

Lead Project Scientist

Date 7/12/69
Storm or Project Barry
Mission ID

Flight ID 190712H2
Experiment name FMC TOR

Pre-flight

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.
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 drop times.
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. Complete Lead Project Scientist Form.
5. 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 turn in to data manager at HRD.
3. Obtain a copy of the 10-s flight listing from the AOC flight director. Turn in with completed forms.
4. Obtain a copy of the radar DAT tapes. Turn in with completed forms.
5. Obtain a copy of serial flight data on thumb drive. Turn in with completed forms.

[Note: all data removed from the aircraft by HRD personnel should be cleared with the AOC flight director.]

6. Report landing time, aircraft, crew, and mission status along with supplies (tapes, etc.) remaining aboard the aircraft to Field Program Director
7. Determine next mission status, if any, and brief crews as necessary.
8. Notify Field Program 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 TS Barry

Experiment name EMC TDR

Flight ID 190712H2

Mission ID _____

A. Participants:

Function	Participant	Function	Participant
Lead Project Scientist	<u>Rogers</u>	Flight Director	<u>Holmes / Carpenter</u>
Radar	<u>Reasor</u>	Pilot	<u>Prite</u>
Workstation	<u>—</u>	Pilot	<u>Altford</u>
Cloud Physics	<u>—</u>	Navigator	<u>Richards</u>
Drosonde	<u>Sellwood</u>	Systems Engineer	<u>Mascaro</u>
Drosonde		Data Technician	
AXBT/AXCP		Electronics Technicians	
Observer/Guest	<u>Zawislak</u>	Flight Engineer	
Observer/Guest			

B. Take-off and Landing Times and Locations:

Take-Off: 1949 UTC Location: KLAC

Landing: 0249 UTC Location: KLAC

Number of Eye Penetrations: —

C. Past and Forecast Storm Locations:

Date/Time	Latitude	Longitude	MSLP	Maximum Wind
/				
/				
/				
/				
/				

D. Mission Briefing:

Conduct EMC tasked TDR mission into TS Barry, which is now a 55-kt storm. Barry continuing to be asymmetric, with at most all convection on S side. There have been some episodes of strong convection appearing near low-level center, suggesting N shear may be relaxing a bit. However, convection then waves and low-level circulations propagate away from a large circulation, strongest winds on SE side. AF recently found 70 kt at 2L, MTC was 993 mb at 2PM. Potential for downscale reformation, but circulation is slowly moving NW, so time over water is limited. Fly butterfly pattern, 1P on NE, 90 nm legs on N side, 120 nm on S to better sample convection concentrated there. Drops at turn, mid points, center point, fly at 10 kft for most of mission, except final W-E pass try to climb to 20 kft. After pattern attempt offshore convection mode, do SPUR mode on 1st SW leg. Possible CB mode too.

Storm or Project TS Barry Experiment name Emc/IDR

Flight ID 190712HZ Mission ID _____

E. — Equipment Status (Up U, Down D, 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	U			
Data System	U			
GPS sondes	U			
AXBT/AXCP	O			
Ozone instrument	O			
Workstation	O			
Cameras	U			

REMARKS:

Lead Project Scientist Event

Date 7/12/19

Flight ID 190712H2 LPS Rogers

Time	Event	Position	Comments
1949	takeoff	KLAL	
2023	obs	ferry	passing through 4 band on E side, mostly strat
2054	obs	ferry	vis sat shows LLC rotated around N, tracking SW toward deep convection developing
2128	obs		
2147	pattern	at IP, NE	90 nm NE of center, turning to track 210, no drops here
2149	obs	inbound on NE	stratus cu, stratus deck, clear above that, 50 kt FL peak on NE
2206	drop 1	218 nm NE center	drop for SFRP showing; however center close to land, so winds here probably not strong enough to be of much use. May try another drop on NW downwind
2209	drop 2	center,	center drop, though FL winds suggest it may be off our left wing
2221	drop 3	mid pt SW	FL 35 ST 35; deviated a bit to track 190 to avoid cells, one clear will resume 210; looks to be growing Cu, heavy rain but not deep
2225	obs	near drop SW end	near WNW-ESE band, looks mostly strat.; now seeing mixed deep, need convection, some lightning flash

