Lead Project Scientist

Storm or Project IRMA (ALL) **Experiment type** TDR
Flight ID 20170903H1 **Mission ID** 01A

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 occasionaly 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. AVAPS ✓

✓ 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 IRMA (ALI) **Experiment name** TDR

Flight ID 20170903H1 **Mission ID** 0111A

A. Participants:

HRD		AOC	
Function	**Participant**	**Function**	**Participant**
Lead Project Scientist	ZAWISLAK	Flight Director	BELSON/PORRISH
Radar/Workstation	ZHANG	Pilots	PRICE MITCHELL/REES
		Navigator	URATA
Cloud Physics		Systems Engineer	
		Data Technician	MIKE MASCARO
Dropwindsonde	ZAWISLAK	Electronics Technician	MCALISTER (AVAPS)
AXBT/AXCP		Other	
Photographer/Observers/Guests	ALVEY (UTAH)		

BUTTERFLY:
105/210°
105/030°
105/330°
105/150°
105/090°
105/270°

B. Take-off and Landing Times and Locations:

Take-Off: 1911 UTC Location: BPB (BARBADOS)

Landing: 0230 UTC Location: BPB

SHIPS SHEAR: 358°/9KT 9/3 12Z

Number of Eye Penetrations: 3

C0: 255/12 KT

C. Past and Forecast Storm Locations:

03/1500Z 17.7N 48.4W 969 mb 100 KT

Date/Time	Latitude	Longitude	MSLP	Maximum Wind
FCST NHC FCST 00Z	17.1 N	50.1 W		
NHC 00Z	17.6N	49.8W	959mb	100 KT

FROM OUR FIXES

D. Mission Briefing:

WANT DATA B/W 2100Z (1700 LOCAL) & 0300Z (2300L) ... TARGETING 00Z CYCLE OF HWRF
DRUM IF NECESSARY TO ARRIVE ON STATION 2100Z, BUT NOT BEFORE. 10KFT PA
DROP ON PERRY HOME FROM HIGH ALTITUDE. SOMEWHERE HALFWAY.

PLAN IS FOR A BUTTERFLY 10KFT. WE'LL DO ENDPOINT DROPS (W BACKUP). AND CENTER DROPS PLUS A FIX ON EACH OF THE 3 LEGS. PASSES. THEN WE'LL GO OUT TO WEST AT 10KFT TO DO A NORTH → SOUTH, AXBT RUN W/ 7 AXBTS AT 10KFT. THEN CLIMB TO ALTITUDE AND DROP A SONDE AT TRANSIT ALTITUDE. WELL-DEFINED EYE. 24MM 4 OF THE AXBTS

Storm or Project IRMA (AL11) **Experiment name** TOR

Flight ID 20170903H1 **Mission ID** 01111A

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:

SFMR CALIBRATION DONE ON FERRY OUT TO BARBADOS

ALL INSTRUMENTS UP / RUNNING AT START OF MISSION

Lead Project Scientist Event Log

NOAA 230

Date 9/3/17 Flight ID 20170903H1 LPS ZAWISLAK

Time	Event	Position	Comments
1911Z	T/O		
1933Z	ENROUTE TO IP		CHECKING FOR FORE/AFT VELOCITIES
1952Z			JUN VERIFIED FOR 6000 FT
			6K REFLECTING FLIES (SIZES) ALSO SURFACE SHOW VELOCITY/
			0132 FORE/AFT.
1958Z			SATELLITE SHOW THAT THE EYE IS CLOUDED OVER, LOOKS LIKE
			THERE IS SOME CB ACTIVITY IN THE EYEWALL. OVERSHOOTING
			THE COO. SMALL INNER CORE.
			MIGHT BE IN AND OUT PRETTY
			QUICK, SOME OUTER BANDING
			~200-300KM FROM CTR, BUT
			CLEARER OBTUSEEN. ACTUALLY
			LOOKS LIKE A DRY SLOT TO THE
			EAST OF CTR MOSTLY, BUT THAT
			ISN'T IMPACTING.
			APPROACHING FIRST OUTER BAND
2100Z	IP TO SW OF STORM	16°1' / 50°51'	OF LIDAR NEAR SW/SSW
			SONDE AT IP, TURN INBOUND ON 210°
			NOT A WHOLE LOT OF BANDING
			VERY CONFINED LOT OF
			SHALLOW, STABLE ARMY
			ANVIL ABOVE
2120Z	APPROACHING EYEWALL		20nm HAVE HURRICANE STRENGTH
			BEST EYEWALL CONVECTION
			IS TO THE NW EYEWALL
			SOUTH, SOUTHEAST.
2126Z	CTR #1	17°29' / 49°52'W	80 KT SFMR INBOUND SW.
			937 EXTRAPOL
			ASPEN NOT PRODUCING A USABLE MESSAGE TO TRANSMIT.
2151Z	WAYPT 2	18°56' / 49°55'	ON TO DOWNWIND TO 330'
2			NOW DOWNWIND TO WP #3
2217Z	WP #3	18°58'N / 51°6'W	AT WP #3 TURN INBOUND ON 330° TO CTR
2219Z	SONDE AT WP #4	18°53' / 51°6'	INBOUND ON 33°
			SO IN THE NE EYEWALL,
			WE HAD 106 KT SFMR SFC
			102 FL ON NE EYEWALL
			BELL PRESS S/ TE EYEWALL.

SONDE

SONDE 960mb CENTER 60MS 180

SONDE H

SONDE

Lead Project Scientist Event Log

Date 9/8/17 **Flight ID** 20170903 H1 **LPS** ZAWISLAK

Time	Event	Position	Comments
2237	INBOUND CTR #2	17° 49'N/50° 26'	NOT A LOT OF PRECIP ON THIS UTR, OR NW QUADRANT
			+64 KT AT 25 nm NOW
			A LITTLE OPEN TO THE WEST
			90 KT TO 20nm
2241Z			100KT AT ~10:12 nm.
			LOOKS LIKE HIGHER REF GOING ACROSS TO NORTH (USC) TOWARD
2245Z	CTR 2	17°21' /50°6'	958 mb INTERVAL
			44 KT, SFMR ON THAT PASS
			BETTER CONTROL ON THE DSC SIDE OF EYEWALL
			HIGHEST REF. OUTBOUND ON 150°
			SE OF CENTER. PRIMARY RAINBAND FROM SOME BUMPS.
2302Z	OUTBOUND WP #4	16°21' / 49°31'	OUT ON 150° TO WP #4 STILL ~102 KT FL ON NW SIDE
			A LITTLE STRONGER WIND AT SFC ON SE SIDE THAN NW. ~53 m/s
2311Z	WP #4	15°49' / 49° 11'	ARRIVED WP #4 TURN DOWNWIND TO GET WP #5 090°
	TURN DOWNWIND TO WP #5		
2333Z	WP #5	17° 16' / 48° 32'	AT WP #5 TURN 090° TOWARD CTR
2347Z	WP #1 INBOUND	17°17' / 49°33'	FL 50mb +64 KT
2354Z			EYEWALL. IN THE 10nm DECENT RENEW W FRONT
			ON LF. DBZ TO 10 KM NOT TOO BUMPY NOT TOO BAD OF CONVECTION.
2358Z	CTR #3	17°18'/50°22'	EYE. NICE CIRCULAR EYE
			LESS INTENSE RAIN ON W EYEWALL, THOUGH
			PASS IN WASN'T VERY DEEP ~88 KT SFC OUTBOUND
0018Z	OUTBOUND TO WP #6	17°17' / 51°53'	LOOKS LIKE 90 KT SFMR ON THIS PASS MAX. NOT SO HIGH
0022Z	WP #6 SONDE 9	17°17' /52° 12'	SONDE AT WP #6
			ACTUALLY GOT SOME DEBRIS AIR TURBULENCE ON THAT PASS

