NOAA P-3 N42RF
NEAQS 2004 Flight #10
KPSM - KPSM

Flight ID: H040728

Sensor or system	*Number or Name*
Inertial + Accelerometer Data	*1*
Temperature Probe	*1*
Dew Point Probe	*1*
Altitude (for vertical wind)	*Pressure Altitude*
Radar Altitude	*RA-159*
Static and Dynamic Pressure	*Rosemount Fuselage*
Time Source	*Micro 99*
Constants File	*CO2042.CON*

Notes:

There were time/data gaps from 154511-20Z and 203321-30Z. Be aware of data spikes as a result of these data gaps.

Radar Altimeter 159 was replaced with Radar Altimeter 232 from 135301-135724Z (takeoff), 172153-174323Z, and from 203128-203500Z (landing) due to spiking.

TDM2 was offset -2 degrees from 142824-142912Z and -1 degree from 181154-181857Z due to RH% values over 120%.

There may have been instances when the dew point temperature exceeded the ambient temperature resulting in a RH% above 100%. These times were during heavy precipitation events and were likely due to a wet-bulb effect on the total temperature sensor, and/or an artificial warming of the dew point sensor as it tried to burn off excess moisture. These periods are typically reflected in the J/W liquid water data. No corrections were made during these events unless noted above.

All other instruments worked optimally during the flight.

The aircraft INE positions were renavigated with respect to GPS.

Due to AOC equipment/printer failure, the last step of our Quality Control process (visual QC) was not able to be performed. While other measures were taken to ensure there were no problems with the data, questions concerning questionable data should be brought to the attention of the Flight Director ASAP.

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

Flight Director: Paul Flaherty
Phone #: (813) 828-3310 ext. 3094

U.S. Dept. of Commerce / NMAO / NOAA / Aircraft Operations Center

Flt ID: 040728 H	From: KPSM	To: KPSM
Flt. No: 04 - 030	Blk In: 2041 z	Time On: 2033 z
ETD: 1400 z	Blk Out: 1347 z	Time Off: 1355 z
ETE: 8 + 00	Blk Time: 6 + 54 (6.9 Hrs)	Flt Time: 6 + 38 (6.6 Hrs)
Sponsoring Org: **NOAA / A.L.**	Program: **NEAQS**	Purpose: IOP 10

AOC Flight Crew

Aircraft Commander:	Kennedy, P	Data System:	McMillen, S
Co-Pilot:	Choy, B	AVAPS:	ROGERS, M
Navigator:	Brakob, D / [redacted]	System Eng:	[redacted]
Flight Eng:	WADE, S	A A:	
Flight Director:	Flaherty, P	A A:	
Avionics:	Rodgers, M	Crew Chief:	

Participating Scientists / Visitors

Name (Last, First)	*Activity on Aircraft*	*Affiliation*
RYERSON, T	Principal Investigator	NOAA A.L.
SMITH, J	SCI	"
NEWMAN, A	SCI	"
PELTIER, R	SCI	"
NELSON, D	SCI	"
BONDY, R	PRESS	McNEILL-LAIR REPORT / PBS

Remarks (Storm Name, Mission ID, Recco Times, Fix Times)

Mission ID: BALANCED DP2 1624 / DYN ATTACK (DAPM) A LITTLE LOW (1 mb?) (BELOW FRZ?)

(See reverse for additional remarks)

U.S. Dept. of Commerce / NMAO / NOAA / Aircraft Operations Center

Flight ID: 0407281t	Time Off: 1355 Z	Time On: 2033 Z

	A/C - Takeoff	Wx Station - Takeoff	A/C - Land	Wx Station - Land
Pressure	1014.5 mb	3004 mb	1013.1 mb	3002 mb

ATIS	Time	Observation	
Takeoff	1321Z	01004KTS 7SM 15/14	3004
Land	1955Z	13002KTS 15SM 19/16	3002

	Number	Data Disposition / Date / Quality	
Flight Level Tapes			
Radar Tapes			
Cloud Physics Tapes / CDs			
Video Tapes			
Dropsondes		Good: Bad:	
AXBT			
AXCP			
AXCTD			

