E.2 Lead Project Scientist

E.2.1 Preflight

__X__ 1. Participate in general mission briefing.

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

__X__ 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.

__X__ 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.

__X__ 5. Meet with AOC flight director and navigator at least 3 hours before take-off for initial briefing.

__X__ 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.

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

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

__X__ 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).

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 Director1 week after the flight).

On-Board Lead Project Scientist Check List

Date 14 September 2003 Aircraft N43RF Flight ID 030914I

A. Participants:

HRD		AOC	
Function	Participant	Function	Participant
Lead Project Scientist	Aberson / Mike Black	Flight Director	Flaherty / Damiano
Cloud Physics	Uhlhorn / French / Drennen / Lasswell	Pilots	Tennessen / Tebeest / Strong
Radar	Mike Black / Aberson	Navigator	Brakob
Workstation	Mike Black	Systems Engineer	Bast
Photographer/Observer		Data Technician	Lynch
Omegasonde	Aberson / Mike Black	Electronics Technician	Tong / Smith
AXBT/AXCP/Guest	Floyd (press)	Other	

Take-Off: 145443 Location: St Croix

Landing: 2225 Location: St Croix

Number of Eye Penetrations: 1

B. Past and Forecast Storm Locations:

Date/Time	Latitude	Longitude	MSLP	Maximum Wind

C. Mission Briefing:

Penetration S → N, then step descents, possible leg along inner eyewall

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

Equipment	Pre-Flight	In-Flight	Post-Flight
Aircraft	X		
Radar/LF	X		
Radar/TA (Doppler)	X		
Cloud Physics	X		
Data System	X		
Omegasondes	X		
AXBT/AXCP			
Workstation	X		
Videography			

REMARKS:

Lead Project Scientist Event Log

Date 14 September 2003 **Flight** 030914I **LPS** Aberson

CIP probe not working

Time	Event	Position	Comments
145443	Takeoff		
151707	Start box pattern & circles for Jeff French		3kft
153332	End Jeff French calibration manouevres, begin coordination w/ 43		
1550	Through band, tetering	TAIL, not in FAST	
152430	Tanker seen below	>25 kt SFMR, some breaking waves	
	Eye seems ~50 nm across on radar		
	TEAL inside at 1715		
1622	Into convection >50 mi S of eyewall	>40 dBZ, flevel wind max ~77 kt	SFMR windmax inside that
	Eye seems about 45 mi across		
	First sonobuoy to be channel 11		
1631	flevel winds suddenly jumped over 100 kt		then back down to 85 kt
	moderate turbulence, heavy rain		SFMR windmax just inside
1632	Another sudden jump	>100 kt, not so much	turbulence
1638	Started 4 drop sequence, sonobuoy on last		drop
1654	Drop in 10000 ft convection in eye		
1701	Drop in end of striation		
1706	Drop near tall cloud in eye		
1721	Drop N eyewall inner		
172115	Drop N eyewall ~~outer~~ middle		
172130	Drop N eyewall ~~outer~~		
172145	Drop N eyewall		

2
2

Lead Project Scientist Event Log

Date 9/14/03 Flight 0 LPS _____

Time	Event	Position	Comments
173020	60 mi NW of eye turn right and descend		
173305	Sonobuoy + Spiral descent to area for step descent		
1750	Gave up on this area - closed up		
181230	start 1200' downwind leg		60 kt SFC
181900	End 30 min downwind leg		
182030	start 900' upwind leg		
182830	end 900' upwind		
183201	Begin 600' downwind		70-80 kt 925 mb
183440	End 600' leg upwind		
184440	End 450' leg upwind		
184621	200' leg downwind		60-65 kt SFC
185250	end 200' leg		
185436	200' cross + outward		
190100	End 200' cross		
190621	End 900 ft cross + inward		
190721	begin 600' cross outward		
191321	end 600' leg crosswind		
191514	begin 900' leg		
191940	end 900' leg	inbound	
192140	start 200' leg		
192740	end 250' leg downwind		
194251	Descent back to 1200' - closer in north of eye		
194603	start 1200 kt leg downwind		70-80 kts
194945	end 1200'		
145030	900' downwind leg		
195800	end 900' downwind leg		
20004	end 900 crosswind		

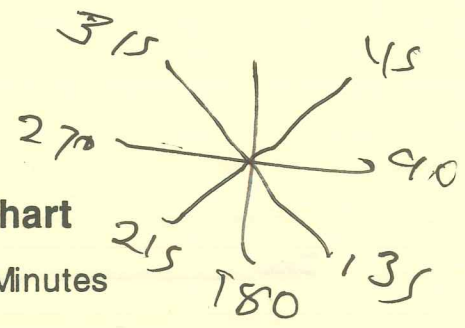
turn to 010 - begin 600' upwind leg - west of eye.

