IPEX

Flight 5 I000221

DATA TYPE	SENSOR or OPTION
INE	2
Accelerometer	2
Temperature Probe	1
Altitude (for vertical wind)	Pressure Altitude
Static Pressure	Fuselage
Dynamic Pressure	Fuselage
Dewpoint Probe	2

Notes:

THIS MISSION WAS ABORTED AT 0129Z DUE TO PROBLEMS WITH # 1 ENGINE.

There were no data/time gaps.

All sensors functioned normally.

Downward spikes in radar altimeter values were due to overflying mountain crests.

Aircraft INE positions were not renavigated with respect to GPS due to the short duration of the flight.

SPECIAL NOTE!!! Locations 80, 81 and 82 of record five on the standard tape contain vertical ground, vertical air and vertical wind speeds, respectively, derived from Dave Jorgensen's vertical wind algorithm. It is recommended that these values be used for vertical wind analysis.

The King liquid water voltage is in location 79 of record five on the standard tape.

	Takeoff	Landing
Aircraft static pressure	864.3 mb	867.9 mb
Corrected tower pressure	N/A	N/A

Flight Director: A. Barry Damiano, (813) 828-3310 ext. 3073

FLT ID: I000222	FM: KSLC	TO: KSLC
FLT NO: 00-21	BLK IN: 03:12Z	ATA: 0304Z
ETD: 0000Z	BLK OUT: 2357Z	ATD: 0005Z
ETE:	BLK TIME: 3:15	FLT TIME: 2:59
SPONSOR ORG: NSSL	PROGRAM: IPEX	PURPOSE: FLT #5

OAO PERSONNEL

AC	TENNESEN	SYS ENG	
CP	O'MARA	DATA SYS	B SMITH
NAV	ADLER/RATHBUN	RADAR	BARR
FE	WADE	BT/ODW	
RADIO	SANS SOUCI	CLD PHYS	
FD	DAMIANO	~~BOOSTER~~	FLOYD

PARTICIPATING SCIENTIST/VISITORS/OAO

LAST, FIRST NAME	ACTIVITY ON A/C	AFFILIATION
SCHULTZ	PI	NSSL
SMULL	ASST. PI	NSSL
KINGSMILL	ASST. PI	DRI
COX	PMS	U of U
CLEMENTS	OBS	U of U
STEWART		"
SONNTAG		"
OLSEN		"

PROPOSED/ACTUAL MISSION/REMARKS (RECCO, FIXES, STORM, PENET, NHOP #)

0030 went to RA232

Problem with #1 engine during spiral ascent at 0129Z

0056Z Both radar stop.

0106Z back up

0106Z down

0107Z up

0108Z down

0148Z Dumping fuel

MISSION ABORTED

U.S. DEPT. COMM./NOAA/OAO - DATA SECTION WORK FORM NO.2 OAOWF2 FILE

FLT ID: I000222 TIME OFF: 00052 TIME ON: 0304Z

	A/C T/O	WX STN	A/C LAND	WX STN
PRESSURE	864.3	29.81	867.9	29.93

	NO	DATA DISPOSITION/DATE/QUALITY
1/SEC FLT LVL TAPES	2	
FAST FLT LVL TAPES		
RADAR TAPES	2	
DOPPLER TAPES		
ODW CASSETTES		
HARD COPIES		
PMS	1	
VIDEO	4	
AXBT		
AXCP		
ODW		

PHOTOGRAPHY

	FWD	LS	RS	VERT	
ON					
OFF					
RATE					

REMARKS

NOAA FORM 59-4
(2-72)

I000221

TIME	LAT	LON	TRK	HD	WD	WS	TA	TD	PA	GA	SP	PS			RQ
001000	4055	11214	301	300	142	11	4.3	-4.3	2462	1139	861.8	750.3	RUN	CLD	69.8
002000	4031	11225	178	180	164	20	-8.9	-12.3	4013	2432	832.0	615.8	RUN		73.6
002400	4016	11225	181	184	196	40	-8.7	-14.1	4012	—	—	615.5	CLD		65.1
003100	3950	11224	179	183	222	20	-8.7	-9.9	3981	2230	818.3	617.4	CLD		74.9
003600	3946	11225	352	351	190	30	-8.9	-9.9	3984	2324	826.3	617.4	RUN		68.5
004200	4036	11226	1	0	192	30	-8.9	-11.1	3982	2691	865.1	618.1	RUN		72.5
004900	4054	11226	358	2	142	23	-8.7	-9.9	3973	2698	866.2	618.3	RUN		73.3
005600	4054	11227	160	160	153	21	-9.0	-9.5	3981	2697	865.4	618.1	RUN		75.4
010020	4038	11225	180	185	206	38	-9.0	-11.6							
011300	3952	11224	175	181	216	37	-9.2	-9.4	3964	1965	793.7	619.7	RUN		71.3
011900	3945	11224	346	344	211	35	-9.7	-9.8	3956	2295	826.6	619.8	RUN		72.6
012705	start spiral ascent														

