

Lead Project Scientist

Storm or Project T09 (AL09) Experiment name NHC FIX (RI)
Flight ID 20160831T1 Mission ID NOAA3 1009A CYLLONE

Preflight

- ___ 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 MGOC in Miami.
- ___ 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 MGOC.
- ___ 7. Determine next mission status, if any, and brief crews as necessary.
- ___ 8. Notify MGOC 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 TD9 (AL09) Experiment name NHC FIX / RI

Flight ID 20160831I1 Mission ID NOAA3 1009A CYCLONE

A. Participants:

HRD		AOC	
Function	Participant	Function	Participant
Lead Project Scientist	<u>ZAWISLAK</u>	Flight Director	<u>WILLIAMS / SEARS</u>
Radar/Workstation	<u>ANNANE</u>	Pilots	<u>KERNS / ABITBOL</u>
		Navigator	<u>GALLAGHER</u>
Cloud Physics		Systems Engineer	<u>LYNCH</u>
		Data Technician	<u>MASCARO</u>
Dropwindsonde	<u>ZAWISLAK / BRAMMER</u>	Electronics Technician	
AXBT/AXCP		Other	
Photographer/Observer s/Guests	<u>BRAMMER</u>		

B. Take-off and Landing Times and Locations:

Take-Off: 1550 UTC Location: MacDill

Landing: 0029 UTC Location: MacDill

Number of Eye Penetrations: _____

C. Past and Forecast Storm Locations:

CURRENT :

Date/Time	Latitude	Longitude	MSLP	Maximum Wind
31/1500Z	24.6	-88.0	1001pb	30KT
FCST 31/1800Z	25.4	-87.8	1001	30 KT
VOM 31/1803Z	25.3	-87.8	1004	42 KT PEAK
VOM 31/1918Z	25.25	-87.35	1004	29 KT PEAK
VOM 31/2054	24.75	-87.3	1002	29 KT PEAK
VOM 31/2211	24.95	-87.08	1002	58 KT IN BOUNDARY MAX BUT 52 KT SFC OUTBOUND
VPM 31/2212	25.28 26	-87.17	1001	SHEAR: 11 KT FROM 318° 15° 96° AT 6000'

D. Mission Briefing:

NHC FIX TODAY 1730Z AND 2330Z. SAME PATTERN. START NW → SE, NW → SE, THEN FOR US S → N, DOWNWIND FOR W → E, THEN WE'LL SEE. SS ROUTES FIG 4. BE AT SKT FOR WHOLE FLIGHT. 2 XBTS ON SE END. DROPS MIDPOINTS/TURNS, POSSIBLY CENTER AS WELL, PARTICULARLY IF USEFUL FOR NHC. LOOKING AT STEADY INTENSIFICATION WHILE WE'RE OUT THERE.

2 XBTS SE END OF NW → SE LEG, W/ DROPS AT THOSE POINTS.

Storm or Project TD9 (AL09) Experiment name NHC FIX (r1)

Flight ID 20160831 I1 Mission ID NOAA3 1009A CYCLONE

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:

Lead Project Scientist Event Log

Date 8/31/16 Flight ID 2016 0831 I1 LPS ZAWISLAK

Time	Event	Position	Comments
1550	T/O		
1630			CARCAH DECISION TO START ON SE POINT
1717		24° 36' / 86° 30'	SFMR PBL WIND, 25 M/S
1730		23° 48' / 86° 22'	LOTS OF BANDING ON THE EAST SIDE.
1732	DROP 1 AT IP	23° 45' / 86° 24'	IP INBOUND FROM SE
1748	DROP 2	24° 35' / 87° 0'	MP INBOUND FROM SE
	MP		LOTS OF TURBULENCE COMING IN, SFMR COT TO 46, BUT IN RAIN
			WONT LOOK BETTER FOR SFMR
	CTR FIX ^{DROP 3} CTR	25° 18' / 87° 8'	UPSTREAM LOOKING A LOT CLOUDIER, MUCH LESS PRECIP
1815	DROP 4 MP	25° 52' / 89° 28'	MP UP OUTBOUND TO NW
			MIDLEVEL CIRCULATION DISAPPEARED
			SOUTHWEST STILL THICK UNDER 1000m
	VDM 1803Z	25° 18' / 87° 49'	
1830	DROP 5 AT PT 2	26° 32' / 89° 14'	EP OF SBE → NW, PRETTY CLEAR, SHALLOW CU
			BTs GOT OUT AT IP AND MP
1838			CARCAH WANTS GROUND ON THE SW TO NE
			GUESSES THEY DON'T SEE MUCH POINT OUTSIDE OF THERE
1856		24° 56' / 89° 42'	VERY STABLE AT THERE LOW CU BUT VERY FINE, NO VERTICAL DEVELOPMENT
1858	INBOUND FROM SW DROP 6 AT PT 3	24° 46' / 89° 35'	→ THE TURN INBOUND AT 3 TO NE
		25° 9' / 87° 44'	NEW CONVECTION COMING UP?
1922	"CTR" SONDE ^{DROP 7}	25° 58' / 87° 4'	CTR MAY BE A BIT NORTH
		25.29 / 87.75	25° 17' / 87° 9'
1918	VDM WAS 25° 15' 87° 21'	25° 14' / 87° 11'	MARKS SAYS GPM OVERPASS 2008 Z COMING
1933		87.19 / 87.23	NOW GOING IN OUT ON 45 TO NE
1939	DROP 8	26° 6' / 86° 8'	PRECIP AGAIN
			MP UP OUTBOUND ON THE 45 →
	DROP 9 AT PT 4	26° 31' / 85° 40'	→ EP OF OUTBOUND 45° TO NE
1948			NOW DOWNWIND FOR 180° AZI.

CTR

CTR

OSTR STRATI

50 NOV 7

221

Lead Project Scientist Event Log

Date 8/31/16 Flight ID 20160831 I 1 LPS ZAWISLAK

Time	Event	Position	Comments
2013	DROP 10 N PT. 5 TURNINGS	27° 11' / 87° 25'	TURN IN INBOUND TO THE SOUTH
2020	DROP 11		MR. INBOUND FROM NORTH
2033		25° 53' / 87° 37'	CLOUDS TRYING TO BUILD BUT JUST NOT THAT HIGH.
2040	near center	87.2 / 25.1	CONVECTIVE ↑ ↓
2048	DROP 12 CTR	87° 13' / 25° 01'	CENTER N → S
2059	ⁿ²⁰⁵ BEST GUESSES: 24.76 / 87.28 24.49 / 87° 31'	24° 26' / 87° 19'	SOME DEEP CONNECTION TO SOUTH OF CENTER FORMING A VISIBLE RING NOW SEE CENTER DISOULDED TO SE SOME DINGUS IN THE LF?
2110Z			ALIGNING ITSELF. SOME CU DEEP. RUN ALSO STRATIFORM. MUCH SHARPER WIND GRADIENT ON THE SOUTH SIDE. FL CENTER FURTHER SE THAN I PASS
2118Z	FROM PT 6		
2120Z	DROP 14 TURN TO PT 4	23° 13' / 87° 22'	TURN DOWNWIND FOR SE POINT 87
2142Z	DROP 15 PT 4	23° 57' / 85° 50'	NICE CONVECTIVE BAND HERE TURN INBOUND TO NW
	VOM 2054	24° 45' / 87° 18'	
2156		24° 22' / 86° 13'	PICKING UP 50 KT FL NOW
2201	DROP 16	24° 35' / 86° 27'	MR. INBOUND TO NW FINAL LCL WILL BE W → E GORM IN, IOSA OUT
2211	FL CTR MARK	24° 57' / 87° 51'	CENTER OF 2 ND SE → NW PASS
	DROP 16 17	24.95 / 87.08	
2228	DROP 18 ^{OUTBOUND} NW		NOW OUTBOUND TO NW, PT 8 UP CORNER
	VOM 2211	24° 57' / 87° 51'	
2236		26° 5' / 88° 23'	GROWING CONVECTUS UPSTREAM TRYING TO GROW
2239	DROP 18 AT PT 8 19	26° 11' / 88° 30'	TURN DOWNWIND TO W PT 19

