19980922II-LPS

E.2 Lead Project Scientist (On-Board)

E.2.1 Preflight

___ 1. Participate in general mission briefing.

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

___ 3. Determine from CARCAH or field program director whether aircraft has operational fix responsibility and discuss with AOC flight director/meteorologist and CARCAH unless briefed otherwise by field program director.

___ 4. Contact HRD members of crew to:

   a. Assure availability for mission.
   b. Arrange ground transportation schedule when deployed.
   c. Determine equipment status.

___ 5. Meet with AOC flight crew at least 90 minutes before takeoff, provide copies of flight requirements, and provide a formal briefing for the flight director, navigator, and pilots.

___ 6. Report status of aircraft, systems, necessary on-board supplies and crews to appropriate HRD operations center (MGOC in Miami or FGOC at remote recovery location).

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.

E.2.3 Postflight

___ 1. Debrief scientific crew.

___ 2. Report landing time, aircraft, crew, and mission status along with supplies (tapes, *etc.*) remaining aboard the aircraft to the appropriate HRD operations center (MGOC or FGOC).

___ 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 the appropriate operations center (FGOC or MGOC) as to where you can be contacted and arrange for any further coordination required.

___ 7. Prepare written mission summary.

On-Board Lead Project Scientist Check List

GEORGES

Date 22SEP98 Aircraft N43RF Flight ID 980922I

A. Participants:

HRD		AOC	
Function	Participant	Function	Participant
Lead Project Scientist	WILLOUGHBY	Flight Director	PARRISH
Cloud Physics		Pilots OMAIZA	TENNISON (AC)
Radar	GRIFFIN	Navigator	STRONG
Workstation		Systems Engineer	LYNCH
Photographer/Observer		Data Technician	HORN/BOOLE
~~Omega~~GPSsonde	LANDSEA	Electronics Technician GPS	SMITH
AXBT/AXCP/Guest		Other	CLOSSER

Take-Off: 22/1728 Location: OPF

Landing: _____ Location: OPF

Number of Eye Penetrations: Ø

B. Past and Forecast Storm Locations:

Date/Time	Latitude	Longitude	MSLP	Maximum Wind

C. Mission Briefing:

FLY ATTACHED FLIGHT TRACK N OF GEO, DROP NUMEROUS SONDES. RECOVER OPF, AND STAND BY.

D. Equipment Status (Up, Down, Not Available, Not Used)

Equipment	Pre-Flight	In-Flight	Post-Flight
Aircraft	↑	↑	↑
Radar/LF	↑	↑	↑
Radar/TA (Doppler)	↑	↑	↑
Cloud Physics	N/A		
Data System	↑	↑	↑
~~Omegasondes~~ GPS	↑	↑	↑
AXBT/AXCP	N/A		
Workstation	↑	↑	↑
Videography	↑	↑	↑

REMARKS:

E. (I) Proposed Flight Pattern (sketch or designate by number)

SEE ATTACHED SHEET

E. (II) Actual Flight Pattern

FLOWN AS BRIEFED

Lead Project Scientist Event Log

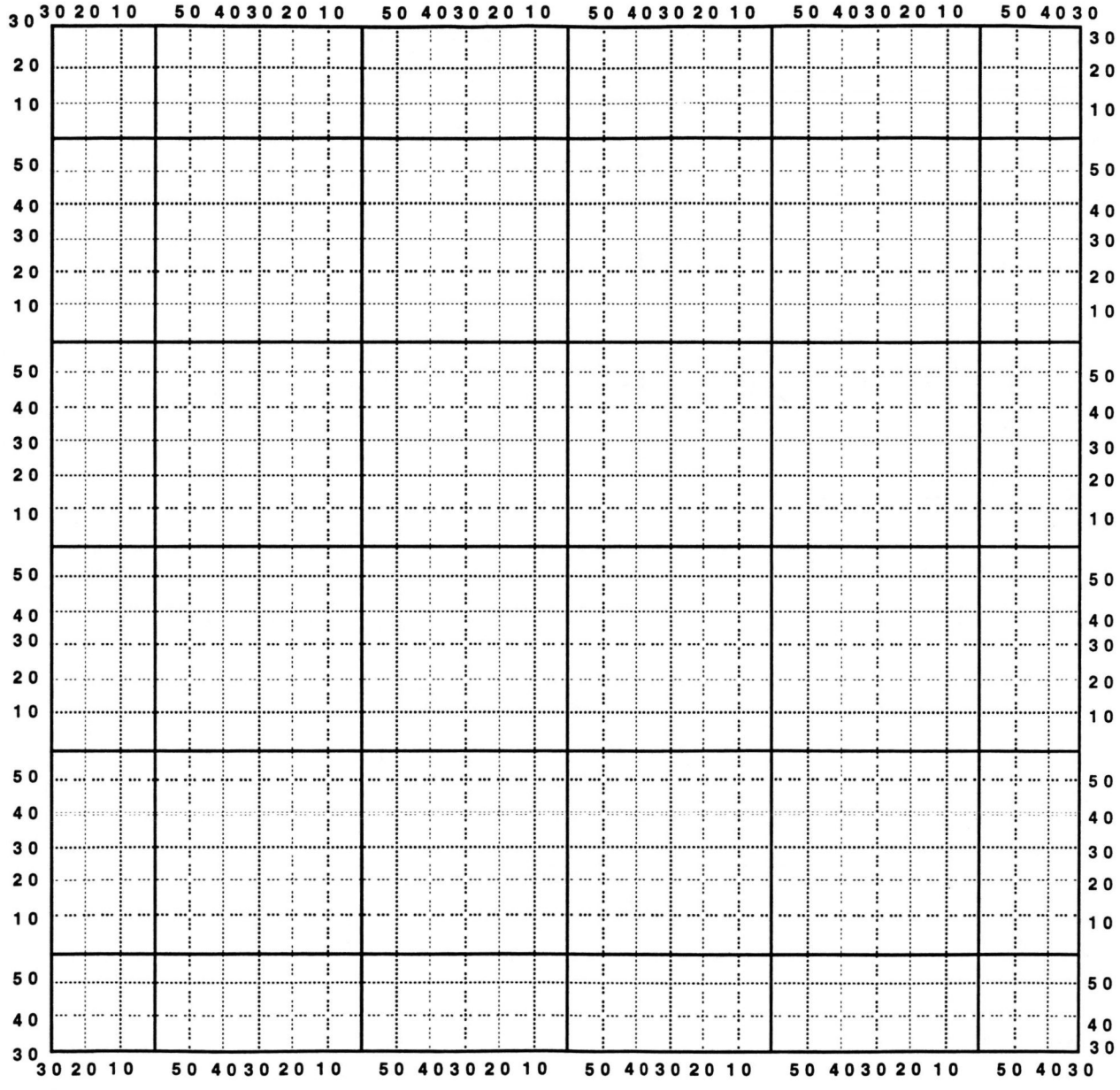
Date 22SEP98 Flight 980922I LPS WILLOUGHBY

