

Chapter One: Amateur Radio Emergency Service ®

(ARES ®)



The Amateur Radio Emergency Service ® (ARES ®) consists of licensed amateurs who have [voluntarily registered](#) their qualifications and equipment for communications duty in the public service when disaster strikes. Every licensed amateur, regardless of membership in ARRL or any other local or national organization, is eligible to apply for membership in the ARES. Training may be required or desired to participate fully in ARES. Please inquire at the local level for specific information. Because ARES is an Amateur Radio service, only licensed radio amateurs are eligible for membership. The possession of emergency-powered equipment is desirable, but is not a requirement for membership.

1.1 ARES Organization

There are four levels of ARES organization--national, section, district and local. National emergency coordination at ARRL Headquarters is under the supervision of the ARRL Membership and Volunteer Programs Manager, who is responsible for advising all ARES officials regarding their problems, maintaining contact with federal government and other national officials concerned with amateur emergency communications potential, and in general with carrying out the League's policies regarding emergency communications.

1.2 Section Level

At the section level, the Section Emergency Coordinator is appointed by the Section Manager (who is elected by the ARRL members in his or her section) and works under his/her supervision. In most sections, the SM delegates to the SEC the administration of the section emergency plan and the authority to appoint District and local ECs, Assistant SECs and Assistant DECs. Some of the ARRL sections with capable SECs are well-organized. A few have scarcely any organization at all. It depends almost entirely on who the section members have put into office as SM and whom he/she has appointed as SEC.

1.3 Local Level

It is at the local level where most of the real emergency organizing gets accomplished, because this is the level at which most emergencies occur and the level at which ARES leaders make direct contact with the ARES member-volunteers and with officials of the agencies to be served. The local EC is therefore the key contact in the ARES. The EC is appointed by the SEC, usually on the recommendation of the DEC. Depending on how the SEC has set up the section for administrative purposes, the EC may have jurisdiction over a small community or a large city, an entire county or even a group of counties. Whatever jurisdiction is assigned, the EC is in charge of all ARES activities in his area, not just one interest group, one agency, one club or one band.

1.4 District Level

In the large sections, the local groups could proliferate to the point where simply keeping track of them would be more than a full-time chore, not to mention the idea of trying to coordinate them in an actual emergency. To this end, SECs have the option of grouping their EC jurisdictions into logical units or "districts" and appointing a District EC to coordinate the activities of the local ECs in the district. In some cases, the districts may conform to the boundaries of governmental planning or emergency-operations districts, while in others they are simply based on repeater coverage or geographical boundaries. [Figure 2](#) depicts the typical section ARES structure.

1.5 Assistant ECs

Special-interest groups are headed up by Assistant Emergency Coordinators, designated by the EC to supervise activities of groups operating in certain bands, especially those groups which play an important role at the local level, but they may be designated in any manner the EC deems appropriate.

1.6 Planning Committee

These assistants, with the EC as chairman, constitute the local ARES planning committee and they meet together from time to time to discuss problems and plan projects to keep the ARES group active and well-trained.

There are any number of different situations and circumstances that might confront an EC, and his/her ARES unit should be organized in anticipation of them. An EC for a small town might find that the licensed amateur group is so small that appointing assistants is unnecessary or undesirable. On the other hand, an EC for a large city may find that even his assistants need assistants and that sometimes it is necessary to set up a special sub-organization to handle it. There is no specific point at which organization ceases and operation commences. Both phases must be concurrent because a living organization is a changing one, and the operations of a changing organization must change with the organization.

1.7 Operation and Flexibility

We have discussed how a typical ARES unit may be organized. Just what shape the plan in your locality will take depends on what your EC has to work with. He/she uses what he/she has, and leaves provision in the plan for what he/she hopes, wants and is trying to get. Flexibility is the keynote. The personnel, equipment and facilities available today may not be available tomorrow; conversely, what is lacking today may be available tomorrow. In any case, bear in mind that organizing and planning are not a one-person task. The EC is simply the leader, or, as the title indicates, the coordinator. His/her effectiveness inevitably will depend on what kind of a group he/she has to work with. Make yourself available to your EC as a member of his planning committee, or in any capacity for which you think you are qualified.

