

AUG 26 1998

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.
- ☒ 2. Maintain a written commentary in the radar logbook of tape and event times, such as the start and end times of F/AST legs. Also document any equipment problems or changes in R/T, INE, or signal status.

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 Field Ground 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.

Doppler Radar Scientist Check List

~~AUG 26 1998~~
Flight ID: 980826H
Aircraft Number: 42RF
Doppler Radar Operators: Marks
Radar Technician: Barr
Number of digital magnetic tapes on board: 2

Component Systems Status:

MARS	<u>✓</u>	Computer	<u>✓</u>
DAT1	<u>✓</u>	DAT2	<u>✓</u>
LF	<u>✓</u>	R/T Serial #	<u>102</u>
TA	<u>✓</u>	R/T Serial #	<u>123/202</u>

Time correction between radar time and digital time: _____

Radar Postflight Summary

Number of digital tapes used:	DAT1	<u>2</u>	
	DAT2	_____	
Significant down time:			
DAT1	<u>17min</u>	Radar LF	<u>17min</u>
DAT2	_____	Radar TA	<u>17min</u>

Other Problems:

Flight 980826H Aircraft 42RF Operator Marks Sheet 1 of 1
LF RPM 2 TA RPM 10

Tape #	F/AST On?	Event Time (HHMMSS)	Event
1	NO	102500	single PRF
	yes	110000	FI/AST 50 nm from first
			152116 radar system down
		152116	Tape rewound
2	YES	153847	TK SE along inside edge of
	NO	161420	TK SSW to G 80 nm
	YES	165149	TK ENE to pt SE of G sounded ABT
	NO	170550	TK NNW to G to LTX
			170701 TA down
			170710 TA up
			1715 down/up
		1826	<u>off</u>

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HRD Radar Tape Log

Flight 980826H Aircraft 42RF Operator Marks Sheet 2 of
LF RPM 2 TA RPM 10

(Include start and end times of DATs, as well as times of F/AST legs and any changes of radar equipment status)

[illegible]

Flight 9808264 Aircraft 42RF Operator Marks Sheet 3 of
LF RPM 2 TA RPM 10

[illegible]

HRD Radar Down-Time Log

AUG 26 1998

Operator Marks

Flight ID 980826H

Sheet 1 of 1

Item	Time Down (HHMMSS)	Time Up (HHMMSS)	Problem
system	152116	153847	system crash, reboot

Item List: DAT1, DAT2, COMP, MARS, LF, TA.

Include serial numbers of any new R/Ts.

980824H1 Bonnie

E.5 Doppler Radar Scientist (On-Board)

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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 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.
- ☒ 2. Maintain a written commentary in the radar logbook of tape and event times, such as the start and end times of F/AST legs. Also document any equipment problems or changes in R/T, INE, or signal status.

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 Field Ground 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.

Doppler Radar Scientist Check List

Flight ID: 980824H1 Bonnie
Aircraft Number: 42RF
Doppler Radar Operators: Frank Marks
Radar Technician: George Delgado/Jim Barr
Number of digital magnetic tapes on board: 2 boxes

Component Systems Status:

MARS	<u>✓</u>	Computer	<u>✓</u>
DAT1	<u>✓</u>	DAT2	<u>✓</u>
LF	<u>103 ✓</u>	R/T Serial #	<u>103</u>
TA	<u>123/100 ✓ 123/201 AT</u>	R/T Serial #	<u>123/201</u>

Time correction between radar time and digital time: 1 s

Radar Postflight Summary

Number of digital tapes used: 1

DAT1 1

DAT2

Significant down time:

DAT1 9 min

Radar LF 9 min

DAT2 9 min

Radar TA 9 min

Other Problems:

Radar system froze twice (see downtime log)

HRD Radar Tape Log

Flight 980824H1 Aircraft 42 Operator F. Marks Sheet 1 of
LF RPM 2 TA RPM 10

(Include start and end times of DATs, as well as times of F/AST legs and any changes of radar equipment status)

[illegible]

