

Hurricane 1999

Hurricane Floyd - Synoptic Flow #3

Flight #9: 990913H

<u>Sensor or system</u>	<u>Number or Name</u>
INE	2
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	CO2991.CON

Notes:

The radar altimeter (RA159) had a spike at takeoff and was replaced by RA232 from 1725:01-1732:44. A spike also occurred at landing and RA159 was replaced by RA232 (0228:01-0236:00).

Dewpoint (DW1) was replaced by DW2 from 1725:01-1751:15 and 2234:26-0205:36. DW1 had spike removed and patched due to balancing 1831:00-1833:00. Dewpoint (DW1) exceeded ambient temperature (AT2) several times due to heavy precipitation.

	<u>Takeoff</u>	<u>Landing</u>
Aircraft static pressure	1007.6	1011.0
Corrected tower pressure	1010.5	1012.2

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: 990913H	FM: TISX	TO: KTRM
FLT NO: 99-022	BLK IN: 0237Z	ATA: 0231Z
ETD: 1730Z	DLK OUT: 1723Z	RTD: 1730Z
ETE: 0300Z	BLK TIME: 9.14 9.2	FLT TIME: 9.01 9.0
SPONSOR ORG: NOAA	PROGRAM: NHC	PURPOSE: SYN. FLOW. FLOW D

OAO PERSONNEL

AC TAGGART, B ✓	SYS ENG MC MILLAN, S
CP TENNESEN, D / OMARA, T ✓	DATA SYS ROLES, J ✓
NAV NEWMAN, C ✓	RADAR
FE BAST, S ✓ / TORREY, R ✓	BT/ODW PRADAS, J ✓
RADIO	CLD PHYS
FD CZ424K, S ✓	DOPPLER CURRY, J ✓

PARTICIPATING SCIENTIST/VISITORS/OAO

LAST, FIRST NAME	ACTIVITY ON A/C	AFFILIATION
BLACK, M ✓	P.I	HRD
BLACK, B ✓	SCIENTIST	"
DODGE, P ✓	"	"
WALHORN, E ✓	"	"
CARSWELL, J ✓	CSCOT/SEMR	U MIAMI
		UMASS

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

BALANCE OW1 1831Z

DW2 SPIKE 1831Z

BALANCE OW2 1834Z

2 PENETRATIONS

2300Z 2334Z

(2)

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

FLT ID: 990913H TIME OFF: 1730Z TIME ON: 0231Z

	A/C T/O	WX STN	A/C LAND	WX STN
PRESSURE	1007.6	29.84	1011.0	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	
AXBT		
AXCP		
ODW		
G.P.S	26	12 HRD

