

**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.

*JW ON TAS 225 COMAP AT SET IN CASE*

**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 SEP 7 1991

Flight 910907 I

Operator Willie

Tape #	EOF #	Time On	Time Off	Comments
1		1545/00	1556/49	
2		1556/49	1619/10	stopped? restarted
3		1619/21	1633/50	
4		1633/54	1641/00	
5		1641/00	1653/45	
6		1653/50	1729/20	JW? OK!
7		1729/20	1735/50	
8		1735/50	1752/18	Vertical Wind looks a little squinty
9		1752/19	1809/?	didn't switch
10		1811/31	1825/37	thru stratiform region
11		1825/50	1833/30	
12		1833/30	1847/50	
13		1847/51	1901/29	
14		1901/30	1917/20	
15		1917/20	1951/22	
16		1951/22	2001/?	1952/40 restarted
17		2002/50	2027/42	
18		2027/42	2035/59	2033/15 restarted
19		2036/11	2059/07	
20		2059/07	2109/00	

1835  
27/49'  
62/29  
1930  
2755  
62/33



# Cloud Physics Project Scientist Operational Check List

Date SEP 7 1991

Aircraft 43RF

Flight ID 910907II

## A. Instrument Status and Performance:

System	Pre-Flight	In-Flight	Downtime	# of Tapes
Johnson-Williams	✓			
PMS probes:				
2D-P	✓ <i>probably is probe w/ Baumgardner fix</i>	✓		30
2D-C	✓	✓ ?		
FSSP	✓	✓		
Data System	✓			
Recorder	✓			
Formvar	ON BUT NOT OPERATED			
DRI Charge Probe	✓			
DRI Field Mills	✓			
King Probe	✓			

## B. Remarks:

*vertical wind looks like it is squirrely*

## Formvar Log

Date \_\_\_\_\_ Flight \_\_\_\_\_ Operator \_\_\_\_\_

[illegible]



Date Sept 7, 1991 Flight 910907II Operator Willis

$$\begin{array}{r} 2229 \\ \hline 2821 \\ 6248 \end{array}$$
[illegible]

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**B. Remarks:**

Date \_\_\_\_\_ Flight 910907 I Operator \_\_\_\_\_

[illegible]



# CLOUD PHYSICS

Claudette 9/07/91 Bermuda NAS

10Z 27.0N 61.5W

10:22am T/O

delayed for fuel

1438 starting engine and taxi

First track 158

1447/55 T/O

1419/42 31.56.7N 64.41.6W 166/05 8.7°C/-8.6 686 mb

TAS 250 64.11% clock

CLOUD PCP

2 END 1852 2316

3 END 1490 1991

4 1482 1511

5 1202 1199

6 4872 4935

7 4853 4991

8 1472 1507

9 Taxi 0208 0240

1505/30 Revert day to 07 Sept 91 was at 03

1511/PClock PMS 15 ahead of display

$$\frac{TAS (FRACPH)}{4 \times 10^6} = \frac{50 \times 10^{-6}}{4 \times 10^6}$$

$$\boxed{FRACPH = \frac{TAS}{200}}$$

1545/00 STARTED TAPE 1

OUTER BAND  $-1.2^{\circ}\text{C}$  SSB mb. TAS 276

1613/25 grangel hitting aircraft  $+5.9^{\circ}\text{C}$

1715 have been orbiting to W of storm  
waiting for 42 to fix radar

1742 reset 0 on SW

1757 1W eye, very messy eye, full of cloud

1758/20 42 right below us radar eye open on  
went thru grangel above entire west side  
but we didn't

1810 large stratiform region on SW-SE side of

1812 in stratiform region on SSW side of storm

1818 turning N will go thru stratiform area, then  
start circle around eye

1923/30 turning for circle of eye

1825 former won't drive 414 frame broken?

1912 eye getting better defined

2006/45 IN STRATIFORM REGION ON SSE Side

2059/40 lightning off left wing  
convective area on west side of storm  
Vertical milt very active now



2123/27 pretty good updraft 10 m/s

2126/03 reset JW - zero

2229/20 display K-TIME - 2229/00

CLAMP PCP

END	3	1661	1849
DOCK	2	1320	1313