☆U.S. GOVERNMENT PRINTING OFFICE: 1980—765-012/1119

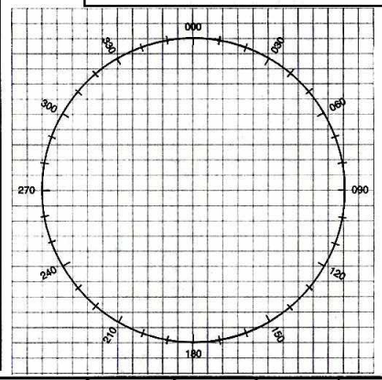
south

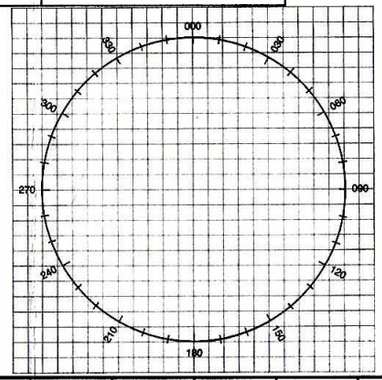
CLEARANCES

FREQ	ALT	HDG	OTHER
			SLC J482 V21 DELTA
			FF 200/38 then
			RW35 260° HD

MISSION LOG

PAGE ___ OF ___





POSITION REPORT

1. POSITION
2. TIME
3. ALTITUDE
4. NEXT POSITION
5. ETA
6. NEXT POSITION

EMERGENCY MESSAGE

TRANSMIT THE FOLLOWING MESSAGE TO ANY AGENCY ON THE AIR-GROUND FREQUENCY IN USE. IF UNABLE TO ESTABLISH COMMS, ATTEMPT CONTACT ON ANY OF THE FOLLOWING EMERGENCY FREQUENCIES:

UHF/VOICE	VHF/VOICE	MF/VOICE	HF/CW	MF/CW
243.0	121.5	2182 KHZ	8364 KHZ	500 KHZ

MAYDAY, MAYDAY, MAYDAY
THIS IS NOAA _____, NOAA _____, NOAA _____

- POSITION _____ N / S
  _____ E / W AT _____ Z
- HEADING _____ TRUE/MAG
- AT _____ KTS TRUE/INDICATED
- FLIGHT LEVEL OR ALTITUDE _____
- WE ARE A P-3 AIRCRAFT WITH _____ SOULS ON BOARD
- NATURE OF EMERGENCY
- ASSISTANCE DESIRED
- PILOT INTENTIONS
- WE HAVE _____ ENDURANCE REMAINING

TIME	FIX TYPE	POSITION	INS 1 POSITION	K ERR	INS 2 POSITION	K ERR	MH	VAR +E==>	TH	DR +R==>	TRK	GS	WD	WS	ALT	TAS	NEXT PT	DIST	TIME	ETA	REMARKS
2353	ENG																				
2357	TAXI																				
2357	BLK																				
0005	TO																				
0018	✓	40 38.3 112 24.4	40 38.2 112 24.4	+.1 +.0	40 38.3 112 24.4	+.0 +.0	162	15E	177	1L	176	230	215	10	13K	247	#6				315/23 FFU SLC
0044	△	40 22.4 112 25.7	40 22.6 112 25.5	-.2 +.2	40 22.7 112 25.5	-.3 +.2	341	15E	356	2R	359	268	190	40	13K	227	#5				
0120	△	39 49.6 112 25.0	39 50.0 112 24.7	-.4 +.3	39 49.8 112 24.8	-.2 +.2	336	15E	351	5R	356	284	195	30	13K	240	#5			0146	need to climb
0131	△	40 24 112 23	#1	problem																	
0148	△	40 59 112 26	FUEL DUMP																		
0304		40 46.5 111 58.4	40 46.4 111 58.1	+.1 +.3	40 46.2 111 58.1	+.3 +.3															LAND BLOCK IN
0312																					