8/24/98

B0

HRD Radar Tape Log

Flight 980824H Aircraft 42RF Operator F. Marks Sheet 1 of 1
LF RPM 2 TA RPM 10

(Include start and end times of DATs, as well as times of F/AST legs and any changes of radar equipment status)

Tape #	F/AST On?	Event Time (HHMMSS)	Event
1	Y	185200	dual PRF 2100/1400 0.375 us ±31 m/s 71 km max range.
			1931 radar down restart
			193339 on again
		201720	switch to HURR1 1600 single PRF start leg 100nm NW of 9
	N	202811	
	Y	210715	100nm SE of 9 TK to (2) up strong rainband
	N	213642	double peak NE of 9
	Y	233645	100nm NW of 9 TK 225 to new (7)
		234115	switch to dual PRF 2100/1400 0.375 us TK along outer band
			011518 radar system down band
			tape off entering <u>reset</u>
	Y	012400	012459 radar FAST missed Eegewall
		025405	off

Flight 980824H1 Aircraft 42RF Operator E. Marks Sheet of
LF RPM 2 TA RPM 10

[illegible]

Bonnie

HRD Radar Down-Time Log

Operator F. Marks

Flight ID 980824H1

Sheet ____ of ____

Item	Time Down (HHMMSS)	Time Up (HHMMSS)	Problem
system	1931	1933	reset system
system	0115	0122	reset/reboot missed signals

Item List: DAT1, DAT2, COMP, MARS, LF, TA.

Include serial numbers of any new R/Ts.

④

0032 turn pearl in ramband
100nm E of 5

F/AST and dual PRF

0046 100nm NE of center in
real intense ramband
lots of interesting near BB

physics $T_A = 0.6^\circ\text{C}$

0050 fix 225 to 9

0056 45 - 0057 10 WOW!!!
what an up/down combo
YOUTH!!!

radar down in NE edge of eye

①
980826H Bonnie Landfall
TO MacDill
27 SI $82^\circ 30'$

Crew Barnes
Marley
Abersom
Leighton
Kimberlain
Wroe

TO 102000 no dual-PRF
single PRF 1600 per
0.5 us request

11000 F/AST 50 nm from 1st
outer band

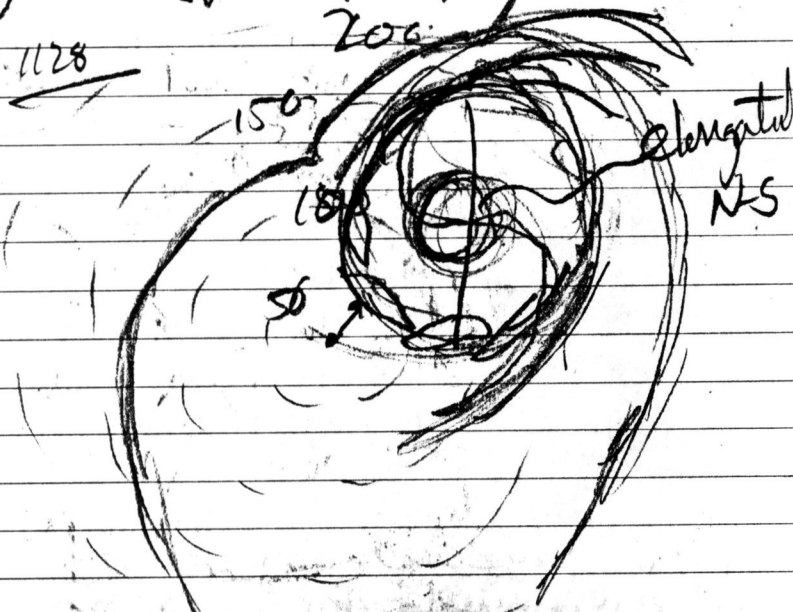
1107Z $32^\circ 40'$ $78^\circ 10'$ TEAL fix

