

19910811I1-CLDPHY

E.3 Cloud Physics Scientist (On-Board)

AUG 11 1991

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.

AUG 11 1991

Date AUG 11 1991

Operator _____

[illegible]

Cloud Physics Project Scientist Operational Check List

Date AUG 11 1991 Aircraft 43 Flight ID 910811I

A. Instrument Status and Performance:

System	Pre-Flight	In-Flight	Downtime	# of Tapes
Johnson-Williams	✓	✓		
PMS probes:		✓		5
2D-P	✓	✓		
2D-C	✓	✓		
FSSP	✓	✓		
Data System	✓	✓		
Recorder	✓	more or less	1/2 passes	
Formvar	✓	✓		1 video 1 roll
DRI Charge Probe	✓	✓		
DRI Field Mills	✓	✓		
King Probe	✓	✓		

B. Remarks:

See record book for N42RF Cloud
Physics for notes. R. A. BLACK
11 AUGUST 1991

Formvar Log

Date AUG 11 1991 Flight Operator

[illegible]

AUG 11 1991

CAPE-5

1991 01 09

R. A. BLACK

PMS NOTES PREFACED BY "2D" or "PMS"

aut. ON 190840 spd 1 2D tape #1 on

490 spd 6 190920 cloud pass 1

3600 spd 6 2 mks 191025 aut off spd 1
frame count at end of auto off 5063

192950 aut ON 193000 pass 2 spd 1 new tower.

193030 2 mks

193108 2 mks spd 6

193150 aut off spd 1 2 mks.

frame count at end = 8809

193555 spd 6 2 2D on max - missed start. pass 3

12,055 spd 1 aut off 193714 2D #1 off

2D #2 ON 193919 some SC water, gumpel, small ice also.

FC at start of next pass 12,776 2D on again 194109

FV ON 194530 missed cloud. film jammed pass #4

194845 start pass #5 NO FORMVAR

194920 FV back on spd 6

195300 FC 15,800 aut on spd 1 pass 5

195346 2 events

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Pg. 2

spd 5 , 954/20 SE water.

1954/45 auto off FC at start 18,614

200300 spd 2 auto on 18,900 2 mks 200325
Pump spd on 2 = 25 anvil ice

22,600 3 mks 200630

200649 auto off spd 1 FC 23,889 at start next pass

200920 spd 1 on Pump = 15 missed cloud turn for another try
25,400 2 mks 201205
spd 6 201228 2 mks

10 mks 201300 end pass 6

28,400 spd 6 pass 7

auto off 201531

201710 anvil spd 1

201720 spd 2

2 event 33000 201925 2D #2 off 201940

auto off 202030 spd 1 2D #3 on 202209

FC at start of next run = 35262

202330 on spd 1 202410 2 mks 35,700

202430 spd 2 2D on map 202450

2 event 37000 202530 ANVIL JUNK

202610 off Fcount at start 38,706

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1991 Pg. 3 of 3

203520 on spd 1

38,600 spd 6

pump

70

auto off 203615

next run starts at 40,780 cloud #8

203850 on spd 1

cloud #9

203915 2 mks.

204010 spd 1

pump 50

spd 6 70 spd 5 = 70 also

204053 auto off

204410 on pass 10

spd 1

4425

2 mks

44,500

4454 spd 6

204542 auto off spd 1

2D failed DAMNED old record

204925 on spd 1

cloud #11

205020 spd 6

auto off 205050 frame 50,330

total 50,877

205400 on spd 1

cloud #12

205470 spd 6

205445 auto off

205550 2D re-wound by itself.

2D on 205759 cloud pass 13

225459 2D off That's all, Folks!

Vases in row 5 just before fixed.

field null. OK out 0

Field null
Replica
close

Hallett

67
16

Sun 11 Aug 91

Radar more air in Earth's front Fl.



[@ Hallett]

2 3 2 3 8 L
To 19 32 38 2

Q to 11KV 18.43 +1 4200m

E field on flight under arvil
(18.45)

net at 8.4KV +4 S137

1/1 19.09. S132 -3°C

drawn 2 13 IAS
E field to ± 2 boxes.

Plotting the cloud, 19 20 24.
(K in the cloud)

Scat plane in this cloud.

photo 19-24 K in this cloud
perate 19 27.

2/2 19.31 .87W } not
to 5050 $\uparrow$ 21 m/s } make E

Low
 Visibility
 in "few S. Poles."

new calls no brass fast

(no clue)

1/3 -6 5078

19.36

Plot. on vid over to sky

quad
 Mass e feet - ~~Sol~~ solar
 salute

7 20 ms⁻¹

8 w > 1/2

Tok to 30.00 ft

How V. low Vis chit & Patches

over top of new chet.

