNI	71.5	ADI	67.3
STI	91.4	HEI	82.7	CAI	76.3	DSI	71.4	AMI	67.2
STE	91.2	HFE	82.6	CAE	76.2	DSE	71.3	AME	67.1
SAE	91.0	REE	82.4	OTE	76.1	DIE	71.3	AUE	67.0
SAI	90.3	REI	82.3	OTI	76.0	DII	71.2	AUI	67.0
SUI	90.6	RII	82.1	ZTI	75.9	DEI	71.1	AAI	66.9
SUE	90.4	RIE	82.0	ZTE	75.8	DEE	71.0	AAE	66.8
SNE	90.2	BSE	81.9	ZAE	75.7	EEE	70.9	ATE	66.7
SHI	90.0	BSI	81.7	ZAI	75.6	EEl	70.8	ATI	66.6
SDI	89.3	BHI	81.6	ZUI	75.4	EII	70.7	UTI	66.6
SDE	89.7	BNE	81.4	ZUE	75.3	EIE	70.6	UTE	66.5
SNE	89.5	BDE	81.3	ZHE	75.2	ESE	70.5	UAE	66.4
SNI	89.3	BDI	81.1	ZHI	75.1	ESI	70.4	UAI	66.3
SSI	89.1	BHI	81.0	ZDI	75.0	ENI	70.4	UUI	66.3
SSE	89.0	BME	80.9	ZDE	74.9	ENE	70.3	UUE	66.2
SIE	88.3	BUE	80.7	ZNE	74.8	EDE	70.2	UNE	66.1
SII	88.6	BUI	80.6	ZNI	74.7	EDI	70.1	UHI	66.0
SEI	88.4	BAI	80.4	ZSI	74.6	ENI	70.0	UDI	65.9
SEE	88.3	BAE	80.3	ZSE	74.6	ENE	69.9	UDE	65.8
IFE	88.1	BTE	80.1	ZIE	74.5	EUE	69.8	UNE	65.8
IEI	87.9	DTI	80.0	ZII	74.4	EUI	69.8	UNI	65.7
III	87.3	ATI	79.9	ZEI	74.3	EAI	69.7	USI	65.6
IIE	87.6	ATE	79.3	ZEE	74.2	EAE	69.6	USE	65.5
ISE	87.4	XAE	79.7	LEE	74.1	ETE	69.5	HIE	65.5
ISI	87.2	XAI	79.6	LEI	74.0	ETI	69.5	UII	65.4
ILI	87.1	XUI	79.4	LJI	73.9	TTI	69.4	HEI	65.3
INE	86.3	XUE	79.3	LIE	73.8	TTE	69.3	UEF	65.2
IDE	86.7	XME	79.2	LSE	73.8	TAE	69.2	NEE	65.2
IDI	86.6	XMI	79.1	LSI	73.7	TAI	69.1	HEI	65.1
IMI	86.4	XDI	79.0	LNI	73.6	TUI	69.1	MII	65.0
IME	86.2	XDE	78.9	LNE	73.5	TUE	69.0	HIE	64.9
IHE	86.0	XNE	78.8	LDE	73.4	TNE	68.9	HSE	64.8
IUI	85.3	XOI	78.7	LDI	73.3	TNI	68.8	HAI	64.7
IAI	85.7	XSI	78.6	LMI	73.2	TDI	68.7	HNI	64.6
IAE	85.5	XSE	78.4	LME	73.1	TDE	68.7	HNE	64.5

B-60 Calibration Sheet

Serial # 26Date Calibrated 5/26/77

Alt(Kft)	Msec	Alt(Kft)	Msec	Alt(Kft)	Msec	Alt(Kft)	Msec
60.0	134.0	65.0	167.0	70.0	211.0	75.0	266.9
60.1	143.5	65.1	167.0	70.1	212.0	75.1	268.3
60.2	152.0	65.2	167.1	70.2	213.1	75.2	269.6
60.3	159.4	65.3	167.3	70.3	214.2	75.3	270.9
60.4	165.9	65.4	167.5	70.4	215.3	75.4	272.3
60.5	171.6	65.5	167.8	70.5	216.3	75.5	273.5
60.6	176.5	65.6	168.1	70.6	217.4	75.6	275.0
60.7	180.7	65.7	168.5	70.7	218.5	75.7	276.4
60.8	184.2	65.8	169.0	70.8	219.5	75.8	277.8
60.9	187.1	65.9	169.5	70.9	220.6	75.9	279.2
61.0	189.5	66.0	170.1	71.0	221.6	76.0	280.6
61.1	191.3	66.1	170.7	71.1	222.7	76.1	282.0
61.2	192.8	66.2	171.4	71.2	223.7	76.2	283.5
61.3	193.8	66.3	172.1	71.3	224.8	76.3	284.9
61.4	194.5	66.4	172.9	71.4	225.8	76.4	286.4
61.5	194.8	66.5	173.7	71.5	226.9	76.5	287.8
61.6	194.9	66.6	174.5	71.6	227.9	76.6	289.3
61.7	194.7	66.7	175.3	71.7	229.0	76.7	290.8
61.8	194.3	66.8	176.2	71.8	230.0	76.8	292.3
61.9	193.8	66.9	177.2	71.9	231.1	76.9	293.8
62.0	193.0	67.0	178.1	72.0	232.1	77.0	295.3
62.1	192.1	67.1	179.1	72.1	233.2	77.1	296.8
62.2	191.1	67.2	180.1	72.2	234.3	77.2	298.4
62.3	190.0	67.3	181.1	72.3	235.3	77.3	299.9
62.4	188.9	67.4	182.1	72.4	236.4	77.4	301.4
62.5	187.6	67.5	183.2	72.5	237.5	77.5	303.0
62.6	186.4	67.6	184.2	72.6	238.5	77.6	304.5
62.7	185.1	67.7	185.3	72.7	239.6	77.7	306.1
62.8	183.8	67.8	186.4	72.8	240.7	77.8	307.7
62.9	182.5	67.9	187.5	72.9	241.8	77.9	309.2
63.0	181.2	68.0	188.6	73.0	242.9	78.0	310.8
63.1	179.9	68.1	189.7	73.1	244.0	78.1	312.4
63.2	178.7	68.2	190.8	73.2	245.1	78.2	314.0
63.3	177.5	68.3	192.0	73.3	246.3	78.3	315.6
63.4	176.3	68.4	193.1	73.4	247.4	78.4	317.2
63.5	175.2	68.5	194.2	73.5	248.6	78.5	318.8
63.6	174.2	68.6	195.3	73.6	249.7	78.6	320.4
63.7	173.2	68.7	196.5	73.7	250.9	78.7	322.0
63.8	172.3	68.8	197.6	73.8	252.0	78.8	323.6
63.9	171.4	68.9	198.7	73.9	253.2	78.9	325.2
64.0	170.7	69.0	199.9	74.0	254.4	79.0	326.8
64.1	169.9	69.1	201.0	74.1	255.6	79.1	328.4
64.2	169.3	69.2	202.1	74.2	256.8	79.2	330.0
64.3	168.8	69.3	203.2	74.3	258.1	79.3	331.6
64.4	168.3	69.4	204.3	74.4	259.3	79.4	333.2
64.5	167.9	69.5	205.5	74.5	260.5	79.5	334.9
64.6	167.5	69.6	206.6	74.6	261.8	79.6	336.5
64.7	167.3	69.7	207.7	74.7	263.1	79.7	338.1
64.8	167.1	69.8	208.8	74.8	264.4	79.8	339.7
64.9	167.0	69.9	209.9	74.9	265.6	79.9	341.3

B-60 Calibration Sheet

Serial # 26Date Calibrated 5/25/77

Alt(Kft)	Msec	Alt(Kft)	Msec	Alt(Kft)	Msec	Alt(Kft)	Msec
80.0	342.9	85.0	423.9	90.0	527.9	95.0	669.9
80.1	344.6	85.1	425.7	90.1	530.5	95.1	672.9
80.2	346.2	85.2	427.4	90.2	533.0	95.2	675.9
80.3	347.8	85.3	429.1	90.3	535.6	95.3	678.9
80.4	349.4	85.4	430.9	90.4	538.2	95.4	681.9
80.5	351.0	85.5	432.6	90.5	540.8	95.5	684.9
80.6	352.6	85.6	434.4	90.6	543.4	95.6	687.9
80.7	354.2	85.7	436.2	90.7	546.1	95.7	690.8
80.8	355.9	85.8	438.0	90.8	548.7	95.8	693.8
80.9	357.5	85.9	439.8	90.9	551.4	95.9	696.8
81.0	359.1	86.0	441.6	91.0	554.1	96.0	699.8
81.1	360.7	86.1	443.4	91.1	556.8	96.1	702.8
81.2	362.3	86.2	445.3	91.2	559.5	96.2	705.7
81.3	363.9	86.3	447.1	91.3	562.3	96.3	708.7
81.4	365.5	86.4	449.0	91.4	565.0	96.4	711.7
81.5	367.1	86.5	450.9	91.5	567.8	96.5	714.7
81.6	368.7	86.6	452.8	91.6	570.5	96.6	717.6
81.7	370.3	86.7	454.7	91.7	573.3	96.7	720.6
81.8	371.9	86.8	456.6	91.8	576.1	96.8	723.6
81.9	373.5	86.9	458.6	91.9	578.9	96.9	726.5
82.0	375.1	87.0	460.5	92.0	581.8	97.0	729.5
82.1	376.7	87.1	462.5	92.1	584.6	97.1	732.5
82.2	378.3	87.2	464.5	92.2	587.5	97.2	735.4
82.3	379.9	87.3	466.5	92.3	590.3	97.3	738.4
82.4	381.5	87.4	468.6	92.4	593.2	97.4	741.3
82.5	383.1	87.5	470.6	92.5	596.1	97.5	744.3
82.6	384.7	87.6	472.7	92.6	599.0	97.6	747.3
82.7	386.3	87.7	474.8	92.7	601.8	97.7	750.2
82.8	387.9	87.8	476.9	92.8	604.8	97.8	753.2
82.9	389.5	87.9	479.0	92.9	607.7	97.9	756.2
83.0	391.1	88.0	481.1	93.0	610.6	98.0	759.2
83.1	392.7	88.1	483.3	93.1	613.5	98.1	762.1
83.2	394.3	88.2	485.5	93.2	616.4	98.2	765.1
83.3	395.9	88.3	487.7	93.3	619.4	98.3	768.1
83.4	397.5	88.4	489.9	93.4	622.3	98.4	771.1
83.5	399.1	88.5	492.1	93.5	625.3	98.5	774.1
83.6	400.7	88.6	494.4	93.6	628.2	98.6	777.1
83.7	402.4	88.7	496.7	93.7	631.2	98.7	780.1
83.8	404.0	88.8	498.9	93.8	634.2	98.8	783.1
83.9	405.6	88.9	501.3	93.9	637.1	98.9	786.1
84.0	407.2	89.0	503.6	94.0	640.1	99.0	789.1
84.1	408.9	89.1	505.9	94.1	643.1	99.1	792.1
84.2	410.5	89.2	508.3	94.2	646.1	99.2	795.2
84.3	412.2	89.3	510.7	94.3	649.1	99.3	798.2
84.4	413.8	89.4	513.1	94.4	652.0	99.4	801.3
84.5	415.5	89.5	515.5	94.5	655.0	99.5	804.4
84.6	417.2	89.6	518.0	94.6	658.0	99.6	807.5
84.7	418.9	89.7	520.4	94.7	661.0	99.7	810.5
84.8	420.5	89.8	522.9	94.8	664.0	99.8	813.7
84.9	422.2	89.9	525.4	94.9	667.0	99.9	816.8

