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## KY EMCOMM COURSE STUDY MATERIAL

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### Purpose:

Emergency Communication, ECom, is an opportunity to provide the public service trained Amateur Radio operators who will have a consistent level of expertise Communication no matter where in the United States they live.

It is evident that there are areas in the U.S. that have few opportunities to train open communication. This program will provide consistency in technical training where lives. The added benefit comes in that it will be easier to insure the students understand necessary to interface with the public service community in a manner which is beneficial.

There are many personality types in Amateur Radio, some of which lack the necessary to participate in a positive manner. These people simply need guidance and assistance to the position of Amateur Radio is in public service.

The goal of this document is to provide consistently knowledgeable communication people with a very positive, service oriented attitude.

### Attitude:

Before you begin the technical material involved in learning about Emergency

(ECom) it is imperative that you understand your knowledge in ECom is not actually your attitude, during emergencies.

Yes, technical ability will enable you to do a far better job of communicating. But you determine the success of the overall Amateur Radio effort. The person who brings a "Cowboy" attitude will only hamper relations with served agencies.

The people you will be serving - remember that word - are professionals that have seen people more interested in impressing someone than in getting the job done. You will impress them far more by being as quiet as you can and doing your job well. Results, without served agency people, will cement relations with your served agency.

Simply stated, ECom requires an explicit mental commitment to help others. Please recommitment to help others. To be effective in ECom you will be required to expend money and time in training and practice. Many say "I did that before, so I don't need to practice. It will take time a lot of time, if you are to be successful. If you are willing to WELCOME!

Hams are patriotic, independent people and they are volunteers. The attitude among a 'Volunteers don't have to take orders.' That's absolutely correct. We don't have to take orders if you are not ready to follow instructions, you may want to do something outside of ARI

By the way...Do not adjust, play with or fiddle with any piece of equipment in use for that event, unless it is malfunctioning. Remember, an incident scene is not about radio Ham, it's about the incident and YOU will either be part of the problem or part of the solution.

**Please note there are 2 questions on the first EmComm test that are related to MUST answer them BOTH CORRECTLY in order to pass the test!**

### **What is a Communications Emergency?**

The easiest way to think about a communications emergency is to begin by using the Incident Command System (ICS) (see the ICS Overview]. "We will define an emergency as a planned or unplanned occurrence or event, regardless of cause, which requires activation of emergency service personnel to prevent or minimize loss of life or damage to property and/or natural resources."

We can see that during a large scale event it would be possible to have enough information flow that the emergency service communications could become overloaded to a level where they are unable to function as required by the incident.

- What defines a communications emergency?  
When normal communications processes are inadequate to handle the information flow to service an incident as defined in the ICS
- What role does Amateur Radio serve?  
Our primary role is to support the emergency management community (response and recovery agencies) with communications during times of emergency and disaster when other communications are unavailable or overwhelmed

### **We are NOT a rapid response team.**

If you arrive at the scene of an emergency just as the sirens are quieting, keep your mouth shut and get out of the way! We do not provide first aid, transport victims, provide traffic control, or provide other emergency services.

function normally provided by public service agencies. We DO provide communication service systems are overloaded. Even the SKYWARN group (information available on web) does not activate until the National Weather Service has requested our help. As in many cases, do more than "just" communicate. You as an ARES/RACES operator work for the served agency that they request of you, so long as you are comfortable AND it does not hinder your ability to communicate.

Many operators think of ARES/RACES as a simple extension of the "talk time" in truth not true. ARES and RACES are organizations that continually need more trained and willing to learn to communicate rather than just talk.

It is not that the trained operators are willing to learn to communicate. It is that they have learned to communicate accurately, in a timely fashion, regardless of the obstacles. Unlike general amateur radio activities, emergency operations happen in real-time. They are not delayed. Emergency communicators are looking for specific stations to contact NOW. Teamwork, not competition between stations, is imperative.

Emergency communications involves both amateurs and non-amateurs alike. All communicators must have the equipment, skill and knowledge to improvise additional capacity in very short order. In all of this, leadership, teamwork and initiative are keys to success!

### **Who runs the event?**

When you are working any event please understand that you are there to help the served agency's communications shortfall. This, in and of itself, is embarrassing to some agencies. If you are in mind, you can eliminate confusion and problems by acknowledging that the served agency is in need. Not just by your words, but by your actions.

The largest problem that Amateur Radio has is operators that go into an event and exhibit Cowboy and "wanna-be" behavior. This WILL discourage the served agency from ever using Amateur Radio services again. In some cases it has resulted in the Amateur Radio operator being arrested and removed from the scene.

Most if not all Public Service agencies use some form of the Incident Command System model for operations during an emergency. You will help your served agency and your group if you understand how the ICS works (see the ICS summary, below).

### **Who talks to the Media?**

Dealing with the media/public: During an emergency do NOT make any statements to the media/public about the emergency! The Public Information Officer (PIO) for the agency will make ALL statements. You can discuss non-detailed information about Amateur Radio if they have time and they ask. Do NOT include mode, frequency or traffic-volume information. NEVER RELATE INJURY, FATALITY OR DAMAGE information to the media. Follow the instructions from the primary served agency!

Should you encounter some very persistent media people, the following statement is a good one to check with your served agency before you use this statement.

"ARES is Amateur Radio Emergency Service. These are volunteer Amateur Radio operators who are aiding local law enforcement, fire, EMS and other agencies with auxiliary communications due to the current overload or difficulties due to high volume of

unusual conditions. We currently have (XX #) operators in places like the EOC, centers, red cross shelters and other places where additional communications are required.

### **How you can get involved?**

Contact your local ARES/RACES group and volunteer. You can be of help to these training in the disciplines needed for appropriate communication. Training Communications BEFORE you are needed will help you develop the skills necessary to become an ARES/RACES communicator.

During an event do your best to maintain a courteous, professional image. You may be working with several agencies including police, fire, first aid squads, National Guard, etc. Extend courtesy to members of these groups. Make sure they know who you are, your communications capabilities are. But remember we are there primarily to provide communications support. However, we will, in many cases, do more than "just" communicate. ARES/RACES operators are free to do any work for the served agency that they request as long as you are comfortable doing that work AND it does not hinder your ability to communicate.

### **Communication Guidelines**

Let's face it, there are hundreds of people that can talk the ears off of a brass monkey. When you finally finish you ask yourself "what did they actually say?".

Within Emergency Communication you will have TWO different levels of communication: formal and informal. In passing traffic on behalf of a served agency. This is known as formal traffic. Under formal traffic you pass traffic EXACTLY as written. You change nothing. In some instances you will be asked to interpret what the message means. That is fine. Your job is to get the message to the destination as clearly as possible, not to understand it.

When you receive a message from a served agency, read it. If there is any part you cannot understand, ask for clarification before accepting the message. You can't accurately transcribe what you cannot understand. If you transcribe a message from a served agency, MAKE NO CHANGES! It does not matter if you do not understand the technical meaning. It DOES matter that you pass traffic exactly as written.

Let's revisit the last sentence. PASS TRAFFIC EXACTLY AS WRITTEN!  
If you are the author, make your corrections before you are ready to send.  
If ANYONE else initiated the message, MAKE NO CHANGES!

The second type of communication is where YOU originate the message, it is not written. A written response is not required. This is commonly known as informal traffic. In informal traffic you control what the text of the message will be. Therefore phrasing is up to you.

Plan your communications at least as well as you plan what you say when you are quoted. When ever reasonable, write down what you will say before you say it.

In Emergency communication it is important to say as little as possible, yet convey all the information. How can we do this?

- **Brevity and Clarity**  
The standing "rule of thumb" is - if you can leave a word out without changing the meaning, leave it out. If a description of an item will not add to the understanding of the message, leave it out. Another item to remember, do NOT use contractive messages. Words like "don't" and "isn't" are far too easy to confuse. Add to the

confusion during an emergency and they WILL create problems.

- **Slow Down!**

Hams, in general, tend to handle communications as quickly as they can. This is the maximum throughput during a net. While this may seem counterintuitive, it has been shown again that a three or four second break between transmissions will actually result in messages being passed more quickly. If this seems strange to you, take the time to listen to a Police Fire dispatch. They are able to convey large amounts of information very quickly while maintaining a slow, measured pace.

In addition, the three or four second break between transmissions insures priority and gain access to the net without requiring the largest signal on that frequency.

- **Do not editorialize**

Actually, hours can be lost by people inserting their opinion on unrelated subjects. If you think about a ball game or the weather is irrelevant unless the weather or the ball game is being discussed.

- **Listen**

The first requirement for communication is the ability to listen. But, you say, I can't listen if I'm not speaking. It is required without listening. Not really.

Communication is the two-way exchange of thoughts, ideas or information. It involves both speaking and listening. An old timer once told me "A ham has two ears and one mouth. Therefore he listens as much as he talks". Makes sense. Communication will be acknowledged.

- **Standard ITU Phonetics**

While it may take less effort to speak into a microphone and listen than to type, you must take some care to quickly and accurately convey exact information. Speak distinctly. If you are typing information to be written, pace your speech accordingly. For critical information, spell words with standard ITU phonetics. ITU phonetics were chosen because they sound completely different from all others. A list of ITU phonetics is available in the ARRL handbook and the ARRL logbooks. A compressed copy follows.

A - alfa (AL-fa)	B - bravo (BRAH-voh)	C - charlie (CHAR-lee)
D - delta (DELL-tah)	E - echo (ECK-oh)	F - foxtrot (FOK-trot)
G - golf (GOLF)	H - hotel (HOH-tell)	I - india (IN-dee-ah)
J - juliet (JU-lee-ett)	K - kilo (KEY-loh)	L - lima (LEE-ma)
M - mike (MIKE)	N - november (NOVEM-ber)	O - oscar (OS-ker)
P - papa (PAH-PAH)	Q - quebec (kay-BECK)	R - romeo (RO-mee-oh)
S - sierra (SEE-air-rah)	T - tango (TANG-go)	U - uniform (YU-ni-form)
V - victor (VIK-tor)	W - whiskey (WISS-key)	X - x-ray (EX-ray)
Y - yankee (YANG-key)	Z - zulu (ZOO-loo)	

- **Numbers**

are pronounced as individuals. The number 60 is pronounced six zero, not six zero. The number 90 is pronounced five zero nine, not five hundred nine and NOT five oh nine.

- **Insure you have asked all questions necessary to have obtained the following:**

- Who is requesting and from whom?
  - What is the requester's full name/title/agency & location?
  - What is the recipient's full name/title/agency & location?
- What are they requesting and how many do they want/need?

- Is it a list or single item?
  - If it's a list, do all items come from the same place?
    - If multiple sources then multiple message
    - Is the subject the transportation of an item, or the ac item, or both?
- Where will it come from (not always the same as the location of the pers request)?
- Where will it go to (not always the same as the location of the person rec (s))?
- When is it needed?
  - Time/date as applicable

### **Getting the message through:**

To improve communications you need to improve the difference between the signal levels (signal to noise ratio) to achieve reliable communications. For our purpose defined as any impediment to transmission or reception of information (messages). What "noise" take? Some of the more common ones are:

- Static and background noise on the air
- Equipment or voice sounds around you
- Inappropriate amount of light
- "Loose cannon" tempers
- Improper transmission speed
- Improperly formatted messages

What can you do to maximize message throughput? Here are some of the more common handle impediments.

Slow Down! Hams, in general, tend to handle communications as quickly as they can produce the maximum throughput during a net. While this may seem counterintuitive, it has been proven again and again that a three or four second break between transmissions will result in information being passed more quickly.

- Static and background noise on the air
  1. Insure you have the proper antenna for the job.  
An NVIS will work very well for 40 and 75 meter SSB when your comm is up to about three hundred miles where a vertical will not. Conversely, verticals work quite well for VHF/UHF.
  2. Choose the best band for the job  
VHF/UHF are very good for short distances (less than 50 miles) but not for distances over one hundred miles. The antennas are quite small.  
HF propagation differs by band. What distance do you wish to cover? Answer that first.
  3. Make sure your equipment is grounded.
- Equipment or voice sounds around you
  1. Use a headset to minimize noise you will hear from the area you are in.
  2. Use a noise canceling microphone to minimize transmitted noise.
  3. When ever possible, locate your station away from the source of noise.
- Inappropriate amount of light  
Many people do not think of light as a potential problem. Think what happens when there is too much light when you try to read a computer screen or too little light when

printed information.

1. Stay out of direct sunlight if at all possible.
  2. Try not to be in shade while having to look directly into the sunshine.
  3. Insure there will be sufficient light for you to work at night.
- "Loose cannon" tempers  
These are very hard to deal with. Your best bet is to ask assistance from your su working calmly toward a common goal will frequently defuse the situation.
  - Improper transmission speed
    1. Practice sending at the appropriate rate where the other party can copy. shouldn't ramble off the message text at high speed, but pace yourself to that the other party is copying (about 15 WPM). That translates to about four seconds. As you speak, imagine that you're writing the word in yo while, you'll get the hang of talking 15 WPM. If you do this right, yc request to repeat a section.
    2. When asking for part or all of the message to be repeated, get into the hab "Again" instead of "Repeat". Repeat is used in the military to fire another s;
  - Improperly formatted messages  
Please see the section on Message Handling for formatting information

**Record Keeping:**

Before we go into the details of message handling it is helpful to understand record most people find record keeping distasteful it does serve a necessary purpose during events. If a served agency person comes over and asks when thus-and-such was handl answer? If you keep accurate logs of everything your location does the answer is eas log and give them the information they requested. But, you say, what if it is not in m the location that has the correct log and get the required information.

The following set of forms are suggestions for a starting point with information cc group has their own forms, use them! These are for areas that have not developed the starting point only. Each served agency has unique requirements. Build your own form served agency(ies) needs. The following are one line examples of logs. [Full page | these logs are available here if you would like to print them out.](#)

Who's Here? Date: _____				
Callsign/Name	Reported or Called in at	Arrival Time	Assigned Tactical Call / At	V

Who's On First?			
Tactical Callsign	Callsign/Name	Arrival Time	Comments

_____ Log ___/___/___ Page ___ of ___	

Location	Time	Comments

### Message Handling:

#### 1. Why standard formats

Examples As mentioned last, the primary purpose of a standardized format is so persons can receive formal messages briefly, with the minimum amount of explanation. The RA specific format that everyone follows. This allows for the administrative handling of messages without having to go into lengthy discussions about where the traffic originated and or how it is being handled and where it's going. One could imagine if there were no standardized format a message exchange might occur:

**"Hey Bud, I have a message here from a local ham in Colorado Springs; he told me who isn't a ham. I took the message yesterday evening and I'd like to see if there is any way to get it passed to Tulsa, Oklahoma. There's no real urgency, the lady just wants to know that she received his letter and will be sending one back in a couple of days.."**

The preceding unformatted message consists of 76 words. And ... we still don't know what the message needs to go.

The same message in NTS format might read as follows:

**Number 58, Routine, NØXXO, 11, Colorado Springs, Colorado, November 18**

**Mark Smith  
573 Glenside Lane  
Tulsa, Oklahoma 74131  
918 635 0227**

**BT**

**RECEIVED YOUR LETTER XRAY WE  
WILL WRITE BACK SOON XRAY  
LOVE**

**BT**

**MARY**

Even counting the preamble (and the breaks), the message length is 35 words. Much more efficient use of time and spectrum. Also, the message has everything it needs to be delivered -- back to its originator.

#### Abbreviations, Prowords, Prosigns

#### 2. **Don't speculate**

Do not speculate on anything relating to an emergency! There may be someone out there listening to what you say (Amateur Operators, Media AND Public - via sc.

incorrect information could cause a panic. If your served agency INSISTS on may provide that information, so long at you make it - very - clear that it is example - "Estimated number of spare shovels at fire base three is twelve acceptable. **First choice is NO speculation.**

3. **Pass messages exactly as written**

Your job as a communicator is to pass traffic as quickly and accurately as possible you will NOT change any message as you handle it. If you note an inaccurate NTS traffic, you will maintain the original count and note the corrected count station. This holds true for voice traffic as well. Pass traffic as received, with interpretation.

4. **Not all tactical messages will be in NTS format.**

It is important that you understand that much of the tactical information being passed at an event may not be in NTS format. It will have much of the same information, such as Name, Agency and title of the originator  
Name, Agency and title of the recipient  
Date, Time and Priority of the message  
Body of the message  
but may not be in NTS format.

5. Preamble

6. Message Text

7. **Signature and why it's important**

During an emergency the messages you handle can easily contain requests for supplies that have a very limited "shelf life" (such as blood for an aid station) or will only respond to authorized requests (flight for life helicopters). As such it is important you insure the signature/authority is included in every message.

8. **Modified message form for disasters**

While NTS format messages can handle many different types of information often be requirements for formats that are unique to an individual emergency. An effective message format for the event you are working.

Work with your EC and served agency(ies) - before - the emergency to see what fulfill their information needs.

9. Other NTS Information While attempting to keep the word count at a minimum, be careful exercised to keep from creating ambiguous messages.

Letter greetings such as Dear Mom and Dad, are bad form - they are redundant.

Reading speed versus regular sending speed. Transmitting station should trace over the words they are speaking them to ensure you are not speaking faster than the receiving station can understand.

NO XRAY needed at end of message.

RECEIVING station calls sending Station; NET controls should hand off to receiving station.

The standard way of indicating that you are finished sending is to say "END, NO MORE.. (call sign, back to net).

Hams are not expected to spend money to deliver NTS traffic - toll calls, calls to direct obtain telephone numbers and stamps to mail locally all cost money.

ARRL operating aids for the traffic handler:

1. Yellow and green pad of Radiogram forms
2. FSD-218 dated 2/91 Title: Amateur Message Form, known as "The Pink Card"
3. FSD-3 dated 2/94 Title ARRL Numbered Radiograms - earlier forms do not have a title, the latest addition which is ARL SIXTY NINE

These items are available from the ARRL or any commercial establishment with an AF

### **Safety!**

**The following are your priorities - in this order - when it comes to safety.**

1. **You**

I think each of us has heard the saying something to the effect - watch out for me or else you will. Be it a training exercise or an actual emergency your safety is your primary concern. If at any time you are asked to handle an assignment that, for some reason you are uncomfortable with, decline it. If your concern is with safety, please let your partner know why you declined.

2. **Your Team**

Your second priority is the safety of your team. There can easily be an assignment where the person with the camera will be very engrossed with insuring the picture is as good as possible and may not notice unsafe conditions. You as the second person there must be very careful about the safety of your team.

3. **Your Mission**

Your mission becomes important only after your safety and the safety of your team. If your mission becomes an issue, speak up and if necessary leave.

**The standing rule in fires is to always have two exits and should one of them become unusable use the one you have - IMMEDIATELY.** If necessary, leave your equipment. Even if it is replaced, people can't.

### **Workmens Compensation Insurance**

During the briefing for the event you are about to go out on there should be mention of workmen's compensation insurance. If it is not mentioned, ask! Not every served agency will be equipped with workmen's compensation insurance. If yours does not, feel free to decline the assignment if the lack of insurance bothers you. If you are willing to participate without workmen's compensation insurance that's fine but you must know in advance of going out, so you can make an informed decision.

### **Safety - Summary**

Remember, an incident scene is not about radios and being a Ham, it's about the incident itself. You either be part of the problem or part of the solution. Keep your eyes open and do your part to identify unsafe conditions before they happen.

### **Personal Preparation:**

In preparing ourselves to assist our served agencies in times of emergency, many times we have a somewhat myopic view of that preparation. We look toward the equipment and sometimes forget one other consideration we must make. Are we physically ready?

For a lot of us, the equipment is a major contributor in the fun of Amateur Radio. To be as technical as we would like to be, it is still a lot of fun to get new equipment (a.k.a. the

use it properly. Equipment is but one third of the equation.

Training ourselves, not just to be able to operate the equipment, but to handle messages and with minimal impact to our surroundings is also a challenge.

The item that many overlook is the physical conditioning that we really need to be able to handle the stress of emergency operations. Does that imply that each of us must be ready to go at a moment's notice? Hardly. There are a few simple guidelines we need to follow to be better prepared to perform an ARES operation.

- Eat properly - this means eat the foods that will help keep us healthy.
  - Minimum "junk" food. The "Mickey D" three basic food groups of sugar do not help our health.
  - Appropriate amounts of protein, vegetables and complex carbohydrates (tailored to the individual).
  - Drink a LOT of water. Most of us forget that the recommended minimum is 4oz. every hour (not coffee, not soda pop, etc). Very few people consume enough water.
  - Moderate amount of alcohol (or none, if you prefer).
- Get enough rest, Regularly! - Some people think that four hours of sleep will suffice, but you do better with six minimum and the really intelligent understand that seven and a half is better yet. The other half of that equation is \*regularly\*. That means virtually every night with minimum sleep is not a problem, as long as it is occasional.
- Exercise - Get regular exercise, appropriate in duration and type. Appropriate for most people is twenty-five to thirty minutes. A good source of reason for all of us is to walk for at least thirty minutes each day.

Many will whine that there is "not enough time". If you are planning on being dead in a year, I agree. Go for it. For the rest of us, take the time. Plan on a slow, steady, evolution. How you make yourself ready to support the life style you have chosen. If you are properly rested and have eaten properly, you are better prepared for the stress of emergency operations.

### **Operator Stress:**

Emergency communications is a very challenging assignment. There's a lot of need for people in a short amount of time. For this reason, stress can build upon the operational demands wear down the individual's capacity for tolerance, flexibility and creativity, the signs of stress. People show it as varying levels of irritability and emotional outbursts, the ability to work well with others. The best time to deal with stress is before it presents itself. Coping mechanisms before responding to an event.

Some of those mechanisms are:

1. Focus on teamwork, strategy and results, rather than on worry and concern.
2. Learn tolerance and patience during times of heightened demand and activity.
3. Understand that we are human and there are limits to our performance, both individually and corporately.
4. Learning the impact that diet, beverages and exercise can have on relieving stress and the capacity for dealing with it.
5. Learn to get rest and take breaks as necessary for you. What works for someone else may not work for you.

You may be exposed to experiences that are unique and unpleasant. A healthy person can withstand the emotional experience of high stress well enough until the impact of the event passes, then begin processing the experience to accept the situation rather than reacting. The team should learn to work with the stress rather than reacting to it.

### **ARES/RACES Debriefing**

Within the Amateur Radio Emergency Service there are many "opportunities" to experience that we would not normally encounter. Some of these experiences, especially during public service events, can be very enjoyable and rewarding. Some, such as during flood operations and events like September 11, 2001 in New York City are far less than enjoyable but can be very rewarding. In both environments we need to debrief ourselves to accomplish our objectives. During all events we need to assess our effectiveness and determine how we can improve. This serves to help focus our training in areas that need the most work and insures ourselves on the areas done well. During/after stressful events it is very important that we monitor our own stress levels and those of the people we are working with. In doing this we can determine the effectiveness of our unit and identify jobs that need people rotated out of before they become critical.

To adequately handle this discussion the subject has been divided into three portions:

1. Tactical Debriefing - needed in all events
2. Emotional Debriefing - needed in stressful events
3. Family Briefing - needs to be covered before major events

#### **Tactical Debriefing:**

Most of us view tactical debriefing as something done as an after thought or something out of the way. If you instead look at debriefing as a learning tool that will improve you and that of your unit, it will serve you well.

One approach to debriefing is to answer the following questions in as much detail as is possible:

1. What was our mission/goal - exactly what were we there to accomplish?
2. For the communication, did we have a clear definition of who we were to communicate with and what the likely traffic would be?
3. Did we accomplish our mission/goal?
4. What did we do correctly (list everything)?
5. What did we do that was beyond expectations?
  - o If nothing was beyond expectations, why not?
    - Were the expectations unreasonably high?
    - Did we not have enthusiastic participants?
    - Were we lazy
6. What items did not meet expectations?
  - o How can we improve on those items?
7. What specific training items do we now have a need for?
8. Other than the training items, what else needs improvement?
9. Were there any "surprises" and why did they surprise us?

It is very important that every ARES operator in the event have input to the debriefing. It is simple. First, many times one person's comment sparks yet another thought from

Second, no one can observe everything that happens, you need everyone's observation:

If you are unable to attend the formal debriefing or if the incident is multiple day : capture your input a sample online [debriefing input](#) form has been created. Contact you see about implementing this process.

### **Emotional Debriefing:**

The American Red Cross has some thoughts on stress induced during disasters that a for your information.

Police psychologists talk a lot about "critical incidents," but what exactly is one? A c an occurrence that is one or more of the following: (a) Sudden and unexpected (b) p threatening (c) overwhelming (d) disrupted sense of control (e) disrupted basic assump (f) resulted in physical and/ or emotional loss

Physical reactions to critical incidents can include: (a) headaches (b) exhaustion (c) sl (d) appetite disruptions (e) "nervous stomach"

Behavioral reactions to critical incidents can include: (a) hyperactivity (b) being e; withdrawing or isolating oneself (d) periodic underactivity

Psychological reactions to critical incidents can include: (a) anger (b) self-blame (c) ea) depression (f) over sensitivity (g) emotional numbness (h) having a heightened se flashbacks (j) preoccupation with the incident (k) feeling that these emotions are "wimj

To minimize the effects of event related stress we need to provide emotional de debriefings must be an organized, open discussion that takes place after a serious taxing event. Its purpose is to provide a forum in which emergency workers can rel This is not an investigation or an interrogation, nor is it a tactical debriefing. Rathe constructive means by which emergency workers can openly express their e appropriate, trained professionals may take part. They can offer concrete suggestio overcoming the stress related to the incident.

The concept behind these debriefings is to encourage free expression of thoughts, fea in a supportive group environment without losing status among one's peers. In fact much more successful and the feedback more positive when peer support personnel The debriefing process allows individuals to gain insight and reframe the even perspective. As short-term initial intervention, it often aids in preventing some c cumulative effects caused by traumatic incidents.

All debriefings must be confidential and provide an opportunity for educating em workers on stress responses, as well as letting those involved know that they are n thoughts and feelings.

### **What can I do?**

Stress reduction begins with an evaluation of one's life. Taking a close look at your li that you can control will help with your evaluation. Here are some ways you can redu life:

1. Don't make any life altering changes.
2. Get plenty of rest.
3. Rather than jumping out of bed and rushing to start your day, plan to get up 15 minutes each morning and take time to meditate. Beginning this way provides a foundation for the day.
4. Structure your time - keep busy.
5. Do not make as many daily decisions as possible which will give you a feeling of control over your life, i.e., if someone asks you what you want to eat - answer them even if you're not hungry.
6. At regular intervals live in the present moment. Anxiety increases when we brood over an event or fret about a future obligation.
7. Do things that feel good to you.
8. Approach a stressful event with a positive attitude and it will boost your energy.
9. You're normal and having normal reactions - don't label yourself crazy.
10. Talk to people - talk is the most healing medicine.
11. Help your co-workers as much as possible by sharing feelings and checking on them.
12. Give yourself permission to feel rotten and share your feelings with others.
13. Keep a journal; write your way through those sleepless hours.
14. Realize those around you are also under stress.
15. Be aware of numbing the pain with overuse of drugs or alcohol; you don't need to deal with a substance abuse problem.
16. Reach out - people do care.
17. Maintain as normal a schedule as possible.
18. Spend time with others.
19. Remember, you get to make mistakes in life. Strive for excellence but don't beat yourself if you do not attain it every time.
20. Give yourself some credit. Each day take a moment to give yourself a pat on the back for the things that you do.
21. Take the time each day to create peaceful images in your mind. During the day occasionally pause to imagine yourself in a tranquil setting.
22. Eat well-balanced and regular meals (even if you don't feel like it).
23. Change your eating environment. Get out of the office and enjoy your meals. Occasionally eat by yourself in silence. Eat slowly, and enjoy yourself.
24. Observe your breathing. When we are relaxed, our breathing is slow and even. When we are anxious or upset, we tend to breathe irregularly.
25. Take a brisk walk. **Exercise burns off the excess adrenaline that fuels feeling stress.**
26. Practice hospitality. Greet people with a smile; this will make others feel good and give you a deep sense of ease, calm, and peace.
27. Just say no. You don't have to accept every project, every invitation to become a speaker, every opportunity to attend a meeting.
28. Walk in someone else's shoes. Try to see a conflict or difference of opinion from another person's point of view.
29. Don't bring work problems home or home problems to work. When you pull in from work take a minute to orient yourself to being with your family and entering your home.

Most of us aren't able to get rid of all the stress in our busy lives. However, by finding ways to deal with and reduce stress and keeping your life simple, you can begin to start sorting out the matters in your life.

### Family Briefing:

One item that few of us remember is that our family **will** be affected by our emergency situations. The easiest way to minimize adverse effects on our families is to insure **before** the event that we will need their help and understanding after major traumatic events are called upon to work.

A good source for information they can easily understand is the American Red Cross. An extensive amount of helpful information you can get. The most important information [is included here](#).

Specific things the family can do to help are:

- Listen carefully.
- Spend time with the traumatized person.
- Offer your assistance and a listening ear if they have not asked for help.
- Reassure them that they are safe.
- Help them with everyday tasks like cleaning, cooking, caring for the family, etc.
- Give them some private time.
- Don't take their anger or other feelings personally.
- Don't tell them that they are "lucky it wasn't worse" - traumatized people are not. Instead, tell them that you are sorry such an event has occurred and help them to understand and assist them.

### Served Agency Communication Systems:

Each served agency will have its own - unique - communication system. It is in the both served agency(ies) and ARES/RACES group to discuss and understand what your agency uses. While you discuss the communications they use, ask what - if any - you may have for Amateur Radio operators to operate the served agency system and gain the knowledge these operators will need.

### Nets:

#### Definitions:

- **CONTROLLED NET:** A means of insuring orderly use of limited frequency to conduct communications for a scheduled event or during an emergency.
- **NET CONTROL STATION:** The person charged with control of information on a frequency used by a controlled net.

Please take a moment to study the NCS definition. During an emergency the NCS does the event! NCS is there simply to control information flow. The Incident Command System provides a coordinated system of command, communications, organization and managing emergency events.

#### Net Types:

- **Open (Informal) Nets:** During an open net most any type of traffic or communication is permitted. Conversations (rag-chews) are permitted provided they break every 5 minutes to allow incident related traffic to flow.
- **Directed Nets:** A Directed Net is created when there are a large number of stations and the use of the frequency or the volume of traffic cannot be dealt with on a first-come first-served basis.

- The NCS will determine who uses the frequency and what traffic will be passed
- **Tactical:** Tactical nets are the primary coordination nets for the event. They w net, using tactical calls, normally restricted to traffic for the event ONLY. NCS has absolute control over this net.
  - **Resource:** The resource net is to acquire volunteers for the event and make w for the event. They will be a directed net using FCC issued calls, normally res pertaining to the event. All traffic goes through the NCS.
  - **Traffic:** Traffic nets are for the passing of formal, normally written, traffic. T nets, using FCC issued calls. Traffic may be passed on the net frequency or se frequency at the option of the NCS. Casual conversations may be allowed at NC
  - **ICS Nets:** During an emergency a large percentage of our served agencies Command System as a model for their operations. When this system is used agency you will need to understand what term in ICS corresponds to ARES/RACES.

An ARES/RACES - Tactical - net is an ICS - OPERATIONS - net, and an ARES/RAC net is an ICS - LOGISTICS - net.

Please understand that the name you use for any given net IS a local option. The san tactical identifiers. Use the name for your nets and locations that convey the most in largest number of people at your event.

### **Net Participant Guide:**

#### **Net protocols.**

##### **Legal:**

Legal requirements within nets are those of identification and operation on freque Amateur Radio Bands. The FCC tell us that you MUST identify at ten minute in conversation and in your last transmission. During periods of heavy activity in event forget when you last identified.

The easiest way to insure you comply with FCC identification requirements during a identify with your FCC issued call as you complete an exchange. This serves two fu NCS you consider the exchange to be complete without having to use extra words Fulfills all FCC identification requirements.

##### **Customary:**

Customary protocols will normally be used in long standing, non emergency nets. Tl such practices as identifying with the FCC call of both stations on each transmission, call of the next person to talk or many other variations.

Please listen to the net before joining. Customary protocols will easily stand out.

#### **Tactical Calls - when and how to use them**

Tactical calls are used to identify a location during an event regardless of who is oper important concept. The tactical call allows you to contact a location without knowing the operator there. It also virtually eliminates confusion at shift changes and when . break from operating. Think about that. Do you answer a call from the sound of a j from the identified location. Obviously from the identified location.

#### **Tactical Calls**

Tactical calls should be used for all Emergency nets once there are more than three most public service nets if there is more than minimal traffic.

Net control will assign the tactical call as each location is opened. It will normally identifier that indicates which location or function this is. Some examples are:

**NET** - for net control

**FIRE-BASE-1** - for the first fire base established or the fire base in a particular region

**CHECK-POINT-1** - for the first check point in a public service event

**CP** - for the event command post

**AID-3** - for the third aid station on a route etc.

Proper use of tactical calls can best be explained by example.

### **Initiating a call**

If you were at aid station three during a directed net and wanted to contact Net Control "NET, AID3" or, in crisper nets, simply "AID3". If you had emergency traffic you would say "AID3, emergency traffic" or for priority traffic "AID3, priority traffic".

Notice how you have conveyed all information necessary without using any unnecessary time.

If you had traffic for another location, such as check point five, you would say "AID3, CHECK POINT 5". This tells NCS everything needed to handle the traffic. NCS will respond "CHECK POINT 5, call AID3 for traffic", if there is no other traffic holding.

Notice that there have been no FCC issued calls used. At this point none are necessary.

### **Traffic during a call**

Tactical calls will normally not be used in the contact unless a separate location is mentioned in the message.

### **Completing a call**

To complete the call from AID3, after the message/traffic is complete you would say "AID3, complete". This fulfills your identification requirements and tells NCS that you believe the call is complete.

If the Net Control Station believes the exchange to be complete, and the member is identified, then the NCS should say, (completing this example) "AID3, do you have further traffic? If not, that point AID3 should either finish with the traffic or identify and clear."

The above is the same for all participants under virtually all traffic examples.

### **Participating in a net**

- Enjoy yourself - Amateur Radio public service is fun!
- Prepare your self. Are your batteries charged? Are you on your best frequency/repeater you will be on? Do you have pencil paper and other items you need?
- Listen. If you are there at the start of a net or join one in progress, LISTEN for

before you check in. NCS will announce/ask-for what they want.

- Check into the net in the mode being used by the net. This should go without saying see people who cannot follow directions.
- Follow NCS Instructions. NCS will ask for specific people/categories-of-people needed. Follow instructions!
- Slow Down! Hams, in general, tend to handle communications as quickly as they can. Do NOT produce the maximum throughput during a net. While this may seem correct, it has been proven again and again that a three or four second break between transmissions actually result in information being passed more quickly.
- Do not editorialize. "This is Phred in the North East portion of the county at 930 snowing, but it was sunny five minutes ago when I came in from feeding the hamsters, but its cold right now and it looks like it could rain in the next day or so in....." is unnecessary AND unwanted. This ties up the net and does nothing. Check in with your CALL. Add name and other information as required.

Plan your transmission. If you have more information than just your Name/Call then you can, if necessary, just read your note. \*\*\*\* This promotes clear concise communication.

Check in ONLY if you are going to be part of the net. Do NOT check in as "in & count". You are joining the net or you should only listen.

Checking in with "This is" then a pause or un-key followed by the call may work or it causes delays and potential problems on most. (Local net option)

Unless your transmission is longer than ten minutes, you need only identify at the start of transmission/exchange of information.

Let NCS know when you leave or if you need to leave early. **Do not go into details of why you need to leave.**

During an event, if the authorities ask you to move; do so immediately and without delay. Notify the NCS of your change in status as soon as you can.

If an on-scene authority requests that you shut your radio off, or that you not transmit, **ask immediately and without question.** This is **one circumstance** where you do not need to explain a change in your status. This deserves a little explanation. This would normally occur in the presence of explosives or explosive chemicals or vapors, and there is the possibility of a producing electronic device is present which might be triggered by an RF Signal.

Be patient with the NCS. An NCS operator is under high stress. His questions and responses should be clear and crisp; but as he/she begins to tire, there may be a tendency to become rather incoherent. There is a whole lot going on at an NCS that the field operators never know about.

Hams are patriotic, independent people and they are volunteers. The attitude among a lot of hams is 'Volunteers don't have to take orders.' That's absolutely correct. We don't **have** to take orders. If you are not ready to follow instructions, you may want to do something outside of ARI.

### **Leaving a net**

You will leave a net for one of three reasons:

1. The location is closing: If NCS has given you directions to close the location, with your FCC issued call, the location tactical call and the word "CLOSED". Tell you if anything else is needed. If you are closing the location on orders of the set will identify with your FCC issued call, location tactical call and the phrase "lo per (name of person - served agency identification)".
2. You need a break and there is no relief operator Tell NCS that "I will be away fi (number of minutes)" and end with "Tactical id, (your call)".
3. You have turned the location over to another operator  
You will normally not need to tell NCS that you are leaving. However if tl instructions from NCS then follow those instructions.

### **Don't over identify**

There is normally nothing that will expend more time, needlessly, than over identify that uses their FCC issued call in every transmission is usually a person that is unsure (worse yet, someone that is more interested in having their call known to everyone at latter situation, help them find work elsewhere.

The FCC tells us that you need only identify at ten minute intervals during a conversati a net unless you talk for more than ten minutes) and during your last transmission.

If you end each exchange with your call, that tells everyone that you are of the opinior complete and you fulfill all FCC requirements.

### **Write it down**

The easiest way to minimize what you say during a net is to write down everything bef microphone. Since very few of us like to write lengthy notes, this will promote brevity. place to keep this information is in your location log. This serves two purposes: 1) You complete log of everything that came from your location 2) It will become very brief.

### **Roles in a Net:**

- NCS
  - The NCS is in charge of the net while the net is in session. He/She is controlling who uses the frequency and when they pass traffic. This need with the fact you will be dealing with volunteers.
  - Slow Down! The pace of the net is controlled by the NCS. If you lea seconds between transmissions, you will actually pass more traffic in less 1
  - Net Control shall have a commanding signal, i.e. clear, crisp signal v characteristics.
  - NCS must keep track of which resources are on the net and who has clea NCS is also responsible for knowing what traffic each person is capable (sending HF traffic to a Tech. will not work).
  - In medium and large operations you need to have a backup NCS and a per
  - Keep a written record of the incident and all traffic passed. This does not all formal traffic. Simply an overview of the message.
  - Make ALL instructions clear and concise, using as few words as possible.
  - Use tactical call signs. If participants do not follow your lead, only recog tactical calls (obviously all bets are off if it is emergency traffic).
  - Different nets handle different traffic. Should someone try to pass traffic t another net, refer them to the correct net.
- NCS backup
  - There are two types of NCS backups. The first is located in the same room/area

acts as relief for the NCS at regular intervals. The second type is a person duplicate log of everything happening at the event and is available should there be a primary NCS location. Whenever there are enough people working an event, a NCS should be maintained. This person must be operating with the knowledge of the NCS station and should be known to the entire net.

- **Loggers**  
People to handle the keeping of an operational log for the event are a very smooth operation of the event. These people free the NCS from having to split down to a level that is neither efficient nor productive. Every net will be enhanced by a logger.
- **Site communicators**  
Site communicators have the responsibility of listening to everything that happens at the site, maintaining contact with the served agency people at the site. They need to relay traffic as applicable, maintain a log of activity at their location and be responsive to their served agency people.

It will be far easier to handle all of the tasks at the location if there are at least two people (one person presumes an emergency situation).

- **General communicators**
  - Report to the NCS promptly as they become available.
  - Ask clearance from NCS before using the frequency.
  - Answer PROMPTLY when called by NCS.
  - Use tactical call signs.
  - Follow established net protocol.
- **Listeners - LISTEN!**  
The most helpful listener, during an emergency, is one that listens and stays quiet. Be sure to take care that you are there listening unless he asks for assistance from listeners. No one person should be enough people working the net to handle anything NCS needs.
- **Liaison Stations**
  - Liaison stations provide the communication link between two nets. They are limited to two nets so they can maintain good communications between them.
  - Liaison stations will need to have at least two radios, each with their own antennas must be separated sufficiently to NOT interfere with the other operator transmits on either frequency.
  - Liaison stations will be appointed by NCS or the staffing officer, usually by the radio operators.

### **CW Nets:**

Not all nets need to use voice to pass traffic. CW nets can be used to move traffic in a similar manner over conditions that are not favorable for voice networks. Examples are:

- Limited power at the transmitting location, requiring conservation of energy.
- Limited antenna capability, especially during a windstorm such as a hurricane or when it is not possible to deploy a full, directional antenna.
- Extreme interference due to foreign broadcast, commercial paging or similar conditions.
- Does not require computer equipment or conditioned power to pass traffic.
- Poor propagation and high static, especially on 40m and 80m, diminishing the efficiency of two-way communications.

During such times, CW can be an effective means of passing traffic.

On-the-air speed is not an appropriate measure of effectiveness. The timely and accurate messages is. Since accuracy is very important, it may be prudent to slow down the speed to make up for adverse conditions. The key is to send at a speed that the receiving station can receive comfortably, and with heavy interference and poor signals, 10 WPM may be appropriate.

### Digital Nets:

HF digital is NOT plug & play

- Receiver stability, bandwidth, dynamic range and operator skill
- Interfacing requires special care - RF/audio lines.
- Each mode requires operator understanding of TNC commands and how to monitor point to point or with a BBS and accepted conventions on how to turn over the line
- HF net frequency specifications are unique Like CW, skill in HF digital operation is essential for practice.

Controlling a digital net is more daunting than a voice net.

- Typing skills
- Know essential commands
- Use ARRL QN signals
- Higher data throughput
- Less prone to scanner-listeners
- Many new operators

### Voice Nets:

#### SSB Nets

SSB Nets are found mostly on the HF bands and are designed to meet the needs of amateur operators. Nets can be found for most everyone's operating habits, including international communications. Because of the nature of HF, these nets can be international, national, or regional coverage. Band selection and propagation will usually dictate the net coverage, and operators are placed to take advantage of particular band conditions. In addition to the HF SSB nets, there are regional and local SSB nets on VHF that exist throughout the country that can be put to use if the need arises. A good reference to the many nets in current operation, including regional nets, exists in the ARRL's Net Directory.

- **Standard Frequency:** As part of your local emergency plan, there should be a standard frequency for your local and section nets and their operating frequencies and times. A standard frequency is important, as this is where everyone will congregate on when an emergency arises. Alternates to this frequency are also important if the frequency should become unusable for some reason. Make sure you keep a current list of nets, their frequencies and emergency frequencies that may be called into service if the need arises.
- **Net Control Stations and rotation:** Emergency nets need net control stations, abbreviated NCS. Most major emergency nets keep a rotation list of net control stations. It is the responsibility of these net control operators to make sure that the nets run smoothly and efficiently. They CONTROL the net. You should follow the net control's lead to determine how a particular net is operated by LISTENING first. It is important for a net control station to designate an alternate NCS during the operation of any nets, because of the potential of a NCS station due to equipment failure or other problem.
- **Traffic for the net:** The goal of all nets is to transfer information (which

Important things to remember here are that each net has its own priority for d traffic. The normal priority is Emergency, Priority, Routine and Health and W that order. Some nets will not take Health and Welfare traffic, preferring to ser such traffic to other nets specifically set up for that traffic. ALL nets should t emergency traffic if there is not a better net available to handle such traffic. traffic, when you check in, make sure you state this information to the NCS.

- **Regular participation:** Regular participation in emergency nets is the best current and understanding the operations of a particular network. In addition, it equipment is operating properly and helps you to understand your station's prop in a particular net.
- **Checkins/checkouts:** All nets have particular procedures for checking into the the net preamble to learn about the proper way to check in to that net. Oth announce your call during a pause in communications (not during traffic or if in by) and, if acknowledged by NCS, go ahead and check in.
- **Relays:** SSB nets and FM Simplex nets will require relays if there are weak s check in with traffic. Many nets have established policies in dealing with re alternating NCS to widen the net's reception due to propagation. (Note: Nets c will require relays if someone is trying to get into the repeater and cannot quieting signal. A station closer to that unreadable station can sometimes rela listening to the unreadable station's transmission directly on the repeater inpu relaying the request to the net on the repeater.)

### FM Simplex

- **Regularly scheduled nets:** Nets held on FM Simplex frequencies are usually c as backups when normal FM repeater communications are disrupted or to han These nets hold special challenges for all concerned, and are closer to SSB nets they are to FM Repeater nets. For that reason, experience in operating on HF SS the operator in good stead during a simplex net.
- **Location, location, location:** The first fundamental of efficient simplex operati you are mobile, move your antenna until you can receive a good signal and use c be able to communicate with the NCS. Some stations will relocate to a high po simplex net to improve their coverage.
- **Net Control challenges:** As part of the challenges facing Simplex operations learn to use relay stations properly to pass traffic. Since not all stations can he most simplex nets, there is a need to establish those stations with the best recep relay points. If you try to check in to such a net and NCS does not acknowledg relay.
- **Practice regularly to develop skills:** A regularly scheduled Simplex net can ge speed on the problems facing simplex operations and can stimulate those inv improve their stations and operating skills to the point that simplex becomes a alternative to emergency communications should the local repeater system fail.
- **Have a plan:** It is important that there should be a local emergency plan and th amateurs know what that plan is. Knowing what frequency to turn to in emergency is the best way to insure that there are enough operators availabl emergency situation. Having backups to these established frequencies is also ar that should be in the plan. These backups should include both FM repea frequencies. Reference to local section HF nets should also be mentioned fo capabilities. Find out what the local plan has in it. If there's not one, get with y your local club if there is no EC in your area) and help make one.

- **Simplex repeaters:** There has started to be increasing use of simplex repeaters in emergency situations. These are simply radios that listen to a particular simplex frequency what is being sent, and when the carrier drops, they will repeat that same information on the same frequency, but usually from a location with wide coverage and higher power sending station. These provide a special challenge and different operating skills are used with such repeaters. While coverage is definitely increased for a simplex network repeater stationed at a high point, the drawback is that there is a time delay when you are being 'repeated' literally, doubling the communications time for any message. If a direct path is available, it would be better to conduct the communication directly if possible. A move to a different frequency would probably be the best solution for such traffic if a simplex repeater is in place. Simplex repeaters definitely help especially in areas where there are coverage problems.

## Repeaters

### Repeater Etiquette:

- **Leave at least 3-4 second breaks between transmissions.** This allows other people to get into a conversation should there be an emergency.
- Some repeaters have courtesy beeps. These signify that the time out timer is about to expire.
- **Autopatch:** Most are closed - that is the autopatch is for club members only. For those that are open, you need to think of the following
  - Keep calls short and to the point.
  - Inform the person on the phone line that this call can be heard by others.
  - Remind the person on the phone line that there is to be no profanity.
  - Don't say anything to the person on the phone line that you would not say in a public local shopping mall.
- Various repeaters have functions other-than or in-addition-to rag chewing. For a simplex repeater you are about to use BEFORE you begin a long rag chew.
- **Linked repeaters:** In general, linked systems are not a good place to hold long conversations. They will not just tie up a single frequency pair. You may - in some systems - have repeaters in as many as ten cities tied up. Be careful.
- "Q" signals are for CW
- Leave the 10 codes on "other" radio services.

### Basic Training:

Education and training is what supplies the knowledge to help you build confidence in your ability to execute the required steps in the shortest amount of time and with the minimum amount of motion. Hesitancy and indecisiveness will quickly tire you, as you are expending more energy than required, and that would soon dull your senses. Thus you educate yourself and the skills are needed. Education and training helps you function as part of a team.

Emergency communicators are part of an adaptive team that can rely on and support each other. Team members must function as a cohesive unit. Individuals may possess great operating skills but will perform inadequately if they cannot work as part of a team.

### What you need to do:

Find an organization active in developing emergency communicators. Find an AF 6 or 7 similar program in your community. You may ask at your local amateur radio club meeting if you do not know of any organization in your area.

1. **Undergo an educational/training program.**

You may have to UNlearn some things you thought you knew.

There are many false concepts on emergency communications due to impressions based on actual field experience. Some of the most important emergency operating principles differ significantly from traditional daily amateur radio because emergency communications requires a network of message relay stations from scratch and operating within minutes or very few hours of an activation.

Building a communications network is not done routinely by amateur operators as a course of enjoying the pastime. It is important to seek out educational material and sound practices refined with actual field experience. Be open to learning new things and the rationale why it works.

Unlike individual amateur radio operators operating from a single station at home or mobile, emergency communications involves radio operators forming teams to relay messages using both similar and dissimilar techniques simultaneously. Emergency communicators know very well that it's not a case of choosing which "single one-size-fits-all method" for getting the job done but rather that it's a matter of whichever is appropriate for that particular message. These radio operators must integrate with their host emergency management agency. While the lower level operations may resemble and borrow from our personal experience as amateur radio operators and operators, it requires personal growth to operate in a challenging environment that materializes during an emergency.

2. **Emergency Management**

- Learn about the Incident Command System.
- Learn about emergency management agencies in your area.
- Learn about how disaster declarations are escalated from the county mayor (s), to the state governor, to the nation's president -- paving the way for federal aid.
- Learn about how requests for mutual aid are handled within your community during a disaster.
- Find out about the notification/activation tree for emergency communications as a team member.
- It's highly recommended to take a first aid course. It's knowledge you can use anywhere.

3. **Equip yourself**

- Get a NOAA Weather Radio with digital SAME alert. Program it with the frequency for your area.
- Put together a quick deployment bag (A.K.A. GoBag) with your spare 12V batteries, antennas, coax, clipboard, pens, IDs, etc. Place your checklist of last minute items (batteries, water, etc) into the bag as well.
- Put together a 72 hour pack, useful for both field deployment and emergency operations.

4. **Learn about Emergency Communications Procedures**

- Practice checking into and out of nets. Practice operating in a net.
- Practice becoming Net Control.
- Practice sending and receiving ARRL Radiogram messages.
- Practice participating in a tactical network, such as a parade or marathon.

5. **Learn about Emergency Communications Equipment**

- Learn and practice HF techniques.
- Learn and practice NVIS antenna setup and function.

- Learn and practice VHF/UHF simplex techniques.
  - Learn and practice Packet Radio.
6. **Existing programs at the local level.**
- Check with your local ARES official (SEC, DEC, EC, AEC, etc).
  - Check with your local amateur radio clubs.
  - Check with your local agency - Civil Defense, American Red Cross, N Service, Salvation Army, etc.
  - Check with your local church, county or state-wide denomination.

### **Practical Experience:**

When you go out on a real emergency there are several things you need to understand listed relate to expectations and attitude while the remainder deal with specific actions will need to handle.

- Expect confusion. When we respond to a field assignment, our served agencies response organized and are often being pulled in a number of directions. E people won't know why you're there, what it is that you are supposed to do, a doing it for.
- Be flexible. Because of the confusion, we must always remain flexible and cor are serving that we are here to help. Sometimes our function is clearly defined other times it isn't. Remaining flexible reduces your stress level and prove agencies that you are a team player.
- Know your audience. We contrast arriving to a field assignment as either Ramb Neither is good, don't over dress, try to look the part that's required. Outf appropriate for the situation. For example, don't arrive to assist the base camp short pants and a tank top, you might be asked to leave because your clothing c you in danger. Stop for a moment, consider your assignment and who you will make appropriate clothing and appearance choices. Don't arrive like you just c beneath a rock, always look clean and well kept.
- Be aware of your first impressions. Some of us are shy, some are outgoing. So others are outspoken. Know how others perceive you and adjust your character : situation. If you are a shy and quite individual, know that you might have to be official or area you have been assigned to assist. If you are typically loud and around you, you might need to tone it down a little. If you are assigned to a Pol center, loud talking and bold action are not going to be appreciated by the dis assisting citizens with emergency needs.

### **Simulations and how they help**

One key to the success of emergency communications is the amount of education preparedness prior to the event. By learning, practicing and evaluating prior to the overall level of proficiency is raised.

During activation and operation, the time to develop one's skills and knowledge is existent, yet this is the time when having that knowledge and experience makes the Practicing emergency communications is best approached as a team effort scheduled weekends and not while the actual emergency is happening.

There are a number of ways to develop knowledge and practice. The best way is to experiences of other emergency communicators, taking the best practices and avoiding occur in any setting.

Skill is needed for handling simultaneous multiple activities that can arise during the very nature of responding to an emergency affords very little in the way of on-the-spot training. Hence it is vital that the education, training and practice occur ahead of time. Equipment problems, people requesting attention and a response, listening for a station with a distorted signal, all the while trying to absorb the situation and direct a team effort are real-life situations that can occur. Fortunately, there are ways to learn and practice in a setting that are enjoyable. Simulations, exercises and practice nets are proven ways to practice these elements in a non-threatening and fun environment, developing the composure and confidence through analysis and feedback and gain new confidence to rise above any situation.

Amateur radio operators are always in search of new knowledge, equipment and training opportunities. The learning and training sessions leading up to the simulations are excellent ways for specialists to introduce the rest of the team to new modes or techniques. A number of things you can arrange to try out and practice before the exercise, then practice during the event. Try alternate frequency and communications modes, (non-repeater) operations, SSB where FM modes are prevalent, Near-Vertical Incidence Skywave (NVIS) for local HF coverage, satellite for reliable long-haul coverage, packet and digital mode for passing message text. See the section on Communications Technology for more information.

Simulations offer a safe environment for being an NCS or liaison/relay station. Other than trying out their skill and just as in practicing for team sports, an occasional procedure offers an avenue for review, learning and improvement. Practice removes the fear, anxiety of doing something you have not done before. Just that calming effect you feel that sense of accomplishment is worth the experience. You have attempted an operation, an amateurs venture.

The National Traffic System is an excellent vehicle for practicing relaying large volumes of traffic in a timely and coordinated fashion. NTS stations practice originating, relaying messages (collectively called traffic) quickly and efficiently. The skills honed with NTS removes the hesitation and mishandling that can happen when faced with having to pass traffic.

### **Public Service Events**

Public service events are another setting where emergency communicators can practice and build their confidence. Many public service events involve operators supporting a variety of outdoor events such as parades or community fun runs communicating between each other with handie talkies. These outdoor operators are typically supported by Net Control Stations at the event using portable/mobile stations. Public service events are excellent settings for refining skills on passing informal traffic, juggling amongst multiple operating frequencies, and oneself with radio and personal equipment to comfortably operate in the field for a successful event while enjoying and participating in a community event.

In summary, training activities and community service participation allow you to try out all communication activities in a non-threatening environment with the added advantage of working while you work at them.

### **Lessons Learned on Past Events**

Debriefing sessions should be held after each operation to exchange lessons learned from future operations. Since each event typically features a new set of operators, the lessons are frequently the same material being conveyed to a new audience. It is a wise use of time to share the experience of others and work towards mitigating potential gaps and obstacles in the future.

their past mistakes.

### **Teamwork and Attitude**

As the first segment in this course said, the attitude you bring with you will do more success of your effort than anything else. You must, therefore, bring an attitude of hell to every event you participate in. If that is a problem for you, then I suggest you try some of ARES/RACES.

### **Move the Message Forward**

The mission for emergency communicators is to use any available communication technique to forward the message to its final destination. Whether it's via regular telephone, fax, commercial and government radio, Citizens Band, Family Radio Service, bicycles, or even immaterial. What counts is that the message got delivered in usable form to the recipient in an accurate fashion that the recipient could take action.

When you are handling traffic, be sure you do not become myopic with your efficiency. An example is during a practice session in Packet, NCS should have one station pass an emergency message to one of the other packet stations (something like the time on your instant). You will be amazed at how many people will spend the time to format the message to send it rather than using the microphone to send a voice message that would be followed by a packet message.

### **Creating an Operating Environment**

You will learn to create a new environment where none previously existed -- and change won't happen seamlessly on its own. Recognize and accept this reality. Do not rely upon to do your own preparation and the time prepare personally for emergency and disaster now while there is time to think it through, purchase what you need with no lines, assemble things into kits and checklists. Your single most important item in the field is beverages such as coffee or soda that will dehydrate you. There is much written about personal emergency preparedness, so further discussion will be deferred.

Don't worry and be distracted by the condition of someone else's equipment and operation. Since you're already at your site (or heading to your assignment or evacuation shelter), deal with the situation first, then deal with other situations as conditions permit. The better you prepare, the faster you arrive at your destination (without speeding), the faster you'll handle the situation.

While we would like to see everything go smoothly in an emergency, Murphy tells us that it won't. Do not wait for someone else to do your preparation. YOU make it happen. YOU make it work. YOU make it an education and results. YOU make it go right.

Here are a few hints to help you during an emergency:

- **Remember you are emergency communicators, not emergency rescue personnel.**
- Keep your Civil Defense ARES/RACES ID with you at all times.
- **Do not impede the work of professional responders such as fire fighters, police, and emergency medical personnel.**
- Stay out of the "hot zone" unless instructed. You don't want to endanger yourself or add yourself to the casualty list. Follow the directions of your lead operator or the command.

- You may be required to perform duties beyond just emergency communications. to respond to the needs of the situation.
- Test your techniques before an exercise or an event.
- If you want to experiment with a new technique or method, test it before you have an exercise or event. You don't need more frustration or embarrassment, so why not take a chance when the stakes are higher?

### **Operating Skills**

- Once you've learned the basics, gain as much on-the-air experience as possible. Practice often. Publicize and hold practice sessions. Plan for them.
- One cannot anticipate all the possible problems that can come up in the field, or during such a spontaneous event. By engaging in on-the-air activities, you practice solving problems spontaneously while continuing to communicate.
- Don't be overly concerned with the problem solving during the exercise. What's important is your experience and learn to cope with fielding multiple, unexpected situations when you are in future activities. Problem solving will be developed simply by attempting to handle message traffic and situations.
- There is a very good reason for training in advance. You do not want to deploy in the field with any form of uncertainty or hesitation. You want to work out your "butterfly stomach" ahead of time in a comfortable and safe environment, such as an afternet or on simplex with a couple of your buddies.
- Practice being efficient with your time and the use of other people's time (like cutting out excessive chatter and getting immediately to the point) -- because during an emergency the radio channel is of the essence.
- Make your transmissions sound crisp and professional like the police and fire radios and the air traffic controllers. Do not use any more transmission time on the radio than is absolutely necessary.
- Someone IS waiting to use the channel. (That's why frequencies are busy and crowded during an emergency.) You don't like it when someone is hogging the channel when you need it. You should be considerate and reciprocate similarly and keep your time on the radio to a minimum.

### **Staging of Resources**

Please see the section on Incident Command for a full overview of ICS. A staging area is what it sounds like. It is a location where resources are staged and managed prior to being sent to the scene. Separate staging areas might be needed for many reasons:

- Lack of space at the base camp (because it is set up at the trail head parking lot and there is no space for heliports, parking, etc.).
- The mission might be geographically spread out over such a great distance that it makes sense to marshal some people at a separate staging area.
- The mission might use unique transportation systems that require their own staging area (marine support from a dock or harbor, air support from a landing strip, or ground support from an access trail not close to the base camp, etc.).

### **Characteristics of Staging Areas include:**

- Staging areas are managed by the Logistics Section.
- Assets that are mobilized into the field from the Staging Area are controlled by the Logistics Section.

- The staging area can be co-located with the ICS staff at Base Camp.
- If a staging area is not co-located with the ICD staff at Base Camp, a separate system (cell phone, runner, two-way radio) must be set up between the ICS staff area.

### **Shift rotation and Overwork**

Radio operators are of value only when they show up at the operations site. As a result of overwork the operators that respond if there are fewer than needed. Team lead operators as a whole must recognize this and anticipate bringing in fresh operators to shift.

While most of us are accustomed to working in an office or similar environment for radio operators should be allowed to take a break every hour. Practically speaking, they should not work more than ten hours in a 24 hour period, allowing them time to handle personal matters.

Often during emergencies, the demand for emergency communications far exceeds the number of operators. A typical, well staffed operation for a given site requires a minimum of three operators per shift for adequate coverage and rest.

### **Lack of available food/water and "facilities"**

One needs to keep in mind that during emergencies, operations will take place in locations that normally do not accommodate groups of people. As a result, you'll probably find that there are no accommodations for food, water, restroom, personal hygiene and first aid. You will need to bring your own supplies for your needs, and realistically, for at least two more people (since you're in a remote environment and there'll be other responders). Packaged foods such as MREs, prepackaged baby wipes, and rolls of toilet paper are signs of a well-prepared communicator.

### **Lack of replacement Equipment**

Sometimes, as shift communicators leave, they will take back their personal equipment for their own operations. This is understandable, and should be anticipated. As people respond to an emergency operation, take a moment, find out how long they will remain and ask them if they can loan their equipment. If they indicate that they can only loan the equipment for a short period of time, begin putting out a request for replacement equipment early.

### **Every one is "Stressed Out"**

Emergency communications is a very challenging assignment. There's a lot of need for people in a short amount of time. The following are some tasks that will help things go

- Meet with the appropriate person in charge to establish the working relationship of responsibilities and the relative means of handing off working and communications.
- Set up an operating location with work table, lighting and similar considerations as possible - comfortable environment.
- Insure you install equipment, antennas in a safe and durable fashion.
- For those responding at an evacuation shelter, informing the general public that they are communicators and not shelter managers and to refer shelter management to an appropriate designated person. Do not attempt to handle Red Cross issues for the shelter.
- Remember that many people have many different priorities. Try to work within their constraints.

As these demands wear down the individual's capacity for tolerance, flexibility a person shows signs of stress. People show it as varying levels of irritability and emotion which affects the interpersonal relationship present.

**Steps are needed to anticipate oncoming stress and mitigate the results after they include:**

- Remind the emergency communicators that tensions can form, so don't take anything
- Telling people up-front that we're all in this together, and to remind the people objective. (Since the objective changes from event to event, there is no one single)
- Try to establish teamwork and cooperation, and remind everyone that working together achieve the best results. We have to make do with what we have.
- Insure everyone knows the command structure.
- **Being cooperative and not bruising someone else's ego**

The best time to emphasize this is up-front, before the event. Build this in as part of the emergency communications team. Remind the team when they're activated and before operations. Remind the team that they will be shining examples of what amateur radio to the rest of the community, whether they are professionals, the general public or other amateurs. Their conduct should be that of "professionals" -- to be courteous, considerate, effective above the situation. **The only thing that's amateur is in our name and that's because of love, not for compensation.**

Remind them that even if things are not going well at the moment, that it's not a failure. Success. The key is to focus at the task at hand and pull it off.

#### **ARES and RACES:**

##### **Dual Membership and its advantages**

It's not a question of ARES or RACES, it is to enroll and participate in both. Each of distinct origin, yet both provide the coverage of amateur radio emergency communication to the community.

RACES originated as a Federal Government program designed to use amateur radio equipment scattered throughout the community as a ready resource in the event of a Civil Defense. RACES is comprised of two parts:

1. specially designated FCC-licensed RACES stations and
2. amateur radio operators registered with civil defense organizations as a pool of volunteers authorized to operate in the RACES service upon a declaration of a civil defense.

Amateur radio operators are encouraged to register with their civil defense organization to operate under FCC Part 97.407 in the event the President invoked an emergency. Emergency Powers of 1934, however, RACES operators can respond to emergencies to civil defense authorities.

During RACES operations in wartime, only RACES stations may communicate with other RACES stations.

RACES stations or amateur radio operators enrolled in civil defense organizations

RACES operations until specifically authorized by the civil defense organization for As such, RACES amateur radio operators cannot begin conducting advisory and before activation, nor can they continue relief operations after official authorization/operations has concluded.

During these times, amateur radio operators organized under ARES can operate and individuals to effect emergency communications. ARES operators can initiate nets ahead of formal RACES activations and can continue to operate providing relief, he communications after the formal RACES operations concludes. As an operating arm ( operations can request and incorporate ARES operators from neighboring counties and the communications response for the affected area.

ARES can respond to situations that may not draw the attention of civil defense or example, if a local hospital's PBX phone system fails, ARES can respond and provid communications within the hospital complex. Even using employees with cellul telephones, wireless phone service would be overwhelmed with the volume of requirec stationed at key locations within the hospital could assist staff in dispatching and routi A hospital's phone system problem would not warrant intervention by civil defense at activation of RACES as it does not directly involve government services or affect ov welfare.

In summary, RACES may not be activated to respond to every emergency situation. ! operators will not be allowed to operate as RACES operators in the event of a war unle the local Office of Emergency Management. In many instances, identification issued authorities may be needed to access areas affected by the emergency. It is therefore j and serve with both programs to retain flexibility to respond to the situation as needed.

### **Working Together**

There are a number of peer amateur radio organizations involved with provi communications for national organizations. Among them are: ARES (ARRL), RACE and local governments), SATERN (Salvation Army), SKYWARN (National Weath Other emergency management organizations may also be served by amateur radioc (Citizens Emergency Response Team), VOAD (Volunteers Organizations Active in D (Military Affiliate Radio Service), hospitals and health care agencies, utilities, public : Some of these operate under the ARES/RACES umbrella as a local agreement.

Amateurs are encouraged to register with more than one organization. For example, a up in ARES, RACES and SKYWARN without much difficulty or overlap. A person his/her primary served agency -- the one which he/she will develop and respond to ir emergency. However, during times of non-emergency, they would be able to assist a p in the development of their program, education and training efforts and special ev given emergency, the primary served agency is not activated, the individual is free agency needing assistance.

### **Leadership - Who is in charge (not an issue if they work together)**

This must done via MOUs and understanding amongst the leadership BEFORE develops. SOP calls for each organization to maintain a roster, noting which persons a primary basis to work with that group. The choice of the primary served agency is up operator, as he/she is in the best position to determine his/her availability given his/her family situation.

SOP calls for each agency to determine which frequency(ies) they will monitor for other agencies and nets which frequencies are being monitored for this incident. Fre operations should be coordinated on an area basis amongst the leadership and work time. The leadership must keep in mind that no situation is perfect during an emergency in the arrangements are expected as adjustments are made due to the situation, 1 equipment, propagation, operators and agencies involved.

**REMEMBER an emergency is about providing SERVICE, not about which or charge or who will get credit!.**

SOP also calls for overall objectives, priorities and decisions to be made by the ICS. The lead commander should be clearly identified and changes in lead commanders should be communicated as the situation evolves.

The focus must be to align communications to anticipate and keep pace with the emergency operations as required by the command team. Quality leadership in the groups recognize this and will coordinate their efforts amongst the groups to assure continuity.

#### **Minimizing "us vs them" thinking**

Quality leadership recognizes that the overall goal is to move the messages to the final timely and usable manner. Quality leadership recognizes that this is done via teamwork require give-and-take to accomplish multiple goals. The culture of quality and professionalism is established not during the event, but before the event. The membership should focus on leadership development, and communicate these values to non-members and non-amateurs.

#### **ARES Section Leadership**

At the local level, there are operators registered with the ARES program. Non-ARRL operators sign up as ARES operators. The Emergency Coordinator (EC) position, however, is a membership position. ECs are appointed by either their Section Emergency Coordinator (SEC) or Section Manager (SM). Assistant Emergency Coordinators (AECs) are selected and appointed by the EC. An EC may have as many AECs as required to effectively manage the ARES Unit. (Refer to the ARRL Emergency Coordinator's Manual for a complete outline of EC and AEC duties.)

At the section level, the Section Manager for a given ARRL section appoints the SEC. The SEC appoints District Emergency Coordinators (DECs) to cover districts within the section. The decision of which district is local decision and may encompass several counties, for example. The DEC is responsible for coordinating within their district to come up with a comprehensive emergency response plan coordinated amongst the ECs.

#### **ARES - Mutual Aid**

During severe emergencies, ARES personnel can be called in from other parts of the section. The situation is elevated from EC to the DEC, SEC and ARRL HQ. Often, the emergency is carried on national news, and other available amateurs in the region and across the section ready themselves for deployment and identify themselves to ARRL HQ. In the event of an emergency, the request for more emergency communicators is also handled. Additional communicators are dispatched, and informed who to contact when they arrive in the affected area.

#### **Personal Equipment:**

Each ARES member is expected to be prepared to respond as effectively as possible.

**one is expected to ignore personal responsibilities to family or employer, nor their welfare!** *However, personal inconvenience or lack of preparation is insufficient supporting a callout!*

How do I prepare? Put together a "go-bag" of the items suggested in the equipment list

Please understand that you are not expected to stuff your entire ham shack, closet and capsule in preparation for an alternative life style in support of ARES. Rather that you items you do not have and acquire them while there is time and no urgency.

The list includes virtually everything you will need to be helpful in an ARES event. maintain one "go-bag" with the items that you would need only during a deployment second (or it could be just a list) of the items that, when added to the first, will provide personal supplies and radio equipment to make you much more effective and comfortable event. To summarize, don't wait until you are called, to assemble your "go-bag". Do your leisure.

The items shown in UPPER CASE are the ones most likely to be needed.

### **Equipment:**

- ARES/RACES/SERVED-AGENCY IDENTIFICATION CARD
- COPY OF AMATEUR RADIO LICENSE
- HANDHELD RADIO (dual band if possible)
- SPARE BATTERY PACKs (CHARGED nicad and AA)
- HEADSET, SPEAKER-MIC.

The most usable headset in high noise areas will have noise cancellation in the - be effective.

**\*\*DO NOT USE THE VOX OPTION\*\*** on any headset.

- 19IN. MAG. MOUNT/GROUND PLANE ANTENNA (will function on 70cm)
- COAX JUMPERS AND CONNECTORS
- CONNECTOR ADAPTERS (bnc/pl259, bnc/so239, some radios require SMA)
- DUCT TAPE
- SHORTHAND NOTEBOOK, PEN & CLIP BOARD
- WATCH
- MAPS OF THE AREA (Topo and street)!!!
- COPIES OF MESSAGE FORMS
- Compass and/or GPS
- Copy of District Operations Manual
- List of served agency phone numbers in your area (not just your district)
- Boundary-Marking Tape
- Insect Repellent (summer)

### **Survival Items:**

- 3 DAY SUPPLY OF PERSONAL MEDICATION!
- WARM CLOTHING & BOOTS (bright colors for shirts and jackets)
- HAT - (this is IMPORTANT for everyone)
- GLOVES
- SPARE GLASSES (spare contact solutions if you wear them)

- FIRST AID KIT
- SUPPLY OF WATER (the warmer your region, the more you need but EV. water with them)
- TOILET PAPER/KLEENEX
- Moist Towelette Packets
- SUN SCREEN (winter or summer)
- RAIN SUIT
- ORANGE VEST (for use if your clothing is drab colored)
- Space Blanket
- Plastic ground cover tarp
- Spare shoe laces and some twine
- Wool blanket
- Fanny-pack/Back-Pack
- Sports/Bicycle water bottle
- High energy snacks
- Large trash bags
- Flashlight W/extra batteries
- Whistle

**Tools:**

- SWISS ARMY - type - KNIFE
- SCREW DRIVER (phillips and flat)
- PLIERS
- SIDE CUTTER
- CRESCENT WRENCH
- ELECTRICAL TAPE
- Volt Ohm Meter
- Fence Pliers (includes hammer)
- Crimp Tool (includes wire stripper)
- Assortment of crimp connectors, nails, brads, tacks
- 4 or more each of the 4", 8" and 12" plastic cable ties

**For public service events:**

- COOLER with FOOD & DRINK
- Lawn chair
- Umbrella (sun or rain)

**Optional items:**

- 3 Wire AC Extension Cord w/2-3 pin adaptor
- AC to 12V power supply
- Soldering Iron w/solder
- 2M Beam Antenna w/Tripod, mast & guy rope
- Nut Driver set
- Folding set of Allen/Torx wrenches
- Zip Cord
- Cash (for pay phones & if power is out)
- Transistor radio

- Binoculars
- HF Unique:
- HF rig (12V dc preferred) with:
- Mic
- Key
- Head phones, external speaker
- Tuner - for the oddball antenna
- 50 ft + RG58 or better
- NVIS antenna: (NOT a mobile vertical!)
- 75m dipole w/ ladder line or 130 ft of wire
- Insulators
- 3 Masts, 8ft or more, preferably non-conductive
- Guy rope
- Tent pegs for guys
- Lead weight & 50 ft light line for tossing over branches
- "Loud" marking tape to warn passers-by of guys, lines.
- Power source (one or more):
- 12V gel cell 75 A/H w/ charger
- Vehicle w/ 12V battery & gas
- Portable shack:
- Shelter tent
- Table & chair

### **Marking your Equipment**

There are very few people that would knowingly relieve you of your equipment in an emergency there is a lot of confusion. If you have each piece of your equipment marked with a name and call it will be much easier to insure your equipment is returned to you at the event.

### **Connectors and Your Equipment:**

#### **Standardized Connectors**

During public service events or emergencies you could easily need to connect your radio to someone else's power supply or someone else may need to connect their radio to your power supply. To facilitate this inter connectivity a standard for power connectors is necessary.

#### **Anderson Powerpole**

The recommended connector is the Anderson Powerpole 30A (APP-30A). The ARI changed to the APP-30A in June of 2000.

This connector is gender non specific but when assembled per recommendation the positive and negative polarity reversed. [The recommended configuration is shown here](#) is rated at 30 amps and is recommended for higher power applications but will work in lower power situations as well.

In a size comparison between the previous recommended RS/Molex and APP-30A the difference between the two connectors with the APP-30A being the smaller. Or more virtually the same size but due to the difference in appearance, the APP-30A looks smaller it would indicate.

The Anderson Powerpole 30A connector is not as readily available as the Molex connector.

group may want to consider purchasing bulk quantities for its members. This will also per connector. One supplier charges \$1.00 per connector, plus shipping, in quantities charges seventy five cents per connector, delivered in quantities of 200.

The manufacturer (with a list of - distributors - ) is at <http://www.andersonpower.com/> (I have had good luck with [www.powerwerx.com](http://www.powerwerx.com) - WOIPL)

### **Adaptors**

It is recommended that you equip your radios, power supplies and batteries with t Since not everyone will use these connectors it would be very helpful for you mal (patch cords) made with these connectors and other types. Connections you may want are:

- large auto-type battery clips
- cigarette lighter plugs
- any other connectors that your group has in abundance.

### **Knowing your Equipment**

Nothing is more embarrassing during an event than to have to ask someone else to s operate your own equipment. To avoid that situation you should:

1. Make sure YOU can set up the radio on any frequency/mode the radio will opera
2. Insure you know how to set, turn on and turn off the sub audible tone encoder fo
3. For VHF/UHF radios - make sure you can operate "reverse pair" if the radio is n in case the repeater IS down and someone else is "rock bound" or doesn't kn operate their radio.
4. Does your radio have the ability to lock on or out a frequency? Insure you know or deactivate that function.
5. Try all configurations of power source, transceiver, antenna, fuses, and patch cor
6. Make a card with tune-up procedures and operating precautions.
7. Photocopy key pages from the operating manual and place in an envelope attach Include enough information so another ham can use your radios without further i
8. Label pre-programmed memory channels by name and frequency. Preferably on plastic pouch attached to the radio.

### **Equipment Maintenance**

When you maintain equipment in standby or "on the shelf" waiting for a callout the eq be used for months. It's easy to overlook routine maintenance you should perform should keep in mind:

1. NiCd batteries self discharge at approximately one percent (1%) of their capacit leave them on the shelf for over three months they can go to zero charge or b state that individual cells in the battery pack may reverse polarity, thereby ruini best way to avoid problems is to use EVERY battery pack you have every mont discharge/charge cycle WILL keep the battery pack healthy well beyond "norma
2. "Button" cells used for memory backup in programmable radios can go dead years. Replace them when it's convenient for you, not when it's too late.
3. Connectors, switches, and potentiometers can develop corrosion from disu dissimilar metals are present. Operate, unplug/replug, and clean them regularly.
4. Pre-installed antennas at served agency locations and vehicles can be damag

- Check them monthly for changes and physical damage.
5. Printer ribbons and ink cartridges dry out from disuse. Develop a stock rotation plan that doesn't get too old.
  6. Dry cell batteries, flares, first aid supplies, fuels, food and water all have shelf life. Develop a stock rotation plan for the ones you have.

### **Portable Antennas and Generators**

Of all possible portable antennas, the type that will be easiest to transport, store and use is the J-pole antenna. These antennas can be made in various configurations based on the frequency covered. For VHF/UHF the "J-pole" antenna, made from 300 ohm TV type twin lead, has a gain over a quarter wave yet store in a very small space. For HF the mono band or narrow band antenna will be very effective.

#### H.F. Considerations:

- One of the most effective "local coverage" H.F. Antennas is the NVIS or Near Vertical SkyWave. This is a half wave dipole mounted less than 1/8 wave (at the operating frequency) above the ground. Excellent results are obtained with the antenna at least 10 feet above the ground. This antenna is most effective on 40 and 75 Meters.
- When you put up H.F. antennas, you must consider the potential impact of the antenna and equipment in the area. Or more simply you must have sufficient poles, rope, boundary marking tape and such to put the antenna far enough up to not be a hazard to equipment in the area.
- An effective NVIS antenna for 40 and 75 meters can be made from a 1:1 balun of wire (62' for 75 and 34' for 40) per side. Add to that a four inch separator at the top of the meter elements and an end insulator at the ends of the 75 meter elements and you are done.
- Another configuration that shows promise is to take two mono-band mobile antennas and connect them base to base with one being the driven element and the other being the ground plane. Care must be exercised in tuning this configuration that the elements remain perpendicular. In testing this configuration we found that this antenna delivered a signal from one station less than the full sized dipole. The ones I used are available at HRO. Antennas are the IHF75's and IHF40's (two each) and the Ironhorse IH-DAK-AD adapter. Total cost for four antennas and the mounting bracket is \$117.96.

#### VHF/UHF Considerations:

- Many times you will be in situations where the 1/4 wave antenna will not be necessary. During those times a three to five element Yagi antenna will be very helpful.
- Keep the antenna at least one full wave (at the operating frequency) away from metal surfaces if at all possible.
- Keep coax runs as short as possible.
- Use the lowest loss coax you can.

#### **Generators:**

There are several safety considerations to keep in mind when using portable generators. The primary are:

- Insure you have the best possible ground line hooked up to the generator ground before you start the generator.
- Check the engine oil level before you start the generator and each time you need to run it.
- Refuel the generator when it is cool if at all possible.

- Store the extra fuel away from the generator.
- Remember, even the smallest generator has enough voltage-current to kill you. Use caution with this equipment.
- Use only three wire extension cords to bring power to the operating area.
- Insure the extension cord has the required capacity for the projected load. Do not connect two cords together to get the length you need (the wire gage used in virtually all extension cords is the minimum allowable for that length/load - thus if you connect two fifty foot cords, they will have less capacity than a 100 foot cord)

### **Incident Command System (ICS):**

Latest update: 4/5/03

#### **Disclaimer**

The following description of the Incident Command System (ICS) is a summary for radio operators working on ARES and RACES activities. This summary is -only- to provide with basic a understanding of terminology and concepts associated with ICS and is not a formal ICS training within your district.

Understand that the structure defined in this document is for large events. In smaller events, only a portion of the full structure will likely be used.

#### **ICS Overview**

Incident Command System is a management tool designed to assist anyone who has the responsibility for the successful outcome of an incident. We will define an incident as any planned or unplanned occurrence or event, regardless of the cause, which requires action by emergency services to prevent or minimize loss of life or damage to property and/or natural resources.

Emergency services professionals agree that too often there is considerable coordination problems and poor operational performance at major incidents. On large structure fires, floods, forest fires, hazardous materials spills and tornados, the ability to manage the situation effectively seems to be in direct proportion to the number of agencies involved.

Problems arise because of different operating procedures, terminology, and/or equipment. The problem is compounded when different types of agencies such as fire, law enforcement, rescue groups, health departments, and forest services all become involved in the same incident. When several levels of government add to the mix, the potential for confusion is increased.

It is not uncommon for each agency to have a very limited understanding of the terminology of the other agencies involved, yet the jurisdictions and authority at the scene overlap extensively. Too often, the person in charge is unable to communicate a strategy or action. As they arrive, the various agencies have difficulty determining their duties and fitting into the management structure.

#### **What does ICS do?**

The Incident Command System (ICS) is a standardized method of managing emergencies. It is based on a common organizational structure, common terminology, and common procedures.

ICS will manage small, routine, daily incidents as well as the large, complex multi-agency disasters everyone dreads. ICS reduces confusion and uncertainty in the early phases of an incident thereby increasing the efficiency and effectiveness of mutual aid while increasing safety.

Within ICS, the transition from a routine incident to a major emergency is orderly minimum of adjustment for any agency. In its largest application, it may include s people without compromising effective supervision.

**ICS does not infringe on the daily routine, responsibilities or authority given e statute.** But, if a transfer of authority is necessary as conditions change, ICS smooth since organizational structure and lines of authority are clearly defined.

On-scene operations often need coordination from the affected governments. This s delegation (and definition) of authority to the Incident Commander, and planning/lc from all agencies involved. ICS compliments interagency planning and logistics thru Agency Coordinating System (MACS).

### **ICS Structure**

The Incident Command System has two halves. These halves are interrelated and bo the successful outcome of the incident.

### **Management by Objectives**

Four essential steps used in every incident, regardless of the size or complexity are:

1. Understand policy, procedures and statutes
2. Establish incident objectives
3. Select appropriate strategy
4. Apply tactics most likely to accomplish objectives (assign correct resour results)

The complexity of the incident will determine how formally the management by ob will be handled. In a small, simple incident, the process can be handled by verbal between appropriate people. As the incident becomes more complex many of the individual objectives will be resolved by documentation of the incident objectives document describes the process that allows this to happen in a systematic way.

### **Organizational Structure**

The ICS structure begins with the Incident Commander (IC). The person designated I for the management of the incident and starts the process by setting incident objectiv may do all functions without aid but will usually delegate responsibilities to organization. The IC still has overall responsibility for the incident, regardless of dutie

It is common to have an incident cross-jurisdictional boundaries. Unified Comm process that allows the multiple jurisdictions to develop unified objectives and st incident. This is accomplished without any loss of authority, responsibility or account:

### ***Under Unified Command:***

1. There is one IC for any event. There is not an "IC for ..... and an IC for ....."  
There is **ONE** Incident Commander.
2. The incident will be handled under a single coordinated Incident Action Plan (I
3. One operations Section Chief will have responsibility for implementing the

Plan (IAP).

4. One Incident Command Post (ICP) will be established.

As the IC fills positions in the organizational structure the positions will fall into management function:

**Command:**

The IC is responsible for all incident or event activity. The incident size/c determine which other management functions will be filled. The command staff as reports directly to the IC.

**Operations:**

Operations is responsible for directing the tactical actions to meet incident objective one Operations Chief (if activated by the IC) per operational period but that pos deputies as needed. The Operations Section commonly uses Branches, Divisions Forces and Strike Teams to maintain unity, chain of command and span of control.

**Planning:**

Responsible for collection, evaluation and display of incident information. It also ma resources, preparing the IAP and incident related documentation.

**Logistics:**

Is responsible for providing adequate services and support to meet all incident or even

**Finance/Administration:**

Responsible for tracking incident related costs, personnel and equipment records an procurement contracts associated with the incident or event.

Each of these functional areas can expand as needed into additional organizational u delegation of authority. As positions are filled, the radio designations are replaced wi titles.

The ICS organization at any time should reflect only what is required to meet 1 objectives. The size of the current organization and that of the next operational perio through the incident action planning process.

A number of organizational elements may be activated in the various sections wi sectional chiefs. Each activated element must have a person in charge of it. A single initially be in charge of more than one unit. Elements that have been activated an needed should be deactivated to decrease organizational size.

The greatest challenge for the IC is to maintain control of the resources and communication both up and down the organizational structure. The principles of Unit Chain of Command and Span of Control allow this to take place. These three pri critical for maintaining the safety of incident personnel.

- UNITY OF COMMAND means that every individual has one designated su who that person is and how to contact them.
- CHAIN OF COMMAND means that there is an orderly line of authority within

organization with lower levels subordinate to and connected to higher levels. In chain of command will consist of:

1. Command
2. Resource

As incidents expand, the chain of command expands through an organization that can consist of several layers. For example:

3. Command
  4. Sections
  5. Branches
  6. Division/Group
  7. Units
  8. Resource
- **SPAN OF CONTROL** relates to the number of individuals one supervisor manage. In ICS the span of control for any supervisor falls in the range of three to five being considered optimal. Span of control is accomplished through delegations and good resource management.

### **INCIDENT DOCUMENTATION:**

**INCIDENT ACTION PLAN (IAP)** is to provide all incident supervisory personnel for future actions. It may be written or verbal but written plans are preferred. It is in written IAPs when:

1. Two or more jurisdictions are involved
2. The incident will overlap major changes in personnel or go into a new operation
3. There is extensive or full activation of the ICS organization

**COMMUNICATIONS PLAN** can be very simple and given verbally or may be quite a portion of the written Incident Action Plan. Among other items it lists the frequency used for the incident.

### **ICS Command Structure:**

#### **INCIDENT COMMANDER**

Reporting are:

- **Command Staff**
  - Safety Officer
  - Liaison Officer
  - Public Information Officer
- **Logistics Chief**
  - Service Branch

- **Communications**

This is where Amateur Radio fits in ICS when there is need for structure. Understand then that each incident will be structured as an ARES or RACES member, your job is to supplement the communications. Therefore we will be assigned where the Incident Commander (IC) needs us. The following is the breakdown for Communications. Not all of these positions will be filled in every incident.

- Communications Unit Leader (ComL)

- Communications Technician (ComTech)
  - Incident Communications Center Manager (INC)
  - Radio Operator (Rado)
- Medical Unit
- Food Unit
- Support Branch
  - Supply Unit
  - Facilities Unit
- **Operations Chief**
  - Staging Area Manager
    - Fire
    - Law Enforcement
    - Emergency Medical Service
    - Public Works
  - Emergency Medical Service Branch
    - Triage Group
    - Treatment Group
    - Transportation Group
  - Fire Service Branch
    - Suppression Group
    - Rescue Group
    - Rehabilitation Group
  - Law Enforcement Branch
    - Investigations Group
      - Interviews
      - Crime Scene
    - Perimeter Group
      - North
      - East
      - West
      - South
    - Search Division
      - Team 1
      - Team 2
      - Team 3
      - Tactical Response
  - Public Works Branch
    - Diking
    - Debris Clearance/Street repairs
    - Utilities, Electrical
    - Utilities, Gas
    - Utilities, Water
    - Telephone
- **Planning Chief**
  - Resources Unit
  - Situation Unit
  - Documentation Unit
  - Demobilization Unit
  - Technical Specialists
- **Finance Chief**

- Time Unit
- Procurement Unit
- Compensation Unit
- Cost Unit

**Position Objectives:**

Each person within the ICS structure is charged with accomplishing specific tasks in overall effort. These tasks, for incident managers are:

**Incident Commander(IC)**

- Assess the situation
  - Establish incident objectives and overall plan
  - For the first hour
  - For hours two - eight
  - For extended operations
- Fill necessary ICS functions
- Brief staff
- Monitor staff and revise plans as necessary
- Handle requests for additional resources and release resources

**OPERATIONS CHIEF**

- Obtain briefing from IC
- Establish operational objectives per incident plan
  - For the first hour
  - For hours two - eight
  - For extended operations
- Develop tactics to accomplish objectives
- Divide incident by geographic reference and/or function
- Appoint and brief Branch/Division/Group leaders
- Supervise operations
- Determine and acquire resources from Branch/Division/Group leader input

**STAGING AREA MANAGER**

- Determine location of staging area
- Establish staging area layout
- Determine support/service needs for staging area
- Report status of equipment and personnel in staging area to the Operation
- Dispatch personnel and equipment from staging area to the incident as ne

**BRANCH/DIVISION/GROUP LEADERS**

- Assess the situation
- Establish incident objectives for Branch/Division/Group
  - For the first hour
  - For hours two - eight
  - For extended operations

- Develop tactical plan to accomplish objectives
- Determine time and resource requirements
- Determine logistical requirements
- Requests needs from Operations Chief

#### **PLANS CHIEF:**

- Obtain briefing from IC
- Establish necessary positions within function
- Supervise preparation of Incident Action Plan (IAP)
- Develop alternative strategies
- Provide periodic predictions on incident potential
- Supervise planning section units

#### **SITUATION INFORMATION CENTER**

- Compile incident situation information
- Display incident status on maps, boards, etc.

#### **RESOURCE STATUS UNIT**

- Compile incident resource information
- Display resource utilization/availability
- Check in resources as they arrive

#### **DOCUMENTATION UNIT**

- Document complete incident

#### **LOGISTICS CHIEF**

- Obtain briefing from IC
- Establish logistics section positions as necessary and do briefings as necessary
- Identify service and support needs for the duration of the incident
- Coordinate and process requests for resources
- Advise IC and staff of current service and support capability
- Prepare "Service and Support" portions of the IAP

Etc. etc. etc. - The remainder of the objectives will not normally be of interest to AR so have been omitted from this document.

#### **Incident Command System and Amateur Radio:**

The Incident Command System (ICS) was developed as a result of wildland fires in the 70's.

Many agencies at the local, state and federal level were tasked with responding and level of assistance to this type of incident, and it became painfully evident that terminology and the lack of a unified command structure created confusion, a

coordinated approach to managing the incident.

A Federal/State/Local task force was created to develop a system for the management of wildfires, and it expanded to include any incident.

A few years later, ICS was formalized. Over the past two decades, it has been used throughout the US and Canada and today is the standard emergency response for managing incidents of any size.

The primary components of ICS are:

- Common Terminology
- Multi-Jurisdictional Unified Command
- Modular Organization
- Integrated Communications
- Manageable Span of Control

As Amateur Radio groups continue to work more closely with the different Public Safety agencies, they may be asked to function within the ICS structure. It is incumbent upon Amateur Radio leadership, and, to a lesser degree, all Amateur Radio operators to understand how they fit into ICS.

ICS does not seek to alter the way any unit (including Amateur Radio) performs its primary function. ICS does not dictate how the police does its policing, how firefighters fight fires, nor how Amateur Radio units accomplish their tasks. Existing Amateur Radio methods and procedures remain unchanged. *ICS does provide an organization and reporting structure, with a clearly defined command and span of control.*

The elements of ICS are discussed in the detailed ICS description in the first portion of the course.

While the ICS structure might look a bit daunting at first, it should be noted that this structure is designed for the management of any incident, regardless of size. All tasks *may not* be needed at every incident. ICS allows for the expansion of the organization as needs dictate, to maintain a span of control between 3 and 7 (optimal of 5) subordinates per supervisor.

### **Where we fit in ICS?**

**We fit nowhere in the organization until asked. There is no position within the organization for "on-call" operators! If you wish to help in any event, contact your local ARES Emergency Coordinator, RACES officer and volunteer with that person. DO NOT just show up to work.**

The primary area of interest to Amateur Radio participants is the Logistics Section, Support Unit. Typically, the primary contact at the served agency will not be an Amateur Radio leadership individual to advise the nature of the incident, and where the incident may be a staging area, or to the Command Post area, usually to either the Logistics Section Director, or the Communications Unit Leader. One individual may fulfill multiple capacities, so Amateur Radio operators serving at a command post need to be aware of the specific nature of the incident. The command post may be identified by a green light. An Amateur Radio operator may be assigned to the Communications officer or they may serve as a Technical Specialist in another area.

Amateur Radio operators may be requested to perform non-ham radio activities conceivably be assigned anywhere. If an operator is assigned to a non-ham unit, or comply with the directions of the unit supervisor, understand the mission and report that unit supervisor.

Amateur radio groups deployed as units should be structured into groups of 3 to 5 Amateur Radio unit supervisor. For example: If a unit has 20 members, the leadership the unit down into 4 or 5 units. This could be based upon geography (where they are deployed), time of day (shifts), specific function (HQ unit, field unit 1, field unit 2, etc.) a reasonable, manageable division of labor. Then, instead of one Amateur Radio leader status or provide direction to 20 members, the 1 leader interacts with 4, and those 4 interact with each other. This allows for a much quicker and more manageable method of communication. Smaller units are also able to be re-assigned and moved more quickly than large units. Units also allow Incident Command more flexibility in the utilization of overall resources.

Everyone MUST insure that all assignments, delegation and hand-overs are done with a statement of intent and explicit statement of acceptance. The most likely problems with assignments and duties are assigned/accepted implicitly.

If **ALL** assignment, delegation, handovers, acceptance etc. are explicit, the misunderstandings are minimized or eliminated. **A good technique to insure understanding is to repeat back what you understand the order or instruction to be. This will expose any misunderstandings they can become a problem.**

Amateur Radio leadership with the likelihood of serving in supervisory roles for an extended period should familiarize themselves with the ICS structure, forms, methods and procedures. The more familiar an individual Amateur Radio operator serves, the more important ICS training would be mandatory for an Amateur Radio operator assigned to a served agency. The Amateur Radio liaison to be fully trained in the Incident Command System. Each Emergency Services group within Colorado should have a cadre of individuals "fully trained" in ICS. ICS training is provided by served agencies throughout the United States; check with the OEM, Sheriff's Office, or Fire agency for local information.

In addition, ICS courses are available from the Federal Emergency Management Agency. See the web at: <http://www.fema.gov/emi/is1951st.htm>

As previously mentioned, the methods and procedures used by Amateur Radio operators in areas such as packet or ATV, and other training such as Damage Assessment, Fire Weather training-- are items that remain in place, in use, and unaffected by ICS. The nature of how information is reported up the chain and how commands are given to the field by Amateur Radio operators should continue to receive training in these areas-- and already valuable skills used to serve the public via Amateur Radio.

### **ICS Duties for ARES and RACES Operators:**

To repeat some VERY important instructions that apply to all ARES/RACES operators:

Everyone MUST insure that all assignments, delegation and hand-overs are done with a statement of intent and explicit statement of acceptance. The most likely problems with assignments and duties are assigned/accepted implicitly. If ALL assignment, delegation, handovers,

are explicit, the potential mis-understandings are minimized or eliminated.

**A good technique to insure understanding is to repeat back what you understand instruction to be. This will expose errors before they can become a problem.**

### **Event Check List:**

The following are YOUR responsibilities for every emergency and many exercise events that during an emergency you will either be part of the solution, or you will become a problem.

- **Before you leave your house, you should:**
  - Review your assignment to insure you understand what is expected for your specific assignment.
    - Incident type, name and designation
    - Incident check in location
    - Reporting time
    - Anticipated length of stay
    - Travel instructions
- Update your "go-bag" with needed items not normally stored there
  - Prepare clothing and food, sufficient to handle the anticipated length of assignment.
  - Review communication procedures as necessary
  - Ensure that your family knows how to contact you while you are at the assignment
  - Review transportation requirements - to and from the assignment
- **On departure from your house**, check in with the staffing net to let them know your route to your assignment.
- **On arrival:**
  - Check in at the staging area so the served agency records reflect your help
  - Notify the staffing net that you are going to the operations frequency.
  - Check in with operations NCS to let them know you are available.
  - Determine where/when the event briefing will be (ASK!)
- Perform the duties assigned in a manner consistent with good safety procedures and techniques. This will include:
  - Monitor work progress.
  - Provide your supervisor with appropriate status updates and notification of conditions that may arise.
  - Keep a good log of your station activities.
- Once your assignment is complete AND **prior to departing** you need to:
  - Complete your work assignment
  - Brief your subordinates on demobilization
  - Complete event paper work
  - Brief your replacement as applicable
  - Follow incident check out procedures. This means:
    - Check out where you checked in (if at all possible)
    - Notify Operations NCS of your departure
    - Notify the Staffing Net you are checking out from your assignment home.
- **Upon arrival at your house**, check out with the staffing net. ICS Definitions

[ICS Definitions](#) will explain the terms and definitions used within ICS that are not

ARES/RACES.

[ICS Glossary](#) are the definitions of many other ICS terms that should help minimize c

### **Emergency Callouts:**

#### **What is a callout?**

A callout is the process by which ARES members are contacted to support served emergency. Callout procedures may be used as part of ARES exercises.

Callouts occur at the District level and will ONLY be initiated by the EC or AECs for a real emergency, these officials act in response to actual or anticipated requests for support by served agencies.

Each ARES member is expected to be prepared to respond as effectively as possible one is expected to ignore personal responsibilities to family or employer, nor unnecessary welfare. However, personal inconvenience or lack of preparation is insufficient supporting a callout.

#### **How do I prepare?**

Put together a "go-bag" of the items suggested in the "Personal Equipment Checklist" wait until you are called to assemble your "go-bag". Do it in advance, at your leisure needed.

#### **How will I know?**

As an amateur radio emergency communicator, you should register with the amateurs RACES, Civil Defense (or Office of Emergency Management) and ARES and make yourself be available for alert and activation. Typically, two or more amateurs serving as liaisons RACES are on pager notification by the CD agency. The pagers and/or telephone voice typically activated by a computerized group-call paging/notification system activated by the communications officer using a touch tone telephone control code. Other similar manual notification system may be in use in your county.

Once these amateurs are notified, a number of alert mechanisms can be used. A coordinator disseminate the alert/notification via a pager and/or telephone tree. The pager code is a six digit frequency of a local repeater, followed by a three digit action code (1 for emergency, 000 for test). Some groups use a two tone paging signal on a local repeater coverage, activating commercial voice pagers that have been modified to monitor the repeater.

Once the activation notice has been sent to check into the local command repeater establishes a check-in net while the ICS communications command team establishes the operation teams are expected to activate and respond according to their normal responsibilities. The command team will issue bulletin statements for the net as needed, directing and coordinating activation. They will cancel the alert as needed should the situation warrant it.

As the net is started it is the responsibility of the NCS to start the mobilization / demo net. A recommended form can be found below. The information that must be kept is:

- Name and FCC issued call

- Date/time they called in at
- Date/time they reported to the staging area  
If the person called in as they arrived at the staging area then the last two it same.
- Tactical assigned to this person or the tactical call used by the location this pe and the time this person was assigned.
- Time/date the person left for home. This information is critical to insur participated is accounted for at shut down. A byproduct of this information determine how much time we spent on the event.[Full page PDF versions o available here if you would like to print them out.](#)

Who's On First?			
Tactical Callsign	Callsign/Name	Arrival Time	Comments

If the situation is weather related, amateurs can also monitor NOAA NWR for inform; the National Weather Service.

You can find out more by contacting the Civil Defense office i <http://www.fema.gov/fema/statedr.htm>

**Individual Responsibilities:**

Each and every person working an emergency (and most training events) has specific These include, but are not limited to the items shown in the ARES Check List. Thi toward the Incident Command System (ICS) but should be utilized in virtually every event.

**Initial Operation:**

If you are responding to another location, as you get on site, ask for the person introduce yourself as the emergency communicator assigned to serve that location. charge will be busy, so spend only a moment explaining that you would lil communications station for that location, and to ask where he/she would like the loca to suggest an appropriate location -- one that can serve as an operating table and m feedline access to the window, outdoor or roof; access to power and telephone, and i command center to avoid commotion from disturbing either the command or communi

Move your equipment, battery and power cords into position. Hopefully, you've arri two or more, so that a person can start setting up while the other person is movi equipment in. The first priority would be to set up a 2M mobile station to establish with the net. Use the lowest power setting that produces reliable contact. Since you're unfamiliar environment, resist the temptation to run high power, which could poss interference in nearby equipment.

Proceed to set up the scanner, then HF, packet and other stations. As more of your setup becomes operational you can check into other nets and begin compiling a list of reachable directly or via a relay station.

**Paperwork required at the site:**

Some of the things you should have with you when you operate in the field:

- Message forms or sheets to compose messages.  
Often, you'll copy the message onto scratch paper, then transcribe it cleanly on message form.
- Log sheets to log incoming and outgoing messages.
- Notepad for writing notes.
- 3M Post-its for annotating items.

**Long term operation:**

If you expect to operate from the location for a period of time, establish a message desk that you can retrieve the messages as needed. Some of the "portable office" type that has hanging folders and has a tray on top for pencils, a mini-stapler, scissors and scotch tape are very useful to organize and file the messages.

You should also look for and establish a break area, rest room facilities and a sleeping area.

**Notification of shutdown:**

The notification for shutting down operations may be given over the air by the command station. The shutdown is usually preceded by notices given a heads up stating that the operations is coming. Notifications can be supplemented via alpha pager and telephone.

**Be sure you confirm the shutdown order.****Shutdown and cleanup:**

Upon receiving notice of a shutdown, the station should begin securing the message desk, equipment and other materials. Make sure you leave the area you operated in a better condition than you found it. Your served agencies appreciate that.

**Debriefing Input:**

As part of the preparation for after action debriefing, the following information should be collected:

- Your log should contain what time critical events occurred. It is useful in the debriefing analysis to determine timeframes for activation, setup, transit, etc.
- Complete information on what happened.
- Note who was around. In case there are questions, you will know who to contact for information.
- Note the hours of operation.
- Note what was accomplished. Often, the list of accomplishments need to be given by those who weren't there at the scene/operating location.
- Note what's pending. If there were unfinished items, note them so that someone can follow-up.
- Note what was good. Jot down the things that went well. Often, in the heat of the moment we forget that there were things that worked in our favor.
- Note what needed improvement. This is fairly easy to note, as we remember the things we struggled with the most.
- Thank those who turned out and were involved. Even a simple verbal thank you goes a long way, compared to hearing not a single word. Make sure you make it a point to say thank you.

around you and your family for letting you get the job done.

To simplify collection of Debriefing information in large incidents (multiple day) an  
been created. [This form will need to be copied and modified to work for your Section.](#)

### **Congratulations!!!**

You have completed the study material for Test Parts 1 and 2. Why not take a minute,  
thoughts before taking the test. Return to the [Course Introduction Page](#) to proceed to

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