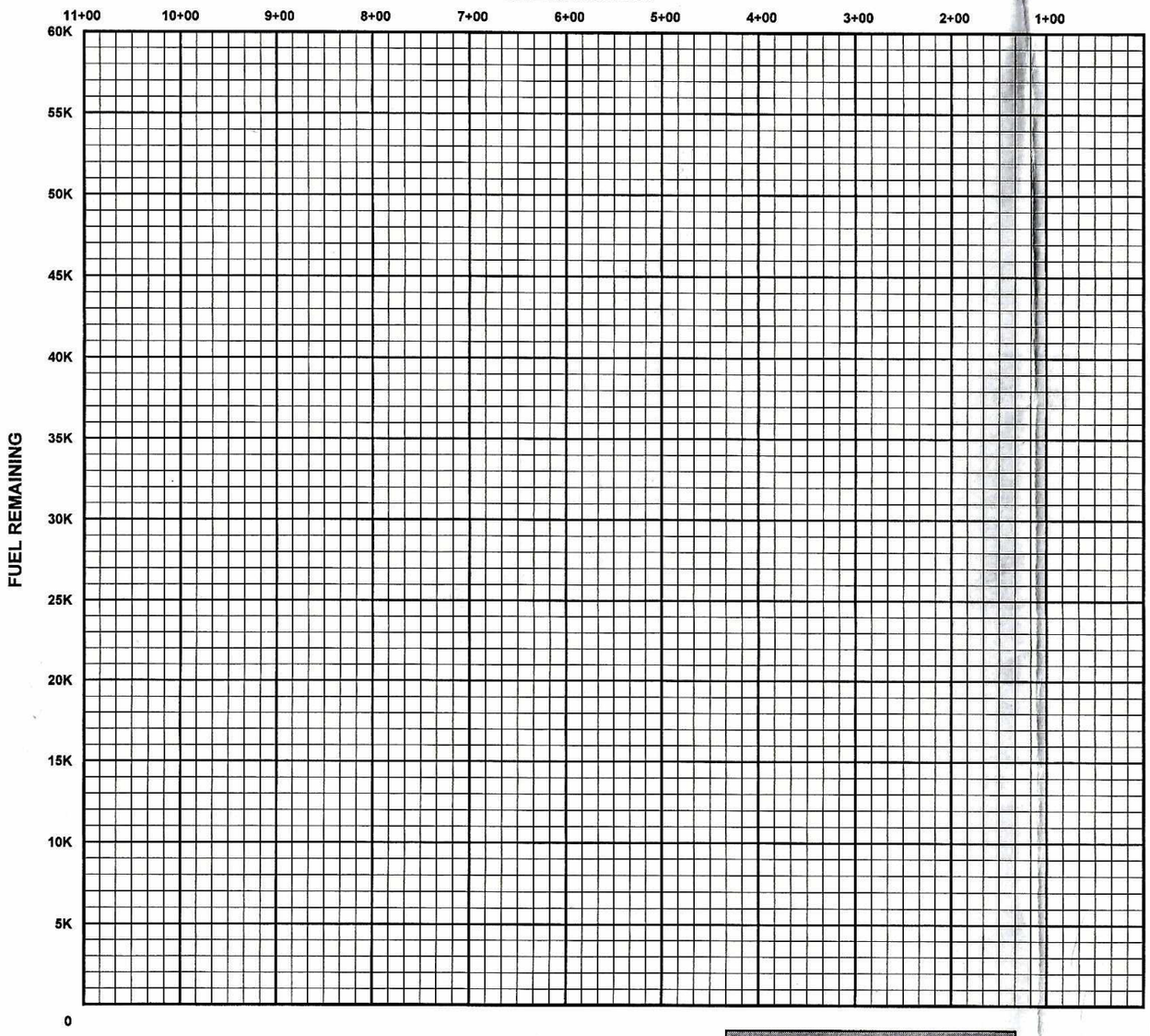
16L ILS ←

MISSION LOG	PAGE ___ OF ___

FIX TYPES
(G) - GPS (I) - INS (R) - RADIO (V) - VISUAL (C) - CELESTIAL (D) - DR

TIME	FIX TYPE	POSITION	INS 1 POSITION	K ERR	INS 2 POSITION	K ERR	MH	VAR +E==>	TH	DR +R==>	TRK	GS	WD	WS	ALT	TAS	NEXT PT	DIST	TIME	ETA	REMARKS
0050													145	30							#5 in NORTH
0030													230	30							by #6 in south

