

Lead Project Scientist

Storm or Project IRMA Experiment type TDR
Flight ID 20170908H1 Mission ID # 2011A

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. (HAVE THEM) ^{NOTES}
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.

DOMR
HOUR
TS
(50)
LF (50)

TDR SLOW
LF

AXBT ✓

18 BTs

1 EREWALL

1 EYE

EACH TURN/MD

Lead Project Scientist Check List

Storm or Project IRMA Experiment name TOR

Flight ID 20170908H1 Mission ID 2011A

A. Participants:

HRD		AOC	
Function	Participant	Function	Participant
Lead Project Scientist	<u>ZAWISLAK</u>	Flight Director	
Radar/Workstation	<u>HOLBACH</u>	Pilots	
		Navigator	
Cloud Physics		Systems Engineer	
		Data Technician	
Dropwindsonde	<u>DUNION</u>	Electronics Technician	
AXBT/AXCP		Other	
Photographer/Observer			
s/Guests			

B. Take-off and Landing Times and Locations:

Take-Off: 0724 UTC Location: LAL

Landing: 1532 UTC Location: LAL

Number of Eye Penetrations: 4

C. Past and Forecast Storm Locations:

Date/Time	Latitude	Longitude	MSLP	Maximum Wind
NHC 0200AM ⁽⁰⁶⁸⁾	21.5N	73.3W	925mb	140KT
FCST 09Z	21.7N	73.6W		
NHC 09Z	21.7N	73.8W	925mb	135KT
NHC 12Z	21.8N	74.7W	927mb	130KT
NHC 15Z	22.0N	75.3W	927mb	130KT

205/14

D. Mission Briefing:

LOADER 18 BTs.
(R 30408)

FIX ON EACH PASS. SO ROTATED FIG. 4 PATTERN, 1R DROP AT TURN POINTS MIDPOINTS, COMBO W/ AXBT. REGULAR DROPS AT MAX WIND, CENTER. W/ EXCEPTION OF ONE EREWALL SONDE WILL BE A COMBO AND ONE EYE (FIRST) WILL BE COMBO. IRMA APPEARS TO BE GOING THROUGH EREWALL REMOVED TONE AROUND THE EYE ARE WARMING, STORM HAS WEAKENED TO 140KT IN THE LAST FIX FROM TCU. PMW INCREASING INDICATES A LARGER OUTER EREWALL MAY BE TAKING OVER.

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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:

HAT COMM ISSUES DURING PRE-FLIGHT → RESOLVED BEFORE TAKEOFF
REQUIRES NEW SETTINGS FOR ASPEN

IN TRANSIT: TDR IS UP: ALTITUDE IS CORRECT. TH & TS ARE
SHOWING VELOCITY (SFC RETURNS) AND REACTIVITY

TEMP IS UP

ASPEN IS UP.

LF IS UP.

18 ARBTS / 12 SONDES ON BOARD.

Lead Project Scientist Event Log

Date 9/8/17 Flight ID 20170908H1 LPS ZAWISLAK

Time	Event	Position	Comments
0724Z	T10		
0800Z	ENROUTE TO IP		0750Z IR IMAGERY INDICATES CLOUDS CLEARING AROUND THE EYE WALL, PERHAPS INDICATING THAT EYE IS BEING REORGANIZED AND POSSIBLE CONTRACTS COULD OCCUR. SEEMS AS THOUGH PAWS INDICATES THAT THERE IS A DISCONTINUITY OVER EYE WALL NOW THE STORM HAS WEAKENED SOME
0823Z	ENROUTE TO IP		0800Z GSD-R INDICATES NEAR COMPLETE AZ. COVERAGE AROUND EYE WALL
0900Z	ENROUTE TO IP		NHC HAS LOWERED INTENSITY TO 155 KT (CAT). INDICATES CENTER A LITTLE WEST OF EXPECTED.
0919Z	IP 12/ST	21°39' / 75°10'	IR/ST, INBOUND 090° ON 230°
0920Z			~87km TO CIR
			LF INDICATES THE REMNANT WIND EYE WALL STILL PART. OVER DRAGGING MUR INTENSIF AND PROMINENT DROPPED SHORT OF NEW EYE WALL
0929Z	MID B/W ON W BAND 200 12/ST	21°40' / 74°39'	
0937Z	CTR # 12/ST	21°38' / 74°41'	CENTER IN REMNANT INNER EYE WALL IS OPEN. NE THROUGH SW
0948Z	MID OUTBOUND 093	21°37' / 73°16'	BEFORE HEAVY RAIN A LOT ORIG
0957Z	# END #2 12/ST	21°37' / 72°41'	IN PART HEAVY STRATIFORM RAIN STILL HAVE A COUPLE MIN ON THE TRACK TO WINDZ EARLY DRIP
			CENTER PAS +1 WFS:
			PEAK SEC 116 KT, FL 130 W CAN SEE A FAINT HINT OF ORIGNAL EYE WALL IN FL
1008Z	DOWNWIND TO W #3		INSTRUMENT OUTER RAIN

IR #1
ST #1 (6)

IR #2
ST #2

IR #3
ST #3

IR #4
ST #4

IR #5, ST #5

GOING TO ORIGIN TO BKFL PD
FOR NEXT PAS; FOR DR CONFLUENCE
BEFORE WE GET UP NEXT
INBOUND.