Time	Event	Position	Comments
22/1728	OPF	D/P	
1827	29-31 78-26	DROP 1 TRAILE	GOOD. W WIND ALL THE WAY DOWN SPLASH 1011
1849	29-34 AB 76-22	DROP 2 ABOVE 500MB	GOOD. W WIND SPLASH 1010, 4YD 1013
1912	29-30 74-15	DROP 3	GOOD W WIND
1934	29-29 72-07	DROP 4	GOOD W WIND
1957	29-29 69-59	DROP 5 TURN SE	GOOD
2009	28-48 69-04	CLIMB TO 19K	
2015	28-30 68-43	DROP 6	GOOD. WIND AT 70S SLP 1012
2034	27-30 67-30	DROP 7	BAD LOST TELEMETRY
2036	27-16 67-29	DROP 7 AGAIN	WIND IFFY WORKED UP OK
2056	25-45 67-29	DROP 8	GOOD WINDS CALM RIDGE AXIS SLP=1012
2118	23-59 67-31	DROP 9 TURN SSW WIND 115/8	GOOD, in easterlies, maybe storm near bottom
2146	22-00 68-33	DROP 10 TURN W	E-wind 25 kt at FL
2213	22-00 71-00	DROP 11 TURN NNE	NO WINDS FAST FALL
2215	22-15 70-57	DROP 11 A	GOOD
2239	22-00 70-01	DROP 12	GOOD still in circ.
2253		CLIMB TO 22000	
2304	26-02 70-03	DROP 13	GOOD TURN NW
2335	23-35 27-44	DROP 14 TURN W	GOOD
2356	27-45 74-00	DROP 15	GOOD W-WIND
0018	27-42 76-00	DROP 16	GOOD

Hurricane Recco Plotting Chart

True at 25° Latitude, in Degrees and Minutes

Date _____ Flight ID _____ LPS _____.



Note : Label full degrees according to location of the flight area.

