Maine ARES
Maine Emergency Communications Course, Level III
(02-01-2010)

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Relevance in a Changing World

CHANGING TIMES

A telecommunications professional recently observed that, "more than at any time in the history of technological development, the world is witnessing the emergence and proliferation of new communication modes and media. Much of the new technology is user friendly and very efficient."

The Internet now offers a means of sending large volumes of messages and data quickly and efficiently over redundant routes with little likelihood of total systemic failure. Federal, state and local agencies are investing in interoperable, flexible, and survivable communications networks. The Red Cross has vastly improved its capability for on-site communications. Satellite phones and data links rely on little infrastructure. Cellular providers now have mobile cell sites ready to deploy, and key public safety personnel have priority access to both wireline and cellular dial tones. Most politicians and inexperienced planners will think that this huge investment brings invulnerability - at least that's what the salesmen told them.

In the face of these developments, is Amateur Radio still useful as an emergency communications tool? With the efficiency of regular agency methods for message handling rising, will Amateurs be able to meet the increased expectations they create?

In March 2004, the Department of Homeland Security announced the SAFECOM program, a wide-reaching initiative to ensure interactive and reliable wireless communication systems that will meet the needs of modern public safety agencies, both in day-to-day use and during major emergencies. The nearly 200 page program document covers voice, data, and video communications, both radio and wireline, and sets the stage for the creation of a communications network unlike any seen before. It also mentions Amateur Radio prominently as a key part of several disaster scenarios.

STILL VULNERABLE

In many areas, new and sophisticated communication systems have been implemented or built, and they can handle more traffic volume, more efficiently, and more quickly. Some rely entirely on fragile local public infrastructure, such as the Blackberry network or the Internet. A few are less vulnerable to damage. However, there are still some critical weaknesses. Very large-scale devastation could still wipe out a portion or all of an area's key communications facilities, as was demonstrated in Hurricane Katrina. Even if the facilities continue to function, the agency's staff may not be able to handle the workload. Many of these new systems have not been tested under realistic disaster conditions, and may not be until the "real thing" occurs. The problem is that planners will continue to believe in their invulnerability until they are proven wrong - probably by a major catastrophe or large-scale drill. Even then, they may not admit the truth because that would be admitting to a costly mistake.

The greatest vulnerability for most disasters lies in "the last mile" - the area directly affected by the disaster. Except in a highly unlikely "Armageddon" nuclear war scenario or a very clever (and lucky) terrorist attack, regional and national infrastructure is likely to remain intact. It is on the last-mile element that Amateur emcomm groups need to focus their primary efforts, while not forgetting that larger disasters are indeed possible.

KNOWING YOUR CUSTOMERS

In 1998, the ARRL sponsored several conferences around the country to bring served agency representatives and ARES leaders together to assess two troubling questions:

- How will Amateur Radio continue to play an important role in providing emergency communications in the face of new technology, and the greater capabilities of such systems as the global mobile-satellite services?
- What could our served agencies offer to help us adapt to their evolving needs?

Several major agencies participated:

- Red Cross local and national staff
- Salvation Army
- County and state emergency management
- National Weather Service
- Forestry departments
- Public safety (state police)
- The National Hurricane Center

The following is partly based on conclusions from these conferences.

More cross-training in served agency functions will add value to our contributions.
Especially in the case of the Red Cross, Amateurs can increase their value to the agency by taking advantage of training offered for other disaster relief functions: damage assessment, shelter management, mass care and feeding, for examples.

Traditionally, Amateurs have declined to perform functions unrelated to their primary radio communication interest and training. Indeed, ARRL literature has cautioned Amateurs against providing unrelated services, encouraging them to concentrate on their role as radio communicators only. This caution was founded on a healthy concern that Amateurs performing unrelated functions for which they were not trained would become liabilities instead of assets, and cause Amateur Radio to lose credibility.

However, if we do not broaden our perspective on Amateur Radio's traditionally limited role, we minimize our utility and risk finding ourselves outside looking in when it comes to serving agencies engaged in future disaster relief. Proper training and certification in the various functions are the keys to a successful bid for greater utility and corresponding perpetuation of our public service tradition. Hams can expect to be asked to participate in non-traditional activities in the future, to make them more valuable to served agencies and the public at large. However, these activities must include radio communications, such as being a member of a Disaster Assessment Team or driving a radio-dispatched bus or delivery vehicle.

Integration of Amateur systems with Internet systems will increase utility and value.
ARRL committees have proposed greater integration of Amateur Radio systems with other telecommunication assets, despite concerns that we would dilute the "purity" of the Amateur service and give other interests a foot in the door.

Regardless, changes are happening. APRS®, an Amateur Radio developed technology, now incorporates computers, the Internet, weather sensor systems, and GPS. Echolink and the Internet Repeater Linking Project (IRLP), among others, connect Amateur FM systems together using the Internet. The new D-Star Amateur Radio digital voice and data protocol promises a better and faster means of local and regional communications. The Winlink 2000 system uses HF Pactor, FM packet, and the Internet to create a robust "last mile" or "around-the-world" message delivery system that links Internet email servers to Amateur Radio. Even if all Internet functions ceased, Winlink HF users could still move email between Amateur stations.

Hybrid radio/wireline systems such as these may represent an opportunity to enhance our contributions to served agencies for the future. Emergency managers and National Weather Service personnel appreciate the value of these and similar systems in gathering information, and supporting communications from locations not well serviced by their own systems.

Although the potential is certainly there, few emergencies completely disrupt Internet access to a wide area. This means that in all but the most serious situations, your local Internet connection is likely to remain usable. Internet "gateway" locations should be chosen carefully to maximize their chance of survival, and backup locations further decrease the likelihood of a disruption. If the connection is lost, Amateurs can fall back to more traditional methods such as manual message handling via the National Traffic System (NTS), or access Internet based services in unaffected areas using radio links.

More cross-training with agency-owned radio systems will make Amateur operators more valuable in the EOC.
One stated purpose of the Amateur Radio Service is the creation of a "pool of trained radio operators." A Florida emergency manager said he had a need for operators who are capable of operating *all* communication systems in the EOC. "When hams come in, they should be prepared to operate anything." Of course, this will vary from agency to agency.

Thus, we may not only need to integrate Amateur systems with other systems, but we may also want to consider training ARES volunteers to develop proficiency with new systems that do not directly integrate with Amateur Radio. Amateurs have often been asked to operate agency radios. In 1992, most state and municipal systems used simple two-way radios. Today, it is often 800 MHz trunking and digital radios. Do Amateurs know what a trunked radio system is, and how to use one? Could your volunteers operate a satellite telephone terminal to relay messages?

The Telecommunications Committee of the Florida Emergency Planner Association has been asked to extend training to ARES and RACES operators in new technologies adopted by county and state agencies. When the dust settles after an emergency, we will be remembered for how useful we were to the overall response, not whether we were using our own frequencies or the agency's.

We should continue to emphasize our role in providing interagency communications during multi-agency responses.
Despite the institution of new interoperable telecommunication technologies, such as APCO Project 25 digital radios in the public safety sector, and attempts to interconnect systems, responding agencies are often still unable to communicate with one another at a disaster site. Since 9-11, emergency response agencies at all levels of government are mandated to build interoperable communication systems, but they will take time to deploy and perfect. In the meantime, this is a perfect function for Amateur Radio service providers. Long term, ARES can still be a backup provider.

Amateurs need to present a unified front to the agencies they serve.
This observation came from a Florida Department of Emergency Management official. Infighting and turf wars, especially between ARES and EMA-RACES volunteers, are as old as RACES itself. Toss in the mix of clubs who claim monopolies over served agencies and emergency responses in their communities and the result is confusion and disorganization as seen by agency officials who do not have time for it. Amateur Radio groups must present a coordinated, unified, professional face to served agencies.

Amateurs should emphasize the unique decentralized nature of Amateur radio.
Radio Amateurs are already geographically dispersed throughout the areas to be affected by disaster. They are found in just about every neighborhood across the country. They are already everywhere that relief agencies would like to be, but cannot, because of obvious limitations. Amateurs need to reaffirm this unique value of Amateur Radio when "selling" their services to potential served agencies.

The value of decentralized radio services such as Amateur Radio has been recognized internationally by entities such as the Working Group on Emergency Telecommunications (WGET), part of the United Nations organization. Not everyone will own a portable satellite phone, at least not in the near future, owing to expense, and the fact that they are not yet proven, reliable devices. We still hold a monopoly over low cost, survivable, widespread decentralized communications resources.

Expanding our client base with new agencies to serve will maximize opportunities for Amateur Radio.
If Amateurs lose the opportunities to serve some agencies as a result of being displaced by new technology, they should expand the client base by seeking new and possibly nontraditional entities to serve. Some ARES groups have turned to their district school systems, for example. Jerry Boyd, K6BZ, a well-respected public safety official, ARES official and frequent *QST* contributor, identified other sectors for expanding our client base: public works departments, publicly owned utilities, transportation, hospitals, convalescent centers, senior citizen homes, and child care centers. More recently, the Department of Homeland Security (DHS) created Community Emergency Response Teams (CERT) to aid police, fire, and rescue agencies in times of disaster. DHS and ARES hold a MOU to provide communication support for CERTs.

In addition to the results of the meetings, consider the following:
Amateurs must be ready to handle longer, complex messages, more quickly. With the advent of the National Incident Management System (NIMS) standards, all federal, state, and local agencies will be using standardized forms for interagency communications. One example is the ICS-213 general message form, and many more such standardized forms are being created daily. This will mean a greater emphasis on error-correcting digital modes, automated routing, and software designed to accept and convert a variety of software file formats for transmission. However, traditional manual systems, despite their slowness and labor intensive nature, will still need to be maintained as a last-resort backup.

Amateur Radio is an essentially free resource for served agencies.
While additional paid reserve personnel and spare radio equipment might be one solution to expanding a communication network during a disaster, it is not always an affordable one. Even if an agency could afford the extra manpower and equipment, radio spectrum cannot be held in reserve. In addition, many of the skills Amateurs possess cannot simply be taught in a classroom to uninterested persons. Passion for the hobby is part of what makes hams so capable. Hams have the skills to make expedient field repairs, to understand why a radio signal is not making it to its destination, and know how to solve problems. Amateurs have modes and skills far beyond just talking into a microphone.

Think of Amateur Radio communication support as a "product" to be marketed and sold.
A business-like approach to the relationship with served agencies is important. When any supplier has a product to offer, they do three things:

- Through marketing research, they learn what the customers' wants and needs are.
- Then, they develop a product to meet those needs.
- Once they have a product ready to go, they create an advertising campaign to get make potential customers aware of their product's benefits.

Amateurs can do the same thing. Through a continuing dialog with served agencies, determine what their needs will be. Even where an agency is not currently working with hams, you may be able to determine their needs by talking with other similar agencies. Create a communication plan and training program that will help meet the agencies' needs, and then create a way to help sell the program. ARRL's video CD, "Amateur Radio Today," with legendary newscaster and ham Walter Cronkite, is a great ice-breaker that tells our story in a brief and informative format.

Create your own promotional material. Keep it accurate. Be realistic. Identify a need, and offer a specific solution. Do not claim skills, membership, or other resources you cannot absolutely count on. If agencies need something you do not have, suggest that you may be able to develop a solution over time if you work together. *Under promise and over deliver.*

Professionalism is critical.
While hams are not truly professionals, our behavior and skills should be nothing less. Little else damages our reputation like an unprofessional attitude. Volunteers of all kinds have a bad reputation for "wannabe" behavior and an inappropriate appearance. Police and fire personnel pride themselves on their professional look and demeanor, and they do not want volunteers to detract from that image or impede them in their work. Here are some suggestions:

- Know your place - you are not sworn police officers or firefighters
- You are there to meet their needs, not yours
- They define their needs, not you
- Dress as they want you to - not as you would like to
- Most important - leave your ego at home

Summary

While public service communication systems have come a long way in the last few years, there is still a need for Amateur Radio support. Served agency systems will still fail, and they will never have enough trained operators on the payroll to meet their needs during a disaster. However, if we are to remain a viable option for these agencies, we must have the right attitude and approach to the situation. We must be able to do more than operate Amateur Radio, and we need to look at new and innovative solutions. Develop solutions to the agencies' needs, package them, and sell them as you would any other product. *Under promise - over deliver.*

Building Relationships with Public Safety Agencies

Our Relationship

Public service communications provided by ARES members are based on a number of requirements. Specifically, public-safety officials must first accept us. Once accepted, our continued ability to contribute in times of disaster is based on the efficiency and effectiveness of our ongoing performance. While acceptance, image, efficiency and effectiveness are all important to the ongoing working relationships between Amateurs and officials, it is the initial acceptance that is often difficult to achieve.

How Public Safety Officials See Volunteers

Police and fire officials tend to be very cautious and skeptical concerning those who are not members of the public-safety professions. This posture is based primarily on experiences in which well intended but somewhat overzealous volunteers have complicated, and in some cases jeopardized, efforts in emergencies. The Amateur operator or other volunteer who wants to be of assistance must be aware of this perception.

The police have generally had their fill of "groupies" or "hangers on." They cannot afford to tolerate frustrated individuals who have always wanted to be police officers or firefighters, but for one reason or another have never reached that goal. There seems to be an abundance of people, especially during a crisis, who will quickly overstep the limits of their authority and responsibility if they are given any opportunity to assist in an official capacity. In their zeal, such persons often disrupt the actions of trained personnel. Worse yet, they can make an already dangerous situation even more so by their actions. With few exceptions, Amateur Radio operators do not fall into this category. The problem is, however, that police officers in the midst of stressful operations may have difficulty in distinguishing between those volunteers who are problem solvers and those who are problem makers.

Those very few hams who behave emotionally, are overzealous in offering their services or in describing their abilities, or who abuse the established limits of their responsibility, are doing the Amateur fraternity a real disservice. The typical police officer or firefighter, like the typical civilian, does not understand the vast differences among various radio services, the types of licensing involved or the high level of expertise and discipline that is characteristic of the Amateur Radio Service.

When an Amateur arrives at a scene and jumps out of a vehicle with a hand-held in each fist and two more clipped to the belt, all squawking at once, officials simply don't know how to respond. They are either overwhelmed by equipment they do not understand, or so awe-struck that they try to avoid what they perceive as threatening.

Working to Become Accepted

How Amateur Radio volunteers are accepted depends on their establishing a track record of competent performance in important activities. This begins with convincing officials that Amateurs offer a cost-effective (otherwise known as "free") substitute for functions that would otherwise be paid for by taxpayers. Local Radio Amateurs also must demonstrate that they are organized, disciplined and reliable, and have a sincere interest in public service, as well as the capability to provide the types of services needed by the agency.

The most effective way to accomplish this is for you, as head of your communications group, to initiate the contact with public safety agencies in an official capacity. This is far better than having individual Amateurs, particularly outside an organized structure, making uncoordinated and poorly prepared contacts that often result in an impression that your group is disorganized.

Approach the first meeting well prepared, and give a concise presentation of Amateur Radio's capabilities. Be careful not to oversell your actual capabilities. Illustrate accomplishments with newspaper clippings, *QST* and other magazine articles, etc., highlighting Amateur Radio public service. Discuss the existing Amateur Radio structure, emphasizing that a certain number of qualified operators will be able to respond to the public's needs. Be conservative in your estimates.

Demonstrate the reliability and clarity of Amateur gear. Nothing is more impressive than asking for a roll call on a 2-meter repeater using a hand-held radio in the police or fire chief's office and having Amateurs respond with full-quieting signals from locations where municipal radios are normally ineffective. Such a demonstration several years ago convinced officials in Laguna Beach, California to ask for the assistance of the South Orange County ARES. The wisdom of this decision became evident a short time later when that seaside resort community was hit by a series of local emergencies.

Suggest specific ways in which Amateurs can be of assistance. Indicate that you are aware that police and fire radio frequencies are usually saturated with critical tactical or operational traffic during emergencies, and offer to provide a fully-staffed administrative frequency for use in overall management and coordination of the relief effort. More important, offer to demonstrate what you are actually capable of doing by supplying a demonstration of your communications capabilities. It is of tremendous importance that you emphasize that the services supplied by your group will free public-safety personnel for other duties.

Demonstrate how easily Amateurs and their equipment can interface with public-safety efforts. A perfect way to do this is to demonstrate equipment that can be made operational quickly inside the headquarters building, in a mobile command post or in field units.

Express your group's willingness to meet the needs of the agency. Show a readiness to provide training to your membership. Offer public-safety officials the opportunity to have their own representatives appear before your group and provide orientation and training they feel is essential.

Finally, be realistic and objective in terms of what your group promises to provide. Be fully prepared to keep all promises you make. Remember to be organized and competent. Once you have implemented these suggestions, be patient. The requests for your services will be forthcoming, perhaps in a volume you had not anticipated!

Grass-roots action is the name of the game when it comes to achieving effective liaison. With the proper groundwork accomplished in advance, recognition among those sponsors and agencies having communications needs can be dramatically increased. It's symbiotic; these people need us, and we want to help. Now that all the necessary introductions have been made, the rest is easy, for we are indeed the experts in meeting communications requirements of every sort.

Changing the Way We Think About RACES in the 21st Century

WHAT IS RACES?

Most of us have long been in the habit of referring to a "RACES organization" as though it was a group similar to ARES or a radio club. Nothing could be further from the truth. RACES, like the Amateur Radio Service, Family Radio Service, and CB, is simply an FCC-authorized radio service. It is not a national organization. RACES can only be utilized by local, county or state government emergency management agencies (EMAs) using licensed Amateur Radio operators. Some clubs that are sponsored by the EMA call themselves "RACES clubs" but this also helps to create confusion about the true nature of RACES.

"Wait," you say. "What about all those RACES volunteers?"

The term "RACES volunteer" is misleading. They are really EMA-registered Amateur Radio operators who can use either RACES or Amateur Radio to provide communications for the agency. Of course, the EMA can choose to allow operation only under RACES rules, but this can severely limit the flexibility of their stations to contact non-EMA Amateur stations serving non-government agencies, such as the Red Cross and Salvation Army.

EMA-registered hams can legally operate under either Amateur Radio Service (ARS) or RACES rules, as needed. For the most part, EMA Amateur Radio operators never really need to operate under the highly restrictive RACES rules. Amateur Radio rules are far better suited to general emergency operations. In fact, operation under RACES rules offers no practical advantage unless Amateur Radio operations have been suspended in time of war, something no longer likely under current law, or for coordination with military stations on certain shared Amateur frequencies.

It *is* correct to say that someone is a "RACES operator," but *only* if they are operating under RACES rules, and not Amateur Radio Service rules. If they are operating under ARS rules, they might be called "EMA-registered Amateur Radio Operators" or whatever term the agency chooses. In California and several other states, they are called "Auxiliary Communications Service (ACS) radio operators."

RACES PAST AND PRESENT

During World War II, Amateur Radio operation was suspended. After the war ended, the federal government decided it was not in the public interest to shut down all Amateur Radio operation in time of war. A great deal of free talent and equipment could have been put to use for official Civil Defense communications. The RACES radio service was created to meet this need, and flourished in the 50s and early 60s. The Federal Emergency Management Agency (FEMA) created a "RACES Program" to provide guidance and assistance to agencies wishing to use RACES. When federal funding for the RACES service and equipment was eliminated in the mid-1960s, the EMA-registered Amateur Radio volunteers who operated it were neglected. Most officials looked at RACES as a wartime-only radio service, providing one last means of communication when everything else had failed or was destroyed. For the most part, the program was put aside with the white civil defense helmets.

EMA Amateur Radio and RACES operations continued in a few areas because officials recognized their potential usefulness in civil emergencies. In some of these areas, stiff competition for volunteers

between ARES and EMAs resulted, which generally undermined Amateur Radio's usefulness to government and non-government agencies.

In reality, the portion of the War Powers Resolution that would have automatically ended Amateur Radio operations in time of war has expired, thus ending the primary reason for RACES existence as a radio service. (The president could still suspend operations by executive order, if required.)

There is another small, but seldom used, advantage that operation under RACES rules still offers. FCC rules permit RACES stations to communicate with other government stations that Amateurs would not normally be allowed to contact, but only with prior authorization. Regular Amateur rules prohibit this except in cases of immediate danger to life or property when no normal means of communication exist.

RACES rules permit contact with the military only for coordination purposes, and on only two frequencies: 3.997 MHz and 53.30 MHz. In this case, only the stations actually communicating with the government stations need operate under RACES rules. Under most other circumstances the EMA will enjoy greater flexibility by operating under ARS rules.

THE ARES/EMA RELATIONSHIP

It is not a question of ARES vs. RACES. The real question is this: should the EMA use an outside group, such as ARES or a local radio club, for its communications - or ham volunteers who are registered with the EMA?

