

## Lead Project Scientist

Storm or Project ALOG/FLORENCE Experiment type EARLY STAGE EXPERIMENT  
Flight ID WAOCA Mission ID 20180908H1

### Preflight

- \_\_\_\_\_ 1. Participate in general mission briefing.
- \_\_\_\_\_ 2. Determine specific mission and flight requirements for assigned aircraft from the Field Program Director.
- \_\_\_\_\_ 3. 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.
- \_\_\_\_\_ 4. Meet with AOC flight director and navigator at least 3 hours before take-off for initial briefing.
- \_\_\_\_\_ 5. Determine from AOC flight director the mission designation and whether aircraft has operational fix responsibility
- \_\_\_\_\_ 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 drops.
- \_\_\_\_\_ 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. Request AOC flight director to leave radar in non-sector mode for initial Figure 4.
- \_\_\_\_\_ 5. Once at IP, request AOC flight director adjust radar tilt to minimize sea clutter.
- \_\_\_\_\_ 6. Complete Lead Project Scientist Form.
- \_\_\_\_\_ 7. Check in occasionally 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 Dropsonde raw and processed files from the AVAPS operator on thumb drive.
- \_\_\_\_\_ 4. Obtain a copy of the radar LF files from the radar technician on thumb drive.
- \_\_\_\_\_ 5. Obtain a copy of the tar'ed radar TA files from the radar scientist on thumb drive.
- \_\_\_\_\_ 6. Obtain a copy of serial flight data and raw NetCDF file on thumb drive from the data technician.
- \_\_\_\_\_ 7. Obtain a copy of SFMR data on thumb drive from the data technician.
- \_\_\_\_\_ 8. Obtain a copy of DMT data on thumb drive from the data technician.
- \_\_\_\_\_ 9. Report landing time, aircraft, crew, and mission status to the Field Program Director.
- \_\_\_\_\_ 10. Determine next mission status, if any, and brief crews as necessary
- \_\_\_\_\_ 11. Prepare written mission summary using **Mission Summary** form.

### Lead Project Scientist Check List

Storm or Project ALOG / FLORENCE Experiment name EARLY STAGE EXPERIMENT

Flight ID 20180908HI Mission ID UA06A

**A. Participants:**

HRD		AOC	
Function	Participant	Function	Participant
Lead Project Scientist	<u>ZAWISLAK</u>	Flight Director	<u>HOLMES</u>
Radar/Workstation	<u>REASOR</u>	Pilots	<u>KIBBEY</u> <u>ABIBOL</u>
		Navigator	
Cloud Physics		Systems Engineer	
		Data Technician	<u>MASLARO</u>
Dropwindsonde	<u>HOLBACH</u>	Electronics Technician	
AXBT/AXCP		Other	<u>GREENE (MMR)</u>
Photographer/Observer	<u>MILES O'BRIEN</u>	<u>PAUL CHANG</u>	
s/Guests		<u>GORAN JELENC</u> <u>JOE SAPP</u> <u>&gt; NESDIS</u>	

**B. Take-off and Landing Times and Locations:**

Take-Off: 1150 UTC Location: BERMUDA

Landing: 1959 UTC Location: BERMUDA

Number of Eye Penetrations: \_\_\_\_\_

**C. Past and Forecast Storm Locations:**

SHIPS SURR 18Z: 284/6kt

Date/Time	Latitude	Longitude	MSLP	Maximum Wind
<u>08/0800Z</u>	<u>24.5N</u>	<u>54.2W</u>	<u>997</u>	<u>55 KT</u>
<u>08/1500Z</u>	<u>24.5N</u>	<u>54.3W</u>	<u>995</u>	<u>55 KT</u>

w/ 16kt

**D. Mission Briefing:**

→ WE COULD ALSO CATCH AN OVERPASS

PLAN TO DO PARTIAL CIRCUMNAVIGATION ON WEST SIDE OF STORM AT ANYWHERE FROM 90 TO 120 NM IN HORIZONTAL VMC. THEN GO INBOUND ON EITHER 210° OR 240° FOR BUTTERFLY - ENDING ON WEST OR NORTHWEST SIDE.