In view Dppr bubble nor
 etc

2/1 follows to 3/1 (no gun)
 (just left)

↓ 19.46 new call v/s cut (no E)

1/5 1/2 gun / 15 ms⁻¹. (no E) -7.1

2/2 1954
 (Goto Blv) voice / no E field

ce chunks 2 min E 1 box +
 out 2 @ 20

Low
Visibility
in few S. Pkts.

new calls see brass fast

(no clue)

19.36
Plot. on vis over to sea
good
Haze & fogs - Sol. sea
salts

7 20 ms⁻¹

W 7 1/2

Tokio 3

How V. low Vis visibility

over top of mountain.

In view Dapper double no
etc

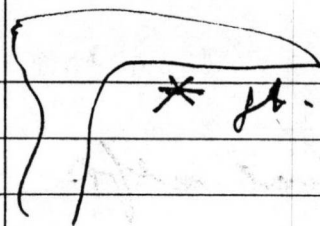
2/1 follows to 3/1 (no gun)
(just left)

↓ 19.46 new call v/s cut (no E)

209
105. 1/2 gun / 15 ms⁻¹. (no E)

2382 / 2. 19.54
(Goto Blk V) voice / no EF

Ice chunks 2 min E 1h
out 2 @ 20



* ft.

300°.

-14°C

6400m.

1 box
fields

1 note under oval.

20 03

4/2

name dot 2007

new film

new film 2 good notes 2010

new cell. 20 12.28
 4/1 just started (1/2 box)

8 Dec U.S. Post -13

[420m]

4/2 20 15
 1100ft 1/2 box (noise?)

Re do oval 2016. -13 1/2

204103

2 box E field.

? under E CW!

? strong local a/cft
change?

change q to 19kV. 2023
+ return to 8kV
(in orbit at end).

Strong change on a/cft may
be visible for effects.

Return ^{mis} under a/cft
out 20 26

S/1 new cloud 20 36
bumps, $E \frac{\text{box}}{10}$

6 Jw 7 ms⁻¹.

S/2 20 39 25.
300 f

Volume
cloud
air
25
paleon

5 Jw; 7/9 ms⁻¹;

? little rise E feels $\frac{3}{4}$ box.

S/3 20.44.50. (cloud below a/cft)

big rise E 1.2 box too,
29 ms⁻¹

Knocking on
program
for 2.

Wet under
brass a/cft



? 5/4 1 1/2 boxes ↑ J & ? 2

2.5/5

20-34

old and

5 ft

-13

(hi E field)

Replicator out of film.

5/5

20-34

old remains gold cell

good E field 2 boxes

small 1/2 in ice

no
satellite.

Balloon chasing (Taffin!)

off

21-35

16KV

on

21-37

clear air

low flt

3919 m

+3.9

IAS 206

Instruments:

mills / Q / power OK.

microw / power }
 " " " 2DC. }

Dist meters of dist cloud at ~18kft
 with string ↑

power
 Mills test off 22.15

HV on 22.16

non 100V.

3918 m 4.9

22 23 turn

climb to 18kft @ mid of col. 22.31

Series of photos } 22 30/22 up
 construction clouds }

V. phone ↑ ↓ mic as before

Things to do:

① round off edges a bit. (p)

② new demodulator for V.M.I.S.T.

③ ^{E64} Insulate desicc.

④ Do frame count on Q tapes

Q Probe

Sunday 11 August 1991

Saunders

St-to

135/3/4/3

Tape 3 Side 1

C1 P1 190815 TR ON 286 TAS
 Good CB ? OFF -5°C
 Vigorous pass -ice 5735m

Q Noise now 2V p/p Rest 182/3/4/3
 Many photos as we boxed cloud.
 C1 P2 192950 TR ON ^{TAS} 300 -6.5
 193235 OFF

C1 P3 193438 TR ON ^{TAS} 286 → 308
 193714 OFF -6.7°C

~~C1 P4~~ 193957 TR ON
~~194047~~ OFF
 C1 P4 New Gones 194426 TR ON
 short bump at 194650 280 -7.1
 C1 P5 Vigorous 194900-
 ? TR OFF

C1 P6 195302 TR ON -7 284kt
 195502 OFF
 2 or 3 photos of our cloud.

C1 P7 UNDER OLD ANVIL 200128 TR ON -14 267 kt
 2mm ICE 200602 OFF

NEW Turbott 201201 TR ON -13 276
 2 Passes H₂O 201524 OFF
 small ice

UNDER

ANVIL

201639 ON

-13 281

2 passes

202607 OFF

Film finished with shots of airstrip at ksc

New Film

TOPS

203442 TR ON

-13 303 kts

203602 OFF

Growing On

RETURN

203846 ON

Some ice + H₂O Just $\frac{1}{2}$

PATH

204100 OFF

Some Again

204352 ON

Lots of gravel -15°C

204531 OFF

Again

204915 ON

205032 OFF

Again

205317 ON

-13.5

205512 OFF

"

205750 ON

-13

Small ice 500M 505952 OFF

First pictures of ksc and landing strip -
shuttle landed today.

Bill Jaffer's balloon hunt - field mill?

One tape used Tape 3 Side 1