

INSTRUCTOR GUIDE
FOR THE
REACT EMERGENCY COMMUNICATIONS (EComm)
CERTIFICATION TRAINING PROGRAM



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REACT Emergency Communication (EComm) Certification – Instructor Guide

Introduction to this Instructor Guide:

This booklet is intended to assist instructors preparing for, setting up, and conducting group training under the *REACT* Emergency Communications Certification Program.

There are no secrets in this booklet and distribution is not limited to “instructors only.” The material in this booklet focuses on the needs of instructors, but some persons taking the course may find the material in this booklet interesting or helpful. If you are an individual taking the course as a self-study program, feel free to read this booklet or ignore it. If you are an instructor preparing to conduct the course for your Team or Council, *please* read this entire booklet before you begin.

Each section of this booklet covers one section of the *REACT* Emergency Communication Certification Program manual. The booklet includes the internet addresses of the corresponding source material, tips for the instructor, and suggested questions to check student understanding and stimulate discussion of the material being covered in this section. Most of these questions are presented here in ‘true or false’ format. You may rephrase some of the questions to vary the presentation. When you present questions, don’t stop after getting just the answer; have the students discuss the reasons behind the answer and try to identify the teaching point covered by the question. The important part isn’t generally the question itself, but the discussion about behind the answer. A few of the sample questions are obvious or funny, instructors may want to use, skip, or modify such questions based on the tone of the class and their own personal style of presentation. These questions are not a test, they are a guide to help the instructor. Note also that this booklet does not specify the answers for most of the suggested questions – the answers are covered in the course material – and, of course, anyone teaching this course should *know* the answers (as well as being able to *explain* the answers)!

The ARRL has an Emergency Communications Certification Program which formed the inspiration for this program and provided most of the content. The formal certification version of the ARRL program is an on-line educational course. To enroll in that course go to: [URL to be published].

The basic content of the ARRL program is also available on the internet. The address for that web site is <http://home.earthlink.net/~w0ipl/>

This web site provides links to files or other web sites containing the actual source material. Most of those web addresses are also cited in the appropriate parts of this Instructor Guide.

Preparing to teach the *REACT* Emergency Communications Certification Program to a group:

This booklet does not specify the time or equipment needed for each session. The circumstances in each Team and Council area vary too widely to allow a one-size-fits-all plan for how to conduct this training. The Team or Council conducting a course should select *one* person to manage the course. The Course Manager will need to study the materials and determine how the course will be conducted for his or her group, including any local information or procedures that should be added. For example, if a Team has their own emergency power generator, the specific procedures for that generator would be *added* to the lesson on Section 8. If the Team regularly works with a particular local agency, they might request an instructor from that agency to cover the part of Section 2 about Served Agency Communication Systems.

For a small group, one well qualified individual might serve as Course Manager and also be the Instructor for the entire course. More often, the Course Manager will arrange the primary instructor and any assistant instructors for each session. Depending on the number of students and the scope of the material to be covered during a session, there may be more than one instructor needed, but there can only be *one* Primary Instructor at a time.

If you are the Primary Instructor, ensure any assistant instructors know how you plan to conduct the class and what you want them to do. If you are an assistant instructor, be sure you understand what the Primary Instructor wants you to do.

When scheduling a session, time must be allocated before the class to ensure the classroom is set up for instruction and any equipment is present and working properly. When setting up the classroom ensure there is enough room to accommodate each student. Tables are better than “student desks” because they provide more room for note taking and allow the students to have their course manuals and a note book both on the table. Student desks with a writing area will work if you can’t get a room with tables. This course generally should not be taught in a room using just chairs with no place to write (usually called “auditorium seating”).

Before presenting this program, all instructors must thoroughly prepare by studying the lesson and the identified reference material.

Rehearse each presentation, both to be sure you know what you plan to say and to get a feel for the time required. Know the time required for each major part of a presentation so you will be better able to tell if you are running ahead or behind your planned schedule. If you find you are running behind while giving a presentation, *do not* try to rush to make up for ‘lost’ time – cover the material you can within the time available and adjust the schedule of other sessions accordingly.

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As with any other group activity, the leaders should conduct a Risk Assessment prior to the activity. Identify any hazards in the planned activities, equipment, and location. Once you have identified the hazards, decide what steps are appropriate to minimize any risks. Review the Risk Assessment immediately prior to each session – circumstances do change – consider the weather and any other factors.

Begin the course by introducing the instructors, distributing the course materials, and explaining how the course will be conducted. Tell the students that time will be allotted for discussion and questions during each session.

Position yourself where all of the students can see and hear you. If a demonstration is used, the Primary Instructor would usually narrate the demonstration while a selected Assistant Instructor performs the procedures.

Make sure a list of students for each session is provided to the Course Manager.