As well organized as an ARES group might be, there is still an important missing link that is sometimes difficult to overcome - the link between government officials and Amateur Radio volunteers. In some areas, these volunteers have worked closely with government agencies, earned their respect and confidence, and are used to the fullest extent. In other areas, ARES volunteers find it difficult to associate with government agencies to any extent.

From an Amateur point of view, an additional benefit to being an EMA-registered radio operator is insurance. Some EMAs provide Worker's Compensation insurance to their volunteers while on the job.

HOW GOVERNMENT SEES HAMS

To many emergency management officials, the term "ham radio volunteer" invokes an immediate response similar to of one or more of the following:

- "We don't need them - we're fine on our own."
- "They have been the source of an unpleasant experience in the past - never again."
- "They want to tell us how to do our job - we can't seem to control them."
- "They are unwilling to make a commitment to the kind of training needed."

In many cases, unfortunately, their response is based on actual experience. The bottom line: government officials feel that they must be able to give direction to, and have control of, all of their volunteer resources during any emergency operation. If not, they are concerned that free-lancing volunteers could become part of the problem, not the solution.

One way they can do this is with EMA-registered ham radio operators, who are also registered with ARES. This permits volunteers to "switch hats" as needed, serving both the EMA directly, and non-government agencies served by ARES. This model has been used successfully in many areas of the country, including Wisconsin. When they work as EMA volunteers, the agency has full control of their actions. A suitable command structure needs to be developed to suit the local situation, and a detailed and well thought out Memorandum Of Understanding drafted and signed.

ARES MEMORANDA OF UNDERSTANDING

A major part of our emergency communication activity is conducted within the context of ARRL's formal agreements with seven key agencies of the national emergency management community. These include, not in order of importance, the American Red Cross, the National Weather Service, the Federal Emergency Management Agency, the Department of Homeland Security's Corporation for National and Community Service, and the Association of Public-Safety Communications Officials-International, the National Communications System, and the Salvation Army.

These national-level agreements are called either a "Memorandum of Understanding" (MOU) or "Statement of Understanding" (SOU), depending on the agency.

The Basics: An MOU provides a simplified framework for cooperation and coordination with agencies to which we as radio Amateurs may provide communication services. At the national level, this means periodic headquarters-to-headquarters contact for exchanging news, views, information, and points of contact in the field. For example, ARRL staff attends the annual Red Cross partnership meeting, along with representatives from other agencies and organizations (from the government and non-government, private and commercial sectors) that have MOUs with the congressionally chartered organization. The idea is to get to know one another on a face-to-face basis so that when an actual emergency occurs each knows who to call and whom to count on.

At the local level, an MOU serves two purposes. First, it is a "door opener." A new ARES group is more likely to be heard and taken seriously by a local NWS office when accompanied by the agreement document signed by the national head of the agency. The agency says, in effect, "We have examined this organization of Radio Amateurs and have found them to be trustworthy and able to render needed services for our field operations in times of emergency." The agency head is telling its field offices, "work with them - they are good for us."

Second, the provisions of the MOU document spell out the capabilities and organization of the serving agency (ARES), the organization and needs of the served agency (them), and the methods of cooperation. These are broad guidelines that should lead to the establishment of a local MOU or similar document that sets forth the more detailed operational plans and policies to be subscribed to by both parties during drills, and actual events.

The most important step here is to ensure that both parties to the local agreement have a realistic assessment of the resources brought to the table by ARES, and the needs of the served agency. Fanciful expectations lead to breaches of trust and a breakdown of relations, with each party going away unhappy and demoralized. Rifts develop and once in place, become more or less permanent. Worst of all, the public - the clientele of both Amateur Radio and the agency - is not served.

GETTING YOUR MOUS APPROVED

Before a draft local MOU can be signed by a local ARES official, it must be approved by the Section Manager *and* ARRL HQ. This is to prevent agreements that could be detrimental to, or cause legal difficulties for ARRL, which owns ARES. Sample MOUs are available from ARRL HQ that can be used as templates for writing your own MOU. If you have any questions about what to say in your MOU, please contact ARRL HQ by phone, letter, fax, or email.

National Voluntary Organizations Active in Disaster

The National Voluntary Organizations Active in Disaster is a partnership among a number of organizations that are active during a disaster response. The organization was founded on the principle of disaster planning and cooperation among member non-government disaster response organizations in the U.S.

After Hurricane Camille in 1969, organizations that had been involved in providing resources and services to victims and communities affected by disaster shared their mutual concern about the frequent duplication or gaps in services. Beginning in 1970, representatives from these voluntary organizations began to meet together on a regular basis. The purpose of those early meetings was for participants to share their respective activities, concerns and frustrations in order to minimize duplication of effort and manage disaster activities more efficiently.

Today, NVOAD has 31 national member organizations, including the ARRL. There are fifty state and territorial VOADs and a growing number of local VOADs. State and local VOAD members include local ARES, REACT and other disaster communication groups.

FUNCTIONS OF NVOAD

NVOAD coordinates planning efforts by many voluntary organizations responding to disaster - it does not provide direct services for the public. Member organizations increase their effectiveness by reducing duplication of services by working together before disasters strike. Once a disaster occurs, NVOAD or an affiliated state VOAD encourages members (including ARRL section officials, and other voluntary agencies) to convene on-site. This cooperative effort has proven to be the most effective way for a wide variety of volunteers and organizations to work together in a crisis.

NVOAD serves member organizations through:

- **Communication** - disseminating information by electronic means, its newsletter, a directory, research and demonstration, case studies, and critique.
- **Cooperation** - creating a climate for cooperation at all levels (including grass roots) and sharing information.
- **Coordination** - coordinating policy among member organizations and serving as a liaison, advocate, and national voice.
- **Education** - providing training and increasing awareness and preparedness in each organization.
- **Leadership Development** - giving volunteer leaders training and support so as to build effective state VOAD organizations.

- **Mitigation** - supporting the efforts of federal, state, and local agencies and governments and supporting appropriate legislation.
- **Convening Mechanisms** - putting on seminars, meetings, board meetings, regional conferences, training programs, and local conferences.
- **Outreach** - encouraging the formation of, and giving guidance to, state and regional voluntary organizations active in disaster relief.

NVOAD ORGANIZATION

A nine-member board of directors meets at least four times each year to provide guidance for the achievement of NVOAD goals. NVOAD is not itself a service delivery organization. Instead, it upholds the privilege of its members to independently provide relief and recovery services, while expecting them to do so cooperatively.

NVOAD is committed to the idea that the best time to train, prepare, and become acquainted with each other is prior to the actual disaster response.

Organizations and agencies that wish to become NVOAD members go through an application process and need to demonstrate their capability to work within the parameters agreed to by the members of NVOAD.

Many NVOAD members are faith-based organizations that, in many cases, have a longstanding history of providing services to victims of disaster and their communities. Most are large organizations with paid key staff and professional services that can be relied upon by communities in the post-disaster and recovery phases. Time and again, victims will see these organizations roll into a disaster area and provide services including shelter, food, medical assistance, and the management of donations from the outside world.

AMATEUR RADIO AND NVOAD

Amateur radio has long provided disaster communication support for these organizations. Most Amateurs are aware of our support for the Red Cross and the Salvation Army, but are unaware of the same services provided to other NVOAD organizations.

During actual disasters, when NVOAD convenes on-site planning and coordination meetings, ARRL HQ provides NVOAD members with local and state ARES contacts to muster communication support for their activities. In cases where Amateur groups are members of state and local VOAD groups, these contacts have already been made, and plans may be in place.

In Florida, ARRL section officials participate in annual state VOAD conferences, usually held in conjunction with the Governor's Hurricane Conference.

ARES leadership officials should review the list of NVOAD members below, determine the status of VOAD groups and activity at the state and local level, and then contact these organizations for advance disaster planning. ARES leaders will find that these organizations provide significant disaster relief services, and that a viable opportunity exists for Radio Amateurs to support them in their humanitarian missions.

Introduction to the National Incident Management System (NIMS)

INTRODUCTION

Over the last few years, the federal Department of Homeland Security (DHS) has added many new acronyms to the "alphabet soup" of emergency response. The two most important are the National Incident Management System (NIMS) and the National Response Plan (NRP).

What are the NIMS and NRP? How are they used, and how do they work together? Most important, do they affect Amateur Radio emcomm?

NIMS is a set of standards that will be used at the federal level, and by any state, local, or tribal government that wishes to receive federal funding. These standards cover:

- Response plans
- Incident management
- Information sharing & management
- Communication systems
- Equipment
- Training
- Credentialing

The NRP is the actual plan the federal government uses to respond to an incident. It replaces the old Federal Response Plan (FRP). Many state and local plans follow the same basic plan format.

NIMS strengthens America's response capabilities by identifying and integrating core elements and best practices for all responders and incident managers. Through a balance between flexibility and standardization, and use of common doctrine, terminology, concepts, principles, and processes, execution during a real incident will be consistent and seamless. Responders will be able to focus more on response, instead of organizing the response, and teamwork and assignments among all authorities will be clearly enhanced. Key elements and features of NIMS include:

- **Incident Command System (ICS).** NIMS outlines a standard incident management organization called ICS that establishes five functional areas--command, operations, planning, logistics, and finance/administration--for management of all major incidents. To ensure further coordination and during incidents involving multiple jurisdictions or agencies, the principle of unified command has been universally incorporated into NIMS. This unified command not only coordinates the efforts of many jurisdictions, but provides for and assures joint decisions on objectives, strategies, plans, priorities, and public communications.
- **Preparedness.** Responder readiness to manage and conduct incident actions is significantly enhanced if professionals have worked together before an incident. NIMS recognizes this and defines advance preparedness measures such as planning, training, exercises, qualification and certification, equipment acquisition and certification, and publication management. Preparedness also incorporates mitigation activities such as public education, enforcement of building standards and codes, and preventive measures to deter or lessen the loss of life or property.

- **Communications and Information Management.** Standardized communications during an incident are essential and NIMS prescribes interoperable communications systems for both incident and information management. Responders and managers across all agencies and jurisdictions must have a common operating picture for a more efficient and effective incident response.
- **Joint Information System (JIS).** NIMS organizational measures further enhance the public communication effort. The Joint Information System provides the public with timely and accurate incident information and unified public messages. This system employs Joint Information Centers and brings incident communicators together during an incident to develop, coordinate, and deliver a unified message. This will ensure that Federal, state, tribal, and local levels of government are releasing the same information during an incident.
- **NIMS Integration Center (NIC).** To ensure that NIMS remains an accurate and effective management tool, the NIMS NIC will be established by the Secretary of Homeland Security to assess proposed changes to NIMS, capture and evaluate lessons learned, and employ best practices. The NIC will provide strategic direction and oversight of the NIMS, supporting both routine maintenance and continuous refinement of the system and its components over the long term. The NIC will develop and facilitate national standards for NIMS education and training, first responder communications and equipment, typing of resources, qualification and credentialing of incident management and responder personnel, and standardization of equipment maintenance and resources. The NIC will continue to use the collaborative process of Federal, state, tribal, local, multi-discipline and private authorities to assess prospective changes and assure continuity and accuracy.

The completion of NIMS follows the October 2003 nationwide deployment of the Initial National Response Plan (INRP) which represented the first step in aligning incident management response and actions between all Federal, state, tribal, local, and private communities. A final National Response Plan is under development and will eventually replace the INRP, while NIMS will continue to provide the Nation's doctrinal guidance for incident management for acts of terrorism, natural disasters, and other emergencies.

WHAT DOES NIMS MEAN TO AMATEUR RADIO EMCOMM?

At the time of this writing, many details of NIMS are still unknown. Many of the NIMS standards will take time to develop, and much longer to be fully implemented across the country at all levels of government. Until more is known, we have attempted to identify several general types of NIMS standards that may have a future impact on Amateur radio emcomm.

- **Credentialing** - NIMS will establish credentialing standards for local, state, and federal agencies. If you are an emergency management communications volunteer, or if your ARES or other private group works with any government agency, the ID you carry will likely need to meet those standards. This issue should be discussed between your group's leadership and agency officials.
- **Certification** - Certain responder functions will require certification. Presently, it is unclear if any certification will be required of Amateur Radio emcomm volunteers, or for emcomm communicators in general. Most of the jobs being considered seem to have to do with emergency management, rescue operations, medicine, and other direct services.
- **Resource Typing** - Following the model used with the Incident Command System (ICS) in California, commonly used resources will be typed and classified to make it easier to request them. No generally accepted standard now exists for classifying and typing Amateur Radio resources, but efforts to create them are being made by Amateurs on the West coast. This subject is covered in greater detail later in this course.

- **Procedures and Forms** - This area has already had a significant impact on Amateur Radio emcomm. Agencies are now expecting general messages to be sent on the standard ICS-213 message form, which is not well suited to traditional Amateur Radio message handling procedures. Messages also tend to be longer and more detailed than the ARRL Radiogram form will handle. At present, many groups have opted to simply add the ARRL form's header (preamble) to the ICS-213. Digital modes with error correction are best suited to the ICS-213 form due to its potential length.

  NIMS will also standardize many other ICS forms, some multi-page, which you may be asked to send. Software and modes should be adequate to handle the more complex forms. Some Amateur Radio software offers user-created fill-in-the-blank templates. Examples include ARESPACK, FNpack, and Emergency Service Packet Client. MS Word .dot form files may be sent as attachments over the Winlink 2000 system. In any event, keeping a supply of blank standard forms in every go-kit is advisable.

  One NIMS procedure that has an impact on Amateur Radio is the use of plain language and common terminology. NIMS mandates that all communications will use plain language and common terminology.

  After the Oklahoma City bombing, 9/11 and Hurricane Katrina, it was discovered that public safety responders were speaking different languages (in the form of “10” codes). Responders coming into a large scale disaster from out of the area often had “10” codes which were not compatible with the “10” codes in the disaster area. This often had unexpected results that, at times, caused misunderstandings which lead to hazardous situations. The “10” codes are not standard in all areas of the country. Take, for example, 10-55. In Maine it is an automobile accident. In New Hampshire and Vermont a 10-55 is an intoxicated driver. In Boston, a 10-55 is an officer shot or stabbed.

  In mandating plain language for all communications, NIMS eliminates the confusion and misunderstandings.

  Just as public safety agencies have their unique codes (primarily the “10” codes), Amateur Radio has its own set of codes (in the form of “Q” signals). All Amateur Radio emcomm responders need to adopt plain language when operating during a disaster. QSL, OM?

- **Radio Equipment** - While it is unlikely that NIMS will set any standards for Amateur Radio equipment, it will certainly set them for agency-owned systems that we may be asked to operate. While the primary benefit envisioned is interoperability between agencies and jurisdictions, standardization may also make training and operation easier. In addition, Amateurs will need to consider the capabilities of agency systems when designing Amateur networks and choosing modes to back them up.

  The good news is that Amateur systems are, by definition, generally interoperable and compatible. Variations may occur where one group is using a different software package than another, or a different digital mode. The short-term answer is for groups to be equipped and familiar with as many modes and programs as possible. For instance, your digital "bag of tricks" might include packet, PSK, and Pactor. Since most can be run with a simple sound-card interface or TNC, and a laptop computer, this is easy to accomplish. Long term, ARES and the Amateur Emcomm community at large will need to consider greater standardization.

- **The Press -** In the past, Amateurs have been asked to send reporters to the served agency's information officer for information about their response. For some larger incidents where multiple agencies or jurisdictions are involved, NIMS provides for a Joint Information Center (JIC) (see DHS press release above). In these cases, we will now refer reporters to the JIC rather than to our served agency's public information officer. Where appropriate, your organization may be asked or able to provide a representative, or printed information about your part of the response, to the JIC staff. You can always offer this information to the JIC if it is not requested.

TRAINING AND CERTIFICATION

An increasing number of jurisdictions are requiring all employees and volunteers to become NIMS and ICS certified. The training is free and available online from the Department of Homeland Security's Emergency Management Institute (EMI). Some local jurisdictions also offer classroom courses. ARRL strong recommends that all ARES volunteers take NIMS and ICS training.

The National Response Plan

"In Homeland Security Presidential Directive (HSPD)-5, the President directed the development of a new National Response Plan (NRP) to align Federal coordination structures, capabilities, and resources into a unified, all-discipline and all-hazards approach to domestic incident management. This approach is unique and far reaching in that it, for the first time, eliminates critical seams and ties together a complete spectrum of incident management activities to include the prevention of, preparedness for, response to, and recovery from terrorism, major natural disasters, and other major emergencies. The end result is vastly improved coordination among Federal, State, local, and tribal organizations to help save lives and protect America's communities by increasing the speed, effectiveness, and efficiency of incident management.

"The NRP represents a true national framework in terms of both product and process. The NRP development process included extensive vetting and coordination with Federal, State, local, and tribal agencies, nongovernmental organizations, private-sector entities, and the first-responder and emergency management communities across the country. The NRP incorporates best practices from a wide variety of incident management disciplines to include fire, rescue, emergency management, law enforcement, public works, and emergency medical services. The collective input we received from our public- and private-sector partners has been, and will continue to be, absolutely critical to the implementation and continued refinement of the core concepts included in this groundbreaking national plan.

"The NRP is built on the template of the National Incident Management System (NIMS), which provides a consistent doctrinal framework for incident management at all jurisdictional levels, regardless of the cause, size, or complexity of the incident. The activation of the NRP and its coordinating structures and protocols-either partially or fully-for specific Incidents of National Significance provides mechanisms for the coordination and implementation of a wide variety of incident management and emergency assistance activities. Included in these activities are Federal support to State, local, and tribal authorities; interaction with nongovernmental, private donor, and private-sector organizations; and the coordinated, direct exercise of Federal authorities, when appropriate.

"The NRP is also an essential element of the broader policy coordination and reconciliation mechanisms of the Federal Government. The operational and resource coordinating structures described in the NRP are designed to support existing White House policy mechanisms and decision making entities during the response to a specific threat or incident. Also, while the NRP itself creates no new authorities, it serves to unify and enhance the incident management capabilities and resources of individual agencies and organizations acting under their own authorities in response to a wide array of potential threats and hazards.

"Implementation of the NRP and its supporting protocols will require extensive cooperation, collaboration, and information-sharing across jurisdictions, as well as between the government and the private sector at all levels. The Letter of Instruction included with the NRP provides specific guidance on the phased implementation of the plan."

CHANGING FROM THE FEDERAL RESPONSE PLAN TO THE NEW NATIONAL RESPONSE PLAN

Since 9/11, much has changed in emergency response planning. Although the Federal Emergency Management Agency (FEMA) offered planning suggestions in the past, states and various sections of the federal government were pretty much free to create their emergency plans as they wished. The result was a wide variety of plans that bore only superficial resemblance - if any - to one another. This made cooperation and mutual support during a multi-jurisdictional or multi-disciplinary incident difficult at best. Under the Department of Homeland Security's new National Incident Management System (NIMS) and the National Response Plan, all that is quickly changing.

Until January 2005, the primary FEMA planning document had been the old Federal Response Plan (FRP). The new National Response Plan (NRP) replaced it over the course of 2005. The 426 page preliminary NRP core document was published in December, 2004. During 2005 and beyond, FEMA will continue to develop and phase in the NRP and its annexes. When completed, it will entirely replace the FRP and several related federal plans. As a result, there may be significant confusion about existing and evolving plans for the next few years. For state and local jurisdictions, the new FRP will also result in a new planning template on which to build their own response plans.

THE GOVERNMENT'S PLANS

The older FRP document totaled 310 pages. It established a very complex and detailed framework for federal assistance to states and communities in any major disaster or emergency declared by the President under the Robert T. Stafford Disaster Relief and Emergency Assistance Act. When local resources were exhausted or nearly so, the governor of the affected state could request such a declaration. The new NRP will maintain the same general structure, but with significant enhancements.

One critical difference from the past is the concept of "resource pushing." In the past, the Federal government provided resources only when formally requested by the affected state. This had the effect of delaying the delivery of critical support and potentially increasing the loss of life and property. In a large or catastrophic event, FEMA will now respond on its own by moving or "pushing" certain resources to staging areas nearby the incident, ready for the Incident Commander (IC) when he or she requests them. For other, less critical emergencies, FEMA will continue to wait for a request to be made, as in the past. The US Army's Northern Command (NORTHCOMM) is also considering a similar resource "pushing" program for responses to certain types of incidents, including nuclear, biological or chemical attacks or accidents.

The new NRP document is 426 pages in its initial form, and is expected to grow both in size and complexity. State and local governments are expected to build their own plans based on the structure used in the NRP. Thus, plans will be interoperable from jurisdiction to jurisdiction across the country.

SCOPE

The NRP applies all domestic disasters. These include both:

- A major disaster or emergency as defined by the Stafford Act, and
- Incidents of National Significance (INS).