PHOTOGRAPHY

	FWD	LS	RS	VERT
ON				
OFF				
RATE				

REMARKS

990913H

TIME	LOT	LOW	TK	HD	TA	TD	WD	WS	PA	GA	PS	SP	REMARKS
1752	1735	6550	267	266	1.9	-16.8	170	8.7	4577	4807	571.5	1005.7	LEVEL 16K PA
181946	1730	6800	270	268	0.7	-11.1	191	14.4	4576	4796	571.6	1005.8	DROP #1
185159	1731	7030	270	269	1.0	-12.7	226	15.0	4576	4787	571.5	1004.8	DROP #2
185915	1732	7103											CLIMB
190215	1735	7116	268	267	-0.5	-16.8	226	12.7	4892	5120	548.0	1003.3	LEVEL 16K
192139	1746	7245	277	278	-1.1	-16.8	276	8.0	4890	5117	548.1	1003.9	DROP #3
192215													CLIMB
192515													LEVEL 17K
195429	1806	7458	44	43	-2.8	-12.7	291	11.0	5184	5429	527.1	1003.3	DROP #4
201826	1945	7331	40	37	-2.2	-14.0	254	24.6	5183	5410	527.1	999.1	DROP #5
204552	2131	7859	96	102	-2.7	-2.7	230	30.1	5185	5392	527.0	997.8	DROP #6 BAD WIND
204743	2130	7149											DROP #6A
212226	2106	8858	352	351	-2.3	-15.0	202	27.3	5183	5436	527.1	1003.4	DROP #7
215640	2401	6905	286	281	-1.2	-14.8	161	34.9	5184	5438	527.0	1001.0	DROP #8
221045	2422	7019											DESCENT
221550	2430	7045	286	281	3.2	1.1	143	47.9	4744	4392	597.1	999.1	LEVEL 14.5 RAD
222358	2445	7127	311	306									ROUNDS
222358	2445	7127	311	306	2.9	2.0	157	64.7	4243	4360	597.1	995.5	DROP #9
224143	2507	7301	270	254	3.5	3.7	139	99.1	4379	4370	586.5	976.9	DROP #10
225524	2442	7352											NORTH EYEALL
225535													DROP #11
2300	2423	7356											DROP #12
230226	2409	7357											DROP #13
230240													DROP #14
230301													DROP #15
233238													DROP #16
233249													DROP #17
2374	2423	7856											DROP #18
233955													DROP #19
234516	2434	7413											DROP #20
234528	"	"											DROP #21
235402	2434	7459											DROP #22
235538	2434	7509											DROP #23
001452	2258	7536	195	203	-3.6	-6.5	325	49.0	5799	6017	484.9	988.7	DROP #24 16K PA
002231	2124	7645	292	295	-6.05	-7.2	312	35.8	5794	6015	485.3	997.9	DROP #25
010943	2303	7830	7	30.3	-5.6	-11.2	6	29.1	5796	6086	485.2	1000.3	DROP #25

$\begin{array}{r} 79 \\ \times 2 \\ \hline 158 \end{array}$

[illegible]

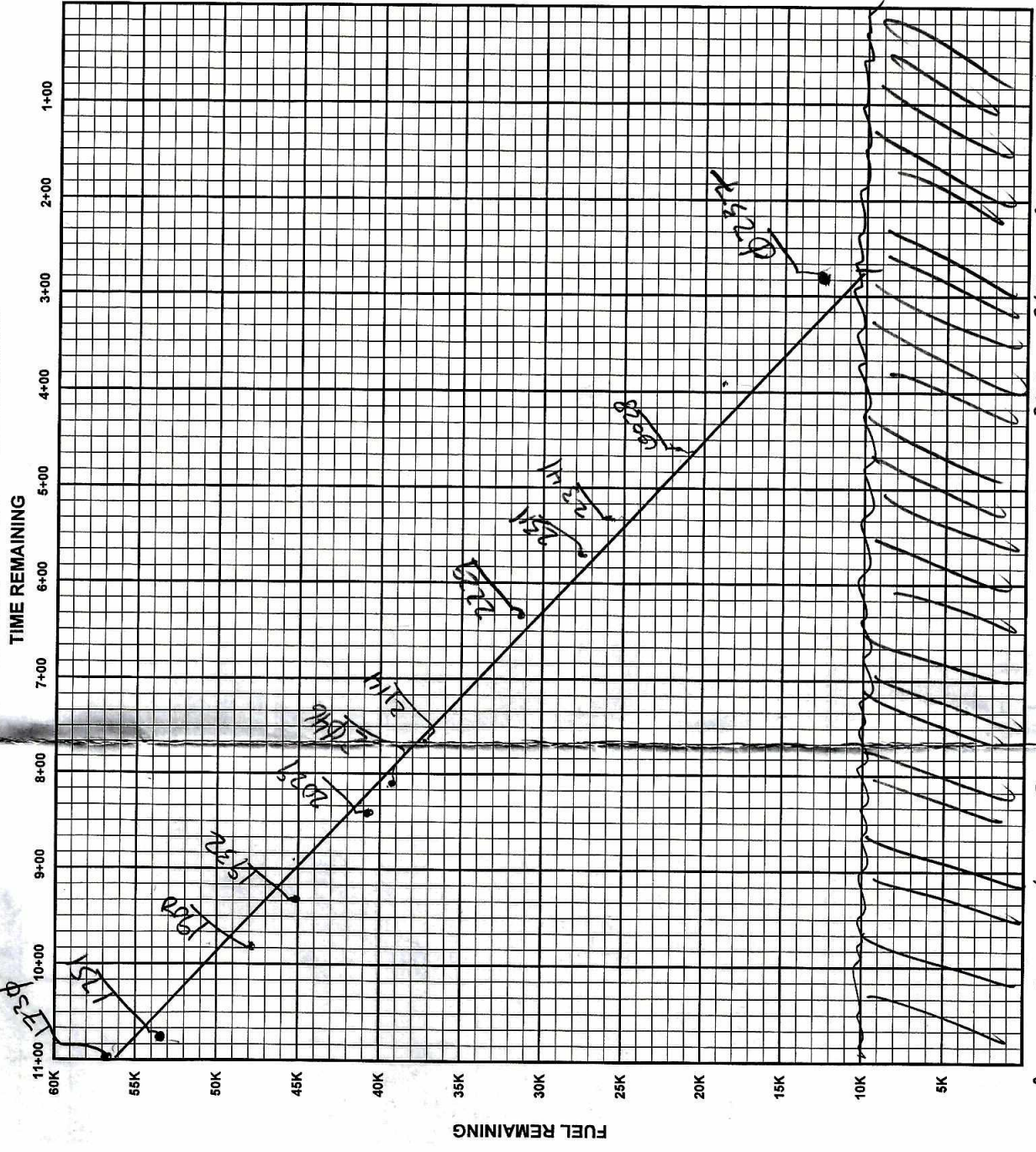
INS PERFORMANCE		INS 1	INS 2
BEGIN ALIGN TIME		163φ	163φ
ALIGN STATUS (0-5)		φ	φ
END NAV TIME		0230	023φ
START NAV TIME		173φ	173φ
DELTA T		10	10

