



# Amateur Radio Station at the National Hurricane Center



## 35 Years of Public Service

Our achievements are the results of many  
dedicated volunteer individuals working together.  
We are grateful for your participation and commitment  
to the Humanitarian Goals of the WX4NHC team.

*Our Mission - to help save lives.*

*John McHugh K4AG*  
NHC Amateur Radio Coordinator

*Julia Repoll WD4R*  
NHC Asst. Amateur Radio Coordinator

# WX4NHC Videos

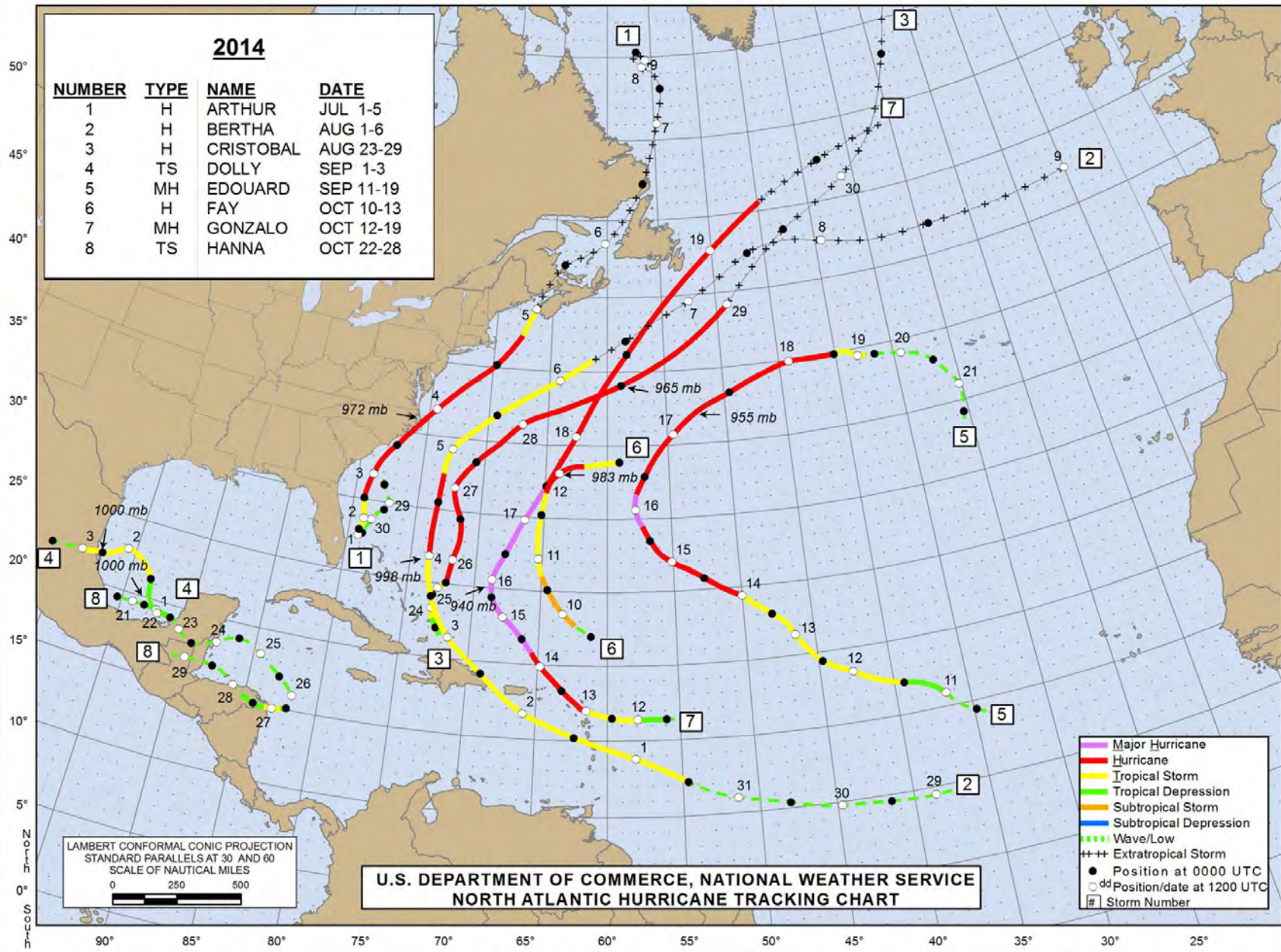
**Are now on You Tube.com**  
**Search for WX4NHC**



120° 115° 110° 105° 100° 95° 90° 85° 80° 75° 70° 65° 60° 55° 50° 45° 40° 35° 30° 25° 20° 15° 10° 5° West 0° East 5° 10°

**2014**

NUMBER	TYPE	NAME	DATE
1	H	ARTHUR	JUL 1-5
2	H	BERTHA	AUG 1-6
3	H	CRISTOBAL	AUG 23-29
4	TS	DOLLY	SEP 1-3
5	MH	EDOUARD	SEP 11-19
6	H	FAY	OCT 10-13
7	MH	GONZALO	OCT 12-19
8	TS	HANNA	OCT 22-28



LAMBERT CONFORMAL CONIC PROJECTION  
STANDARD PARALLELS AT 30 AND 60  
SCALE OF NAUTICAL MILES  
0 250 500

U.S. DEPARTMENT OF COMMERCE, NATIONAL WEATHER SERVICE  
NORTH ATLANTIC HURRICANE TRACKING CHART

Major Hurricane  
Hurricane  
Tropical Storm  
Tropical Depression  
Subtropical Storm  
Subtropical Depression  
Wave/Low  
+++ Extratropical Storm  
● Position at 0000 UTC  
○<sup>dd</sup> Position/date at 1200 UTC  
# Storm Number

