

Hurricane 1998

Tropical Storm Bonnie

Flight #3 980821H

<u>Sensor or system</u>	<u>Number or Name</u>
INE	1
Accelerometer	1
Temperature Probe	2
Dew Point Probe	1
Altitude (for vertical wind)	RA-159
Static Pressure	Rosemount Fuselage
Dynamic Pressure	Rosemount Fuselage
Time Source	Micro 99
Constants File	CO2988.CON

Notes:

Radar altimeter (RA159) had a spike at takeoff and was set to zero from 1803:01-1807:06 and then replaced by RA232 from 1807:06-1815:48. RA159 was replaced by RA232 + 15.0 from 1819:15-1826:57. There were several spikes in RA159 during the flight, all of these spikes were removed and patched (1819:31-1820:30, 2035:30-2036:30, 2101:30-2103:30, 2106:30-2107:00, 2209:00-2210:00, 2347:00-2348:00, 2351:00-2352:00, 0019:00-0020:00 (2), 0148:31-0149:00, 0213:00-0214:00, and 0225:31-0226:30). RA159 had a spike at landing and was set to zero 0234:46-0238:00.

Dewpoint (DW1) was balanced three separate times at the beginning of the flight due to inconsistent readings. The spikes due to balancing were removed and patched (1825:15-1827:00, 1845:00-1849:00, and 1937:30-1943:00). The dewpoint (DW1) performance improved at 1950:00 and continued thru the end of the flight. Due to other instrumentation problems (no DW2 and no LW for comparison) and occasional oscillations in the dewpointer (DW1), confidence in dewpointer (DW1) was still less than desired. Dewpoint (DW1) exceeded ambient temperature (AT2) several times due to heavy precipitation (2050:00-2210:00).

Static pressure (PSF) had two spikes removed and patched (0041:30-0043:30).

Dynamic pressure (PQF1) had a spike removed and patched (0043:00-0044:00). Dynamic pressure (PQF1) and static pressure (PSF) had several small spikes (~0.5 mb) that were not edited from (0045:00-0056:00).

Dynamic slip pressure (DBP) had problems due to possible leak in the line. DBP was replaced by the dynamic pressure on the fuselage (PQF1) with an appropriate offset (1949:41-2019:41 (offset +4.55), 2056:40-2202:20 (offset +5.1), and 2218:24-2226:26 (offset +4.5)).

	<u>Takeoff</u>	<u>Landing</u>
Aircraft static pressure	1005.9	1010.4
Corrected tower pressure	1013.2	1015.5

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.

Flight Meteorologist: Stan Czyzyk, (813) 828-3310 ext. 3086

U.S. DEPT. COMM./NOAA/OAO - DATA SECTION WORK FORM NO.1 OAOWF1 FILE

FLT ID: 7808214	FM: TBPB	TO: TISX
FLT NO: 98-068	BLK IN: 0240Z	ATA: 0235Z
ETD: 1800Z	BLK OUT: 1759Z	RTD: 1807Z
ETE: 0306Z	BLK TIME: 8.41 8.7	FLT TIME: 8.28 8.5
SPONSOR ORG: HRD	PROGRAM: HURR.RES	PURPOSE: SYN.FLOW BONNIE

OAO PERSONNEL

AC PHIL APPS BORN, R ✓	SYS ENG McMILLAN, S ✓
CP TAGGART, B ✓ / OMARA, J ✓	DATA SYS
NAV BOTH BOW, D ✓	RADAR DELGADO, J ✓
FE TORREY, R ✓	DT/ODW BARR, J ✓
RADIO ROLERS, M	CLD PHYS
FD CZYZYK, S ✓	DOPPLER CUREN, J ✓

PARTICIPATING SCIENTIST/VISITORS/OAO

LAST, FIRST NAME	ACTIVITY ON A/C	AFFILIATION
BLACK, P ✓	PI	HRD
BLACK, M ✓	SCIENTIST	U
MARKS, F ✓	"	U
LEIGHTON, P ✓	"	U
STONE, J ✓	"	U
BRACKEN, E ✓	"	U

PROPOSED/ACTUAL MISSION/REMARKS (RECCO, FIXES, STORM, PENET, NHOP #)

TTZ HAS BEEN 1°C WARM CONSISTENTLY
 RA-159 OUT/GOING TO SWAP 1815Z / SWAP AGAIN UP @ 1827Z
 1825.20 BALANCE DWI
 1845.00 BALANCE DWI
 RD NOT WORKING, LW STILL OUT (JW)
 TW NOT WORKING PROPERLY, BACK (1940Z)
 3 TEMP DROPS NOT X MITED HRD WORKSTATION. PROB
 INEZ MUCH BETTER

U.S. DEPT. COMM./NOAA/OAO - DATA SECTION WORK FORM NO.2 OAOWF2

FLT ID: 980821H

TIME OFF: 1807Z

TIME ON: 0235Z

	A/C T/O	WX STN	A/C LAND	WX STN
PRESSURE	1005.9	29.92	1010.4	29.89

NO DATA DISPOSITION/DATE/QUALITY

1/SEC FLT LVL TAPES	2	
FAST FLT LVL TAPES		
RADAR TAPES		
DOPPLER TAPES		
ODW CASSETTES		
HARD COPIES	1	
AXDT	9	
AXCP		
ODW		
6PS	24	2 BAD

PHOTOGRAPHY

	FWD	LS	RS	VERT
ON				
OFF				
RATE				

REMARKS

980821H

TIME	LAT	LONG	TK	HD	TA	TD	WD	WS	PA	GA	PS	SP	REMARKS
184300	15 23	59 49	346	348	-3.3	-43.0	16.5	10.0	5495	5836	505.4	1008.5	19K
1923													
194324	20 02	61 05	267	266	-3.0	-25.7	141	15.8	5493	5840	505.6	1008.6	SC DECK 820' (FLW) RECO #2
1954													DROP #1
2007	20 02	63 02	277	273									RECO
201800	20 00	64 00	268	264	-2.2	-11.8	155	32.2					RAINBAND
201900							167	24.1	5484	5815	506.2	1004.2	DROP #2
205031	20 33	66 18											BT
205723	21 00	66 42											DROP #3
210335	21 22	67 07											DROP #4
210522	21 33	67 29											BT
2110													DROP #5
													BT
													DROP #6
212410	20 26	67 25											EXPEN 15K
213352	20 59	66 51											DROP #7
213731	21 16	66 38									OFF		DROP #8. CNTR
213732													DROP #9
214651	21 40	66 16									OUTER EDGE CONV		BT
214652													DROP #10
215028	21 58	66 16											BT
215029													RAINBAND
215351	22 05	66 23											DROP #11
215353	22 34	66 30											BT
215810													DROP #12
215809													MIX HP BT
221523	23 33	67 22											DROP #13
221524	23 33	67 22									LEVEL	19K	BT
221925	23 33	67 44											DROP #14 No wind
223237	23 33	69 06											BT
225409	23 24	71 00	178	175	-9.6	-38.5	48	25.4	6404	6824	446.1	1010.5	DROP #15
231619	21 30	71 05	234	234	-8.8	-38.3	48	29.2	6401	6791	448.4	1016.5	DROP #16
234248	20 08	73 07	247	247	-9.3	-26.6	54	20.8	6392	6802	447.1	1008.3	DROP #17 FL200
000740	18 56	74 58	190	187	-9.1	-48.7	90	13.8	6390	6792	447.1	1007.3	DROP #18 FL210
002200													DROP #19
002534	17 29	74 54	121	119	-12.4	-29.6	42	11.5	6712	7134	427.0	1009.7	CLIMB
005955	16 05	72 20	87	88	-11.2	-36.3	103	12.7	6720	7141	427.0	1016.6	DROP #20 FL220
013001	16 06	69 45	90	93	-11.8	-32.3	185	16.3	6719	7147	427.2	1018.9	DROP #21
014050													DROP #22
014235	15 59	68 39											CLIMB
020117	16 02	67 01	54	56	-17.5	-37.7	127	10.2	7036	7498	408.5	1008.7	LEVEL 23K
													DROP #24

NOAA FORM 56-49
(2-95)

