

Lead Project Scientist

Storm or Project Hurricane Michael Experiment type TDR
Flight ID 19101041 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.

intense convection module after pattern is complete SF site

Lead Project Scientist Check List

Storm or Project Michael Experiment name TDR
 Flight ID 18C01041 Mission ID _____

A. Participants:

HRD		AOC	
Function	Participant	Function	Participant
Lead Project Scientist	<u>Rogers/Leung</u>	Flight Director	<u>Sears</u>
Radar/Workstation	<u>Hazelton</u>	Pilots	<u>Kilbey, Ab, Hrd, Kelen</u>
		Navigator	<u>Richards</u>
Cloud Physics		Systems Engineer	<u>Richards</u>
		Data Technician	<u>Paul</u>
Dropwindsonde	<u>Selkwood</u>	Electronics Technician	<u>Peet</u>
AXBT/AXCP	<u>James (JM)</u>	Other	
Photographer/Observer s/Guests	<u>Zawislak, Sippel, Rogers</u>		

B. Take-off and Landing Times and Locations:

Take-Off: 0823 UTC Location: KLAL
 Landing: 1146 UTC Location: KLAL
 Number of Eye Penetrations: 4

C. Past and Forecast Storm Locations:

Date/Time	Latitude	Longitude	MSLP	Maximum Wind

D. Mission Briefing:

Conduct mission into Hurricane Michael, cat-4 storm approach
 100% probability. Storm continues to steadily intensify, as coldest cloud tops now encircle
 eye, though it has been experiencing some periods of asymmetric cloud shield and cycling
 of convective bursts indicative of shear. Storm may also be feeling interaction with mid-level
 jet, which is enhancing upward motion and deepening storm.
 Fly out fig-4 1 hr on N, 1 hr on SE 185 miles. Likely have to truncate legs on
 NE + NW sides. Sides at all turn, mid, down, and center pass. BTs at turn, mid pts, 1, 2, 4 pass
 out outside pass on NE, NW, SE + W passes, OTH on 3rd center pass. 8000 ft. Possible offshore (over)

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Flight ID 181010H1 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 10/10/18

Flight ID 181010H1

LPS Rogers/Zawislak

Time	Event	Position	Comments
0823	takeoff	KLAL	takeoff
0835	obs	far out IF	880 showing extensive precip on N, NE sides, IR warming suggests much of this is convection
0856	obs	NE of center or into Barry	IR precip, mostly unrad obs at time is shallow convection
0924	drop 1	N mid pt	FL 23, SF 12 m/s
0936	obs	inbound on side	radar (880) showing first elliptical then triangular eyewall, CBs moving with vertices of polygonal structures → convection tied to VR up dynamics
0938	drop 2, BT 1	N mid pt	FL 32, SF 25 m/s, 28.7 SST
0943	BT 2	outside N eye	
0947	drop 3	N eyewall	FL 60, SF 50 m/s
0949	core, drop 4, BT 3	28°33' 86°29'	lightning in eyewall, eastern eyewall looks more non-actively active based on TOR
0953	drop 5, BT 4	S eyewall	FL 60, SF 45 m/s
0955	obs	outside S eyewall	on S side, echoes do extend up to 14-16 km, but not as strong cores of deep convection; highest reflectivity does not extend as high, more vertical extent in N eyewall
1003	drop 6, BT 5	S mid pt	FL 32, SF 20 m/s

Lead Project Scientist Event Log

Date 10/10/12 Flight ID 18101011 LPS Reyes, Zawislak

Time	Event	Position	Comments
1017	drop 7, BT6	Sendot	FL 25, SF 15 m/s
1038	obs	downwind leg, SE side of storm	all stratiform precip on this side; SLP shar is WNW, so this is OS / OS L
1052	drop 8	E midpt	FL 30, SF 18 m/s
1101	obs	inbound on E side	radar analysis: former 12 pass shows practically no tilt, obs flagged over entirety of region inside PBLW, in marked contrast to previous mission. Profile shows strongest updraft at ~6 km in S eyewall
1104	drop 9, BT7	E midpt	FL 45, SF 32 m/s
1109	BT 8	outside FRW	
1114	drop 10	E eyewall	FL 55 lightning visible in E eyewall; peak FL 70, SF 55 m/s
1117	center, drop 11	28°49' 86°22'	center was in SW part of eye (i.e., FL wind min)
1119	drop 12	W eyewall	peak FL 55, SF 55
1123	obs	outside W eyewall	radar shows peak updrafts ~6 km in S eyewall, lightning in E eyewall, 88° shows cells initiating on S side, maturing on E (OS); possible low-level PBLW peak in W eyewall, where radar profile shows strong inflow
1125	BT 9	outside W eyewall	

Mission Summary

Storm name

YYMMDDA# Aircraft 4_RF

Scientific Crew (4 RF)

Lead Project Scientist _____

Radar Scientist _____

Cloud Physics Scientist _____

Dropwindsonde Scientist _____

Boundary-Layer Scientist _____

Workstation Scientist _____

Observers (affiliation) _____

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

ROTATED FIG 4 :



N-S, E-W, SW → NE, NW → SE

8 WIND PROFILES, COMBO DATA OF SONDES AND VARIOUS BUOYS AT EACH ENDPOINT, MIDPOINT, RMW, CENTER. SOME CP, CTD, AXBT.
POSSIBLE CONJECTURE BLOW, LANDFALL POSSIBLE, BUT LIKELY NOT.

Mission Synopsis. (include plot of actual flight track)

OVERALL, THE STORM CONTINUED TO INTENSIFY WHILE WE WERE IN STORM. THE PIR WENT DOWN TO 4130 EMBRIN, AND ~ 931ms FROM SURGE WE ACTUALLY GOT ISURF AT FL ON OUR OUTBOUND PASS THROUGH THE RMW TO THE SOUTH EAST. ABLE TO MEASURE SURFACE WIND UP TO 125 KTS. PRELIMINARY THE INBOUND FL TOWARD THE END WILL RESULT IN SURFACE SFC 18 HAN ADVISORY.

HAD TO TRUNCATE CECs ON INBOUND DUE TO LAND PROXIMITY.

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

TEAL HAD 928ms ON A PASS JUST AFTER OUR LAST SMC

OVERALL, WE WERE ABLE TO COMPLETE THE 8 ROTATED FIG 4, WITH SOME TRUNCATION ON THE INBOUND SIDE DUE TO THE PROXIMITY OF LAND. PRETTY STRAIGHT PASTERN LEG, WITH REALLY ONLY SOME DEVIATIONS OUTBOUND ON LAST PASS. TURBULENCE REALLY MADE A MESS OF THINGS. HAD TO WRITE FORGIVE A WHILE AFTER THE PASS TO THE NE. THE LAST RADAR ANALYSIS WINDS DON'T MAKE SENSE

Problems:(list all problems)

TOR WENT DOWN BRIEFLY, BETWEEN 1407-1408Z

Expendables used in mission.

GPS sondes 16

AXBTs 19

Sonobuoys: 4 CP, 1 CTD