1126Z descend to 12kft.
double ring eyewall
structure

②

RVP7 500K
for both planes + spans
200

1128



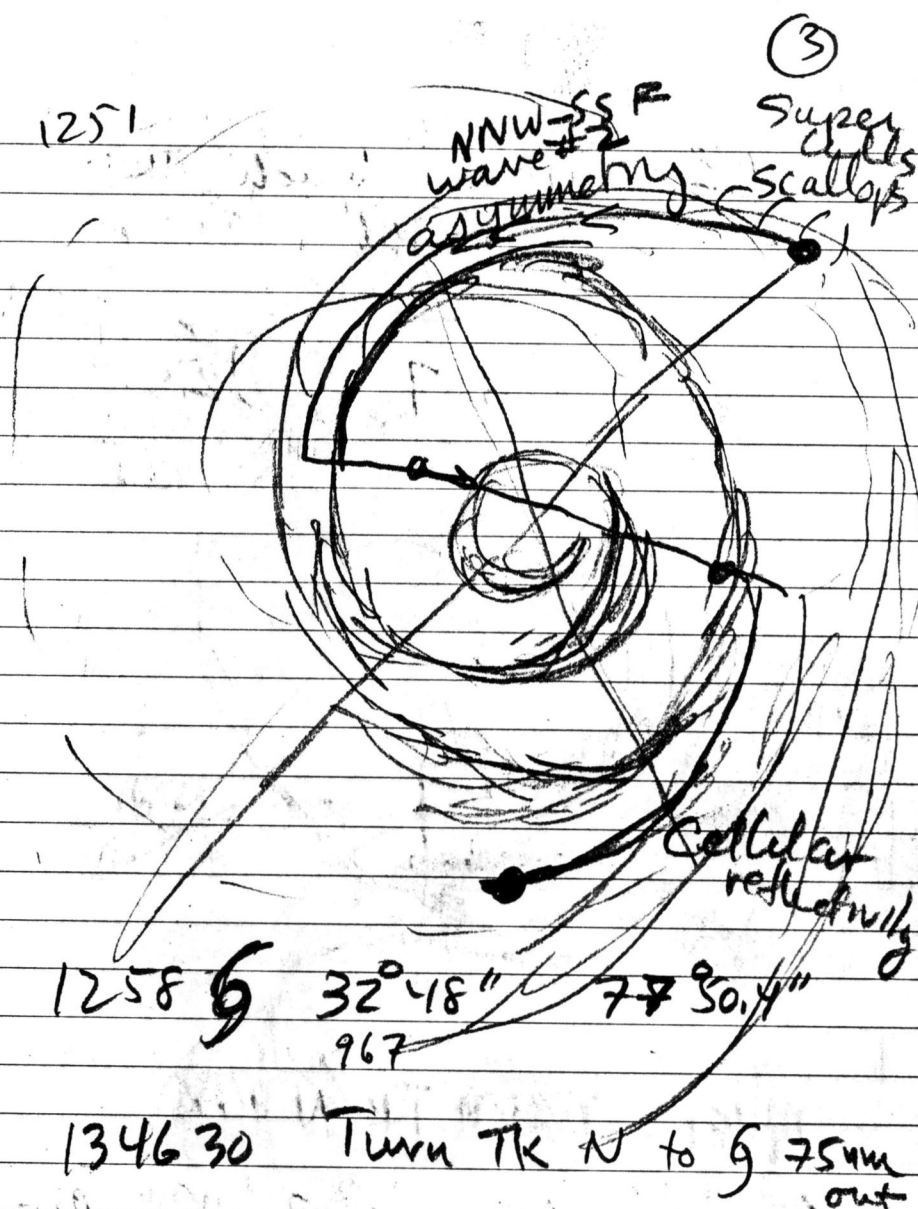
Coast line in eye very
32°34" 77°49.5" weak diffuse

1220 Turn TK 320 75mm NE

just inside major of
convective band

124741 Turn TK 110 to eye from
outer wall

1251



1258 32°48" 77°30.4"
967

134630 Turn TK N to 75mm out

1408 32°59.9 77°54.2"
M phys sizes looking real good

(4)

