

Lead Project Scientist

Date 2019-9-16

Flight ID 20190916H1

Storm or Project

Experiment name NESDIS Ocean Winds

Mission ID W109A

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 Humberto Experiment name Ocean Winds
 Flight ID 20190916H1 Mission ID WA09A

A. Participants:

Function	Participant	Function	Participant
Lead Project Scientist	Bucci	Flight Director	Lundry / Parrish
Radar	Alvey	Pilot	Kahn
Workstation		Pilot	Rossi / Legidakes
Cloud Physics		Navigator	Richards
Dropsonde	Aberson	Systems Engineer	
Dropsonde		Data Technician	Warnecke
AXBT/AXCP		Electronics Technicians	McAlister Naehor
Observer/Guest	Chang Hough	Flight Engineer	Darby
Observer/Guest	Zorana Sapp		

B. Take-off and Landing Times and Locations:

Take-Off: 1744 UTC Location: Lakeland

Landing: 0006 UTC Location: Lakeland

Number of Eye Penetrations: 8

C. Past and Forecast Storm Locations:

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

D. Mission Briefing:

Humberto satellite presentation has improved with an eye showing up on vis/IR. AF has found a 978 mb hurricane. Research calls for a single Figure-4 w/ 90 n. mi legs. Ends, mids, and 1 center for EMC. Following pattern, NESDIS will fly radials for high winds.

Storm or Project HUMERTO Experiment name NESDIS Ocean

Flight ID 20190910H1

Mission ID WA09A

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				
Data System				
GPS sondes	↑	↑		
AXBT/AXCP				
Ozone instrument				
Workstation	↑	↑		
Cameras	↑	↑		

REMARKS:

Lead Project Scientist Event

Date 9-16-2019 Flight ID 20190916H1 LPS Bucci

	Time	Event	Position	Comments
1	1842	IP sonde	30°9' 77°57'	Turned early to 090 to hit center based on surface roughness MMR
	1847	enter strat rain	20-40 dBZ	up to 10 km
	184630	completed descent to 8k		radar altitude
2	1856	sonde	inbound mid	stratiform rain good sonde
	1856	SFMR > 32 m/s	30°9' 76°43'	75kt FL
	1902	entered eyewall		36 m/s SFMR
	1904	estimate eye diameter		25 mi E-W elliptical
	1905	turn 5° right		to track better through eye
3	1907	center sonde		good sonde → chute
	1907	mark center	30°9' 76°3'	extrap. press. 973 mb
	1909	center open to east		
	1918	center info from sonde		0120° @ 6 kts 974.5 mb
4	1919	midpt sonde	30°9' 75°10'	good sonde
	1923	rain band		stratiform up to 12 km
5	1928	endp sonde	30°9' 74°27'	good sonde
	1929	turn to downwind		avoidance
				set up in a moat
	1937	SFMR ~ 20 m/s	radius of	TS winds > 105 n. mi.
		FL ~ 55 kts		
6	1957	end sonde		good sonde
	1955	early longer	turn to avoid	higher ^{dBZ} stratiform rain
	2000	inbound track	175 → difficult	to tell if correct on MMR
7	2007	midpt sonde		no launch detect → good GPS data
8	2008	midpt sonde		good sonde bad sonde
	2017	marked center		↓

