NET CONTROL OPERATOR
Manual

Rev. 2025

Contents

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DOUGLAS COUNTY ARES NET CONTROL OPERATOR MANUAL

PURPOSE: *The purpose of this training manual is to present basic information and procedures for use in amateur radio Net Operations specifically for training those whom wish to become a Net Control Station. An effective Net requires continuity in Net Operations. We wish to thank R. Bruce Winchell N8UT for the structure of this manual.*

CHAPTER ONE: NET FORMATS

*The word **"Net"** is short for **"Network"**.* Networks can be defined as groups of equipment, individuals, and/or agencies acting together to increase efficiency and effectiveness through shared information and resources. The word *"Network"* can be further broken down into its two components. *"Net"* implies a capture and holding effect. *"Work"* implies that something productive is to be accomplished. Ham radio operators and Nets in emergency situations will capture, record, hold, and distribute information so that others may work (produce results) more effectively.

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 a large number of member stations. Nets are either directed *(formal)* or undirected *(informal or open)*.

DIRECTED NETS
A **Directed Net** is formal, has a set of rules or Net directives, all communications must go through Net control. It controls the frequency with Net related traffic only, and has a specified person in charge, the Net Control Station (NCS). The NCS will issue specific instructions on how he/she wants the Net to run. A directed Net is one in which it is necessary to obtain permission from the NCS before transmitting to other stations in the Net.

SCHEDULED NETS
Directed Nets are divided into two types: **Scheduled** and **Emergency Nets**. Scheduled Nets have fixed times, frequencies and format. Scheduled Nets include ARES, RACES, Club, Traffic and ARPSC Nets.

ARES NETS
Amateur Radio Emergency System (ARES) Nets are open to any licensed amateur radio operators. They may be originated by club or public service events. They may also serve agencies like the Red Cross, Salvation Army or any other non-governmental agencies.

ARPSC NETS
Amateur Radio Public Service Corps Nets can be held at the ARRL Section, District, and Local levels. These are information Nets. Participants are informed of ARRL policies, news, events, and appointments. These Nets represent an excellent training opportunity and should be held weekly. These are always directed Nets.

CLUB NETS

The **Club Net** is another excellent place to train a new Net Control Operator. Most of the time, they are run as a 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.

TRAFFIC NETS

Traffic Net handles formal written messages in a specified format. The Nets operated by the *National Traffic System (NTS)* are an excellent example of traffic Nets.

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 <u>do not have independent authority to declare an emergency</u>. An Emergency Net is a group of stations who provide communication to one or more served agencies or to the general public in an emergency. 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. *SkyWarn* and *RACES* are examples of emergency Nets. Tactical, Command, Resource and Information Nets are types of emergency functions used during an Emergency Net.

SkyWarn Nets

It is essential that all Net Control Operators be aware of and fully familiar with the **SkyWarn** activation process for their area and be fully trained by attending the NWS or Emergency Management training sessions for summer and winter weather. Weather reports on severe weather Nets are limited to critical severe weather observations unless specifically requested by the Net control operator. The procedure for Alerting the Weather Net and a list of what to report and how to report using the Time, Event, Location (T E L) method may be found in **Appendix C.**

SkyWarn Nets are usually run under the ARES flag. They are nearly always directed Nets, with varying degrees of Net discipline, held on local repeaters, FM simplex, and HF frequencies. The level of formality is set by the NCS. ARES NCS operators should be qualified and should be familiar with the Incident Command Structure (ICS).

RACES Nets. – Note Douglas County does not participate in RACES.

RACES (Radio Amateur Civil Emergency Service) Nets have specific requirements for initiation, and a discussion can be found in the Emergency Nets section. Weekly RACES training Nets may be scheduled or initiated by the RO. Scheduled RACES Nets may be used to conduct monthly Emergency Operations Center (EOC) Nets.

RACES (Radio Amateur Civil Emergency Service) Nets are a bit different.

1. They are federally sponsored by FEMA and can only be activated by a governmental

official. This appointed or elected official can be at a local, State, or Federal level. It is usually a County Emergency Manager, Sheriff or the State Police.

2. A RACES Net, under current law, can only have RACES membership. An operator must be RACES qualified in order to participate. To become qualified, an operator must take a simple, short course of instruction available from FEMA. The text for the course and the open book test is now available on the Internet from FEMA.

