

## Lead Project Scientist

Storm or Project AL92 Experiment name Genesis 3  
Flight ID 10091341 Mission ID 10091341

### Preflight

1. Participate in general mission briefing.
2. Determine specific mission and flight requirements for assigned aircraft.
3. Determine from AOC flight director/meteorologist whether aircraft has operational fix responsibility and the mission designation.
4. 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.
5. Meet with AOC flight director and navigator at least 3 hours before take-off for initial briefing.
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 MGOC in Miami.
8. Before take-off, brief the on-board GPS dropsonde operator on times and positions of drop times.
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. Complete Lead Project Scientist Form.
5. Check in 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 10-s flight listing from the AOC flight director. Turn in with completed forms.
4. Obtain a copy of the radar DAT tapes. Turn in with completed forms.
5. Obtain a copy of serial flight data on thumb drive. Turn in with completed forms.

[Note: all data removed from the aircraft by HRD personnel should be cleared with the AOC flight director.]

6. Report landing time, aircraft, crew, and mission status along with supplies (tapes, etc.) remaining aboard the aircraft to MGOC.
7. Determine next mission status, if any, and brief crews as necessary.
8. Notify MGOC as to where you can be contacted and arrange for any further coordination required.
9. Prepare written mission summary using **Mission Summary** form.

### Lead Project Scientist Check List

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 Flight ID 100913 #1 Mission ID 100913 #1

**A. Participants:**

HRD		AOC	
Function	Participant	Function	Participant
Lead Project Scientist	<u>Markes</u>	Flight Director	<u>Sears / Flaherty</u>
Radar/Workstation		Pilots	<u>Halverson / Nelson / Kibbe</u>
	<u>Lorsolo / Annane</u>	Navigator	<u>Kidder</u>
Cloud Physics		Systems Engineer	<u>Bast / Dewey</u>
Photographer/Observer /Guests	<u>Popstefanija ProSensing (2)</u>	Data Technician	
Dropwindsonde	<u>,</u>	Electronics Technician	<u>Lynche / Bosko</u>
AXBT/AXCP		Other	

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

Take-Off: 0914 UTC Location: KMCF MacDill

Landing: 1718 UTC Location: St Croix

Number of Eye Penetrations: 0

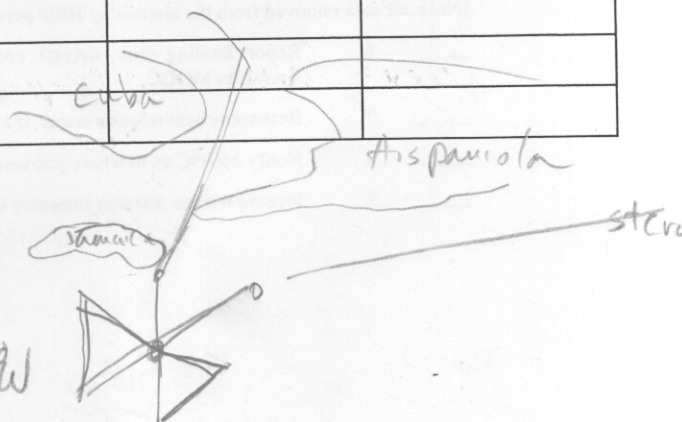
1632  
7623

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

Date/Time	Latitude	Longitude	MSLP	Maximum Wind
<u>9/13 12Z</u>	<u>16.5 76.4</u>			
<u>9/13 13Z</u>	<u>16.5 77.0</u>			

**D. Mission Briefing:**

Butterfly starting N-S  
 ESE - WNW  
 WSW - ENE  
 moved N-S leg along 77W  
 for 1st leg



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Flight ID 100913H1 Mission ID 100913H1

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	↑	↑	↑	no packet 3 analysis data 1 DAT
Doppler Radar/TA	↑	↑	↑	
Cloud Physics	—	—	—	→ NA
Data System	↑	↑	↑	1 DAT
GPS sondes	↑	↑	↑	15/12 Transmitted
AXBT/AXCP	—	—	—	→ O
Ozone instrument				
Workstation	↑	↑	↑	
Cameras	↑ dark	↑	↑	
WSRA	↑ TO	↑	↑	

**REMARKS:**

- TO delayed 1h because of APU issue. Also problem with WSRA laptop.
- Set up pattern to come in from N → S 1st leg because of delay <sup>and shortened to 80 NM</sup> - Centered on pouch 16.5N, 77W
- Shifted pattern W at 17-18 kts to keep up with translating system (Pouch)
- Convection developing SE of Pouch center on 1st & 2nd legs. large strat form Anvil to W of pouch. last leg passed through leading convection on W of pouch, anvil, then growing convection on E side.
- good mission in spite of delays.
- on ferry home did 30 min at 9kft for WSRA
- no packet data available for radar - copied radar file

Lead Scientist	F. Marks
Doppler Scientist	S. Lorsolo
Dropsonde Scientist	B. Annane
Flight Director	I. Sears/ P. Flaherty
Pilots	H. Halverson/M. Nelson/ J. Kibbey
Navigator	R. Kidder
Electronics Technician	J. Bosko/T. Lynch
Other	Popstefanija/ProSensing

Time	Action	Comments
0914	TO MacDill	1.25 h delay because of APU and WSRA laptop issue. Changed flight pattern to make up time by reorienting pattern to start N-S along 77W center point at 16.5N.
1220	18, 75	crossing bands S of Cuba entering circulation - good time to start Doppler analyses
1239	17.5, 76.5	start descent to 12 kft
1246	17.2, 77	IP drop #1, just south of Kingston Jamaica
1250	16.8, 77	drop#2 midpoint inbound leg from N
1255	16.5, 77	drop #3 in center of pattern winds still E at 12 kt.
1302	16, 77	wind light and variable, shifting to SW briefly as we cut through cells, then to ESE
1305		drop#4 midpoint outbound leg to S
1315	15.2, 77	Point 2, drop #5 turn to point 3
1329	16, 76.35	Point 3, drop#6 turn TK 300
1337	16.25, 76.85	drop#7 midpoint inbound leg from ESE
1344	16.5, 77.3	drop #8 center of pattern - bad sonde
1353	16.85, 77.95	drop #9 midpoint outbound leg to WNW
1400	17.1, 78.45	Point 4, drop#10 turn TK 180 to point 5 crossing convective line and then track along W side of it
1414	16.2, 78.45	W edge of convective band on W side of anvil, lightning
1415	16.1, 78.4	drop #11 just on W side of the convective band
1418	16, 78.2	Point 5, turn TK 050 in major convection - the HOOK - winds at FL due N at 16 kt, lots of convergence
1423	16.2, 77.9	drop#12, midpoint inbound leg from WSW
1433	16.5, 77.25	drop #13, center of pattern

1443 16.75, 76.6 drop #14, midpoint of outbound leg to ENE right in the middle of convective feature

1453 17.25, 76.05 Point 6, drop#15, end of pattern

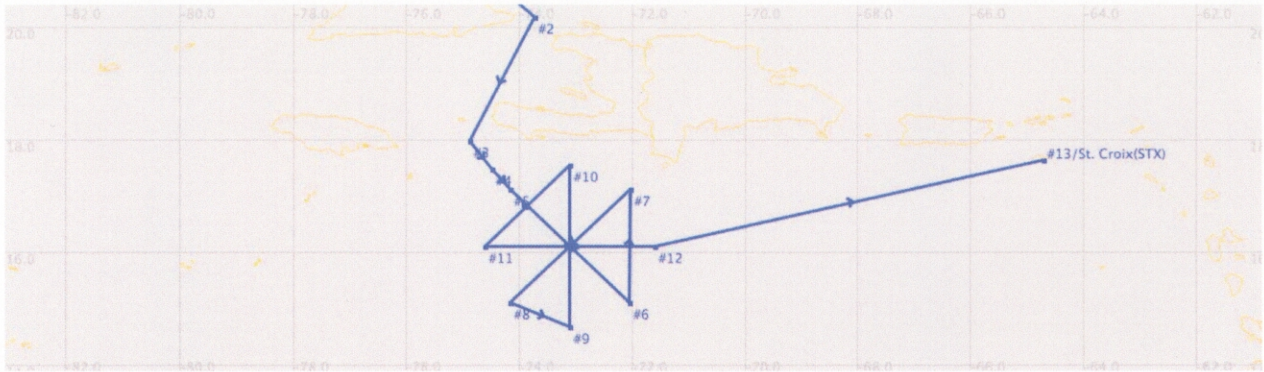
1632 descend to 9 kft S of Puerto Rico for WSRA tests.

1718 STX Land

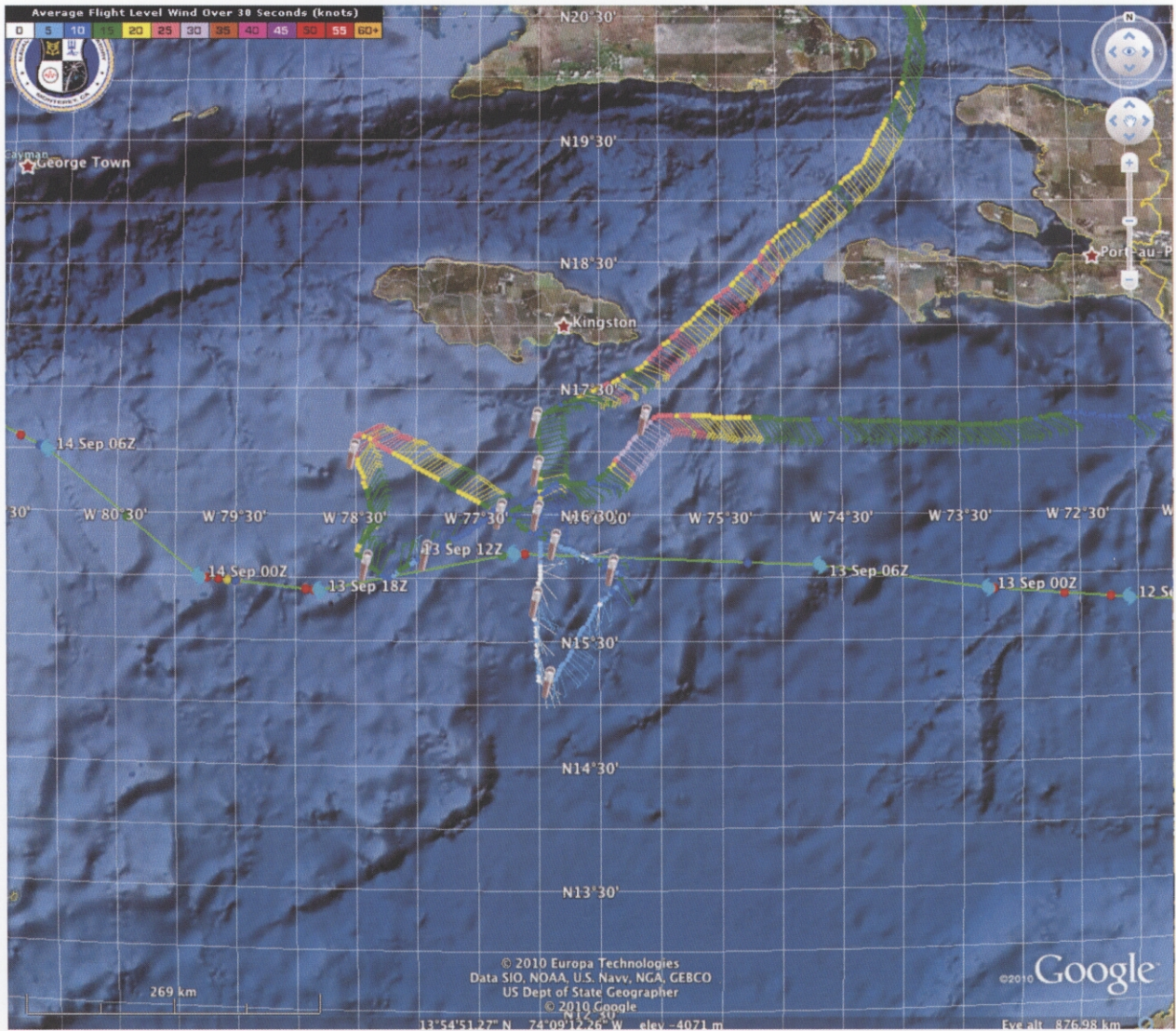
Comments:

1. TO delayed 1.25 h primarily because of APU, but we also had a minor glitch in the WSRA laptop that was debugged before we took off
2. Very Good mission despite the delays
3. No packet radar data available on mission. Sylvie made sure to take off what we needed from the laptop after conferring with John Gamache. He said that this had happened before on N42RF. He needed to work with Joe Bosko and Terry Lynch to see why we continue to have the problem.
4. Because of delay we changed the pattern from the one briefed and drawn up so that we could minimize impact on pattern and to maintain schedule for future missions. We set up first leg to enter from N and fly 1<sup>st</sup> leg N-S. Because the IP was over Jamaica for the first leg we decided to begin the leg just outside the Jamaica ADIZ and track S to the center of the pouch at 16.5 N, 77 W. This shortened the first inbound leg by about 10 nm.
5. As the pattern evolved it became apparent that we needed to shift our pouch center point W at about 17 kt with each leg to keep our Doppler data in the pouch relative framework. Also did the same with the Doppler analyses.
6. Convection was developing rapidly SE of the pouch center but within our pattern on our first two legs. Excellent sampling with Doppler of the growing convection. Large stratiform anvil to W of pouch center. Sampled the stratiform anvil and leading convective squall line on W side of pouch on our second and third legs. Leading convective line was along very sharp wind shift line from northerly flow to W and ESE flow the East of the lone - the HOOK! Excellent Doppler coverage of the whole pouch.
7. On ferry to St. Croix we descended to 9 kft for 30 min for WSRA tests.

Radar	3 analyses and SOs completed, 1 DAT
Data system	1 DAT
Dropsondes	15 dropped / 12 processed and transmitted 1 bad drop (tracked sonde in A/C - which effected two others

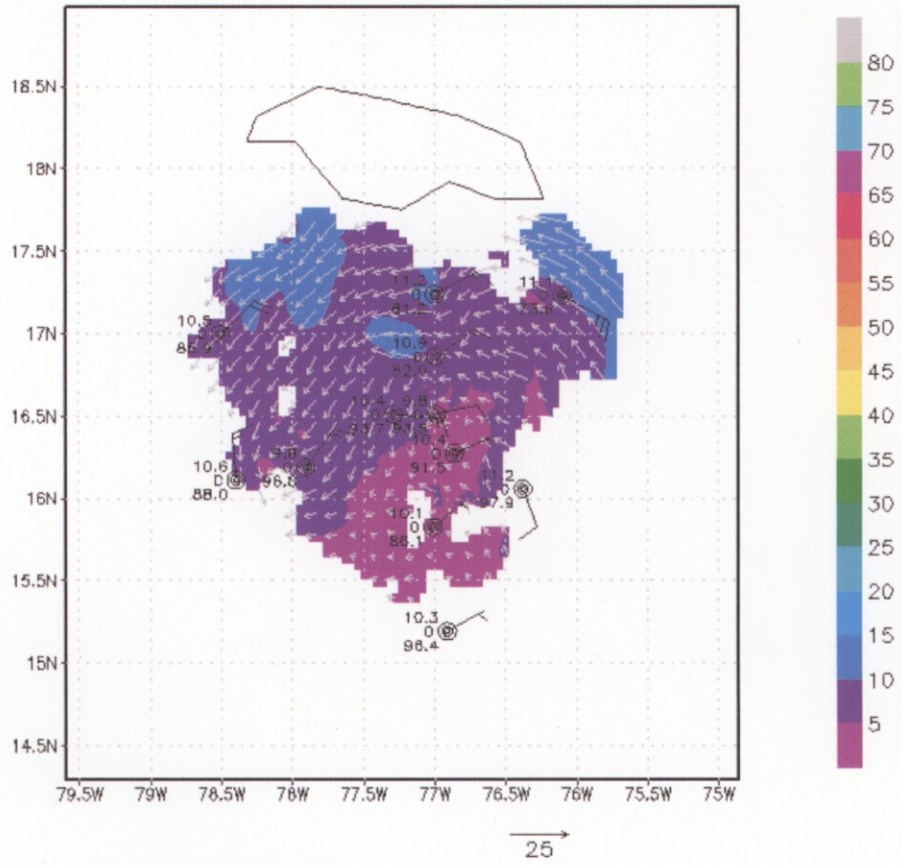


Planned Flight track



Actual Flight track

# 100913H1 AL92 at 3 km (m/s)



GrADS: COLA/IGES

Merged Doppler analysis - 3 km altitude