W426 Turn on beach TK180
33°21.6" 79°10.4"

143526

BT#32 32.7"

78°52.5"

Cal-1

SSW or red

1445



144800 Turn TK N to 6

1450 BT#4 3°16" 77°47"
SST 28.9°C

(5)

152010

Turn TK upwind along NE
rainbands

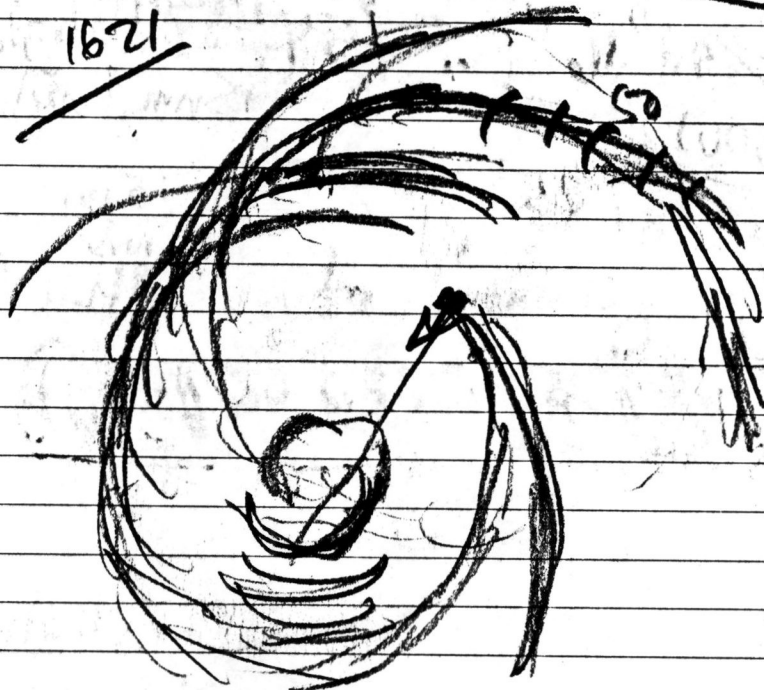
152116 radar system ↓

1558 No 4 overheat shutdown
1600 drop sonda along in
side edge of supercell

1610 engine restart ↑

1615 TK 210 to start

1621



⑥ 48RF 33°16" 77°53"
18316

(1650 end track)

run FAST downwind
outside outer eyewall

1651 436
33°21" 77°52"

