

M. Black 030912Z Isahel

E.2 Lead Project Scientist

E.2.1 Preflight

- MB 1. Participate in general mission briefing.
- MB 2. Determine specific mission and flight requirements for assigned aircraft.
- MB 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.
- MB 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. Perform a radio check with headsets. Make sure everyone's headsets is work properly.
- _____ 9. 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).

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).

Lead Project Scientist Check List

Date 9-12-08 Aircraft 43 Flight ID 030912I1

A. —Participants:

HRD		AOC	
Function	Participant	Function	Participant
Lead Project Scientist	<u>M. Black</u>	Flight Director	<u>Paul Flaherty</u>
Cloud Physics	<u>Eric Ohlhorn</u>	Pilots	<u>Tennison, TeBeest</u>
Radar	<u>Rob Rogers</u>	Navigator	<u>Paul Newman</u>
Workstation	<u>Rob</u>	Systems Engineer	<u>Deise, Greg Best</u>
Photographer/Observer	<u>Kay Zehr</u>	Data Technician	<u>Terry Lynch, Ray Tongs</u>
Dropwindsonde	<u>Rob</u>	Electronics Technician	<u>Jeff Smith</u>
AXBT/AXCP/Guest	<u>Seppardo</u>	Other	<u>BAT Jeff French</u>

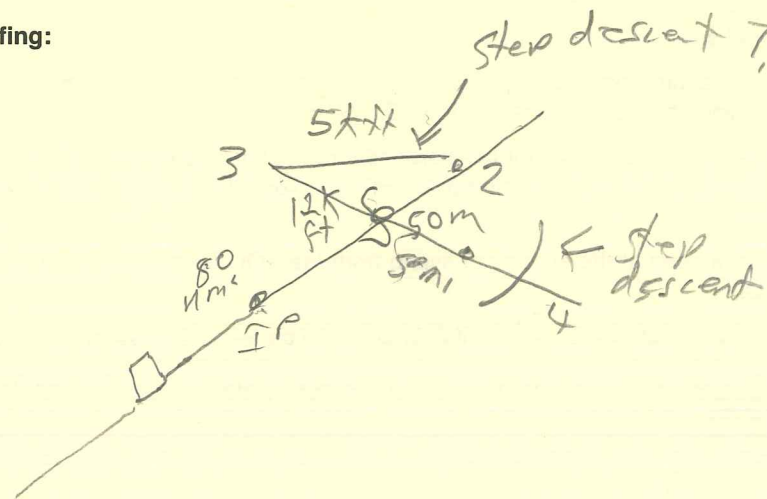
Take-Off: 1506 Location: St. Croix Landing: 2207 Location: St. Croix

Number of Eye Penetrations: 2

B. —Past and Forecast Storm Locations:

Date/Time	Latitude	Longitude	MSLP	Maximum Wind
<u>12/18</u>	<u>22.0</u>	<u>58.4</u>	<u>920? mb</u>	<u>140 kts</u>

C. —Mission Briefing:



Isabel

Lead Project Scientist Event Log

Date 9-12-03 Flight 030912L LPS M. B. G. C.

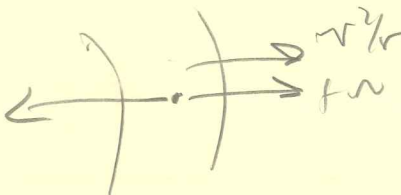
Time	Event	Position	Comments
1547	Descend to 5,000'		For box calibration
154830	First leg box pattern ~ 250m SW of eye		
154950	End leg 1		
155128	Begin leg 2 ~		
155248	End leg 2		10-15 Kts
155344	Start leg 3		
155502	End leg 3		
155604	Start leg 4		
155728	End leg 4		
155849	TRK 152° towards LP		
1633	Ascend to 12 Kt		
1638	Leg 143 @ 10,000 ft Trk 060° inbound from 105 nm out		
1641	12,000 ft near eye		
1642	IN Trk 075° inbound ~ 90 mi		
1651	In outer eye wall ~ 50 mi out from eye		
1658	outer portion of outer eye wall 120 Kts		
	west eye wall 4 drops		
	eye		
	cinching in eye - Radar down		
172614	Exit eye wall - 4 drops		
	AF 920 mb		
	SRA down!		
1742	Cinching ~ 70 mi ENE of eye for steep descent		
1746	Descending to 1200 ft for steep descent		
175107	Begin leg upward 1200' leg x		70 kts
175917	End 1200' run		Rly

180030 Turn left descend to 900'

Lead Project Scientist Event Log

Date _____ Flight _____ LPS _____

Time	Event	Position	Comments
180354	900' downwind leg	wind 170°	Trk 150°
180804	End 900' leg	Turn left - frk 350°	
181038	Begin 600' upwind leg	Trk 135°	
181800	End 600' leg		
182150	begin 400' downwind leg		wind 140°
182620	End 400' leg	Turn right to 315°	Trk 350°
182	descend to 200' - still downwind		
182820	begin 200' downwind		
183240	End 200' leg	downwind	
183545	start 600' crosswind		
184009	End 400' crosswind		14 miles
184216	Begin 400-200' crosswind		Trk 20°
184802	End, 600' climb		
185033	begin 600' crosswind		
185059	Sono buoy		
185645	End 600' leg	ascend	
185835	End begin 900' leg		
190515	End 900' leg		
190655	begin 1200' leg		
191234	be-eye 1200' crosswind		
191254	ascend to 12,000 ft - downwind		NE or eye
193128	approaching Gray on inbound leg of Figure 4 at 12kft		
193516	1st sonde on inbound leg		
193550	2nd sonde		
193607	3rd sonde		
193637	4th sonde; all 12 sonobuoys launched		
193826	launching center row; max FL wind 145 kts @ 12,000'; sfw wind 115 kts		



Lead Project Scientist Event Log

Date _____ Flight _____ LPS _____

Time	Event	Position	Comments
194010	center fix fix	21° 43.8' 56"	28.5' center fix
195302	1 st drop outbound leg		
195339	2 nd drop		
195407	3 rd drop		
195437	4 th drop; max FL wind 130 kts; stc wind 115 kts on SE side		
195505			
200410	turning left to 030 for 60 miles		
201542	turn left to 270, inbound leg starting 50 mi. east, collect VI data		
201746	going thru outer rainband on E side; 40 dBZ echoes		
202031	outer wind max of 120 kts (outer eye wall)		
202424	single drop just past FL wind max; max FL wind 140, stc 105 kts		
202805	center fix 2029 21° 43.9' 58" 35.9'		
203122	single drop on inbound leg; max FL wind 145 kt; stc wind 110 kts; broader wind field at sfc than on E side		
204055	turning to 270, RTB		
205340	climb to 16,000 ft		
213706	descend to 5000 ft. for BAT probe calibration maneuvers		
214612	turn left for ^{circular} maneuvers for BAT probe calibration		
214937	turn right for same maneuver		
215250	holding at 230 track for 20 seconds		
215310	RTB at 5000 ft.		
2207	land at Martha St. Croix		

$$\frac{1}{\rho} \frac{\partial p}{\partial x} = f v + \frac{v^2}{r}$$

$$\frac{\partial p}{\partial r} = \frac{9000 \text{ Pa}}{6 \times 10^5 \text{ m}}$$

$$\frac{(5 \times 10^{-5})(6 \times 10^5)}{2} = 15$$

$$\frac{v^2}{r} + f v + \frac{1}{\rho} \frac{\partial p}{\partial r} = 0$$

$$v = \frac{-f \pm \sqrt{f^2 - \frac{4}{r} \frac{\partial p}{\partial r}}}{2}$$

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