

ALTERNATIVE COMMUNICATIONS FOR AN EMERGENCY

BY JOHN WHITINGER

IT'S 1:30 A.M. AND YOU FIND YOURSELF STANDING NEXT to the chief in front of the local hardware store with heavy smoke and flames showing. The owner frantically approaches you and the chief to inform you that the store had received a huge shipment of really bad chemical stuff earlier today. The chief pulls out his handy DOT *Emergency Response Guidebook* and thumbs to the correct page. Looking up with that "deer in the headlights" look, he orders you to coordinate an evacuation of the adjoining residential area to no less than a one-mile radius of the incident. It's time to put that multimillion-dollar communications network to use. What communications network?

With a quick call to your county office of emergency management, you could activate your local Radio Amateur Civil Emergency Service (RACES) and could have an entire communications network up and running in no time.

RACES is an organization of amateur ("ham") radio operators who volunteer to provide radio communications for state and local governments in emergencies. Created in 1952 primarily to serve in civil defense emergencies, RACES provides essential communications and warning links to supplement state and local government assets during emergencies.¹

The Federal Communications Commission (FCC) is responsible for regulating RACES operations, which are subsequently administered by the local, county, or state emergency management or disaster services agency with jurisdiction in your area. If there is no such agency, the administration can be passed to another agency such as a police or fire department. Some RACES units even combine government RACES and nongovernment ARES (Amateur Radio Emergency Service) activities and identify themselves as ARES/RACES organizations.

ARES/RACES members are licensed amateur radio operators and commonly have a technician class or higher license. Members often have access to multiple radios and can operate on many different frequencies and bands, including public safety frequencies. Annually,

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Photos by author.

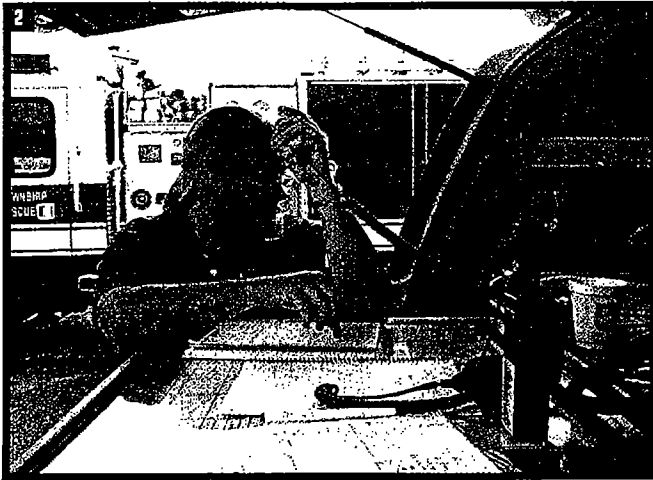
the amateur radio community collectively spends more money on communications equipment than the National Aeronautics and Space Administration (NASA).²

ARES/RACES organizations and their members are constantly training for the possibility of deploying and operating a self-sustaining communications system with little or no notice. The amateur radio community's annual "Field Day" is an event in which amateur radio operators deploy and maintain communications with other operators all over the world for 48 continuous hours. Amateur stations operate throughout the entire event without commercial power or telecommunications support. This invaluable event is not only fun and challenging for the participants but is also a great training opportunity for keeping volunteers up to speed for when the call for help comes in.

HISTORY

Amateur radio organizations such as these have been functioning since before World War I and have been instrumental in supporting communications during many of our nation's major incidents. In 1913, a large windstorm created havoc in the Midwest, downing telegraph and telephone lines (what few existed then), shutting down power plants, and knocking out transmission lines. Amateur radio operators at the University of Michigan and at Ohio State University, along with scores of individual amateurs in the region, successfully bridged the gap between isolated communities and the outside world. This was the first recorded instance in this country of amateur radio's