Instructor Resources for Section 1

Section 1 is the Introduction to Emergency and Public Service Communication. This section consists of the following topics:

- What is a Communications Emergency?
- Public Service Communication
- Organizations to meet communication goals
- Who runs the event - PRIMARY SERVED AGENCY
- Who talks to the Media (press) - the primary served agency PIO
- How you can get involved

These topics are generally covered in a single session together with the course introduction, overview, and any administrative procedures such as establishing a class roster. It is recommended that the Course Manager conduct the introduction and overview before turning the class over to another instructor if needed.

If the class includes *any* students who don't all know each other, the instructor should have all the students introduce themselves and tell a little about their own experience with emergency communications. This is especially important if most of the class do know each other and there are only a few students who don't know everyone else.

Spend some time at the beginning of the class discussing the concept of attitude. Solicit examples of good and bad attitudes that the students have encountered in emergency or public service communications. When discussing examples of bad attitudes, ask the students not to mention names and to avoid identifying specific individuals – the idea is to examine how attitudes impact on getting the job done and on working together, not to complain about other individuals or groups.

See also the material at the following web sites:

<http://home.earthlink.net/~w0ipl/>

<http://www.arrl.org/field/pscm/>

Suggested questions for discussion:

True or false: The most important quality you bring to Emergency Communication is your operating skill.

True or false: During an emergency, you are there to provide direction to the other agencies.

True or false: When working with other agencies, you should be conspicuous to make sure everyone notices and remembers your contribution to the event.

True or false: You should try to impress everyone with your knowledge.

True or false: You need to be a team player.

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True or false: You will take direction.

True or false: It's OK to interfere with served agency people.

True or false: When working for another agency, you should do things “their way” unless you know a better way.

True or false: Your attitude determines the effectiveness of the *REACT* participation.

True or false: *REACT* emergency communicators have the same role as emergency responders and search and rescue personnel.

True or false: Our primary mission is to provide first aid to accident victims.

True or false: Our role is just to communicate and not provide service to the served agency.

True or false: A communications emergency is when the police chief can't find his secretary.

True or false: During a communications emergency all routine traffic flows normally.

True or false: You get into emergency communications so you can talk more.

True or false: Training is unimportant.

True or false: It's not important how fast you handle emergency communication.

True or false: *REACT* Amateur radio operators should be trained and proficient in operating other personal radio services such as citizen band and family radio service.

True or false: *REACT* radio operators should be trained and proficient in operating radio services such as the local government radio, Red Cross, or other served agency radio systems, if given authorization and training provided by the local agency.

True or false: All radio communications for emergencies are handled on one frequency.

True or false: All radio communications for each specific emergency should be handled on only one radio service to ensure everyone involved will be able to work together.

True or false: All Amateur radio communication is limited to line of sight.

True or false: If the telephone service is out Amateur Radio will not function.

True or false: You should never test your equipment for functionality.

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True or false: Cell phones will handle all necessary communication during an emergency.

True or false: You will always know, in advance, when an emergency is about to happen (you will see it on TV or have other warning).

True or false: Teamwork is unimportant in emergency communication.

True or false: Real emergencies only last ten to twenty minutes.

True or false: Lack of teamwork, like a bad attitude, will hamper the *REACT* effort during an emergency, but will quickly be forgotten afterwards.

True or false: Cell phone systems overload quickly during an emergency

True or false: Public Service Communications may only be provided for public events sponsored by a 501(c)(3) non-profit organization.

True or false: Amateur radio operators can use their amateur radio equipment to provide public service communications to commercial for-profit events.

True or false: Non-amateurs may be a member of ARES and RACES.

True or false: All available resources should be committed immediately in any emergency.

True or false: The primary form of information passed on nets is informal traffic.

True or false: *REACT* emergency communicators should be skilled and trained.

True or false: Radio operators rarely need to be replaced during an emergency.

True or false: Spontaneous volunteers from within the local community provide the best source of replacement radio operators.

What are some possible sources of replacement radio operators during a prolonged emergency situation?

True or false: Appropriate emergency communications procedures can be picked up and operators can become proficient solely by reading or studying.

True or false: Formal mutual aid agreements are not appropriate for non-government organizations such as *REACT* or ARES.

True or false: The RACES regulations are contained in FCC Part 97.

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True or false: Amateur radio operators can authorize RACES operations.

True or false: In the event the president invokes the War Emergency Powers, amateurs may communicate on any frequency in the amateur radio band.

True or false: ARES and RACES have redundant functions, therefore, only one of these two organizations should serve a given geographic area.

True or false: To prevent being double counted, *REACT* members should never also be enrolled with ARES or RACES.

True or false: Radio operators from SATERN are never available to support other agencies.

True or false: The amateur radio National Traffic System (NTS) is limited to the CW mode of transmission.

True or false: It is the radio operator's role to take over the operations of an emergency that is in progress and give direction to Public Service officers.

True or false: It is the emergency communicator's role to talk with the news media.

True or false: *REACT* radio operators responding to an emergency should follow the Incident Command System methods and integrate into the ICS system that exists for the incident.

True or false: You can become involved in Emergency Communication by volunteering with your local *REACT* Team.

