



ARES MEMBER STANDARD OPERATING PROCEDURES

FORSYTH COUNTY, NC - AMATEUR RADIO EMERGENCY SERVICES

This SOP provides ARES Members with a set of standardized procedures for all ARES operations.

Forsyth County Amateur Radio Emergency Services ARES Member Standard Operating Procedures

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I. PURPOSE

To document standardizes ARES member procedures for all ARES operations. The purpose of these SOP's is to enhance the professionalism of our operations by ensuring communications are crisp and brief in nature. ARES members will follow the NCS operators lead in communications. The NCS operators set the standard and tone of the net.

II. BREVITY

Keeping transmissions as short as possible helps to keep the frequency clear which makes communications more efficient and permits more stations to participate. Extraneous language should be eliminated to the greatest extent possible. Use the briefest statement that enables the message to be completed. I.E. Members checking in any ARES net do NOT need to say "Net Control, please check in WA4ABC, John, Winston-Salem, good evening" (See NCS Check In Procedures Below)

The use of full phonetic call signs is NOT required once the station has checked into the net nor is it necessary to use full phonetic call sign after the initial call sign statement at the beginning of a net. Only full phonetic should be used for the FIRST call sign statement. I.E. When checking into an ARES net WA4ABC would state "This is (unkey) Whiskey Alpha 4 Alpha Bravo Charlie". For any other communications the member merely states their alphanumeric identification. I.E. This is W A 4 A B C". (Exception is when communications are difficult such as Simplex or HF operations.)

While we want to always be polite this is an EMCOMM NET and we should always strive to operate it as we would during emergency situations. Constantly saying "Please" or other pleasantries all add unnecessary wording and time and should be eliminated.

III. PRIORITIES FOR COMMUNICATIONS

Critical communications have competing priorities including accuracy, security, speed and efficiency among others. It is important as ARES operators that we keep these priorities in mind when conducting ECOMM operations.

The highest priority is *ACCURACY*. What is transmitted must be *ACCURATE*. If the traffic (message) is not accurately relayed and delivered, the other priorities are meaningless.

Speed is the next priority to take into account. We should strive to ensure that traffic (messages) is handled with as much *SPEED* as possible and according to their indicated precedence while maintaining *ACCURACY*.

IV. PERSONAL PROTECTED INFORMATION (PPI)

We must remember that our frequencies ARE monitored by non-amateur individuals such as news media and the general public. Remember that anything that is said on the air can and will rapidly become public information. It is imperative that as ARES Operators we ensure that PPI is not transmitted or relayed on the air. While it is the responsibility of each ARES operator to ensure that we do not transmit PPI, the NCS has the responsibility to remind stations, if necessary, about PPI should they start to provide that type of information over the air.

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PPI includes the following:

- A) Full Name
- B) Date of Birth
- C) Address
- D) Phone Number (when included with A, B or C above)
- E) Medical Information
- F) Social Security Number
- G) Driver's License Number

PPI should be transmitted via secure methods such as Cellular, Landline, Fax, and certain station to station digital modes only.

V. PHONETIC ALPHABET

The use of standard phonetics for the pronunciation of letters in call signs and text aids accuracy and efficiency.

The following is the **only** phonetic alphabet to be used in ARES:

Phonetic Alphabet

A ALPHA	J JULLIET	S SIERRA
B BRAVO	K KILO	T TANGO
C CHARLIE	L LIMA	U UNIFORM
D DELTA	M MIKE	V VICTOR
E ECHO	N NOVEMBER	W WHISKEY
F FOXTROT	O OSCAR	X X-RAY
G GOLF	P PAPA	Y YANKEE
H HOTEL	Q QUEBEC (Pronounced KEH- BECK)	Z ZULU
I INDIA	R ROMEO	

VI. PRONUNCIATION OF FIGURES

The clear pronunciation of numerals is also essential to professional-grade voice radio communications.

Pronunciation of Figures

1 WUN	6 SIX
2 TOO	7 SEV-EN
3 TREE *	8 AIT
4 FOW-ER *	9 NIN-ER *
5 FIFE *	0 ZE-RO

* Note the non-standard pronunciations for intelligibility on radio.

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VII. RADIO PROCEDURES DURING NORMAL OPERATING CONDITIONS CALLING AND COMMUNICATING TECHNIQUES

The secret to working quickly and efficiently in an emergency net is to use standard procedures. The techniques presented herein are the most common. It doesn't take much analysis to see that standards and guidelines must be established and then utilized.

Before you key your mike, gather your thoughts about what you are going to say. Many people with radios have a tendency to talk and/or repeat too much. Say what you need to say without unnecessary repeats. Keep in mind that you must strive to get your message through the first time.

In general, there are five parts to Calling/Communications. The more serious or complex the situation, the more important these procedures become. The information contained herein **MUST** be practiced until it is second nature. Practicing proper day-to-day radio procedures will make emergency radio procedures automatic and reduces confusion. Another way of saying this is that the secret to working quickly and efficiently in an emergency is to use common approved radio communication procedures and guidelines and practice, practice, practice.

1st, you **MUST** give the radio callsign of the station you are calling. This alerts that station that they are being called and that they should listen to determine who is calling.

2nd; say "THIS IS". The called station knows your tactical call follows. This is extremely important in cases where there is a lot of confusion or poor signal conditions.

3rd, give your radio callsign. Don't give your first name. Radio callsigns are important and first names are not, egos notwithstanding. Remember, we are licensed for radio to radio **NOT** person to person communications. You **WILL** create confusion if you reverse the first three steps, especially during emergencies and when you are communicating with a dispatcher or people who do not know you. If your practice is the reverse of the "norm", you will not be able to change "on the fly" especially during the added stress brought on by an emergency situation.

4th, give your message. Speak clearly. Don't speak too fast especially if the message needs to be written down. Pause after logical phrases. Do not use the word "break" when you pause. It is confusing, wastes time and has other connotations. Merely unkey and pause. If the other station has questions, they should key up and make their request known. This also permits other stations to break in if they have emergency traffic.

5th, you can end your conversation with "CLEAR" however it isn't required.

A. EXCEPTIONS OR VARIATIONS

1. It is sometimes permissible to omit the radio callsign designator of the station you are calling, **BUT** only after communications have been established and no confusion will occur. Don't waste time, by using superfluous tactical callsign.

Example:

SAG 1 is calling SAG 4: "SAG 4 THIS IS SAG 1 OVER"

SAG 4 responds: "THIS IS SAG 4 OVER"

SAG 1 states: "SAG 4 THIS IS SAG 1"

Communications has already been established and there is no reason to use callsigns until the end of the communication.

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2. The term "THIS IS" is used to separate the FROM and TO callsigns. If, and only if, confusion will not result, omitting the "THIS IS" phrase is permissible.
3. If you are the calling station and you omit your own radio callsign, you can create confusion. In certain situations, such as quick replies between operators, it can be accomplished without confusion. You must NOT use this simplification where messages can be interpreted incorrectly.

VIII. RADIO PROCEDURES DURING EMERGENCIES

1. Identify yourself at the beginning of each transmission especially where confusion may result if omitted.
2. Identification is a requirement of the FCC. According to the FCC, radio users must give their callsign when they first start to talk and when they finish their communication. Exception is during the use of Tactical Call Signs where the operators FCC Call Sign need only be used at the end of the communication unless the exchange is greater than 10 minutes in length which requires both stations to identify using their FCC Call Sign at 10 minute intervals.
3. Listen before transmitting. Be sure you are not on the air with someone else.
4. Know what you are going to say before you push the mike button; in other words, engage your brain before you put your mouth in gear.
5. Hold the transmit button down for at least a second before beginning your message to insure that the first part of your message is not cut off.
6. TALK ACROSS THE FACE OF YOUR MICROPHONE. This technique makes the communications more understandable. In other words, hold the face of the microphone almost at a right angle to your face.
7. Speak slowly, distinctly, clearly, and do not let your voice trail off at the end of words or sentences. Give each and every word equal force. For some this takes a lot of practice and conscious effort but do it.
8. Never acknowledge calls or instructions unless you understand the call or instructions perfectly. If you do not understand, re-contact the sending station and "say again" the missed traffic.
9. When you have understood the message, acknowledge the receipt with the word "ROGER".
10. The word "break" is never used to enter a net even in an emergency. If you need to enter a net with Emergency, Immediate or Priority traffic, state the traffic precedence three (3) times.