RANGE CONTROL GRAPH



ETP = .5(TOTAL DISTANCE x OUTBOUND WIND FACTOR)

WIND FACTOR		
WINDSPEED	HEADWIND	TAILWIND
10	1.03	.97
20	1.06	.94
30	1.10	.92
40	1.14	.89
50	1.18	.87
60	1.22	.85

ENROUTE FUEL	
ENROUTE TIME	
ENROUTE FUEL (6K .5K 4.5K RULE)	
RESERVE AT DESTINATION	
REQUIRED RAMP	
ACTUAL RAMP FUEL	

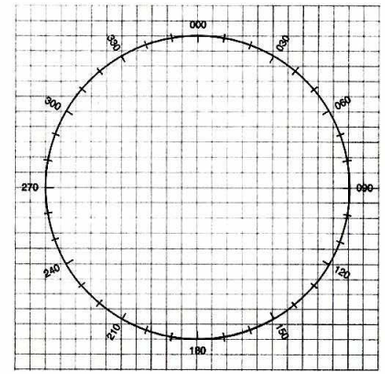
TACTICAL (OFFSTA TO DESTINATION)	4 ENG	3 ENG
DISTANCE (OFFSTA TO DEST)		
ENROUTE TIME (OFFSTA TO DEST)		
BURN RATE (LBS/HR)	4500	5500
ENROUTE FUEL REQUIRED		
RESERVE AT DESTINATION		
FUEL AT OFFSTA		

POINT OF SAFE RETURN	4 ENG	3 ENG
ETP DISTANCE (TO DEPARTURE)		
ENROUTE TIME (TO DEPARTURE)		
BURN RATE (LBS/HR)	4500	5500
FUEL REQUIRED		
RESERVE AT DEPARTURE		
PSR FUEL		

CEX - TRUE BEARING METHOD			
COMPASS TYPE	INS1	INS2	WET
MCH (READING)			
- MTH (SEXTANT)			
CE			
- VAR			
DEV			

CEX - ERB METHOD			
COMPASS TYPE	INS1	INS2	WET
MERB (DIAL 000)			
+ ZN			
= MTH			
MCH (READING)			
CE			
- VAR			
= DEV			

CEX SIGHT	
GMT	
GHA	
CORR	
GHA	
LONG +W -E	
EXACT LHA	
LAT	
BODY	
DEC	
HC / D	
CORR	
HC	
Z	
ZN	



F FACTOR	PRESS ALT	200	250	300	350
	10,000	1.0	1.0	.99	.99
	20,000	.99	.98	.97	.97
	30,000	.97	.96	.95	.94
	40,000	.96	.94	.92	.90

TRUE AIRSPEED CROSS-CHECK

TIME	IAS	PRESS ALT	"F" FACTOR	EAS	OAT	TAS	ITAS
023	202	13K	1	1	-9c	236	242

241

NOAA FORM 56-49
(2-95)

MISSION PREFLIGHT LOG

DESTINATION	MISSION	NAVIGATOR	AIRCRAFT COMMANDER	FLIGHT DIRECTOR	SCHEDULED / ACTUAL TAKEOFF Z	DATE OF TAKEOFF
KSLC	00-21	ADLER	TENNESEN	DAMIANO	0001 / 0005	22Feb00

WP	LAT / LON	RTE	MH	VAR +E==>	TH	DR +R==>	TRK	GS	WD	WS	ALT	TAS	LEG / TOT DIST	LEG / TOT TIME	PROP ETA	ETA	ATA	REMARKS
9	KSLC RAMP																	
1	OPT B																	
2																		
3																		
4																		
5	286/22 N SLC																	
6	200/38 $ FFU																	
7	DELTA																	
8	RFU																	

18 SOB

INS PERFORMANCE	INS 1	INS 2
BEGIN ALIGN TIME	2212	2212
ALIGN STATUS (0-5)	0	0
END NAV TIME	0311	0311
START NAV TIME	2351	2351
DELTA T	3+21	3+21

TERMINAL ERRORS	INS 1	INS 2
DELTA LAT	+.1	+.3
DELTA LON	+.3	+.3
RGS	0	1
RADIAL ERROR	0	0.

