

19890918I1-RADAR

SEP 18 1989

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E.5 Doppler Radar Scientist (On-Board)

The on-board Doppler radar scientist (DRS) is responsible for data collection from all radar systems on his/her assigned aircraft. Detailed operational procedures and check lists are contained in the operator's manual supplied to each operator. General supplementary procedures follow. (Check off and initial.)

E.5.1 Preflight

- Jm 1. Determine the status of equipment and report results to the on-board lead project scientist (LPS).
- Jm 2. Confirm mission and pattern selection from the on-board LPS.
- Jm 3. Select the operational mode for radar system(s) after consultation with the HRD/DRS and the on-board LPS.
- Jm 4. Complete the appropriate preflight calibrations and check lists as specified in the radar operator's manual.

E.5.2 In-Flight

- Jm 1. Operate the system(s) as specified in the operator's manual and as directed by the HRD/DRS, unless superseded by directions from the on-board LPS or as required for aircraft safety as determined by the OAO flight director or aircraft commander.

E.5.3 Postflight

- Jm 1. Complete the summary check lists and all other appropriate check lists and forms.
- Jm 2. Brief the on-board LPS on equipment status and turn in completed forms to the LPS.
- Jm 3. Hand-carry all radar tapes and arrange delivery as follows:
 - a. Outside of Miami - to the HRD operations center (FGOC).
 - b. In Miami - to MGOC or to AOML/HRD. [Note: all data removed from the aircraft by HRD personnel should be cleared with the OAO flight director.]
- Jm 4. Debrief at the appropriate operations center (FGOC or MGOC).
- Jm 5. Determine the status of future missions and notify the appropriate operations center (FGOC or MGOC) as to where you can be contacted.

Doppler Radar Scientist Check List

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Flight ID 890918Z
Aircraft # 43RF
Operators MARKS
Radar Tech. ROLLS/GOLDSTEIN

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Number of digital magnetic tapes on board > 20

Number of tape labels on board > 20

Component systems up and checked:

MARS ✓

Computer ✓

DMTR1 ✓

DMTR2 ✓

LF ✓

R/T# 101M

TA ✓

R/T# 204M

* J. Roles swapped in spare synchro for azimuth.

Time correction between radar time and digital time D

Radar Postflight Summary

Number of digital tapes used:

DMTR1 2

DMTR2 2

Significant recorder down time:

DMTR 1 0

Radar LF

DMTR 2 0

Radar TA

Other problems:

TA elevation flakey off and on at the beginning of the flight. Settled down once we started our pattern at 12 kcf!

* Same problem with elevation we experienced yesterday. Need to write algorithm to catch these elevation excursions.

Flight 890918I Aircraft 43RF Operator MARKS Sheet 1 of 1

[illegible]

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Sheet 1 of 1

Item List: DMTR1, DMTR2, COMP, RDSC, LF, TA, DSC1, DSC2.

Jim Roles changed the TA azimuth synchro before the flight (AOC has a spare built into the new antenna controller). They will have to replace the bad one.

890918 E

Hugo

(1)

Marble/Willoughby Ferry to Miami via G
T.O. 172525

Game plan is to fly up the
Leeward Islands to a point 100 nm
E of San Juan. Fly west thru
G, go 100 nm W of G, turn NE to
point 100 nm N of G, turn S to G,
W to pt. 100 nm W of G then to
MIA. FL for penetrations 12 kft.