Example: PRIORITY, PRIORITY, PRIORITY
11. Always acknowledge calls and instructions. Nothing is more disruptive to the smooth flow of communications than dead silence in response to a message. If you cannot copy or respond to the call immediately, then tell the caller to "repeat" or "stand by." Otherwise, acknowledge each call immediately.
12. Under stress, many operators have a tendency to talk too fast. ACCURACY FIRST, SPEED SECOND.
13. At times, radio conditions are poor and words must be overly exaggerated to be understandable. In general, speak very slowly and distinctly to carry through static and weak signals.

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14. If you are relaying a message for another person, be sure you repeat the message exactly, word for word as it is given to you. If it makes no sense to you, get an explanation before you put it on the air. If necessary, refer the message back to the originator for clarification.
15. There is no place for Ham radio "Q" signals or signals from any other radio service during official and emergency communications. They are too easily misunderstood, rarely save time, and often result in errors. Use "plain English" only.
16. Do not act as a relay station unless Dispatch, or another radio station, asks for a relay – and you can fulfill the requirement with your station.
17. When transmitting numbers (house numbers, street & telephone numbers, etc.), always transmit number sequences as a series of individual numbers. Never say numbers in combinations.
18. If a proper name needs to be transmitted, try to spell it out using the recognized radio phonetic alphabet. Do not use cute or self-invented phonetics. There is no place for them in official and emergency communications. Avoid using the phrase "common spelling" to reduce confusion.
19. **ONLY TRANSMIT FACTS.** If your message is a question, deduction, educated guess, or hearsay; identify it as such. Do not clutter up the air with non-essential information. Be careful what you say on the air. There are many ears listening. Many facts will be taken out of context even when carefully identified.
20. If you do not understand the whole message given to you or if you missed a word out of the transmission, reply with "Say again." Do not say "please repeat" because it sounds too much like the word "received" when conditions are poor.
21. Chewing gum, eating, and other activities with items in the mouth tend to clutter up the clarity of your speech. Don't.
22. Avoid angry comments on the air at all costs. Obscene statements are not necessary and are out of place in all communications.
23. Sound alert. Nothing destroys confidence as much as a bored or weary sounding radio operator. If you are tired, get a relief operator.
24. During an incident, communications suffers enough confusion without wisecracks and jokes. When providing emergency communications you must remember that it is serious business and should be treated as such at all times.
25. Stay off the air unless you are sure you can be of assistance. It does no good to offer advice, assistance, comments or other input to a net unless you can truly provide clarification. It is better to remain silent and be thought a fool than to open your mouth and remove all doubt!
26. Always know your location. If you are mobile or portable and moving around, always keep a sharp lookout for landmarks. You must be able, if called upon, to accurately describe your location at any time. This is particularly important if you with a search team or other mobile units.
27. When you are on the fringes of communications, (such as in a building or at end communications boundaries edge) look for a receiving "hot spot" site and use it. Don't walk around talking while in a communications fringe area. Repeaters have much more power than your handheld. Even if you have a good signal from a repeater, it does not mean you are good going into the repeater.
28. If you check into an emergency net, you must monitor on the net. If you must leave the net, ask permission from the NCS (Net Control Station). Report to the NCS when you return to the net. It is

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vital that the NCS know the availability of each station on the net and it is up to YOU to keep the NCS advised. However, if the NCS is very busy and you must leave the net, do so without interrupting the net.

29. Net Control Stations frequently are very busy with work that is not on the air. If you call the NCS or dispatcher and do not get a reply, be patient and call again in a minute or two. If you have an emergency, say you have "Emergency Emergency Emergency" then identify yourself when you call the NCS. Be patient with the NCS and other stations.
30. A mobile radio (that is one that is mobile, portable, or airborne) has priority over any other type of radio station AND other forms of telecommunications. This is true in all radio services. Fixed station operators must recognize that a call from a mobile station takes precedence over telephone calls, personal conversations, and other activities. Respond promptly to any call from a mobile station -- even if it is to advise the caller to standby.

In conclusion, these few rules and suggestions are intended to help you become a better radio operator. Analyze your present operating methods and try to polish each element so your participation in radio communications is professional and worthwhile.

IX. GENERAL ARES NET PROCEDURES

- A) LISTEN, LISTEN, LISTEN. Doubling with other stations requires additional time and may actually interfere with Emergency, Immediate or Priority traffic.
- B) Be prepared to respond to NCS instructions
- C) Use Full Phonetic call sign at the beginning of the net and alphanumeric call signs from that point forward.
- D) Be prepared to deploy as instructed. Remember you may be deployed for several hours to several days.
- E) Do not leave the net without the permission of Net Control.

X. FORMAL MESSAGE PRECEDENCE

There are four types of message traffic in ARES; Emergency, Immediate, Priority and Routine.

EMERGENCY: Traffic that relates to immediate safety of life or property.

IMMEDIATE: Traffic that relates to urgent needs that cannot wait due to potential impact to life or property.

PRIORITY: Traffic that relates to needs or issues that must be handled in a timely manner.

ROUTINE: Traffic that relates to operations issues that are not of a priority or immediate need.

XI. COMMON PROWORDS

Effective, efficient and brief communications are a tenant of ARES operations. The use of prowords helps us be brief and yet clear in our meaning.

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A) OVER and OUT

The most common prowords are "OVER" and "OUT".

Every ARES voice transmission must end with either "OVER" or "OUT" but, never both.

OVER means, "I have finished my transmission, go ahead and transmit." It indicates to the other station that a reply is expected and necessary. NOTE: We do not say "go ahead" as an invitation to transmit.

OUT means, "I have concluded my transmission, no reply is expected." When a station says OUT, that is the end of the exchange. The other station should say nothing. If the other station has more to say, he must re-establish contact using proper net procedures by calling the NCS and asking to contact the other station. Unless the context makes it clear that the communications are concluded, the station who started the contact should usually be the one to say OUT. The initial calling station may but is not required to call the NCS and advise that the traffic is complete. It is important that the NCS monitor the traffic being passed so that they are aware when the initiating station states OUT as the conclusion of their traffic.

B) ROGER

The prowords "ROGER" means "I have received the information transmitted by you" without indicating approval or disapproval, agreement or disagreement.

Many operators use ROGER to mean, "yes." This is not an accurate use of ROGER.

Additionally some operators may use other phrases for the same purpose as ROGER. These include, "That's a good copy," "That's a Charlie Copy," "Copy that," "Charlie, Charlie," among others. These are not proper prowords and should not be used in ARES operations.

Not all amateur operators are familiar with or use amateur Q-signals. The use of Q-signals is discouraged in ARES operations for this reason.

C) BREAK

The prowords BREAK is used in message handling and is not to be used to conclude transmissions between stations, to enter a net or to interrupt communications.

D) CORRECT / WRONG

The prowords CORRECT means "what you transmitted is correct." The opposite is WRONG.

E) CORRECTION

When an operator making a transmission makes an error and needs to make a correction, the proword CORRECTION is used. The operator will then repeat the last phrase that was correct and then state the corrected phrase that follows. NOTE that I SAY AGAIN is not the correct proword for this purpose.

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F) DISREGARD THIS TRANSMISSION

When an operator decides in the middle of a transmission that it should be cancelled, the proword DISREGARD THIS TRANSMISSION will be used.

G) DO NOT ANSWER

DO NOT ANSWER is used in sending a message to one or more stations who are not to reply or acknowledge receipt. This is normally used by the NCS when making a general statement to the net during ARES operations. Example: **NCS** : “DO NOT ANSWER, Shelter 1, 3, 7 contact Net Control via landline, Net Control WS4FC, out.”

H) FIGURES

The proword FIGURES means numerals or numbers, or mixed group beginning with a numeral, follows. FIGURES is not used in conjunction with the prowords TIME, GROUPS, NUMBER or CALL SIGN. FIGURES is used to distinguish the numerical form or a numeral from textual form, (i.e., to distinguish “2” from “two”) and is not necessary when a number is not to be transcribed.

For example, FIGURES is not needed in these situations:
“Change frequency to 146 decimal 640”

I) I SPELL

I SPELL means one or more letters, or a mixed group beginning with a letter, will follow, sent phonetically. When used with a pronounceable letter group, say it, then spell it, then say it again.

Example: “Tanks, I SPELL TANGO ALPHA NOVEMBER KILO SIERRA, Tanks”

J) NEGATIVE / AFFIRMATIVE

NEGATIVE means “no.” The opposite AFFIRMATIVE means “yes.”

K) NO PLAY

During an exercise should actual “real world” traffic (message) need to be passed the proword NO PLAY will be used to indicate that the traffic (message) is not a part of the exercise. The NO PLAY traffic (message) will be given priority over exercise traffic.