B-60 Calibration Sheet

Serial # 26

Date Calibrated 5/26/77

Alt(Kft)	Msec	Alt(Kft)	Msec	Alt(Kft)	Msec	Alt(Kft)	Msec
00.0	819.9	105.0	1013.9	110.0	1289.9	115.0	1577.9
00.1	823.1	105.1	1018.8	110.1	1295.7	115.1	1584.9
00.2	826.3	105.2	1023.7	110.2	1301.3	115.2	1591.9
00.3	829.5	105.3	1028.7	110.3	1307.0	115.3	1599.0
00.4	832.7	105.4	1033.6	110.4	1312.7	115.4	1606.3
00.5	835.9	105.5	1038.7	110.5	1318.3	115.5	1613.6
00.6	839.2	105.6	1043.7	110.6	1324.0	115.6	1621.1
00.7	842.5	105.7	1048.8	110.7	1329.6	115.7	1628.3
00.8	845.7	105.8	1054.0	110.8	1335.2	115.8	1636.6
00.9	849.1	105.9	1059.2	110.9	1340.8	115.9	1644.5
01.0	852.4	106.0	1064.4	111.0	1346.4	116.0	1652.5
01.1	855.8	106.1	1069.6	111.1	1352.0	116.1	1660.7
01.2	859.2	106.2	1074.9	111.2	1357.5	116.2	1669.0
01.3	862.6	106.3	1080.2	111.3	1363.1	116.3	1677.5
01.4	866.0	106.4	1085.6	111.4	1368.6	116.4	1686.1
01.5	869.5	106.5	1091.0	111.5	1374.1	116.5	1694.8
01.6	873.0	106.6	1096.4	111.6	1379.6	116.6	1703.7
01.7	876.6	106.7	1101.8	111.7	1385.1	116.7	1712.7
01.8	880.1	106.8	1107.3	111.8	1390.6	116.8	1721.8
01.9	883.7	106.9	1112.8	111.9	1396.1	116.9	1731.1
02.0	887.3	107.0	1118.3	112.0	1401.6	117.0	1740.4
02.1	891.0	107.1	1123.9	112.1	1407.1	117.1	1749.9
02.2	894.7	107.2	1129.4	112.2	1412.6	117.2	1759.5
02.3	898.4	107.3	1135.0	112.3	1418.0	117.3	1769.2
02.4	902.2	107.4	1140.7	112.4	1423.5	117.4	1779.0
02.5	906.0	107.5	1146.3	112.5	1429.0	117.5	1788.8
02.6	909.8	107.6	1152.0	112.6	1434.5	117.6	1798.7
02.7	913.7	107.7	1157.6	112.7	1440.0	117.7	1808.7
02.8	917.6	107.8	1163.3	112.8	1445.5	117.8	1818.7
02.9	921.6	107.9	1169.0	112.9	1451.1	117.9	1828.7
03.0	925.5	108.0	1174.8	113.0	1456.6	118.0	1838.6
03.1	929.6	108.1	1180.5	113.1	1462.2	118.1	1848.6
03.2	933.6	108.2	1186.2	113.2	1467.8	118.2	1858.5
03.3	937.7	108.3	1192.0	113.3	1473.5	118.3	1868.2
03.4	941.9	108.4	1197.8	113.4	1479.2	118.4	1877.9
03.5	946.1	108.5	1203.5	113.5	1484.9	118.5	1887.4
03.6	950.3	108.6	1209.3	113.6	1490.6	118.6	1896.3
03.7	954.6	108.7	1215.1	113.7	1496.4	118.7	1905.9
03.8	958.9	108.8	1220.9	113.8	1502.3	118.8	1914.7
03.9	963.2	108.9	1226.6	113.9	1508.2	118.9	1923.3
04.0	967.6	109.0	1232.4	114.0	1514.1	119.0	1931.5
04.1	972.1	109.1	1238.2	114.1	1520.1	119.1	1939.2
04.2	976.6	109.2	1244.0	114.2	1526.2	119.2	1946.5
04.3	981.1	109.3	1249.7	114.3	1532.4	119.3	1953.3
04.4	985.7	109.4	1255.5	114.4	1538.6	119.4	1959.5
04.5	990.3	109.5	1261.3	114.5	1545.0	119.5	1965.0
04.6	994.9	109.6	1267.0	114.6	1551.4	119.6	1969.8
04.7	999.6	109.7	1272.8	114.7	1557.9	119.7	1973.7
04.8	1004.3	109.8	1278.5	114.8	1564.5	119.8	1976.8
04.9	1009.1	109.9	1284.2	114.9	1571.2	119.9	1978.9

B-60 Calibration Sheet

Serial # 26

Date Calibrated 5/26/77

Alt(Kft)	Msec	Alt(Kft)	Msec	Alt(Kft)	Msec	Alt(Kft)	Msec
20.0	1564468916139ex-16	25.0	164028227403ex-17	30.0	130.0	433	

20 1980

20.1 1982.1

20.2 1984.2

20.3 1986.3

20.4 1988.4

20.5 1990.5

20.6 1992.6

20.7 1994.7

20.8 1996.8

20.9 1998.9

21.0 2001

BAROCODER CODE SHEET

Date 13 Apr 78 Flight # H78-13 Barocorder B-34018 Project Ashcan

<u>Time</u>	<u>Code</u>	<u>Altitude</u>	<u>Remarks</u>
0439			CREW DEPART TO RNWY. 04
0448			ALL VEHICLES ON RNWY.
0459			PACKAGES HOT FOR CMND checks
0503			CMND checks good.
0507			BALLOON LAYOUT STARTED
0512			BALLOON LAYOUT COMPLETE
0522			VALVE CHECK OK
0539			CLEARED TO INFLATE
0542			INFLATION STARTED
0553			INFLATION COMPLETE
0555			CLEARED TO LAUNCH IN 5 MIN. TR
0603			Launch
0603:30			ANT DROP 40 MEG. HIGHLY MOD. MODULATED BY 1746 SIGNAL
0605	6.1		
0606	6.6		
0608	8.5		
0609	9.5		
0610	10.6		
0612	11.9		
0614	14.4		
0615	14.5		
0616	15.8		
0617	16.4		
0618	17.6		

Code Copier _____

BAROCODER CODE SHEETDate 13 APR 78 Flight # H78-13 Barocoder B341018 Project AsL

<u>Time</u>	<u>Code</u>	<u>Altitude</u>	<u>Remarks</u>
<u>0619</u>	<u>18.7</u>		
<u>0620</u>	<u>19.5</u>		
<u>0621</u>	<u>20.7</u>		
<u>0622</u>	<u>21.5</u>		
<u>0623</u>	<u>22.2</u>		
<u>0624</u>	<u>23.5</u>		
<u>0625</u>	<u>24.2</u>		
<u>0626</u>	<u>24.8</u>		
<u>0627</u>	<u>26.0</u>		
<u>0628</u>	<u>27.3</u>		
<u>0629</u>	<u>28.2</u>		
<u>0630</u>	<u>28.7</u>		
<u>0631</u>	<u>30.0</u>		
<u>0632</u>	<u>30.7</u>		
<u>0633</u>	<u>31.7</u>		
<u>0634</u>	<u>33.1</u>		
<u>0635</u>	<u>34.4</u>		
<u>0636</u>	<u>35.2</u>		
<u>0637</u>	<u>36.7</u>		
<u>0638</u>	<u>37.4</u>		
<u>0639</u>	<u>38.7</u>		
<u>0640</u>	<u>39.8</u>		
<u>0641</u>	<u>40.7</u>		
<u>0642</u>	<u>41.5</u>		
<u>0643</u>	<u>42.2</u>		

Code Copier

BAROCODER CODE SHEETDate 13 APR 78 Flight # H78 13 Barocoder B341018 Project Ash

<u>Time</u>	<u>Code</u>	<u>Altitude</u>	<u>Remarks</u>
0644	43.3		
0645	44.8		
0646	45.0		
0647	46.5		
0648	47.6		
0649	48.5		
0650	50.1		
0651	51.4		
0652	52.8		
0653	53.9		
0654	—		
0655	56.4		
0656	57.4		
0657	58.3		
0658	59.5		
0659	60.1		
0700	61.6		
0701	62.7		
0702	64.0		
0703	B34	B66	B60
0704	66.0	—	DELAY Alt.
0706	68.8		
0707	69.7		
0708	70.4		
0709	71.4		

Code Copier

BAROCODER CODE SHEETDate 13 APR 78 Flight # H7813 Barocoder B34 018 Project Ach

<u>Time</u>	<u>Code</u> <u>B34</u>	<u>Altitude</u> <u>(ft)</u>	<u>Remarks</u>
0710	72.6	—	
0711	73.3	73.4	
0712	74.5	—	
0713	75.2		
0714	76.4	75.8	
0715	77.2		
0716	77.8	77.4	
0717	79.0		
0718	80.4	79.3	
0719	80.6		
0720	80.6	79.6	Balloon At Float
0721	80.6		
0722	80.4	79.5	
0723	80.6		
0724	80.4	79.5	CMD Samplers on
1028	XAI	79.6	
1030	XUI	79.4	
1045	XMI	79.1	
1050	XNI	78.7	
1115	XEI	78.1	
1120	XSI	77.8	
1126	OMI	76.8	Samp. CMD OFF
1127			Valve Failsafe 4.5 min
1129	OAI	76.3	
1131	ZAI	75.6	

Code Copier Harris

BAROCODER CODE SHEETDate 13 APR 78 Flight # 1478-13 Barocoder 018 Project ASHCAN
801C

<u>Time</u>	<u>Code</u>	<u>Altitude</u>	<u>Remarks</u>
1132	ZPI	75.0	Value Failsafe dropped out
1134	LII	73.9	
1136	LMI	73.2	
1138	LAI	72.9	
1140	DUI	72.1	
1142	DDI	71.8	
1144	EII	70.8	
1146	ESI	70.4	
1148	EDI	70.1	
1150	EAI	69.7	
1152	TAI	69.1	
1154	TDI	68.8	
1158	AEI	67.9	
1200	ANI	67.5	
1202	ADI	67.3	
1204	AMI	67.2	
1206	AUI	67.0	
1208	UTI	66.6	
1210	UDI	65.9	
1212	UNI	65.7	
1214	UII	65.4	
1216	UII	65.4	
1218	MII	65.0	
1220	MMI	64.1	
1222	MAI	63.7	

Code Copier Harris

BAROCODER CODE SHEET

Date 13 APR 78 Flight # H78-13 Barocoder 018 Project ASHCAN
80K

<u>Time</u>	<u>Code</u>	<u>Altitude</u>	<u>Remarks</u>
1224	MMI	62.3	
1226	MMI	62.3	
1228	MNI	61.7	
1230	MII	61.2	
1232	MFI	61.2	
1234	MEI	61.6	
1236	UII	60.5	
1238	USI	60.1	
1240	UDI	59.7	
1242	UMI	59.5	
1244	UAI	59.1	
1246	UTI	58.7	
1248	AUI	58.2	
1250	ASI	57.3	
1252	TDI	55.6	
1256	TMI	55.5	
1258	TUI	55.1	
1300	EAI	54.2	
1302	EMI	53.7	
1304	ENI	53.3	
1306	DII	52.3	
1308			Blow Ballast
1308:33			Pour Ballast
1309	OEI	52.4	Valve latched open
1310	EII	52.8	

Code Copier

Harris

BAROCODER CODE SHEET

Date 13 APR 78 Flight # 478-13 Barocoder 018 Project ASHCAN
80K

<u>Time</u>	<u>Code</u>	<u>Altitude</u>	<u>Remarks</u>
131039			Termination by King 60
1311	DMI	51.4	
1313	LMI	44.8	
1314	ODI	41.3	
1315	XNI	38.1	
1316	XAI	36.7	
1317	BII	33.1	
1318	HMI	30.7	
1319	IUI	28.7	
1320	III	26.8	
1321	SMI	24.7	
1322	NUI	22.7	
1323	RII	20.0	
1324	RMI	18.7	
1325	FUI	16.9	
1326	GNI	13.7	
1328	PTI	11.9	System in trail

Code Copier _____

BALLOON TRACK LOG

FLIGHT NO. H78-13/H-129 DATE 13 Apr PAGE 1 TYPE TRACK CMD

TIME ()	LATITUDE ELEVATION SLANT RANGE	LONGITUDE AZIMUTH AZIMUTH	ALTITUDE	HORIZONTAL DISTANCE OUT	FCC CLASS	FCC CODE GROUPS	SENDER INITIALS	OTHER. FIXES
0700	7.75	56.10	63.2	67.31				ELEV. ANGLE LOW
0715	10.30	56.9	80.3	66.38				
0730	10.1	56.3	79.5	67.0				
0745	10.0	57.2	79.5	67.55				
0800	11.25	56.7	80.1	60.69				
0815	11.1	56.5	80.2	61.58				
0830	11.0	56.5	80.2	62.14				
0845	10.85	55.7	79.9	62.75				
0900	10.65	54.5	79.8	63.8				
0915	10.35	53.4	79.7	65.57				
0930	10.25	52.4	79.4	65.94				
0945	10.2	51.1	79.4	66.26				
1000	10.3	50.2	79.2	65.46				
1015	10.15	49.2	78.8	66.1				
1030	10.20	47.9	78.6	65.58				
1045	10.0	46.4	77.8	66.2				
1058	9.65	43.540-35	77.4	68.2				
1115	10.0	40.9	76.7	65.2				
1130	9.65	38.4	75.0	66.0				
1145	8.60	37.1	70.1	69.0				
1200	7.95	37.1	67.3	69.96				
1218	7.3	37.4	65.4	73.7				

1.85KM = 1.0NM = 1.15SM 1 DEG = 17.77 MILS

AFCRL Form 98
14 Feb 1969

4400 20

20

CONVERSIONS: 2027 YARDS $\approx$ 1.85 KM $\approx$ 1.0 NM $\approx$ 1.15 SM 1 DEG $\approx$ 17.77 MILS

H78-13/H129

80

Kft.

13 APR 78

FLIGHT DATA RECORD

(ASCENT/DESCENT)

LOCATION

Holloman AFB N.M.

