

19930930II-CLD PHY

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 _____ Flight _____ Operator _____

[illegible]

Cloud Physics Project Scientist Operational Check List

Date 9/30/93 Aircraft N43RF Flight ID 930930I

A. Instrument Status and Performance:

System	Pre-Flight	In-Flight	Downtime	# of Tapes
Johnson-Williams	✓	✓		
PMS probes:		✓		
2D-P	✓	✓		
2D-C	✓	✓		
FSSP	✓	✓		
Data System	✓	✓		
Recorder	✓	✓		2 DAT'S
Formvar	PUMP DOWN?			1 roll
DRI Charge Probe	UP	OK-NOISY		3 tapes
DRI Field Mills	UP	OK		
King Probe	?			

B. Remarks:

LIGHTNING STRIKE 2137:00 locked up
DAT. Last pass on file HU93/930930I3.2DG

R. A. BLACK

Formvar Log

Date _____ Flight _____ Operator _____

[illegible]

OCEAN CU R. A. BLACK 930930I

SEA TIME = DATA SYSTEM TIME - 3.0 sec.

2D TIME = WWV - 3 sec.

reset time. $\Rightarrow$ 2D TIME = WWV - 1.0 sec

1706 - - columns, rounded, + junk. $T^{\sim} - 5^{\circ}\text{C}$
ODW PATTERN

1736 cloud pen #1 columns. (FLA. KEYS)

FV on count 90 spd 1 missed it
auto off 1737:15

1741:20 lining up again Q-probe has much noise.
174520 spd 1 on 1400 count PASS 2, 4 pass
spd 4 spd 6 2500 count 174628
all rain auto off 174700 spd. 1
end pass 2 $T^{\sim} - 4$

Cloud 2, 2nd pass lining up start count 4845
1750:25 on 2 marks spd. 1 spd 4, spd 6
175133 count 6400
1752 auto off spd. 1 2 marks count 7908

Cloud 2, pass 3 start 1754:30
1755 on spd 1 event spd. 6 2 events at 175800
count 10,800 spd. 1, auto off 175630

Cloud 2, pass 4 start 1758:00 count 12,411
spd 6 175843 2 event 15,500
15,400 spd 4 2 mks auto off, spd 1 1759:50
count 16.

Cloud 2 pass 5 start 180156 16,600
16,900 spd 6 2 mks 180230
1803:00 auto off spd 1 count 19,734 at end

Cloud 3 pass 1 (new turret Paul says cl. 3, pass 6
1806 spd 1 on 19,840 2 marks
180840 pass 6 180700 auto off

Cloud 2, pass 7 180900
180930 spd 1 on 22,600 2 events
spd 6 2 mks 181001 181043 auto off spd 1

Cld 2, pass 8 181330 on spd 1, spd 6, 2 mks
auto off 181401 28300 spd 1 small cells.

181516 on spd 1 Pass 9 spd 6 181540 2 mks
29850 181640 spd 1 2 mks 32,800

Cloud 3 pass 1 10 181742 1818 2 mks
32600 2 more mks spd 6 181900 spd 1 auto off

Cld. 3, pass 2 182410 on spd 1 36,100
182508 2 mks spd 4 count 37,000 more use
182630 2 mks 42,100 count

spd 4, then 1 ant off count 44290

Pass 3 on 183300 spd 4 45500 2 marks
at 183340 46530 2 more wisps of cloud 2 marks

Pass 4 183725 on spd 1 spd 4 2 events 1838 49000
is new cell at 183840 2 events 51000
52,200 spd 1 ant off 53,026 count.
end FORMVAR

3, Pass 5 on this system 1848:26 lining up 184930 columns

1851:50 searching for another cell

cloud 4, pass 1 on cloud 3, pass 6 1854:00 line up
185541 in cloud small. nothing to it. Columns 185730

1903:30 in cell. many columns.

Charge TEST HVPS on 192900 zeroing RIGHT

1933 HVPS off - in precip.

1935 HVPS on, bal. right 193650 off (high cirrus)
193800 HVPS on 193900 HVPS off 193954 on

194800 in (under an anvil)

2010 still ferrying to another spot though anvil precip

1,666,049 k

File off 2026:30

Cloud 4 pass 1 file on 202940 ice
columns 203045 S/C water alt. 17.5kft.

4 Pass 2 2034:30 some large drops S/C?

radar problem 203800 file off → QUIT DAT #1
2045:00 ON w/DAT #2
2046:50 FILE OFF
2048:00 File ON

Pass 3 - aborted - Doppler is down file off ~2052:-
old. 5 Pass 1 again 21114 file on at 2109-
Pass into by one, but its fairly time 2114:39 out

Pass 2 2121:30 212356 out (2 cells); heading for
another. 2 has S/C water 212550 another w/S/C wet ice

Pass 3 on reciprocal 2128:30 lining up.

(data rate is ~ 2^{400} 2000 k/sec in cloud)

Pass 4 2134:00 2 cells about 5 mi. apart on same track.
2136:30 2137:00 lightning strike

2040:30 2D-GREY image window stopped
updating

215100 writing to file HU93/930930I3.206
(DAT LOCKED UP) 2152:56 columns

next { 215430 bad memory problem on ZDS-C is worse
pen. { 215950 file off

2DAT'S , 1 FILE 930930I3.206 ON
HU93 directory