L) PRIORITY, PRIORITY, PRIORITY

If a station has higher precedence traffic than the communications being conducted, that station can interrupt the communications by stating the precedence of his/her traffic three times; e.g., “PRIORITY, PRIORITY, PRIORITY.” The NCS, having heard the interruption will seize control of the net and stop the communications so the higher precedence traffic can be passed.

The station with higher precedence traffic should use some judgement before interrupting. If it appears the on-going communications may be concluded promptly, waiting until it is finished may be more efficient for all concerned.

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M) SAY AGAIN

The proword SAY AGAIN is used to request a repetition of the something that was transmitted. The word "repeat" is not used in ARES operations. The proword I SAY AGAIN means I am about to restate something I have already transmitted.

N) SEND YOUR MESSAGE

SEND YOUR MESSAGE is used in response to an offer to send a message. OVER (as an invitation to transmit) can also be used instead, but may seem ambiguous. SEND YOUR MESSAGE is less ambiguous.

O) SILENCE, SILENCE, SILENCE

Anytime an NCS needs to silence the net, he/she will state the proword SILENCE three times. All stations will immediately stop transmitting and remain silent until the NCS announces "SILENCE LIFTED." When commanded, radio silence is critical. Absolute obedience is required.

P) THIS IS

THIS IS means, "The current transmission is from the station whose call sign follows." This proword can be omitted after communications are established.

Q) THIS IS A DIRECTED NET

This proword, when spoken by the net control, means that until further notice the net is directed. This means that all stations need permission of the net control to call other stations.

R) UNKNOWN STATION

UNKNOWN STATION means, "The identity of the station I am attempting to contact is not known to me." This proword is used to reply to a station whose call sign was not heard or was only partially heard.

For example

"UNKNOWN STATION, THIS IS WS4FC, SAY AGAIN, OVER."

Note that this is more efficient than saying, "There is a weak station attempting to check in and I can't quite make out the call sign..."

S) USE FULL CALL SIGNS

USE FULL CALL SIGNS means, until further notice, use complete call signs. This may be used when tactical call signs are being confused or for any reason the NCS determines full call signs are to be used.

T) USE TACTICAL CALL / TACTICAL CALL SIGNS

Tactical Call Signs are used during events and emergency operations. Examples of Tactical Call Signs are: "Rest Stop 1", "Shelter 3", "Staging Area", "SAG 4."

USE TACTICAL CALL means all stations are to use TACTICAL CALL SIGNS as outlined in paragraph X. TACTICAL NET OPERATIONS / PUBLIC SERVICE EVENTS in this manual.

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U) WAIT and WAIT OUT

The proword WAIT is used when a pause is required and will last for only a few seconds. WAIT should not be over-used; you may simply pause a second or two without stating it. WAIT OUT is used when the pause requires more time; i.e., someone might wonder what happened to your signal. The time period associated with the use of WAIT OUT should be as short as possible so net operations are not delayed.

Although the proword WAIT OUT ends with "OUT," the communication between the two stations is not yet complete. Therefore, no other station will transmit during this pause unless they have higher precedence traffic than that which is being handled. If too much time passes, the NCS can assert control by saying:

"THIS IS [NCS call sign] OUT."

V) WILCO

The proword WILCO is a contraction of the phrase "will comply." It is used in response to a request or tasking and means that you understand the tasking and agree to accomplish the task. Because it implies that you understand the request, it is never used with the proword ROGER as that would be redundant.

W) WORDS TWICE

The proword WORDS TWICE is used when communication is difficult. It means transmit each phrase twice. If sent by the NCS to all stations, it indicates that all stations are to transmit each phrase twice.

Example:

"This is my first training session; this is my first training session, OVER."

A complete list of approved prowords is contained in [Appendix 3](#) of this Manual.

XII. NET OPERATIONS

Our nets function very efficiently because of the compliance of the net participants with the net procedures that have been developed in this manual and the ARES NCS SOP Manual. ARES Nets operate differently from other nets such as National Traffic Net, rag-chew nets and even SkyWarn nets. Differences are driven by factors such as numbers of stations checking in, type of message traffic handled, geographic area covered and other, local considerations.

When checking into a net, members should carefully follow any specific instructions given by the Net Control Station (NCS) at the opening of the net.

A. DIRECTED NET PROCEDURES

A directed net is one in which any station must have permission of the Net Control (NCS) to contact another station. All ARES related nets are normally directed nets.

1. CHECKING INTO A NET

When checking into a directed net, the ARES Operator (you), should listen to the NCS calls for check-ins. When your group is called, use the following procedure. Remember to listen for your callsign after checking into a net and to answer promptly.

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Example:

NCS (Calling for check-ins): "Stations Alpha through Hotel, Over"
WA4QBF (Checking into the net): "**This is**" (unkey) "**Whiskey Alpha Four Quebec Bravo Foxtrot, Over**".

DO **NOT** USE CUTE PHONETICS such as Quick Brown Fox for QBF.

Example using Tactical Call Signs:

NCS: "ALL SAGS CHECK IN OVER"
SAG 5: "**THIS IS SAG 5, W A 4 D E F, OVER.**"

2. CHECKING INTO A NET WITH TRAFFIC

When checking into a net with formal traffic, stations should list the traffic when initially checking in. Here are some examples of possible traffic check-ins.

"**THIS IS** (unkey and listen) **NA4PPP** (phonetics), **ONE ROUTINE, OVER.**"

"**THIS IS** (unkey and listen) **WA4DEF** (phonetics), **ONE PRIORITY, ONE ROUTINE, OVER.**"

"**THIS IS** (unkey and listen) **W1ABC** (phonetics), **REQUEST INFORMAL WA4DEF, OVER.**"

IMPORTANT: The **only** time a station may transmit out of turn is to list Emergency, Immediate or Priority traffic. We must always maintain net order and discipline.

3. RELAYING CHECK-INS/CALLS

During the establishment of net and other times, it often occurs that a station hears someone attempting to call whom the NCS and/or Alternate Net Control Station (ANCS) do not acknowledge. This happens in simplex and HF operations. Primary responsibility for RELAYS is with the Alternate Net Control Station (ANCS). If neither the NCS nor ANCS hears a station calling, there is a specific procedure for relaying such stations into the net. First, to relay someone else, a station (the "relaying station") must already be part of the net. No business, including relays, may be conducted by any station not already checked into the net. Also, a relaying station may not call out of turn.

A RELAY can be mentioned as part of the relaying station's check-in procedure. But, the relaying station must wait until the proper time to check-in.

Example of a relay during check-in:

NCS: ". . . STATIONS HOTEL THROUGH NOVEMBER, OVER."
(WA4DEF not heard by NCS or ANCS)

W1ABC: "**THIS IS** (unkey and listen) **W1ABC** (phonetics), **RELAY, OVER.**"
(W1ABC did hear WA4DEF trying to check-in)

NCS: "W1ABC THIS IS [NCS call sign], ROGER, SEND YOUR RELAY, OVER."

W1HRC: "**THIS IS W1ABC, I RELAY, WA4DEF** (phonetics), **OVER.**"

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NCS: "W1ABC THIS IS [NCS call sign], ROGER WA4DEF, OUT."

A station already checked into the net with a station to RELAY must first gain the permission from NCS before doing so. No station should make an unidentified or unauthorized transmission for any purpose, including RELAYS.

Example of an offer to RELAY: "**THIS IS W1ABC, RELAY, OVER.**"

B. HANDLING MESSAGE TRAFFIC

Once the NCS has a complete roster, he/she should start directing the stations that have listed traffic to send it.

Messages listed with the precedence of IMMEDIATE should be handled first then PRIORITY, and lastly, ROUTINE messages. INFORMAL traffic may be handled after all precedence traffic has been passed or at the end of the net (training during weekly nets). This will enable stations requesting to close the opportunity to do so.

If there are multiple IMMEDIATE or PRIORITY messages being sent between different stations, those stations may be sent to other frequencies to pass the traffic so that messages can be passed simultaneously. If necessary, they can be passed on the net frequency.

Stations involved in sending and receiving messages must listen carefully to the NCS instructions so that messages can be passed as efficiently as possible. During HF operations, other stations on the net are encouraged to listen carefully and copy messages if they can. In that way, they may be able to assist with relays and repetitions of messages, should propagation suddenly change.

C. DO NOT ANSWER TRANSMISSIONS

Normally, if the NCS makes a collective call to the net to send a message, the entire net roster would be expected to answer, in order, that each station was ready to receive the message. Then, after the message is sent, the entire net roster would be expected to receipt (ROGER) for the message, again in order, indicating complete reception of it.