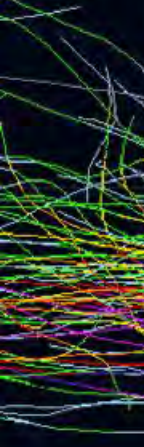




2000 km  
1000 mi

Medellin • VENEZUELA  
Bogota • GUYANA  
Cali • COLOMBIA FRENCH GUIANA

NOVEMBER 10, 2012  
10:53 AM

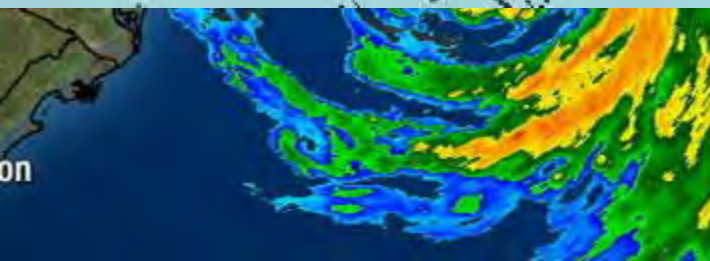


**HURRICANE  
EVACUATION PLAN**



- 1. GRAB BEER**
- 2. RUN LIKE HELL**

**GRAB BEER**  
...  
...  
...  
...  
...





SPECIAL HURRICANE EDITION

