19890803HI. RADAR

AUG 5 1989

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

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

E.5.2 In-Flight

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 Operate the system(s) as specified in the operator's manual and as directed by the HRD/DRS, unless superseded by directions from the on-board LPS or as required for aircraft safety as determined by the OAO flight director or aircraft commander.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

1. Complete the summary check lists and all other appropriate check lists and forms.
2. Brief the on-board LPS on equipment status and turn in completed forms to the LPS.
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.]

4. Debrief at the appropriate operations center (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.

RADAR.INTOBSP1

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Doppler Radar Scientist Check List

Flight ID 890805 H1

Aircraft # 42

Operators P BLACK, DORST

Radar Tech. ROLES

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Number of digital magnetic tapes on board 20

Number of tape labels on board ∞

Component systems up and checked:

MARS	✓	Computer	✓
DMTR1	✓	DMTR2	✓
LF	✓	R/T#	103M
TA	✓	R/T#	9320 (?)

Time correction between radar time and digital time _____

Radar Postflight Summary

Number of digital tapes used: DMTR1 _____

DMTR2 _____

Significant recorder down time:

DMTR 1	_____	Radar LF	_____
DMTR 2	_____	Radar TA	_____

Other problems:

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HRD Radar Tape Log

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Flight 890805H1 Aircraft 42 Operator P BLACK/~~DORST~~ Sheet 1 of ___

Tape #	Time On	Time Off	Comments
D1T1	1440Z	154139Z	START OF 1st run
D2T1	1541Z	1650Z	TAPE STOPPED FOR RT replacement
D1T2	1700Z	174142Z	SYSTEM RESTARTED, NEW RT,
D2T2	1741Z	185103Z	TA Doppler bad.
D1T3	1851Z	192602Z	Doppler off
D2T3	1926Z	201030Z	
D1T4	2010Z	204444Z	LAST TAPE, CLIMB FOR HOME

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HRD Radar Down-Time Log

Operator P BLACK/DORST Sheet 1 of ___

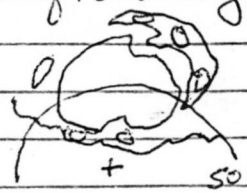
Item	Time Down	Time Up	Problem
TA reflect	1500	1507	
TA	1602	1640	RT FAILURE
TA	1644	1700	NEW RT PLACED IN SYS
TA	1732	1757	In turn TA went flaky
TA	1811	1813	SPATTER

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

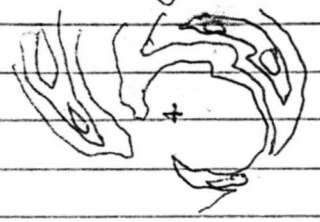
890805H1 - Energetics Exp into Hurricane Dean, RACING NORTH from Puerto Rico (2 plane exp).
LPS - Dr Frank Marks, ODU - Dr HEW
Radar/AXBT. Dr P Black, CPS - R Black
Sallery boy - N Dorst
T/O San Juan 1314Z LAND San Juan 22:13Z
1314Z - Beautiful sunny day as we leave SJU, light swell on ocean, no sign of DEAN here. We have a guest from NWSFO on board. J Thompson is our radar tech.
1410Z - Some minor problems getting radar system UP, but now it seems to run fine. Way north of us we are getting some echoes. Not recording yet!
1428Z - 43 has problem w/ L antenna but they're continuing on. We have eye ~ 150 N.M out. Seems to have a closed eye, but were too far out.

1440Z - Started recording radar data at altitude 3500 m, tilt at 3°, the new system is very sensitive to adjustment.

1454 - Starting eye penetration 25 km from eye wall

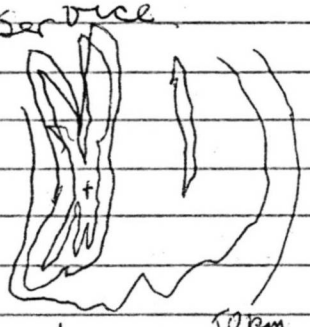


15Z - TA reflectivity problem
1504Z - Still working on TA. In the eye



1507Z - TA back in service.

1516Z -
In the eyewall >

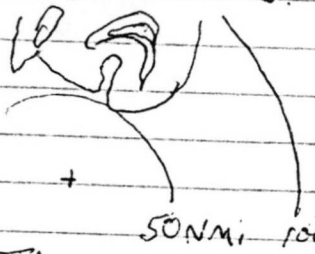


1600Z - Radar restart going thru eye wall on our way out West.

1607Z - TA problems (on STBY)

1631Z - TA still out, South of storm in calm area. My tummy likes

settled enough for me to enjoy some Chicarrones. Yum.



1640Z - TA seems to be running again. Keep your fingers crossed.
1644Z - You didn't keep your fingers crossed! TA down again, they're trying a restart.
1700Z - Restarted W/O radar system w/ new R/T for TAIL. Doppler velocities suspect, but LF seems OK. Think radar sys overheated
1732Z - In middle of a turn TA began to 'Slatter', reset TA at 1737Z since new R/T at 17Z the doppler velocities have been bad. They're about useless, but reflectivity seems OK if suspect. LF is OK.
1811Z - During turn TA began to 'SPLATTER' again. Boys are too busy to work on it now. Cleared up 1813Z

1825 Z - Descend to 500 m

1843 Z - Bump caused TA to go 'SPLATTER'

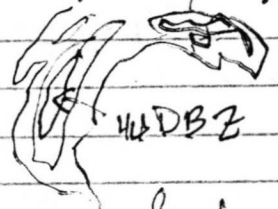
1858 Z - Eyewall at 500 m, it's pretty rough. TA continues to act up 'splats'

1902 Z - TA on 'STNDBY',

1909 Z - TA working, but 'splats persist.

1918 Z - Stopped recording doppler vel.

1939 Z - Heading for HEAVY eyewall at 509 m!!



2015 Z - We climb up & N of eye. I toss my lunch. Luckily, I only ate ½ my sandwich.

2044 Z - RADAR System crash. Leaving the hurricane, so we and radar recording now.

2213 Z - Land at SJU