

Lead Project Scientist

Storm or Project EPAC GENESIS/INV 96E Experiment type GENESIS STAGE

Flight ID Z0190928H1 Mission ID WCVXE 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 / INV 96E Experiment name GENESIS STAGE

Flight ID 20180928141 Mission ID WCWXE GENESIS

A. Participants:

HRD		AOC	
Function	Participant	Function	Participant
Lead Project Scientist	<u>ZAWISLAK</u>	Flight Director	<u>SEARS</u>
Radar/Workstation	<u>ROGERS</u>	Pilots	<u>AIC: 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>RE: LAUNDE SANCHEZ</u>
Photographer/Observer			<u>NRSDV: SAPP</u>
s/Guests			

B. Take-off and Landing Times and Locations:

Take-Off: 1256 UTC Location: LIBERIA, C.R.

Landing: 2114 UTC Location: LIBERIA, C.R.

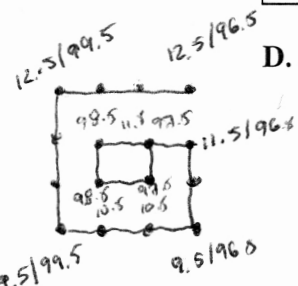
Number of Eye Penetrations: _____

C. Past and Forecast Storm Locations:

Date/Time	Latitude	Longitude	MSLP	Maximum Wind
<u>28/0600Z INV</u>	<u>11.0 N</u>	<u>96.7 W</u>	<u>~ 1007 mb</u>	

D. Mission Briefing:

FOR A SQUARE-SPIRAL AROUND INVEST 96E, WHICH SHOULD BE APPROXIMATING 98W, 97.5N. FOR 1210FTE PRESSURE. 16 DROPS PLANNED. SOME IR SONDES. MOST OF THE CONVECTION IS DISPLACED TO SE, BUT SOME NEW CONVECTION DEVELOPING CWZEL TO THE BROAD CIRCULATION SHEAR DOESN'T SEEM TO BE AN ISSUE. MAYBE JUST A BIT OF REM AIR IN THE BROAD CIRCULATION BECAUSE DEEP CONVECTION DEVELOPING ON THE EAST SIDE AS WE HEAR ON



Storm or Project EL GENESIS / INV9GE Experiment name GENESIS STAGE

Flight ID 2018092841 Mission ID W/CWXP GENESIS

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				
AXB T/AXCP				
Ozone instrument				
Workstation				
Cameras				

REMARKS:

OPERATIONAL WING POD SFMR DOWN/
LIFE SFMR USED IN HDOR

Lead Project Scientist Event Log

Date 9/28/18 Flight ID 20180928HI LPS ZAWISLAK

Time	Event	Position	Comments
1256 Z	T/O, LIBERIA, C.R.		
1311 Z			DEFINITE A SUBSTANTIAL CONVECTIVE BURST ON THE EAST SIDE OF THE CIRCUMSTANTION AND PATTERNS
			WE'LL SEE HOW IMPERIAL THIS IS. PERHAPS AN HCV TO CONSOLIDATE THE MASSAGE AND PROVIDE A FOCUS POINT TO DEEPEN OR CONSOLIDATE THE SURFACES?
			CROSS SHEAR INDICATES HIGH SHEAR (SW TO THE NORTH) SO CERTAINLY LOOK LIKE STRIA WINDS. HOWEVER WHEN IT COMES AWAY?
1443 Z	~2000 IP		UNDER ANGLE OF THAT LARGE MASS ON THE EAST SIDE OF THE CIRCUMSTANTION
1453 Z	STARTING RAIN ANALYSIS FOR FIRST LEG ON THE INBOUND TRANSIT		
1504 Z	IP 1	12°30'N / 96°32'W	SONDE AT IP. CONVECTIVE OR SHAL. CLOUDS. SONDE 1: 40 FT EASTWARD 1009 mb 98° 98° WIND
1516 Z	2ND SONDE E→W OUTER BOX		2ND PT IN OUTER BOX 1008.9 mb
			PREM DECENT CONVECTIVE JUST TO OUR NORTH ON THIS FIRST PART OF THE LEG. LOOKS LIKE NEW GROWTH MIDDLE OF THE LEG DSL? CONVECTIVE
1529 Z	3RD SONDE E→W OUTER BOX	12°29'N / 98°31'W	SONDE 3 IN W LEG BUT CLEARER NOW
			STILL DECENT CONVECTIVE TOP TO OUR NORTH ~ 10-20 km
			SONDE 3 HAS 30 FT ONE ABOVE 2ND 20 FT NE BELOW
			RAINING UNDER LOCAL STRATIFORM FROM FRESH TROPOSPHERE
1543 Z	4TH SONDE E→W LEG NW POINT OF OUTER BOX	12°27'N / 99°39'W	QUITE A BIT OF CONVECTIVE BUT AT THIS NEW POINT
			UP TO OUR FL SOME DEEPER THAN THAT AROUND THUS
1558 Z	2ND SONDE ON N→S LEG UP OUTER BOX	11°30'N / 99°30'W	END SONDE N→S PREM CLEAR BELOW
1611 Z	3RD SONDE ON N→S LEG UP OUTER BOX	10°30'N / 99°30'W	3RD ON THE LEG. SO FAR EASTERN WINDS.
1624 Z	4TH SONDE ON N→S LEG UP OUTER BOX	9°30'N / 99°30'W	LAST SONDE ON N→S LEG PREM CLEAR OUTHERE.