This procedure is very reliable and practicable in smaller nets of fewer than 10 to 15 stations. However, with larger nets having 20 or more stations checked in, that can be extremely time consuming.

DO NOT ANSWER is a proword which means what it says. It is for use when making a transmission (or sending a message) when no reply is required or expected. It is especially useful when sending a message to many stations at once.

Example:

"[Called stations call signs] **THIS IS [NCS call sign] DO NOT ANSWER MESSAGE ... [sends message] ..., OUT.**"

If warranted, he/she can then call the net and ask, "**THIS IS [NCS call sign] DOES ANY STATION REQUIRE A RETRANSMISSION? OVER.**" Any station requiring a repetition can then call the NCS and make his/her request.

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D. RADIO CHECKS

A station requesting a signal report will use the proword RADIO CHECK. This is normally done during simplex or HF operations.

Example:

"W1ABC THIS IS WS4FC, RADIO CHECK OVER."

Radio checks should not be given unless requested, and should not be requested excessively.

For HF or Simplex operations, the NCS might decide to conduct a radio check with some or all of the stations on the net to determine whether propagation has changed to the extent that a frequency change would be required. Alternatively, particularly on HF, the NCS might request radio checks after assuming control of a net. The NCS would announce the radio check as shown above. Then, NCS would call each station one at a time. In each case, the station called shall respond with a signal strength and readability report as shown below.

The tables below are appropriate responses to radio check requests.

Table 1A Signal Strength Description

LOUD: Your signal is very strong

GOOD: Your signal strength is good

WEAK: Your signal strength is weak

VERY WEAK: Your signal strength is very weak

FADING: Your signal strength fades to such an extent that continuous reception cannot be relied upon

Table 1B Readability Description

CLEAR: Your signal has excellent quality

READABLE: Your signal quality is satisfactory

BARELY READABLE: Your signal is almost unreadable

UNREADABLE: Your signal quality is so bad that I cannot understand you

DISTORTED: Your signal is distorted or is suffering bad distortion

WITH INTERFERENCE: Your signal has interference (could be man-made or natural)

INTERMITTENT: Your signal is intermittent

Note that other adjectives, such as "FAIR" and "MEDIUM" are not proper descriptions and will not be used on ARES Nets.

A simple reply of "**ROGER, OVER**" means the signal is LOUD and CLEAR.

Example of a single radio check:

NCS: "**W4ABC THIS IS** [*NCS call sign*], **RADIO CHECK, OVER.**"

(*NCS calls W4ABC for a radio check*)

W4ABC: "**THIS IS W4ABC, ROGER, OVER.**"

NCS: "**WEAK WITH INTERFERENCE, OUT.**"

XIII. NET CONTROL STATION (NCS)

A Net Control Station (NCS) is a station designated to control traffic flow and enforce Net discipline. The tempo of any traffic net arises from the precision and timing of its NCS operator combined with his ability to communicate under all conditions. Net Control procedures must be

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executed with precision and clarity to ensure that all net stations will interpret the NCS's instructions as intended. Normally the NCS will be assigned by the ARES Emergency Coordinator in advance, however in an emergency; any ARES member may initiate the net until a fully qualified NCS comes on the air. It is the goal of Forsyth County ARES to have all members fully qualified as NCS.

Because the passage of information by voice is slower than other modes, it is important that Net Control Stations use standard procedures and minimal airtime to maximize net efficiency. NCS must set an example of how the net members are to conduct themselves. Most will follow the example of the NCS.

Just as traffic handlers must minimize excess words to speed throughput, ARES members and NCS must also minimize excess words and transmissions in conducting a net.

BE CLEAR BE BRIEF BE CONCISE

A. NO NCS AT NET TIME

If a scheduled net does not start by 5 minutes after the scheduled net time, or if an emergency makes a net necessary at an unscheduled time, any NCS may step forward to start a net, as soon as possible.

Example: *[No net started at 5 minutes past the scheduled time]*

W4ABC: **"THIS IS WHISKEY 4 ALPHA BRAVO CHARLIE, IS THERE A NET CONTROL STATION ON FREQUENCY FOR THE [NET NAME], OVER."**

(Pause – If there is an NCS, he/she should answer – If No Answer)

W4ABC: **"THIS IS WHISKEY SIERRA 4 FOXTROT CHARLIE"**

(W4ABC assumes the NCS role and starts the net using the WS4FC call sign.)

B. ESTABLISHING A NET

1. Directed Net - Scheduled

The procedure necessary to establish a scheduled net is to simply call follow the written scrip at the designated day and time. See Appendix 2 and 3 for net scripts.

Example:

"Calling all radio amateurs. This is WS4FC (phonetics) calling the Forsyth County ARES Net..."

2. Maintaining A Net Log

The NCS must maintain a net log or roster of the stations that have checked-in and note when stations leave. Note must also be made of stations listing traffic and sending or receiving traffic. The NCS should also log any other significant occurrences during the net, such as interference, propagation difficulties, etc..

XIV. DEPLOYMENT

ARES members should be prepared to deploy at a moment's notice. Emergencies happen without prior warning and we can be asked by our served agencies to deploy at any time day or night. ARES deployments may be for a few hours or several days or more. ARES members are only asked to commit the time than they can comfortably provide.

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A. GO-KITS

We do not have time in an emergency to run around looking for spare batteries, clothing, bug spray, etc. ARES members are encouraged to maintain Go-Kits for their radios and personal items needed for deployment. Go-Kits are an essential to rapid response. Having a small suitcase pre-packed with clothing for 3 days, a radio kit with spare HT batteries and mag-mount antenna or mobile radio, powers supply and antenna(s) is a best amateur ARES practice. See [Appendix 4](#) for Personal Go-Kit suggested items.

B. ARRIVE FOR YOUR ASSIGNMENT AHEAD OF TIME

Arrive at your assigned operating point 10 to 20 minutes before your shift starts so that you can get set up and be briefed by the start of your shift. The operator you are relieving would like to leave at the end of his shift also. If the operator you are relieving doesn't have written information for you, you can use the same list we just discussed (with any additions you need) to guide your questions.

XV. TACTICAL NET OPERATIONS, PUBLIC SERVICE EVENTS

A. Background

Amateur radio has a long standing tradition of providing support in events where the official sponsoring organization cannot provide all the communications required for adequate public safety. Competent service rendered by amateurs has proven valuable, and often essential, to public safety in these events by providing rapid alerting of officials when people need help. The FCC protects amateur radio from incursion by commercial and government interests by limiting our support to the public safety issues and those not related to "regular business affairs" of any party.

B. Other Tactical Operations

For the purpose of this manual tactical net operating is connected to public service events, although tactical nets can be run for any purpose. There are many other types of amateur nets that can be run in tactical fashion. Administrative nets for coordinating activities during disasters, social nets, swap nets, technical nets, etc. All such nets may be run in the same pattern as the formal traffic nets, but abbreviated or custom syntax may be substituted.

Experienced net operators will appreciate the basic structure of the "directed net" in all such activities. The role of the NCS is to help conduct the operation in an orderly fashion.

C. Mission

The amateur mission in public service events is accomplished by providing communications for officials responsible for the event and public safety. As amateurs, we are not responsible for that safety. We facilitate the mission of officials who are, and can help by providing communications in depth over the full geographical area of the event.

Our mission is to communicate, not administrate, for the responsible officials. We are the telephone or FAX service between officials. Our job is to pass their information and emergency requests back and forth with speed and accuracy.

D. Planning and Teamwork

Working together to provide communications for this type event requires the support of planners, operators and equipment support people. Your ideas on how to do an effective job are valuable and most welcome during planning and operation. Thorough planning with the officials prior to the event is essential to effective operation and full and proper use of the amateur resources. The

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ARES EC or designee will coordinate with the event officials during planning and operations. When this kind of service is well planned with the officials, and well conducted by the operators, it provides a very rewarding opportunity to serve the public with our skills. If we operate effectively we set an example for other amateurs and other officials we might someday serve. Outsiders listening to our communications will judge Amateur Radio and our club or group based on what they hear.

E. Tactical vs. FCC Call Sign Use

Tactical call signs are generally used for efficiency while working public service events or emergency communication nets. During a directed net, you will be called by your tactical call sign, not your FCC amateur radio call sign. You should use the tactical call sign to identify your transmissions, and you should call other stations by their tactical call sign. However, you must also comply with FCC regulations and identify properly with your FCC call sign. Remember, part 97 requires that "Each amateur station . . . must transmit its assigned call sign . . . at the end of each communication, and at least every ten minutes during a communication . . ." That means our FCC call sign. To comply, simply add your FCC call sign to your last transmission in a series.

F. "Best Amateur Practices"

Participating operators should be familiar with "best amateur practices" reviewed in the following sections. The examples have been tailored to this type event, relative to those used in formal nets, in order to simplify them for tactical operations. These operating practices are presented as a guide and not intended to make our operations so formalized as to interfere with the friendly atmosphere characteristic of our service. Calm and confident operators can pass the typical information in these events without every word being scripted in advance. Using these practices will help maintain control and order and help assure that essential information gets through.

Perhaps a good way to demonstrate the tactical net is to present the operation in the setting of a typical public service event. The following section does that, showing basic syntax that may be used by the NCS and stations. Later sections deal with the questions of verbal versus written traffic and planning for such events, etc. Call signs shown are intended to be generic for example purposes only and not related to the holders of those call signs in any way.

G. Tactical Net Practices, Event Example

For the following examples and procedures, assume a public service event is to be held with a large public participation, such as a walk-a-thon. The officials have provided medical stations along the course with medical staffs to assist the public with problems. Amateurs are stationed at each medical station and at a key location where contact is maintained with public safety officials and the event officials (a fixed location in this example, but often event officials move about and require a shadow operator to follow along to maintain contact).

H. Example Event Station Assignments

The amateur stations are to use two meter portable or mobile equipment, a local repeater, and tactical call signs:

MED1: (The station at the public safety and event command post.)

SAG1, SAG2, SAG3, REST1, REST2: The stations on the course.

NCS: The net control station.

The NCS is at a central location free of the responsibility of serving anyone but the net business. The NCS is able to communicate with the stations directly on simplex as well as through the repeater system in use. Additional "home" stations may be used for simplex relay where the

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geography demands. A second operator at the NCS station is often helpful to handle off air jobs. Although simplex operation is possible here, and conserves spectrum use, the choice is yours based upon many other considerations such as HT and home station coverage, etc. A net station with a public safety agency mobile or field command post is an important provision for expediting emergency calls to public safety organizations. A home station standing by to make telephone calls to public safety agencies is also a wise precaution. This station may also back up the NCS and help relay when needed. Both are often used, the field command post usually being primary since they are usually in direct contact with police and fire resources on the course as well as with dispatch centers. Any number of variations of this format is possible. Each event will present a different configuration problem to be matched with communications providers. A rehearsal with a roving communicator to test the course for difficult communications areas is advisable.

I. Confirmation

The station delivering the message should originate a priority message back to the official or station originating the request with information that an emergency response is in route, if possible, or at least that notification has been made. The station on scene should make note to check for such a response within a reasonable time, although it is difficult in some events to get feedback from busy public safety officials regarding the dispatch of the emergency response. As amateurs, however, we can inform the station on scene that the call was passed to those officials.

J. Documentation

The station delivering an emergency message to public safety officials should do so in writing when possible. This may be done after the first verbal transmission to expedite the call (submit the written follow-up marked "handled"). All emergency calls should be logged by the sending station, receiving station, and NCS. Emergency message info should be held for the medical supervisor and/or event officials to be presented on demand. It is often necessary for those officials to report all the circumstances and response information for liability reasons and others.

K. Tactical Dispatching, On and Off Net Frequency

This dispatching is very similar to that used on formal traffic nets. Note that the first station addressed in the dispatch command acknowledges or calls first. The receiving station initiates the frequency check and calls the transmitting station off frequency. This understanding avoids confusing simultaneous transmissions possible on repeaters.

1. On Net Frequency

SAG 4: "NET CONTROL SAG 4, TRAFFIC FOR REST 2 OVER"

NCS: "SAG 4, CONTACT YOUR STATION OVER"

2. The Exchange

SAG 4: "REST 2 SAG 4...OVER"

REST 2: "REST 2 OVER"

SAG 4: (Conducts their traffic with REST 2 – Upon completion states) "SAG 4, N4ABC, OUT"

REST 2: "REST 2, KM4CCC, OUT"

NCS: "Net Control, WS4FC, OUT"

(Note: The NCS does not initially sign as they are considered part of the conversation. Once all stations have completed their traffic, the NCS then signs to clear the frequency for other stations.)

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3. Multiple Station Calling - On Net Frequency

NCS: "SAG 1, SAG 3, REST 2"; and so on (Stations acknowledge in order called)

SAG 1: "SAG 1"

SAG 3: "SAG 3"

REST 2: "REST 2"

NCS: (Conducts their traffic then states "Over")

SAG 1: "SAG 1 (comment or proword as appropriate) W4AAA, OUT"

SAG 3: "SAG 3, KK4BBB, OUT"

REST 2: "REST 2, NI4DDD, OUT"

NCS: "Net Control WS4FC, OUT"

4. Off Net Frequency

There are times when due to the volume of traffic, tempo of operations or privacy concerns that traffic may have to be passed on a frequency other than the formal net operations frequency. Having an alternate frequency for this purpose should always be in the event planning.

SAG 3: "SAG 3 traffic with MED 1, over"

NCS: "SAG 3, MED 1 switch to (frequency) for our traffic. Report when back, WS4FC, OUT"

SAG 3: "SAG 3 switching, W4XX, OUT"

MED 1: "MED 1 switching, N4EDF, OUT"

Off frequency the receiving station checks the frequency is clear, calls the sending station, and, after the traffic is passed, both stations sign their full amateur call signs before returning to net.

SAG 3: "SAG 3 on frequency, W4XX, OUT"

MED 1: "MED 1 on frequency, N4EDF, OUT"

NCS: "SAG 3, MED 1 roger, WS4FC, OUT"

5. Returning To Net, Job Completed

Stations returning to net after a successful exchange after being sent off frequency by the NCS, following any net transactions:

SAG 3: "SAG 3 on frequency, W4XX, OUT"

NCS: "SAG 3, roger, WS4FC, OUT"

MED 1: "MED 1 on frequency, N4EDF, OUT"

NCS: "MED 1, roger, WS4FC, OUT"

6. Reporting Back To Net, Job Not Completed

Stations returning after failure to make contact or complete their exchange, following any net transactions:

SAG 3: "SAG 3 BACK, NO CONTACT, OVER"

NCS: "SAG 3 ROGER STAND-BY"

MED 1: "MED 1 BACK, NO CONTACT, OVER"

NCS: "MED 1 ROGER"; or

The NCS may immediately dispatch the business on the net

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NCS: "MED 1 ROGER, CONTACT SAG 3, OVER"

(NOTE: The NCS may ask for advice, assign an alternative frequency, or arrange a relay for the communications – particularly for simplex and HF operations.)

Often missed contact is due to repeaters that are, or become, busy. It is helpful for the NCS to be able to monitor repeaters before delegating stations to alternate frequencies. If the dispatch was to a simplex frequency the transmitting station should notify the NCS that the calling receiving station could not be heard. Relays may then be quickly arranged, possibly through a "home" station.

7. Reporting Back to Net With Additional Requests

If returning stations have additional business with the net, they check back in as in:

REST1: "REST 1 BACK WITH (state type of traffic, immediate, priority, routine, administrative) TRAFFIC (state receiving station(s) unless NCS), OVER"

NCS: "REST 1 PASS YOUR TRAFFIC, OVER"

Stations pass traffic and identify as above in the section on Tactical Dispatching, On and Off Net

Frequency, On Net Frequency, The Exchange.

L. Stations Requesting To Be Excused

It is expected that all stations checked into the net will remain on the net monitoring the NCS unless specifically excused.

1. Excusing From the Net

SAG 3: "SAG 3, OVER"

NCS: "SAG 3, OVER"

SAG 3: "REQUEST TO BE EXCUSED, OVER"

NCS: (Using SAG 3's FCC CALL SIGN) "W4XX [THANKS 73] YOU ARE EXCUSED, NET CONTROL WS4FC, OUT"

SAG 3: W4XX (Although optional, the use of the tactical call sign when signing out associates that call sign with the amateur licensee for monitoring purposes. If stations use their full call signs at the conclusion of net transactions the ID rules can be met throughout the net. The tactical call sign use then is little different than the use of suffixes in directed traffic nets.)