Stafford Act disasters include any natural catastrophe; fire, flood, or explosion regardless of cause; or any other instance for which the President determines that federal assistance is needed to supplement state and local relief efforts.

Incidents of National Significance are actual or potential high-impact events that require a coordinated and effective response by and appropriate combination of Federal, State, local, tribal, nongovernmental, and/or private-sector entities in order to save lives and minimize damage, and provide the basis for long-term community recovery and mitigation activities. These incidents might include widespread epidemics, terrorism, or acts of war.

The NRP covers federal actions leading up to, during, and following a disaster: reducing vulnerability to disasters (mitigation); saving lives, protecting property, and meeting basic human needs (response); and restoring the disaster-affected area (recovery).

The NRP applies to all federal and independent agencies that may be tasked to provide assistance in a major disaster or emergency. Additionally, the American Red Cross functions much as though it were a federal agency in coordinating the use of federal mass care resources in a Presidentially declared disaster or emergency.

NATIONAL RESPONSE PLAN BASICS:

- Sets forth policies, planning, concept of operations, response and recovery actions, and the responsibilities of various federal agencies
- Describes the federal response, recovery, and mitigation resources available to assist state and local disaster relief and recovery efforts
- Organizes the types of federal response assistance that a state is most likely to need under twelve **Emergency Support Functions** (ESFs), each of which has a designated primary federal agency
- Provides for interagency and intergovernmental emergency preparedness, planning, training, exercises, coordination, and information exchange
- Includes plans and procedures for specific major threats to implement federal response and recovery activities efficiently

RELEVANCE FOR AMATEUR RADIO

Federal plans only indirectly affect how Amateur Radio emcomm resources are viewed, categorized, and requested at the state and local level. At the federal level, presently no mention is made of utilizing Amateur Radio resources, nor is any anticipated for now. Except in rare circumstances,

federal communication resources are considered adequate to deal with any likely emergency short of "Armageddon."

All state, local, and tribal jurisdictions will also use the same general plan framework, and at their discretion may list Amateur Radio, ARES, or other volunteer emcomm groups as a communications resource. Whether or not Amateur Radio is listed in any state or local plan will depend entirely on the relationships at the time the plans are drafted or updated. If Amateur Radio is not listed, it is unlikely that *any* request for communication support from ARES or any other group will ever be made, almost regardless of the immediate need.

This situation emphasizes the need for ARES and similar groups to establish and maintain healthy relationships with state and local emergency management agencies. However, the lack of such recognition does not preclude ARES support of local organizations such as CERTs, the Red Cross, or Salvation Army.

HOW THE NRP IS ORGANIZED

The NRP consists of a basic plan, six appendixes, and twelve annexes.

The **NRP basic plan** consists of the following sections:

I. Introduction
II. Planning assumptions and considerations
III. Roles and responsibilities
IV. Concept of operations
V. Incident management actions
VI. On-going plan management and maintenance

The **Appendixes** include:

1. Glossary of key terms
2. List of acronyms
3. Authorities and references
4. Compendium of national/international interagency plans
5. Overview of initial federal involvement under the Stafford Act
6. Overview of initial federal-to-federal support in non-Stafford Act situations

The **Annexes** include:

Emergency Support Functions Annex

ESF-1 Transportation
ESF-2 Communications
ESF-3 Public Works and Engineering
ESF-4 Firefighting
ESF-5 Information and Planning
ESF-6 Mass Care
ESF-7 Resource Support
ESF-8 Health and Medical Services
ESF-9 Urban Search and Rescue
ESF-10 Hazardous Materials
ESF-11 Food
ESF-12 Energy

Recovery Function Annex

Support Annexes (for internal federal support actions)

1. Introduction
2. Financial management
3. International coordination
4. Logistics management
5. Private-sector coordination
6. Public affairs
7. Science and technology
8. Tribal Relations
9. Volunteer and Donations Management
10. Worker Safety and Health

The **Incident Annexes** include:

1. Introduction
2. Biological (Epidemics, any cause, and chemical and biological attacks)
3. Catastrophic (for extreme casualty levels, any cause)
4. Cyber (Internet and computer attacks)
5. Food and Agriculture (crop failures, famine, etc.)
6. Nuclear/Radiological (power plant, weapons, industrial)
7. Oil and Hazardous Materials
8. Terrorism

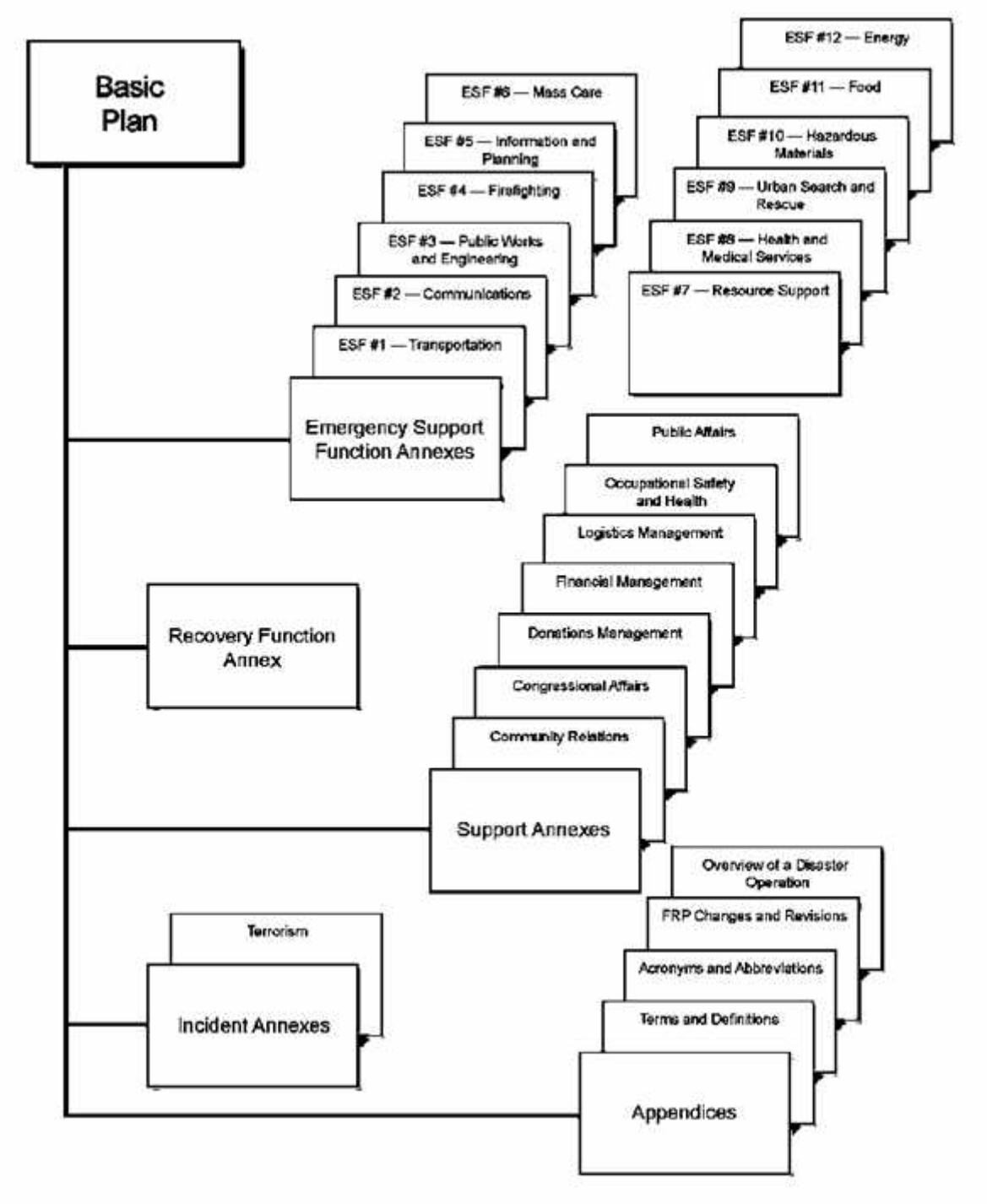
Together, these elements present the overall policies and concept of operations that guide the federal government's disaster aid response. They also summarize federal planning assumptions, response and recovery actions, and responsibilities. Many of the Incident Annexes and any supplemental

information will not be made available to the general public due to the sensitive nature of specific operational information - especially for those annexes related to man-made disasters.

The **Emergency Support Functions Annex** has the greatest relevance for Amateur Radio emcomm planning. The ESFs describe the responsibilities of the primary and support agencies involved in the implementation of key response functions that supplement state and local activities.

Amateur Radio emcomm leaders should be familiar with the structure and relevant elements National Response Plan. Special attention should be paid to the Emergency Support Functions most likely to involve Amateur Radio emcomm support: ESF#2 *Communications*, ESF#6 *Mass Care*, and ESF#8 *Health and Medical Services*. These ESFs will be covered in greater detail in the next Learning Unit.

National Response Plan Structure Chart



Key NRP Emergency Support Functions

SCOPE

The information in this unit describes how the ESFs are used at the federal level. Since state and local plans are now required to be identical in format to the NRP, you should be familiar with the ESF provisions of your state and local plans. While quite similar to the federal document, there will be differences in the details.

LEAD AGENCIES

Each ESF is assigned a "lead agency" with full responsibility for implementation of the ESF. The lead agencies at the federal level are listed in this unit. At the state and local level, the lead agency will vary widely, so you should consult their plans for details.

EMERGENCY SUPPORT FUNCTION (ESF) #2 - COMMUNICATIONS

Conventional telecommunication systems are often among the first casualties of a major disaster. The Communication ESF (commonly referred to as "ESF 2") lays out the plan for the establishment of temporary telecommunication systems using a variety of federal resources, and ultimately the restoration of permanent telecommunication facilities in the affected areas. The plan applies to all Federal agencies that may require telecommunication services or whose telecommunication assets may be employed during a disaster response.

Lead Agency - Department of Homeland Security:
DHS with its Information Analysis and Infrastructure Protection Office and National Communications System has the lead for the Communication ESF at the federal level. It is responsible for developing plans and coordinating telecommunication support for federal organizations in a disaster. The ARRL holds an MOU with the DHS for participation in the Citizen Corps programs, including Community Emergency Response Teams (CERT). Support agencies include the FCC, Department of the Interior, US Department of Agriculture, Department of Defense, Department of Commerce, and the General Services Administration.

Key players:
When ESF #2 is activated, a "Federal Coordinating Officer" (FCO) is appointed, with overall responsibility for the coordination of telecommunication support in the response area. A "Federal Emergency Communications Coordinator" (FECC) may also be appointed. The FECC prioritizes telecommunications requests and recommends solutions to the FCO. As the NIMS evolves, this may change.

Key resources used as part of ESF 2 include the government's Shared Resources HF Radio System (SHARES), Telecommunications Service Priority (TSP) program, Government Emergency Telecommunications Service (GETS), and the Wireless Priority Service (WPS).

What happens during a disaster:
During a disaster, government authorities require accurate and timely information on which to base decisions and guide response actions. At the same time the need for communication capacity increases, commercial telecommunication facilities may sustain widespread damage. In such

situations, all surviving communication systems, especially those of the government, will be needed immediately. When activated, ESF #2 coordinates federal communications resources to provide for this need.

Operations:
At the federal level, ESF 2 response operations for a major disaster will normally begin when the NRP is activated. FEMA selectively activates the various ESFs based on the nature and scope of the event, and the Federal resources required to support state and local responses.

Amateur Radio:
In all but the most extreme cases, federal resources are adequate to meet their needs. Amateur Radio and related resources, including MARS, are generally considered an "if all else fails" option. At a minimum, ARES and other communication groups' leadership should be familiar with the elements of the ARRL MOUs with DHS and FEMA. Ideally, the state RACES coordinator, ARES SEC, and the state or regional leadership of other volunteer communication groups should meet with their federal counterparts at the regional level in FEMA and NCS to develop plans for cooperation and coordination during federal call-outs and ESF #2 activations. For information on regional contacts, check with the Federal Emergency Management Agency: http://www.fema.gov. Contact information for NCS is at http://www.ncs.gov. Contact at the state and local level will depend on who the lead agency is. Contact at the state level should only be made by the ARES SEC or SM, and at the county and local level by the appropriate EC, or their official designee.

ESF 6 - MASS CARE

ESF 6, Mass Care, coordinates federal assistance to meet the basic daily needs of large numbers of disaster victims. ESF #6 covers both the emergency response and recovery phases, since initial recovery efforts may begin as response activities are taking place. As recovery operations are introduced, close coordination is required between those federal agencies responsible for recovery operations and voluntary organizations providing recovery assistance, including the American Red Cross, Salvation Army, and others.

Lead Agency:
Under federal law, the American Red Cross is the "lead agency" for the Mass Care Emergency Support Function. The ARRL has a Memorandum of Understanding with the Red Cross for Amateur Radio emergency communication support. Please read the MOU by clicking on the link in the Reference Links section for this unit.

Scope:

Emergency shelter for disaster victims includes the use of pre-identified shelter sites in existing structures such as schools; creation of temporary facilities or the temporary construction of shelters; and use of similar facilities outside the affected area should evacuation be necessary.

Feeding provided to disaster victims and emergency workers through a combination of fixed sites, mobile feeding units, and distribution of bulk food.

Emergency first aid for disaster victims and workers at mass care facilities and at designated sites within the disaster area.

Disaster Welfare Information (DWI) on the status of individuals residing within the affected area is collected and provided to immediate family members outside the affected area through a DWI system. DWI is also provided to aid in reunification of family members within the affected area who were separated at the time of the disaster.

Bulk distribution of emergency relief items will be handled at sites established within the affected area to meet urgent needs of disaster victims.

Amateur Radio:
Historically, radio Amateurs have been heavily involved in each of the functions listed above, especially for shelter communications and DWI, usually in support of the American Red Cross and similar relief agencies. Using existing MOUs as a guide, ARES leaders should have detailed operational plans with local and state Red Cross officials for these functions, so that in the event of National Response Plan (or its state or local equivalent) activation, ARES and emergency management agency (EMA) Amateur Radio volunteers are ready to assist in a seamless manner.

ESF 8 - HEALTH AND MEDICAL SERVICES

ESF 8 provides coordinated federal assistance in response to public health and medical care needs following a major disaster or emergency, or during a developing medical situation such as an epidemic or plague. Resources will be furnished when state and local resources are overwhelmed and public health and/or medical assistance is requested from the federal government.

Lead Agency:
Federal Department of Health and Human Services (HHS).

Scope:
ESF 8 discusses supplemental assistance in identifying and meeting the health and medical needs of victims of a major disaster. HHS, in its lead agency role for ESF 8, coordinates the provision of federal health and medical assistance to meet needs identified by the affected state and local authorities. This support is categorized in the following functional areas:

- Assessment of health/medical needs
- Health surveillance and monitoring
- Medical care personnel
- Health/medical equipment and supplies
- Patient evacuation
- In-hospital care
- Food/drug/medical device safety
- Worker health/safety
- Radiological/chemical/biological hazards consultation
- Mental health care
- Public health information
- Vector control (spread of disease by specific means, such as mosquitoes)
- Potable water/wastewater and solid waste disposal
- Victim identification/mortuary services
- Veterinary services.

Included in ESF 8 are overall public health response; triage, treatment, and transportation of victims of the disaster; and evacuation of patients out of the disaster area as needed. Evacuated patients are sent to a network of military, Veteran's Administration, and pre-enrolled non-federal hospitals located in the major metropolitan areas of the United States.

ESF 8 uses resources from within HHS, other ESF 8 support agencies, and the National Disaster Medical System (NDMS), discussed in Unit 11 of this course. ESF 8 also uses specific non-federal sources such as major pharmaceutical suppliers, hospital supply vendors, the National Foundation for Mortuary Care, certain international disaster response organizations and international health organizations.

Amateur Radio:
Hams are typically involved in medical/health support functions in two ways: support for local hospital communications; and the National Disaster Medical System. Hospital communications may be within the hospital itself in the event of telephone system failure, logistical support between the hospital and a casualty staging area, or external inter-agency communications.

OTHER ESFS

There are nine other ESFs and each has the potential for some level of Amateur Radio communications support involvement. Amateur Radio emcomm leaders should have at least a minimal understanding of each of them, described briefly in the previous learning unit.

DHS Citizen Corps and Community Emergency Response Teams (CERT)

DEPARTMENT OF HOMELAND SECURITY - CITIZEN CORPS

In June 2003, ARRL became an official affiliate program of Citizen Corps, an initiative within the Department of Homeland Security to enhance public preparedness and safety.

A new Statement of Affiliation (SOA) makes ARRL an affiliate of the four Citizen Corps programs: *Neighborhood Watch, Volunteers in Police Service,* ***Community Emergency Response Teams*** and the *Medical Reserve Corps*. Other affiliates include the National Safety Council, Points of Light Foundation, National Voluntary Organizations Active in Disaster, National Volunteer Fire Council, National Fire Protection Association, Save a Life Foundation, and the Jaycees.

ARRL has worked closely with FEMA beginning in 1984 when an MOU was inked that helped ARRL volunteers coordinate their services with emergency management at all levels of government. FEMA is a "last responder," as opposed to "first responders" (the local, county and state emergency management agencies). Today, Citizen Corps groups are forming at the community level and state levels to assist first responders.

The SOA calls on DHS and ARRL to raise public awareness of Amateur Radio as a safety resource. DHS and ARRL will cooperate in providing training and accreditation for Amateur Radio emergency communications. They will work together to promote the formation of local Citizen Corps councils and assist them with education, training and volunteer service opportunities that support local first responders.

THE COMMUNITY EMERGENCY RESPONSE TEAM (CERT)

CERT teams are directly affiliated with city, town or county government agencies. Most teams will likely be tied to fire and rescue services, or police or sheriff's departments. Other agencies with CERT teams might include county or city owned hospitals and local health departments.

CERTs (as well as the other Citizen Corps programs) are administered locally by a "Citizen Corps Council." Local councils will be represented at a County Citizen Corps Council, if a county form of government is used, and then a State Citizen Corps Council. These councils oversee and coordinate the CERT program and any local, state, or federal funds.

The CERT program helps train people to be better prepared to respond to emergencies within their communities on behalf of the sponsoring agency. When emergencies occur, CERT members may be called upon to give critical support to first responders, provide immediate assistance to victims, and organize spontaneous volunteers at a disaster site. CERT members can also help with non-emergency projects that help improve the safety of the community.

CERT courses are taught in the community by a trained team of first responders who have completed a CERT Train-the-Trainer course conducted by their state training office for emergency management, or FEMA's Emergency Management Institute (EMI), located in Emmitsburg, Maryland. Base-level CERT training includes:

- Disaster preparedness
- Disaster fire suppression
- Basic disaster medical operations
- Light search and rescue operations
- CERT Organization
- Disaster Psychology
- Terrorism

Local CERT activities and instruction will encompass training in hazardous conditions or disasters likely to affect that geographic area. These hazards include:

- Earthquakes
- Fires and Wildfires
- Floods
- Excessive Heat
- Hurricanes and Coastal Storms
- Landslides and Mudflows
- Severe Thunderstorms
- Tornadoes
- Tsunamis
- Volcanoes
- Winter Storms
- Nuclear Power Plant Emergencies
- Hazardous Materials Incidents

Amateur Radio emergency communication groups already focus their training and response capability to support agencies responding to these same types of hazards, making a relationship with local CERTs a natural.

CERT Organizational Structure

The CERT organization is based on the Incident Command System (ICS), a proven management system used by most emergency responders.

The CERT organizational structure provides for:

- Common terminology that contributes to effective communication and shared understanding.
- Effective communication among team members.
- A well-defined management structure (e.g., leadership, functional areas, reporting chain, working in teams).
- Accountability.

The objectives of CERT Organization:

- Identifies the scope of the incident
- Determines an overall strategy
- Deploys resources
- Documents actions and results

CERT Communication Requirements

Just as each region of the country is faced with different disaster response requirements, the communication needs of local CERT organizations will vary. In each case, the communications plan must be developed to meet local operational needs, and take into account the human, technical, and funding resources available.

CERT Teams are made up of citizen volunteers, who may not have relevant communications experience. Depending on location, geographic make up, and participation, some CERT Teams may include Amateur Radio Operators and some may not have the benefit of Amateur Radio Operators as team members.

Defining a CERT's Specific Communications Needs

Regardless of their location, most CERTs face similar communication requirements:

- Tactical communications within teams
- Coordination between teams and sub-groups
- With state or county CERT leadership
- Communicating with the sponsoring agency and other agencies

Many CERTs around the country are attempting to fill these communication needs with the cell phones, and public safety, MURS, FRS and GMRS radios. Widespread standardization of communications equipment and established communication plans does not exist. In many cases, there is no money for the purchase of any sort of communications equipment.

