

Flight ID 121026H2 **Lead Project Scientist** Storm Sandy **LPS** Rogers
Preflight

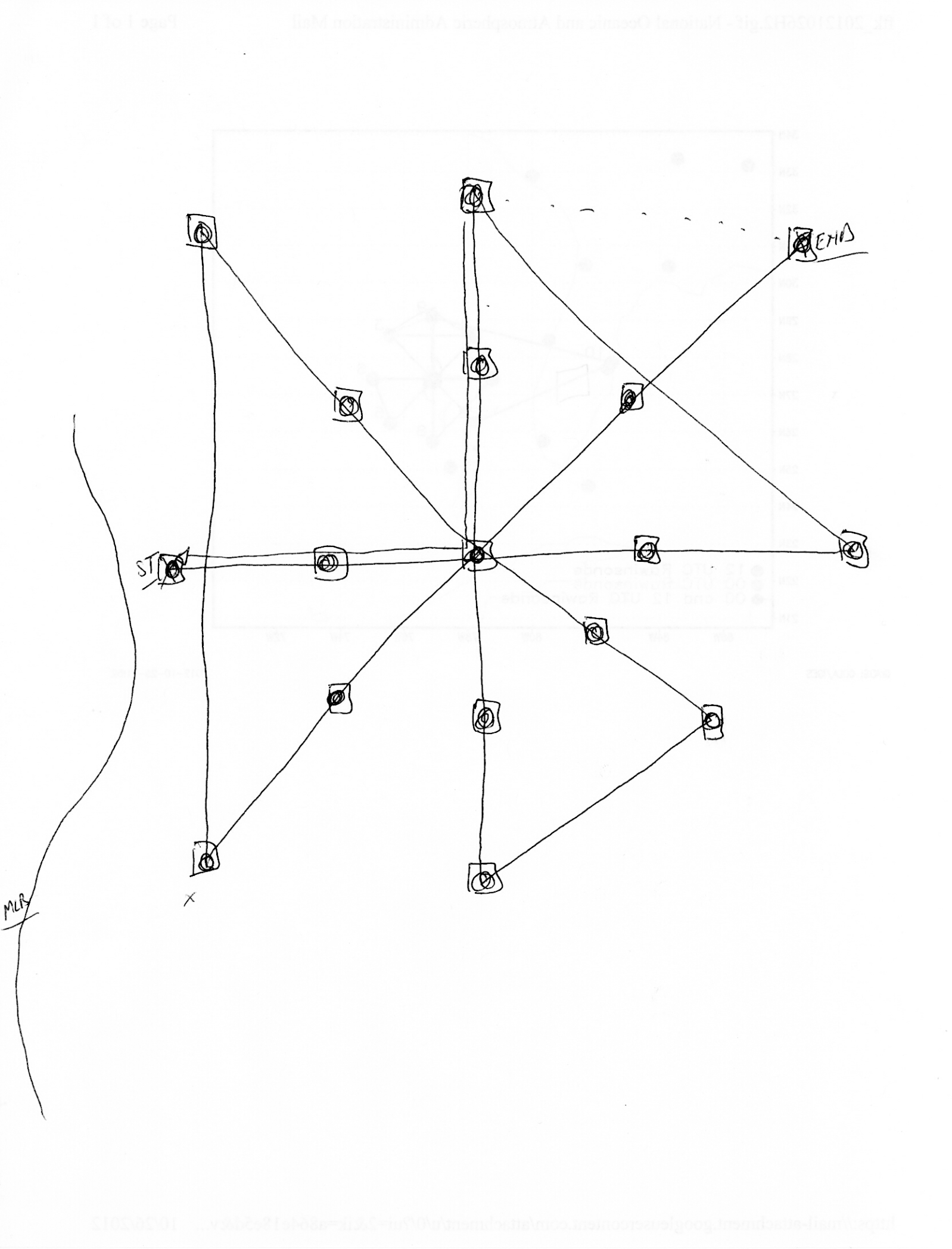
- 1. Participate in general mission briefing.
- 2. Determine specific mission and flight requirements for assigned aircraft.
- 3. Determine from AOC flight director/meteorologist whether aircraft has operational fix responsibility and the mission designation.
- 4. Contact HRD members of crew to:
 - a. 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 Sandy Experiment name TDR
 Date 10/26/12 Aircraft N42RF Flight ID 121026H2
 Mission ID _____