1707 continuous scan TK to G

drop ~~ABT~~ & some
good ~~II~~ leg for Mike

~~DOW 34~~ 16" 77°54" Wilmington
15nm behind

~~DOW 2~~ 34°25" 77°37" 15nm
NE of
HW

Teal 23 CP 963 ab

1731



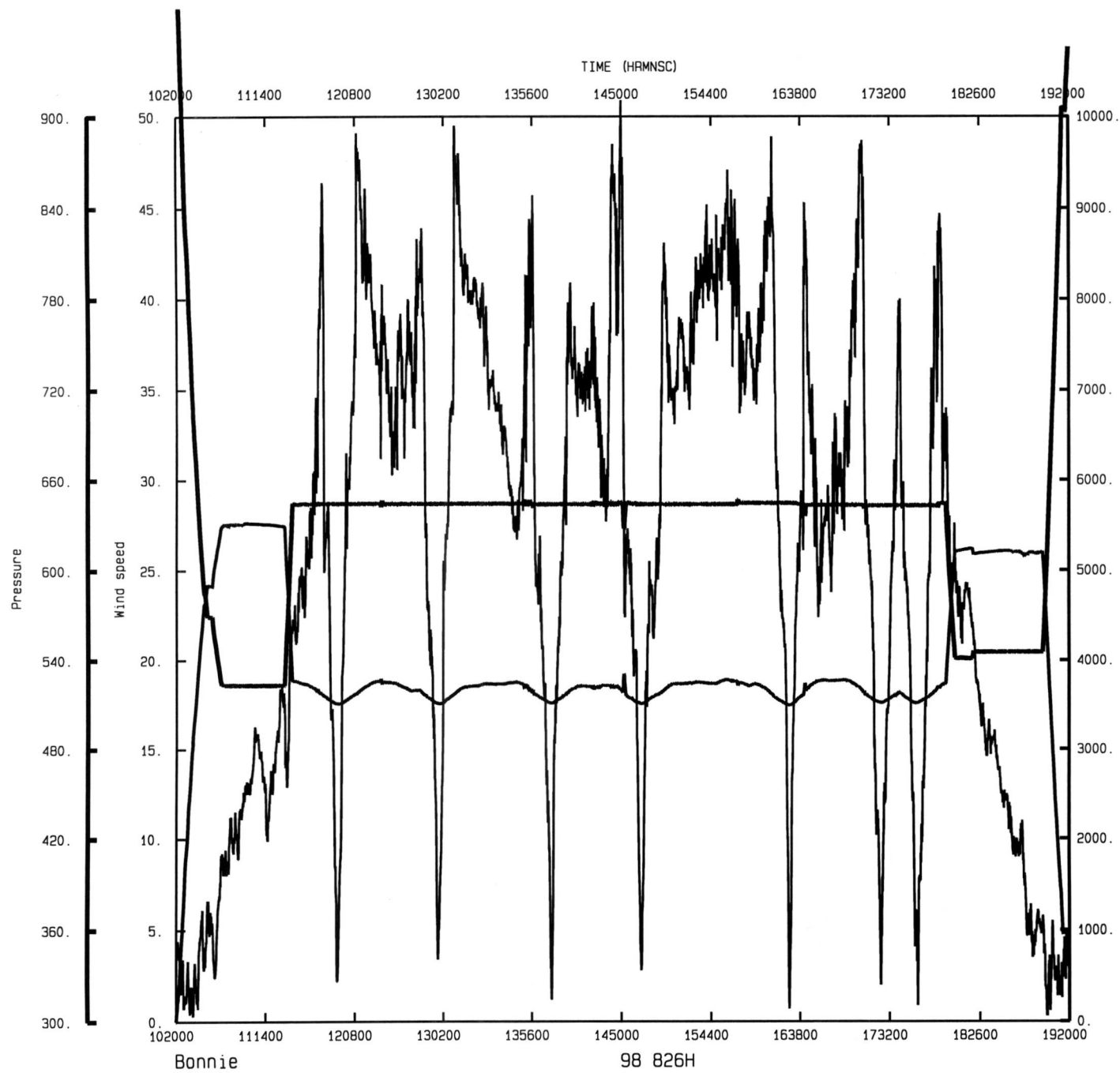
end leg 1736 over KLIX
reverse heading

⑥ 174950 33°32.2' 77°57.1"
TK SW thru G wall to MacD
good II leg for Mike

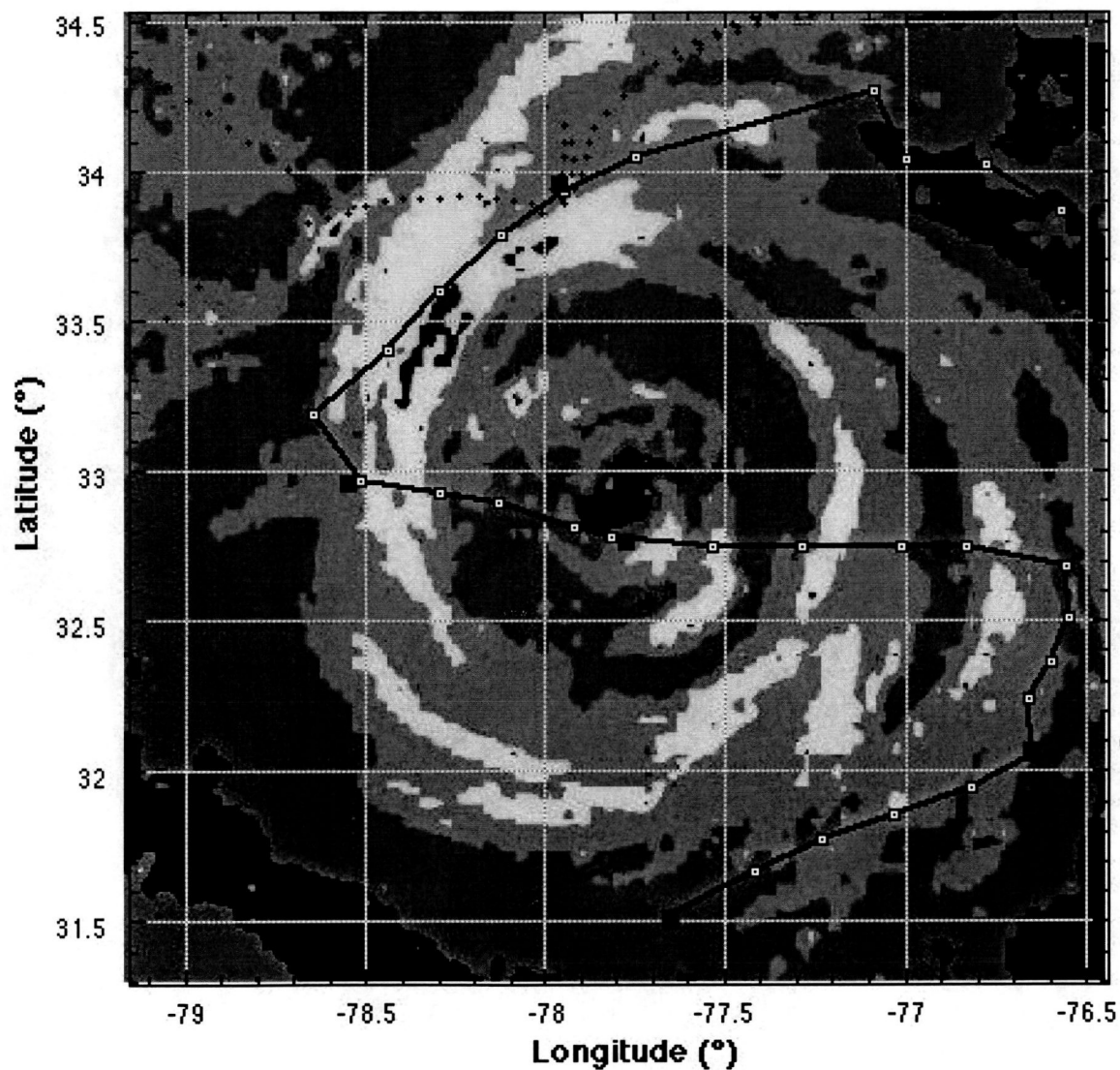
180715 end pattern head for
the barn!!! Great flight

AXBT Log

Sonde	Time	Latitude (°)	Longitude(°)	SST	Comment
1	12:20:50.00000	34.160	-76.600	28.500	
2	12:33:30.00000	33.960	-77.960	27.900	
3	12:49:46.00000	32.960	-78.550	28.000	
4	12:58:55.00000	32.766	-77.775	29.000	
5	13:09:26.00000	32.740	-76.900	28.100	
6	13:27:19.00000	32.067	-76.650	25.100	
7	13:45:59.00000	31.500	-77.650	27.500	
8	14:35:39.00000	32.551	-78.887		failure
9	14:50:00.00000	32.266	-77.780	28.800	
10	15:33:00.00000	34.100	-76.737		failure
11	16:20:30.00000	33.900	-77.500	27.100	
12	16:32:00.00000	33.100	-77.950	27.400	
13	16:41:00.00000	32.616	-78.150	28.300	
14	16:52:00.00000	31.967	-78.260	28.700	
15	17:07:45.00000	32.320	-77.088	26.700	
16	17:16:00.00000	32.816	-77.500		failure



