

## Lead Project Scientist

Storm or Project NATE Experiment type Alpex  
Flight ID 20171007H1 Mission ID WDIGA

### 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.

✓ AXBT

### Lead Project Scientist Check List

Storm or Project NATE Experiment name AIPEX

Flight ID 20171007H1 Mission ID WD16A

**A. Participants:**

HRD		AOC	
Function	Participant	Function	Participant
Lead Project Scientist	<u>ZAWISLAK</u>	Flight Director	<u>HOLMES</u>
Radar/Workstation	<u>HOLBACH</u>	Pilots	<u>KISSEY</u> <u>KAHN</u> <u>ROSSI</u>
DWL	<u>KLOTZ</u>	Navigator	<u>B</u>
Cloud Physics		Systems Engineer	<u>PEEK</u>
	<u>SELLWOOD</u>	Data Technician	<u>LYNCH</u>
Dropwindsonde		Electronics Technician	
AXBT/AXCP	<u>WADLER</u>	Other	
Photographer/Observer s/Guests			<u>AVAPS : UNDERWOOD</u>

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

Take-Off: 0744 UTC Location: LAL

Landing: 1522 UTC Location: LAL

Number of Eye Penetrations: 5 7.6

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

Date/Time	Latitude	Longitude	MSLP	Maximum Wind

**D. Mission Briefing:**

ROTATED FIG. 4, BEGINNING W/ N-S, THEN E-W, FOLLOWED BY A 2nd FIG. 4, SW → NE, NW → SE. WE'LL FOCUS ON DOING A CONVECTIVE BURST MODULE IF THE OPPORTUNITY PRESENTS ITSELF, EITHER AFTER FIRST FIG. 4 OR AFTER SECOND. WE COULD ALSO HAVE TIME TO DO THE SFMR HIGH INCIDENCE ANGLE CIRCLES AT THE END. PLAN FOR 10KFT, LIKELY A BIT LOWER IF REAL ON-STATUS. WE'LL DO AXBT/SNDOR COMBO AT TURNS, MID, AND SOME CENTERS (COULD GO W/ MHC REQUEST FOR THOSE). BUT 20 PLANNED SOUND PTS, 22 BTs IN BURST. WE'LL BE FLUID AT THE AS EXTRA DRAGS AND BTs COULD BE FOCUSED ON WARM PUL FROM PREVIOUS PRE-TORN MODULE.

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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:**

DID NOT GET POWER TO THE OWL TO START THE FLIGHT

### Lead Project Scientist Event Log

Date 10/2/17 Flight ID 2017100741 LPS ZAWISLAK

Time	Event	Position	Comments
0744	T/O		ON OUR WAY OUT TO THE STORM, LR 145X CRAFT WARMING ALSO TOPT IN THE BURN ACTIVITY IN THE BURN NOW
			PRIMARY TO THE NORTH OF THE CENTER HURRICANE IT WILL GET AROUND TO THE WEST FOR THE MODULE.
0819	ENROUTE TO IP	26°45' / 84°25'	APPEARS TO BE SOME NEW BUBBLING TO THE WEST BUT FAR FROM CTR. LOOKS LIKE WALL ORANGE THAT INNER LINE/ETSWALL.
0901Z	IP	26°9' / 87°10'	SOUND INTO SOME CLOUD
	INBOUND 180° MIDPT		STILL NOT A SYMMETRIC PRECIP COVERAGE IN INNER CORE, BUT THERE IS A DEVELOPING RETWALL UPSTREAM ON THAT LINE SIDE.
0913Z	MIDPT ON INBOUND 180°	25°29' / 87°8'	NOW AT 64K FT - SOME RAIN CTR
0926	CTR #1	24°42' / 87°21'	CENTER STARTING TO GET A LOOK AT SOUTHERN BAND ABOUT 40NM TO SOUTH OF CTR.
0935	MIDPOINT OUT TO WP #2	24°8' / 87°22'	DROPPING BT/SOUND CTR IN THE A MIDDLE OF THE BAND A LOT OF THE PRECIP LOOKS USE SE SIDE OF STORM. RAW AT FL → SOME IN DNBAND
	OUTBOUND TO WP #2		THAT RAINW/ETSWALL TO SOUTH OF CTR - SOUND CLOUD BE A TARGET VERY WIDE RETWALL DEVELOPING. WE'LL SEE IF THAT CONVECTIVE ROTATES AROUND.
0951	WP #2	23°21' / 87°21'	TURN DOWNWIND FOR WP #3 EASTERN POINT
	DOWNWIND TO WP #3		SO FAR THAT EAST SIDE MAY BE THE TARGET
1023	WP #3	25°7' / 85°52'	CONVECTIVE BUILT GRADUAL TO EAST/NE
	MIDPOINT TO CTR #2		MUSTN'T SIGNIFICANT RAIN IN THIS REGION
			LESS THAN 40NM OUT
			LOOKS LIKE DRUMMING SOME INNER CYCLONE WALL
1047	CTR #2	25°16' / 87°39'	CTR #2 3015 NM OR 40-SUN SET UP TO WEST
	OUTBOUND TO WP #4		SHORTEN UP TO TURN FOR NEXT INBOUND TO LINE US SOME TIME - NO MUCH CHANGING AS FAR AS

