

**Lead Project Scientist**

**Flight ID** 120822H1 **Storm** TS Isaac **LPS** Rogers

**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.
- 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 HFP Director.
- 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 member has a life vest.
- 7. 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.
- 2. Confirm camera mode of operation.
- 3. Confirm radar recording set-up.
- 4. Confirm data recording rate.
- 5. Complete Lead Project Scientist Form.
- 6. 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 bag separately from other missions. Turn in to data manager at HRD.
- 5. Copy serial flight data, dropsonde files, and radar data onto thumb drive. Turn in with completed forms.
- 6. Report landing time, aircraft, crew, and mission status along with supplies (tapes, etc.) remaining aboard the aircraft to HFP Director.
- 7. Determine next mission status, if any, and brief crews as necessary.
- 8. Notify HFP Director 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 Isaac Experiment name TDR  
 Date 8/22/12 Aircraft N42LF Flight ID 120822I1  
 Mission ID \_\_\_\_\_

**A. Participants:**

HRD		AOC	
Function	Participant	Function	Participant
Lead Project Scientist	<u>Rogers</u>	Flight Director	<u>Williams</u>
Radar	<u>Gunnache</u>	Pilots	<u>Halverson, Mordis, Koby</u>
Dropwindsonde	<u>Vukobenc</u>	Navigator	<u>Siegel</u>
Sea-Air		Systems Engineer	<u>Lynch</u>
Photographer/Observer/ Guests (give affiliation)		Data Technician	<u>Reef</u>
Cloud Physics		Electronics Technician	
		Other ( )	

**B. Take-off and Landing Times and Locations:**

Take-Off: \_\_\_\_\_ UTC Location: TPBP

Landing: \_\_\_\_\_ UTC Location: \_\_\_\_\_

Number of Eye Penetrations: \_\_\_\_\_

**C. Past and Forecast Storm Locations:**

Date/Time	Latitude	Longitude	MSLP	Maximum Wind

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

Equipment	Pre-Flight	In-Flight	Post-Flight	Number of Expendables
Radar/LF				
Doppler Radar/TA				
Cloud Physics				
Data System				
GPS sondes				
AXBT/AXCP				
Ozone instrument				
Cameras				
Other ( )				

D. Mission Briefing:

Flying Emc-tasked ~~mission~~ PR mission into TS Isaac, which is moving over windward Islands north of Barbados. This is first PR mission into system. Fly a rotating figure-4, 105 nm leg length, with 1P on S side of storm. Upon completion of 4<sup>th</sup> pass, set up for second W-E pass, exit storm on E side. Drop sondes at turn points, mid points, RW, and on first and last passes. Fly at 10,000 ft on first pass over islands, then descend to 8000 ft for remainder of mission. No AXBT's.

Storm remains disorganized at 40kt. There are some areas of deep convection on SW and E side of center, but core does not appear to be organizing at this time. Looks to be encountering some shear around the periphery, and some dry air evident on N side. Appears to be abundant scatterers near center ~~and S of center~~ and S of center, limited coverage on N side.



### Lead Project Scientist Event Log

Date 8/22/12 Flight ID 120822II LPS Rogers

Time	Event	Position	Comments
2016	takeoff	Barbados	take off
2050	<del>obs</del>	20 nm from IP	near IP on S side, anvil but no precip, looks like stratiform ahead on LF
2059	drop 1	at IP, 105 nm S	FL 15 kt, SF 30 kt
2108	drop 2	at midpoint	FL 20 kt, SF 30 kt
2112	obs	~40 nm S of ctr	all anvil, no precip, FL RH ~ 60% here
2125	pattern	thru center, on outbound leg	real diffuse system, work to find a center, peak FL on S side about 25 kt
2129	drop 3	RHW on N side	FL 25, SF 35 kt on N side of storm
2138	drop 4		
2146	drop 5	end of N-bound leg	FE 40 kt, SF 35 kt
2204	obs	on downwind leg	very disorganized storm, nearly complete absence of precipitation dry air evident in FL data (below 60-80 in "core", no W winds at 8-10 kft; there are two convective blowups on LR w/ ~80C cloud-top temps, but they are displaced to E and SW of suspected center; hope that we can sample these systems
2221	drop 6	105 nm W of center	FL 30, SF 25-30 kt
2224	obs	~40 nm W of ctr	some convection on W side, lightning

2146 VR AF  
 15° 44'  
 61° 25'



### Lead Project Scientist Event Log

Date \_\_\_\_\_ Flight ID \_\_\_\_\_ LPS \_\_\_\_\_

Time	Event	Position	Comments
2235	drop 7	midpt of Windward leg	FL 25, SF 30 kt
2247	drop 8	inboard leg, near max winds at this center	FL 25, SF 25 kt
2250	drop 9	center	
2258	obs	~ 20 km E of ctr	widespread lightning, cells up to
2302	drop 10	R/W on E side	FL 30 (16 km) SF 35 kt
2314	drop 11	at end of outboard leg on E side	FL 20, SF 35 kt
2335	drop 12	turn pt NE	
2348	drop 13	mid pt on NE inboard leg	seeing lightning again
2358	drop 14	R/W on NE	FL 40, SF 30 kt
0009	obs	in "center"	passing b/w 2 cold cloud shields
0014	drop 15	mid pt outboard SW	
0026	pattern	end of SW outboard	turn to setup for SE-NW leg
0027	drop 16	" " "	
0059	pattern	105 km S E of center	
0059	drop 17		
0113	obs	on inboard SE/NW leg?	shallow storm. appears to be strong east-west flow as low as 4-5 km thru center

15 30  
61 36

15 31  
59 48



# Mission Summary

## Storm name

YYMMDDA# Aircraft 42RF

## Scientific Crew (4RF)

Lead Project Scientist Pages

Radar Scientist Ganaka

Dropwindsonde Scientist Whitney

Sea-Air Scientist \_\_\_\_\_

Cloud Physics Scientist \_\_\_\_\_

Observers \_\_\_\_\_

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

see previous

Mission Synopsis: (include plot of actual flight track)

flaw pattern generally as planned, but modified frequently b/c of difficulty finding center. On final W-E leg turned to S to look for center. SRA was not working so climbed to 10 kft for pattern.

Evaluation: (did the experiment meet the proposed objectives?) were many challenges on this flight.

Doppler analyses are suspect; not sure if it's related to RVP8, lack of scatterers, or something else. Transmission scripts to FMC also not working. Dropsondes worked fine, but had to manually transmit ~~some~~ temp drops. SRA did not work. Adding to challenge was that this is a very disorganized storm. weak,

Problems: (list all problems)

- radar analysis suspect
- FMC script, not working
- ASPED can't automatically transmit temp drops
- SRA down

diffuse center, shallow, with limited scatterers in many parts made it a challenge. There was some areas of deep convection & lightning, so will see if it can become better organized.

Expendables used in mission:

GPS sondes: 27

AXBTs: \_\_\_\_\_

Sonobuoys: \_\_\_\_\_