

Lead Project Scientist

Date 9/4/2019 Flight ID 20190904#1
Storm or Project Dorian Experiment name Dorian TDR
Mission ID 4405A Dorian

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 TDR

Flight ID 20190904H1

Mission ID 4405A Dorian

A. Participants:

Function	Participant	Function	Participant
Lead Project Scientist	<u>Marks</u>	Flight Director	<u>Parrish</u>
Radar	<u>X. Zhang / Gamache (ground)</u>	Pilot	<u>Kahn (Nate)</u>
Workstation	<u>-</u>	Pilot	<u>Rossi (Joe)</u>
Cloud Physics	<u>-</u>	Navigator	<u>Sam Urato</u>
Drosonde	<u>Sellwood</u>	Systems Engineer	<u>Richards</u>
Drosonde	<u>-</u>	Data Technician	<u>Mascuro</u>
AXBT/AXCP	<u>-</u>	Electronics Technicians	<u>McAlister</u>
Observer/Guest	<u>Zorana Jehnele</u>	Flight Engineer	<u>Darby / Tuffad</u>
Observer/Guest	<u>SAPP</u>		

channel
&
crew
(3)

B. Take-off and Landing Times and Locations:

Take-Off: 1946 UTC Location: Lakeland 28, 82

Landing: 0212 UTC Location: Lakeland 28, 82

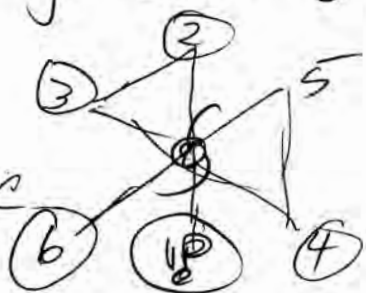
Number of Eye Penetrations: 6

C. Past and Forecast Storm Locations:

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

D. Mission Briefing:

Butterfly 105 nm legs start S → N
+ Ocean winds as requested
drops end, mid, RMW, 9 for EMC
6 AXBTs, IR drops



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44 missing in Dorian safer! Wow! 3M pattern 3rd modul drops 18xmitted 5IR 11 NESDIS

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	✓	✓	✓	6 analyses
Cloud Physics	✓	✓	✓	
Data System	✓	✓	✓	
GPS sondes	✓	✓	✓	34 total
AXBT/AXCP	✓	✓	✓	6/2 failed
Ozone instrument	—	—	—	
Workstation	—	—	—	
Cameras	✓	✓	✓	

REMARKS:

- Butterfly with 3 legs 2 at 8000' and last one at 10kft.
- All drops worked 18xmitted 5IR, 34 total 11 NESDIS
- 4 of 6 AXBT'S worked all combos with IRs and
- 3 Doppler analyses in Butterfly + 3 analyses for NESDIS ocean wind / convective burst patterns
- All objectives were met for EMC tasking
- Ocean winds module had 3 penetrations 2 with 3 sondes across surface RMW with return passes over splash point of RMW
- Perfect dataset for SFMR, JWRAP, TDR comparison in 100 kt winds

Lead Project Scientist Event

①

Date 9/4/2019 Flight ID 20190904#1 LPS Marks

Time	Event	Position	Comments
194616	TO	Lakeland 28.82	
2020	IP	29, 80	dropsande #1 TK 040 G depressing cu. in 8000' FL
202725	combo drop	29.5, 80	AXBT/IR sonde combo (27.5 SST) BT
203317	mid pt.	29.85, 79.95	
203645	RMW pt	30.05, 79.88	pk SFMR 75 kt FL
204350	G	30.5, 79.73	huge eye 30nm across interesting lots of mesos offbit in G
210005	RMW pt	30.87 79.3	drop 84 kt SFMR
210840	mid pt	30.4 79.7	
212145	②	32.25 79.73	dropsande turn TK 245 to staying offshore
2135	paralleling coast		to pick up TK to G
214130	③ coord	31.3 81.01	TK 120 to G drop
214744	mid pt	31 80.6	drop
215650	RMW		drop
2201	G	30.61 79.73	combo. IRsonde/AXBT (27.9 SST)
2208	RMW	30.4 79.27	drop
2216	mid pt	30.1 78.75	drop
2227	④	29.75 78	combo ^{APP} v _g BT (BT 4 failed)
2236	combo #1		IRsonde/BT
2243	combo #2		"
2250	combo #3		" SST 28.1 (BT failed)

#1 →

#2 →

AXBT
6/2 bad

2

Lead Project Scientist Event

Date 9/4/2019 Flight ID 2090904#1 LPS Marks

Time	Event	Position	Comments
2253	5	31.7 77.93	combo drop TK
		repressurized	10kft FL press Alt 240.66
230930	midpoint	31.13 78.85	drop
2315	RMW	31.00 79.25	drop RMW
232245	RMW	30.67 79.71	drop
	RMW		4 drops 3 NESDIS
234550	midpt	30.18 80.68	drop
2345	6	29.9 81.2	drop
			descend to 8kft TK 0457
001825	6	30.62 79.78	fav NESDIS
		8kft PA	TKW module
0019	leg #1	TK W	big bumps in west leg
0035	leg #2	TK 090	3 drops went through little hole in dB2
0052	leg #3	TK 280	
0104	leg #4	TK 060	3 drops
	leg #5		
	leg #6		
	leg #7		
	leg #8		
0117	leg 5		exit storm TK 226°
0227	land		