3. As a rule of thumb during a RACES Net you cannot communicate with a non-RACES station. This is a topic of considerable debate. Some individuals and groups claim an interpretation of the rules that allows communication with non-RACES stations. This is predicated on permission being granted by a government official for such communications. (See Appendix A for Part 97 subpart E: Providing Emergency Communications)

4. These are always directed Nets requiring tight Net discipline.

5. The Net Control Station is nearly always located in a pre-designated Emergency Operations Center (EOC). Expect to deal with a number of agencies and manage communications liaisons with most of them. NCS operators will normally be reporting directly to the EC/RO.

6. RACES NCS operators and Net participants should be familiar with the Incident Command System (ICS).

7. Participants in RACES activities are covered by their State's Disability/Workman's Compensation Structure. Recent changes in Federal law also give participants increased, but limited, liability protection against the possibility of being sued for actions they might take as emergency volunteers.

8. A RACES training Net is currently limited by law to a minimum of one hour of airtime per month. A RACES training Net may be called or initiated by the RO.

Resource Nets
Big events are most often run using the Incident Command System (ICS). The ICS uses a different form of a standby Net. It is called **Resource Net**. These Nets are always directed. The Resource Net Control Station makes assignments, gives instructions, and directs the flow of available resources. The Resource NCS receives requests for transportation, equipment, supplies and personnel from a front-line Tactical Net, the Command Net, and outside served agencies. A Resource Net may be needed to acquire volunteers and handle assignments. Resource Nets accept check-ins from arriving volunteers who are then directed to contact an appropriate station or to proceed to a specific location.

Tactical Nets
Tactical Nets are used for real-time coordination of activities related to the emergency. This is a fast moving, often less formal operation. Tactical Nets are used after an event has occurred or during and after a lengthy event. They are found on the *"front lines"* of response, disaster assessment, recovery and Search and Rescue operations. There may be several of these Nets

running at the same time; on different frequencies and from widespread locations all reporting to a *"master"* Tactical NCS at the EOC.

Command Nets

Command Nets are encountered in all large disasters or emergencies. This is a communications Net established to keep the top *"executive board"* of emergency officials informed. They are also used by fire departments and police agencies during smaller, local events. They are run in accordance with the Incident Command System (ICS). It would be rare for amateurs to be involved directly in one of these Nets, but it is common for amateur Nets and sub-Nets to be reporting certain information to a command Net. For now, just be aware that they exist and that they are the guys who are really running the show.

Information Nets

An **Information Net** is usually an open Net used to collect or share information on a developing situation without overly restricting the use of the frequency by others.

The operation of an Information Net also serves as notice to all stations that a more formal Net may be activated at any moment if conditions warrant. A good example is the SkyWarn Weather Net activated during a severe storm watch.

Undirected Nets

The Informal or **Undirected Net** is the last example of Net format. An open Net can be held amid 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, NCS can set the level of formality with informal Net guidelines.

CHAPTER TWO: THE NET CONTROL OPERATOR

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.

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 to 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.

   A. **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 *(Memorandum of Understanding)* with served agencies

B.   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.

C.   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."*

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. <u>Speak in a normal clear calm voice</u>. When using a repeater, be sure to leave a little extra time between pressing the push to talk switch and speaking. <u>Pause a little longer than usual</u> (suggestion of the author is 5 seconds) **between each transmission any time there is a possibility that other stations may need to check in or have emergency traffic to pass.**

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.

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.

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.

Some hams like to make up their own Phonetics. **Nothing is more frustrating to a Net Control Station than having a ham give his call sign in cutesy words instead of the ITU Phonetics 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.

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 then 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 <u>least every two hours</u> 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.

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**. But not to slow to cause delay. Speak with confidence even if you are 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 ensures that you know about equipment failures and missing operators as soon as possible.

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. Id'ing 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.

HABITS TO AVOID

- Thinking aloud On-the-Air: *"Ahhh, let me see. Hmmm. Well, you know, if…"*

- On-the-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"**

- Speaking without planning your message in advance

- Talking just to pass the time.

STATION LOCATION

Net control should always be located at a station that has a strong, commanding signal. The same is true of choosing a repeater to use. A NCS that can't be heard is worthless. If you have taken temporary control of the Net that is just beginning, do not transfer NCS duties to a weak or marginal station. **If faced with a choice of a weak station manned by an experienced NCO or a strong station manned by an inexperienced NCO ... go with the strong station and try to get an experienced operator to a strong station.**

The NCS should have the capabilities to communicate with served agencies. This could be by telephone, radio, liaison station, courier, CB, or whatever. Get your links set up as quickly as possible. If possible, the NCS should have alternative, back-up power and a back-up rig. During short-term, violent events, an alternate NCS should be either pre-arranged or set up immediately to run parallel recording operations during the Net. If the primary NCS should experience failure, the secondary would automatically assume Net duties.