2209
28.7
91.1

28.4
91.0
estimated FL center
factoring in 1/2 kt wind
we missed FL center

Lead Project Scientist Event

Date 7/12/09

Flight ID 190712HZ LPS *Ruger*

Time	Event	Position	Comments
2234	pattern 1, drop 4	~105 nm SW	turned early to try to paint W-E band
2246	obs	downwind leg S of center	nicely embedded in stratiform, some heavy strat. / shallow convection ~30 km N; we're sampling pretty much the only band in system, along S side; suggestions we're seeing nice along-band transition from convective (west end) to stratiform (east end)
2258	drop 5	SE end pt	FL 25, SF 12 m/s
2306	obs	near SE mid	in broad stratiform region, looks like like of cells ahead, curious if it'll be convective or strat. mostly mixed deep con, strat; through some areas of 16-18 km to the west of the leg
2314	drop 6	SE mid	FL 13 SF 15 m/s
2326	drop 7	"center"	missed center again on this pass, it's actually W of our line, still did drop at predicted center b/c LLC, which seemed to be NW of LLC, may have been there
2348	pattern	NW point	end outboard to NW, turn downward to try an SFR? shaking drop
2358	drop 8	mid pt. downward	SFR? shal drop, 40 kt str wind

28 28

Lead Project Scientist Event

Date Flight ID LPS

28.28
90.86

Time	Event	Position	Comments
0003	pattern	downward leg	climbing to 20 kft to try to get deep-layer drops and shifting a bit south to better
0015	obs	near W point	part. main band on S side TDR to W, at upward side of main band, shows 16-18 km echo tops, deep conv.
0016	drop 9	W pt (end pt)	at 20 kft, PL 11 SF 9 m/s
0026	drop 10	W mid pt	PL 13 SF 9 m/s
0034	drop 11	W of PL center	dropped early b/c have to descend before hitting ice
0040	obs	E of center	coming up on downward edge of band, seeing pretty widespread deep convection, most convection, 18 km E
0047	obs	E side, near mid pt	peak FL 60-65 kft at 10 kft
0049	drop 12	E mid pt	PL 25 SF 20 m/s
0000	drop 13	E end pt	PL 25 SF 15 m/s
0119	pattern	S point	passing ~10 km E of cells; intense core on LF but it's only 6 km → heavy shallow/moderate convection
0130	drop 14	N point of module	PL 20, SF 5 m/s
0136	obs	obs 11 S leg of mod	TDR shows cell has grown a little, bit larger in horiz. scale strat. on inside edge
0142	drop 15	end of module	

Mission Summary

Scientific Crew (42RF)

Lead Project Scientist Reasor
 Radar Scientist Reasor
 Cloud Physics Scientist —
 Dropwindsonde Scientist Sellwood
 Boundary-Layer Scientist —
 Workstation Scientist —
 Observers (affiliation) — Zamistak

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

See previous

Mission Synopsis: (include plot of actual flight track) Plan mission as planned. Extended

legs on S side to 120 nm to better capture the band evident on satellite. ~~W-E~~ Dropped 2 sondes on leg as we were emerging offshore for SFRS shooting module. Completed butterfly, W-E leg climbed to 20kft on W side for drops. Shifted W-E leg south to try to sample main band on S side. Was to for N on west side of band, but passed thru band on E side. Did landfall module on E side outside main circ. Sampled ~ 30 nm near line of cells that was

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

Mission was successful. 3 radar and 400s transmitted, 15 drops land stat. mostly underated shallow convection

flew at high altitude on W side of W-E leg storm is still trying to align and summarize, but struggling in (shear, drag) and proximity to land. Band on S shows nice along-band

Problems: (list all problems)

No problems
 | initiation from convective upward to stratiform downward
 | LLC & MLC appears to be coming into closer alignment, LLC may be consolidating some. But limited time before landfall.

Expendables used in mission:

	Deployed	Good	Bad
GPS sondes:	15	15	—
AXBTs:	—	—	—
Sonobuoys:	—	—	—
UAVs	—	—	—