



October 2007

# VoIP Hurricane Net Newsletter

Volume 1, Issue 2

## Felix: Second Category 5 to Make Landfall, Net Activates!!

**Weather Radio Recall**

**LA Nina Returns?**

**A Closer Look at the WC-130J**





# VoIP Hurricane Net News

October 2007

- Welcome
- Don't forget our Saturday Night Prep Net !!
- If you would like to submit an article, send them to me at kf6bka@voipwx.net by the 25th of each month

Your monthly update about the VoIP Hurricane Net !!

Volume1, Issue 2

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## From The Editor

September has been an impressive month. There were 8 named storms, we have broken a few weather records with two category 5 hurricanes making landfall in the same season and two making landfall in the same country at the same time. The conclusion that we all can draw from this is that as we continue in this period of heightened activity that we must prepare. I personally have reconfigured

my station a few times so far and have made plans for emergency power. This month most places are running a Simulated Emergency Test and I would encourage you to participate and use it for a learning experience. Do it the way you would if your town got hit by a cat 5, not as a club cook out!!! When I was at GAREC-07 one speaker made the point that the lessons learned in Katrina were the

same lessons learned in Camille and forty other storms since then. I believe we should take a look back at those lessons. Did we fix everything?

This issue you will see some changes as the publication grows. Please take the time to fill out the survey in this issue so I can continue to make this the best publication possible for you! I have no experience doing

this kind of thing so all input is very valuable to me. As always please feel free to write an article or if you'd like to do a monthly Column that would be great too! Just send me an email!

## VoIP Hurricane Net Secures as Hurricane Felix Slams Northeast Nicaragua

Hurricane Felix made landfall as a Catastrophic Category-5 Hurricane causing significant damage in Northeast Nicaragua and heavy rainfall into Southeast Honduras. The threat from Felix will be moving from significant wind damage to major flooding over the course of the day Tuesday. The VoIP Hurricane Net was active from 400 AM EDT/0800 UTC through 8 PM EDT/0000 UTC to gather reports for WX4NHC, the Amateur Radio station at the National Hurricane Center

"We have received reports of significant damage in Puerto Gabezas, Nicaragua to many structures with phone and power out. The Puerto Gabezas Hospital has been evacuated due to significant flooding and 2 ships and 35 fishermen on those ships are missing" said Rob Macedo-KD1CY, Director of Operations for the VoIP Hurricane Net.

Reports were relayed from various sources. XE2WCG-Carlos from Tampico, Mexico has relayed reports from the Nicaragua Emergency Net on 40 Meters and has assisted with Spanish translation of those reports for the net. Additional Spanish translators, NP30D-Franisco from the VoIP Hurricane Net Control team and EB1FGO-Andoni from IRESC, the International Radio Emer-

gency Support Coalition, monitored other sources such as Nicaragua TV for information on what was happening in the affected area.

"We attempted to relay reports from any means that cannot be monitored directly from the National Hurricane Center" Macedo said

Amateur Radio was lauded by the President of Honduras over local media on the Voice of Honduras radio station. "The President of Honduras, Senor Manuel Zelaya Rosales says thanks to the community of radio hams for the aid".

EB1FGO-Adoni and a team of translators from IRESC brought this news to the VoIP Hurricane Net.

IRESC also relayed a report to the VoIP Hurricane Net from Nicaragua TV that 5500 homes were destroyed. 13,000 people had officially been evacuated and 38,000 total people were affected by Catastrophic Hurricane Felix. Further reports that the VoIP Hurricane Net handled during this activation can be seen from the VoIP Hurricane Net web site's report viewer link off the main menu of their web site.

WX4NHC, the Amateur Radio Station at the National Hurri-

cane Center monitored the VoIP net and other systems to gather reports and information. Julio Ripoll-WD4R, Assistant WX4NHC coordinator, stated that "Felix was the second CAT-5 Atlantic Hurricane to make landfall as a CAT-5 this year. This has never happened before in recorded history. The Ham Radio reports will be part of this historic hurricane's official NHC archives."

Ripoll also stated, "WX4NHC extends its sincere thanks to all the Ham Radio Operators from many countries and Nets for being the link between NHC and those in the path of this extremely powerful and dangerous hurricane. We hope that our continued efforts to spread the hurricane warnings will help save lives. Our thoughts and prayers are with those people who were affected by Hurricane Felix, and hope that they can rebuild their lives quickly."

