030903I Fabian CBLAST

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.

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

MB 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.

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

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

MB 8. Perform a radio check with headsets. Make sure everyone's headsets is work properly.

MB 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 Director1 week after the flight).

Form E-2
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Lead Project Scientist Check List

Date 9-3 **Aircraft** 43RF **Flight ID** _____

A. —Participants:

HRD		AOC	
Function	**Participant**	**Function**	**Participant**
Lead Project Scientist	M. Black Chris	Flight Director	Marty Mayicuk / Barry
Cloud Physics	Lanlea, Rob Rogers	Pilots	Tom Strong, Tennesin
Radar	Rob, Chris	Navigator	John Adler
Workstation		Systems Engineer	Greg Bast
Photographer/Observer		Data Technician	Terry Lynch
Dropwindsonde	Chris / Rob	Electronics Technician	Ray Torg
AXBT/AXCP/Guest	Eric	Other	SRA - Ed Walsh

Eric Uhlhorn

Jeff French - DAT

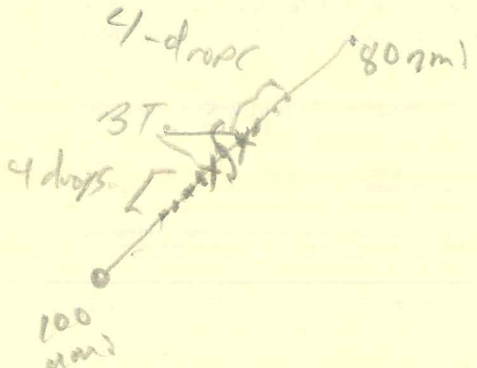
Take-Off: 1521 Location: St. Croix Landing: 2330 Location: St. Croix

Number of Eye Penetrations: 1 - 2

B. —Past and Forecast Storm Locations:

Date/Time	Latitude	Longitude	MSLP	Maximum Wind

C. —Mission Briefing:



SW to NE pass at 5,000 ft
Coordinated w 42 @ 8,000 ft
12 drop sequence inbound / outbound
(8-42, 4-43)
loiter in eye until new sondes
ready - exit to NE
4 full steps descents / ascents
upwind/downwind, crosswind
both directions - 2500 ft, 1200 ft
900, 600, 400, 200 ft. coordinated w/42
maybe final pass through eye

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

Equipment	Pre-Flight	In-Flight	Post-Flight	# of DATs or Expendables
Aircraft	✓	✓		
Radar/LF	✓	✓		
Radar/TA (Doppler)	✓	Weak/noisy		
Cloud Physics	✓			
Data System	✓	✓		
GPS sondes	✓			
AXBT/AXCP	✓			
Workstation	✓	✓		
Videography	✓			

REMARKS:

(1)

Form E-2
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Lead Project Scientist Event Log Rob Rogers, Chris Landrea, M. Black

Date 9-3-03 **Flight** 030903I **LPS**

Time	Event	Position	Comments
1538	Fr outer band	18.55 64.24	
1545	descend to	3,100 Ft for BAT probe maneuvers	
1548	at 3,000 ft	trk 300°	
1549	wind box	leg #1	
1551	end leg 1		
1552	leg 2 Trk 300		
1554	end leg 2		
155510	leg 3 Trk 120°		
155710	end leg 3		
155818	leg 4 Trk 210		
160018	End box pattern		
1603	circle for BAT Probe left		
160439	end circle		
1605	circle right		
1607	end circle		
162630	going thru outer band on SW side,	~120 nmi from center	
164835	trk 000, at IP	at 5 kft altitude	
165817	entering rainband on SW side		
170050	on weak side of	storm; seeing weaker than yesterday, maxed 32 in band ~36 dBz	
170209	45 nm. from eye	sfc. winds ~35 m/s	
170858	drop 1st sonde	at 10 nmi out from inner edge	
170926	2nd sonde, was at 93 kts flight level		
170959	3rd sonde, speed 94 F.L., 88 at sfc		
171033	4th sonde, BT	drop (16) combo	
171148	back into eye,	high ref, on NW side	
171253	trk 030 to center		
171311	trk 020		

