030914H

E.2 Lead Project Scientist

E.2.1 Preflight

RR 1. Participate in general mission briefing.

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

RR 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.

RR 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.

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

RR 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.

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

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

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

RR 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).

Lead Project Scientist Check List

Date 9/14/03 **Aircraft** N42RF **Flight ID** 030914H

A. —Participants:

HRD		AOC	
Function	**Participant**	**Function**	**Participant**
Lead Project Scientist	Rogers, Landsea	Flight Director	T. Shepherd
Cloud Physics	—	Pilots	Kennedy, Silah
Radar	Leighton	Navigator	Newman
Workstation	Leighton	Systems Engineer	
Photographer/Observer	—	Data Technician	
Dropwindsonde	Landsea, Rogers	Electronics Technician	
AXBT/AXCP/Guest		Other	

Take-Off: ~~St. Croix~~ 150922 Location: St. Croix Landing: _____ Location: St. Croix

Number of Eye Penetrations: 7

B. —Past and Forecast Storm Locations:

Date/Time	Latitude	Longitude	MSLP	Maximum Wind

C. —Mission Briefing:

Takeoff St. Croix, head to storm N. of island at 15,000'. IP 60 nm south of center, descend to 7000', begin figure 4 pattern dropping 8 sondes along wind max in eyewall (coordinated with 43). within eyes perform one downwind circuit about 5 mi. inside eyewall edge, ~~running TA~~ to get wind data from TA radar. Complete Fig. 4, coordinated with 43, doing 8-drop sequences on each leg. Do wedges for Paul Chang afterward, at 8000', number of penetrations TBD.

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)	✓			
Cloud Physics	—			
Data System	✓			
GPS sondes	✓			
AXBT/AXCP	—			
Workstation	✓			
Videography	✓			

REMARKS:

Mission Summary

Storm name

YYMMDDA# Aircraft 4__RF

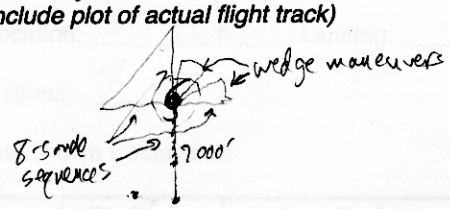
Scientific Crew (4 RF)

Lead Project Scientist Lundsea, Rogers
Radar Scientist Leighton
Cloud Physics Scientist
Dropwindsonde Scientist Rogers, Lundsea
Boundary-Layer Scientist
Workstation Scientist Leighton
Observers

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

Fly to storm at 15,000ft, descend to 7000' begin Fig. 4 from S-N, dropping 8 sondes on inbound leg. Complete 1 circuit downwind on inner edge of eyewall; coordinate w/ 43 for outbound leg. Repeat 8-sonde sequence, complete Fig. 4 pattern. Do wedge maneuvers for Paul Chang at 7000',

Mission Synopsis: (include plot of actual flight track)



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

Problems:(list all problems)

Lead Project Scientist Event Log

Date 9/14/03 **Flight** 030914H **LPS** Rogers

Time	Event	Position	Comments
15:09:22	Takeoff	St. Croix	Takeoff at 150922 UTC from St. Croix
15 28 03	Ferry		Ascending to 15,000'
16 14 40	descent	21° 52' 66° 26'	descend to 7000' heading 330°
162506		22° 35' 66° 31'	approaching outer band from south
162702	adjustment	22° 44' 66° 32'	turn right to 355 heading
162922		22° 53' 66° 33'	broad area of convection; multiple bands on S side
163635	drop	S eyewall	drop 1 on inbound
163653	drop	"	drop 2
163712	drop	"	drop 3
163732	drop	"	drop 4
163751	drop	"	drop 5
163812	drop	"	drop 6
163831	drop	"	drop 7
163945	drop	"	drop 8
163947	penetration	23.57° 66.67°	penetrate eyewall
163955		S side of eyewall	top FL wind (80 kt), SFC wind (20 kt
164710	turn	in eye	turn left to 270 heading
164942	turn	eye	turn left along eyewall edge, take 7th obs of eyewall
165050		eye	8-10 mi. inside inner edge (grey)
165243		eye	pentagonal eyewall, very sloped eyewall (>60° from vertic
165413		eye	turning within eye still
165635		eye	pentagonal
170000	center estimate	eye	23° 55' 66° 40' (geometric center)
170430		eye	pentagonal
170410	center fix	eye	23° 47' 66° 45' (pressure center from 43)
170458		eye	appendages growing in pointing downwind from eyewall
171038	turn	eye	left turn to 090

