

Lead Project Scientist

Storm or Project NATE Experiment type ALPEX

Flight ID 20171006H9 Mission ID W816A

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.

✓ A X BT

Lead Project Scientist Check List

Storm or Project NATE Experiment name AIPEX
 Flight ID 20171006H1 Mission ID W816A

A. Participants:

HRD		AOC	
Function	Participant	Function	Participant
Lead Project Scientist	<u>ZAWISLAK</u>	Flight Director	<u>HOLMES</u>
Radar/Workstation	<u>HOLBACH</u> (GEOID: GAMPCHZ)	Pilots	<u>KIRBY</u> <u>ROSS</u>
		Navigator	<u>FREEMAN</u> <u>WASS</u>
Cloud Physics		Systems Engineer	<u>PECK</u> / <u>WAGH</u>
DWL	<u>KLOTZ</u>	Data Technician	<u>LINCH</u>
Dropwindsonde	<u>SELWOOD</u>	Electronics Technician	
AXBT/AXCP	<u>WADLER (R/MAS)</u>	Other	<u>AVAUDS : UNDERWOOD</u>
Photographer/Observer s/Guests			

B. Take-off and Landing Times and Locations:

Take-Off: 0759 UTC Location: LAL
 Landing: 1616 UTC Location: LAL

Number of Eye Penetrations: 0

C. Past and Forecast Storm Locations:

Date/Time	Latitude	Longitude	MSLP	Maximum Wind
<u>06Z / NHC</u>	<u>16.1 N</u>	<u>84.8 W</u>	<u>999 mb</u>	<u>40 KT</u>

87 IS

D. Mission Briefing:

5 MIN CALIBRATION, STRAIGHT/LEVEL, OVER WIND, NO CLOUDS/NO PRECP
 MIGHT BE TOUGH TO GET THE RIGHT SKY CONDITIONS.
 SO WE'LL DO AN INITIAL FIG. 4 → NTU, THEN W TO GET VORTEX SURVEY. - THIS WILL BE
 AT 10KFT, ALTHOUGH TERRAIN CLEARANCE TO THE SOUTH WOULD REQUIRE US TO GO TO 12.5KFT
 WE'LL THEN FIND A CLOUD REGION TO THE WEST TO DO CIRCLES. FOR SPMR,
 3 AT 30° / 5 AT 45°. THEN EITHER GO HIGH FOR CIRCUMNAV ABOVE 25KFT UPSTAIR
 OR DO ANOTHER PASS AT 10KFT WE'LL DO CIRCUMNAV ABOVE 25KFT UPSTAIR
 THEN ATLEAST 1 FOR SPMR CIRCLES. IS ANYONE ON BOARD TO GET OUT.

DECIDE BY
 WINDS
 AS TO THE
 FOLLOWING
 MODULES.

Storm or Project NATE Experiment name AIPEX

Flight ID 20171006 H1 Mission ID WB16A NATE

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:

DWL COMPUTER DID NOT GET POWER, SO THERE WILL BE
NO DATA COLLECTION TODAY W/IT.