Remarks:

m 413-50

040728 H

TIME	LAT	LON	TRK	HDG	Temp	T_d	WIND DIR	WIND SPD	STATIC PRESSURE	CLOUDS / NOTES			
140200	4308	7030	103	108	11	9.6	250	22	770.8	SCT↓ (BLUE)	BKN↑	8000* FT	
140715	4303	7001	103	109	5	3	230	30	673.1	OVC↓	OVC↑	—	11,000 FT
141530	4301	6917	001	355	7	3	219	37	672.3	OVC↓	OVC↑	—	11,000 FT
142100	4326	6910								IN + OUT OF CLOUDS			
144040	4451	6917	358	356	5	2	259	12	672.2	SCT↓ BKN↓	BKN↑	11,000 FT	
145200	4538	6916	001	359	5	1	271	10	672.1	BKN↓	OVC↑ (AVIS)	11,000'	
145730											PT 3		
515530	4717	6850	013	009	-3	-9	262	22.1	573.2	FEW CU↓	BKN↑	15000'	
52759	4812	6830	014	013	-3.5	-37.0	267	13.4	573.1	FEW CU↓	SCT↑	15000'	
53354	4839	6820	014	013	-4	-36	262	9.7	588.2	FEW CU↓	SCT↑	14000'↑	15000'
60830	5109	6731								DESCENDING	HAZY - FEW CU		
62230	5105	6720	091	091	4.3	.5	288	19		ASCENDING↑	12K	HAZY - FEW CU	
70430	4923	6621	198	201	2	-27	290	09	643.5	FEW CU	SCT THIN CIRRUS↑	CLIMBING 20K	
72244	4807	6701	200	205	-13	-23	268	24	465.7	FEW CU↓	SCT THIN CI↑	20,000'	
81614	4424	6843	197	202						DESCENDING	IN CLOUDS - 14000		
83530	4311	6914								14000'	IN CLOUDS		
901500	4439	6916	001	357	-2	-6	241	22	573.4	15000'	OVC↓	OVC↑	
953400	4405	6918	182	185	14	11	222	17	813.2	@6000'	OVC↓	BKN↑	

NOAA FORM 56-49
(2-95)

MISSION PREFLIGHT LOG

DESTINATION	MISSION	NAVIGATOR	AIRCRAFT COMMANDER	FLIGHT DIRECTOR	SCHEDULED / ACTUAL TAKEOFF Z	DATE OF TAKEOFF
KPSM	NEAQS #10	LT BRAKOB	CDR KENNEDY	FLAHERTY	1400	28 JULY 04

	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
KPSM	1X	N 43-05 / W 70-49						097				2-15K	200	65 / 65	+20 / +20				→ BOYCC
BOYCC	2X	42-56.4 / 69-20						001				✓	✓	185 / 250	+55 / 1+15				→ MLT 330/40
MLT 330/40	3X	46-00 / 69-15						013				✓	✓	370 / 620	1+50 / 3+05				→ YWK 210/60
YWK 210/60	4X	52-00 / 67-00						191				✓	✓	550 / 1170	2+45 / 5+50				→ BOYCC
BOYCC	2X	42-56.4 / 69-20						001				✓	✓	185 / 1355	+55 / 6+45				→ MLT 330/40
MLT 330/40	3X	46-00 / 69-15						181				✓	✓	185 / 1540	+55 / 7+40				→ BOYCC
BOYCC	2X	42-56.4 / 69-20						278				✓	✓	65 / 1605	+25 / 8+05				→ KPSM
KPSM	1X	43-05 / 70-49																	

INS PERFORMANCE	INS 1	INS 2
BEGIN ALIGN TIME	1130	1130
ALIGN STATUS (0-5)	0	0
END NAV TIME	2035	2035
START NAV TIME	1340	1340
DELTA T	6+55	6+55

