

Lead Project Scientist

Storm or Project TD Harvey Experiment type TDR
Flight ID 17082441 Mission ID _____

Preflight

1. Participate in general mission briefing.
2. Determine specific mission and flight requirements for assigned aircraft from the Field Program Director.
3. 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.
4. Meet with AOC flight director and navigator at least 3 hours before take-off for initial briefing.
5. Determine from AOC flight director the mission designation and whether aircraft has operational fix responsibility.
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 Field Program Director.
8. Before take-off, brief the on-board GPS dropsonde operator on times and positions of drops.
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. Request AOC flight director to leave radar in non-sector mode for initial Figure 4.
- _____ 5. Once at IP, request AOC flight director adjust radar tilt to minimize sea clutter.
- _____ 6. Complete Lead Project Scientist Form.
- _____ 7. Check in occasionally 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 Dropsonde raw and processed files from the AVAPS operator on thumb drive.
- _____ 4. Obtain a copy of the radar LF files from the radar technician on thumb drive.
- _____ 5. Obtain a copy of the tar'ed radar TA files from the radar scientist on thumb drive.
- _____ 6. Obtain a copy of serial flight data and raw NetCDF file on thumb drive from the data technician.
- _____ 7. Obtain a copy of SFMR data on thumb drive from the data technician.
- _____ 8. Obtain a copy of DMT data on thumb drive from the data technician.
- _____ 9. Report landing time, aircraft, crew, and mission status to the Field Program Director.
- _____ 10. Determine next mission status, if any, and brief crews as necessary.
- _____ 11. Prepare written mission summary using **Mission Summary** form.

Lead Project Scientist Check List

Storm or Project TD Harvey Experiment name TDR

Flight ID 170824H1 Mission ID _____

A. Participants:

HRD		AOC	
Function	Participant	Function	Participant
Lead Project Scientist	<u>Rogers</u>	Flight Director	<u>Belson</u>
Radar/Workstation	<u>Zhang</u>	Pilots	<u>Price, Rossi, Mitchell</u>
		Navigator	<u>Urato</u>
Cloud Physics	_____	Systems Engineer	<u>Mascaro</u>
		Data Technician	<u>Phelan, Richards</u>
Dropwindsonde	<u>Sellwood</u>	Electronics Technician	<u>Feek</u>
AXBT/AXCP	<u>Kolbach</u>	Other	
Photographer/Observer s/Guests	_____		

B. Take-off and Landing Times and Locations:

Take-Off: 0152 UTC Location: KLAL

Landing: 0956 UTC Location: KLAL

Number of Eye Penetrations: _____

C. Past and Forecast Storm Locations:

Date/Time	Latitude	Longitude	MSLP	Maximum Wind

D. Mission Briefing:

Conduct a TDR survey, into TD Harvey, currently located in SW Gulf of Mexico after having emerged from Yucatan peninsula. Storm has a broad circulation, with a lack of an inner core at this point. Environment is generally favorable, though there is some moderate SW shear associated with an upper level low to allow OATD convection bursts are continually developing over and down shear of center (which is likely tilted), but they are transient. Some slow intensification seems likely until an inner core becomes established. Fly butterfly pattern, 1P on N, 105 and legs. Combo O-PS/BT at all turns, O-PS at center if center is found. Fly at 7000 ft. Eval outboard leg to NE is coordinated w/ O-PS overpass. If possible, do CFMR built maneuvers, likely on N/NE side.

Storm or Project _____ Experiment name _____

Flight ID _____ Mission ID _____

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

Equipment	Pre-Flight	In-Flight	Post-Flight	# DATs / CDs /Expendables/ Printouts
Radar/LF	✓	✓		
Doppler Radar/TA	✓	✓		
Cloud Physics	—	—		
Data System	✓	✓		
GPS sondes	✓	✓		
AXBT/AXCP	✓	✓		
Ozone instrument	—	—		
Workstation	—	—		
Cameras	—	—		

REMARKS:

Lead Project Scientist Event Log

Date 8/23/17 Flight ID 170824HL LPS Rages

Time	Event	Position	Comments
0152	takeoff		takeoff from KLAZ
0307	obs	ferry to IP	CB's keep forming at and downshear of center, but freeze out, water vapor & P-W drops show very dry air about 400 mb along western boundary of Bay of Campeche. Uncertain how close that dry air gets, but water vapor looks a bit moister w/ in 100 km of center
0344	obs	~15 km from IP	AF Aiz showed center is displaced about 50 km from centroid of cold cloud tops from IP, indicating SW shear impacting system
0350	obs	~10 km from IP	TA sweeps slow stratiform rain all on both sides of Aiz, in a band well NE of center
0404	parttern	at IP	
0406	GPS, BT	at IP	FL 25, SF 25, precip. to east of plane, all stratiform, no BT
0411	obs	on inbound leg from N	passing just west of band of precip., all strat. of TA still
0418	obs	~50 km from center	seeing echo tops up to ~16 km to our east, ~10 km to east
0425	obs	west of FL center	N-S line of precip, some embedded convective cores getting up to 18 km

AF 2500'
0314
22
a 2.6

42-7000'
0425
22.5
a 2.7

AF
0520
22.5
92.5

Lead Project Scientist Event Log

Date 8/23/17 Flight ID (70824H) LPS Regis

Time	Event	Position	Comments
0436	drop 2	22.05 92.30	SLP ~1002 extra, peak FL on N side of peak SF ~ 30-35 kt, not a firm fix though; estimated center 22°28' 92°30'
0502	drop 3, BT	100 nms of center	FL 20 kt; completely devoid of precip on S side, except for some isolated areas of reflecting in lower levels; BT had ~30.5 C
0523	obs	near SE pt to turn inbound	very low SFMR obs on this whole leg
0530	obs	near inbound turn point	deviating around convective on SE side AF just fixed center much further north from previous fix, and close to our fix. Possible that low-level center was shifted north in convection
0532	drop 4, BT	105 nm SE	FL 35 kt, 28 C SST SF doesn't seem to be working correctly, not measuring surface winds < 15 kt
0552	obs	~30 nm SE	flying above some gusting Cu

2244

0604

9232

Lead Project Scientist Event Log

Date 8/23/07

Flight ID 070824M1

LPS

Rogers

Time	Event	Position	Comments
0604	center, drop 5	22° 44' 92° 32'	extrap SLP ~ 999 mb, still pretty broad
0633	drop 6, BT	105 nm NW	turn to track 180, downwind leg, 30C
0703	drop 7, BT	105 nm SW	upshor here, FL 15kt no lam or detect, no BT
0719	obs	~ 50 nm SW of center	LF present at 100 does not show a clear center, but some curvature, oval bands extending out forward 5 from east side
0733	drop 8	2387 92° 40'	extrap SLP ~ 996 mb, splash press 995.5 w/ 20 kt SFC winds
0739	obs	outbound to NE, ~ 30 nm from center	in precip bumpiest leg, widespread stratiform with some embedded convective elements, echo tops near 18 km IR shows broad cold cloud shield cloud top temps < -80C, CO flying to form 50 kt FL winds, heavy stratiform
0747	drop 9		Ocean wind 3 drop, in heavy precip, mostly stratiform, but quite bumpy
0805	drop 10, BT	105 nm NE center	BL 40 kt, but peak FL winds var ~ 60 kt on NE side BT 24, but suspect that's wrong

2307
8240

Mission Summary

Storm name

YYMMDDA# Aircraft 42RF

Scientific Crew (4 RF)

Lead Project Scientist Rogers
Radar Scientist Zhang
Cloud Physics Scientist _____
Dropwindsonde Scientist Selwood
Boundary-Layer Scientist Kolbach
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 was flown as planned. Had hard time finding centers on first two passes, as storm was still broad and center trying to consolidate. Most of precip NE of center, likely bc of SW shear. Center appeared to shift north into this precip. Satellite shows expanding cold cloud shield appearing to get more over center, including upshear. Embedded deep convection in the stratiform, primarily on NE side (downshear). Storm was strengthening. By end of flight, FC winds NNEkt, drop splash pressure

Evaluation: (did the experiment meet the proposed objectives?) on final pass radar sub.

There has been a problem with the radar analysis, still trying to fix. Analyses are not producing any winds. As such, no analyses were transmitted to Eme (all data were flagged). Also, there was a problem w/ SFMR but that seemed to have gotten fixed. Perhaps radar data can be recovered post-flight. Dropped 10 sondes, 6 HPR, 3 NHC, 1 Ocean winds. Final SW-NE pass well-coord. w/ OYG USS. 6 BT's, 3 worked well

Problems: (list all problems)
radar analyses, SFMR for part of flight, 1 sonob failed, 3 BT's failed

Expendables used in mission:

GPS sondes: 10

AXBTs: 6

Sonobuoys: —