TIME (Z) 5 Min. Int.	CODE ALT (Kft.)	DENS. ALT (Kft.)	REMARKS*	TIME (Z) 5 Min. Int.	CODE ALT. (Kft.)	DENS. ALT (Kft.)	REMARKS*
13			Launch				
15			ANT DROP				
20	6.1						
25	10.6						
30	14.5						
35	19.5						
40	24.2						
45	28.7						
50	34.4						
55	39.8						
60	44.8						
65	50.1						
70	56.4						
75	61.6						
80	68.8						
85	72.6						
90	77.2						
95	80.6						
100	79.5		Balloon Afloat				
105			Sam. CMD. ON.				
110		75.9	Sam. CMD OFF				
115			Valve Failsafe				
120	75.0						
125	73.3						
130	72.0						
135	70.7						
140	69.7						
145	68.4						
150	67.5						
155	67.2						
160	65.9						
165	65.4						
170	64.1						
175	62.3						
180	61.2						
185	60.7						
190	59.7						
195	59.1						
200	57.3						
205	54.2						
210	53.2						
215	52.4		Blow Ballast				
220	52.8		Valve latch				
225			Termination				
230	44.8						
235	38.1						
240	26.8						
245	16.9						
250	11.9		System in trail				

Flight release, antenna drop, float, flight termination,

Contact or aerial recovery, deviations, etc.

ALTITUDE AT FLOAT

GMD

RADAR

H7813/H129

80

Kft.

13 APR 78

FLIGHT DATA RECORD

SAMPLE COLLECTION PERIOD

LOCATION

Holloman

AFB

N.M.

TIME (Z) Min. Int.	CPS 1	CPS 2	CPS 3 ALT. (Kft.)	REMARKS (Samplers on, Samplers off, Deviations, etc.)	TIME (Z) 5 Min. Int.	CPS 1	CPS 2	ALT. (Kft.)	REMARKS (Samplers on, Samplers off, Deviations, etc.)
725	65	68	62	79.5					
727	65	68	62	79.5					
730	64	68	62	79.4					
735	63	68	61	79.6					
740	62	68	61	79.8					
745	62	68	61	79.8					
750	62	68	61	79.6					
755	62	68	61	79.6					
800	62	68	61	80.0					
815	61	68	61	80.0					
830	62	69	60	80.1					1 hr of Sampling
845	62	69	59	79.7					
900	61	69	59	79.7					
915	61	69	59	79.7					
930	62	69	59	79.6					2 hr of Sampling
945	62	69	58	79.4					
000	62	69	58	79.2					
005	62	69	58	79.1					
010	63	69	57	78.9					
015	62	69	58	78.8					B-60
020	63	69	58	78.8					
025	62	69	58	3 hrs of Sample	78.6				
030	62	69	58		78.3				
035	62	69	59		78.3				
040	62	69	59						
045	62	69	58		77.9				
050	62	69	59		77.7				
055	62	69	59		77.6				
100	62	69	59		77.3				
105	62	69	59		77.3				
110	62	69	59		77.1				
1115	62	70	59		76.8				
1120	62	69	59		76.1				
1125	63	69	59		75.9				
126				Sampl. Cmd OFF					

DEPARTMENT OF THE AIR FORCE
DET 1, AIR FORCE CAMBRIDGE RESEARCH LABORATORIES (OAR)
HOLLOMAN AIR FORCE BASE, NEW MEXICO 88330



MEMO FOR RECORD: Aircraft Observers Report

1. Mission Identification:

Date 14 APR 78 Flt No H78-13 Mission Code _____ Project No ASH CAN
Aircraft Type C-206 No _____ Pilot Eisler Co-Pilot N/A
Observers TSgt Bentley^{2.} SSgt Foster^{3.} _____ 4. _____

2. Observers Report:

Time	
<u>0910</u>	Aircraft Take-off
<u>0905</u>	Radio Comm on <u>VHF</u> - <u>Motorola</u> Communications Freq <u>148.515</u>
<u>0925</u>	Radio Comm on <u>HF</u> - <u>RF301</u> Communications Freq <u>8964</u>
	Radio Comm on _____ Command Freq _____
<u>1200</u>	Balloon Position - Direction <u>295°</u> @ <u>45</u> nm from <u>Roswell</u>
<u>1310</u>	Balloon Position - Direction <u>305</u> @ <u>28</u> nm from <u>Roswell</u>
	Balloon Position - Direction _____ @ _____ nm from _____
	Balloon Position - Direction _____ @ _____ nm from _____
<u>1245</u>	Recovery Radio Contact
<u>1311</u>	Observed Cut
* <u>1311</u>	OBSERVED PARACHUTE DEPLOYED - (Parachute oscillations) _____
* <u>1312</u>	BALLOON DESTRUCT
** <u>1325</u>	Balloon Impact - Direction <u>335°</u> @ <u>28</u> nm from <u>Roswell</u>
** <u>N/A</u>	Payload Impact - Direction _____ @ _____ nm from _____
<u>N/A</u>	Parachute Collapse - Parachute Drag _____
<u>N/A</u>	Recovery Arrival at Payload
<u>N/A</u>	Recovery - PAYLOAD CONDITION ESTIMATE _____
<u>1430</u>	Recovery Arrival at Balloon
<u>1930</u>	Aircraft Landing

REMARKS: This was an air Recovered System,
it was recovered by King-60 on first
pass.

T.O. HMN	0910	817.4	5.5 Wait
Land Roswell	1043	818.6	
T.O. Roswell	1243	819.1	
Land Hobbs	1510	820.6	
T.O. Hobbs	1800	Land HMN	1930 823

Will Bentley
(Signature)

15 APR 78
(Date)

STATION ALTITUDE 4126.59 FEET MSL
 13 APR. 78 C730 HRS MST
 ASCENSION NO. 223

SIGNIFICANT LEVEL DATA
 1030010223
 HOLLOMAN

GEODETIC COORDINATES
 32.68865 LAT DEG
 106.09965 LON DEG

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES	DEWPOINT CENTIGRADE	REL.HUM. PERCENT
874.4	4126.6	17.0	-1.6	28.0
863.3	4483.0	15.4	-1.6	31.0
850.0	4916.5	17.4	-.3	30.0
802.8	6509.0	14.4	-2.5	31.0
700.0	10248.0	5.3	-8.5	36.0
680.3	11011.8	3.5	-9.1	39.0
652.8	12107.5	1.2	-14.0	31.0
530.3	17484.4	-10.5	-29.0	20.0
515.8	18183.8	-12.1	-28.0	25.0
500.0	18963.6	-14.0	-22.6	48.0
473.3	20325.6	-17.4	-23.3	60.0
458.3	21116.9	-19.1	-25.1	59.0
456.2	21229.4	-19.5	-27.7	47.0
435.8	22346.0	-20.5	-36.1	23.0
410.3	23807.7	-22.7	-40.4	18.0
400.0	24419.8	-24.0	-42.0	17.0
342.8	28056.1	-33.4	-49.4	18.0
300.0	31092.1	-40.7		
250.0	35095.2	-50.3		
202.3	39526.9	-62.1		
200.0	39759.7	-62.3		
190.3	40773.3	-61.5		
188.8	40936.3	-58.0		
181.8	41720.0	-58.5		
177.1	42265.8	-56.1		
150.0	45733.3	-57.7		
142.3	46824.9	-59.6		
106.3	52794.1	-63.0		
100.0	54025.7	-66.1		
81.8	58041.4	-66.6		

STATION ALTITUDE 4126.59 FEET MSL
13 APR. 78 C730 HRS MST
ASCENSION NO. 223

SIGNIFICANT LEVEL DATA
1030010223
HOLLOMAN

GEODETIC COORDINATES
32.88865 LAT DEG
106.09965 LON DEG

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE		REL.HUM. PERCENT
		AIR DEGREES	DEWPOINT CENTIGRADE	
70.0	61161.8	-65.4		
54.8	66039.9	-68.9		
50.0	67860.9	-66.8		
46.3	69420.4	-60.3		
42.3	71277.5	-61.5		
37.3	73869.1	-59.4		
33.8	75929.1	-55.1		
30.0	78450.2	-54.7		
24.0	83176.5	-54.4		
20.0	87078.5	-50.3		
17.1	90491.7	-46.6		
13.3	96030.6	-45.3		
10.0	102432.9	-38.4		
7.0	110603.5	-36.2		

STATION ALTITUDE 4126.59 FEET MSL
13 APR. 78 0730 HRS MST
ASCENSION NO. 223

UPPER AIR DATA
1030010223
HOLLONAN

GEODETIC COORDINATES
32.88865 LAT DEG
106.09965 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	DEWPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	SPEED KNOTS	INDEX OF REFRACTION
4126.6	874.4	17.0	-1.6	28.0	1047.4	664.4	180.0	7.0	1.000258
4200.0	872.1	16.7	-1.6	28.6	1045.8	664.0	182.4	6.9	1.000258
4400.0	865.9	15.8	-1.6	30.3	1041.5	663.0	189.5	6.6	1.000257
4600.0	859.7	15.9	-1.3	30.7	1033.4	663.2	197.0	6.5	1.000256
4800.0	853.6	16.9	-.7	30.3	1022.7	664.3	204.8	6.4	1.000254
5000.0	847.5	17.2	-.4	30.1	1014.0	664.8	212.4	6.5	1.000253
5200.0	841.4	16.9	-.7	30.2	1008.0	664.3	219.8	6.7	1.000251
5400.0	835.4	16.5	-1.0	30.3	1002.2	663.9	226.7	7.0	1.000249
5600.0	829.4	16.1	-1.3	30.4	996.3	663.4	232.9	7.4	1.000247
5800.0	823.5	15.7	-1.5	30.6	990.5	663.0	238.5	7.8	1.000246
6000.0	817.6	15.4	-1.8	30.7	984.8	662.5	242.2	8.1	1.000244
6200.0	811.7	15.0	-2.1	30.8	979.0	662.1	243.0	7.8	1.000242
6400.0	805.9	14.6	-2.3	30.9	973.3	661.7	243.7	7.6	1.000240
6600.0	800.1	14.2	-2.6	31.1	967.8	661.2	244.6	7.3	1.000239
6800.0	794.3	13.7	-2.9	31.4	962.4	660.6	245.5	7.0	1.000237
7000.0	788.5	13.2	-3.3	31.7	957.0	660.0	243.6	6.7	1.000235
7200.0	782.7	12.7	-3.6	31.9	951.7	659.4	237.4	6.3	1.000234
7400.0	777.0	12.2	-3.9	32.2	946.4	658.9	230.4	6.0	1.000232
7600.0	771.3	11.7	-4.2	32.5	941.1	658.3	222.9	5.8	1.000231
7800.0	765.7	11.3	-4.5	32.7	935.9	657.7	215.0	5.7	1.000229
8000.0	760.1	10.8	-4.8	33.0	930.7	657.1	210.7	5.9	1.000227
8200.0	754.6	10.3	-5.2	33.3	925.5	656.6	212.5	6.2	1.000226
8400.0	749.0	9.8	-5.5	33.5	920.3	656.0	214.1	6.6	1.000224
8600.0	743.6	9.3	-5.8	33.8	915.2	655.4	215.5	6.9	1.000223
8800.0	738.1	8.8	-6.1	34.1	910.1	654.8	216.8	7.3	1.000221
9000.0	732.8	8.3	-6.5	34.3	905.1	654.3	218.4	7.7	1.000220
9200.0	727.4	7.9	-6.8	34.6	900.1	653.7	222.0	8.1	1.000218
9400.0	722.1	7.4	-7.1	34.9	895.1	653.1	225.2	8.6	1.000217
9600.0	716.8	6.9	-7.4	35.1	890.1	652.5	228.1	9.0	1.000215
9800.0	711.6	6.4	-7.8	35.4	885.2	651.9	230.7	9.5	1.000214

STATION ALTITUDE 4126.59 FEET MSL
13 APR. 78 0730 HRS MST
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UPPER AIR DATA
1030010223
HOLLOMAN

GEODETIC COORDINATES
32.88865 LAT DEG
106.09965 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	DEWPOINT. CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	SPEED KNOTS	INDEX OF REFRACTION
10000.0	706.4	5.9	-8.1	35.7	880.3	651.4	233.0	10.1	1.000212
10200.0	701.2	5.4	-8.5	35.9	875.4	650.8	231.9	10.4	1.000211
10400.0	696.0	4.9	-8.6	36.6	870.4	650.2	230.8	10.8	1.000209
10600.0	690.9	4.5	-8.8	37.4	865.4	649.7	229.8	11.1	1.000208
10800.0	685.7	4.0	-9.0	38.2	860.4	649.1	228.8	11.5	1.000207
11000.0	680.6	3.5	-9.1	39.0	855.5	648.6	227.9	11.8	1.000206
11200.0	675.5	3.1	-9.9	37.6	850.5	648.0	228.0	12.6	1.000204
11400.0	670.4	2.7	-10.8	36.2	845.4	647.5	228.1	13.4	1.000202
11600.0	665.4	2.3	-11.7	34.7	840.5	647.0	228.3	14.2	1.000200
11800.0	660.4	1.8	-12.6	33.2	835.5	646.5	228.4	15.0	1.000198
12000.0	655.4	1.4	-13.5	31.8	830.6	645.9	228.5	15.8	1.000196
12200.0	650.5	1.0	-14.3	30.8	825.6	645.4	229.8	16.9	1.000194
12400.0	645.5	.6	-14.8	30.4	820.6	644.9	231.2	18.0	1.000193
12600.0	640.5	.1	-15.4	30.0	815.6	644.4	232.4	19.1	1.000191
12800.0	635.6	-.3	-15.9	29.6	810.6	643.8	233.5	20.2	1.000190
13000.0	630.7	-.7	-16.4	29.2	805.7	643.3	234.5	21.3	1.000188
13200.0	625.8	-1.2	-17.0	28.8	800.8	642.8	235.4	22.3	1.000187
13400.0	621.0	-1.6	-17.5	28.4	795.9	642.3	236.5	23.0	1.000185
13600.0	616.2	-2.0	-18.1	27.9	791.1	641.7	237.5	23.7	1.000184
13800.0	611.5	-2.5	-18.6	27.5	786.3	641.2	238.5	24.4	1.000182
14000.0	606.8	-2.9	-19.2	27.1	781.5	640.7	239.4	25.1	1.000181
14200.0	602.1	-3.4	-19.7	26.7	776.8	640.2	240.2	25.8	1.000180
14400.0	597.4	-3.8	-20.3	26.3	772.1	639.6	240.8	26.2	1.000178
14600.0	592.8	-4.2	-20.9	25.9	767.4	639.1	241.4	26.7	1.000177
14800.0	588.3	-4.7	-21.4	25.5	762.7	638.6	242.0	27.1	1.000176
15000.0	583.7	-5.1	-22.0	25.1	758.1	638.0	242.5	27.6	1.000174
15200.0	579.3	-5.5	-22.5	24.7	753.5	637.5	243.1	28.0	1.000173
15400.0	574.8	-6.0	-23.1	24.3	749.0	637.0	244.0	28.3	1.000172
15600.0	570.4	-6.4	-23.7	23.9	744.4	636.5	245.0	28.5	1.000171
15800.0	566.0	-6.8	-24.2	23.4	739.9	635.9	246.0	28.8	1.000169

STATION ALTITUDE 4126.59 FEET MSL
13 APR. 78 C730 HRS MST
ASCENSION NO. 223

UPPER AIR DATA
1030010223
HOLLOMAN

GEODETIC COORDINATES
32.68865 LAT DEG
106.09965 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
16000.0	561.6	-7.3	-24.8	23.0	735.4	635.4	246.9	29.1	1.000168
16200.0	557.3	-7.7	-25.4	22.6	731.0	634.9	247.8	29.3	1.000167
16400.0	553.0	-8.1	-25.9	22.2	726.6	634.4	248.9	29.4	1.000166
16600.0	548.7	-8.6	-26.5	21.8	722.2	633.8	250.0	29.5	1.000165
16800.0	544.5	-9.0	-27.1	21.4	717.8	633.3	251.1	29.5	1.000163
17000.0	540.3	-9.4	-27.6	21.0	713.5	632.8	252.1	29.6	1.000162
17200.0	536.2	-9.9	-28.2	20.6	709.2	632.2	253.2	29.7	1.000161
17400.0	532.0	-10.3	-28.8	20.2	704.9	631.7	254.4	29.6	1.000160
17600.0	527.9	-10.8	-28.8	20.8	700.6	631.2	255.6	29.4	1.000159
17800.0	523.7	-11.2	-28.5	22.3	696.2	630.6	256.8	29.2	1.000158
18000.0	519.6	-11.7	-28.3	23.7	691.9	630.1	258.0	29.1	1.000157
18200.0	515.5	-12.1	-27.9	25.5	687.7	629.5	259.3	28.9	1.000157
18400.0	511.4	-12.6	-26.1	31.4	683.4	629.0	259.2	29.0	1.000156
18600.0	507.3	-13.1	-24.6	37.3	679.2	628.4	258.4	29.2	1.000156
18800.0	503.3	-13.6	-23.4	43.2	675.0	627.6	257.5	29.3	1.000156
19000.0	499.3	-14.1	-22.6	48.3	670.9	627.3	256.6	29.5	1.000155
19200.0	495.3	-14.6	-22.7	50.1	666.8	626.7	255.8	29.7	1.000154
19400.0	491.3	-15.1	-22.7	51.8	662.7	626.1	254.5	30.1	1.000153
19600.0	487.3	-15.6	-22.8	53.6	658.7	625.5	253.0	30.7	1.000152
19800.0	483.4	-16.1	-22.9	55.4	654.6	624.9	251.5	31.3	1.000151
20000.0	479.5	-16.6	-23.0	57.1	650.7	624.2	250.0	31.7	1.000150
20200.0	475.7	-17.1	-23.2	58.9	646.7	623.6	248.7	32.5	1.000149
20400.0	471.9	-17.6	-23.4	59.9	642.7	623.1	249.8	32.9	1.000148
20600.0	468.0	-18.0	-23.9	59.7	638.6	622.5	251.1	33.3	1.000147
20800.0	464.2	-18.4	-24.3	59.4	634.5	622.0	252.5	33.7	1.000146
21000.0	460.5	-18.8	-24.8	59.1	630.4	621.5	253.8	34.1	1.000145
21200.0	456.7	-19.2	-27.0	59.1	626.3	620.9	254.7	34.6	1.000143
21400.0	453.0	-19.5	-28.8	43.3	621.9	620.6	254.6	35.3	1.000142
21600.0	449.3	-19.7	-30.1	39.0	617.3	620.3	254.5	36.0	1.000140
21800.0	445.7	-19.9	-31.5	34.7	612.8	620.1	254.3	36.7	1.000139

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13 APR. 78 0730 HRS MST
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UPPER AIR DATA
1030010223
HOLLOMAN

GEODETIC COORDINATES
32.88865 LAT DEG
106.09965 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	SPEED KNOTS	INDEX OF REFRACTION
22000.0	442.0	-20.1	-33.0	30.4	608.4	619.8	254.2	37.4	1.000138
22200.0	438.4	-20.3	-34.7	26.1	604.0	619.5	253.5	37.5	1.000136
22400.0	434.8	-20.6	-36.3	22.8	599.6	619.2	252.5	37.5	1.000135
22600.0	431.3	-20.9	-36.8	22.1	595.4	618.8	251.5	37.5	1.000134
22800.0	427.7	-21.2	-37.4	21.4	591.2	618.5	250.5	37.6	1.000133
23000.0	424.2	-21.5	-38.0	20.8	587.1	618.1	249.7	37.4	1.000132
23200.0	420.7	-21.8	-38.6	20.1	583.0	617.7	249.5	36.6	1.000131
23400.0	417.3	-22.1	-39.2	19.4	578.9	617.3	249.4	35.8	1.000130
23600.0	413.8	-22.4	-39.8	18.7	574.8	617.0	249.3	35.1	1.000129
23800.0	410.4	-22.7	-40.4	18.0	570.8	616.6	249.1	34.3	1.000128
24000.0	407.0	-23.1	-40.9	17.7	567.0	616.1	248.7	34.2	1.000127
24200.0	403.7	-23.5	-41.4	17.4	563.3	615.6	248.2	34.4	1.000126
24400.0	400.3	-24.0	-42.0	17.0	559.6	615.0	247.8	34.6	1.000126
24600.0	397.0	-24.5	-42.4	17.0	556.0	614.4	247.3	34.8	1.000125
24800.0	393.6	-25.0	-42.8	17.1	552.4	613.8	246.9	35.1	1.000124
25000.0	390.3	-25.5	-43.2	17.2	548.9	613.1	246.6	35.6	1.000123
25200.0	387.0	-26.0	-43.6	17.2	545.4	612.5	246.4	36.2	1.000122
25400.0	383.7	-26.5	-44.0	17.3	541.9	611.8	246.1	36.7	1.000121
25600.0	380.5	-27.1	-44.4	17.3	538.5	611.2	245.9	37.3	1.000121
25800.0	377.2	-27.6	-44.8	17.4	535.1	610.5	245.7	37.5	1.000120
26000.0	374.1	-28.1	-45.2	17.4	531.7	609.9	245.5	37.2	1.000119
26200.0	370.9	-28.6	-45.6	17.5	528.3	609.3	245.4	36.8	1.000118
26400.0	367.8	-29.1	-46.0	17.5	524.9	608.6	245.3	36.5	1.000118
26600.0	364.7	-29.6	-46.4	17.6	521.6	608.0	245.1	36.1	1.000117
26800.0	361.6	-30.2	-46.8	17.7	518.3	607.3	245.1	35.9	1.000116
27000.0	358.5	-30.7	-47.3	17.7	515.0	606.7	245.2	36.0	1.000115
27200.0	355.5	-31.2	-47.7	17.8	511.8	606.0	245.3	36.1	1.000115
27400.0	352.5	-31.7	-48.1	17.8	508.5	605.4	245.5	36.2	1.000114
27600.0	349.5	-32.2	-48.5	17.9	505.3	604.7	245.6	36.3	1.000113
27800.0	346.5	-32.7	-48.9	17.9	502.1	604.1	245.8	36.7	1.000112

STATION ALTITUDE 4126.59 FEET MSL
13 APR. 78 0730 HRS MST
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UPPER AIR DATA
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32.88865 LAT DEG
106.09965 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	DEWPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
26000.0	343.6	-33.3	-49.3	18.0	499.0	603.4	246.0	37.8	1.000112
28200.0	340.6	-33.7	-50.1	17.1**	495.6	602.8	246.2	38.9	1.000111
26400.0	337.7	-34.2	-51.2	16.0**	492.3	602.2	246.4	40.0	1.000110
28600.0	334.7	-34.7	-52.2	14.8**	489.0	601.6	246.6	41.0	1.000109
26800.0	331.8	-35.2	-53.3	13.6**	485.7	601.0	246.7	42.1	1.000108
29000.0	328.9	-35.7	-54.4	12.4**	482.4	600.4	246.8	43.0	1.000108
29200.0	326.0	-36.2	-55.7	11.2**	479.2	599.8	246.9	43.9	1.000107
29400.0	323.1	-36.6	-56.9	10.0**	475.9	599.1	247.0	44.7	1.000106
29600.0	320.3	-37.1	-58.3	8.8**	472.7	598.5	247.1	45.8	1.000105
29800.0	317.5	-37.6	-59.8	7.7**	469.6	597.9	247.2	46.7	1.000105
30000.0	314.7	-38.1	-61.5	6.5**	466.4	597.3	247.2	47.1	1.000104
30200.0	312.0	-38.6	-63.4	5.3**	463.3	596.7	247.2	47.4	1.000103
30400.0	309.3	-39.0	-65.6	4.1**	460.2	596.1	247.2	47.6	1.000103
30600.0	306.6	-39.5	-68.3	2.9**	457.1	595.5	247.1	47.9	1.000102
30800.0	303.9	-40.0	-72.2	1.7**	454.0	594.9	247.1	48.2	1.000101
31000.0	301.2	-40.5	-79.9	.5**	451.0	594.2	247.2	48.1	1.000100
31200.0	298.5	-41.0			447.9	593.6	247.3	47.6	1.000100
31400.0	295.8	-41.4			444.8	593.0	247.4	47.2	1.000099
31600.0	293.1	-41.9			441.6	592.4	247.5	46.8	1.000098
31800.0	290.5	-42.4			438.5	591.8	247.6	46.4	1.000098
32000.0	287.8	-42.9			435.5	591.2	247.4	46.2	1.000097
32200.0	285.2	-43.4			432.4	590.6	247.1	46.2	1.000096
32400.0	282.7	-43.8			429.4	589.9	246.8	46.1	1.000096
32600.0	280.1	-44.3			426.4	589.3	246.5	46.1	1.000095
32800.0	277.5	-44.8			423.4	588.7	246.2	46.0	1.000094
33000.0	275.0	-45.3			420.5	588.1	245.9	46.4	1.000094
33200.0	272.5	-45.8			417.5	587.5	245.8	47.1	1.000093
33400.0	270.1	-46.2			414.6	586.8	245.6	47.8	1.000092
33600.0	267.6	-46.7			411.7	586.2	245.5	48.6	1.000092
33800.0	265.2	-47.2			408.9	585.6	245.4	49.3	1.000091

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 4126.59 FEET MSL
13 APR. 76 0730 HRS MST
ASCENSION NO. 223

UPPER AIR DATA
1030010223
FOLLOMAN

GEODETIC COORDINATES
32.88865 LAT DEG
106.09965 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
		DEWPOINT CENTIGRADE						
34000.0	262.8	-47.7		406.0	585.0	245.2	50.1	1.000090
34200.0	260.4	-48.2		403.2	584.4	245.2	50.4	1.000090
34400.0	258.0	-48.6		400.4	583.7	245.2	50.6	1.000089
34600.0	255.7	-49.1		397.6	583.1	245.2	50.9	1.000089
34800.0	253.4	-49.6		394.8	582.5	245.1	51.1	1.000088
35000.0	251.1	-50.1		392.1	581.9	245.1	51.4	1.000087
35200.0	248.8	-50.6		389.3	581.2	245.1	51.6	1.000087
35400.0	246.4	-51.1		386.6	580.5	245.7	52.3	1.000086
35600.0	244.0	-51.6		383.8	579.8	246.3	53.1	1.000085
35800.0	241.7	-52.2		381.1	579.1	246.9	53.8	1.000085
36000.0	239.4	-52.7		378.4	578.4	247.5	54.6	1.000084
36200.0	237.1	-53.2		375.7	577.7	248.0	55.4	1.000084
36400.0	234.9	-53.8		373.0	577.0	248.6	56.1	1.000083
36600.0	232.7	-54.3		370.4	576.3	249.8	57.4	1.000082
36800.0	230.4	-54.8		367.7	575.6	251.1	58.7	1.000082
37000.0	228.3	-55.4		365.1	574.9	252.3	60.1	1.000081
37200.0	226.1	-55.9		362.5	574.2	253.5	61.4	1.000081
37400.0	223.9	-56.4		360.0	573.5	254.6	62.8	1.000080
37600.0	221.8	-57.0		357.4	572.8	255.6	64.3	1.000080
37800.0	219.7	-57.5		354.9	572.1	256.5	65.0	1.000079
38000.0	217.6	-58.0		352.4	571.4	257.3	65.6	1.000078
38200.0	215.5	-58.6		349.9	570.7	258.1	66.3	1.000078
38400.0	213.5	-59.1		347.5	570.0	258.9	66.9	1.000077
38600.0	211.5	-59.6		345.0	569.3	259.6	67.5	1.000077
38800.0	209.4	-60.2		342.6	568.6	260.4	68.2	1.000076
39000.0	207.5	-60.7		340.2	567.8	260.8	68.3	1.000076
39200.0	205.5	-61.2		337.8	567.1	261.1	68.3	1.000075
39400.0	203.5	-61.8		335.4	566.4	261.4	68.3	1.000075
39600.0	201.6	-62.2		332.8	565.9	261.7	68.3	1.000074
39800.0	199.6	-62.3		329.7	565.7	262.0	68.3	1.000073

STATION ALTITUDE 4126.59 FEET MSL
13 APR. 78 0730 HRS MST
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UPPER AIR DATA
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HOLLOMAN

GEODETIC COORDINATES
32.88865 LAT DEG
106.09965 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
		DEWPOINT CENTIGRADE						
40000.0	197.7	-62.1		326.3	565.9	262.1	68.2	1.000073
40200.0	195.7	-62.0		322.8	566.2	261.9	67.9	1.000072
40400.0	193.8	-61.8		319.5	566.4	261.8	67.6	1.000071
40600.0	191.9	-61.6		316.1	566.6	261.6	67.3	1.000070
40800.0	190.1	-60.9		312.0	567.5	261.5	67.0	1.000069
41000.0	188.2	-58.0		304.8	571.4	261.3	66.7	1.000068
41200.0	186.4	-58.2		302.1	571.2	260.7	65.6	1.000067
41400.0	184.6	-58.3		299.4	571.0	260.2	64.6	1.000067
41600.0	182.9	-58.4		296.7	570.9	259.6	63.6	1.000066
41800.0	181.1	-58.1		293.4	571.2	259.0	62.6	1.000065
42000.0	179.4	-57.3		289.5	572.4	258.4	61.6	1.000064
42200.0	177.7	-56.4		285.5	573.6	258.0	61.7	1.000064
42400.0	176.0	-56.2		282.5	573.9	257.5	61.8	1.000063
42600.0	174.3	-56.3		279.9	573.7	257.1	62.0	1.000062
42800.0	172.6	-56.3		277.4	573.6	256.6	62.1	1.000062
43000.0	171.0	-56.4		274.9	573.5	256.1	62.2	1.000061
43200.0	169.4	-56.5		272.3	573.4	256.1	63.4	1.000061
43400.0	167.7	-56.6		269.9	573.3	256.1	64.8	1.000060
43600.0	166.1	-56.7		267.4	573.1	256.1	66.2	1.000060
43800.0	164.6	-56.8		265.0	573.0	256.1	67.5	1.000059
44000.0	163.0	-56.9		262.6	572.9	256.0	68.9	1.000058
44200.0	161.4	-57.0		260.2	572.8	256.1	69.7	1.000058
44400.0	159.9	-57.1		257.8	572.6	256.2	70.5	1.000057
44600.0	158.4	-57.2		255.4	572.5	256.2	71.2	1.000057
44800.0	156.9	-57.3		253.1	572.4	256.3	72.0	1.000056
45000.0	155.4	-57.4		250.8	572.3	256.3	72.7	1.000056
45200.0	153.9	-57.5		248.5	572.2	256.4	73.5	1.000055
45400.0	152.4	-57.5		246.3	572.0	256.4	74.2	1.000055
45600.0	151.0	-57.6		244.0	571.9	256.5	75.0	1.000054
45800.0	149.5	-57.8		241.9	571.7	256.5	75.7	1.000054

STATION ALTITUDE 4126.59 FEET MSL
13 APR. 78 0730 HRS MST
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UPPER AIR DATA
103001C223
HOLLOMAN

GEODETTIC COORDINATES
32.88865 LAT DEG
106.09965 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES DEWPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
46000.0	148.1	-58.2		240.0	571.2	256.6	76.4	1.000053
46200.0	146.7	-58.5		238.0	570.8	256.7	76.5	1.000053
46400.0	145.2	-58.9		236.1	570.3	256.7	76.0	1.000053
46600.0	143.9	-59.2		234.2	569.8	256.8	75.6	1.000052
46800.0	142.5	-59.6		232.4	569.4	256.9	75.2	1.000052
47000.0	141.1	-59.7		230.3	569.2	256.9	74.7	1.000051
47200.0	139.7	-59.8		228.1	569.0	257.0	74.3	1.000051
47400.0	138.4	-59.9		226.0	568.9	257.2	73.0	1.000050
47600.0	137.0	-60.0		224.0	568.7	257.4	71.7	1.000050
47800.0	135.7	-60.2		221.9	568.6	257.6	70.4	1.000049
48000.0	134.4	-60.3		219.9	568.4	257.8	69.0	1.000049
48200.0	133.1	-60.4		217.8	568.3	258.0	67.7	1.000049
48400.0	131.8	-60.5		215.8	568.1	258.7	66.6	1.000048
48600.0	130.5	-60.6		213.9	568.0	259.4	65.6	1.000048
48800.0	129.2	-60.7		211.9	567.8	260.2	64.6	1.000047
49000.0	128.0	-60.8		209.9	567.7	261.0	63.7	1.000047
49200.0	126.7	-61.0		208.0	567.5	261.6	62.8	1.000046
49400.0	125.5	-61.1		206.1	567.3	261.9	62.1	1.000046
49600.0	124.3	-61.2		204.2	567.2	262.3	61.4	1.000045
49800.0	123.0	-61.3		202.3	567.0	262.6	60.6	1.000045
50000.0	121.9	-61.4		200.5	566.9	263.0	59.9	1.000045
50200.0	120.7	-61.5		198.6	566.7	262.1	59.0	1.000044
50400.0	119.5	-61.6		196.8	566.6	261.2	58.1	1.000044
50600.0	118.3	-61.8		195.0	566.4	260.2	57.1	1.000043
50800.0	117.2	-61.9		193.2	566.3	259.3	56.3	1.000043
51000.0	116.0	-62.0		191.4	566.1	258.3	55.4	1.000043
51200.0	114.9	-62.1		189.7	566.0	257.2	54.5	1.000042
51400.0	113.8	-62.2		187.9	565.8	256.1	53.6	1.000042
51600.0	112.7	-62.3		186.2	565.7	255.0	52.6	1.000041
51800.0	111.6	-62.4		184.5	565.5	253.8	51.7	1.000041

STATION ALTITUDE 4126.59 FEET MSL
13 APR. 78 0730 HRS MST
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UPPER AIR DATA
1030010223
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GEODETIC COORDINATES
32.88865 LAT DEG
106.09965 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES DEWPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
52000.0	110.5	-62.5		182.8	565.4	252.6	50.9	1.000041
52200.0	109.4	-62.7		181.1	565.2	251.4	50.0	1.000040
52400.0	108.4	-62.8		179.4	565.1	250.1	49.2	1.000040
52600.0	107.3	-62.9		177.8	564.9	249.2	48.4	1.000040
52800.0	106.3	-63.0		176.2	564.7	248.5	47.7	1.000039
53000.0	105.2	-63.5		174.9	564.1	247.8	47.0	1.000039
53200.0	104.2	-64.0		173.5	563.4	247.1	46.3	1.000039
53400.0	103.2	-64.5		172.2	562.7	246.4	45.6	1.000038
53600.0	102.1	-65.0		171.0	562.0	245.6	44.9	1.000038
53800.0	101.1	-65.5		169.7	561.3	245.2	44.3	1.000038
54000.0	100.1	-66.0		168.4	560.7	245.1	43.6	1.000038
54200.0	99.1	-66.1		166.8	560.5	244.9	43.0	1.000037
54400.0	98.1	-66.1		165.2	560.5	244.8	42.4	1.000037
54600.0	97.2	-66.2		163.5	560.5	244.7	41.8	1.000036
54800.0	96.2	-66.2		161.9	560.4	244.6	41.3	1.000036
55000.0	95.2	-66.2		160.3	560.4	245.1	40.9	1.000036
55200.0	94.3	-66.2		158.8	560.4	245.7	40.6	1.000035
55400.0	93.4	-66.3		157.2	560.3	246.2	40.3	1.000035
55600.0	92.4	-66.3		155.7	560.3	246.7	40.0	1.000035
55800.0	91.5	-66.3		154.1	560.3	247.3	39.7	1.000034
56000.0	90.6	-66.3		152.6	560.2	247.8	39.2	1.000034
56200.0	89.7	-66.4		151.1	560.2	248.3	38.7	1.000034
56400.0	88.8	-66.4		149.6	560.2	248.7	38.2	1.000033
56600.0	87.9	-66.4		148.1	560.1	249.2	37.7	1.000033
56800.0	87.0	-66.4		146.7	560.1	249.7	37.3	1.000033
57000.0	86.2	-66.5		145.2	560.1	250.1	36.6	1.000032
57200.0	85.3	-66.5		143.8	560.0	249.7	35.2	1.000032
57400.0	84.5	-66.5		142.4	560.0	249.2	33.7	1.000032
57600.0	83.6	-66.5		141.0	560.0	248.7	32.3	1.000031
57800.0	82.8	-66.6		139.6	559.9	248.2	30.9	1.000031

STATION ALTITUDE 4126.59 FEET MSL
13 APR. 78 0730 HRS MST
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UPPER AIR DATA
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GEODETTIC COORDINATES
32.88865 LAT DEG
106.09965 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	SPEED KNOTS	INDEX OF REFRACTION
58000.0	82.0	-66.6		138.2	559.9	247.6	29.5	1.000031
58200.0	81.2	-66.5		136.8	560.0	246.5	28.0	1.000030
58400.0	80.3	-66.5		135.4	560.1	244.9	26.6	1.000030
58600.0	79.6	-66.4		134.0	560.2	243.1	25.3	1.000030
58800.0	78.8	-66.3		132.6	560.3	241.1	23.9	1.000030
59000.0	78.0	-66.2		131.3	560.4	238.8	22.6	1.000029
59200.0	77.2	-66.2		129.9	560.5	236.3	21.4	1.000029
59400.0	76.4	-66.1		128.6	560.6	234.7	21.1	1.000029
59600.0	75.7	-66.0		127.3	560.7	233.3	20.9	1.000028
59800.0	74.9	-65.9		126.0	560.8	231.9	20.8	1.000028
60000.0	74.2	-65.8		124.7	560.9	230.4	20.6	1.000028
60200.0	73.4	-65.8		123.4	561.0	228.9	20.5	1.000027
60400.0	72.7	-65.7		122.1	561.1	227.8	20.4	1.000027
60600.0	72.0	-65.6		120.8	561.2	228.0	20.4	1.000027
60800.0	71.3	-65.5		119.6	561.3	228.2	20.5	1.000027
61000.0	70.6	-65.5		118.4	561.4	228.4	20.5	1.000026
61200.0	69.9	-65.4		117.2	561.5	228.6	20.5	1.000026
61400.0	69.2	-65.6		116.1	561.3	228.7	20.5	1.000026
61600.0	68.5	-65.7		115.0	561.1	229.5	20.2	1.000026
61800.0	67.8	-65.9		113.9	560.9	231.0	19.7	1.000025
62000.0	67.1	-66.0		112.9	560.7	232.6	19.2	1.000025
62200.0	66.4	-66.1		111.8	560.5	234.2	18.6	1.000025
62400.0	65.8	-66.3		110.8	560.3	235.9	18.1	1.000025
62600.0	65.1	-66.4		109.8	560.1	237.8	17.6	1.000024
62800.0	64.5	-66.6		108.7	559.9	239.5	16.8	1.000024
63000.0	63.8	-66.7		107.7	559.7	241.3	15.8	1.000024
63200.0	63.2	-66.9		106.7	559.5	243.4	14.8	1.000024
63400.0	62.6	-67.0		105.7	559.3	245.7	13.9	1.000024
63600.0	61.9	-67.1		104.7	559.2	248.4	13.0	1.000023
63800.0	61.3	-67.3		103.8	559.0	251.4	12.1	1.000023

STATION ALTITUDE 4126.59 FEET MSL
13 APR. 78 0730 HRS MST
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32.88865 LAT DEG
106.09965 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
64000.0	60.7	-67.4		102.8	558.8	252.2	11.0	1.000023
64200.0	60.1	-67.6		101.8	558.6	253.2	10.0	1.000023
64400.0	59.5	-67.7		100.9	558.4	254.5	8.9	1.000022
64600.0	58.9	-67.9		100.0	558.2	256.0	7.9	1.000022
64800.0	58.3	-68.0		99.0	558.0	258.1	6.8	1.000022
65000.0	57.7	-68.2		98.1	557.8	260.9	5.8	1.000022
65200.0	57.2	-68.3		97.2	557.6	260.7	5.1	1.000022
65400.0	56.6	-68.4		96.3	557.4	260.5	4.4	1.000021
65600.0	56.0	-68.6		95.4	557.2	260.1	3.7	1.000021
65800.0	55.5	-68.7		94.5	557.0	259.5	3.0	1.000021
66000.0	54.9	-68.9		93.6	556.8	258.7	2.3	1.000021
66200.0	54.4	-68.7		92.6	557.0	257.0	1.6	1.000021
66400.0	53.8	-68.5		91.6	557.3	254.9	1.6	1.000020
66600.0	53.3	-68.3		90.6	557.7	253.1	1.3	1.000020
66800.0	52.7	-68.0		89.6	558.0	251.7	2.0	1.000020
67000.0	52.2	-67.8		88.6	558.3	250.6	2.2	1.000020
67200.0	51.7	-67.6		87.6	558.6	249.6	2.4	1.000020
67400.0	51.2	-67.3		86.6	558.9	248.8	2.6	1.000019
67600.0	50.7	-67.1		85.7	559.2	247.3	2.6	1.000019
67800.0	50.2	-66.9		84.7	559.5	245.2	2.5	1.000019
68000.0	49.7	-66.2		83.6	560.4	243.1	2.5	1.000019
68200.0	49.2	-65.4		82.4	561.5	240.9	2.4	1.000018
68400.0	48.7	-64.6		81.3	562.7	238.5	2.4	1.000018
68600.0	48.2	-63.7		80.2	563.8	236.1	2.4	1.000018
68800.0	47.7	-62.9		79.1	564.9	234.0	2.5	1.000018
69000.0	47.3	-62.1		78.0	566.0	232.9	3.0	1.000017
69200.0	46.8	-61.2		76.9	567.1	232.1	3.6	1.000017
69400.0	46.3	-60.4		75.9	568.3	231.5	4.1	1.000017
69600.0	45.9	-60.4		75.2	568.2	231.0	4.6	1.000017
69800.0	45.5	-60.5		74.5	568.1	230.7	5.1	1.000017

STATION ALTITUDE 4126.59 FEET MSL
13 APR. 78 C730 HRS MST
ASCENSION NO. 223

UPPER AIR DATA
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FOLLOMAN

GEODETIC COORDINATES
32.88865 LAT DEG
106.09965 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	SPEED KNOTS	INDEX OF REFRACTION
70000.0	45.0	-60.6		73.8	568.0	230.4	5.6	1.000016
70200.0	44.6	-60.7		73.1	567.8	229.9	6.1	1.000016
70400.0	44.1	-60.8		72.4	567.7	229.1	6.3	1.000016
70600.0	43.7	-60.9		71.8	567.5	228.4	6.5	1.000016
70800.0	43.3	-61.0		71.1	567.4	227.6	6.7	1.000016
71000.0	42.9	-61.2		70.5	567.2	227.0	6.9	1.000016
71200.0	42.5	-61.3		69.8	567.1	226.4	7.1	1.000016
71400.0	42.0	-61.2		69.1	567.2	225.8	7.3	1.000015
71600.0	41.6	-61.1		68.4	567.4	225.6	7.6	1.000015
71800.0	41.2	-60.9		67.7	567.5	226.8	8.2	1.000015
72000.0	40.8	-60.8		67.0	567.7	227.9	8.8	1.000015
72200.0	40.4	-60.6		66.3	567.9	228.9	9.4	1.000015
72400.0	40.1	-60.5		65.6	568.1	229.7	10.1	1.000015
72600.0	39.7	-60.3		64.9	568.3	230.4	10.7	1.000014
72800.0	39.3	-60.2		64.3	568.5	231.1	11.3	1.000014
73000.0	38.9	-60.0		63.6	568.7	231.7	12.0	1.000014
73200.0	38.5	-59.9		62.9	568.9	229.4	11.5	1.000014
73400.0	38.2	-59.7		62.3	569.1	227.0	11.1	1.000014
73600.0	37.8	-59.6		61.6	569.3	224.5	10.7	1.000014
73800.0	37.4	-59.5		61.0	569.5	221.7	10.3	1.000014
74000.0	37.1	-59.1		60.3	569.9	218.7	9.9	1.000013
74200.0	36.7	-58.7		59.6	570.5	215.5	9.6	1.000013
74400.0	36.4	-58.3		59.0	571.0	212.1	9.3	1.000013
74600.0	36.0	-57.9		58.3	571.6	205.9	8.6	1.000013
74800.0	35.7	-57.5		57.6	572.2	197.8	8.0	1.000013
75000.0	35.3	-57.0		57.0	572.7	188.5	7.5	1.000013
75200.0	35.0	-56.6		56.5	573.3	178.2	7.2	1.000013
75400.0	34.7	-56.2		55.7	573.8	167.5	7.2	1.000012
75600.0	34.3	-55.8		55.0	574.4	157.2	7.5	1.000012
75800.0	34.0	-55.4		54.4	574.9	147.7	7.9	1.000012

STATION ALTITUDE 4126.59 FEET MSL
13 APR. 78 0730 HRS MST
ASCENSION NO. 223

UPPER AIR DATA
1030010223
HOLLOMAN

GEODETTIC COORDINATES
32.88865 LAT DEG
106.09965 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	SPEED KNOTS	INDEX OF REFRACTION
76000.0	33.7	-55.1		53.8	575.3	142.4	8.3	1.000012
76200.0	33.4	-55.1		53.3	575.3	140.2	8.4	1.000012
76400.0	33.1	-55.0		52.8	575.4	138.0	8.5	1.000012
76600.0	32.7	-55.0		52.3	575.4	135.9	8.6	1.000012
76800.0	32.4	-55.0		51.8	575.5	133.9	8.8	1.000012
77000.0	32.1	-54.9		51.3	575.5	132.0	8.9	1.000011
77200.0	31.8	-54.9		50.8	575.5	130.1	9.1	1.000011
77400.0	31.5	-54.9		50.3	575.6	128.4	9.2	1.000011
77600.0	31.2	-54.8		49.8	575.6	127.4	9.3	1.000011
77800.0	30.9	-54.8		49.4	575.7	126.4	8.7	1.000011
78000.0	30.6	-54.8		48.9	575.7	125.3	8.5	1.000011
78200.0	30.4	-54.7		48.4	575.7	124.2	8.3	1.000011
78400.0	30.1	-54.7		48.0	575.8	123.0	8.1	1.000011
78600.0	29.8	-54.7		47.5	575.8	121.8	7.9	1.000011
78800.0	29.5	-54.7		47.1	575.8	120.4	7.7	1.000010
79000.0	29.2	-54.7		46.6	575.8	123.0	7.4	1.000010
79200.0	29.0	-54.7		46.2	575.9	126.7	7.0	1.000010
79400.0	28.7	-54.6		45.7	575.9	130.6	6.8	1.000010
79600.0	28.4	-54.6		45.3	575.9	134.9	6.5	1.000010
79800.0	28.1	-54.6		44.9	575.9	139.5	6.3	1.000010
80000.0	27.9	-54.6		44.4	575.9	144.4	6.1	1.000010
80200.0	27.6	-54.6		44.0	575.9	149.6	6.0	1.000010
80400.0	27.4	-54.6		43.6	576.0	151.3	6.0	1.000010
80600.0	27.1	-54.6		43.2	576.0	149.8	7.2	1.000010
80800.0	26.8	-54.6		42.8	576.0	148.6	8.0	1.000010
81000.0	26.6	-54.5		42.4	576.0	147.6	8.8	1.000009
81200.0	26.3	-54.5		42.0	576.0	146.8	9.7	1.000009
81400.0	26.1	-54.5		41.6	576.0	146.1	10.0	1.000009
81600.0	25.9	-54.5		41.2	576.1	145.6	11.4	1.000009
81800.0	25.6	-54.5		40.8	576.1	145.2	12.0	1.000009

STATION ALTITUDE 4126.59 FEET MSL
13 APR. 78 C730 HRS MST
ASCENSION NO. 223

UPPER AIR DATA
1030010223
HOLLOMAN

GEODETIC COORDINATES
32.88865 LAT DEG
106.09965 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	SPEED KNOTS	INDEX OF REFRACTION
82000.0	25.4	-54.5		40.4	576.1	145.8	11.8	1.000009
82200.0	25.1	-54.5		40.0	576.1	146.4	11.5	1.000009
82400.0	24.9	-54.4		39.7	576.1	147.1	11.3	1.000009
82600.0	24.7	-54.4		39.3	576.1	147.7	11.0	1.000009
82800.0	24.4	-54.4		38.9	576.2	148.4	10.7	1.000009
83000.0	24.2	-54.4		38.5	576.2	149.2	10.5	1.000009
83200.0	24.0	-54.4		38.2	576.2	149.9	10.2	1.000008
83400.0	23.8	-54.2		37.8	576.5	151.3	9.5	1.000008
83600.0	23.5	-54.0		37.4	576.8	153.1	8.7	1.000008
83800.0	23.3	-53.7		37.0	577.1	155.2	7.8	1.000008
84000.0	23.1	-53.5		36.6	577.3	157.8	7.0	1.000008
84200.0	22.9	-53.3		36.3	577.6	161.1	6.2	1.000008
84400.0	22.7	-53.1		35.9	577.9	165.3	5.5	1.000008
84600.0	22.5	-52.9		35.5	578.2	170.9	4.8	1.000008
84800.0	22.2	-52.7		35.2	578.4	178.6	4.1	1.000008
85000.0	22.0	-52.5		34.8	578.7	189.1	4.2	1.000008
85200.0	21.8	-52.3		34.4	579.0	199.0	4.4	1.000008
85400.0	21.6	-52.1		34.1	579.3	207.9	4.7	1.000008
85600.0	21.4	-51.9		33.7	579.5	215.5	5.1	1.000008
85800.0	21.2	-51.6		33.4	579.8	222.0	5.6	1.000007
86000.0	21.0	-51.4		33.0	580.1	227.3	6.1	1.000007
86200.0	20.8	-51.2		32.7	580.4	231.7	6.7	1.000007
86400.0	20.6	-51.0		32.4	580.6	235.4	7.3	1.000007
86600.0	20.5	-50.8		32.0	580.9	237.6	7.6	1.000007
86800.0	20.3	-50.6		31.7	581.2	239.3	7.7	1.000007
87000.0	20.1	-50.4		31.4	581.5	240.8	7.8	1.000007
87200.0	19.9	-50.2		31.1	581.7	242.4	7.9	1.000007
87400.0	19.7	-50.0		30.8	582.0	243.9	8.1	1.000007
87600.0	19.5	-49.7		30.4	582.3	245.3	8.2	1.000007
87800.0	19.3	-49.5		30.1	582.6	246.7	8.3	1.000007

STATION ALTITUDE 4126.59 FEET MSL
13 APR. 78 0730 HRS MST
ASCENSION NO. 223

UPPER AIR DATA
1030010223
HOLLOMAN

GEODETIC COORDINATES
32.88865 LAT DEG
106.09965 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	SPEED KNOTS	INDEX OF REFRACTION
88000.0	19.2	-49.3		29.8	582.9	248.1	8.4	1.000007
88200.0	19.0	-49.1		29.5	583.2	249.2	8.4	1.000007
88400.0	18.8	-48.9		29.2	583.4	249.2	7.4	1.000007
88600.0	18.7	-48.7		28.9	583.7	249.2	6.5	1.000006
88800.0	18.5	-48.4		28.6	584.0	249.2	5.5	1.000006
89000.0	18.3	-48.2		28.4	584.3	249.1	4.5	1.000006
89200.0	18.1	-48.0		28.1	584.6	249.1	3.6	1.000006
89400.0	18.0	-47.8		27.8	584.8	249.0	2.6	1.000006
89600.0	17.8	-47.6		27.5	585.1	248.9	1.6	1.000006
89800.0	17.7	-47.3		27.2	585.4	248.3	.7	1.000006
90000.0	17.5	-47.1		27.0	585.7	70.5	.6	1.000006
90200.0	17.3	-46.9		26.7	586.0	69.5	1.9	1.000006
90400.0	17.2	-46.7		26.4	586.2	69.3	3.3	1.000006
90600.0	17.0	-46.6		26.2	586.4	69.3	4.7	1.000006
90800.0	16.9	-46.5		25.9	586.5	69.2	6.1	1.000006
91000.0	16.7	-46.5		25.7	586.5	69.2	7.5	1.000006
91200.0	16.6	-46.4		25.4	586.6	69.2	8.9	1.000006
91400.0	16.4	-46.4		25.2	586.7	69.2	10.2	1.000006
91600.0	16.3	-46.3		25.0	586.7	69.2	11.6	1.000006
91800.0	16.1	-46.3		24.7	586.8	68.0	10.6	1.000005
92000.0	16.0	-46.2		24.5	586.8	66.5	9.4	1.000005
92200.0	15.8	-46.2		24.3	586.9	64.5	8.3	1.000005
92400.0	15.7	-46.2		24.1	587.0	62.0	7.1	1.000005
92600.0	15.5	-46.1		23.8	587.0	58.4	6.0	1.000005
92800.0	15.4	-46.1		23.6	587.1	53.3	5.0	1.000005
93000.0	15.3	-46.0		23.4	587.1	45.6	4.0	1.000005
93200.0	15.1	-46.0		23.2	587.2	32.9	3.1	1.000005
93400.0	15.0	-45.9		23.0	587.3	7.9	2.2	1.000005
93600.0	14.9	-45.9		22.8	587.3	306.7	1.9	1.000005
93800.0	14.7	-45.8		22.6	587.4	213.0	3.4	1.000005