Felix was weakening rapidly over land but the remnants of Felix still posed a major river and stream flood threat with the potential of landslides for Nicaragua and Southern Honduras. —ARRL.org



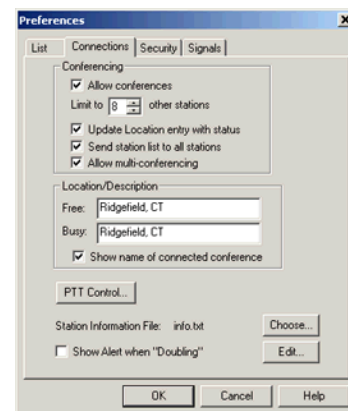
### Technical Tips and Tricks by Rob KD1CY: Conference Capability

The integrated EchoLink/IRLP conference capability that we utilize has an automatic conference killer script. If a conference is detected, the conference will be automatically kicked off the system. The reason for this is to prevent unintentional interference to the net by someone conferencing into the station connected to our net. This is the source of 90% of the interference we've had in past nets. The station is unaware that the node is connected to a net and connects to the system and unintentionally causes interference. Conferences interested in being setup as listen only should contact the VoIP Hurricane Net Management team so we will

grant permission for the conference to be connected. EchoLink nodes/links in the affected area are asked, if possible, to turn conferencing off when connecting to our net to prevent interference. At the same time, this may not be possible and EchoLink nodes/links in the affected area that must have conferencing enabled or cannot easily shut it off can email the net management team and we will grant the exception. If we notice a link from the affected area of a hurricane that is being disconnected by the conference killer script, we will go in and grant permission for the link to remain on the system as well so if your link is in the affected area and gets

disconnected, please be patient, reconnect and we will grant the exception. If its possible to disable conferencing, we would prefer that to happen but if it cannot be disabled, again, we will grant the exception.

For PC and link users that can disable conferencing, you can disable conferencing by going into Tools -> Preferences -> Connections and make sure the Allow Conferencing check box is deselected (ie: no check in the check box next to allow conferencing). This will prevent you from being kicked off the system if someone connects to you if you have conferencing enabled.



### Once Again, Hurricane Center Needs a New Director

For the second time in less than a year, federal officials formally began the search for a new director of the National Hurricane Center, but a leading candidate swiftly took himself out of contention Monday. Ed Rappaport, a veteran hurricane forecaster who now serves as interim director and had been deputy director, said he was not seeking the top position – one of the most prominent, demanding and

time-consuming in government meteorology. "The timing of this position is not right, both personally and professionally, so I have chosen not to apply," said Rappaport, 49, who lives in Pembroke Pines. He did not elaborate. The job posting came two weeks after the announcement that Bill Proenza, who took over the position in January and was ousted in July after a staff mutiny, was returning to his previ-

ous National Weather Service job in Texas. Other leading candidates to run the center in West Miami-Dade include Bill Read, the center's interim deputy director, and hurricane specialist Richard Knabb, both of whom applied last time. Knabb said Monday that he would seek the job again. "I've got to get to work on the application," he said. Read said he would "most

likely" make another try for the post. The National Oceanic and Atmospheric Administration said applications would be accepted until Oct. 24. The job pays between \$111,676 and \$168,000 per year.

— Martin Merzer *MiamiHerald.com*

### Fictional Hurricane Zoey Strikes Florida's Largest Newspaper

Two weeks ago, WFO Tampa Meteorologist-in-Charge Brian LaMarre and Warning Coordination meteorologist Daniel Noah collaborated with management of the St. Petersburg Times newspaper to conduct a hurricane preparedness exercise. The fictional category 4 Hurricane "Zoey" made landfall just north of Tampa Bay and produced a storm surge of 18 to 22 feet - a worst case scenario for Pinellas County and the greater Tampa Bay Area. Pinellas County is the home of The Times and one million people. Dur-

ing impacts from a major hurricane, the county will become a barrier island. Regarding the effects from a high-impact event, Pinellas County is second only to New Orleans as the most vulnerable place for a hurricane to strike. Visual images of county inundation led to gasps from managers participating in the exercise, and turned the words "20 foot storm surge" into a realistic benchmark for their Continuity of Operations plan. For instance, ahead of the storm, The Times could be forced to retrieve a

large number of the more than 7,000 newspaper racks in the Tampa Bay area to prevent additional flying debris and limit damages to property. Throughout the exercise, the newspaper's team reevaluated action plans - with an emphasis on refining printing requirements the day after a hurricane's impact should debris and flooding hamper production. During an open forum for suggestions, The Times adopted Noah's suggestion of creating a toll-free number (similar to 1-888-NOAA-

911) to account for personnel and collect pertinent information regarding their well being during an emergency. — *National Weather Service Southern Region Headquarters*