Local ARES operation will usually take the form of nets -- HF nets, VHF (repeater) nets, even RTTY, packet or other special-mode nets, depending on need and resources available. Your EC should know where your particular interests lie, so that you can be worked in where your special talents will do the most good.

It is not always possible to use the services of all ARES members. While it is general policy that no ARES member must belong to any particular club or organization to participate in the program, local practical considerations may be such that you cannot be used. This is a matter that has to be decided by your EC. In some cases, even personality conflicts can cause difficulties; for example, the EC may decide that he cannot work with a particular person, and that the local ARES would be better served by excluding that person. This is a judgment that the EC would have to make; while personality conflicts should be avoided, they do arise, more often than we would prefer. The EC on the job must take the responsibility for making such subjective evaluations, just as the SEC and DEC must evaluate the effectiveness of the job being done by the EC.

1.8 ARES Operation During Emergencies and Disasters

Operation in an emergency net is little different from operation in any other net, requires preparation and training. This includes training in handling of written messages--that is, what is generally known as "traffic handling." Handling traffic is covered in detail in the ARRL *Operating Manual*. This is required reading for all ARES members--in fact, for all amateurs aspiring to participate in disaster communications.

The specifications of an effective communication service depend on the nature of the information which must be communicated. Pre-disaster plans and arrangements for disaster communications include:

- Identification of clients who will need Amateur Radio communication services.
- Discussion with these clients to learn the nature of the information which they will need to communicate, and the people they will need to communicate with.
- Specification, development and testing of pertinent services.

While much amateur-to-amateur communicating in an emergency is of a procedural or tactical nature, the real meat of communicating is formal written traffic for the record. Formal written traffic is important for:

- A record of what has happened--frequent status review, critique and evaluation. Completeness which minimizes omission of vital information.
- Conciseness, which when used correctly actually takes less time than passing informal traffic.
- Easier copy--receiving operators know the sequence of the information, resulting in fewer errors and repeats.

When relays are likely to be involved, standard ARRL message format should be used. The record should show, wherever possible:

1. A message number for reference purposes.
2. A precedence indicating the importance of the message.
3. A station of origin so any reply or handling inquiries can be referred to that station.
4. A check (count of the number of words in the message text) so receiving stations will know whether any words were missed.
5. A place of origin, so the recipient will know where the message came from (not necessarily the location of the station of origin).
6. Filing time, ordinarily optional but of great importance in an emergency message.
7. Date of origin.

The address should be complete and include a telephone number if known. The text should be short and to the point, and the signature should contain not only the name of the person sending the message but his title or connection, if any.

Point-to-point services for direct delivery of emergency and priority traffic do not involve relays. Indeed, the full ARRL format is often not needed to record written traffic. Shortened forms should be used to save time and effort. For example, the call sign of the originating station usually identifies the place of origin. Also, the addressee is usually known and close by at the receiving station, so full address and telephone number are often superfluous. In many cases, message blanks can be designed so that only key words, letters or numbers have to be filled in and communicated. In some cases, the message form also serves as a log of the operation. Not a net goes by that you don't hear an ARL Fifty or an ARL Sixty One. Unfortunately, "greetings by Amateur Radio" does not apply well during disaster situations. You may hear an ARL text being used for health and welfare traffic, but rarely during or after the actual disaster. Currently, no ARL text describes the wind speed and barometric pressure of a hurricane, medical terminology in a mass casualty incident or potassium iodide in a nuclear power plant drill. While no one is suggesting that an ARL text be developed for each and every situation, there is no reason why amateurs can't work with the local emergency management organizations and assist them with more efficient communications.

Amateurs are often trained and skilled communicators. The emergency management community recognizes these two key words when talking about the Amateur Radio Service. Amateurs must use their skills to help the agencies provide the information that needs to be passed, while at the same time showing their talents as trained communicators who know how to pass information quickly and efficiently. We are expected to pass the information accurately, even if we do not understand the terminology.

Traffic handlers and ARES members are resourceful individuals. Some have developed other forms or charts for passing information. Some hams involved with the SKYWARN program, for instance, go down a list and fill in the blanks, while others use grid squares to define a region.

Regardless of the agency that we are working with, we must use our traffic-handling skills to the utmost advantage. Sure, ARL messages are beneficial when we are passing health and welfare traffic. But are they ready to be implemented in times of need in your community? The traffic handler, working through the local ARES organizations, must develop a working relationship with those organizations who handle health and welfare inquiries. Prior planning and personal contact are the keys to allowing an existing National Traffic System to be put to its best use. If we don't interface with the agencies we serve, the resources of the Amateur Radio Service will go untapped.

Regardless of the format used, the appropriate procedures cannot be picked up solely by reading or studying. There is no substitute for actual practice. Your emergency net should practice regularly--much more often than it operates in a real or simulated emergency. Avoid complacency, the feeling that you will know how to operate when the time comes. You won't, unless you do it frequently, with other operators whose style of operating you get to know.

Chapter Four: ARES and RACES

After World War II, it became evident that the international situation was destined to be tense and the need for some civil-defense measures became apparent. Successive government agencies designated to head up such a program called on amateur representatives to participate.

In the discussions that followed, amateurs were interested in getting two points across: First, that Amateur Radio had a potential for and capability of playing a major role in this program; and second, that our participation should be in our own name, as an Amateur Radio Service, even if and after war should break out. These principles were included into the planning by the formulation of regulations creating a new branch of the amateur service, the Radio Amateur Civil Emergency Service, RACES.

Recognition of the role of Amateur Radio as a public service means responsibility. RACES regulations are printed in full in the ARRL publication, *The FCC Rules and Regulations for the Amateur Radio Service*, along with the rest of the amateur regulations. Every amateur should study closely and become familiar with these rules; civil preparedness, now a major function, may become our only on-the-air function if we are plunged into war.

4.1 What is RACES?

RACES, administered by local, county and state emergency management agencies, and supported by the Federal Emergency Management Agency (FEMA) of the United States government. It is a part of the Amateur Radio Service that provides radio communications for civil-preparedness purposes *only*, during periods of local, regional or national civil emergencies. These emergencies are not limited to war-related activities, but can include natural disasters such as fires, floods and earthquakes.

As defined in the rules, RACES is a radiocommunication service, conducted by volunteer licensed amateurs, designed to provide emergency communications to local or state civil-preparedness agencies. It is important to note that RACES operation is authorized by emergency management officials only, and this operation is strictly limited to official civil-preparedness activity in the event of an emergency-communications situation.

4.2 Operating Procedure

Amateurs operating in a local RACES organization must be officially enrolled in the local civil-preparedness agency having jurisdiction. RACES operation is conducted by amateurs using their own primary station licenses and by existing RACES stations.

The FCC no longer issues new RACES (WC prefix) station call signs. Operator privileges in RACES are dependent upon, and identical to, those for the class of license held in the Amateur Radio Service. All of the authorized frequencies and emissions allocated to the Amateur Radio Service are also available to RACES on a shared basis.

While RACES was originally based on potential use for wartime, it has evolved over the years, as has the meaning of civil defense (which is also called civil preparedness), to encompass all types of emergencies.

While operating in a RACES capacity, RACES stations and amateurs registered in the local RACES organization may not communicate with amateurs not operating in a RACES capacity. Such restrictions do not apply when such stations are operating in a non-RACES--such as ARES--amateur capacity. Only civil-preparedness communications can be transmitted.

Test and drills are permitted only for a maximum of one hour per week. All test and drill messages must be clearly so identified. With the approval of the chief officer for emergency planning and applicable state, Commonwealth, district or territory, however, such tests and drills may be conducted for a period not to exceed 72 hours no more than twice in any calendar year.