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 ICS-213 Form) 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.

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 NCS should maintain the original logs in their files for one year. An Emergency Net Control Station will submit original logs to the Douglas County Emergency Manager. The forms should include:

Header - Name of Net, date, time of start, time of end, who is NCS, who is alternate NCS.

Body - 1) list and acknowledgement of all stations checking in by name, call, location and

tactical call sign if used including a place for notes such as relay stations, liaison stations, mobile or portable stations.

2) list of traffic or messages – sending stations, type of traffic, listing of traffic, receiving station and check that traffic or message is passed.

3) place to designate who received incident summary or Net report, date and time.

CHAPTER THREE: NET CONTROL

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.

BASICS

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.

BACKUP or ALTERNATE NCS
A Backup or Alternate NCS needs to be readily available should there be an equipment failure at the primary NCS or if the primary operator needs a break. Whenever possible, an offsite backup or alternate NCS should be maintained. Equipment can fail even during less demanding operations.

Here are some basic dos and don'ts for a backup or alternate NCS.

- 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.

HANDOVERS

While 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.

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 be in charge of 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.

NET MEMBERS

In order for any communications circuit to operate efficiently, it is necessary to maintain a measure of circuit discipline. This is the job of the NCS. At all times the NCS is the boss of the Net. His requests should be complied with immediately unless one has reason to believe they are incorrect. One should never transmit unless invited to by NCS. Of similar importance are the following rules applicable to all radiotelephone Nets:

a. NET GUIDELINES

- Avoid unnecessary transmissions and phrases. Keep all transmissions short, succinct and to the point.

- Always determine that the Net frequency is free before transmitting.

- Be prepared to move to alternate frequencies to clear traffic.

- Use the correct message forms and procedures.

- Comply immediately with the instructions of NCS.

- Use the correct ITU Phonetic alphabet.

- Never leave the circuit without first notifying NCS.

- Do not transmit without the permission of NCS.

b. EXPECTATIONS

You can reasonably expect trained Net members to:

- Report to the NCS promptly as they become available.

- Ask for clearance from NCS before using the frequency.

- Answer promptly when called by NCS

- Use tactical call signs when necessary

- Follow established Net protocol

Expectations aside, you must keep in mind that you are dealing with volunteers. You cannot order their compliance, you can only ask for their cooperation. Probably the best way to enlist the cooperation of the Net is to explain what you are doing in a calm and straightforward manner. This may involve supplying a small amount of real time training. **The one thing you must never do is criticize someone On-the-Air.** It is better to lead by example; it produces better results.

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.

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 to pass 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.

NET INSTRUCTIONS IN WEATHER NETS

Net instructions are extremely important in weather Nets. You must be very firm and specific about what you want reported. If you don't, you will get *"sunshine, flash-to-boom, and dewdrop"* reports that don't mean anything to anyone. If you don't explain at the outset, that this is a **thunderstorm watch** . . . we expect clouds, rain, thunder and lightning . . . and those

things are not reportable unless rain accumulation reaches flash flood danger or lightning strikes a person or property . . . they will drive you nuts with weather drivel. If an inexperienced spotter reports these things, thank them and simply read that part of your instructions again. Start your reading with something like "The Net is reminded . . ." They will get the idea sooner or later.

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 relatively 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.

ORDER OF CALLS

"Emergency" calls have the highest priority of all calls you may receive. *"Priority"* calls are 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 it's 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.

GO DIRECT
These requests can be a very valuable tool. They can save a lot of valuable airtime. They can also seriously disrupt the flow and control of a Net when abused. Cover what you expect these requests to consist of in your Net instructions. A good, quick response to one of these requests is simply: *"Make your call."*

THE CHALLENGE
You are going to have the usual B0ZO on 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 could 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.

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 on a 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 really just a dummy load on a stick, or that their spare battery pack needs to be charged once in a while 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 on 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".*

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 minor communications issues, 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.

- If possible, take the discussion offline. *"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.

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.

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 becoming 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.

LIAISON and RELAY STATIONS

Liaison stations are very important in many Nets, especially large-scale Nets or those spread over a wide area. They are invaluable in a Net that is serving several different agencies. As NCS, you can create Liaison Stations on the fly, as you need them.

