U.S. DEPT. COMM./NOAA/OAO - DATA SECTION WORK FORM NO.1 OAOWF1 FILE

FLT ID: 990704I	FM: KBNA	TO: KBNA
FLT NO: 99-36	BLK IN: 0413Z	ATA: 0409Z
ETD: 2000Z	BLK OUT: 2017Z	RTD: 2027Z
ETE: 0330Z	BLK TIME: 7.56 7.9	FLT TIME: 7.37 7.6
SPONSOR ORG: NOAA/AL	PROGRAM: AESOP	PURPOSE: W. NASHVILLE

OAO PERSONNEL

AC KENNEDY, P ✓	SYS ENG LYNCH, T ✓
CP O'MARA, T	DATA SYS HORNBROOK, C ✓
NAV RATHBUN, D ✓ / NEWMAN, C ✓	RADAR
FE BOST ✓	DT/ODW
RADIO ,	CLD PHYS
FD CZYZYK, S ✓	DOPPLER YOUNG, D ✓

PARTICIPATING SCIENTIST/VISITORS/OAO

LAST, FIRST NAME	ACTIVITY ON A/C	AFFILIATION
~~Herr~~ TRAINER, M ✓	PI	NOAA-AL
HUBLER, G ✓	SCIENTIST	"
RYERSON, T ✓ / HUEY, G ✓	"	"
~~Herr~~ GOLDAN, P ✓ / PARRISH, D ✓	"	"
~~JEFFERSON, T~~ [redacted] R	"	"
LEE, Y ✓	"	BROOKHAVEN
FLOCKE, F ✓	" ~~ALCO~~	NCAR

PROPOSED/ACTUAL MISSION/REMARKS (RECCO, FIXES, STORM, PCNET, NHOP ...)

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

FLT ID: 990704I TIME OFF: 2027Z TIME ON: 0404Z

	A/C T/O	WX STN	A/C LAND	WX STN
PRESSURE	1008	30.24	999.1	30.19

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

PHOTOGRAPHY

	FWD	LS	RS	VERT	
ON					
OFF					
RATE					

REMARKS

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TIME	LAT	LON	HK	HD	TA	TD	WD	WS	BA	GA	PS	SP	REMARKS
023728	36 36	87 49											LEVEL 2K
024320	36 39	88 14											PT 16
024549	36 49	88 15											PT 18
025221	36 50	87 46	323	318	24.0	18.3	186	11.6	856	832	914.5	1005.5	PT 19 + CLIMB
025550	36 50	88 09											PT 19 + CLIMB
030230	36 50	88 03	90	95	22.3	14.9	188	16.4	1139	1119	883.8	1005.5	LEVEL 4K
030600	36 50	87 47											PT 19
030806	36 58	87 45											PT 21
031407	37 00	88 10											PT 20 + DESCEND
031510	36 58	88 08											LEVEL 3K
032018	37 00	87 46	90	93	24.2	17.7	199	12.1					PT 21 + DESCEND
032138	37 03	87 46											LEVEL 2K
032735	37	88 12											PT 20 + CLIMB
033330	37 00	88 09	94	96	12.7	2.2	151	13.0	2828	2924	716.4	1004.2	LEVEL 9.5K

