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

FLT ID: 960325H	FM: KOQU	TO: KOQU
FLT NO: 96-006	BLK IN: 2341	ATA: 2137
ETD: 1722	BLK OUT: 1656	ATD: 1704
ETE: ~~22~~ 6.5 hrs	BLK TIME: 6+45/6.7	FLT TIME: 6+33 / 6.5
SPONSOR ORG: NOAA/AC	PROGRAM: NARE/OZONE-96	PURPOSE: AIR CHEMISTRY

30.1 / 102 knots

AOC ~~OAO~~ PERSONNEL

AC KENNEDY ✓	SYS ENG ROLES, J ✓
CP PLAYER ✓	DATA SYS DELGADO, J
NAV RATHBUN ✓	RADAR
FE WADE ✓	DT/ODW
~~RADIO~~ MCFADDEN, J ✓	CLD PHYS
FD /WHITE/ PARRISH ✓	DOPPLER

PM

PARTICIPATING SCIENTIST/VISITORS/OAO

LAST, FIRST NAME	ACTIVITY ON A/C	AFFILIATION
HUBLER, G	NO. NARE/	~~NOAA/AERONOMY LAB~~ CU CIRES
HOLLOWAY, J	OZONE-96	CU CIRES
JOBSON, T		CU CIRES
LEE, Y-N		BROOKHAVEN NAT'L LAB
WILLIAMS, J		CU CIRES
FRIED, A		NCAR
RYERSON, T		CU CIRES
GOLDAN, P		NOAA/AC
SHERIDAN, P		CU CIRES

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

FLT HRS 6.8

59

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

FLT ID: TIME OFF: TIME ON:

	A/C T/O	WX STN	A/C LAND	WX STN
PRESSURE	1025 mb		1018 mb	

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

PHOTOGRAPHY

	FWD	LS	RS	VERT	
ON					
OFF					
RATE					

REMARKS

960325 H Ozone #3

START 1652:01
STOP 2340:00

BAD BLOCKS

17 16:53
17 17:00
17 23:02 Bad Position
  Lat 38.475 42.321
  long -65.464 -72.010
17 23:02
17 23:10
17 24:31 Bad Position
  Lat 38.547 42.401
  long -65.514 -72.065
17 24:31
17 24:40
19 24:28 2131:45 2339:03
  24:30 2131:50 2339:10

1704:00 APN 05 spike

IVE ~~#2~~ 1 w/ GPS

	LA	LO
1800:00	~~+0.9~~ −1.6	~~+0.4~~ +0.1
1900:00	~~−0.3~~ −3.1	+0.1 +1.1
2000:00	~~+0.8~~ −4.9	~~+0.6~~ +3.3
2100:00	~~−0.8~~ −6.1	~~+1.7~~ +4.2
2200:00	~~−4.9~~ −6.0	~~+2.2~~ +3.4
2340:00	~~−6.3~~	~~+2.5~~
	~~−7.0~~ −6.9	~~+4.6~~ +2.5

