

Lead Project Scientist

Storm or Project EPAC GENESIS Experiment type GENESIS STAGE EXPERIMENT

Flight ID 20180926H1 Mission ID WANXE GENESIS

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.

Lead Project Scientist Check List

Storm or Project EPAC GENESIS Experiment name GENESIS STAGE EXPERIMENT

Flight ID 20180926141 Mission ID NAWXE GENESIS

A. Participants:

HRD		AOC	
Function	Participant	Function	Participant
Lead Project Scientist	<u>ZAWISAK</u>	Flight Director	<u>SEARS</u>
Radar/Workstation	<u>ROGERS</u>	Pilots	<u>AC: PRICE ROSSI / KAHN</u>
		Navigator	<u>RICHARDS</u>
Cloud Physics		Systems Engineer	<u>GREENE</u>
		Data Technician	<u>MASCARO</u>
Dropwindsonde	<u>ZHANG</u>	Electronics Technician	
AXBT/AXCP		Other	<u>NEEDS: SAPP CHONG JELENKA</u>
Photographer/Observer			<u>FR: SHUCKE AVAPS: MCALISTER</u>
s/Guests			

B. Take-off and Landing Times and Locations:

Take-Off: 1557 UTC Location: LIBERIA, C.R.

Landing: 2042 UTC Location: LIBERIA, C.R.

Number of Eye Penetrations: 0

C. Past and Forecast Storm Locations:

Date/Time	Latitude	Longitude	MSLP	Maximum Wind

NO VIBEX DATA
 → DISTURBANCE AREA
 10/40%
 CHANGE IN FUEL SAMPLING
 215 0045

D. Mission Briefing:

TWO NORTH-SOUTH ORIENTED SURVEY LINES. THE FIRST IS CLOSE TO THE COAST TO SAMPLE THE PARAGUAY GAN REGION, THE OTHER IS A LINE DOWN THE TROUGH THAT SHOULD BE ON THERE. EXPECTING TO SEE CUMULUS ON THE NORTHERN PART OF THAT LINE, AND WETTER/LIKELY BY THE SOUTH. 14KFT TO ALLOW WRAH TO COLLECT. SUR TORN FLIGHT ABOUT CONVECTION AS NEEDED.

3 AXBT'S
 SOME IR-
 THE INITIAL
 LINE IS
 SATELLITE
 UNDERWAY

SOMEONE ELSE IS MOVING OFF TO THE WEST IN THE WESTERN PART OF THE REGION.

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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:

OPERATIONAL SFMR DOWN ~ 1636 UTC.

SWITCHED THE 2nd DOWN LOOKING SFMR TO VIEWABLE

~1913 SWAP?

Lead Project Scientist Event Log

Date 9/20/19 Flight ID 20190926H1 LPS ZAWISUK

Time	Event	Position	Comments
1557	T/O LIBERIA, C.R.		
1616Z	TOWARDS IP		SOME SCATTERED SHALLOW CONVECTION NEAR OUR PT.
1623Z	WP #1 SONDE 1	10°0N / 87°	SONDE 1 ON GAP LINE
	IP		SOME CONVECTION AROUND
			DEFINITELY THROUGH THE AREA SHALLOW W/
			WENT THROUGH SOME PROCS WITH W/
1637Z	WP #2 ^{SONDE 2/3}	SONDE #2	FAST FALL SONDE 2
1638Z		SONDE #3	BT WP #2 TO BACKUP.
			SO AT OUR LEVEL, SOUTH WESTERLY WIND, BUT ABOUT 20KT WIND, W/ 9000 ft BELOW 4000 ft
			SO MAKE GOOD WIND ZONE BELOW 4000 ft.
1651Z	WP #3 SONDE 4		WP #3 SE INITIAL W/ ON THE SE-NW.
1658Z			STILL FLTING IN REVERSE CLEAR.
			TRANSITION IN WIND DIRECTION FROM 85U TO 700MB
		BELOW 700MB	EASTERN AT 850MB, MORE SOUTH WESTERLY AT 700
		9300 ft BELOW 3km	FOR GAP WIND!
		25KT AT 925MB	IP DROP?
1704Z	WP #4 SONDE 5	12° / 89° 30' W	SONDE OF WP #4 NOW HEADING WEST/NW
	→ SONDE LOST AS 1657Z.		PROGRAMMING
			SFMR DOWN NOW
			BUT OUR RESEARCH IS STILL UP.
1723Z	WP #5 SONDE 6		DRY AIR BELOW 700MB
			SO MAKE WIND ABOVE.
1742Z	DOWN TO WP #6		SWITCHING TO RESEARCH SFMR NOW

SONDE 1
OB #1

SONDE 2
CORRECTION #
SONDE 3
↓ SET 2
OB #2

IN
SONDE 3

SONDE 4
BT CORRECTION
BOLD BOLD
500 m
OB #3

SONDE 5
CORRECTION
OB #4
CCA

SONDE 6
OB #5
↑

So that is around 1704Z.