2. Temporary Excusing

SAG3: "SAG 3, OVER"

NCS: "SAG 3, OVER"

SAG3: "SAG 3 REQUEST TO LEAVE THE NET FOR (...) MINUTES OVER"

NCS: "MED 4 YOU ARE EXCUSED, NET CONTROL WS4FC, OUT"

SAG3: "SAG 3, W4XX, OUT"

W4XX would return with "NO TRAFFIC", or sometimes simply "W4XX SAG 3 BACK" to check back in implying no traffic, or would add "WITH TRAFFIC" if returning with additional business for the net.

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M. NCS Excusing Stations

In public service events it is typical that the event officials will be consulted prior to excusing stations covering sites or tasks for the event. Other station serving at home or for strictly amateur radio purposes may be excused by the amateur incident commander. See the next section. When net business is concluded the NCS will call the stations remaining in the net and excuse them individually. In service situations typical of these events, it is better to be sure each station is checked out at the proper time than to assume that all operators will hear the net close.

1. Excusing Stations Individually

SAG 3: "REQUEST TO BE EXCUSED, OVER"

NCS: "SAG 3 THANK YOU 73 YOU ARE EXCUSED"

SAG 3: [SAG 3] 73 W3XX (Although optional, the use of the tactical call sign when signing out associates that call sign with the amateur licensee for monitoring purposes. If stations use their full call signs at the conclusion of net transactions the ID rules can be met throughout the net. The tactical call sign use then is little different than the use of suffixes in directed traffic nets.)

N. Authority for Closing Stations

Stations participating in the event should secure permission from the event officials before closing operations. This is normally done, or coordinated, by the net control station, and each station in the net is excused as the officials approve.

O. Identification Procedures

The FCC rules for station identification are as follows (in applicable part as amended):
(From FCC 89-180, The Amateur Radio Service.)

97.119 Station Identification.

(a) Each amateur station, except a space station or telecommand station, must transmit its assigned call sign on its transmitting channel at the end of each communication, and at least every 10 minutes during a communication, for the purpose of clearly making the source of the transmissions from the station known to those receiving the transmissions. No station may transmit unidentified communications or signals, or transmit as the station call sign, any call sign not authorized to the station.

Note that a "communication" in the rule means an exchange, or series of exchanges, between stations, and not each single transmission. When stations address the NCS with their tactical call sign, or the NCS calls stations with tactical call signs, these administrative exchanges set up a transaction between two stations. Stations ID with their full call signs at the end of those transactions on net or off frequency. (There is no need to use tactical calls off net.) This applies to words between stations, passing of formal traffic, etc. The syntax shown here is typical of that used on the "directed" traffic net specifically to provide for this ID arrangement. Stations use their full call sign when first checking into the net. Tactical call signs may be used thereafter for asking permission to transmit, or by the NCS to address stations. The tactical call signs in the examples are usually used for clarity and to help the net control keep an accurate record of requests and stations based on function. A roll call at intervals for ID purposes is not required if ID is done as shown. The net control should identify within the 10 minute limits, and should state the purpose of the net, pausing for additional check-ins as often as possible.

Avoid over-identification which wastes net time. You do not have to periodically identify if you are in a net and make no transmissions. Identify with full call sign when you check in, when you exchange traffic or words during the net or off frequency, and when you check out. It is

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customary that the tactical call sign and the station's call sign both be given in the transaction ending ID on the net to associate the two clearly.

Example:

NCS: "REST 2 CALL SAG 1, OVER" (dispatching pending business)

REST 2: "SAG 1 REST 2, OVER"

SAG 1: "SAG 1, OVER"

REST 2: "NEED MORE WATER AT THIS LOCATION PLEASE HAVE THE TRUCK STOP HERE NEXT, OVER"

SAG 1: "ROGER SAG 1, W2XX, OUT"

REST 2: "THANKS REST 2 W1XX, OUT"

NCS: "NET CONTROL, WS4FC OUT"

Obviously the NCS set up the communications using the tactical calls; therefore it is not mandatory to use both calls to meet the legal ID requirement. The amateur call sign should be last in the sequence if both are used.

P. Repeater Delays

Remember that there may be a delay in repeater transmitter response time. Operate your push-to-talk switch and then PAUSE a second or two to allow the repeater to activate before talking. Failure to do so will cause the first part of your transmission to be cut off. The use of "this is... (pause with PTT release)... (call sign)..." by net stations may be used to avoid "doubling" with other stations, again keeping the delay in mind for both parts.

Q. Transmission Speed, Voicing Rules

When sending a message or listing traffic, remember that the station on the other end trying to write it down is probably not a shorthand expert. Send slowly and clearly...it takes less time to do it right the first time than having to repeat. Experienced traffic handlers say a portion of text, pause while spelling it to themselves, and then continue as they visualize the receiving station has finished writing.

NOTE: Public safety dispatchers infrequently use phonetics or spelling for much of the traffic passed, but they do use phonetics or spelling for critical groups such as letters in tag numbers. For street names, etc., remember that even though they may have a computer aided dispatching computer system backing them up to catch errors, amateurs should strive to get incident addresses passed accurately.

Letter spelling may be used for critical words. Phonetics are not that often required on FM voice operations, but their use for abbreviations, initials, mixed groups, and proper names, etc., will prevent common mistakes. Use the appropriate introductory words for initials, figures, mixed groups, amateur calls, etc. In other words, using the proven techniques of traffic handling can and will help maintain the accuracy needed and avoid the errors of speech perception.

No matter how urgent the message, or how excited the operator might be, if the receiving station has to write down the request, it will get written only as fast as he can write it. If he is rushed, he may get it wrong, or not be able to read it a few minutes later. Contrary to the emotions of the moment, the fact is that the more urgent the message, the more slowly and carefully the message should be sent.

SOMEONE'S LIFE MAY DEPEND ON YOUR ACCURACY IN COMMUNICATING

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R. Written TRAFFIC vs. VERBAL TRAFFIC

This is a controversial subject. There are those who insist that written traffic has no place in tactical event net operations---that verbal communicating is perfectly satisfactory in all cases, and that written messages are for those "traffic handlers" among us. There are others who argue that ALL third party traffic must be written out.

Perhaps the best approach is to accept that a mix of the two is probably wise. These events can present situations where all forms of communicating are appropriate at different times. An important part of deciding which to use might consider the number of hands your message must pass through to get to the delivery point, and how busy the addressee's are likely to be. In many cases the message should be written out for the official's benefit, and in other cases for the benefit of the handling amateurs. In the latter case, for example, a complex message for an event coordinator might best be written out and passed to the shadow operator formally for verbal delivery when the official has a moment to listen. The opposite might be true for a message to a public safety official.

Giving the Police or Fire officials written incident message forms (ICS 213) will be well received. Many of these can be written out from verbal transmission, but some may be more complex. In such cases, the skills of the "traffic handler" are prerequisite for getting a complex message passed and delivered accurately.

Permitting officials to talk over your radio is the opposite extreme, and can be very helpful. Using verbal communications to direct logistics for participating amateurs is the norm.

Generally speaking, verbal communications often suffice when the officials are listening to our radios, or are standing next to our operators. When they are busy or distracted, common sense dictates when a written note would be the right way to pass information to them. The transmission on the air could be either verbal or written traffic. It is generally accepted that amateurs supporting such events are not, simply by participating, responsible for running or supervising the event itself. Certainly amateurs should not engage in yelling at each other demanding that event matters be resolved. The officials should interact among themselves to resolve event issues, using us as communicators to gather information and issue commands. We should coach them in the methods of creating clear messages and requests, and should make them aware of the limits of our service, the lack of radio privacy, and appropriate message content. Often we must translate the hurried request ourselves into a verbal or formal message that makes sense. The station interfacing with the official should be careful doing any such translating.

"We communicate. We do not administrate." At least we avoid the latter unless we wish to take full responsibility and accept liability for our decisions and communications. What you do off the air is your business, but you still represent the amateur community. What you do on the air is subject to regulation and exposed to wide listening. Amateur Radio generally is present to help assure the safe conduct of these events. We serve the participating public.

S. Planning, Preparation, And Execution Checklist

Proper planning and preparation for these type events cannot be overemphasized. The following checklist may contain a few items that could be helpful:

- 1) Meet with the event and public safety officials well in advance of the event. Help them to understand what amateur radio can do for them, what it is not permitted to do, and how to structure their plans to allow for the effective use of your resources. These officials will probably have to make extensive plans for their own people, and you want to have your part in the operations well known in those plans.