Experience has shown that when Amateur Radio operators participate in a CERT, ham radio quickly becomes the backbone of that CERT organization's communications effort. Our communication skills and knowledge appear to be a natural fit for CERT Teams communications needs.

IMPLEMENTING A CERT COMMUNICATIONS PLAN

Several units in this course may be helpful in designing communications plans for CERTs, including *Designing the Local Emergency Response Plan* and *Network Theory and the Design of Emergency Communication Systems*.

Since CERT Team volunteers will represent a cross-section of the community, the degree of communications experience will vary widely. Some volunteers will know immediately what to do with a radio; others will need to learn all the basics, beginning with the on-off switch. Both the communications plan and the equipment should be simple to learn and easy to use. Radio procedures should emphasize clear and succinct messages, and plain language. Codes and fancy terminology should be avoided to decrease the amount of training required and increase the clarity of communications.

Intra-Team Communications: Team members will need to communicate with each other. There are several possible radio choices that are suitable, including FRS (for very short ranges), MURS, agency-owned frequencies, and Amateur Radio. Some CERT teams have made an Amateur license a requirement for membership.

Inter-Team Communications: Depending on the size of the community, CERTs may be made up of smaller neighborhood or specialized teams. Coordination between teams, including arranging mutual aid, may require more range than hand-held radios on simplex channels can provide.

Long Distance Communications: Team leaders will need to communicate with their sponsoring agency's headquarters, and possibly with hospitals and state or county resources. Most CERT teams will not be able to afford or have access to long distance communications outside of cellular telephones, or perhaps agency radios. Amateur Radio is a perfect fit for this application.

CERTS - A GREAT OPPORTUNITY FOR AMATEUR RADIO

In the final analysis, Amateur Radio and CERTs are made for each other. In an era when many traditional served agencies are pouring money into better and more robust communication systems, hams are increasingly finding themselves on the sidelines. Unlike primary agencies, the all-volunteer CERTs do not have access to adequate funding and communications expertise. It is important to note that CERT training teaches volunteers NOT to put their lives in danger in carrying out their mission, since some hams may be reluctant to take significant personal risks while supporting an agency.

National Disaster Medical System (NDMS) Communications Support

NATIONAL DISASTER MEDICAL SYSTEM

The National Disaster Medical System is a federally coordinated initiative to augment the nation's emergency medical response capability. NDMS is made up of Federal government agencies, state and local governments, and private businesses and civilian volunteers to ensure resources are available to provide medical services following a disaster that overwhelms the local health care resources.

The overall purpose of NDMS is to establish a single national medical response capability for:

- Assisting state and local authorities in dealing with the medical and health effects of major peacetime disasters
- Providing support to the military and VA medical systems in caring for casualties evacuated back to the US from overseas armed conflicts

NDMS has three major components:

1. Disaster Medical Assistance Teams (DMATs) with supplies and equipment that can be dispatched to a disaster site within the United States from the country's major metropolitan areas. DMATs may also provide NDMS patient reception services at their home locations.
2. An evacuation capability for movement of patients from a disaster area to locations where definitive medical care can be provided.
3. A voluntary hospital network, which will provide definitive care.

DISASTER MEDICAL ASSISTANCE TEAM

The National Disaster Medical System, through the U.S. Public Health Service (PHS), fosters the development of the Disaster Medical Assistance Teams (DMATs). A DMAT is a group of professional and paraprofessional medical personnel (supported by a cadre of logistical and administrative staff) designed to provide emergency medical care during a disaster or other event.

Each team has a sponsoring organization, such as a major medical center, public health or safety agency, non-profit, public, or private organization that signs a Memorandum of Understanding (MOU) with the PHS. The DMAT sponsor organizes the team and recruits members, arranges training, and coordinates the dispatch of the team.

In addition to the standard DMATs, there are highly specialized DMATs that deal with specific medical conditions such as crush injury, burn, and mental health emergencies. Other specialty teams include Disaster Mortuary Operational Response Teams (DMORTs) that provide mortuary services, Veterinary Medical Assistance Teams (VMATs) that provide veterinary services, and National Medical Response Teams (NMRTs) that are equipped and trained to provide medical care for victims of weapons of mass destruction.

DMATs are designed to be a rapid-response element to supplement local medical care until other Federal or contract resources can be mobilized, or until the situation is resolved. DMATs are principally a community resource available to support local, regional, and State requirements. However, as a National resource they can be federalized to provide interstate aid.

Each team is deployed to a disaster site with sufficient supplies and equipment to sustain themselves for a period of 72 hours while providing medical care at a fixed or temporary medical care site. In mass casualty incidents, their responsibilities include triaging patients, providing basic field medical care, and preparing patients for evacuation. In other situations, DMATs may provide primary health care, or may serve to augment overloaded local health care staffs.

PATIENT TRANSFER TO NDMS-AFFILIATED HOSPITALS

In rare cases, patients may be evacuated to a distant hospital for specialized care, or because hospitals in the disaster area are not functioning. At the disaster site, patients will be stabilized by a DMAT for transport. In most cases, patients will be evacuated by air. At the airport of the NDMS reception area, patients will be met by a local DMAT, which will sort, assess, and match those patients to participating hospitals.

NDMS FEDERAL COORDINATING CENTER

Currently, there are more than 100 metropolitan areas that serve as potential hosts to NDMS patients. For each NDMS area, there is a Coordinating Center, which is a Federal hospital. The Coordinating Center has three major functions: Recruit and maintain local non-Federal hospital participation in the NDMS; before a disaster, assist sponsors of DMATs, participating hospitals and other local authorities in developing patient reception, transportation, and communication plans, and exercises; and during an activation, coordinate the reception and distribution of patients coming into an area.

AMATEUR RADIO COMMUNICATION SUPPORT FUNCTIONS

DMAT Support: Amateur Radio operators from the DMAT's home base are appointed as full members to the DMAT. They are trained and prepared to travel with the DMAT to the disaster area, and to operate on secure government radio systems as well as Amateur Radio. New rules require that certain DMAT communications be transmitted only on secure government radio channels.

The section ARES organization and the DMAT cooperatively develop a plan for broad-based support in the event that the team is deployed locally for an intra-area disaster. All ARES members in general should be trained to meet the needs of DMATs in a disaster area under the direction of the DMAT member-hams. This is because ARES members located just outside the disaster area could be asked to provide communications support, since many hams living within the disaster area would likely be preoccupied with personal situations and unable to assist.

Federal Coordinating Center Support: ARES organizations should develop a plan for supporting the local Federal Coordinating Center (FCC) if one exists in their area. ARES members would supplement existing communications resources among the airport reception/triage sites, ambulances, hospitals and the Center's headquarters. This would be implemented through local agreements between ARES and the Centers.

Hospital Emergency Communications

This unit is based on a long-established and successful program, the *Hospital Disaster Support Communications System*, (HDSCS) in Orange County, California. April Moell, WA6OPS, a well-respected ARES leader and hospital professional, developed the program. HDSCS has supported thirty-four hospitals for twenty-five years. Ranging from small community facilities to major trauma centers, HDSCS's experiences are considered to be generally applicable to all hospitals, nationwide. More detailed information is available from their website, http://www.hdscs.org, including potential RF interference concerns.

With the development of new public safety communications infrastructure, there has been increasing discussion of new missions for Amateur Radio. Support for hospitals is an important mission for

ARES that is not new, but largely unfulfilled. Many ARES groups claim to support local hospitals but usually that just means they would go to a hospital if some authority asked them to. Hospital-specific planning or training is rare. In addition, hospital's communication needs are often an afterthought when an area-wide disaster hits, when they should be among the first served.

Hospitals are vital organs in every community. They should have the highest priority for communications support. Mass casualty incidents and area-wide disasters are not the only situations in which back-up communications are needed for hospitals. Any telephone system failure in a hospital can be a disaster too, and it is that emergency that has activated HDSCS 70% of the time. The potential for serious consequences to patients is high any time communication is impaired. When patient care is at stake, hospitals need every resource available. Even with all the new technologies, Amateur Radio can be a vital additional resource, provided that hams prepare, plan thoroughly, and drill with the hospitals. The mission is clear: supporting communications that are critical to patient care.

A WORKING MODEL

Since 1980, the Hospital Disaster Support Communication System has provided backup communications to hospitals in Orange County, California. HDSCS has been recognized by both FEMA and the National Disaster Medical System. Beginning with one hospital, the program has expanded to support 34 facilities, including each of the county's paramedic receiving hospitals. Each facility has formally requested the involvement of Amateur Radio, recognizing in a letter of request that HDSCS is a volunteer organization, and acknowledging that communicators will respond to the best of their abilities.

HDSCS is a special ARES group. Operating as part of ARES frees the group to interface directly with individual private and public hospitals at all times. It is important to be able to respond to hospitals individually when they request help, and to automatically respond in accordance with designated plans in an area-wide emergency. There are no intermediaries in this ARES structure that would delay a response. HDSCS has a memorandum of understanding with Orange County Emergency Management for RACES support in the county for occasions when hospital emergency communication with city or county government entities is needed.

HDSCS has two key components:

- The *Call-Up* system activates members for phone outages and mass casualty incidents.
- The *Core Team* system - a mechanism by which members automatically respond to nearby hospitals during area-wide emergencies.

Hospitals activate a *call-up* responder on their own list when a communications problem occurs. A group-page beeper number is also provided for hospitals to use if calls are unanswered or there are limited opportunities to make calls. The first HDSCS operator contacted takes over, putting the system in motion to rapidly get responders to the hospital. All members are considered call-up responders.

Core Team members are individuals who have committed to respond to specific assigned hospitals without first being called when a major area-wide disaster strikes. *Core Team* responders do not take on assignments from other ARES/RACES groups that they belong to unless cleared from HDSCS first.

KEYS TO SUCCESS

Between 1980 and January 2005, HDSCS has responded to more than 85 hospital communication emergencies. The group is recognized in the county's Mass Casualty Medical Response Plan. It is represented on all three regional hospital disaster planning committees and also participates in the county's EMS Disaster Advisory Group. This level of acceptance did not just happen - the group earned it over a period of years. Six factors led to this degree of credibility and success. They include:

1. **Preparedness.** HDSCS hams are ready to respond from home, from work, and while on the road. There's no time to rummage through the shack to figure out what to take. Members carry a complete go-kit with portable radios and accessories at all times.
2. **Portability.** Whether or not the hospitals have external antennas or radio gear does not matter - HDSCS hams prepare as if none exist. They most often have to communicate unit-to-unit within a hospital, shadow a supervisor, communicate from an outdoor triage area, or set up at a temporary command post. Portability and flexibility are crucial.
3. **Consistency.** Many members have been with the group for more than ten years. Most hospital staff recognize the hams because they see them during drills. Drill committee members recognize the HDSCS coordinators because they attend the daytime meetings. HDSCS members have checked on hospitals after earthquakes and responded at all hours to any communications problem that might affect a hospital. As a result, the hospitals believe we are serious about what we do. That leads to being called out, not just in emergencies, but also for stand-by operations when phone systems are being upgraded, participating in disaster/safety fairs, and for public service activities such as hospital-sponsored 10-kilometer runs.
4. **Training.** HDSCS members learn about the unique communication needs of hospitals. Meetings feature presentations about county emergency medical services, specific hospital departments, medical procedures and much more. The group drills with each hospital at least once a year, testing the activation procedures as well as communication links. During drills, hams test real-time responses and are forced to set-up in the midst of the hospital establishing their own command posts, etc. Setting up prior to the start of a drill gives a false idea of what communications you might provide and doesn't teach the hospital or the hams how the activation procedures would work.
5. **Multiple channels.** One repeater or simplex frequency for hospital communications is not enough in most scenarios. Alternates are needed for high traffic volumes and if primary repeaters are inoperable or unavailable. Repeater autopatch capability is also a plus. Internal communications are often easier on 222 or 440 MHz. The use of the 222MHz band has also been valuable when more discreet communications are desired.
6. **Reliable tactical voice communications.** Over 99% of inter-hospital and intra-hospital emergency communications are short, point-to-point, tactical messages. Many involve contacting physicians and staff, both inside and outside the facility. Requests for supplies, whether within the hospital or from an outside source, have almost always been for less than three items. On many occasions, the ham gives the microphone to a hospital staff member for third-party communications. Packet radio and ATV may be exciting modes, but when it comes to supporting hospitals, good tactical voice communications are what is needed.

MAKING A DIFFERENCE

To date, HDSCS volunteers have responded over 300 times to Orange County hospitals. Eighty-five of these have been emergency callouts for phone failures and activations for earthquakes, flooding and fires. The remainder has been stand-by operations and drills.

By making the effort to learn, prepare, drill, and respond, the group has made a difference that has positively affected people's lives. Emergency messages have included orders for blood, a "stat" (immediate) request for medication from the Neonatal Intensive Care Unit to the Pharmacy, an urgent call for a physician to assist in an emergency Cesarean section, and a call for priority response from the power company to a hospital when its emergency generator failed after an earthquake. The bottom line is patient care. In Orange County, Amateur Radio plays a crucial role in the support of the local hospitals.

COMMON MISTAKES

The two most common initial mistakes made by Amateur Radio groups when asked to support hospitals are:

1. encouraging the installation of a fixed station in the facility
2. pushing to license hospital staff.

Simply installing Amateur Radio equipment in a hospital is not a "plan," and actually creates a whole new set of problems with equipment security, user familiarity, location, obsolescence, damage, etc. Hospitals are constantly undergoing change, and today's good location may not be there tomorrow. HDSCS sometimes install rooftop antennas with cables terminating in the emergency department's command post or triage area to allow communications with incident sites and local repeaters, but radios and power supplies are provided by responding members.

Licensing hospital staff is fine if those individuals are generally interested in Amateur Radio and want to assist as intermediaries and advisors. However, during an emergency they are usually unable to be dedicated communicators, not to mention that FCC rules prohibit the use of Amateur Radio as part of an operator's employment. The few hospital employee hams that might exist will never be enough to support the communications effort in a phone outage or major disaster.

Building an ARES Organization

If you are an EC, one of your primary responsibilities is to build and maintain an active ARES organization. This is not always an easy job, particularly in areas with few real communication emergencies. In this unit, we will give you some ideas that will help build and sustain your group. One of the challenges is keeping activity at just the right level so that your members don't get burned out, yet maintain an adequate level of readiness. This will help reduce the "boom and bust" cycles that plague many organizations.

ELIGIBILITY FOR ARES MEMBERSHIP

All that is required for ARES membership is a valid Amateur license of any class. The equipment owned by the Amateur should not be considered a limiting factor. Amateurs with limited operating ability, because of license or equipment, can always be used as secondary operators on the team. ARRL membership is required for the EC and higher positions.

RECRUITING MEMBERS

Recruiting is an ongoing process that ensures the continued life of an ARES group. New members are important enough that an EC may want to delegate recruiting to an AEC as a regular job.

Why would someone want to join ARES? Serving the public, increasing knowledge of communications, ensuring the continuity of the hobby, and public recognition - to name a few. Each person will have his own reasons for joining. Once you are comfortable answering the inevitable question, "What's in it for me?" you are ready to recruit.

Recruit for quality, not just quantity. Be sure that everyone signing up understands the time commitment and is willing to actively participate. Large memberships look good on paper, but create false expectations on the part of the served agency if few members get the training or show up when needed.

Recruiting from Local Clubs - Club meetings are a great place to recruit ARES members. Club members tend to enjoy interacting with other hams in person and on the air. They are also more likely to own VHF or UHF equipment to talk to other club members - a necessity for effective ARES participation.

If the club has been cool to ARES in the past, the EC should try to find out why and adapt the presentation accordingly. A good salesman anticipates objections and is prepared to overcome them. If the club has already indicated an interest in ARES, getting its members registered in ARES will be easier. If the club is ARRL Affiliated or an ARRL Special Service Club (SSC), one of its responsibilities is to get involved in emergency communications.

When a club actively supports ARES activities, it should encourage new members who are interested in emergency communication and public service to sign up for ARES at the same time.

Here is a sample outline for a short ARES recruiting presentation to a club:

1. Introduce yourself.
2. Give a short talk on ARES explaining how ARES has served the public in the past, how your group intends to serve the public in the future, and the organizational structure of ARES, and any special requirements for membership.
3. Explain the time commitments required for various positions.
4. Question and answer session.
5. ARES Registration Forms (FSD-98) should be distributed, filled out, and then collected.
6. ARES ID cards (FSD-224) should be handed out to new members if no background check is required.
7. Announce the time, date and location of the next ARES meeting, and any scheduled training activities. A handout is useful here.

OTHER WAYS TO RECRUIT MEMBERS

- On the air in daily conversations
- Short presentations during ARES and other nets
- At Hamfests with a booth and display
- Speak about emergency communications and ARES at licensing classes

- Direct mail using mailing labels from ARRL
- However, person to person is always the most effective means

RETAINING ACTIVE MEMBERS

Getting people to sign up for ARES is relatively easy. Getting them to be active participants for the long term is far more difficult. A large membership list is of little use if most of the members on it are not well trained and otherwise prepared.

To be successful, ARES must have a valid reason to exist, and an appropriate program designed to meet real needs. In northern states, where serious hurricanes seldom venture, tornados are rare, and earthquakes are usually tiny, it may be more difficult to hold members' interest. Develop a communications plan and training program that is appropriate for your area.

If natural disasters are unlikely to ever create a communications emergency, consider developing other missions. For instance, you might prepare to provide backup communications for a local hospital in the event that their telephone system is ever disrupted. Your group might also consider becoming an ARESMAT team to assist more distant areas that do have periodic disasters. Be creative, but realistic, when looking for new missions.

If large-scale disasters are more likely in your area, more members are likely to be self-motivated. Both the communications plan and training should be designed to prepare members to meet the specific needs of the served agencies, and be in line with the probability of a disaster. While monthly meetings and weekly drills may be too much in northern states, they could be imperative in some communities along the Gulf coast.

WHAT LEVEL OF ACTIVITY IS "JUST RIGHT"?

The most appropriate level of activity in your group will depend on the need. Quarterly or bi-annual meetings and drills may be adequate in areas that experience very few disasters, but monthly meetings, drills and frequent nets could be critical in a place like Florida or Georgia. Be sure each activity has a real purpose and a clear-cut goal, driven by your communications plan. Make work activities will not hold the interest of your members and participation will fall off. Your members have lives outside of ARES (we hope) and your activity planning should reflect that.

VARIETY HELPS BUILD AND HOLD INTEREST

Emcomm uses a wide range of skills, some of them easy to learn, others less so. Train for those you are most likely to need (following your communications plan), but do not neglect less needed skills. Do something different for each drill or set of drills.

BE CREATIVE

Try something novel or experimental once in a while. For instance, one ARES section was concerned that HF might not provide a reliable means of statewide communication after poor conditions caused training nets to be cancelled. Several experiments were done to find alternatives. They put a ham in a small aircraft one evening, and asked members to help determine which altitude would be most likely to offer the required coverage. On another occasion, a test was conducted on the six meter band using both SSB and simplex FM to determine whether it could be used as a viable replacement for HF when

band conditions are poor. In both cases, a significant number of members who had not participated in some time took part. Other ideas might include a simplex net, new or novel modes (SSTV, PSK), or using existing modes in novel ways, like doing SSTV or PSK over a repeater or simplex FM link. Your own needs and experiences will provide appropriate ideas, but be sure they serve a real purpose.

PUBLIC SERVICE EVENTS

Especially in areas with low disaster probability, use public service events as your primary source of activity and training, since many of the skills are easily transferable to an emergency situation. Create various net structures that mimic those required in a large-scale disaster. Where possible, focus on larger public service events, leaving the smaller ones for local clubs, and avoid doing too many, since doing so can quickly "burn out" your members.

MULTIPLE MEMBERSHIP CLASSIFICATIONS

The work of planning and preparing for emergencies can usually be done by a small group of dedicated active members. This is especially true in low probability areas.

Consider creating two levels of membership - "Active," and "Trainable Reserves." For instance, active members might be required to maintain a specified level of training and readiness. Reserve members may only be required to keep their equipment ready for deployment, and attend one training event per year, or just be on the list and willing to respond when called. Set the standards according your area's needs. If you opt for a "reserve" membership level, your active members must be prepared to offer expedient on the job training.

A DANGER TO AVOID

Do not feel you have to accept everyone who volunteers. When you are short of qualified volunteers, the temptation is to accept almost anyone who expresses an interest. Nothing does more damage to a small team than bringing in the wrong kind of volunteer. These folks fall into two categories:

- The "wannabe" - He does not have the intellect to be or do anything of real importance, and really does not want to put in the effort to gain the necessary skills and attitude. The ego boost from looking and acting important are all this guy wants. He can do more damage to your relationship with served agencies than almost anything else.
- The "disturbed" personality. Unfortunately, these folks can be hams too. They may be perpetually angry, certain that they are better at everything than anyone else, demand to be put in charge, or display a range of other difficult or dangerous behaviors.