REMARKS

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
AIRCRAFT OPERATIONS CENTER

Option "A"

Aircraft Flight Track Plan

Location of Airport: 40.78 -111.97 Take off time: 0000 UTC

Way Point # 1 Lat: 40 57.2 Lon: -115 29.8
Wind Dir: 260.0 Wind Spd: 20.0 kts TAS: 250.0 kts Alt: 15000 ft
Dist to Way point: 160.4 nm Leg duration: 41.7 mins Arrival Time: 0041 UTC
Ground Speed: 230.6 kts Track: 274.8 degrees

Way Point # 2 Lat: 40 15.4 Lon: -115 30.4
Wind Dir: 260.0 Wind Spd: 20.0 kts TAS: 250.0 kts Alt: 15000 ft
Dist to Way point: 41.8 nm Leg duration: 10.2 mins Arrival Time: 0051 UTC
Ground Speed: 245.3 kts Track: 181.3 degrees

Way Point # 3 Lat: 40 15.4 Lon: -113 30.2
Wind Dir: 260.0 Wind Spd: 20.0 kts TAS: 250.0 kts Alt: 15000 ft
Dist to Way point: 91.7 nm Leg duration: 20.4 mins Arrival Time: 0112 UTC
Ground Speed: 269.7 kts Track: 89.4 degrees

Way Point # 4 Lat: 39 44.1 Lon: -113 29.7
Wind Dir: 260.0 Wind Spd: 20.0 kts TAS: 250.0 kts Alt: 15000 ft
Dist to Way point: 31.4 nm Leg duration: 7.6 mins Arrival Time: 0119 UTC
Ground Speed: 246.7 kts Track: 177.1 degrees

Way Point # 5 Lat: 39 45.5 Lon: -115 29.5
Wind Dir: 260.0 Wind Spd: 20.0 kts TAS: 250.0 kts Alt: 15000 ft
Dist to Way point: 92.1 nm Leg duration: 24.0 mins Arrival Time: 0143 UTC
Ground Speed: 230.4 kts Track: 271.5 degrees

Way Point # 6 Lat: 39 44.1 Lon: -113 29.7
Wind Dir: 260.0 Wind Spd: 20.0 kts TAS: 250.0 kts Alt: 15000 ft
Dist to Way point: 92.1 nm Leg duration: 20.5 mins Arrival Time: 0204 UTC
Ground Speed: 269.7 kts Track: 90.2 degrees

Dist to base: 94.1 nm Leg duration: 21.2 mins Landing time:0225 UTC
Wind Dir: 260.0 Wind Spd: 20.0 kts TAS: 250.0 kts Alt: 15000 ft
Ground Speed: 266.6 kts Track: 47.6 degrees

Total mission duration: 2.4 hrs

Option "B"

Aircraft Flight Track Plan

Location of Airport: 40.78 -111.97 Take off time: 1200 UTC

Way Point # 1 Lat: 39 32.3 Lon: -111 58.3
Wind Dir: 260.0 Wind Spd: 20.0 kts TAS: 250.0 kts Alt: 15000 ft
Dist to Way point: 74.7 nm Leg duration: 18.2 mins Arrival Time: 1218 UTC
Ground Speed: 245.7 kts Track: 180.0 degrees

Way Point # 2 Lat: 38 42.1 Lon: -112 32.6
Wind Dir: 260.0 Wind Spd: 20.0 kts TAS: 250.0 kts Alt: 15000 ft
Dist to Way point: 56.8 nm Leg duration: 14.4 mins Arrival Time: 1232 UTC
Ground Speed: 237.2 kts Track: 208.1 degrees

Way Point # 3 Lat: 38 1.1 Lon: -112 31.4
Wind Dir: 260.0 Wind Spd: 20.0 kts TAS: 250.0 kts Alt: 15000 ft
Dist to Way point: 41.1 nm Leg duration: 10.0 mins Arrival Time: 1242 UTC
Ground Speed: 246.4 kts Track: 178.0 degrees

Way Point # 4 Lat: 38 1.7 Lon: -112 12.4
Wind Dir: 260.0 Wind Spd: 20.0 kts TAS: 250.0 kts Alt: 15000 ft
Dist to Way point: 15.0 nm Leg duration: 3.3 mins Arrival Time: 1245 UTC
Ground Speed: 269.8 kts Track: 87.4 degrees