TERMINAL ERRORS	INS 1	INS 2
DELTA LAT	+1.3	-1.3
DELTA LON	-1.3	-1.7
RGS	2	10
RADIAL ERROR	2	2

REMARKS

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

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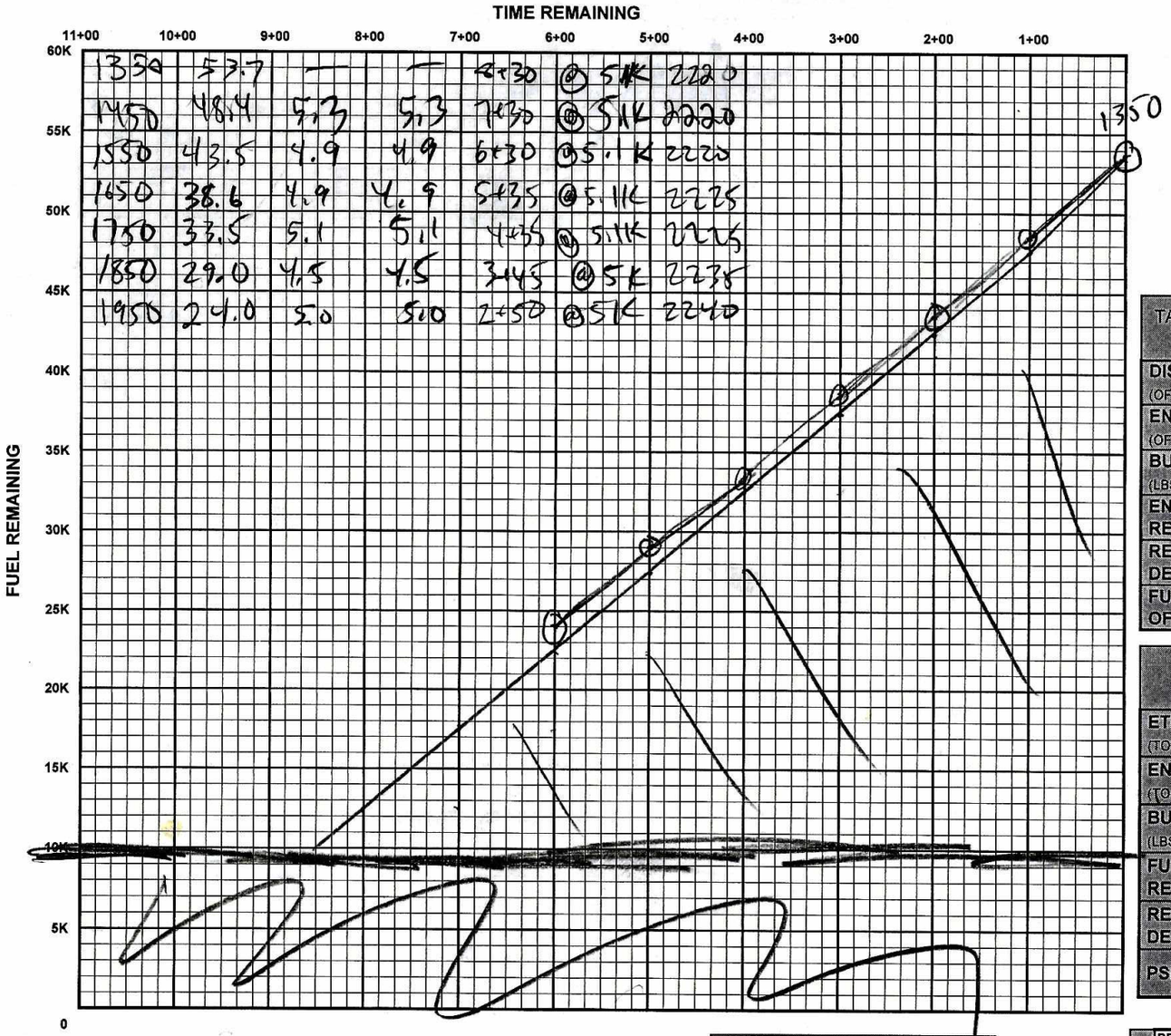
RANGE CONTROL GRAPH



1350	57.7	—	—	8+30	@ 5K	2220
1450	48.4	5.3	5.3	7+30	@ 5.1K	2220
1550	43.5	4.9	4.9	6+30	@ 5.1K	2220
1650	38.6	4.9	4.9	5+35	@ 5.1K	2225
1750	33.5	5.1	5.1	4+35	@ 5.1K	2225
1850	29.0	4.5	4.5	3+45	@ 5K	2235
1950	24.0	5.0	5.0	2+50	@ 5K	2240

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	8+00
ENROUTE FUEL (6K 5K 4.5K RULE)	41K
RESERVE AT DESTINATION	10K
REQUIRED RAMP	51K
ACTUAL RAMP FUEL	53.7