The Miami Herald

MONDAY, AUGUST 24, 1992

CONTENTS PAGE 1 and 1A see inside

FREE

# THE BIG ONE

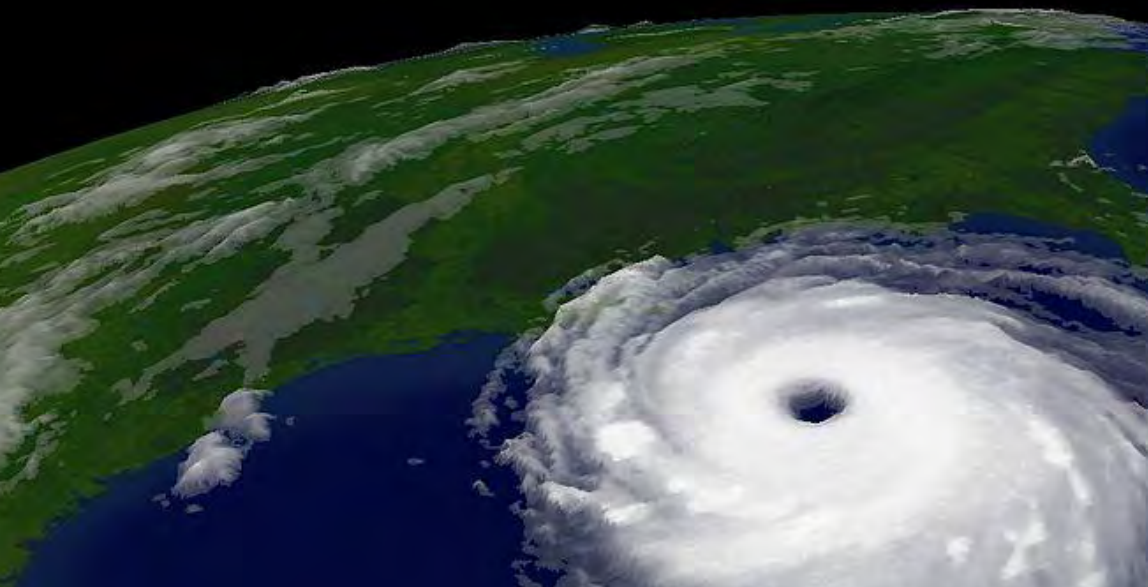
## Hurricane is knockin

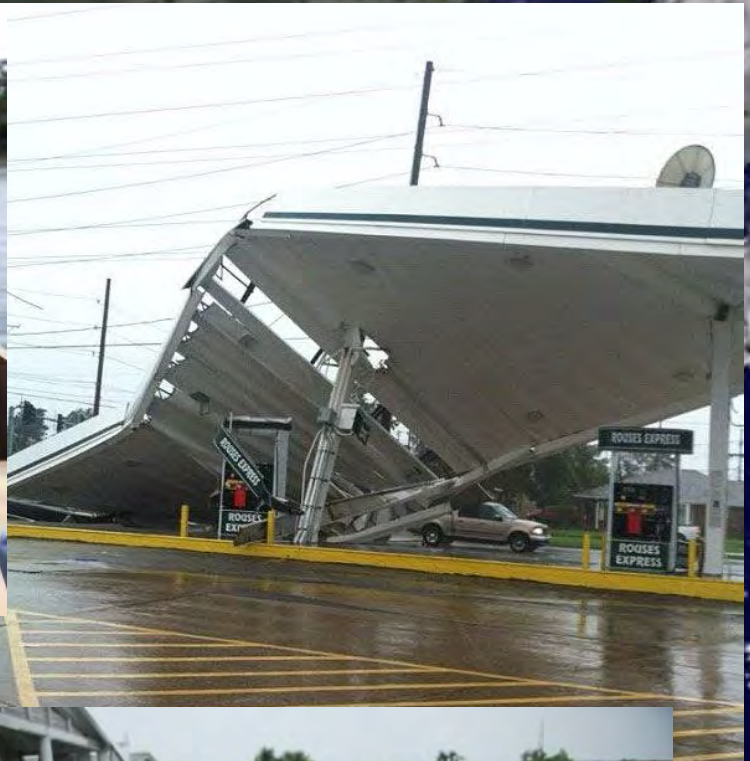
# HURRICANE ANDREW

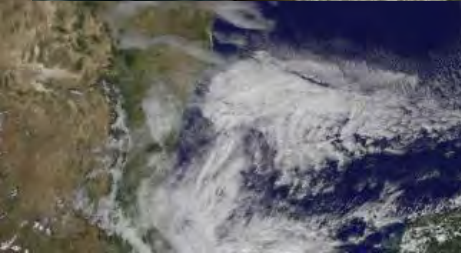


Question  
Time to



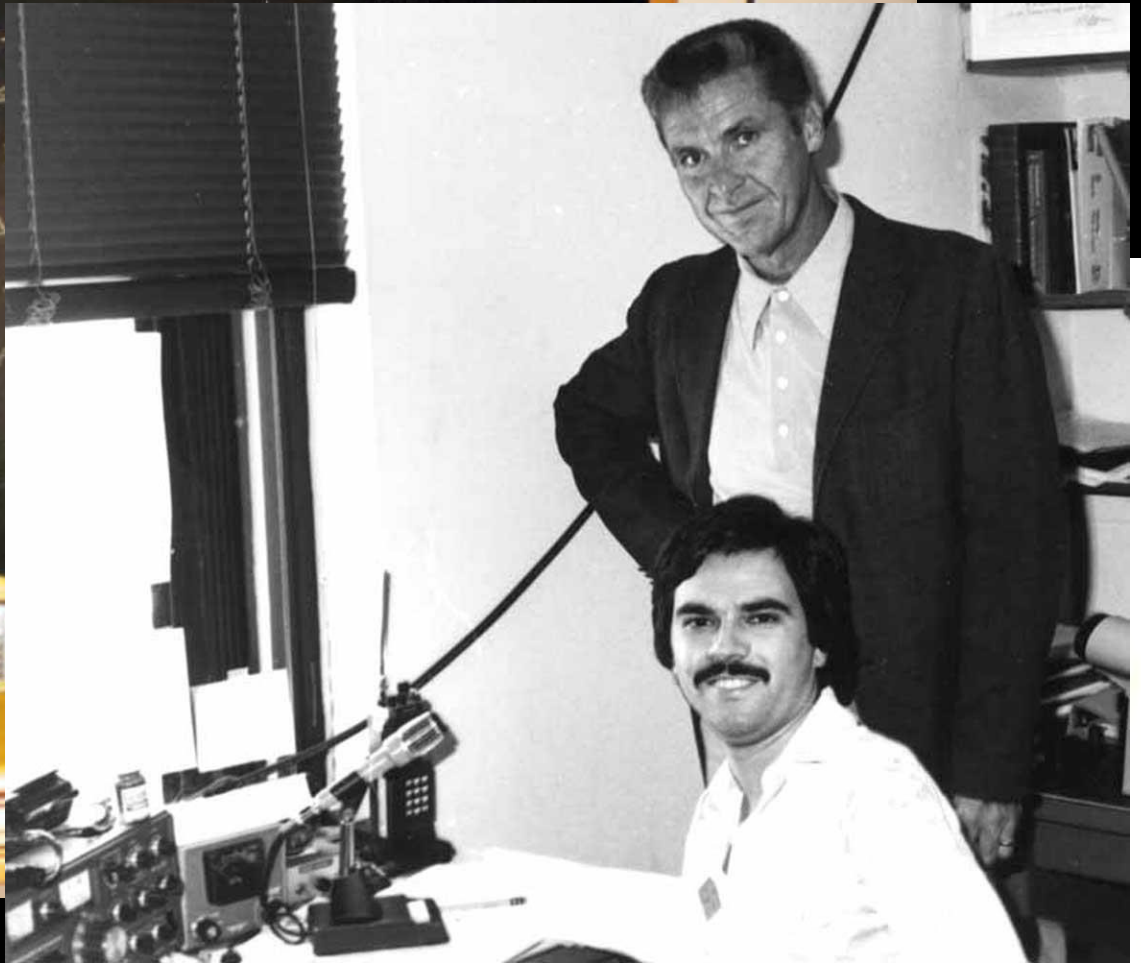
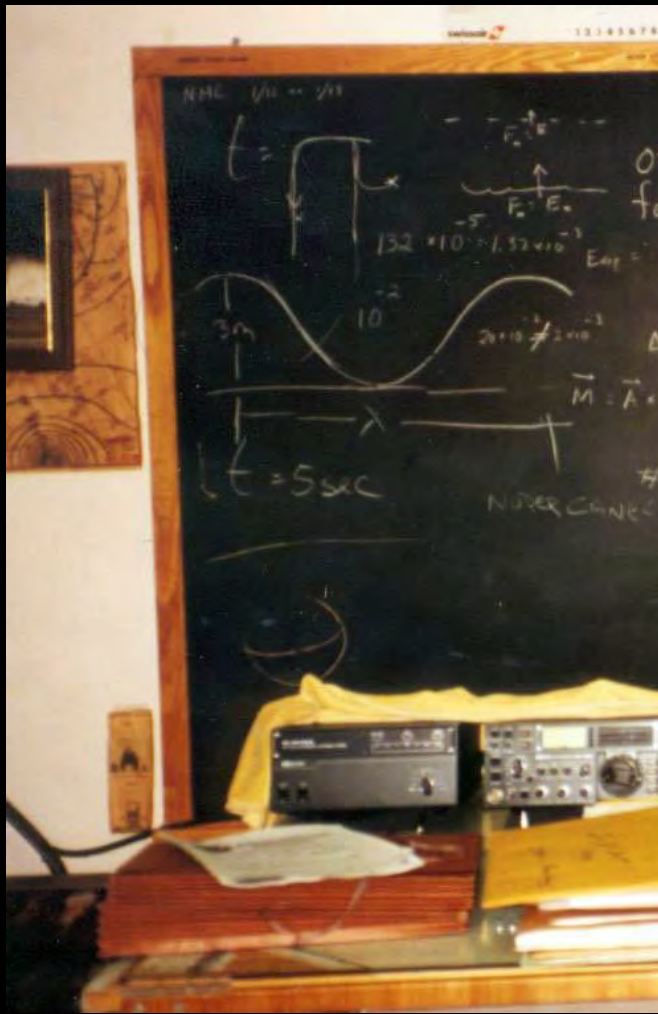