Lead Project Scientist Event Log

Date 9/14/63 **Flight** 030914H **LPS** Rogers, Landsea

Time	Event	Position	Comments
171710	turn	eye	turn left at center, completing outbound leg
172008	drop	N eyewall	drop 1 on outbound leg
172019	"	"	drop 2
172027	"	"	drop 3
172037	"	"	drop 4
172054	"	"	drop 5
172115	"	"	drop 6
172135	"	"	drop 7
172155	"	"	drop 8; little stepped inwards; max FL 75 w/s; 62 m/s @ SFMR
172756	turn	N of eyewall	turn to 20° heading
172758			coordinating w/43 for stepped descent
173011	turn	"	turn left to 270 to coordinate
173245	"	"	turn left to 90, approaching stepped IP
173400	"	"	turn left to 60 to avoid wx
173458	"	"	turn right to 90
173922	"	"	turn left, waiting for 43; SFMR winds are 80 kts
174340	"	"	no longer coordinating w/43
174800	turn	"	turn left to 215 (scrubbed to find clear slot)
175410	"	"	turn right to 234
180211			transiting to west of eye
181200	pattern	W of eyewall	begin inbound leg toward 90
181609	turn	" "	turn to 080
182103	drop	in W eyewall	drop 1
182123	"	"	drop 2
182143	"	"	drop 3
182202			drop 4
182222			drop 5

Lead Project Scientist Event Log

Date 4/14/03 **Flight** 030414H **LPS** Rogers, Land/Sea

Time	Event	Position	Comments
182234	drop	W eyewall	drop 6
182244	drop	W eyewall	drop 7
182252	drop	"	drop 8; max FL 68 m/s; sfc 58 m/s
183227	radar interp.	eye	still pentagonal eyewall; rough wind ass'd w/
"	"	"	hints of an outer eyewall structure roughly 1
183735	visual interp.	eye	large eye (~50-60 mi.), inner
183750	"	"	[illegible] cloud; [illegible] top
183825	"	"	SCu top ~4000'-5000'
184123	"	"	very shaped cloud pattern
184358	"	"	rope clouds coming into eye
184830	turn	eye	turn to 090, start outbound leg
185200	drop	E eyewall	drop 1
185210	"	"	drop 2
185220	"	"	drop 3
185230	"	"	drop 4
185251	"	"	drop 5
185309	"	"	drop 6
185331	"	"	drop 7
185351	"	"	drop 8; max FL 150 kts; sfc 125 kts
185746		east of eyewall	going turn outbound; is it outer eyewall?
190133		"	broader wind field on this side
190230	turn	"	turning to 330, beginning wedges for chang
190505	"	NE of eyewall	turning to 240, entering eyewall
190658	"	"	turning to 250
190950	"	"	turn to 260
191430	drop	"	drop 1 of Paul Chang pattern (wedge)
[illegible] 191445	drop attempt	"	drop got stuck

(2)

