

# Preparing for Next Time

**W**ho could forget the 2005 hurricane season? This month we'll take a look at more routine public-service activities, training, and preparations for ham radio operators to respond at a moment's notice.

## Getting Ready

In early December several Hawaiian amateurs came together to prepare and manufacture HF radio "go kits" for use by hospitals located on the state's many islands. The project was funded by a grant from National Bioterrorism Hospital Preparedness Program, which is administered by the Health Resource and Service Administration. The grant was secured by Toby Clairmont, KH7FR.

The purpose of the National Bioterrorism Hospital Preparedness Program (NBHPP) is to prepare hospitals and supporting healthcare systems, in collaboration with other partners, to deliver coordinated and effective care to victims of terrorism and other public-health emergencies. The NBHPP program is intended to improve hospital-system preparedness for bioterrorism and other public-health emergencies.

"In the case of this project, it helps satisfy the need for interoperable, contingency communications together with commercial equipment we have put in place," said Clairmont. The commercial equipment includes Nextel base stations, tactical handheld radios, 800-MHz trunked radios, and satellite phones, supplemented by amateur gear.

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Ron Hashiro, AH6RH, and Joe Hunkler, NH7WL, mount the power supplies to the wooden bases. (Photo courtesy of Bev Yuen, AH6NF)



Carter Davis, KH6FV, and Bart Aronoff, WH6AA, test a radio after assembly. (Photo courtesy of AH6NF)

These kits were designed to be portable and stored in an EMP (Electromagnetic Pulse) resistant location to be deployed after the onset of an event.

## The Kit

A few years ago the group made several kits that featured amateur VHF/UHF dual-band mobile setups. These kits, however, would be set up for HF operations. In addition to the commercial gear listed above, each kit consisted of an ICOM IC-706 MKIIG multi-mode, multi-band transceiver, AT-180 antenna tuner, and a PS-125 power supply. They were mounted on a removable plywood base and enclosed in an orange Pelican transport case. The antenna was a Buddipole HF dipole and field tripod contained in a small carrying case.

The kits were put together by members of Healthcomm. The group enhances emergency communications of participating institutions of the Healthcare Association of Hawaii in times of emergency when normal means of communication are overwhelmed, failing, or non-existent.

The group develops effective and coordinated volunteer amateur radio communications in support of the healthcare institutions. Members assist the institutions with the technical requirements of amateur radio communications, within the guidelines of each institution and healthcare facility's regulations and standards. They provide support utilizing well-trained and experienced professionals who volunteer to assist the healthcare institutions.

The group was keenly aware of the importance of preparing for emergency communications. Many had supplied emergency communications during Hurricane Iniki in 1992. That storm ripped through the island of Kauai, causing massive devastation. The hurricane also damaged parts of



Carter Davis, KH6FV, beside one of the Buddipole antennas that will be part of each kit. Photo courtesy of AH6NF)



One of several HF radio go-kits shipped out to hospitals in Hawaii. (Photo courtesy of Toby Clairmont, KH7FR)

west Oahu. The group gained further insight into emergency communication needs from Clairmont. He was the team leader of the Hawaii DMAT (Disaster Medical Assistance Team) that provided medical relief in Louisiana after Hurricane Katrina.

### Work Day

The team arrived at Clairmont's home at 9 AM. He briefed the members on the project, the radio components, and the prototype of the plywood base he had created. The team immediately began to organize the materials, tools, and work effort.

"The corners of the plywood base were cut in order to fit within the interior of the case. Lines were dimensioned for the mounting location of the power supply, holes to be drilled and countersunk, and a groove to be routed near the front. The board was sanded, and the assembly started," said Ron Hashiro, AH6RH. "Two handles were screwed into the board for quick handling of the base. The power supply was partially disassembled and the bottom case screwed onto the plywood. The power supply was then reassembled, and the radio and antenna tuner placed onto the board between the two carrying handles with the front bail fitted into the routed groove. A hook-and-loop

strap across the handles held the radios in place. The radios, tuner, and power supply were wired together and tested on the Buddipole antenna."

The group finished the 14 radio kits in time for a pizza lunch.

Hashiro described some of the lessons learned and amplified from the work party. They included:

- Freeing up Clairmont as the workflow leader to be available to answer questions, get materials, and handle exceptions.
- Having an adequate supply of munchies, water, and work surfaces was important to success.
- Of immense value was the creation of a prototype jig, and having it available for display and study to the group. KH7FR did a quality orientation for the group in the shortest amount of time.
- Using <sup>3</sup>/<sub>4</sub>-inch plywood to allow the screw heads to be countersunk on the underside prevented the screw heads from scratching the tabletops. The depth of the countersink was verified manually by running the hand over the screw head.
- Having the plywood precut at a local lumber store ensured consistent outside dimensions.
- The initial woodworking consumed quite a bit of time. Next time, bring along more T-squares and steel rulers to

speed up the measurements and use as guides for the router.