MISSION PREFLIGHT LOG

DESTINATION
TAPB-775X

MISSION
TS BONNIE

NAVIGATOR
NATHAN

AIRCRAFT COMMANDER
PHILIPSBORN

FLIGHT DIRECTOR
CZTZK

SCHEDULED / ACTUAL TAKEOFF Z
1800Z ' 1806

DATE OF TAKEOFF
21 AUG 98

WP	LAT / LON	RTE	MH	VAR +E=>	TH	DR +R=>	TRK	GS	WD	WS	ALT	TAS	LEG / TOT DIST	LEG / TOT TIME	PROP ETA	ETA	ATA	REMARKS
1	TAPB 13 04.6 59 29.5																	
2	20 00 61 00																	
3	20 00 64 00																	
4	20 00 66 30																	
5	20 30 68 00	2111	2101															
6	21 36 67 27	6640	6649															
7	20 25 67 27																	
8	21 36 66 11																	
9	23 30 67 00							285					110 110	+23 +23	2234		2211	
1	23 30 69 00							285					110 120	+23 +26	2257		2252	
2	23 30 71 00							280					120 340	+26 +12	2323	2318	2315	
3	24 15 73 00												130 470	+29 +14	2352		2342	
4	19 00 75 00												135 610	+29 +10	0021		0006	
5	17 30 75 00												90 700	+18 +18	0024		0024	
6	16 00 72 30												170 870	+34 +52	0058		0058	
7	16 00 69 45												160 1030	+32 +24	0130		0130	
8	16 00 67 00												160 1190	+32 +56	0202		0201	
9	17 44.1 64 42.1							270					170 1360	+38 +34	0240			
1	17 42.1 64 47.9																	
2																		

INS PERFORMANCE

BEGINALIGN TIME	INS 1	INS 2
1630Z		→
ALIGN STATUS (0-5)	1	1
END NAV TIME	0235Z	0235Z
START NAV TIME	1755Z	→
DELTA T	8140	8140