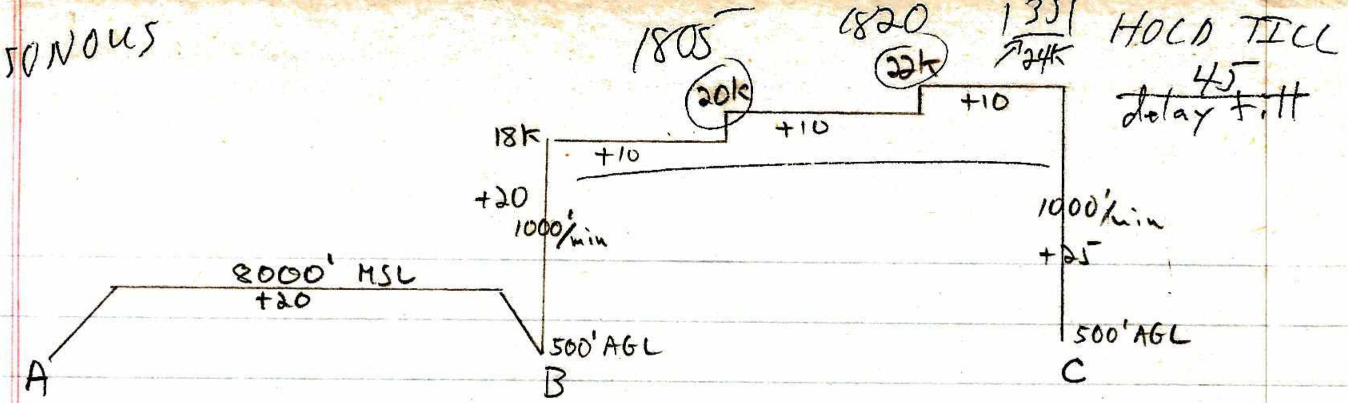
start tape 1652 960325H

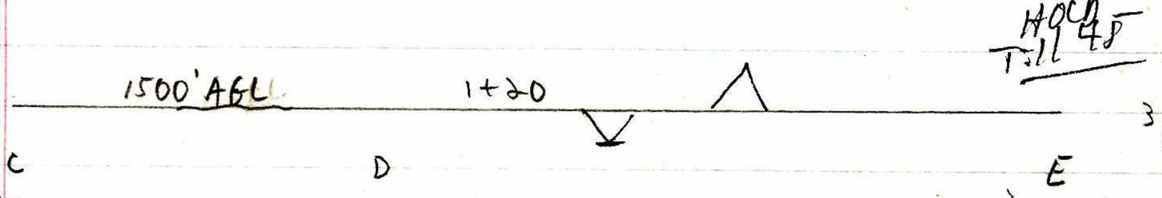
OAA FORM 59-4
?-72)

Time	LAT	LONG	Temp	DP	WD	WS	SP	PS	REMARKS
1704	4136.5	7125.3	1.7	0.3	173	20.2	1020.4	1012.2	T/O
1707	4131.4	7125.4	5.9	-10.3	213	35.3	1018.1	919.0	Climb thru 1000'-1300' AGL turbulent (BL)
1723	4218.8	7200.6	0.9	-11.3	241	40.8	783.7	744.5	Appr Pt B/delay till 1730
1727	4230.9	7208.2	0.5	-11.1	237	40.4	775.9	744.5	Loiter @ Pt B
1730									descend to 500' AGL
1733					268	35.8			3900' AGL turbulence
1736	4232.0	7210.3			216	17.2	978.7	948.6	mark 1730 at HF Gond Site
1739			4.4	-10.4	230	39.8			climb/turb ceases @ 4500' AGL
1744		10,000 - 12,000 AGL							↗10K AGL smoky haze
1758			-20.2	-34.1	221	27.0			climb to 20K (1757) 180?Z
181331								start	pitch (-2.7 -5.6 -6.7)
181440								End	pitch
1821:50	4156.7	7453.2	-18.4	-45.1	226	37.7			awaited clearance to 22K
1826	4152.7	7611.8			222	38.7			level 22K
1836	4136.0	7610.0			218	47.1			climb 24K
183930					216	53.6			level 24K
1848			-22.5	-34.3	219	60.3			descend to lower 21.79
—	OVC cirrus deck ↗25K, haze (smoke) below								
1911					180	30			↘500' AGL
1914			10.5	-3.8	184	37.0			level 1300' AGL mod chop
1915-25	fly North of plants West-East @ 1300' AGL								
1939	look back 5 min @ DP or TT								SW bound MOT Mtn
—	4029.4	7613.8							
1945			14.5	2.7	193	26.3			over mtn's descend ↘1500'
1957:25			13.7	3.4	195	32.7			D → E
2013/4	3706.0	7449.0	13.1	4.6	207	45.7			ft wet/much less turbulence
—	cirrus SCT/↗25K - fm W VIS 25+ in Haze								
2045.0	38.0	72.40	12.1	6.9	213	32.2	1022.6	957.2	descend 500' ↗25K
2112			-28.1	-53.7	298	13.2	—	—	descend ↘2000' MSL → F
2131	descend thru several elev. trap layers/haze in horiz								
2132	3832.1	7116.6	10.7	-2.5	203	36.4			ap. 2000' to 1500' AGL → G
2148:11	decr. winds w/ht								climb 2000'/min 2 min
2150:09									descend 2000'/min 2 min
2151:33	back to				211	42.2			stop cone flight
2157:15			6500' →		243	40.9			climb 2000'/min 3 min
2200:15									descend 2000'/min 3 min
2203:55					221	44.8			level 1500' AGL
2215:06	4110.1	7058.4	11.5	0.9	216	42.1	1020.9	988.4	desc to ~~X~~ 500' AGL
2241:08			-26.9	-53.7	237	24.5			touch 25K → 30.15"Hg
2251:10					230	49.9			start 10 min Westbnd
~~2301:10~~ 2303:06			2.7	-10.7	228	54.5			start 10 min Eastbnd
2313:--									finish; into PVD
2337									land