SONDE #
960.4
8 m/s / 178
EXTRAP

SONDE #

SONDE #

SONDE #
SFMR 11
961.4mb
8 KT
166°
↓
NO SFC WIND IN WMO ON THIS ONE
16m WIND

SONDE 9

4.7 172.2

Lead Project Scientist Event Log

Date 9/3/17 Flight ID 20170903H1 LPS Zawislak

Time	Event	Position	Comments
0040Z	BT #1	17°29' / 53°30'	BEGINNING N→S BT RUN SHIZ.
			THIS RUN ALONG 53.5°W.
			BT RUN IS IN THE CLEAR
0045Z	BT #2	17°5' / 53°29'	BT #2- 28.8C SST
0050Z	BT #3	16°40' / 53°30'	BT #3
0055Z	BT #4	16°16' / 53°30'	BT #4
0100Z	BT #5	15°52' / 53°29'	BT #5
			SO INBOUND FROM EAST.
			SAW A SECONDARY WIND MAX AT FL 84 KT OUT TO SOUTH
			SMALL SPIKE AT SFC. HIGHER WINDS TO EAST (LEFT OF SHEAR)
			ONLY 88 KT SFC OUT TO WEST, THOUGH SLIGHTLY
			HIGHER ON WEST AT FL THAN ON EAST SIDE
0105Z	BT #6	15°29' / 53°29'	
0110Z	BT #7	15°5' / 53°29'	
			HITTING SOME OUTER BAND
0114Z		14°49' / 53°35'	ACTION. BEFORE WE CLIMB OUT
0134Z	SONDE 10	14°20' / 55°10'	HIGH ALTITUDE DROP HALFWAY HOME AS REQUESTED BY
			EMC. 23 650' RADAR

BT #[illegible] NO [illegible]

BT #2 28.8[illegible]

BT #3 27. GOO[illegible]

BT [illegible] GOO[illegible] [illegible]

BT #5 29.[illegible]

BT #6 28.[illegible]