### Hurricane Hunters Fly Felix

The Air Force Reserve Hurricane Hunters are currently deployed to St. Croix in the U.S. Virgin Islands where they are flying state-of-the-art WC-130J aircraft into Hurricane Felix in support of the National Hurricane Center. Hurricane Felix very quickly became a monstrous category five hurricane in a matter of days and its path is ominously close to that of Hurricane Dean that hit the Mexico shoreline causing wind damage and flooding. The data collected by the Air Force Reserve Hurricane Hunters led the National Hurricane Center to name the storm initially and incrementally raise the intensity to five, the strongest category for a storm. The Hurricane Hunters recorded Felix's minimum central pressure at 28.387 inches, moving toward the west-northwest at 18 mph, with sustained winds increasing to 165 mph. Felix is a major Category 5

hurricane on the Saffir-Simpson scale. The National Hurricane Center expects the storm to affect Honduras with a direct hit to Belize in the next few days. Another reconnaissance mission is scheduled for tonight and the unit will continue rotating aircraft through the storm until it is no longer a threat. The 2007 season started with Sub-Tropical Storm Andrea on May 9. Since then, the season has been slow, which has allowed more aircraft to be equipped with the Stepped-Frequency Microwave Radiometer, affectionately called the 'smurf' Hurricane Hunters are using the 'smurf' technology on flights in to Hurricane Felix. The 'smurf' allows the Citizen Airman of the Hurricane Hunters to constantly measure surface winds directly below the aircraft. The 'smurf' can also determine rainfall rates within a storm system. This, in addition to wind speeds at flight level provides struc-

tural detail of the storm. "The SFMR will be the biggest advance I can think of to improve hurricane intensity forecasts," said Max Mayfield, former director of the NHC. The data collected by the Hurricane Hunters increase the accuracy of the NHC forecast by 30 percent, a rate which will undoubtedly increase with the use of the 'smurf.' This data enables the NHC to more accurately predict the path of storms in order to save lives and narrow areas of evacuation, according to NHC forecasters. One WC-130J aircraft will be equipped with the SFMR each month until all 10 WC-130J aircraft are outfitted with the SFMR pod.

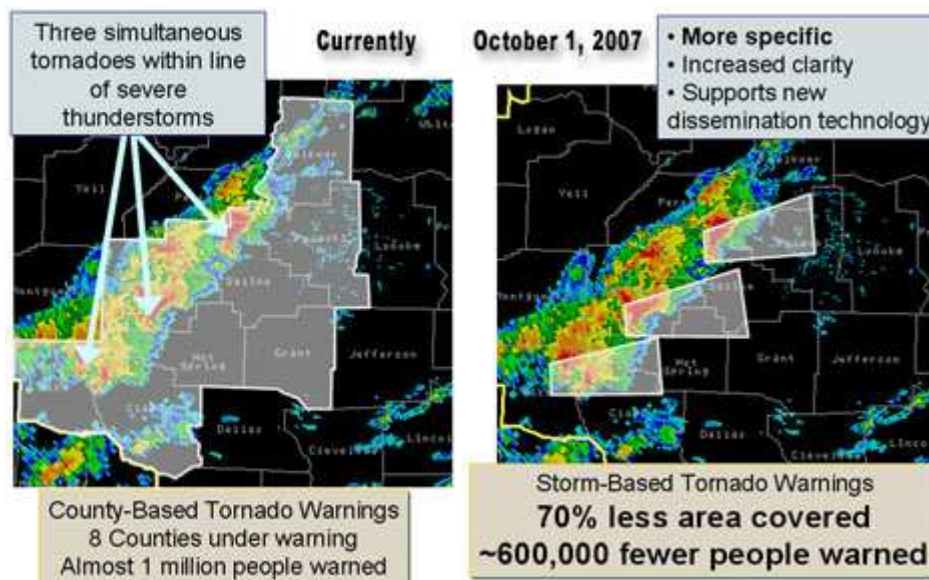
-403rd Wing Public Affairs



### National Weather Service Starts Storm Based Warnings

The National Weather Service (NWS) mission is defined as the provision of weather forecasts and warnings for the protection of life and property and the provision of weather information for the Nation's economic well-being. The NWS currently issues and disseminates warnings for tornado, severe thunderstorm, flood and marine hazards using geopolitical boundaries. Realizing the continuing need to improve the specificity and accuracy of warnings for tornadoes, severe thunderstorms, floods and marine hazards, the NWS will implement **Storm-Based Warnings** on October 1, 2007. **Storm-Based Warnings (threat-based polygon warnings)**, are essential to effectively warn for severe weather. **Storm-Based Warnings** show the specific meteorological or hydrological

threat area and are not restricted to geopolitical boundaries. By focusing on the true threat area, warning polygons will improve NWS warning accuracy and quality. **Storm-Based Warnings** will promote improved graphical warning displays, and in partnership with the private sector, support a wider warning distribution through cell phone alerts, pagers, web-enabled Personal Data Assistants (PDA), etc. - NOAA