2. 120

315 of 35 nm 1st LP for stat

Form E-2
Page 5 of 5

Lead Project Scientist Event Log Black, Rogers, Landsea

Date 9-3-03 **Flight** 030903I **LPS**

Time	Event	Position	Comments
171427	22° 19' 62° 45'	center position	, max fl & sfc winds about 100 kts
171600	circling around eye to the right	waiting for 42	
172149	writing MS wind for 42		
172250	good stadium effection on E side		
172501	27.7 C from BT		
172800	high shear at 6 west 200' 64 splash (12 sonde)		
173154	turning to 60°	for outbound leg	
173600	max sfc wind of nearly 85		
173636	1st drop, drop	BT combo, max	FL wind of 124 kts
173719	2nd drop		
173749	3rd drop		
173816	4th drop		
174007	27.5 SST		
1802	Hunting for 1st step descent 50 m; NE of eye		
1806	right turn baw upwind to begin upwind leg		
181730	left turn to begin downwind 2500' leg		
182100	Downwind leg 2500'	75 KTS FL wind - 56 kts SFC	
1828	Aborting this descent too much rain		
1835	tracking south to eye		
1846	North eyewall		
1850	eye 934 mb		
191157	trk 335 upwind @ 2500, 50 mile SW of eye		
192340	reverse trk downwind 1200'		
192640	upwind downwind 1200' 40 kts		
	precip clearing in eye		
1930-1950	going downwind around to east and northeast side of the storm		

(3)

Form E-2
Page 5 of 5

Lead Project Scientist Event Log

M. Black
R. Rogers
C. Landsea

Date 9-3-03 **Flight** 030903I **LPS**

Time	Event	Position	Comments
2013	Circling	~75 miles	Northern Eye
	waiting for 42 for step descent		
	in 45-50 kts OR wind - clears sfc		
20?6	Landsea at LPS	(cycles!)	
20??	Turned back to	west track, about to begin at 2,500'	
203130	Leg Started -	still cloudy below - 270°	
203520	Switched	to 260° track our wind dir is N-68 knots 75°	
203700	Changed track to	220° to avoid band	
203820	Switched to	040° track, descend to 1200'	
204033	Switch to	060° track - avoid band	
	Wave heights 720' up	to 30 SFMR 26-28 m/s	
204755	turn off	go to 900' 240°	
205000	Leg at 900'	begun	
205315	Change to	240 track - started new leg	
205900	Turn to	215°	
210002	RECTart	log - 70	at SFMR!
210430	Turn to	200° descend to 600'	65 kt at sfc.
	Spray starting to	hit pond	
210752	Leg started -		
211126	Adjust track to	100°	
	salt covers	wind shield	
211556	Leg ends		
2116	R+ Turn -	Try to clean windshield	
	ascending		
2120	Clear windshield	- track 240°	
212242	Leg started -		