TERMINAL ERRORS		
	INS 1	INS 2
DELTA LAT	+10	-8
DELTA LON	-1	+7
RGS	6	1
RADIAL ERROR	10	10

REMARKS
13 212 242 73.7
1406 24.6 75.9
26.2 78.3
1506 28.4 79.9
30.9 80.5

375
166
194

RANGE CONTROL GRAPH



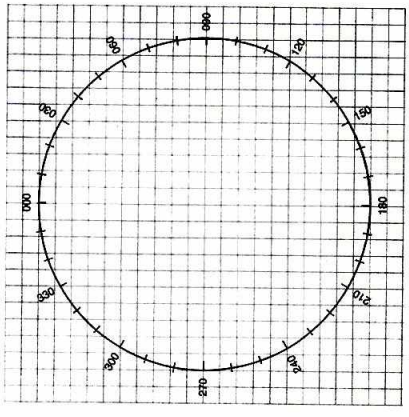
375
35254
11
46254
4.7
525
300
35254

ENROUTE FUEL	
ENROUTE TIME	9.5
ENROUTE FUEL (6K SK45KRULE)	46.2
RESERVE AT DESTINATION	14
REQUIRED RAMP	56.2
ACTUAL RAMP FUEL	

CEX - TRUE BEARING METHOD				CEX SIGHT	
COMPASS TYPE	INS1	INS2	WET	GMT	
MCH (READING)				GHA	
- MTH (SEXTANT)				CORR	
CE				GHA	
- VAR				LONG + W - E	
DEV				EXACT LHA	
				LAT	
				BODY	
				DEC	
				HC / D	
				CORR	
				HC	
				Z	
				ZN	

TACTICAL (OFFSTA TO DESTINATION)		4 ENG	3 ENG
DISTANCE (OFFSTA TO DEST)			
ENROUTE TIME (OFFSTA TO DEST)			
BURN RATE (LBS/HR)	4500	5500	
ENROUTE FUEL REQUIRED			
RESERVE AT DESTINATION			
FUEL AT OFFSTA			

POINT OF SAFE RETURN		4 ENG	3 ENG
ETP DISTANCE (TO DEPARTURE)			
ENROUTE TIME (TO DEPARTURE)			
BURN RATE (LBS/HR)	4500	5500	
FUEL REQUIRED			
RESERVE AT DEPARTURE			
PSR FUEL			



WIND FACTOR		
WINDSPEED	HEADWIND	TAILWIND
10	1.03	.97
20	1.06	.94
30	1.10	.92
40	1.14	.89
50	1.18	.87
60	1.22	.85

PRESS ALT		200	250	300	350
10,000	1.0	.99	.98	.97	.96
20,000	.99	.98	.97	.96	.95
30,000	.97	.96	.95	.94	.93
40,000	.96	.95	.94	.93	.92