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- 2) Investigate the liability questions for amateurs exposed to risk in the event. Consider the liabilities that might extend to the operators and the event organizers resulting from communications problems.
- 3) Document the course, positions and responsibilities of officials, public safety provisions, and strategies required to perform the event. Document exactly to whom each type emergency or regular message is to be sent, and where those parties will be at all times, fixed or roving. Stay in close touch with the planners until event time. Adapt to last minute changes.
- 4) Use the official plans and course information to create a manning and radio operations plan.
- 5) Plan for sustaining communications with officials who are able to answer questions arising during the event.
- 6) Review the radio environment. Drive the course (for a day event, drive daytime in the higher solar noise; for a weekday event, drive a weekday in the higher commercial noise environment). Check the availability of your favorite hilltop to facilitate communications on the weekday or weekend as appropriate. Check if rain or snow might be a path problem. Check coverage for the type radios you will specify to be used during the event. Check out the intermod. Check out local desensing caused by close stations. Two 2 meter stations cannot usually operate at full capability closer than a few hundred feet or more depending on power levels. Some HT's are notoriously bad in this regard. Evaluate what equipment and antennas to specify for the operators. You may discover problems you never thought possible. The day of the event is no time for surprises.
- 7) Plan for backing up the primary radio coverage and net control. Assign an alternate net control. Look at direct simplex paths between all stations, if possible, to cover for loss of repeaters, NCS, or home stations. Consider using home stations for relay or phone calls, alternate repeaters (with permission), and other bands for backup. Check out your choices and make sure they work.
- 8) Solicit your required manpower. Be sure to allow plenty of time so that fellow amateurs may adjust or reserve their time for the event. Line up extra manpower to cover for last minute cancellations and no-shows. Plan for any required training. Help newcomers learn and gain confidence in what they will do during the event (or team them up with veteran operators).
- 9) Document and distribute the operation plan. Include maps and other aids to present the entire event situation as best you can. It is better to share all the info than to limit info to specific jobs. Include info on what, where, when, how... and how long. List needed equipment, antennas, personal supplies, clothing, food, fixed-portable-mobile-power requirements, etc., that exist for each operator or job. Specify the name, location, and time for meeting with officials for each assignment. Arrange for parking as required.
- 10) Meet with the officials and review your final plans with them before the event. Things have a way of changing without you learning about them. This is the time to make final adjustments. The officials will be encouraged to know that your part of the event is ready to go.
- 11) Arrange for media coverage and publicity if appropriate. Invite your ARES, RACES and NTS operators to participate, of course.
- 12) Arrange for the repeater(s) control operator(s) to be available to respond to equipment or other problems during the event.
- 13) Practice with your operators, as required, to prepare for the event. Help them check out their equipment to be certain it will do the job.

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- 14) Run the event. Have experienced stations monitor and possibly record the operation for later review. Keep good NCS records and log emergency traffic.
- 15) When the event is over, review the event with fellow participants. Get their assessment of the amateur radio and the official's performance.
- 16) Review the event with the served officials. Document improvements to be included in future events.
- 17) Share the experience information with other groups, ARES leadership, and prospective "customers". Report the activity to the SEC and SM for the monthly review of Section public service.
- 18) Follow up on media and other coverage of the amateur effort. Stories about amateur radio activity usually require consultant support.

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XVI. APPENDIX 1 ARES NET SCRIPT

(REVISED 2/1/2018)

FORSYTH COUNTY ARES / RACES

NET CALL PROCEDURE

(Net to begin promptly at 8:30 p.m. local time each evening.)

“Calling all radio amateurs.” This is WS4FC calling the Forsyth County ARES Net. My name is _____ and I am located _____. This is a directed net, and serves as the Amateur Radio Emergency Services net for Forsyth County, NC. All radio amateurs are invited to check in and participate in this net, and stations having emergency or priority traffic should break at any time.

(ALLOW REPEATER TO DROP)

This net meets every _____ evening at 8:30 p.m. on the K4GW repeater, frequency 147.315 MHz. In the event of a real or simulated failure of this repeater, net operations will shift to one of our backup repeaters, the W4NC repeaters, primary, 145.470 or 146.640 MHz or secondary 444.275 MHz. These repeaters serve the Winston Salem / Forsyth County area. The offset is positive for the K4GW repeater and negative for the W4NC repeaters. All repeaters use a 100 Hz PL tone. In the event all repeaters should fail, net operations will shift to 146.520 MHz simplex.

All stations checking into the net should check in alphabetically according to the first letter in the suffix of your call sign. State THIS IS and temporarily unkey, then state your call sign using standard phonetics, followed by your name and any listings of announcements or traffic for the net.

(ALLOW REPEATER TO DROP)

Are there any ARES, ARRL representatives or county RACES stations for the Forsyth County ARES Net over.

Mobile or portable stations over.

Fixed stations Alpha through Golf (A-G) over.

Stations Hotel through November (H-N) over.

This is WS4FC with the Forsyth County ARES Net, stations Oscar through Tango (O-T) over.

Stations Uniform through Zulu (U-Z) over.

(BE SURE TO ACKNOWLEDGE CHECK-INS BY GROUP)

**(Acknowledge each call sign in a group using alphanumeric call signs:
I.E. “W 1 H R C, W A 4 N O T, roger. Out.” Then move to next group.)**

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Additional stations for the Forsyth County ARES net Alpha through Zulu (A-Z) over.

(At this time handle any announcements or traffic for the net. Ask if there are any inquiries pertaining to the announcements.)

At this time we will hold our weekly ARES meeting. Will the Forsyth County EC or a representative call net control WS4FC.

[After ARES meeting, ask for any additional check-ins Alpha – Zulu. Once the meeting is completed, net control may close the net or proceed with an informal rag chew session with participating stations. This decision will be made at net controls discretion. If participating in rag chew, periodically ask for check-ins during the session.]

This is WS4FC closing this regularly scheduled session of the Forsyth County ARES net at _____ local time. Net control would like to thank all stations for participating and we would like to thank Gerry Minor and the Forsyth Amateur Radio Club for the use of our primary and back-up repeaters. This is net control WS4FC saying good evening and returning the repeater to normal amateur use. 73's.

(NOTE: Full Phonetic call sign is only required for the FIRST use of the call sign. All following uses should use alphanumeric. Full Phonetic call sign is identified in the script by underline WS4FC.)

Forsyth County Amateur Radio Emergency Services ARES Member Standard Operating Procedures

XVII. APPENDIX 2 SPECIAL EVENT NET SCRIPTS

(REVISED 6/2/2017)

FORSYTH COUNTY ARES /RACES

SPECIAL EVENT NETS

ROLL CALL PROCEDURE

This is WS4FC opening the [*Name of Net*] Net. This is a directed net for [*Name of Event*]. All stations should direct their traffic to NET CONTROL. All participating stations standby for roll call, over.

{Periodic Calls}

This is WS4FC for the [*Name of Net*] Net. All stations should direct their traffic to NET CONTROL, out.

{CLOSING}

This is WS4FC closing the [*Name of Net*] Net at ____local time. Net control would like to thank all stations for participating and we would like to thank Forsyth Amateur Radio Club for the use of our primary and back-up repeaters. This is net control WS4FC saying good evening and returning the repeater to normal amateur use. 73's.

RADIO CHECK-IN PROCEDURE

This is WS4FC opening the [*Name of Net*] Net. This is a directed net for [*Name of Event*]. All stations should direct their traffic to NET CONTROL, out.

(Note: Participating stations in this mode will perform a radio check with the NCS and hence be checked into the net. Example: WA4AAA - "Net Control this is WA4AAA radio check, over." NCS - "WA4AAA Loud and Clear, out.")

{Periodic Calls}

This is WS4FC for the [*Name of Net*] Net. All stations should direct their traffic to NET CONTROL, out.

{CLOSING}

This is WS4FC closing the [*Name of Net*] Net at ____local time. Net control would like to thank all stations for participating and we would like to thank Forsyth Amateur Radio Club for the use of our primary and back-up repeaters. This is net control WS4FC saying good evening and returning the repeater to normal amateur use. 73's.

