

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 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 on-board LPS or as required for aircraft safety as determined by the AOC 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 AOC 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.

SEP 07 1991

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Doppler Radar Scientist Check List

Flight ID 910907 I 1
Aircraft # 43
Operators ROUX, DODGE
Radar Tech. SELIM LEIVA, Terry Lynch

Number of digital magnetic tapes on board at least 16

Number of tape labels on board enough

Component systems up and checked:

MARS	<u>✓</u>	Computer	<u>✓</u>
DMTR1	<u>✓</u>	DMTR2	<u>✓</u>
LF	<u>✓</u>	R/T#	<u>121</u>
TA	<u>✓</u>	R/T#	<u>202</u>

Time correction between radar time and digital time _____

Radar Postflight Summary

Number of digital tapes used: DMTR1 _____
DMTR2 _____

Significant down time:

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

Other problems:

6) CLAUDETTE

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HRD Radar Tape Log

Flight 910907 I 1 Aircraft 43 Operator ROUX DODGE Sheet 1 of

[illegible]

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HRD Radar Down-Time Log

Operator Dodge

Sheet ____ of ____

Item	Time Down (HHMMSS)	Time Up (HHMMSS)	Problem
<i>17</i>	<i>1520</i>	<i>1542</i>	<i>1 REW tape - system hung up, LF would not update so TLYNCH fixed.</i>
			<i>MAYBE MARS over heat.</i>
<i>DTR1</i>	<i>1844</i>	<i>1844</i>	<i>MISLOAD, then OK</i>

Item List: DMTR1, DMTR2, COMP, MARS, LF, TA.

RADAR

SEP 07 1991

(1)

7 Sept 1991

910907I1

LPS: GAMACHE RADAR: ROUX/DODGE

CLOUD PHYSICS: P. WILLIS FIELD Mill, etc P. BLACK

RADAR TECHS: LEYVA, LYNCH

Going for eyewall evolution in CLAUDETTE from Bermuda, where we're competing with an airshow. We are will be late taking off because of fueling delays.

1428Z: Finally we are fueled

1445: Take off

1510 start recording so paint

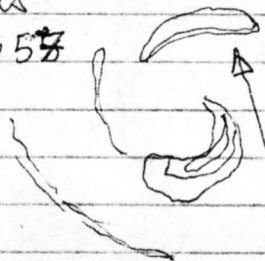
Bermuda. TA IDRAM, FIAT cont. LF 2 RPM
SECTOR CTR set at 10° so FIAT cont will.1526: PDodge FOCK UP: T Lynch says
turn TA off until we get in bandsbecause of switch. So in process of
doing 1 round tape 1.

1535: LF stopped updating.

1545: RESTARTED Recording

1547: can see eye 150 KM, ~160° from us

1557

turning & descending
to1603: About to go
through. Was stratiform

- 1609 into eye wall 98 KTS max

1611 eye full of clouds

SEP 07 1991

(2)

910907I1

1612 SE eye wall has "60 dBZ"
108 KTS

1613 flying thru GRAPEL, then rain

1619 Tape 1 end.

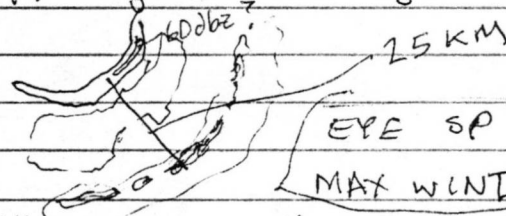
1631 did a  to avoid some stuff
now we are turning for 2nd run

in at 315° 1633 pouncey

163604: DATA sys went down (NOT radar DS)

1638 DS back up 1640

1641 hdg ~310° into eye



EYE SP 956

MAX WIND 115

1644 TA very attenuated, grape

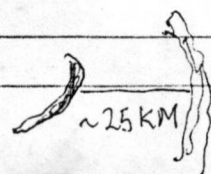
1647 ODW drop 27°37' 3476 GA
62°18' T16'3 T0 9.21711 we're circling at 27°39, 63°17
waiting to hear about 42's radar problems1716 headed back ^{towards} ~~the~~ eye

1725 W eyewall ~80 KTS

eye SP ~956.5 mB E eyewall 105 KTS
we pass just N of most intense DBZ

1732: picked up 42's radar

1733

1743 we heading NW
just inside line
of strong cells

③ 910907I1 6 CLAUDETTE

1752 heading ~~224~~ 224°, TRK 240° into eye, ~50 KM

1756 NE eyewall ~80 KTS(?)

SP-955

1800



radar center

SW eyewall?