TRUE AIRSPEED CROSS-CHECK					
TIME	IAS	PRESS ALT	"F" FACTOR	EAS	OAT

ETP = .5(TOTAL DISTANCE x OUTBOUND WIND FACTOR)

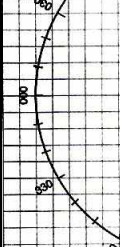
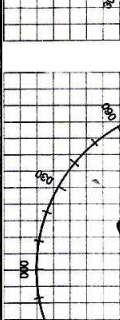
2024 8/5/24 9/15/24

FRQ	ALT	HDG	OTHER
			"U" V1020067
			106/15 29.87
1618 91 — 1909	9		TPA R105 21100 150 + 10 128.65 2114
1918 1 — 1918	8		PT 213 415.6 2430 74000 D 1130 PT 1112 UNSUS ASD4 DLO V97 PIF

[illegible][illegible]

POSITION REPORT

- 1. POSITION**
- 2. TIME**
- 3. ALTITUDE**
- 4. NEXT POSITION**
- 5. ETA**
- 6. NEXT POSITION**

MISSION LOG	PAGE ____ OF ____
	

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

MAYDAY, MAYDAY, MAYDAY

THIS IS NOAA _____, 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 _____

N42RF AVAPS DropSonde Log

N42RF Project: Hurricane Floyd Flight ID: 990913H

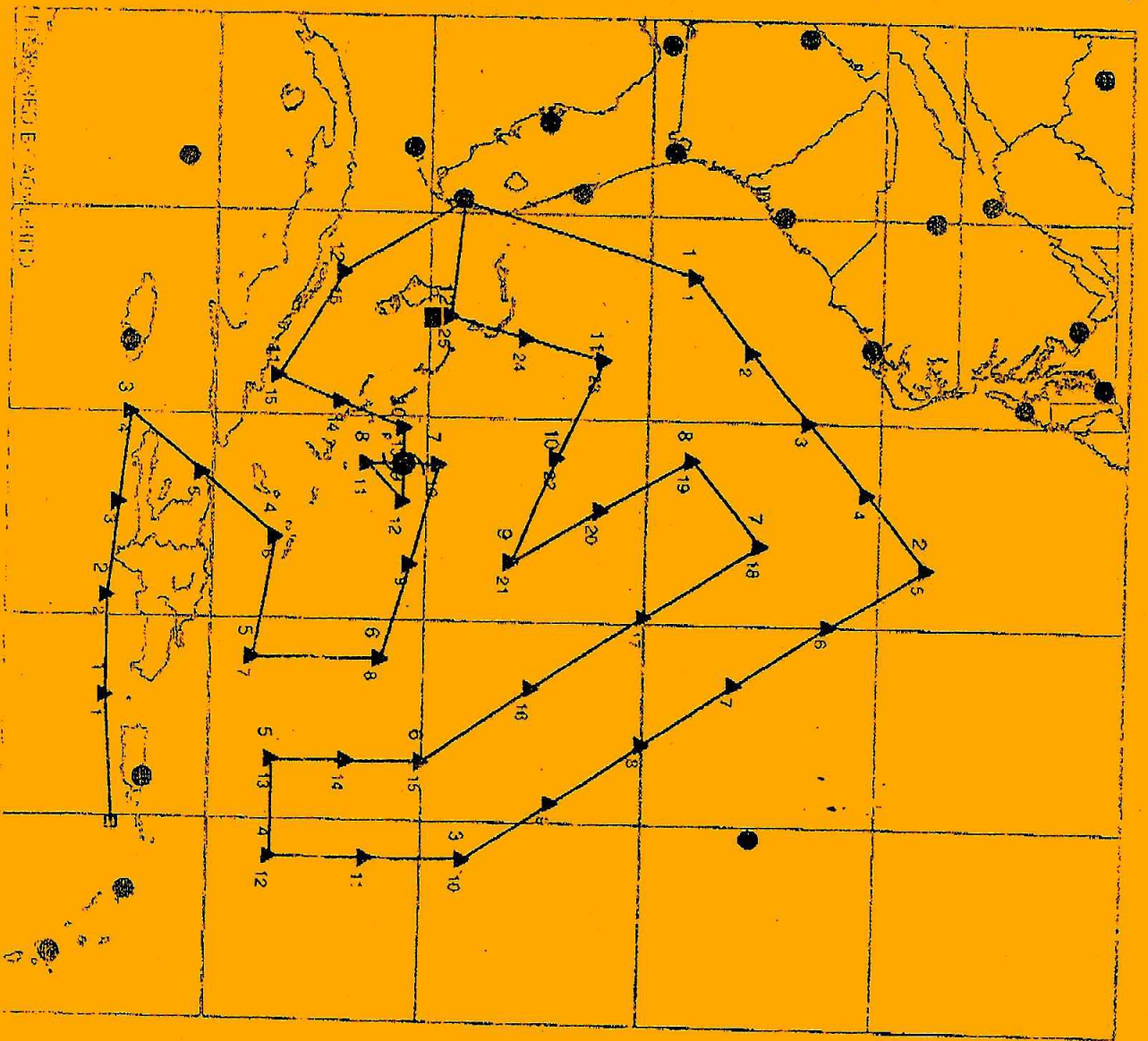
Mission: Floyd Flight #: 3 System Status: OK