STATION ALTITUDE 4126.59 FEET MSL
13 APR. 78 0730 HRS MST
ASCENSION NO. 223

UPPER AIR DATA
1030010223
HOLLOMAN

GEODETTIC COORDINATES
32.88865 LAT DEG
106.09965 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TM)	SPEED KNOTS	INDEX OF REFRACTION
94000.0	14.6	-45.8		22.3	587.4	261.3	5.3	1.000005
94200.0	14.5	-45.7		22.1	587.5	255.9	7.3	1.000005
94400.0	14.3	-45.7		21.9	587.6	252.9	9.4	1.000005
94600.0	14.2	-45.6		21.7	587.6	250.9	11.5	1.000005
94800.0	14.1	-45.6		21.5	587.7	249.5	13.5	1.000005
95000.0	13.9	-45.5		21.3	587.7	248.5	15.6	1.000005
95200.0	13.8	-45.5		21.1	587.8	246.9	17.2	1.000005
95400.0	13.7	-45.4		20.9	587.9	245.1	18.6	1.000005
95600.0	13.6	-45.4		20.7	587.9	243.5	19.9	1.000005
95800.0	13.4	-45.4		20.6	588.0	242.1	21.3	1.000005
96000.0	13.3	-45.3		20.4	588.0	240.8	22.6	1.000005
96200.0	13.2	-45.1		20.2	588.3	239.7	24.0	1.000004
96400.0	13.1	-44.9		20.0	588.6	238.8	25.4	1.000004
96600.0	13.0	-44.7		19.8	588.8	237.9	26.8	1.000004
96800.0	12.9	-44.5		19.6	589.1	237.1	28.2	1.000004
97000.0	12.7	-44.3		19.4	589.4	236.3	28.6	1.000004
97200.0	12.6	-44.0		19.2	589.7	235.6	28.9	1.000004
97400.0	12.5	-43.8		19.0	590.0	234.8	29.1	1.000004
97600.0	12.4	-43.6		18.8	590.2	234.0	29.4	1.000004
97800.0	12.3	-43.4		18.6	590.5	233.3	29.6	1.000004
98000.0	12.2	-43.2		18.5	590.8	232.6	29.9	1.000004
98200.0	12.1	-43.0		18.3	591.1	231.8	30.2	1.000004
98400.0	12.0	-42.7		18.1	591.3	231.1	30.4	1.000004
98600.0	11.9	-42.5		17.9	591.6	230.4	30.7	1.000004
98800.0	11.8	-42.3		17.7	591.9	229.9	30.8	1.000004
99000.0	11.7	-42.1		17.6	592.2	229.4	30.9	1.000004
99200.0	11.5	-41.9		17.4	592.4	228.9	31.0	1.000004
99400.0	11.4	-41.7		17.2	592.7	228.4	31.2	1.000004
99600.0	11.3	-41.5		17.1	593.0	227.9	31.3	1.000004
99800.0	11.2	-41.2		16.9	593.3	227.4	31.4	1.000004

STATION ALTITUDE 4126.59 FEET MSL
13 APR. 76 0730 HRS MST
ASCENSION NO. 223

UPPER AIR DATA
1030010223
FOLLOMAN

GEODETIC COORDINATES
32.88865 LAT DEG
106.09965 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
100000.0	11.1	-41.0		16.7	593.6	226.9	31.5	1.000004
100200.0	11.0	-40.8		16.6	593.8	226.5	31.6	1.000004
100400.0	10.9	-40.6		16.4	594.1	226.7	31.9	1.000004
100600.0	10.9	-40.4		16.2	594.4	229.4	32.9	1.000004
100800.0	10.8	-40.2		16.1	594.7	231.9	33.9	1.000004
101000.0	10.7	-39.9		15.9	594.9	234.3	34.9	1.000004
101200.0	10.6	-39.7		15.8	595.2	236.5	36.0	1.000004
101400.0	10.5	-39.5		15.6	595.5	238.6	37.2	1.000003
101600.0	10.4	-39.3		15.5	595.8	240.6	38.4	1.000003
101800.0	10.3	-39.1		15.3	596.0	242.4	39.6	1.000003
102000.0	10.2	-38.9		15.2	596.3	244.1	40.9	1.000003
102200.0	10.1	-38.7		15.0	596.6	245.7	42.3	1.000003
102400.0	10.0	-38.4		14.9	596.8	247.5	42.5	1.000003
102600.0	9.9	-38.4		14.7	597.0	249.2	42.7	1.000003
102800.0	9.8	-38.3		14.6	597.0	251.0	42.9	1.000003
103000.0	9.8	-38.2		14.5	597.1	252.7	43.2	1.000003
103200.0	9.7	-38.2		14.3	597.2	254.4	43.5	1.000003
103400.0	9.6	-38.1		14.2	597.2	256.0	43.8	1.000003
103600.0	9.5	-38.1		14.1	597.3	257.7	44.2	1.000003
103800.0	9.4	-38.0		14.0	597.4	259.3	44.6	1.000003
104000.0	9.3	-38.0		13.8	597.4	260.9	45.1	1.000003
104200.0	9.3	-37.9		13.7	597.5	262.4	45.5	1.000003
104400.0	9.2	-37.9		13.6	597.6	263.9	46.1	1.000003
104600.0	9.1	-37.8		13.5	597.6	264.5	46.4	1.000003
104800.0	9.0	-37.8		13.3	597.7	264.5	46.6	1.000003
105000.0	8.9	-37.7		13.2	597.8	264.5	46.7	1.000003
105200.0	8.9	-37.7		13.1	597.8	264.4	46.9	1.000003
105400.0	8.8	-37.6		13.0	597.9	264.4	47.1	1.000003
105600.0	8.7	-37.5		12.9	598.0	264.4	47.3	1.000003
105800.0	8.6	-37.5		12.8	598.0	264.4	47.5	1.000003

STATION ALTITUDE 4126.59 FEET MSL
 13 APR. 78 C730 HRS MST
 ASCENSION NO. 223

UPPER AIR DATA
 1030010223
 HOLLOWMAN

GEODETIC COORDINATES
 32.88865 LAT DEG
 106.09965 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
106000.0	8.6	-37.4		12.6	598.1	264.4	47.7	1.000003
106200.0	8.5	-37.4		12.5	598.2	264.4	47.9	1.000003
106400.0	8.4	-37.3		12.4	598.3	264.3	48.1	1.000003
106600.0	8.3	-37.3		12.3	598.3	264.3	48.2	1.000003
106800.0	8.3	-37.2		12.2	598.4			1.000003
107000.0	8.2	-37.2		12.1	598.5			1.000003
107200.0	8.1	-37.1		12.0	598.5			1.000003
107400.0	8.1	-37.1		11.9	598.6			1.000003
107600.0	8.0	-37.0		11.8	598.7			1.000003
107800.0	7.9	-37.0		11.7	598.7			1.000003
108000.0	7.8	-36.9		11.6	598.8			1.000003
108200.0	7.8	-36.8		11.5	598.9			1.000003
108400.0	7.7	-36.8		11.4	598.9			1.000003
108600.0	7.6	-36.7		11.3	599.0			1.000003
108800.0	7.6	-36.7		11.2	599.1			1.000002
109000.0	7.5	-36.6		11.1	599.1			1.000002
109200.0	7.4	-36.6		11.0	599.2			1.000002
109400.0	7.4	-36.5		10.9	599.3			1.000002
109600.0	7.3	-36.5		10.8	599.3			1.000002
109800.0	7.2	-36.4		10.7	599.4			1.000002
110000.0	7.2	-36.4		10.6	599.5			1.000002
110200.0	7.1	-36.3		10.5	599.5			1.000002
110400.0	7.1	-36.3		10.4	599.6			1.000002
110600.0	7.0	-36.2		10.3	599.7			1.000002

STATION ALTITUDE 4126.59 FEET MSL
13 APR. 78 0730 HRS MST
ASCENSION NO. 223

MRN SIGNIFICANT LEVEL DATA
103001C223
HOLLOMAN

GEODETTIC COORDINATES
32.88865 LAT DEG
106.09965 LON DEG

GEOPOTENTIAL ALTITUDE DECAMETERS	DIRECTION DEG (TN)	WIND DATA SPEED MPS	N-S MPS	E-W MPS	DEW PT DEP DEG C	TEMPERATURE AIR DEG C	PRESSURE MILLIBARS
3352.	9999.**	9999.**	-9999.**	-9999.**	99	-36.2	7.000+0
3105.	248.	22.	8.	20.	99	-38.4	1.000+1
2912.	241.	12.	6.	10.	99	-45.3	1.330+1
2745.	69.	2.	-1.	-2.	99	-46.6	1.710+1
2642.	241.	4.	2.	4.	99	-50.3	2.000+1
2524.	150.	5.	5.	-3.	99	-54.4	2.400+1
2381.	123.	4.	2.	-3.	99	-54.7	3.000+1
2305.	143.	4.	3.	-3.	99	-55.1	3.380+1
2243.	221.	5.	4.	3.	99	-59.4	3.730+1
2164.	226.	4.	3.	3.	99	-61.3	4.230+1
2108.	231.	2.	1.	2.	99	-60.3	4.630+1
2061.	245.	1.	1.	1.	99	-60.3	5.000+1
2006.	258.	1.	0.	1.	99	-68.9	5.480+1
1858.	229.	11.	7.	8.	99	-65.4	7.000+1
1763.	247.	15.	6.	14.	99	-66.6	8.180+1
1642.	245.	22.	9.	20.	99	-66.1	1.000+2

** WIND DATA NOT COMPUTED DUE TO MISSING RAW AZIMUTH AND ELEVATION ANGLES.

STATION ALTITUDE 4126.59 FEET MSL
13 APR. 78 0730 HRS MST
ASCENSION NO. 223

MANDATORY LEVELS
1030010223
HOLLOMAN

GEODETTIC COORDINATES
32.88865 LAT DEG
106.09965 LON DEG

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUM. PERCENT	WIND DATA	
MILLIBARS	FEET	AIR DEGREES	DEWPOINT CENTIGRADE		DIRECTION DEGREES (TM)	SPEED KNOTS
850.0	4913.	17.4	- .3	30.	209.2	6.4
800.0	6601.	14.2	-2.6	31.	244.6	7.3
750.0	8373.	9.9	-5.4	33.	213.9	6.5
700.0	10238.	5.3	-8.5	36.	231.7	10.5
650.0	12203.	1.1	-14.3	31.	230.0	10.9
600.0	14302.	-3.5	-20.0	27.	240.6	20.0
550.0	16537.	-8.4	-26.3	22.	249.7	29.4
500.0	18938.	-14.0	-22.6	48.	256.8	29.5
450.0	21532.	-19.7	-29.8	40.	254.5	35.8
400.0	24380.	-24.0	-42.0	17.	247.8	34.6
350.0	27525.	-32.1	-48.4	18.	245.6	30.2
300.0	31032.	-40.7			247.2	47.9
250.0	35020.	-50.3			245.1	51.5
200.0	39666.	-62.3			261.9	68.3
175.0	42410.	-56.2			257.3	51.9
150.0	45612.	-57.7			256.5	75.4
125.0	49349.	-61.1			262.1	51.8
100.0	53861.	-60.1			245.1	43.6
80.0	58296.	-66.4			244.4	26.2
70.0	60955.	-65.4			228.5	20.5
60.0	64016.	-67.5			253.3	9.9
50.0	67610.	-66.8			244.9	2.5
40.0	72143.	-60.5			229.7	10.0
30.0	78120.	-54.7			122.9	8.1
25.0	81950.	-54.5			146.7	11.4
20.0	86677.	-50.3			241.1	7.8
15.0	92916.	-45.9			20.2	2.0
10.0	101885.	-38.4			247.4	42.5
7.0	109969.	-36.2				

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 4126.59 FEET MSL
13 APR. 78 0730 HRS MST
ASCENSION NO. 223

