

Lead Project Scientist

Date **Aug. 30, 2019**

Flight ID **20190830H1**

Storm or Project **DORIAN**

Experiment name **EMC TOR**

Mission ID

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 **DORIAN**

Experiment name **EMC**

Flight ID **2019083041**

~~Mission ID~~

A. Participants:

Function	Participant	Function	Participant
Lead Project Scientist	ALAKA	Flight Director	HOLMES
Radar	SIPPEL	Pilot	DIDIER
Workstation		Pilot	MITCHELL, DOREMUS
Cloud Physics		Navigator	FREEMAN
Drosonde	DAHL	Systems Engineer	
Drosonde		Data Technician	
AXB/AXCP		Electronics Technicians	
Observer/Guest	NEWCOMB, GONSALVES		
Observer/Guest	MECKLEY, SUR	Flight Engineer	

B. Take-off and Landing Times and Locations:

Take-Off: 0922 UTC Location: KLAL

Landing: 1702 UTC Location: KLAL

Number of Eye Penetrations: 3

C. Past and Forecast Storm Locations:

Date/Time	Latitude	Longitude	MSLP	Maximum Wind
30/0300Z	23.3°N	68.4°W		90
30/1200Z	24.3°N	69.4°W		100
31/0000Z	25.4°N	71.1°W		105
31/1200Z	26.0°N	73.0°W		110
01/0000Z	26.3°N	74.7°W		115

D. Mission Briefing:

*Don't backup MIDs

*Coordinate 2nd pass with CYGNSS

EMC TDR @ 10K' pressure → now 8K' because of AF Teal

Sondes/BTs: 30/6

Storm or Project DORIAN Experiment name FMC TDR

Flight ID 20190830H1

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	U			
Doppler Radar/TA	U			
Cloud Physics	N/A			
Data System	U			
GPS sondes	U			
AXBT/AXCP	U			
Ozone instrument	N/A			
Workstation	U			
Cameras	U			

REMARKS:

Lead Project Scientist Event

Date Aug. 30, 2019 Flight ID 20190830H1 LPS ALAKA

Time	Event	Position	Comments
0922Z	Takeoff from KLAL		
	Did the other crew grab our 29H1 data?		
	Need a better way to coordinate		
1100Z	G-IV might not fly. JS and I decided to add ~3 drops on the ferry home at high altitude		
1109Z	TDR master froze. Data + FD are aware		
1128Z	TDR master fixed		
1130Z	IP is embedded in convection. Trying to get there		
1146Z	PRF Fault for Slave TDR → Dana will restart		
1147Z	Slave TDR fixed		
1153Z	Reached IP	24.8°N 70.7°W	
	DROP1 END		EMC
1204Z	DROP2 MID		EMC
	AXBT1		combo
1210Z	DROP3 RMW		NESDIS
1212Z	DROP4 RMW		NESDIS
1215Z	Mark Center	24.18°N 69.4°W	FD: 24.20°N 69.46°W
	DROP5 CTR	24.18°N 69.42°W	NE EMC
	SFMR to 85kt, FL 75kt		
	FL 100kt in NW eyewall		
	Old eye embedded in new 15mi eyewall		
1227Z	DROP6 MID		EMC
	AXBT2		1min data
1237Z	DROP7 END		EMC
1300Z	DROP8 END		EMC