TERMINAL ERRORS

DELTA LAT	INS 1	INS 2
	+7.0	+2.7
DELTA LON	-4.8	-1.6
RGS	5	4
RADIAL ERROR	9	3

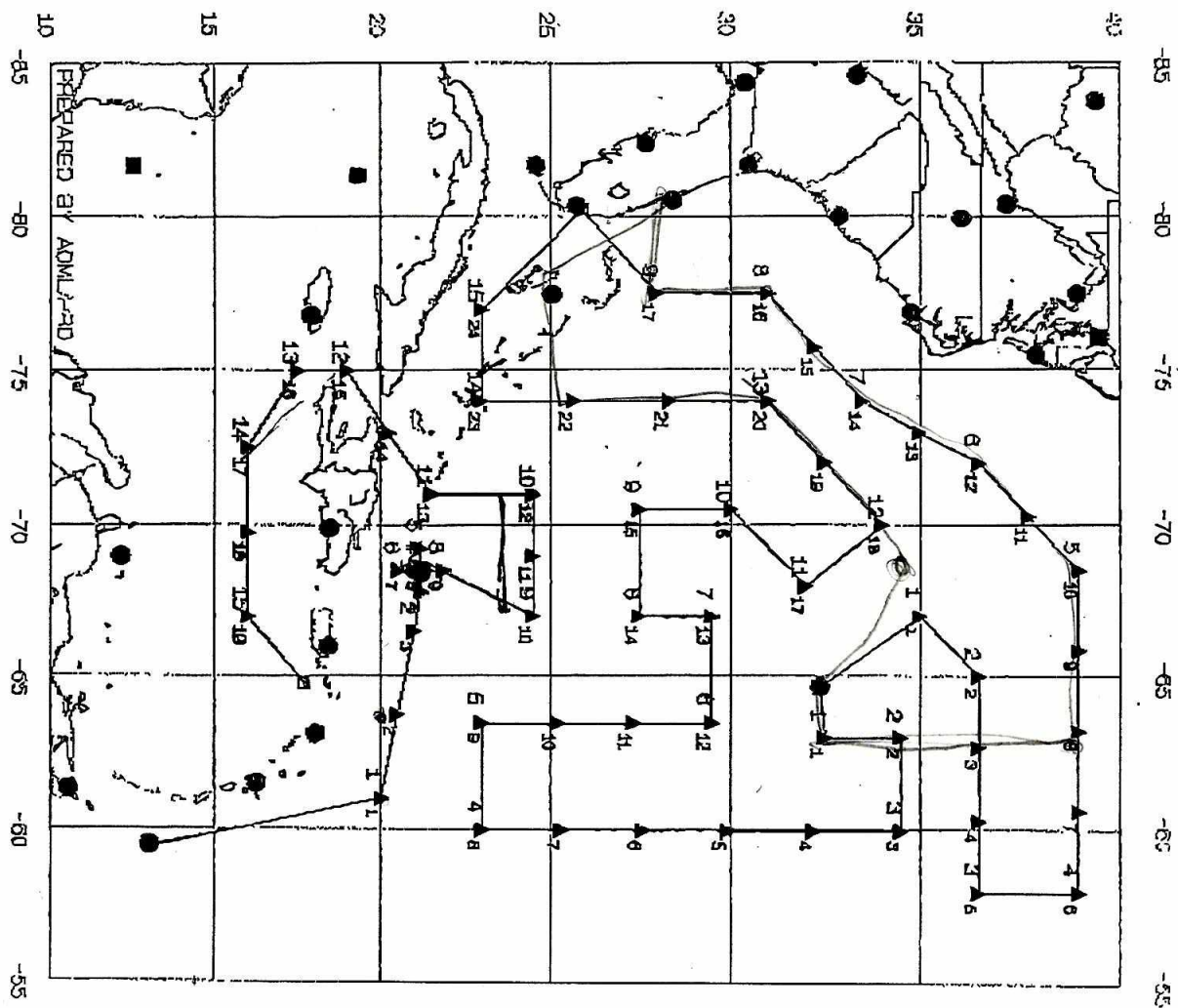
REMARKS

N42RF AVAPS DropSonde Log

N42RF Project: Hurricane 99 (BRET) Flight ID: 990821H

Mission: _____ Flight #: _____ System Status: OK

Drop #	Sonde Serial Number	Time (Z)	Chn #	Press. offset	Winds time	Operator Init.	Comments Drop Status	BAD ☐	GOOD ☐
1	984 715 083	Not launched	1	—	—	JWH	Bad sonde NO PTH Not launched		
2	984 715 282	20:08	1	0	20	JWH			✓
3	984 325 370	2022	2	0	25	JWH			✓
4	984 325 346	2024	1	0	24	JWH			✓
5	984 325 450	2028	3	0	18	JWH			✓
6	984 715 059	2042	2	—	—	JWH	No Winds		
7	984 325 581	2054	1	0	19	DTL			✓
8	984 325 414	2108	3	—	15	DTL			✓
9	984 715 264	2013	1	—	43	DTL			✓
10	985 035 295	2113	2	—	17	DTL			✓
11	984 325 238	2127	3	—	27	DTL			✓
12	984 325 318	2138	1	—	16	DTL			✓
13	984 325 336	2152	2	—	27	DTL			✓
	984 715 250	2152	3	—	38	DTL			✓
15	984 325 558	2157	1	—	—	DTL	LATE Launch Detect		
16	984 715 278	2216	2	—	—	DTL	NO WINDS	✓	
17	985 035 046	2225	1		29	DTL			✓
18	984 325 430	2237	2		25	MER			✓
19	984 325 521	2240	1		28	MER	BAD Winds int		
20	984 325 497	2249	3		30.6	MER			✓
21		2249	1		32	MER			✓
22	985 035 221	2254	2		30	MER			✓
23	984 325 575	2309	1		27	MER			✓
24	984 715 196	2321	3		24	MER			✓
25			?						
26									
27									
28									
29									
30									
31									
32									
33									



FLIGHT TRACKS BONNIE

980821np.ftk
980821p.ftk
980821np.ftk

RAWINSONDES 9804

- Regular
- 12Z only
- 00Z only
- Infrequent
- Infrequent - 00Z
- Infrequent - 12Z