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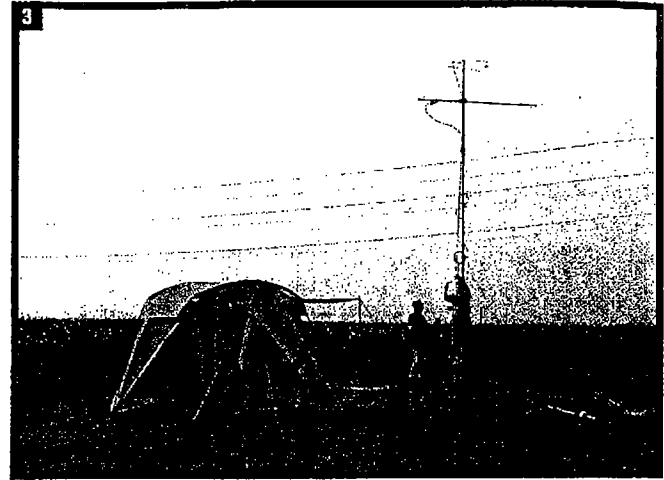
providing emergency communications.

Since then, incidents such as the Blizzard of '93, Hurricane Andrew, the Mount Saint Helens eruption, and even the horrific events of 9/11 have proved that organizations such as these can be extremely beneficial in supplementing communications any time, anywhere (photo 1). Even today, several government agencies work hand-in-hand with the amateur radio community. The National Weather Service (NWS) and the National Hurricane Center in Miami, Florida, rely heavily on the amateur radio community's network. SKYWARN, a concept developed in the early 1970s, was originally designed so that the NWS could receive severe weather reports from individuals in specific communities.

The idea was that an individual would take a position near his community and report wind gusts, hail size, rainfall, and cloud formations that indicated a developing tornado. Such reports would be relayed by telephone or through the amateur radio network and would greatly increase the NWS's speed in issuing effective public warnings.

Although the idea was sound, the telephone system was plagued with problems. As a storm made its way across a warning area, the NWS would be overwhelmed with reports and could not effectively prioritize them quickly enough to be effective. In addition, callers trying to report a possible funnel cloud could not get through jammed phone lines because others were calling in to report heavy rain or high winds. Although the telephone system was plagued with problems, the amateur radio network seemed like a viable alternative. Since all of the amateur radio members could hear one another, they could effectively self-prioritize the incoming reports and provide the NWS with timely, valuable information. Although a majority of reports were still coming in by telephone, the quality of reports received through the amateur radio network proved to be invaluable. The radio reporting system has become the main means through which the NWS receives severe weather reports today.

In a major emergency incident involving the above evacuation scenario, the amateur radio operators would be deployed as a supplementary communications network. For example, an operator would be stationed at the command post, another at an evacuation shelter, another at a hospital, and anywhere else where direct communication would be needed. Using this network, the incident com-



mander could then communicate with various sites involved in a far-flung incident quickly.

BENEFITS

This supplemental radio network has several benefits. First and foremost, it frees the regular emergency personnel so that they can handle their primary responsibilities. For example, would you rather have a trained haz-mat technician working the decon line or handling radio traffic (photo 2)? In addition, having a supplemental communications system effectively doubles your communications ability and capacity. The larger the incident, the more communications becomes vital.

Amateur operators' radio logs (written records of radio traffic) provide additional documentation such as time on the scene, apparatus used, when and what resources were requested, and so forth, which can be useful for accounting purposes. In litigation, the radio log could provide evidence that the incident commander acted appropriately and requested the proper resources at the right time.

This network also provides two important keys to an effective communications network, equipment and trained personnel. First, most ARES/RACES members have multiple radios that can be programmed on-the-fly to accommodate what any situation needs. Second, all ARES/RACES members are FCC-licensed amateur radio operators, meaning that they have taken the time and effort to study and pass a radio operations course.

Another proven benefit of an ARES/RACES team is the fact that the amateur system is entirely self-supporting. These teams usually have proven time and again that they can establish anything from a countywide radio network to a sophisticated regional or national communications network in very little time. If a storm, fire, or terrorist incident wiped out your community's regular emergency communications network, how quickly could you get back in operation? Two hours, 20 hours, or two days? Undoubtedly, not fast enough. In photo 3, amateur radio operators set up this fully self-contained, self-powered radio repeater station in less than 30 minutes.