2 of 2

Lead Project Scientist Event Log

Date 22SEP98 Flight 980922I LPS WILLOUGHBY

Time	Event	Position	Comments
0042	DROP 17	26-57 78-00	LAST
0123	RECOVER	OPF	

Lead Project Scientist Event Log

Date ____________________ Flight ____________________ LPS ____________________

Time	Event	Position	Comments

Lead Project Scientist Event Log

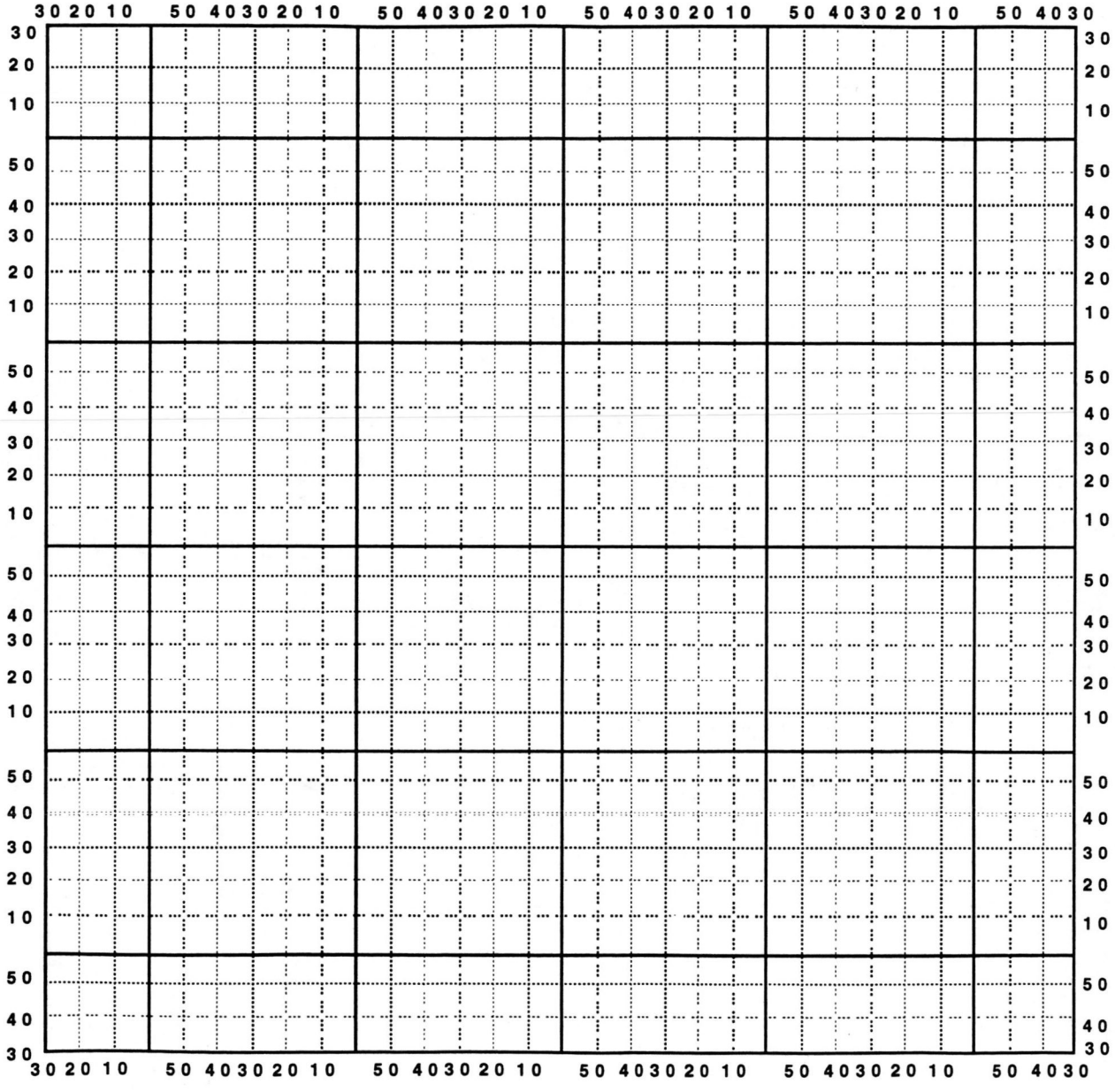
Date ____________________ Flight ____________________ LPS ____________________

Time	Event	Position	Comments

Hurricane Recco Plotting Chart

True at 25° Latitude, in Degrees and Minutes

Date _____ Flight ID _____ LPS _____.



Note : Label full degrees according to location of the flight area.

Mission Summary
Hurricane George - Synoptic Surveillance

980922I Aircraft: N43RF
Scientific Crew:

Chief Scientist:	Hugh Willoughby
Doppler Scientist:	-------
Cloud Physics:	-------
Dropsonde Scientist:	Chris Landsea
Workstation/AXBT:	Joe Griffin

Mission Briefing

Flight 980922I was one sortie of a two–aircraft synoptic surveillance mission flown around Hurricane Georges. It originated and terminated at Opa–Locka. HRD participants were: Hugh Willoughby, Joe Griffin, and Chris Landsea. The objective was to fly eastward along a a circuitous route north of the Greater Antilles to locate the subtropical ridge axis and scout for weaknesses in the ridge. These data, combined with observations in the Bahamas and Carribean from N49RF were intended to improve the initialization of the operational forecast cycle for 23/00Z and add to the ensemble of multi–aircraft GPS sonde synoptic surveillance missions.

Mission Synopsis

N42RF took off from Opa–Locka at 1728 UT on 22SEP98, flew northeastward, reaching the initial drop point (29°30'N, 78°30'W) at 1827 UT. We then flew east along 29°30'N to 70°-00'W, just above the 500 hPa level in 15 kt westerly winds north of the ridge axis, then southeast to 27°30'N, 67°30'W. The first 6 sondes worked beautifully, but the 7th, at this position, lost telemetry. We dropped a second instrument 14 nmi south of the nominal drop point. As we continued south along 67°30'W we reached the ridge axis near 25°45'N where we deployed drop 8 in calm winds. It reported a 1012 hPa Surface pressure. Drop 9, near 24°N was in easterly flight–level flow (115° at 8 kt) south of the ridge. From that point as we flew SSE to 22°N, 68°-33'W. We were clearly in Georges circulation as we turned westward along 22°N and climbed to 443 hPa. Surface pressures were about 1011 hPa. Drop 11 at 71°W was a fast fall that reported no winds. We turned NNE, and dropped a backup 45 nmi farther along track. At 24°N, we turned north along 70°W, climbed to 424 hPa, remaining in easterly winds until after we passed 26°N and turned NW. By the time we reached the next drop point (27°44'N, 72°W) we were in weak westerlies again north of the ridge. These winds continued as we flew westward along 27°44'N, then tuned WSW to recover at Opa–Locka at 0123 UT on 23SEP98, 7h 55m duration.