What a liaison station does, is act as an answering service and garbage filter for the main NCS and a served agency. It monitors what is happening on a sub-Net that is serving a particular agency on a frequency separate from the NCS. The liaison station may act as a semi-silent Net control for the group of hams doing the work at that agency. He handles a lot of the usual goofy questions for the group and makes sure they have what they need. The workers know that he is their contact man. In most cases, he also monitors the Main NCS Net. When important stuff comes through from either side, the liaison station passes it to the other party. This entire process is designed to lighten the load on the main NCS. Instead of constant and confusing chatter from 30 to 100 hams, the NCS is dealing with 5 or 6 liaison stations. The use of various tone encoding schemes by the main NCS can significantly reduce the chatter for the liaison stations as well.

Situations are encountered, particularly in weather Nets, where the distance from one area to another is too great for effective direct communications and repeater linking is either not possible or inadequate. In this case, a liaison station may be used to relay only specific

information between the two sites. This requires two transceivers, sometimes on different bands, outstanding antennas and, possibly, amplifiers. The operator must have outstanding operating skills and be very well trained. A simpler method is often used. The liaison station may just monitor repeater activity and report the appropriate information to the second site by way of telephone. Because of their fascination with radio, hams often overlook the value of a working telephone.

While not a regular Net position, a Relay Station is one that passes messages between two stations on the Net that cannot hear each other. Relay stations are generally designated by the NCS on an *"as needed"* basis.

Relay stations are most often found on HF Nets since propagation and interference vary from one location to the next. In the case of simplex operation during an emergency with repeaters unavailable, relay stations may be positioned to provide coverage to an area.

THE INCIDENT COMMAND SYSTEM

If you understand the Sub-Net process, you now understand the basics of the Incident Command System. There is no mystery about 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 anyone 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 five to seven 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.

CHAPTER 4: PRACTICE

The adage that practice makes perfect is never truer. The shortcut to being 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.

COPYING CALL SIGNS

One of the greatest fears for a new trainee to overcome is 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 into 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 contester 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.

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.

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 is 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.

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.

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-trip. Guess what they are going to talk about all day! Guess what they might check out for a hobby!

CHAPTER FIVE:
Ode to a Tour of Duty as NCS – The First 15 Minutes
By R. Bruce Winchell -N8UT (Reproduce freely)

Your EC just woke you up in the middle of your favorite TV sporting event. He wants you to start an Emergency Net from your shack. He is at the EOC. There is a ruptured gas main in a heavily populated part of town.

Other than the location, he didn't give you any more information. You head for the shack, turn on the 2-meter rig, and grab a clipboard. Your training kicks in. You begin asking yourself questions and writing down the answers.

OK, broken gas main ... police, fire, gas company, and EM involved ... possible evacuation . . . possible need to open shelter . . . transportation possibly needed . . . likelihood of handicapped people in the area . . . danger of asphyxiation . . . might go all night

1. What kind of Net should I start? Open? Directed?

2. How many people am I likely to need?

3. How long do I estimate the event will last?

4. Do I need to hold some people in reserve for a shift change?

5. What agencies are likely to be involved?

A. Do we have special liaison people for these agencies?

6. Do I have any operators who live in the affected area?

7. Which way is the wind blowing?

8. What will be the safest route into the area?

Don't have enough information. EC said he will call back with more. Better find out what I have available right now. Pick up the mike and announce that there is an emergency developing. Use open format standby Net.

Take check-ins. Ask two operators to go to other local repeaters and recruit people for the upcoming Net. Check-ins begin coming in. Tell everyone to prepare for participation assignments. Recruit someone to come to your shack to do logging and phone calls for you.

EC calls back. Says to prepare for an all-niter. You are going to need relief shifts. Evacuation will take place. Need to activate Red Cross shelter at high school. Red Cross has been notified. Wants voice and packet for shelter. Requests five operators to report to staging area to do head counts on city buses being used for evacuation. Needs two ARES members to man 2-meter and packet stations at EOC ASAP.

Back On-the-Air. Formalize the Net. Request two ARES volunteers for a 4-hour shift at EOC . . . one has to be able to run packet. Recruit two more RACES volunteers to pick up the portable packet station stored at the clubhouse and dispatch them to the high school shelter. Recruit five volunteers to handle head counts and assign one of them as team leader

to compile the reports. Send them into the area from the North.

