

SECTION 15: STATION CONFIGURATION

This section provides information needed by individual operators responsible for setting up, provisioning and configuring an ARES emergency station.

Once you complete this section, you will be able to:

- Select a location for your ARES station
- Set up and configure a station
- Configuring a home station for ARES.

SELECTING A LOCATION

Before choosing a location for the ARES station, work with the manager responsible for the operations site to find a location that will meet your needs while staying out of the way of other essential functions.

Consider:

- Accessibility
- Antenna erection
- Privacy
- Nearby facilities.

Also discuss with the site manager how messages and communications will be handled by the station.

STATION SETUP AND CONFIGURATION

If you are responsible for establishing a station at a location, there are a number of things you need to consider:

Special site considerations

Some types of sites where you may be asked to establish a station have specific constraints or conditions that may require care.

EOC

If you are setting up a station at an EOC or other operations centre, consider the following recommendations:

- Install or use headsets or earphones to minimize your impact on the EOC.
- Consider RFI when installing antennas, feedlines and equipment. Do not interfere with other communications systems at the EOC.

- Unless the station has been set up at the EOC prior to the emergency, set it up as quickly and quietly as possible, without making the installation permanent. Use velcro, cable ties and other items that can be 'de-installed' after the operation without damage.

Medical environment

If you are setting up a station in a hospital, at a medical-care senior citizens' home, or in any environment where medical equipment is being used:

- Install or use headsets or earphones to minimize your impact on patients and staff.
- Consider EMI/RFI when installing or using radio systems. Some medical equipment is extremely vulnerable to accidental interference, with tragic results.
- Run antenna systems outside and away from patient areas.
- Shield your radio equipment from the mains power.
- Configure transmitters to operate at their lowest power levels.
- Set up a kill switch (for example, a single switch on a power bar) that can be used to immediately shut down all station equipment.
- Make staff aware of the possibility of interference, so that they know to watch for it and to notify you if it occurs.

Sealed sites

If you are setting up a station in a building or trailer that is sealed (for example, during a chemical or radiological emergency):

- Do not attempt to run feedlines or antennas to the outside. If you do not have coverage from inside, and feedlines and antennas are not already installed, consider using a relay station, or a simplex or CBT repeater in a nearby automobile.

Mobile units

If you are setting up a station in a mobile unit (for example, in a city bus being used for evacuations):

- Do not drill or hard-mount equipment. If you need to temporarily mount equipment, use velcro strips.
- Do not alter the vehicle in any way.
- Keep all antennas, cables and equipment out of the way of the driver.
- Keep in mind the purpose of the vehicle during the emergency, and the activities that will take place on the vehicle. (For example, if the vehicle is being used to transport victims, ensure that your installation will not be in the way of, or vulnerable to injured persons brought onboard.)

- Do not interfere with any existing radio equipment.
- Do not 'hotwire' into the vehicle power system to get radio power. Use cigarette lighter plugs or temporary clip-on fused cables to get power, or run off batteries.

Antennas

Indoor antennas

Indoor antennas are the easiest to set up, and may work well in many locations. Your choices will be determined by the antennas that you have available yourself, and by the antennas that other operators can loan to the station. Typical indoor antenna types include:

- BNC or SMA rubber ducks or whip antennas
- wall-mounted or window-mounted dipole antennas for 6m or 2m
- mag-mount whips

Outdoor antennas

Outdoor antennas may be required at some locations, but are much more complex to install, even in temporary situations.

Ad-hoc outdoor antennas that you can install in an emergency include the following:

- mag-mount whips
- handheld-style BNC whips or rubber ducks with an 'auto-style' window-mounted extension cable and base
- externally mounted dipoles for HF, 6m, or 2m
- J-pole for 2m

A length of 2 by 4 wood with a cross piece can be inserted into a sewer vent pipe as a temporary antenna mount.

