

E.3 Cloud Physics Scientist (On-board)

The on-board Cloud Physics Scientist (CPS) is responsible for cloud physics data collection on his/her assigned aircraft. Detailed operational procedures are contained in the cloud physics kit supplied for each aircraft. General procedures follow. (Check off and initial.)

E.3.1 Preflight

- ☒ 1. Determine status of cloud physics instrumentation systems and report to the on-board Lead Project Scientist (LPS).
- ☒ 2. Confirm mission and pattern selection from the on-board LPS.
- ☒ 3. Select mode of instrument operation as determined by the HRD/CPS.
- ☒ 4. Complete appropriate instrumentation preflight checklists as supplied in the cloud physics operator's kit.

E.3.2 In-Flight

- ☒ 1. Operate instruments as specified in the cloud physics operator's kit and as directed by the HRD/CPS unless superseded by directions from the on-board LPS.

E.3.3 Postflight

- ☒ 1. Complete summary checklist forms and all other appropriate forms.
- ☒ 2. Brief the on-board LPS on equipment status and turn in completed check sheets to the LPS.
- ☐ 3. Take cloud physics data tapes and other data forms and turn these data sets in to the OAO/Flight Director, who will arrange delivery as follows:
 - a. Outside of Miami - to the HRD operations center (FGOC).
 - b. In Miami - to OAO/Science and Program Division. [Note: all data removed from the aircraft by HRD personnel should be cleared with the OAO/Flight Director.]
- ☐ 4. Debrief as necessary at the appropriate operations center (i.e., FGOC or MGOC).
- ☐ 5. Determine the status of future missions and notify the appropriate operations center (FGOC or MGOC) as to where you can be contacted.

Cloud Physics Project Scientist Operational Checklist

DATE OCT 8 1985AIRCRAFT 42RFFLIGHT ISABELA. INSTRUMENT STATUS AND PERFORMANCE

System	Preflight	Inflight	Down time	#Tapes/data units
Johnson-Williams (JW)	✓	?		
PMS probes	✓			19 tapes.
2D-P	✓		~ 10 min	
2D-C	✓	BAD	ALL OF FLT.	
FSSP	✓			
DAS	✓			
Display(s)	✓			
Formvar	✓			
Nimbiometer	✓	?		
Lyman-Alpha				
U.V.				
Dew Point	✓	? OK		
CO ₂ Radiometer	✓	?		
Microwave Radiometer	✓			
Ice Particle Counter				
Mee				
ERT				
Aerosol				
Filters				
Bulk-Water				
INC				
CCN				

B. REMARKS

HAVE DRI FIELD MILLS ON BOARD, WILL USE
 2D-C CRAPPED OUT. LOW END DIODE VOLTS, etc.
 ALL IN CLEAR AIR.
 2D-P looks bad 225300

DATE OCT 8 1985

FLIGHT 851008H

OPERATOR R. BLACK

2-D Knollenberg Data Tape Log

Tape #	EOF #	Time On	Time Off	Comments
1		174809	190041	at 1500 ft. error light on
2		190049	190754	OK
3		190759	191557	all these are in a wide (80 mi)
4		191558	192643	band
5		192644	193948	1500'
6		193949	195139	1500'
7		195139	200420	1500'
8		200420	201245	going to 500' 200420
9		201245	202351	this tape also @ 500'
10		202352	203922	also at 500' until 203030
11		203922	210425	at 2500 ft. (743 m) T=19°C
12		210426	213453	1500' 21.6°C going NORTH
13		213459	214308	1500' TRK 1.1 NORTH
14		214309	220125	2D-P flake out getting worse
15		220129	222819	221721 going N again
16		222819	223849	
17		223849	225009	
18	1 @ 225247 ON 225846	225009	235610	2D-P FLAKED OUT 225300
19		235610	242009	climb out. 2D-P bad.

