

070916Z

Lead Project Scientist

Preflight

- ☒ 1. Participate in general mission briefing.
- ☒ 2. Determine specific mission and flight requirements for assigned aircraft.
- ☒ 3. Determine from field program director whether aircraft has operational fix responsibility and discuss with AOC flight director/meteorologist unless briefed otherwise by field program director.
- ☐ 4. Contact HRD members of crew to:
 - a. Assure availability for mission.
 - b. Review field program safety checklist
 - c. Arrange ground transportation schedule when deployed.
 - d. Determine equipment status.
- ☒ 5. Meet with AOC flight director and navigator at least 3 hours before take-off for initial briefing.
- ☒ 5. Meet with AOC flight crew at least 2 hours before take-off for crew briefing. Provide copies of flight requirements and provide a formal briefing for the flight director, navigator, and pilots.
- ☐ 6. Report status of aircraft, systems, necessary on-board supplies and crews to appropriate HRD operations center (MGOC in Miami).
- ☐ 7. Before take-off, brief the on-board GPS dropsonde operator on times and positions of drop times.
- ☐ 7. Make sure each HRD flight crew members have life vests
- ☒ 7. Perform a headset operation check with all HRD flight crew members. Make sure everyone can hear and speak using the headset.
- ☐ 8. Collect "mess" fee (\$2.00) from all on-board HRD flight crew members.

In-Flight

- ☐ 1. Confirm from AOC flight director that satellite data link is operative (information).
- ☐ 2. Confirm camera mode of operation.
- ☐ 3. Confirm data recording rate.
- ☐ 4. Complete Lead Project Scientist Form.
- ☐ 5. Check in with the flight director to make sure the mission is going as planned (i.e. turns are made when they are supposed to be made).

Post flight

- ☐ 1. Debrief scientific crew.
- ☐ 2. Report landing time, aircraft, crew, and mission status along with supplies (tapes, etc.) remaining aboard the aircraft to MGOC.
- ☐ 3. Gather completed forms for mission and turn in at the appropriate operations center. [Note: all data removed from the aircraft by HRD personnel should be cleared with the AOC flight director.]
- ☐ 4. Obtain a copy of the 10-s flight listing from the AOC flight director. Turn in with completed forms.
- ☐ 5. Obtain a copy of the radar DAT tapes. Turn in with completed forms.
- ☐ 6. Obtain a copy of the all VHS videos from aircraft cameras (3-4 approx.). Turn in with completed forms.
- ☐ 7. Obtain a copy of CD with all flight data. Turn in with completed forms.
- ☐ 8. Determine next mission status, if any, and brief crews as necessary.
- ☐ 9. Notify MGOC as to where you can be contacted and arrange for any further coordination required.
- ☐ 10. Prepare written mission summary using **Mission Summary** form (due to Field Program Director a week after the flight).

Lead Project Scientist Check List

Date 9/16/07 Aircraft N43RF Flight ID 070916T

A. Participants:

HRD		AOC	
Function	Participant	Function	Participant
Lead Project Scientist	<u>Rogers</u>	Flight Director	<u>Almeida</u>
Radar	<u>Black</u>	Pilots	<u>Choy, Nelson</u>
Workstation	<u>Black</u>	Navigator	<u>Siegel</u>
Cloud Physics	<u>—</u>	Systems Engineer	<u>Lynch</u>
Photographer/Observer /Guests	<u>—</u>	Data Technician	<u>Smith</u>
Dropwindsonde	<u>Black</u>	Electronics Technician	<u>GauSSouci</u>
AXBT/AXCP		Other	

B. Take-off and Landing Locations:

Take-Off: 2029 Location: Barbados

Landing: 0310 Location: Barbados

Number of Eye Penetrations: 0

C. Past and Forecast Storm Locations:

Date/Time	Latitude	Longitude	MSLP	Maximum Wind
<u>16/15Z</u>	<u>17.2</u>	<u>57.9</u>		<u>30 kt</u>
<u>17/00Z</u>	<u>17.7</u>	<u>59.1</u>		<u>30</u>
<u>17/12Z</u>	<u>18.4</u>	<u>60.3</u>		

D. Mission Briefing:

Mission #5 in support of 3-D Doppler winds Experiment.
Fly hammerhead pattern at 12,000 ft. N-S (long) legs are 160 nm. Attempt Doppler analysis on N-S legs. Drop GPS sondes at 80nm distances from likely center at cardinal points. System is highly sheared, limited convection confined well east of center.

