19950904H1_RADAR

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.

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Doppler Radar Scientist Check List

Flight ID 950904H

Aircraft # 42

Operators Black, Dodge

Radar Tech. Roles, Barr

Number of digital magnetic tapes on board ENOUGH

Number of tape labels on board ENOUGH

Component systems up and checked:

MARS	✓	Computer	
DMTR1	✓	DMTR2	
LF	✓	R/T#	121
TA	✓	R/T#	R201 T 101

Time correction between radar time and digital time

Radar Postflight Summary

Number of digital tapes used: DMTR1

DMTR2

Significant down time: INE #1

DMTR 1 Radar LF

DMTR 2 Radar TA

Other problems:

Tape 1 ended sometime around 210, and 2nd tape was not loaded – so JRoles loaded another – but we may have lost 5 min of FIAST

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HRD Radar Tape Log

Flight 950904H Aircraft 42 Operator Black/Dodge Sheet ___ of ___

Tape #	Time On (HHMMSS)	Time Off (HHMMSS)	2132 take off Comments
1	2145	~0210	224801 - F/AST ON
		Leg 2 (	230202 F/AST OFF
			2324 F/AST ON
		Leg 3 (	2330 F/AST OFF
			235230 F/AST ON
		Leg 4 (	0006 F/AST OFF
			002750 F/AST ON
		leg 5 (	0041 F/AST OFF
			0100 F/AST ON
		leg 6 (	0113 F/AST OFF
			013730 F/AST ON
		leg 7 (	014200 F/AST OFF
			020449 " ON
		leg 8 (	021645 OFF
			0238 ON
		leg 9 (	0249 OFF
			031020 ON
		(	0323 OFF
TAPE 2	0215	0409	

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HRD Radar Down-Time Log

Operator _____ Sheet ____ of ____

Item	Time Down (HHMMSS)	Time Up (HHMMSS)	Problem

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

LUIS

950904H1

2 plane mission From Barbados -
Vortex motion Experiment

NOAA 43 took of 1705Z

NOAA 42 Crew:

LPS: John Gamache
Rudar: Dodge/M. Black
c-scat: Pete Black

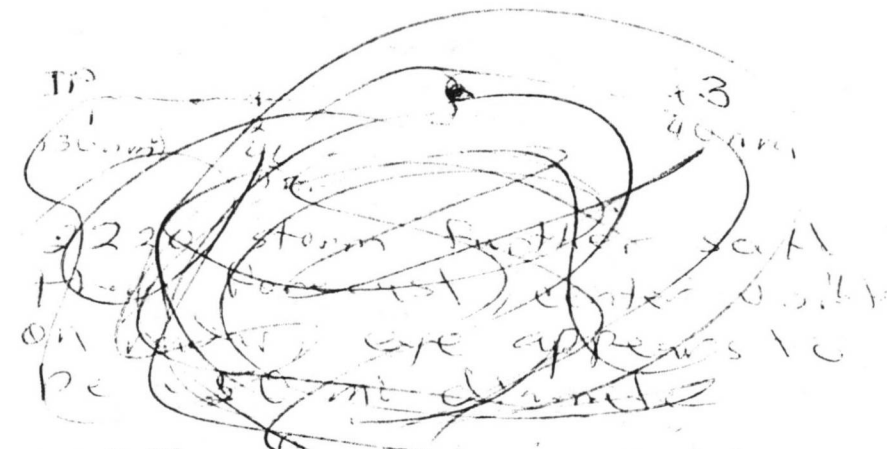
Observers/helpers:
Liz Ritchie
Wen-Chau Lee

Luis - 945 mb 140 kts

Take off: 2131 59

Started recording 214500

LOLS-2



2237 - descent to FP1

2158 eye, closed, ~50 nmi diam (?)
well def on LF with several rainbands
that we are traversing now. (stratiform)
17°10′ 59°45′ Tacks Radar Fix
at 2200

2212 Jack adjusts) LF tilt up 0.5°

2215 first good rainband
2223 circle at 16°16′ 59°51′ to buy
time for 43...
~~2223~~

LOLS-3

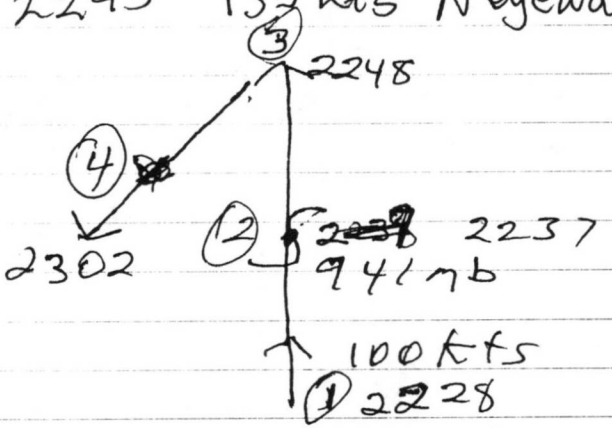
2231 eye ~40 nmi across.