P851008H1-FDIR

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

FLT ID: 851008H	FM: KMZA	TO: KMZA
FLT NO: 86-01	BLK IN: 0138	ATA: 0132Z
ETD: 1600Z	BLK OUT: 1613Z	RTD: 1620Z
ETE: 0100Z	BLK TIME: 9:25	FLT TIME: 9:12
SPONSOR ORG: HRD	PROGRAM: ESABEL	PURPOSE: RAINBAND EX

OAO PERSONNEL

AC GUNNOE	SYS ENG JARYZ
CP MEYERS	DATA SYS HANCHETT
NAV ADAMS	RADAR THOMPSON
FE MOORE	BT/ODW
RADIO NUNN	CLD PHYS
FD DARBY	DOPPLER

PARTICIPATING SCIENTIST/VISITORS/OAO

LAST, FIRST NAME	ACTIVITY ON A/C	AFFILIATION
WILLIAMS, BOB	PI	HRD
BLACK, MIKE		HRD
KOHLER, BOB	RADAR	HRD
BLACK, BOB	CP	HRD
SZOKO, ED		NCAR
CARROLL, JAMES		NORTHROP - NASA

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

FIX 21Z/00Z

U.S. DEPT. COMM./NOAA/ORD - DATA SECTION WORK FORM NO.2 OROWF2 FILE

FLT ID:

TIME OFF:

TIME ON: 01322

	A/C T/O	WX STN	A/C LAND	WX STN
PRESSURE	1012.4 RPS 1017.0 PS	1019.5 CLAB 3009 ALT	1019.2 -15480	

NO

DATA DISPOSITION/DATE/QUALITY

1/SEC FLT LVL TAPES

1

FAST FLT LVL TAPES

RADAR TAPES

16

HRD

1018.8 -15476

DOPPLER TAPES

ODW CASSETTES

HARD COPIES

CP

17

HRD

AXBT

AXCP

ODW

PHOTOGRAPHY

	FWD	LS	RS	VERT
ON	1639	1639	1639	
OFF	2259	2259	2259	
RATE				

REMARKS

A/C COMMANDER	NAVIGATOR	A/C NO.	MISSION NO.	TIME AIRBORNE	LOCATION KMIA N25-48 W80-17.6	DATE	PROJ. NAME
GUNNOE	ADAMS	42RF	851008	162003		8 OCT 1985	J Teobel

TIME OF ENTRY	POSITION	TYPE	INERTIAL POSITION	LAT LON COR'S	POSITION	LAT LON COR'S	REMARKS
161215	25-48.3 80-17.6	4	25-48.2 080-17.6	+1 0	25-48.2 080-17.6	+1 +2	Black out
162003	25-48.1 80-17.1	4	25-48.0 080-17.3	+1 -1.2	25-48.0 080-17.1	+1 0	Tuff
1635	25-42.0 79-17.1	2	25-42.2 79-18.0	-1.2 -1.9	25-42.2 79-17.4	-1.2 -1.3	MOT EBV
							VISUAL 6nm S Great NEACO - position checked w/1 Inm.
1822	26- 072-	9	26-30.1 072-09.0		26-31.3 072-07.4		51 TK out 110°
1848		9	26-31.1 72-13.0		26-32.2 72-11.6		52 TK out 000
194030		9			28-22.1 071-28.8		North of rain band
1952		9	27-56.6 071-11.9		27-57.6 071-10.3		South of rain band
2003		9	28-29.3 71-42.7		28-29.8 71-40.9		N pt.
210630		9	26-53.2 072-13.9		26-54.0 072-11.5		53
2127		9	27-57.9 71-54.5		27-58.4 71-52.6		South end of
2254		9	28-02.4 071-55.4		28-02.7 071-53.7		TK E along rainband

SYS	BEGIN ALIGN TIME	NCS CONN	Ω AID	TIME OUT OF COARSE ELAPSE ALIGN POST TIME	ALIGN STS 0-5	(1) TIME INTO NAV.	(2) TIME OUT NAV.	ΔT (2)(1)	TERMINAL ERRORS		
									LAT	LONG	G S
INS 1		✓	✓	—	3	1551	0139	10.8	-1	+1.7	1
INS 2 or IMU		✓	✓	—	5	1551	0139	10.8	+1.5	+1.9	1

ALIGN REMARKS: Station Hoff air / Station 6 off air intmt / H deselected

OTHER REMARKS:

TYPE OF FIX : (1) DR (2) RADIO (3) CELESTIAL (4) VISUAL (5) LORAN
 (6) RADAR (7) DOPPLER (8) OMEGA (9) INERTIAL
 (10) OMEGA - INERTIAL

26-32
72-15

[illegible]