8-10KT FOR RADAR → WANTS 7 KFB.

BUT OF WEATHER EN ROUTE TO COME W/ ASSOCIATED W/ AL 94.

ENC TO: AL. WE'LL BE DOING FIXES FOR MHC. FIRST AIRCRAFT INTO AFT STORM

→ WILL START BUTTERFLY AT 240° AFTER CIRCUMNAVIGATION.



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Flight ID 20180908H1 Mission ID WAOGA

E. — Equipment Status (Up ↑, Down ↓, 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:

1 WRAP ON BOARD

2<sup>nd</sup> DOWN LOOKING SFMR (HPOL/VPOL) + UPWARD LOOKING

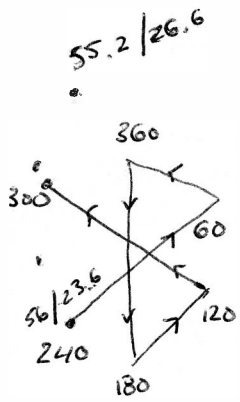
ISSUE W/ SFMR SENS THAT AFFECTED ABILITY TO GET  
SURFACE WINDS, LED TO 2 AMP/3 REBOOTS AND  
LED TO CHANGED MISSION ID

# Lead Project Scientist Event Log

Date 9/8/18 Flight ID 20180908 H1 LPS ZAWISAK

Time	Event	Position	Comments
1150	TAKEOFF	BERMUDA	NOW ON FERRY TO IP, WHICH WILL BE THE BEGINNING OF THE CIRCUMNAV. ON WEST SIDE OF STORM
			55.2 W / 26.6 N 56.1 W / 26.36 N 50.1 W / 23.6 N
			STORM IS LOOKING HEAVENLY TODAY W/ CONVECTION NOW UNBROKEN APPARENTLY ON THE UPSIDEAR SIDE THE SHEAR IS FROM SW TO SE PRECIP NOW VIS, THROUGH THE ASYMMETRIC AND A D. CLOUDS BE WRAPPING IN TROUGH ON THE EAST SIDE
			SUPRA LOOKS GOOD AT THIS POINT IN SOME
			NEED TO BE ON TRACK ABOUT 1430Z IF WE ARE TO CATCH THAT CLOUD OVERCAST
1315		27°14' / 57°15'	20 MIN FROM IP. STORM MOVING INTO BETTER ENVIRONMENT. LOOKING MORE SYMMETRIC WITH INNER CORE. AT LEAST CLOUD ON AROUND THE CENTER THE W. AIR IS MAY BE PUSHING BACK ON THE ENVIRONMENTAL SHEAR SEE IF THE CONVECTION SYMMETRIZES OR CONVECTION DEF. NEAR CTR. JUST WANT A DRY SLOT
1401	REACH IP	26°2' / 55°7'	DROP AT IP AT 20KFE IN NW AT 120NM AT 120 330° DR. DROP 1
			SHEAR NOT SHOWING UP CONDITIONS AHEAD LOOK GOOD STABLE SHALLOW CLOUD LAYERS
1409		~ 25°10' / 55°14'	CIRCUMV #2 AROUND 300° CIRCUMV AROUND VERTICALLY WITH LAYERS BUT NOT GROWING FROM BELOW DR. DROP 2 NO CLOUDS
	REBOOTING RAMP		TO TRY AND GET SOME W. WIND SHOWING SWS, WHICH COULD INDICATE
			WILL IMPACT RAMP ON WHAT WE THOUGHT COULD BE A DOWNWARD W. C.
1755		24°27' / 55°26'	DR. DROP 3 NO GEO P...
1802	END OF "CIRCUMNAV"	23°42' / 55°36'	END OF CIRCUMNAV AT LEAST THE 90 NM RADIUS DR. DROP 4

1405Z  
1440Z  
1431Z



SITING UNDER THE ANGLE ON THE WEST SIDE NOT MUCH GROWING UP UNDERNEATH BUT THEN AGAIN WE ARE QUIN ON HEAVY BUST OF CONVECTION ON THE NORTH SIDE.



