



The Role of Amateur Radio in Emergency Communication

1. What is Amateur Radio?

Amateur radio is an activity regulated by the international treaty. It is a radio service defined by the International Telecommunications Union (ITU) and is practised by more than 3 million people around the world. Radio amateurs come from all walks of life, from school children to retirees, from kings to farmers.

There is a requirement to be technically qualified to get a licence to transmit via amateur radio. Every licensed amateur radio operator is identified by a unique call sign. All radio amateurs have an interest in experimentation, communications and many technical innovations have been the work of radio amateurs. Amateur radio makes use of dedicated radio frequency spectrum for:

- ✓ Self-training and learning
- ✓ Non-commercial exchange of messages
- ✓ Experimentation
- ✓ Emergency communications

Amateur radio can provide direct "point to point" voice radio communications with some data transmission capacity. In many populated areas, there are VHF/UHF "repeaters" to extend communications range and give a city or regional coverage. Radio amateurs are trained, self-reliant and they are widely dispersed, living in their communities. A healthy amateur radio population within a country helps to enhance a nation's skills base as well.

2. How can Radio Amateurs help with Emergency Communications?

In emergencies, normal communications infrastructure is under stress or fails. Amateur radio is not dependant on existing communications infrastructure which means that Amateur radio works "when all else has failed".

Radio amateurs can provide "start-up" communications at the first stages of a disaster. Typically, the first needs are providing situation reports and responding to urgent calls for medical supplies. Amateur radio also provides direct communications to the civil societies and the people. Radio amateurs work with the government agencies and NGO groups.

Radio Amateurs are trained to work under adverse conditions with temporary stations that can be deployed quickly with simple wire antennas and a Grab Kit and portable radios. Most amateur radio equipment can work with a variety of power sources including the 12-volt supply from car or truck batteries.

Radio amateurs are also constantly training themselves through participating in field days, contests both locally and worldwide, taking part in emergency practice nets or simulated emergency tests. They take part in DXpeditions where they travel to remote islands or areas where there are very few or no radio amateurs and set up portable stations to communicate with the rest of the world.

When well prepared, radio amateurs can provide the back-up communications needed in an emergency. The key to having this capability is proper preparation and partnership between civil authorities and radio amateur groups. This relies on creating a supportive environment for amateur radio to grow.

For effective amateur radio disaster assistance, an up-to-date set of National Radio Regulations is essential. Many countries are not up-to-date and have restrictive national regulations. Radio amateurs need access to all the frequency bands allocated to the amateur service in the ITU Radio Regulations and the provisions of the revised Article 25 of those regulations. There need to be readily available examinations and the availability of licences. A supportive government is essential for amateur radio to grow and succeed.

3. Building A National Amateur Radio Capability

The International Amateur Radio Union (IARU) which is a non-governmental organisation is the global federation of national amateur radio societies. There are currently 168 Member Societies around the world, of which there are 35 in Africa. Since 1925, the IARU has been representing the interests of the amateur service to spectrum regulators both at the ITU and Regional Telecommunications Organisations.

If your country does not have a significant radio amateur population, then the IARU may be able to assist with its STARS program. STARS stand for Support to the Amateur Radio Service.

STARS seek to support growth in amateur radio activity through a series of pre-defined projects in countries where the amateur population is low and where available funding for investment in growth projects is also low. The idea is to create a viable and vibrant amateur radio community which through its activity will enhance the local skill base and develop an emergency communications resource.

For a country to be considered for STARS assistance, it first needs to satisfy the core criteria of reasonable stability, security and safety. Where there is an existing national amateur radio society which needs help to grow, then STARS can assist by working with that society. Where there is no amateur radio service, and there is a clear interest from the spectrum regulator or government to support the development of amateur radio then the country can approach the IARU for assistance through its STARS program.

STARS is a five-stage program with a clear milestone plan and each stage must be completed before the next stage is funded. The program is run under close review from the STARS chairman, but it is driven by an in-country program manager.

The In-Country Program Manager Needs To:

- ✓ Develop and maintain a relationship with the spectrum regulator.
- ✓ Be the driving force in creating the in-country radio society.
- ✓ Create a local implementation team with at least 2 other people.
- ✓ Lead the training project.
- ✓ Provide regular reporting to STARS and liaison with IARU and ensure transparency of information between the country and IARU on the progress of the project

Briefly, the stages are:

Stage 1 - Program manager qualification

It is vitally important that the STARS program is managed in-country and, therefore, the in-country program manager needs to be pre-qualified against the criteria of availability, motivation, commitment, energy and training capability. Also, there must be the support of a core team of at least two other people with the same qualities.

Stage 2 - Developing the regulator relationship

The following requirements need to be in place:

- A clear indication of regulator support for Amateur Radio.
- An affordable licence fees
- Radio amateurs with access to equipment and therefore a reasonable equipment import duty in place.
- A clear protocol for issuing individual licences to the suitably qualified radio amateurs.
- The program manager must also have an "open door" to regulator

STARS can also support the regulator via an Amateur Radio Administration Course for regulators.

Stage 3 - Establishing the "national amateur radio society" and delivering training & training materials

Experience has shown that a scout group or similar does not work hence a university or technical college facility is preferred. STARS support is provided via:

- ARDP (Amateur Radio Development Program), which is a one-to-one programme including leadership development
- Training documentation can be provided.
- Provision of on-line examinations may be able to be facilitated to get the ball rolling.
- Simple kits, SDR dongles and antennas can also be provided to stimulate the interest in amateur radio.

Stage 4 - Providing (limited) equipment

STARS support is given via limited provision of equipment with the focus on good second-hand equipment. Simple "how to" designs for mono-band antennas that can be self-built and are replaceable can be provided. The IARU STARS program has a limited supply of transceivers ready for assignment and can assist with the sourcing of equipment.

Stage 5 - Revisiting the programme and re-energising it

Now that an amateur radio society is established and there are a growing number of radio amateurs, recognition needs to be given to keep up the momentum. This could include the STARS chair meeting with the program manager, regulator and club members or university faculty. Successful programs will also receive high profile publicity.

A thriving community of well trained, competent radio amateurs who can provide emergency communication when all else fails, is a key resource that should be developed in every country. IARU and the STARS program can potentially support countries which want to grow their amateur radio population and their technical skills pool. Starting young can help grow future engineers and scientists who are valuable resources for any country.

Interested? Contact the IARU Region 1 STARS Coordinator at:

STARS@iaru-r1.org for an exploratory discussion.