212656 Leg Ended - go to 2500' track 150°

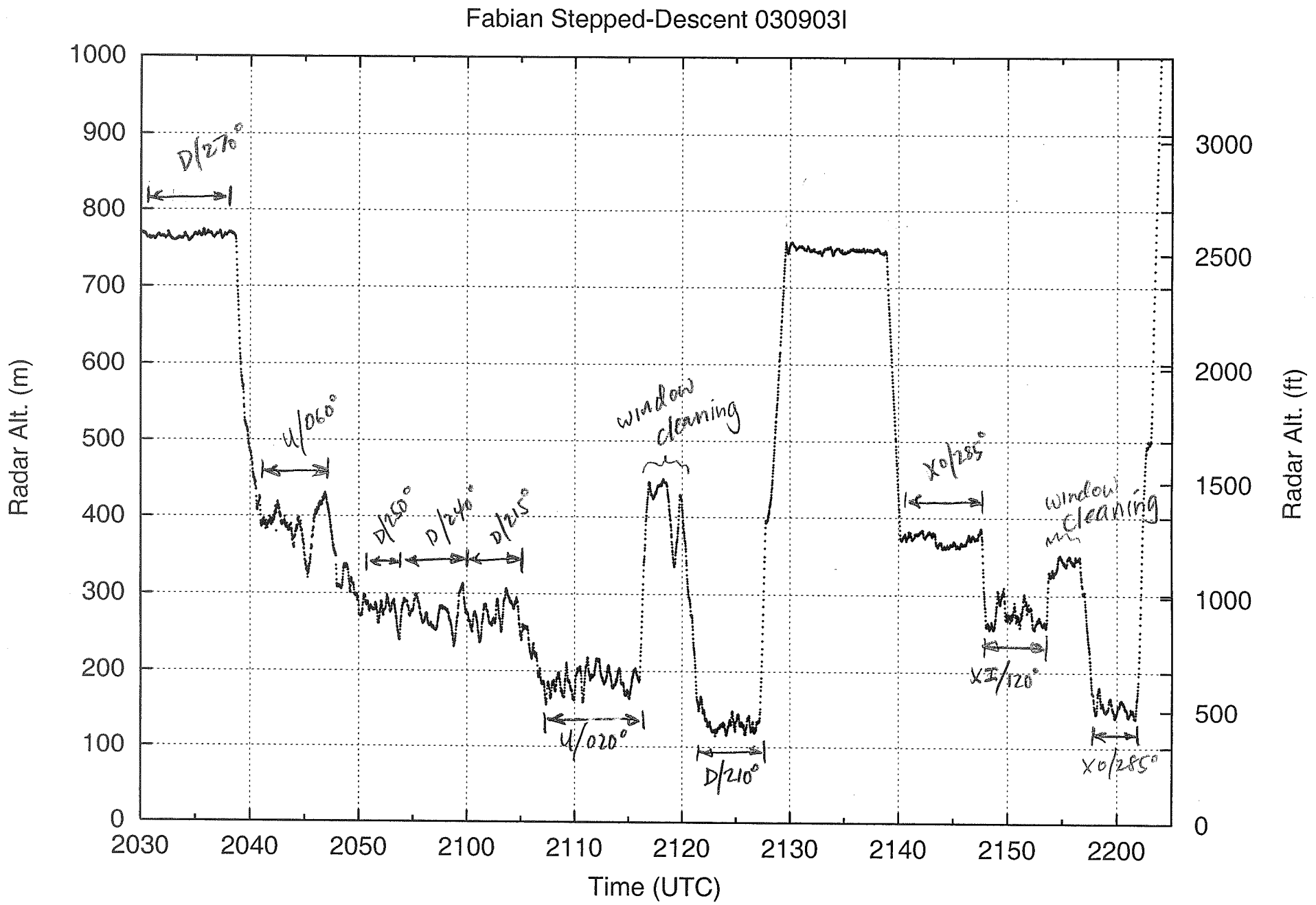
Eye +180

200

Lead Project Scientist Event Log

Date 9-3-03 **Flight** 030903I **LPS** M. Black, E. Landsea, Rob. Rogers

Time	Event	Position	Comments
2140	Descend	to 1200' -	cross wind leg 42
2141 45	Crosswind ahead	of the storm 1200'	
2147 30	End 1200' leg		
2148			
2150 04	Start	900' crosswind leg	
2155 42	End 900' leg		
2159 58	Start 500'	leg crosswind	
2200 50	End 500' leg		
2204	Climb to 16,500	RTB St. Croix	


Fabian Stepped-Descent 030903I
Radar Alt. (m)
Radar Alt. (ft)
Time (UTC)
1000
900
800
700
600
500
400
300
200
100
0
3000
2500
2000
1500
1000
500
0
2030
2040
2050
2100
2110
2120
2130
2140
2150
2200
D/270°
U/060°
D/250°
D/240°
D/215°
window cleaning
U/020°
D/210°
X0/285°
XI/120°
window cleaning
X0/285°

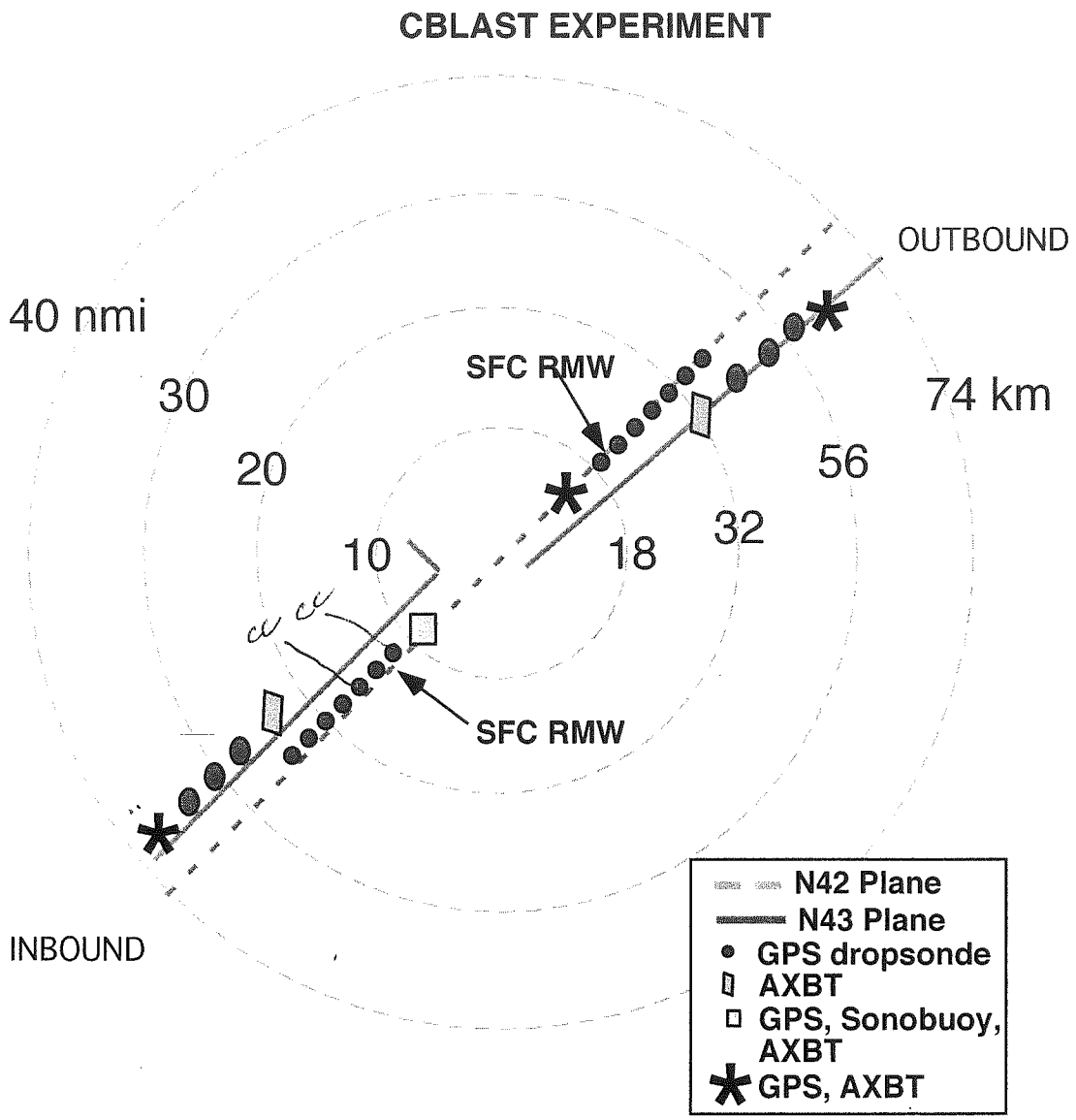


Figure 2b. Eyewall Dropsonde Module: Horizontal View

Note 1.	NOAA 43 (lower aircraft) starts a sequence of four near-eyewall drops on inbound legs at ~2RMAX . NOAA 42 should start 8 eyewall drops 30 s after end of 43's drops, ending at inner edge of eyewall. Orbit in the center until all drops have cleared. Reverse the sequence on the outbound legs.
Note 2	NOAA 43 legs are 3-6 nmi upwind of 42 leg, to ensure 42 overflies 43 drop splash points for IWRAP verification.
Note 3.	Last 2 sondes on inbound leg and first 2 sondes on outbound leg of 42 should be inside the surface RMW.
Note 4.	42 does triple drop (GPS, Sonobuoy and AXBT) after 43 has made upwind turn in eye.
Note 5.	42 and 43 fly polygonal patterns in eye (not circles) while crew prepares sondes for outbound leg.
Note 6	43 drops BT 30s after dropping last sonde inbound, and 30 s before first sonde on outbound leg.
Note 7	Innermost 4 sondes from 42 are dropped at 1 nmi) (15 s) intervals. 42 outermost 4 and 43 sondes are dropped at 2 nmi (30 s) intervals

CBLAST EXPERIMENT

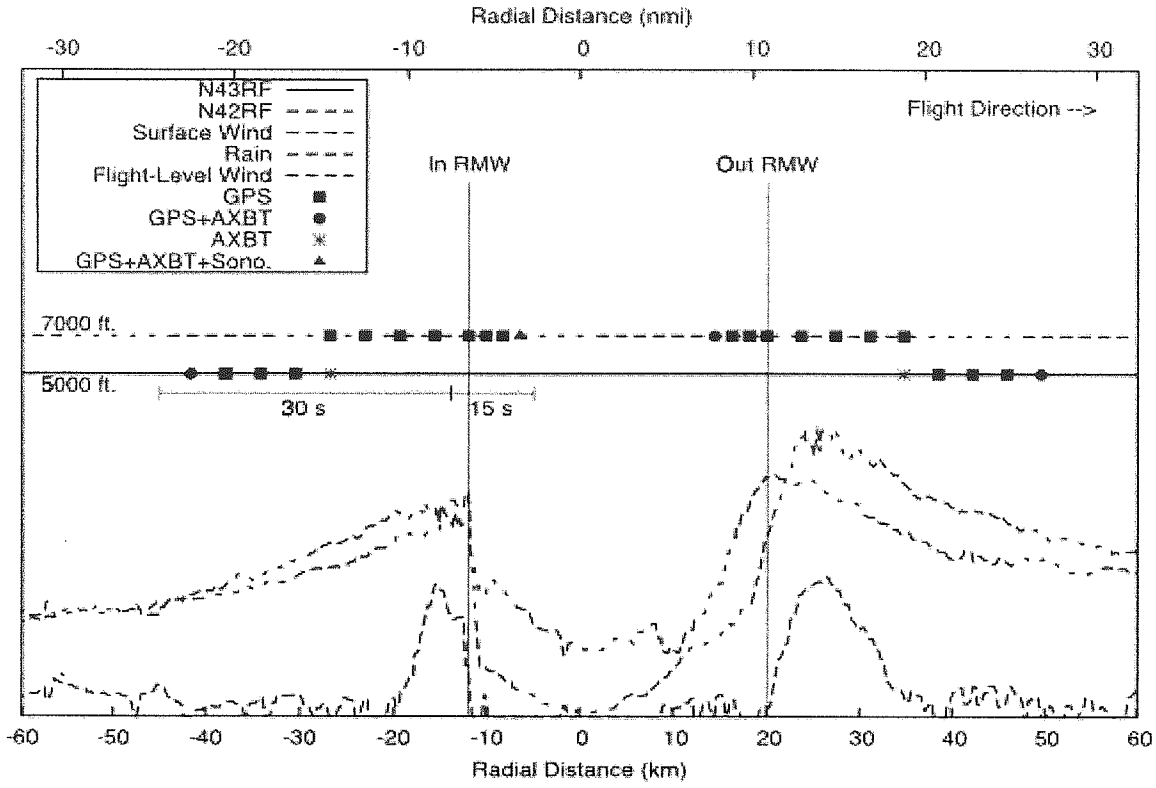


Figure 2c: Eyewall Dropsonde Module: Vertical Cross Section.

Note 1.	NOAA 43 (lower plane) starts a sequence of four near-eyewall drops on inbound legs at ~ 2RMAX . NOAA 42 should start 8 eyewall drops 30 s after end of low plane drops, ending at inner edge of eyewall. Orbit in the center until all drops have cleared. Reverse the sequence on the outbound legs.
Note 2	NOAA 43 legs are 3-6 nmi upwind of 42 leg, to ensure 42 overflies 43 drop splash points for IWRAP verification.
Note 3.	Last 2 sondes on inbound leg and first 2 sondes on outbound leg of 42 should be inside the surface RMW.
Note 4.	42 does triple drop (GPS, Sonobuoy and AXBT) after 43 has made upwind turn in eye.
Note 5.	42 and 43 fly polygonal patterns in eye (not circles) while crew prepares sondes for outbound leg.
Note 6	43 drops BT 30s after dropping last sonde inbound, and 30 s before first sonde on outbound leg.
Note 7	Innermost 4 sondes from 42 are dropped at 1 n mi (15 s) intervals. 42 outermost 4 and 43 sondes are dropped at 2 n mi (30 s) intervals.

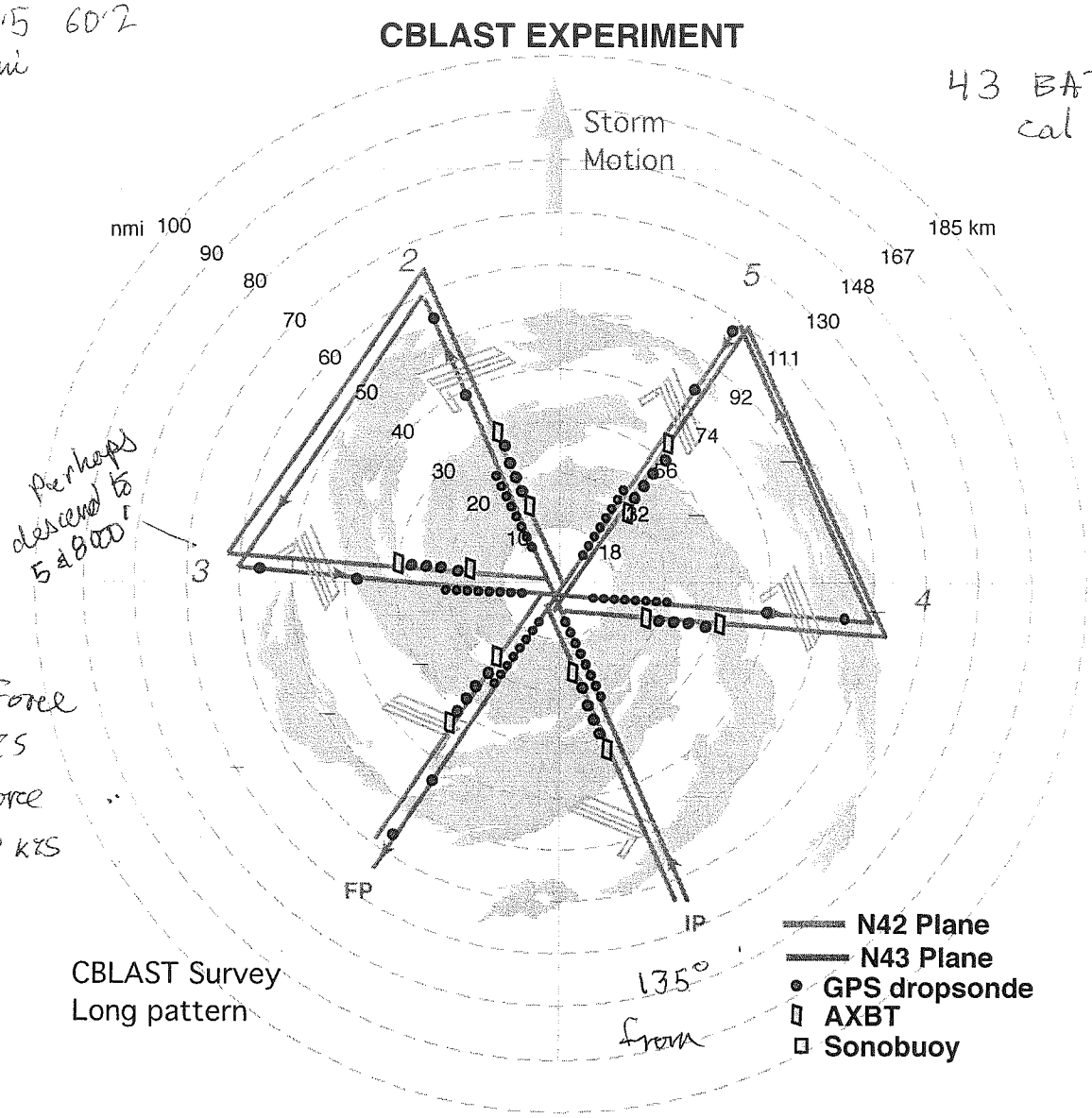


Figure 4. CBLAST long pattern.

• Note 1.	The pattern should be aligned 30° from storm heading. Preferred **IP** is in left-rear quadrant, but can be in any quadrant.
• Note 2.	The two WP-3Ds fly 'in trail' with high plane at 7,000 ft RA (12,000 ft in CAT 4 or 5) and low plane at 5,000 ft RA from **IP** to **2**, 2,500 ft RA thereafter, conditions permitting (8,000 ft for CAT 4 or 5). The lower WP-3D will lead the upper WP-3D.
• Note 3.	Aircraft should reach their respective **IP's** as simultaneously as possible, with the **IP** for upper WP-3D at a radius of 108 nm, and the **IP** for the lower WP-3D at a radius of 97 nm.
• Note 4.	The high WP-3D will commence a sequence of six eyewall drops on inbound legs at approximately 1.5RMAX or near the outer edge of the eyewall, ending at inner edge of eyewall. Reverse the sequence on the outbound legs.