4.3 ARES and RACES

Although RACES and ARES are separate entities, the ARRL advocates dual membership and cooperative efforts between both groups whenever possible for an ARES group whose members are all enrolled in and certified by RACES to operate in an emergency with great flexibility. Using the same operators and the same frequencies, an ARES group also enrolled as RACES can "switch hats" from ARES to RACES and RACES to ARES to meet the requirements of the situation as it develops. For example, during a "nondeclared emergency," ARES can operate under ARES, but when an emergency or disaster is officially declared by a state or federal authority, the operation can become RACES with no change in personnel or frequencies.

This situation is still not well understood and accepted throughout the United States; both ARES and RACES still exist, separately, in many areas. League officials will have to determine the situation in their own area.

Where there is currently no RACES, it would be a simple matter for an ARES group to enroll in that capacity, after a presentation to the civil-preparedness authorities. In cases where both ARES and RACES exist, it is possible to join both or to be involved in either. As time progresses, the goal would be the merger into one strong organization, with coordination between ARES and RACES officials using the same groups of amateurs. In some sections of the U.S. today, the ARES structure has also been accepted as the RACES structure.

4.4 Other Amateur Facilities

There are a number of other Amateur Radio facilities, not sponsored or directly affiliated with the League, which are nevertheless an integral part of our public service effort. Some of these organizations are the monitoring services, MARS, independent nets -- both international and domestic -- and other similar activities. While naturally we want you to participate in organizations sponsored by your League, it's better to participate in a non-League sponsored public service organization than not to participate at all. In this booklet we cannot give details of the operation of these other organizations because there are too many of them, and their operations change too rapidly.

Chapter Five: ARES Principles of

Disaster Communication

It is impossible to state exact rules that will cover every situation that arises. The good amateur faced with a disaster situation may, however, benefit greatly from certain rules of thumb. These rules are, or should be, part of his/her training in his/her ARES group. They are presented here and should be reviewed by all amateurs, even those not active in disaster communications preparation.

1. Keep the QRM level down. In a disaster, many of the most crucial stations will be weak in signal strength. It is most essential that all other stations remain silent unless they are called upon. If you're not sure you should transmit -- don't. Our amateur bands are very congested. If you want to help, study the situation by listening. Don't transmit unless you are sure you can help by doing so. Don't ever break into a disaster net just to inform the control station you are there if needed.

2. Monitor established disaster frequencies. Many localities and some geographical areas have established disaster frequencies where someone is always (or nearly always) monitoring for possible calls. When you are not otherwise engaged, it is helpful simply to sit and listen on such frequencies, some of which are used for general ragchewing as well as disaster preparedness drilling. On CW, SOS is universally recognized, but has some legal aspects that should be considered where the need is not truly crucial. On voice, one can use "Mayday" (universal, the phone equivalent of SOS) or, to break into a net or conversation with the word "emergency."

3. Avoid spreading rumors. During and after a disaster situation, especially on the phone bands, you may hear almost anything. Unfortunately, much misinformation is transmitted. Rumors are started by expansion, deletion, amplification or modification of words, exaggeration or

interpretation. All addressed transmissions should be officially authenticated as to their source. These transmissions should be repeated word for word, if at all, and only when specifically authorized. In a disaster emergency situation, with everyone's nerves on edge, it is little short of criminal to make a statement on the air without foundation in authenticated fact.

4. Authenticate all messages. Every message which purports to be of an official nature should be written and signed. Whenever possible, amateurs should avoid initiating disaster or emergency traffic themselves. We do the communicating; the agency officials we serve supply the content of the communications.

5. Strive for efficiency. Whatever happens in an emergency, you will find hysteria and some amateurs who are activated by the thought that they must be "sleepless heroes." Instead of operating your own station full time at the expense of your health and efficiency, it is much better to serve a shift at one of the best-located and best-equipped stations. This station will be suitable for the work at hand, and manned by relief shifts of the best-qualified operators. This reduces interference and secures well-operated stations.

6. Select the mode and band to suit the need. It is a characteristic of all amateurs to believe that their favorite mode and band is superior to all others. For certain specific purposes and distances, this may be true. However, the merits of a particular band or mode in a communications emergency should be evaluated impartially with a view to the appropriate use of bands and modes. There is, of course, no alternative to using what happens to be available, but there are ways to optimize available communications.