- Apply masking tape along the T-square and mark critical dimensions onto the tape for quick, reproducible measurements.

- Ensure that two persons double check all dimensions and the woodwork of each board prior to assembly. Any defect in the woodwork required time to dismount the assembled electronic components prior to redoing the woodwork. One set of radio components should have been available to physically lay on each board to ensure all lines, holes, and grooves were in alignment prior to releasing the board to the assembly line.

- Setting up a second position next to the test bench allowed us to work in parallel to power up the next radio and set the mode and frequency while the previous radio was being tested through the antenna.

### Parade Time

On the east Coast, members of the Holmesburg Amateur Radio Club coordinated Santa's early arrival in Philadelphia in the Mayfair-Holmesburg Holiday Parade. The parade is the largest community-based parade in Pennsylvania. This marked the twelfth year that HARC members coordinated several





*Rich Shivers, KB3FGJ, and Mike Wurgley, N3LXN, conduct a final radio check before moving on to their assigned positions at the Mayfair-Holmesburg Holiday Parade in Philadelphia. (Photo courtesy of Beth Ann Johnson)*

thousand marchers in the staging area. They also kept an eye out for problems along the 1.5-mile route and stayed in contact with parade officials in the reviewing stand.



*A member of the Greater Kensington String Band entertains the crowd as Holmesburg ARC members keep an eye on the parade movement. (Photo courtesy of Beth Ann Johnson)*

HARC members stayed with six divisions which covered over 3 miles of city streets. In addition, members provided liaison with Philadelphia police and volunteer ambulance squads. A key element for club members was to provide information to the end of the parade on any changes in the order of march. Rich Shivers, KB3FGJ, came up with a simple but effective way to keep the line-up straight for the master of ceremonies. He made up a 5" x 7" card that had the name of each group marching as well as any commentary that would help describe the group for the spectators near the reviewing stands. Most communications are handled on a 2-meter simplex frequency; however, communications from the staging area to the end of the parade were handled by using a crossband 2-meter/70-cm repeater strategically placed along the parade route.

Club members had investigated using packet radio or other forms of digital communications to relay the information, but opted for a keep-it-simple approach because of possible weather problems and other working conditions near the reviewing stands.

While this year proved to be good fall-like weather, other years have gone from being very warm to very cold. This has presented a series of medical problems from dehydration to hyperthermia. Unfortunately, the extreme weather also contributed to the need to rush patients to a hospital. Club members say that by providing a service to the

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community, they can be better trained should there be a real emergency.

## Training

Speaking of training, now is a good time to take some of the Federal Emergency Management Agency's on-line courses that are now required for all first responders. Anyone working with a state or local government will be required to take certain courses as a condition of receiving federal preparedness funding assistance in FY 2007. That means that courses have to be completed by September 30, 2006.

These courses are part of the National Incident Management System. The training requirements will continue past this year as the United States' prevention, preparedness, response, and recovery capabilities improve and our homeland security landscape changes. Furthermore, new personnel will continue to need NIMS training, and NIMS processes will still have to be exercised in future years.

According to FEMA,

the successful implementation of the NIMS depends on the participation and integration of all state, territorial, and community-based organizations, including public, non-governmental and private organizations that may have a role in preventing, preparing for, responding to, or recovering from an incident. States, territories, tribes and local jurisdictions should therefore consider and include appropriate organizations in their NIMS implementation efforts, including private sector emergency medical and hospital providers, transportation systems, utilities, and special facilities such as industrial plants, nuclear power plants, factories, military facilities, stadiums and arenas. Moreover, full NIMS implementation is a dynamic and multi-year phase-in process with important linkages to the National Response Plan (NRP), the Homeland Security Presidential Directive - 8 (i.e. the "National Preparedness Goal") and the National Infrastructure Protection Plan (NIPP). Future refinement to the NIMS will evolve as policy and technical issues are further developed and clarified at the national level. This may well result in additional requirements being issued.

FEMA's Emergency Management Institute (EMI) serves as the national focal point for the development and delivery of emergency management training. This training enhances the capabilities of the federal, state, and local government, volunteer organizations, and the private sector to minimize the impact of disasters on the American public. EMI curricula, including the Independent Study Program (ISP) courses, are structured to meet the needs of

this diverse audience with an emphasis on how the various elements work together in emergencies to save lives and protect property.