E. — Equipment Status (Up ↑, Down ↓, Not Available —, Not Used O)

Equipment	Pre-Flight	In-Flight	Post-Flight	# DATs / Cds /Expendables/ Printouts
Radar/LF	✓	✓		
Doppler Radar/TA	✓	✓		
Cloud Physics	—	—		
Data System	✓	✓		
GPS sondes	✓	✓		
AXBT/AXCP	—	—		
Workstation	✓	✓		
Videography	—	—		

REMARKS:

Lead Project Scientist Event Log

Date 9/16/07 Flight 070916T LPS Rogers

Time	Event	Position	Comments
2029	takeoff	Barbados	tlc from Barbados
2107	pattern	at 1P, 124 nm SW ctr.	turn to track 90
2114	obs	108 nm SW ctr.	no echoes near alt cont,
			some echoes 150 nm to east
			and north
2142	obs	130 nm SE of ctr.	some clouds here, few isolated
			areas of convection, otherwise
			just cirrus canopy, isolated
			anvilus
2146	turn	140 nm SE ctr.	turn to track 0, begin
			1st N-S leg
2151	obs	130 nm SE ctr.	some convection off to
			W of ctr, about 8 km deep
215536	radar	120 nm SE ctr.	track 0
220829	obs	125 nm E ctr.	convection about about
			(5 km deep to our west,
			can see the anvils being blown to
			the east on tail radar, indicating
			shear
223156	turn	161 nm NE ctr.	turn to track 270
224130	turn	128 nm NE ctr.	turn to track 180
225450	obs	95 nm E of ctr.	no echoes echoes out here
230015	drop 1	90 nm E of ctr.	FL 10, SF 20
2308	turn	100 nm SE of ctr.	turn to track 270
2324	obs	86 nm SE of ctr.	some scattered convection
			down here, occasional echoes around
			10 km height, some indication cells
			being tilted ctr sheared forward south

start
RL 1

end
RL 1
start
RL 2

end
RL 2



Lead Project Scientist Event Log

Date 9/16/07

Flight 070916I

LPS Rogers

Time	Event	Position	Comments
232920	turn	78 nm SEctr	turn to track 0
2347	radar	17.9 N 58.3 W	radar locked, reset
2351	pattern	18.0 N 58.3 W	shifting pattern
			1 1/2 degree to south, any convection
			is down there, and possible circ
			center is further south too
2359	turn	18.68 58.31	turn to track 270,
			shifted pattern
0010	turn	start of leg 4, ^{MS} leg	turn to track 180; at 18.66 59.10
0011	drop 2		FL 10, SF 15, SFL 10, 11.5
0013	obs	18.43, 59.10	want ^{above} some
			convective cores, SF
			winds went up to 35 kt,
			then dropped back down to 20 kt
0029	drop 3	17.24 59.1	FL 8, SF 0 kt.
0037	obs	16.7 59.1	some convection S
			of a/c, about 50 nm ahead,
			going to extend leg to get a sample
			of convection now to our south
			and to our west
005155	turn	15.5 59.0	turn to track 280,

going to parallel NW-SE line

Lead Project Scientist Event Log

Date 9/16/07

Flight 070916I

LPS Rogers

Time	Event	Position	Comments
0053	drop 4	15.55 59.24	FL 5, SF 20 kt, sp 104.2
start PL 5 005630	radar	15.63 59.57	paralleling line of stems, call this beginning of radar leg
0104	obs	15.76 59.93	echo tops ~ 45,000 ft.
0108	pattern	16.1 60.1	traveling around this line, coming back to track 60
end of samples 011430	pattern	16.4 59.8	turning back to track 60
0140	obs	18.4 59.8	nothing up here, no scatterers, all east lies
			turning track 270, going to next N-S leg
end PL 5 014230	radar	18.4 59.8	end of PL 5
start PL 6 015300	turn	18.4 60.59	turn to track 180
020821	drop 5	17.3 60.6	FL 13, SF 0 kt, SPL 1011.6
end PL 6 022500	radar	15.6 60.5	end of radar leg 6
0235	pattern	15.11 60.3	at FL, heading home
0310	landing	Barbados	land at Barbados