Lead Project Scientist Event Log

Date _____ Flight ID _____ LPS _____

Time	Event	Position	Comments
			ALSO, DECISION TO NO LUNGER DU CTR DRVR
			NOW THO WE ON THE IR/ BT COMBO. NHC DOESNT
			NEED IT ANIMATE AND A REQUIR. SURE DOESNT
			DO US MUCH GOOD.
1021Z	ENROUTE TO WA#2		LOOKS LIKE SOUTH OVBAND WILL HAVE TO BE TRUNCATED.
			WE'LL GO OVBAND ON 180° SINCE THAT WILL COVER -65 N. OR SO.
1038Z	NEAR WA#2		THE WA#2 HAS TWO STATION OFFSHORE IN LINE ON 180°, SO WE'LL GO WEST ON CASE WE ON 165°
1043Z	WA#2 DEPARTING OUT TO ISLAND AND CONVECTION.	22°57' / 75°3'	WA#2 WELL SW OF ORIGINAL POINT INBOUND 105° SURVEILLANCE CLEAR
1052Z	INBOUND CTR 335° RAIN		LITTLE BIT OF UP INNER EYEALL -LEAST NOT MUCH THOUGH.
1054Z	MIDPOINT 375° INBOUND	22°20' / 74°44'	IR/ BT COMBO MAY WIND UP RAIN
1106Z	CTR #2	21°37' / 74°23'	NO DUNE
1117Z	MIDPOINT 155° OVBAND	21°1' / 74°4'	PROP IN MOST REAR RELATIVE RAIN FREE
1130Z	WA#4 IR/ BT COMBO	20°17' / 73°42'	TRY TO GET IN LESS RAIN. JUST CLOUD BELOW ON THE IR/ BT COMBO PROP TRUCK UP AGAIN WIND
1135Z	DOWNWIND TO WA#5		ASKED FOR 300° TRACK IN/OUT TO GET BETTER TDR COVERAGE
1142Z			CIRCLING FOR WORKING OTC COORDINATE.
1155Z			OUT OF HOLD AND HEADINTO NEW WA#5
1203Z	IN WA#5	20°51' / 73°20'	INBOUND - 310° ON THE ABOUT 80 AM LEG IN BOUND ON 130° - 135°
1210Z	MIDPOINT ON 135° INBOUND	21°11' / 73°43'	IR/ BT COMBO MAYBE LIGHT RAIN BELOW

IR #6
BT #6

IR #7
BT #7

IR #8
BT #8

IR #9
BT #9

IR #10
BT #10

IR #11
BT #11

* 2nd Pass. OR 50% 83 FL ON 2nd Pass
108 130 Peak

Lead Project Scientist Event Log

Date _____ Flight ID _____ LPS _____

1219

Time	Event	Position	Comments
1218Z	MAY WIND DROP	21°39' / 74°17'	ON INBOUND 130° SE OF STAN BY MAY WIND 0220 12 ALMOST 120 BT SFC BUT EAST
1225Z	CTR #3	21°44' / 74°41'	RAIL PASS BY OUR EXTREME WEST SIDE DEFINELY SOME STD EYEEND. SUDRY.
1230Z	MAY WIND DROP	21° / 56' / 74° 58'	MAY WIND DROP OUTBOUND 310°
1240Z		22° 21' / 75° 30'	MIDPOINT OUTBOUND 310° TO W46 THIRD PASS: OUTBOUND 147 KT FLY 147 KT SFC
1248Z	WR #6 DOWNWIND TO WR #7	22° 44' / 75° 58'	WR #6 IR/ST THE DOWNWIND WILL BE CUBAN ADLES AT WR #7 THEN WELL GO 035°
			~1302Z → THIS MIGHT BE OUR INBOUND
1310Z	WR #7	21° 29' / 75° 32'	ARRIVE BACK SOUTH TOWARD WR #7 FOR 045 INBOUND MAYBE 30nm WOODWARD NOT MUCH FORGO MIDPOINT DROP SINCE REALLY TIGHTLY TRACKED SO DID WR #7 COMBO WITH AN REGULAR MAY WIND DROP CTR COMBO, THEN GO OUTBOUND ON 035°, MAX WIND COMBO, THIRD PASS COMBO, ENDPOINT COMBO
1316Z	MAY WIND INBOUND 045	21° 38' / 75° 7'	MAX WIND 215° 045° INBOUND
1320Z	CTR #4	COMBO 21°47' / IR/ST 74°55'	COMBO DROP IN CTR WON'T DO REGULAR AT RHW. ONLY COMBO MIDPOINT AND ENDPOINT
1330Z	MIDPOINT ON OUTBOUND 035	COMBO 22° 17' / 74° 31'	COMBO BEFORE MIDPOINT LOOKS LIKE LOWER DBZ NOW GETTING INTO HEAVIER PRECIP

