Rogers
050828I

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 form 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

Storm or Project Katrina **Experiment name** NHC task / RAINEX Coord.
Date 8/28/05 **Aircraft** N43RF **Flight ID** 050828I

A. Participants:

HRD		AOC	
Function	**Participant**	**Function**	**Participant**
Lead Project Scientist	Rogers	Flight Director	Damiano / Mayeaux
Radar	Small / Gamache	Pilots	Silah, Strong
Workstation	Gamache	Navigator	Siegel
Cloud Physics	—	Systems Engineer	Lynch
Photographer/Observer /Guests	Roux	Data Technician	San Soucie / Olney
Dropwindsonde	Gamache	Electronics Technician	Olney
~~AXBT/AXCP~~ SRA	Walsh	Other	

B. Take-off and Landing Times and Locations:

Take-Off: 1621 UTC Location: MacDill AFB

Landing: 0140 UTC Location: MacDill AFB

Number of Eye Penetrations: 5

C. Past and Forecast Storm Locations:

Date/Time	Latitude	Longitude	MSLP	Maximum Wind

D. Mission Briefing:

NHC-tasked combination SFMR/fix mission w/ fix times of 18, 21, 00 UTC. Katrina is a Cat 5 in central Gulf of Mex. Fly 105-nm legs, possibly extended (see fig.). Drop sondes at all turn points, sfc wind max, + center for NHC, sondes outside & within eyewall for RAINEx (and along card. downwind leg). Coordinate downwind legs on NE side w/ NRL P-3.

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	↑	↑ recording problem	some ↑	
Data System	↑	↑	↑	
GPS sondes	↑	↑	↑	
AXBT/AXCP	↑	↑	↑	
Ozone instrument	O	O	↑	
Workstation	↑	↑	↑	
Videography	↑	↑	↑	

REMARKS:

possible problem w/ cloud physics recording

A - AOC sonde
N - NHC sonde
X - RAINEX sond
BT - AXBT

Lead Project Scientist Event Log

Date 8/28/05 **Flight** 090820I **LPS** Rogers

	Time	Event	Position	Comments
	1621	takeoff	MacDill AFB	f/o from MacDill
	1719	obs	~~AF~~ IP	FL 80 kt, SF 55 kt; approaching outer rainband
N	1720	drop 1	IP 105 nm NE	FL 80, SF 50 kt
	1724	obs	~~80~~ nm from center	outer rainband 90 nm from center
	1727	winds	70 nm from cent	hurricane force winds 70 nm from center
	1732	winds, obs	50 nm from cent.	~~max~~ 84 kt SF winds, heavy widespread rain all in NE quad.
	1740	track	30 nm from center	FL starting up to 130 kt, SF at 90 kt
X	1743	drop 2	outer NE	
X	1744	drop 3		
BT, N	1745	drop 4		
	175518	fix, drop 5	26° 20' 88° 39'	GPS 902 mb
	1757	obs	eye	here for a while, beautiful stadium effect, steeply-sloped eyewall, symmetric, evidence of some clouds extruding inward from eyewall
BT, N	1758	drop 6		SST 28.5
X	1759	drop 7		
X	180040	drop 8		FL 120, SF 90 kt, peak W was 4 m/s up
	1818	Obs	90 nm SW eye	bands on SW side of storm
	1821	winds	100 nm SW eye	FL 50, SF 50 kt
	1823	drop 9	SW turn point	FL 50, SF 45 kt, turn to track 90

Lead Project Scientist Event Log

Date 8/28/05 **Flight** 050829I **LPS** Rogers

	Time	Event	Position	Comments
A	183144	drop 10	80 nm S of eye	AOC/SFMR drop, FL 55, SF 55 kt
	184716	obs	100 nm SE of eye	band about 50 nm from eye, another about 100 nm from eye with strat. in b/w; outer of 2 rainbands has embedded convective elements, probably too risky for NFL P-3
N	1854	drop 11	105 nm SE from eye	FL 70 kt, SF 45 kt
	1855	turn	105 nm SE eye	turn to track 315, outbound leg
	1857	obs	95 nm SE eye	going thru band w/convective elements right now w/ LF dBZ of 40+ dBZ
	1951	obs	80 nm SE of eye	going thru strat. bands b/w convective rainband & eyewall
	1914	radar	30 nm SE of eye	bulge on LF on E side of eyewall
X	1917	drop 12	outside SE eyewall	FL 140, SF 100 kt
X	191806	drop 13		
N	191912	drop 14		FL 125 SF 120 kt
N	192302	fix, drop 15	26°34' 88°51'	protuberance on NE side of eyewall, has been rotating cyclonically, GPS 901.5 mb
	193130	radar	26°35' 88°58' eye	eye somewhat polygonal
N	193230	drop 15	NW eyewall - drop 1	FL 100, SF 100
X	193337	drop 16	N eyewall - drop 2	
X	193450	drop 17	" " - drop 3	FL 120, SF 100 kt peak FL 130, SF 115 on NW side

