Lead Project Scientist

Storm or Project H. Irene **Experiment name** TDR
Flight ID 110826H1 **Mission ID** _____

Preflight

- ✓ 1. Participate in general mission briefing.
- ✓ 2. Determine specific mission and flight requirements for assigned aircraft.
- ✓ 3. Determine from AOC flight director/meteorologist whether aircraft has operational fix responsibility and the mission designation.
- ✓ 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.
- ✓ 6. 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.
- ✓ 7. Report status of aircraft, systems, necessary on-board supplies and crews to MGOC in Miami.
- ✓ 8. Before take-off, brief the on-board GPS dropsonde operator on times and positions of drop times.
- ✓ 9. Make sure each HRD flight crew member has a life vest.
- ✓ 10. Perform a headset operation check with all HRD flight crew members. Make sure everyone can hear and speak using the headset.

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. Gather completed forms for mission and turn in to data manager at HRD.
- ____ 3. Obtain a copy of the 10-s flight listing from the AOC flight director. Turn in with completed forms.
- ____ 4. Obtain a copy of the radar DAT tapes. Turn in with completed forms.
- ____ 5. Obtain a copy of serial flight data on thumb drive. Turn in with completed forms.

[**Note**: all data removed from the aircraft by HRD personnel should be cleared with the AOC flight director.]

- ____ 6. Report landing time, aircraft, crew, and mission status along with supplies (tapes, *etc.*) remaining aboard the aircraft to MGOC.
- ____ 7. Determine next mission status, if any, and brief crews as necessary.
- ____ 8. Notify MGOC as to where you can be contacted and arrange for any further coordination required.
- ____ 9. Prepare written mission summary using **Mission Summary** form.

Lead Project Scientist Check List

Storm or Project H. Irene Experiment name TDR

Flight ID 11082611 Mission ID

A. Participants:

HRD		AOC	
Function	**Participant**	**Function**	**Participant**
Lead Project Scientist	Rogers	Flight Director	Sears
Radar/Workstation		Pilots	Newman, Sweeney
	Lorcdo/Klotz	Navigator	Brakob
Cloud Physics		Systems Engineer	Bosko
Photographer/Observer /Guests	Sullivan, Zimmerman	Data Technician	Avery
Dropwindsonde	Klotz	Electronics Technician	Peek
AXBT/AXCP		Other	

B. Take-off and Landing Times and Locations:

Take-Off: 1957 UTC Location: KMCF

Landing: _____ UTC Location: _____

Number of Eye Penetrations: _____

C. Past and Forecast Storm Locations:

Date/Time	Latitude	Longitude	MSLP	Maximum Wind

D. Mission Briefing: Fly TDR mission into Irene. Butterfly pattern at 8000ft. IP on S, 105 nm legs, end up on SW side. Drops at turn and mid points, and RMW and first and third pass. At end of first outbound leg to N, turn up the coast and then return back for a downwind coastal run, within 40 nm of Morehead City 88-D radar. Comparison w/ cloud physics probes and ground-based dual-Doppler radar. Storm continues to slowly weaken, but very broad wind field to north.

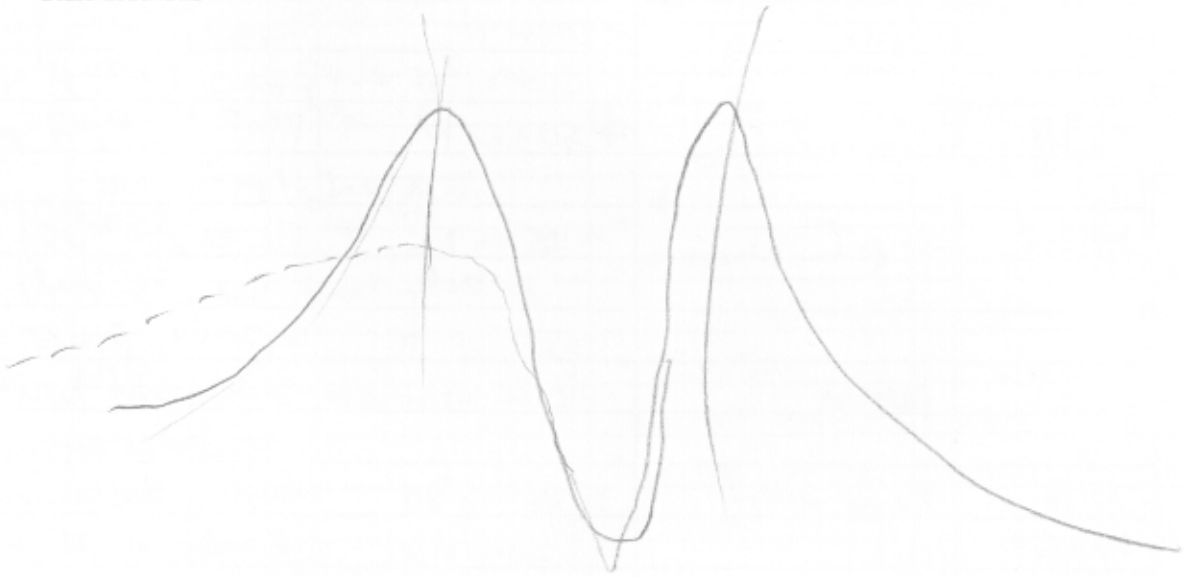
Storm or Project Irene **Experiment name** TDR

