



NOAA P-3 N43RF CBLAST- HURRICANE FABIAN INVESTIGATION FLIGHT 1



Flight ID: 030902I

Sensor or system

INE

Accelerometer

Temperature Probe

Dew Point Probe

Altitude (for vertical wind)

Static Pressure

Dynamic Pressure

Time Source

Constants File

Number or Name

1

1

1

1 (General Eastern)

Radar Altimeter 159

Rosemount Fuselage

Rosemount Fuselage

Micro 99

CO3033.CON

Notes:

There were several time/data gaps during this flight which occurred during the times 174541Z-174620Z, 181621Z-181640Z, 182341Z-182350Z, 201711Z-201750Z, 222311Z-222320Z, and 222511Z-222530Z.

Substituted Radar Altimeter 232 for 159 during the times 143231Z-143500Z and from 232801Z-233100Z.

Corrected dewpoint temperature values to minimize spikes below 140% in relative humidity during the times 153201Z-153900Z, 165601Z-165700Z, 192701Z-194000Z, and 201201Z-202800Z. However, there were numerous times during the flight where the dewpoint temperature exceeded ambient temperature resulting in an RH>100%. This was likely due to heavy rain (as noted by the Johnson-Williams Liquid Water Sensor), a wet-bulb effect on the total temperature sensor, and/or an artificial warming of the dewpoint sensor as it tried to burn off excess moisture. No corrections were made to the dewpoint values during these events unless they caused the relative humidity value to exceed 130%.

All other instruments worked optimally during the flight.

The aircraft INE positions were renavigated with respect to GPS.

SPECIAL NOTE!!! Locations 80, 81 and 82 of record five on the standard tape contain vertical ground, vertical air and vertical speeds, respectively, computed using Dave Jorgensen's vertical wind algorithm. It is recommended that these values be used for vertical wind analysis.

	Takeoff	Landing
Aircraft Static Pressure	1012.7 mb	1008.8 mb
Corrected Tower Pressure	1012.8 mb	1010.8 mb

Flight Director: Martin Mayeaux (813) 828-3310 ext. 3086

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AOCWF-1

Flt ID: I030902	From: TISX	To: TISX
Flt No: 03-71	Blk In: 2332Z	ATA: 2328Z
ETD: 1430Z	Blk Out: 1423Z	ATD: 1435Z
ETE:	Blk Time: 9:09 (9.2)	Flt Time: 8:53 (8.9)
Sponsor Org: HRD	Program: CBLAST	Purpose: CBLAST PROFILE FOR H. FABIAN

AOC Personnel

AC: TENNESEN ✓	Sys Eng:
CP: TEBEEST / STRONG ✓	Data Sys: LYNCH ✓
Nav: ADLER	Radar:
FE: FLOYD / ██████	GPS/BT: TONG ✓
FD: DAMIANO / MAYEAUX ✓	Cld Phys:
Avionics: SANS SOURCE ✓	

Participating Scientists / Visitors / AOC

Name (Last, First)	Activity on Aircraft	Affiliation
BLACK, M ✓	PI	HRD
ROGERS, R ✓	ASST. PI	
LANDSEA, C ✓		
UHLHORN, E ✓	SFMR	
LAWSWELL, J ✓	LASER ALT, INFARED CAM	SCRIPPS
FRENCH, J ✓	BAT PROBE	NOAA /
COOPER, S ✓	OBS	NWS SR

Proposed/Actual Mission Remarks (Recco, Fixes, Storm, PENET, NHDP #)

18Z forecast 20.4 61.0

164201 RADARS STOPPED

AF fix at 1711Z delayed

our penetration.

first CARACH called saying no ASDL

but Terry checked Wallops and all is there

2027 6045
1754Z 946
1740 2026 6047

IP 1930 6012
1745Z Run setups 2001Z
1834Z 2038
2030 945 6057
6052 2221Z 2030 944 601141 944043
Sona buoy on 42
Chanel 11 and 12

(4)

20m

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AOCWF2

Flt ID: 1030902 Time Off: 1435Z Time On: 2328Z

A/C (Take Off)