26.3
68.4

Lead Project Scientist Event Log

Date 8/28/05 **Flight** 050828I **LPS** Rogers

Time	Event	Position	Comments
194202	obs	50nm NW of eye	band here, isolated cells,
		gap in	band where plane is headed
1958	turn	105nm NW of eye	turn to track
N 2002	drop 18	" " "	FL 65, SF 40kt, SST 30°C
2012	turn		
N 2014	drop 19	105 nm W of eye	~~FL~~ 55kt, SF 45kt
N 2017	drop 20	100 nm W of eye	backup to drop 19
N 2035	drop 21	W eyewall	FL 132 SF 115 kt
26°46' N 2038	fix, drop 22	26°46' 88°55'	GPS 903
86°59' N 2041	drop 22	E eyewall	FL 150 kt, SF 120kt
2046	winds	30 nm East of eye	peak FL winds on W-125kt
↓			FL wind on E 145kt
E point			SF winds on W-115kt
			" " E-120kt
2102	obs	100nm E of eye	big bumps, 12 m/s updraft
N 2106	drop 23	105 nm E of eye	FL 81kt, SF 50kt
X 2	drop 24	on RI NEX downwind	
X 2123	drop 25	on RI NEX downwind leg	
X 2127	drop 36		
X 2154	drop 37	on CANEX leg	
2136	pattern	on downwind leg	turning coordinated leg with NRL
		NE of storm	43 has set up outside band
			about 100 nm E of eye; NRL
		ended up inside band; 43 tracked outside	
		band about 10-15 nm outside band. Then	
	needed to remain in area to provide LF so NRL could get out		
	now returning to Point N of center		

Lead Project Scientist Event Log

Date 8/28/05 **Flight** 050828I **LPS** Rogers

Time	Event	Position	Comments
2158	turn	100 nm N of storm	turn to track 330, readjust
			to point for final inbound leg
N 2204	drop 38	105 nm N of eye	
2219	obs	45 nm N of eye	passing thru band N of eye, fairly choppy
N 2228	drop 39		FL 1286 ft, SF 120 kt
2229	obs	eye, fix 27500', 89 07'	cloud-bands rapidly
		along inner edge of eyewall, started	
		upward as	more anti-cyclonically
N 2235	drop 40	S eyewall	
2238	winds	30 nm S of eye	peak FL winds: N 140 kt, S 130 kt.
			SF winds: N 120 kt, S 115 kt
2319	microphysics	25 nm S of eye	re cloud physics probe ~~shot~~ has error recording,
			~~has~~ been like this for about 30 min
N 2321	~~drop~~ 41	SW eyewall	
2332	pattern	eye	Circumnavigating in eye
		about 10-15 nm from inner	
		edge to get TA ~~crossing~~ at eyewall	
N 2325	drop 42, fix	eye 27°58'10 88°49'	
2337	obs	eye	multiple swirls of
			varying sizes in
			low-level clouds in eye
N 2351	drop 43	NE eyewall	peak FL 160 kt, SF 120 kt
2358	obs	50 nm NE of eye	going thru bands
0008	obs	100 nm NE of eye	final band on NE side,
			embedded strong convective
			elements
N 0011	dropsey	105 nm NE	FL 90, SF 55
0034	obs	130 nm ENE of center	still hitting bumps, not
0140	landing	MacDill AFB	quite as bad, was sharpest bump landing at MacDill AFB

Mission Summary

Storm name

YYMMDDA# Aircraft 43RF

Scientific Crew (4 RF)

Lead Project Scientist Rogers
Radar Scientist Sunil/Gamache
Cloud Physics Scientist —
Dropwindsonde Scientist Gamache
Boundary-Layer Scientist Walsh/SRA
Workstation Scientist Gamache
Observers Roux

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

See previous

Mission Synopsis: (include plot of actual flight track)

rotating fig-4 for combo SFMR/fix mission for NHC. Three fixes at 18, 21, 00 UTC, on the NE downwind leg the NRL positioned itself on the inner edge of the rainband that was going to be targeted at 90-100 nm from center. Coordination was not good at that point, but NRL did get some good measurements of A band as did N43RF. Also dropped 3-drop sequence across eyewall in NE, NW, SW, SE quads, and ~~then~~ circumnavigated eye twice along inner edge to get TA Doppler of eyewall.