Mission Summary

Storm name

YYMMDDA# Aircraft 43 RF

Scientific Crew (4 RF)

Lead Project Scientist Rogers
Radar Scientist Black
Cloud Physics Scientist —
Dropwindsonde Scientist Black
Boundary-Layer Scientist —
Workstation Scientist Black
Observers —

Mission Briefing: (include sketch of proposed flight track or page #)

See attached

Mission Synopsis: (include plot of actual flight track)

Flaw pattern. Center was very difficult to find. There was some convection on the south and east of the system. During first E-W leg appeared that center, or shear axis, was much further south than planned. B/c of that, and b/c of scatterers concentrated there, modified pattern by shifting to the south 1/2 degree. Also flew around a convective cell, sampling it as we flew around it.

Evaluation: (did the experiment meet the proposed objectives?)

This was a difficult mission to complete. The complete lack of organization and general absence of scatterers made completing an analysis very difficult. Very little wind remained. This type of case will pose a significant challenge for performing ~~the~~ real-time Doppler analyses.

Problems: (list all problems)

No problems w/ radar or sondes.

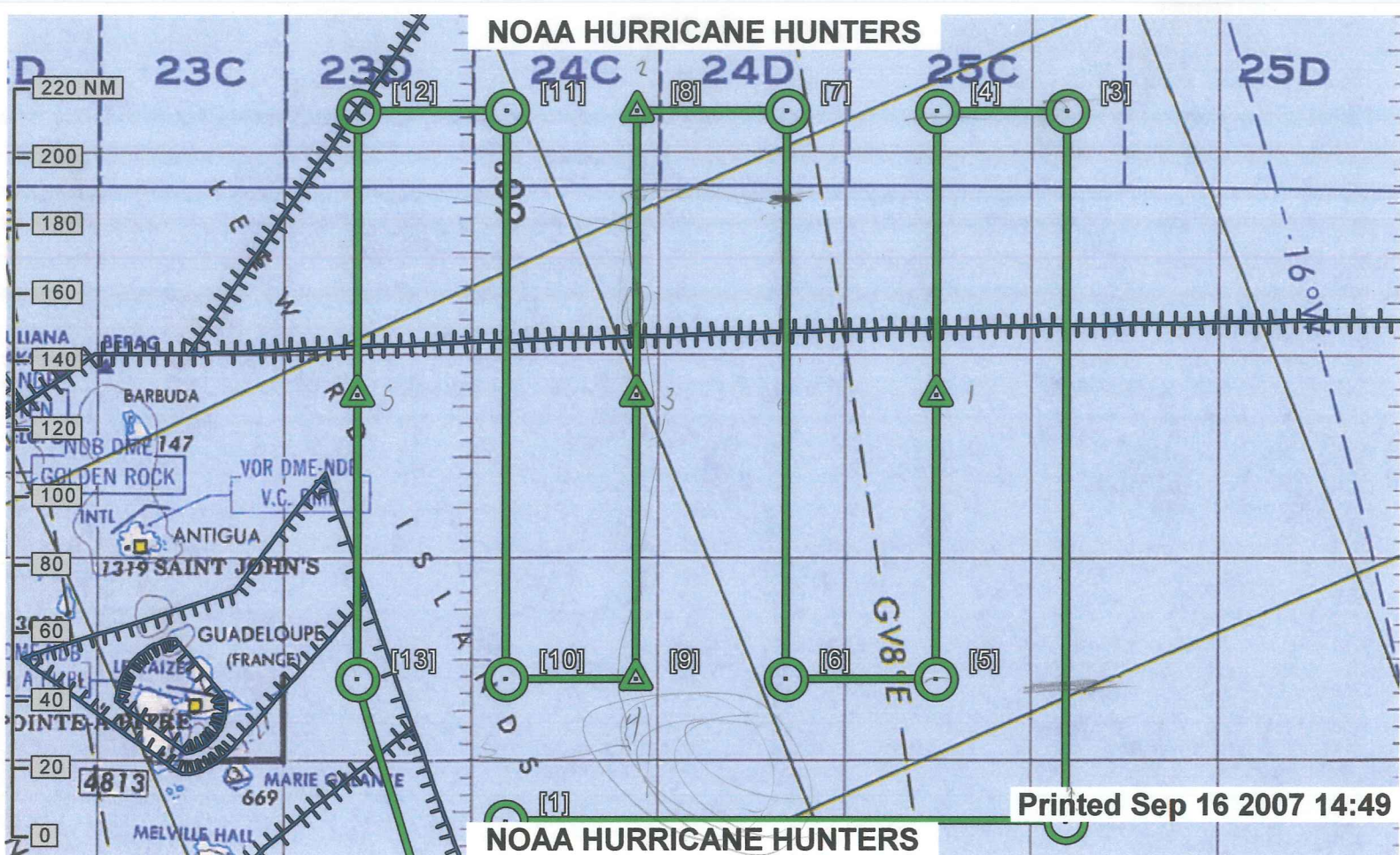
Expendables used in mission:

GPS sondes : 5

AXBTs : —

Sonobuoys: —

NOAA HURRICANE HUNTERS



LD

19

16

NO BARBS
CS KT

FP 1010

60 0101 Z

Q1010E
10415

58

56

57

Turn Pt	Type	Fix/Point Description	Latitude Longitude	Elev MV	Aspd Bank	Altitude Wind	Temp FF	MH MC	TH TC	Leg Time Clock Time
1	ST	TBPB 09/RW	N 13 04.25	169FT		169M	-9C	091	076	00+00+00
*M		GRANTLEY AD	W059 30.45	15.2W			0	091	076	20:30:00
2			N 15 00.00	unk	270T	12000M	-9C	008	353	00+25+48
*M			W059 45.00	15.2W			0	008	353	20:55:48
3			N 15 42.00	unk	270T	12000M	-9C	011	356	00+09+19
*M 1			W059 48.00	15.2W			0	011	356	21:05:07
4			N 15 42.00	unk	260T	12000M	-9C	105	090	00+40+04
*M 2			W056 48.00	16.1W			0	105	090	21:45:11
5			N 19 12.00	unk	260T	12000M	-9C	016	360	00+48+16
*M 3			W056 48.00	16.1W			0	016	360	22:33:27
6			N 19 12.00	unk	260T	12000M	-9C	286	270	00+09+10
*M 4			W057 30.00	15.9W			0	286	270	22:42:37
7	TG		N 17 48.00	unk	260T	12000M	-9C	196	180	00+19+19
*M			W057 30.00	15.9W			0	196	180	23:01:56
8			N 16 24.00	unk	260T	12000M	-9C	196	180	00+19+18
*M 5			W057 30.00	15.9W			0	196	180	23:21:14
9			N 16 24.00	unk	260T	12000M	-9C	286	270	00+10+39
*M 6			W058 18.00	15.7W			0	286	270	23:31:53
10			N 18 42.00	unk	260T	12000M	-9C	016	360	00+31+43
*M 7			W058 18.00	15.7W			0	016	360	00:03:36
11	TG		N 18 42.00	unk	260T	12000M	-9C	286	270	00+10+31
*M 8			W059 06.00	15.5W			0	286	270	00:14:07
12	TG		N 17 18.00	unk	260T	12000M	-9C	196	180	00+19+18
*M			W059 06.00	15.4W			0	196	180	00:33:25
13	TG		N 15 54.00	unk	260T	12000M	-9C	195	180	00+19+18
*M 9			W059 06.00	15.4W			0	195	180	00:52:43
14			N 15 54.00	unk	260T	12000M	-9C	285	270	00+09+20
*M 10			W059 48.00	15.2W			0	285	270	01:02:03
15			N 18 42.00	unk	260T	12000M	-9C	015	360	00+38+37
*M 11			W059 48.00	15.3W			0	015	360	01:40:40
16			N 18 42.00	unk	260T	12000M	-9C	285	270	00+10+31
*M 12			W060 36.00	15.0W			0	285	270	01:51:11
17	TG		N 17 18.00	unk	260T	12000M	-9C	195	180	00+19+18
*M			W060 36.00	14.9W			0	195	180	02:10:29
18			N 15 54.00	unk	260T	12000M	-9C	195	180	00+19+18
*M 13			W060 36.00	14.9W			0	195	180	02:29:47
19		TBPB 09/RW	N 13 04.25	169FT	280T	12000M	-9C	174	159	00+38+42
*M		GRANTLEY ADA	W059 30.45	15.2W			0	174	159	03:08:29