It is better to be short handed than to accept either one of these problem volunteers. Both can do serious damage to your team's reputation, and both can waste valuable time and resources.

Saying "no" must be done with care and tact. If you have an official list of minimum standards (you should), and they do not meet them, politely explain the situation and thank them for their kind offer. You can then suggest ways they can make themselves better able to meet the agency's needs in the future. Another technique is to ask if they are willing to submit to a quick police background check, whether this is likely or not. Many people have pasts they would rather keep private. Some of these folks will not give up easily, so be firm but friendly. Remember, some of these people may try to jam

your net if angered. As a last resort, consider putting these volunteers into jobs where they can do little or no harm.

THE LEGAL SIDE OF BACKGROUND CHECKS AND SELECTIVE MEMBERSHIP

Your group may have one or more served agencies that require background checks, or at least some reasonable certainty that your members are of good character and have stable personalities. Should you be selective or require background checks? This is what ARRL General Counsel Chris Imlay has said on the subject:

> "We have always maintained, as a general matter, that we can reject an ARES volunteer for any reason or no reason. We simply don't have to accept volunteer service from everyone. However, there is no justification for rejection of certain persons in protected classes from our programs. We can't reject someone from ARES, for example, because they are a member of a racial minority, or based on sex, age, religion, or sexual orientation, so we do need to monitor the reason why a particular person is not accepted into a local ARES program.
>
> "As to the criminal history, it is reasonable to ask on a form whether or not the person has been convicted of a crime, but which crimes have to be reported? Traffic violations? Drunk driving? Some forms exempt "minor traffic violations" from the list that have to be reported. I have always thought it best for us not to get into background checks for ARES membership, though I realize that many served organizations require such as a condition of participation. So I guess the best approach is to ask the question whether a person has been convicted of a crime other than minor traffic violations, and if so, ask them to explain the circumstances."

ARES groups should not become directly involved in performing or contracting for background checks in order to avoid any personal liability if any of the information proves faulty. Background checks done by commercial firms can be expensive, and vary widely in their effectiveness and accuracy. Most served agencies that require background checks will handle them for you.

PREVENTING DUPLICATION OF EFFORT

If you are thinking about expanding or starting a new organization, do other emergency communication support groups already exist? Are they capable of meeting the needs? Is there really a need for a separate (and cooperative) organization? Will there be political difficulties between the groups, and how can this be handled constructively? How will this affect the ability of all groups to accomplish their missions? *Remember that competition between groups to serve the same agencies is always counter-productive.*

Strategies for Preparedness in Low-Risk Areas

Not every region of the country has a strong and regular need for Amateur Radio emcomm. California probably has the greatest need, with its varied menu of frequent disasters. Hawaii, Florida and the southeastern and Gulf states know that serious hurricanes are quite likely, and frequent floods and tornados continue to plague the Midwest and Southeast US.

But what about most northern-tier states, and other areas with minimal exposure? For instance, while New England states have the potential for an occasional major hurricane, flood, or rare tornado or earthquake, serious events are rare.

Building and maintaining an active and well prepared ARES team in these regions is a much greater challenge, because most hams can find "better" things to do than prepare for an event that may never happen. Although *you* may believe that you should be prepared for that rare eventuality anyway, it may be difficult to convince enough others to set aside the time it takes to make a full-sized and capable team a reality.

Operating an ARES team in such an area often requires a faith similar to belief in God. You have not met Him yet, but you might - just as that disaster might happen - someday! How do you convince others to keep that faith -and your ARES team - alive?

If a disaster does occur, history has shown that untrained volunteers will appear out of nowhere, and disappear again afterwards just as quickly. Most Amateurs assume that their existing radio skills are enough to be able to provide effective emergency communications. Those with real emcomm experience know this is not true. Emcomm requires a very different skill set, and one that requires regular practice to maintain.

A Different Approach to Preparedness

In California, a sizeable and well-trained team is critical to meeting the served agency's all-too-frequent needs. The need is generally large, immediate, and often comes without warning. In places like New England and other northern-tier states, serious disasters are not only fewer, but generally provide some warning. Hurricanes and other major storms, the most likely danger, don't just occur suddenly. They give you time to prepare, and this allows greater flexibility.

For many years, ARRL has quietly suggested the "cadre" concept. A cadre is a smaller group of key people. Think of it as the "officers without troops." They form the core of a larger "ad-hoc" response. Instead of maintaining a large group of volunteers at maximum readiness, the core cadre might include only four or five motivated and highly trained operators. Each member must be able to handle many different jobs, and have a wide range of operating skills.

Key among these skills is the ability to train spontaneous volunteers - those who just "show up" when the need arises. While large and well-organized groups generally consider these volunteers a nuisance and liability, they are essential to the cadre concept. Each member of the cadre must be able to evaluate and train these spontaneous volunteers quickly, and thus increase the level of the response.

You can create a cadre around a Level I Rapid Response Team (RRT). Members are fully equipped and ready to depart on short notice. All or most of their gear is pre-packed and frequently checked and tested to ensure readiness. Unlike the usual RRT, they must also carry all the materials needed to train and supply spontaneous volunteers.

Keeping Your Team Interested and Ready

While it is certainly easier to find a smaller number of self-motivated volunteers, even the most dedicated volunteers need to get some satisfaction from a mostly thankless task. This can happen in a number of ways.

First, just by virtue of being a smaller group, each person has greater responsibility for the team's readiness. Each person will have more than one duty. In addition, smaller teams are often viewed as an

elite group. You can be a bit more selective if your team is viewed as the "best of the best." However, be sure you do not become a closed group as this will result in stagnation and eventual failure.

You may opt to have a less frequent, but more intense training program. Instead of meeting or holding a drill for a few hours once a month, you might meet and train four times a year for an entire Saturday, covering a variety of skills and topics.

Cross-training is an essential element of the cadre concept. By this, we mean that all members should be trained in all areas, and able to perform any task with equal ease. If any one member isn't available, any other member should be able to do their job. Cross-training also reduces the chances that any team member will become bored with his job!

ORGANIZING THE RESPONSE

By necessity, the response will be graduated. Do not worry - your served agency will likely be facing similar challenges. Served agencies in low-risk areas seldom plan or train adequately for low-probability events. In fact, your team may be the most prepared element of the overall response.

The first level of the response should be geared to meeting essential served agency needs, and recruiting and managing the intake of spontaneous volunteers. This will require that one or more RRT members be assigned to each task area. For instance, several members might establish basic communication links for the agency and a resource net, while others set up the staging area and prepare to deal with spontaneous volunteers. If the event promises to be large or lengthy, consider calling adjacent areas for an ARESMAT response.

As spontaneous volunteers and ARESMATs begin to arrive, the response can be expanded to meet agency needs more completely. The EC or other person in charge of the emcomm response should not become directly involved with message handling or other "hands on" tasks, and concentrate instead on organizing the response and supervising operations.

USING SPONTANEOUS VOLUNTEERS

A plan to effectively utilize these volunteers is essential, since any large-scale or extended event will quickly overwhelm a small cadre. As spontaneous volunteers may have little or no emcomm training or experience, this plan should include some expedient training in operations and organization. A set of prepared handouts can help a great deal, but a certain amount of live instruction will still be essential to ensure that fundamentals are clearly understood.

Incoming volunteers can be directed to a separate staging area for orientation and training before being assigned to an emcomm job. One or more RRT members should staff the staging area. Their duties will be to conduct volunteer intake, briefing, training, and make field assignments. A classroom in a local school being used as a shelter makes a good intake and training site.

Intake should include filling out a form with basic personal information, also listing any emcomm experience or other skills and credentials. The form should include their driver's license number and emergency next of kin contact information. Never ask for or record Social Security numbers unless requested by the served agency for purposes of Worker's Compensation insurance. Keep all such information secure and private.

This should be followed by a brief face-to-face interview to determine where best to utilize the volunteer. If you are unfamiliar with the volunteer, ask to see a copy of their FCC license and any other important credentials. Do not forget to ask about their equipment, supplies, and how long they are available.

As discussed in the previous unit, *Building an ARES Organization*, you are not required to accept everyone who offers to help. Those with questionable backgrounds or personalities should be politely turned down. Your organization may want to develop a procedure for doing this that will not make enemies.

Once the suitability of a volunteer is determined, training and orientation should take place either individually or in groups as the situation dictates. Since the volunteer may be operating alone at some point, without someone to answer questions or set an example, the training, orientation, and handouts should be as comprehensive as time allows.

Training should cover generic skills, and include message form usage, message handling procedures, and how directed nets function. The orientation should deal with the specifics of the incident, including likely duration, frequencies, net structure, specific safety issues, information about the served agency's needs, contacts in the agency and emcomm organization, and personal needs (food, rest breaks, etc.).

SPONTANEOUS VOLUNTEER ASSIGNMENTS

During advance planning, clearly define as many jobs for spontaneous volunteers as you can. Make a list of relevant skills and information that will need to be provided. The best initial assignment for an inexperienced volunteer is alongside a more experienced operator. In essence, RRT members will teach the new volunteers the skills needed to carry on when the RRT member's shift ends, or after reassignment to a new location. In general, spontaneous volunteers should be assigned jobs that require less skill and experience. Examples include logging messages, manning a radio-dispatched delivery truck, handling radio-related logistical support functions, or shadowing an ARES leader (leave shadowing agency officials to experienced members if possible).

MODIFIED "READY KITS"

Most hams cannot justify keeping a completely redundant set of equipment in a go-kit full time, particularly when it will seldom - if ever - be needed. Some Amateur Radio gear is just too expensive. However, you can keep a minimal ready kit ready without great expense. The kit should contain small items and essentials, and a detailed checklist for large, expensive, or perishable items. Radios, antennas, power supplies, and other costly items can be added to the kit at the last minute. Smaller items should be in the kit already, since these are more difficult to locate and more time consuming to pack at the last minute. Try not to raid this kit when you need something, so that it will always be ready to go when needed.

Modified Partial Ready Kit *(Vary according to your needs)*

- Wire antennas
- Coaxial cables
- 2m or dual-band twin-lead J-pole
- Materials to string or support antennas
- RF and audio adapters
- Headphones
- Small tool kit
- Electrical and duct tape
- Spare batteries (alkaline)
- Message and log forms
- Frequency and net lists
- Call-up phone tree list
- Copy of ARES Communications Plan for your area
- Telephone numbers and contact info for agencies and Section ARES leaders
- Copy of FCC license
- Non-perishable snacks, emergency water packs
- Small first aid kit
- A complete checklist of all the expensive items NOT kept in the kit, such as radios, power supplies, and tuners
- Expedient training materials for spontaneous volunteers

OTHER ACTIVITIES AND IDEAS

With few real emergencies, even the most dedicated team will lose interest over time. One way to keep your small crew ready to go is to involve them in other activities that are related to emergency communication. The more challenging public service events have enough in common with emergency communications that they provide an excellent training ground.

Since your RRT should be among the best and brightest, they can also be a speakers and teachers bureau for area clubs and civic organizations.

Rotate people in and out of the group as they lose or gain interest. Fresh members help keep the group alive. Never operate a closed group.

Create innovative training exercises, experiment with new modes, and run emcomm courses for local ham radio clubs. This is a great way to attract new members, who might be looking for something entirely new to try.

If you are using the RRT as your Section's ARESMAT team, and if your members are willing and able to travel on occasion, perhaps you could establish a long-distance ARESMAT relationship with another ARES group in a high-risk area.

Designing the Emergency Communication Plan

PLANNING

The emergency communication planning process involves three steps:

1. Establishing a regular dialog with currently and potentially served agencies.
2. Learning the agencies' probable communication needs in time of emergency.
3. Developing a flexible plan that will best meet those needs with the resources available.

Effective plans are never developed in a vacuum. This means that the EC must work together with the served agency's personnel and other ARES leadership to be sure that everyone understands and agrees with the goals, capabilities, and limitations of the plan. Working cooperatively builds mutual trust and respect, and provides a greater likelihood of everyone's expectations being met.

All elements of the ARES communications plan must be coordinated by the EC to ensure a unified and effective response. These elements include:

- a sufficiently detailed definition of the needs to be met
- training to ensure that the plan can be implemented smoothly
- a system for call-up
- job assignments
- equipment needs
- types of nets and communication patterns
- resource nets and staging areas
- personnel management.

This does not mean that the EC must actually develop the entire plan personally. In fact, one key to success is delegation of responsibility to other qualified members. This is often called "sharing leadership." If the EC attempts to do it all himself, two things will happen - the EC will experience burnout, and he will get little cooperation from the membership.

Once the initial drafts are completed, one person should rewrite and edit the material so that it is in a consistent style, and reads well, and any "disagreements" between the various sections of the plan are eliminated. Care should be taken to ensure that terms and abbreviations used are consistent throughout the plan. All abbreviations and unusual terms should be clearly defined.

WORK WITH SERVED AGENCY STAFF

While you might think you know what serve agencies need or want, you may be surprised to learn their true expectations. Agency staff who do not have regular exposure to disaster operations and communications may have unrealistic expectations for your organization, or conversely may not understand how much you can really do for them.

Once you and the served agency have agreed upon a list of specific expectations for each other, and created a Memorandum of Understanding (MOU) or similar document, you can begin to develop a communications plan that will meet their needs. Review the agency's plans with their staff to identify specific needs and challenges.

DEFINING THE NEED

The challenges faced by each emergency communication group will be different. Some will face a low probability of a communication emergency, others will know with certainty that one or more large-scale disasters are likely in the future, depending on the location and size of their jurisdiction. In addition to frequency, the size and impact of potential disasters will vary widely.

The first task for any emergency communication manager is to identify all potential disasters, the likelihood of each occurring in their area, and the probable impact on the communication needs of served agencies.

1. Where will your served agency need to communicate, and what will the messages be like? In the case of the Red Cross, it might be between local shelters and the chapter house. They might also need to communicate with the National Office and neighboring chapters. Messages will likely be written and formal, and may have considerable detail.
2. Compile a list of all the possible disasters that could occur in your area, and then assign each a level of probability. Probability ratings can be as simple as "unlikely," "somewhat likely," or "very likely." If you do not have the skills or information to estimate probability, your local, regional, or state emergency manager may already have this information in some form. Otherwise, make your best guess based on history and other known factors.
3. Beginning with the most probable, think about how each of these disasters would impact the community and its communication infrastructure. Here are some examples of issues to consider: In a hurricane, all systems would suffer damage and overload at some level over a fairly wide area. A tornado would cause damage in a relatively small area, but with little warning. A telephone system failure at the county hospital would have implications both within the hospital and for the community as a whole. Some communication system failures will result from call volume overload, and others from physical damage to the infrastructure, or both. Recovery time from call volume overload is immediate once call volume decreases - repair to physical damage may take days or weeks. (Failure modes are discussed in more detail below.) Evaluate the resources your community already has to meet a communication emergency. Do local and state governments, and VOAD agencies already have backup communication plans and resources in place? Are they adequate? How will your plan fit in with existing plans, and how will they be coordinated? Will yours fill in any voids?

FAILURE MODES

Once you decide which types of disasters are most likely to occur, you need to determine which primary communication systems will likely fail, when, and how, for each type of disaster. This information allows you to create a backup communication plan that fits the served agency's needs.

There are two general modes of communication system failure to consider. In a hurricane, the first to occur is usually "call volume overload," followed by "infrastructure damage and failure." A tornado will likely produce the same two results, but in the opposite order. This is significant for two reasons. In the hurricane example, you will have time to "ramp up" your support as the communication systems deteriorate. In the tornado example, the maximum effect will be almost immediate. For planning purposes, these two situations could be characterized as having "gradual" and "immediate" needs.

Telephone network overload occurs when the number of attempted calls exceeds the system's simultaneous call capacity. Most telephone networks are designed so that at normal peak loads, your

probability of being able to complete a call is at least 95%. When a disaster occurs, the call volume can increase more than a hundred-fold beyond the normal peak load, and the probability of being able to complete a telephone call drops tremendously.

Cellular telephone networks fail for the same reasons wireline networks do, with the additional liability of a more fragile infrastructure. Antennas, towers, and microwave links between cell sites and switching centers can be damaged quite easily. Add call volume overload, and you can quickly understand why cellular networks should never be relied upon as a replacement for wireline networks during a disaster situation. In addition, many cellular providers have failed to increase capacity quickly enough to meet increasing demand,, so the probability of being able to complete a day-to-day call may be well below 95%. This has been solved for some emergency service providers using special priority phones that can "bump" other users from the channels, but not all areas offer this program.

Public safety communication networks suffer from the same general modes of failure as wireline and cellular telephone systems. In addition, public safety agencies are labor-intensive operations, and quickly run short of personnel to do the communicating. As available personnel work around the clock with adrenaline pumping, they become physically exhausted, tempers grow short, and the ability to cope with the disaster diminishes.

Organizations like the Red Cross and Salvation Army often have minimal communication systems of their own at the local level, and are not equipped to deal with the large volume of message traffic a disaster brings. Red Cross has significant national communication assets that can be moved into a large disaster area as needed, but this takes up to seventy-two hours (three days) and is seldom enough in very large-scale disasters such as strong hurricanes that travel hundreds of miles up the coast. Since they are generally dependant on telephone service and portable radio systems in a disaster situation, these organizations are almost automatically in trouble without initial outside radio communication support.

The "All Hazards" Approach

If you find that each possible disaster creates very similar needs, you may choose to create a single, but flexible "all hazards" communications plan. This is a simpler method both to create and implement, and can make everyone's job much easier.

KEY ELEMENTS OF THE EMERGENCY COMMUNICATION PLAN

At this point, you should have a pretty good idea about which communication systems could fail, when, why, and how, for each potential disaster on your list. You should also know where your served agency needs to communicate, and the general nature of the messages to be sent.

Networks:

You can begin to design the networks necessary to supplement and replace failing systems. This should include a list of different types of nets, geographic coverage, specific station locations, and equipment and staffing needs.

Staffing Plans:
Staffing plans will help you determine how many operators you will need for the various assignments in your plan, which skills will be required, and when they will be needed. Begin by estimating how many operators will be required to staff each net, allowing enough in reserve to work all shifts, replace those who cannot remain on duty, and cover other contingencies.

Do you have enough local members and other hams to meet your staffing needs in all cases? Probably not. This means that you will need some outside assistance, and the time to plan for that is now, not when your world is coming apart at the seams. Whenever possible, have more than one back-up plan in place.

A major emergency usually brings unsolicited offers of help.

A call to your DEC or SEC may bring more aid from an ARESMAT or neighboring areas, so be sure to discuss your response plan with them to learn what resources may be available. Ask your DEC or SEC to help you make contact with any ARESMAT teams or other groups just outside your region to learn their capabilities. Remember that these capabilities may be different from one day to the next. If the emergency affects them as well, they may not be able to help at all. Even if it does not, key members of the team or certain equipment may not be available. For very large-scale disasters, ARRL HQ may be able to gather and send in additional resources.

Use your core team members for the most critical assignments. You know their skills, level of training and commitment, and the physical resources they bring along. They know each other, the area, your response plan, and local resources better than outside "reserve" help will. Less critical positions can be filled from outside the core team.

In a disaster situation, you never know who will be available. Avoid making "cast in stone" assignments. Rather, group your members into skill areas. Instead of assigning Joe as the only net control for the tactical net, create a list of potential net control operators. In addition to skills, consider equipment. A member with only a hand-held radio might not be a good choice to quickly establish a net control station in the field, but fine for the same job at a fully equipped EOC.

Physical Assets and Resources:
These will include digital networks, nodes, Winlink gateway stations, FM repeaters (fixed and portable), and other infrastructure items. It will also include possible operating locations including EOCs and shelters, group and individually owned equipment, vehicles, temporary shelters, feeding equipment, or any other assets you might need.

Create a list of potential needs first, and then identify resources to fill them. You might choose to list equipment by source, or by type, or both. For instance, you might list your members and other sources, and then the assets each has available. This way, when you ask Joe to set up a station at the local shelter, you know he will likely have a dual band radio, portable antennas, and backup batteries. Additionally, if you need a particular asset, such as a portable HF station, you could look up "HF Stations, 100 watt portable" on your asset list, and see that both Mike and Harry have them.

Resource Tracking:
You will need a plan to keep track of all personnel and resources. This may involve one or more persons constantly making and updating lists of people and equipment, their status, and location. Resource tracking is key to a safe and efficient operation and should never be left to chance.

