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# Net Operations Forum

ARRL West Central Florida Section

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# References and Credit

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- References:
  - ARRL Operations Manual, 12<sup>th</sup> Edition, 2019
  - ARRL EC-001, Introduction to Emergency Communications, Section 2, Topic 6a – Basic Net Operations
- Contributors:
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# Net Operations Topics

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- Net Basics
  - Free Nets
  - Directed Nets
- Net Participation
- Net Control Duties
- Net Liaisons
- Relay Stations
- Net Manager Duties and Responsibilities
- Net Do's and Don'ts
- Traffic Handling
- Questions



# Net Basics

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- What Is a Net?
  - A collection of stations communicating together
  - Common purpose
- Types of Nets
  - Free or Open (Informal) Net – A group with stations able to contact each other. Might have a net control.
  - Directed (Formal) Net – Stations communicate only with net control station unless directed to communicate with another station.





# Net Basics

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- Types of Formal (Directed) Nets
  - Traffic Net – Handles formal written traffic
    - Formal traffic is formatted messages vs. informal traffic which is just passing information.
  - Resource Net – Coordinate responder assignments and check-ins (Generally informal traffic)
  - Tactical Net – Directing response, receiving assignments, coordinating operations (Both formal and informal traffic.)
  - Information Net – Make announcements, bulletins or collect information (SKYWARN ®)
  - Health & Welfare Nets – Handles information about people impacted by an event. (Mostly formal traffic)



# Net Basics

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- Types of Nets (cont.)
  - Roll Call Net – A net composed of registered members.
    - The net control usually conducts a roll call of net members. Net may ask for visitors after the roll call.
    - Many local nets are modified roll call nets. Might call by location or call sign component. No fixed roster of stations.
    - Example: Florida Phone Traffic Net is a Roll Call Traffic Net.
  - Controlled Net – Net control restricts check-ins to specific traffic and stations only.
    - Emergency Management Resource Nets are normally controlled.
    - Some SKYWARN ® nets are controlled. Example: Condition Black = Tornado Warning, Condition Red = Severe Weather Warning



# Net Basics

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- Net control station is in charge on directed nets.
- Nets normally follow a protocol which includes the net instructions and script
- Net manager provides instructions on how the NCS should run the net.
- The net script, published by net manager, consists of the
  - Net Pre-amble (Net description and instruction to stations)
  - Net Procedure (like the roll call)
  - Net Closing (closing instructions and net report)



# Net Participation

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- First rule of net operations is LISTEN.
- Good idea to listen to a net several times before joining.
- Follow the instructions of the net control.
- Be ready when your station is called. Know what you are going to say before keying the microphone.
- When talking, speak at moderate speed. No credits for speed only adds to confusion and need to repeat.
- Use standard phonetics and standard prowords. Avoids confusion.
- Avoid chit chat and extensive niceties. We don't need your life history or all medical conditions. Take those discussions off-net.





# Net Participation

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- Practice, practice, practice. The more you operate on nets, the better you will become.
- Good idea to keep a personal log of stations on the net each time.
- Most Net Control Stations are willing to help beginners become comfortable operating on the net.
- Don't wear out your welcome. If you need a lot of help, ask for a session with an Elmer outside of net time.
- Never correct operating practices on-the-air. If you must, use email or text.
- And it goes without saying, no derogatory comments or expletives. Keep your opinions to yourself.



# Net Control Duties

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- Net control station (NCS) handles the minute-by-minute operation of the net.
- NCS is appointed and assigned by the Net Manager.
- NCS generally follow the net script but may deviate when operations require.
- In a directed net, NCS controls all interaction between stations on the net.
- Stations should ask NCS permission to contact other stations.





# Net Control Duties

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- NCS or designated logging station logs all stations on the net.
- For noisy nets or nets with propagation issues, NCS may designate an Alternate Net Control Station (ANCS) to reach stations the NCS may not hear.
  - ANCS only operates at direction of NCS.
  - ANCS may conduct roll call, then report station check-ins to NCS when control is returned
  - Best ANCS is someone located away from NCS to ensure good geographical coverage.