Wx Station (Take Off)

A/C (Land)

Wx Station (Land)

Pressure

1013.8

29.98

1011.9

29.92

Number

Data Disposition / Date / Quality

Flt Lvl Tapes

2

Radar Tapes

1

Cloud Physics Tapes

Video Tapes

41

AXBT

6

AXCP

AXCTD

Dropsondes

25

Video

Forward

Left Side

Right Side

Down

Remarks

Time On

Time Off

Rate

Remarks

MURDER AVIATION
2nd center fly

$$\begin{array}{r} 225 \\ 40 \\ \hline 315 \end{array}$$

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Form 413-50

[illegible]

NOAA • AOC • SED
N43RF AXBT DROP LOG

Project : Hurr '03 / CBLAST

Mission : UNK FABIAN^{NY} Flight ID : 030902I

Operators: Sans Souci, Tong

Take Off : _____

Landing : _____

[illegible]

NOAA • AOC • SED
N43RF AVAPS DROP LOG

Project : Hurr '03 / CBLAST

Mission : HURR FABIAN #2

Flight ID : 030902I

Take Off : _____

Landing : _____

Drop #	Sonde Serial #	Rcvr #	Press Offset	Launch Time	Winds Time	Operator	Comments	Good ?
1	023 235 027	1	0			RT		✓
2	023 235 240	2	-0.3			RT		✓
3	023 235 226	3	+0.3			RT		✓
4	023 235 231	4	-0.3			RT		✓
5	023 235 186	1	+0.6			RT		✓
6	022 615 132	2	+0.4			RT		✓
7	022 625 116	3	-0.7			RT		✓
8	022 945 273	4	0			RT		✓
9	023 235 073	1	0			RT		✓
10	023 235 072	2	0			RT		✓
11	023 235 036	3	0			RT		✓
12	023 235 085	4	0			RT	Launch Det	✓
13	022 945 272	5	+0.5	1936		RT		✓
14	022 615 056	6	0	1937		RT		✓
15	023 235 043	7	+0.4	1938		RT		✓
16	022 625 064	8	+0.4	1939		RT	Late launch detect (9sec)	✓
17	023 235 221	5	+0.6	1956		RT		✓
18	022 945 280	6	-0.3	1956		RT	Late L.D. (6sec)	✓
19	023 235 035	7	+0.3	1957		RT		✓
20	023 235 235	8	-0.5	1957		RT		✓
21	022 945 282	5	0	2017		RT		✓
22	023 235 230	6	0	2018		RT		✓
23	023 235 031	7	+0.4	2019		RT		✓
24	023 235 188	8	0	2020		RT		✓
25	023 235 232	5	-0.2	22:20	45	TL		
			-0.9					
Note: Drops 13 through 25 stored on "Primary" Drive								
- using "Backup" drive as mark one								
DROPS 1-8 not saved - Recover "D" Files from TAPE								