FIRST ONE
↑
REGULAR SOUND

SECOND
REGULAR
OR
REGULAR

IR #12
BT #2

IR #13
BT #13

IR #14
BT #14

REGULAR
#3
SOUND

IR #15
BT #15
→ 928MB
PASSED
BT #16

IR #16
BT #16
→ JUST PASSED
MAY WIND

IR #17
BT #17

1334Z ON THE OTHER SIDE OF THE
RAINGAUG. CONTINUED ASST REMAINING ASBT
AND EITHER UP RELAXING OUR IR SOUNDER.

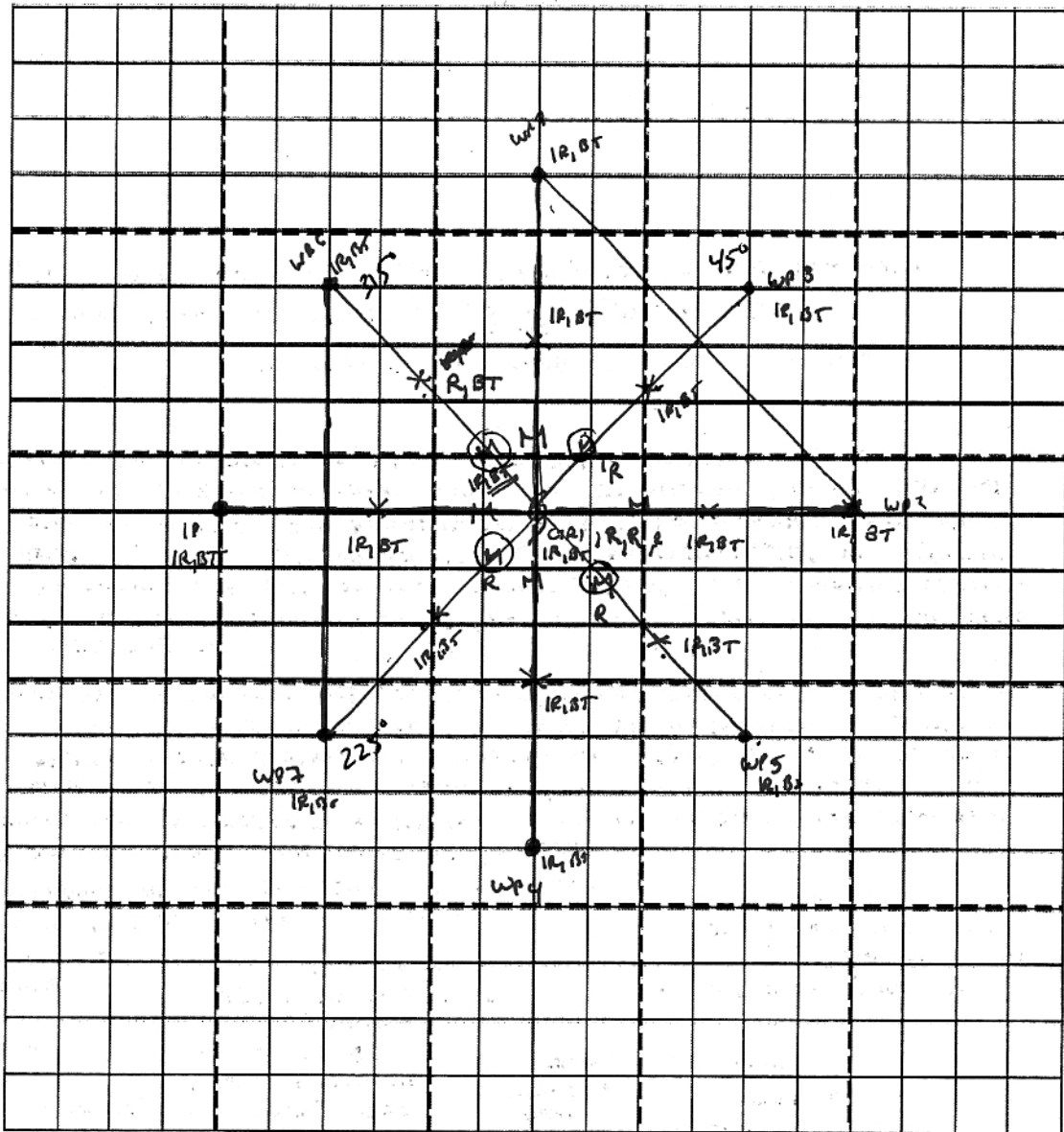
1345Z WR #8
ENDPOINT COMBO IR #18
FAIRLY CLEAR BT #18
BLW A/C ALTITUDE
NOT MUCH RAIN 23° 5' / 75° 51'