True or false: Training in Emergency Communication BEFORE the event is important.

Instructor Resources for Section 2

Section 2 is Communications. This section consists of the following topics:

- Basic Communication Guidelines
- Public Service and Emergency Communications
 - Getting the message through - Power isn't everything
 - Message Handling
 - ARRL Format Radiograms
 - ARRL Numbered Radiogram Message Texts
 - Personal Safety Considerations
 - Modes of Communication
 - Security Considerations
 - Operating Stress
 - The Four C's of Emergency Communications
- Served Agency Communication Systems

When covering the material on Workers Compensation Insurance, the instructor should provide information if there are local arrangements with served agencies in effect. Do not speculate – if there are not specific arrangements in effect say so; if the students come from areas which may have different arrangements, just tell them to check with their local served agencies.

For the discussion of the standard Amateur message format, the instructor should have a sample blank form for each student. You can obtain a pad of blank message forms from the ARRL or may be able to obtain some from a local amateur radio operator. Or you can reproduce the form from the next page to use as a sample.

If the instructor is not familiar with some modes of communication mentioned in this section it may be advisable to invite someone else to cover that part of the material. Check with a local amateur radio club, or the ARRL Section Manager or Section Emergency Coordinator for assistance if needed.

Due to the amount of material to be covered, it may be necessary to cover this section in more than one class session (especially if guest speakers and or demonstrations are used).

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See also the material at the following web sites:

<http://home.earthlink.net/~w0ipl/>

<http://www.iex.net/ares/ares.htm>

Suggested questions:

What are the two types of emergency communications messages? (Formal and informal.)

True or false: Emergency Communicators should use contractions and abbreviations within messages to keep communications as short as possible.

True or false: Emergency Communicators should editorialize and expand on messages sent/received at their stations.

True or false: Emergency Communicators should listen before transmitting.

True or false: Communication is the two way exchange of information or ideas.

True or false: The objective in a communications system is to increase the signal level until the message gets through.

Which one of these elements is not a part of a communications system.

The message.

The encoder.

The instruction manual.

The communications medium.

True or false: The communications media is limited to those electronic in nature.

True or false: The communicator should make liberal use of slang in his/her messages.

True or false: The communicator should use ITU phonetics.

True or false: During an emergency, chances are you'll be working with people you don't know.

True or false: It is preferable to write down messages that are received.

True or false: The average person can comfortably write 30 words per minute.

True or false: You should write messages in capital, block letters.

True or false: You should write messages in columns of seven words.

True or false: You should speak messages as fast as you can.

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True or false: You should add as many relay stations and relay paths as possible when forwarding a message.

True or false: You should insist on using amateur radio to pass messages.

True or false: You should be familiar with using telephone systems, commercial radio units, and fax machines.

True or false: During emergencies, amateur radio operators can transmit on the amateur radio band, and listen for communications from other agencies on their operating frequencies.

What is the goal of emergency communications? (To exchange messages in a timely and accurate fashion.)

When we relay formal messages, which of these is true:

- a) We do not change the content of the message.
- b) We use the minimal number of relay stations.
- c) We must include the signature (name and authority of the sender)
- d) ALL OF THE ABOVE

True or false: Radio operators are permitted to add other information to formal traffic.

True or false: Wherever possible, use contractions such as “can’t” and “don’t” instead of saying “can not” and “do not”.

Ten-codes and Q-signals are shorter so they should be used to improve clarity and reduce the waste of transmission time.

True or false: One should add comments and opinions to operations on the nets.

What radio licenses are required to:

- Transmit on an FRS radio?
- Transmit on a GMRS radio?
- Transmit on a VHF Amateur Radio?
- Listen to Amateur Radio over a scanner?
- Listen to Amateur Radio over an amateur radio transceiver?
- Transmit on an HF Amateur Radio?
- Listen to a local government radio?
- Transmit on a local government radio?
- Listen to a Red Cross radio?
- Transmit on a Red Cross radio?

True or false: A test of accurate listening is if the listener can repeat accurately the contents of a message without adding or deleting content.

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Spell your first name using the standard phonetic alphabet.

True or false: An important design consideration for a packet radio emergency communications network is to minimize the amount of packet collisions, especially from the hidden transmitter effect.

True or false: You should not reveal the contents or even the existence of a message, even after the incident has been completed.

True or false: You do not know who is listening to a radio transmission.

True or false: To the extent possible, you should not pass along private information, such as account information, unlisted phone numbers and repeater control codes on the air.

True or false: You should be sensitive to your comments during times when fatalities or severe casualties may have occurred.

True or false: The body text of an amateur radiogram must never exceed 25 words.

True or false: A full street address and telephone number is required for the address of any message in the amateur radiogram format.

True or false: In the amateur radiogram format, the “signature” may include a title, but it must always include the name of the person sending the message.

True or false: Messages received as ARRL Numbered Radiograms should be delivered exactly as received.