Drop #	Sonde Serial Number	Time (Z)	Chn #	Press. offset	Winds time	Operator Init.	Comments Drop Status	BAD ☒	GOOD ☒
1	990 415 362	1819	2	Ø	60	JCPB	2*		✓
2	991 845 139	1852	2	Ø	10	JCPB			✓
3	991 845 191	1921	2	Ø	14	JCPB			✓
4	991 845 193	1951	2	Ø	24	JCPB			✓
5	992 525 869	2018	2	Ø	25	JCPB	↓		✓
6	991 435 042	2045	2	Ø	80	JRols	* Late winds		✓
7	992 455 279	2047	3	Ø	30	JRols	*		✓
8	991 435 044	2122	2	Ø	34	JRols	*		✓
9	991 845 201	2156	2	0	20	JRols	**		✓
10	991 845 150	2224	2	0	16	JRols	*		✓
11	991 845 202	2241	2	Ø	48	JRols	** ASDL XMT for 1 st hr		✓
12	984 715 131	2255	2	Ø	36	JRols			✓
13	991 845 200	2255	3	Ø	37	JRols	Put wrong comment in file		✓
	992 615 004	2302	4	Ø	28	JRols	**		✓
15	992 615 062	2304	1	Ø	—	JRols	BAD NOPTH NO winds	✓	
16	991 845 155	2332	2	Ø	36	JRols		✓	✓
17	992 455 328	2332	3	Ø	23	JRols			✓
18	991 845 135	2339	4	Ø	50	JRols			✓
19	991 515 143	234450	2	Ø	40	JRols			✓
20	992 455 323	2345	3	Ø	40	JRols	Lost winds last half		✓
21	991 845 161	2354	4	Ø	140	JRols	Almost NO WINDS	✓	
22	992 525 870	2356	2	Ø	30	JRols			✓
23	990 838 030	001459	2	Ø	27	JRols	P static winds PTH+ BAD 4m Biting gap		✓
24	992 538 001	BAD	3			JRols	NOT Dropped	—	—
25	991 845 153	003236	3	Ø	49	JRols	Some P static		✓
26	992 645 005	010945	2	Ø	20	JRols			
27	992 455 500	NO DROP	3						
28									
29	* Jeff, At this point I launched 3 sondes at once								
30	In the evening, I can find no record of the 3 rd sonde.								
	I had 3 sondes transmitting on the screen. Maybe I threw								
31	out one that was warming up. Instead of the one that was transmitting								
33	data								

Jim Rols

(STM)