25 DROPS - CHARGE TO HRD

1 - Box 11
4 on 16 BT
1 - Box 11
very nice

HRD not used

HRD

Recover

ELT
1945Z
21N
061 40W

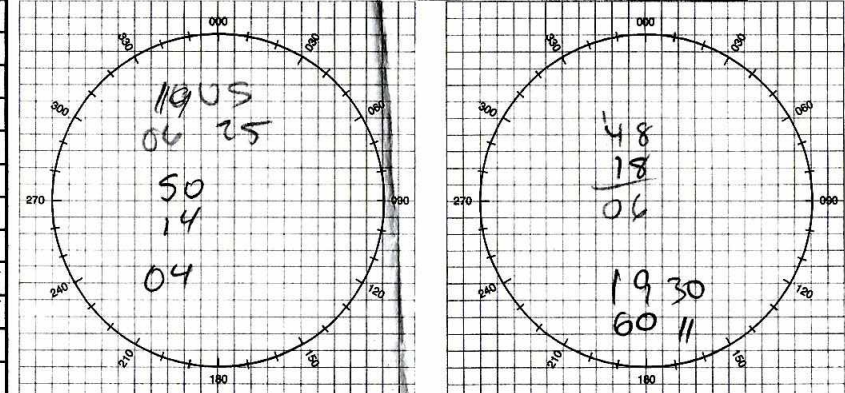
60 32 60 45 28
210

315 405 045

19 47.1 059 54.0

CLEARANCES			
FREQ	ALT	HDG	OTHER
			L045 7K
			0071g
			BT lost
			21 06N EXIT
			061 23W POINT

MISSION LOG 36 PAGE 1 OF 1



POSITION REPORT

1. POSITION

2. TIME

3. ALTITUDE

4. NEXT POSITION

5. ETA

6. NEXT POSITION

EMERGENCY MESSAGE

TRANSMIT THE FOLLOWING MESSAGE TO ANY AGENCY ON THE AIR-GROUND FREQUENCY IN USE. IF UNABLE TO ESTABLISH COMMS, ATTEMPT CONTACT ON ANY OF THE FOLLOWING EMERGENCY FREQUENCIES:

UHF/VOICE 243.0 VHF/VOICE 121.5 MF/VOICE 2182 KHZ HF/CW 8364 KHZ MF/CW 500 KHZ

MAYDAY, MAYDAY, MAYDAY
THIS IS NOAA _____, NOAA _____

- POSITION _____ N/S
E/W AT _____ Z

- HEADING _____ TRUE/MAG
- AT _____ KTS TRUE/INDICATED
- FLIGHT LEVEL OR ALTITUDE _____
- WE ARE A P-3 AIRCRAFT WITH _____ SOULS ON BOARD
- NATURE OF EMERGENCY _____
- ASSISTANCE DESIRED _____
- PILOT INTENTIONS _____
- WE HAVE _____ ENDURANCE REMAINING

TIME	FIX TYPE	POSITION	INS 1 POSITION	K ERR	INS 2 POSITION	K ERR	MH	VAR +E==>	TH	DR +R==>	TRK	GS	WD	WS	ALT	TAS	NEXT PT	DIST	TIME	ETA	REMARKS
1417	ENG																				
1423	TAXI																				
1423	BOOK																				
1434	T/O																				
1439	✓	17 51.0 064 34.9	17 51.3 064 34.7	-0.3 +0.2	17 51.2 064 34.7	-0.2 +0.2				0	057	215	060	16	71K	226					
1532	Δ	18 34.7 062 11.9	18 37.1 062 11.2	-2.4 +0.7	18 32.5 062 11.1	-2.0 +0.8				0	083	253	300	25	7.5	243					1943 1627 059 39
1635	Δ	19 40.5 059 55.1	19 42.6 059 54.7	-2.1 +0.4	19 42.8 059 54.6	-2.3 +0.9				14L	092	266	215	65	7500	240					1945N 059 45W
1738	Δ	20 34.3 060 46.1	20 36.7 060 46.4	-2.4 -0.3	20 36.3 060 45.5	-2.0 +0.6				3R	179	245	100	10	7500	242					2030N 060 32W 060 45
1827	Δ	20 29.2 061 20.2	20 35.4 061 17.6	-5.2 +2.6	20 35.1 061 17.1	-5.9 +3.1				24R	090	199	015	102	7500	242					2032 061 41
1910	Δ	20 22.9 060 46.3	20 28.6 060 45.4	-5.7 +0.9	20 26.8 060 44.7	-3.9 +1.6				16R	-	250	215	55	7500	234					
2002	Δ	20 34.3 060 57.5	20 42.7 060 93.1		20 40.3 060 52.2					-	-	302	175	54	7500	243					20 34.3 060 57.5
2100	Δ	20 25.2 060 06.2	20 38.1 060 01.3		20 35.0 060 01.2					0	167	150	170	70	900	222					20 37 060 54 150
2151	Δ	20 33.0 060 09.5	20 41.6 060 06.8		20 37.2 060 05.8					17R	255	215	170	70	7500	228					
2221	Δ	20 49.6 061 13.5																			
2244	Δ	19 37.1 062 32.3	19 46.7 062 25.5		19 42.2 062 24.9					9L	223	301	315	45	16500	300					16K 14K 2300
2328	Δ	TSTX																			120
		17 42.1 064 47.9	17 52.4 064 42.8	-10.3 +7.1	17 46.8 064 42.7	-4.7 +5.2															