NW to NE side

Lead Project Scientist Event Log

Date ____________________ Flight ____________________ LPS ____________________

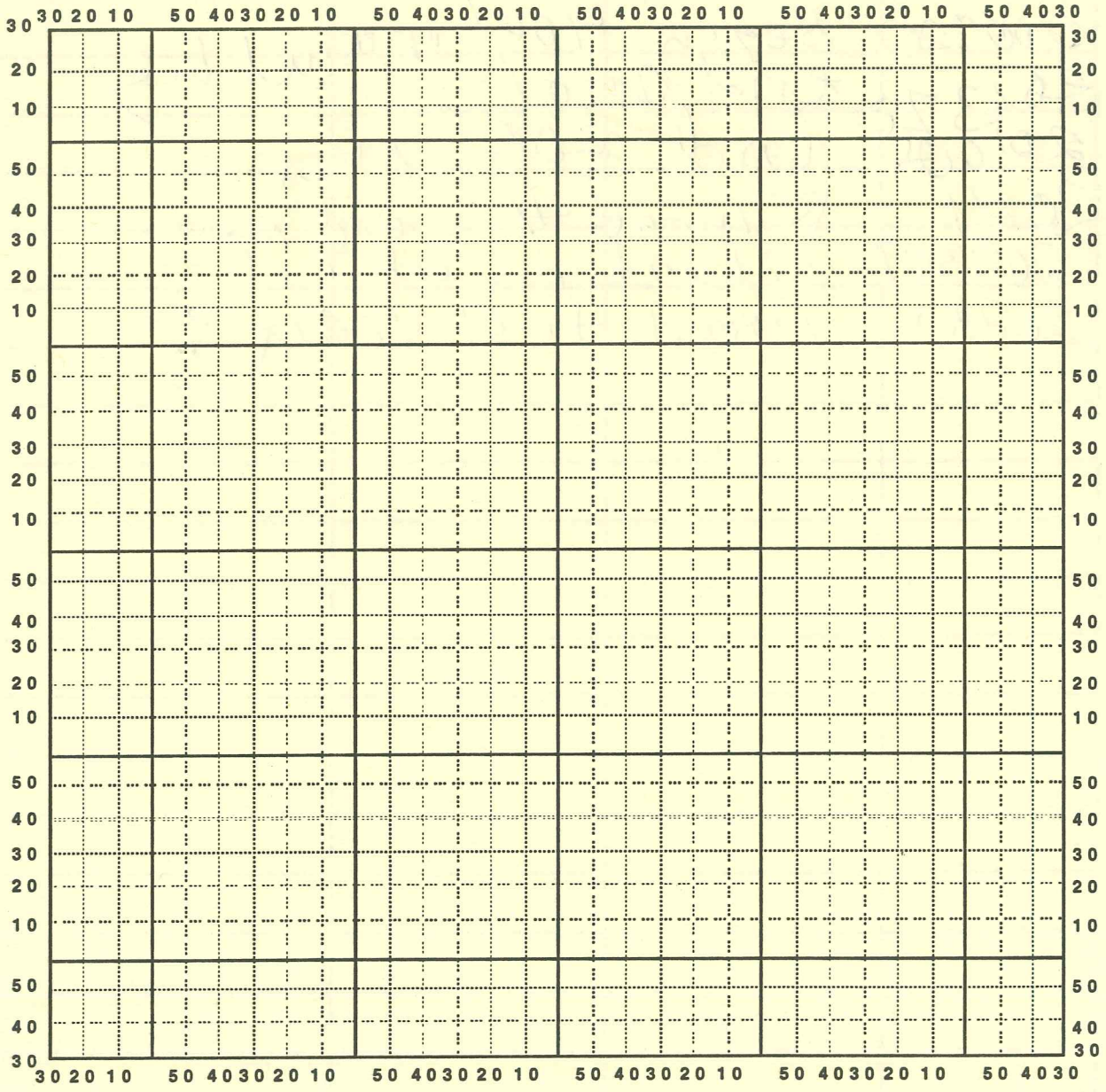
Time	Event	Position	Comments
200920	begin	400' run	
201372	end 400'		ud bu[illegible]
201605	end	200' run	
2021	Frame #3	end [illegible]	
202307	situation	of	
202325	Direct	to St. Croix ?	



Hurricane Recco Plotting Chart

True at 25° Latitude, in Degrees and Minutes

Date _____ Flight ID _____ LPS _____.



Note : Label full degrees according to location of the flight area.

$$\frac{\partial p}{\partial x} = \frac{9000}{6\times10^5} = \frac{9\times10^3}{6\times10^5} = 1.5\times10^{-2}$$

$f = 5\times10^{-5}$

$\rho = 1.2$

$r = 6\times10^5$

$$V_g = -\frac{fr}{2} \pm \sqrt{f^2 - \frac{4}{r\rho}\frac{\partial p}{\partial x}}$$

$$= -\frac{(5\times10^{-5})(6\times10^5)}{2} \pm \sqrt{(5\times10^{-5})^2 - \frac{4}{(6\times10^5)(1.2)}(1.5\times10^{-2})}$$

$$= -\frac{30\times10^0}{2} \pm \sqrt{25\times10^{-10} - \frac{6\times10^{-2}}{7.2\times10^5}}$$

$$= -15 \pm \sqrt{2.5\times10^{-11} - 10^{-7}}$$