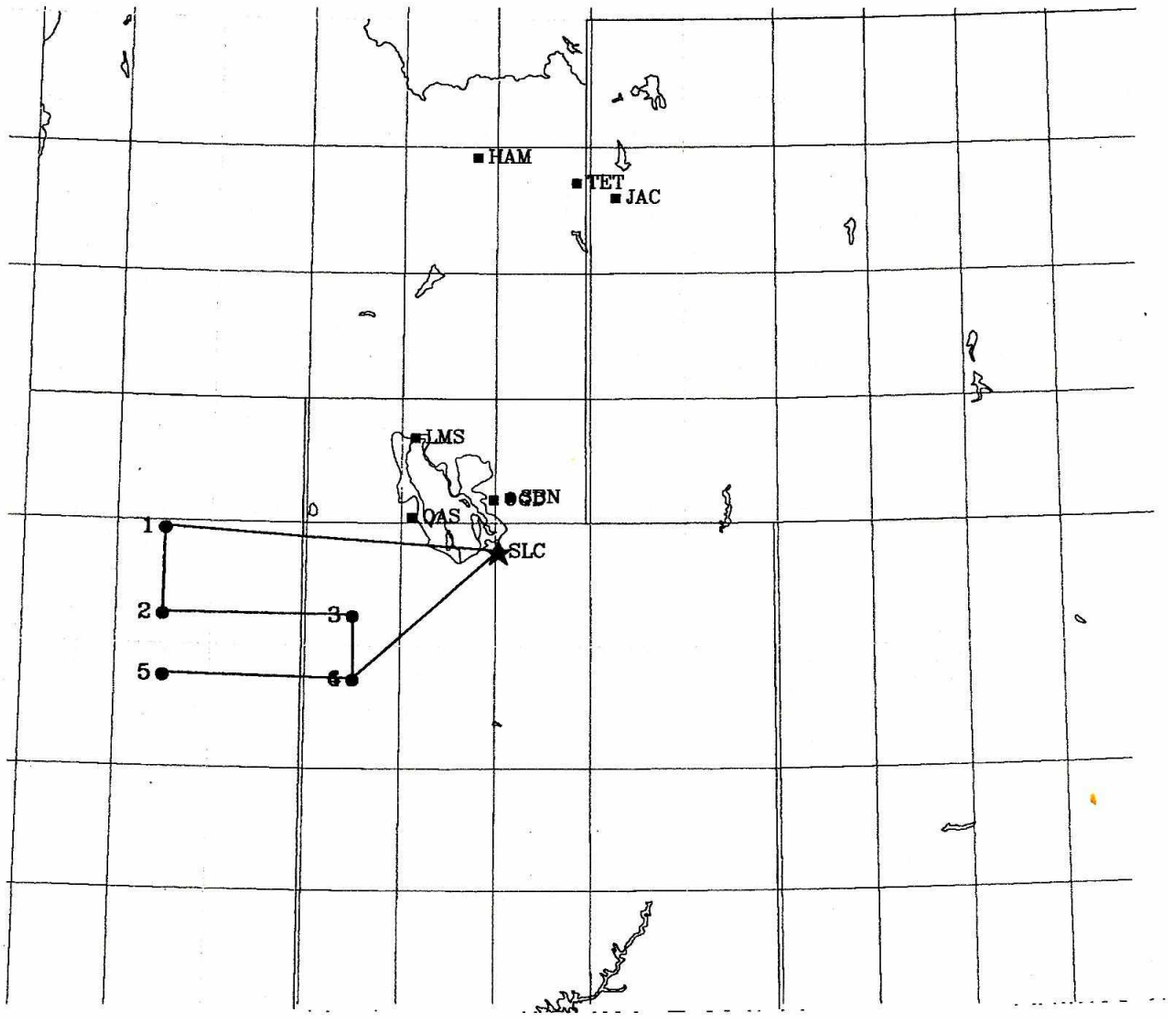
Dist to base: 165.6 nm Leg duration: 39.1 mins Landing time:1325 UTC
Wind Dir: 260.0 Wind Spd: 20.0 kts TAS: 250.0 kts Alt: 15000 ft
Ground Speed: 254.0 kts Track: 3.8 degrees

Total mission duration: 1.4 hrs

. Option "A"

