Lead Project Scientist

Flight ID 080924I1 **Storm** AL93 **LPS** Rogers

Preflight

✓ 1. Participate in general mission briefing.

✓ 2. Determine specific mission and flight requirements for assigned aircraft.

✓ 3. Determine from field program director whether aircraft has operational fix responsibility and discuss with AOC flight director/meteorologist unless briefed otherwise by field program director.

✓ 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.

✓ 5. 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.

✓ 6. Report status of aircraft, systems, necessary on-board supplies and crews to appropriate HRD operations center (MGOC in Miami).

✓ 7. Before take-off, brief the on-board GPS dropsonde operator on times and positions of drop times.

✓ 7. Make sure each HRD flight crew members have life vests

✓ 7. Perform a headset operation check with all HRD flight crew members. Make sure everyone can hear and speak using the headset.

✓ 8. Collect "mess" fee ($2.00) from all on-board HRD flight crew members.

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. Report landing time, aircraft, crew, and mission status along with supplies (tapes, *etc.*) remaining aboard the aircraft to MGOC.

___ 3. Gather completed forms for mission and turn in at the appropriate operations center. [Note: all data removed from the aircraft by HRD personnel should be cleared with the AOC flight director.]

___ 4. Obtain a copy of the 10-s flight listing from the AOC flight director. Turn in with completed forms.

___ 5. Obtain a copy of the radar DAT tapes. Turn in with completed forms.

___ 6. Obtain a copy of the all VHS videos form aircraft cameras (3-4 approx.). Turn in with completed forms.

___ 7. Obtain a copy of CD with all flight data. Turn in with completed forms.

___ 8. Determine next mission status, if any, and brief crews as necessary.

___ 9. Notify MGOC as to where you can be contacted and arrange for any further coordination required.

___ 10. Prepare written mission summary using **Mission Summary** form (due to Field Program Director a week after the flight).

Lead Project Scientist Check List

Storm or Project AL93 **Experiment name** TDR/Genesis
Date 9/24/08 **Aircraft** N43RF **Flight ID** 080924I1

A. Participants:

HRD		AOC	
Function	**Participant**	**Function**	**Participant**
Lead Project Scientist	Rogers	Flight Director	Flaherty
Radar	Lorsolo	Pilots	Newman, Choy, Ehlert
Workstation	Dorst	Navigator	Gallagher
Cloud Physics	—	Systems Engineer	Lynch
Photographer/Observer /Guests	—	Data Technician	Smith
Dropwindsonde	Dorst	Electronics Technician	San Soucí
AXBT/AXCP	—	Other	

B. Take-off and Landing Times and Locations:

Take-Off: 0758 UTC Location: KMCF

Landing: 1600 UTC Location: KMCF

Number of Eye Penetrations: —

C. Past and Forecast Storm Locations:

Date/Time	Latitude	Longitude	MSLP	Maximum Wind

D. Mission Briefing: Conduct combination TDR/Genesis mission for NOAA tasking. Fly the W-E leg south of Hispaniola, in area where deep convection is concentrated, in broad, diffuse circulation centered on south coast of Hispaniola. Depending on distribution of convection, will either return back E-W shifted about 50 nm S of original leg, or will circumnavigate island. If widespread scatterers south of island and nothing north, will return back on S side. If limited scatterers, will circumnavigate. Fly entire pattern at 10,000 ft. Drop ~6 sondes spaced evenly during pattern (see diagram).

E. —Equipment Status (Up ↑, Down ↓, Not Available —, Not Used **O**)

Equipment	Pre-Flight	In-Flight	Post-Flight	# DATs / Cds /Expendables/ Printouts
Radar/LF	✓	✓		
Doppler Radar/TA	✓	✓		
Cloud Physics	O	O		
Data System	✓	✓		
GPS sondes	✓	✓		
AXBT/AXCP	O	O		
Ozone instrument	O	O		
Workstation	✓	✓		
Videography	✓	✓		

REMARKS:

Lead Project Scientist Event Log

Date 9/24/08 **Flight** 080924I1 **LPS** Rogers

Time	Event	Position	Comments
0758	takeoff	KMCF	takeoff from MacDill
0920	obs	24.1 77.2, 400	Satellite images show
		nm from IP	limited convection; system
			looks very unhealthy
0101	obs	18.1 74.5,	still no convection on
		off SW tip of Haiti	S and W side of island
(E) 1106	drop 1	17.9 74.2	drop 1, FL 8 kt, SF 1-2 kt
			FL dir 310°
1123	obs	17.6 72.7	drop 1 showed N + NNW
			flow from FL to ~ 900 mb,
			below that easterly flow,
		dry air	down to about 750 mb
(E) 1142	drop 2	17.4 71.22	FL 22 kt, SF 2 kt,
			FL dir 280°, RH < 90%
			above 6500 ft; wdir below
			3000 ft shifts to ~230° from
			275° above; low level wind
			speeds < 10 kt
1157	obs	17.4 70.0,	Line of isolated convection
		approaching SE tip	oriented NE-SW about
		of DR	100 km offshore of DR
1205	obs	17.4 69.4,	encountering strat. rain,
		close to SE tip of	cirrus tops extending to
		Hispaniola	~20-25,000 ft
1216	obs	17.86 68.59,	winds are SSW now, indicating
		at SE tip of Hispan.	broad flight-level circulation
			centered over Hispan. or just
			north of it, FL winds about 30 kt here

Lead Project Scientist Event Log

Date 9/24/08 **Flight** 080924I1 **LPS** Rogers

Time	Event	Position	Comments
1210	drop 3	17.47 69.00	mainly over depth, strong SW winds from FL down to 925 mb, weaker S flow below that
1227	turn	18.5 68.0	turn to track 335
1227	drop 4	18.5 68.0	FL 28kt, SF 25kt, FL dir 190°
1235	obs	19.1 68.3	some strat. precip. on NE side of island, more prevalent than previously
1242	drop 5	19.54 68.64	FL 25 SF 25 kt FL dir 200°, wind speed in drop uniformly 25-30 kt, direction backing from 225 to 165° at 4500 ft; 140° at surface
1247	obs	19.8 69.00	isolated convective cores N of island, stratiform rain; TA shows 35-40 dBZ
1259	pattern	20.4 69.7	turning to NW, ATC orders, breaking off circumnavigation of island, heading to Grand Turk
1314	drop 6	21.1 70.6	FL 9, SF 5, FL dir 70°; drop winds < 10 kt, direction WSW 75 and 110°
1329	pattern	21.73 71.69, NW of Bahamas	climb to 21,000 ft., FL 10 kt, dir 60° here
1500	landing	KMCF	land at KMCF

Lead Project Scientist Event Log

Date 9/24/08 **Flight** 080924I1 **LPS** Rogers

Time	Event	Position	Comments
1210	drop 3	17.47 69.00	moist over depth, strong
			SW winds from FL down
			to 925 mb, weaker S flow
			below that
1227	turn	18.5 68.0	turn to track 335
1227	drop 4	18.5 68.0	FL 28kt, SF 25kt,
			FL dir 190°
1235	obs	19.1 68.3	Some strat. precip. on
			NE side of island, more
			prevalent than previously
1242	drop 5	19.54 68.64	FL 25 SF 25 kt FL dir 200°;
			wind speed in drop uniformly 25-30 kt,
			direction backing from 225 to 165°
			at 4500 ft; 140° at surface
1247	obs	19.8 69.00	isolated convective cores N
			of island, stratiform rain;
			TA shows 35-40 dBZ
1259	pattern	20.4 69.7	turning to NW, ATC
			orders, breaking off
			circumnavigation of island,
			heading to Grand Turk
1314	drop 6	21.1 70.6	FL 9, SF 5, FL dir 70°;
			drop winds < 10 kt, direction
			SW 75 and 110°
1329	pattern	21.73 71.69,	climb to 21,000 ft.,
		NW of Bahamas	FL 10 kt, dir 60° here
1600	landing	KMCF	land at KMCF

Lead Project Scientist Event Log

Date 9/24/08 **Flight** 080924I1 **LPS** Rogers

Time	Event	Position	Comments
1210	drop 3	17.47 69.00	moist over depth, strong SW winds from FL down to 925 mb, weaker S flow below that
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1329	pattern	21.73 71.69, NW of Bahamas	climb to 21,000 ft., FL 10 kt, dir 60° here
1600	landing	KMCF	land at KMCF

Mission Summary
Storm name
YYMMDDA# Aircraft 43RF

Scientific Crew (4RF)
Lead Project Scientist Rogers
Radar Scientist Corsolo
Cloud Physics Scientist —
Dropwindsonde Scientist Dorst
Boundary-Layer Scientist —
Workstation Scientist Dorst
Observers —

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

See previous

Mission Synopsis: (include plot of actual flight track) flight track attached. Performed circuit around island. System is still very disorganized. Very broad circulation, center at flight level possibly over Hispaniola or just north of it. Little to no convection on S side of island. Some convective elements embedded in stratiform precip on E and NE side of island. Dropsondes suggested circulation only extended down to about 900 mb. Evidence of dry air on west side of circulation.

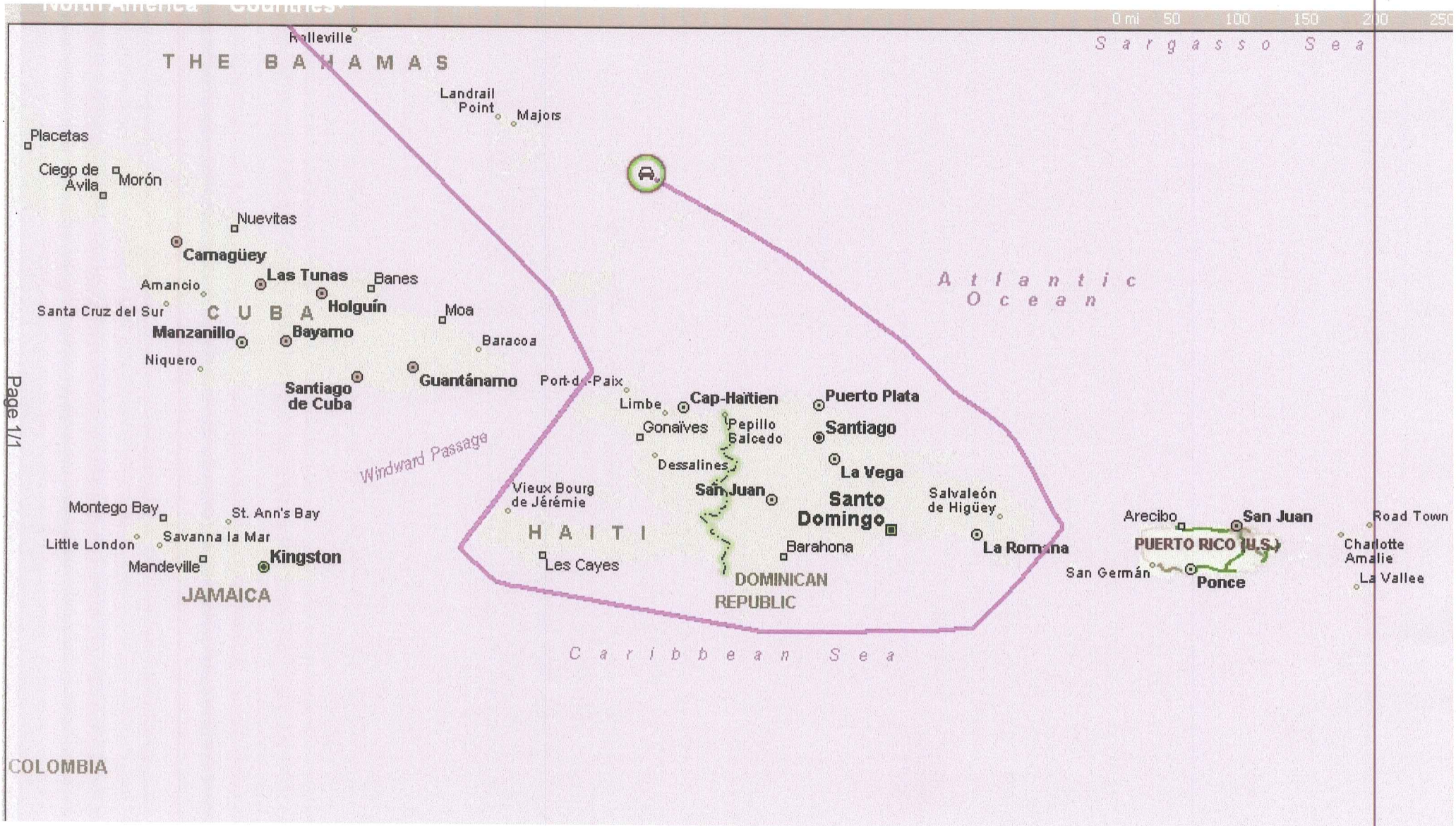
Evaluation: (did the experiment meet the proposed objectives?) Experiment accomplished overall goals, i.e. collection of Doppler data. Because system was so disorganized, with such little coverage of scatterers, was not able to produce reliable analyses. Equipment functioned properly, but disorganization of system hampered success in analyses. Did 2 radar analyses, only 1 produced anything meaningful.

Problems:(list all problems)

No major problems with instruments or expendables. All 6 sondes worked. Satcom was sporadic at times, so transfer of analyses was slow.

Expendables used in mission:
GPS sondes : 6
AXBTs : 0
Sonobuoys: 0

> Analysis of 2nd leg (starting E of ~~center~~ island and extending NE of island) showed a broad circulation between about 3 km and 5 km (perhaps higher). Embedded within broad circulation was a smaller-scale circulation spanning same depth. Below 3 km was lower-tropospheric divergence, based on wind vectors.


North America Countries
0 mi 50 100 150 200 250
Sargasso Sea
Rolleville
THE BAHAMAS
Landrail Point
Majors
Placetas
Ciego de Avila
Morón
Nuevitas
Camagüey
Las Tunas
Banes
Amancio
Holguín
Moa
Santa Cruz del Sur
CUBA
Manzanillo
Bayamo
Baracoa
Niquero
Guantánamo
Santiago de Cuba
Port-de-Paix
Limbe
Cap-Haïtien
Puerto Plata
Gonaïves
Pepillo Salcedo
Santiago
Dessalines
La Vega
Windward Passage
Vieux Bourg de Jérémie
San Juan
Santo Domingo
Salvaleón de Higüey
Montego Bay
St. Ann's Bay
HAITI
Arecibo
San Juan
Road Town
Little London
Savanna la Mar
Barahona
La Romana
PUERTO RICO (U.S.)
Charlotte Amalie
Mandeville
Kingston
Les Cayes
San Germán
Ponce
La Vallee
JAMAICA
DOMINICAN REPUBLIC
Atlantic Ocean
Caribbean Sea
COLOMBIA

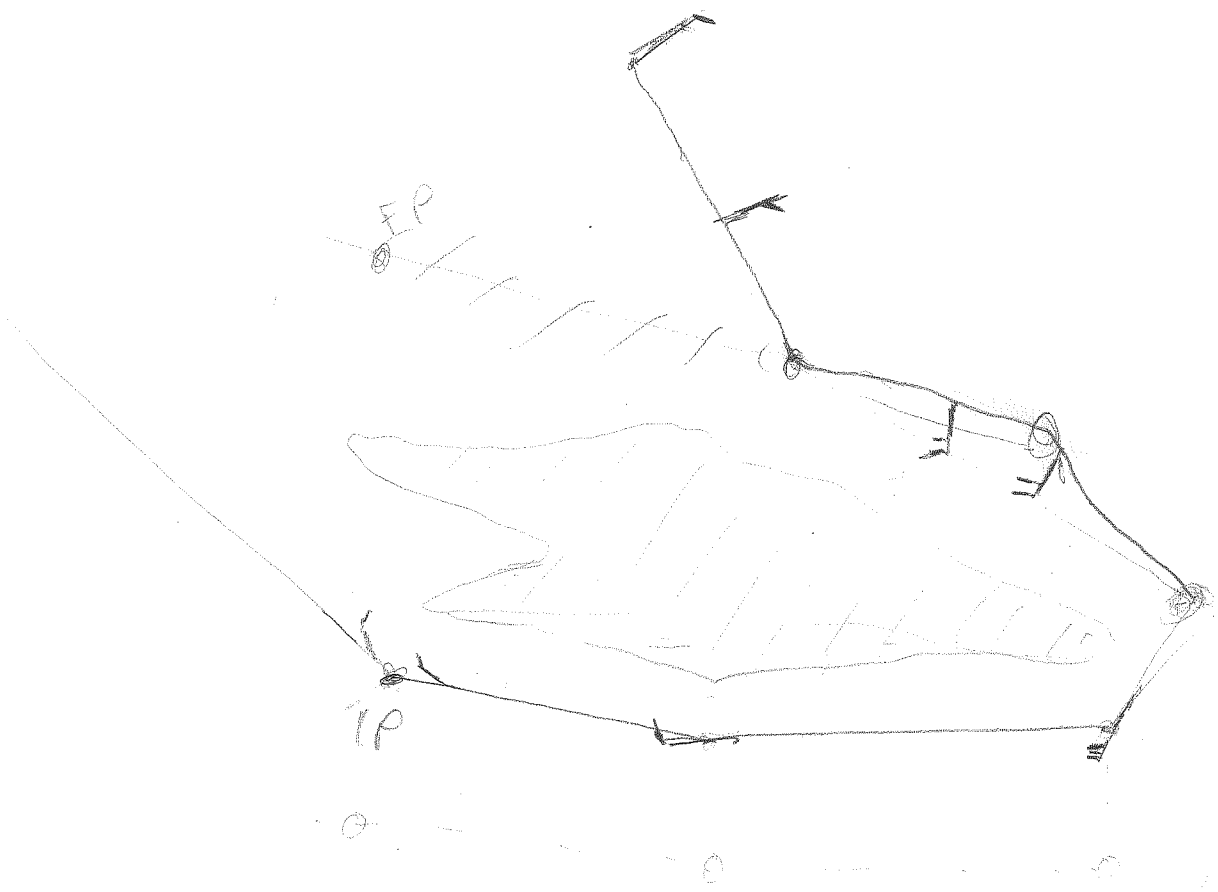


Fig. 1