Flight ID 11082641 **Mission ID**

E. —Equipment Status (Up ↑, Down ↓, Not Available **N/A**, 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	—			
Ozone instrument	—			
Workstation	✓			
Cameras				

REMARKS:



Lead Project Scientist Event Log

Date 8/26/11 Flight ID 110826H1 LPS Rogers

Time	Event	Position	Comments
1957	takeoff	KMCF	
2105	pattern, obs	~~near~~ at IP, 105 nm S	in some bumps, pretty heavy rain
2106	drop 1		FL 78, SF 45-50 kt
2112	obs	~70 nm S of ctr	no precip, cirrus w/ some breaks
2116	drop 2	~55 nm S of ctr	FL 75, SF 50 kt
2123	drop 3	S eyewall	FL 65, SF ~50 kt, very broad wind field, wide swath of ~70 kt at FL and 50 kt at SF, eyewall open on S side
2126	~~pattern~~ center	in eye,	AVAPS needs to be relocated
2129		31°45' 77°15'	
2139	drop 4	N eyewall	FL 60, SF 50 kt
2145	obs	~40 nm N	big asymm in FL/SF ratio; SF ctr FL on S side, SF ctr FL on N
2153	drop 5	~~NE~~ 60 nm N	FL ~65 kt, SF 50-55, in a band of precip here
2202	drop 6	~105 nm N	FL 60, SF ~50 kt, in outer band here, FL winds have gone up to ~70-75 kt, SF ~55-60 kt
2213	pattern	~110 nm NE of ctr	flying upwind to set up for radar run
2225	~~Recon~~ pattern	34° 44' 76° 20'	turning downwind
2241	obs	on downwind leg	LF radar mostly 24-28 dBZ w/ some areas of 28 & 32-36 dBZ in isolated 88D has refls. ~35-40 dBZ & possible 10 dBZ ltg?

Lead Project Scientist Event Log

Date 8/26/11 **Flight ID** _____ **LPS** - Rogers

	Time	Event	Position	Comments
	2304	pattern	105 nm NW	turn to track 120, inbound
7	2305	drop 7	103 nm NW	FL 70, SF ~ 50 kt
8	2313	drop 8	~55 nm NW	FL 60-65, sf ~ 60 kt, fast fall
9	2315	drop 8b	~50 nm NW	FL 60, sf 55 kt
10	2330	drop 9	32°03' 77°05'	
11	2335	drop 10	SE eyewall	peak FL 70, SF 55
12	2342	drop 11	SE mid point	FL 80, sf 60-65
	2357	~~drop 12~~ pattern	105 nm SE eye	completed outbound leg,
				turning to downwind
13	2358	drop 12	105 nm SE	FL 80, sf 55 kt, peak
			FL winds of	100 kt at ~ 70 nm from ctr
14	0020	drop 13	105 nm NE	~~90~~ 85 kt, 50 kt
15	0032	drop 14	~50 nm NE	FL 80, SF 60-65
16	0033	drop 14b		
17	0044	drop 15	NE eyewall	FL ~ 75, SF 60-65,
			but stronger	winds were radially out
18	0048	drop 16	center	32°17' 77°0'
19	0053	drop 17	SW eyewall	FL 55, sf 40-45, very
				asymmetric W SW & NE side
	0055	dss	~30 nm SW	on inbound NE leg, hit
			an outer band with 65 kt, then it dropped down,	
			then rose back up in inner weak feature to	
			60-65 kt	
	0101	drop 18		FL 60, SF 55 kt
		drop 19	105 nm SW	
	0221	land	EMCF	

01 7/11 notion

Mission Summary
Storm name
YYMMDDA# Aircraft 4_RF

Scientific Crew (4 RF)
Lead Project Scientist Rogers
Radar Scientist Lorsolo
Cloud Physics Scientist —
Dropwindsonde Scientist Klotz
Boundary-Layer Scientist —
Workstation Scientist Klotz / Lorsolo
Observers Sullivan (NOAA), Zimmerman (FEMA)

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

see previous

Mission Synopsis: (include plot of actual flight track) pattern was flown as planned. Storm was moving just east of north, Storm structure continues to indicate a weakening vert broadening circulation. Strong tangential flow confined to a shallow layer on the east and NE side, strongest SFwinds about 65-70 kt on NE. SF winds decoupled from FL winds. Broad shield of moderate to heavy rain on N side. Performed radar leg on downwind portion along NC coast. Center drop on last pass was 951 mb, but storm so broad & peak winds still weakening

Evaluation: (did the experiment meet the proposed objectives?)
Experiment did accomplish objectives. Three radar analyses were performed. There were numerous problems with sonde telemetry, perhaps ~~[illegible]~~ to lack of land interference or from cell phones on plane. Five of 21 sondes failed. Cloud physics probes worked well for radar leg. There have been transmission problems to EMC for the radar analyses.

Problems:(list all problems)
- Dropsonde telemetry issues were only problem (5 drops)
- transmission of radar data to EMC

Expendables used in mission:
GPS sondes : 21
AXBTs : —
Sonobuoys: —