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TIME	LAT	LON	TK	HD	TA	TD	WD	WS	PA	GA	PS	SP	REMARKS
													CLOUD BASE 4.7 PA
204308	36 17	8756	283	283	1.9	-12.8	108	12.5	4348	4546	589.2	1006.7	LEVEL 4.5 PA
204545	36 16	88 10											PT 1
205730	36 18	88 16											DESCEND
												5.8 PA	CLOUD/HAZE TOP
210425	36 16	88 08	197	196	19.7	14.8	161	8.4	1784	1300	867.1	1004.7	LEVEL 4.5 PA
210617													DESCEND
210815													LEVEL 2K PA
210857	36 00	88 15											PT A
211600	35 51	87 47											PT B
212102	36 08	87 45											PT 2'
212925	36 16	88 20											PT 1'
213845	36 08	87 45											PT 2 + DESCEND
214135	36 08	8744	301	300	29.8	15	128	5.2	306	159	977.1	998.0	LEVEL 500 AGL
214925	36 17	88 18											PT 1
215948	36 08	87 44											PT 2 + CLIMB
220230	36 08	8746	292	294	23.0	17.6	158	6.9	982	913	903.0	1000.2	LEVEL 3500 PA
220415	36 10	8753											LEVEL 3000 PA
221008	36 18	88 18											PT 1
221940	36 08	87 45											PT 2 + CLIMB
222355	36 11	8757	289	288	19.7	14.9	167	11.3	1384	1393	857.7	1001.2	LEVEL 4000 PA
222850	36 18	88 19											PT 1 + CLIMB
223019	36 15	88 19											LEVEL 5200 PA
223842													PT 2 + DESCEND
224105	36 17	8745											PT 3
224155	36 19	8748											LEVEL 2K PA
224940	36 30	88 20											PT 4
230150	36 31	87 31	91	92	27.4	20.5	242	4.4	536	434	950.7	1000.1	PT 5
230345	36 38	8730											PT 6
231714	36 39	88 29											PT 7 + DESCEND
231838	86 37	88 27	48	50	30.3	20.3	187	9.8	252	154	983.4	999.7	LEVEL 500 AGL
233450	36 39	87 16											PT 6 + CLIMB
233800	36 39	8720											LEVEL 3K PA
235330	36 40	88 29											PT 7 + CLIMB
235440	36 41	88 26	090		20.6	13.5	186	12.3	1307	1271	865.7	1001.7	LEVEL 4500 PA
001013	36 3												PT 6 + DESCEND
002360	3644	8650	286	285	27.8	20.0	184	3.2	554	466	948.5	997.7	LEVEL 2000 PA
002748	36 49	87 1											PT 8
0045	36 50	88 29	270	268									PT 9
004753	36 59	88 31	356	355									PT 10
010145	37 00	8730	89	91	27.0	20.3	205	9.3	552	454	948.7	998.3	PT 11
010723	37 14	8730											PT 12
012100	37 15	8829	272	269	27.0	19.9	199	10.2	552	459	948.7	998.0	PT 13
013850	36 15	88 30	180	181	27.1	18.8	192	6.1	554	492	948.5	1002.8	PT 14
015017	36 15	87 45	91	92	27.0	19.4	168	6.2	554	472	948.4	1001.8	PT 15 + CLIMB
020015	3620	8816											CLIMB
020135	3620	88 22											PT 14
021105	36 20	8746											PT 15
021925	36 38	8730	35	37	21.4	17.6	182	13.9	1161	1141	881.4	1004.1	PT 17
022930	36 39	84 13											PT 16 + DESCEND
023120	36 38	84 08	56	58	23.8	16.1	195	12.0	865	86	913.5	1007.0	LEVEL 3K PA
023600	36 39	8747											PT 17 + DESCEND

NOAA ● AOC● SED Flight Performance Log

Aircraft : N43RF Project : Ozone '99 Mission : Ozone #3

SED Crew: Lynch, Hornbrook Flight ID : 990704F

Pre-Flight: 17:30 Take-Off: 2026 Landing: 0403

	System			Pre-Flight	In-Flight	Post-Flight		
NAV	INE #1	Aligned to :	Ø Ø	✓ TL		-1.3	+.7	Ø
NAV	INE #2	Aligned to :		✓ TL		+4.9	-1.0	3
NAV	GPS			✓ TL		Lat	Long	GS
RADAR	Nose			✓ TL				
RADAR	L/F	R/T SN : 103		✓ TL		Mod Switch Off ? ✓ TL		
RADAR	MARS Data System			Clean DAT? ✓ TL		# DATs : 1		
TEMP		Cal High	Cal Low			Cal High	Cal Low	
TEMP	Temp #1	31.0	-30.3	✓		+30.7	-30.3	
TEMP	Temp #2			✓				
TEMP	Dewpoint #1			✓				
TEMP	Dewpoint #2 (AOC)			✓				
PRESS	Attack Angle (AP/DAP)			✓				
PRESS	Slip Angle (BP/DBP)			✓				
PRESS	Differential (PQ1/PQ2/PQ3/PQ4)			✓				
PRESS	Absolute (PS1/PS2)			✓				
PRESS	Radome Transducers			Plugs ?				
PRESS	Cabin Transducer (Station 5)			✓				
FLT LVL	Apn-159	SN: 8071-01		✓ TL		Off ? : ✓ TL		
FLT LVL	Apn-232	SN: 1699		✓ TL		Off ? : ✓ TL		
FLT LVL	J&W Liquid Water			✓ RCFH				
FLT LVL	Lyman Alpha Hygrometer			Plugs ? ✓ TL		Plugs?:		
FLT LVL	Down PRT-5 (SST)			✓				
FLT LVL	Side PRT-5 (CO^2)			✓				
FLT LVL	RAMS Data System			Clean DAT? ✓ TL		# DATs : 2		
FLT LVL	F/D Laptop			✓		Off ?		
FLT LVL	C.I. Printer			✓				
MISC	ASDL			N/U		Off ? : ✓ TL		
MISC	Epply Radiometers (PSP / PIR)			✓				
MISC	Exterior Walk Around			✓				
MISC	Video	(N) (L) (R) (D)		✓ TL		Lens Covers ?: ✓ TL		
MISC	AVAPS			N/U		# Tapes : N/A		
MISC	GPS Digital Dropsondes (GD^2)			#On Board : N/A	# Dropped : N/A	# Good : N/A		
MISC	FCU	A B C		✓ TL		UPS Off : ? ✓		
USER	Wing Pods - Bolts & Covers			✓ TL		Accelerometers		
USER	Zenith SAFS Radiometer			Secure ? ✓		#1 (2 G) : 8190		
USER	Pump Bay Temp Sensor			✓ TL		#2 (2.5 G) : 6686		
USER	Window Inlet Covers			Removed ? TL		#3 (3 G) : 5967		
USER	CO & NO Alarm Operational			Test ? ✓ TL		#4 (3.5 G) : 2892		
USER	CO & NO Gas PSI Check			Start PSI : 360		End PSI : 340		
USER	All Gas Cylinders Secure			Mounting ? ✓ TL		Valve Closed ?		

