

Lead Project Scientist

Preflight

- ☒ 1. Participate in general mission briefing.
- ☒ 2. Determine specific mission and flight requirements for assigned aircraft.
- ☒ 3. Determine from field program director whether aircraft has operational fix responsibility and discuss with AOC flight director/meteorologist unless briefed otherwise by field program director.
- ☒ 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.
- ☒ 5. 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.
- ☒ 6. Report status of aircraft, systems, necessary on-board supplies and crews to appropriate HRD operations center (MGOC in Miami).
- ☒ 7. Before take-off, brief the on-board GPS dropsonde operator on times and positions of drop times.
- ☒ 7. Make sure each HRD flight crew members have life vests
- ☒ 7. Perform a headset operation check with all HRD flight crew members. Make sure everyone can hear and speak using the headset.
- ☒ 8. Collect "mess" fee (\$2.00) from all on-board HRD flight crew members.

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. Report landing time, aircraft, crew, and mission status along with supplies (tapes, etc.) remaining aboard the aircraft to MGOC.
- ☐ 3. Gather completed forms for mission and turn in at the appropriate operations center. [Note: all data removed from the aircraft by HRD personnel should be cleared with the AOC flight director.]
- ☐ 4. Obtain a copy of the 10-s flight listing from the AOC flight director. Turn in with completed forms.
- ☐ 5. Obtain a copy of the radar DAT tapes. Turn in with completed forms.
- ☐ 6. Obtain a copy of the all VHS videos from aircraft cameras (3-4 approx.). Turn in with completed forms.
- ☐ 7. Obtain a copy of CD with all flight data. Turn in with completed forms.
- ☐ 8. Determine next mission status, if any, and brief crews as necessary.
- ☐ 9. Notify MGOC as to where you can be contacted and arrange for any further coordination required.
- ☐ 10. Prepare written mission summary using **Mission Summary** form (due to Field Program Director a week after the flight).

Lead Project Scientist Check List

Storm or Project Emily Experiment name
 Date 7/18/05 Aircraft N43RF Flight ID 050718J

A. Participants:

HRD		AOC	
Function	Participant	Function	Participant
Lead Project Scientist	<u>Rogers</u>	Flight Director	<u>Mayeaux</u>
Radar	<u>Black</u>	Pilots	<u>Tekeest, Nelson</u>
Workstation	<u>Black</u>	Navigator	<u>Brakob</u>
Cloud Physics	<u>Panscher (arch)</u>	Systems Engineer	<u>Barr</u>
Photographer/Observer	<u> </u>	Data Technician	<u>Sam Grier</u>
/Guests	<u> </u>	Electronics Technician	<u> </u>
Dropwindsonde	<u>Black</u>	Other	<u> </u>
AXBT/AXCP	<u>Whorn</u>		

B. Take-off and Landing Times and Locations:

Take-Off: 133949 UTC Location: MPAC
 Landing: 225232 UTC Location: MacDill

Number of Eye Penetrations: 3

C. Past and Forecast Storm Locations:

Date/Time	Latitude	Longitude	MSLP	Maximum Wind

D. Mission Briefing:

Tasked SFR mission into Emily. Takeoff from San Jose, fly north around Yucatan peninsula, enter system on west side of Yucatan. 18 and 21 fix responsibilities.

E. —Equipment Status (Up ↑, Down ↓, Not Available —, 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	↑			
Videography	○			

REMARKS:

Lead Project Scientist Event Log

Date 7/8/05 Flight 050718I LPS Rogers

Time	Event	Position	Comments
133348	takeoff	MROC	takeoff from MROC
165825	at CP	1P, 105 nm NE eye	FL winds 57 kts @ 167°, SF winds 34 kts
170042	rebar	95 nm NE eye	strong band about 120 nm out, tops up to 10 km; eye about 50 nm offshore of Yucatan
171138	winds	50 nm NE eye	FL winds 70 kts, SF winds 55 kts
171436	drop 1	NE eyewall	FL winds 75 kts; SF 60 kts
171703	obs	in eye	cloud covered eye; about 45 nm diameter
172238	drop 2 - in eye	21°53' 90°14'	extrop. st. press. 978; GPS 983.5
172949	winds	SW eyewall	FL winds 40 kts; SF 50 kts
173056	drop 3	SW eyewall	
173442	winds	outside of SW eyewall	winds in eye drop were 5 kts over much of drop drop except at surface, where it was 15 kts. southerly. Possibly vortex is tilted toward NE?
174816	obs	100 nm SW eye	strong cell SW of eye
174905	turn	105 nm SW eye	turn to track 120, head to coast & prepare for S-N leg
180141	turn to 020	95 nm S of eye	begin beach run; SF winds around 35 kt, FL winds same; inbound leg now
181843	turn to 360	22 nm S of eye	heading into eye now
182002	winds	20 nm S of eye	FL 48 kts, SF 30 kts
182014	drop 4	S eyewall	eye wall open on S side; SW, SF two
182200	winds	inside S eyewall	FL winds still increasing to 50 kt; st. winds to 44 kts

Lead Project Scientist Event Log

Date 7/18/05

Flight 050718I

LPS Rogers

Time	Event	Position	Comments
182327	obs	in eye	Eye appears a bit more clear above; max reflectivity on NW side of eyewall
183056	drop 5 - center	in eye	eye hunting
183613	drop 6 - center again	in eye; 22°3'40"26'	center; 983 mb
183849	winds	near N eyewall	SF & FL winds equal here
184427	drop 7	N eyewall	FL 70 kt; SF 60 kt
184811	winds	90 nm N of eye	FL winds constant at 68 kt, SF winds dropping steadily to 40 kt
191200	radar	110 nm NW of eye	Rain shield extensive in this quadrant
193349	turn	158 nm WNW of eye	turn to 115 track, begin final leg
193721	pattern	1937 37	do a 360° leg to kill time before final fix
200018	winds	70 nm NW of eye	FL 50 kt; SF 50 kt
200524	drop	NW eyewall	FL 60 kt; SF 60 kt
	drop (center drop)	22°15'40"84'	heading forward E now for another round leg; SLP 984
201430	radar	in eye	eyewall appears to be closing along SW side.
2018	drop 10	22°15'40"15'	FL 70 kt; SF 55 kt
225232	land	Marshall	land at Marshall AFB

Mission Summary

Storm name

YYMMDDA# Aircraft 43RF

Scientific Crew (43RF)

Lead Project Scientist Rogers
Radar Scientist Black
Cloud Physics Scientist Fauschauer
Dropwindsonde Scientist Black
Boundary-Layer Scientist Milhorn
Workstation Scientist Black
Observers _____

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

See previous

Mission Synopsis: (include plot of actual flight track) flew tasked AX (SPAR mission into Emily. 105 min - length legs, 10,000 ft. altitude. IP began NE of center, went SW, then S to coast, beach patrol around to point S of center, then north, then a downwind leg to point NW of center, then a leg to a point SE of center, RTB from there.

Evaluation: (did the experiment meet the proposed objectives?) Yes. Measured surface winds, flight level winds, and MSLP which allowed NHC to reduce Emily to a minimal hurricane. Eyewall was open on SW, S, SE side initially, showed signs of closing again by final pass. MSLP rose 1 mb while in storm.

Problems: (list all problems)

None

Expendables used in mission:

GPS sondes: 8

AXBTs: 0

Sonobuoys: 0