winds
no thermo

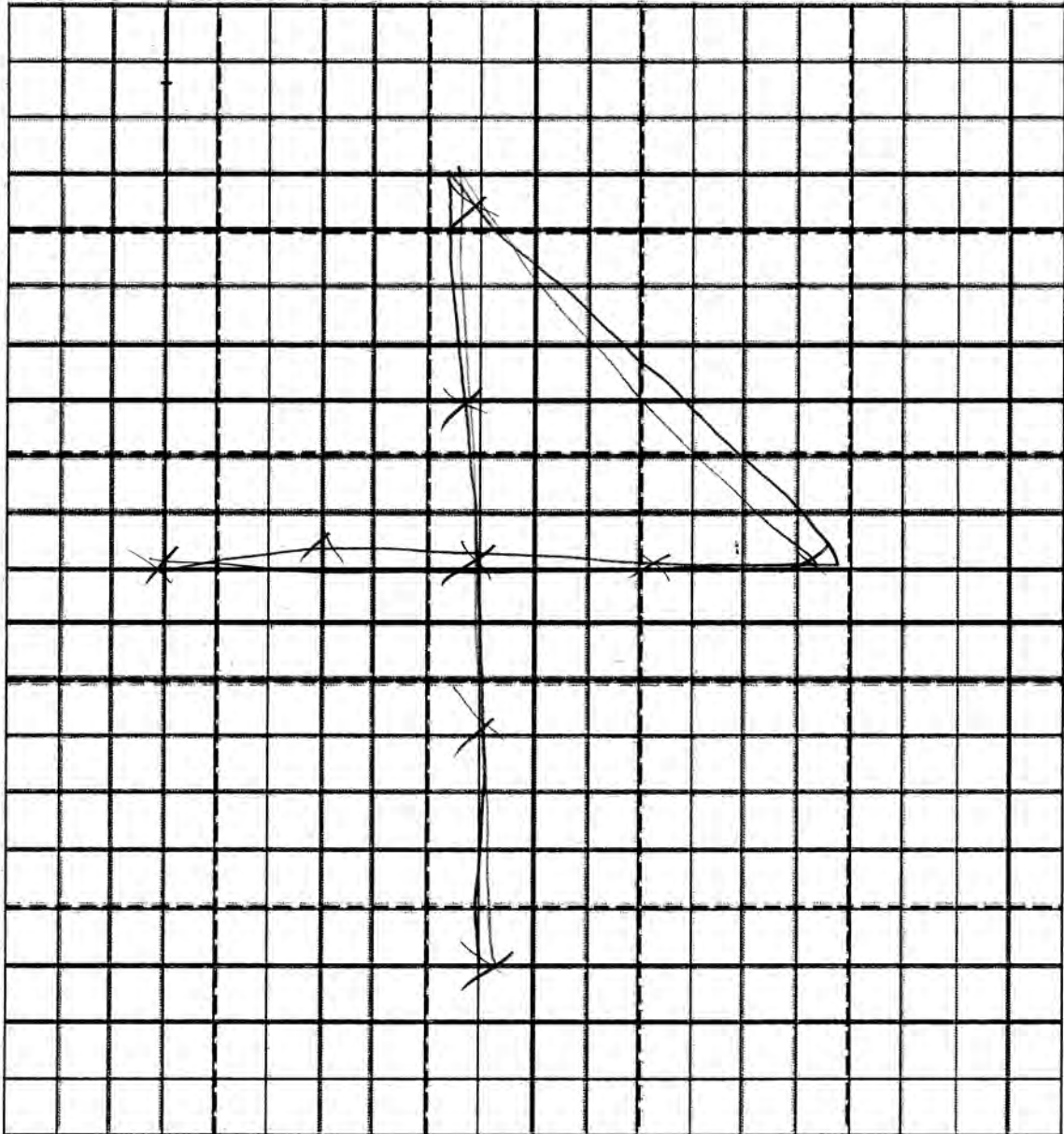
Observer's Flight Track Worksheet

Date _____

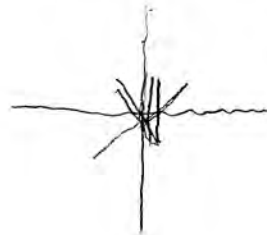
Flight 20190916H1 Observer Bucci

Use highlighter to draw freehand on chart

Latitude (°)



Longitude (°)



8 pennies

Mission Summary

Scientific Crew (4 RF)

Lead Project Scientist Bucc

Radar Scientist Alvey

Cloud Physics Scientist

Dropwindsonde Scientist Aberson

Boundary-Layer Scientist

Workstation Scientist

Observers (affiliation) Chang, Zorana (NESDIS)

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

See part D.

Mission Synopsis: (include plot of actual flight track)

Single Fig. 4. Used MMR surface roughness to target center w/out hunting (worked well with only 5° track shifts needed). ~~no~~ EWR cycle detected even though storm isn't very strong/organized. Strongest wind appear to be in SW quad. (based on radar)

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

Successful completion of pattern and transmission of radar analyses and sondes. On flight radar processing tested successfully.

Problems: (list all problems)

Ran out of gas and stopped radials

1 sonde no launch detect

1 sonde no thermo

Expendables used in mission:

Deployed 10 Good 8 Bad 2

GPS sondes : 10 mini sondes : 8

AXBTs :

Sonobuoys:

UAVs