Lead Project Scientist Event Log

Date 9/20/18 Flight ID Z018092641 LPS ZAWISOK

NEW OP
NW → SE
LEG

Time	Event	Position	Comments
1753 Z	WP #6 SOUNE 7	11°46' / 93°28'	WEAK CONDITIONS AT THIS POINT. CIRROUS ABOVE. BUT SOME SUBSIDED MID CONGESTION BELOW BUT AT THIS WP ONLY A FEW CLOUDS BELOW
1754 Z	WP #6 SOUNE 9 Backup.		
1809 Z	WP #7 SOUNE 9		WORKING UP ISSUE W/
1824 Z	WP #8 SOUNE 10		
1841 Z	WP #9 SOUNE 11		SOUND ON THE NW → SE LINE
	<div style="border: 1px solid black; border-radius: 50%; padding: 5px; display: inline-block;"> THIS WAS A BT COMB W/ AT IR SOUNE OF RAIN </div>		OH, SO WE HAD SOME WIND SHIFT AT FL. BUT IN MOSTLY CLEAR CONDITION THROUGH THIS ROUTE OR IF CONGESTION AROUND US. I THINK THE SOUTH LINE FEATURE MAY HAVE LEFT BEHIND AN HOUR SINCE WE ACTUALLY GOT A WIND SHIFT AS OUR FL OF 1
1857 Z	WP #10 SOUNE 12	7°16' / 91°28'	SO SCAT SATELLITE SHOW A BROAD LLC TO BE SURE OF WIND APPEAR TO BE A POSSIBLE HL CIRCULATION SEEN IF THE RADAR POS. ARE AT FL ↳ SKY OR SO REMAINING FROM CONVECTION THAT EXISTS BEFORE?
1913 Z	WP #11 SOUNE 13	TURNING TO ME TO DO FINAL SW → NE LEG	REALLY DON'T SCATTERED MID CONGESTION WAS IN THIS AREA. NO DUNE DUNE, BUT NOT URGE RAIN CONVECTION.

1841 Z

WIND SHIFT
92.67W / 9.9N
BROAD CIRCULATION
AT 5 KM
STILL SURFACE
TROUPEL

ASCAT
93.0W / 8.1N
CLOUD
TO AW

TURNING
FOR FINAL
SW → NE
LEG

IR¹
SOUNE 7
OB #6
REQUIRE
SOUNE 8
IR²
SOUNE 9
OB #7
IR³
SOUNE 10
OB #8
IR⁴
SOUNE 11
BT COMB
OB #9
IR⁵
SOUNE 12
OB #10
REQUIRE
SOUNE 13
OB #11

Mission Summary

Storm name

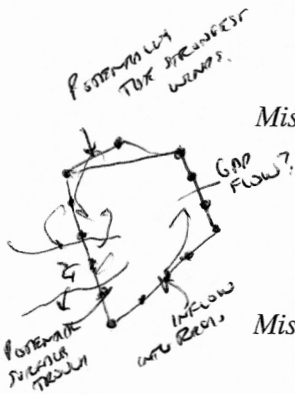
YYMMDDA# Aircraft 42RF

Scientific Crew (4 RF)

Lead Project Scientist ZAWISIAK
 Radar Scientist ROGERS
 Cloud Physics Scientist _____
 Dropwindsonde Scientist ZIANG
 Boundary-Layer Scientist _____
 Workstation Scientist _____
 Observers (affiliation) _____

SAMP
 CHANG > NESDIS
 JELMAN

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



TWO SEAWAY LINES OF DROPS PLUS SOME E-W THAT WILL ALLOW US TO SURVEY THE AREA WHERE THERE COULD BE A GAP TEND FROM PARACON. THAN THE WESTERN LINE WITH SHOW WINDS AND THERMS FROM DROPS AT 0 CBSI SECTION THROUGH THE SURFACE TRACK THAT COULD FORM 14K. SOME REMNANT CONVECTION IN THE PATTERN AT THE MOMENT.

SO SHOULD ALSO SEE THE INFLOW INTO IS, AS WELL AS STRONGEST WINDS

Mission Synopsis: (include plot of actual flight track)

THE INITIAL SEAWAY NEAR THE COAST ALONG WITH THE CITY OF CROWN APPROX 1165

SO WE WERE ABLE TO FLY THE PATTERN AS PROVEN UP WITHOUT TOO MANY ISSUES. VERY LITTLE DEVIATION REQUIRED, WHICH MAKES SENSE CONSIDERING THE LIMITED COVERAGE OF CONVECTION / THERM. JUST A LOT OF ANVIL.

SAW A MIDDLE LEVEL CIRCULATION ON OUR WAY TO THE WESTERN LINE, AS WELL AS A LARGE WIND SHEAR JUST SOUTH OF THE FLIGHT LEVEL (MIDDLE LEVEL) WIND SHEAR. DRIER AIR COMING IN FROM THE SOUTH, WHICH COULD BE PREVENTING BETTER RAIN COVERAGE AND DEVELOPMENT.

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

OVERALL A BROWN MID LEVEL AND LOW LEVEL CIRCULATION BUT NOT MUCH CONVECTION, NOT THERE.

INTERPRETATION:
 DRY AIR -> NOT QUOTE CONVECTION!

PROBABLY BECAUSE OF THE DRY AIR?

BY CIRCULATION ARE PRESENT -> DRY AIR PREVENTING DEVELOPMENT.

OVERALL SCIENCE INTERESTING BUT SFMR DROPS, COULD BE A SIGN OF

Problems: (list all problems)

ML 92.6W/ 9.84N

OPERATIONAL SFMR WENT DOWN, SWITCHED TO 2nd SFMR BEW 1745Z.

FIRST FAIL, BACKED UP AT WP #2 (REGULAR SOND)

LATE LAUNCH DETECT AT WP #4 / SOND 5

2nd FAIL, BACKED UP AT WP #6 (1/2 SOND BACKED UP)

STILL 1657 BUT WP 1704 -> SFMR CCA ON WP #4

Expendables used in mission:

GPS sondes . 16 (14 GOOD, 2 FAIL) 15 IR SONDES

AXBTs . 3 (EARLY LAUNCH DETECT 1 FAIL, WORKING GOOD 2 AT WP #6)

Sonobuoys: _____

-> BT / IR SONDE COMBO AT WP #9 1 BT / IR SONDE COMBO.

BRAND ML 92.6W/ 9.84N
 IN PL / LAMP
 SURFACE TRACK SHEAR AXIS SOUTH OF THIS
 IN SOUTHERN METER AND SOND.