

E.2 Lead Project Scientist

E.2.1 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 filed 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.
8. Collect "mess" fee (\$2.00) from all on-board HRD flight crew members.

E.2.2 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 Form E-2.
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).

LF & Tail 151900 start steps (ie. BAMEX)
1550 switched to AIRR01

E.2.3 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. Determine next mission status, if any, and brief crews as necessary.
6. Notify MGOC as to where you can be contacted and arrange for any further coordination required.
7. Prepare written mission summary using form E-2 p.3 (due to Field Program Director 1 week after the flight).

Videotapes with Paul Chang -110-

Serial # 5
 LF 121
 TA 123 rec 201

On-Board Lead Project Scientist Check List

Date September 12, 2003 Aircraft N42RF Flight ID 030912H

A. Participants:

HRD		AOC	
Function	Participant	Function	Participant
Lead Project Scientist	<u>PAUL CHANG</u>	Flight Director	<u>SHEPARD/MAYEAUX</u>
Cloud Physics	<u>≡</u>	Pilots	<u>KENNEDY</u> <u>SLOAN, Halverson</u>
Radar	<u>Paul Leighton</u>	Navigator	<u>DEVON BRAKOB</u>
Workstation	<u>PAUL LEIGHTON</u>	Systems Engineer	<u>DELGADO</u>
Photographer/Observer		Data Technician	<u>PEEK</u>
Omega GPS Droop	<u>CHRIS LANDSEA/SIM ABERSON</u>	Electronics Technician	<u>MCNEILAN</u>
AXBT/AXCP/Guest	<u>Kerr/Etalon/Kelenak</u>	Other	

Take-Off: 1511 UTC Location: ST. CROIX

Landing: 230250 UTC Location: St Croix

Number of Eye Penetrations: 6

B. Past and Forecast Storm Locations:

Date/Time	Latitude	Longitude	MSLP	Maximum Wind
<u>12th/15Z (in 4)</u>	<u>21.6</u>	<u>57.8</u>		<u>140 kt</u>
<u>13th/00Z</u>	<u>21.8</u>	<u>59.1</u>		<u>135</u>
<u>/12Z</u>	<u>22.2</u>	<u>61.2</u>		<u>135</u>
<u>14th/00Z</u>	<u>22.8</u>	<u>63.4</u>		<u>135</u>
<u>/12Z</u>	<u>23.4</u>	<u>65.5</u>		<u>135</u>

270-8th

C. Mission Briefing:

42+43 Ocean Winds/CBLAST mission - 42 3 to do a Figure 4 of Isabel. At end of Fig 4, go back to eye do a "wedge" manoeuvre, then circle within eye upwind with straight leg segments

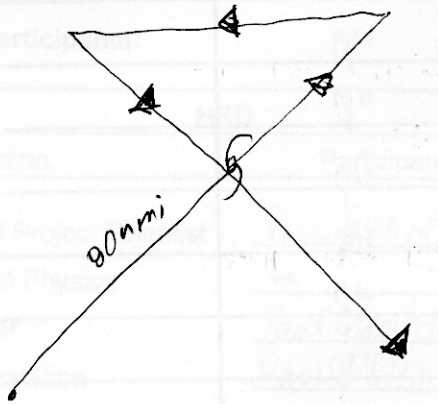
21.6
 58.2
 102

D. Equipment Status (Up, Down, Not Available, Not Used)

Equipment	Pre-Flight	In-Flight	Post-Flight
Aircraft	up	up	
Radar/LF	up (1530)	up	
Radar/TA (Doppler)	up (1530)	up	
Cloud Physics	up	up	
Data System	up	up	
Omegasondes GPS	up	up	
AXBT/AXCP ^{Sono buoys}	up	up	
Workstation	up	up	
Videography	up	up	

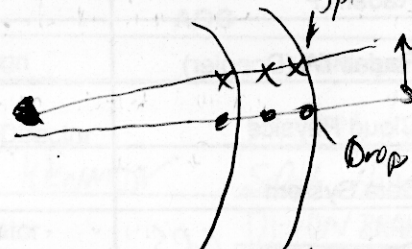
REMARKS:

E (I) Proposed Flight Pattern (sketch or designate by number)



each radial leg 8 GPS drops bracketing the sfc wind peak between drops #6+7 app.

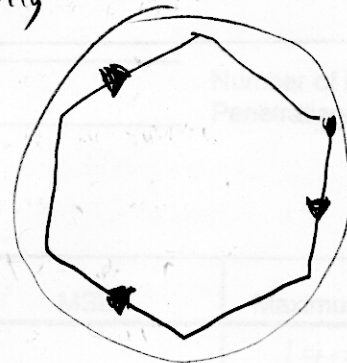
then back to center, then splash.



wedge pattern

try to drop 3 ~~in~~ eyewall, then fly back over splash location

finally - within eye do upwind legs (straight)



E (II) Actual Flight Pattern

Date/Time	Latitude	Longitude	Wind
12/13/02	21.5	157.5	10
13/02	22.3	157.8	15
14/02	22.2	157.8	15
15/02	23.4	157.5	15

C. Mission Briefing:

42-43. Storm land / SFC 1500...
 of fuel...
 this could enter...