30 TWO
CLOUD
COMPARISONS
→
PROBABLY MORE
RAIN THAN
BT #16

Observer's Flight Track Worksheet

Date 9/8/17 Flight 20170908 H1 Observer ZAWISAK

Latitude (°)



Longitude (°)

335 25+90
155 55 25 15
155
25
90
155
90
60
155 (3)
035° OUTBOUND ON LAST LEG
215°
22
155

Mission Summary
Storm name
YYMMDDA# Aircraft 42RF

Scientific Crew (4 RF)

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

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

ATTEMPT TO FLY ROTATED FC. 4, 270° → 090°, 000° → 180°, 135° → 315°,
 225° → 045°. IR/ST AT TURN AND MID. ONE IN EYE, ONE
 MAY WIND REGULAR DROPS. W. 4 QUADRANTS. W. AN RMW.

Mission Synopsis: (include plot of actual flight track)

TOUCH TO GET A CLEAN PATTERN W/ CURVA SO CLOSE TO THE CENTER
 TO THE SOUTH / SOUTHWEST. WE ACCOMPLISHED IN ON 270° (THOUGH SHORTER THAN 90M)
 THEN 6000 OUTBOUND 090°. SOME WA AVOIDANCE OVER FLY 25M MADE US GO
 INBOUND ON 335° INSTEAD OF 360°. STARTED ON 155° OUTBOUND. AFTER A HOLD WE
 FINISHED DOWNWIND ON 130/135° RRMW, OUT ON 310° → DOWNWIND TO 225° → WELL
 TRUNCATED BY SW JIBE (MAYBE SOME?) DUE TO AIRSPACE. TURNED TO 075° OUTBOUND AND
 GOT FULL LEG.

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

WE REVEALED 18 IR SONDE / AXBT COMBO. WE ENDED UP W/ 2 EYE COMBOS, REST MIN
 A LITTLE CONFUSION ABOUT IR SONDE (AVAILABILITY ON FINAL DOWNWIND AND 5M P15
 SO ENDED W/ 1 AXBT COMBO. NO MIDPOINT (TOO CLOSE TOGETHER), AN EYE
 COMBO (4th PASS), MISS MAX WIND, 2 COMBO ON EITHER SIDE OF RAINWIND. THOUGH WE
 INNERMOST WAS CLOSE TO RMW (JUST OUTSIDE) → 2 DIFFERENT RAINWIND PROFILES FOR THE
 INNER LEG 033 BELOW TORNADO. SO WE GOT THE EYE
 COMBO X2. OTHERWISE HIT THE MIDPOINT AND
 ENDPOINT COMBO. ONLY 3 REGULAR SONDES
 SO WE GOT GOOD
 DATA FROM ALL IR/ST
 COMBOS
 LA MORE FROM AT
 MIDPOINTS → TRIED TO
 KEEP THEM IN MOST REGIONS
 AND BETTER W/ AT TURN POINTS.
 → SCATTERED CLOUDS BELOW AT TURN POINTS

Problems: (list all problems)

3 OUT OF THE LAST 4 ST,
 DID NOT REPORT DATA → EYE,
 AND 2 MIDPOINTS
 ALL OTHER SONDE / BT GOOD.

Expendables used in mission:

GPS sondes: 3 2074, 18 12 SONDES
 AXBTs: 18 AXBTs → 3 SONDES HFIP
 (15 GOOD 13 W/ ST)

Sonobuoys: _____

ISSUE W/
 SEEING
 UP IMAGES
 ON THE PHONE

4 TOR ANALYSES → THOUGH MANY
 W/ TRUNCATION

PLUS LOOKS LIKE MIDW HAS GENELO
 SONDE, BUT SOME OF THE REMNANT
 INNER STRENGTH WAS GONE SINCE AT
 OUR ALTITUDE BUT THIS THING
 SHOULD START CLEARING AGAIN.