NO DATA SO FAR FROM WRA  
NO WRA

Pass #1:  
PEAK FETA GO RT  
NORTH/W  
FL 70K+ H3/W  
LARGE RETWALL  
NOW OPEN TO NW WEST  
COVERAGE. 983

SOUND #1  
BT #1  
NO DATA

MID SOUND  
SOUND #2  
BT #2  
NO DATA

SOUND #3  
BT #3  
NO DATA

SOUND #4  
BT #4  
GOOD.

SOUND #5  
BT #5

SOUND #6  
BT #6  
CHIC NO DATA

SOUND #7  
BT #7  
NO DATA

SOUND #8  
BT #8  
BT 28.6Z

BURN IS CONCERNED  
GO INBOUND 225° RAD, TURN THEN EVALUATE.

1058 MIDPOINT OUT ON 270° 25°15' / 88°27'

SOUND #9  
BT #9

Lead Project Scientist Event Log

Date 10/7/17 Flight ID 2017100741 LPS ZAWISLAK

PASS 2:  
PEAK FL 95KT  
SENR: 72KT  
~80% SW

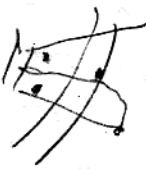
PASS 3:  
PEAK FL: 92KT  
SENR: 70KT  
WIDE ASYMMETRY  
IN WIND AS  
EXPECTED  
SAME EXTEND 905m  
S

Time	Event	Position	Comments
1108	WP #4	NEW 0. 25°13' / 09°12'	TURN DOWNWIND TO WP #5
			DOWNWIND WILL BE SHORER OF IT'S FORWARD SIBER
	DOWNWIND TO WP #5 SW		SO NOT MUCH COMPILING FOR BEST. HOPING THAT SOMETHING DEPENDS TO SW (PRESUMABLY) OSL THAT WHICH WE WOULD TANGLE ON THIS INBOUND, THEN HIT IT AGAIN WHEN IT GETS TO BE ANOTHER IT ON FINE OUTBOUND, THOR OWE WE RASPED THROUGH
			OW THE EAST SIDE IS 9TH ON EAST SIDE, HAS IT ROTATED
1131	WP #5 TURN IN		TURNING INBOUND TO CTR #3
1134	SOUND FOR WAVE	24°48' / 09°26'	JUST RADIUM INWARD OF RANO
1142	MIDPOINT INBOUND	25°15' / 09°07'	MIDPOINT INBOUND 040° MADE A SLIGHT JOG TO THE NORTH AND BACK ON 020°
1147	CTR #3 OUTBOUND	25°34' / 07°56'	NO SOUND / BT COMBO FOR THIS CTR HEART AREA ON THE E/NW SIDE / E/SE SE I THINK THE JUTTER HAS CHANGED DIRECTION. LOOK MORE NORTH, SO NOW MORE SE IS OSL STILL LOOKING AT SE SIDE ALTHOUGH
1158	MID OUTBOUND TO WP #6	26°09' / 07°35'	MIDPOINT OUT ON 045°
1205	WP #6 DOWNWIND TO WP #7 TO NW	26°24' / 07°15'	TURN DOWNWIND TO SENDING SOME NEW GROWTH TO SIDE OF CTR. COULD BE FOCUS OF CB MODULE. THAT MIGHT BE MORE OSL NOW.
1229	WP #7	26°40' / 09°11'	REACH 2 MW PT. SCATTERED AND TO DEEP CONVECTION OUTHERE, BUT ACTUAL FROM CLEAR. TRYING TO BALANCE COVERAGE AND CORRECTING CB MODULE.
1241	MIDPOINT INBOUND TO CTR #4	26°15' / 08°40'	MIDPOINT SWAY BROKEN DECK BRINGS
1251	CTR 4	25°54' / 08°03'	CTR 4 GOING TO ENTER THE SYSTEM THROUGH THE LACIEST REAR ITS OSL, WUL AT THE MOMENT SWEAT IS MORE NW NOW.