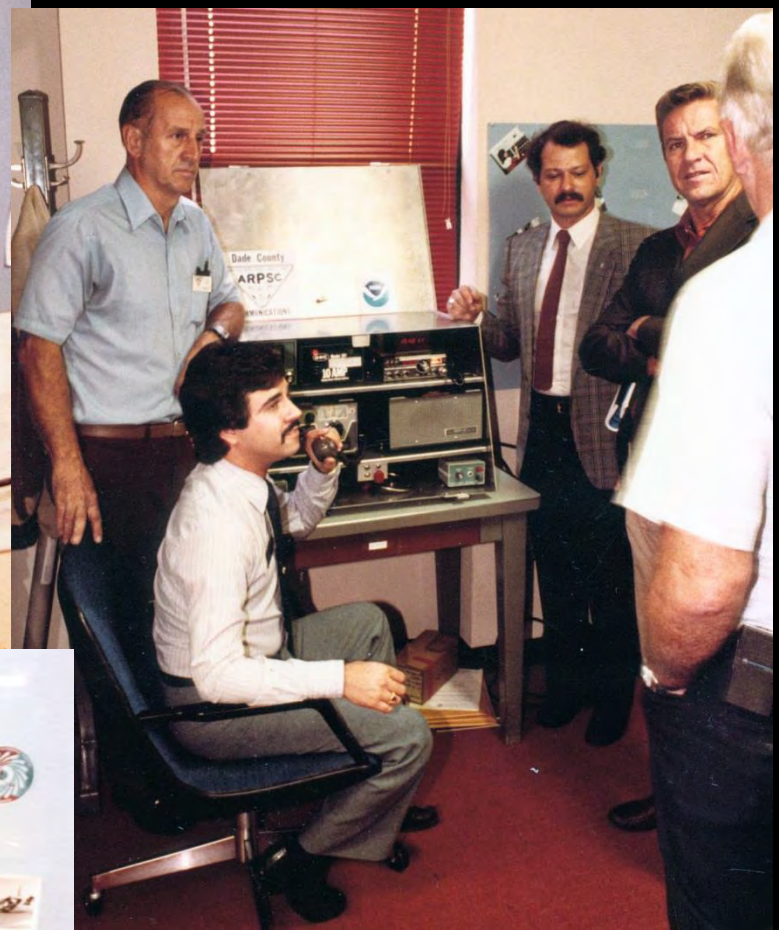




1980 NHC on 6<sup>th</sup> Floor of the  
Gables One Tower  
Notice it was the only floor with  
Hurricane shutters!

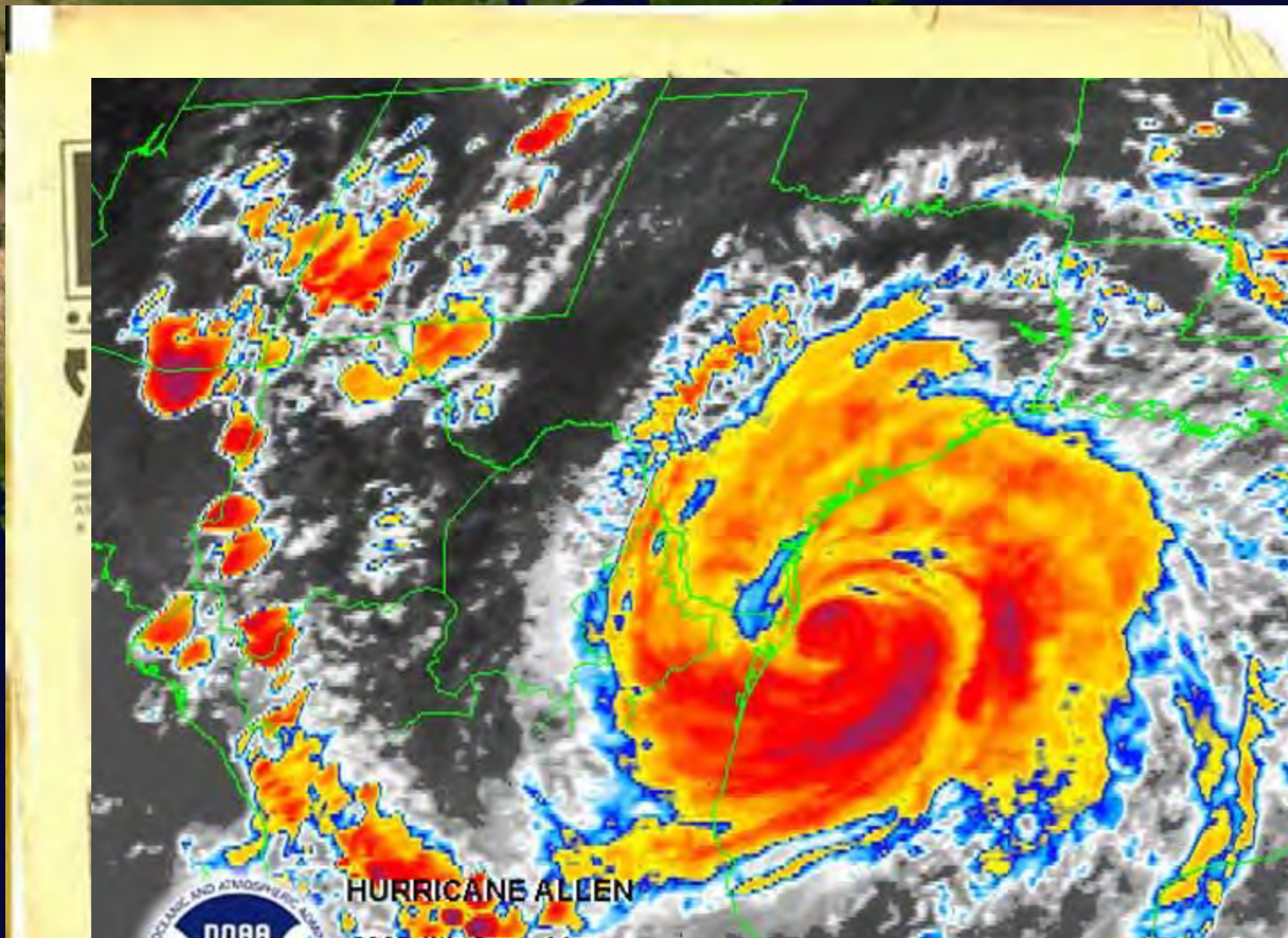


NHC Ham Station 1980's



The 1980's





**HURRICANE ALLEN**  
SMS-II Infrared Image  
August 9, 1980 @ 22:30 UTC

# Hurricane Allen 1980

AMATEUR RADIO STATION - WX4NHC  
AT THE

AMATEUR RADIO STATION - WX4NHC  
AT THE  
NATIONAL HURRICANE CENTER  
SURFACE WEATHER REPORT

Hurricane: **KATRINA**

Repo  
Geog  
Local

Date:

Wind

(sustained)

Wind

Wind

Bar

(convert)

Additional

NO

Har

Se

Am

md

Operator

Reporting Station Callsign: W5SLA -  
Geographic Location: NWSFO - SLIDELL  
Location (Latitude/Longitude): \_\_\_\_\_ North \_\_\_\_\_ West

Date: 8-29-05 Time of Observation: \_\_\_\_\_ (Z) (GMT)

Wind Speed: \_\_\_\_\_  mph  knots  
(sustained for one minute)  estimated  measured

Wind Gust: \_\_\_\_\_  mph  knots

Wind Direction: \_\_\_\_\_

Barometric Pressure: \_\_\_\_\_  Inches  millibars  
(convert to millibars)

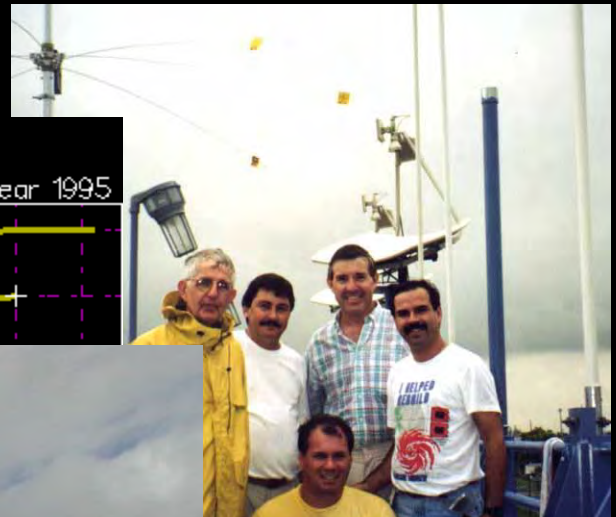
Additional Comments: Comm. w/ NWSFO SLIDELL & REGIONAL  
DIRECTOR: PAUL TRAUTOR:  
STAFF ON DUTY = (91) - ALL OK.  
STAFF OFF DUTY = (4) = ALL OUT OF TOWN  
ON EMERGEN. PWR. AWIPS DISH OK, NO COMM.  
CAN WALK OUT OF BUILDING - CAN NOT DRIVE OFF-SITE  
DUE TO TREES DOWN & FLOODING ON ROADS.  
H&W ON WIFES IN LA FAYETTE BASED ON - ALL OK. (BARTON, RICKS, JOLLY)  
NEXT HF Ham SCHEDULE 0930 pm EDT.

Operator: John Spall WP4R

A SERVICE OF THE DADE COUNTY AMATEUR RADIO PUBLIC SERVICE CORPS

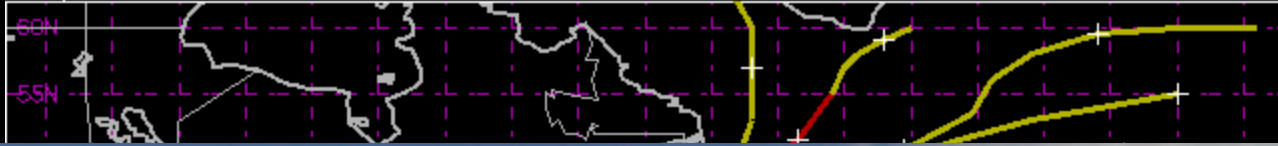


Hurricane Katrina



Tropical Storm Tracks

Year 1995



NATIONAL HUBBARD  
AMATEUR RADIO SOCIETY  
MUSICAM  
OPERATION SCHEDULE

113C  
HAM Radio Group

Amateur Radio Station  
**WX4NHC**





APRS  
Remote Weather stations  
Please Leave ON





**WX4NHC On-The-Air**

## Dr. Richard Knabb, NHC Director



**nbc6.net**

## **South Florida 'Dinosaurs' Offer Help To Hurricane Victims**

### ***Ham Radio Operators Link Victims To U.S.***

POSTED: 8:00 a.m. EDT October 2, 2002

UPDATED: 8:11 a.m. EDT October 2, 2002

**MIAMI** -- Ham radios, now considered dinosaurs in the world of communication, provide a way to talk with people in the heart of a natural disaster when all else fails.



There are currently 42 operators at the National Hurricane Center who volunteer their time when a storm strikes.

Once they establish radio contact, they take to the phones to contact people in the U.S. and let them know how their loved ones are doing.

Operators are in the storm center now getting reports from Cuba as it recovers from Hurricane Lili. The strengthened storm roared across the western part of the island, forcing thousands from their homes. There are no reports of any deaths so far.