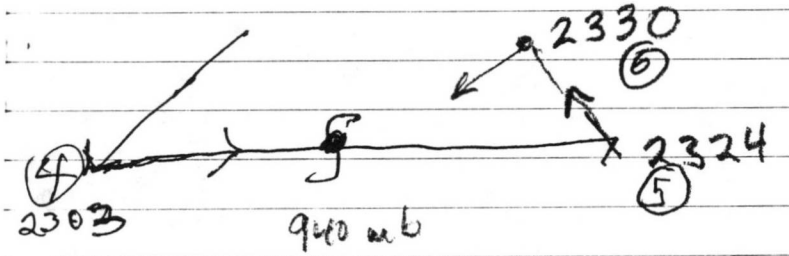
2234 Appearance

52 m/s MAX S eyewall

Fix 17°06′ 59°52′ ~941 mb

2243 135 kts N eyewall





2309 110 kts MAX W eyewall

~2313 ~940 mb

2323 F/AST ON 2330 OFF

LUIS-4

2332 Inbound from NE for pass #3

(6)

~125 KTS NE eyewall

2340 Beautiful moon in the eye! almost like the P. Rowan

2341 17°09.9' 60°08.8' FIX #3

2349 Twice Mike has noted spikes in LF display, very brief - maybe 45? ISLANDS show up well

235230 turn F/AST ON

0006 F/AST off
16°30' 59°42'

0010 Jack P noted SQUARE eye in LF! N, NE eyewall looks more convective now...

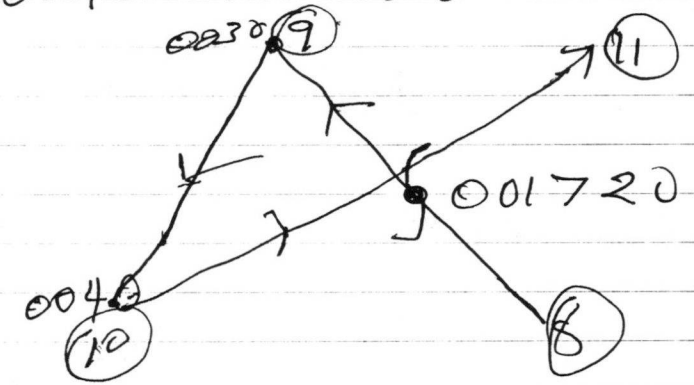
0018: Maybe 45 dbz in cell east part of eyewall

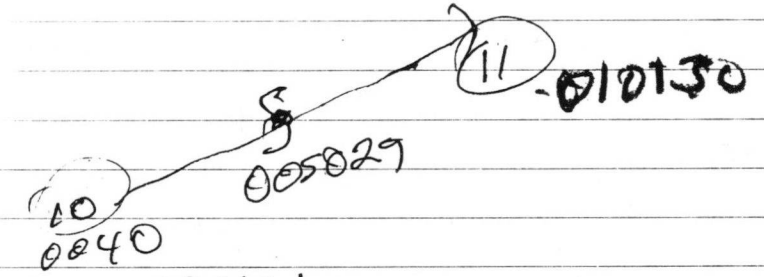
LUIS-5

002750 F/AST OFF

0030 F/AST ON
100 Kt tail (w'ind! 360 kts ground speed

0040 Continuous





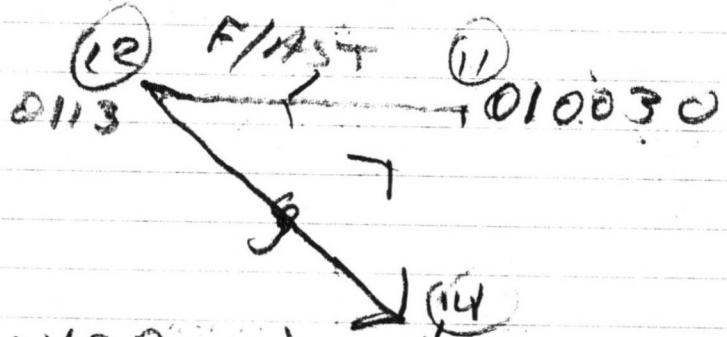
0049:
Can see the lights of NOAA43 just to the left of us and closing

0051 A lot of interference from their radar

LUIS-6

0059
storm is moving
almost straight west
273° @ 12 kts

0058: looks like ~~[illegible]~~
double bright band,
one at 5 km and one
at 12 km



010420 - in strong
convective band NE of center

0124: saw 43 out left side again

012715 FIX 17°04.1' 60°22.9'
936 mb
double pressure min on this
pass.
0136 - headed for pt 13

LUIS 7

013730 F/AST ON ~16°29' 59°55'
then heading NE for short
F/AST Leg - OFF 14200

148 Jack remarks it is a pentagonal
eye!
FIX#7: 944mb
015410 17°09.3 60°29'

020449 F/AST ON
0208 - Mike remarked eye
seemed smaller - JG agreed,
on LF clear area in eye is
~50 km across

0215 tape changed
PROBABLY lost 2-5 min

21645 F/AST off

0227 17°06.3 60°36' (#8)
233 130KTS 17°28 60°21

238 F/AST ON
249 F/AST OFF

LUIS-8

FIX #9 938 mb

025845 17°11'1 60°32'9

31020 F/AST on

0323 F/AST OFF for

pass #10 through @ LUIS

334; 43 rings on our tail

FIX #10

033530 17°10'8' 60°41'

So the storm does not seem to be moving that fast now.

The TAPE PROBLEM MORAL:

USE TWO TAPES!

HAVE AUTOSWITCHING ON!

347 ~~[illegible]~~ END PATTERN

348 F/AST on for LEE-TESTUD

950906 H Hurricane Luis

1 plane mission from Barbados to Miami

Take off at: 14.11.50

NG2RF Crew:

LPS: 1

Radar: Viltard / M. Black

C. Seat:

Cloud Physics:

ODW:

Peter Black, Mike Black, Liz Ritchie

James Franklin, Nicolas VILTARD