52.74  
25.27

### Lead Project Scientist Event Log

Date 9/8/18 Flight ID 20180908H1 LPS ZAWISLAK  
/H2

Time	Event	Position	Comments
<del>1406</del>	SECTOR REBOOT AMPS		TIME WASN'T SHOWING UP. JUST GOING TO HAVE TO WAIT
	MISSION ID NOT CHANGE TO 20180908H2 BECAUSE OF THIS		
1430	SOME CONNECTION BURST ON THE NORTH SIDE		
1445	IP OF BURST	23° 49' / 55° 28'	START OF BURST IN INBOUND 240° DEVIATING TO THE RIGHT SIDE
1456	MIDPOINT INBOUND 1	24° 3' / 54° 43'	MIDPOINT INBOUND 240° BUT HEADING 047 DEFINITELY SOME DEEP CONNECTION AROUND WEST/NORTH SIDE
1506	600 OUT CTR 1 99150m 983 RETURN	24° 29' / 54° 15'	CTR 1 991mb 210/9
1518	060 NEW MIDPOINT OUTBOUND 060°	24° 5' / 53° 33'	NOW IN CLEAR B/W OUTSIDE EYEWALL AND OUTER BAND. CONNECTION BEING CRAWLING AROUND THE CTR NOW, BUT SOL ARE ON WEST EAST OF THE CTR.
1528	CALL THIS THE ENDPOINT FOR RADAR PURPOSES		
1530	ENDPOINT SONDE.	25° 23' / 52° 52'	ENDPOINT OF 060° OUTBOUND TO BE ALOT OF CONNECTION BAND TO EAST. STAY INSIDE OF IT
1548	IP FOR GOING SOUTH	25° 58' / 54° 6'	RE SONDE CMTN 1 TRACKING SOUTH ON 360° KIND OF JUST START OF BAND. SHOULD BE LEFT OF 511711
1600	NEARING MP INBOUND TO CTR	25° 13' / 51° 12'	INBOUND FROM NORTH A LOT OF FAIRLY CLEAR, BUT A FEW WINDS OF THE EYEWALL.
1602	MIDPOINT	25° 0' / 54° 13'	MIDPOINT TO NORTH, PART 2 GOOD RETURN NOW.
1611	990 EXTRA CTR #2 991mb 15/1615	24° 33' / 54° 21'	CENTR 2, CLOSED EYEWALL NOW SOO BELOW CLOSE TO HURRICANE WINDS ON THE RADAR ANALYSIS RETURN CLEARER AS TO THE SOUTH OF EYEWALL FEW WINDS DEFINITELY TO THE NORTH NEARBY HURRICANE
1624	MIDPOINT SOUTHWEST	23° 47' / 54° 31'	SCATTERED BANKING AROUND OUTSIDE.
1635	ENDPOINT TO SOUTH	22° 59' / 54° 32'	ENDPOINT TURNING DOWNWARD.

54.18  
26.00

54.2  
27.0

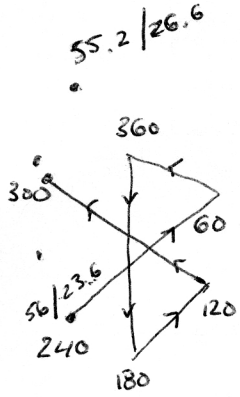
EP  
DROP 5  
MP  
DROP 6  
1BT COM  
6202  
DROP 7  
TR NWS  
DROP 8  
2 M BT COM  
6007 53  
MP  
DROP 9  
DROP 10  
3BT COM  
EP  
DROP 11  
BT COM  
4 MP  
DROP 12  
NWS  
DROP  
DROP 13  
BT COM  
5  
DROP 1