Lead Project Scientist Event Log

Date 10/06/17 Flight ID 20171006H1 LPS ZAWISLAK

Time	Event	Position	Comments
0749 Z	T/O		
0821 Z		IN TRANSIT	NATE IS OFFHORE. SEEMS TO BE DROD CONNECTION DEVELOPING ALL AROUND THE CTR, AS WELL AS IF THE CIRCUMFERENTIAL IS POSSIBLE. IF THE CONNECTION COMING FROM THE CTR, WE COULD SEE THIS THING ORANGE FIRST AND INTERVIEW SOME TOOK BEFORE GUNNERS MOVE TOWARD TUCUMAN.
0855 Z		IN TRANSIT	CAN GO OVER HONDERAS AS WELL BE AT REF REF TO BE CLEAR OF THEROIN SO THATS A BIT HIGH SO WE'LL STICK W/ 10000 INSTEAD THE LEG AND TREAT THE MIDPOINT LOCATION AS THE END POINT. THAT WILL GIVE AN EXTRA PT, WHICH WILL FOLLOW ON CONVECTIVE DOWNDRIFT AREA OR EQUAL. FIND SOME HIGHER WINDS. NO AFB ON 2nd CTR.
1000 Z		DESCEND TO 1P	VERY OPEN CONNECTION TO 5th CTR. SOME DEVELOPMENT NEEDED. GUNNERS HAVE TO DO OUR BEST TO GET ON THE RIGHT LONG. TO CTR. BEST GUNNERS: SINGLE NOTING ON LF SERV.
1008 Z	1P	18°56' / 85°11'	ARRIVE AT 1P, TAKE 080° RADIAL. IN COMBO
1011 Z		18°42' / 85°11'	REQUIRE 13000 FT TO 1P.
1021 Z	MIDPOINT	17°59' / 85°12'	MIDPOINT INBOUND
			GUNNERS TO MISS THE CTR ON WEST SIDE. WE DID 130° DIRECTION AND THEN JUST WEST OF THE CTR FORCED A BIT CLOSER, ABOUT 30 NM TO OUR EAST. SOME LIGHT BANDING AROUND THE CTR. PASSING SW OF CTR. GET A CTR DROP.
1035 Z	"CTR"	17°10' / 84°45'	"CTR" DROP
		17°36' N / 85°09' W	
		8436'	HONDERAS PARTICIP TO SW. BETTER COVERAGE, HIGHER DSE ACCORDING TO LF JUST TO OUR WEST.

SUNDE #1
BT #1
SUNDE #2
BT #2
SUNDE #3
BT #2

SUNDE #4
BT #3

Lead Project Scientist Event Log

Date 10/6/17 Flight ID 20171006H1 LPS ZAWISLAK

Time	Event	Position	Comments
1049Z	MIDPOINT OUT	16° 19' / 84° 38'	MIDPOINT OF OUTBOUND ON 180° IT ALMOST LOOKS LIKE THE SHEAR IS FROM THE NE CONTINUE JUMP ANOTHER 20-30 KM TO CHECK TIDES TURN DOWNWIND FOR WP # 3
1054Z	TURN AT WP #2	15° 58' N / 84° 35'	TURN TOWARDS DOWNWIND TO WP #3
1109Z	MID OF DOWNWIND	16° 49' N / 83° 56'	MIDPOINT DROP APPROX DOWNWIND ON EAST SIDE OF STORM. GETTING SOME WIND AT FL. JUST PBL TURNED CUMULUS RAY, VERY HIGH HERE TO EAST 34 KT WINDS FROM W HERE ~ 9000L FROM CIR TO CUB
1126Z	WP #3	17° 49' / 83° 23'	WP #3
1127Z			WP #3 DROP AFTER TURN. JUST FALLING CLOUD. MOVING BLW THERE INJ, UNTIL CIRCUS ABOVE. LOOKS LIKE A PRE SLOT HERE THEORETICALLY WINDS DOWNWIND SO IS THIS SUBSIDING FROM WINDS AND WINDS BEING WINDS? OR JUST A PRE SLOT? SO FAR DRAIN WIND 56 KT SPHR 57 KT FL. SEE SOME NICE WAVE ACTION AND ABOUT 10° CLOUD OFFWR NOW SOME DEEP CONGESTION BUILDING UNDERDEEP SOME TOWERING AHEAD TO NW TO EAST OF CIR. ALSO GET UP TO 30 KT FL. 57 N 75 MIN OUT GOING THROUGH RAIN AT OUR ALTITUDE. RAINING CONGESTION. PRE SFR → GROWING THIN.
	INBOUND		
	INBOUND WITH 3 TO CIR	17° 54' / 83° 59'	
1140Z	MIDPOINT DROP	INBOUND TO CIR 17° 52' / 84° 20'	MIDPOINT SOME TO CIR #2 MOSTLY FLATTERED CLOUD BELOW. THINK SOME CLOUD AT OUR ALTITUDE.
1145Z	'CIR'	17° 52' / 84° 45'	"CIR" JUST TO OUR SOUTH TARGETING THE MID DEPT TO BE JUST ABOVE THIS, NEAR CONVECTION. COULD BE SOME COOL POOLING NEAR IT FROM CONVECTION - END OF UCL REGION