Ask for volunteer ARES qualified base station close to the staging area to liaison traffic from the staging area volunteers to the Red Cross shelter on simplex so that HT's can be run on low power to conserve batteries. Ask liaison station to relay only compiled totals to NCS.

Request a qualified NCS volunteer to set up a resource Net and two shift reliefs on secondary repeater. Instruct all remaining individuals not yet assigned to a task to check-in on the resource Net. Eight minutes . . . not bad . . . smooth as silk. Call EC and give progress report. Can't reach EC.

8 minutes, 15 seconds: Logging volunteer shows up.

8 minutes, 30 seconds: Your wife informs you that the toilet is plugged, and she can't find the handle to the plumber's plunger. You smile. It's taped to the tower . . . holding your new wire antenna.

9 minutes: Your 6-year-old tells you that there is a big fire in a warehouse across town . . . he thinks it's where you work . . . it's on TV . . . and a half mile upwind from the gas leak.

9 minutes 30 seconds: Over in the corner, under a big stack of radio catalogs, the weather alert receiver begins to screech . . . it's tornado season.

10 minutes 50 seconds: The phone rings, your assistant drops it, hiccups loudly, and then hands it to you . . . it's the EC. The telephone receiver is broken but you manage to understand that the EC now wants you to set up a SkyWarn sub-Net and send out the Amateur TV guys to the warehouse fire. You tell the EC, "No Problem"

11 minutes 30 seconds: Hang up the broken phone and call the Resource Net for manpower to fill the new requests. Resource NCS says "No Problem".

12 minutes: Resource Net calls back. One of the available ATV guys is on his way to the shelter as the packet operator and the other one is your hiccup afflicted logging assistant. The other ATV team is out of town on an experimental, underwater, dual satellite linked ATV Dx-Epedition near Easter Island . . . bunch of retired guys with too much money. You console the frustrated Resource NCS and tell him to work it out.

12 minutes 10 seconds: You call the EC and tell him there will be a bit of a delay but there is "No Problem".

13 minutes 5 seconds: Your pager goes off with a message from your boss telling you not to bother reporting for work in the morning.

13 minutes 8 seconds: Console wife about income loss by giving her a hug and saying, "No Problem".

13 minutes 20 seconds: The computer printer connected to your packet station begins

spitting out paper. The packet station at the EOC is still programmed to your station from the last test you did. Fast and frantic search begins . . . and ends. The right software for it is in your briefcase . . . at work . . . where the fire is . . .

13 minutes 35 seconds: The liaison station calls on the radio to report that one of your staging area volunteers has just gone into labor . . . her water broke and ruined her shoes; and he wants to know if it is OK to let her go to the hospital.

13 minutes 55 seconds: The 16-year-old kid, who took the test ten times to get his Tech license, calls in a "priority" message on his HT, with a half-dead battery, on the rubber duck, from 15 miles out of town, to report that the wind just blew over the outhouse with grandma inside. Grandma got confused after she rolled out of the outhouse and fell in the pit. After 8 more broken transmissions, you find out that grandma is OK . . . "but she smells something awful!!!"

Welcome to the first 15 minutes of an Emergency Net from inside a Net control station.

Out on the Resource Net, there is much grumbling about going to bed ... because nothing is happening!!

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 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 – SkyWarn Information Net

Net Activation:
SkyWarn Nets are activated in the following ways:

- Whenever the National Weather Service (NWS) issues a Severe Thunderstorm, Blizzard or Tornado Watch or Warning for our county.

- Severe weather anywhere in Southeast Michigan starts to approach severe limits.

- Severe Thunderstorm, Severe Blizzard or Tornado Warnings are in effect for counties surrounding us that might threaten us.

Alerting the Weather Net:
The NCS, using a VHF or UHF repeater, directs and maintains control over traffic being passed on the weather Net. The station also collates reports, relates pertinent material to the weather service and organizes liaison with other area repeaters. The NCS might start the Net upon hearing a NOAA radio alert, or upon the request by NWS or the ARES EC and use the following guidelines:

Guidelines for the SkyWarn Net:

1) Activate the alert tone on repeater.

2) Read weather Net activation format.

3) Appoint a backup NCS to copy and log all traffic - and to take over in even if the NCS goes off the air or needs relief.

4) Ask NWS for the current weather status.

5) Check in all available operators.

6) Assign operators to priority stations and liaisons.

7) Give severe weather report outline and updates.