2029
060/44

I03

SONDE ID	MISSION NAME	LAUNCH TIME	CH #	LAUNCH		AC FL PRESS (mb)	AC FL TEMP (C)	AC FL RH (%)	AC FL WIND (m/s)	AC FL WIND (deg)	AC ALT (m)	Last Press (mb)	Last Press Time (SEC)
				DETECT DELAY (SEC)	DETECT PIN PULLED								
22945272	030902i	193640.5	5	0.0	T	755.60	13.20	111.66	42.10	51.00	2348.0	988.91	185.1
22615056	030902i	193740.1	6	0.0	T	760.80	13.00	114.59	41.80	53.30	2312.1	992.33	188.5
23235043	030902i	193840.2	7	0.0	T	764.50	13.70	103.97	39.50	43.00	2286.1	994.83	169.9
22625064	030902i	193940.6	8	18.9	T	765.50	13.10	110.95	38.30	49.00	2300.1	997.39	176.0
23235221	030902i	195526.7	5	0.0	T	755.70	14.30	107.35	48.70	348.90	2280.1	982.29	191.0
22945280	030902i	195627.6	6	6.2	T	752.10	14.60	108.02	50.30	346.60	2271.1	977.07	172.5
23235035	030902i	195716.6	7	0.0	T	750.70	15.10	106.62	55.40	347.50	2246.1	971.31	172.5
23235235	030902i	195746.9	8	0.0	T	745.50	15.30	106.61	52.20	334.90	2275.1	968.56	203.2
22945282	030902i	201702.7	5	0.0	T	751.10	13.70	111.61	60.00	160.90	2272.1	971.95	210.3
23235230	030902i	201801.9	6	0.0	T	753.30	13.50	114.53	59.70	165.00	2287.1	977.30	196.1
23235031	030902i	201902.5	7	0.0	T	755.80	14.40	97.44	58.20	167.20	2294.1	982.00	168.0
23235188	030902i	202003.4	8	0.0	T	762.10	13.40	111.64	56.20	160.10	2254.2	987.43	166.1
23235232	030902i	222053.7	5	0.0	T	663.60	14.10	98.71	1.60	303.20	3074.4	943.39	229.5

~ +.5 mb

0902

Last Wind Dir (deg)	Last Wind Speed (m/s)	Last Wind Offset (SEC)	Winds Acquire Time (sec)	PTH Data Good (%)	Wind Data Good (%)	Temp Equil. Delay (sec)	Max Wind (m/s)	Max RH (%)	RH! Fail Fail	RH1 Fail Press	RH2 Fail Fail	RH2 Fail Press	RH1/ RH2 Delta >10
1.8	41.21	1.0	22.6	98.1	94.1	13.1	55.8	95.3	F		F		F
12.5	44.23	5.5	43.5	98.9	95.4	12.5	54.6	100.0	F		F		F
-99.0	-99.00	-99.0	-99.9	98.6	0.0	11.4	0.0	94.0	F		F		F
20.8	35.71	2.0	45.0	98.0	86.9	11.5	52.7	96.7	F		F		F
306.6	39.46	3.0	46.5	97.1	83.5	8.5	58.4	100.0	F		F		F
301.6	51.18	1.5	31.5	99.4	78.6	11.5	61.1	96.9	F		F		F
301.7	47.32	0.5	44.0	98.8	47.5	9.0	63.4	97.2	F		F		F
294.9	49.78	6.5	51.2	98.4	83.6	8.2	62.8	99.4	F		F		F
130.5	53.95	1.5	41.3	99.1	91.7	13.8	63.5	95.7	F		F		F
123.2	60.00	3.5	36.6	98.7	93.9	5.6	66.2	100.0	F		F		F
130.7	50.57	0.5	46.5	98.5	76.5	8.0	64.2	100.0	F		F		F
127.0	45.60	0.0	53.1	99.0	96.0	12.6	60.9	100.0	F		F		F
92.9	6.13	-0.5	42.5	98.3	88.8	17.5	6.4	95.5	F		F		F