# Lead Project Scientist Event Log

Date 9/8/18 Flight ID 20180908 H1 LPS ZAWISAK

Time	Event	Position	Comments
1150	TAKEOFF	BERMUDA	NOW ON FERRY TO IP, WHICH WILL BE THE BEGINNING OF THE CIRCUMNAV. ON WEST SIDE OF STORM  55.2 W / 26.6 N 55.19' 26.36' 56 / 23.6
			STORM IS LOOKING HEAVIER TODAY W/ CONVECTION NOW WRAPPING, APPARENTLY ON THE UPSIDEAR SIDE THE SHEAR IS FROM SW SO PRECIP NOW DRY, THROUGH FOLK ASYMMETRIC, DRY AIR COND (BE WRAPPING IN THOUGH ON THAT EAST SIDE)
			SU FAR LOOKS GOOD AT 120 NM, HOPEFULLY WE CAN PUSH IN SOME
			NEED TO BE ON TRACK TO CATCH THAT CROWN OVERPASS
1315		27°14' / 57°15'	ABOUT 1430Z IF WE ARE 20 MIN FROM IP.  STORM MOVING INTO BETTER ENVIRONMENT, LOOKING MORE SYMMETRIC WITH INNER CORE, AT LEAST CLOUD BY APPROX. THE W/FLOW MAY BE PUSHING BACK ON THE ENVIRONMENTAL SHEAR.  SEE IF THE CONVECTION SYMMETRIZES DSR CONVECTION DEV. NEAR CTR. JUST WANT A DRY SLOT
1401	REACH IP	26°2' / 55°7'	DROP AT IP AT 20KFE IN NW AT 120NM ALONG 330° OR SFR NOT SHOWING UP  CONDITIONS AHEAD LOOK GOOD SCATTERED SHALLOW CLOUD (AFTER)
1409		~ 25°10' / 55°14'	CIRCUMV #2 AROUND 300°  CIRCUV ABOVE VORTWIS CUM (AFTER) BUT NOT IN GROUND FROM BELOW
	REBOOTING RAMP		WILL IMPACT RAMP ON WHAT WE THOUGHT CULD BE A DOWNRAMP W/ C
	TO TRY AND GET SOME UP. WANT TO SHOWING STR, WHICH GET INDR		
1755		24°27' / 55°26'	
1802	END OF "CIRCUMNAV"	23°42' / 55°36'	END OF CIRCUMNAV AT LEAST THE 90 NM RADIUS

1405Z  
1440Z  
1431Z.



DROP 1  
  
DROPP 2  
NO CUMUL.  
  
DROPP 3  
NO GEO P  
  
DROPP 4

SITING UNDER THE ANGLE ON THE WEST SIDE NOT MUCH GROWING UP UNDERWEIGHT, BUT THEN AGAIN, WE ARE QUIN ON HEAVY BUST OF CONVECTION ON THE NORTH SIDE.

### Lead Project Scientist Event Log

Date 7/8/18 Flight ID 20180908H1/112 LPS Zawislak

Time	Event	Position	Comments
1700	INBOUND POINT TO SE INBOUND WIND BE 300°	23°46' / 52°57'	GOING TO DO 3 CIRCLES AT 30°
			NOW A LOT MORE CONNECTION NEAR THE CAR AND MORE AT A FORWARD RADAR
1711	INBOUND	23°47' / 53°6'	AFTER 3 30° CIRCLES FOR CHANGE NOW TURNING INBOUND
			NHC WON'T SEE AWIPS DATA.
			FOR 3 CIRCLES, WIND WAS LESS THAN IDEAL FOR MORE SEVER CIRCLES.
	2 BANDS FOR RENEWAL		LOOKS LIKE WE COMING HOME
1723	MIDPOINT INBOUND 120°	24°14' / 53°48'	S HEADING TOWARD A COUPLE OF BANDS THAT ARE RENEWAL.
			AGAY DEED CONNECTION ALL THE WAY AROUND THE CENTER
		SE K PAK FL IN.	
1733	990 205/14 CTR 3 989 FX1	24°33' / 54°27'	FARER OPEN IN CENTER LOW CLOUDS BUT CLEAR ANUL OVERHEAD.
			FALLEN BELOW RENEWAL
			CLOUD ON NW SIDE MUST BE ANUL FROM UP IN V1/R
			STEADY STATE, BUT ABOUT TO GO R?
1744	MIDPOINT OUT ON 300°	24°58' / 55°15'	MIDPOINT, CLEAR BELOW OUT OF PRECIP.
1754	ENDPOINT OF 300° AND BUTTERFLY	25°17' / 55°51'	REACHED END OF PATTERN BUTTERFLY
			END SCIENCE

53 KT INBOUND FROM SE

DROP 15 BT COMP

DROP 16 BT COMP

DROP 17 VWS 3

DROP 18 BT COMP &

DROP 19

## Mission Summary

### Storm name

YYMMDDA# Aircraft 4ZRF

20180908H4/H2

Scientific Crew (4 RF)

Lead Project Scientist ZAWISLAK

Radar Scientist REASOR

Cloud Physics Scientist \_\_\_\_\_

Dropwindsonde Scientist HOLBACH

Boundary-Layer Scientist \_\_\_\_\_

Workstation Scientist \_\_\_\_\_

Observers (affiliation) MILES O'BRIEN

CHANG  
ZELFMAN  
SAPP

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

PLAN FOR PARTIAL CIRCUMNAVIGATION OF WEST SIDE OF TROPICAL STORM FLORENCE AT 20KFE FROM 330° TO 210°, FOLLOWED BY ROTATIONAL PATTERN SW-TW, N-TS, SE-TW. AT 10KFE, THINGS COULD BE OK FOR A COMPROMISE W/ POU CHANGE (WIND, POSITIVE CONVECTION BARR, WIND LEGS, BUT MAY NOT BE TIME

Mission Synopsis. (include plot of actual flight track)

FIVE WIND PARTIAL CIRCUMNAVIGATION OF THE WEST SIDE, ALTHOUGH IT WAS MORE N-TS. HIT THE 330 TURN WIND LEGS SINCE IT WAS CLEARER THERE IN THE 120 AREA. GOT 4 DROPT W/ HUR. THEN DROPPED DOWN TO 8KFE TO AT 240 INBOUND, 60° OUT, 360°/180°, 120°/300° AND GOT MIDS (END), CR, NO RAW. 8 AXBTs, 7 WINDS, CONVECTION POINT N AND SE

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

STORM WAS ABOUT ~990mb, 60% → PREM SFC TO NIGHT/NE. INNER CORE VERY MUCH MORE SYMMETRIC. DEEP CONVECTION GOT ALL THE WAY AROUND THE CENTER FOR AN EXTENSIVE PERIOD. THERE IS A ORA JUST ~ 30. GOING AHEAD W/ WIND IT MAY HAVE TO OVERCOME

SE WAS ASSOCIATED W/ CLOUDS RE QUESTS BY POU CHANGE.

Problems: (list all problems)

SEMR WASN'T DISBURGING WIND AND IT COULD BE RELATED TO NAV IN SST. TRIED REBOOTING AAMPs TO FIX. SO PROBLEM WITH THE DATA SYSTEM AND UP TO FIX → IN EARLY CIRCUMNAVIGATION. WILL WE GET RADAR DATA ON THE W/ PATH DUE TO AAMPs BEING TAKEN DOWN. BUT FLIGHT ID ALSO H2 NOW

Expendables used in mission.

GPS sondes . 19 (3 (1st 3) NO GROUNDWATER HEIGHT)

AXBTs . 8 (7 (6))

SONDES IN CIRCUMNAV HAD NO BENEFICIAL OR IMPLICATION. BLK OF DATA SYSTEM

Sonobuoys: —