Lead Project Scientist

Storm or Project TS Ingrid **Experiment name** TDR/RI
Flight ID 13091441 **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 Ingrid **Experiment name** TDR/RI

Flight ID 13091411 **Mission ID**

A. Participants:

HRD		AOC	
Function	**Participant**	**Function**	**Participant**
Lead Project Scientist	Rogers	Flight Director	Sears
Radar/Workstation	Chen	Pilots	Halverson, Kibbey
		Navigator	Bishop, Gallagher
Cloud Physics	—	Systems Engineer	Lynch
		Data Technician	Smith
Dropwindsonde	J. Zhang	Electronics Technician	Bosko
AXBT/AXCP	J. Zhang	Other	
Photographer/Observers/Guests			

B. Take-off and Landing Times and Locations:

Take-Off: 0612 UTC Location: KMCF

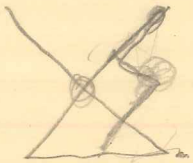
Landing: 1408 UTC Location: KMCF

Number of Eye Penetrations: —

C. Past and Forecast Storm Locations:

Date/Time	Latitude	Longitude	MSLP	Maximum Wind

D. Mission Briefing: Fly TDR/RI pattern into TS Ingrid. Single figure-4, IP on NE side of storm. 100 nm leg legs this, storm is close to MX coast, so SW outbound leg will be shortened. Conduct Doppler analyses. Drop combo sonde/BTs at all turn, midpoints, center passes. Fly at 10,000 ft. Storm is a 50-kt TS, experiencing moderate SW shear, near land. Despite this, it is intensifying and is forecast to become a hurricane before landfall in 72 h. some deep convection near center at time of take off.



Lead Project Scientist Event Log

Date 9/14/13 **Flight ID** 130914H1 **LPS** Rogers

Time	Event	Position	Comments
0612	takeoff	Kmcf	takeoff
0818	obs	165 nm below IP	MW imagery shows signif.
			ice scattering on SW side of
		circ. center at 0420Z, 37 GHz	
		showed	clear center, perhaps eyewall?
0910	pattern, drop 1	IP	FL 11 m/s, SF 17 m/s
0922	drop 2	20°36' 94°55'	FL 12, SF 12
0928	pattern	20°12' 95°0'	looking for center, seems
		to be further east than we	
		thought	
0932	center drop 3	20°1' 94°44'	center found at 10kft, 990 mb
0943	obs		
0944	drop 4, BT	SW corner	FL 16, SF 1626.8 SST
0945	pattern		end outbound leg,
			starting downwind leg,
			48 nm SW of center
0948	obs	downwind leg,	mostly stratiform
		19°20' 95°5'	precip here
1006	pattern		end downwind leg
	drop 5	100 nm SE	28.5C
1020	drop 6	19°32' 94°15', mid	FL 22 SF 21
1027	drop 7		
1030	center, drop 8	20°6' 94°36'	
1038	pattern	outbound leg	cutting outbound leg
			to NW short to 30 nm,
		then turn	around back in
1046	pattern		exp outbound leg, turn
			back into center

20.0
95.2

drop 1, BT
drop 2, BT

0932
200 1' drop
94°44'
center

2340Z
19 18
95 14

20° C'
94°36'
1030Z
center

1057 Z center

20° 90' 94° 34'

Lead Project Scientist Event Log

Date 9/14/13 **Flight ID** 13091411 **LPS** Rogers

Time	Event	Position	Comments
1057	center, drop 9		center
drop, BL 1409	drop 10	midpt out bound leg	FL 16, SF 16 m/s
drop 1420	drop 11, no BT obs		end of out bound leg
1437		on ferry back home	some pretty deep convection on NE side of center
045/9 kt			
1408	landing	touch	LAND

Mission Summary

Storm name

YYMMDDA# Aircraft 42RF

Scientific Crew (42RF)

Lead Project Scientist Rogers

Radar Scientist Chen

Cloud Physics Scientist

Dropwindsonde Scientist J. Zhang

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) Pattern generally flown as planned. Storm was further east than expected, so had to deviate to find center. Was able to get ~ 40 nm SW of center. On second pass, cut the outbound leg short at 50 nm. At that point turned around, did another center fix, and went out bound to the NE for 3rd analysis. Dropped 11 sondes and 10 BT's. Storm is getting better organized. Deep convective cells tops to 18 km on NE side near center. Mostly stratiform on SW. MSLP was ~ 990-988 mb, dropping from pass to pass. Peak SFMR winds ~ 60 kt seen, but no drop at that location to confirm

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

Mission did meet objectives. Got 3 radar analyses, paired drops/BT's. Had to deviate b/c of unexpected shift in center, but should not cause problem w/ Doppler analysis. Storm appears to be intensifying, although not rapidly, even in the presence of SW shear and proximity to land.

Problems:(list all problems)

No major problems. Occasional drops of radar images on "real-time display" but don't know if that means a data loss.

Expendables used in mission:

GPS sondes : 11

AXBTs : 10

Sonobuoys: —