SOUND #5
BT #4

SOUND #6
BT #5

SOUND #7
BT #6

SOUND #8
BT #7

SOUND #9
BT #8

1156Z "MIDPOINT" OF DOWNWIND. 17° 51' N / 85° 33' W "MIDPOINT" ON OUTBOUND.
1742 / 8441 ESTIMATE CIR #2 STILL TO CONVECTION WHERE THERE MIGHT BE POOLING
RAIN AT DROP

SOUND 10
BT 9

Lead Project Scientist Event Log

Date _____ Flight ID _____ LPS _____

Time	Event	Position	Comments
1205Z	OUTBOUND TO WP#4		DON'T LOOK LIKE WE'RE GOING TO GET THE WIND UP THIS SIDE.
1209Z	WP#4	17°51' / 86°35'	NO CIRCLES WP ON THIS SIDE. JUST DON'T HAVE THE WINDS ~ 10-11 MS WIND ON THIS DOWNWIND AND SUBSEQUENT INFLUENCE, WILL BE PROBABLY CLOSE TO THE SHIP'S SHEAR VECTOR WIND TEND TO GET WINDS ON THE EAST / NORTHEAST SIDE. JUST TOO MUCH CLOUD AT 25 KFT TO DO CIRCULAR. → CONTINGUOUS TRENDS TO GET ANOTHER FIG. 4 ROTATED, ALTHOUGH QUITE APPROPRIATE. ~ 50m IN/OUT LEGS TRAIL, THE SW AN OUT, DOWNWIND, SW AN ON 315' / FROM COMBAT IN DOWN THEN CTR ON TO WP FIG CIRCLES.
1228Z			
1231Z	WP#5 (NEW) TO SW 225°	16°34' / 85°40'	DRAG TO SW CLEAR BELOW ALC
1245Z	MIDPOINT ON 225° TO CTR	/	MIDPOINT → JUST GOT THROUGH CONNECTION WEARING CTR DOWN → GETTING CLEARER THE DOWN. ANCEL REMARK: JUMPING CLOUDS BELOW
1257Z	'CTR' 3	18°0' / 84°30'	MISSED TO BE A BIT, DRAGITE STARTING ON 35°. SO REVEALED CLOUDS WERE FINE 'CTR' 3" FL WINDS STARTED UP.
1303Z	OUTBOUND TO WP#6		OUT ON 055° - 30 MIN. 40 KT SEAR WIND CONVECTION OR RADIATION / SOME VISUAL CHANGE LEFT WINDOW, REMAINS TIPPING TO FINE W? SAW A MAX 46 KT SEAR. LF INCREASED CTR 3 AT ~ 84.67 18.08
1307Z	WP#6 TO NE	18°40' / 84°1'	END, WP#6 RAN DOWN TO 315° POINT FURTHER / FEW CLOUDS BELOW
1317Z	DOWNWIND TO WP#7	18°44' / 84°46'	SOME MORE CONVECTION CLOUDS, SHALLOW MOISTURE NOT A WIND LOT OF FRESH. LOOKS LIKE IT WAS TO OVERCOME A GET SUT. OR INTRODUCING BUT IT MIGHT BE ONLY FINE
1325Z	WP#7 IMPROV 315°	18°45' / 84°57'	TRAIL AT WP#7 FOR FINE LTR (4) WIND