SONDE 1
SONDE 2
SONDE 3
IR 4
SONDE 4
SONDE 5
SONDE 6
SONDE 7
IR 8
2590 GBT
1008.1

Lead Project Scientist Event Log

Date 9/28/18 Flight ID 2018092841 LPS Zawisjak

Time	Event	Position	Comments
1630Z			CERTAINLY LOOKING LIKE THERE COULD BE AN MV TO THIS ACE ON THE EASTERN BOX OUT ON THE WEST SIDE JUST WEST EASTERLY
1638Z	2nd SOND OF W → E LEG OF OUTER BOX	9°29'N / 99°25'W	NOW ON W → E LEG. PERM CLEAR OVER HERE. DID FIND A WIND SHIFT OF FL AND NOW UNDER SURFACE AT THE SURFACE
1647Z			CATCH LLC ON SOUTH LEG OF OUTER BOX → MLC WJ
		ALSO SLOW WIND SHIFT IN FL WINDS AT WELL.	CONVECTION TO THE EAST OF THAT. STILL CLEAR OVER LLC
1651Z	3rd SOND OF W → E LEG OF OUTER BOX	9°39'N / 97°32'W	OPEN CONVECTION BUILT AT OUR THIRD POINT SO SOND JUST NORTH OF THE CONVECTION
1706Z	4th SOND OF W → E LEG OF OUTER BOX	9°54'N / 96°29'W	4th SOND AT SE CORNER OF OUTER BOX. ANVIL ABOVE, FEW CLOUD BELOW → CUMULUS
1711Z	4th SOND OF W → E LEG BUT FORWARD NOW →		BOILED UP THAT SE SOND AS IT LOOKS LIKE A FAST FALL
1719Z	AT WP #11 2nd SOND ON S → N LEG OF OUTER BOX	10°34'N / 96°30'W	ANVIL ABOVE. CONVECTION TO OUR EAST. PERM CLEAR BELOW. MUCH NEW CONVECTION DEVELOPING TO OUR WEST AND WEST OF MAIN MCS REGION. WILL NEED TO DEVIATE PRIORS IS BE GOING A BIT NORTH THEN CENTER TOW DIVERG TO WP #13 FOR INNER BOX
1731Z	PLT OF SIGNIFICAL WINDS IN THE MCS, BUT NEW CONVECTION FORMING	NEARIN C WP #12	
1733Z	AT WP #12	11°30'N / 96°29'W	SOND 13 AT WP #12. FOUND A WIND SHIFT AT OUR FL AROUND 96.5 / 10.6
1738Z	ABOUT TO CUT THROUGH	THAT NEW DEVELOPMENT	NEAR 96°39'W POSSIBLE MULTIPLE CENTERS RIGHT NOW
1749Z	WP #13 START OF INNER BOX	9th POINT INNER BOX	RAINING, SO USE RECON SOND.
1803Z	WP #14 NW PT OF INNER BOX	NW POINT INNER BOX	CLEAR BELOW STILL AN INFLUENCE OF DRZ AIR.
1816Z	WP #15 SW PT OF INNER BOX	10°30' / 98°27'	QUITE CLEAR OUT HERE IN THE WESTERN PART OF INNER BOX

SOND 8
218/20W

1009.4
1009.4
SOND 9
197/20W

SOND 10
12#3

1009.7
SOND 11
18#12

SOND 12
20#18
197
1009.8

SOND 13
18#130

SOND 14

SOND 15
12#4
1009.10
164

SOND 16
14#202
1006.5

50 MIN LEVEL
FL WIND SHIFT
AT 96.5 W
10.5 N OR
50

THANK A LLC HAS MOVED OFF TO OUR WEST. HAVE LOGGERS ON THE NW PT DRZ.