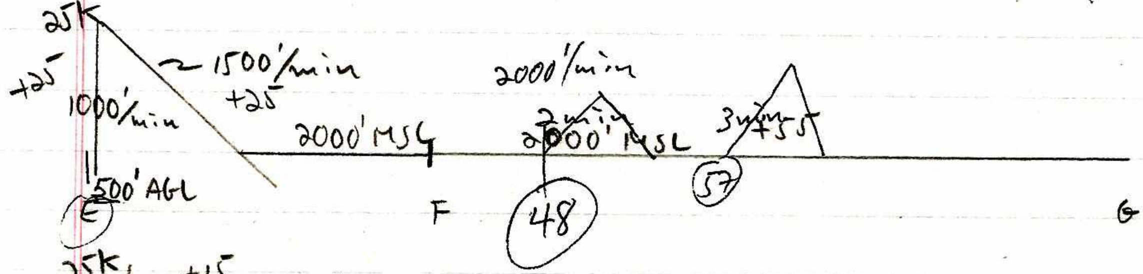
2341:53 end of tape

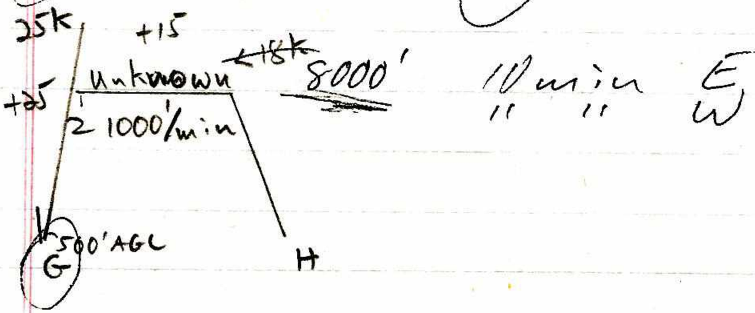
POISONOUS





2
+20
+20
+30
3 +25
1+20
+50
+55
+25
+15
4+40





Flight on 25 March 1995

Takeoff: 11:00 EST planned

Time 00:00 (hh:mm) is at the full hour or 15 min increments here from

From Pt. A, Quonset, head direction of Pt. B
Climb to 8000 ft MSL for calibration 30 min

O At time 00:30 be at Pt. B at 500 AGL
At Pt. B, race track profile to 18 kft MSL (reverse direction every ~~2.5~~ 5 min), climb at 1000 ft/min
20 min

O Head direction of Pt. C, at time 01:05 climb to 20 kft MSL, thereafter increase altitude by 2000 ft every 15 min.
Include ~~Pitch~~, roll, and yaw maneuvers
Pt. B to Pt. C (203 nmi, ~50 min) 50 min

O At Pt. C, race track profile to 500 AGL (reverse direction every 2.5 min), descend at 1000 ft/min) 25 min

O Head direction of Pt. E via Pt. D at 1500 AGL
according to HC sampling and NOy zeros (Observer calls), include traffic cones (climb for 3 min, then descend for 3 min, altitude change at 1500 ft /min) if air traffic allows.
Pt. C to Pt. D (102 nmi, 30 min),
Pt. D to Pt. E (181 nmi, 50 min) 80 min
If Power plant plume is intercepted, or visually seen, backtrack and intercept the plume another two times. +15 min

O At Pt. E, descend to 500 ft AGL, then race track profile to 25 kft MSL (reverse direction every 2.5 min), ~~descend~~ ascend at 1000 ft/min 25 min

O Head direction of Pt. F and descend along the way to 2000 MSL at 1500 ft/min
Pt. E to Pt. F (83 nmi, 23 min) 25 min

O Head direction of Pt. G at 2000 ft MSL,
according to HC sample and NOy zeros (Observer calls), include positive and inverted traffic cones alternatively
switch between moist marine boundary layer and dry layer aloft every 5 min
for a total of 30 min
Pt. F to Pt. G (190 nmi, 52 min) 52 min

O At Pt. G, ~~climb to 25 kft AGL~~ descend to 500' AGL, then race track profile to 25 kft MSL (reverse direction every 2.5 min), climb at 1000 ft/min
30 min

O Calibration before descent to Quonset, below 18 kft, Observer calls altitude
For example: Head east for 10 min, then return to Pt. G.
20 min

O Return to Pt. A

Estimated flight duration: 6 hrs 15 min

Pt. A (41 37, -71 25)
64 Pt. B (42 32 30, -72 10 37)