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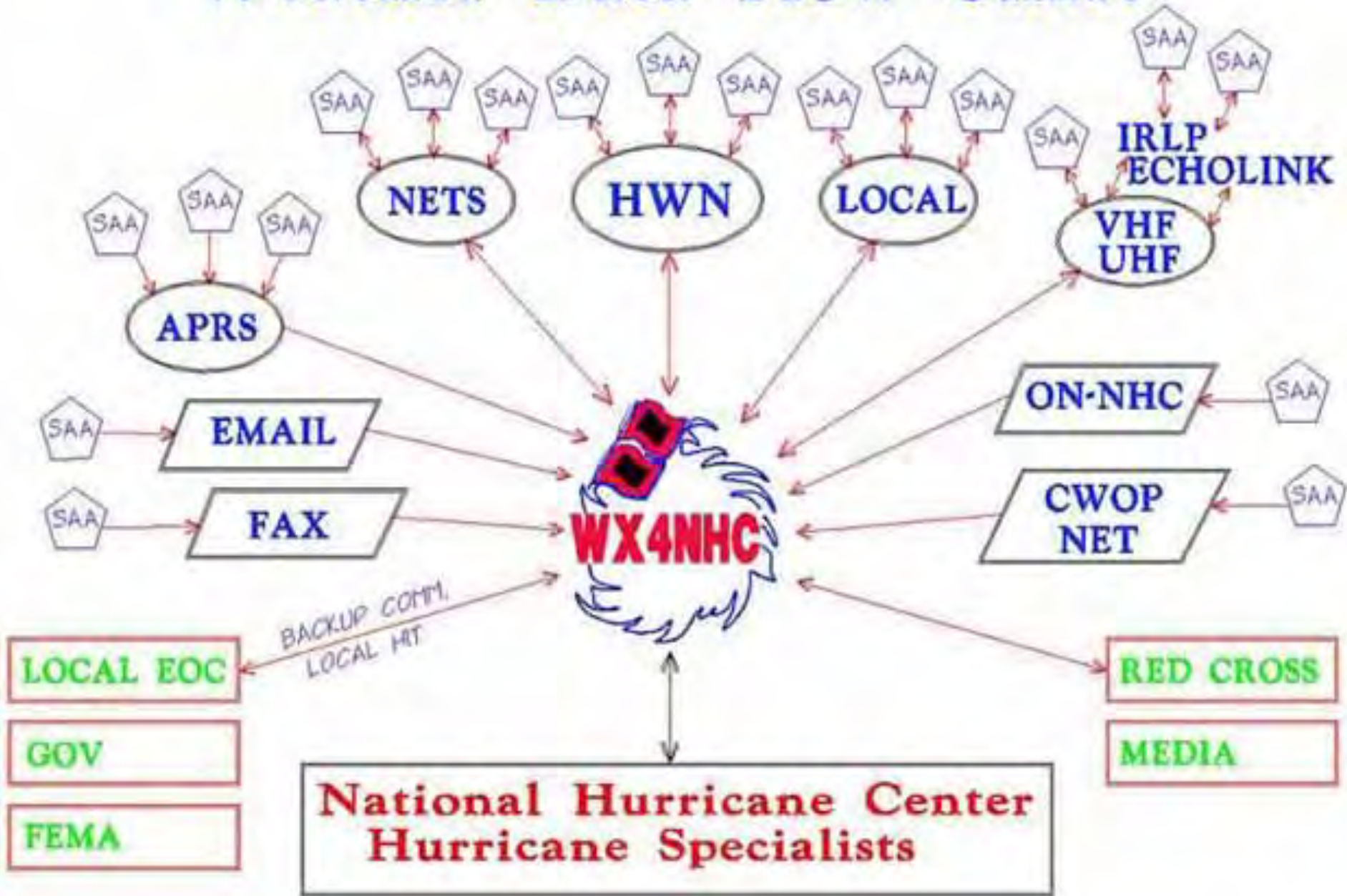


# Purpose and Goals

1. Collect weather data “Surface Reports” from the Hurricane affected areas in real time for use by the Hurricane Forecasters.
2. Provide back-up emergency communications to and from the Hurricane Center during and after a direct hit on Miami.
3. Provide Hurricane Advisories over Ham Radio, when other sources are not available to the affected area.
4. Enhance and promote the accuracy and availability of weather data surface reports.

*Our Mission – to help save lives.*

# Amateur Radio WX4NHC Weather Data Flow Chart



# *How to contact WX4NHC*

## **Amateur Radio HF Frequencies** - (single sideband mode)

20 meters : 14.325 MHz **Hurricane Watch Net** (Main frequency during Hurricanes)

40 meters : 7.268 MHz Water Way Net (secondary frequency) Maritime Mobiles Net

80 meters : 3.815 MHz Caribbean Net, (Alternates: 3.950 : North Florida / 3.940 South Florida)

## **Amateur Radio EchoLink and IRLP Modes**

EchoLink **VoIP Hurricane Net** on WX-Talk Conference (Node 7203)

IRLP Reflector Node 9219

## **Amateur Radio VHF/UHF Frequencies**

VHF : 147.470 MHz simplex - Coordination frequency for NHC ops. (*official use only, please*)

VHF : 147.000/146.400 repeater (Dade Radio Club )

UHF : 444.600/449.600 repeater (K4AG/WX4NHC on FIU Campus )

## **APRS mode Frequencies**

HF : 30 meters : 10.151 MHz (LSB)

VHF : 2 meters : 144.390 MHz simplex

## **Internet Home Page** : [www.wx4nhc.org](http://www.wx4nhc.org)

Online Hurricane Weather Report Form (stations in affected area only)

Email : [wx4nhc@wx4nhc.org](mailto:wx4nhc@wx4nhc.org)

### **Amateur Radio Coordinator:**

John McHugh, K4AG Email: [K4AG@arrl.net](mailto:K4AG@arrl.net)

### **Amateur Radio Asst. Coordinator:**

Julio Ripoll, WD4R Email: [WD4R@arrl.net](mailto:WD4R@arrl.net)



# **The Hurricane Watch Net**

Serving the National Hurricane Center since 1965

**HF 14.325 MHz**

[www.HWN.org](http://www.HWN.org)