Aircraft Flight Track Plan

(45.0,−105.0)



(37.0,−117.0)

NOAA/NSSL Lambert Conformal (41.0,−111.5)

Y 41 00
112 25

39 45
112 25

45 d7
dugway
40 53

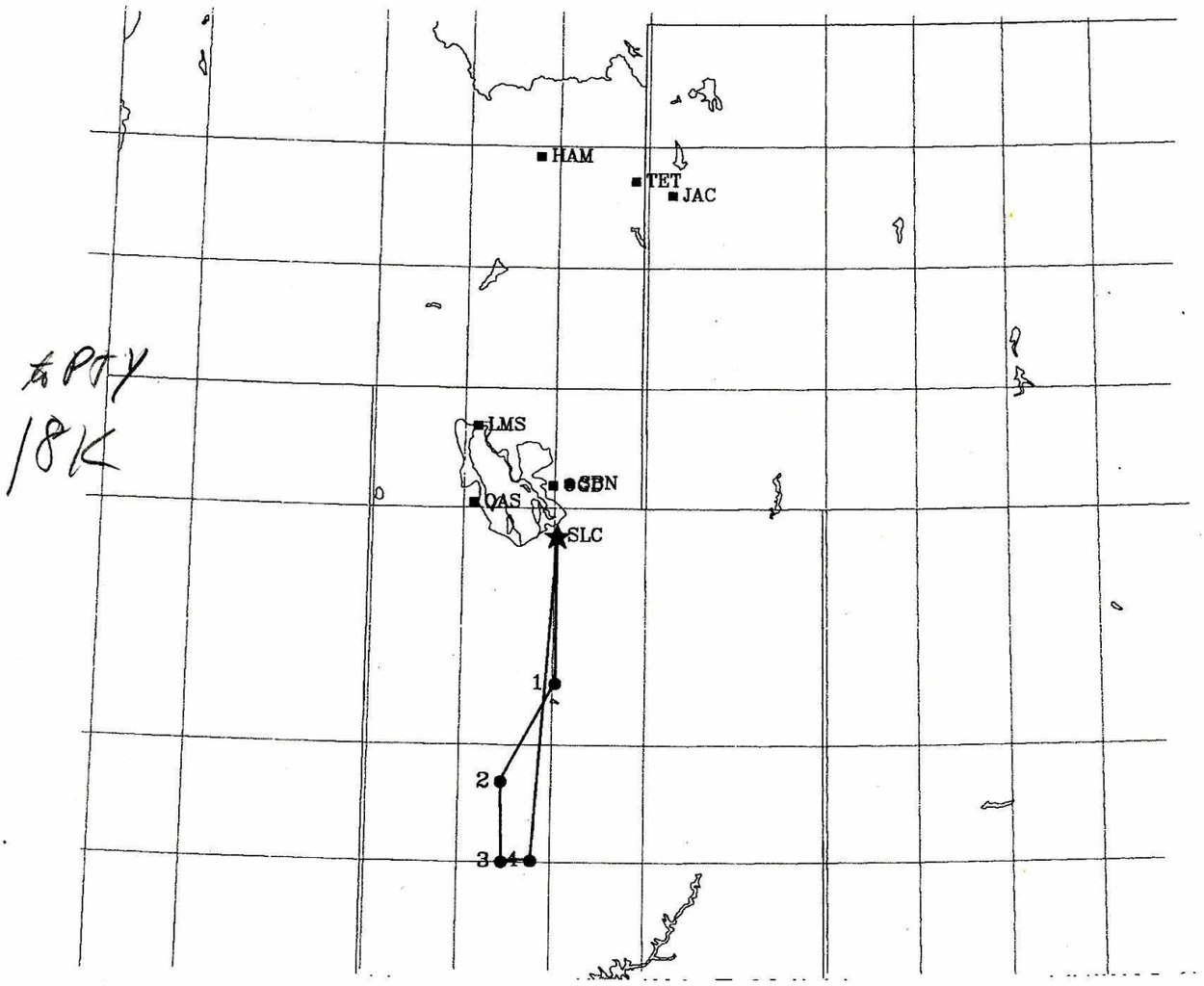
Option B

4030
N30

29.88

Aircraft Flight Track Plan

(45.0,−105.0)



(37.0,−117.0)

39 45N
8 29.89
6

NOAA/NSSL Lambert Conformal (41.0,−111.5)