2030
6050

30 15 15 (60)

Date time unknown 700
damped

2034 946
6051 AF 15

2022
6142

2034

CBLAST EXPERIMENT

190

2040
6003

235
21
065

248

FRIC
150

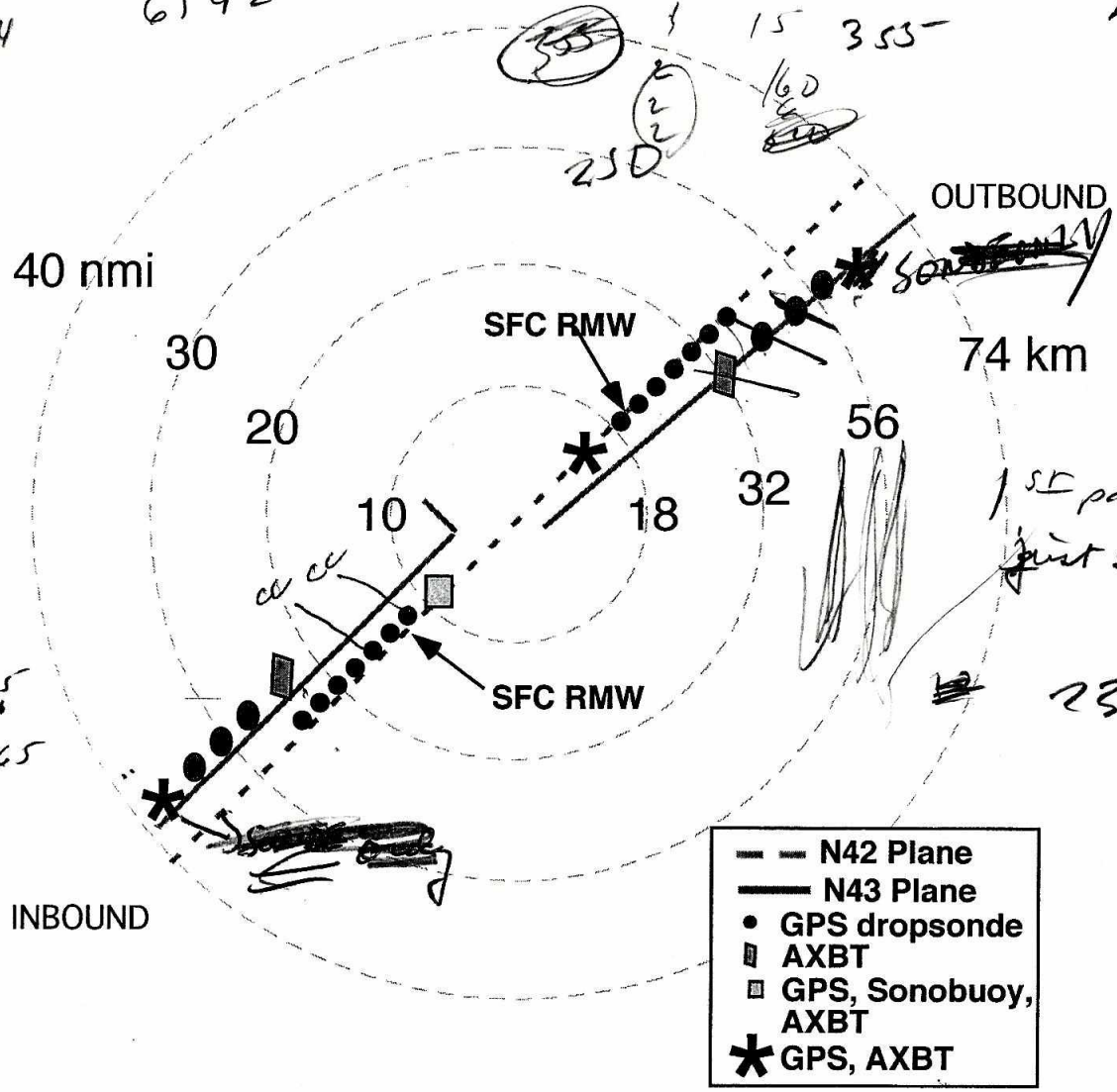