Lead Project Scientist Event Log

Date 9/14/03 **Flight** 030914H **LPS** Rogers, Land Sea

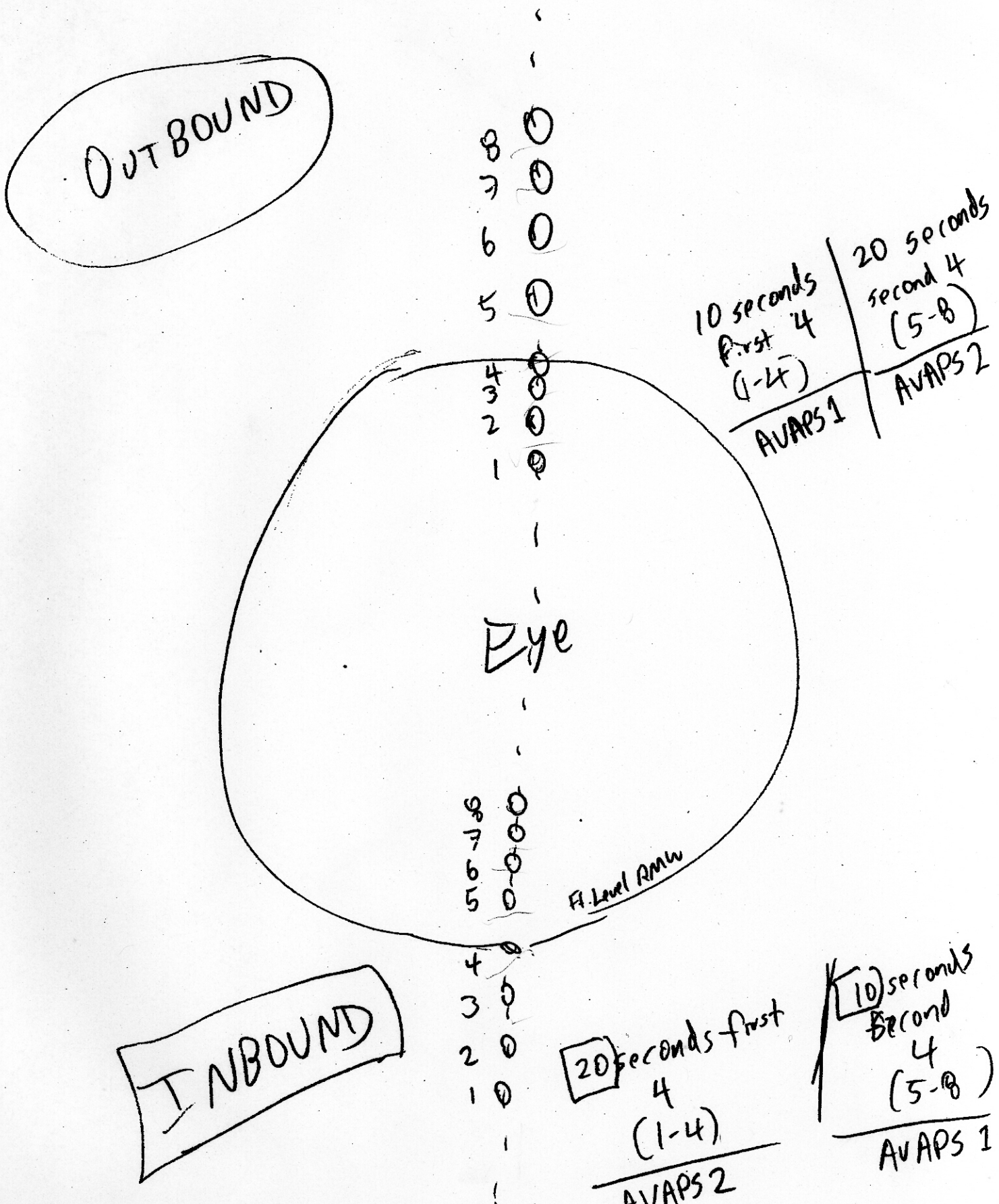
Time	Event	Position	Comments
192018	radar interp.	eye	nearly circular eyewall now center
192221	"	"	nearly completely concentric eyewall
193052	turn	eye	turn to 060, begin outbound
193258	"	"	turn to 330, setting up for outbound
193547	"	"	turn to 060
193703	radar interp.	"	3 notches on LF ahead on inner edge
194239		east eyewall	max sfc. wind 125kts; FL 155kts
194655	turn	east of eyewall	turn to 330
195158	"	NE of eyewall	turn to 210
195240	center call	NE of eyewall	24°N 67°17'W (geometric center)
200020	drop	NE eyewall	drop 1 of wedge inbound
200110	"	"	drop 2
200135		NE eyewall	outer eyewall FL wind of 140 kt
200217	"	"	drop 3
201629	turn	eye	heading 60, starting outbound leg
202842	turn	NE of eyewall	turn to 270
203748	drop	Northern outer eyewall	drop 1 of inbound wedge
203940		"	140kt FL, as strong as inner eyewall now
204124	drop		drop 2
204340	drop		drop 3
2055	Turn to north	Outbound of eye	
2059	North eyewall	At winds 145kt	SFMR 120kt
2100	1st sonde		
2103	2nd Sonde		
2105	Outer north eyewall ft winds		140kt (moat 125kt)
		SFMR 100kt	(no 2nd peak)
2106	3rd sonde		

