Lead Project Scientist

Storm or Project TS Raftra **Experiment name** TDR
Flight ID 140803H1 **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 TS Bertha **Experiment name** TDR

Flight ID 140803H1 **Mission ID** _____

A. Participants:

HRD		AOC	
Function	**Participant**	**Function**	**Participant**
Lead Project Scientist	Rogers	Flight Director	Holmes
Radar/Workstation	Reasor	Pilots	Kibbey/Kerns
		Navigator	Gallagher
Cloud Physics		Systems Engineer	Bosko
		Data Technician	Lynch
Dropwindsonde	Uhlhorn	Electronics Technician	Richards
AXBT/AXCP	Uhlhorn	Other	
Photographer/Observers/Guests			

B. Take-off and Landing Times and Locations:

Take-Off: _____UTC Location: St. Croix

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 TS Bertha, located in the southern Bahamas. Bertha continues to struggle, having encountered significant westerly shear and dry mid-to-upper level air its entire lifecycle. Fast translation speed (~20kt) + interaction with Hispaniola have also hindered organization. Convection is still sporadic & transient, and primarily located on east side of circulation. Expect a broad, diffuse circulation. Mission calls for a rotating fig 4, 1 P on S side. 100 nm legs. Drop sondes at all midpoints and center fixes. Drop BT's at all turn points, mid points, and outer. Fly at 10,000 ft.

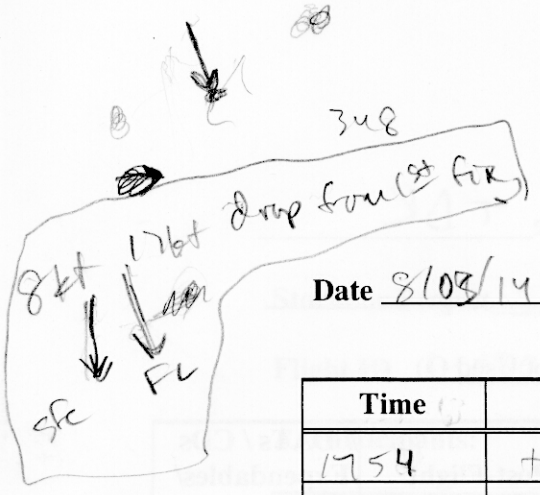
Storm or Project TS Bertha **Experiment name** TDR

Flight ID 140803H1 **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	N/A			
Data System	↑			
GPS sondes	↑			
AXBT/AXCP	↑			
Ozone instrument				
Workstation				
Cameras				

REMARKS:



→ SF → SFSa

Lead Project Scientist Event Log

Date 8/03/14 **Flight ID** 140803H1 **LPS** Rogers

Time	Event	Position	Comments
1754	takeoff	TISX	
1932	obs	near IP on SE	LF slowing
		area of stratiform precip, with	
		embedded convective elements, some?	
		TA radar shows only extending up to	
		~10 km → dry air possibly being	
		entrained into system? will be	
		good to see GPS drops in vicinity.	
1959	BT 1	IP, 100nm S	SST 28.8
2011	BT 2, sonde 1		27.9
2027	BT 3, sonde 2	23°20' 73°05'	SST 27.9
2040	BT 4, sonde 3	50nm N of center	SST 28.8
2052	BT 5	100nm N of center	out outbound leg
2055	obs	downwind leg	missed FL center on
			first pass, was a little
			to the SE of us. Drop from
		that point suggested	showed sfc winds of
		8kt from N, FL wind 17kt from 348, suggesting	
		slight tilt toward E. Will continue to fix based	
		on projected FL center, and reassess if we	
		want to anchor to sfc center for 2nd fig. 4	
2125	pattern, BT 6	100nm W	starting next inbound
		leg, same next to no scatterers on	
		downwind leg	
2137	BT 7, drop 4	50nm W	FL 40, SF 35 kt 29.2
2156	BT 8, drop 5	center, 23deg 44 min	sfc. press 1008,
		72deg 36min	extrap. 1007, SST 28.7