True or false: Your responsibility in emergency communications is to operate your station and ensure the messages get through, even if doing so places you at risk.

Which of these modes enhance privacy/security over normal communications practices:

- Digital (non-voice) modes such as CW, packet, AMTOR, PSK31, RTTY.

- Modes not frequently found in scanners or consumer radios.

- Image modes such as ATV, SSTV and FAX to pass images.

- Horizontal polarization

- Split frequency or cross band operations

- Cross-mode operations

- Satellite systems (with directional, non-terrestrial, low power signals) to work around casual terrestrial listeners.

True or false: The operator's stress condition should be assessed before the operator is released.

True or false: Active listening skills are an important tool to aid another in managing their stress

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True or false: “Pace, then lead” skills is a tool can be used to guide another person to discover a successful outcome.

True or false: Communicators are not directly exposed to the conditions of an emergency so they do not need to participate in Critical Incident Stress Debriefing programs.

True or false: Tone squelch systems, such as Motorola’s Private Line, allow multiple stations to operate on the same frequency at the same time without interfering with each other.

Instructor Resources for Section 3

Section 3 is “Nets, What They Are And How They Work.” This section covers:

- Net Types
- Net Participant Guidelines
- Traffic Handling
- CW Nets
- Digital Nets
- Voice Nets

This material will usually be handled in a single session – although much of the material will appear again in other lessons later in the course.

See also the material at the following web sites:

<http://home.earthlink.net/~w0ipl/>
<http://www.arrl.org/field/pscm/>

Suggested discussion questions:

True or false: In a Directed Net all stations communicate only to and from the Net Control Station unless the NCS specifically directs otherwise.

True or false: “Tactical” callsigns are only used by operators in a formal “Tactical” net.

True or false: The use of tactical callsigns fulfills all FCC identification requirements.

True or false: When tactical callsigns are used, a different tactical callsign must be assigned for each radio service operating from a single location to provide a way to tell them apart.

True or false: The NCS should assign a new tactical callsign each time the operator at a station is replaced.

True or false: Tactical callsigns are always assigned to a location, not an individual.

True or false: Being counted for participation is important during emergencies. During an emergency you should check in to each active radio net you can reach, even if you have to check “in and out” to go to another net or to do something else.

True or false: If you are operating on one net and you hear important information on another net, you should immediately report that information to your net so everyone will know what is going on.

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True or false: CW nets may be important on 40 and 80 meters if the noise levels become too high.

True or false: HF digital operation is simpler than VHF or UHF digital operation.

True or false: Most HF phone (voice) nets operate using Frequency Modulation.

True or false: FM simplex nets are easier to manage than repeater nets.

True or false: The use of a simplex repeater will speed traffic handling compared to using a conventional repeater.

True or false: Modern repeater systems are so reliable that there is no reason to have a plan for net operation if the repeater fails.

Instructor Resources for Sections 4 & 5

Section 4 is “Basic Training - an Individual Checklist.” This material may be combined with Section 5 “Practical Experience” as a single session.

See also the material at the following web site:

<http://home.earthlink.net/~w0ipl/>

Suggested questions:

True or false: An important part of education and training is to reduce the mental energy wasted in moments of hesitation during the real event.

True or false: It is not important to learn about the Incident Command System (ICS) and the ICS teams in your area.

True or false: A NOAA Weather Radio with digital SAME alert is recommended.

True or false: You should put together a quick deployment bag and include a “last minute” checklist.

When looking for programs at the existing level, one should check with:

- a. your local ARES official (SEC, DEC, EC, AEC, etc).
- b. your local radio clubs.
- c. your local agencies - Civil Defense, American Red Cross, National Weather Service, Salvation Army, etc.
- d. your local church, county or state-wide denomination.

True or false: Key operating principles for Emergency Communications often differ from daily amateur radio operations.

True or false: One should learn and practice being an Net Control Station.

True or false: One should practice sending and receiving ARRL Radiogram messages.

True or false: One should learn about radio services, modes, and bands, even if you don’t have the license to use them.

True or false: You should learn about NVIS operations even if you never expect to use it.

True or false. You should learn about VHF/UHF simplex practices even if you use only repeaters during your normal amateur activities.

Instructor Resources for Sections 6 & 7

Section 6 is “ARES and RACES.” This section may be combined with Section 7 on the “National Traffic System (NTS)” in a single session or taught as separate sessions. If you have active ARES and/or RACES units in the area, it is strongly recommended to invite the appropriate ARES Emergency Coordinator and/or RACES Radio Officer to speak to the class. If these organizations operate separately in your area, make a special effort to extend an equal opportunity to both.

See also the material at these web sites:

<http://home.earthlink.net/~w0ipl/>

<http://www.arrl.org/field/pscm/>

Suggested questions:

True or false: Enrolling in either ARES or RACES gives an amateur radio emergency communicator the same access to opportunities to operate during times of emergency and disaster.

True or false: Only amateur radio stations may be RACES stations.

True or false: During RACES operations in time of war, only RACES stations may talk with other RACES stations.

True or false: RACES operators can begin RACES operations before a civil defense activation has been authorized.

True or false: ARES operators can begin emergency communications operations ahead of a RACES activation.

True or false: ARES operators are permitted to operate as RACES operators in times of war.

True or false: Both ARES and RACES operators should adhere to Incident Command System (ICS) procedures during times of emergency activation.

True or false: ARES personnel can be called in from other parts of the state or country.

True or false: The NTS always conducts extra sessions whenever a communications emergency exists.

True or false: Scheduled NTS nets are the primary method for passing emergency traffic within the local area.

Instructor Resources for Section 8

Section 8 covers “Equipment.” This topic includes:

- Personal Equipment Checklist
- Standardized connectors
- Knowing your equipment BEFORE you need it
- Equipment maintenance
- Portable antennas, generators, etc.
- Equipment Operation (CTCSS, DTMF, etc.)

Instructors conducting this course for a local group should suggest appropriate adjustments to the suggested equipment checklist. The more specific the group, the more detailed the instructor can be with equipment recommendations. For example, students in Hawaii and Florida are likely to have different needs compared to students in Alaska and Maine. When this course is presented for a local Team, you can be quite specific with information such as required identification materials. When the course is presented for a Council or other large group, the material will be more generic.

The material on “Standardized Connectors” should be covered in its entirety, but the instructor must make the students aware of any standards which have been adopted or become common practice in their area.

Equipment that is owned by or regularly available to the Team or Council should be covered in this section of the course.

Be especially alert to cover the safety aspects of any equipment displayed or discussed.

See also the material at the following web sites:

<http://home.earthlink.net/~w0ipl/>

<http://home.earthlink.net/~w0ipl/hc-conn.htm>

Discussion for this section should not be based directly on knowledge of the text material, but rather on application of the principles covered here. Talk about actual equipment. Ask students to show the class how their own equipment works. Try some practical exercises: If you have several amateur radio operators in the class who have radios with them, pick a suitable simplex frequency and see if everyone can program it into their radio. A tougher exercise would be to try the same thing for GMRS operators, selecting a repeater frequency and tone. Could your whole class spread out around the area – perhaps inside and outside in the parking lot – and ALL be in touch by radio, using some mix of different services, frequencies, relays and liaison stations? Try it!

Is YOUR “go bag” packed and ready?

Instructor Resources for Section 9

Section 9 is the “Incident Command System.” This lesson covers:

- ICS Overview
- Command Structure
- Position Objectives

Most state emergency management agencies and many metropolitan emergency management agencies have formal training programs available on the Incident Command System. Participation in these training programs is highly recommended whenever the program is available. If state or locally presented ICS training is not available, the FEMA home study program offers IS 195 - Basic Incident Command System which provides good basic training on the topic. The ICS material in this course is not a substitute for dedicated ICS training. The focus of ICS training within this course is on how the emergency communicator fits into the ICS structure.

When this course is conducted at the local level for a Team that regularly serves with the same agency, this material may be adjusted to reflect the specific functional alignment employed by that agency. Some agencies actually manage their individual radio operators as Single Resources, other agencies may regularly assign radio operators to Task Groups or treat the individual radio operator as part of some other “Single Resource.” How emergency communications personnel are managed will certainly depend on the agency, will usually depend on the size of the incident, and sometimes will even depend on the personal preferences of the individual Incident Commander.

See also the material at the following web sites:

<http://home.earthlink.net/~w0ipl/>

<http://www.fema.gov/emi/is195.htm>

<http://www.uscg.mil/hq/g-m/nmc/response/forms/Default.htm>

<http://www.nysemo.state.ny.us/ICS/explain.htm>

and your state and local emergency management agency web sites.

Suggested questions:

True or false: The most basic purpose of the Incident Command System is to ensure that someONE is always in charge.

Which functional area includes communications?

Each supervisor would typically supervise 3 to 7 subordinates. How many supervisors would each individual report to?

Instructor Resources for Sections 10 & 11

Section 10 “Emergency call outs” and Section 11 “Station Logs” are normally conducted as a single session. Both are relatively short.

When this class is conducted at the local Team level, the instructor should cover the actual Call Out procedures used by that team. When several teams are involved in the training, try to discuss the various Call Out systems used by these teams.

The instructor should have a copy of REACT form 133 for each student. If the course is conducted for a local Team that has adopted a different format as a standard station log form, instructors may substitute the local form.

Suggested questions:

True or false: The Call Out plan is finished once the members are activated and have reported to the initial service location or staging area.

True or false: An assigned “Telephone Tree” where each member calls one or more other members or even just a team roster with telephone numbers is sufficient as the complete Call Out plan for a small Team.

True or false: The Call Out plan should always provide for assembling all personnel before anyone reports to an assigned service location.

True or false: *REACT* members should automatically “self dispatch” whenever they find out that an emergency is happening.

True or false: Team members should be debriefed before they are dismissed.

True or false: Each station should maintain a physical record of all formal traffic handled throughout an emergency.

True or false: Station logs should be destroyed immediately after the end of an emergency to prevent the information being divulged.

True or false: If you don’t have any station log forms, you can’t keep an accurate log.

What information is important to record in a station log? (Get answers from several students and discuss the need to use some professional judgement.)

Instructor Resources for Section 12

Section 12 covers Specialized Modes and Different Radio Services, including: Packet, APRS, ATV, SSTV, Citizens Band (CB) Radio Service, Family Radio Service (FRS), General Mobile Radio Service (GMRS), and the new Multiple Use Radio Service (MURS).

This section includes most of the material that *REACT* added to the ARRL version of this course. There is a lot of ground to cover in this section and it may require more than one class session to cover all of it thoroughly. This is also the most technical of the material in the course. The use of guest experts is strongly encouraged unless the instructor is very familiar with all this material. Try to arrange demonstrations of the various specialized modes.

See also the material at the following web sites:

<http://home.earthlink.net/~w0ipl/>

<http://web.usna.navy.mil/~bruninga/aprs.html>

<http://www.qsl.net/va3jtr/>

Suggested questions (remember that these questions are intended for discussion, not simply as a test of knowing the “right” answer):

True or false: Packet radio is especially good for short messages between mobile units.

True or false: Packet radio is suitable for transmitting long text information, such as list of personnel in shelters during an evacuation.

True or false: A packet radio station requires more equipment than a station handling regular voice traffic.

True or false: The typical packet station consists of a computer or terminal, a terminal node controller, and a radio transceiver.

True or false: One advantage of packet radio is improved security and privacy compared to voice communications.

True or false: Once a VHF or UHF packet station has been set up, it can usually be operated successfully without a specialized knowledge of packet technology.

True or false: HF packet is easy to set up for high speed communications.

True or false: APRS is a special application of packet radio.

True or false: APRS can be used on the same frequency used to handle voice traffic.

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True or false: APRS is useful for keeping track of what is happening at fixed stations such as shelters.

True or false: The term ATV usually refers to Fast Scan TV signals over amateur radio.

True or false: FSTV and SSTV are two methods of sending the same sort of visual information.

True or false: Amateur radio is the only service where SSTV can be used in the United States.

True or false: ATV, FSTV and SSTV all provide real-time live-action video.

True or false: Fast Scan ATV requires more specialized equipment than Slow Scan TV.

True or false: SSTV can generally be sent over any voice-grade communications link, including UHF, VHF, and HF radio and regular telephone lines.

True or false: CB radio can provide effective short range communications between mobile and fixed stations within a local area.

True or false: Because CB is not licensed, there are no regulations about how it is used.

True or false: A UHF amateur radio may be used on GMRS and FRS frequencies provided the power is set down to the limit for the frequency being used.

True or false: A commercial “business band” radio may be used on amateur radio frequencies provided the operator holds the proper amateur radio license.

True or false: A VHF amateur radio may be used on MURS frequencies if the power is kept under 2W and the modulation is within the bandwidth allowed by the FCC regulations.

True or false: A CB radio may be modified for operation in the Amateur Radio Service.

True or false: A CB radio which has been modified for amateur radio operation can never again be used on CB frequencies.

True or false: Licensed GMRS operators may use their GMRS radio on the FRS channels. NOTE: As a T/F this is a “trick question” because GMRS operators can use their radio on the GMRS interstitial channels which are the same as FRS channels 1-7, but GMRS radios cannot be used on FRS channels 8-14 which are between the GMRS repeater input frequencies at 467 MHz.

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True or false: GMRS, FRS, and amateur UHF (70cm) band, and commercial UHF radios all provide essentially identical propagation. NOTE: Discuss the perceived performance differences to point out that factors such as antenna type, location, power, and even radio physical characteristics (such as speaker size and placement) have much more impact on performance than the small differences in frequency among the different radio services between 400-500 MHz.

True or false: APRS can legally be used on MURS. NOTE: Discuss that APRS *can* legally be used on MURS, but that it must be done with a certified MURS radio not with a modified amateur radio.

True or false: Tone squelch enables several people to use the same frequency at the same time without interfering with each other.

Instructor Resources for Section 13

Section 13 discusses the National Weather Service “Skywarn” program and related weather issues. If there is a NWS office in your area, ask if they will provide a someone to speak during this session. Also consider inviting representatives of any active Skywarn program organizations in the local area. If there is currently no Skywarn program in your area, discuss the Skywarn program with your local Emergency Management Agency to see if there is interest in starting an effective Skywarn program.

See if you can arrange to conduct the EComm training session on Skywarn immediately before or after an NWS weather spotter class. This will help ensure that students have both the spotter skills and communications skills to make the program most effective.

See also the material at the following web sites:

<http://www.skywarn.org/>

<http://www.warn.org/>

Suggested discussion questions:

True or false: Only licensed radio operators may be enrolled in the Skywarn program.

True or false: During a Skywarn radio net, only reports from trained spotters will be accepted.

True or false: *REACT* and the ARRL both have memorandums of agreement with the NWS covering their participation in the Skywarn program.

True or false: Once the new Doppler radar system is installed at each NWS location, manual storm spotting will no longer be needed.

Who activates the Skywarn program in your area? NOTE: Highlight the fact that even if local policy is to “automatically” activate Skywarn for weather watches or certain other conditions, it is still being activated *on the authority of* SOME official or organization – individual Skywarn participants never activate themselves *as part of Skywarn* without proper authority. In many areas, activations are “automatic” because the proper authority has established certain conditions for activating Skywarn as part of their local SOP or emergency plan.

Instructor give some examples of various weather conditions, such as various size hail, winds, rain, etc., and ask the students which of these conditions should be reported on a Skywarn net. Discuss the concept of “severe” weather.

Instructor Resources for Section 14 & 15

Section 14 mentions the ARRL Public Service Communications Manual and some other useful publications available from the ARRL. Section 15 discusses DOs and DON'Ts for Public Event Communication adapted from the guidelines published by the ARRL. These two sections are normally covered in one class session.

Try to have a copy of each of the publications mentioned in Section 14 so the class can examine them and see the sort of information contained in these manuals. Teams should consider having a set of these manuals as part of their reference library.

See also the material at the following web sites:

<http://www.arrl.org/field/pscm/>

<http://www.iex.net/ares/arrl-dnd.htm>

There are no “suggested questions” for this session, rather the instructor should encourage discussion of most of the individual “Do”s and “Don’t”s to ensure the students understand the reason behind each item.

Annexes

The annexes included with the EComm certification program are not taught in separate sessions. These annexes provide reference material that is used in training the course and will be used by the students for continuing study and reference.

Annex A – ARRL / NTS Handling Instructions

Annex B – ARRL Numbered Radiograms

Annex C – FEMA’s Independent Study Program

Annex D – Sample *REACT* form 133, Radio Log

Annex E – Memorandums of Understanding

Annex F – Acronyms and Abbreviations

Test Procedures

Students are not required to take any test as part of this training.

There are two test *options* available. Students may complete an optional written test to receive a Certificate of Training showing they have successfully completed the *REACT* EComm Level I training program. *REACT* also offers a certification option. Certification requires the applicant complete a written test and provide documentation of actual hands-on experience in emergency communications. Students who complete both these requirements will receive a certificate and a wallet card showing they are registered as a Certified Emergency Communicator.

The written test for the Certificate of Training consists of thirty multiple-choice questions with a passing score of 90%. This test is “open book” with no time limit. The applicant signs a statement saying that the test was completed without assistance. Applicants who are entitled to assistance under the Americans with Disabilities Act (ADA) will attach a statement explaining the kind of assistance provided and attesting that the answers are those of the applicant.

The written test for registration as a Certified Emergency Communicator consists of forty multiple-choice questions with a passing score of 95%. This is a “closed book” test with a two hour time limit, monitored by a Team or Council officer. Applicants who are entitled to assistance under the ADA will attach a statement explaining the kind of assistance provided and attesting that the answers are those of the applicant. The time limit may be waived for applicants requiring assistance under the ADA, depending on the nature of the assistance required.

Certification also requires a statement signed by a Team or Council officer and an experience statement signed by a responsible official of a state or local emergency management agency or an emergency response organization attesting that the applicant has successfully performed communications for the agency or organization in an actual emergency or comparable simulated emergency conditions. The nature and quality of the experience is left to the professional judgement of the responsible official.

Students may take either or both written tests. A student who is interested only in the Certificate of Training should take just that test. A student who wants to become registered as a Certified Emergency Communicator may skip the short test and take the Certification test. If a student takes the Certificate of Training test, and later decides to apply for registration as a Certified Emergency Communicator, they will still have to take the longer written test.

Test packages for either test must be requested from *REACT* in advance. Tests packages are normally issued to individuals by name. Teams or Councils conducting training programs may coordinate to obtain a reasonable number of test packages for the Certificate of Training test without having the names of each student. Test packages for Certified Emergency Communicator are issued only on a by-name basis.

A form is provided at the end of this booklet for Teams and Councils to report training sessions and request testing materials.

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Tests are scored by *REACT* International, Inc. No answer key is provided to students or instructors and specific discussion of test questions and answers should be avoided. Students will be informed of their score for the test, but will not be given information about the specific questions.

If a student does not pass the test, they may request another test at a later date. The test questions are randomly selected for each test, so the second test will probably contain some of the same questions as the first test and some new ones. An applicant will be allowed only two tries at either level.

If a student a student who has not previously received a Certificate of Training takes the Certification test and scores between 90-94%, that score will qualify for the Certificate of Training but not for registration as a Certified Emergency Communicator. The student may apply to retake the test as indicated above.

Submit training and testing reports and requests to:

REACT EComm Training
7001 Ethan Allen Way
Valley Station KY 40272-1305

or e-mail:

<membership@reactintl.org>

Performance Certification

The performance certification form is only required for students who are applying to be registered as a Certified Emergency Communicator.

This form is used to attest to the fact that an applicant for has successfully performed such duties under actual emergency conditions or under simulated conditions comparable to an actual operation.

Part I of this form is completed by the applicant.

Part II of this form is completed by an officer of the applicant's *REACT* Team of the applicable *REACT* Council. If the applicant is not a member of a *REACT* Team, the form must be completed by a Team or Council officer with first hand knowledge of the applicant's qualifications and must include a statement of the circumstances indicating why a non-member is applying for *REACT* EComm Certification.

Part III of this form is completed by a supervisor or management official of the state or local government Emergency Management Agency *or* an official of a non-government organization involved in emergency or disaster response or recovery work for whom the applicant has performed communications duties.

Definitions:

“State or local government Emergency Management Agency” refers to the government organization specifically designated to perform the Emergency Management function. It does not generally include police, fire, or emergency medical agencies unless the Emergency Management function is assigned to that agency by the appropriate local government.

“Emergency response organization” refers to organizations with an established program of emergency or disaster response or recovery. Prominent examples of such organizations include the American Red Cross, Salvation Army, Adventist Community Services, UMCOR. Organizations that are members of National Voluntary Organizations Active in Disaster (NVOAD) other than *REACT* International and the American Radio Relay League qualify. *REACT* and the ARRL do not qualify as “emergency response organizations” for the purposes of this certification program because the emergency response program of these organizations consists of providing communications for other organizations or agencies. Certification that an applicant has satisfactorily performed communications must come from an official of the Served Agency. Similar organizations at the state and local level also qualify but additional information may be requested to identify such organizations.

“Supervisor or manager” includes any staff or volunteer holding an official position with the agency or organization, whose duties include either overall management of the operation in an emergency situation or management of the communications function.

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“Simulated emergency or disaster” refers to the conditions typical of a major multi-agency exercise such as most Emergency Management Agencies and formal emergency response organizations regularly conduct to train and evaluate their personnel and procedures. This is not meant to include limited training such as a classroom practice. We leave it up to the professional judgement of the agency official to determine if the conditions of a particular exercise provided the realism needed to be considered comparable to performance in an actual emergency or disaster situation.

The form directions include the following advice for the official being asked to certify the applicant’s experience: *“As an Emergency Management Agency or Emergency Response Organization official, if you feel confident that this applicant is fully qualified to perform emergency communications for your agency or organization with no more than normal supervision during a real emergency, then you should sign the application. If you do not believe this applicant has the skills needed to perform communications for your agency in an actual emergency, please do not sign the application. If you have any concerns or perhaps feel this application falls in a ‘gray area’ where you are unsure, please discuss your concerns with the applicant and include any concerns in Part IV of the form.”*

Part IV is normally optional. It provides space for an explanation of any unusual circumstances. Part IV may be used any time the applicant, the Team or Council officer, or the agency official wants to add more information or explain anything about the information on the form. Some responses in other parts of the form require additional information in Part IV.

An applicant may submit multiple copies of Part III showing experience with additional agencies or organizations.

REACT Emergency Communication (EComm) Certification Program

Name of Team or Council: _____
plans to conduct a *REACT* EComm training as shown below.

Training dates: _____

Training location: _____

Expected number of students: *REACTers* _____ non-*REACTers* _____

Course Manager name: _____

Address: _____

City, State, Zip _____

Daytime phone number _____

Evening phone number _____

E-mail address: _____

Teams and Councils conducting group training sessions are requested to inform *REACT* prior to the training and to submit a report after the training listing the number of members and non-members trained and any comments or suggestions about the training materials.

Teams and Councils planning to conduct group testing sessions must request test materials in advance. Whenever possible, requests for test materials should specify the names of the members (or non-members) to be tested. *REACT* will accept requests for reasonable quantities of test packages for the Certificate of Training without specific names in advance. Tests for registration as a Certified Emergency Communicator are issued *only* on a by-name basis.

Testing date: _____

Testing location: _____

Test Manager name: _____

Address: _____

City, State, Zip: _____

Daytime phone number _____

Evening phone number _____

E-mail address: _____

Use the back of this page to list names of members and non-members to be tested.

REACT Emergency Communication (EComm) Certification Program

Request for test materials for Certificate of Training (30 question, open book test)

Name of individual to take test	Name of <i>REACT</i> Team If individual is not a <i>REACT</i> member show organization and attach an explanation

Number of additional test packages requested without names: _____

Request for test materials for registration as Certified Emergency Communicator (40 question, “closed book” test, must be supervised by Team or Council officer)

Name of individual to take test	Name of <i>REACT</i> Team If individual is not a <i>REACT</i> member show organization and attach an explanation

This test package is available only on a by-name basis.