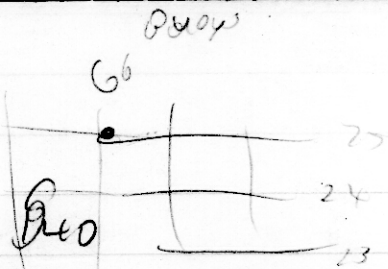
Lead Project Scientist Event Log

Date _____ Flight 030914H LPS ROGERS/LANDSEA

Time	Event	Position	Comments
2110	Turn back to	180° to go back	over splashes
2120	N eyewall again	– southbound	
(5) 2122	Back in eye	– loiter to get	AVAPS
2132	eye drop –	bod drop	
2135	Drop one		
2136	Eyewall on South side + 2nd	Drop	Ft. Peak 115 kt SFMR 115 kt
2138	Drop 3		
2141	Outer eyewall	Ft Level 125 kt SFMR 100	(no 2nd peak)
	Outer eyewall	has become	more dominant
	reflectivity use (40 vs 35)		and at flight level
	but not at	surface	
2151	Turn to NW	to fly back	over drops
2159	Inbound – SE	Outer Eyewall	
2202	Inner SE eyewall		
(6) 2204	eye – eye is	now ~40nmi	(started 50)
	+ outer	eyewall is ~	80nmi
2213	Back in South	eyewall headed	outbound (Ft. wind 120kt SFMR 110kt)
2214	1st Drop		
2215	2nd Drop		
2219	3rd Drop –	Outer eyewall	Ft. 130kt SFMR 105kt (small maxima)
2228	heading home	to St. Croix	

2132 eye
2135
2136
2138


OUTBOUND
8
7
6
5
4
3
2
1
Eye
8
7
6
5
4
3
2
1
Fl. Level Row
INBOUND
10 seconds first 4 (5-8) AVAPS 2
20 seconds second 4 (1-4) AVAPS 1
20 seconds first 4 (1-4) AVAPS 2
10 seconds second 4 (5-8) AVAPS 1



Isabel 14th/09Z 290°-11 kt 23.3 65.2 140

12hr	14th/09Z	23.8	66.8	140
24	15th/06Z	24.5	68.5	135
36	/18Z	25.5	69.5	130
48	16th/06Z	26.5	70.5	125
72	17th/06Z	29	72.5	120
96	18th/06Z	33.1	75	110
120	19th/06Z	39.5	77	100

11:15 takeoff

42 7000

43 12,000

11:00 takeoff

12 drop sequence? 42-B 43-4 coordinate pass

100 mi SW

bracketed Ft level RMW

inside Ft Level RMW

60 mile legs

SSE RMW side all sides

9 sondes

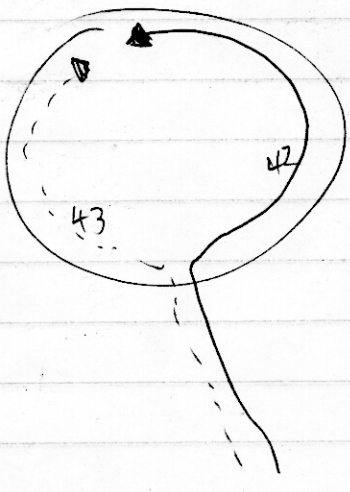
lead

42 rt 43 lft first pass

43 stepped descent or continuous figure 4 -

25W buoys

66W



2055 Turn to north outbound

2059 North eyewall ft winds 145kt SFMR ~120 kt

2100 1st sonde 2103 2nd sonde

2105 2nd eyewall

ft. winds 140kt (onset to 125 kt)