SOUND 11
BT 10

SOUND 12
BT 11

SOUND 13
BT 12

SOUND 14
BT 12

SOUND 15
BT 13

SOUND 16
BT 14

CTR 4 WAS ~ 84.78 / 18.4

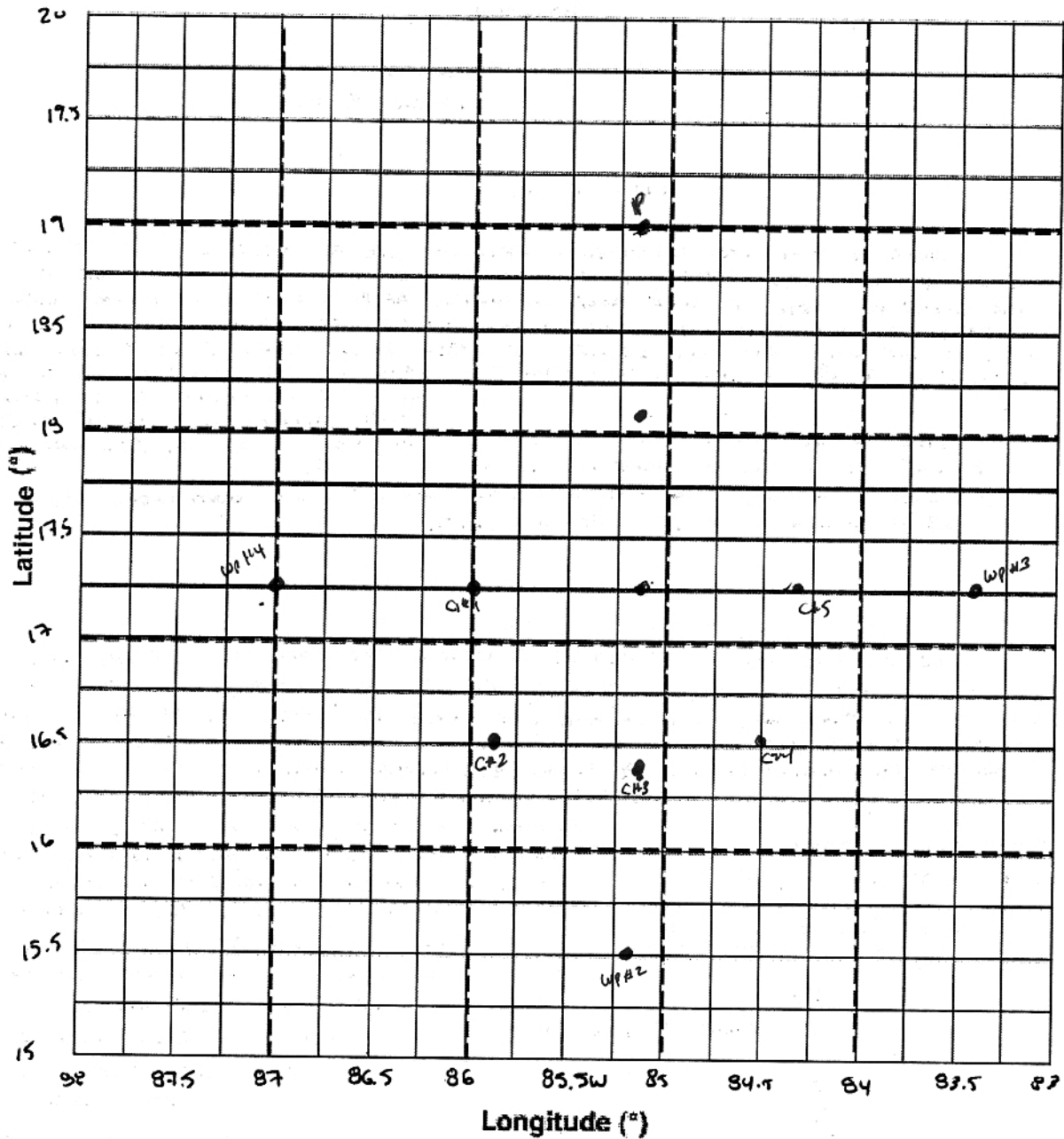
LOOKS LIKE THE CTR WAS DRAGS NORTH? HARD TO TELL
STILL SHALLOWEST, MORE MID CLOUD SUSTAIN