## Profiling a Hunter—A Closer Look at the WC-130J

### MISSION:

The WC-130J Hercules is a high-wing, medium-range aircraft used in weather reconnaissance missions. This plane is a C-130J transport configured with palletized weather instrumentation for penetration of tropical disturbances and storms, hurricanes and winter storms to obtain data on movement, size and intensity. The WC-130J is the weather data collection platform for the 53rd Weather Reconnaissance Squadron.

### FEATURES:

The aircraft is capable of staying aloft almost 18 hours at an optimum cruise speed of more than 300 miles per hour. An average weather reconnaissance mission lasts 11 hours and covers almost 3,500 miles. The crew collects and reports weather data as often as every minute.

The WC-130J carries a minimal crew of five: pilot, co-pilot, navigator, aerial reconnaissance weather officer and weather reconnaissance loadmaster. The crew and the aircraft are assigned to the 53rd WRS, an Air Force Reserve Command unit assigned to the 403rd Wing at Keesler AFB, Miss. The 53rd WRS, known as the Hurricane Hunters, is responsible for the reconnaissance mission in the Atlantic Ocean, Caribbean Sea, Gulf of Mexico, and Eastern and Central Pacific Ocean areas.

From the front of the cargo compartment, the Aerial Reconnaissance Weather Officer operates the computerized weather reconnaissance equipment and acts as flight director in the storm environment. The weather officer also evaluates other meteorological conditions such as turbulence, icing, visibility, cloud types and amounts, and ocean surface winds. The ARWO uses the equipment to determine the storm's center and analyze atmospheric conditions such as pressure, temperature, dew point and wind speed.

A critical piece of weather equipment on board the WC-130J is the dropsonde system. The GPS Dropsonde Windfinding System is a cylindrical-shaped instrument about 16 inches long and 3.5 inches in diameter and weighs approximately 2.5 pounds. The dropsonde is equipped with a high frequency radio and other sensing devices and is released from the aircraft about every 400 miles over water. As the instrument descends to the sea surface, it measures and relays to the aircraft a vertical atmospheric profile of the temperature, humidity and barometric pressure and wind data. The dropsonde is slowed and stabilized by a small parachute. The Dropsonde System Operator receives, analyzes and encodes the data for transmission by satellite.

Beginning in May 2007, the WC-130J will be equipped with the Stepped-Frequency Microwave Radiometer, which continuously measures the surface winds and rainfall rates below the aircraft.

The WC-130J provides data vital to tropical cyclone forecasting. The WC-130J usually penetrates hurricanes at an altitude of approximately 10,000 feet to collect meteorological data in the vortex, or eye, of the storm. The aircraft normally flies a radius of about 100 miles from the vortex to collect detailed data about the structure of the tropical cyclone.

The information collected makes possible advance warning of hurricanes and increases the accuracy of hurricane predictions and warnings by as much as 30 percent. Collected data are relayed directly to the National Hurricane Center, in Miami, Fla., a Department of Commerce weather agency that tracks hurricanes and provides warning service in the Atlantic area.

### SPECIFICATIONS:

Primary function: Weather Reconnaissance

Primary contractor: Lockheed-Martin

Power plant/manufacturer: Four Rolls-Royce AE 2100D3 turboprops

Horsepower: More than 4,700 horsepower each engine

Length: 97 feet, 9 inches (29.3 meters)

Height: 38 feet, 10 inches (11.9 meters)

Wingspan: 132 feet, 7 inches (39.7 meters)

Speed: 417 mph/362 ktas (Mach 0.59) at 22,000 feet (6,706 meters)

Ceiling: 28,000 feet (8,615 meters) with 42,000 pounds (19,090 kilograms) payload

Maximum Range with 35,000 pound payload: 1,841 miles (1,600 nautical miles)

Maximum takeoff weight: 155,000 pounds (69,750 kilograms)

