# Amateur Radio and Emergency Communications

Disasters in remote places have historically involved amateur radio operators. These "hams" have stepped in to provide assistance when other forms of communication fail. Disasters still happen regularly, and ham radio operators continue to serve the public with their skills and radio equipment. Emergency management professionals still need to include ham radio operators in their planning processes because of the vital help they can offer.

Ham radio might be considered a precursor to the social media of today. This form of communication dates back to the 1890s. It wasn't until 1912 when the Radio Act was passed, granting federal licensing to ham radio stations. Ham radio stations today are regulated by the United States Federal Communications Commission. In 1935, the Amateur Radio Emergency Service (ARES) was established by the American Radio Relay League. Licensed amateur radio operators belong to the ARES, having registered their equipment and qualifications to be ready to assist the public in the event of a disaster. The Radio Amateur Civil Emergency Service was established in 1952, serving as a civil defense radio service that activates in emergencies. Following Federal Emergency Management Agency protocols, ham radio operators have authorization to transmit during emergencies after the president invokes these powers.

## Understanding Ham Radio Communication

Ham radio operators must study and pass exams to earn licensing. The tests include topics such as operator responsibilities, FCC rules, operating procedures, radio propagation, electronic circuits, electrical principles, typical equipment troubleshooting, antenna measurements, repairs, non-voice communications, and safety. Ham operators often have extensive communications experience or even professional broadcasting experience. Many operators are also first-responders. Members may also have earned FEMA training certificates, have law enforcement backgrounds, or participate in volunteer activities such as search and rescue.

## How and When to Use Ham Radio

If all communication is being managed via commercial services, ham radio is not necessary. However, regular communications systems may be compromised in a disaster or emergency. When this occurs, supplemental ham radio can take the place of commercial communication systems until they are restored. In major disasters, extensive failures can occur involving overloading of communications infrastructure such as cellular networks, Internet access points, and public safety radio systems. Ham operators will be needed in force for an extended period when this occurs. FCC regulations authorize ham operators to assist the public with direct communication with non-amateur entities such as the military and FEMA. Ham radio operators can provide voice and data communication in these scenarios.

Ham radio operators may be used remotely at auxiliary command posts, emergency shelters, evacuation sites, emergency operations centers, medical facilities, police and fire stations, and

public works sites. Ham operators may also assist with communications links between similar agencies, establishing communications in areas outside of public service coverage areas, shadowing emergency management workers to ensure constant contact, monitoring highways and bridges to ensure safety, and observing damaged areas to provide reports. Ham radio operators may not be able to completely replace all communications. However, these volunteers can step in to establish and maintain critical communications during challenging conditions. Ham operators who have solar-powered equipment can even maintain communications when other traditionally powered equipment fails.

## The Integration of Ham Radio Into Emergency Management

Emergency management coordinators can integrate ham radio into contingency plans in several ways. A plan may involve establishing an auxiliary emergency communications unit that consists of ham operators. An emergency management team may also host a ham radio licensing class to teach and train new ham radio operators. Even in areas that do not experience frequent emergencies, it's important to have ham radio operators ready to step in during emergencies. These areas may benefit from scheduling drills and exercises to keep operators ready to respond in emergencies. Drills also ensure that professionals and ham operators are comfortable working together. For optimal results, emergency management officials should strive not to limit ham operators in their responses. By not dictating operator response, hams have the freedom to respond effectively.

## Further Reading

- What Is Ham Radio?
- Overview of Ham Radio
- All About Ham Radios
- A New Vision for the Amateur Radio Service (PDF)
- Amateur Radio Service
- Emergency Communications Driving Increase in Amateur Radio Operators
- Getting Started With Amateur Radio
- Amateur Radio on the International Space Station
- Introduction to Amateur Radio
- Ham Radio Terms (PDF)
- Good Operating Practices
- Early Radio Astronomy: The Ham Radio Connection
- SKYWARN
- Amateur Radio License: How to Get it
- Amateur Radio Guide to Digital Mobile Radio (DMR) (PDF)
- Amateur Radio Essential to Emergency Response
- Guidelines for Amateur Radio Operations
- Amateur Radio in the 1950s: Romance and Reality (PDF)
- Ham Radio 101 (PDF)
- When Everything Else Fails, Amateur Radio Still Thrives