

# Emergency Communication (ECom) Net Control Station (NCS)

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Last update: 10/28/09

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## Definitions

- **Event**  
Scheduled, non emergency occurrence where Amateur Radio support is supplied for non-profit / public-service organizations, or for the training of operators.
- **Incident**  
(a.k.a.) Communications Emergency - Any planned or unplanned occurrence or event, regardless of cause, which requires action by emergency service personnel to prevent or minimize loss of life or damage to property and/or natural resources.
- **Net**  
A Communications Network (Net) is established to handle the information flow (traffic) for an event or incident when there are three or more stations involved or when the volume of traffic is sufficient that it cannot be handled on a first-come first-served basis. **A Net will be**

**established to open all incidents.** A Net will be opened for events as soon as there are three or more operators, and may be opened sooner.

- **Net Control Station (NCS)**

NCS is the person charged with controlling the information flow during a net. The NCS has authority over all traffic handled by the Net and determines the order in which other stations use the frequency and when they pass their traffic. The NCS is not in charge of the event or incident, only the information flow during the net.

- **Net Script**

A set of notes or a formal document created as a guideline to aid the NCS in conducting regularly scheduled Nets.

- **Tactical Call**

A name assigned to a specific station in a net that describes the function, location or assignment of that station. It allows anyone to call the station by its tactical call rather than the FCC issued call of the operator and thus minimizes confusion at shift changes or when operators take a break from their duties. See "Net Participant's Guide" in ECom Basic material for details.

- **Terse**

From the dictionary: (**adj.** free of superfluous words; concise; succinct). What you as NCS need to be.

This does **NOT** mean rude. It does mean use the fewest words that properly handle the communication.

## What do I do?

There are three types of nets that you may be asked to run. First is the regular weekly net held by your ECom district. This is the easiest one for you to learn to be NCS at because you have a script to follow. On that subject, remember, the script is a guideline of the material to be covered in the weekly net and may be altered for any good reason. The purpose of the script is to make it easier to keep track of where you are in the net and help you not forget any of the regular items covered in those weekly nets.

SUGGESTION: Have more than one copy of the script so you can mark it up as you go. That simplifies keeping track of where you are in the net. It also makes it easier to maintain the essential - LOG - of who checked in and who had business. See "Record Keeping" in the ECom Basic material for more detail.

The second type of net is the Public Service event nets. These are seldom, if ever, scripted and as such it is far better for you to have run many weekly nets (ten to thirty - depending on the individual) before attempting one of these. They range from very simple with a length of one or two hours, to extremely complex, running several hours to multiple days. Logs of the net activity are very important to smooth operation of this type of net.

The third type of net is the incident or emergency net. These range from complex to very complex and tend to be much more fast paced than they should be (**SLOW DOWN** - you pass more information faster that way). It is recommended that you have run many event nets, if at all possible, before attempting an incident net. Maintaining accurate logs for these nets is critical to effective net operation.

The weekly net or very simple event net are the only nets that can be run effectively by one person.

All others require at least two people at NCS to run efficiently - one person to talk and one to log. In long term or very complex nets, a third operator is strongly recommended. This third person can handle messages, runner tasks, and relieve the other two operators at regular intervals so all can operate at higher efficiency.

1. To begin a scheduled weekly net you will:

- Get the latest copy of the Net Script, if one exists.
- READ it twice before you start.
- Check with your net manager or EC to find out when (time) and where (frequency) the net is to be run.
- Start the net on time. Remember, there will likely be many people waiting for the net. Don't waste their time by being late.
- Be as concise as possible as you conduct the net.
- If you fumble or mumble, unkey, take a deep breath and go at it again. The extra few seconds will do wonders for your composure.
- SMILE - your ability to be friendly helps these nets run more smoothly.

2. To begin a scheduled event net you will need:

- A copy of the roster of participants
- A map or description of where the stations will be located.
- The time and frequency you will start operating on.
- A description of what we are to accomplish.
- You will then:
  - Open the net with a description of the event and how long it is anticipated to run.
  - Call for check-ins and issue Tactical Calls based on the operators function or location.
  - Be as concise as possible as you conduct the net.
  - Keep good logs!
  - Handle traffic.

3. To begin an incident net you will:

- Get a description of the incident and what support is needed.
- Find out from your EC or AEC where and when the net is to be run
- Find out what resources are needed to support the incident. Remember, you will probably be the staffing net for the first period of time for this incident.
- Open the net with a description of the incident and a statement of what help is needed.
- Be as concise as possible as you conduct the net.
- Keep detailed logs!
- Follow your EC's instructions.
- Handle traffic.

4. Two important items:

- **If NCS cannot be heard by all stations on a given repeater system -- and there are qualified NCS operators who can be heard by all -- NCS duty should immediately be turned over to the station that can be heard.**

- **For all nets - Do your best to remain as calm and relaxed as possible, give it an honest try and ask for help if you need it.** Nothing more will ever be asked of you. One last hint - ask for a mentor for your first few nets of each type. This helps you learn faster and assures someone can help you pick things up, should you fumble anything significant.

The following are suggestions for forms that may be of use to you. If your district has other forms, use those. If your district uses ICS forms, use those. These forms are for areas that do not have established forms and are only a starting point in your development.

- [Mobilization/demobilization](#)
- [Net location log](#)
- [Event log](#)

## NCS Questions

The following is a list of questions an NCS operator needs to ask of themselves BEFORE starting a net. If you cannot answer at least two thirds of the questions in the affirmative, you should seriously consider having someone else run the net. Exceptions to these are daily or weekly scheduled nets and those should still consider many of the items.

1. ***Is the NCS location away from the Command Post?***

If not, it should be! The noise and commotion at CP degrades your ability to run a good net and the noise you generate only adds to the confusion there.

2. ***Are you using a headset with noise canceling microphone?***

You really should. Even from home the background noise will affect how well you can hear and be heard.

3. ***Do you have the best performing antenna for the conditions?***

A "rubber duck" is not adequate unless you can see the repeater antenna. That does not mean see the mountain the repeater is on, it means see the antenna.

For HF, polarization of your antennas WILL affect your signal to others.

4. ***If you are running from battery: Do you have at least enough charge on the battery to run more than one hour?***

You should have a battery with 90+% charge but if you are the only choice for NCS then make sure you can run the net long enough to have someone else get ready.

5. ***Do you have pencil/pen and paper sufficient to run the net for a full shift?***

You will NOT be able to remember enough of the information to be effective unless you **write it down**. It is up to you to maintain the log for the event/incident, unless you have an assistant to handle that assignment.

6. For VHF/UHF: ***Do you know the characteristics of the repeater system you are on?***

Your effectiveness as NCS will be adversely affected if you do not. For example; The Colorado Connection system must have the repeater at the Denver end down for three seconds for the time out timer in Grand Junction, 200 miles away, to reset.

7. ***Do you have a runner, liaison or logging person to support you?***

For large scale events three people are required. You **cannot** handle the net, log and run messages.

8. ***Do you have a designated relief operator?***

Everyone gets tired and NCS must be the most alert operator on the net.

## Attributes of a good NCS operator

- Good communications skills and fluent command of our language
- Good voice quality
- Good hearing capabilities
- Good listening capabilities
  
- Good ear-to-hand copying skills
- Understands what SERVICE means
- Has good knowledge of the Incident Command System
- Willing to take and carry out direct orders
  
- Is a strong team player
- Is Self-assured but not overbearing
- Decisive, with the maturity to make good judgment calls
- Physically able to tolerate high stress for extended periods
  
- Constant concern for the safety of participants
- Organizer
- Sense of humor
- Ability to absorb new terminologies quickly
  
- Decent (readable) penmanship
- Generally neat of appearance
- Consistently demonstrates above average operating techniques
- Knowledge of band characteristics

## Learning to be NCS

Many of the skills used in contesting are applicable to NCS. Both activities involve coordinating several stations on the same frequency at the same time. The similarity ends there. Where the contestor is in a hurry, NCS is calm and almost seems to be going very slowly. The extra time NCS uses actually speeds information flow by minimizing repeats and ensuring that priority information has access to the net without needing the largest signal on the net.

NCS techniques include:

- **Have the best performing antenna for conditions.** A "rubber duck" is not adequate unless you can see the repeater antenna. That does not mean see the mountain the repeater is on, it means see the antenna. For HF, polarization of your antennas WILL affect your signal to others.
- **A good log is critical to an efficient operation.** Create / use a good log! A few calls scribbled on a sheet of paper, in no real order, becomes useless in a few seconds. Make sure your log includes: **1)** Time of the entry **2)** Call / Tactical call **3)** Summary of what was said or requested. Be sure not to kill yourself with excessive details. The log is an overview of who did what, where and when.
- **Plan what you are about to say as if you will be quoted.** - *PTT does not mean Push*

***Then Think.***

- **DO NOT make editorial comments about the business or information being passed unless it will speed or enhance the information flow!** Chattiness, especially early in the net, degrades the effectiveness of the net.
- **Be as concise as possible.** Use the fewest words that will completely say what you mean. This will minimize the need for the repeating of instructions.
- **Slow Down!** Wait three or four seconds before you answer any call. This assures any emergency or priority traffic has access to the net without requiring the largest signal.
- When asking for reports or soliciting traffic, **listen!**  
Take down as many calls as you can identify before you acknowledge anyone!
- When there is a double, try to get something unique from one or more of the stations. Then call for clarification from those stations **ONLY**. The alternative approach is to acknowledge the check-ins you could understand and then call for check-ins that tried in the last round but were not acknowledged. The very worst thing you can do is to say "The station that doubled with ....." How are they to know who they doubled with?!
- When acknowledging check-ins, list the callsigns as letters (not phonetically). The purpose of this acknowledgment is to confirm to each check-in that his/her call was heard. Phonetics used on all acknowledgments simply slows the net. NOTE: Phonetics are an excellent way to clarify questions about the call received (was that a B or a D, etc.). Reciting all of the check-in information beyond the call simply wastes time.
- Acknowledge all stations that you heard, then yield the frequency to a single station. When that station is finished, hand the frequency to the next station on the priority list, without soliciting more traffic. Follow this pattern until you've completed your list, then repeat. The exception to this is in handling routine traffic during an emergency. With routine traffic during an incident net, break between messages to solicit any emergency/priority traffic and handle that first.
- The net-name/function and the NCS callsign, should be announced several times at the beginning of the net and every eight to ten minutes during the net. Many NCS' use the repeater IDer to track the time to identify.
- For scheduled nets, NCS' goal should be to run the script top to bottom and handle all of the listed business, announcements and traffic as quickly as possible, without rushing. If you are concerned that this makes the net "too cold" you could schedule a "chat session" at the end of the net or just after the net closes.
- If someone tunes up on the net frequency during the net (SSB, CW, etc.), remind them **ONE TIME** that this constitutes harmful interference and should be done off the net frequency. Repeating this notification will only serve to encourage those attempting to interfere with the net. Some HF nets even schedule one minute for tune-ups just prior to the start of the net.
- If your net is passing NTS traffic, remind participants to read the variable information in order without the redundant field identifiers such as: "Check", "phone figures", etc.
- Most participants will catch on quickly to the pattern. If they do not, take the time to explain. Things get done much faster if everyone uses the same techniques.
- Take frequent breaks. While you may not recognize the stress that being an NCS produces, it will become evident in your voice. If you are asking yourself when your last break was, you know it is time for one. Turn over the net to your backup at least every two hours and REST. Do not listen to the net. **Rest.** Then, when rested, listen to the net for a few minutes before resuming your station.
- Control the tone of your voice. Be as calm as possible. Tension tends to make our voices raise in pitch and this change **will** be picked up by the net. Use a calm tone and members of

the net will tend to remain calm.

### **Last and FAR from least**

- **Speak in first person.** It is "recognizing kd0zzz" or "roger kd0zzz" **NOT** "NCS would like to recognize kd0zzz" or worse yet "Net would like to recognize kd0zzz". This is important because it shows a subconscious acceptance of leadership. The person "bought into" running the net. They subtly reinforce the NCS' authority by telling everyone they accept full responsibility for operating the net. One side benefit is reduction of word count by four in that one transmission alone. Be concise!

The ability to remain cool, calm and collected will buy you more than anything else. There is no doubt that being an NCS is a high pressure assignment and it is easy to become frustrated or angry. If you have a frustrating problem, ask for help from other members of the net. Knowing when to delegate is the mark of a good leader.

## **Net Discipline**

In many ways the job of NCS can be equated to that of a traffic cop for the frequency. You control the flow of information. This analogy carries over to the duties of enforcing net discipline. You can reasonably expect net members to:

1. Report to the NCS promptly as they become available.
2. Ask clearance from NCS before using the frequency.
3. Answer PROMPTLY when called by NCS.
4. Use tactical call signs.
5. Follow established net protocol.

However, you must remember you are dealing with volunteers that have a vast range of knowledge and experience. This means you cannot order their compliance, only ask for their cooperation. It is better to lead by example and produces much better results. Probably the best way to enlist the cooperation of the net is to explain what you are doing in a calm and straight-forward manner. This may involve supplying a small amount of real-time training. The one thing you never do is dress down someone over the air.

One way of classifying a net is the level of net discipline used, or the "style" of the net. The two acknowledged styles are:

### **1. Open (Informal) Nets**

During an open net most any type of business or communication is permitted. Conversations (rag-chews) are permitted provided they break every so often to allow event related business to flow.

### **2. Directed Nets**

A Directed Net is created when there are a large number of stations needing to use 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 first. Casual conversation is discouraged and tactical call signs will be used as applicable.

**Like anything else, being a good NCS requires practice. Contact your local ECom EC/RO for opportunities in your area!**

## **NCS Hints and Kinks**

- If it is a scheduled net, start on time!
- Use a script when/where possible. If you have time, make notes to yourself to help with the information in the script - before you start the net.
- Create / use a good log! A few calls scribbled on a sheet of paper, in no real order, becomes useless in a few seconds. Make sure your log includes: **1) Time of the entry 2) Call / Tactical call 3) Summary of what was said or requested.** Be sure not to kill yourself with excessive details. **A good log is critical.**
- Be friendly yet in control - speak slowly and clearly with an even tone, not a monotone. Sound confident, even if you are not. Above all, don't worry. Just give it an honest try.
- Ask SPECIFIC questions, give SPECIFIC instructions! You can make it much harder on yourself with nebulous questions and instructions.
- **Slow Down!** While it may seem counter-intuitive, you will actually handle more traffic in less time when you wait three or four seconds before answering any call.
- **DO NOT** make editorial comments about the business or information being passed unless it will speed or enhance the information flow! An ECom net is not about your opinion, it is about efficient information flow.
- Read your owner's manual and understand how to use your microphone. The worst sounding NCS is one that cannot be heard or sounds like a train huffing and puffing into the microphone as they speak. From the ARRL Field Resources Manual: Articulate, don't slur. Speak close to your mike, but **talk across it, NOT into it.**
- When there is a double, try to get something unique from one or more of the stations. Then call for clarification from those stations **ONLY**. Please don't say "The station that doubled with ....." How will they know who they doubled with?!
- During check-ins, recognize participants by name whenever possible.
- Acknowledge checkins and ALL messages.
- Be sure to frequently identify the purpose of the net (let people know what they are checking in to!) and advise all listeners of the subaudible frequency required if applicable.
- Ask for assistance if/when you need it. If this is not a weekly net, delegate responsibilities. You cannot do it all.
- Maps are VERY helpful in events or incidents and may have critical information in an emergency.
- If this is an emergency net, remind listeners to listen and tell them where the staffing net is. Someone checking in to say they are listening only slows the net.
- Don't be afraid to say "OOPS" if you get flustered and mumble a bit. Pause, take a deep breath, and go back at it. If you make a mistake, remember this is not Brain Surgery. Do your best to CALMLY recover. Nothing more will ever be asked of anyone.
- **DON'T THINK ON THE AIR!** If you need a moment to consider what is needed next, say something like "Stand by" and unkey your mic.
- Keep transmissions as short as possible. Resist the tendency to ragchew or ramble.
- Transmit only facts! If there is need to make an educated guess or speculate, make sure it is VERY clear that it is speculation. **First choice is to not speculate at all.**
- Avoid becoming the source for general information about the event. If it is an emergency,

refer incident status questions to the served agency Public Information Officer (PIO).

- When necessary, use standard ITU phonetics. There is no such thing as "common spelling". Send all numbers as individual numbers, e.g., 334 is three three four not three hundred thirty four.
- **Speak in first person.** It is "recognizing kd0zzz" or "roger kd0zzz" **NOT** "NCS would like to recognize kd0zzz" or worse yet "Net would like to recognize kd0zzz". This is important because it shows a subconscious acceptance of leadership. The person "bought into" running the net. They subtly reinforce the NCS' authority by telling everyone they accept full responsibility for operating the net. One side benefit is reduction of word count by four in that one transmission alone. Be concise!
- For voice nets, use plain English. "Q" signals are for CW.
- If the net has been quiet for more than ten minutes, check on operator status. This keeps the net running more smoothly and insures you know about equipment failures as soon as possible.

## Contingency plans

A somewhat thread bare saying that is very true, tells us a lot about contingency planning. "Those who fail to plan, plan to fail". Or as Murphy put it - "Anything that can go wrong, will. Anything that can't go wrong, still will". How does this relate to Emergency Communication? Simple. As you begin your planning for emergency operation, be sure you have redundancy of equipment and back up people available when ever possible.

As NCS it is up to you to plan for your backup and have backup equipment available for your use. Every emergency net and the vast majority of event nets require at least one extra person at the NCS position. Ideally, there will be three people at NCS for any emergency or major event net. This allows one person to act as NCS, one person to handle logging and the third to handle liaison with the served agency and act as runner. The people at NCS will rotate assignments about each hour.

Try to obtain more volunteers than you have positions to fill. Wait! More volunteers than you have need for? Yes. On average, for every ten volunteers you get, there will be at least one that will develop equipment problems, or have transportation problems, or have personal emergencies that develop. If you have only "just enough" volunteers, you actually are short ten percent for the event.

**Having one or two "floaters" who can act as relief for almost any of your operators WILL help the event run more smoothly.** In addition, having an extra person to act as - runner - handling message transportation to/from your served agency will help your group function more efficiently. The side benefit is that should one of the volunteers prove to not have sufficient training, they can become the backup on that job and have a successful training experience during the event.

## Handovers

During the course of every event that lasts over two hours (and most of the others) you will have need to turn over operation of one or more of the locations in the net to a relief operator. As NCS it is in the best interest of the net and your sanity to do likewise with the net to another NCS operator at least every hour. To facilitate this change of operators the new operator will need:

- List or note of outstanding messages to/from the location
- Log of traffic to/from the location  
These two items may be one log, properly annotated
- Status of open queries
- Local and remote contacts for the location (served agency and others as necessary)
- Any other information the outgoing operator feels necessary

When ever possible, both operators should handle the location for at least ten minutes to allow smooth transition. This is sometimes referred to as briefing / debriefing.

## Coverage breaks

Coverage breaks are, as the name implies, failures of a station to handle traffic as required during a net. These will usually take the form of equipment failures, power supply failures or overly tired operators who fail to pay attention. In ALL cases, prior agreement of how the coverage breaks are to be handled, should be announced in the pre event briefing.

### **NCS**

The best way to handle NCS coverage breaks is with a known NCS backup. This person is known to the net and has a duplicate copy of the operational log for the event and thus is able to pick up operation of the net in just a few moments. When there is not sufficient resource to have a backup NCS then the person with the best NCS skills and most complete staff at their location should take over the net. This person will start with a call for emergency traffic, handle that, then go to roll call to establish continuity. After which regular net traffic will resume. **NOTE: As this person takes over the net they will no longer be available to handle the previous assignment.** A relief operator will need to be dispatched to handle the new NCS' previous assignment!

### **Non NCS**

When a station fails repeatedly to respond to calls from NCS an assessment must be made of the criticality of the traffic. If there is critical traffic holding for that station then a relief operator will need to be dispatched immediately. If the traffic can be held for several minutes then a re-evaluation should be made at that time. If the coverage break was from equipment failure and that can be corrected, then the relief operator may be recalled. If the coverage break was from being inattentive, the relief operator should take over.

## Handling an irate participant

This is one of the toughest problems you will face. If handled incorrectly, it can cause net participants to 'take sides' and erode the morale and effectiveness of your net. People can get their feelings hurt over very little, especially when they are tired and in unusually stressful circumstances. Your first reactions need to be:

- a. **Slow up.** Don't respond instantly. Take a deep breath.
- b. Do a quick review of what you know about this person.
- c. **DO THE NEXT THREE STEPS ALL IN ONE STATEMENT.**
  1. Acknowledge the problem. Give in to the 'Problem' Whether they are right or wrong! This acknowledges that there is a problem and that you are recognizing that fact. Once you agree that there is a problem, the 'fight' is gone.

2. Empathize with them! Whether you understand or not, tell them that you can understand how they can feel that way and that, were the situation reversed, you would probably feel the same way.
  3. Ask them to suggest a simple yet reasonable solution. Listen intently! This is where they will reveal the real problem. Everything they have said up to now may have been a loud smokescreen. Somewhere in their suggestion, they will tell you what they really want from you.
- d. If their suggestion/solution is reasonable, tell them that you will try to put it into play. If it is not, make a counter-suggestion that will satisfy the real problem that they have revealed to you.
  - e. If the problem cannot be resolved quickly and reasonably, quietly send someone to replace this individual and relieve him from his post. If there are no posts involved in the operation, give up . . . let him win . . . politely explain that the net must continue, thank the person for his services and tell him he doesn't have to stick around. You tried to solve the problem reasonably and he refused. He wins the fight and you win the battle. The rest of the net will respect what you did and morale will remain intact.

## **Handling malicious interference**

Most people that interfere with net operations or with casual conversations are poor, weak individuals that think the only way to get recognition is to behave improperly. The best way to handle them is to ignore them. When they can evoke no response, at all, they tend to leave. Let them leave without comment. If you comment in any way, these people will persist.

Unfortunately, there are people who prove there is need for more chlorine at their end of the gene pool. To overcome the interference from these individuals you will have to plan for it. Plan by having alternate frequencies announced at the pre-event briefing. Should the interference become intolerable, move to the alternate frequency. When you move to another frequency, do so under pre-announced set of conditions (at the briefing) and **without** saying anything on the primary frequency. Another very successful method involves the use of your local "fox hunters" to track down the offending station. This will need to be a well coordinated effort that is not announced on the net frequency.

## **Shortcut to being a good NCS - Practice, Practice Practice**

- Be willing to learn.
- Accept constructive criticism politely.
- Contact your district Emergency Coordinator and volunteer.
- Contact the person in charge of your local traffic net and volunteer.
- Contact your local Amateur Radio club to see if they have a net. If so volunteer.
- Look for the group that handles public service events in your area. Many times this will not be the ECom group, so volunteer.
- Work with the best NCS you can find. This person will be able to show you (if you care to watch) a lot of subtle, but important techniques.
- Work as NCS as often as you can.

## Liaison

The dictionary tells us - Liaison: n. a connecting of the parts of a whole, as of military units, in order to bring about proper coordination of activities. You will most likely be concerned with:

### Your group

You are now at the point where you are accepting management duties. With these duties come the responsibility of becoming one of the people who **MUST** be concerned with how well each of the people in your group interact with others. The easiest way to start this process is to make **VERY** brief mental notes to yourself on what person-x did wrong, or better yet what person-x did that was a great help. People respond very well to positive feedback and when you are consistent and **accurate** with positive feedback you will find your job much easier.

Please understand that if you become known as the local "snitch" people will cease to cooperate / interact with you. Thus it is important that you make comment **ONLY** when there is noticeable negative impact by person-x and that you are very accurate in your assessment. You, and the group, will be well served if you can just take person-x aside and provide them with friendly help to resolve the situation.

### Served Agencies

The second portion of liaison is with your served agencies. This can be either quite easy (if the people before you had a good working relationship with the agency) or very difficult should you have to "re-educate" your served agency on the value of ECom.

When the re-education (or occasionally initial education) of a served agency is required, **it is imperative that you are viewed as a team player that is there to help when and where they need help**. This is easiest if you keep a few things in mind:

- Every public service agency has daily contact with people that are very negative.
- Police, Sheriff's departments and State agencies have had negative encounters with people that want to be a Police person or fire person but do not have "what it takes".
- Police, Sheriff's officers and State agencies are most comfortable when **THEY** are in charge.
- They may be embarrassed at having to ask for help.

It is up to you how the served agency will perceive you and your group. When you are friendly, without being pushy, cooperative and **LISTEN** to what they say, your group will make progress. If you go out of your way to be available (but **NOT** in their face) when they have training, you can slowly prove the value of your group to your served agency.

**The key word in dealing with a served agency is SLOWLY.** If you attempt to push, go too quickly (except in response to their requests) or attempt to tell them how to run their business, your efforts will fail. There is a fine line between being available and being pushy. You will need to be very careful as you approach this line to insure you do not cross it. With that said, there are many agencies that appreciate regular contact and it does prove very helpful.

## Training Others

As you begin to train others on a regular basis you will need to consider many things that are

difficult to quantify. The reason they are hard to quantify is that each person learns at a different rate and in one of several different ways. Some of the more common learning/teaching techniques are:

- Stick to the subject.  
Examples, used to make a point, are good. So long as you spend more time with the main material than on examples (commonly called "war stories").
- Vary your speed of presentation.  
Highly technical information should have a slower presentation rate while simpler material can be covered more quickly. Take extreme care to realize what is simple to some may be quite complex to others.
- Organize your material.  
The standard "timing" for course preparation is two hours of preparation time for each hour of presentation time. This will vary with how many times you have taught the material. The first time you do a segment you may need three to four hours of prep. time for each hour of class.
- Have a specific learning goal in mind for each segment.  
The most effective presentations are short, concise and handle one subject.
- Use charts and diagrams as applicable.  
Many people find it easier to learn material when they have "pictures" to help with explanations. The old true-ism states "a picture is worth a thousand words".
- Make copies of the material for your students.  
Handouts give the student a good place to make notes and insures they will have a place to find those notes later.
- Make notes to yourself - on your copy - about which examples work best for this segment.  
As you teach, you will find specific examples that work very well in emphasizing a given point. The notes will help you remember which one(s) work the best and where.
- Above all else, try to have fun while you teach.  
Students pick up, very quickly, how relaxed you are. If you are having fun teaching, your students will probably have fun learning.

It has often been said that you learn more about a subject when you teach it. That is true and it can be fun.

## NCS Self Evaluation

ECom operators are frequently called upon to create "Nets" (short for Communication Networks) with little or no advance warning. Those are the life blood of our work. To prepare for these events or incidents we regularly hold training nets that have the potential for being anything from poorly conducted to very efficient. By what standard do we measure how good those nets are?

Please keep in mind that everyone needs to have as many of these items correct as possible but increased experience *requires* more correct than a new NCS.

- **Yes items - can you answer yes to all of these**
  1. If it was a scheduled net, did I start the net on time?
  2. Was I prepared?
  3. Did I use my microphone correctly?

- a. No huff and puff from P, B, etc.
  - b. No breath sounds
  - c. Volume consistent
  - d. No distortion
  - e. No (or minimal) background noise
4. Did I allow enough time for net participants to reply? A consistent four to five second wait is essential.
  5. If on a repeater - Did I listen well and hear stations without asking for multiple unnecessary repeats?
  6. If on a repeater system - Did I properly utilize the unique properties of the repeater system? Colorado Connection for example, requires the Denver machine to be down for three seconds to have the Grand Junction timer reset, 200 miles away.
  7. If on HF - Did I ask for relays as appropriate?
  8. Did I handle acknowledgments correctly?
    - a. Not repeating phonetics
    - b. Not repeating checkin information beyond the call and those with business/traffic
    - c. Not missing multiple checkins
  9. Did I speak in first person during acknowledgments?  
("Net would like to recognize ...." is not first person)
  10. Did I handle "doubles" properly?
  11. Did I ask specific questions?
  12. Did I give specific instructions?

- **No items - can you answer no to all of these**

1. Did I over identify?
  - a. Was this a script problem?
2. Was I overly talkative?
3. Did I mumble or fumble through more than one item?
4. Did I seem in a hurry?
5. Did I make editorial comment on more than one item?
6. Did I seem to be under stress?
7. Did I seem to "get lost" and have to think on the air (dead air time)?

- **Overall:**

Were you comfortable with the net?

If not, what specific items would improve the net?