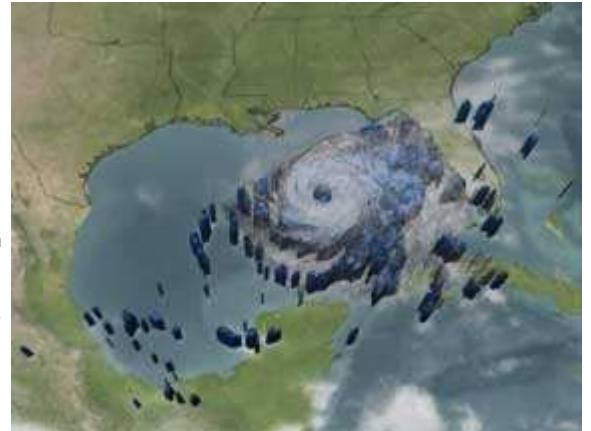
Crew: Five (pilot, co-pilot, a navigator, aerial reconnaissance weather officer, and weather reconnaissance loadmaster)



### New Lightning Sensors Warn of Hurricane's Power From Far Away

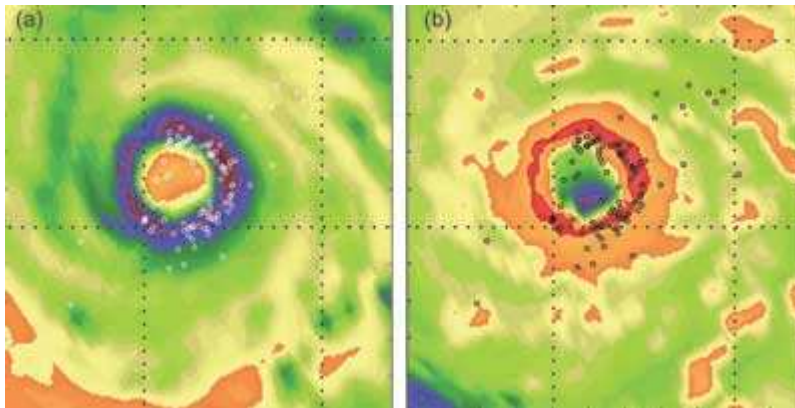
A NASA-supported study has introduced a new way to detect lightning outbreaks inside a hurricane from thousands of miles away, giving forecasters new insight into just how powerful an oncoming storm will be.

**Image right:** On Sept. 22, 2005, Hurricane Rita threatened the U.S. Gulf Coast. NASA's TRMM satellite helped create this three-dimensional view of the storm; storm clouds shown here in white. Credit: NASA



As a result, researchers can now investigate with greater accuracy how the rate of lightning strikes produced within a hurricane's eyewall is tied to the changing strength of that hurricane. A hurricane's eyewall is the inner heat-driven region of the storm that surrounds the "eye" where the most intense rainfall and most powerful winds occur. By monitoring the intensity of lightning near a hurricane's eye, scientists will be able to improve their forecasts of when a storm will unleash its harshest conditions.

During the study, researchers used data from a growing network of new, long-range, ground-based lightning sensors, a NASA satellite and aircraft-based sensors. They explored the relationship between eyewall lightning outbreaks and the intensity of two of the most severe Atlantic storms on record before they made U.S. landfall: category five hurricanes Katrina and Rita. An article on this research, also supported by the U.S. Office of Naval Research, will be published in the American Meteorological Society's Monthly Weather Review later this year.



**Image above:** TRMM's Microwave Imager collected data as the satellite passed over the center of Hurricane Rita and lightning strike locations (circles) on Sept. 21, 2005. The left image indicates the temperature of the ice particles; the right image indicates the concentration of ice particles in the hurricane eyewall. Ice is important for charge separation in the clouds needed to produce lightning. Credit: NASA

"There are very few observing systems that offer a broad view of a storm over the open ocean where hurricanes tend to build or lose strength," said lead author Kirt Squires, a recent graduate of the meteorology program at the University of Hawaii in Honolulu. "What's really compelling about the new sensors is their increased sensitivity to pick up lightning's electromagnetic signal over water from such a long distance. As a result, we can see thunderstorm activity over the ocean from thousands of miles away for the first time. This development is essential to improving the way meteorologists can look at a growing storm to judge just how harsh it will be."

When water condenses from vapor into a cloud droplet, latent or hidden heat is released, which in turn builds updrafts – air moving upwards in a cloud. Latent heat provides the energy that fuels hurricanes. If the ensuing updrafts are strong enough, they can cause the separation of charge that produces lightning. The tight correlation between the rate of lightning strikes, the amount of rainfall and the heat released in the eyewall of a storm allows the lightning rate data to be useful in computer models that forecast hurricane track and intensity.

"Hurricane forecasters and researchers are very interested in developing methods that allow a continuous examination of the structural growth of the eyewall within hurricanes," said co-author Steven Businger, a senior professor of meteorology at the University of Hawaii. "The fact that lightning is directly linked to the heat energy released in the eyewall makes it a priority for us to examine the evolution of lightning within a storm."