Equipment:

Everything worked well. Of the 19 sondes deployed only 2 failed outright: drop 7 lost telemetry and drop 11 was a fast fall with no winds.

Critique:

Flown as briefed. Another multi–plane synoptic surveillance mission in the ensemble.

H. E. Willoughby
10 October 1998

Hurricane Research Division

AOML/NOAA
4301 Rickenbacker Causeway
Miami, FL 33149-1026

10 October 1998

To: F. D. Marks

From: H. E. Willoughby

Subject: Flight 980922I

Planning: Flight 980922I was one sortie of a two–aircraft synoptic surveillance mission flown around Hurricane Georges. It originated and terminated at Opa–Locka. HRD participants were: Hugh Willoughby, Joe Griffin, and Chris Landsea. The objective was to fly eastward along a a circuitous route north of the Greater Antilles to locate the subtropical ridge axis and scout for weaknesses in the ridge. These data, combined with observations in the Bahamas and Carribean from N49RF were intended to improve the initialization of the operational forecast cycle for 23/00Z and add to the ensemble of multi–aircraft GPS sonde synoptic surveillance missions.

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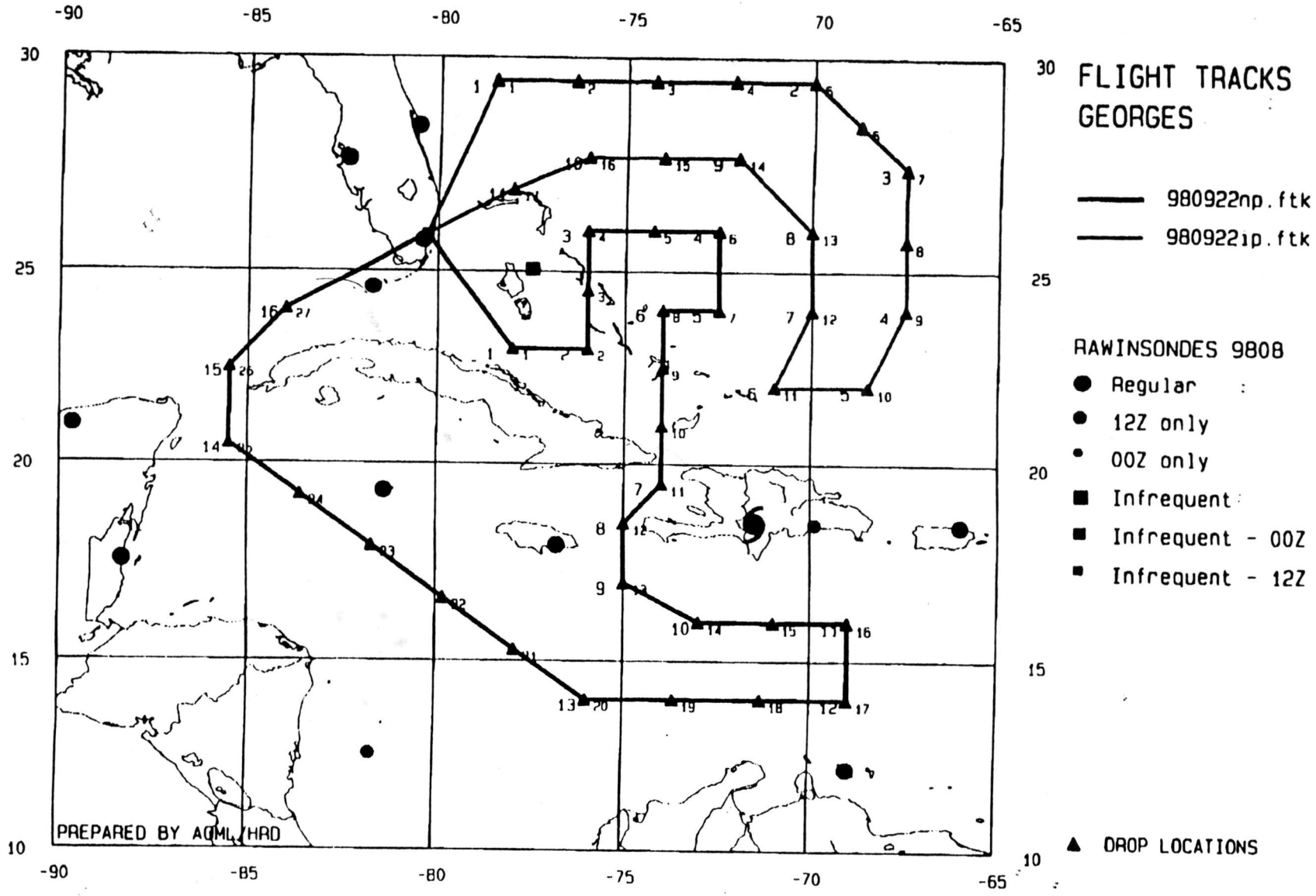
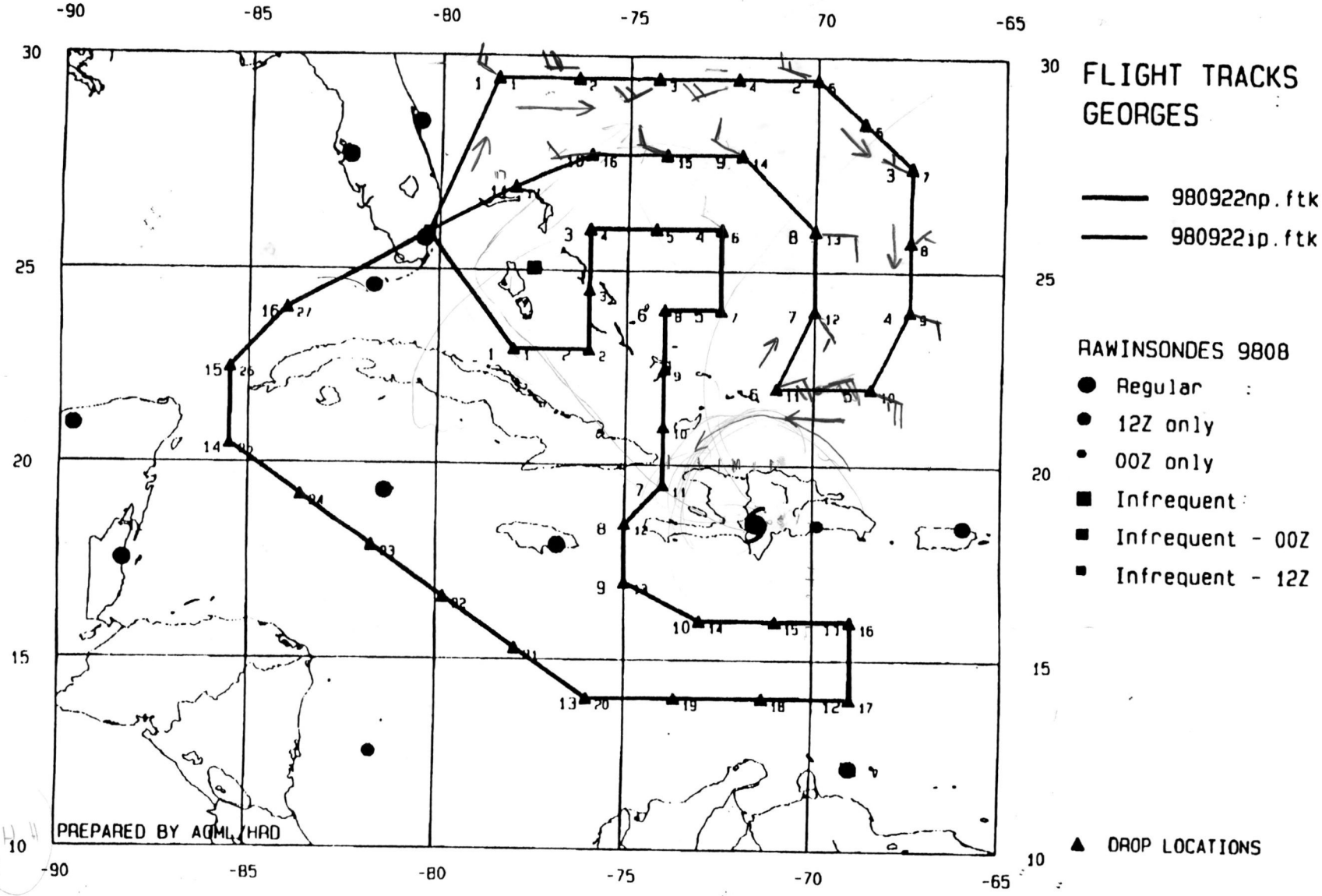
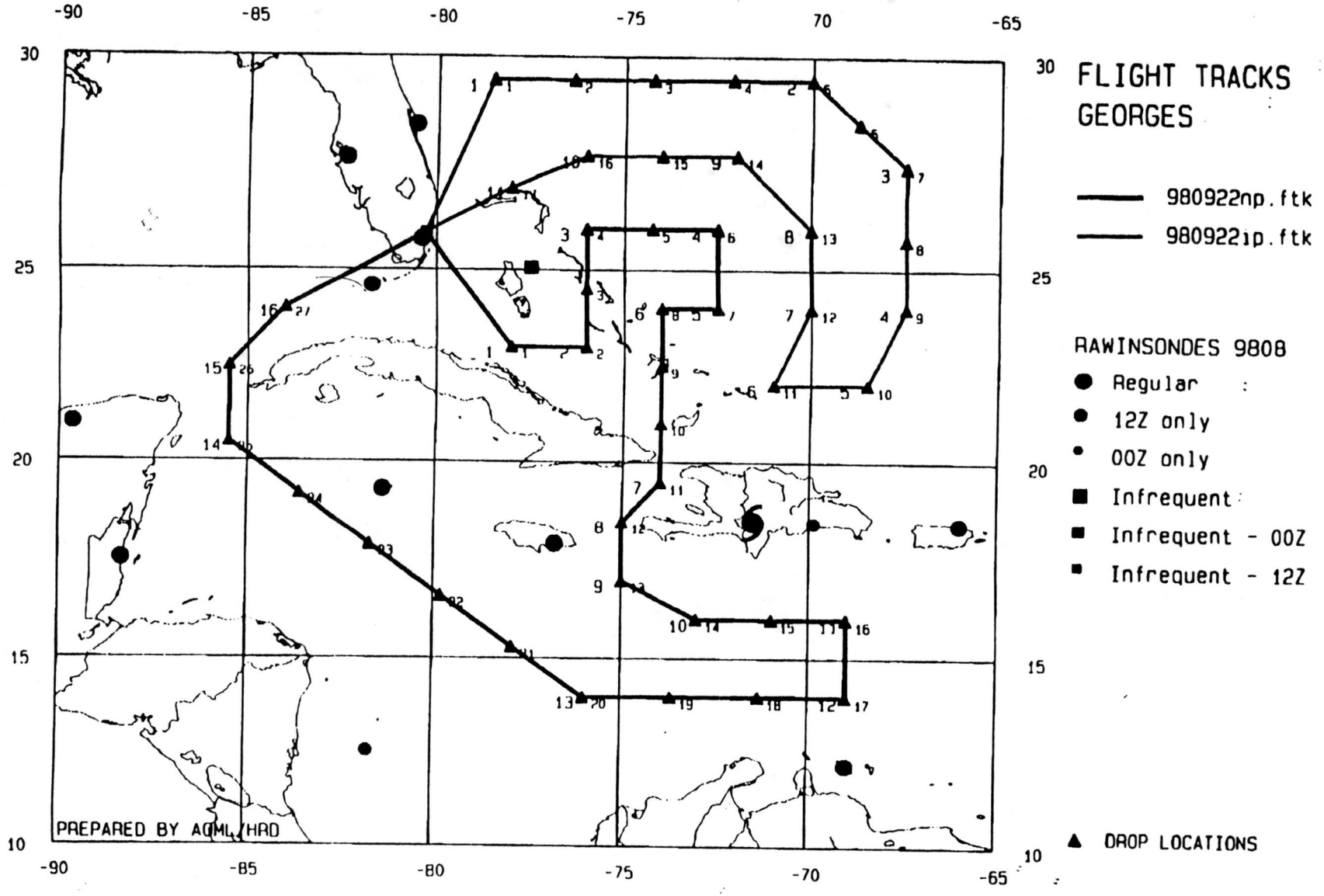
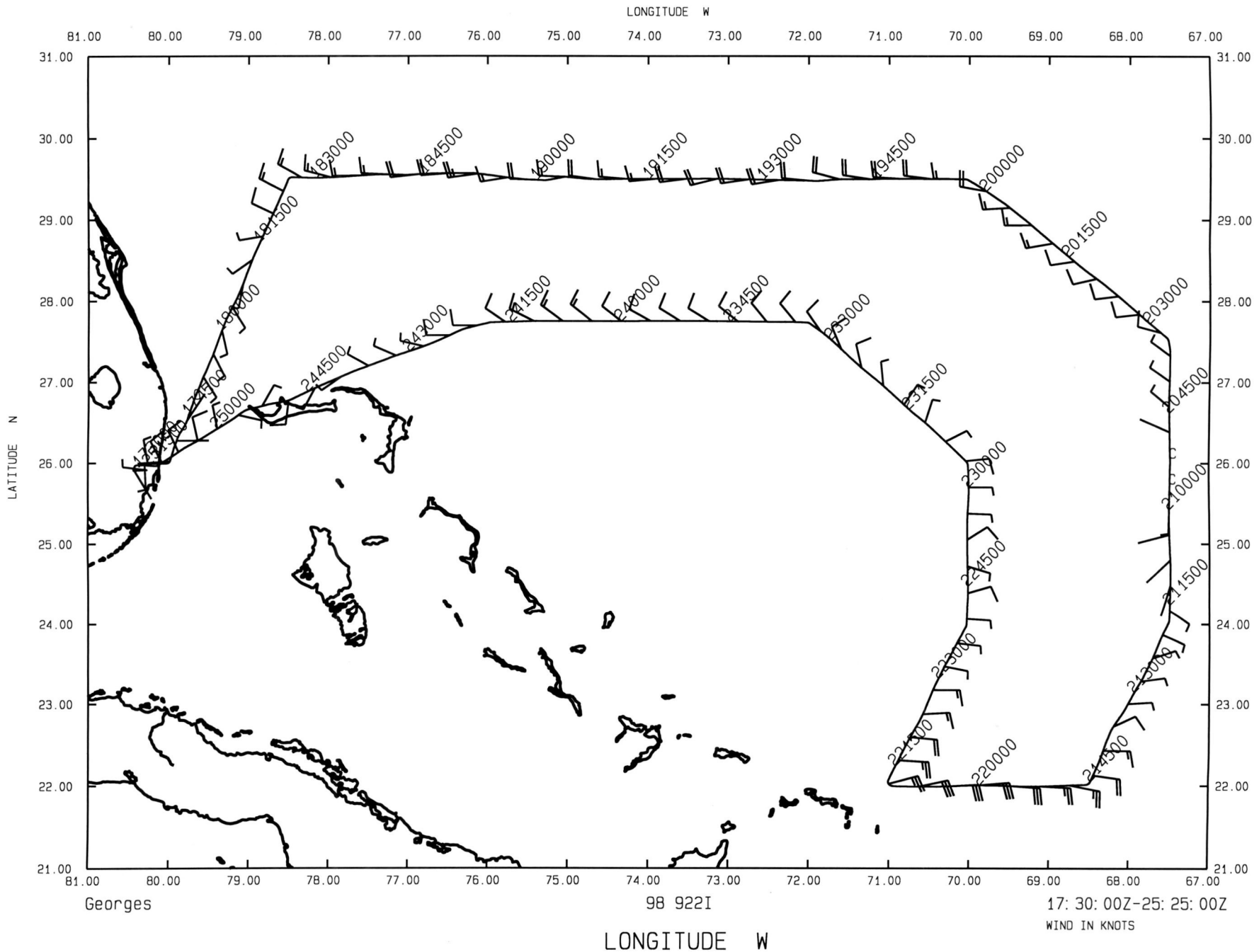
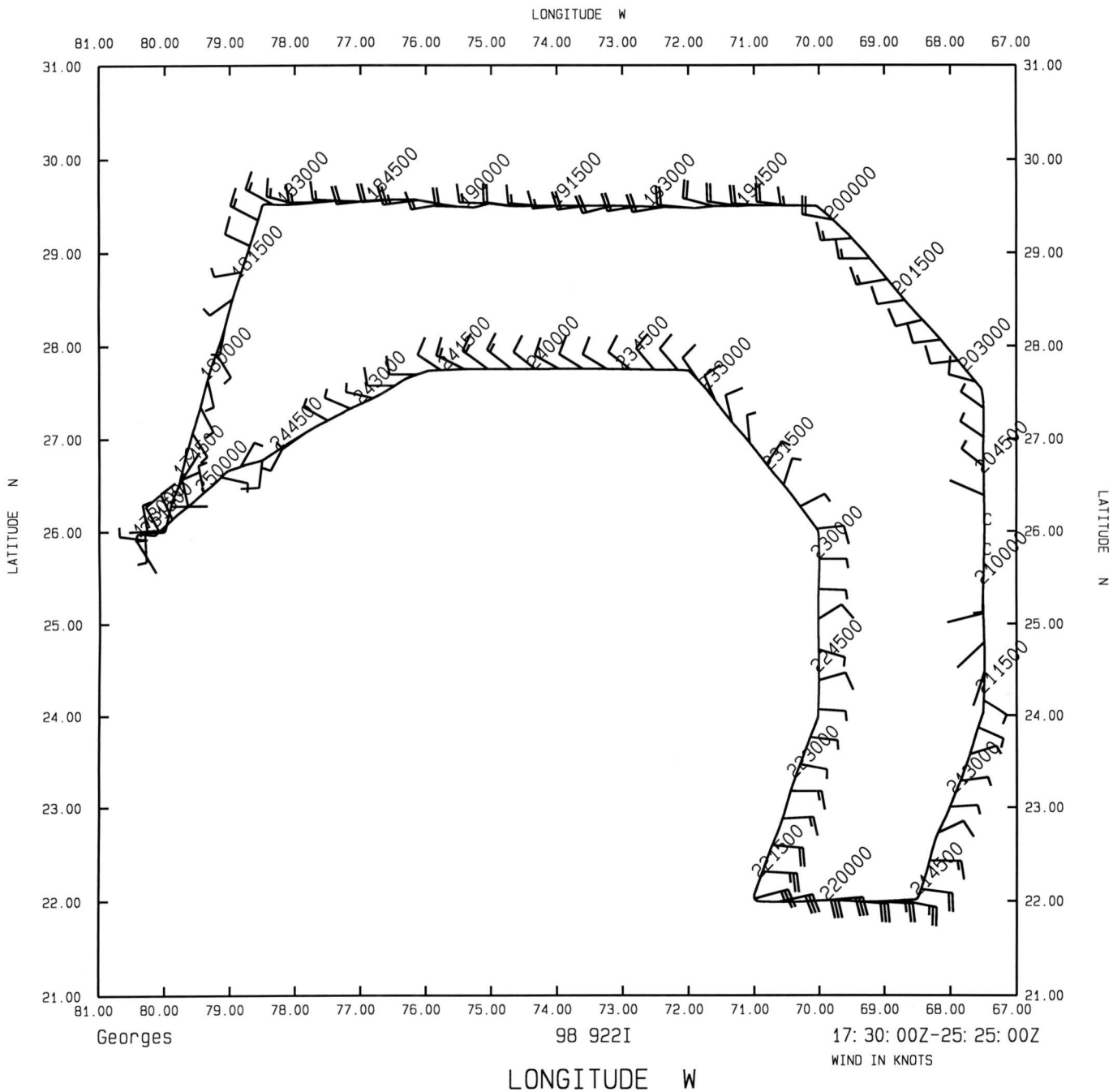