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



THE UNIVERSITY OF CHICAGO

ATTENTION: HURRICANE SPECIALISTS

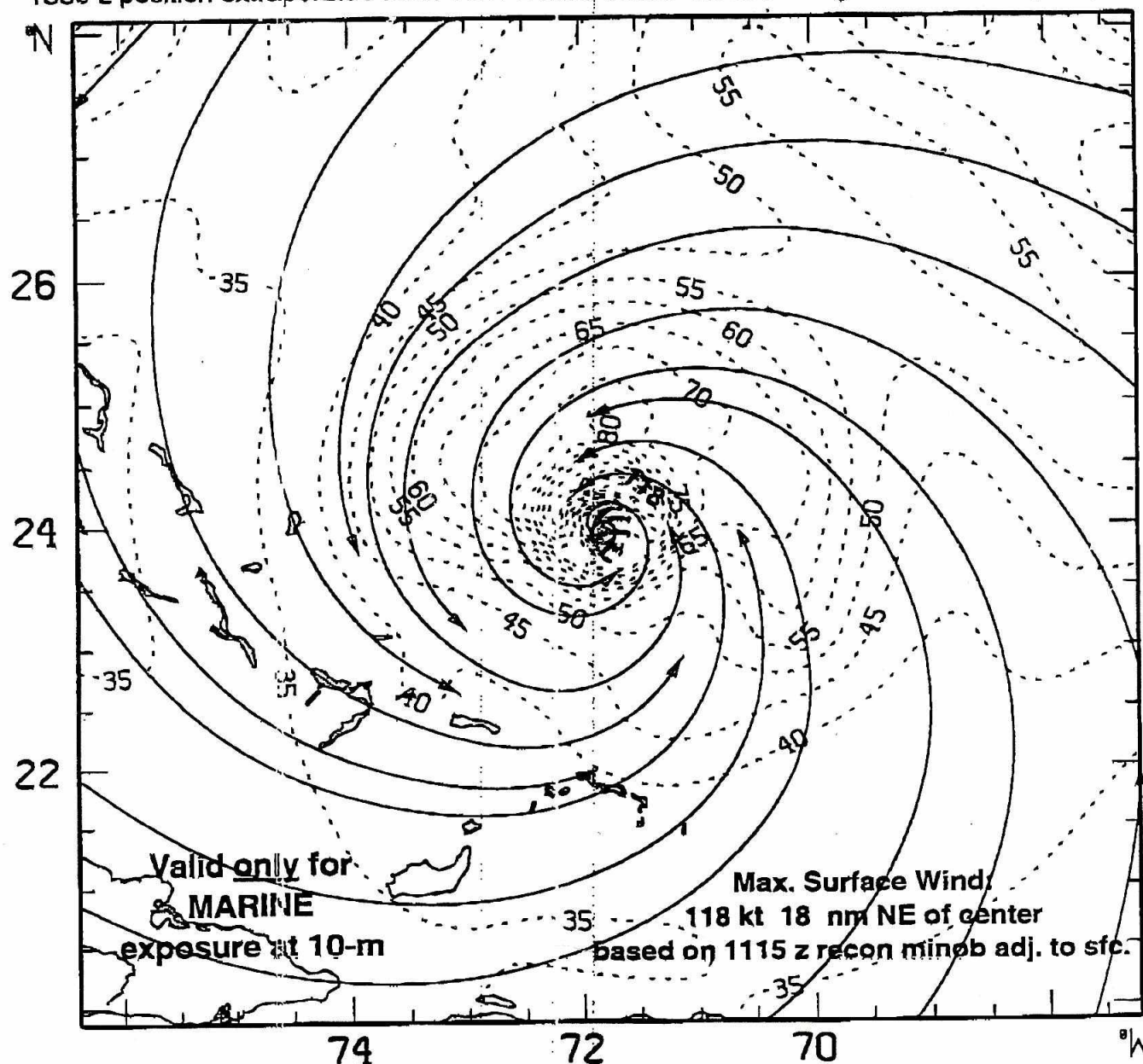
Hurricane Floyd 1330 UTC 13 Sept. 1999

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

Analysis based on US AFRES recon. 700 mb winds adj. to sfc: 0700-1154 z,

3 GPS dropwindsondes MBL adj to sfc: 0750, 0927, and 1115z

1330 z position extrapolated from 1121 z wind center fix assuming 280° @ 12 kt, mslp = 921 mb



Experimental research product of :

NOAA / AOML / Hurricane Research Division