In a widely publicized incident on July 27, 2001, the Stafford County, Virginia, ARES team was activated after the county's 911 center lost all incoming telephone trunks. The telephone company rerouted incoming 911 calls to a local high school. Stafford County's

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emergency communications director deployed two dispatchers to take calls at the school and alerted the Stafford County Amateur Radio Association to assist in passing message traffic to the 911 center.

Hams activated an emergency net to relay 911 traffic between the high school and the 911 center, where ham gear is permanently installed. With another radio set up at the school, the hams were prepared to relay call information to the 911 center. The telephone switch was brought back on line approximately 90 minutes after the disruption began.

In addition to fixed station operations set up at schools, 911 centers, and emergency operations centers, many mobile command posts are also set up with dedicated stations for amateur radio operators. In Ohio, the new Mahoning County Mobile Command Post has pre-equipped two amateur radio positions, a cellular telephone, and administrative supplies for the operators (photo 4).

The assets that the amateur radio community can bring to your organization can be instrumental to successful management and resolution of major incidents. However, the conditions for activating these organizations are spelled out by the Federal Communications Commission, and they can be activated only under certain circumstances. Preplanning is the key to handling any situation, and activating one of these organizations

is no different. Start by contacting your local, county, or state emergency management agency and requesting information about activating these resources. If your jurisdiction does not have an emergency management agency or equivalent organization, contact the local amateur radio club in your area; it can direct you to the correct people.

Once you have learned how to activate an organization such as this, you can preplan major events to use this new resource. Just like any other part of the fire service, you need to practice and drill together. Many fire departments obtain the services of their local amateur radio clubs to help them with communications during local events such as parades, walk-a-thons, bike races, and community days.

For example, when fire departments hold parades in conjunction with local community festivals, the radio clubs handle the communications in the staging area. This allows the fire department to simply hand the parade unit list to the radio club and then concentrate on participating in the parade.

At walk-a-thons and bike-a-thons, radio operators are placed throughout the route to watch for problems. If a walker or biker needs assistance, radio operators can place an immediate call for help. Such events are a great opportunity to work together and learn about how your organizations can complement each other.

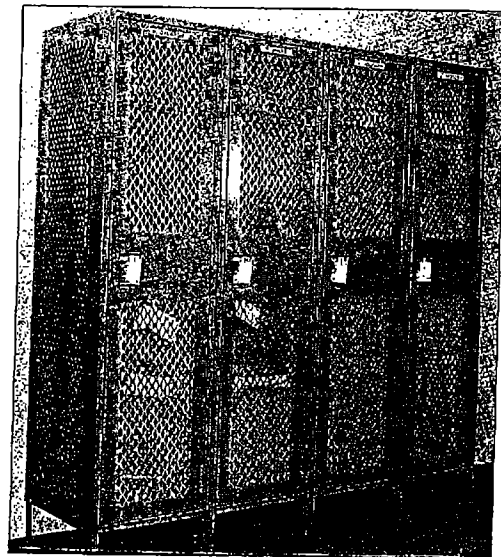
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Now if the chief gives you that evacuation order, a quick phone call to the local emergency management agency could provide you with an amateur radio operator on every corner of every block, in every hospital, in your county communications center, in your police command post, in your fire command post, along every evacuation route, in every shelter, or anywhere else that communications might be needed. This multimillion-dollar communications network that you probably didn't even know you had can make the difference between the successful resolution of a major incident and a horrific disaster. ■

Endnotes

1. Guidance For Radio Amateur Civil Emergency Service, Civil Preparedness Guide CPG 1-15, Federal Emergency Management Agency, March 18, 1991. Web site: www.fema.gov/library/civilpg.shtm/.

2. The American Radio Relay League (ARRL): The National Association for Amateur Radio. Web site: www.arrl.org/.



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