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

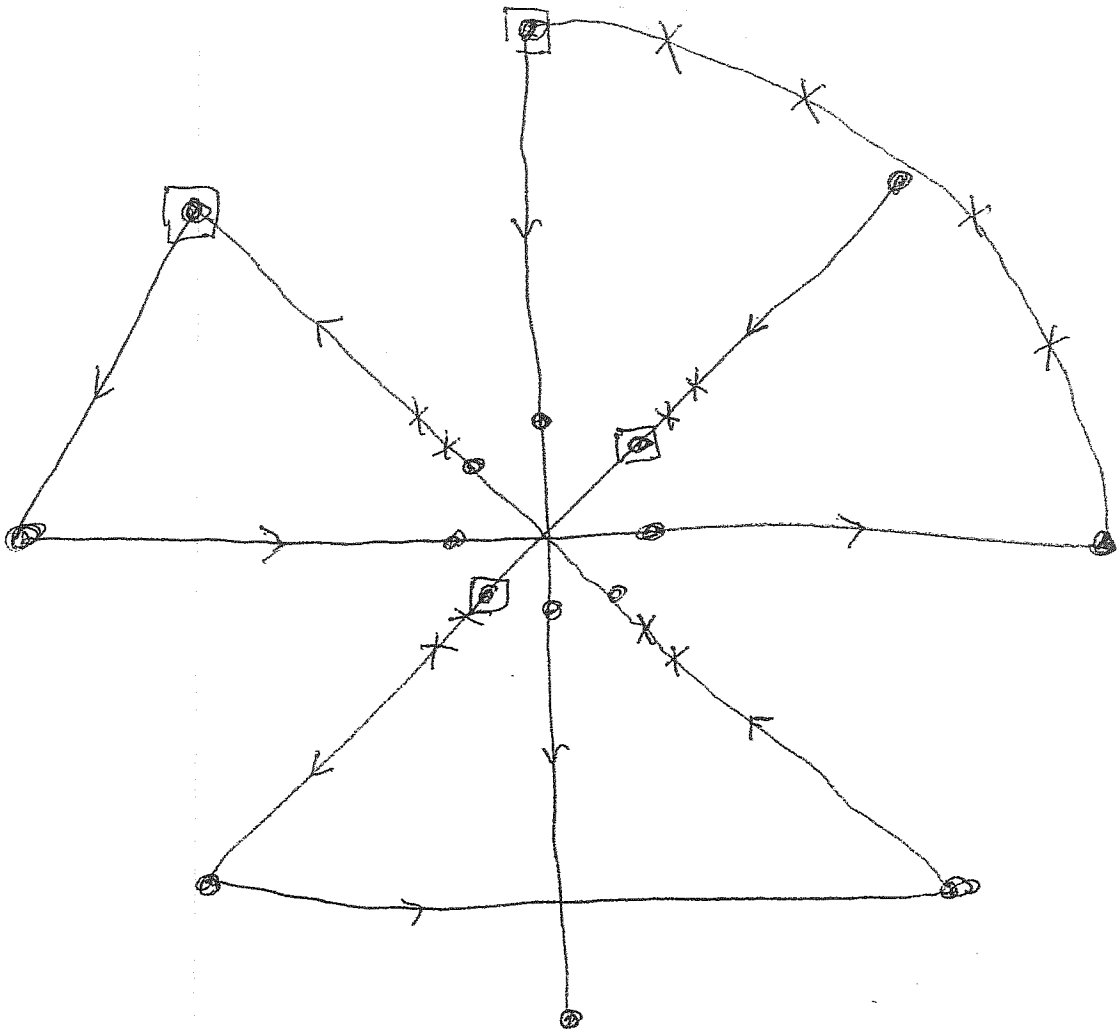
Mission was successful for NHC. Also collected valuable data for RAINEX, including rainband measurements, eyewall sequences, and inner eyewall wind fields from TA scanning. There was problems w/ coordination with NRL, However. NRL ended up inside rainband, which required our LF to help them out, though we were on ~~task~~ mission and had limited flexibility.

Problems:(list all problems)

no major problems with instruments, Sondes, radar worked well. Cloud physics has some problems with recording, which may have compromised some of data collection.

Expendables used in mission:

GPS sondes : 44 - 31 NHC, 12 RAINEX, 1 ACC
AXBTs : 4
Sonobuoys: 0



• NHC GPS

× RAINEX GPS

□ AXBT

Lrainx

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