✓
✓
X
✓
X

Lead Project Scientist Event

Date Aug. 30, 2019 Flight ID 20190830H1 LPS ALAKA

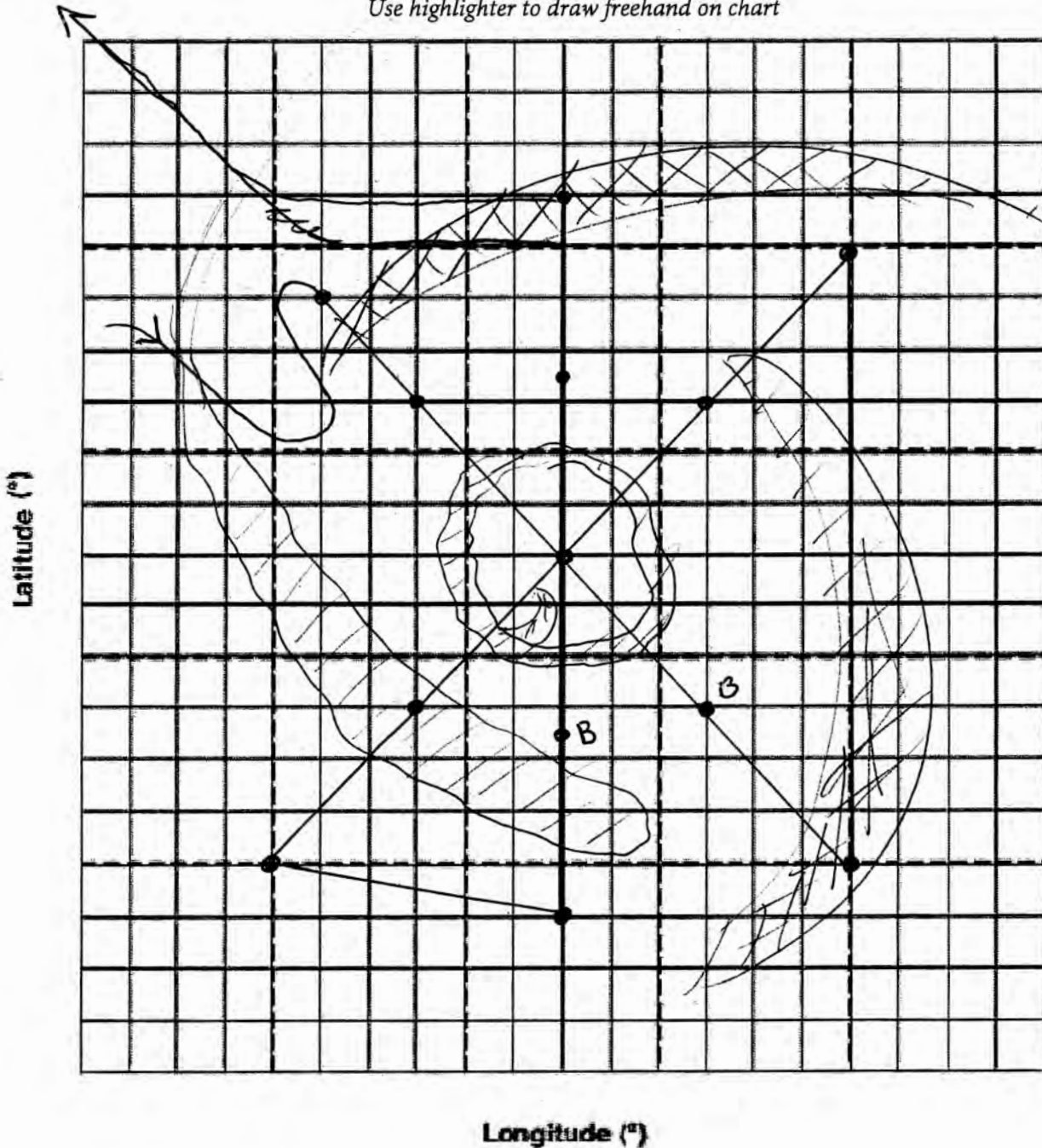
Time	Event	Position	Comments
1311Z	DROP 9 MID		EMC
	AXBT 3		
1318Z	DROP10 RMW		NESDIS
132323Z	Mark Center	24.42N 69.64W	
	DROP11 CTR		EMC
1335Z	DROP12 MID		EMC
	No AXBT combo		Not enough prep time
1344Z	DROP13 END		EMC
	JS and PR solved the TDR data transfer issue		
	1st and 2nd jobfiles have been sent		
	DN also very helpful		
1403Z	DROP14 END		EMC
1411Z	DROP15 MID		EMC
	AXBT 3		
	Banding and cells to south of CTR		
	New eyewall almost complete, eye clear below P3		
142209Z	Mark Center	24.48°N 69.78°W	
	DROP 16 MID CTR		EMC
1425Z	DROP17 RMW		NESDIS
1435Z	DROP18 MID		EMC
	No AXBT combo		
1444Z	DROP19 END		EMC
	Additional 4 drops on ferry home to sample environment and make up for G-IV. So We will climb to 22kft and at fly along 28°N. Drops at 71.5°W, 73.5°W, 75.5°W, 77.5°W		

71.5, 73.5, 75.5, 77.5

Observer's Flight Track Worksheet

Date Aug. 30, 2019 Flight 20190830HI Observer ALAKA

Use highlighter to draw freehand on chart



• = DR00
B = AXBT

Mission Summary

Scientific Crew (4 RF)

Lead Project Scientist

ALAKA

Radar Scientist

SIPPEL (REASOR)

Cloud Physics Scientist

Dropwindsonde Scientist

DAHL

Boundary-Layer Scientist

Workstation Scientist

Observers (affiliation)

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



15 sondes (+ ? RMW)

Mission Synopsis: (include plot of actual flight track)

23 sondes (22 good; 1 EMC, 4 NESDIS, 4 NWS)

Observed eyewall evolution → dominant 15nm eye

Some intensification during mission

Eye really became defined on IR/VIS as we left storm.

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

Great TDR coverage

Synced 2nd pass with CYGNSS

"G-IV" drops from 26kft on ferry home

Problems: (list all problems)

No large external HDD

TDR went down (master and slave restarted separately)

RI starting?

Expendables used in mission:

	Deployed	Good	Bad
GPS sondes :	23	22	1
AXBTs :	4	3	1
Sonobuoys:	—	—	—
UAVs	—	—	—