Flexibility = Survivability:
No two disasters are ever the same, and no two will have precisely the same effect on communication needs. Generals are often accused of "fighting the last war," something we would do well to avoid. It has also been said that "no battle plan survives first contact with the enemy." Keep plans simple and flexible enough to adapt and survive as the situation changes. Provide alternatives in the event that the situation goes beyond the capabilities of the primary plan. For example, your telephone tree and repeater notification system could be rendered useless by a tornado uprooting utility poles, and destroying local repeater towers. A backup plan might involve one or more distant but useable repeaters that members should tune to for instructions once they become aware of the disaster, or a designated simplex frequency - or both.

An excellent strategy is to build two or three layers of redundancy into your plan. The top layer is usually the one with the greatest speed and efficiency, and is usually the one with the greatest dependency on fragile infrastructure. For instance: repeaters linked using IRLP or Echolink, local Winlink or TelPac email/packet nodes, conventionally linked repeaters, packet backbone networks, and similar systems. The middle layer provides a fall-back position if top-layer systems are damaged. It might include standalone repeaters, packet links established through portable or temporary KA nodes, and liaison stations helping to bridge between nets on unlinked repeaters. The bottom layer is the "when all else fails" plan. It includes simplex nets with hilltop liaisons to neighboring areas, local packet nets, HF voice and digital nets, use of distant Winlink nodes, and perhaps even CW nets if conditions are exceptionally bad.

The Training Plan:
The best communications plan will fail unless all involved know their part in it. A comprehensive training plan is essential. Training never stops - it is a continuous cycle that ensures that all team members are able to do their best when called upon. Some training program elements might include:

- Appropriate levels of this course series, (Introduction to Emergency Communications and Maine Emergency Communications Courses), for all members, over time
- FEMA's IS-100 and IS-700 courses
- General understanding of the plans and how they work
- Specific skills, such as message formatting, equipment operation, and emergency field repairs
- Use of various software and modes, including packet, Winlink, Pactor, and others
- Net operations, both tactical and formal traffic handling
- Implementing or testing operational elements, such as message routing and forms
- Full scale drills and simulations, including the annual SET
- Communication support for public service events such as walk-a-thons and parades.
- Backup plans and "work-arounds"

ARES Management and the Incident Command System

Since the early 1990s when the first official Incident Command System was introduced in California, an increasing number of local, state, and federal agencies have adopted the ICS for both major and day-to-day incident management. Following the 2001 attacks on the World Trade Center and the Pentagon, the Department of Homeland Security has strongly encouraged emergency response agencies to use the ICS. With the development of the National Incident Management System (NIMS), it has become law. For this reason, it is imperative that all Amateur Radio emcomm leaders have a good working knowledge of the ICS as used in their area, and how ARES might fit into it in a variety of situations.

THE TWO INTEGRATION MODELS

Amateur Radio emcomm groups are most likely to have one of two relationships with the Incident Command System. In the first model, you are there to support a single agency, such as the Red Cross, providing only internal agency communications. Your interaction with the ICS structure in this model will be limited.

The second model places you directly in the ICS structure. In this case, you are either a designated independent resource agency called in to provide interagency or command communications support, (under the Federal Response Plan and most state plans, ARES would be considered an ESF-2 agency), or are directly affiliated with the lead emergency management agency. Your group will fall under the Logistics Section, Service Branch, Communications Unit of the ICS structure. The Communications Unit Leader will use your group as a resource to solve both single agency and interagency communication problems.

In either case, it is important to remember that in any event being run under the ICS, only those organizations that are specifically invited may participate. "Spontaneous" volunteers are almost never accepted. This underscores the importance of building long-term relationships with served agencies, since more and more incidents of all sizes will be managed with the ICS in the future.

USING AN ICS-TYPE COMMAND STRUCTURE WITHIN ARES

One problem with using the ARRL Field Organization as a "command structure" during an emergency is that only one individual holds each title and job description. This is fine for general day-to-day management of the group, but it fails to provide for around-the-clock leadership coverage during an emergency. The EC may be in charge for the first twelve hours, but what happens when he needs to go off-duty for rest and personal needs? Who is in charge? This is exactly the problem that the ICS was created to solve in the first place.

To solve this dilemma, we have created optional ICS-style titles for top ARES emergency event leadership. This ensures that when you need to contact the person presently in charge at the Section Level, you will be able to address the message to a job title, rather than to a specific person who may be off-duty.

For instance, the person in charge of operations at the Section level is called the Section ARES Coordinator (SAC). At the local level, it would be the Local ARES Coordinator (LAC). These are functional titles, and are not assigned to anyone until your group is activated for an event.

Other regular internal ARES job titles can be converted to event titles simply by placing the word "event" in front of them. Thus, you would have an "Event Net Manager."

Your group's emergency communications plan should describe who may hold each title, how authority will be transferred to the next person at shift change, and the limits of that authority. Generally, when a person holding a job title goes off-duty, the title is handed over to whoever is next in line according to your group's plan. In many cases, the outgoing person may need to use his own judgment regarding the choice of a replacement. As with any ICS operation, the outgoing person should provide the incoming relief with a complete briefing on the status of the operation.

AMATEUR RADIO EMCOMM ORDERING SYSTEM - THE "ARCT"

ICS resources are typically given four letter "ordering codes" that have a commonly understood meaning. While the system described here is not universally known, it is being discussed in several western states. This system was developed by a group of west coast ARES leaders, including Dave Thorne K6SOJ, and published in QST magazine on two occasions. The code developed is called *Amateur Radio Communications Team* (ARCT). There are five different ARCTs, referred to as "Types."

The Type I ARCT is a complete basic response team, with a fully equipped base station, 4 mobile/portable stations, and twelve operators. The other four ARCTs are add-on elements, such as additional base or mobile units. The first order will almost always include a Type I ARCT, but may also include other ARCT types to meet the ICS organization's needs. Thus, the Communications Section Leader might order one Type 1 and two Type 4 ARCTs.

ARCT STAFFING

Each ARCT is designed to be capable of continuous twenty-four hour operations. The Type 1 ARCT has a twelve person team - enough to staff it for two twelve-hour shifts per day. The Type 1 ARCT also includes a supervisor and assistant supervisor, one per shift. In the event that one team member needs to leave, the ICS Communications Coordinator can order a Type 5 ARCT (single operator and his station) as a replacement. Type 2, 3 and 4 ARCTs offer a variety of add-on team resources.

ARCT Ordering Menu

ARCT Type 1 - (Full field station and 4 mobile/portable units)

- Complete Amateur Radio emergency/auxiliary communications team for single or multiple agency communications
- Capability: Short-range (VHF/UHF) and long-range (HF) voice and digital communications for tactical, logistics, health/welfare, administrative, and other radio traffic. Is not dependant upon any outside power source or infrastructure.
- 12 licensed and registered AROs* including one supervisor and one assistant supervisor. Consists of one ARCT (Type 2 or 3) base station; and four Type 4 units (mobile, portable, or "rovers".

ARCT Type 2 - (Field/base station - complete)

- Capability: Short-range (VHF/UHF) and long-range (HF) voice and digital communications for tactical, logistics, health/welfare, administrative, and other radio traffic. Is not dependant upon any outside power source or infrastructure
- 4 (or more) licensed and registered AROs* with one or two vehicles
- 2 must be General class (or higher)
- May be assigned to a specific agency, or for AUX/EMCOMM
- Use at a staging area, CP, EOC, etc. for multiple agency service

ARCT Type 3 - (Field/base station - no digital)

- Same as ARCT TYPE 2 but without digital (packet or Pactor) capability

ARCT Type 4 - (Mobile/portable field units)

- 2 licensed and registered AROs* with one or two vehicles
- Technician class or higher (At least 1 General class or higher if available)
- VHF FM (minimum) equipped, HF mobile/portable desired
- May be assigned to a specific agency or to supplement/relieve an existing multi-agency ARCT

ARCT Type 5 - (Mobile/portable field additional support unit)

- 1 individual licensed and registered ARO* with vehicle
- Technician class or higher
- VHF FM (minimum) equipped
- Rarely (if ever) ordered singly
- May be assigned to a specific agency or to supplement/relieve an existing ARCT

Special ordering note: An order for a Type 1 ARCT must specify whether the base station component will be Type 2 or Type 3.

*** ARO** - Amateur Radio Operator

FILLING AN ARCT ORDER

Unless you have a staging area full of registered volunteers, it is unlikely that you will have an ARCT of any type available for immediate dispatch. Be sure to let the person placing the order know how quickly you anticipate being able to have them on their way to the assignment.

This is where a resource net is essential. The resource coordinator should log in each volunteer and his capabilities as they sign in. If possible, the resource coordinator should attempt to anticipate the upcoming needs and put together various types of teams on paper for quick deployment. If a staging area is open, those volunteers able to do so should be asked to go there for eventual assignment. When no staging area is available, volunteers should remain at home or just outside the operational area until dispatched to a particular location.

PROPOSING ARCT IN YOUR AREA

If your ARES or other emcomm group is a listed and registered ESF-2 agency, consider proposing the ARCT ordering system to the state or county emergency management planners. It is important to point out to cost-conscious emergency management directors that unlike most other ICS resource orders, ARCT orders are always FREE!

However, before putting such a system in place, be sure your group is able to support ARCT orders. Your training and plans must reflect this system for it to be used successfully. Avoid promising more than you can reasonably provide, and be sure that the agency understands that yours is a volunteer organization and that available resources may vary from day to day.

Managing the Response Effort

PLANNING FOR DEPLOYMENT

Your response to a call for communications support will only be effective if you and your group put time and effort into preparation. Potential needs should be identified, specific plans made to meet them, and necessary resources put in place. Your plan should be detailed enough to permit anyone reading it to know what to do, but not so specific as to restrict flexibility. Physical and human resources, and a means of accessing and tracking them, must be identified. Networks should be outlined. One of the most important resources is an adequate pool of trained operators. If you are not prepared, the effectiveness of your response will be greatly reduced.

EMCOMM TIME LINE

For every disaster, there is a fairly predictable progression of events that involve emcomm volunteers. The duration of each phase will depend upon the type of disaster - hurricanes last longer than tornadoes. For each potential disaster, develop a time line and the actions that must be taken by your team during each phase. Also note that not every disaster has all phases.

Preparedness - Standby - Warning - Operational - Stand-down

The *preparedness phase* takes place in the months and years before a disaster occurs. Plans are written and tested, resource lists developed, equipment installed, and members trained.

The *standby phase* may occur before the event has occurred, such as with a storm whose precise track is uncertain, or during the period immediately afterward, as would happen with a chemical incident or terrorist attack. During this phase, emcomm groups should assess the likelihood that they will be called upon to help. If appropriate, team members should be put on alert and asked to make preparations. The standby phase might not exist at all in some sudden emergencies.

During the *warning phase*, the community takes action to reduce the potential impact of the impending disaster. In a hurricane, boarding up windows and shoreline evacuations would take place. During this phase, emcomm groups are moving in and setting up. With a tornado, this phase would barely exist, and emcomm set up would occur in either the operational or recovery phase.

The *operational phase* begins once actual communications are being handled. During this time, emcomm teams do their best to meet the needs of the served agency and keep themselves safe. Once the event has passed and the cleanup and recovery begins, the emcomm team's job does always not end because it may take a while for primary communication systems to recover. Telephone and power could remain out of service for some time, and served agencies will continue to assist the public. Health and welfare traffic may increase dramatically. If this phase lasts for any significant period of time, additional resources may be needed to take over from exhausted volunteers. Recovery efforts by the served agency may begin during the event itself, but for our purposes, operational needs may change significantly once the event itself is over.

The *stand-down phase* begins as conventional communication facilities resume normal operation and the served agencies no longer require your services. Stations and networks are gradually closed and the teams begin to head home as they are released.

MOBILIZATION

Every response begins with a call from the served agency, or with an event that calls for an automatic response in your plan, such as a tornado. Your served agency should have multiple points of contact for your group and several ways to reach each person on the list. In the case of an automatic response, emcomm leadership should make every effort to notify their contact at the served agency that your teams are responding automatically as per the plan.

You will need a plan to get your team members ready for deployment in a short time after getting the call from the served agency. It begins with a call-up plan, using a combination of means that increases the chances of alerting as many members as possible in the shortest time with the least effort. You can use commercial pagers, landline and cell phones, paging on Amateur repeaters, email, packet radio, or any combination. Members should know what to do if they become aware of an incident or situation that may result in a call-up. This usually means monitoring one or more standard net frequencies.

Once alerted, each team member will need to know what they are to do next. It may be checking into a particular net for further instructions, or responding directly to a particular EOC or other facility. This information should be in your communications plan, and everyone should know their pre-planned assignments.

For those without specific assignments, provide a resource net or staging area. The initial resource net might be on the same frequency as the primary operations net, but if it is busy it should be moved to another frequency as soon as resources allow.

OPERATIONS

SECTION ARES OPERATIONS CENTER

Any time activation occurs, the SEC and their staff should consider opening an ARES Operations Center (AOC) to coordinate and oversee the response, hopefully outside the affected area. Depending on the needs of the event, this could mean the SEC working from home, or for larger events, establishing a temporary AOC facility at a club station, school classroom, served agency office, or other suitable location. The AOC must be able to monitor network operations and be in contact with ECs, served agency officials at the Section level, and with ARRL HQ. This means telephone, fax, email, copier, and radio contact should be available. Around the clock staffing for this center should be considered as well as logistical support including food and water, rest facilities, batteries and generator fuel, and general supplies.

Networks: Many considerations go into designing a network. Foremost are the communication needs of the served agency. What types of messages do they need to send, and where? Are they long, detailed, text messages, or short tactical ones? Which modes are currently available to you, and which will best suit the types of messages? How many nets or stations will you need to handle the expected message load?

Depending on local needs and circumstances, you may decide to have a complete network design ready to go in your operations plan, or only the initial check-in net, from which you can build as needs become clearer. Network plans should be kept as flexible as possible so as to better cope with varying conditions. No single mode or band should be relied upon in your plans. If propagation, or a repeater

or node failure renders one path unavailable, the plan should offer alternatives. These alternative net modes should be planned and trained for well in advance.

C&C nets: A Command and Coordination net can be used to organize other nets and manage the flow of messages. It may be combined with the Resource net (see below) for greater efficiency and in smaller events. It can also be used to alert stations to packet messages that have been posted to a bulletin board and are ready for retrieval.

NET MANAGEMENT

Resource nets and staging areas: All but the smallest incidents should have a separate resource net. This net allows emcomm managers to register and track incoming volunteers, direct them to staging areas, and coordinate replacement operators, supplies, and equipment repairs without disrupting tactical and traffic nets.

Support Logistics: While your members' "go-kits" should allow each operator to be completely self-sufficient for 24-72 hours, at some point you may need to make sure they have the resources necessary to stay in service. (food, water, sanitation, shelter, fuel, batteries, etc). Depending on your local resources, the plan may call for each operator to be completely self-sufficient and not to expect re-supply from outside. If you have the resources, and the type of emergencies you are likely to encounter demand it, you may have one or more support personnel helping to re-supply the field stations. In some cases, served agencies may provide some supplies, but radio-related items may still be needed. In the case of the Red Cross, you will be expected to be self-sufficient for at least the first 72 hours so that they may concentrate on serving the victims of the disaster and not their volunteers. If your organization will be expected to provide direct logistical support to your volunteers, you will also need to consider (in advance) who will pay for and deliver supplies.

Organizing shifts: How long should any one operator remain on-duty? The answer varies with the person and event, but in most cases it should be ideally six or fewer and certainly no more than twelve hours. Keeping a ready reserve of fresh operators is the single most important and difficult job an emcomm leader can face during a long event. Make sure everyone has a chance to take care of personal needs on a regular basis, and gets regular meals and rest breaks. Exhausted operators become inefficient and can make costly mistakes, perhaps endangering their own or other's lives.

Staffing: The staffing of an incident can often be problematical. Do you deploy all of your resources (both human and equipment) at once? How do you staff each operating location? You must plan for the “long haul”. Incidents last an average of 72 hours or longer. You can’t expect to send a single operator to a location and expect them to operate for 72 hours or longer without relief. The “go on – stay on” philosophy never works in long duration incidents (of 24 hours or longer). Due to conditions you might not be able to get relief operators to a deployed location from a staging area after an initial operator is deployed.

The easiest solution is to deploy human assets in teams of two. The two operators can set up shifts that will provide for adequate breaks for each operator. This means that you may not have as many human assets as you think. Let’s say you have an ARES group with 40 members. Of those 40 members, 30 can be depended on to respond. Of those 30 members, 20 might be expected to be available to deploy. You have effectively have 10 teams (of 2) to deploy in a long duration incident. Never depend on all of your ARES members to respond to any given incident. A good ratio to depend on is approximately

2/3rds of your active membership to respond. Never bank on having spontaneous volunteers to respond to an incident. They may not “come out of the woodwork”.

Resource Tracking: A system must be in place to track all volunteers, equipment, and other resources. This may be as simple as assigning a station to participate in the resource net as a "recording secretary" to log the present location and status of operators, equipment, and supplies. Without tracking, injured or missing operators might not be missed until it's too late, badly needed supplies could sit unused, and available operators with needed skills might be waiting for assignments forever. Consider creating paper log sheets or a simple to learn and use computer spreadsheet or database for the purpose. Training in resource tracking will be required for it to be effective.

ICS-STYLE JOB TITLES

When the EC goes off duty for rest, how do the others know who is in charge? Some groups use a special club call-sign for the EC, and others use an ICS-style job title to identify the guy in charge. While ARES has no official standardized titles for the purpose, some were suggested in the ICS unit of this course.

If you are part of an expanded ICS operation as a provider of resources, chances are that your regular ARES leadership will only be involved in resource and net management. Staff in the Communications Section of the ICS organization will make all command decisions and should handle most support issues.

DEMOBILIZATION

While most plans cover the mobilization and operational aspects of a response pretty well, an orderly means of reducing and eventually ending services is often overlooked. As an incident (or exercise) winds down, so will the communication needs of your served agency. This transition must be as smooth as possible so that it does not interfere with any ongoing operations.

Begin at least one, but not more than two, shifts, before your anticipated or scheduled release. Set up the last shift, and possibly a "contingency" shift, (the situation might go down-hill again,) to be available if needed. Disseminate this information as far and fast as possible. Use the telephone first, and then radio voice or packet to accomplish this. Try to use your own personnel for the last "mop-up" shifts so that you can release assisting or mutual aid (ARESMAT) personnel first.

Emcomm Manager's Demobilization Checklist

- ❑ Make a list of any information or instructions that operators need to have before shutting down, including what to do with official station logs, undelivered messages, borrowed equipment, host site restoration, etc. Be sure this information is sent to all stations early during their final shift so that they have time to prepare.
- ❑ Contact any excess standby resources and let them stand-down, but try not to completely deplete your reserves until the last shift ends.
- ❑ Release mutual-aid resources first, then those who have been out longest or who have urgent personal needs and families to attend to.
- ❑ Consolidate nets as the traffic load diminishes and return vacated repeaters and nodes to normal operation. Don't forget to thank everyone connected with the operation.
- ❑ Shortly after the incident, hold a debriefing for all personnel. Suggest that everyone going off-duty make a list of items for discussion, both positive and negative.

DEBRIEFINGS

Post-event debriefings and discussions are essential to the health of your organization, and to the effectiveness of the support you provide to your served agency. They are a chance to learn about the things that went well, and those that need a different approach next time. The time to plan for a post-event debriefing and discussion is before the event even happens - it should be in your operations plan so that everyone expects it.

Your debriefing plan should include pre-release instructions for all operators. If their logs are to be turned in to the served agency, you might suggest they keep a separate set of notes to use as a memory aid for the debriefing. Ask them to keep a list of any problems, or methods and systems that worked especially well. Try to keep the group discussions on a non-personal level. Problems between individuals should be dealt with privately. Group discussions should be about procedures, and what was done, but not who did it.

For a small event with few contentious issues, it may be appropriate to hold the discussion on the air, at the conclusion of the net. For larger or more problematic events, a face-to-face meeting a few days later is a better choice. The delay allows everyone to get some rest, think about events and issues, and organize their thoughts. As a last resort, consider sharing comments via an email group.

Once the debriefing is over, and all the information is analyzed and collated, any relevant or useful findings should be shared with the group. Lessons learned that have wide applicability should be published in a newsletter or even in QST so that others may learn.

Training From a Management Perspective

Some material in this lesson was developed from work by Ron Clark N0POM, EMA Volunteer Communications Coordinator for Sarpy County, Nebraska, and by the New Hampshire ARES Rapid Emergency Deployment (RED) Team.