24.70
87.29

CTR

MISSED MIDDPOINT DROP ON SOUTH OUTFLOW

CTR

Mission Summary
Storm name
YYMMDDA# Aircraft 4_RF

Scientific Crew (4 RF)

Lead Project Scientist ZAWISLAK
 Radar Scientist ANNANE
 Cloud Physics Scientist _____
 Dropwindsonde Scientist BRAMMER
 Boundary-Layer Scientist _____
 Workstation Scientist _____
 Observers (affiliation) _____

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

ORIGINAL WAS FIG. 4 FOR NW → SE, NE → SW BUT NHC WANTED TO START TO SE

NHC FIX MISSION W/ RESEARCH INTERESTS W/ POSSIBLE RI. WE WERE RESPONSIBLE FOR 2330 AND 1730Z. START W/ FIG. 4 SE → NW, THEN SW → NE, THEN GO DOWNWIND FOR NORTH TO SOUTH, ANOTHER REQUEST FOR SW → NE, THEN DOWNWIND TO WEST TO EAST. ALL AT 5000FT

Mission Synopsis: (include plot of actual flight track)

SEE ABOVE, STARTED W/ 10SAMI LEG FROM SW → NE, BUT W/ LACK OF INTEREST, SHORTENED SW TO NE TO BE 60km THEN 10SAMI (ALL NHC REQUEST) THEN REQUEST WAIT FOR 10SAMI NORTH AND SOUTH. THE NEXT SW AND NE WAS 10SAMI THEN 60km. FOR OUR W → E, 60km THEN 10SAMI. WE DID DROPS AT TURNS AND MIDS, ALSO CENTERS (WHICH SHOULD BE FOR NHC). DID SKIP A COUPLE DROPS AT MIDS WHEN LEGS WERE SHORTENED.

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

OVERALL WE WERE OUT THERE APPARENTLY FOR IDENTIFICATION, ACTUALLY HAD 50+ KT WINDS AT SFC IN SPMR ON EAST SIDE DESPITE JUST ASYMMETRY. SW PRECIP STILL PRIMARILY DOWNWIND AND THE SFC FLOW LOOKS KIND OF SW → NE ELONGATED (BAROCINIC INTERACTION). SOME NEW CONVECTION DURING THE FLIGHT IN THAT BAND THAT WRAPPED SW TO NE, BUT A LOT OF STRATIFORM.

Problems: (list all problems)

SOUNDINGS. QUITE FINE
 CONTAINS OLDER DROPTOS
 RADAR WAS GOOD, SO PRETTY GOOD FLIGHT

STILL CLEAR AND STABLE UPSHEAR
 BIG GRADIENTS IN WINDS AND PRECIP.
 GRADIENT SOUTH AND WEST

INTERESTING INTERACTION CASE. APPEARED TO ALIGN PRETTY WELL DURING OUR FLIGHT. MAYBE BE THE MID LEVEL WAS PULLING THE LOW LEVEL? YET VERY ASYMMETRIC

Expendables used in mission:

GPS sondes: 23 TOTAL (15 NHC)
 AXBTs: 2 TURNS, CENTER

Sonobuoys: _____

2 BT'S GOT OUT AND MEASURED 28.3°C AT END POINT, 30.1 AT MID (CLOSER TO CENTER)

SEEMS TO MATCH BE ALIGNED WITH DROPS LL THROUGH EYE OF PRIMARY