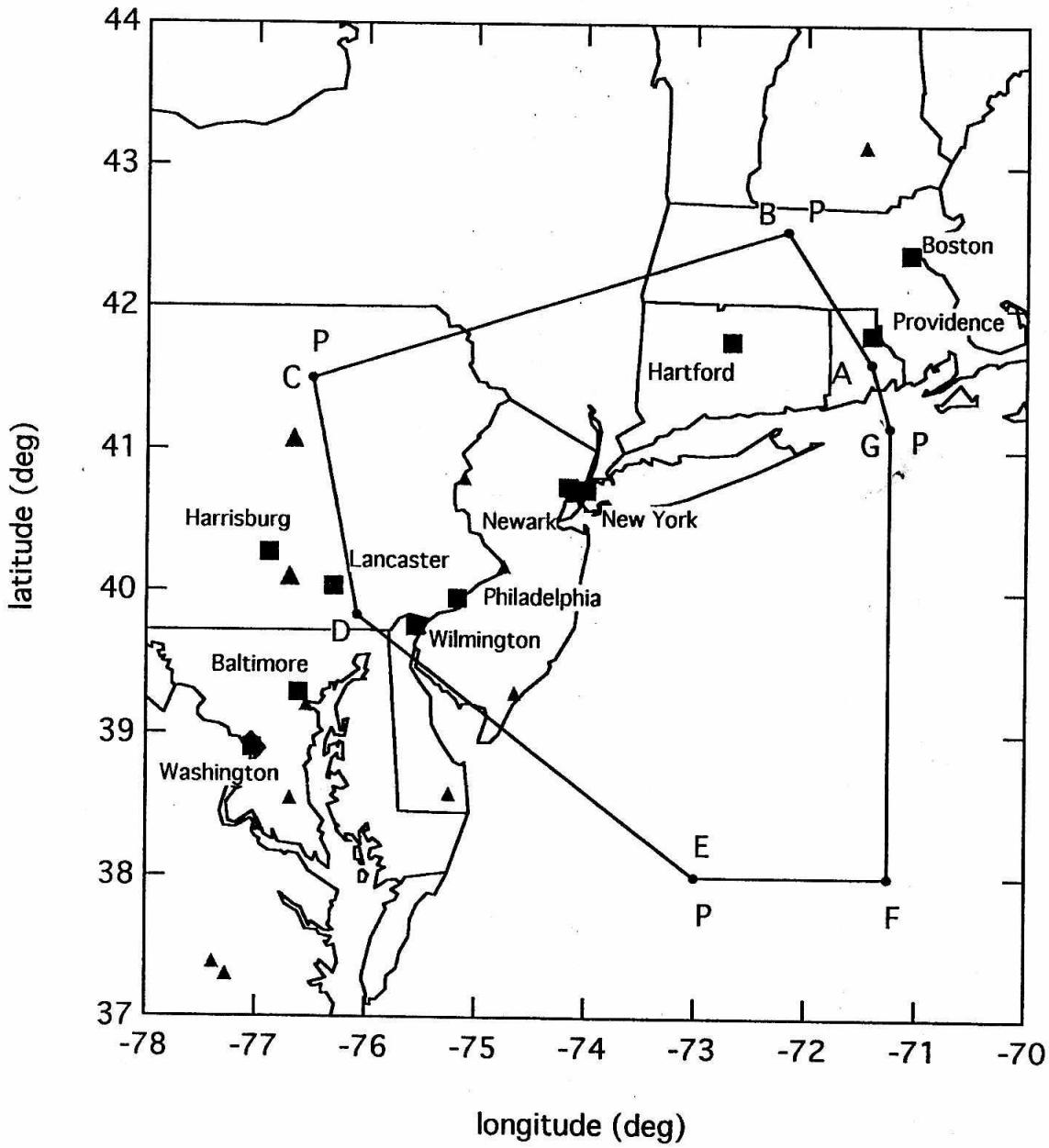
Harvard Forest Ground Site. The site is directly south of Prospect Hill. Prospect Hill has a firetower on its top.

162 Pt. C (41 30, -76 30)
104 Pt. D (39 50, -76 05)
181 Pt. E (38 00, -73 00)
83 Pt. F (38 00, -71 15)
190 Pt. G (41 10, -71 15)
28 Pt. H (41 37, -71 25)

The flight aims to a) characterize the NE area under non-frontal conditions, b) look at fresh pollution during the spring, c) possibly see pollution at lower altuitude over the N Atlantic, and d) provide plenty of opportunity for instrument test at low and high altitude.