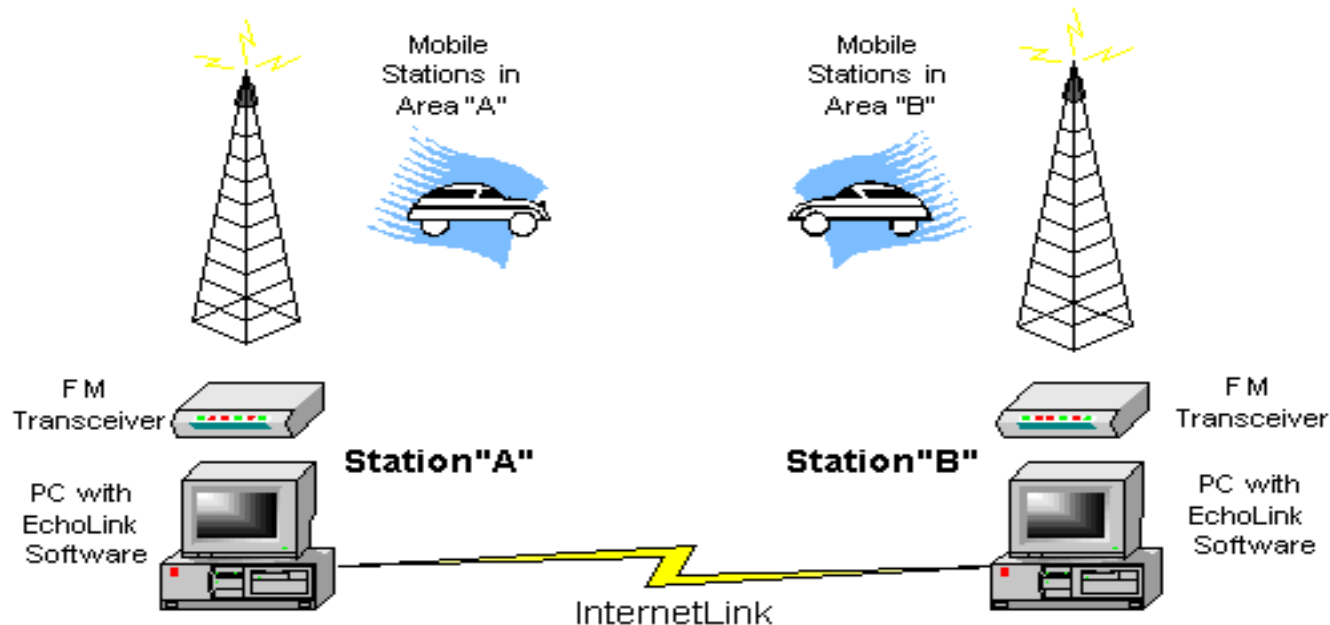
# VoIP Hurricane Net

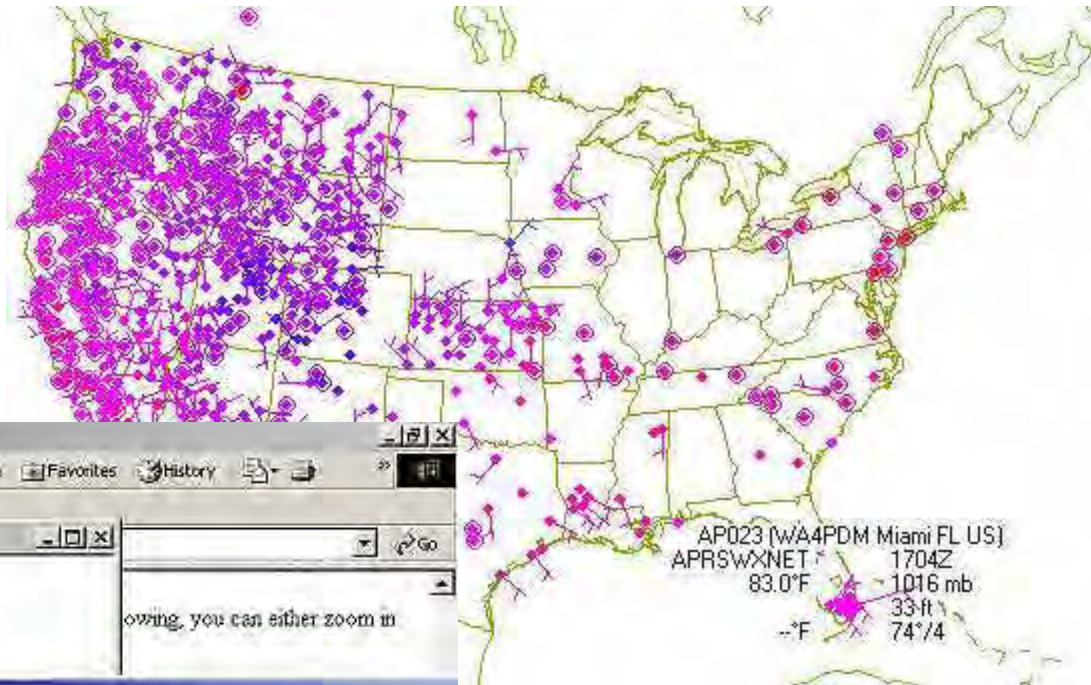
(EchoLink WX\_Talk, 7203 + IRLP 9219)

[www.voipwx.net](http://www.voipwx.net)

Rob Macedo – KD1CY, Director

## Linking Example





FSI surface data display - Microsoft Internet Explorer

APRSWXNET: AP022 (UB20PA-4 Naples FL US) (26.13,-81.77) 125 ft  
 data ending 01-Jun-2002 12:01:57

time	altimeter	t(OC)/td	wind (mph)	presUxsskyCover
obs rpt (mb)			dir/spd	
1101 (1106)	1013	73.0(V)/73.70	223°/004	
1116 (1121)	1013	73.0(V)/73.40	228°/006	
1131 (1136)	1013	74.0(V)/73.10	234°/005	
1146 (1151)	1013	74.0(V)/73.40	249°/003	
1201 (1206)	1013	74.0(S)/73.40	245°/004	

Warning: Applet Window

History

RAUS: FI468 (OCHOPEE RAWS) (25.92,-81.28) 7 ft  
 data ending 01-Jun-2002 11:36:00

time	altimeter	t(OC)/td	wind (mph)	presUxsskyCover
obs rpt (mb)			dir/spd	
1136 (1216)	----	73.0(S)/73.00	20°/005	

Warning: Applet Window

FL-Meso: STDF1 (Homestead FAHW) (25.51,-80.5) 0 ft  
 data ending 01-Jun-2002 11:45:00

time	altimeter	t(OC)/td	wind (mph)	presUxsskyCover
obs rpt (mb)			dir/spd	
1100 (1107)	----	70.2(V)/69.00	32°/003	
1115 (1122)	----	71.0(V)/69.90	3°/004	
1130 (1137)	----	71.5(V)/70.30	3°/005	
1145 (1152)	----	71.9(V)/70.60	354°/004	

Warning: Applet Window

2378 stations loaded in 13.2 seconds

Internet

Start 8:33 AM

Hurricane Surface Reports:  
Examples & Forms Used at  
WX4NHC

# Online Hurricane Weather Report Form

Amateur Radio Operators and Volunteer Weather Observers within 300 miles of a hurricane are asked to send information listed on this hurricane report form to the National Hurricane Center.

***SAFETY FIRST! Please do NOT put yourself in any danger trying to collect information.***

**Please be sure to indicate if the information is Measured or Estimated**

***Please report only winds over 35mph or significant weather events.***

Reporting Station :  (Amateur Radio Callsign or First & Last name)

Email Address:

Phone:  (area code) + number

Geographic Location:

Address:

City:  State:  Zip:

Country:

Location (Latitude/Longitude):  N  W

Date of Observation:  month  day  year

Time of Observation:  GMT UTC

(GMT - Greenwich Mean Time is preferred) (also known as Zulu or UTC)

**Please indicate if your Wind Measurements are measured with weather instruments or estimated.**

Indicate if Measured or Estimated ? :  Estimated

Sustained Wind Speed:  MPH

(One minute)

Gust Speed:  MPH

Wind Direction:  Dir  Degrees

Barometric Pressure:  Millibars

(must be attained using calibrated barometer.)





AMATEUR RADIO STATION – WX4NHC  
AT THE  
NATIONAL HURRICANE CENTER

**WEATHER SURFACE REPORT**

**Hurricane:**

Observation Station Call Sign (or full name):	
Geographic Location (city, state, country):	
Distance from ocean:	Height above sea level:
GPS Location: (Latitude/Longitude): _____ North / _____ West	

Date:	Observation Time:	<input type="checkbox"/> GMT	<input type="checkbox"/> LOCAL
-------	-------------------	------------------------------	--------------------------------

<b>WIND SPEED:</b> _____ <i>(SUSTAINED ONE MINUTE)</i>	<input type="checkbox"/> MPH	<input type="checkbox"/> KNOTS/H	<input type="checkbox"/> KILOMTR/H
<b>GUST WIND SPEED:</b> _____	<input type="checkbox"/> MPH	<input type="checkbox"/> KNOTS/H	<input type="checkbox"/> KILOMTR/H
<b>WIND DIRECTION:</b> _____			

<b>Barometric Pressure:</b> _____ <i>CALIBRATED TO SEA LEVEL?</i> _____	<input type="checkbox"/> INCHES	<input type="checkbox"/> MILLIBARS
	<input type="checkbox"/> FALLING	<input type="checkbox"/> RISING

<b>Surface Observations:</b> <i>Flooding, sea level storm surge, Rain amount, Damage Report.</i>

<b>WX4NHC Operator on duty:</b> _____
Relayed by: <input type="checkbox"/> HWN <input type="checkbox"/> VOIP <input type="checkbox"/> APRS <input type="checkbox"/> ON-LINE/EMAIL <input type="checkbox"/> OTHER: _____



## WX4NHC Amateur Radio Surface Report

### HURRICANE RITA

Date : SEP 24 2005 07:15 AM CDT

Callsign : WM6V "Flo",  
Livingston Memorial Hospital

Location : Livingston, Texas

Comments :

Hospital:

Doors at Emergency Room Entrance have blown-in.

School:

Roof was lifted off of the Timber Creek Primary School cafeteria building.

This school is being used as a hurricane shelter with 280 people.