1807 Tape 2-2 ended

1809 They switched from INE 1 to INE 2, we left INE 1 for radar

1816 : maneuvering ^{to setup} ~~for~~ circle pattern, Corole pattern actually OCTAGON around eye

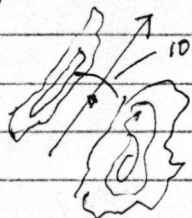
1834 SAW TAX-SEC of eye with AFT beam

1839 JACK & BARRY est 9 motion 330° 9 KTS

1846 we are scooting between 2 strong bands SE of eye, starting 2nd circle

1851

F Roux happy



10 KM



1901 finishing CIRCUIT #2, again scooting between bands.

1903 : eye closed (in 20 dBZ at least)

④ 910907I1

42 fix 1923Z 27°55' 62°33'

1913 Barry pointed out that storm better org, Howard T. said maybe spun it up and we'll get blamed.

1916 on 4th circuit

1922 bouncing about just N of eyewall

1925 Now have good bands to either side of eye - CLAUDETTE getting her merde together



new band forming inside the old meany

1935

2001 28°01' 42 fix 62°35'

1943 Roux & GAMACHE very pleased with this data set!

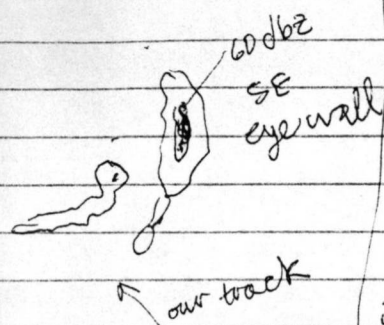
1956 we are going N up and then do 180° to set up for L. 1958 turned.

2007: J Parish says wind profile does not have sec max even tho radar shows "double eye". 2011: sun lit clouds to the east. HOORAY. ^{at} 27°11' 62°34' turn to head NE.

2026: starting our rotating alpha pattern by heading 319 back into storm

2034: some bounce in stratiform goo...

2035



910907I1 (5)

SP ~ 958 GA 3625

28° 8' 62° 38' 2039

Approx center

NW eyewall MAX 89-90 KTS

Outer eyewall 40-50 km
in radius - it may alreadybe choking off inner stuff. Wind
maxes ~ 20 KTS less than last penetration
at 17Z2103 we turn to head East and 42 is
also headed back in

2118 ~CTR 28°14' 62°39' SP 959 mB

2124 ^{W INNER} eyewall wind max still only ~80 KTS
outer eyewall had ~87 KTS East side, lots
of rain.2132 OPW drop 28°21' 61°42' T.4.5 T.5.4
GA 3669 Ps 657 mB channel 3

2143 heading back in 212°

2152 inner convection seems to have rotated
so max NE instead of just E. 2nd eyewall
also has ~50dbz convective area

28°13' 62°43' 42 FIX

28°10' 62°44' 43

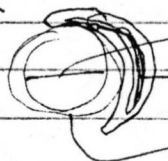
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2202 lots of rain in outer band/eyewall

2214 turn to head N

2220 in S part of outer eyewall lots of
rain. 2222 inside that band

2224

INNER
eye

only about 10-15 km across

max wind ~80 KTS

2227 cbr ~ 28°25' 62°47' (APPROX)

2229 101 KTS in N eye wall

[43 2228Z 28°15' 62°48'

[42 28°21' 62°48' 962 mB

2245 - TAIL off to save ^{FRENCH} antenna

2300 - LF off.

TOOK 14 Tapes