Pass-throughs

A pass-through for antenna cables can be made through the walls of EOCs and other locations with a section of 1 1/2 to 2 inch PVC pipes with screw top, clean-outs on the inside and outside of the building wall.

Antenna and power safety

All amateur radio antennas should be grounded whenever and wherever possible. This is particularly important for stations operating during disaster situations, when there may be a tendency to continue operating even during electrical storms.

In fixed installations, use DC grounded antennas whenever possible.

A grounded antenna still needs a lightning arrestor. In addition, each coax feed line should be connected to ground (at least 2.5 m ground rod connected with minimum #4 AWG bare copper, through a lightning arrestor).

An individual surge protector should be used on each piece of equipment connected to the AC mains.

Both coax feed lines and power cords should always be disconnected from amateur equipment in EOCs and other served agency locations when not in use. Make sure that coax terminations ends are legibly tagged for identification and placed at least 1 m from equipment.

The equipment ground, antenna ground and lightning arrestor should be tied to the same points whenever possible to form a grid.

Tables

The site manager may be able to provide a table or surface on which you can set up a portable station or a working location, if you are at a location with resources. Otherwise, you should consider bringing a small card table or other fold-up table.

Signage

Your services aren't useful if no one can find you. If you are stationed in an EOC or in an operations centre, this won't be an issue. But if you are serving a number of clients, or are located remotely from your clients, you'll need some signage to make finding your station easier.

Local communications

You may want to integrate as much as possible into local communications being used onsite. For example, if you are serving in a large EOC, you may want to adopt a phone extension and make sure that key clients know how to reach you via that extension. You may want to monitor an FRS/GMRS channel (such as Channel 9) so that clients can reach you using the cheap, short-range FRS handhelds that are now commonly available. You may want to bring an Ethernet-equipped laptop so you can plug into the location's LAN in order to facilitate messaging and file transfer.

Comfort

If you and other station operators are going to be operating for extended periods, you'll need some comfort facilities at your station, or at the location you are serving.

Cots and blankets. Being able to sleep at the station allows you to run short shifts with other operators.

Coffeepot or kettle. Access to coffee, tea or hot chocolate will make operations much more comfortable.

Note: *Do not eat or drink in front of evacuees unless they have also been provided with meals and water.*

Food. Although each operator is expected to arrive with 12 hours of food and water, any extended operation will require ongoing commissary services for station personnel.

Entertainment. In order to allow operators to rest or take a break without leaving the station, you need to provide light reading such as magazines or recent newspapers. You may also consider providing a small portable TV.

Internet. Although many emergency situations may affect Internet access, you should consider providing an Internet-connected laptop (with a LAN connection or a wireless Internet connection) that can be used by personnel on break to check email or read online.

Bathroom facilities. For any operation of any length, you need to provide access to washroom facilities, and somewhere where personnel can wash up.

Shelter. You may need to provide a tent or other form of shelter.

CONFIGURING A HOME STATION FOR EFFECTIVE ARES USE

Whether you are a skilled ECOM operator, a serious traffic handler, or simply a hobby operator, consider the following suggestions for configuring your home station for ARES operation:

- Designate a room or space for the radio station and ensure that the space is not cluttered with items not related to the station.
- Set up a well-lighted desk or table and a comfortable chair.
- Include an accurate battery clock. (Two are better – one set for local time and one for UTC.)
- Put up a wall calendar.
- Include the following items:
 - A flashlight or other emergency light source
 - Logbooks and note books. (In addition, 3x5” index cards in a file box can be useful.)
 - Extra pens, pencils and a sharpener.
 - A repeater directory, operating guide, antenna books, and copies of emergency plans
 - Maps
 - File folders and cabinets
 - Weather station or outdoor thermometer (properly shaded)
 - An operational notebook in a sturdy binder, containing important names and numbers, frequencies, and other reference information
 - Blank paper, paperclips, pre-printed message pads, and envelopes
 - Headphones.