Lead Project Scientist Event Log

Date September 12, 2003

Flight 030912H

LPS CHANG

10

Time	Event	Position	Comments
1511 Z	Take off ST. Croix - climbing		to 16,500'
1515 Z	Tail + Belly radars turned on -		
1530	All systems operational		
1530	Set Radar to HURRO 1 - Originally set to BAMEX		
1617	Radar Reset		
1627	Start Descent -		
1632	Raised radar tilt to 2.8		
1630	Radar Az : 210° 20' 57° 46'		
1634	Level 7000' Radar -		
1637	Turning into storm track due east		
1640	wedge on radar -		
1642	First outer bands - strong convective cells -		
1643	Turn to 075° track		
1646	Nice 3 band structure :	(0	the outer one is more convective
1652	100 ft flight level		
1653	110 ft flight level	100 SFMR	
	40-45 dBZ ahead		
1655	1st Drop, 2nd		
1657	Peak flight	125 ft, SFMR	125-130 ft
	920-925 mb MSZP - maybe	918 mb in center	305 inside - 2 mi "weak side of storm"
	Very few bumps - spectacular eye		

2120
5746

would be more convective

tilted slightly on east side, tilted more westward.
~17 nmi eye

Lead Project Scientist Event Log

4 x 20 = 80s
4 x 10 = 40s
20s

Date 12 Sept 2003 Flight 030912H LPS Chang

2 min 8 nmi

Time	Event	Position	Comments
1703	Circling in eye	waiting for AVAPS to prepare	
Probl-	2nd 04 GPS drops	AVAPS failed - data likely lost	
	1st 4 GPS drops	worked	
Radar -	Paul L. made	1st composite, but it had circle problem	
	still worth sending out -		
1721	Outbound 075 track	-	
1722	Drops started		
	146 kt peak flight level	140 kt SFMR - but	
	03 plus went out	- Danny said that	
1726	SFMR display	back up -	
	- Looks like SFMR + flight	level wind resume + relocated -	
* 1739	21°39' 50°08'	120 kt / 150 kt	920 mb - Teal
1736	Reached 50 nmi	- 43 decided to do stepped descent	
1738	Paul Leighton did a 2 sweep composite	- is in the ASD2 cue.	
	circum - waiting for 43 to be ready -		
	Going to do the star step (43)	on ENE of eyewall	
1751	Turn to 160°	+ One GPS drop - Going Upwind	
	Flight Level ~ 75 kt	SFMR ~ 60 kt	
1755	2nd GPS drop		
1759	3rd GPS drop		
1800	Done with holding	in stepped descent - Turn to 300 track	
1815	Radar reset	downwind to complete figure 4	
1827	Turn inbound		
1840	Intense		
1844	Finished drop sequence		
1850	Turn began in eye		
1902	End turn in eye, into severe turbulence		

Lead Project Scientist Event Log

Date 12 September 2003

Flight 030912 H

LPS Chang

Time	Event	Position	Comments
1918	Turn back into eye	Double eyewall apparent on radar but no detectable wind maxima at fl or sfc.	
1929	Broke into eye	max fl 78ms ⁻¹ , max sfcw 66ms ⁻¹ , no sonde	
1945	One eyewall SE	max fl 78ms ⁻¹ , max sfcw 68ms ⁻¹ , 3 sonde	
1949	Turn back in before	second max to go over sonde	
1952	Back in eye E	max fl 76ms ⁻¹ , max sfcw 63ms ⁻¹	
2008	Entering E eyewall	max fl 70ms ⁻¹ max sfcw 63ms ⁻¹ 3 sonde	
2011	Start turn back in	Sonde with 96ms ⁻¹ ! (159 serial #)	
2015	Entering E eyewall	max fl 72ms ⁻¹ , max sfcw 61ms ⁻¹	
2017	Radar reset		
2018	SE eyewall outbound	max fl 80ms ⁻¹ , max sfcw 65ms ⁻¹ , 8ms ⁻¹ up and down	
		through horizontal radar reflectivity, no wind max	
2035	Radar reset, turn back in toward eye		
2046	E eyewall	max fl 75ms ⁻¹ , max sfcw 65ms ⁻¹ , 12ms ⁻¹ up, 7ms ⁻¹ down	
2100	Began upward along eyewall in eye.		
		Stop in reflectivity in SE eyewall. Real?	
	Eye no longer a ring		
2111	eyewall maneuver at 120°		
2117	Final outbound penetration,	max fl 68ms ⁻¹ max sfcw 61ms ⁻¹	
		Secondary wind max at fl, not at sfc	
2133	End of science		

isabel
pictures

Mission Summary
Storm name
YYMMDDA# Aircraft 4_RF

Scientific Crew (4 RF)

Lead Project Scientist Chang
Radar Scientist Leighton
Cloud Physics Scientist -
Dropwindsonde Scientist Lindsee / Abarson
Boundary-Layer Scientist -
Workstation Scientist Leighton
Observers -

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

Mission Synopsis: (include plot of actual flight track)

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

Problems:(list all problems)

Isabel

i 12h, ram

i 12h, trk

0309 12 H

9	61181	16:59:41	comp 1	1644 - 1709	Rim ²
	61717	17:08:37	—		
	68482	19:01:22	comp 2	1842 - 1907	9
	70400	19:33:20	comp 3	1920 - 1945	Rings
	72360	20:06:00			
	73241	20:20:41	comp 4	2000 - 2030	9
	73500	20:25:00			

i 12h, ram

i 12h, trk

0309 12 I

	61337	17:02:17	comp 1	1647 - 1712	9
	62512	17:21:52	—		
	70804	19:40:04	comp 2	1925 - 1955	9
	71465	19:51:05			
	73680	20:28:00	comp 3	2016 - 2036	9

1992 + 11 (3)
 1995 + 22 (26)
 1998 + 65 (62?)