TA looks great - azimuth problems corrected
LF looks great

set TA noise at 1.7 dB above
the noise
 elev. offset +0.5°

1830 TA elevation started acting up.

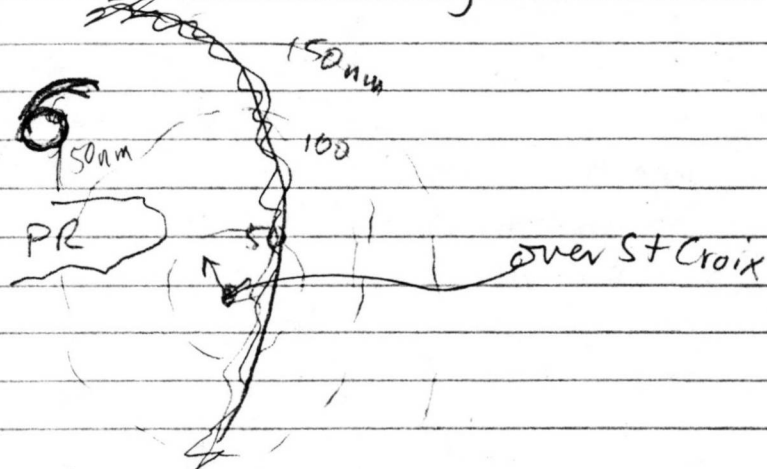
like yesterday. Elevation swings
far aft or far forward. Jim Boles
said keep eye on it. If it drifts
out again try adjusting the tilt. If
it doesn't stop, we'll have to shut
it down.

1840 try and switch control track ball
from radar station to ODW station
Done!!

(2)

Running ODW and Radar from
ODW station.

1854 radar recording on



1858 descent to 12Kft.

in turn

1906 30 TA elev. screwing up.

1910 26 stopped Th antenna

1911 30 started again elev. ok

1914 eye looks ~19 km across.

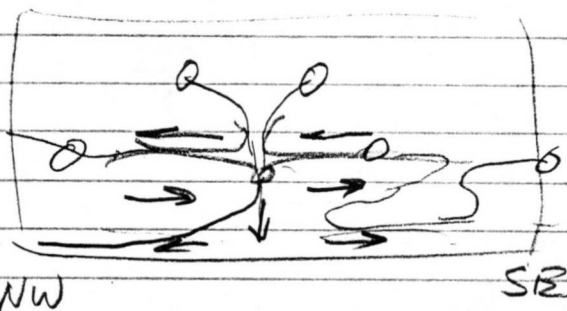
a bit busy doing ODW to
make many notes

(3)

ODW 1912 GWT in 6
1958 all done with ODW's
back to work

[No time for Cbl Physics shut it down]
2009 TK 045° to point 100nm.
N of 5

Same weird Doppler as yesterday.

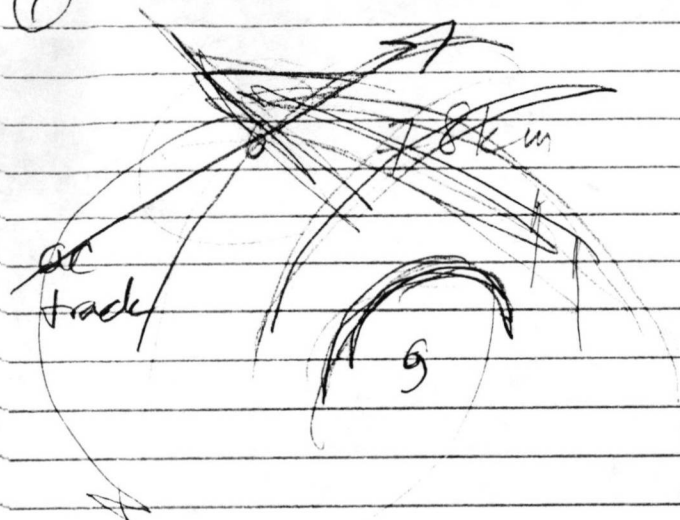


0 isodap does not intersect
ground below plane
elevation looks fine.

2013 even more pronounced

2015-2016 strong outflow jet 7-9 km
from SE on NW side of
eye.