A. Participants:

| HRD | | AOC | |
|--|-----------------|------------------------|--------------------------------|
| Function | Participant | Function | Participant |
| Lead Project Scientist | <u>Rogers</u> | Flight Director | <u>Scors</u> |
| Radar | <u>Gamaache</u> | Pilots | <u>Nelson, Martin, Sweeney</u> |
| Dropwindsonde | <u>Gamaach</u> | Navigator | <u>Slaine</u> |
| Sea-Air | <u>Rogers</u> | Systems Engineer | <u>Cyphel</u> |
| Photographer/Observer/ Guests (give affiliation) | | Data Technician | <u>Swit</u> |
| Cloud Physics | | Electronics Technician | <u>Peck</u> |
| | | Other () | |

B. Take-off and Landing Times and Locations:

Take-Off: 2017 UTC Location: KMCF
 Landing: 0355 UTC Location: KMCF
 Number of Eye Penetrations: 5

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:

Fly TDR mission #3 into Hurm. Sandy.

Rotating Fig-4, 1P on W, end up on NE (see attached). Once there, fly downwind 45 degrees for a final inbound leg to the S, then exit out the W for a total of 5 penetrations. Drop combs GPS/BT at all end points and midpoints, send only on first and last center pass. Fly at 12,000 ft. Storm is looking less and less organized, exposed low-level circ. with precip on the NW side.

Lead Project Scientist Event Log

Date _____ Flight ID _____ LPS Rogers

| Time | Event | Position | Comments |
|------|------------|---------------------------|--|
| 2017 | takeoff | curf | |
| 2056 | pattern | 105 km W | at 10 |
| 2056 | drop 1, BT | ward pt | FL 25, SF 25 m/s, SST 28 |
| 2109 | drop 2, BT | W mid pt | FL 25, SF 28 m/s SST 27 |
| 2118 | obs | near eye | searching for center, limited precip on W side |
| 2131 | drop 3, BT | eye | Psurf 969, center weak at 27° 23' 77° 11', SST 26.5 971.6, 206 fms |
| 2142 | obs | mid pt E | dry air, limited (no convection), just shallow cu, FL RH ~ 50% |
| 2144 | drop 4, BT | | FL 30, SF 30 m/s, SST 27 |
| 2154 | pattern | end of leg on E side | turning downwind |
| 2156 | drop 5, BT | End pt E | FL 25, FL 21 m/s, SST 20 (suspect) |
| 2158 | obs | downwind leg on E side | asymm. winds from W-E, about 10 m/s variation, peak on W side; void of convection on E side, just stratocum |
| 2223 | pattern | end pt N side | turning far inboard leg on N side |
| 2225 | drop 6, BT | end pt N side | FL 20, SF 19 m/s, SST 27 |
| 2236 | drop 7, BT | mid pt N side | FL 21, SF 21 m/s, SST 27 |
| 2258 | drop 8, BT | mid pt S side | FL 23, SF 16 m/s, SST 27.5 |
| 2314 | drop 9, BT | end pt S side | FL 25, SF 23 m/s, SST 27.5 |

2259 drop 9 (backup)

Lead Project Scientist Event Log

Date _____ Flight ID _____ LPS _____

| Time | Event | Position | Comments |
|------|-------------------------------|--|---|
| 2318 | obs | SE of storm, setting up for next fig-4 | Sat image shows broad cloud shield on NW side of storm, nothing w/in circulation, or any cloud looks like ET cyclone |
| 2328 | pattern pattern | 105 nm SE | turning to track 315 for 2nd fig 4 |
| 2329 | drop 11, BT | endpt SE | FL 26, SF 28 m/s, SST 26 |
| 2340 | drop 12, BT | midpt SE | FL 23, SF 13 m/s, SST 26.8 |
| 2353 | drop 13 | 27°25' 77°16' | center, PSURF 967 |
| 0006 | drop 14, BT | midpt NW | FL 20, SF 20 m/s, SST 27 |
| 0019 | drop 15, BT | endpt NW | FL 30, SF 33 m/s, SST 27C |
| 0022 | obs | on downwind leg to SW | widespread precip here; SFR winds peaked at 33 m/s at end of leg, or (1) |
| 0047 | drop 16, BT | endpt SW | FL 23, SF 25 m/s |
| 0057 | drop 17, BT | midpt SW | FL 25, SF 25 m/s, SST 24C |
| 0124 | obs | near midpt NE | RMW around 1000 m based on SFR & Doppler; shallow vortex, peak winds drops from 40 m/s at 0.5 km to ~20-25 m/s at 3 km on NW side |
| 0126 | drop 18, BT | midpt NE | FL 25 SF 22 m/s, SST 26.5 |