## Description

Here's a description of some of the courses that will help with training of amateur radio groups.

**ICS 100, Introduction to the Incident Command System**, introduces the Incident Command System (ICS) and provides the foundation for higher level ICS training. This course describes the history, features and principles, and organizational structure of the

Incident Command System. It also explains the relationship between ICS and the National Incident Management System (NIMS).

**ICS 200** is designed to enable personnel to operate efficiently during an incident or event within the Incident Command System (ICS). ICS-200 provides training on and resources for personnel who are likely to assume a supervisory position within the ICS. IS-100 is a pre-requisite to the IS-200 course.

**IS-700 National Incident Management System (NIMS), An Introduction**. This course introduces NIMS and takes approximately three hours to

complete. It explains the purpose, principles, key components, and benefits of NIMS. The course also contains "Planning Activity" screens, giving you an opportunity to complete some planning tasks during this course. The planning activity screens are printable so you can use them after you complete the course.

**IS-800 National Response Plan (NRP), An Introduction.** Since the tragic events of September 11, 2001, our nation has resolved to better prepare to prevent terrorist attacks within the United States; reduce America's vulnerability to terrorism, major disasters, and other emergencies; and minimize the damage and recover from attacks, major disasters, and other emergencies that occur. These complex and emerging 21st century threats and hazards demand a unified and coordinated national approach to domestic incident management.

The National Response Plan, or NRP, specifies how the resources of the federal government will work in concert with state, local, and tribal governments and the private sector to respond to incidents of national significance. The NRP is predicated on the National Incident Management System, or NIMS. Together the NRP and the NIMS provide a nationwide template for working together to prevent or respond to threats and incidents regardless of cause, size, or complexity.

This course introduces you to the NRP, including the concept of operations upon which the plan is built, roles and responsibilities of the key players, and the organizational structures used to manage these resources. The NRP provides a framework to ensure that we all can work together when our nation is threatened.

### Getting Started

The easiest way to get started on these free courses is to go to the FEMA training website at <[www.training.fema.gov/EMIWeb/IS](http://www.training.fema.gov/EMIWeb/IS)>. Click on "Our Courses" on the left-hand side of the page, choose a course, and click on it.

### New International Emergency Frequencies

With so many international disasters occurring, the International Amateur Radio Union (IARU) has suggested that specific emergency frequencies should be established internationally to ensure that emergency nets can be activated rapidly after any international disaster. Global emergency frequencies of

21.360 MHz, 18.160 MHz, and 14.300 MHz were recommended. In Region I (Europe and Africa), these frequencies were adopted along with regional frequencies of 7.060 MHz and 3.760 MHz. Regions II (North and South America) and III (Asia and Oceania) have not met since the recommendations were made, but the matter will be on the agenda for their next scheduled conferences.

### Getting the Best Signal

RAYNET, the Radio Amateurs' Emergency Network, in Great Britain recently reported a story of hams providing communications for a most unusual rescue.

Coastguard and North Dyfed RAYNET members Keith Morgan, MW3LFL, Dave Mansell, GW8SFT, and Iwan Davies, MW3ROX found themselves participating in an unusual "rescue." Ray Ricketts, GW7AGG, told RAYNET that following a crime in the Borth area of Ceredigion, the thief had dumped a heavy safe down an old mineshaft near Goginan, a few miles to the east of Aberystwyth. According to Ricketts, the police wanted to recover the safe for fingerprint evidence, so the Coastguard team was asked to try and retrieve it. They knew that communications would be difficult down a mineshaft and normal Marine VHF would probably not work, so two methods were tried. The first was the UHF amateur band on 433.050 MHz. This held up well, with Keith operating as comms link at the top of the shaft until Iwan was near the bottom when the signal became noisy and barely readable.

As a backup Iwan had also lowered down the shaft a long length of RG58 with a small helical aerial on the end with the cable at the top connected to a handheld transceiver. This was used on VHF and gave solid copy. They had extra lengths of coax available to add on if the shaft had been very deep, and it would have been interesting to see how far this would have worked, but it was not needed. Both Coastguard and the safe were "safely" winched to the surface and the safe was handed over to the waiting detectives.

### Time to Get Back to Business

This month we talked about a few events that took place late last year. Now it's time to get down to studying, preparing a go-kit, and making sure you're ready to respond at a moment's notice.

The time we would like to thank Ron Hashiro, AH6RH, and RAYNET for providing information for this story.

Do you have a story to tell about amateur radio public service in your area? Drop us a note. Until next time . . .

73, Bob, WA3PZO