

Section 2: The Networks for Messages

Topic 7

The Net Control Station (NCS)

Objectives

Welcome to Topic 7.

Following completion of this topic, you will acquire knowledge of how the Net Control Station (NCS) runs a net, and many of the skills required.

Student Preparation required:

None.

Introduction

The NCS

Formal (directed) nets will always have one station “in control.” This station is known as the Net Control Station (NCS). The person running the NCS is known as the NCS operator. Think of the NCS operator as a sort of traffic cop, directing the orderly flow of messages. His or her skills are critical to the success of any emergency communication net. For this reason, many emergency communication groups elect to have training or classes designed to teach operators NCS skills. Practice sessions are often helpful for this purpose, and many ARES® groups schedule regular weekly practice.

When an NCS Is Needed

All formal (directed) nets require an NCS. Formal nets are used to maintain order when a large number of stations are in the net, or when a large volume of messages is being sent. The NCS operator decides who speaks when, in which order messages are passed, keeps a log of which messages went where and when, and keeps a list of messages that have yet to be passed.

Some informal nets will have a “standby” NCS, although informal nets are not controlled. This person is there to keep things organized when necessary, to answer questions, keep the frequency clear, and to step in to upgrade the net to “formal” status if it becomes necessary. This often

happens with initially light-duty nets that have the potential to grow as a situation evolves. SKYWARN® tornado watch nets are a good example. During the “watch” phase, not much is happening other than informal sharing of information between observers. If a tornado appears, the traffic on channel will increase, and if damage occurs on the ground, the net could quickly evolve into a high-volume disaster relief net. Having an NCS operator on standby helps make for a smooth transition.

The Importance of a Well-Trained NCS Operator

The value of the NCS operator’s skill is unquestionable. A well-run net meets the needs of the partner; a poorly run net can end Amateur Radio’s relationship with the partner altogether.

A poorly run net may exhibit several negative qualities. Routine messages may be passed on-channel, while emergency or priority messages wait in line. Messages may be disorganized, lost, changed, or misdirected. The NCS operator may lose their cool while under stress and alienate net members.

Training should, ideally, result in an NCS operator who is a good organizer, and who knows how to defuse tension and stress with an appropriate sense of humor. The NCS operator also must have the ability to absorb new terminology quickly, as there is no environment more fertile for the growth of jargon than the emergency management community!



The Right Stuff

Here is a short list of basic prerequisites for a good NCS operator:

- A clear speaking voice, with the ability to enunciate words crisply, for maximum intelligibility.
- Fluency in the primary language used — thick accents or an inability to use the language quickly, precisely, and with ease, may make it difficult for others to understand.
- The ability to handle mental and physical stress for long periods. Information and demands will be coming from all directions all at once, sometimes for hours on end. The NCS operator must handle that without losing their composure or their voice. The NCS must think and act quickly when seconds count, using prudence, and must be able to make decisions under pressure.
- The ability to listen and comprehend in an often noisy and chaotic environment. The NCS operator needs to be able to tune out all the distractions and focus only on the job at hand.
- Good hearing — NCS operator of a voice net is not an ideal task for someone who has a hearing loss that makes it difficult to understand human voices. Ham radio operators with limited hearing problems may elect to act as NCS operator for a digital mode net, according to their abilities.
- The ability to write legibly what is heard, as it is received, and to make accurate notes in real time, rather than relying on memory.
- Above-average general knowledge and operating skills in the modes used (phone, digital, and CW).

Transferable Skills

Some of the skills used in everyday Amateur Radio activities will be useful to an NCS operator.

- A well-designed and maintained station is critical to success. An NCS operator must be able to choose the correct antenna, know how to get the best sound from a microphone, be radio agile, knowing how to operate, program, and maintain the radio on short notice and have all controls and supplies within easy reach.
- An understanding of propagation is necessary, so that the NCS operator can choose the appropriate frequency as band conditions change.
- Amateurs who have extensive experience with chasing DX contacts learn how to pick weak signals out of the noise and deal with crowded band conditions — skills that are

helpful to NCS operators.

- Many of the skills used in ham radio contesting are applicable to controlling a net. Both activities involve dealing with many stations on the same frequency at the same time. The contesteer running a pileup will try to contact as many stations as possible in the least amount of time. The mission of the NCS operator is to move as much traffic as possible in the least amount of time, accurately and effectively.

Learned Skills

A good NCS operator is trained, not born. The following are some skills a ham may need to learn to become an effective NCS operator.

- Working as a team player to achieve the goals of the net.
- Effective leadership skills — keeping the team on track and motivated by developing a confident, self-assured management style.
- Decisiveness — the ability to make quick and appropriate decisions.
- Record-keeping — log sheets (writing, thinking, and talking all at once).
- Planning ahead — net scripts, assignments, materials on hand.
- HF propagation and antenna choices — knowing when to move to a different band.
- Dealing with stress — a “burned-out” operator is a danger to the net.
- Delegation — knowing when and how to hand off some jobs and responsibilities.
- A working knowledge of the Incident Command System (ICS) and how Amateur Radio fits in.