Figure 2b. Eyewall Dropsonde Module: Horizontal View

- 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

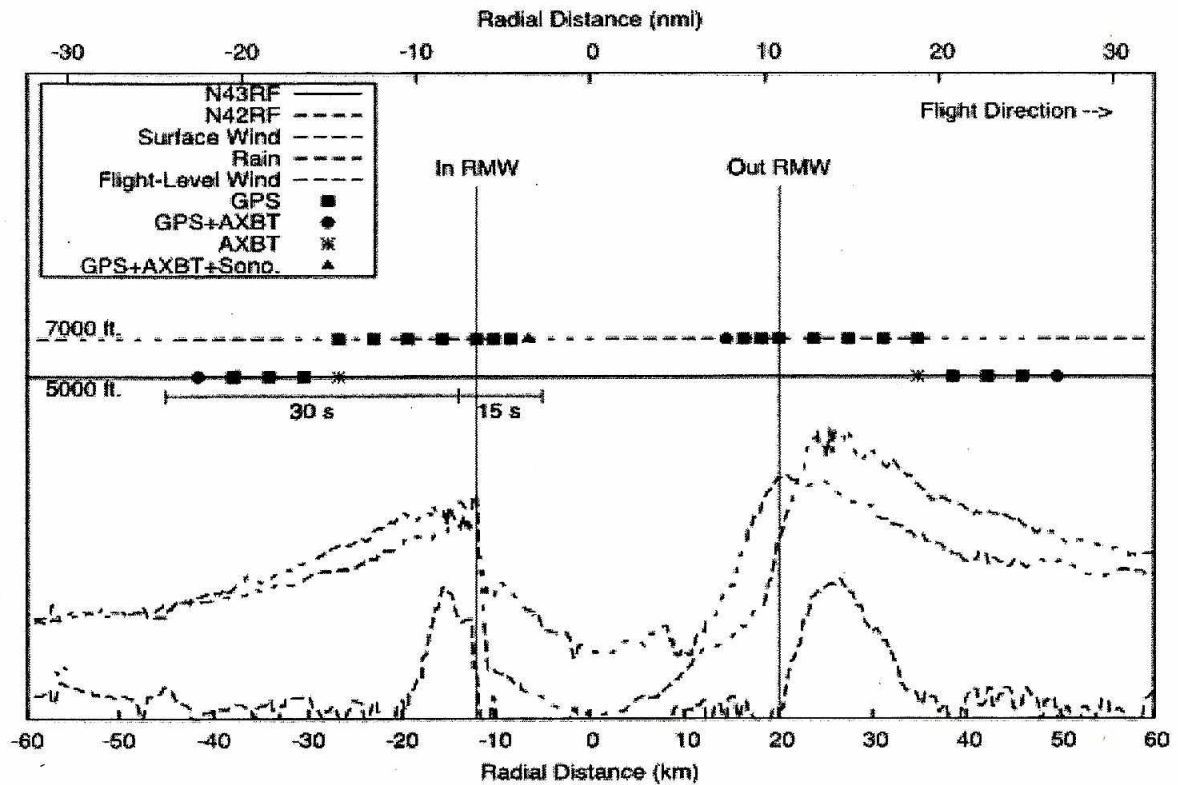


Figure 2c: Eyewall Dropsonde Module: Vertical Cross Section.

