

# Introduction to Emergency Communications

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## What is a Communications Emergency?

The easiest way to think about a communications emergency is to begin by using the definitions used in the Incident Command System -ICS- (see section I.9 for the Incident Command Overview). "We will define an incident as any planned or unplanned occurrence or event, regardless of cause, which requires action by emergency service personnel to prevent or minimize loss of life or damage to property and/or natural resources."

We can see that during a large scale event it would be possible to have enough information (traffic) flow that the emergency service communications could become overloaded to a level that it would fail to function as required by the incident.

### 1. What defines a communications emergency?

When normal communications processes are inadequate to handle the information flow required to service an incident as defined in the ICS

### 2. The role Amateur Radio serves

Our primary role is to support the emergency management community (responders, relief and recovery agencies) with communications during times of emergency and disaster when normal communications are unavailable or overwhelmed.

Please understand that we are NOT a rapid response team. If you arrive at the scene of an emergency just as the sirens are quieting, keep your mouth shut and get out of the way! We do not provide first aid, transport victims, provide traffic control or any other function normally provided by public service agencies. We DO provide communication when public service systems are overloaded. Even the SKYWARN group (information available on the world wide web) does not activate until the National Weather Service has requested our help.

As a group we will, in many cases, do more than "just" communicate. You are free to do any work for the served agency that they request of you. So long as you are comfortable doing that work AND it does not hinder your ability to communicate.

Most operators think of ARES/RACES as a simple extension of the "talk time" in the hobby. This is not true. ARES/RACES are organizations that continually need more trained operators that are willing to learn to communicate rather than just talk. Do you have the time and the drive to do it well?

It is not that the trained operators are willing to learn to communicate. It is that the trained operators have learned to communicate accurately in a timely fashion regardless of the obstacles in the event.

### 3. Why Amateur Radio works when other methods don't

- a. Amateur radio equipment does not rely on wires and communications facilities provided by

common carriers and phone companies, thus it is not prone to disruptions with the telephone system.

- b. Public Service agencies can communicate with each other only if they are on the same frequency. Amateur radio operators have a wide range of frequencies to choose from and thus provide that common frequency.
  - c. Amateur radio enthusiasts use a wide range of radio bands, each one with its particular strength in overcoming the communication barriers. VHF (Very High Frequency-50, 144, 222 Mhz) and UHF (Ultra High Frequency-440 Mhz and above) radios handle short ranged communications. HF (High Frequency) provide coverage beyond VHF and UHF. All may cover a wide range of communications modes, whether it's TV, data, voice or morse code to exchange messages. The very nature of the amateur radio service encourages amateurs to learn how to make contacts, regardless of the challenges that may abound.
  - d. Amateur radio operators are distributed throughout the community, near schools, churches and park facilities which are often used for evacuation shelters. These operators are then near the scene of the event and can respond quickly. Please note that Amateur Radio operators are **NOT** first response people in their capacity as ARES/RACES. Should for any reason a section of a town or city be devastated, there is enough equipment and operators ready in other parts of the same community, to respond.
  - e. Regardless of the specific brand and model of radio equipment, amateurs that use the same frequency band and mode can communicate with each other. This is the reverse of private companies and government, where communications is limited to each entity by their FCC license and equipment. In many cases, they are not able to communicate with each other.
  - f. Amateur radio operators are already licensed and pre-authorized to communicate internationally into and out of places hard hit during natural disasters.
  - g. Amateur radio operators are allowed to run higher power than other licensed and unlicensed personal radio services such as Citizen Band (CB), Family Radio Service (FRS), General Mobile Radio Service (GMRS) and have more flexibility with the equipment. Therefore, they can communicate over greater distances and with greater diversity.
  - h. Amateur radio operators are encouraged to use their equipment regularly which verifies that it's maintained and operational. Thus the amateur radio operators are familiar with the operation and capabilities of their equipment, and how to overcome obstacles to radio communications that may be within their neighborhood.
4. Why the phone companies may not operate during emergencies

Communications between agencies and the general public are handled by common carriers such as phone, paging and Internet companies. Phone companies invest large amounts of monies into equipment that provide reliable phone service, including durable and secure buildings, highly reliable phone switches, diesel generators, large banks of batteries. Cellular, paging and Internet companies in turn rely on communications services provided by the phone companies. These phone systems (a) are sized for business reasons for the peaks in regular daily usage, **not peaks in emergency usage**, (b) usually rely on copper or fiber optic cables which when exposed are prone to damage during high winds, storm and unusual flooding conditions, (c) are usually not portable and reliable enough to respond to the demands of the emergency.

These are the most common reasons why normal public communication needs are not met during emergencies. Since Amateur Radio communication does not rely on these same features, it is able to respond to the needs of the emergency.

5. How does Amateur Radio Emergency Communications compare with other amateur radio activities?

a. **Uses basic skills and activities as a foundation.**

Amateur radio operators will find that much of emergency communications borrows from existing aspects of the hobby. For example:

- Each operator is federally licensed after a period of study and examination on varying levels of technical, operating and regulatory knowledge.
- Each operator routinely uses that privilege to practice and build upon the ability to communicate via radio.
- One uses general operating practices to converse on repeaters and HF.
- NTS practice offers skill sets for passing formal traffic efficiently and accurately.
- Contesting emphasizes speed, listening skills and endurance.
- Field Day offers the chance to practice operating out of tents handling radios powered by generators.
- Public Service events lets us practice flexible communications practices while walking around serving a public event.

In these ways regular amateur radio activities resemble skills used for emergency communications.

b. Emergency communications builds upon and extends this foundation in ways that normally do not occur in regular daily living, and are present only during times of emergency or disaster.

- Emergency communicators are often activated with little or no previous warning, to organize and coordinate field operations.
- Emergency communicators must handle several key organizations simultaneously and may become the primary means of inter-agency communications.
- Emergency communicators are often dealing with several nets simultaneously to pass messages within a limited timeframe.
- Stations must be portable and must be setup and operational in a matter of minutes or at most a few of hours.
- Emergency communicators are looking for specific stations to contact NOW to pass traffic. **Teamwork, not competition between stations,** is imperative.
- Emergency operations are likely to continue for several days or weeks.
- Unlike general amateur radio activities, **emergency operations happen in real-time. Things can not be delayed.**
- Emergency communications involves both amateurs and non-amateurs alike.
- Emergency communicators must have the equipment, skill and knowledge to improvise additional communications capacity in very short order.

■ **In all this, leadership, teamwork and initiative are key factors to success!**

Simply put, amateur radio emergency communications offers a very rich, challenging and rewarding environment to apply amateur radio knowledge and skills in unique situations where no one else has a viable solution. *Amateur radio operators that have honed that knowledge and skills have truly earned the right to be called emergency communicators.*