Learning and Practicing Skills

Book-learning alone does not make for a competent NCS operator. It takes practice to learn these skills in a way that they will be ingrained and useful in a real emergency. Continued practice is necessary to maintain these skills once they have been learned. Many ARES groups conduct weekly local nets, with rotation of NCS operators, in order to practice and maintain skills.

Net control skills can be learned and honed through classroom sessions, tabletop exercises, and regularly scheduled training nets. Actual emergency conditions can be simulated with periodic drills and simulations such as the annual Simulated Emergency Test (SET), and public service events such as road races, marathons, and bike rides. Some ARES units conduct simulated

emergency nets weekly, and some have simulated emergency weather nets during the severe weather season.

To begin your own NCS training, find out if your local group offers any formal training. Some will begin with tabletop exercises, in which a group sitting around a table will simulate a net operation, taking turns as NCS and net member stations. Tabletop exercises allow quick feedback and greater interaction among participants.

Other groups will simply let you take over as NCS for several scheduled training nets. Before you do this, try to listen to other, more experienced operators on your own net, and on as many other formal nets as you can. Pay close attention to how they run the net, what scripts they use (if any), and any mistakes they make.

If your group or local club provides communication support for events such as marathons, large parades, or races, these provide additional opportunities to get some real-world NCS operator experience.

A real emergency is not the time to learn or practice new skills, unless there is no other option. A poorly trained or inexperienced NCS operator can do as much harm as good. Participation in regularly scheduled nets is important, so that anyone who is or may become an NCS operator during a disaster or emergency can be effective and vital to the overall success of the mission.

What the NCS Operator Is Not

The duties of the NCS operator should be limited to running the net. This is a full-time job. The NCS operator should not oversee the overall communication effort, or of any portion of the response beyond his or her own net and shift. The Net Manager generally handles the assignment of NCS operators, frequencies, and schedules, and may also recruit members for the net. Also, it is best for the Net Control Station to work away from any location that is also a significant originator or destination of message traffic.

Reference Links

NTS Methods and Practices Guidelines

www.arrl.org/files/file/NTS_MPG2014.pdf

To learn more about local ARES and NTS net operations, contact your Section Manager (SM), Section Emergency Coordinator (SEC), or District Emergency Coordinator (DEC)

<http://www.arrl.org/sections>

ARRL Net Directory — search for ARES and NTS nets operating in your area

<http://www.arrl.org/arrl-net-directory>

Review

The NCS operator oversees controlling the flow of information on a net. In addition to training and practice, a good NCS operator has several attributes, including a clear speaking voice and patience. The Net Manager assigns an NCS for each net session or operating shift. The duties of the NCS operator should be limited to running the net.

Activities

1. Participate in a formal net as a member. Review the performance of the net control stations. List five positive features and any negative features of net operation that you encountered. If you do not have the capability to check into a net yourself, listen to nets on VHF/UHF or HF and review their operations and the effectiveness of the NCS operators.

While net frequencies or times change, see the ARRL Net Directory book or go to the ARRL Web site at <http://www.arrl.org/arrl-net-directory> to find the latest known information about major nets.

- U.S. Coast Guard Amateur Radio Net 14.300 or 14.327 MHz
- International Assistance and Traffic Net: 14.303 MHz
- East Coast Amateur Radio Service Net: ECARS, 7.255 MHz (SSB)
South Coast Amateur Radio Service Net: SCARS, 7.251 MHz (SSB)
Midwest Amateur Radio Service Net: MIDCARS, 7.258 MHz (SSB)
- Mobile Emergency and County Hunters Net, Primary: 14.336 (SSB), 14.0565 MHz (CW); Secondary: 7.188 MHz (SSB), 7.0565 (CW)

If you do not have a receiver capable of monitoring such nets, contact your local ARES group or Amateur Radio club – a member may be able to let you listen to a few nets at their station.

Welcome to Topic 7 Knowledge Review

Please review the following questions to improve your understanding of this topic:

Question 1:

Which is the primary purpose of a “standby” NCS in an informal net?

- a) To make certain that the informal sharing of information flows smoothly.
- b) To encourage others to join in the informal conversations.
- c) To upgrade the net to formal status if it becomes necessary.
- d) To acquire monthly service points.

Question 2:

The NCS operator is responsible for which of the following?

- a) Being in charge of the overall communication effort.
- b) Being in charge of the net during his shift.
- c) Being in charge of net operations beyond his net and shift.
- d) Being in charge of frequencies, schedules, and recruiting.

Question 3:

Which is *least* desirable time to train new operators?

- a) During an emergency.
- b) During a tabletop exercise.
- c) During a public service event.
- d) During a regularly scheduled training event.

Question 4:

Which best describes the *primary* mission of the NCS operator?

- a) To train net operators.
- b) To understand the Incident Command System (ICS).
- c) To help the net move as much traffic as possible in the least amount of time, accurately, and effectively.
- d) To tune out all distractions and to focus on the job at hand in an often noisy and chaotic environment.

Question 5:

Which of the following does *not* represent an important quality of a good NCS operator?

- a) The ability to handle mental and physical stress for long periods.
- b) The ability to write legibly.
- c) The desire to be seen as important in a response, despite lack of training.
- d) Above-average operating skills.