▲ DROP LOCATIONS

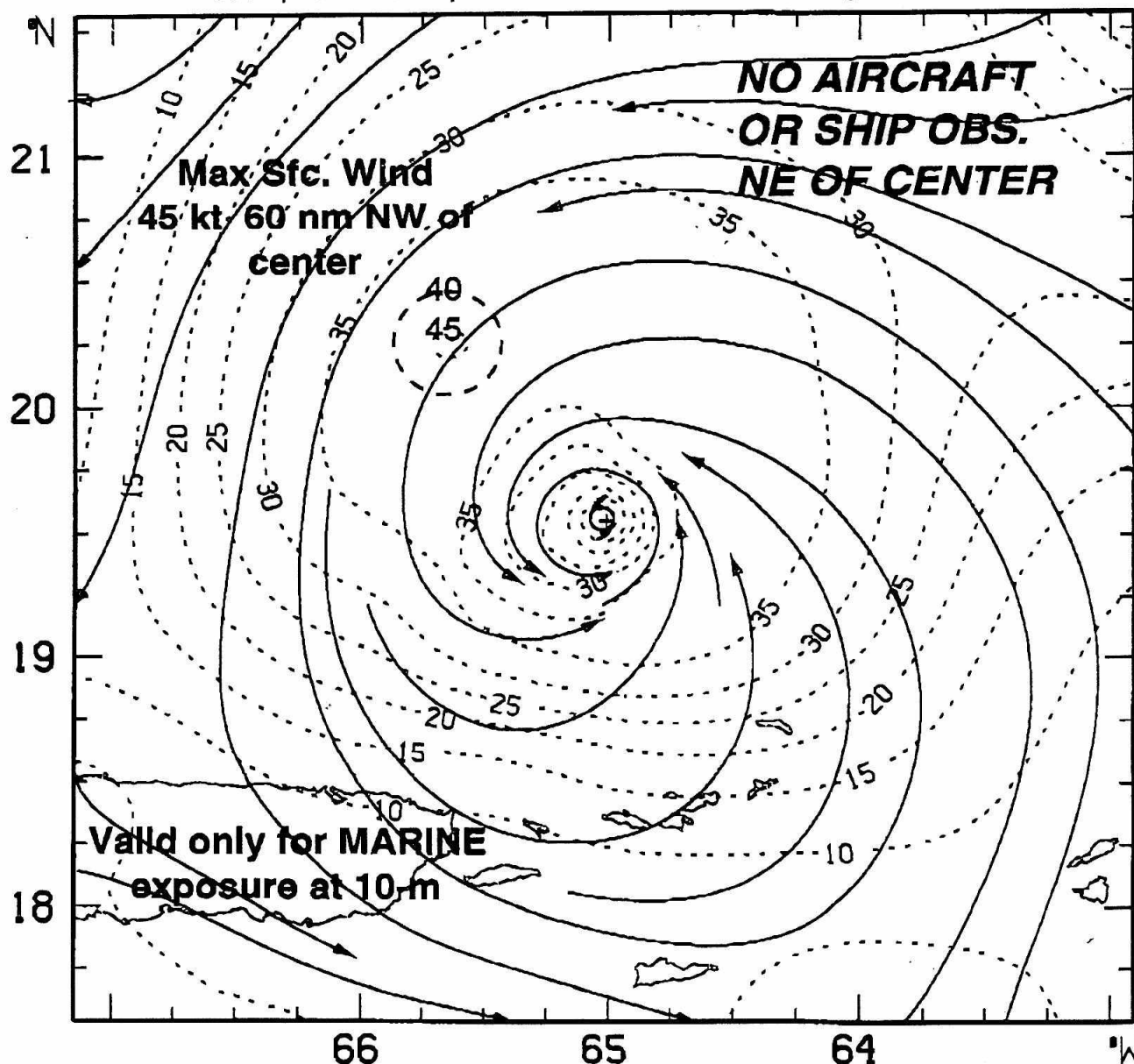
ATTENTION: HURRICANE SPECIALISTS

Tropical Storm Bonnie 1330 UTC 21 Aug. 1998

Max. 1-min sustained surface wnds (kt) for marine exposure

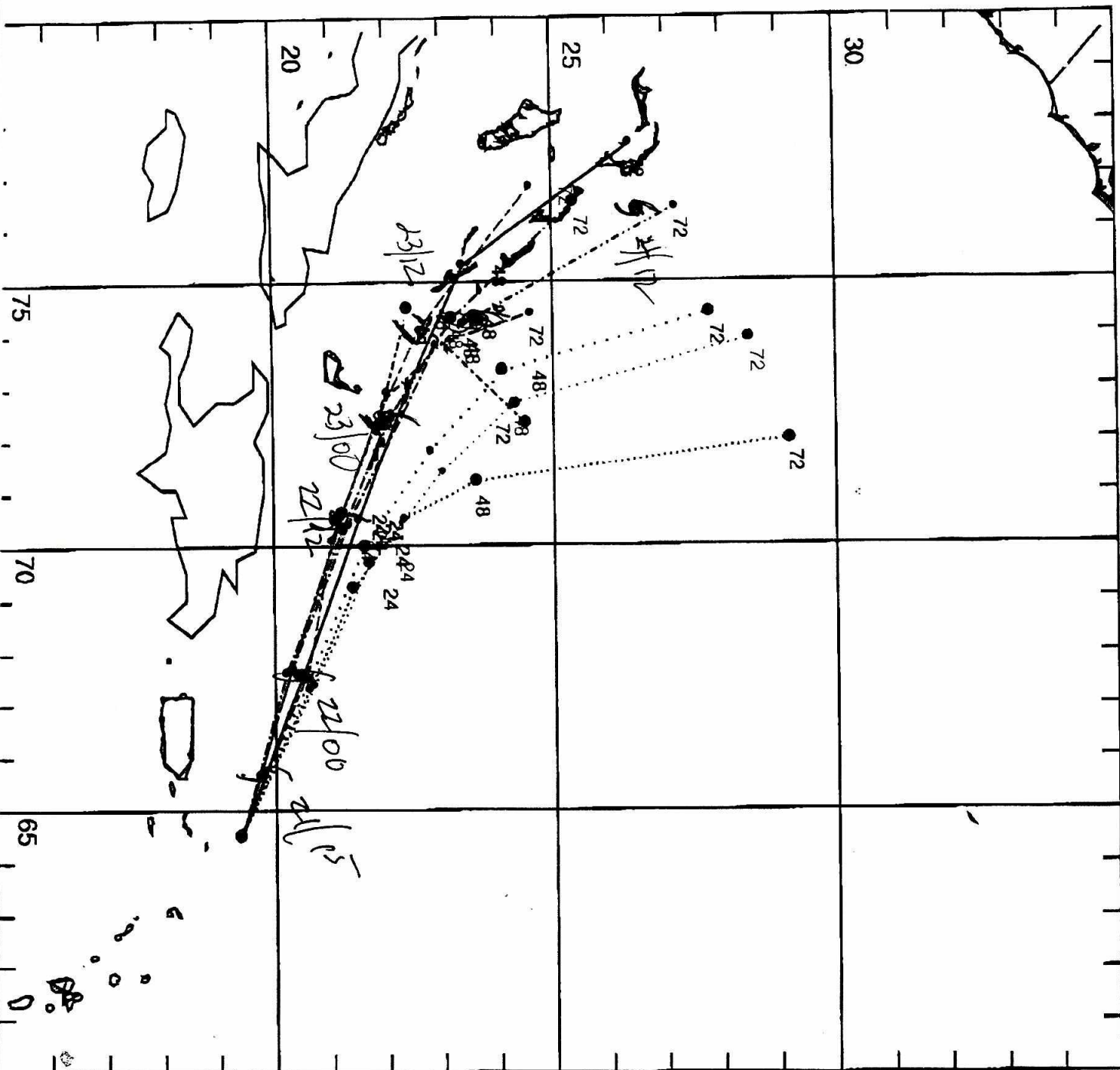
Analysis based on AFRC C-130 Recon data from 400 m adjusted to the sfc from 1115-1250z;
shlp and metar reports from 0600 -1200z

1330z position extrapolated from 1143z fix assuming 290° @ 19 kt



Experimental research product of :

NOAA / AOML / Hurricane Research Division



HURRICANE RESEARCH
DIVISION AOML/NOAA

BONNIE

8/21/98 12 UTC

BAMD
BAMM
BAMS
A90E
CLIP
GFDO
A98E
A9UK
LBAR

PLOTTED AT LOCAL TIME
09:25:34 21-AUG-98