- | | |
|---------|--|
| 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. |

Common local
est 1600 20'4 61'D

REAL 39
to H
for 18 z
fix

43-8, 42-12 K
↓
5,000'

AF at 19000'

IP at 19.5 60'2
~300 mi

43 BAT
cal at begin

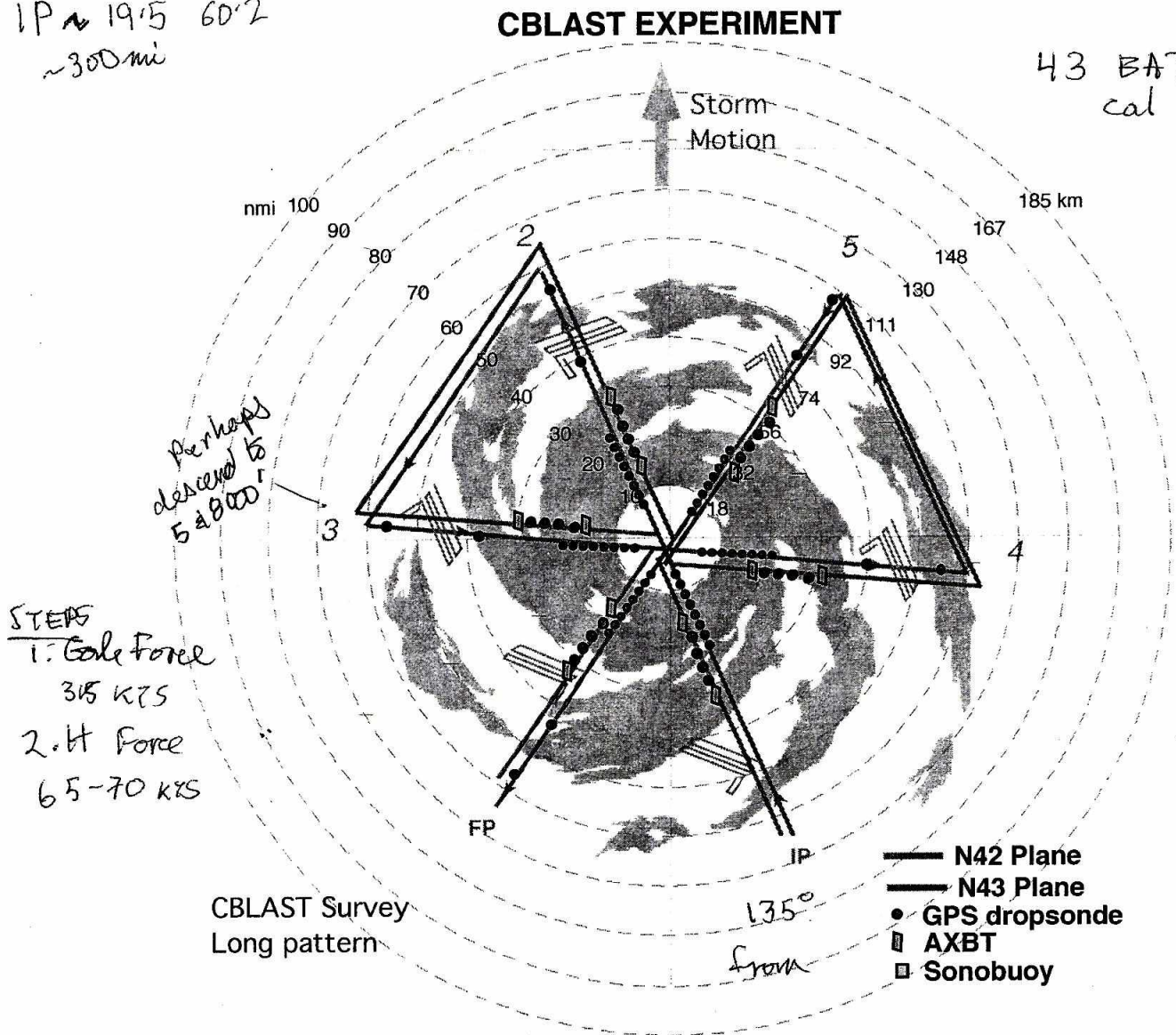


Figure 4. CBLAST long pattern.

- 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.

stopped
1st leg upwind

EW here