SFMR 100kt (no 2nd peak)

2106 - 3rd sonde

2110 Turn back to 180°

to go back over drop splashes

2120 - N eyewall going in

Isabel

030914 H1

i144l.trk

		60166	16:42:46		
9		62134	17:15:34	comp 1	1655 – 1725
		66945	18:27		
9		67628	18:47	comp 2	1822 – 1852
9		72503	20:08:	comp 3	2000 – 2028 ? 55 – 55
9		74923	20:48	comp 4	2035 2100
9	*	77468	21:31:08	comp 5	2119 – 2144
9		79777	22:09:37	comp 6	2157 – 2222

030914I1

use i144l.trk

9		62138	17:15:38	comp 1	1655 – 1725

1/.5 for 60/30

.5√E1

.www.nws.noaa.gov

National Weather Service
Tropical Prediction Center
National Hurricane Center

Site Map News Organization Search Enter Search Here Go

Search TPC Go

Text-only version
Get Storm Info
Satellite Imagery
US Weather Radar
Aircraft Recon
Advisory Archive
Mobile NHC Products
Advisories by E-Mail
About NHC Products
Tropical Analysis and Forecasting
All TAFB Products
About TAFB Products
Learn About Hurricanes
Hurricane Awareness
Frequently Asked Questions
F.A.Q. (French)
AOML Hurricane Research Division
The Saffir-Simpson Hurricane Scale
Forecasting Models
Inland Wind Model

Hurricane ISABEL

Home Public Advisory Forecast/Advisory Discussion Probabilities Maps/Charts Archive

000
WTNT43 KNHC 141459
TCDAT3
HURRICANE ISABEL DISCUSSION NUMBER 34
NWS TPC/NATIONAL HURRICANE CENTER MIAMI FL
11 AM EDT SUN SEP 14 2003

SATELLITE IMAGERY SUGGESTS THAT ISABEL HAS WEAKENED DURING THE PAST 6 HOURS OR SO. EYEWALL CLOUD TOPS HAVE WARMED TO ABOVE -70C AND THE THREE SATELLITE AGENCIES HAVE COME IN WITH A CONSENSUS INTENSITY ESTIMATE OF T6.5...OR 127 KT. THE EYE REMAINS VERY DISTINCT AND CIRCULAR...ALBEIT WITH AN UNUSUALLY LARGE 40 NMI DIAMETER. THE INTENSITY HAS ONLY BEEN DECREASED SLIGHTLY DOWN TO 135 KT SINCE THE EYE HAS BECOME EMBEDDED DIRECTLY IN THE CENTER OF THE CENTRAL DEEP CONVECTION. SUCH PERFECT SYMMETRY OFTENTIMES INDICATES A CYCLONE STRONGER THAN SATELLITE THE ESTIMATES...WHICH WAS THE CASE YESTERDAY. RECON WILL IS SCHEDULED TO INVESTIGATE THE HURRICANE THIS AFTERNOON.

THE INITIAL MOTION ESTIMATE IS 290/10. THERE IS NO SIGNIFICANT CHANGE TO PREVIOUS FORECAST TRACK OR REASONING. SATELLITE FIX POSITIONS HAVE BEEN COMING IN ON TOP OF THE PREVIOUS FORECAST TRACK AND THE LATEST 06Z NHC MODEL GUIDANCE IS ALSO NOW STRONGLY CONVERGENT ABOUT THE PREVIOUS FORECAST TRACK. THERE WAS A SLIGHT WESTWARD SHIFT TO THE MODEL CONSENSUS...BUT THERE IS NOW MUCH LESS DIVERGENCE AMONG THE GLOBAL AND REGIONAL MODELS THROUGHOUT THE FORECAST PERIOD. UNFORTUNATELY...THE MODELS ARE NOW IN EXCELLENT AGREEMENT WITH ISABEL MAKING LANDFALL ALONG THE CENTRAL U.S. EAST COAST IN ABOUT 4 DAYS. THERE IS STILL UNCERTAINTY ON WHERE THE EXACT LANDFALL COULD OCCUR SINCE THE DEVELOPING CENTRAL U.S. TROUGH COULD DEEPEN AND DIG SOUTHWARD MORE THAN IS FORECAST BY THE GLOBAL MODELS...WHICH COULD LEAD A MORE NORTHWARD MOTION AND LANDFALL FARTHER UP THE EAST COAST THAN WHAT IS CURRENTLY FORECAST. UNFORTUNATELY...ALL OF THE MODEL GUIDANCE AGREE ON A LARGE AND STRONG NORTH-SOUTH ORIENTED RIDGE REMAINING EAST OF ISABEL...WHICH SHOULD PREVENT THE POWERFUL HURRICANE FROM RECURVING OUT TO SEA. LANDFALL ALONG THE U.S MID-ATLANTIC COAST SOMEWHERE BETWEEN NORTH CAROLINA AND NEW JERSEY BETWEEN 4 OR 5 DAYS IS APPEARING MORE AND MORE LIKELY.