# Net Control Duties

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- NCS must give each station time to check in. Wait about 5 seconds or more for responses. Some NCSs say “Nothing heard” before returning to the script.
- Net operation is not like DX OPS. There is no hurry in conducting the net.
- NCS should echo the call sign of every station checking in. We recommend using standard phonetics to avoid confusion.
- Whenever possible, ignore disruptions or interference.
- Net may need to move to another frequency or shift to a different time depending on interference or propagation.
- All stations should listen to NCS and follow instructions. Only help the NCS when they ask for help.



# Net Liaisons

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- Nets may have liaison stations that bring messages or information from other nets.
- The NCS may make a general call for liaison stations or make a roll call of liaisons.
- Liaison stations should identify by call sign, net they represent, and whether they have traffic.
- On traffic nets, the NCS will normally ask the liaisons to list the destination of their incoming traffic.
- Traffic nets almost always have an outgoing liaison.



# Relay Stations

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- The NCS may not hear all stations that check into a net.
  - If you hear a station that the NCS doesn't respond to, wait for a pause, announce RELAY and your call sign.
  - NCS should reply with RELAY GO AHEAD.
- NCS should ask for any relays when practical.
  - Example: After calling for all WHISKEY stations, ask if there are any RELAYs.
- Don't be a RELAY pest. On most nets there will be stations with better reception who routinely act as relays.





# Net Script

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- Directed nets should have a protocol and a script.
- Protocol is a definition of the net composition and the procedures to be followed.
- The net script should follow the protocol. NCSs should follow the script. Avoid going off-script.
- Keep the net script clear and concise. Say what needs to be said. Avoid a lot of overhead in the script.



# Net Script (cont.)

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- NCSs should memorize the script, but always read from a hard or online copy. Be comfortable with it.
- Avoid sidebar discussions. Refer these to after the net.
- Remember, EMERGENCY traffic always has priority. There is no need to ask for it, though many nets do. NCSs should ask for PRIORITY traffic.
- Pause often while reading the script. Allows stations to catch up.





# Net Manager

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- Net manager is responsible for the overall operation and scheduling of the net.
- Net manager establishes the protocol and normally writes/publishes the net script.
- Net manager should participate in the net as often as practical.
- Let NCSs run the net. Be there to answer questions, but don't hover and interrupt. NCSs should query the Net Manager if advice is needed.
- Remember, don't correct operators on-the-air. Do it privately after the net.
- Net manager should keep records of the net and make monthly reports to sponsoring agencies or the ARRL as appropriate.



# Net Do's

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- Be on time. Both as NCS or participant.
- Remain on the net until the end unless the protocol allows early release.
- Be ready when your station is called and know what you are going to say before you key the mic.
- Keep a note pad handy to jot down items you might need to remember, like call signs.
- Avoid chit-chat during the net. Keep niceties like "How are you?" or "Have a great day." to a minimum.
- Volunteer to be NCS if you have the opportunity.
- Study the reference materials to become a better net participant.
- Follow the instructions of Net Control.
- And listen, listen, and listen.



# Net Don'ts

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- Don't interrupt Net Control unless there is emergency traffic.
- Avoid doubling with other stations. Don't be in a hurry.
- Avoid non-standard phonetics like "KILOWATT" or "SUGAR". Most NCSs and participants understand the standard phonetic alphabet.
- Don't race through your call sign. Remember, the NCS is writing it down. If you are asked to repeat, you are doing it **WRONG**.
- Don't give your life history when checking in. A check-in should be about 5 to 10 seconds.



# Handling Traffic

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- All nets should be ready for PRIORITY traffic.
- Refer ROUTINE messages to a traffic net.
- On traffic nets
  - Ask for net liaisons, first. If no liaison station, ask for Official Relay Stations.
  - Ask call sign of stations holding traffic
  - Rotate through stations with traffic and copy down the locations.
  - Have station receiving message call sending station and confirm good communications.
  - When possible, move actual traffic handling to another frequency or channel.



# Handling Traffic

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- Remember, traffic should follow the “minimum hops” rule of thumb.
  - If recipient is on the net, that station takes the traffic.
  - If recipient is not on net, have liaison nearest take the traffic.
  - As last resort ask an ORS to take the traffic.
- If a station acts as full relay, that counts as two messages.
- Net Control Stations should be experienced traffic handlers.
- Only way to be good at handling traffic is to DO IT!





# Questions

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