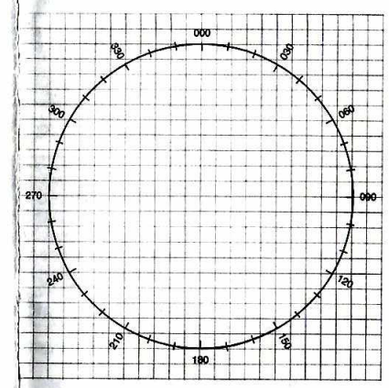
TACTICAL (OFFSTA TO DESTINATION)	4 ENG	3 ENG
DISTANCE (OFFSTA TO DEST)		
ENROUTE TIME (OFFSTA TO DEST)		
BURN RATE (LBS/HR)	4500	5500
ENROUTE FUEL REQUIRED		
RESERVE AT DESTINATION		
FUEL AT OFFSTA		

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	



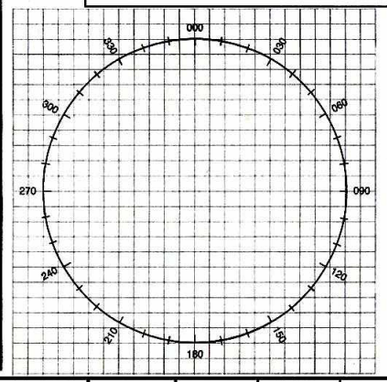
IF FACTOR	PRESS ALT	200	250	300	350
	10,000	1.0	1.0	.99	.99
	20,000	.99	.98	.97	.97
	30,000	.97	.96	.95	.94
	40,000	.96	.94	.92	.90

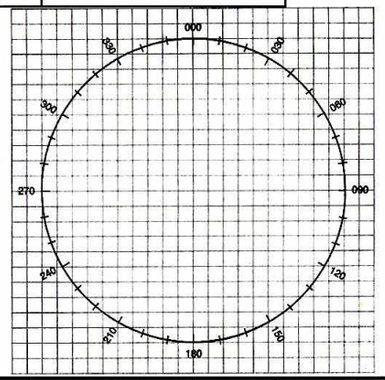
TRUE AIRSPEED CROSS-CHECK							
TIME	IAS	PRESS ALT	"F" FACTOR	EAS	OAT	TAS	ITAS
1410	205	11K			-12	231	231