Researchers studied data on intensity and lightning strike rate from hurricanes Katrina and Rita, both from 2005. They were trying to determine whether a link existed between the two traits. The researchers combined data from NASA's Tropical Rainfall Measuring Mission satellite's microwave radiometers and from sensors onboard the National Oceanic and Atmospheric Administration's P-3 "hurricane hunter" aircraft that fly into the storm, with the enhanced sensor capability of the NASA co-funded Pacific Lightning Detection Network.

The network comprises four state-of-the-art, long-range, high-sensitivity sensors located around the central northern Pacific Ocean. Businger is working with the U.S. division of Finnish technology firm Vaisala, Tucson, Ariz., and other agencies to expand the network with eight additional sensor sites by the end of 2008. It is part of the larger North American Lightning Detection Network of nearly 200 sensors that monitors lightning over the Gulf of Mexico and the Atlantic and Pacific oceans. Though Businger acknowledges that more research is needed, results from this study show that the growth and density of lightning strikes in a hurricane's eyewall provide important insight into the inner workings of the most powerful storms on Earth, information that may in the future help save lives through improved hurricane forecasts. —NOAA

**Weather Radio Recall**

The U.S. Consumer Product Safety Commission, in cooperation with the firm named below, today announced a voluntary recall of the following consumer product. Consumers should stop using recalled products immediately unless otherwise instructed.

**Name of Product:** Oregon Scientific Weather Radios

**Units:** About 66,000

**Manufacturer:** Oregon Scientific Inc., of Tualatin, Ore.

**Hazard:** The radios could fail to receive National Weather Service alert signals in certain areas of the country. In the event of severe weather, this failure could put a consumer's life and property at risk.

**Incidents/Injuries:** None reported.

**Description:** This recall involves the following Weather Radios and Weather Stations:

NAME	MODEL
All Hazards Portable Weather Alert Radio	WR103NX
Portable Public Alert Radio	WR108
Public Alert Weather Station	WRB308
John Deere Public Alert Weather Station	WRB308J

No other models are included in this recall.

**Sold at:** Retail stores nationwide, including some electronics and sporting goods stores, online retailers and in catalogs from December 2005 through June 2007 for between \$30 and \$150.

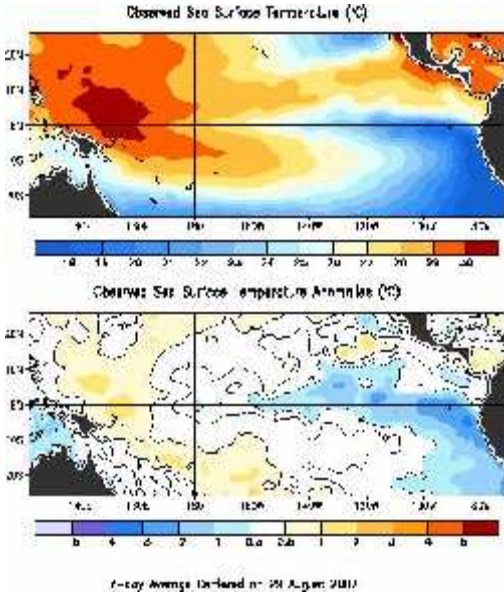
**Manufactured in:** China

**Remedy:** Consumers should not rely on the recalled weather radios to receive emergency information. Consumers should contact Oregon Scientific for instructions on returning the radio to receive a free replacement.

**Consumer Contact:** For additional information, contact Oregon Scientific at (800) 203-4921 between 8 a.m. and 5 p.m. PT Monday through Friday or visit the firm's Web site at [www2.oregonscientific.com](http://www2.oregonscientific.com) –NOAA



### La Nina Develops in the Pacific



Scientists with NOAA's Climate Prediction Center, in today's release of its monthly El Niño/Southern Oscillation (ENSO) Diagnostic Discussion, say that La Niña is on its way. "While we can't officially call it a La Niña yet, we expect that this pattern will continue to develop during the next three months, meeting the NOAA definition for a La Niña event later this year," said Mike Halpert, acting deputy director of the Climate Prediction Center in Camp Springs, Md.

La Niña refers to the periodic cooling of ocean surface temperatures in the central and east-central equatorial Pacific that occur every three to five years. NOAA declares the onset of a La Niña event when the three-month average sea-surface temperature departure exceeds -0.5 degrees Celsius (-0.9 degrees Fahrenheit) in the east-central equatorial Pacific [between 5 degrees North and 5 degrees South and 170 degrees West - 120 degrees West].

