

H. OLIVIA
REVISITED

19940925 II-CLDPHY
(FOR REAL!)

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

R.A.B.

- ☒ 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

R.A.B.

- ☒ 1. Operate instruments as specified in the cloud physics operator's kit and as directed by the on-board LPS.

E.3.3 Postflight

R.A.B.

- ☒ 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.

Cloud Physics Project Scientist Operational Check List

Date 9/25/94 Aircraft N43RF Flight ID 940925I

A. Instrument Status and Performance:

System	Pre-Flight	In-Flight	Downtime	# of Tapes
Johnson-Williams	✓	✓		
PMS probes:				1 DAT
2D-P	✓	FAILED INTERMITTANTLY	~3 hrs.	
2D-C	✓	✓		
FSSP	✓	✓		
Data System	✓	✓		
Recorder	✓	✓		
Formvar	UNUSED	UNUSED		
DRI Charge Probe	?	RECORDER FAILED		
DRI Field Mills	✓	✓	NADA	
King Probe	REPLACED SENSOR WIRE	OK		

B. Remarks:

See notes in log book
2D-P failed in heavy precip, seemed to
recover after a few minutes, then went out
for the count. Charge ~~for~~ test at 1741.00
to test field mill system.
YESTERDAY'S FORMS HAVE THIS DATE ALSO -
CLOCKS CHANGED DATE AT 00:00:00 & I
didn't notice.

2-D Knollenberg Data Tape Log

Date 9/25/94 Flight 940925 I Operator R. A. BLACK

[illegible]

Formvar Log

Date _____ Flight _____ Operator _____

[illegible]

SUNDAY, 25 SEPT. 1994

940925I
H. OLIVIA

①

T.O. from Puerto Vallarta at 1733:55

PMS TIME = WWV - 3.0 SEC.

FIELD MILL CHARGE TEST COMMENCING

1741:00

step 1 .202 1742:55

.404 1743:30

.604 1744:20

.801 1745:00

1.007 1745:30

1.207 1746:00

1.3 1747:00 → display goes squiggly.

1748:05 HVPS off

File ON 1955:00 in ice. Starting descent.
All systems fine.

2004:30 melting ice. Intermittent ice through 2010:00

2021:30 2D-P crapped out

IP at 2023:00 2024:25 → 2D-P is back. inbound to W

2D-P crapped out 2028:00 same problem as yesterday.

pretty eye at 2032:40 w. eyewall at 2034:30

2037:13 2D-P is really dead.

2045:00 turning, 2D-P is back TRK SE 150°

2048:00 2D-P crapped out briefly.

Turn 2053:30 to TRK 0430 RLO48

Seyewall at 2104:30 2D-P OUT.

(2)

20-P has a leak! NE eyewall at 2107:35

2118:35 turn to track 277°

2127:00 turning into eye from the ^{N.} side. several bands on radar this side.

2136:00 N eyewall 2138:15 center (report 19 3.7N 120.8W)

2139:00 SSW eyewall.

NOTE: occasionally, there are many near-circular level-1 images.

Nearly always, they are < 10 pixels wide. Conclusion: it's not safe to reject images w/ level 1 shadowing as out of focus. Compute fraction of level 1 images to images w/ $> \text{level 1}$. Also, many level-1 images are split down the middle - must re-construct these.

2151:00 turning, heading NE

2159:00 turning into eye, TRK NW @ 319°

2207:18 SE EYEWALL

2211:00 NW eyewall - lot of downdraft.

2242:30 going inbound on WSW side

2247:00 eyewall 2248 rainbow on nose camera

2249:18 NNW wall looks good.

2250:37 lots of level 1 stuff (E. eyewall)

N42 reports graupel in N eyewall

2301:00 turning. TRK NW @ 320° .

2307:00 turning to 220° TRK into NE eyewall

2315:40 into eye

2319:09 SW eyewall

2332:27 TRK 109° in periphery of storm

2342:50 TRK 360° N into eye.

2351:24 heavy rain in N eyewall

Q-PROBE RECORDER HAS FAILED!

problem is in the tape transport mechanism. Deck refuses to move tape in any direction.

2357:30 2D-P is out again.

00:00:00 turning to TRK 176° back into eye, + climb out to East of storm.

ask Hallett about running Q-probe output through 80 Hz A-D converter + recording counts on fast tape.

0009:30 N eyewall again 2D-P still out. heavy precip.

0013:30 TRK 090 + climbing. 2D-P out.

0017:30 2D-P is back. $T = -1^{\circ}\text{C}$

0024:00 capped columns. $T = -5^{\circ}\text{C}$

0027:00 columns.

0102:00 issued Cmd 29 i 31 to both probes to cut clear-air updates - it doesn't appear to work.

EOT 0145:00 SEA SAYS 2130K LEFT.

BOB BLACK MEMORIAL
BARF BAG