ONLY MINOR FLUCTUATIONS IN INTENSITY ARE EXPECTED FOR THE NEXT 3 DAYS AS ISABEL IS FORECAST TO MOVE OVER SIGHTLY WARMER WATER AND REMAIN IN A FAVORABLE DOUBLE-OUTFLOW PATTERN. HOWEVER...BY 96 HOURS...ISABEL IS EXPECTED TO BE ACCELERATING NORTH-NORTHWESTWARD UNDER INCREASING SOUTHERLY UPPER-LEVEL FLOW. HOWEVER...ALL OF THE MODELS ARE IN GOOD AGREEMENT ON THE CENTRAL CORE OF ISABEL REMAINING EAST OF THE STRONG JETSTREAM AND UNDER 20-25 KT 200 MB WIND. THIS WOULD TEND TO KEEP ISABEL STRONGER THAN WHAT THE SHIPS INTENSITY MODEL IS INDICATING...ESPECIALLY SINCE ISABEL WILL BE MOVING OVER THE WARM GULFSTREAM SOUTH OF THE NORTH CAROLINA OUTER BANKS AT THAT TIME. THEREFORE...LITTLE OR NO SIGNIFICANT WEAKENING IS EXPECTED TO OCCUR UNTIL AFTER LANDFALL OCCURS.

Eyewall Wind Profiles
TPC Glossary
NWS Glossary
TPC Acronyms
Storm Names
Breakpoints
Hurricane History
TPC Archives
Climatology
Deadliest 1492-1996 (Atlantic)
1900-2000 (USA)
Most Expensive
Most Intense
US Strikes by Decade
US Strikes by State
About Us
About the TPC
Mission/Vision
Other NCEP Centers
TPC Personnel
NOAA Locator
Visitor Information
NHC Library
WX4NHC Amateur Radio Station
TPC Anonymous FTP Server
Contact Us
Webmaster

```
FORECASTER STEWART

FORECAST POSITIONS AND MAX WINDS

INITIAL      14/1500Z 23.7N  66.3W   135 KT
 12HR VT     15/0000Z 24.2N  67.9W   135 KT
 24HR VT     15/1200Z 25.2N  69.6W   135 KT
 36HR VT     16/0000Z 26.1N  70.6W   130 KT
 48HR VT     16/1200Z 27.2N  71.6W   125 KT
 72HR VT     17/1200Z 30.0N  73.2W   120 KT
 96HR VT     18/1200Z 34.5N  75.5W   110 KT...NEAR NORTH CAROLINA
120HR VT     19/1200Z 41.0N  77.5W    70 KT...INLAND
```

23.8 172
66.7

Tropical Cyclone, Tropical Weather, & TPC Information Topics:
Storm Information, Hurricane Awareness, Historical Information,
Tropical Analysis and Forecasting Branch, About Us, Contact Us

NOAA/ National Weather Service
National Centers for Environmental Prediction
National Hurricane Center
Tropical Prediction Center
11691 SW 17th Street
Miami, Florida, 33165-2149 USA
Todd.Spindler@noaa.gov