Gas Cylinders located in:
- (3) C1/C2 Cabinet
- (1) B3 Cabinet
- (3) Bookcase Sidewall
- (3) Station C3X
- (1) Station 2 Sidewall
- (3) Station 3
- (5) Aft Bottle Rack
- (3) Station 6
- (2) Station 7 Sidewall

Please Note any Discrepencies

Item #	Zulu Time	Problem Description	Initials	Status
(1)		WARDS R/T interface module needs to be secured in B2 cabinet	TL	OK
2	0325	TD Display Locked up Reset OSP3 to clear	[illegible]	—
3		Connector on Ladder plug is all wallowered up	TL	
4		ICS control box at Sta -4 → doesn't receive UHF #1	TL	OK
*		Obsolete Drag 902002 (Pitch) 902000 Sta 2 Aux Coil	TL	

NOAA • AOC • SED

N43RF DATA STATION LOG

Project : Ozone '99 Mission : Ozone #3 Flight ID : 990704I

Operators :

Take Off : 2026 Landing : 0403

RAMS DAT 1 On [8 / 9] : 2016	RAMS DAT 1 Off : 0412	Data : Slow Fast AVAPS
RAMS DAT 2 On [8 / 9] : 2017	RAMS DAT 2 Off : 0412	Data : Slow Fast AVAPS
RAMS DAT 3 On [8 / 9] :	RAMS DAT 3 Off :	Data : Slow Fast AVAPS
Printer On :	Printer Off :	
MARS DAT 1 On [8 / 9] : 2040	MARS DAT 1 Off : 0408	CPU Selected : A B
MARS DAT 2 On [8 / 9] :	MARS DAT 2 Off :	VCR's Used : N L R D
MARS DAT 3 On [8 / 9] :	MARS DAT 3 Off :	VCR Mode : VHS S-VHS 2 / 12
PMS DAT 1 On : —	PMS DAT 1 Off :	
PMS DAT 2 On : —	PMS DAT 2 Off :	Tapes Given To
PMS DAT 3 On : —	PMS DAT 3 Off :	RAMS :
VCR Tape 1 On : 2015	VCR Tape 1 Off : 0406	MARS :
VCR Tape 2 On :	VCR Tape 2 Off :	PMS :
VCR Tape 3 On:	VCR Tape 3 Off :	VCR :

CARCAH Tasking

Mission Number : N/A

Storm Name :

Data Station Operator Notes

DATE : 7/4/99

TO : Chief, AOC Flight Operations

FROM : Pilot/Flight Director, Aircraft N43RF ON 0413Z BLOCKTIME OFF 2017Z 7.9

SUBJECT: Hazardous Duty

PURPOSE OF FLIGHT: AIR CHEMISTRY (AESOP)

Hazardous Duty Pay is required for flight made on 7/4/99 (DATE)

Request based on HAZARDOUS MATERIALS ONBOARD

Personnel on board authorized Hazard Pay:

CZYZYK, S	
BAST, G	
YOUNG, D	
HORNBROOK, C	
LYNCH, T	

PILOT/FLIGHT DIRECTOR: [signature]

APPROVED: _____ DISAPPROVED: _____

CHIEF, AOC FLIGHT OPERATIONS: _____

990704I

RENAV

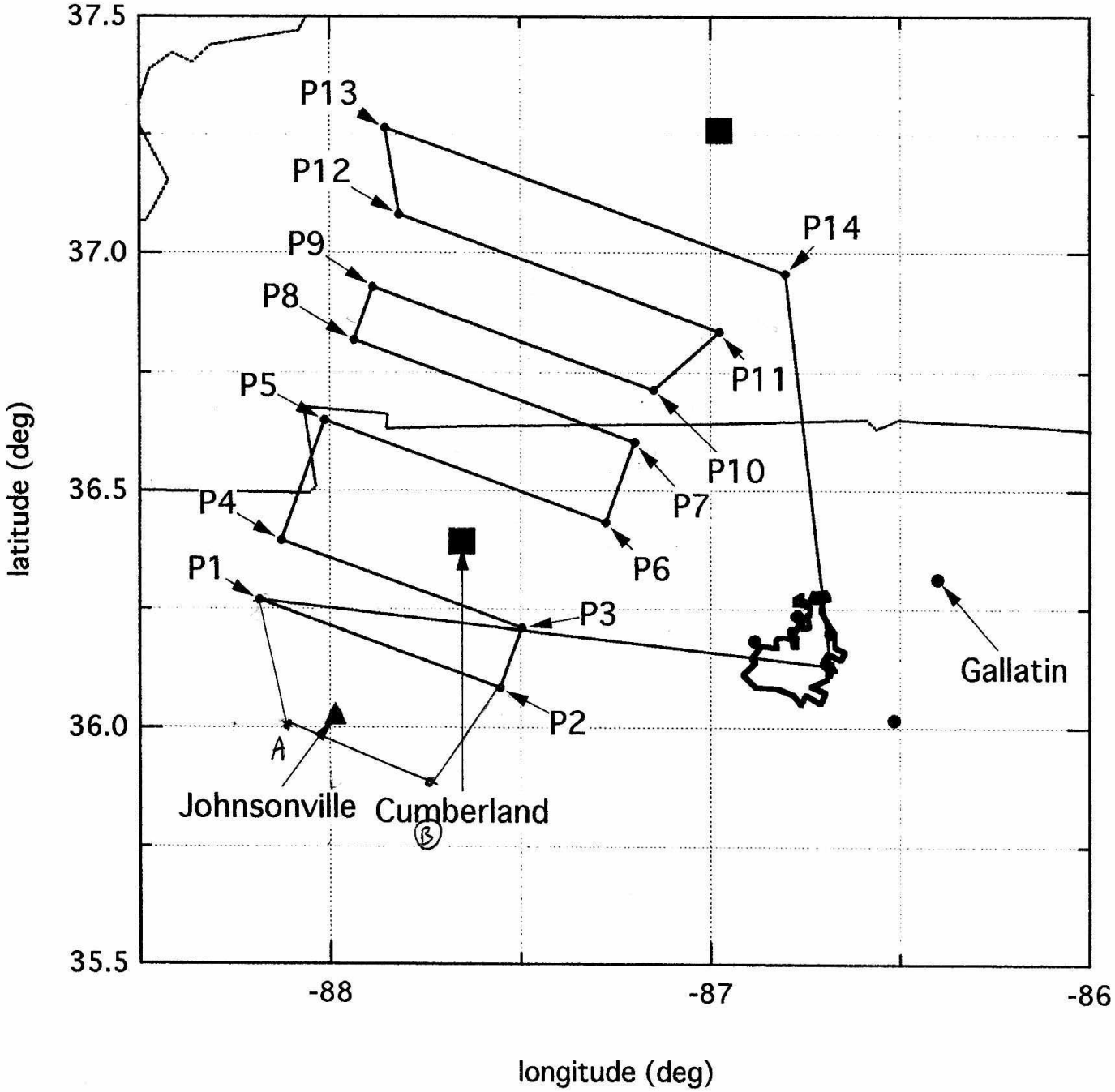
211200,	-0.2,	-0.1	35 56.6	-88 3.9
220000,	0.2,	0.0	36 8.0	-87 42.8
~~222400,~~	~~0.0,~~	~~0.0~~		
230400	0.1,	0.0	36 38.5	-87 30.4
234900,	-0.1,	0.0	36 39.0	-88 9.2
~~005000,~~	~~0.0,~~	~~0.0~~		
014000,	-0.5,	0.1	36 14.6	-88 33.5
022600,	-0.5,	0.0	36 38.9	-87 56.6
030300,	-0.7,	0.3	36 50.0	-88 0.6
041200,	-1.3,	0.8	36 7.2	-86 40.6