FLIGHT TRACKS
GEORGES
980922np.ftk
980922ip.ftk
RAWINSONDES 9808
Regular
12Z only
00Z only
Infrequent
Infrequent - 00Z
Infrequent - 12Z
DROP LOCATIONS
PREPARED BY AOML/HRD
-90
-85
-80
-75
70
-65
-70
30
25
20
15
10

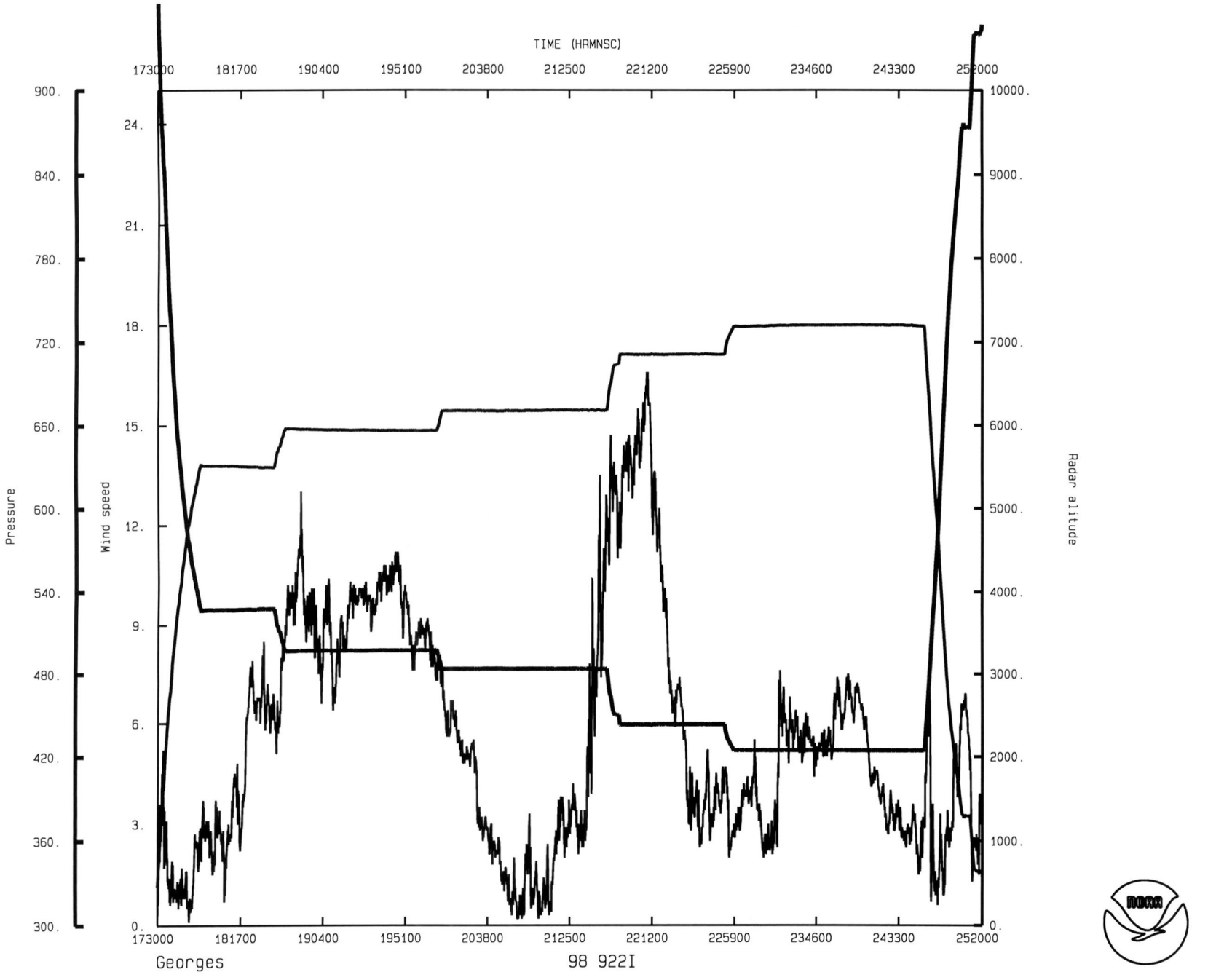


18-9 00Z 71-3 WNW 14 985


-90
-85
-80
-75
70
-65
30
25
20
15
10
FLIGHT TRACKS
GEORGES
980922np.ftk
980922ip.ftk
RAWINSONDES 9808
Regular
12Z only
00Z only
Infrequent
Infrequent - 00Z
Infrequent - 12Z
DROP LOCATIONS
PREPARED BY AOML/HRD


LONGITUDE W
81.00 80.00 79.00 78.00 77.00 76.00 75.00 74.00 73.00 72.00 71.00 70.00 69.00 68.00 67.00
31.00 30.00 29.00 28.00 27.00 26.00 25.00 24.00 23.00 22.00 21.00
LATITUDE N
183000 184500 190000 191500 193000 194500 200000 201500 203000 204500 210000 211500 213000 214500 220000 221500 223000 224500 230000 231500 233000 234500 240000 241500 243000 244500 250000
Georges
98 922I
17: 30: 00Z-25: 25: 00Z
WIND IN KNOTS
LONGITUDE W


LONGITUDE W
81.00 80.00 79.00 78.00 77.00 76.00 75.00 74.00 73.00 72.00 71.00 70.00 69.00 68.00 67.00
31.00 30.00 29.00 28.00 27.00 26.00 25.00 24.00 23.00 22.00 21.00
LATITUDE N
Georges
98 922I
17: 30: 00Z-25: 25: 00Z
WIND IN KNOTS
LONGITUDE W


TIME (HRMNSC)
173000
181700
190400
195100
203800
212500
221200
225900
234600
243300
252000
Pressure
900.
840.
780.
720.
660.
600.
540.
480.
420.
360.
300.
Wind speed
24.
21.
18.
15.
12.
9.
6.
3.
0.
Radar altitude
10000.
9000.
8000.
7000.
6000.
5000.
4000.
3000.
2000.
1000.
0.
Georges
98 922I
TIME (HRMNSC)

NOAA/HRD