Lead Project Scientist

Storm or Project Matthew **Experiment type** IFEX TDR/landfall
Flight ID 161007I1 **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 occasionaly 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 Matthew **Experiment name** IFEX TDR

Flight ID 160071I **Mission ID** _____

A. Participants:

HRD		AOC	
Function	**Participant**	**Function**	**Participant**
Lead Project Scientist	Rogers	Flight Director	Williams/Parrish
Radar/Workstation	Katina	Pilots	Kearns/Kahn/Martin
		Navigator	
Cloud Physics		Systems Engineer	Naeher
		Data Technician	C. Lynch
Dropwindsonde	Ryan	Electronics Technician	
AXBT/AXCP		Other	
Photographer/Observers/Guests	Jolly (ID-FL)		

B. Take-off and Landing Times and Locations:

Take-Off: 1756 UTC Location: MacDill

Landing: _____ UTC Location: _____

Number of Eye Penetrations: _____

C. Past and Forecast Storm Locations:

Date/Time	Latitude	Longitude	MSLP	Maximum Wind

D. Mission Briefing: TBR mission into Hurricane Matthew, Cat 3, just off the coast of FL near Daytona: Rotated Fig. 4, IPSW, FPN, 10,000 ft on 1st pass, then descend to 7000 ft. After 1 or both Fig. 4's are done, do some ocean winds work. After last pass, do N-S run along the coast, releasing sondes near some ground-based observing platforms. Otherwise release sondes at all fore points over water, and any requested by NHC.

No BT's.

Storm or Project Matthew **Experiment name** IPEX TDR/Landfall

Flight ID 161007I1 **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 10/7/16 **Flight ID** 161007I1 **LPS** Rogers

Time	Event	Position	Comments
1756	takeoff	KMCF	
1810	obs	on way to IP,	stratiform deck below,
		SW of center	clear above
1834	pattern	At IP, 60 nm	eyewall often SW,
		SW of center	hub cloud possibly
			inside
1841	center	center of storm	sonde 1 released
		29° 53' 80° 45'	Extrap SLP 946
			sonde 949
1851	obs	outside NE	some convection
		eyewall	in NE eyewall,
			deviated around it,
			then heading back
			toward track 45
1854	obs	~40 nm NE of eye	widespread stratiform
			precip DS, CSL;
			echo tops ~ 10-12 km,
			nice bright banding
1908	obs	~ 90 nm NE	approaching line of
			cellular echoes, in this
			outer band
1913	sonde, 105 nm NE	sonde 2	FL ~ 60 kt, SF ~ 50 kt,
			turn to start downwind
			leg
1941	pattern	~ 105 nm NW	begin inbound leg
1958	pattern	NW eyewall	FL 90, SF 80 kt

Lead Project Scientist Event Log

Date _____ **Flight ID**_____ **LPS** _____

Time	Event	Position	Comments
2026	drop 3	SE endpoint, 105 nm	FL 50 SF 40
2029	pattern	downwind leg east of storm	TDR water is burned out: Abort fig-4 pattern after drop at E point, then do Ocean winds radials, then coastal run, then head home early to give time to fix the TDR before 2AM mission
~~2100~~	~~obs~~	~~inbound~~	
2050	drop 4, 5	105 nm E	FL 70, SF 50 (2 drops)
2109	drop 6	RMW drop on E side (for Ocean winds)	FL 85 SF 70
2171	drop 7	RMW on SE side (Ocean winds)	FL 100, SF 80
2152	drop 8 drop 9 (mini)	RMW E	FL 100, SF 90
2200	drop 10 11 (mini)	RMW SE	FL 80-85 SF 70
2223	obs	NW eyewall	storm highly asymmetric, all precip on N side, open S
2273	drop 12, 13 (mini)	N eyewall	FL 80, SF ~~80~~

Lead Project Scientist Event Log

Date 10/7/16 **Flight ID** 16007I1 **LPS** Rogers

Time	Event	Position	Comments
2246	drop 14	NE of center,	dropped sonde during
		~100 nm	a satellite overpass
			FL 70, SF 50
2256	pattern	N of center	turned back to
			head downwind,
			set up for coastal leg
2308	pattern	at coast ~	set up 10 nm
		60 nm N of center	N of sticknet, 12 nm offs
			drop sonde at latitude
			of stick, then sonde at RMW
			latitude onshore, then
			mirror image on S side,
			RMW at sticknet distance for
2310	begin coastal leg	offshore	flow.
2314	drop 15	at sticknet	near sticknet location
		30° 5 2'	FL 70 SF 55
		81° 12'	
	drop 16	30° 43'	FL 70, SF 60
		81° 12'	
		RMW at coast	
		onshore flow	
2322	drop 17	30° 02'	FL 70, SF 40
		81° 04'	offshore
2324	drop 18	29° 54'	FL 60, SF 35
		81° 01'	offshore
2330	end coastal leg, RTB		
0015	land	KMCF	

Mission Summary
Storm name
YYMMDDA# Aircraft 43 RF

Scientific Crew (43RF)
Lead Project Scientist Rogers
Radar Scientist Zalina
Cloud Physics Scientist
Dropwindsonde Scientist Ryan
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) flew pattern generally as planned through first figure 4. TDR water failed on 2nd inbound pass. Finished that Fig 4, then went downwind to point E of ctr, then did ocean winds radials, or wedges, until 2247 Z, when there was a satellite overpass. After that, went downwind to point ~100nm N of stickvet 12 nm offshore. Did coastal survey module, dropping sondes at latitude of stickvet, (at latitude of RMW, mirror image on S side (offshore flow).

Evaluation: (did the experiment meet the proposed objectives?) With failure of TDR less than halfway into pattern, did not meet primary objective, however did accomplish some science w/coastal survey and underflights.

Problems:(list all problems)
TDR water failure

Expendables used in mission:
GPS sondes : 15 reg, 3 mini (3 HFIP, 4 HRD)
AXBTs : 8 NESDIS

Sonobuoys: