

Flight ID
Preflight

080925II

Lead Project Scientist

Storm

AL 93/94

LPS

Rogers

- ☒ 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 from 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 AL93/94 Experiment name TDR
 Date 9/25/08 Aircraft N93 RF Flight ID 080925 I1

A. Participants:

HRD		AOC	
Function	Participant	Function	Participant
Lead Project Scientist	<u>Rogers</u>	Flight Director	<u>Flaherty</u>
Radar	<u>Corrado</u>	Pilots	<u>Choy, Hannon, Flaherty</u>
Workstation	<u>Dorst</u>	Navigator	<u>Gallagher</u>
Cloud Physics	<u>_____</u>	Systems Engineer	<u>Lynch</u>
Photographer/Observer /Guests	<u>Collins</u>	Data Technician	<u>Smith</u>
Dropwindsonde	<u>Dorst</u>	Electronics Technician	<u>Sam Sanci</u>
AXBT/AXCP	<u>_____</u>	Other	<u>_____</u>

B. Take-off and Landing Times and Locations:

Take-Off: 152 UTC Location: KMCF

Landing: 1700 UTC Location: KMCF

Number of Eye Penetrations: _____

C. Past and Forecast Storm Locations:

Date/Time	Latitude	Longitude	MSLP	Maximum Wind

D. Mission Briefing: Fly tail Doppler missions into two systems in the western Atlantic, AL93 and AL94. AL94 is a primarily baroclinic subtropical system, while AL93 is a low-level swirl experiencing shear and convection to the east. Fly figure-4 pattern in each system, flying AL93 first. Set up on W side, 60 nm leg lengths, center pattern at midpoint of low-levels swirl and anticipated midlevel center in convection to east. Fly upwind leg, final pass from S-N. Proceed to AL94, set up on SE side, 60 nm from center. Extend outbound leg to 90 nm for SAMP coverage near coast, fly upwind again to point 90 nm NE of center. Fly final leg NE-SW. Fly both fig.-4's at 10,000 ft, drop sondes at end points of figure 4's and 1 center drop each. No AXBT's planned.

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	—	—		
Data System	✓	✓		
GPS sondes	✓	✓		
AXBT/AXCP	—	—		
Ozone instrument	—	—		
Workstation	✓	✓		
Videography	✓	✓		

REMARKS:

Lead Project Scientist Event Log

Date 9/25/08 Flight 0809 25 DI LPS Reger

Time	Event	Position	Comments
0752	takeoff	KMCF	takeoff from KMCF
0829	obs	on ferrydown	center position estimate
			for AC93 from CARCAN is
			22.5 70.0 at 0830 Z
1011	pattern	22.74 72.2	descending to 10,000ft.
		120 nm from IP	
1034	pattern change	22.54 70.42	changed pattern b/c precip. is
		23 nm from IP	so far displaced from low-level
			ctr. Sect IP 70 nm from expected
			flight-level center. Then track 110
			for 140 nm. Finish figure-4 from
			there. Shorten legs on AC94 to 60 nm,
			except NE leg, which is a little shorter.
1040	drop 1	at IP 22.5 70.0	FL 11 kt, SF 20 kt,
			FL dir 340°; easterly
			flow at ~20 kt at sfc
1055	drop 2	22.1 68.8	FL 21 kt, SF 6 kt,
			FL dir 300°; dir in soude
			changed from 325 to 150°, speed from
			5-15 kt; suggests FL center is
			displaced to the NE of LLC
1106	obs	21.8 67.95	widespread con. & strat. here
1109	turn	21.75 67.83	turn to track 194, turned
			early to avoid convection
1110	drop 3	21.66 67.85	FL 33 kt, SF 28 kt, FL
			dir. 240°, soude dir 225
1115	turn	21.59 67.87	turn to track 240

22.5
70.0



0

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Lead Project Scientist Event Log

Date 9/25/08

Flight 080925I

LPS Peters

Time	Event	Position	Comments
1121	obs	21.24 68.45	completely clear here
1124	turn	21.11 68.66	turn to track 025
1126	drop 4	21.25 68.7	FL 26 kt, SF 24 kt, FL dir 260°, smoke dir about 240°, spd 20-30 kt on drop
1137	obs	22.11 68.48	back near convection, mostly off b/w 25 & 75 nm to our east; limited coverage by FA due to range
1142	obs	22.35 68.42	FL wind dir shifts from NW to SE, probable center passed; SF winds 40 kt beyond it; SF winds & FL at beginning of this leg; then SF became > FL just prior to and beyond FL center at 1142, further supporting tilt toward NE with height; endrap. set 1000 under FL center
1153	turn	23.17 68.22	end of AL 9.3 pattern, climb to 18,000 ft. track
1158	drop 5	23.48 68.52	FL 15 kt SF 30 kt, FL dir 90°
1253	obs	b/w AL 9.3 & AL 9.4	radar analysis from leg 2 showed clear cyclonic circulation, peak winds w/40 kt b/w 1.5 & 3.5 km (possibly higher slower too)
1406	center from AF	31.36 76.02	center from AF 32° 13' near IP 76° 45', 12 nm N of previous estimate

32 13

76 45

303 1264

Lead Project Scientist Event Log

Date 9/25/08

Flight 080925I1

LPS Rogers

Time	Event	Position	Comments
1407	drop 6, at 1P	31.45 76.09	FL 46 kt, SF 30 kt, drop speeds wrong above 3500 ft, below there it's 40 kt
1422	drop 7	32.29 76.88	at center, SF 5 kt, FL 2.5 kt, drop speeds about 15-20 kt during whole drop, WSW winds
1433	obs	32.77 77.66	peak SF winds on SE side 40 kt, on NW side 40 kt, broad wind van on this side
1438	drop 8	32.97 77.82	FL 40 kt, SF 40 kt, 55-60 kt blw 5000-3000 ft
1440	obs	32.97 77.61	convective cells on NW side hit good bump here, about 6-8 m/s; LF + 880 from Wilmington show eye wall-like feature
1500	obs	32.9 76.2	clear on NE side, SF showing winds ~ 40 kt, been that way on wide leg
1503	turn	32.93 76.00	turn to track 225
1504	drop 9	32.88 76.02	FL 44 kt, SF 36 kt, drop speeds 40-45 kt over depth
1513	obs	32.45 76.65	more isolated convection here, another 6 m/s draft
1519	obs	32.2 76.91	peak SF 42 kt on NE side, very broad, slow decrease inward of that
1533	drop 10	31.46 77.59	FL 19 kt, SF 38 kt, some 35 kt
1534	pattern	31.38 77.66	end of pattern, RTB
1537	obs	31.27 77.76	peak SF 35-40 kt on SW side
1700	landing	KMCF	land at KMCF

RL1
↓↑
RL1RL2
↓

Mission Summary
Storm name
YYMMDDA# Aircraft 43RF

Scientific Crew (4RF)

Lead Project Scientist Rogers
Radar Scientist Wingo
Cloud Physics Scientist —
Dropwindsonde Scientist Doerst
Boundary-Layer Scientist —
Workstation Scientist Doerst
Observers Collins

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

See previous

Mission Synopsis: (include plot of actual flight track) Fly 2-system mission into AL93/94. Main goal was TDR in both systems. Had to adjust track into AL93 b/c convection was so far displaced to SE of where we thought LLC was. Rotated Fig. 9 about 20 degrees clockwise, set IP just to W of suspect LLC, extended legs to 70 nm to better sample convection to east. Kept legs at 60 nm for AL94 sampling.

*Evaluation: (did the experiment meet the proposed objectives?) Experiment did collect TDR. There were few scatterers on first leg in 93, but more on 2nd (SW-NE) leg. Flight-level & SFR data, and drops indicated system that was tilted from WSW-ENE, consistent with overall shear vector and contrary to our initial thought, which had expected tilt to ESE. Radar analysis showed nice circulation on 2nd leg, speeds up to 40 kt b/w 1.5-4 km. For AL94, system was very broad, peak SFR winds were 40 kt. *Some indication of precip. wrapping around SW & S side, but wouldn't call it eyewall. More vigorous, isolated convection in this system than we encountered. Radar analysis from first leg showed clear circulation, peak winds of 50 kt 1.5 km AGL, shifts to E side at 5 km.**

Problems: (list all problems)
drop 6 had bad wind speeds above 900 mb, otherwise no probs

Expendables used in mission:

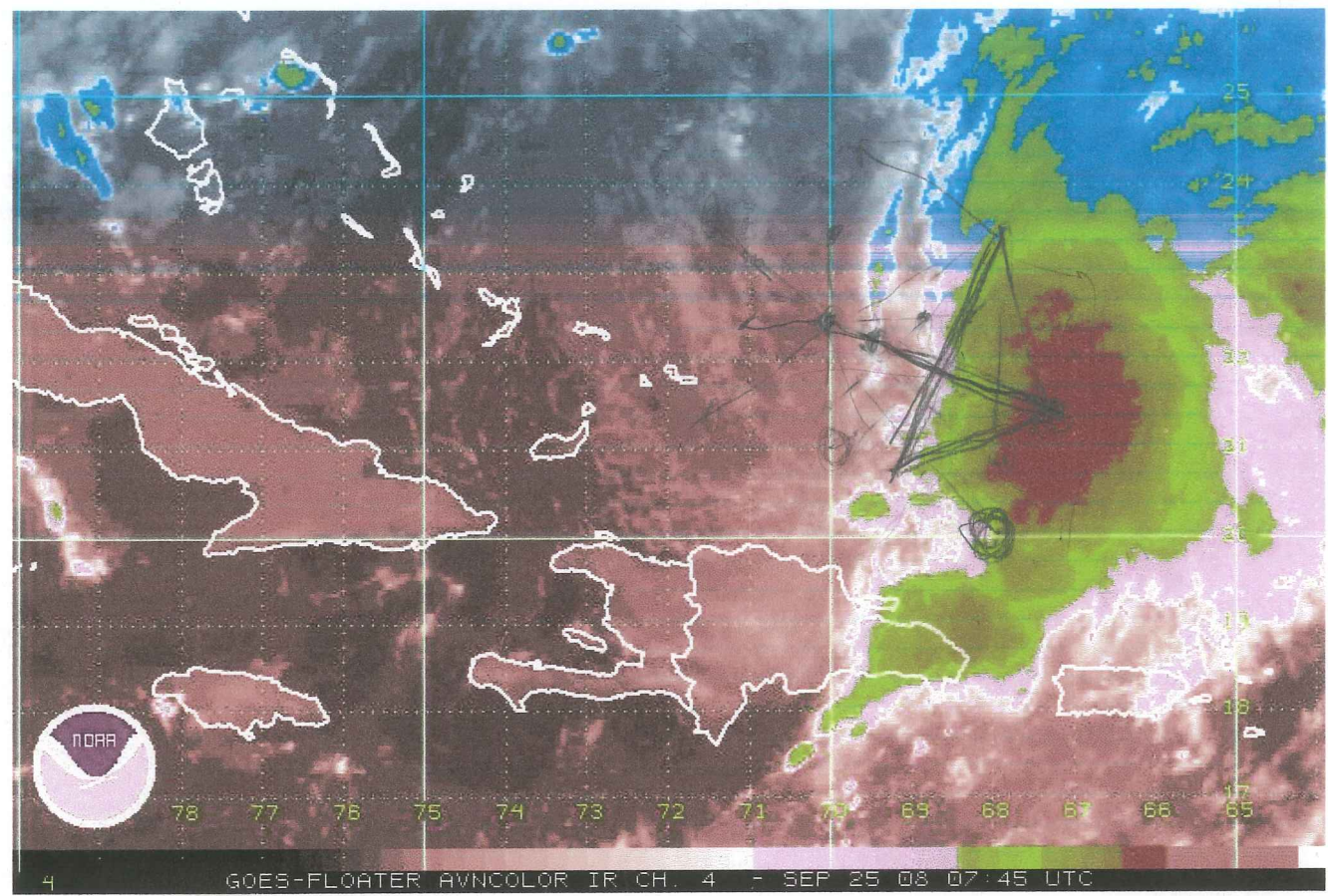
GPS sondes : 10 (all NWS)

AXBTs : 0

Sonobuoys: 0

25

20

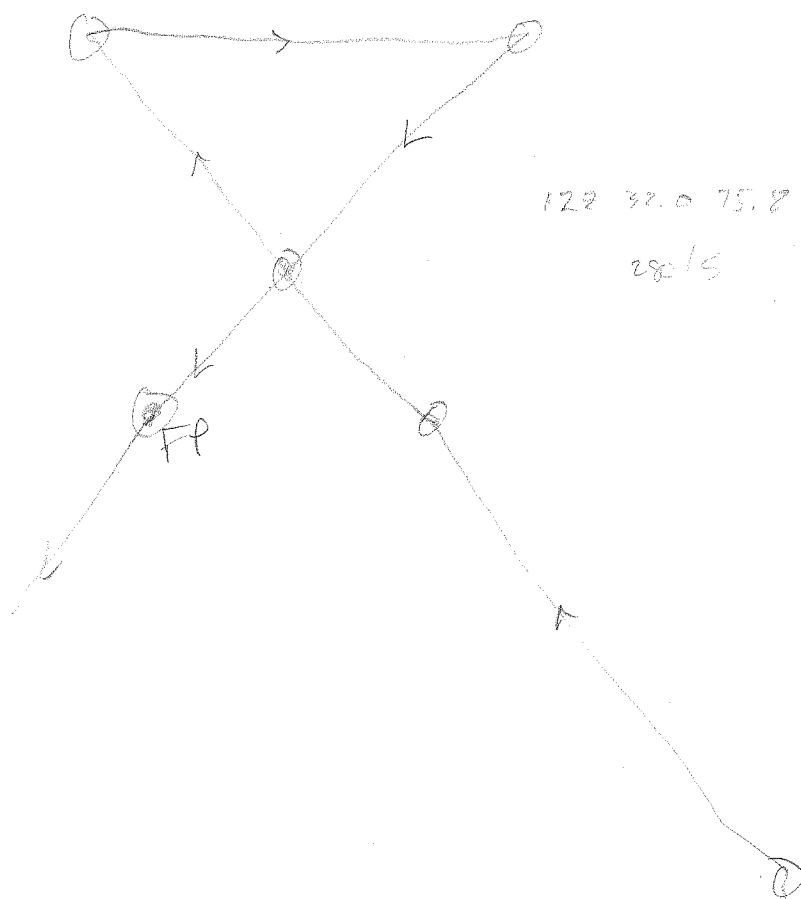


22.5
98.10
69.5

21.5
69

21.5
67.0

20
68
23 15 from 370118



122 32.0 75.8
28/s