8) Be apprised of situations and assignments by EC.

9) Periodically read instructions on Net procedures and types of severe weather to report.

10) Acknowledge and respond to all calls immediately.

11) Require that Net stations request permission to leave the Net.

12) During periods of inactivity and to keep the frequency open, make periodic announcements that a Net is in progress.

13) Close the Net after operations conclude.

What to Report:

It is the job of the SkyWarn Net Control to issue specific instructions on what is to be reported when. If there is no activity currently on the Net the NCS should announce the condition under which the Net is functioning at least every five minutes. The Log should also include, when possible, the location of check-ins using large intersections. Check-ins are only taken in condition green unless it is a report of items listed below.

Reports are to be given in the T E L method. That is TIME, EVENT & LOCATION.

Condition Red: Tornado Warning

1. Tornado

2. Funnel Cloud

3. Wall Cloud

4. Damaging winds OVER 50 mph

5. Flash Flooding

Condition Red: Blizzard Warning

1. High winds

2. Heavy, drifting snow

3. Freezing precipitation

4. Sleet

5. New snow accumulation of 2 or more inches per hour

Condition Yellow: Severe Thunderstorm Warning
All the above plus:

1. Hail (give size)

2. Flooding (over curbs or driveways)

3. Heavy Rain with sustained rate of 1 inch per hour or more

4. High winds

Condition Green: Tornado or Thunderstorm Watch
All the above plus:

1. Gust Front Arrival

2. Approaching Thunderstorms

3. Torrential Rain (with near Zero visibility)

Please note that nowhere in this list is there any mention that we want reports of "the sun is out here" or "it has quit (or is not) raining here". If the Net control operators want this information, they will specifically ask for them.

Appendix C – Net Control Station Scenarios * - DC ARES EXAM

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 Net. The NCS stops transmitting in the middle of a sentence. Nothing is heard for 30 seconds.

    _____

    _____

    _____

2. You are NCS for a SkyWarn Net. It is condition green. You are taking check-ins and you can only hear *". . . (static) MR."*

    _____

    _____

    _____

3. You are NCS for an ARES Net taking check-ins and you hear *". . . static . . . repeater keying . . . static"*.

    _____

    _____

    _____

4. During your reciting the call signs of stations checking into your ARPSC Net, someone whistles *"Yankee Doodle"* each time you unkey.

    _____

    _____

    _____

5. 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.

_____

_____

_____

6. 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."*

_____

_____

_____

7. 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."*

_____

_____

_____

8. You are in condition Yellow during a SkyWarn Net and a station says" I want to check into the Net."

_____

_____

_____

9. 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.

_____

_____

_____

10. In the midst of check-ins for a RACES weekly Net a station says, "I am Kookie 5 Bring My Comb."

_____

_____

_____

11. 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.

_____

_____

_____

12. 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?"*

_____

_____

_____

13. 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."*

_____

_____

_____

14. 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."*

_____

_____

_____

15. 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 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".*

_____

_____

_____

16. 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 meeting Friday?"*

_____

_____

_____

17. A station checks into your SkyWarn 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 ARES 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."*
    *= In order to receive a certificate of completion for this Manual you must do the following:

    1. Attend workshop   ☐ Yes   ☐ No

    2. Bring or send completed answers to scenarios written out.

        ☐ Yes   ☐ No

Appendix D – ITU Phonetic Alphabet

Letter to be transmitted and Code word to be used Spoken as *

A	Alfa	AL FAH		N	November	NO VEM BER
B	Bravo	BRAH VOH		O	Oscar	OSS CAH
C	Charlie	CHAR LEE or SHAR LEE		P	Papa	PAH PAH
D	Delta	DELL TAH		Q	Quebec	KEH BECK
E	Echo	ECK OH		R	Romeo	ROW ME OH
F	Foxtrot	FOKS TROT		S	Sierra	SEE AIR RAH
G	Golf	GOLF		T	Tango	TANG GO
H	Hotel	HOH TELL		U	Uniform	YOU NEE FORM or OO NEE FORM
I	India	IN DEE AH				
J	Juliett	JEW LEE ETT		V	Victor	VIK TAH
K	Kilo	KEY LOH		W	Whiskey	WISS KEY
L	Lima	LEE MAH		X	X-ray	ECKS RAY
M	Mike	MIKE		Y	Yankee	YANG KEY
				Z	Zulu	ZOO LOO

* The syllables to be emphasized are underlined.