(4)



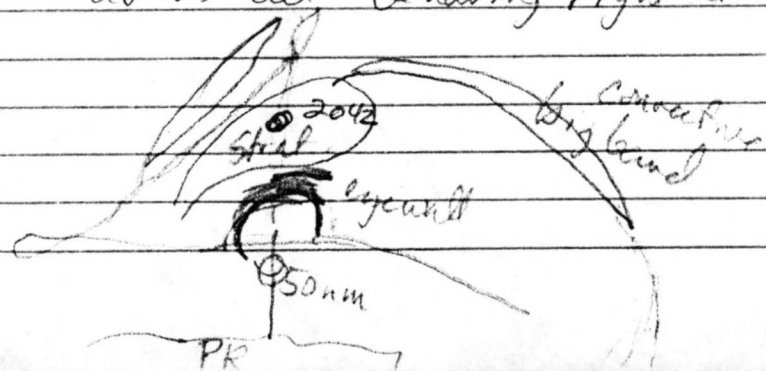
2017 deep inflow from right side
now strange pattern & pretty
much gone now.

2030

NISSAN soup time

shrimp flavor is not too bad!
A little salty.

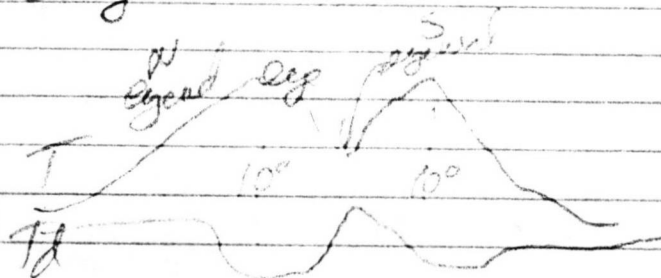
2041 good soup back to the house
of seawall penetrating.
radars all behaving right now!



(5)

2054 19°22' 66°35'

Temp/DP south of eye real
dry



am going down on S side
a little choppy even though
no convection or rain for that
matter.

2104 turn 10-15am N of PIR
Coast TK 360 back to G

210430

Oh shit I forgot to change
the tape!!!

Whew! Caught it just in time
Tape 1 was rewinding and
I changed Tape 2 - System kept
chugging. Working radar from
the ODW station is fine but
changing tapes is a bitch.

⑥

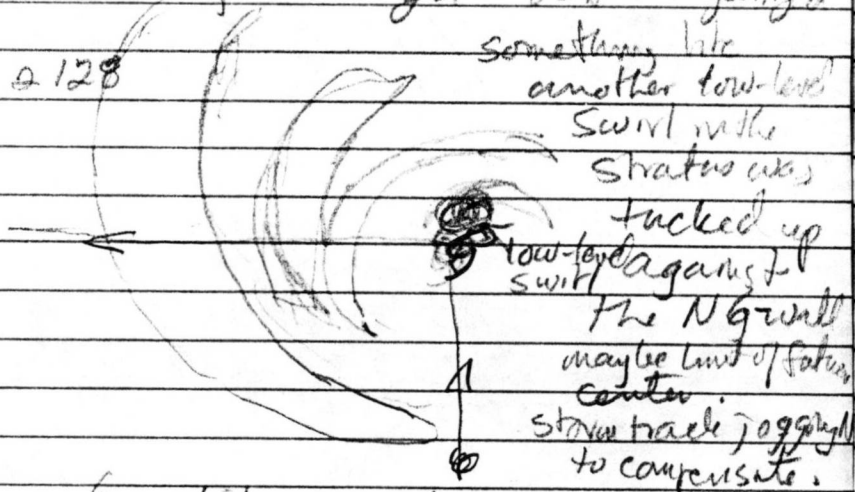
2111 everything looks good
TA elev. OK
LF OK

PR behind us Hugo in front
of us - 3rd penetration.

2117 outside turns in the eye.

⑥ 2117 $19^{\circ}31''$ $66^{\circ}36''$

starting to get better organized



⑥ still open to SE but more
banding to SW than previously

2145 climb out run radar to
end of 2-2

good painting of the rain area at
end of tape 215800

⑦

220145 stop recording
tape 2-2 just about out
~150 nm from G at 12 kft.

2214 climbing to Ferry Aft. track
~22 kft.