Turn Pt	Type	Fix/Point	Latitude	Elev	Aspd	Altitude	Temp	MH	TH	Leg Time
	DTD	Description	Longitude	MV	Bank	Wind	FF	MC	TC	Clock Time
1	ST	TBPB 09/RW	N 13 04.25	169FT		169M	-9C	091	076	00+00+00
	*M	GRANTLEY AD	W059 30.45	15.2W			0	091	076	00:00:00
2			N 15 00.00	unk	270T	12000M	-9C	008	353	00+25+48
	*M		W059 45.00	15.2W			0	008	353	00:25:48
3			N 15 42.00	unk	270T	12000M	-9C	011	356	00+09+19
	*M 1		W059 48.00	15.2W			0	011	356	00:35:07
4			N 15 42.00	unk	260T	12000M	-9C	105	090	00+40+04
	*M 2		W056 48.00	16.1W			0	105	090	01:15:11
5			N 19 12.00	unk	260T	12000M	-9C	016	360	00+48+16
	*M 3		W056 48.00	16.1W			0	016	360	02:03:27
6			N 19 12.00	unk	260T	12000M	-9C	286	270	00+09+10
	*M 4		W057 30.00	15.9W			0	286	270	02:12:37
7	TG		N 17 48.00	unk	260T	12000M	-9C	196	180	00+19+19
	*M		W057 30.00	15.9W			0	196	180	02:31:56
8			N 16 24.00	unk	260T	12000M	-9C	196	180	00+19+18
	*M 5		W057 30.00	15.9W			0	196	180	02:51:14
9			N 16 24.00	unk	260T	12000M	-9C	286	270	00+10+39
	*M 6		W058 18.00	15.7W			0	286	270	03:01:53
10			N 19 12.00	unk	260T	12000M	-9C	016	360	00+38+37
	*M 7		W058 18.00	15.7W			0	016	360	03:40:30
11	TG		N 19 12.00	unk	260T	12000M	-9C	286	270	00+10+29
	*M 8		W059 06.00	15.5W			0	286	270	03:50:59
12	TG		N 17 48.00	unk	260T	12000M	-9C	196	180	00+19+19
	*M		W059 06.00	15.5W			0	196	180	04:10:18
13	TG		N 16 24.00	unk	260T	12000M	-9C	196	180	00+19+18
	*M 9		W059 06.00	15.4W			0	196	180	04:29:36
14			N 16 24.00	unk	260T	12000M	-9C	285	270	00+09+19
	*M 10		W059 48.00	15.2W			0	285	270	04:38:55
15			N 19 12.00	unk	260T	12000M	-9C	015	360	00+38+37
	*M 11		W059 48.00	15.3W			0	015	360	05:17:32
16			N 19 12.00	unk	260T	12000M	-9C	285	270	00+10+29
	*M 12		W060 36.00	15.0W			0	285	270	05:28:01
17	TG		N 17 48.00	unk	260T	12000M	-9C	195	180	00+19+19
	*M		W060 36.00	14.9W			0	195	180	05:47:20
18			N 16 24.00	unk	260T	12000M	-9C	195	180	00+19+18
	*M 13		W060 36.00	14.9W			0	195	180	06:06:38
19		TBPB 09/RW	N 13 04.25	169FT	280T	12000M	-9C	177	162	00+44+44
	*M	GRANTLEY ADA	W059 30.45	15.2W			0	177	162	06:51:22

Turn Pt	Leg Dist Total Dist	Leg Fuel Total Fuel
1	0.0	500
*M	0.0	9500
2	116.1	0
*M	116.1	9500
3	41.9	0
*M	158.0	9500
4	173.6	0
*M	331.7	9500
5	209.2	0
*M	540.8	9500
6	39.7	0
*M	580.6	9500
7	83.7	0
*M	664.2	9500
8	83.7	0
*M	747.9	9500
9	46.1	0
*M	794.1	9500
10	167.3	0
*M	961.4	9500
11	45.4	0
*M	1006.8	9500
12	83.7	0
*M	1090.5	9500
13	83.7	0
*M	1174.1	9500
14	40.4	0
*M	1214.5	9500
15	167.3	0
*M	1381.9	9500
16	45.4	0
*M	1427.3	9500
17	83.7	0
*M	1511.0	9500
18	83.7	0
*M	1594.6	9500
19	208.8	0
*M	1803.4	9500