RA-159 SET TO ~~ZERO~~ 2016:01 - 2026:50 X
REPLACE W/232 2026:50 - 2028:55 X
RA-151 REPLACE W/232 0403:09 - 0412:00 ✓

DW2 PROBS ? 1651:00 - 1654:01
DW2 0356:37 - 0356:41 X

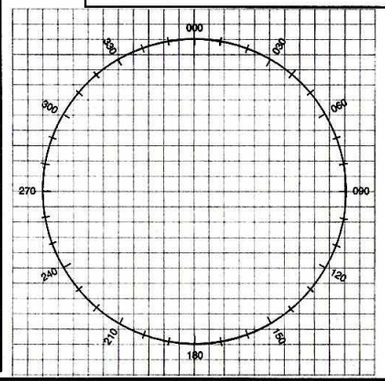
INE1, OP2, TT2

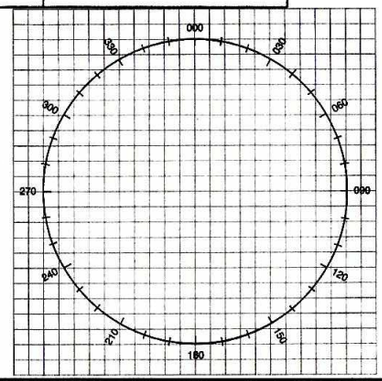
Flight plan : 4 July 1999
Cumberland and Johnsonville Power Plant Study
Transition into the night



CLEARANCES			
FREQ	ALT	HDG	OTHER
		5	37 8830 PT 20
		6	37 8745 PT 21

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 GPS	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
2011																					ENG START
2017																					20C 30.24 TAXI SAI
2026																					TOFF 20C
2112	FM1	3556.5 8803.1	3556.6 8803.1	-.1 0	3552.4 8802.7	+.1 +.4			111	2—	109	211	175	4	2K	212					
2200	FM1	3610.2 8740.9	3610.1 8741.1	+.1 -.2	3610.0 8740.8	+.2 +.1			192		192	224	200	2	3500	227					
2224		3611.1 8757.5	3611.1 8757.6	0 -.1	3610.8 8757.5	+.3 0			292	2R	294	228	175	11	4700	222					
2304		3639.1 8732.4	3639.0 8732.5	+.1 -.1	3638.2 8732.1	+.9 +.3			267	0	267	214	230	8	2000	219					
2349		3639.0 8809.8	3639.1 8809.8	-.1 0	3638.2 8809.9	+.8 -.1			267	2R	269	213	219	9	3000	218					
0226		3638.9 8757.6	3639.4 8757.7	-.5 -.1	3635.7 8757.7	+3.2 -.1			267	4R	271	217	205	16	4000	222					
0303		3650.0 8800.5	3650.7 8800.1	-.7 +.4	3646.0 8801.0	+4.0 -.5			095	4L	091	220	175	15	4000	220					
0404 0413		3607.4 8641.1	3608.7 8640.4	-1.3 +.7	3602.5 8642.1	+4.9 -1.0															LAND BLOCK IN

NOAA FORM 56-49
(2-95)

MISSION PREFLIGHT LOG

DESTINATION	MISSION	NAVIGATOR	AIRCRAFT COMMANDER	FLIGHT DIRECTOR	SCHEDULED / ACTUAL TAKEOFF Z	DATE OF TAKEOFF
BNA	OZONE	LT NEWMAN	LCDR KENNEDY	STAN CZYZYK	2000Z / 2026Z	4 JULY 99

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

INS PERFORMANCE	INS 1	INS 2
BEGIN ALIGN TIME	1814	1814
ALIGN STATUS (0-5)	0	0
END NAV TIME	ΦΗΦ4	ΦΗΦ4
START NAV TIME	2014	2014
DELTA T	7Η5Φ	7Η5Φ

TERMINAL ERRORS	INS 1	INS 2
DELTA LAT	-1.3	+4.9
DELTA LON	+.7	-1.Φ
RMS	Φ	3
RADIAL ERROR	1	5

REMARKS

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