S/S FARN  
SUCCESS  
W/ 12, 16  
SOUND #10  
BT #10  
SOUND #11  
BT #11  
GOW  
CH 16  
28.12  
SOUND #1  
BT #12  
SOUND #13  
BT #13  
SOUND #14  
BT #14  
SOUND #15  
BT #15  
SOUND #16  
BT #16  
SOUND #17  
BT #17

Lead Project Scientist Event Log

Date 10/7/17 Flight ID 17100741 LPS ZAWISLAK



Time	Event	Position	Comments
1257	"MIDPOINT"	25°37' / 87°41'	THIS WAS DONE EARLY ~20 AM FROM CTR TO GET THE DROP IN WIND BT RAIN.  SO FAR A LOT OF STRATIFORM RAIN, HEAVY PRECIP NOT CONVECTION YET.  SO WE'LL HIT THE TURNPOINT GO DOWN ON A 200° TRACK INTO CTR THEN GO OUT TO ME FOR CIRCLES THAT SHOULD PRINT MOST OF THIS.  NEAR WP #8  ALL STRATIFORM RAIN OUT HERE SEEN  NOT EVOLVING MUCH VERY MUCH
1310	WP #9	25°6' / 87°6'	TURN DOWNWIND. GO TO TRK 280° NO BT A LOT OF STRATIFORM RAIN OUT HERE DOWNWIND HAS A LOT OF STRATIFORM FOR THE "CB" MODULE.  BASICALLY W/ THE STORM STRENGTH WE'RE REALLY NOT THAT DIFFERENT IN A STORM RELATIVE SENSE MARKED LITTLE MORE ON THE EAST TOWARD SE.
1320	NEW INBOUND 290°		62 KT WIND JUST OUTSIDE THE BAND RADIAL OUTWARD OF RENEWAL ECHO TO 12 KM 35 dBZ 10 KM TOP STAR GOT UP TO 80 KT OUT IN RAIN RADIAL INWARD SOME SAMPLED BURST KINOF. LEFT OF SHEAR LAST OUTBOUND WILL BE USE PART. STILL RAIN IT WE'RE STILL PRINTING THE USE RENEWAL VERY DEEP CONVECTION
1328		NEARING RENEWAL	
1329			
1332			
1337Z		26°20' / 88°11'	
1342Z		26°41' / 88°14'	
1345Z		26°45' / 88°7'	