Disclaimer Privacy Notice

Page last modified: Sunday, 14-Sep-2003 15:03:14 GMT

Subject: Isabel 030915H Flight summary
Date: Tue, 23 Sep 2003 14:10:12 -0400
From: CHRIS LANDSEA <CHRIS.LANDSEA@NOAA.GOV>
To: Neal M Dorst <Neal.M.Dorst@noaa.gov>, Peter Black <Peter.Black@noaa.gov>, Michael L Black <Michael.Black@noaa.gov>, Robert Rogers <Robert.Rogers@noaa.gov>, Paul S Chang <Paul.S.Chang@noaa.gov>

030914H - Isabel
Paul Chang - LPS (Chris Landsea reporting)

This mission, in conjunction with NRF43, was an Ocean Winds experiment (main emphasis is to collect SFMR/scatterometer/ GPS winds in high wind/rain regions) that was piggy-backed with some CBLAST work on 43 in their doing a stepped descent. The flights were coordinated on this day with 43, in doing the 12 sonde sequence (8 from 42 straddling the flight level RMW and 4 from 43 straddling the surface RMW), circling the eye and in starting the stepped descent by 43.

The flight pattern first consisted of a figure four with passes from south to north and then west to east with eight drops launched straddling the flight level RMW in each quadrant. After first penetrating the eye, a circumnavigation of the eye was done to allow radar mapping of the storm in full scan mode. The circumnavigation within the eye was done (in conjunction with 43) about 8 nmi inside the inner edge of the eyewall. (The eye was a rather large 50 nmi diameter at that point.) After exiting the eye to the north, we began coordination with 43 for their stepped descent. However, the location they had chosen contained too much precipitation and they had to break off of the formation to search for a new location. We ended coordination with 43 at that time (1747 UTC) and continued the figure four. At 1902 UTC, we completed the figure four with the 32 sondes launched. Then there were six wedge patterns flown, where on an inbound leg three sondes were launched in the eyewall (drops called by the LPS) followed by an immediate outbound leg where the plane was routed over the splash location of the middle drop. (This would allow a

direct comparison of SFMR/scatterometer with drop data. However, the last three wedge patterns were done with launches done going outbound and the last wedge pattern did not include the fly-over the splash location.) Thus there were a total of 50 sondes launched and seven eye penetrations. Of these 50 sondes, 3 had no data (1 no launch detects, 1 failed, 1 sonde stuck in the tube), 2 had no winds, but 31 were processed and transmitted. (Because of AVAPS limitations, only 4 of the 8 sonde sequence could be sent to HAPS in real-time. These were sent to HAPS in the ferry home, but only a few could be processed and transmitted before landing in St. Croix.) Of the drops processed, only 4 had winds within 15m of the surface. Peak winds recorded: 150 kt flight level (north eyewall ~1720 UTC), 120 kt SFMR (north eyewall ~1720 UTC), 117 kt drop surface (east eyewall 1852 UTC) and 160 kt MBL (1852 UTC).

The most prominent features of the hurricane on this day were the eyewall changes during the flight. Early on (1630 UTC) Isabel had a 50 nmi diameter eye, which was pentagonal in shape. By about 1830 UTC a distinct outer eyewall was beginning to form from the rainbands present. By 2030 UTC the outer eyewall flight level winds had a secondary wind maximum that was as strong as the inner eyewall's, though no secondary wind maximum was observed yet from SFMR at the surface. By 2130 UTC, the outer eyewall winds were stronger than the inner winds. The radar reflectivity signature was also stronger in the outer eyewall (40 dbz) versus the inner eyewall

(35 dbz) by this time. By 2230 UTC, a secondary wind maximum finally was apparent at the surface with the SFMR, though there still remained a larger wind peak at the surface in the inner eyewall. By the end of being on-station in Isabel, the inner eyewall had contracted to about 40 nmi and the outer eyewall was about 80 nmi. A difference in this flight from the one on the day before was that the cloud tops in the eye were somewhat lower, allowing our plane at 7000' altitude a better view of the eye. The eyewall appeared to be quite sloped (as seen visually and by the tail radar) with perhaps a slope of 60 degrees off vertical, though most of this was likely above flight level. Similarly to yesterday's mission, radar filaments were observed extending from the inner eyewall cyclonically into the eye with spacing and length on the order of a couple nmi.