

19980902II - CDPHY
H. EARL

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.
- ☒ 4. Complete appropriate instrumentation preflight check lists 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 on-board LPS.

E.3.3 Postflight

- ☒ 1. Complete summary check list 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 as follows:
 - a. Outside of Miami - to the HRD operations center (FGOC).
 - b. In Miami - to AOML/HRD. [Note: all data removed from the aircraft by HRD personnel should be cleared with the AOC 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.

2-D Knollenberg Data Tape Log

Date 9/2/98 Flight 780902 I Operator R. A. Black

[illegible]

Cloud Physics Project Scientist Operational Check List

Date 2 Sept. 1998 Aircraft N43 Flight ID 980902I

A. Instrument Status and Performance:

System	Pre-Flight	In-Flight	Downtime	# of Tapes
Johnson-Williams	✓			
PMS probes:				2
2D-P	✓	noisy		
2D-C	✓	"		
FSSP	✓			
Data System	✓	CRASHED ON RECORD		
Recorder	✓			
Formvar	N/A			
DRI Charge Probe	N/A			
DRI Field Mills	N/A			
King Probe	✓			

B. Remarks:

SEA Time offset -1.0 Sec (RT = SEA + 1.0 Sec)
DAS crashed at end of 2nd tape
3 retries on 2nd tape
Both grey probes extremely noisy

ORIENTATION

ZDG-C

⊙ H
Horizontal

ZDG-P

⊕ V
VERTICAL

Formvar Log

Date _____ Flight _____ Operator _____

[illegible]

980902I

H. EARL

R.A. Black, Chief guru, J.m Barr, Data/EI tech

SEA start / no file @ 1914:47 Cloud Arms HORIZONTAL

File on 1918:00 Clear-air updates began as soon as engine power was increased (2D-C only)

1919:45 Cmd29 0,1 32 (at mid level DOF reject on)

1925:13 t/o roll started; 2D-C noise began at once, again in sync w/engine power.

1930:55 File on (small drops)

1934:35 File off filemark 1

2001:00 File on ice drifting down from arrival.

2003:30 2D-P noise is worst. Entering broad band

2016:55 out of presip

2027:30 File off Filemark #2

2029:05 file on

2040:00 file off Filemark #3

2044:10 file on, light rain

2048:00 file off filemark #4

2011:00 file on. Start NE pass through heavier convection

2017:15 3 mm drops

2125:25 start new convection NE leg.

2127:05 melting ice particles

2134:00 are heading south in mixed phase precip.

2138:00 file off ~~#5~~

2139:00 file off filemark #5

2139:20 file on

2146:00 start southern ~~conv~~ convective area.

2152:00 file mark #6

2227:40 file on (small cloud)

2230:00 file off filemark #7

2233:40 file on (another cloud)

2235:00 file off filemark #8

Relatively little active convection around $27^{\circ}35.5$, $85^{\circ}18'W$

2241:36 file on (Northbound run)

2242:30 cmd 23.0 reset.

2253:00 more convection RHS

2256:00 ice particles.

2302:00 file off #9

2307:05 file on

2313:00 start descent

2317:30 end of very bumpy part

2322:40 turning 11 to coast,

2327:00 very bumpy here, skirting along

2330 - turned outbound from coast.

2338:00 out of turbulence for a bit

2342:00 more or less clear

2357:00 end long turbulent run, much rain.

0003:00 file off filemark #10

0012:00 quit - change tapes 1st tape: 2 retries.

0016:40 file on (tape 2), then immediate file off

file on 0018:10, small cloud.

0020:30 cmdzg 0, 1 32 (mid level DOF) enabled.

0025:00 (2) retries; prob. P.E.

0028:00 2D-P noise is less trouble; 2D-C noise is about equal to 1st tape

0029:00 in rain.

0030:00 cmdzg 0 reset

0043:30 file off filemark #1

0100:15 file on (more rain)

0123:00 file off filemark 3 retries. #2

0136:14 file on in rain.

0155:00 file off filemark #3

0156:45 file on

0202:00 file off filemark #4 gain' home.

0204:11 file on - more showers ahead.

0214:00 ERROR ENA buffer too small. add DIO parameters
+ reboot.

SEA SYSTEM OUT!