ARM MANDATORY LEVELS
1030010225
HOLLoman

GEODETTIC COORDINATES
32.88865 LAT DEG
106.09965 LON DEG

GEOPOTENTIAL ALTITUDE DECAMETERS	DIRECTION DEG (TN)	WIND DATA			DEW PT DEP DEG C	TEMPERATURE AIR DEG C	PRESSURE MILLIBARS
		SPEED MPS	N-S MPS	E-W MPS			
3352.	9999.**	9999.**	-9999.**	-9999.**	99	-36.2	7.000+0
3105.	247.	22.	8.	20.	99	-38.4	1.000+1
2832.	20.	1.	-1.	-0.	99	-45.9	1.500+1
2642.	241.	4.	2.	4.	99	-50.3	2.000+1
2498.	147.	6.	5.	-3.	99	-54.5	2.500+1
2381.	123.	4.	2.	-3.	99	-54.7	3.000+1
2199.	230.	5.	3.	4.	99	-60.5	4.000+1
2061.	245.	1.	1.	1.	99	-66.8	5.000+1
1951.	253.	5.	1.	5.	99	-67.6	6.000+1
1858.	228.	11.	7.	8.	99	-65.4	7.000+1
1777.	244.	14.	6.	12.	99	-66.4	8.000+1
1642.	245.	22.	9.	20.	99	-66.1	1.000+2
1504.	262.	32.	4.	32.	99	-61.1	1.250+2
1390.	257.	39.	9.	38.	99	-57.7	1.500+2
1293.	257.	32.	7.	31.	99	-56.2	1.750+2
1209.	262.	35.	5.	35.	99	-62.3	2.000+2
1067.	245.	26.	11.	24.	99	-50.5	2.500+2
946.	247.	25.	10.	23.	99	-40.7	3.000+2
839.	246.	19.	8.	17.	16	-52.1	3.500+2
743.	248.	18.	7.	16.	18	-24.0	4.000+2
656.	254.	13.	5.	18.	10	-19.7	4.500+2
577.	257.	15.	5.	15.	09	-14.0	5.000+2
504.	250.	15.	5.	14.	16	-8.4	5.500+2
436.	241.	13.	7.	12.	16	-3.5	6.000+2
372.	230.	9.	6.	7.	15	1.0	6.500+2
312.	232.	5.	3.	4.	14	5.3	7.000+2
255.	214.	3.	5.	2.	15	9.9	7.500+2
201.	245.	4.	2.	3.	17	14.2	8.000+2
150.	209.	3.	3.	2.	16	17.4	8.500+2

** WIND DATA NOT COMPUTED DUE TO MISSING RAW AZIMUTH AND ELEVATION ANGLES.

DATE LAUNCHED 13 April 1978		BALLOON FLIGHT SUMMARY		FLIGHT NUMBER H78-13/H-129	
I. GENERAL DATA					
1. PROJECT NUMBER & TITLE Ash Can - Atmospheric Sampling		2. PROJECT OFFICER Mr. Ground		3. EXPERIMENTER DOE/EML	
4. FLIGHT OBJECTIVES					
A. Collect two DFS Filters for DOE					
B. Collect C-14 Sample for DOE					
C.					
5. REQUIRED FLIGHT PROFILE Climbout to 80 Kft - Sample (4) hrs - Terminate				6. TEST COORDINATOR N/A	
7. LAUNCH CREW CHIEF Mr. Fumerola		8. METEOROLOGIST(S) TSgt Fultz & Mr. Gildenberg		9. MALFUNCTION REPORTS BLN 0 INSTR 0 OTHER 0	
II. BALLOON DATA					
1. BALLOON NUMBER 3 OF 4, ITEM 2, S/N 26 CONTRACT F29651-77-8005				2. MANUFACTURER Winzen	
3. DIAMETER(S) 108.08 ft		4. LENGTH(S) 155.42 ft		5. VOLUME(S) 0.516 x 10 ⁶ cu ft	
6. WEIGHT(S) 337 lbs + 4.0V + 5.0SL			7. MATERIAL & THICKNESS Stratofilm/1.5 mil		
8. MODEL NUMBER(S) LTV-009		9. VALVE & VALVE MOTOR SERIAL NUMBERS BX0234/299		10. REMARKS (Caps, Defects, Twists, Duct Cuts, etc.) N/A	
III. PAYLOAD DATA					
1. WEIGHT 827 lbs		2. PARACHUTE(S) - (Number, Type, Diameter, Weight) 3 ea/MK-5/29 ft/112 lbs		3. DROPPABLE BALLAST (Type, Weight, Rate) Glass, 50 lb, 37 lb/min	
4. PRIMARY CONTROL PKG(Type) SCADS-1A		5. TRANSMITTER(S) MFGR.Viable MODEL FMT-1As/N 010		MFGR.Jitton MODEL B-34 s/N 018	
6. RECEIVER(S) MFGR. Raven MODEL 10601 s/N 1009		7. ALTITUDE SENSOR(S) MFGR. Zenith MODEL BCR-3As/N 1016		B-34 (018) B-60 (026)	
8. SEPARATION DEVICE Dual Cannon Cutters		9. SPECIAL ITEMS (Description & Weight) N/A			
IV. LAUNCH DATA					
1. SITE RNWY 04, HAFB, NM		2. SURFACE WIND 170° 3 kts		3. TEMPERATURE 14°C	
4. CLOUDS 1 AC 140 5 CI 200		5. GROSS WEIGHT 1173 lbs		6. FREE LIFT 140 LB 12 %	
7. GROSS INFLATION 1314 lbs		8. LAUNCH ARM & RELEASE VEHICLE 119L/Crane		9. LAUNCH METHOD Dynamic	
10. LAUNCH RUN LENGTH; CHARACTER OF LAUNCH 405 ft/smooth		11. LAUNCH TIME SCHEDULED 1300Z ACTUAL 1303Z			
V. FLIGHT DATA					
1. ASCENT RATES TO TROPOPAUSE 960 fpm, TROPOPAUSE TO FLOAT 1080 fpm, OVERALL AVERAGE 1010 fpm					
2. TROPOPAUSE TEMP. -62.3°C		3. MINIMUM TEMPERATURE ALTITUDE 39 Kft PRESSURE 200 mbs -69°C		ALT 66 Kft PRESS. 55 mbs	
4. GROSS WEIGHT AT CEILING ALT. 1173 lbs		5. DESIGN CEILING ALT 80.2 Kft		6. ACTUAL FLOATING ALTITUDE(S) 79.7 Kft	
7. FLIGHT DURATION TIMER SETTINGS PRIMARY N/A SECONDARY 9 hrs			8. COMMAND FREQUENCIES 138.06 MHz, 9019.5 KHz		
9. TELEMETRY FREQUENCIES 40.35 MHz, 1746 KHz			10. TELEMETRY DATA CYCLE(S) Scads-1A Ash Can/continuous		
11. VOICE COMMUNICATIONS FREQUENCIES 8964 KHz, 148.515 MHz			12. TRACKING METHODS GMD, FAA Transponder, ACFT		
13. TERMINATION (Altitude, Method, Initiated By, Date/Time) 52.8 Kft/Pri CMD/King 60/132011Z			14. FLIGHT DURATION 7 hrs 8 min		15. DESCENT LOAD 757 lbs
16. PAYLOAD IMPACT (Position, Date/Time) Aerial Recovery 11.9 Kft 25 NW ROW/132028Z		17. DESCENT TIME 17 min		18. BALLOON IMPACT (Position, Date/Time) 23 NW ROW/131326Z	
				19. BLN DESCENT TIME 15 min	

VI. FLIGHT RESULTS

1. PAYLOAD RECOVERY (Date/Time, By Whom, Equipment Condition) 132028-1408Z/41st ARRS-King 60/Excellent		2. BALLOON RECOVERY (Date/Time, By Whom, Disposal) 132130-2230Z/LCD/Roswell dump	
3. VALVE CONDITION Damaged/Open		4. BALLOON PERFORMANCE Excellent	
5. COMMAND CONTROL PERFORMANCE Excellent		6. FLIGHT OBJECTIVES ACCOMPLISHED? A. yes B. yes C.	
7. VOICE COMMUNICATIONS QUALITY Excellent		8. TELEMETRY DATA QUALITY Excellent	
9. ADDITIONAL RESULTS, PROBLEMS & INFORMATION			

See Post Mission Critique.

10. SIGNATURE OF PROJECT OFFICER

John R. Ground

11. SIGNATURE OF SITE DETACHMENT COMMANDER

Joseph A. Kelly

Memo for Record

DATE: 20 Apr 78

SUBJECT: Post Mission Critique for Flight H78-13/H-129

1. Flight H78-13/H-129 was an 80 Kft. Ash Can flight, flown on 13 April, using a 0.516×10^6 ft³ balloon to carry two DFS and a C-14 sampler. The nominal sampling period was 240 minutes. A Post Mission Critique was held on 20 April 78 to evaluate this flight. Those in attendance are listed in the attached.
2. All mission objectives were met in that two good DFS filters were collected, and a good C-14 sample was taken. The sampling period was 241 minutes.
3. Specific Problem Areas:

The NARCO transponder signal was lost from 0700-1130 MST time; then, an intermittent signal was picked up by the tracking stations and the aircraft. A post mission check showed the transponder to be 3 MHz low in frequency. The transponder will be recalibrated before the next use.

4. Items of General Interest:

- a) At antenna drop the Control Center reported the 40 MHz signal was highly modulated by the 1746 KHz signal; however, this condition cleared at about 10 Kft., and both signals were clean and strong for the remainder of the flight.
- b) A good aerial retrieval was made at 11.9 Kft. The system was stable in-trail.

John R. Ground

John R. Ground
Ash Can Project Officer

ATTENDANCE LIST

Mr. Ground

Mr. Wofford

Mr. Butko

Mr. Fumerola

Mr. Cordery

Mr. Mares

Mrs. Sears

Mr. Gildenberg

TSgt. Bentley

RECOVERY REPORT

Flight Number H-78-13

BALLOON

Date 4/13/78Time arrived: 1430. Location of impact: 25 miles NW of RoswellDistance/name from, (1) town, (2) road: (1) 1,(2) 1. Valve Condition: Crushed. Valve wasopen/~~closed~~. Tenney release was ~~at~~ missing. Apparent destruct did/~~did not~~occur upon termination. Disposition: ROSWEII Dump.Time departed: 1530.

Flight Number _____ PAYLOAD(S) _____ Date _____

Time arrived: _____. Location of impact: _____.

Distance/name from, (1) town, (2) road: (1) _____,

(2) _____. AFGL instrumentation payload(s) was/was not running;

contractor's was/was not. If on, how was it turned off? _____.

What other equipment was running? _____. Impact switches did/

did not fire. What was the condition of the switches? _____. AFGL package

was/was not damaged; contractor's was/was not. How far was the payload dragged?

_____. Payload rolled _____ times. The let-down reel did/did not

work. If it did not how many feet reeled out? _____. Batteries or motors

were/were not shorted out. If any were, which one(s)? _____. They were located

on the gondola/package. Antenna did/did not deploy. Yes/no seals were broken on

the samplers. If yes, which one(s)? _____. The hoppers did/did not blow.

Amount of ballast remaining in the hoppers? _____. Which hopper(s)? _____

The level of remaining ballast was/was not marked. The parachute(s) did/did not

appear to operate properly. What was the condition of the parachute(s)? _____

How many releases were still attached to the top of the parachute(s)? _____

Which one fired? _____. All hot squibs were/were not shorted out. Property

damages did/did not occur. If it did, what type? _____. Time departed:

_____. Time payload was delivered to AFGL unit or contractor: _____.

Remarks: _____

Recovery Crew

Other personnel that assisted in recovery

Name

Address

SRA Christopher Person

Chief

ADVANCE FLIGHT INFORMATION

1. On 13 Apr 78 flight H78-13 was launched at 1303Z HAFB and terminated at 2010 (Z) on 13 Apr. 78.
2. The experimenter was DOE and the objective was Atmospheric Sampling under project number/title Ash Cen.
3. Flight Information:
- A. Balloon: (1) number 3 of 4, (2) item 2, (3) serial number 26, (4) contract number F 29651-77-80051 (5) size (volume) 0.516, (6) type LTV-009, (7) thickness 1.5 mil, (8) manufacturer Winzen, (9) reached altitude of 79.9, (10) it (was) (was not) a success.
- B. Weight: (1) gross 1173 lbs, (2) balloon 337 lbs, (3) payload 836 lbs.
- C. Parachute(s): (1) number 3 (2) serial number N/A, (3) diameter 29 ft.
- D. Mission (preliminary analysis): (1) objective results excellent, (2) recovery conducted yes, (3) payload condition excellent.
4. The above information was called to Lt. Harris on 14 Apr. 78 by Anna Serna of NMSU (PSL).

BALLOON MISSION

PUBLIC INFORMATION RELEASE

1. Balloon flight H78-13 was launched from HAFB at 0603 on 13 APR 78. The launch was accomplished by personnel attached to the Air Force Cambridge Research Laboratories, Detachment 1, which is located at Holloman AFB, NM.
2. The balloon, which is made of this plastic material, has an inflated volume of 516 MCF.
3. The flight, which reached an altitude of 79.5 KA was conducted in support of a Government sponsored high altitude meteorological research program in compliance with Federal Aviation Administration regulations.
4. The balloon is tracked and controlled by AFCRL personnel using radio telemetry and direction finding equipment.
5. If additional information is required concerning the balloon flight, contact: Holloman AFB, NM Public Information Office, Autovon 867-4406 or (505) 479-6511, Ext 4406; or Det 1, Air Force Cambridge Research Laboratories, Holloman AFB, NM, Autovon 867-4421, or (505) 479-6511, Ext 4421.
6. This information was called to ANN YOUNG on 13 APR 78 by MSGT Owens.