#3 →

#4 →

#5 →

#6 →

~~scribble~~

TK 240.66

3 NESDIS

TK 0457

in west leg

Heather needs to see these drops in module

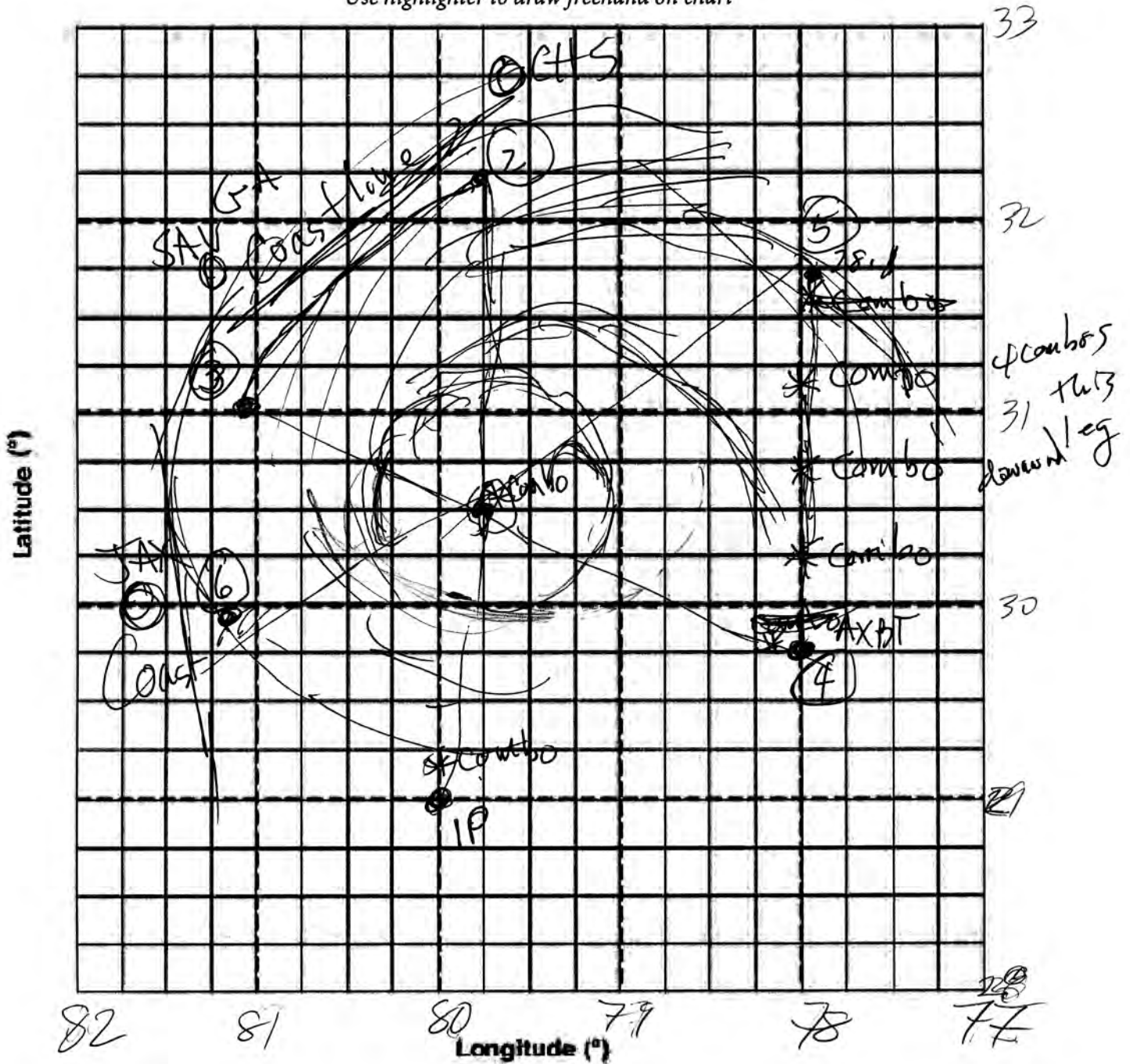
Observer's Flight Track Worksheet

Date 9/4/2019

Flight 20190904#1

Observer Marks

Use highlighter to draw freehand on chart



Mission Summary

20190904H1

Scientific Crew (42RF)

Lead Project Scientist Mark,

Radar Scientist X. Zhang / Grunche

Cloud Physics Scientist —

Dropwindsonde Scientist Sellwood

Boundary-Layer Scientist —

Workstation Scientist —

Observers (affiliation) Jelonek / Sapp

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

Mission Synopsis: (include plot of actual flight track)

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

Problems: (list all problems)

Expendables used in mission:

	Deployed	Good	Bad
GPS sondes :	34 / 5 IR	34	0
AXBTs :	6	4	2 *
Sonobuoys:	—	—	—
UAVs	—	—	—