The flight plan includes 4 altitude profiles, 2 over land and 2 over water. All profiles should be under non frontal conditions.
The 1st profile is over the Harvard Forest Ground Site. The second profile is also over land further to the West. The third profile is over the Atlantic approximately 240 km east of Washington, DC. The fourth profile is the routine profile near Block Island.

The first long horizontal transect (Pt. B to Pt. C) is at high altitude, the increasing altitude intervals will provide to test the altitude limits for the instruments. The Pitch, Roll and Yaw maneuvers may point out potential inlet problems.
The second horizontal transect (Pt. C to Pt. E via Pt. D) is at low altitude over the continent in areas of high emissions, and over water. During this transect we should intercept one or more power plant plumes which should provide the information necessary to determine the NOx instrument response factors.
The third horizontal transect is over the N Atlantic and there might be a chance to observe continental outflow at low altitude (The challange might be to identify the right altitude. We hope to accomplish this by the regular and inverted traffic cones). This leg also may offer an opportunity to contrast moist marine boundary layer and dry free troposphere aloft.



Triangles : Power Plants
Squares: Cities
P: indicates profiles

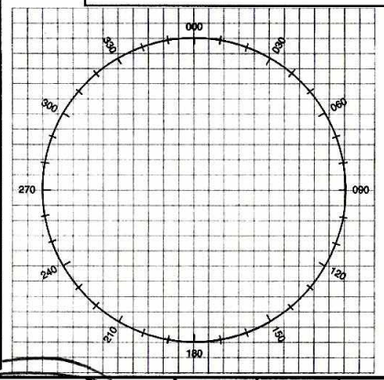
Kennedy
Player
Rathbun
Wade
White
Parrish
Roles
Delgado

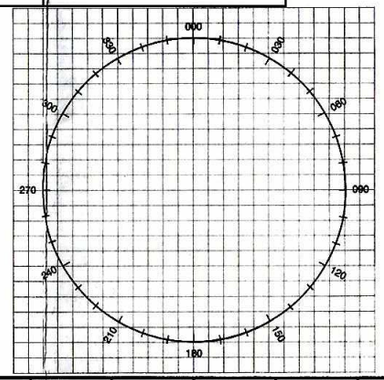
10.
11.
12.
13.
14.
15.
16.
17.
18.

CLEARANCES			
FREQ	ALT	HDG	OTHER

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
1652																					ENG START
1657																					TAXI
1703																					TAKEOFF
1721	GPS FM1	4212.4 7156.1	4213.1 7156.1	-.7 0	4212.6 7156.0	-.2 +.1			323	9R	332	212	236	34	8500	211					→ B
1752		4232.9 7219.7	4234.4 7219.8	-1.5 -.1	4232.4 7219.4	+.5 +.3			238	0	238	239	243	25	18500	262					
1815		4206.8 7416.4	4208.6 7415.8	-1.8 +.6	4205.1 7415.6	+1.7 +.8			241	1R	245	241	229	23	20K	263					
1833		4140.1 7552.3	4142.1 7551.1	-2.0 +1.2	4138.9 7551.4	+1.2 +.9			249	5R	254	266	210	37	22K	298					
1941		4026.7 7613.2	4031.4 7611.2	-4.7 +2.0	4025.0 7612.6	+1.7 +.6			174	4L	170	203	207	25	15000	226					
2012		3906.0 7449.4	3911.1 7445.7	-5.1 +3.7	3906.6 7448.8	-.6 +.6			139	8L	131	208	209	32	15K	217					
2043		3759.8 7254.4	3806.0 7250.7	-6.2 +3.7	3801.7 7252.8	-1.9 +1.6			094	0L	088	241	224	34	15K	222					
2135		3839.5 7116.7	3844.5 7116.3	-5.0 +5.4	3842.8 7115.2	-3.3 +1.5			357	4R	001	257	261	43	15K	218					
2212		4109.9 7116.4	4116.2 7110.8	-6.3 +5.6	4114.4 7114.0	-4.5 +2.4			103	9L	094	223	212	38	15K	207					
2254		4107.5 7109.1	4113.1 7102.4	-5.6 +6.7	4113.2 7107.0	-5.7 +2.1			265	10R	275	171	230	52	8K	212					
2337		4135.8 7124.7	4142.6 7116.7	-6.8 +8.0	4142.8 7120.0	-7.0 +4.7															LAND