Lead Project Scientist

Storm or Project T3 Franklin **Experiment type** TDR
Flight ID 17080941 **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 Franklin **Experiment name** TDR

Flight ID _____ **Mission ID** _____

A. Participants:

HRD		AOC	
Function	**Participant**	**Function**	**Participant**
Lead Project Scientist	Rogers	Flight Director	Holmes
Radar/Workstation	Alaka	Pilots	Kibbey, Kahn
		Navigator	
Cloud Physics		Systems Engineer	Naehr
		Data Technician	Richards
Dropwindsonde	Bucci	Electronics Technician	
AXBT/AXCP	Bucci	Other	
Photographer/Observers/Guests			

B. Take-off and Landing Times and Locations:

Take-Off: 0809 UTC Location: Lakeland

Landing: _____ UTC Location: _____

Number of Eye Penetrations: _____

C. Past and Forecast Storm Locations:

Date/Time	Latitude	Longitude	MSLP	Maximum Wind

D. Mission Briefing: Perform TDR mission into TS Franklin, a 55-kt storm in the bay of Campeche. Franklin has emerged from the Yucatan, in a low-shear environment (some weak north-northeasterly shear). Warm SST, moist lower trop provide a favorable environment for intensification. Fly butterfly pattern, 105 nm legs, 1 pt north. center fix for NHC on 1st pass. Fly 10 kft. Only drop at center on 1st pass, 4 BT's on N and W turn points. Coordinate leg with P3 on 1st N–S pass.

2207 93 06 1030 IP

2023 93 06 1115Z center

Lead Project Scientist Event Log

Date 8/9/17 **Flight ID** 170809AM1 **LPS** Rogers

Time	Event	Position	Comments
0809	takeoff	Lakeland	
1027	obs	at IP	radar LF [illegible] showing attempted eyewall on N side; satellite showing burst of convection near center, [illegible] banding evident on SW side, drop BT
1033	BT	inbound leg from N	BT failed
1046	obs	~40 nm N of CTR	passed thru band, almost all stratiform, limited vertical velocity; peak FL 55, SF 45 kt
1053	pattern	near center, ~ 4 nm	heading center
1056	center	20°13 93°12'	mark center, but actually missed it (FL winds ~113 kt), extrap SLP ~ 988 (that seems low, though); LF shows eyewall trying to close
1106	obs	50 nm S of center	approaching outer band, high echo tops up to ~ 16 km, LF dBZ > 45 and cellular
1120	pattern	105 nm S	turn for downwind leg, right along coast of Mex

1202 20°18' 93°18' center

Lead Project Scientist Event Log

Date 8/9/17 **Flight ID** 170809H1 **LPS** Rogers

Time	Event	Position	Comments
1125	obs	~~ott~~ on downwind leg, S of center	on downshear side, most of precip is here, banding features cross analysis shows ~10kt N shear at 09Z over center
1141	pattern	105 nm SE	turn inbound for 2nd pass
1154	obs	35-40 nm SE	passed thru band with some deep convection, tops to 16 km, moderate chop
1206	pattern	near center	cores of deep convection near/at center, made it hard to fix center
1219	obs	50 nm NW	in USR quad, mostly stratus SCu, no precip, anvil, no congestus
1234	pattern, BT	105 nm NW	ended outbound leg, turning downwind, 29.2C
1247	obs	~100 nm W	radar analysis from first pass shows inner core aligned, but outside inner core the streamlines cross, suggestive of a tilt toward the SE in the outer flow field
1258	pattern, BT	105 nm SW	BT drop, no data
1302	obs	80 nm SW	passed thru convective band

2306

2009

9325

1320

Lead Project Scientist Event Log

Date 8/9/17 **Flight ID** 17080AHI **LPS** Rogers

Time	Event	Position	Comments
1320	center fix, drop	20°09'93°25'	center has cleared out of convection a bit, going thru intense part on NE side
			987.1 mb at surface w/ 15kt winds
1341	obs	~80nm NE	cleared out, sun shining
		eye. Bound up ahead.	
1345	pattern, BT	105nm NE	dropped BT, end of pattern, 28.9C
1609	landed		

Mission Summary
Storm name
YYMMDDA# Aircraft 42RF

Scientific Crew (4 RF)
Lead Project Scientist Rogers
Radar Scientist Aiaka
Cloud Physics Scientist —
Dropwindsonde Scientist Bucci
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) Mission flown as planned. Coordinated with GH. We were a little later getting to IP than anticipated, so GH was ahead of us on the leg. 3 radar analyses performed, transmitted in time for DA window. Two of four BT's worked. Center drop worked. Used a wedge for LF on last pass.

Evaluation: (did the experiment meet the proposed objectives?) Mission was a success. Got three radar analyses, they showed vortex was nearly aligned, or slightly tilted toward south. Radar-core suggested a more substantial tilt towards S (SE (DSL)). System becoming better organized, with banding features on S (downshear) side. Isolated deep convection at center on 2nd pass, had cleared out some by 3rd pass. Pressure had dropped to 987 mb (w/ 55 kt winds at splash). Convective structure suggested anvil, non-precip. on upshear side, most activity downshear + DSL.

Problems:(list all problems)

No problems, other than 2 BT failures

Expendables used in mission:
GPS sondes : 1
AXBTs : 4

Sonobuoys: —