23°20'
73°40'

start radar leg 1

ect.
FL at 2027
and 2041
23°19'
72°55'
start RL2

work
2156
23 44
72 40

Lead Project Scientist Event Log

Date 8/3/14 **Flight ID** 140803H1 **LPS** Rogers

Time	Event	Position	Comments
2202	obs	outbound on E side at center	Passed through some fairly significant precip. and just east of outflow.
		some suggestions of convective elements, with	
some tops to 14 km,		but most of it was	stratiform
2209	BT 9, drop 6	midpt E side	28.49°T
2221	BT 10	end E side, 100 nm E	and outbound leg
2238	BT 11	100 nm NE	begin next inbound leg
2247	obs	near midpt on NE	in an extensive area of precip; mostly strat but some vertically extensive cores of 35dBZ up to ~12 km
2251	BT 12, drop 7	50 nm NE	SST 28.7
~~2255~~	~~obs~~		
2259	BT 13, drop 8	convective core, 60 nm NE ctr) SF winds ~ 58 kt	
2303	" drop 9	Center, 23°54' 72°47'	
2312	obs	midpt SW on inbound leg from NE, found deep convective towers. Some showed echo	
2317	BT 14, drop 10	midpt SW	SST 28.6 tops ~18 km, and 35dBZ up to 16 km, also
	this was a curved band, so released dropsonde,		
	SF winds were 58 kt, LF in center showed nice		

end FL2

begin RL3

center work 2303 23°54' 72°47'

banding features, though still asymmetric, this was first clear indication of a burst, ~10 nm from marked FL center.

Lead Project Scientist Event Log

Date _____ **Flight ID**_____ **LPS** _____

Time	Event	Position	Comments
~~2325~~	Pattern, BT 15	100 nm SW	turn to downwind leg,
2344	obs	downwind leg,	extensive precip shield
		~90 nm S of ctr	here, mostly strat,
			but some convective
			elements, perhaps
		young convection	s/c LF shows high
		but TA not showing tall echoes	
2354	BT 16	~100 nm SE	SST 28.9
2359	BT 17, drop 11	50 nm SE	FL 40, SF 40, SST 28.3
0014	obs	hurricane center	large precip area on
		east side,	very choppy on
		inbound	penetration
0017	pattern,	center, 24° 15' 73° 01'	
	BT 18, drop 12		
0025	BT 19, drop 13		
0039	BT 20		end of pattern
0048	obs	~~enter~~ ferry back	no precip on NW
		to FLL	side, highly asymmetric
	storm	with banded precip on E side, ~~mostly~~	
		some areas of deep convection, including a burst	
		with echoes up to 18 km, wind field also asymm.	
		Peak difference across storm was ~30-35 kt from WSW	
		to ENE sides. Peak winds ~55-60 kt on NE, both	
		surface & SFMR, min press. ~1004 mb	
0227	land	FLL	

0017
24° 15'
73° 01'

Mission Summary
Storm name
YYMMDDA# Aircraft 4_RF

Scientific Crew (4 RF)
Lead Project Scientist Rogers
Radar Scientist Reasor
Cloud Physics Scientist —
Dropwindsonde Scientist Uhlhorn
Boundary-Layer Scientist Uhlhorn
Workstation Scientist —
Observers (affiliation) —

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

See previous

Mission Synopsis: (include plot of actual flight track) Flight was flown essentially as planned. There was difficulty locating the center on first 2 passes. Storm continued to be asymmetric, see final comments in comments section. Still struggling with organizing, but deeper convection indicates it may be getting better organized. Collected and transmitted 4 radar analyses, 13 drops and 20 BT's.

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

Mission was a success. All radar analyses completed successfully and transmitted to EMC. Dropsondes and BT's also were successful.

Problems:(list all problems) No problems, except for an occasional late/no launch detect.

Expendables used in mission:
GPS sondes : 13
AXBTs : 20
Sonobuoys: —