Long experience has developed the following advantages:

CW Mode

- 1. Less QRM in most amateur bands.
- 2. Secrecy of communications--contents of communications are much less likely to be intercepted by the general public to start rumors or undue concern.
- 3. Simpler transmitting equipment.
- 4. Greater accuracy in record communications.
- 5. Longer range for a given amount of power.

Voice Mode

- 1. More practical for portable and mobile work.
- 2. More widespread availability of operators.
- 3. Faster communication for tactical or "command" purposes.
- 4. More readily appreciated and understood by the public.
- 5. Official-to-official and phone-patch communication.

Digital Modes

(1) The first two advantages of CW, the (2) second advantage of voice mode, plus (3) greater speed in record communication than some of the other modes. In most of these modes, (4) error detection. In addition, (5) digital modes offer the potential for message store and forward capability of "digipeating" messages from point A to point Z via numerous automatically-controlled middle points.

The well-balanced disaster organization will have CW, phone, and digital mode capabilities available in order to utilize all of the advantages. Of course, one must make the best use of whatever is available, but a great deal of efficiency is lost when there is lack of coordination between the different types of operation in an emergency. Absolute impartiality and a willingness to let performance speak for itself are prime requisites if we are to realize the best possible results.

7. Use all communications channels intelligently. While the prime object of emergency communications is to save lives and property, Amateur Radio is a secondary communications means; normal channels are primary and should be used if available. Emergency channels other than amateur which are available in the absence of amateur channels should be utilized without fear of favoritism in the interest of getting the message through.

8. Don't broadcast. Some amateur stations in an emergency situation have a tendency to emulate *broadcast* techniques. While it is true that the general public may be listening, our transmissions are not and should not be made for that purpose. Broadcast stations are well equipped to perform any such service. Our job is to communicate *for*, not *with* the general public.

9. Communication support. Within the disaster area itself, the ARES is primarily responsible for communications support. When disaster strikes, the first priority of those NTS operators who live in or near the disaster area is to make their expertise available to their Emergency Coordinator where and when they are needed. For timely and effective response, this means that NTS operators need to talk to their ECs before the time of need so that they will know how to best respond.

Chapter Six: Working with Public Safety Officials

Public service communications performed by ARES members are based on a number of requirements. Specifically, we must be accepted by public-safety officials. Once accepted, our continued ability to contribute in times of disaster is based on the efficiency and effectiveness of our 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.

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 wishes to be of assistance must be aware of this perception.

The police have generally had their fill of "groupies" or "hangers on." They can ill 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 objective. 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 inhibit the actions of trained personnel. Worse yet, they can make an already dangerous situation even more so by their getting in the way. With rare exception, Amateur Radio operators do not fall into this category. The problem is, however, that police officers in the midst of stressful operations may have extreme 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 authority 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 don't understand, or so awe-struck that they try to avoid what they perceive as threatening.

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 previously paid for by the taxpayer. Local radio amateurs also must demonstrate that they are organized, disciplined and reliable, and have a sincere interest in public service.

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 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 that first meeting well-prepared, and give a concise presentation of Amateur Radio's capabilities. Illustrate accomplishments with newspaper clippings, *QST* 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.

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 you are aware that police and fire radio frequencies are usually saturated with tactical or operational traffic in emergencies, and offer to provide an administrative frequency for use in overall management and coordination of the relief effort. More importantly, offer to demonstrate what you are 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 officers 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 sponsor or agency you are dealing with. 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 ground work 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

Topic 13: Amateur Radio Service Support to Public Safety Communications¹

To this point in our Tech Topics series, our discussions of public safety communications have focused primarily on interoperability and various methods and technologies for public safety organizations to communicate with one another. In times of emergency when normal public safety communications are not available, there are alternative systems that may be used for this purpose. Current FCC rules state that amateur stations and operators are allowed to assist and support public safety communications in times of emergency. This topic addresses the voluntary services provided by amateur operators, amateur service organizations and the relationships between amateur service organizations and public safety jurisdictions. Information about amateur services is also briefly described in the Public Safety and Homeland Security Bureau's Amateur Radio Services web page.²

Amateur radio (also known as 'ham radio') services are regulated under Part 97 of the FCC rules.³ Amateur radio operators are licensed users who operate radio communications as a hobby or a voluntary service running within amateur radio frequencies allocated by the FCC⁴. To acquire an amateur radio license, individuals are required to pass a licensing exam that proves the individual possesses the operational and technical qualifications required to properly perform the duties of an amateur service licensee [47 CFR 97.503]. Currently, individuals may qualify for three classes of operator license: Technician, General and Amateur Extra.