Mission Summary

Storm name

YYMMDDA# Aircraft 42 RF

Scientific Crew (4 RF)

Lead Project Scientist Rogers

Radar Scientist Ganache

Dropwindsonde Scientist Ganache

Sea-Air Scientist Rogers

Cloud Physics Scientist _____

Observers _____

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

See previous

Mission Synopsis: (include plot of actual flight track) flew pattern as planned, except on fifth pass, descended to 60kft for PARCAN. Also extended outboard leg to NW out to ~145 nm to better sample precip, wind field. Storm is transitioning to an ETC cyclone, radar, satellite verifies this. Void of precip on SE/E, all on NW side. Vertex appears tilted from S to N. Asym wind field w/ some variation in Pt from W to E side. Peak SF winds ~ 65kt on NW side; cent. press. from 3 drops

Evaluation: (did the experiment meet the proposed objectives?) steady at 972 mts

Mission did meet objectives. Although storm was highly asym and convection was limited, was able to create some analyses especially on NW side. sondes all worked well, BT's largely worked, though a few did have suspiciously low SST. Drops should have sampled PBL thermodynamical structure in shear, Doppler will provide some context as well.

Problems: (list all problems)

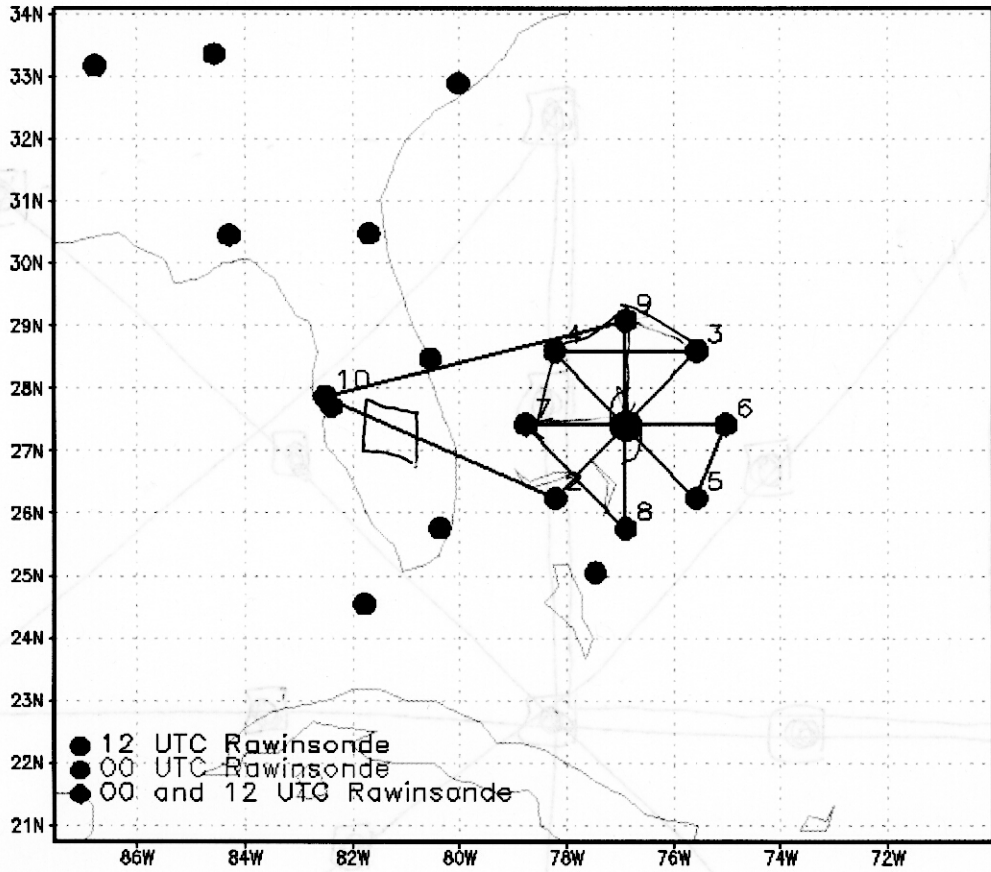
No major problems, other than limited scatterers on E and S. All sondes worked, most BT's.

Expendables used in mission:

GPS sondes: 21

AXBTs: 18

Sonobuoys: —



GRADS: COLA/IGES

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