CLEARANCES			
FREQ	ALT	HDG	OTHER

MISSION LOG

PAGE 1 OF 2





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 42

- 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

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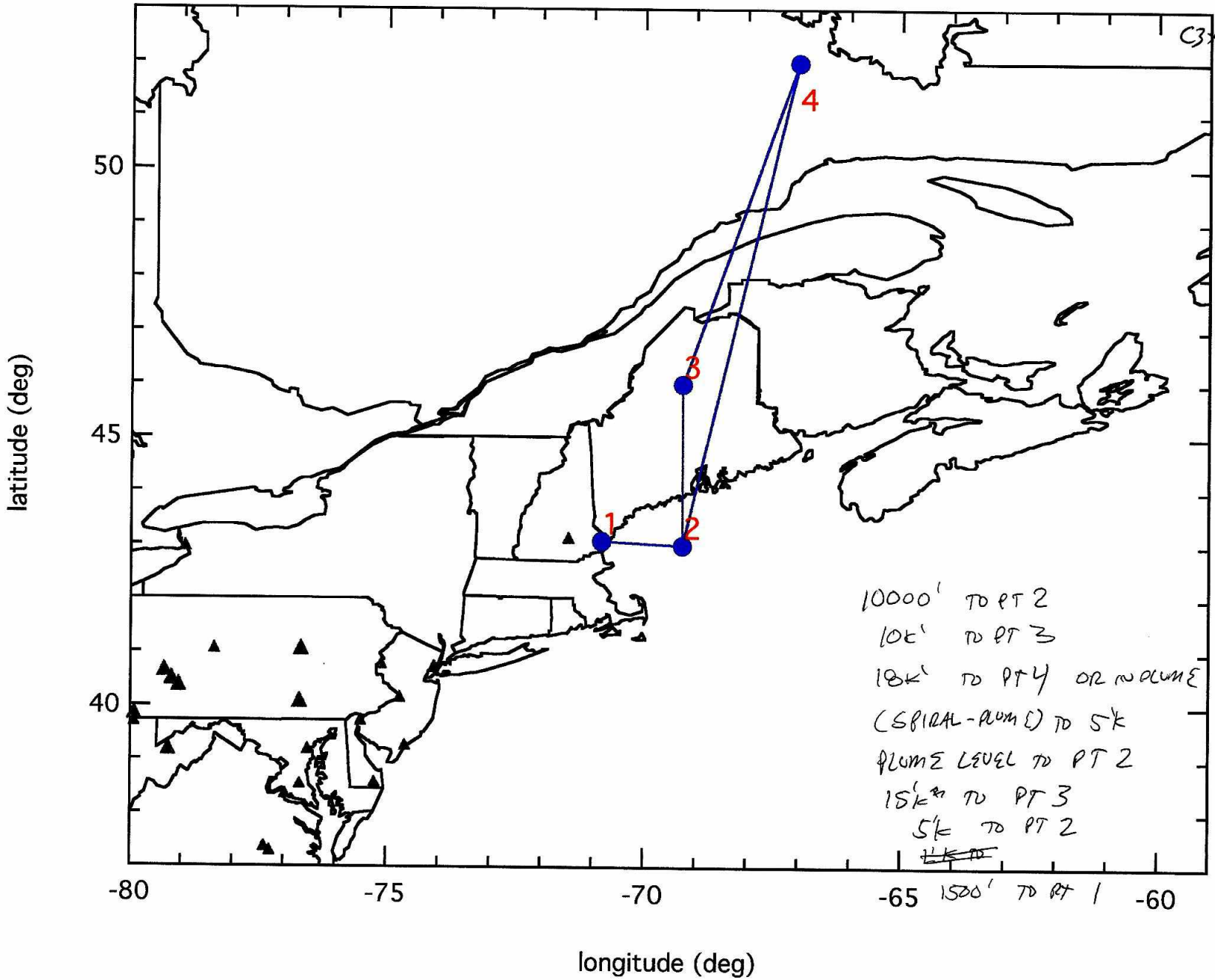
TIME	FIX TYPE	POSITION	INS 1 POSITION	K ERR	INS 2 POSITION	K ERR	MH	VAR +E==>	TH	DR +R==>	TRK	GS	WD	WS	ALT	TAS	NEXT PT	DIST	TIME	ETA	REMARKS
1343	ENG	N	N		N																
1347	TAXI	W	W		W																
1347	BLOCK																				
1355	T/O																				
1403	X ✓	43-06.3 70-20.7	43-06.1 70-20.6	+.2 +.1	43-06.2 70-20.5	+.1 +.2	124	16W	108	5L	103	240	225	25	9K	226					KDT 152/23 ✓
1450	△	45-26.9 69-16.4	45-25.8 69-15.7	+1.1 +.7	45-26.5 69-15.9	+.4 +.5	018	19W	359	2R	002	243	210	12	11K	232					
1550	△	49-48.6 67-54.2	49-47.5 67-53.2	+1.1 +1.0	49-47.9 67-53.7	+.7 +.5	035	23W	012	2R	014	230	250	10	12K	225					
1650	△	50-23.9 65-49.7	50-22.4 65-48.9	+1.5 +.8	50-22.3 65-49.0	+1.6 +.7	226	24W	202	3L	199	236	325	15	10.5K	228					
1750	△	46-19.1 67-52.5	46-17.4 67-52.5	+1.7 0	46-17.0 67-52.9	+2.1 -.4	223	20W	203	6L	197	264	288	32	20K	265					
1850	△	43-44.0 69-17.7	43-42.8 69-18.3	+1.2 -.6	43-42.8 69-19.3	+1.2 -1.6	016	18W	358	4R	002	283	24	33	15K	253					
1950	△	44-13.0 69-18.1	44-12.3 69-18.0	+.7 +.1	44-09.0 69-19.3	+4.0 -1.2	203	18W	185	3L	182	210	235	18	6K	227					
2032	LAND	43-04.8 70-49.5	43-03.5 70-50.8	+1.3 -1.3	43-03.4 70-51.2	+1.4 -1.7															

2010

04-030

28 July 2004, Warm Conveyor Belt, part II, export



Gal Jim Smith
C3X Andy Neuman
2 Ryerson
3 Rick Peltier
Gal Dave Nelson