Lead Project Scientist Event Log

Date 9/28/18 — Flight ID 20180928.HI — LPS ZAWINAK

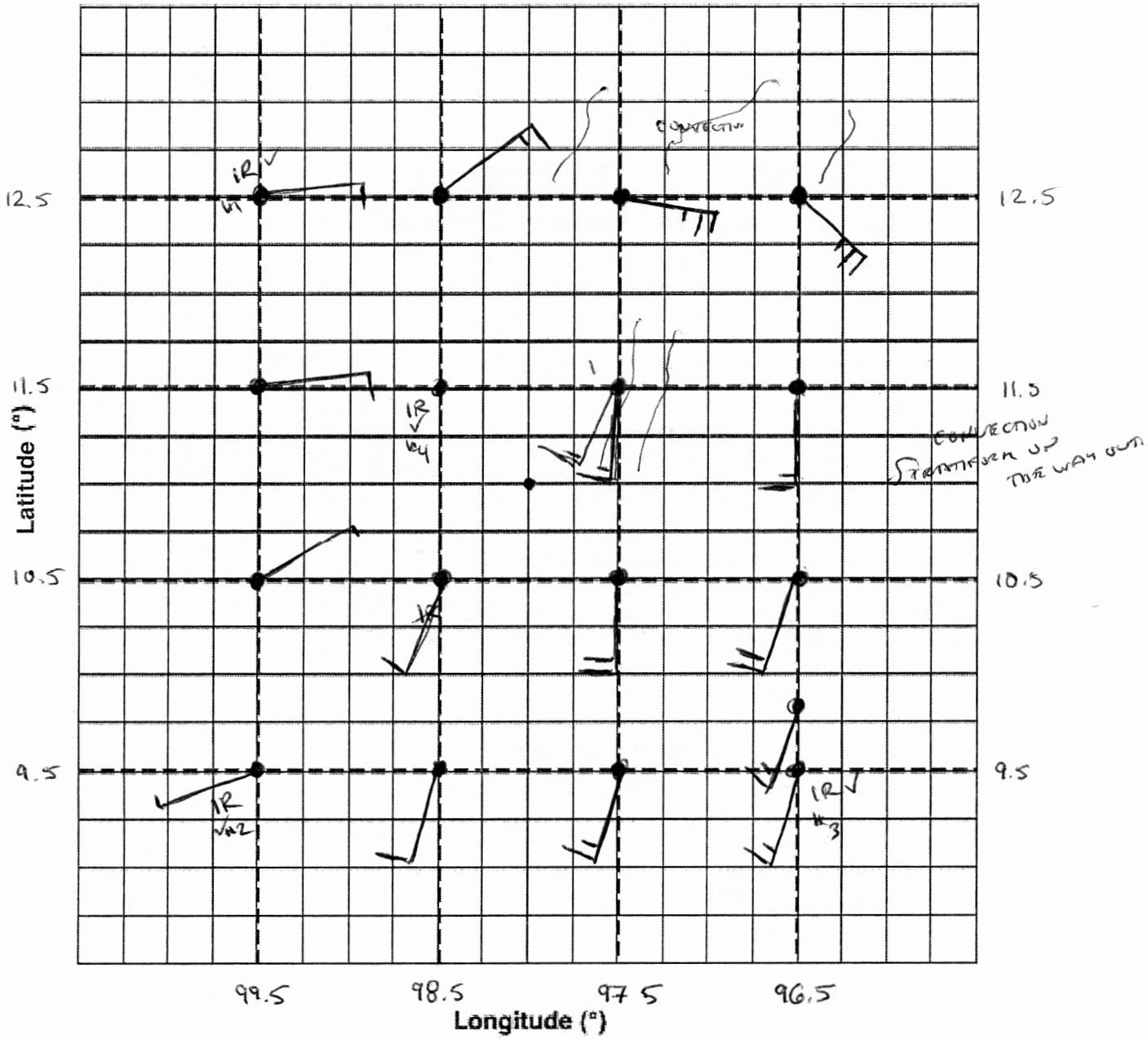
Time	Event	Position	Comments
1829Z	WP # 16 SE PT OF INNER BOX	10°31'N / 97°30'	<p>NOW HEADING ON OUR S-W LINE</p> <p>THINKING ULL HAS MOVED TO OUR WEST. GOT LOG 3.24</p> <p>RAOAR ANALYSIS SHOWING CONTRAST MCI IN PLACE TO EAST OF PATTERN.</p> <p>KNOW WE SEE THAT IN THE IR</p> <p>NEARLY POINTING THE CB TO THE POST 040N</p> <p>GOING TO DROP ONE MORE TIME AT NE POINT OF CB FOR TIME FOR THE INNER</p>
1843	WP # 17 NE PT OF INNER BOX 040N	11°50'N / 97°30'	<p>LAST SONDE AT NE POINT FOR CONTRAST</p> <p>SO TURNING FOR HOME WILL HAVE TO PICK OUR WAY THROUGH THAT MCS.</p> <p>CONTRAST ON OUR POSITION</p> <p>WE HAD PASSED THROUGH THAT CLOUD IN</p>
1904Z	OUTBOUND FROM PATTERN	11°11' / 96°37'	<p>ALL STRATIFORM RAIN IN THIS PART OF THE MCS.</p> <p>WILL STOP RAOAR ANALYSIS</p>
1918Z	END OF RAOAR ANALYSIS ON THE SUBBOUND TROUGH	11°9'N / 95°9'W	<p>ONCE WE GET THROUGH THE STRATIFORM MCS</p>
		END OF SCIENCE	

