

**Newcomers and Elmers Net** **6-22-14**  
**Expanding Knowledge: Testing/Certification Opportunities**  
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Amateur radio operators start their avocations by getting a license—not something bought like a hunting or fishing license, but rather something earned.

-- I will not debate the merits of new test requirements vs. the licensing requirements of the “good old days.”

-- The license requires study, dedication, and a willingness to learn something new. That spirit is embodied in the licensing levels which, when earned, allow for greater and greater privileges and room to grow in the hobby

-- Each license is, as many have said, a license *to learn*. Whether or not one moves beyond the Technician level onto the General and possibly the Extra Class level does not indicate one’s ability or desire to learn more. Many folks stay at the Technician level because the opportunities there meet their interests.

-- Indeed a person could spend the rest of their life exploring the world of VHF and above signals, antennas, equipment and research. Satellite communications, microwave communications, wireless mesh networking—in many ways these areas are in their infant stages by comparison to what lies ahead.

-- For others, moving into the next level of licensing opens up a different world of possibilities with signals capable of traversing the world right from one’s own back yard, or driving down the road using a mobile HF rig.

-- Imagine having a conversation with someone in Greece while making a run to the local market!

-- HF privileges offer a whole new experience of the radio spectrum, from 10m signals which in good times can hop around the world with hamstick antenna on the trunk, to Very Low Frequency (VLF) experimentation using the latest digital modes.

-- There is also a world of experimentation available in antenna research, building equipment, and software/hardware design. These can be done at any level of the hobby.

-- Many, many amateur radio operators build on their hobby and turn their interests into a career in electronics, communications, computers, science, engineering, radio/television and even public safety.

-- Even if the hobby does not lead to an actual vocation, many folks go on to teach others about the hobby, serve as volunteers, or simply help others with equipment, antennas, or designing ham stations.

-- The Extra Class license not only allows for more band privileges than the other two, it also greatly increases the level of antenna and electrical theory one must learn to pass the test.

- Perhaps more than the other tests, the Extra Class license is truly a license to learn in that most folks only have a tenuous grasp of all the different theory when they take the test.
- For most it is only after passing the test and then exploring these topics further in the real world that the theory really begins to come together.
- While I truly studied for all of my licenses, the Extra Class level was not only the most challenging, but also the one for which I had the least grasp of the material.
- Other hams assured me this was the case for most people, and that I would do just what I suggested above—learn far more as I slowly put the theory into practice and expanded my knowledge through experience and further learning.
- Even as an “old-timer” I am constantly learning new things from sources like the many fine authors who write for this publication sharing their expertise with us all.
- I also learn from exploring new areas of the radio hobby. I can draw on previous knowledge to pave the way for learning new things. In many respects I believe the desire to learn is more a state of mind than anything else, and I believe the willingness to learn comes fairly naturally to most hams.

### **Beyond Amateur Licenses**

Beyond amateur licenses there are many, many opportunities to learn through testing and certification.

- One of the most popular areas to gain certification is the world of emergency services. Since 9/11 there has been a concerted effort to get everyone involved in emergency services “on the same page” as we like to say, and part of that is standardizing training and certification of first responders
- Here in the U.S. the Department of Homeland Security has become the umbrella under which many different organizations operate with direct or indirect support and/or oversight.
- The Incident Command System (ICS) is an example of this standardization, where the model for the chain of command for first responders has been adopted (a version of which was developed for firefighters back in the 1970s).
- Other countries and international organizations have followed suit or have developed their own standards for emergency response, and amateurs around the world participate as they are able.
- FEMA, otherwise known as the Federal Emergency Management Agency, has developed a series of classes for training people involved as first-responders.

- First responders are just that—folks who will be the first people to respond during natural or man-made disasters, such as police, fire, medical, and logistical workers.
- From various governmental agencies to non-government agencies and volunteers, these classes are designed to instruct responders about scaleable responses where communications are clear and everyone has the confidence to know where they fit in the overall response
- The ARRL here in the states acts as a liaison for amateur radio emergency responders, and here is an excerpt from their [ARES page](#):

The Amateur Radio Emergency Service® (ARES) consists of licensed amateurs who have voluntarily registered their qualifications and equipment, with their local ARES leadership, 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 ARES. Training may be required or desired to participate fully in ARES.

- The training can take several forms, including an [ARRL certification class](#) and/or [FEMA classes](#).
- Lest one think the ARRL class is just for show, I have included the course description here:

**Description.** This course is designed to provide basic knowledge and tools for any emergency communications volunteer. The course has 6 sections with 29 lesson topics. It includes required student activities, a 35-question final assessment and is expected to take approximately 45 hours to complete over a 9-week period. You will have access to the course platform at any time of day during this 9-week period so you may work according to your own schedule. You must pace yourself to be sure you complete all the required material in the allotted time.

**Course Completion Requirements.** At the end of the course an online final assessment is taken. A score of 80% or better is required for successful course completion. For the student to receive a "Pass," Mentors must also verify student completion by evaluating work on required activity assignments and notify the Continuing Education Program that the student has successfully completed both the course work and achieved a satisfactory score on the final assessment.

The FEMA classes are designed to teach about the NIMS (National Incident Management System) which incorporates the ICS, as well as the National Response Framework

The most common classes are:

- IS-100.b Introduction to Incident Command System, ICS-100
- IS-200.b ICS for Single Resources and Initial Action Incidents
- IS-700.a National Incident Management System (NIMS) An Introduction
- IS-800.b National Response Framework, An Introduction

There are also classes for law enforcement, health care organizations, and public information officials, among others. The above classes are offered online, while other NIMS classes are taken in person during 3-5 day seminars offered around the country at various times of the year

Many additional training opportunities are available connected to emergency services, whether through national organizations or through local chapters of ARES, RACES, [SATERN](#) (Salvation Army Emergency Disaster Services), and similar groups.

## **MARS**

Closely related to the emergency organizations mentioned above, many amateur radio operators become MARS members. Part of the official description follows:

The Military Auxiliary Radio System (MARS) is a United States Department of Defense sponsored program, established as a separately managed and operated program by the United States Army, Navy, and Air Force. The program is a civilian auxiliary consisting primarily of licensed amateur radio operators who are interested in assisting the military with communications on a local, national, and international basis as an adjunct to normal communications . . . providing worldwide auxiliary emergency communications during times of need.

MARS operators are amateur radio operators who have frequency privileges outside of the amateur radio bands, but only in direct connection to MARS activities. The two licenses do not overlap, and each license has its own call sign

- in addition to the emergency services side of things, the training and exercises are guaranteed to make one a better operator, as great emphasis is given to clarity and simplicity in communications.
- MARS groups have regular training nets, drills, and exercises for preparation for emergency events
- a secondary emphasis is on message/traffic handling for service people, but this is only occasional as most people rely on cell phones and the Internet

-- digital modes are becoming a big area of focus now, with regular traffic nets including or limited only to digital modes

### **SKYWARN**

SKYWARN is another amateur radio certification program to train hams for weather spotting

-- classes are held each year, usually in the spring, on a region by region or county by county basis

-- while the training is not hard and certification comes through completing a one-evening class, most SKYWARN members regularly attend these yearly meetings to stay fresh on the requirements and training

-- in the process of these classes spotters are trained to read some of the signs of dangerous weather and how to report the information to the NOAA weather service directly or through nets

### **GROL (Sounds like a Monster!)**

The General Radiotelephone Operator License is a commercial operator's license is required to operate, repair or maintain a maritime land radio station, as well as some ship-based communications over 1000 watts ERP

The test consists of two units:

Element 1 – Marine Radio Operator Permit (MROP)

- Basic radio law and operating practice

Element 3 – General Radiotelephone Operator License

- Electronic fundamentals and techniques required to adjust, repair and maintain radio transmitters and receivers.

In addition to Elements 1 and 3, most amateur radio operators who get the GROL license also get Element 8 – Ship Radar Endorsement, which covers specialized theory and practice applicable to the proper installation, servicing and maintenance of ship radar equipment in general use for marine navigation purposes.

### **Public Information Officer Training**

Public Information Officer training is available for promoting amateur radio in the community through a variety of sources, including clubs, local officials, and media outlets

-- like the ARRL emergency training mentioned previously, the ARRL has an online class available

-- the course description states:

This is a basic training course for PIOs and anyone interacting with the media and promoting Amateur Radio.

This course is designed to give hams a quick overview in public relations activities. It uses the skills of experts in various aspects of public relations to provide volunteer Public Information Officers with the basic skills and expectations that a PIO needs to know to be effective in their home region. PR-101 covers everything from the basic news release to Web sites and video work.

- this is an important area for promoting amateur radio, and will certainly expand your horizons in terms of helping others understand what the hobby is all about and what it has to offer the community
- and best of all the online class is free!

As you can see there are all kinds of ways to continue to learn and expand not only your knowledge, but also your experience of ham radio.