TIME	LAT	LONG	T	Td	WID	WS	GA	PA	PS	HT	SP	RPS
1656	25.78	77.58	2.2	4.3	044	05	4276	4032	615			
1711	25.75	77.34	17.6	13.1	048	11	1279	1193	878	1559	1017	879
1720	25.78	75.73	17.4	14.8	040	11	1268	1190	878	1547	K16	
1729	25.83	75.08								COMPUTER 2		DOWN
173040	25.73	75.08	17.3	16.8	039	12	1256	1182	879	1543	1016	
173210	25.63	75.08	17.6	17.7	039	16	1256	1177	878.4	1545	1016	CAL WIND
174200	25.79	74.53	17.1	16.5	020	09	1249	1191	877	1536	1015	
174731	25.86	74.10	22.4	20.8	018	07	447	418	964	125	1014	
175336	25.93	73.76	21.4	20.1	020	11	439	415	964	117	1014	
1756	25.94	73.56	21.7	19.4	015	10	435	416	964	116	1013	
1801	26.00	73.18	21.6	20.7	351	10	424	415	964	107	1012	
1807	26.10	72.78	21.1	20.9	327	15	399	414	964	079	1009	
1810	26.18	72.62	23.6	17.5	351	30	423	456	966	062	1007	
1812	26.22	72.51	22.4	17.3	346	32	439	486	956	048	1005	
1814	26.24	72.36	21.4	19.4	393	35	424	485	956	036	1004	330/70
1816	26.28	72.24	21.2	20.6	324	24	426	510	950	010	1001	
1819	26.30	72.07	22.7	22.0							1001	
181945	26.38	72.05	23	23			448	531	950	001	1000	
182119	26.48	72.11	21.1	21.7	096	02	451	540				
1822	26.53	72.12	23.5	21.7	121	08	446	542	950	007	999	ETC
1835	26.30	71.34	22	22	194	20	491	546	949	39	1004	
1839	26.37	71.60	23	23	185	20	461	535	951	008	1001	
1841	26.44	71.78	23	23	178	11	447	534	951	000	1000	
1844	26.49	71.91	24	23	186	08	442	536	951	-5	999	
1845	26.53	72.03	24	21	182	11	441	537		-12	999	
1847	26.54	72.11	24	22	147	04	433	536		-14	998	
1848	26.53	72.19	23	23			434	536			998	ETC
1850	26.58	72.27	23	23	040	03	429	535	950	-15	998	26
1852	26.68	72.27	24	23	073	10	434	535	951	-12	999	
1855	26.85	72.26	23	23	089	21	446	535	950	003	1000	
1866	27.11	72.24	21	21	047	23	474	539	951		1001	
1900	27.146	72.26			052	42					1000	
1910	27.09	72.26	20	20	045	30	480	477	957		1011	
1916	27.57	72.26	20	20	051	27	470	458	960		1017	
2035	28.65	71.92	19	19	089	31	769	709	931		1017	
2038	28.50	71.89	19	19	076	28	762	714	930		1016	
2049	27.90	71.68	22	22	101	24	440	442	961	09	1011	27.7
2051	27.76	71.73	22	22	104	33	431	445			1010	26.5
2055	27.52	71.82	23	22	110	28	442	442			1007	26.6
2059	27.34	71.50	23	22	127	28	472	473			1006	26.11
2100	27.23	71.58	22	22	125	33	438	514			1003	25.3
2101	27.16	72.04	22	22	113	25	433	516			1000	
2103	27.09	72.11	23	22	110	18	413	514			999	24.8
210333	27.05	72.15	23	23	100	16	408	523			999	26.6
2105	26.96	72.17	22	22	110	09	473	501			999	26.1
2106	26.89	72.19	22	22			476	501	526		998	26.4
2107	26.81	72.24	24	29	005	11	488	586			997	26.3
2223	28.47	71.95	19	19	078	20	796	751			1015	
2230	28.87	71.95	19	19	074	28	763	705			1017	
2235	29.15	71.95	19	19	090	28	774	709			1018	
2240	28.90	71.92	19	19	077	27	760	702			1017	