SONDE 1
25 BT
179
1006.3

SONDE 1
20 BT
195
1007.5

Observer's Flight Track Worksheet

Date 9/29/18 Flight Z018092841 Observer ZAWISLAK



Mission Summary

Storm name

YYMMDDA# Aircraft 4zRF

Scientific Crew (4 RF)

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

MSD'S: SAPP
WRAP

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

SQUARE SPIRAL, 12 W/ PRESSURE, 1° SPACING OF SONDES FOR EQUAL COVERAGE AND RADAR W/ AXBT. 13 PLANNED SONDES.

CONVECTION, VARIED DEEP DEVELOPING NEAR THE CENTER. MOST OF IT HAD BEEN TO THE SE. STILL APPEARS TO BE A BROAD CIRCULATION AT THE SURFACE.

Mission Synopsis: (include plot of actual flight track)

PREVAILING CONSIDERABLE MC DEVELOPMENT ON THE EAST SIDE AS WE WERE GETTING OUT THERE. SEEMS TO BE IMPACTED BY SHEAR. MUCH DEVELOPMENT W/ HIGH TO NORTH BUT WHAT HADN'T WHEN IT CIRCLED THRU?

WE FOUND A LLC ON OUR SOUTHERN WEST SIDE OF OUTER BOX W/ SONDES. NOT ONLY PRECIP, BUT I WOULD THINK MIDLEVEL CENTER ON OUR EASTERN PORT OF THE BOX. ON OUR SOUTHWEST IN BIG BOX. SO COULD BE MULTIPLE CENTERS OUT HERE - DEFINITELY SOME STRONG SONDEWIND FEEDING INTO THAT MCS (MAY BE A MLC IN THERE WITH NEW DEVELOPMENT). STILL SOME INFLUENCE OF DRY AIR AND SUBSIDING.

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

FLEW THE SQUARE-SPIRAL AS PLANNED. PROFILES WERE GOOD (ROUND). INTERESTING EVOLUTION. CERTAINLY SEEMS LIKE THERE IS A LLC TO THE WEST OF CONVECTION (SHEAR IMPACT) W/ MULTIPLE MCS IN THERE COMPLICATING THE PATTERN.

INNER BOX MAY HAVE BEEN TOO FAR EAST OF LLC WHEN WE REACHED IT. 1000ms THROUGH ON MULTIPLE SONDES REALLY TRYING TO GET MORE BUSTLES ON NORTH AND WEST SIDE TO GO ALONG W/ EAST SIDE. RADAR ANALYSIS SHOW AN MC IN DEEP MCS TO EAST OF PATTERN.

Problems: (list all problems)

NO REMINDER W/ THE FLIGHT OTHER THAN THE WIND PRO SEEM STILL BEING NOT UNUSUAL, BUT WERE USING THE WIND FROM INSIDE?

WAS MANY DEVIATIONS REQUIRED? WITHIN NEARBY, MUST BEING DONE SEVERAL W/ LITTLE ABOUT TURNING.

Expendables used in mission.

GPS sondes: 18 (4 IR SONDES) NO ISSUE

AXBTs: 4

Sonobuoys: _____

EXCEPTION WAS NEAR / AT THE NW POINT OF THE OUTER BOX. REQUIRED REVERSING IR SONDE UNTIL IT WAS A BIT CRESTED BELOW.

PERSISTENT MCS BLW 4 AND 9 km IN MCS IN THE EASTERN PORTION OF OUR PATTERN. SHOWED UP IN 2 DIFFERENT TOR ANALYSES S-W AFR OUTBOUND