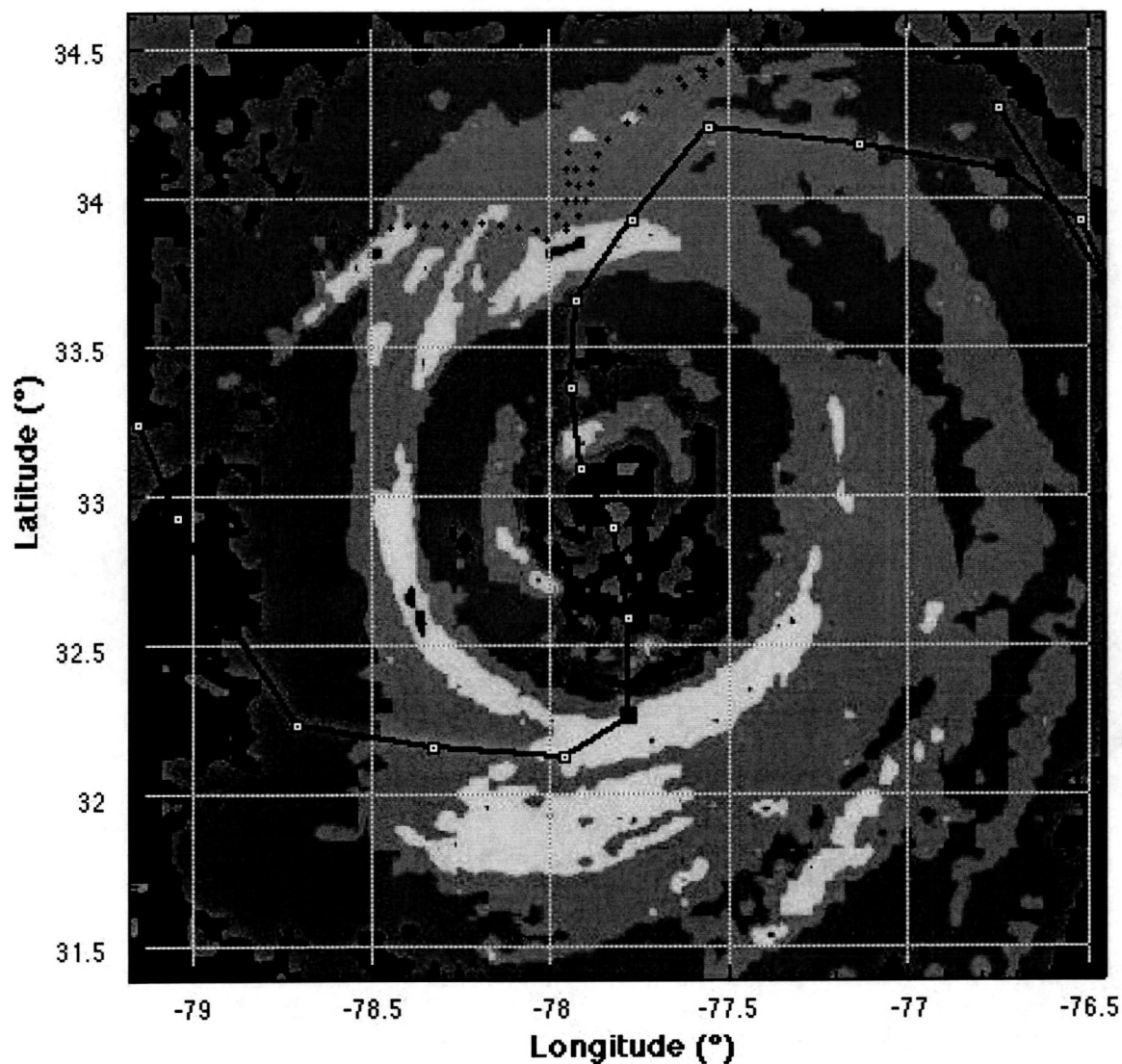
NOAA/HRD



980826h1

BONNIE

123911 Z to
130921 Z



980826h1

BONNIE

134527 Z to
141017 Z