No injuries reported or assistance requested at this time.

Building is one story. Roof is a flat type roof.

Received from the VoIP Hurricane Net  
Sub\_NC : Rob-KD1CY  
Email : rmacedo@rcn.com

Reported by a Ham Radio operator, "Flo" at the Hospital that was in communications with local Ham Operators on VHF.

Flo was using a small VHF Radio on emergency power in the Hospital and was able to relay reports to NHC in Miami via a VHF Repeater that was connected to IRLP/Echolink Internet Linking service.



## WX4NHC Amateur Radio Surface Report

### HURRICANE OPHELIA

Reporting Weather Volunteer Observer :  
K4JVP, John Van Pelt "Storm Study Team"

Geographic Location  
Atlantic Beach, NC





## WX4NHC Amateur Radio Surface Report

### HURRICANE RITA





## WX4NHC Amateur Radio Surface Report

### TS Cindy

Online Surface Weather Report Submission from:  
Amateur Radio Operator KC4MQU Robert Mills,  
[KC4MQU@yahoo.com](mailto:KC4MQU@yahoo.com), Tel: - - - - -  
**Offshore platform ST-308 "Tranatula",**  
28.9.41 Deg. North / 90.13.40 Deg. West  
about 80 miles south of Louisiana.

Date of Observation: July 5, 2005  
Observation Time: 1800 Central  
Wind Measurements: **Measured**  
**Sustained Wind Speed: 60 MPH**  
**Gust Speed: 99.5 MPH**  
Wind Direction: Dir ? 349 Degrees  
Barometric Pressure: 994 Millibars

#### Comments:

It's the worst I have seen all day, now I am concerned.

...

Been a long day.

Thanks for letting us be a part of yours...

the crew of "Tranatula" ST-308

- - - - -  
Instrumentation Comments:

We are using an Extech mini-anemometer model 45118 and our large unit is a Young Instruments Model 05103. mounted approx 150 ft off sea level, adjacent to our heliport. Both units are new and installed by manufactures recommendations.

-----  
*Surface reports from this station being relayed by Julio Ripoll WD4R*

# NHC Surface Weather Report

From: WB4QDX To: WX4NHC@WX4NHC.ORG

Hurricane	Zulu (WX4NHC Test)
Reporting Station Callsign	W4BEM Voice (D-STAR Net)
Geographic Location	Plantation, FL (Broward County EOC)
Latitude	26.124
Longitude	80.249
Date	31-May-2014
Time of Observation	7:32:41
Wind Speed	4
Units	MPH
Measurement	Measured
Wind Gust	0
Wind Direction	SE
Barometric Pressure	30.1
Pressure Units	Inches
Comments	84degrees Jim Broward Co EMA
Operator	Relayed by: WB4QDX John Davis (D-STAR/D-RATS)



**National Weather Service**  
**Tropical Prediction Center**  
**National Hurricane Center**

**Tropical Cyclone Report**

**Hurricane Ivan**

*2 - 26 September 2004*

**Stacy R. Stewart**  
**National Hurricane Center**

16 December 2004  
Revised: 6 January 2005

**Ivan was a classical, long-lived Cape Verde hurricane that reached Category 5 strength three times on the Saffir-Simpson Hurricane Scale (SSHs). It was also the strongest hurricane on record that far south east of the Lesser Antilles. Ivan caused considerable damage and loss of life as it passed through the Caribbean Sea.**

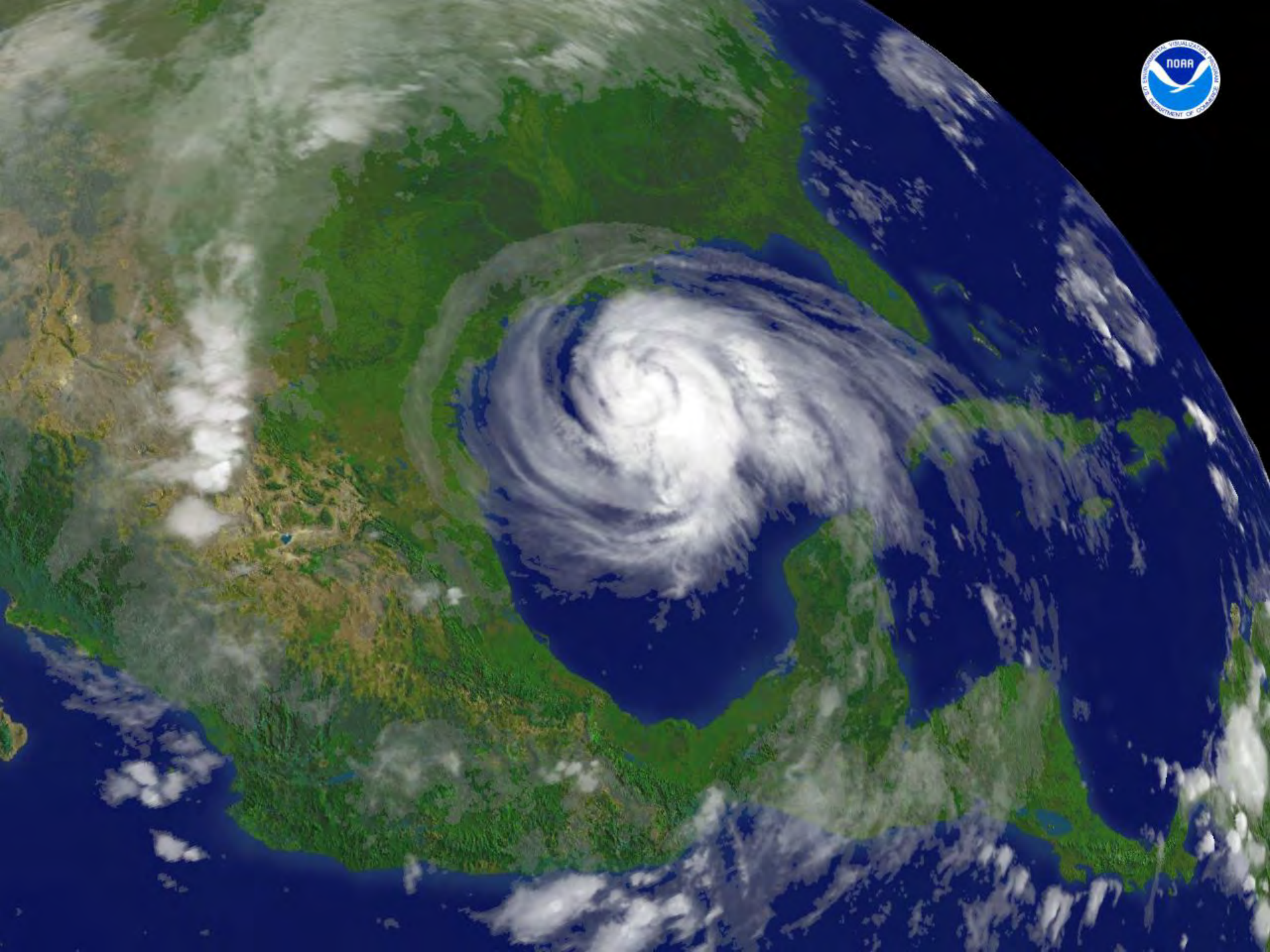
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**Acknowledgments**

NWS/WFOs Houston/Galveston, Huntsville, Jacksonville, Key West, Lake Charles, Mobile, New Orleans (Slidell), Tallahassee, and Tampa Bay, and the NOAA Hydrometeorological Prediction Center and the NOAA Southeast River Forecast Center contributed many of the observations contained in this report.