B40Z BEAT CIRCLES
1343Z CIRCULAR MODULE

18°34' / 84°6' SOUND 17
BT NOT GOING. YET

Observer's Flight Track Worksheet

Date 10/6/17 Flight 2017100641 Observer _____



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 (REMAS)

Workstation Scientist _____

Observers (affiliation) _____

DWL: KLOTZ

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

THERE IS SOME DEEP CONVECTION NEAR THE COAST AS THERE IS NOW OFF THE COAST OF HONOLULU. THERE IS SOME CHANGE OF INTENSIFICATION AND WE'LL SEE IF THE CONVECTION GETS A LITTLE MORE ORGANIZED. AT FOUR A LOW CLOUD COULING. SHEAR IS RELATIVELY LOW (6KT) AND AT THE MOMENT DOESN'T SEEM TO BE IMPACTING THE STORM MUCH SO THE CIRCUMNAV MAY BE DIFFICULT. WE'LL DO THE SINGLE FIG. 4 TO START AT 1000L TREAT IT AS A TOR PATTER. FIND A PLACE TO DO SOME CIRCLES. 30/45° DOWN THEN EITHER THE CIRCUMNAV OR PARTIAL FIG. 4. DOWN AT TURNS / MID / CTR. COMB W/ ATGT. SOME REQUIRES COMBO AT BEGINNING OF THE MODULE.

Mission Synopsis: (include plot of actual flight track)

SEE ABOVE. STORM MOVING AT 10LT AT 325. 45KT / 992 MB CURRENTLY AT 10LT IS FIXING TALK CTR, SHOW THAT WILL HOLD, BUT WE WON'T HOLD. WE'LL GET A CLOSE BY POSITIVE AND DROP AT WIND SHIFT.

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

SO SOMEWHAT SURPRISINGLY THE WESTERN QUADRANT HAD MOST OF THE RAIN, TO SW, S IS THE MOST PRECIP COVERAGE. TO E/N LESS COVERAGE, SOME MID CONVECTION, BUT MOSTLY SHALLOW. IT LOOKS LIKE IT HAD TO OVERCOME SOME DRY INTERUSION. UNLESS THE SUBAR VECTOR IS FLIPPED 180° AROUND. BUT CERTAINLY GOOD, DEEP CONVECTION TO SOUTH AND DEVELOP NORTH OF US. HIGHEST FL WINDS TO E/NE. 45KT SEPR, ALMOST 60 KT FL. HIGHLY ASYMMETRIC

Problems: (list all problems)

UNFORTUNATELY WE COULD NOT GET POWER TO DWL BEFORE FLIGHT.

CIRCUM NAV NOT DONE → TOO MUCH CLOUD IN ORIGINALLY PLANNED LOCATION.

Expendables used in mission:

GPS sondes: 17

AXBTs: 15 (14, PERHAPS ONE STUCK IN A/C)

Sonobuoys: 0

WIND FIELD. WHAT WE DID WELL WAS SAMPLE THE PBL. GET AROUND SOME CONVECTION, SO WE'LL SEE SOME DOWNDRAFTS PERHAPS COOL COVERAGE OR WINDS IN PBL, + 31T FOR FLUX IN A POTENTIAL DEVELOPING STORM.

ALSO GOOD TOR OPER. HAD TO ABANDON THE CIRCUMNAV DUE TO TOO MUCH CLOUDS BUT GOOD NEWS IS WE DID A ROT. FIG. 4, ALTHOUGH THE 2ND WAS ABANDONED TO GET 4 TOR ANSWER. WE DO STRUGGLE WITH GETTING THE CENTER. LF V. FL WIND. OTHER JUST MISSED.

SO CONVECTION TRYING TO ORGANIZE BUT DOES HAVE TO OVERCOME SOME DRY AIR TO THE EAST