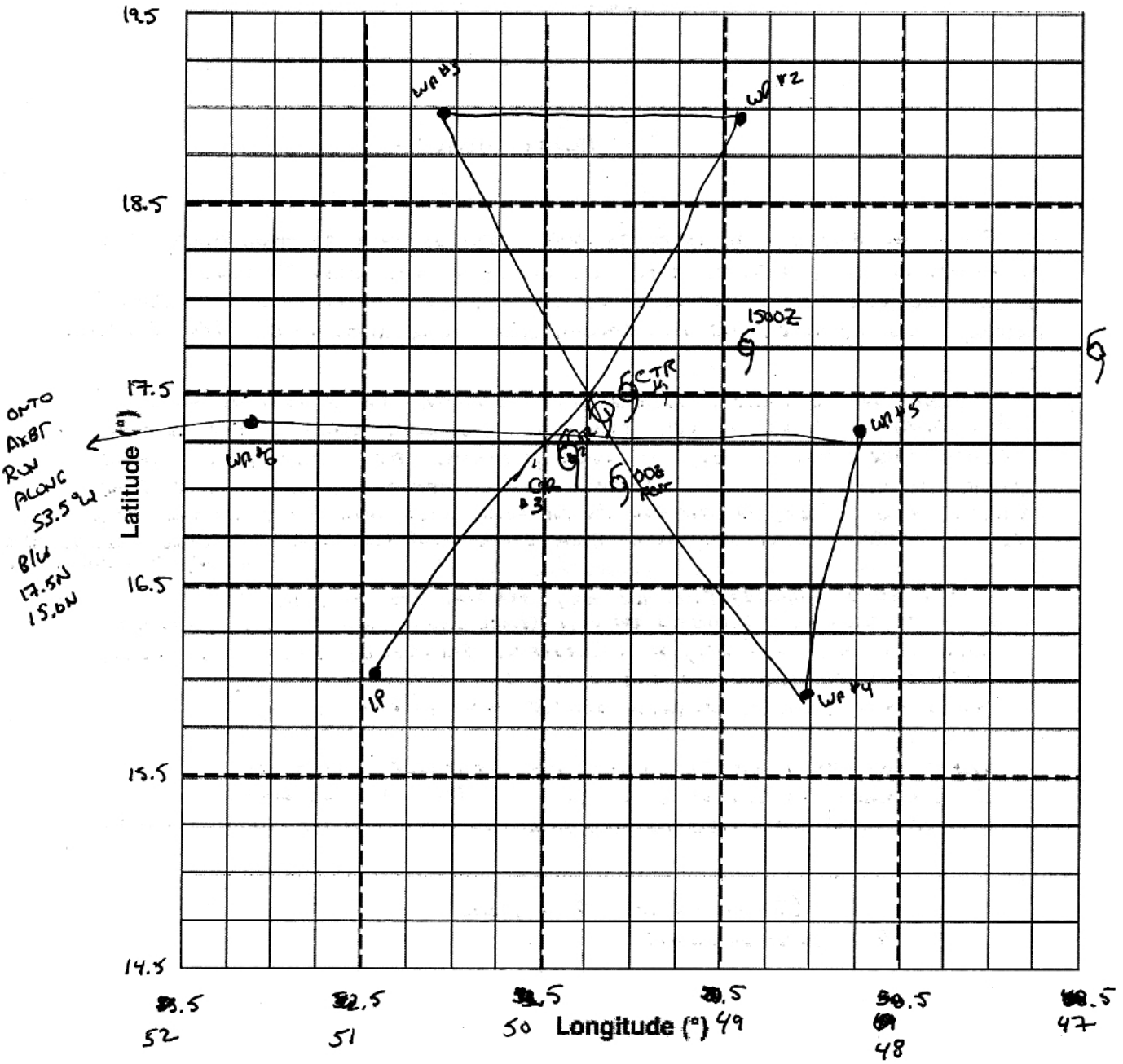
BT #7

BT #7 28.7[illegible]

SONDE[illegible]

Observer's Flight Track Worksheet

Date 9/3/17 Flight 20170903H Observer Zawislak



Mission Summary

Storm name

YYMMDDA# Aircraft 42RF

Scientific Crew (42RF)

Lead Project Scientist ZAWISLAK

Radar Scientist ZHANG

Cloud Physics Scientist

Dropwindsonde Scientist ZAWISLAK

Boundary-Layer Scientist

Workstation Scientist

Observers (affiliation) ALVEY (UTAH) -

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

FLY A BUTTERFLY AT 10KFT TO RMA. SONDES ONLY AT TURN POINTS, 3 SONDES IN CTR / 3 FIXES. THEN EXIT TO WEST AND DROP 7 AXBT ALONG LONGITUDE 53.5°W TO DO A PRE-STORM SURVEY. AFTER GETTING TO FERRY ALTITUDE, DROP ONE MORE SONDE FOR EMC AT HIGH ALTITUDE AFTER RUN. 3 FIX FOR NHC.

Mission Synopsis: (include plot of actual flight track)

FLEW THE BUTTERFLY PATTERN AS DRAWN UP. DID SONDES AT EACH TURNPOINT, 3 CENTER SONDES. THIS TIME BTS WERE ALONG A LON LINE OF 53.5°W (PRE-STORM SURVEY). NO AXBTS IN STORM. FLEW 10KFT PA THE WHOLE FLIGHT, INCLUDING FOR BT RUN. STORM WAS NOT INTENSIFYING. STEADY STATE. SOME EVIDENCE OF ERC (SEF) ON LAST PASS TO THE EAST. HURR WINDS OUT TO 50 NMI. PEAK FL WIND ~108KT 100KT SFC WINDS FROM SFMR MSLP FROM FIXES ~960MB, EXTRAP 958MB NO CHANGE, NO INTENSIFICATION

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

GOT 3 GOOD ANALYSES FROM THE TDR, TRANSMITTED TO EMC.
10 SONDES, ALL GOOD (ALTHOUGH 3RD PASS CENTER DIDN'T HAVE SFC WIND), HAD TO TAKE 16M WIND). 6/7 BTS, SO SUCCESSFUL PRE-STORM SURVEY OF AXBTS ALONG 53.5°W (SEEMS LIKE THE STORM SHOULD PASS THROUGH IT).
EXTRA SONDE FROM 24KFT FERRY ALTITUDE ABOUT HALFWAY HOME.

Problems:(list all problems)

ASPEN 3.3.5 ON S3X WOULD NOT GENERATE WMO FILES SO SWITCHED TO STATION 2 TO DO QC. ONLY 1 AXBT DIDN'T PROVIDE DATA. WAS ABLE TO SEND FILES TO FTP TO GROUND FROM STATION 2.

Expendables used in mission:

GPS sondes : 10 (3 NHC, 7 HFIP) → ALL GOOD

AXBTs : 7 (6 GOOD, 1 BAD)

Sonobuoys: