
ARES NET CONTROL STATION

TRAINING MANUAL

TNARES – WASHINGTON COUNTY



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Documentation:

Numbers in Parentheses in text indicate source. The first number indicates number used above in Bibliography. Second number indicates the page(s) in reference. (1.45) means first reference in list above, page 45. URLs will be listed when used.

Appendix A – Part 97 Subpart E of the FCC Rules.

Appendix B – Net Control Station Scenarios

Attachment A – Phonetics List

Attachment B – JC-Washington County ARES Net Script

Attachment C – JC-Washington County ARES Net Log Sheet

I. PURPOSE

The purpose of this training manual is to provide basic information and procedures for use in amateur radio net operation, specifically for training those who wish to become an ARES Net Control Station. A standard in net operations must be established and met for all parties interested in this position.

We felt that an overview of various amateur radio nets would be beneficial for everyone to understand the differences, which will provide an insight on how to conduct operations appropriate to each. An ARES Net Control Station should be viewed as a very disciplined operation.

II. NET FORMATS

A net, short for “network of stations,” is an organized on-the-air activity. Examples of these nets include ARES, RACES, club nets, traffic nets, rag-chew nets and so on. Most nets meet on a specific frequency or repeater, on a regular schedule. When a net is active on a repeater, the repeater is closed to other activity. The net control station (NCS) oversees the frequency, and all communication should be directed to that station first. (3.38)

The purpose of any net is to provide a means for orderly communication within a group of stations. In a directed net, a net control station (NCS) organizes and controls all activity. Directed nets are the best format when there are many member stations. (1.45) Nets are either directed (formal) or undirected (informal or open).

A. DIRECTED NETS

A formal, or directed net has a single net control station (NCS) that manages its operation for a given session. The NCS operator calls the net to order at its designated start time, periodically calls for participants to join, listens for them to answer (or check in) keeps track of the roster of stations for that net session, and generally orchestrates the operation of the net.

A different station might be designated NCS for each net session. Overall operation and scheduling of NCS assignments and net sessions is managed by the net manager.

When a net covers a large geographic area, such as a continent or even the world, it becomes impractical for a single NCS to control. To cover a large-scale area a net must operate on a frequency where signals can propagate long distances. Ironically, the same ability for long distance propagation leads to a situation where stations that are too close in proximity cannot hear each other. In this case two or more NCSs spaced geographically from one another can effectively collaborate to maintain contact with all possible participants.

Ref: (https://en.wikipedia.org/wiki/Amateur_radio_net)

1. SCHEDULED NETS:

Scheduled nets have fixed times, frequencies and format. Scheduled nets include ARES, RACES, Club, Traffic and ARPSC nets.

a. EVENTS

Hams across the country regularly help charitable organizations with communications during fundraising events such as bike-a-thons, marathons, triathlons and walks. This activity can keep a repeater very busy, so it isn't compatible with other hams chatting on the same channel. During the event a repeater will remain closed to routine operation. Participation in these events is good training for emergency communications. They carry a lot of traffic and give you practice communicating on busy channels, and all the traffic means something. (3.38)

b. CLUB NETS

Amateur Radio Clubs routinely schedule Club Nets for members to discuss upcoming events, status of club contests, informal conversations, etc. Most of the time, they are run as an "informal" directed net in a relaxed atmosphere. These are great training grounds for Net Control Operators. They may be informational, training or just fellowship. Many clubs make check-ins to the club net part of participation requirements.

2. EMERGENCY NETS:

The second type of directed or formal nets is Emergency net. "Emergency" may be defined as an accident or other crisis where people and/or property are in distress. Emergencies are nearly always recognized and declared by agencies or authorities outside of the Amateur Radio Service. Amateur radio operators and net control stations do not have independent authority to declare an emergency. An Emergency Net is a group of stations who provide communication to one or more served agencies or to the public in an emergency. (1.45) Emergency nets may have different purposes and a given emergency may require one or more of these types of net. During a small operation, all functions may be combined into one net. ARES and RACES are examples of emergency nets. Tactical, Command, Resource and Information nets are types of emergency functions used during an Emergency Net.

c. ARES

Amateur Radio Emergency System (ARES) is the Amateur Radio Emergency Service, sponsored by ARRL. During any kind of emergency, ARES operators will

be using repeaters for local coordination and passing traffic. During these operations the active repeater will be closed to regular conversations. (2.38)

d. RACES

Radio Amateur Civil Emergence Service (RACES) is a parallel program under the control of federal, state and local emergency managers. In many areas, hams have dual membership in RACES and ARES programs, and they are integrated and share the same leadership. **“This Training Manual Applies to ARES, Only.”** (3.38)

B. SPECIAL NETS

* DISASTER, SPECIFIC SERVED AGENCIES: ARES/RACES may, from time to time, set up nets devoted to serving one or a small number of specific served agencies to accommodate the needs of those agencies. Liaison with other ARES/RACES or NTS nets is arranged by the local ARES Emergency Coordinators or RACES Officers. These nets also use these net protocols.

In addition, local ARES/RACES or other amateur groups may evoke special nets for other special purposes such as those listed below. Generally, they all use the standard net protocols, making only minor changes to suit the special purposes. These may use formal written traffic as well as tactical traffic as needed.

- * ADMINISTRATIVE, EMERGENCY COORDINATION Nets;
- * VOLUNTEER COORDINATION, MANPOWER, MAINTENANCE Nets;
- * SOCIAL AND SPECIAL PURPOSE NETS, such as swap nets, special interest groups, technical discussion nets, etc.;
- * PUBLIC SERVICE EVENT NETS, special nets, usually local in scope, to facilitate the safe operation of events such as parades, walkathons, bike rides, etc. These nets may use mostly tactical traffic, but in certain emergency situations generate formal written traffic to preserve a record of unusual events and better serve the organizing officials. (6.176)

C. UNDIRECTED NETS

The informal or undirected net is the last example of net format. An open net can be held during other normal frequency traffic. It is very informal; net participants may converse directly and there may or may not be a specified net control operator. If a net control is selected from the group, that NCS can set the level of formality with informal net guidelines.

III. THE NET CONTROL OPERATOR

A. DUTIES AND RESPONSIBILITIES

The Net Control Station (NCS) runs the net. This person controls the flow of messages according to priority and keeps track of where messages come from and where they go. The NCS also keeps a current list of which stations are where, their assignments and what capabilities they have. In a busy situation, the NCS may have one or more assistants to help with record keeping. (5.7)

The net control station calls the net at the scheduled time and frequency, checks in all stations, lists all traffic and other business for the net, assigns stations to receive traffic, instructs stations when and where to pass traffic, controls all transmissions on net frequency, maintains a list of all participating stations and their whereabouts, and checks stations out of the net. The net control will arbitrate the net's adaptation to unusual circumstances which might arise due to missing personnel or outlets, liaison needs, and emergencies of any sort.

Responsibilities of the NCS include knowing the proper routing for traffic, the areas served by the net, required and possible alternative liaisons, emergency plans for the net, directing how to make best use of station capabilities, frequencies and modes, asking questions of net stations when information is needed, and the ability to anticipate the needs and frustrations of stations waiting to check into the net or conduct business.

The net control station reports on each net session to the Net Manager or Net Coordinator (ARES) including information on which stations were present, liaison stations, traffic handled, session time, newcomers, and other information required by the Net Manager or Net Coordinator (ARES). Net reports are filed within a few days to keep current the information on net operations.

It is crucial that the NCS keep a record of all listed business and stations in the net and be able to update the record as traffic is dispatched, stations leave and return to the net, and business is cleared, and stations are excused. Notes should also be made regarding which stations can hear each other when propagation is poor. Prudent use of relays by the NCS can expedite what otherwise might be ineffectiveness. (6.178)

B. PREREQUISITES

Do you have what it takes to become a good NCS? Here is a short list of basic prerequisites:

- A clear speaking voice - someone who talks as though they have a mouth full of marbles won't do. Fluency in the language if you have a thick accent or cannot use the language precisely may make it difficult for others to understand you.
- The ability to handle mental and physical stress for long periods. Information and demands will be coming at you from all directions all at once, sometimes for hours on end. Can you handle it without losing your composure or your voice?
- The ability to listen and comprehend in a noisy and chaotic environment. Can you tune out all the distractions and focus only on the job at hand?
- Good hearing - If you have a hearing loss that makes it tough to understand human voices NCS or a voice net is not the job for you.
- The ability to write legibly what you hear as you receive it.
- The NCS needs a working knowledge of the Incident Command System (ICS); a management tool designed to allow multiple agencies to interact cooperatively under a single Incident Commander.
- A competent NCS must be decisive and have the maturity to make good judgement calls. The NCS needs a strong and self-assured management style and to know how to defuse tension and stress with an appropriate sense of humor. The NCS has constant concern for the safety of participants and releases for rest any net member who is becoming too tired to function effectively. (5.8)

C. CHARACTERISTICS

According to R. Bruce Winchell N8UT some additional characteristics that are desirable in a net control operator are:

- Good voice quality - with an air of authority, without sarcastic overtones or being overbearing.
- Knowledge of band characteristics.
- Knowledge of common equipment.
- Ability to absorb new terminology quickly.
- A strong team player and organizer.
- Generally, "professional" appearance.
- Willingness to take and carry out direct orders.
- Has a spouse who doesn't care how much time is spent "playing radio".
- Consistently demonstrates above average operating technique.
- Has general understanding of all MOU's with served agencies. (5.8)

D. PERSONALITY TYPE

The ARRL Operating Manual suggests some recommended traits in a NCS.

- Be the boss but don't be bossy.
- Be punctual.
- Know your territory.
- Take extra care to keep your antennas in good shape.
- Establish the net frequency by moving to avoid interference.
- Keep a log of every net session.
- Don't hamstring the net by waiting to move the traffic. (5.8)

E. BASIC COMMUNICATION SKILLS

Communication is affected by numerous factors including personal operating skills, method of communication, noise or interference, skills of net participants and adequate resources. The most important skills of communication are those possessed by the Net Control Station.

LISTENING

Listening is at least 50% of communication. Listening means avoiding unnecessary transmission. A wise ham once said, "A ham has two ears and one mouth. Therefore, he should listen twice as much as he talks." (5.8)

MICROPHONE TECHNIQUE

For optimum performance hold the mic close to your cheek and just off the side of your mouth. Talk across, rather than into, the microphone. This will reduce breath noises and "popping" sounds that can mask your speech. Speak in a normal clear calm voice. When using a repeater, be sure to leave a little extra time between pressing the push to talk switch and speaking. Pause a little longer than usual (suggestion of the author is 5 seconds) between transmission any time there is a possibility that other stations may need to check in or have emergency traffic to pass. (5.9)

BREVITY AND CLARITY

Unnecessary chatter on the part of the NCS wastes time, slows the effectiveness of the net and defeats the purpose of the net. Each communication should consist of only the information necessary to get the message across clearly and accurately. Extraneous information can distract the recipient and lead to misinterpretation and confusion.

Make your transmissions sound crisp and professional like the police and fire radio dispatchers and the air traffic controllers. Do not editorialize or engage in chitchat. The Net Control Station should refrain from non-essential conversation. Be sure to say exactly what you mean. **THINK BEFORE YOU SPEAK!** Use specific words to ensure that your precise meaning is conveyed. Communicate one complete subject at a time. If you are sending a list or passing traffic or making an announcement keep each item separate and finish with one before going on to another. (5.9)

PLAIN LANGUAGE

All messages, transmissions and directions should be in plain language. Use of CB words, "Q" signal on phone, 10 codes or other jargon should be avoided. Pro signs (pro words) are acceptable and should be used since they are procedural terms with specific meanings used to save time and ensure that everyone understands precisely what is being said. (5.9)

PHONETICS

Imagine being neck deep in net operations and emergency communications during a catastrophe and amid all the clamor and agony of that earthquake, tornado or hurricane you're trying to understand one op who insists on using his own brand of phonetics and another who uses the ITU standard half the time and whatever pops into my head the other half. (5.9)

Phonetic Alphabet. This practice has no place in emergency communication. Therefore, it should not be used anytime. Few hams realize that their everyday bad habits do not suddenly disappear when there is an emergency. What you do daily is what you will do unconsciously during an emergency when the adrenaline is surging. To do it right in an emergency you have to do it right daily! Professional communicators always use standardized phonetics to avoid confusion. (5.10)

F. BASIC TECHNIQUES

Successful Net Control Stations employ the following basic techniques:

- When asking for reports or soliciting traffic, listen carefully. It is easy to miss critical information when operating under the stress of an emergency.
- For efficiency note on your net worksheet as many calls as you can before you acknowledge any. Acknowledge all stations heard by call and then yield the frequency to any station reporting in with emergency traffic. Clear emergency traffic than priority messages and finally those with routine messages.
- Pair stations to pass traffic to another frequency whenever possible.
- Be as concise as possible. Use the fewest words that will completely say what you mean. This will minimize the need for repeating instructions and messages.

- Take frequent breaks. Turn over the net to your backup at least every two hours and rest. Do not listen to the net - rest!
- Control your voice. Be as calm as possible. Remember to speak with confidence and authority. A weak or indecisive demeanor undermines your effectiveness as NCS and consequently the productivity of the net. (2.14-15)

G. NET CONTROL STATION HINTS

- If a net is a scheduled net, start on time! Tardiness indicates poor management and doesn't inspire confidence in the NCS.
- Use a script (preamble, net instructions) when possible. This promotes efficient operation.
- Be friendly, yet in control. Speak slowly and clearly with an even tone. Speak with confidence even if you are inwardly nervous.
- Ask specific questions -- give specific instructions. This reduces the need for repeats and prevents confusion.
- Have pencil/paper ready and write down all calls.
- Read your radio owner's manual and know your radio before an emergency occurs.
- Know how to use your microphone. Articulate, don't slur, and speak close to your mike but talk across it not into it.
- When there is a double (i.e. when two or more stations transmit on the same frequency at the same time), listen to see if you can identify either station by call sign or text, then ask all stations to stand by while you solicit clarification or repeats from each station involved as needed.
- During check-ins recognize participants by name when possible to boost morale. Frequently identify the name and purpose of the net. Advise listeners of the sub-audible tones required.
- Don't be afraid to ask for assistance if you need it.
- If the net is an emergency operation, tell listeners where to go for other nets.
- You will make mistakes. Acknowledging them will earn the respect and support of the net members.
- Don't think on the air. If you need a moment to consider what is needed next, say something like "standby" and un-key your microphone. This adds a professional touch.
- Keep transmissions as short as possible. This is probably number one on the Top Ten List.
- Transmit only facts.
- Avoid becoming the source for general information about the event.
- Use Standard ITU phonetics.
- For voice nets, use plain English. "Q" signals are for CW.

- If the net has been quiet for more than 10 minutes, check on operator status. This keeps the net running more smoothly and insures that you know about equipment failures and missing operators as soon as possible. (5.11)

H. TACTICAL CALL SIGNS

Tactical call signs can identify the station's location or its purpose during an event, regardless of who is operating the station. The tactical call sign allows you to contact a station without knowing the call sign of the operator. It virtually eliminates confusion at shift changes or at stations with multiple operators. Tactical call signs should be used for all emergency nets and public service events if there are more than a few participants. Tactical call signs will usually provide some information about the location or the purpose. It is often helpful if the tactical call signs have a meaning that matches the way in which the served agency identifies the location or function.

When the station operator may change or during public service events, use tactical call signs on the net and enforce this rule with the other members of the net. Use of tactical call signs is perfectly legal if the FCC ID requirements are met, i.e. announcing your ID every 10 minutes when using the channel.

If you are in an ICS controlled event, the use of "Resource", "Tactical", "Command", "Main", "Control", "Shelter One", etc. is easy for everyone to remember. If a ham forgets to use his assigned tactical call, just gently remind him by leading. If he calls in using his call sign after you assigned him "Shelter One", just "Roger, Shelter One" from you will be reminder enough. (5.11)

I. HABITS TO AVOID

- Thinking aloud on the air: "Ahh, let me see. Hmmm. Well, you know, if..."
- On air arguments or criticism
- Rambling commentaries
- Shouting into your microphone
- "Cute" phonetics
- Identifying every time, you key or unkey the mic
- Using "10" codes, Q signals on phone or anything other than "plain language" 0
- Speaking without planning your message in advance
- Talking just to pass the time. (5.11-12)

J. PREPARATION

The Net Control Station is the key to the efficiency of the net. His/her performance also determines the "image" the net presents to the potential member. Therefore, it is important that all NCS operators strive to perform their duties in a careful and considerate manner. The following suggestions will help you obtain your goal.

- Be prepared. Begin the net with the proper logs, forms, pens, pencils and operating aids (such as FSD-218) on hand.
- Ask a family member to answer telephone calls or if you are home alone, you may want to take the phone off the hook.
- Turn down the volume on scanners, other radios, and electronic equipment.
- Make sure your antenna system allows you to radiate the best signal you can.
- Accuracy transcends speed. If you find yourself making errors, please slow down. You must be understood in addition to being heard. (5.12)

K. RECORDS

Every Net Control Station should have a format to be used during any net they direct. In most cases there needs to be at least two documents: an activity log and a message log. If there are any messages or instructions to or from the NCS then these also should be kept. The logs should be maintained until the conclusion of the exercise or the After-event Debriefing.

Following that, an incident summary or net report should be prepared and submitted to the official in charge of the event. The Net Manager or Net Coordinator (ARES) should maintain the original logs in their files for one year. The forms should include at minimum:

Header - Name of Net, Date, Time of Start, Time of End, who is NCS, who is Alternate NCS.

Body - List and acknowledgement of all stations checking in by Name, Call, Location and Tactical Call Sign if used. Notes and comments should also be included when appropriate.

IV. NET CONTROL STATION (NCS)

A. BEING IN CHARGE

Some people are not comfortable being in charge, and others seek out opportunities to be in charge. Some are natural leaders and others must learn leadership skills. Net Control Operators are perceived as leaders. Assuming a leadership role means that you

are also expected to assume responsibility. When you are accepted as a leader, you are given a certain amount of authority by those who have accepted you. Use the given authority wisely and accept full responsibility for your actions and then trust will be earned. The greater the level of trust that is earned, the more authority and responsibility you are granted. The longer you produce positive results within this balanced framework, the more you earn respect.

Be sure you want to lead for the right reasons. There is nothing grand or glamorous about being a Net Control Operator. It takes work to acquire the skills that make you appear professional. It's the kind of work that can wind up being a lot of challenging and rewarding fun, if ... you know what you are doing. (4.14-15)

B. BASICS

1. CONTINGENCY PLANS

"Those who fail to plan, plan to fail." Be sure to have reliable redundancy of equipment and back up people available whenever possible. As NCS it is up to you to plan for your backup, have backup equipment available for your use. (2.28)

2. BACKUP OR ALTERNATE NET CONTROL STATION

See Section V.

3. HANDOVERS

During every event that runs more than two hours, you will need to turn over operation of one or more 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 facilitate this change at least every two hours, the new operator will need:

- List or note of outstanding messages to/from the location
- Log of traffic to/from locations
- Status of open queries
- Local and remote contacts for the location (served agency and others as needed)
- Roster of net stations and their status
- Any other information the outgoing operator feels necessary
- Whenever possible both operators should handle the location for at least ten minutes to foster a smooth transition. (2.29)

C. DISCIPLINE

The level of net discipline is yours to set. You must decide how tightly you want the rules followed. Describe exactly what you want in your net instructions. Most of the

time, the net participants will sense just how much urgency there is by how you are reacting. If you push up the pace and become more clipped or terse in your responses, they will follow your lead. If you are laid-back and relaxed, they will follow.

You are going to oversee a frequency. Your first duty is to be sure that frequency is used in accordance with FCC Rules. Proper ID at the ten-minute mark can be difficult to remember in the heated activity of a net but you and your participants must do it. If you can grab 30 seconds, hold a round-table ID session or an ID roll call in which they answer you with their call sign. They will look forward to it and stay on frequency. (5.16)

1. PREAMBLE

Many groups open and close their nets with a standard script. The text of the script lets listeners know the purpose and format of the net. Using a standard script also ensures that the net will be run in a similar format each time it operates, regardless of who is acting as the NCS. (1.72)

2. INSTRUCTIONS

When you go to a directed format, you should be prepared to give net instructions or directives. Be specific. Practice writing exactly what information you want passed in your net and how you want it passed. Listen to other net controllers and pick up little things that they do. Net instructions are very important to you and to the participants. Whatever your instructions are, WRITE THEM DOWN! You need to be able to refer to them for updates, as a personal reminder as to what you last told them to do, and for repeats of instructions as needed. (5.16-17)

3. NET ANNOUNCEMENTS

Good NCO's use net announcements regularly. Net announcements do not have anything to do with Net Instructions. They are merely a way of keeping the net participants informed of events and operational changes. Net announcements keep them reminded, interested, awake, and on frequency. Some of the things you can put into your announcements are:

- Safety reminders
- Frequencies of Sub-Nets and Liaison Stations
- Current events regarding the emergency. Be careful not to air exact locations of casualty occurrences or the known names of casualties
- Short term weather forecasts
- Encouragement and praise to the poor guys working in other than normal conditions
- Shift Schedules, Eating Schedules and Food Source Locations, Short break

- relief rotations
- Locations of restrooms available
- Travel/transportation hazards
- Safe/Approved travel route
- Termination/Activation of emergency sub-activities
- Humorous happenings
- Equipment/battery check
- ID sessions
- Relays of personal messages from family to participant

Boredom sets in with a vengeance in many nets, and in a relative short time. Use your net announcements to keep it interesting. If your people don't have anything to listen to on the net, they will wander off frequency looking for something of interest or shut their radios off to conserve power. (5.19-20)

4. ORDER OF CALLS

"Emergency" calls have the highest priority of all calls you may receive. "Priority" calls have the second highest. Whenever you hear a call on the net that begins with the words "Priority" or "Emergency", you must stop the net cold in its tracks and give your undivided attention to that call. No routine transmissions are allowed until you announce that normal net activity is to resume. Say something like: "Please hold all routine traffic until emergency traffic is cleared." The "Emergency" call is the only call that is authorized to interrupt the handling of a "Priority" call. If by some weird circumstance you should ever be involved in handling a Priority call and you should receive an incoming Emergency call, tell the Priority call to stand by and handle the Emergency call immediately. Then go back and finish up with the Priority call.

Here is the difference: "Emergency" calls mean that if the call is not answered immediately, there is a definite, severe and "RIGHT NOW" condition or hazard that will result in death or serious injury to a person or people.

"Priority" calls mean that if the call is not answered quickly, a possible and probable hazard or condition exists, or is developing, that could, might, or may result in loss of life, injury to people, or severe damage to property. (5.22)

D. THE CHALLENGE

You are going to have the usual B0ZO in your net. Count on it! Look forward to it! It's a challenge to your skills! Lead your B0ZO back into proper procedure by example and gentle reminder. Conducting on-the-job training is part of your job. A good, non-sarcastic sense of humor is invaluable. If you did a good job on your net instructions, you can always repeat an applicable part of the net instructions as a general reminder to the

entire net. Do not address that reading of the instructions directly at B0ZO. Avoid direct confrontation with anyone.

NEVER dress anyone down on the air for a rules infraction. If the problem persists, find a way to get B0ZO off the air. Have him come in and log or be a courier for you ... as a special favor. The rest of the net will be rolling in the aisles. (5.16)

1. THE UNTRAINED OBSERVER

The untrained observer can be a lot of fun. He/she will test your patience, communications skills and teaching abilities to the max. The untrained observer will, most commonly, be found somewhere in weather net. He/she really doesn't know that they are supposed to know exactly where they are, what they are seeing, what they are supposed to report, how to report it, how a net works, that the rubber duck on their HT is just a dummy load on a stick, or that their spare battery pack needs to be charged occasionally whether it gets used or not.

Be gentle with them. Teach them by prefacing all questions and comments with something like, "KZ8ABC, thanks for your input ... on this net we usually ... OK?" and proceed to teach them without them knowing it. If things are going hot and heavy in the net, tell the station to stand by and go back to him when you get a little break. If you are clever and have the time, you can entertain and re-educate the entire net regarding proper operating procedures without hurting the 'new kid on the block'. (5.20-21)

2. THE IRATE PARTICIPANT

This is one of the toughest problems an NCS will face. If handled incorrectly, it can polarize net participants. Morale will erode, and the effectiveness of your net will suffer. 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:

- Slow up. Don't respond instantly. Take a deep breath.
- Perform a quick review of what you know about the troubled person.
- When possible take the discussion off line. "John, let's see if we can solve this on the phone. Please call me at 555-1234." This allows the net to continue undisturbed.
- Acknowledge the problem. Give in to the "Problem" whether the subject is right or wrong! Once you agree that there is a problem, the "fight" is gone.
- Empathize with them! Tell them that you can understand how they can feel and that.
- Were the situation reversed, you would probably feel the same way.

- Ask them to suggest a simple yet reasonable solution. Listen intently! This is the point where they will reveal the real problem. Somewhere in their suggestion, they will tell you what they really want from you.
- 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.
- 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 won the battle. The rest of the net will respect what you did, and morale will remain intact. (2.30)

3. INTERFERENCE

Most people that interfere with net operations are individuals who 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.

For more protracted cases, plan on having alternate frequencies announced at the pre-event briefing. Should the interference become intolerable, move to an alternate

frequency. When you move to another frequency, do so under a pre-announced set of conditions at the briefing and without saying anything on the primary frequency. Another successful method involves the use of your local "fox hunters" to track down the offending station. This will need to be a coordinated effort that is not announced on the net frequency. (2.31)

4. SUBNETS

A net can rapidly expand into too many functions for one NCS to handle. The worst and busiest time for a NCS is usually right at the beginning of an event. When the action begins to get out of hand, you should consider setting up a Sub-Net to handle some of the traffic. When you put out the call for a volunteer to act as a Sub-Net NCS, be prepared to give that operator specific net instructions. This way, he knows exactly what you want him to handle.

One of the first sub-nets you should consider is a Resource net. This net will handle the check-ins/outs, equipment list, duty assignments, shift relief, and

transportation problems for you. When you get a call from an agency requesting two hams with HT's and extra batteries, you call the Resource NCS and he will handle it. He will report to you when they have been dispatched and when they arrive. When you receive a call for five teams of five individuals each to help with damage assessment, call the Resource net NCS and have him set up a Tactical Net. The Resource net gets the people, equipment and transportation and has those people report to the new Tactical NCS. Tactical NCS will report only priority messages to you. If he needs additional people or equipment, he calls the Resource net.

Let's say that the Resource NCS is now feeling that he is about to lose control. Transportation is getting to be a major bottleneck for him. He can check with you, (you have now become the Command, or Main, NCS), and tell you that he wants to start his own Sub-Net to handle transportation. You say to go ahead. He then gets a volunteer to be NCS for the new Transportation Net. The Transportation NCS will report directly to the Resource net NCS. When the Transportation net is all set up, the Resource NCS informs the Main NCS. Main NCS puts out a general announcement that there is now a

Transportation Net. Now, if anyone, anywhere in your network, needs transportation, they call the Transportation NCS. (5.23-24)

E. THE INCIDENT COMMAND CENTER

If you understand the Sub-Net process, you now understand the basics of the Incident Command System. There is no mystery about the ICS. The only difference between what was just described, and the ICS is that the ICS has automatic overload prevention.

The ICS has a defined chain of command and authority and is designed to automatically split big and growing tasks into smaller, specialized tasks before the whole thing gets too big for any one person or group to control. It uses something called a "span of control" to trigger the automatic split. As soon as a leader is faced with more than 5 to 7 people or agencies reporting to him, the system splits and some of those people or agencies begin reporting to someone else with the authority to handle their problems. Police and Fire Departments are heavy users of the ICS. The Red Cross has its own version of the ICS.

Hams get confused when a served agency authority suddenly tells them to begin reporting to what appears to be another agency or division of an agency. Just do it! The ICS has split, and you have a new boss. No big deal! Just inform your own NCS of what is going on (he probably already knows) and keep doing what you have been doing. (5.24)

V. ALTERNATE NET CONTROL STATION (ANC)

The Alternate Net Control function is optional, is used primarily on large Local or Section Nets, and is called for each session at the discretion of the Net Manager or Net Coordinator (ARES). This station should monitor the net operation, record all the same information that the net control does, and be prepared to step in immediately and assume the net control duties should it become necessary for any reason. Net Managers or Net Coordinators (ARES) have been known to ask NCS stations to pretend to have a transmitter failure during a net to check the ability of the ANC or other stations to pick up the NCS duties.

If the net format does not call for an ANC, any station on the net should be ready to step in and perform the duties of NCS if that station leaves the air or fails to show up.

The ANC should be called upon for relay help under difficult radio conditions. The NCS may ask additional stations to be assistant net controls for such purposes. (6.179)

Here are some basic dos and don'ts for a backup or Alternate Net Control.

- Remember that although you are in control of the net, you are not "God". Treat members with respect and accept suggestions from other experienced members.
- If you are taking over an existing net, try to run it much as the previous NCS did.
- Always follow a script if one is provided. Write your own if necessary.
Handle messages in order of precedence: Emergency, Priority, and Welfare.
- Speak clearly and in a normal tone of voice. Use good mic technique.
- Make all instructions clear and concise using as few words as possible.
- Keep notes as you go along. Don't let your log fall behind.
- Write down which operators are at which locations. When one leaves or is replaced, update your notes.
- Ask stations to pass messages off the main net frequency whenever possible. (1.72-73)

VI. PRACTICE

The adage that practice makes perfect is never truer. The shortcut to be a good NCS is Practice, Practice, Practice.

- Be willing to learn.
- Accept constructive criticism politely.
- Contact your District Emergency Coordinator to volunteer your NCS services.
- Contact the person in charge of your local traffic net to volunteer.
- Contact your local Amateur Radio club to see if they have a net. If so, volunteer for NCS duties.

- Look for the group that handles public service events in your local area. This group may not necessarily be the ARES group.
- Train with the best NCS you can find. This person will be able to show you subtle techniques.
- Work as NCS as often as you can.
- Monitor other nets and learn from other's examples. (2.31)

A. COPYING CALL SIGNS

One of the greatest fears for a new trainee to overcome is that of copying that flurry of check-ins at the beginning of a net. Ear-to-hand coordination is difficult to master for some people. As NCO, you can ask for a slow pace and lots of space between check-ins.

Another way to practice is to listen to all the nets that you can. Copy the call signs as best you can as they come in to the net control. Don't worry about getting all of them. Get what you can. Just keep going. If you have access to an HF receiver, some of the hottest, fastest, nastiest check-ins that you will ever hear are on the various traders' nets. When you can copy ten or fifteen call signs out of a "Big Guns" check-in in 15 seconds, you are almost a master! The first time you hear one, it's guaranteed to blow your mind!

Another source of practice is to tune into a contest on the weekends. Listen to how an experienced contesteer handles a pile-up. He will copy as many stations as he can get down out of a burst of calls that fly at him, he will say "I've got a group" and then quickly list, verify and work those calls in order. If he missed one, so what?

They will try again, and he will likely get them on the next burst of calls. Copy right along with him. Get all you can. (5.25)

B. WRITING IT DOWN

When you are NCS, you are always writing something down. You are taking an NTS message, writing your next announcement, making notes, logging net activities, taking check-ins/outs, making lists, etc. While you are listening to any net, practice taking notes of what is going on. Your own brand of shorthand will emerge. This will help you immensely when it comes time for you to take on your first NCS assignment. (5.26)

C. LISTENING

Practice listening. Sounds kind of dumb? Bad signals abound in amateur radio. Even on FM repeaters, the rubber duck signal and fringe area propagation noise are abundant. You need to train your hearing to sort out the message from the noise. Try detuning

your 2-meter rig by moving 5 Hz off frequency and listen to the traffic on your favorite repeater. Try to make sense out of that "bad" signal. You can do it!

Sit and listen for periods of time to any conversation on HF during a distant weather disturbance. After a while, with concentration, you hear right through the noise like it isn't even there. With some practice, you can turn this newfound ability on and off at will; and with more practice it becomes automatic. You can suddenly hear those marginal stations on the repeater. Your ears only get part of what is said ... your brain will fill in the blanks. (5.26)

C. RUNNING NETS

Run the local rag chew net, ARPSC net, weather standby net, the ARES/RACES net and every other net you can weasel your way into running. It's all good practice. If a NCS training program is working well in your area, there should never be a need to beg for a net control for any net. If it's working right, you will have to stand in line to run a net.

Tape-record any net that you run. This is one of the best ways to test your developing skills. You will be your own worst critic. Keep the recordings for a few months. By comparing your performance of a few months ago with what you are doing now, you can really see how you are progressing and ... they will become great sources of entertainment and teaching tools for you in the future. (5,27)

C. PASSING NTS MESSAGES

A net control operator must be able to pass NTS format messages! The Radiogram form should be a "picture" in your mind. The ability to take, pass and initiate NTS messages should be as automatic and natural as eating. Pass them on your local rag-chew nets. Pass or initiate messages everywhere until it is second nature. Send your mother an "I love you". Dig out your address book! Send your friends messages across the country! It doesn't matter how much of a pest you think you are. Do it until you have it down cold!

You probably won't get any negative comments. Non-hams think these messages are neat. It really is, if you stop and think about it. How would you like to get a phone call from a stranger with a "happy birthday" message from somebody you haven't heard from in years? "By WHAT? . . . by ham radio? I can send a FREE reply?" Instant ego-trips. Guess what they are going to talk about all day! Guess what they might check out for a hobby! (5.27)

APPENDIX A – PART 97 SUBPART E OF THE FCC RULES.**"Subpart E - Providing Emergency Communications**

97.407 (c) A RACES station may only communicate with:

1. Another RACES station;
2. An amateur station registered with a civil defense organization;
3. A United States Government station authorized by the responsible agency to communicate with RACES stations;
4. A station in a service regulated by the FCC whenever such communication is authorized by the FCC.

(d) An amateur station registered with a civil defense organization may only communicate with:

1. A RACES station licensed to another civil defense organization with which the amateur station is registered;
2. The following stations upon authorization of the responsible civil defense official for the organization with which the amateur station is registered:
 - i. A RACES station licensed to another civil defense organization;
 - ii. An amateur station registered with the same or another civil defense organization;
 - iii. A United States Government station authorized by the responsible agency to communicate with RACES stations; and
 - iv. A station in a service regulated by the FCC whenever such communication is authorized by the FCC.

(e) All communications transmitted in RACES must be specifically authorized by the civil defense organization for the area served. Only civil defense communications of the following types may be transmitted:

1. Messages concerning impending or actual conditions jeopardizing the public safety, or affecting the national defense or security during periods of local, regional, or national civil emergencies;
2. Messages directly concerning the immediate safety of life of individuals, the immediate protection of property, maintenance of law and order, alleviation of human suffering and need, and the combating of armed attack or sabotage;
3. Messages directly concerning the accumulation and dissemination of public information or instructions to the civilian population essential to the activities of the civil defense organization or other authorized governmental or relief agencies; and
4. Communications for RACES training drills and tests necessary to ensure the
5. establishment and maintenance of orderly and efficient operation of the RACES as ordered by the responsible civil defense organizations served. Such drills and tests may not exceed a total time of 1 hour per week. With the approval of the chief officer for

emergency planning the applicable State, Commonwealth, District or territory, however, such tests and drills may be conducted for a period not to exceed 72 hours no more than twice in any calendar year."

APPENDIX B – NET CONTROL STATION SCENARIOS

The following are actual occurrences. Please indicate what you perceive is happening, what you would do, what you would say and your reasoning.

1. You are participating in an ARES club net. The NCS stops transmitting in the middle of a sentence. Nothing is heard for 30 seconds.
2. You are NCS for an ARES net taking check-ins and you hear "... static ... repeater keying ... static".
3. During your reciting the call signs of stations checking into your ARPSC net, someone whistles "Yankee Doodle" each time you unkey.
4. While you are listing stations, you hear one voice saying, "This is . . ." and another voice immediately following saying "November 8 Uniform Tango" on your club net.
5. During a Traffic net you have requested check-ins with traffic and traffic only, a station says "I want to have a short informal with K8PQ if he checks in. Oh, by the way, I am K5 RFN."
6. You are about to read the closing statements on a SATERN net and a station says, "I think this is a stupid time to have this net. I am trying to have dinner now. Why can't you change the time? My wife is complaining. K4PNM."
7. While you are listing traffic on a local traffic net a station volunteers to pick up a radiogram for a city which is outside of his phone exchange.
8. During check-ins for a RACES weekly net a station says, "I am Kookie 5 Bring My Comb."
9. You are reading the preamble for your net. After the second paragraph when you unkey you do not hear the repeater. You hit the mic button again and nothing is heard.
10. After all the traffic is passed and you have asked for announcements, a station says, "I want to let everyone know I am doing odd jobs on the side. Can I give out my phone number now?"
11. You have requested any mobile or portable stations to check-in and a station replies "the handle here is Rockin Robin and I am the rocking chair on I-75 and I want to let you know I'm here."
12. You have requested stations in the south section of the county check-in to the EOC Net. A station response with "This is WD9RR, QNN, and I QSL and QRU."
13. You have listed traffic for Novi and Farmington on traffic net. A station says "N7PU I will take the Farmington, but I don't think that I can take the Novi because it would be long distance for me and I don't want to pay the
14. charges. I would like to take the traffic for Novi, but Farmington is closer, and it doesn't cost me anything extra to call Farmington".

15. You have asked for questions or announcements and a station says "I have a question for Bob K3OMP. Bob, are you on frequency? I want to know if you are going to the
16. meeting Friday?"
17. A station checks into your ARES net with very loud music playing in the background.
18. A station reports "Net Control your signal is breaking up and you are not making the repeater consistently. Should we go to simplex?"
19. You are running a club net and a station checks in saying "I just got my call sign and I don't know what to do with it."
20. During a busy traffic net a station checks in saying, "Here is M2DUM."

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International Telecommunication Union Phonetic Alphabet

A--Alfa	N--November
B--Bravo	O--Oscar
C--Charlie	P--Papa
D--Delta	Q--Quebec
E--Echo	R--Romeo
F--Foxtrot	S--Sierra
G--Golf	T--Tango
H--Hotel	U--Uniform
I--India	V--Victor
J--Juliett	W--Whiskey
K--Kilo	X--X-ray
L--Lima	Y--Yankee
M--Mike	Z--Zulu

Johnson City-Washington County ARES Net Script
First Tuesday of each month on the 147.270 repeater 88.5 tone

At 8:25pm local time:

Announce: "The Johnson City-Washington County ARES Net will be held at 8:30pm local time. Stations listening are invited to check into the net. Any stations wishing to make a call on this repeater should do so now. This is (Your Call Sign) standing by."

At 8:30 Local Time:

"Calling the Johnson City-Washington Co. ARES NET, this is (Your Call), my name is (Your Name), Net Control for this session of the Net. Any station with emergency traffic may break into the Net, informing Net Control that they have emergency traffic."

"This is a directed NET; all contacts will be made through NET Control. This NET meets the first Tuesday of each month for relaying ARES information to members and interested operators and provides training in net control operations."

Net control will call for check-ins in the following order:

- **ARES District 9 Staff Members**
- **JC-WC ARES Staff Members**
- **JC-WC ARES Members**
- **ARES Members from other counties**
- **General check-ins from non-ARES Members**

"When checking into the NET, please give your call sign phonetically, your first name and location. If you have traffic or an announcement for the NET, please state so on check in. Announcement are limited to ARES related information only. If you will be IN/OUT please state so on check in."

"Is there a Washington Co ARES station available to act as alternate NET Control this evening?"

"Net Control will now take check ins from:

- **ARES District 9 Staff Members**
- **JC-WC ARES Staff Members**
- **JC-WC ARES Members**
- **ARES Staff and Members from other counties**
- **General check-ins from non-ARES Members**

Johnson City-Washington County ARES Net Script
First Tuesday of each month on the 147.270 repeater 88.5 tone

When check ins are completed for each category:

“ Net Control acknowledges the following stations for check in.” Run down the list of check ins in the order they were logged.

ANNOUNCEMENTS:

“ We will now proceed with announcements.” Give any announcements related to ARES training, meetings or ARES related business only.

FINAL CALL FOR LATE CHECK INS

WHEN COMPLETE, SECURE THE NET:

“This is (Your Call), Net Control for this session of the Johnson City-Washington County ARES NET. Our thanks to all who check in and participated in tonight’s net.”

“We thank K4LNS for the use of the 147.270 repeater.”

“ The NET is secured at _____hrs. local time and returning the K4LNS repeater back to normal amateur use.”

“ 73 and good evening, this is (Your Call).

JC-Washington County ARES® NET LOG SHEET

Net Start Time:	Net End Time:	Date:	NCS:	ANC:
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ARES District 9 Staff Members

	Call Sign	Name	Location	IN/OUT
1				
2				
3				
4				
5				

JC-WC ARES Staff Members

	Call Sign	Name	Location	IN/OUT
1				
2				
3				
4				
5				

JC-WC ARES Members

	Call Sign	Name	Location	IN/OUT
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

ARES Staff and Members from other counties

	Call Sign	Name	Location	IN/OUT
1				
2				
3				
4				
5				

General check-ins from non-ARES Members

	Call Sign	Name	Location	IN/OUT
1				
2				
3				
4				
5				