

Lead Project Scientist

Storm or Project TD #4 Experiment name TDR
Flight ID 140824H1 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 TD 4 Experiment name TDR
 Flight ID 140824H1 Mission ID _____

A. Participants:

HRD		AOC	
Function	Participant	Function	Participant
Lead Project Scientist	<u>Rogers</u>	Flight Director	<u>Henning</u>
Radar/Workstation	<u>Zhang</u>	Pilots	<u>Halverson, Kerns, Didier</u>
		Navigator	<u>Gallagher</u>
Cloud Physics		Systems Engineer	<u>Lynch</u>
		Data Technician	<u>Riles</u>
Dropwindsonde	<u>Marles</u>	Electronics Technician	<u>Sam Souci</u>
AXBT/AXCP	<u>_____</u>	Other	
Photographer/Observer	<u>_____</u>		
s/Guests	<u>_____</u>		

B. Take-off and Landing Times and Locations:

Take-Off: 0625 UTC Location: Knef
 Landing: 1343 UTC Location: Knef

Number of Eye Penetrations: _____

C. Past and Forecast Storm Locations:

Date/Time	Latitude	Longitude	MSLP	Maximum Wind

D. Mission Briefing:

Ply TDR pattern into TD4, which is still trying to organize in the SE Bahamas. Storm was declared a TD 4 12 h earlier, still had a diffuse circulation based on recent recon. Some convection has developed near the center in the past 3 hours, with IR temps ~ -70. Environment generally appears favorable: westerly shear weak, high SST, improving upper-level out flow structure, despite this models and NHC predicting only slow intensification. Ply butterfly pattern, 1100 W, 1200 W by length, Drop sondes at turn, mid, and centerpoints. No BTs. Ply at 10,000 ft.

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73 30



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Lead Project Scientist Event Log

Date 8/24/14 Flight ID 14082441 LPS Rogers

Time	Event	Position	Comments
0625	take off	KMCF	
0804	IF, drop 1	120 nm W ctr	start PL1
0810	obs	inbound, ~100 nm W	no precip on this side
0820	drop 2	60 nm W	FL 10, SF 15 kt
0830	obs	~20 nm W ctr	very limited to
			non-existent precip, some indication
			~100 nm ahead of us and just to
			the south
0843	center, drop 3	22°47' 72°35'	1003 MSLP
0848	obs	~20 nm E of ctr	passing just to north
			of ctr precip, TA shows
			echoes only up to ~8 km
0854	obs	~50 nm E	in area of wave
			widespread precip, mostly
			stratiform but some convective
			towers extending up to 12 km
0900	drop 4	60 nm E	FL 20, SF 35 kt
0915	drop 5	120 nm E	FL 20, SF 40 kt
0921	obs	downwind lagoon	surrounded by wave
		E side	moderate to deep convection,
			highest echo tops ~14 km
0937	drop 6	120 nm NE	FL 25, SF ~20 kt
0953	drop 7	55 nm NE	FL 15, SF 20 kt
1004	center, drop 8	22°55' 72°39'	
1018	drop 9	50 nm SW	FL 10, SF 20 kt
1033	drop 10	120 nm SW	FL 15, SF 20 kt

start RADIAL 1

end PA DIAL 1
start DWI

end DWI
start RADIAL 2

end PA DIAL 2
start DWI 2

Lead Project Scientist Event Log

Date 8/24/14 Flight ID 1408 24H LPS Riggs

Time	Event	Position	Comments
1043	obs	downwind by S of storm	fair amount of precip here, sat imagery shows some overshooting tops, got some turb.
1101	drop 11	120 nm SE	FL 35 SF 30 kt more OT's here on SE side, a fair amount of cloud W of OT is > 24°C colder than surrounding along flight path
1118	drop 12	60 nm SE	FL 35 SF 40
1129	obs	near center on SE side	all of precip is on E and SE side, OT's of 50,000 ft there. Most of precip is displaced to SE of center. First radar analysis showed storm tilted significantly to E w/ 2 & 8 km, about 100 km
1135	drop 13, center	23° 14' 72" 38'	
1141	drop 14	NW mid pt	FL 15, SF 20 kt
1158	obs summary	near FP	storm shows significant displacement b/w 2 & 6-8 km, about 100 km to east. Circulation center at upper levels w/ in 2-km RMW, which is at about 200 km.
	Almost all precip on E & SE side. A lot of stratiform but some convective cores; OT product shows some tops 24 deg C colder than environment, tops of 50,000 ft		

end DW 2
start RADIAL 3

Lead Project Scientist Event Log

Date 8/24/14 Flight ID 140824M1 LPS Rags

end RADIAL 3

[illegible]

Mission Summary

Storm name

YYMMDDA# Aircraft 42RF

Scientific Crew (4 RF)

Lead Project Scientist Rogers
Radar Scientist J. Zhang
Cloud Physics Scientist _____
Dropwindsonde Scientist Marks
Boundary-Layer Scientist _____
Workstation Scientist _____
Observers (affiliation) _____

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

See previous

Mission Synopsis: (include plot of actual flight track) *mission flown as planned.*

Dropped 15 sondes; all worked. There were problems with the ground server which prevented transmitting of some data to ground (sondes). Patch was implemented with alternate server; data from radar did reach EMC, and sondes were processed on plane. storm is slowly intensifying; was declared TS critical during flight. See discussion in notes for summary of structure. Some indication an RMC is trying to form inside

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

mission did meet objectives, despite communications problems with

the ground server. Radar analyses & superobs transmitted to EMC, sondes transmitted to NHC. Sampled a tropical storm still trying to consolidate, with some areas of deep convection w/ overhanging tops near FL center.

Problems: (list all problems)

communications with the ground server

Expendables used in mission:

GPS sondes: 15

AXBTs: _____

Sonobuoys: _____