Recruiting and keeping volunteers is not easy. Educating them is also a challenge. It is not easy to tell someone who has been a ham for twenty years that they need to learn even more. The "I have done it all" attitude is common, especially among older hams. A few will even refuse to participate in ARES if they are required to take additional or on-going training. These are not the kind of people you really need or want in your core organization. They are less likely to work well in a group, or to take direction from others, and when the time comes to do a job, they will not be effective.

However, others will invest time and effort in learning and honing new skills if a real need is demonstrated, and if the program is interesting and challenging. A well designed training program can help to recruit and retain volunteers - the kind of volunteers you need and want. Instead of a chore, it can be the highlight of your program.

GOAL SETTING

It is unlikely that you will get somewhere unless you know the destination. The first step in developing any education and training program is to define the desired result. Which information and skills will your volunteers need to make your communications plan work? What does your served agency expect you to do, how, and when? What will it mean to "be successful?"

As you might guess, the first steps begin with your emergency communications plan. "Train to your plan." This means that all training should have as its goal increasing the ability of your members to successfully implement and carry out the plan.

SKILLS SETS

There are many different skill sets within the Amateur Radio hobby. Few hams have them all. Some may be seasoned and skilled contesters, others may be able to design and build microwave preamplifiers on the kitchen table. Emergency communication is yet another skill set. While it shares many of the skills contained in other sets, a large number skills are exclusive to emcomm, and perhaps to your specific mission and agency.

Most of the emcomm-exclusive skills are related to message handling, operating under difficult conditions, or with specialized digital modes. Others include working with served-agency personnel and systems. When developing your training goals, consider the existing skill sets within your group, and identify gaps that need additional training.

USE "OUTSIDE THE BOX" THINKING

The usual ARES training program focuses on traditional basics - message handling and net operations. While these are essential skills at which everyone must be proficient, your training should extend to other areas as well.

To get and hold your group's interest, try making your first training sessions about something they know nothing about. Get some experts to come in and give a presentation or go on field trips for the training.

In preparation for the Y2K rollover, one Nebraska Public Power District asked the county emergency management agency's hams to establish a backup net between all of their various power substations, the main office, and a few key line crews at midnight on New Year's Eve. The training might have

been all about nets and messages, but first the group was invited to visit the Power District's underground command center for a tour. The resulting interest meant that the County EMA had all the trained help it needed on New Year's Eve!

Think of it another way. You have a room full of ninth graders sitting at computers hooked to the Internet and you need to sell them on the idea of packet radio. Yes, they can send and receive messages from Tokyo in a matter of seconds, but ask them if they can they chat live with an astronaut in the space station circling overhead, or someone in a ship at sea, on foot, or in a moving vehicle? Similarly, your members know what they can already do, but they may not be aware of what they do *not* know how to do. Once you create that mindset, participation in training exercises will improve.

Develop training exercises around the various risks your region faces. Is there a dam that could break? Hurricanes or tornados? A nuclear power plant? A military base with hazardous munitions? You first need to sell them on the idea of *why* they need training, and then more mundane net discipline and radio procedure lessons will be much easier to sell. In addition, you can build all your training around specific hazards. Do one drill on a nuclear power plant scenario, and for the next, invent a hurricane. This has two advantages. One is variety, which prevents boredom. The other is that you are training for potentially real events. This makes it more interesting and ensures that your volunteers will have had a chance to think about the response to a variety of emergency conditions.

SKILL SETS FOR EMCOMM

- Communications plan knowledge (all members, but especially leadership)
- Served agency plan familiarity (all members, but especially leadership)
- Message creation and handling (net members)
- Net operations for individual stations (net members)
- Using specific modes, equipment, and software (all members)
- Net control operations (the NCS)
- Network design and management (the Net Manager)
- Portable and field operations (covers a wide range of topics and skills)
- Field improvisation - equipment and operations - what to do when it all goes wrong (all members)
- Personal survival (all members)
- Expedient training for spontaneous volunteers (core personnel)
- Working and interacting with served agency personnel (core personnel)
- Served-agency procedures, operations, and specialized forms (all members)
- Operating served-agency communication systems (key members)
- Winlink 2000 operations and procedures
- Operating the ARES Operations Center (AOC) (ARES leadership)

TRAIN TO YOUR COMMUNICATIONS PLAN

Every emcomm group should have a full emergency communications plan. Regardless of whether you choose to take an "all-hazards" approach, or to plan for specific disasters, the overall training program should be specifically designed to increase the group's ability to carry out each element of the plan. This alone will offer a wide variety of training possibilities, since most plans will cover a range of possible scenarios, modes, and skills.

Most plans will propose ideal network and management structures, but they need enough flexibility to deal with the unexpected. As was noted earlier, "no battle plan survives first contact with the enemy."

The same is true of emcomm plans. Think of your basic plan as framework upon which to build the real networks needed to deal with a particular event. Your drills should help everyone become comfortable with the core plan, and what to do when it does not work. This concept automatically expands the number of different drills you can create.

CREATIVE TRAINING IDEAS

The "Dead Computers" drill for NCS training: (Created by Sterling Eanes AK1K)

This drill is designed to give NCS trainees "gray hair" in a hurry. In a compressed time format, it simulates the situation an NCS encounters in a net with high traffic volume, and requires strong NCS skills and good organization to handle it well.

The drill is based upon the impossible but useful premise that a nuclear electro-magnetic pulse (EMP) device has detonated and wiped out all computers and calculators in your area, but somehow has left your radios undamaged. (This impossibility is irrelevant to the purpose of the drill.) The served agency needs a large number of math problems solved, and it has asked the members of your net to do the problems in longhand (remember, no calculators!), and to check each other's work to ensure accuracy. This is how it works:

In advance, the station playing the "served agency" distributes identical charts with rows and columns of four-digit numbers to all net members. The columns are numbered, and the rows are lettered. You can email the charts, or hand them out at an earlier meeting.

The NCS calls the net, takes check-ins, and then asks the "served agency" for directions. The agency station describes the drill scenario, and then begins asking the NCS to have certain problems solved, such as "C2 multiplied by L6." The served agency station can choose to use any math operations he feels comfortable with, but addition will be the simplest for most groups.

Each problem will be assigned a message number by the served agency. As the served agency sends in more and more problems to be solved, the NCS must keep track of which problems he routes to whom, and then have stations pass answers to a second station to be checked and confirmed, keeping track of those as well. Once an answer has been confirmed, it can be routed back to the served agency. If two stations disagree on an answer, it is either passed back to the original station or another for re-checking until the answer is agreed upon.

The drill can go on for as long as you wish. You can make the drill more or less difficult (and time consuming) by using two, three, five, or six digit numbers, using more difficult operations (such as multiplication or division) or by sending more or fewer problems to the net.

The Full-Scale "Tabletop" Exercise: (Courtesy of the New Hampshire ARES RED Team.)

This drill simulates multiple inter-related nets, such as might occur within a Section. The difference is that it is done in one large room, such as a school gymnasium. Unlike a typical tabletop exercise in which you only talk through a plan, you actually operate the nets just as if you were in the field. Think of this as a Simulated Emergency Test (SET) all in one room! NH-ARES calls it the "Tempest in a Teacup."

This drill has two main advantages. First, it lets each member see and experience how the entire network structure works. This is especially valuable to new members. Second, Section and local training staff can quickly see problems occurring and work to correct them.

Each local net sits around a table with its own NCS. You can have as many local nets as you have room and tables for. All the nets can be in one large room, or in separate rooms. Radios are not used to communicate within the local net - members simply speak as though they were using a radio. This takes a bit of getting used to at first, especially in a large, noisy, gym. The noise of a large room helps simulate the noise and confusion often encountered during a real event. Communications between the local net's liaison station and other liaisons on the Section net are done with handheld VHF or UHF radios set to their lowest power settings.

Messages can be passed between net members "off the net frequency" simply by having both "stations" move to a set of chairs placed a distance from the net's table.

An "exercise simulator" is assigned to each local net, and to the Section net. Other simulators may play the roles of served and outside agencies. These simulators periodically pass messages to each station as though they were a served agency representative at that location. One person acts as an overall scenario manager to keep the entire operation on track and on schedule. He can also play "God" from time to time by throwing new situations into the scenario, or by making changes in the schedule if the scenario is moving too fast or too slow.

The exercise scenario is developed in detail, and all messages are created and scheduled beforehand. Each exercise simulator has a package of messages to be fed into the nets at listed times. Net members have log sheets to keep track of the messages they send, and blank message forms for any net related requests. It is useful to create a computer spreadsheet with basic messages into which certain local data can be imported. This will save considerable time in message generation.

A variation of this exercise has each local net meet in a room in their own neighborhood, while the Section net operates on its usual frequency. For instance, each county's net might meet in their EOC, with a radio for the Section net. The Section net could meet on its usual HF or VHF frequency. In this case, it is imperative that each transmission contains the phrase "This is a drill" at the beginning and end, and sometimes in the middle of a longer message.

Create dummy messages beforehand, and distribute them to each net's simulator via email well in advance. This will allow the simulator time to print and organize the messages. Use a time schedule to release each message number during the drill.

OTHER CORE TRAINING IDEAS TO BUILD ON:

Disaster evolutions - standby, warning, operations with increasing failures, stand-down (a great table-top discussion exercise)
Workarounds for network and key system or equipment failures
Call tree tests - unannounced at varied times
Test staffing plans - what happens when someone isn't available?
New or alternate modes - for instance, PSK63 on 2m FM?
Use of specific agency forms
Agency procedures, such as welfare message intake and routing
Operation of resource nets and staging areas
Emergency power modes - training and testing
Simplex nets/relay techniques (no repeater/packet node)
Your role in ARESMAT plans
Net management for high volume traffic (passing messages off-channel)

SAFE AND SECURE DRILLS

Why do we need to say, "This is a drill"? Simply, we don't want to cause confusion and panic. During a recent federally mandated nuclear power plant evacuation drill, a long message containing detailed evacuation directives was read on the state emergency management agency's VHF radio system by an inexperienced (non-ham) operator. Not once during the transmission did he say, "This is a drill." At that moment, a local television reporter walked into her office and overheard the message on her scanner. She was on the phone to the governor's office in seconds, certain that it was real. Needless to say, the governor was not amused. No one wants another H.G. Wells "War of the Worlds" panic scenario.

Another way to prevent misunderstandings like the one above is to notify served agencies, the press, and police and fire departments in advance. The press might even want to cover your exercise, so decide in advance whether you want this to occur. If you do not want press coverage, have a good and reasonable excuse ready in advance should you be asked, so that they will not think you are trying to hide something. For instance, suggest that this is a very preliminary training drill, and that they might get more out of covering the larger exercise later in the year.

Use substitutes for "hot-button" words. For instance, say "golf-balls" instead of "victims." While this may seem to violate the FCC rule against obscuring the meaning of a transmission, remember that there are no real victims! This is all make-believe. You might also say, "simulated victims" or "simulated dosimeter readings" although this can make transmissions rather more lengthy.

Mutual Aid and the ARESMAT Concept

ARES MUTUAL ASSISTANCE TEAM (ARESMAT) CONCEPT

The ARESMAT concept recognizes that a neighboring Section's ARES resources can be quickly overwhelmed in a large-scale or long-term disaster. ARES members in the affected areas may be preoccupied with their own situations and therefore not be able to respond. In this case, ARES support must come from outside the affected areas. This is when help may be requested from neighboring Sections' ARESMAT teams.

The ARESMAT tool should be one of "last resort - better than nothing." Whenever possible, Amateurs from within the affected Section should be used for support. It is a great deal to ask of a volunteer to travel far from home, family and job for an extended period of arduous and potentially dangerous work. ARESMATs should be released from duty as soon as possible.

ARESMAT Member Qualifications

ARESMAT members must be highly qualified emergency communicators, experienced, and physically fit. They must be able to work efficiently under the most adverse conditions using a variety of modes and techniques, and must be familiar with the Incident Command System (ICS).

Additionally, a member should have demonstrated ability to function in stressful crisis situations, possess strong interpersonal communication skills, and have the ability to work effectively within a diverse group of volunteers and emergency response professionals An understanding of how ARRL, Red Cross, and other agencies function at both the national and local levels is helpful.

Pre-Disaster Planning

Well in advance of any disaster, plans and arrangements should be made between neighboring Sections by the SECs. Advance planning will ensure a speedier response to ARESMAT requests. Planning should consider the following:

- Pre-disaster ARESMAT planning with all adjoining sections. Planning can be conducted through written memoranda or in-person at conventions and Division Cabinet meetings.
- Development of a roster of potential ARESMAT members who are able, willing and trained to travel to neighboring sections to provide communication support inside the disaster area.
- Inter-Section communication and coordination during and immediately following disaster conditions.
- Post-event evaluation and any subsequent revision of the inter-Section emergency response plan.

When training ARESMAT members or providing pre-departure briefings, ARES leadership should discuss the following elements:

Making the Request

All ARESMAT requests from ECs should be handled first by District or Section leadership. This helps avoid a situation where resources are used inefficiently. Early in any major disaster, neighboring Section leadership should make contact with each other. Affected leadership should know which resources are potentially available to them at that time, and how to reach neighboring Section officials quickly should an ARESMAT request become necessary.

Requests should be as specific as possible. Information should include:

- Number of operators needed
- Expected arrival time and length of stay
- Anticipated duties
- Radio and support equipment needed
- Operating modes to be used
- Conditions likely to be encountered
- Credentialing
- Transportation issues (including routes into and within the disaster area)
- A place to report upon arrival
- Net frequencies for driving directions upon arrival
- Food, shelter, and basic needs information - special clothing needs
- Expected sleeping accommodations

LEADERSHIP AUTHORITY

An ARESMAT will usually work under the local ARES leadership that requested them. Teams from far away have only a limited view of the overall operation. They may not be familiar with jurisdictional boundaries, town names, roads, and other important facts. For these and other reasons, local ARES leadership will generally be in a position to make more informed decisions.

In turn, however, the host leadership should avoid abusing ARESMAT resources. Should a team no longer be required, or a situation de-escalate, the team should be released at the earliest possible time so that they may return home to their own lives.

Pre-Departure Functions: Team leaders should notify ARESMAT members of the activation and assignment. When possible, credentials should be provided for quick recognition by authorities in the affected area. A faxed letter from a police, emergency management, or served agency official works well. A copy should be given to each responding team member.

Members should receive a general and technical briefing on information drawn principally from the requesting leadership, supplemented by information culled from Amateur Radio, commercial radio, W1AW bulletins, and ARRL officials.

The briefing should include all information provided in the ARESMAT request, plus:

- Frequencies for intra-team use en route and on site, and for contact with home
- Maps and driving instructions to the reception point or staging area
- Emergency contact numbers for home Section leadership

En Route Functions: The entire team should travel to and from the area as a group when possible. Before and while traveling to the affected areas, team leaders should review the situation's status with the team: possible job assignments, checklists, affected area profile, any known plans, strengths and weaknesses of previous and current responses, maps, technical documents, contact lists, and operating procedures. This can be done on VHF simplex, as long as the team leader doesn't have to refer to written material while driving.

Arrival Functions: Upon arrival, team leaders should check in with host ARES leadership, obtain updated information about the operation, and get their final assignments. A second priority should be the establishment of an intra-team communication network, to allow coordination for team support and eventual demobilization and departure. When possible, it is also a good idea to establish an HF or VHF link back to the home Section for family morale traffic.

Planning for Demobilization: An extraction procedure for teams should be negotiated with served agencies and host ARES officials before the team leaves home. To get volunteers to commit to travel and participate, they must be assured that there will be a predefined limit to their stay. Few volunteers will agree to leave home, work, and family for an indefinite period.

The order to demobilize an ARESMAT should come from the same Section leader who made the request for their assistance. Once a team is demobilized, standard procedures should be followed, including handing in all logs and other records when required, accounting for all equipment, cleanup, and notification of local ARES leadership upon actual departure.

A team critique should be conducted, begun on the trip home, and individual performance evaluations on team members should be prepared. Copies of critiques should be sent to both the home SEC and host SEC. Any problems stemming from personality conflicts should be addressed and/or resolved outside of formal reports, as they only provide distractions from the report's more relevant information and can cause further problems.

A post-event evaluation meeting should always be conducted, and a final report prepared upon which any needed update to the inter-sectional ARESMAT plan can be based.

THE ROLE OF ARRL HQ

During a very large event, ARRL staff may be called upon to coordinate with SECs and served agencies at the national level to bring in distant resources.

Using Districts within ARES Sections

WHY DO SOME ARES SECTIONS HAVE DISTRICTS?

In smaller Sections across the country, ARES is organized at the Section and county levels, with no District level. The county ARES group directly serves its local agencies, under the leadership of its Emergency Coordinator (EC). Most planning, training, and events are handled at the county level. The ECs report directly to the Section Emergency Coordinator (SEC). If a large city exists within the county, it may have its own AEC. (It is worth noting here that some Sections are not subdivided along county lines. In these cases, we may substitute the term "local" for "county" to describe this organizational level.)

However, in larger Sections, like Northern Florida with forty-five counties, or Wisconsin with seventy-two, it was necessary to subdivide the Section into "Districts," each with a District Emergency Coordinator (DEC), to make the large Section easier to manage. By "sub-dividing" the management responsibilities into Districts, the SEC magnifies his own effectiveness and that of all levels below him. This is known as "maintaining a reasonable span of control."

According to Incident Command System standards, the ideal span of control is one leader to no more than five to seven subordinates. Some ARRL Districts contain considerably more than seven counties, but it works since this is not high-intensity management. Subdividing a large Section into Districts also makes it easier to hold planning meetings and training sessions, since travel across the state to one large Section meeting, and the expense of an overnight stay and meals can be prohibitive.

WHEN ARE DISTRICTS *NOT* USED?

Districts should not be used in smaller Sections, since the added management layer will slow down operations without any added benefit. Except in Sections with very high population density, avoid creating county-level DECs with town or city-level EC positions as this also creates an excessive number of management positions, thus reducing the number of available Amateurs for the more important job of communicating.

WHO CREATES THE DISTRICTS?

Districts are usually created by the SEC with the permission and cooperation of the Section Manager. No permission is required from Division or ARRL HQ staff.

WHERE DO YOU DRAW THE LINES?

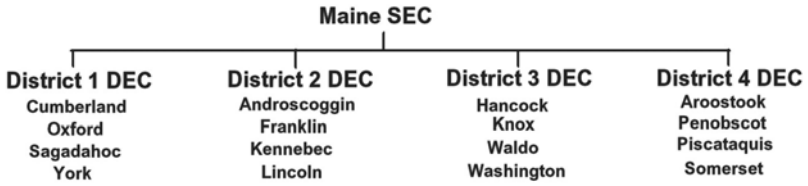
It may be advisable to establish District boundaries to match those used by a primary served agency. This ensures more effective coordination between ARES management and served agency leadership. For instance, if your primary served agency is the Red Cross, draw your lines so that they match ARC chapter service areas. Other factors that may need to be considered include topography, political boundaries, and community-of-interest relationships.

CREATING DISTRICTS WITHOUT CREATING MORE BUREAUCRACY

Districts do not usually need a large staff to make them work well. At most, a District Net Manager, a training manager, and perhaps an assistant for the DEC would be needed. In fact, adding more people to the District staff can cause problems that slow progress and reduce the overall effectiveness of the Section. It can keep experienced operators away from more productive jobs during an emcomm incident, and slow the decision-making and implementation process. In general, you should only create a District-level position when it will meet a clear and demonstrated need.

AN EXAMPLE OF A TYPICAL DISTRICT ORGANIZATION

There are four Districts in the Maine Section, numbered sequentially 1 through 4. Each District is made up of four counties representing general geographic areas. By creating a District system, the SEC has reduced the number of people with whom he must directly interface from sixteen to four.



WHAT DOES THE DEC DO?

The DEC has two primary jobs. The first is to oversee the dissemination and integration of Section-level decisions and plans by the ECs within the District. The second is to organize any needed District-level nets, and any related training or drills.

SECTION PLANNING CONSIDERATIONS

The effectiveness of any multi-layered organization is largely dependant on its members' ability to communicate effectively. Communication plans should reflect this need.

For day-to-day planning and training work, remember that adding another organizational layer will probably mean more meetings, and slower implementation of changes to Section and District comm plans. The SEC will need to meet with the DECs, and each DEC will have to meet with the ECs in their District. Email, Echolink conferences, and on-air nets may be able to handle many of the wide-area communication needs without the added time and expense of travel.

During emergency operations, the extra District network layer can also slow the flow of traffic, and will require more stations to participate. An SEC may opt to use the District model for planning and supervision, but not add the District net layer unless traffic patterns and volume make it desirable.

The SEC will need to add another alerting and operations network layer to the Section's communication plan. In most cases, e-mail may be the best solution for non-emergency or early warning use. During emergencies, a linked repeater system dedicated to Section-level communication, or an HF net will be needed.