The development of La Niña conditions is supported by increasing below-normal-sea surface temperatures across the central and eastern equatorial Pacific and stronger-than-average easterly winds across the west-central equatorial Pacific. "Nearly all operational dynamical models, including the National Centers for Environmental Prediction's Climate Forecast System and many of the statistical models also favor a La Niña event," said Halpert.

With La Niña developing, seasonal forecasters expect wetter-than-normal conditions in the Pacific Northwest and drier-than-normal conditions in the already drought-stricken southwestern U. S. this Fall.

"These conditions also rein-

force NOAA's August forecast for an above normal Atlantic hurricane season," said Gerry Bell, Ph.D., NOAA's lead seasonal hurricane forecaster.

The Climate Prediction Center routinely publishes an assessment of ENSO conditions each Monday and the next official ENSO Diagnostic Discussion will be issued on October 11, 2007. The El Niño/Southern Oscillation Diagnostic Discussion is a product of the Climate Prediction Center in association with its funded institutions.

NOAA is dedicated to enhancing economic security and national safety through the prediction and research of weather and climate-related events and information service delivery for transportation, and by providing environmental stewardship of our nation's coastal and marine resources. Through the emerging Global Earth Observation System of Systems (GEOS), NOAA is working with its federal partners, more than 70 countries and the European Commission to develop a global monitoring network that is as integrated as the planet it observes, predicts and protects.



### Portrait of a Storm—New England Hurricane of 1938

The Great New England Hurricane of 21 September 1938 was one of the most destructive storms to ever strike New England. It killed over 600 people and devastated coastal communities in Long Island, Connecticut, Rhode Island, and Massachusetts. The storm, which formed in the Caribbean, moved quickly up the Atlantic seaboard.

On the preceding day, seas and winds were not particularly high, and New England coastal residents had little warning that severe weather was headed their way. The winds grew gradually during the morning of the 21st, and through the after-

noon and evening, 80-100 mph winds crushed houses, knocked down trees, and lifted barges and boats onto land. Throughout New York and New England, the wind and water felled 275 million trees, seriously damaged more than 200,000 buildings, knocked trains off their tracks, and beached thousands of boats. Damage from the storm was estimated at \$600 million. This value is in 1938 Dollars; multiplying by 10 provides an estimate in present currency.

Considering that wind and rain damage extended as far north as Rutland, Vermont, that entire city blocks burned in New Lon-

don and other industrial towns, and that downtown Providence, Hartford, and other cities were flooded, if this storm were to occur today, the cost of the damage wrought would be Staggering - Army Corps of Engineers



Damage to a building in Bristol. - Courtesy NOAA

At 4:45 p.m. the storm surge of the 1938 hurricane reaches the very heart of Providence, Rhode Island. Waves can be seen in front of the Biltmore Hotel (right building), while marooned pedestrians gather on the steps of Providence City Hall. RIGHT: Looking down Dorrance Street at the height of the hurricane. (Photos Providence Journal 1940).



## Station Profile—VK3JED Tony Langdon

My station is unusual in that it is distributed across two locations, 25km (15 miles) apart, which I will refer to Site 1 and Site 2.

Site 1 is the original station in the western suburbs of Melbourne, which consists of the VK3RTL 70cm repeater and its associated EchoIRLP and WIRES II systems. The repeater uses a Philips FM 828 as the transmitter, and an AWA RT 85 for the receiver. While the 828 is capable of full duplex operation, the RT 85 was chosen for its superior performance. A set of notch cavities couples the transmitter and receiver to the antenna. The control structure for the repeater is unusual in that the repeater controller takes a combined logic and audio signal from the rest of the system and controls the transmitter only. Separate logic and audio mixing is used to combine the VoIP systems. CTCSS on COS has also been implemented to allow ad-hoc linking to Site 2 for emergency purposes, without having to reconfigure the repeater. Other radio equipment at Site 1 includes an FM 92A 2m FM transceiver and a Plessey low band transceiver converted to 6m FM. A Sommerkamp FT-DX150 acts as a HF receiver (transmitter needs a bit of work). All radios except for the HF transceiver are battery backed up by a 50 Ah

sealed lead acid battery. Battery backup for the PC and Internet is still up in the air. I was using some UPSs, but wasn't satisfied with their standby time, and am considering my options here.

Internet at Site 1 is a cable service, capable of up to 10Mbps. The EchoIRLP node itself runs on a P200 system which also forms the firewall and NAT router. Ipv6 is also supported, to allow experimentation with the new generation Internet protocols. The second machine is a P4 2.8 Ghz, which runs Linux to allow secure Internet banking. This machine also runs Windows 2000 Server for the LAN infrastructure and Windows XP for the WIRES II node in separate VMware virtual machines. Wireless access points for 802.11a and 802.11b allow the operating position to be anywhere in the house.

Site 2 is located on a hill in the northern suburbs of Melbourne. The main radio equipment here consists of a Yaesu FT-480R all mode transceiver with a 100W power amplifier, and a Kenwood TM-G707A 2m/70cm FM transceiver. These are normally setup for EchoLink operation on their respective frequencies, with SSB being used on 2 metres. The two radios are connected to each other and the EchoLink PC via a home brew

PIC based controller, which allows them to operate as a crossband repeater. The PIC controller also has a timeout function, similar to a normal repeater. A Windows laptop runs EchoLink in sysop mode for VoIP at this site. Rounding out the shack is an Icom IC-745 HF transceiver.

As space is extremely limited in this shack, all operations except HF are conducted via remote. The EchoLink PC runs VNC to allow it to be controlled from the operating position across the LAN. This also allows participation in the text chat window. For audio, a HT is used to access the local EchoLink node on the UHF frequency. At this time, access is via the main 70cm frequency, but I plan to install a short range local link, to avoid issues when talking to local stations or when using the cross site backup link.

The LAN at Site 2 is a little less formally structured than at Site 1, because it had to incorporate some existing systems without disrupting their previously installed applications and data. Internet access here is ADSL2+ (actual line speed around 16 Mbps) via a D-Link modem and a Belkin router flashed with DD-WRT firmware. Additional access points provide 802.11a coverage and extend the 802.11b/g LAN to the shack.

PC access is via the laptop I'm typing this article from, as well as the work desktop, which is permanently sited at the normal operating position. This gives me a minimum of two displays for running nets. Rounding out the radio equipment is a fleet of HTs that are used to access the VoIP systems and local repeaters. The main radios are an Icom IC-T81A, IC-X2A and a cheap Chinese made 70cm transceiver. In time of Internet failure at either site, full VoIP operation can be restored across both sites by linking to the alternate site. The link is established by moving the 70cm frequency at Site 2 to the output of VK3RTL and decoding the repeater's tone. This capability has been used for at least two VoIP Net activations this season so far.

Future plans for my systems include the addition of a local UHF link at Site 2, upgrading the central logic at Site 1 to the same PIC based design as Site 2 uses and adding a D-STAR radio to the fleet. I am looking at the IC-91AD for this upgrade, as D-STAR is starting to take off here in Melbourne, and looks like becoming an important part of the radio scene. One of the WICEN (our equivalent to ARES) repeaters here is slated for a D-STAR upgrade in the near future.

## Weather and Radio On The Net

Our website for the month is:  
[www.hurricanefrequencies.com](http://www.hurricanefrequencies.com)

This is a comprehensive list of useful frequencies for Ham, Military, and other users. The lists latest addition is August 25th, 2007 and it seems the site owner Bill Snyder (AA6KC) is pretty adamant about keeping his site updated. The site

also features up to the minute solar data and a large amount of links for weather data. There is a section for marine fax as well. One thing that struck me when looking at this site was the large collection of links for health and welfare. Bill is a Red Cross volunteer in Los Angeles and this website shows his dedication to being prepared!! He also asks for help keeping

the site up by adding frequencies and pointing out any errors or omissions.

- Rich kf6bka@voipwx.net



**Your monthly update about the VoIP Hurricane Net !!**

VoIP Hurricane Net Manager—Kevin Anderson, KD5WX, kd5wx@voipwx.net

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Submit articles to kf6bka@voipwx.net

**Making A Difference!!**



**WE ARE LOOKING FOR EXPERIENCED NET CONTROLS!!**

If you are interesting in volunteering contact Jim Palmer, KB1KQW at kb1kqw@voipwx.net or Matt Hoppes, KB3MSE, at kb3mse@voipwx.net to schedule training.

**We are on the web!**  
[www.voipwx.net](http://www.voipwx.net)

**Photo of the Month**



**The weather station at Cape Henry, Virginia 1900 What a grand place to observe the weather that must have been! —NOAA**

Please copy and paste this short survey to an email and fill it out. Submit completed surveys and any comments to kf6bka@voipwx.net

As compared to the first issue, which format did you like the best?

- First issue
- Second issue

Do you feel like the newsletter is:

- Too long?
- Too short?
- Just right.

Do you feel that the newsletter is informative?

- Yes
- No

Have you distributed copies of the newsletter to anyone in your ham radio group or club?

- Yes
- No

Comments (write any comments at all here )