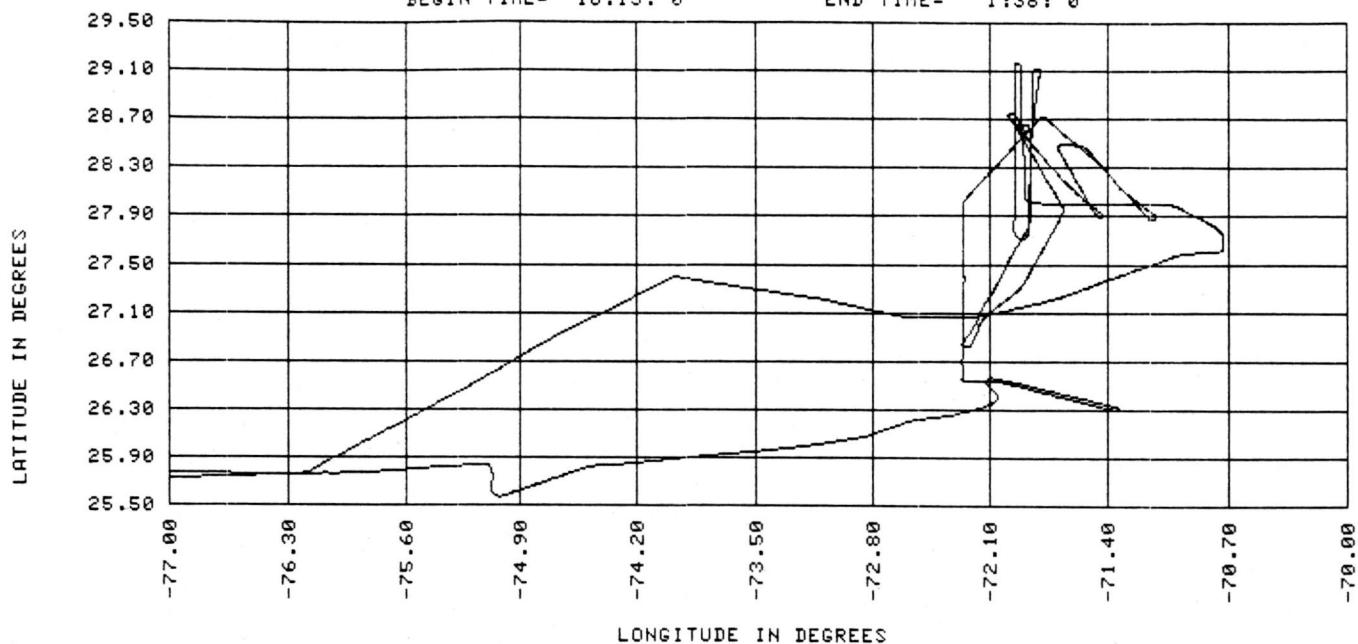
TIME	LAT	LNG	T	Tcl	WD	WS	GA	PA	SP				
2244	28.66	71.92	19	19	079	27	750	700	1015				
2248	28.49	71.90	19	19	079	32	741	703	1014				
2302	27.93	71.39	21	20	130	23	744	705	1014				
2306	27.98	71.17	21	20	135	23	745	700	1014				
2311	27.93	70.93	20	20	145	23	751	700	1015				
2320	27.59	70.87	23	22	136	22	754	425	1014	26.7			
2322	27.56	71.01	23	22	137	24	451	430	1013	25.1			
2325	27.48	71.17	23	21	146	24	444	428	1012	26.6			
2328	27.40	71.33	23	20	150	24	438	430	1012	26.4			
2330	27.33	71.47	23	20	155	22	431	429	1011	26.2			
2332	27.28	71.57	23	20	153	27	425	428	1011	26.0			
2333	27.24	71.66	22	20	150	29	416	429	1002	26.6			
2335	27.19	71.78	22	21	154	32	445	463	1009	26.2			
2337	27.15	71.87	22	21	155	30	437	464	1008	25.2			
2338	27.14	71.93	21	21	156	35	428	464	1007				
2339	27.11	72.01	21	21	163	34	418	461	1003				
2341	27.08	72.12	23	22	167	23	404	461	1004	26.2			
2343	27.06	72.22	23	23	171	20	403	466	1003	26.1			
2344	27.06	72.32	22	22	167	17	431	510	1002	24.5			
2345	27.05	72.41	23	23	169	11	440	516	1002	25.5			
2346	27.05	72.48	23	23	179	7	446	518	1001	26.3			
2347	27.05	72.56	24	22	183	6	435	517	1001	26.9			
2348	27.06	72.64	23	23	251	2	435	517	1001	26.9			
2349	27.08	72.70	23	22			434	515	1001	27.0			
2350	27.11	72.77	23	22	003	07	435	515	1001	26.9			
2357	27.22	73.16	21	21	007	30	471	514	1006				

1000ms sent

FLIGHT TRACK PLOT FOR FLIGHT ID: 851008H

BEGIN TIME= 16:13: 0

END TIME= 1:38: 0



FLIGHT TRACK PLOT FOR FLIGHT ID: 851008H

BEGIN TIME= 17: 0: 0

END TIME= 1: 0: 0