When normal communications systems are not available, amateur stations may make transmissions necessary to provide essential communication needs in connection with the immediate safety of human life and immediate protection of property [47 CFR 97.403]. This provision of emergency communications is regulated by Part 97, Subpart E of the FCC's rules. One advantage for amateur radio operators in public emergency communications is the wide range of available frequencies [47CFR 97.407].⁵

One service within the amateur radio services that uses amateur stations during periods of emergencies is known as the Radio Amateur Civil Emergency Service, or RACES.⁶ To transmit in RACES, an amateur station must be certified and registered by a civil defense organization or an FCC-licensed RACES station. RACES is administered by the Federal Emergency Management Agency (FEMA) and acts as a communications group of the government.

Registered members of RACES are authorized to respond when a civil defense organization requests amateur radio assistance. Typically these activities occur during periods of local, regional or national civil emergencies such as hurricanes, earthquakes, floods or wildfires. RACES stations may only communicate with specified stations [47CFR 97.407(c), (d)].

It is important to recognize that the amateur radio stations participating in RACES are certified by their local civil defense organizations for this specific purpose. The operators are a valuable resource that provides emergency

communication capabilities to their community. Civil defense organizations establish their own training and certification standards. Some localities – for example, Arlington County, Virginia⁷ - have more stringent training and certification standards than others. The key component of the RACES program is the direct and recognized affiliation between the amateur radio operators and local authorities since RACES may provide a critical alternative communications link for local officials. For example, RACES operators serve the county by passing critical emergency information from county officials with the County Emergency Response Team (CERT) to RACES operators at other locations.

Although RACES stations operate in conjunction with a federal, state, tribal or local jurisdiction, there are other options for amateur radio operators in emergency communications to include the Amateur Radio Emergency Service (ARES). Together with the National Traffic System (NTS), these services are broad programs of the American Radio Relay League (ARRL) which is a national association of radio amateur operators. ARES members are licensed amateur radio operators who volunteer to provide emergency communications services to public safety and public service organizations. Most individual ARES units are organized within a city, county or state and usually operate autonomously. The ARRL describes the ARES programs as follows: ⁸

"The Amateur Radio Emergency Service (ARES) consists of licensed amateurs who have voluntarily registered their qualifications and equipment for communications duty in the public service when disaster strikes. Every licensed amateur, regardless of membership in ARRL or any other local or national organization, is eligible for membership in ARES. The only qualification, other than possession of an Amateur Radio license, is a sincere desire to serve. Because ARES is an amateur service, only amateurs are eligible for membership. The possession of emergency-powered equipment is desirable, but is not a requirement for membership."

Frequently, individuals interested in providing emergency communications are registered in both ARES and RACES. Dual registration allows continuity of operations if normal amateur operations might otherwise be prohibited. RACES and ARES are collaborative services although they exist as separate volunteer entities. The ARRL encourages dual enrollment and cooperative efforts between both groups whenever possible. Both organizations remain a vital resource for the public safety community in times of crisis.

¹ This Tech Topic is coauthored with Mr. William T. Cross from the FCC's Wireless Telecommunications Bureau (WTB). Bill is responsible for all amateur radio related issues and can be reached at 202-418-0682  202-418-0682 or email: william.cross@fcc.gov. We sincerely appreciate Bill's contributions to this Topic.

² See <http://www.fcc.gov/pshs/services/amateur.html>.

³ See http://www.access.gpo.gov/nara/cfr/waisidx_07/47cfr97_07.html.