**Amateur Radio (HAM) operators throughout the Caribbean region and those working as part of the National Hurricane Center's WX4NHC Hurricane Watch Net team (<http://www.fiu.edu/orgs/w4ehw/>) were indispensable in providing critical reports as Ivan moved through the Windward Islands and across the Caribbean Sea.**

*Full Report at this web address:*  
<http://www.tpc.ncep.noaa.gov/2004ivan.shtml>









- **Mission** -  
**Save Haiti**



UNIVERSITY OF MIAMI  
MILLER SCHOOL  
of MEDICINE





# QST

DEVOTED ENTIRELY TO AMATEUR RADIO

April 2010

WWW.ARRL.ORG



Amateur Radio  
Communications  
Station



MILITARY AFFILIATE  
RADIO SYSTEM

### QST reviews:

53| **Alinco DJ-G7T** Tri-band Handheld Transceiver

56| **Green Heron Engineering** GH Everywhere Wireless Cable

58| **International Radio** Roofing Filter for the IC-756PROIII

### Inside:

41| **Build a 160 Meter Vertical Antenna**

47| **Design an Effective Dipole Based on Real World Variables**

49| **Power your Handheld with a Switching Regulator**

68| **Meet the New ARRL President**

Hams Respond to  
**Haiti Crisis**

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\$4.99 US \$6.99 Can.



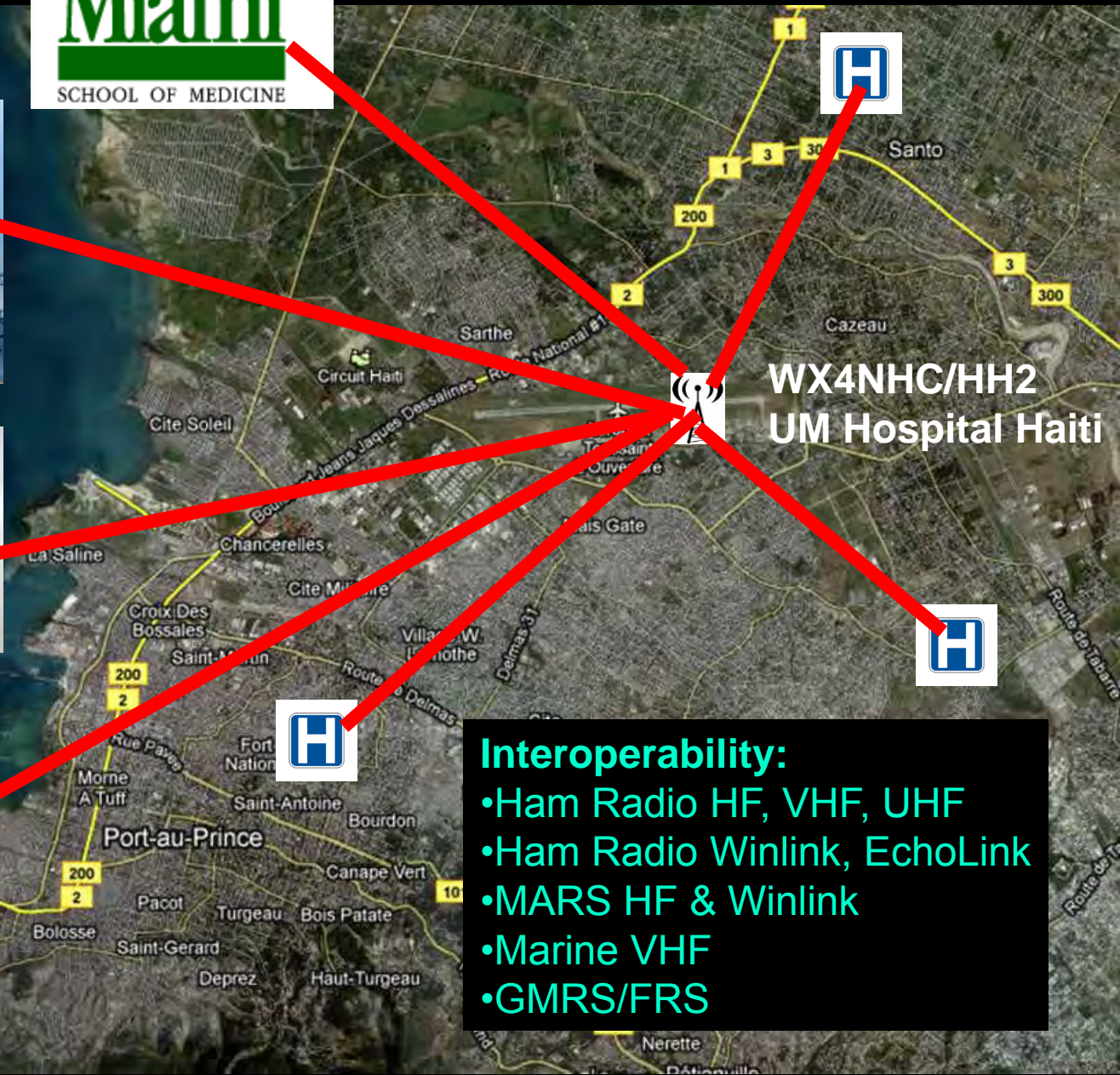
Visit the  
**ARRLWeb** at  
[www.arrl.org](http://www.arrl.org)

Official Journal of  
**ARRL** The national association for  
AMATEUR RADIO™





**WX4NHC/UMH**  
**UM Hospital Miami**



**WX4NHC/HH2**  
**UM Hospital Haiti**

- Interoperability:**
- Ham Radio HF, VHF, UHF
  - Ham Radio Winlink, EchoLink
  - MARS HF & Winlink
  - Marine VHF
  - GMRS/FRS





# Haiti Earthquake Video

**Available on You Tube.com**  
**Search for WX4NHC**



The background features a large, stylized Haitian flag with blue and red diagonal stripes. In the upper left, there is a smaller, tilted version of the national coat of arms. Below the main title, a green topographic map of Haiti is shown with red concentric circles indicating a seismic event's epicenter near Port-au-Prince.

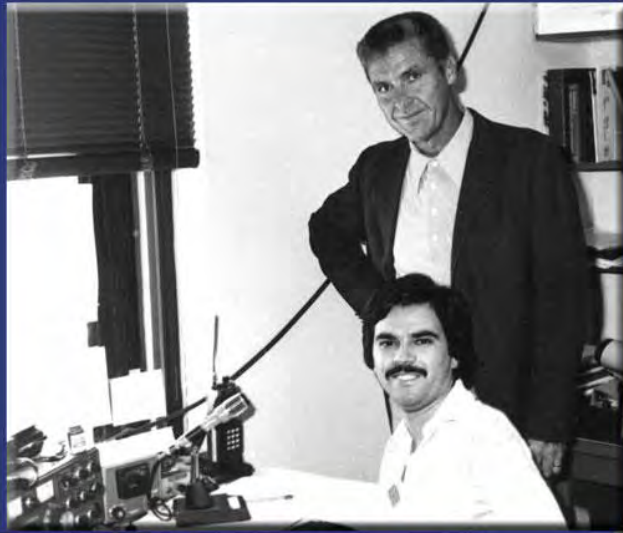
# Disaster in **HAITI**

*Dominican  
Republic*

Port-au-Prince



6:08 58"



Volunteer Public Service  
at the  
National Hurricane Center  
since 1980



WX4NHC Operators

**Please join us in our mission,**



**to help save lives.**





# National Hurricane Center Amateur Radio Station WX4NHC



## Thank You



[www.wx4nhc.org](http://www.wx4nhc.org)