DISTRICT PLANNING CONSIDERATIONS

Adding another layer to ARES management shifts many planning and administrative functions from the Section level to the District level. One of the primary jobs of the DECs is the development of an overall emergency communication plan for their District.

District plans may include the following:

- District level net(s)
- Liaisons to the Section net(s)
- Staffing needs for District net(s)
- Contingency support plan for any county without an active EC
- District level training programs and drills

The District net would include the following stations:

- Liaison stations from each EC's local/county net
- Liaison stations to the Section Net
- The DEC and any other District staff members

ECs have direct authority and responsibility for creating detailed plans at the county or local level, and this authority should never be usurped by the DEC or SEC.

The first priority should be to establish District-wide communications. The ECs must be able to communicate with one another and the DEC to ensure that nets are well coordinated. For day-to-day use, email and telephone will probably work best. For emergencies, add a HF net, or a VHF/UHF repeater system with District-wide coverage, or both, depending on the situation. At the District net level, DECs should appoint liaison stations between the District nets and the Section nets.

Each EC should appoint liaison stations to the District nets. However, the ability to speak directly with the DEC can be important to effective net coordination, and both the ECs and DEC should have a radio available to do so.

EDUCATION AND TRAINING

Each DEC should encourage cooperative inter-county ARES education and training. By doing this at a District level, the workload can be shared within a larger group than at the county level. Training topics would be those of interest to all local/county groups.

This could include classes and workshops, program speakers at meetings, bulletins, newsletters, and by posting each county's emergency plans and other information on a District web site so that all members have access. Invite representatives from served agencies to exchange insights into problems, methods, experiences, and solutions at District meetings.

The District communications plan should be exercised at least once a year, and more often for areas with frequent emergencies, either along with the county and Section plans, or by itself. The Simulated Emergency Test (SET) in October offers a good opportunity each year for such an exercise.

BACKUP LEADERSHIP

What happens if you are not available when the "big one" strikes? It is difficult to manage your District's operations from Acapulco or a hospital bed. While not specifically provided for in the ARRL field organization, each DEC should appoint one or more assistant DECs (ADEC). An ADEC may have specific duties in support of the DEC, such as net or training coordination, but should also be able to step in and perform the DEC's duties in his or her absence. Even if you are there, you will need to take time for rest and personal needs, and one of your ADECs can handle the job while you are off duty.

FCC Rules on Emergency Communications

SAFETY OF LIFE AND PROPERTY

In a situation involving the immediate safety of life and/or the immediate protection of property, and where *no other means of communication are available*, the rules permit Amateurs to use *any* means to send essential information [97.403]. This rule is straightforward and needs little interpretation. If someone's life or property is immediately threatened and no telephone is available, the last thing you want to do is waste precious time worrying about government regulations. But, be prepared in the aftermath of an incident to justify your action in a possible FCC or local law enforcement inquiry. If any other means of communication, such as a cell phone, emergency call box, relay through another Amateur station, or other public-access system is available, they should be attempted first.

WHEN YOUR STATION IS IN DISTRESS

Another FCC rule states "an Amateur station in distress may use any means at its disposal to attract attention, make known its condition and location, and obtain assistance" [97.405(a)]. Also, it states that an Amateur Radio station may use any means of radio communication at its disposal to assist another station in distress.

DISASTER COMMUNICATIONS

The rules say "When normal communication systems are overloaded, damaged or disrupted because a disaster has occurred, or is likely to occur, an Amateur station may make transmissions necessary to meet essential communication needs and facilitate relief actions" [97.401(a)]. This rule is also straightforward: the FCC encourages the use of Amateur Radio service for disaster communications.

TACTICAL CALL SIGNS

Tactical call signs are often adopted during an emergency, or during large public-service activities. Names like "Med Tent," "Fire 1," "Shelter 2," and "Red Cross Staging" quickly identify each function or location, and eliminate confusion when working with other agencies for whom Amateur call signs are meaningless. They also help prevent confusion when several operators may take turns at a position.

The use of tactical call signs is a good idea, but it in no way relieves you of the obligation to identify your station under the FCC's Rules for normal station identification. You must still give your FCC-assigned call sign at the end of your communication, and at least every 10 minutes during the contact [97.119].

WORKING WITH THE BROADCAST MEDIA

In a disaster situation where the immediate safety of lives and/or property is at stake, Amateurs may *provide* safety-related communications to the broadcasters for dissemination to the public *when no other means of communication is available*. Otherwise, Amateurs are prohibited from assisting in program production or news-gathering. [97.113(b)].

The press may retransmit your Amateur communications at any time they choose without your permission. However, except in the limited circumstances cited above, Amateur stations may not transmit information *intended* for retransmission by broadcast stations.

OTHER EMERGENCY-RELATED TRANSMISSIONS

- Amateurs may exchange messages with stations in other FCC radio services for emergency communications. [97.111(a)(2)].
- Amateurs may make one-way transmissions for emergency communications. [97.111(b)(4)]. Generally, one-way transmissions are prohibited except for certain limited circumstances.
- Amateurs may also send one-way information bulletins, as long as they are directed to Amateurs only, with information of interest to Amateurs only, or directly affecting public safety. [97.111(b)(6); 97.3(a)(25)]. Good examples would be a bulletin on the ARES net to ARES members during an emergency deployment or a tornado spotter's report.
- Amateurs may transmit third-party messages to stations in the US and other countries in times of disaster, regardless of any third-party agreements - provided that the other country does not specifically object to any or all such messages.
- Amateurs who are employed as paid emergency service workers may use Amateur Radio while on the job during a disaster. [RM-9114]

ALLOWING CRITICAL RESPONDERS TO SPEAK DIRECTLY OVER THE RADIO

During a hurricane disaster a few years ago, a serious accident at a rural site brought an ARES response. A paramedic was already administering first aid. Because of the extent of the injuries, the paramedic asked to confer with a physician who happened to be in the vicinity of the Amateur net control station at a hospital ten miles away. Strangely, the control operator refused to allow the physician to speak directly over the radio. In spite of complicated medical terminology and the potential for mistakes, the control operator insisted on verbally relaying each message. The control operator questioned whether it would be legal for the paramedic to speak directly with the physician.

In this case, the ARES operators should have immediately handed over their microphones to the physician and paramedic. Not only would this have been legal (communications in connection with the immediate safety of human life when normal communication systems are not available), but it would also have been permitted under normal circumstances by the third party traffic rules as long as the control operators continuously monitored and supervised the doctor's and paramedic's participation. [97.115(b)(1)].

EMERGENCY COMMUNICATIONS DECLARATIONS (ECDS)

If a disaster disrupts normal communications, the District Director of the area's FCC Field Office may restrict certain VHF, UHF, or 60 meter band frequencies for use by stations assisting the stricken area only. (*see Section 97.401 (c) of the FCC rules*) All Amateur transmissions conducted on the designated frequencies must then pertain directly to the emergency. This usually happens a few times each year, generally in connection with a severe hurricane, earthquake, or other major event, but is far less common that it once was. The FCC may also set forth further special conditions and rules during the communication emergency. Only the FCC can end the declaration or lift the conditions.

FCC rules require all Amateurs to give priority to emergency communications, but variations in HF propagation may result in interference caused by others who cannot hear the net. While a declaration for any frequency is possible, they are really only needed for HF frequencies. VHF and UHF frequencies are local by nature and do not usually require further protection except in rare circumstances.

WHICH FREQUENCIES ARE OPEN TO ECDS?

Channels in VHF and UHF bands will receive preference for ECDs. If included in the request and subject to the consent of the licensee or trustee of a repeater station, the ECD may specify a repeater station that may be used only for providing emergency communications.

ECDs will *not* be issued for HF frequencies other than 60 meters as they were in the past. An ECD may authorize use of one or two channels in the 60 Meter Amateur Service band. The center channels are: 5332 kHz, 5348 kHz, 5368 kHz, 5373 kHz, and 5405 kHz. Use of these channels is also subject to the requirements of Section 97.303(s).

Frequencies in other Amateur Service bands may be used under the provisions of Section 97.101(c), which states: *"At all times and on all frequencies, each control operator must give priority to stations providing emergency communications, except to stations transmitting communications for training drills and tests in RACES."*

Determining Need: ECDs should *never* be requested unless an actual need can be demonstrated.

- Does a communication emergency presently (as opposed to potentially) exist? Are regular communication systems incapable of meeting the demand?
- Are 60m communications required? Can other means be used instead?
- Does interference exist, or is there a strong potential for interference?
- Is the request for protection of Amateur Radio communication supported by a served-agency official who is in a position to know how normal systems have been affected?
- To avoid open-ended situations where the declaration remains in place long after the need has disappeared, can a reasonable time limit be established at the outset, with the possibility of extensions if the need still exists, instead of an "until further notice" declaration?
- Has a requested frequency been coordinated within the regional Amateur emcomm community to head off potential conflicts?

Plan Before You Ask: Emergency declaration requests should be made only after careful planning. First, be sure that the frequencies you request will not cause problems for emergency operations in other areas. Check the ARRL net directory, and contact the SECs in other affected areas if they use the same or nearby frequencies.

Second, be sure that you request enough frequencies to meet your needs without being greedy. Be prepared to support your request with specific usage plans. Requesting additional declarations takes valuable time.

Third, estimate the length of time that the declaration will be required. Open-ended (until further notice) requests are less likely to be granted. If your estimate turns out to be too short, an extension can be applied for. To avoid lapses, be sure to apply for extensions well before the declaration expires. Extension requests should always include a new expiration time.

WHO MAY MAKE A REQUEST?

Any licensed Amateur may make the request, but the FCC will not consider any request that is not directly supported by an emergency management official. The emergency management official may

also make request directly, without the involvement of an Amateur operator - this is the preferred method.

Who to Contact: Requests must be made to the FCC's Communications and Crisis Management Center (CCMC) in Washington, DC. Current contact information is available on the ARRL website. (http://www.arrl.org)

WHAT INFORMATION SHOULD BE INCLUDED IN THE REQUEST?

1. The current date.
2. Where applicable, the name, telephone number and call sign of the Amateur Radio operator making the ECD request.
3. Name, title or position and telephone number of the emergency management official who initiated the ECD request.
4. Nature of the disaster (e.g., weather-related, explosion, fire, railway accident etc.)
5. Description of communication systems that have been disrupted and a contact person or persons who can verify this information.
6. Geographic area of the communication systems that have been disrupted (city or part of city, county, state, or region).
7. Frequency(s) requested.
8. Estimated length of disruption of normal communication systems. An ECD will be issued for the estimated length of time of disruption of normal communication systems and shall contain an expiration date in the ECD. An ECD may be extended upon the request of the emergency official (or counterpart) making the original request. ECDs end when regular communications are restored or at the expiration date, whichever occurs first.

Typical General Communications Emergency Declaration

(This is an actual HF declaration issued under the previous rules)

On June 24, 2002, under the authority of Section 97.401 of the Federal Communications Commission's Rules and Regulations [47 C.F.R. Part 97] a General Communications Emergency is declared to exist in Arizona requiring the protection of amateur emergency communication frequencies.

Amateurs are required to refrain from using 7265 kHz (daytime), and 3990 kHz (night time) plus or minus 3 kHz unless they are taking part in the handling of emergency traffic. This order is effective immediately until rescinded but may be as long as 14 days.

Arlan K Van Doorn, Senior Advisor for Public Safety Enforcement Bureau, Federal Communications Commission, Washington, DC.

Relations with REACT International

Radio Emergency Associated Communications Teams (REACT) is a public service organization made up of volunteer radio operators serving their communities and travelers with two-way radio communications through CB, GMRS, and other radio services. The purposes of REACT include:

- Promoting the correct usage of CB Emergency Channel 9.
- Developing skilled use of the CB radio service, GMRS, amateur radio with packet and bulletin board systems, cellular and other radio services as additional sources of communications in emergencies.
- Coordinating efforts with other emergency organizations including Police, FEMA, NOAA, RACES, ARES, NVOAD, the Salvation Army and the American Red Cross.
- Providing public service communications for travelers and their local communities.
- Using radio in the interest of public safety.

REACT accomplishes its goals through "Teams" located throughout the United States and the world. Certain members of these Teams have oversight authority over different committees. The committees are responsible for establishing and maintaining the orderly flow of business within their specialties.

REACT Teams monitor Citizens Band [CB] Radio Emergency Channel 9. Many also use radios in the General Mobile Radio Service (GMRS) and have access to local GMRS repeaters, generally on 462.675 MHz. Some teams have more than one repeater, or may be on different frequencies.

REACT'S MISSION STATEMENT:

"We will provide public safety communications to individuals, organizations, and government agencies to save lives, prevent injuries, and give assistance wherever and whenever needed. We will strive to establish a monitoring network of trained volunteer citizen-based communicators using any and all available means to deliver the message."

REACT ACTIVITIES

REACT teams have the following objectives in addition to those listed above:

1. To assist in any emergency by furnishing radio communications in cooperation with authorities and other volunteer organizations.
2. To practice and encourage operating excellence through proper communication techniques and skills.
3. To maintain equipment at peak efficiency and operate in accordance with all government regulations.

Today's REACT teams provide public safety radio assistance for community events such as parades, runs, walk-a-thons, bike tours, boat races and hot air balloon festivals. REACT teams also host "Safety Wake Breaks" on holiday weekends along major highways. Because of its efforts in this regard, REACT is a recipient of the President's Volunteer Action Award.

REACT members serve their communities by assisting with a variety of local emergencies. REACT team missions include residential home fires, wildfires, chemical spills, and train derailments. During

such widespread disasters as floods and hurricanes, they support the shelter operations of fellow NVOAD groups such as those of the Red Cross or Salvation Army. Of course, REACT volunteers continuously monitor CB channel 9.

REACT'S BEGINNINGS

The idea of using CB radio in an organized way for emergency communication was born in a Chicago snowstorm when the CB was used to get help for a young family stranded on an expressway with a very sick child.

On January 23, 1962, REACT's founder, Henry B. "Pete" Kreer, convinced Hallicrafters Company to sponsor the REACT program. The initial requirements for a Team were three members who agreed to monitor CB for emergencies. There were no dues or other requirements except to comply with federal and state regulations.

By 1964, it was determined that there was a need for a National CB Emergency Channel. REACT National Headquarters asked all REACT Teams to monitor the channel as a voluntary emergency channel. REACT had 800 teams across the country at that time.

In 1967, REACT led a movement to convince the FCC to designate channel 9 as the CB emergency channel.

From 1970 to 1972, the Ohio REACT Emergency Network was formed at the same time that channel 9 became an official emergency channel under FCC rules. This network issued several reports to state and federal agencies to show the relationship between REACT and channel 9 as the emergency channel. This led to the later formation of the Ohio State REACT Council as a pattern for future REACT Councils. REACT colors were changed to orange and black. A statement of understanding was reached with the Red Cross. All teams - new and existing - were issued a charter number. Teams chartered in 1970 are charter teams and designated with a "C" in front of their team numbers.

REACT COOPERATION

Teams participate in their communities' disaster preparedness plans through cooperative agreements with the American National Red Cross, the Salvation Army, and the National Weather Service. All may be viewed on REACT's website.

In addition, REACT International is a participating member of National VOAD (Volunteer Organizations Active in Disasters). Many REACT State Council organizations and local Teams are also members of their State or sub-state chapters of VOAD.

ARRL AND REACT SIGN MOU

In 2001, the ARRL and REACT signed a memorandum of understanding that serves as a framework for coordination and the development of mutual procedures for communication in emergency situations.

Both organizations have marked similarities: each is comprised of volunteers and professional staff in support of educational and technical programs, and field efforts. The MOU commits ARRL and

REACT together to facilitate the flow of information to and from the public during disaster and emergency situations.

In the MOU, ARRL recognizes REACT as a public service organization of private radio operators, which provides radio communications to local communities during emergencies. ARRL also recognizes that REACT coordinates efforts with other emergency organizations including the police, FEMA, NOAA, RACES, NVOAD, the Salvation Army, and the American Red Cross, much like ARES does. ARRL also recognizes REACT's primary mission: to improve communities through the provision of voluntary, two-way communications that serve the interests of public safety.

ARRL-REACT Principles of Cooperation

The essence of the ARRL/REACT MOU is contained in a section called the principles of cooperation. The following principles were agreed upon by ARRL and REACT:

- ARRL and REACT will correspond with each other and exchange materials and engage in activities to encourage and broaden interest, understanding, and appreciation of radio telecommunications technology and its value to the public in emergency situations.
- ARRL and REACT will work to establish protocols and procedures that foster safe and efficient radio services communication to help the public during emergencies and disaster relief. The parties, through these protocols and procedures, will try to eliminate duplicative or technically inferior service to the community in emergencies.
- ARRL and REACT will work with each other in times of emergency or disaster to meet the communications needs of the public.
- ARRL and REACT will generally encourage ongoing liaison with each other and urge members of both organizations to develop increasingly effective communications and cooperation.

Joining REACT

REACT says that more volunteers are needed. REACT has an Electronic Publications (E-Pubs) download page on its web site that includes a guide with instructions on "How to Start a REACT Team in 14 Simple Steps." Other publications available include information on organizing a new team, training guides, and promotional posters.

Summary

Contrary to its reputation, REACT has become much more than a "club of CBers." It is an international organization with councils and teams dedicated to providing public service radio communications based on a number of different radio services, including amateur. It is recognized by major national-level federal agencies and non-governmental organizations, including the Red Cross, National Weather Service, FEMA, and most recently, the ARRL.

It is in the interests of ARES and RACES leadership officials to meet with their counterparts in REACT to form alliances and bonds for coordination of efforts for exercises and actual emergency situation deployments.

REACT has a long history of providing quality radio communication in the community interest. Many radio amateurs recognize this fact and work in cooperation for a more unified emergency radio response for the benefit of the public.

Communications Interoperability

What is Communications Interoperability?

Communications interoperability allows emergency management/response personnel and their affiliated organizations to communicate within and across agencies and jurisdictions via voice, data, or video in real time, when needed, and when authorized. It is essential that these communications systems be capable of interoperability, as successful emergency management and incident response operations require the continuous flow of critical information among jurisdictions, disciplines, organizations, and agencies.

Interoperability planning requires accounting for emergency management and incident response contingencies and challenges. Interoperability plans should include considerations of governance, standard operating procedures (SOPs), technology, training and exercises, and usage within the context of the stress and chaos of a major response effort.

Coordinated decision making between agencies and jurisdictions is necessary to establish proper and coherent governance and is critical to achieving interoperability. Agreements and SOPs should clearly articulate the processes, procedures, and protocols necessary to achieve interoperability.

It is the ability to exchange voice and data information across disciplines and jurisdictions on demand, in real time, and when authorized

"On demand" and "in real time" refer to an *as needed, when needed, who is needed* basis. It does *not* mean everyone, everywhere, all the time.

Generally speaking, it is the decision makers and coordinators who must be able to communicate across agency and jurisdiction boundaries.

Emergency events are time-critical, and communication is a dynamic process. The requirements may vary from hour to hour. When you can't communicate, you can't coordinate the response.

As the incident gains complexity, other response agencies in the jurisdiction become involved.

This does *not* mean that personnel at all levels in the agencies need to be able to communicate with each other. Those in coordination roles need to be able to communicate with their counterparts in other agencies.

As the incident becomes more complex, response agencies in more than one jurisdiction may become involved. Interoperability is required between agencies, with the Emergency Operations Center (EOC), and across jurisdictions.

As the incident becomes even more complex, the incident response now requires interoperability among all agencies and jurisdictions throughout the area/region. The jurisdictions must also be interoperable with providers of outside resources (e.g., neighboring regions, State, and Federal).

Generally, in interoperability, one needs to be able to communicate one level up and one level down. One level up is your immediate supervisor. One level down is the personnel you directly supervise.

Your immediate supervisor may not necessarily be with your agency or have your agency's communication system. Those who you directly supervise may not necessarily be from your agency or have your agency's communication system.

Interoperability is the ability to effectively and efficiently exchange information. Follow your command structure. Prior planning, procedures and training eliminate most issues. Know who you need to talk with.

Amateur Radio has a basic form of Interoperability. It is the relay station. At a communications center we can relay messages between one agency and another via Amateur Radio for those that are unable to communicate directly. Hams are required to be at these agencies to effectively make the relay work.

A good example was the Ice Storm of 1998.

Central Maine Power had problems communicating with the power company workers that had come in from out state to help restore power to southern Maine. This was due to everyone having different radio systems and frequencies with nothing in common for radio communications. A ham was located at Central Maine Power's communications center in Portland. Other hams set up "mini" communications centers in one of the vehicles from each of the power companies dispatched to Maine. Hams relayed dispatches from CMP dispatch to the various out of state vehicles and the hams in the vehicles relayed to other company vehicles via their own communications systems.