

**Lead Project Scientist**

**Flight ID** 121028H2 **Storm** Sandy **LPS** Shirley Murillo

**Preflight**

- 84 1. Participate in general mission briefing.
- 84 2. Determine specific mission and flight requirements for assigned aircraft.
- 84 3. Determine from AOC flight director/meteorologist whether aircraft has operational fix responsibility and the mission designation.
- 84 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.
- 84 5. Meet with AOC flight director and navigator at least 3 hours before take-off for initial briefing.
- 84 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.
- 84 6. Report status of aircraft, systems, necessary on-board supplies and crews to HFP Director.
- 84 7. Before take-off, brief the on-board GPS dropsonde operator on times and positions of drop times.
- 84 7. Make sure each HRD flight crew member has a life vest.
- 84 7. Perform a headset operation check with all HRD flight crew members. Make sure everyone can hear and speak using the headset.

**In-Flight**

- 84 1. Confirm from AOC flight director that satellite data link is operative.
- 84 2. Confirm camera mode of operation.
- 84 3. Confirm radar recording set-up.
- 84 4. Confirm data recording rate.
- 84 5. Complete Lead Project Scientist Form.
- 84 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**

- 84 1. Debrief scientific crew.
- 84 2. Gather completed forms for mission and bag separately from other missions. Turn in to data manager at HRD.
- 84 5. Copy serial flight data, dropsonde files, and radar data onto thumb drive. Turn in with completed forms.
- 84 6. Report landing time, aircraft, crew, and mission status along with supplies (tapes, etc.) remaining aboard the aircraft to HFP Director.
- 84 7. Determine next mission status, if any, and brief crews as necessary.
- 84 8. Notify HFP Director as to where you can be contacted and arrange for any further coordination required.
- 84 9. Prepare written mission summary using **Mission Summary** form.

### Lead Project Scientist Check List

Storm or Project Hurricane Sandy Experiment name TDR  
 Date 10/28/12 Aircraft N00442 Flight ID 121028H2  
 Mission ID 2118A Sandy

**A. Participants:**

HRD		AOC	
Function	Participant	Function	Participant
Lead Project Scientist	<u>Shirley Murillo</u>	Flight Director	<u>Ian Sears</u>
Radar	<u>John Gamache</u>	Pilots	<u>Mark Nelson, Chris Kerns</u> <u>Mark Sweeny</u>
Dropwindsonde	<u>Jeff Newnam</u>	Navigator	<u>Chris Sloan</u>
Sea-Air	<u>Jeff Smith</u>	Systems Engineer	<u>Joe Klippel</u>
Photographer/Observer/ Guests (give affiliation)	<u>Yongzai Liu (HFIP)</u> <u>(UofOK)</u>	Data Technician	<u>Terry Lynch</u>
		Radar	<u>Bobby Peak</u>
Cloud Physics	<u>                    </u>	Electronics Technician	<u>                    </u>
		Other (                      )	<u>                    </u>

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

Take-Off: 195350 UTC Location: KMCF (MacDill AFB)  
 Landing: 0337 UTC Location: KMCF (MacDill AFB)

Number of Eye Penetrations: 3

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

Date/Time	Latitude	Longitude	MSLP	Maximum Wind
<u>28/1500z</u>	<u>32.5N</u>	<u>72.6W</u>	<u>951 mb</u>	<u>65 kt</u>
<u>28/1800z</u>	<u>32.8N</u>	<u>71.9W</u>	<u>951 mb</u>	<u>65 kt</u>
<u>28/2100z</u>	<u>33.4N</u>	<u>71.3W</u>	<u>952 mb</u>	<u>65 kt</u>
<u>29/0000z</u>	<u>34.0N</u>	<u>70.9W</u>	<u>950 mb</u>	<u>65 kt</u>

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:

EMC tasked Tail Doppler Radar (TDR) flight experiment. NOAA42  
 Butterfly pattern with sondes at turn points, mid points  
 and first and last center pass.  
 AXBT launched in combination with the dropsondes except in the  
 center.  
 Fly at 12,000ft but if there is ice or graupel we will drop to 10,000ft.  
 Flight time is estimated to be ~8 hours.  
 Take off and landing at KMCF (MacDill AFB).  
 Last flight in a series of seven flights in Sandy.

