19890924II_RADAR

E.5 Radar/Airborne Doppler Radar Scientist (On-board)

The on-board Radar Scientist (RS) is responsible for data collection from all radar systems on his/her assigned aircraft. Detailed operational procedures and checklists 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/RS and the on-board LPS.

✓ 4. Complete the appropriate preflight calibrations and checklists 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 Operate the system(s) as specified in the operator's manual and as directed by the HRD/RS unless superseded by directions from the on-board LPS or as required for aircraft safety as determined by the OAO/Flight Director or Aircraft Commander.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 checklists and all other appropriate checklists 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.

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Radar Scientist Checklist

Flight ID 870924I Tropical Storm Emily

Aircraft # NOAA43

Operators Burpee _____

Radar Tech Berles

Number of digital magnetic tapes on-board _____

Number of tape labels on-board _____

Component systems up and checked:

RDSC ✓ DSC1 ✓

Computer ✓ DSC2 ✓

DMTR1 * DMTR2 ✓

LF _____ R/T# SN-101M

TA _____ R/T# SN-201

Time correction between radar time and digital time 0

Radar Postflight Summary

Number of digital tapes used DMTR 1 4

DMTR 2 3

Significant recorder downtime:

DMTR 1 _____ Radar LF _____

DMTR 2 _____ Radar TA _____

Other problems:

* spool on DMTR 1 was broken - Bob Berles spent about an hour working on it but could not repair it - he eventually devised a system to hold the tapes on the tape drives with plastic wire clips

NOTE: Tail reflectivity and Doppler data were recorded within 60-70 nm of the center of Tropical Storm Emily and during the first crossing of the frontal boundary - otherwise only lower fuselage radar data were recorded.

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HRD RADAR TAPE LOG

FLIGHT 870924I1 AIRCRAFT NOAA43 OPERATOR Burpee SHEET 1 OF 1

Tape #	Time On	Time Off	Source Radar TA	Source Radar LF	Comments
1/1	194000	204050	see notes	✓	started recording LF only when first ODW dropped, LF tilt angle ~ -0.5°, tilt changed to ~0.0 at 2015, back to ~-0.5 at 2025;
2/1	204050		see notes	✓	started recording tail at 2025 near the center of Emily 2157 - stopped recording tail
1/2	220050	224845	see notes	✓	2219 started recording TA near front ? stopped recording ~~Ea~~ TA
2/2	224845	2348	—	✓	
1/3	2348	0106	—	✓	
2/3	0106	0224	—	✓	
1/4	0224	0256	—	✓	stopped recording LF after last ODW dropped

HRD RADAR LOG

OPERATOR_____

SHEET____ OF ____

RADAR DOWN-TIME LOG

ITEM	TIME DOWN	TIME UP	PROBLEM

ITEM LIST: VTR, DMTR1, DMTR2, COMP, ROSC, LF, NO, TA, DSC1, DSC2

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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/RS and the on-board LPS.

_____ 4. Complete the appropriate preflight calibrations and checklists 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/RS 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 checklists and all other appropriate checklists 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).
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_____ 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 Scientist Checklist

Flight ID 98A0924I

Aircraft # NOAA 43

Operators BLOCK / HANDEL (100 PILOTS)

Radar Tech _____

Number of digital magnetic tapes on-board 134

Number of tape labels on-board _____

Component systems up and checked:

RDSC _____ DSC1 _____

Computer _____ DSC2 _____

DMTR1 _____ DMTR2 _____

LF _____ R/T# _____

TA _____ R/T# _____

Time correction between radar time and digital time _____

Radar Postflight Summary

Number of digital tapes used DMTR 1 _____

DMTR 2 _____

Significant recorder downtime:

DMTR 1 _____ Radar LF _____

DMTR 2 _____ Radar TA _____

Other problems:

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HRD DOPPLER RADAR TAPE LOG

FLIGHT 870924I AIRCRAFT 43RF OPERATOR P. Black & HANDEL SHEET 1 OF ___

TAPE NO.	TIME ON	TIME OFF	SOURCE* V	H	S	COMMENTS** (#pulses, scan rate, range) 32/ 8 rpm / 75 KM
1	195945	201619				
2	2038	2057				HEADED FOR EYE. TAPE STARTED ~10 nm OUT S to N MDH
3	2100:20	2110				DOWNWIND LEG, NW QUAD
4	2115:10	2134				W to E PASS THROUGH TURN @ 2128
5	221550	2234				ALONG AFRONT
6	223710	/				Tape STOP/COFF IN READ MODE REWIND
/	224112	2259				+ RESTART OK

*Vertical, Horizontal, or Full Sweep Scan

** # of pulses averaged (32,64,128,256); scan rate(Min,Max); range resolution(150m, 300m)

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HRD RADAR LOG

OPERATOR_____

SHEET____ OF ____

RADAR DOWN-TIME LOG

ITEM	TIME DOWN	TIME UP	PROBLEM

ITEM LIST: VTR, DMTR1, DMTR2, COMP, ROSC, LF, NO, TA, DSC1, DSC2