SOME 18  
BT 18

SOME 19  
BT 19

SOME 20  
BT 19  
27.17

SOME 21  
BT 20  
CH NO  
DATA

PASS 4?  
EXTREM 985mb  
996mb SMOKE  
62kt FL  
~60kt SMOKE

80+kt  
SPR IN  
RMR

→ 1351Z  
1406Z: SCIENCE COMPLETE  
LEFT CIRCLES  
3 30° / 5 45°  
SCATTERED TO BROKEN  
BELOW ~42kt WIND.  
27°0' / 87°52'  
STARTING TO PRINT SOME  
PRECIP  
GONE OUT 030° GET CLEARER TOP  
CONDITIONS.  
STILL RAIN  
→ BAND W/  
GET CLEARER TOP  
CONDITIONS.  
SOME 22  
BT 22

## Mission Summary

### Storm name

YYMMDDA# Aircraft 42RF

### Scientific Crew (4 RF)

Lead Project Scientist ZAWISLAK

Radar Scientist HOLBACH

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

Dropwindsonde Scientist SELLWOOD

Boundary-Layer Scientist WADLER (RMAS)

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

Observers (affiliation) \_\_\_\_\_

DWL : KLOTZ

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

PLAN WAS FOR A ROTATED FIG 4 W/ THE ADDED FOR CENTER A CIRCULAR, SPMR HIGH INCIDENCE CIRCLES, <sup>AND</sup> COLLECTIVE BURST MODULE, ORAS W/ THE COMBO W/ AXBTs AT TURN AND MID, CENTER FOR SOME. WE'LL COMPUTE THE FIRST FIG 4 THEN AFTER THE SUMM DECIDE IF WE SHOULD DO CB MODULE, WE CAN WAIT IF NOT BETTER. CIRCLES, IF TIME.

### Mission Synopsis: (include plot of actual flight track)

NOTE UPON ARRIVAL ON STATION WAS TO GET W/ PRECIPITATION BECAME MORE SYMMETRIC W/ THE TURN WE MADE OF THE AREA W/ DSR AND USL, NOT AS MUCH CIRCULAR APPROXIMATE (MAYBE HAS TO DO W/ THE FORWARD SPEED?). ALTHO W/ THE SYMMETRY DUE TO FORWARD MOTION. BUT WE DID GET THAT AT FL 4000 75 KTS TO SUPPORT THE INTENSIFY. BY THE END OF THE MISSION, A NEW BURST ORIENTED NW DSR (MAYBE MORE DSR) AND ROTATED LEFT OF CENTER.

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

WE COMPUTED THE FIRST FIG 4, FIXING BOTH CENTER AND END TO CENTER SOME/IST COMBO. IT WAS NOT OBVIOUS FIG BURST MODULE, SO WE WENT TO ROTATE THE FIG 4. SO WE DID SW→NE AND ENCOUNTERED THE BURST USL. SINCE WE WENT DOWNWARD TO NW, THE BURST WAS DIS ON USL. WE DID NOT FIX THE CENTER ON THE 4th BUT CRA AND WENT OUT TO SWAN TO COMPUTE OUTBOUND TO DO THE MODULE! WE WENT DOWNWARD SO THAT WE WOULD STAY TOWARDS HEAVIER RAIN NZSO.

### Problems:(list all problems)

DLW 11 BIS

REPORTED DATA (M)

DLW DID NOT HAVE POWER

SITUATION HAVE GATED FOR WHILE.

ORIGIN ON CENTER SIDE OF EYEWALL LEFT OF TURN W/ COMBO. THEN COMPLETED TO

POINT EYEWALL TO NE AS WE WENT

NW, FIND OUR EXIT TO

ALSO DEBATE COLLECTIVE, BUT

HOPEFULLY YOU PRINT IT.

WE WENT OUT ~30M AND DID

CIRCLES FOR SPMR

### Expendables used in mission:

GPS sondes : 22

AXBTs : 21 (11 GOOD, 10 BAD) CHIZ BETTER

Sonobuoys: \_\_\_\_\_

SO OVERALL, DID GET 4 PRETTY GOOD TOR ANALYSES. REPORT SPANLING USL DID NOT SPMR CIRCLES MODULE DATA, IN 45 KTS WIND

RAIN CONSIDERABLE BURST BUT NIC 11 AM DID GO TO 800