① initial storm motion  
050°/13 kt

② calculated storm motion  
040°/13 kt

Lead Project Scientist Event Log

Date 10/28/12 Flight ID 121028H2 LPS S. Murillo

Time	Event	Position	Comments
195350	take off		KMCF
213010	droppy	south of IP	
220205	combo drop 1	@ IP	sonde/AXBT drop #1 25.28°C
220919	combo drop 2		sonde/AXBT drop #2 25.3°C
221726	center drop 1st pass	33°37' } center 71°16' } fix	sonde (center) #3 951.4 mb
222911	combo drop 3		sonde/AXBT drop #4 24.7°C north mid point
224113	turning, 1 <sup>st</sup> leg completed		
224149	combo drop 4		sonde/AXBT drop #5 25.35°C
230046	combo drop 5		sonde/AXBT drop #6 25.5°C
231212	combo drop 6		sonde/AXBT drop #7 26.4°C
2324	center 2nd pass	33°53' } center 71°06' } fix	
233810	combo drop 7		sonde/AXBT drop #8 25.53°C
235104	combo drop 8		sonde/AXBT drop #9 dud on BT
001420	combo drop 9		sonde/AXBT drop #10 25.0°C
002551	combo drop 10		sonde/AXBT drop #11 25.25°C

mid pt



## Mission Summary

Storm name Sandy  
YYMMDDA# Aircraft 42RF  
12102842

### Scientific Crew (4RF)

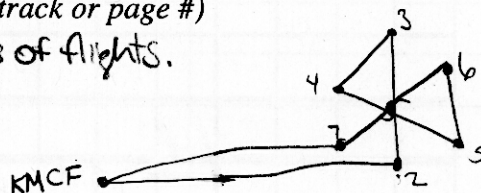
Lead Project Scientist Shirley Munillo  
Radar Scientist John Gamache  
Dropwindsonde Scientist Mike Black via John Gamache  
Sea-Air Scientist \_\_\_\_\_  
Cloud Physics Scientist \_\_\_\_\_  
Observers Yongzuo Liu

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

TDR mission into Sandy. Last flight in this series of flights.

Drops at endpoints, mid-points, 1st & last center pass

are in combination with AXBT launches



*Mission Synopsis: (include plot of actual flight track)*

The flight went as planned. The most turbulent part of the flight was when we were heading towards the IP and leaving. There was a strong mid-level jet. We were at 12,000ft for most of it. Near point 7 (FP) we dropped down to 10,000ft because there was a hint of graupel/ice. The SFMR showed high winds in this area even though the flight level winds were low. We dropped a sonde in this area. The TDR worked well. It showed that the strongest winds were in the SW quadrant. far away

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

were you typically find the strongest winds.

The analyses also showed a northward tilt to the center, indicative of southerly shear.

On our second pass we circled the eye because we didn't mark the center.

*Problems: (list all problems)*

Two BTs didn't report SSTs.

LF went down for a short period

*Expendables used in mission:*

GPS sondes: 15

AXBTs: 12

Sonobuoys: 0

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MISSION PLAN: SANDY

Prepared by the Hurricane Research Division File: current1.ftk

Aircraft: N42RF Proposed takeoff: 28/2000Z

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TRACK DISTANCE TABLE

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#	LAT (d m)	LON (d/m)	RAD/AZM (nm/dg)	LEG (nm)	TOTAL (nm)	TIME (h:mm)
1	MACDILL			0.	0.	0:01
2S	32 32	72 06	100/180	610.	610.	2:27
3S	35 52	72 06	100/000	200.	810.	3:16
4S	35 03	73 51	100/300	99.	908.	3:40
5S	33 22	70 22	100/120	200.	1108.	4:29
6S	35 03	70 21	100/060	101.	1209.	4:54
7S	33 22	73 50	100/240	200.	1409.	5:43
8	MACDILL			558.	1967.	7:35

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