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XVIII. APPENDIX 3 FULL LISTING OF ARES PROWORDS

ACKNOWLEDGE (ACK)	Addressee must send acknowledgement
AFFIRMATIVE	Yes
ALL AFTER	The part of the message I reference is everything after . . .
ALL BEFORE	The part of the message I reference is everything before . . .
ANSWER AFTER	Station called, when answering, answer after [call sign]
ASSUME CONTROL	Take control of the net until further notice
BREAK	Indicates the separations between the heading and the text and between the text and the end procedure.
CALL SIGN	The group that follows is a call sign
CORRECT	You are correct.
CORRECTION	a) An error has been made in this transmission. The transmission will continue with the last word correctly transmitted. b) An error has been made. The corrected version is . . . c) In response to your request for verification, the following is the corrected version. . .
DISREGARD THIS TRANSMISSION OUT	This transmission is in error. Disregard it
DO NOT ANSWER	Stations called are not to answer the call, receipt for the message, or make any transmission in response to this Transmission
FIGURES	Numerals, or a mixed group beginning with a numeral follow(s) . . .
FROM	The following is the originator of this message
I AM ASSUMING CONTROL	I am in control of this net until further notice
IMMEDIATE	The precedence is IMMEDIATE.
INFO	The following are INFO addressees INFO
I READ BACK . . .	This is my response to your READ BACK instruction . . .
I SAY AGAIN	I am repeating what I said . . .
I SPELL	The following are phonetic letters to spell the previous word or letter(s) beginning a group.
I VERIFY . . .	The following is my response to your request to VERIFY . . .
MESSAGE	A message that requires recording is about to follow
MINIMIZE	Reduce traffic and net activity to minimum.
MORE TO FOLLOW	The transmitting station has more messages for the receiving station
NEGATIVE	No
NO PLAY	During an exercise, "NO PLAY" indicates a message that is real, not part of the exercise.
NOTHING HEARD	No reply to my call was heard.
NUMBER	Station serial number of message.
OUT	End of transmission, no reply is expected.
OVER	End of my transmission. Go ahead with yours. Transmit.
PRIORITY	Precedence if PRIORITY. May be spoken 3 times to interrupt lower precedence traffic.
READ BACK	Repeat this entire transmission back to me exactly as you received it.

Forsyth County Amateur Radio Emergency Services ARES Member Standard Operating Procedures

RELAY	Station called, transmit this message to all addressees unless fewer are specified.
RELAY TO . . .	Transmit this message to the station(s) following . . .
RELAY THROUGH	Relay your message through . . .
ROGER	I received your transmission satisfactorily.
ROUTINE	Precedence is ROUTINE.
SAY AGAIN (. . .)	Repeat your last transmission. Repeat the portion of your transmission indicated.
SEND YOUR [MESSAGE]	I am ready to receive your [message].
SILENCE (THREE TIMES)	Cease transmitting until SILENCE IS LIFTED
SILENCE IS LIFTED	Normal communications may continue
SPEAK SLOWER	Reduce the speed of your transmission
THIS IS	The station transmitting is . . .
THIS IS A DIRECTED NET	Until further notice, this net is directed
THIS IS A FREE NET	Until further notice, the net is free
THROUGH ME	Relay your message through this station
TIME	The following is the date-time group of this message
TO	The following are the action addressees of this message
-- TO --	The part of the message to which I refer is from ___ TO ___.
UNKNOWN STATION	The ID of the station I am attempting to contact is unknown.
USE TACTICAL CALL SIGNS	Until further notice, use tactical call signs
USE FULL CALL SIGNS	Until further notice, use full call signs
VERIFY	Addressee requests you check with originator and send a corrected version
WAIT	I must pause a few seconds
WAIT OUT	I must pause more than a few seconds.
WILCO	I have received your instruction, understand it and will comply. (Not used with ROGER)
WORD AFTER	I refer to the word immediately following ___
WORD BEFORE	I refer to the word immediately before ___
WORDS TWICE	Due to poor conditions, send each phrase or code group twice.
WRONG	Your last transmission was wrong. The correct version is ___.

Forsyth County Amateur Radio Emergency Services ARES Member Standard Operating Procedures

XIX. APPENDIX 4 GO-KIT SUGGESTED ITEMS

Day Pack

Kept in vehicle, ready for immediate use.

- _ Radio, Handheld, 2m/70cm
 - _ Antenna, flexible, extended-range, dual-band
 - _ Microphone/Speaker, external
 - _ Battery Pack, Rechargeable (3)
 - _ Charger, Battery, for handheld radio
 - _ Battery Pack, non-rechargeable for radio
 - _ Spare Batteries, AA (2 sets)
 - _ Belt Clip
 - _ Cable, handheld radio external 12Vdc power, w/ PowerPole connector
 - _ Cable, antenna adapter, as appropriate for the handheld
- _ Binoculars, compact, 8 x 35
- _ Flashlight, high-intensity LED
 - _ Spare Lamp Assy, Flashlight
 - _ Spare Batteries, Flashlight (3 sets)
- _ Manual, ARES Field Resources
- _ Maps,
 - _ Map, Forsyth County, laminated
 - _ Map, North Carolina, laminated
 - _ Map, Surrounding Counties (Davie, Davidson, Yadkin, Stokes, Gilford), laminated
- _ Multi-Tool, Leatherman Core
- _ Paper, waterproof notebook, 4½" x 7"
- _ Pen, rolling ball, blue or black (2)
- _ Pen, Sharpie marker, black
- _ Whistle
- _ Cable Ties, nylon, UV-resistant, asstd.
- _ Rope, 1/8" nylon (50 ft)

Food and Water:

- _ Money, \$30 (5 in \$1's, 2 in \$5's and 1 in \$10's)
- _ Snacks (Almonds, trail mix, etc—rotate periodically to keep fresh)
- _ Water, bottled, 0.5 L (2)

Clothing and Protective Gear:

- _ Ear Plugs, disposable (2 pr)
- _ Gloves, leather
- _ Goggles, safety, impact-resistant
- _ Hat, roll-up
- _ Mask, dust (2)
- _ Outer Shirt, pullover, wind-resistant
- _ Vest, safety, yellow w/ reflective stripes (ANSI Approved)

Personal Items:

- _ Eyeglasses, prescription
- _ Lip Balm

Forsyth County Amateur Radio Emergency Services ARES Member Standard Operating Procedures

- _ Lotion, hand sanitizer, waterless
- _ Meds, prescription (full daily doses)
- _ Sunscreen, SPF-35

First Aid Kit:

- _ Blanket, emergency, mylar, 56" x 84"
- _ Clippers, nail
- _ Mirror, steel
- _ Tweezers
- _ Bag, Ziploc, quart
- _ Blade, razor, single edge
- _ Dressing, adhesive, finger (2)
- _ Dressing, adhesive, knuckle (2)
- _ Dressing, adhesive, 2" x 3" (2)
- _ Dressing, adhesive, 3" x 4" (2)
- _ Dressing, adhesive, strip (10)
- _ Dressing, gauze pad, 3" x 4" (2)
- _ Matches, wind- and water-proof
- _ Moleskin, 3" x 4" (4 sht.)
- _ Safety Pin (2)
- _ Tablets, anti-diarrhea, Imodium A-D
- _ Tablets, acid reducer, Zantac 75
- _ Tablets, Ibuprofen 200 mg
- _ Tape, first aid, 1" cloth
- _ Towelette, hand sanitizer (4)

Forsyth County Amateur Radio Emergency Services ARES Member Standard Operating Procedures

24-Hour Kit

Designed to supplement the Day Pack, may also be kept in vehicle.

- _ Radio, Handheld, 2m/70cm (Spare if desired)
 - _ Antenna, OEM
 - _ Battery Pack, rechargeable
 - _ Charger, Battery – for radio
- _ Blanket, nylon, fleece-lined, 48" x 56"
- _ Cup, steel, canteen
- _ Poncho, nylon
- _ Towel and washcloth
- _ Bag, Trash, 33 gal. (2)
- _ Bag, Ziploc, asstd.
- _ Toilet Tissue, roll
- _ Towelette, hand sanitizer, pack

Food and Water:

- _ Meal, Ready-to-Eat (3)
- _ Heater, catalytic, MRE (3)
- _ Water, bottled, 0.5 L (8)

Forsyth County Amateur Radio Emergency Services ARES Member Standard Operating Procedures

72-Hour Kit

Designed to supplement the Day Pack and 24-Hour Kit. Kept at home ready to deploy.

- _ Blanket, microfiber, 50" x 60"
- _ Lantern, LED
- _ Spare Batteries, D (4)
- _ Sewing kit, personal
- _ Towel, bath
- _ Bag, Trash, 33 gal. (2)
- _ Bag, Ziploc, asstd.
- _ Batteries, AA (48)
- _ Batteries, AAA (16)
- _ Mask, dust (2)
- _ Rope, 1/8" nylon (100 ft)
- _ Toilet Tissue (2)
- _ Towelette, hand sanitizer, pack
- _ Utensils, disposable plastic (6 sets)

Food and Water:

- _ Meal, Ready-to-Eat (6)
- _ Heater, catalytic, MRE (6)
- _ Water, bottled, 0.5 L (18)

Clothing:

- _ Sandals, shower
- _ Shirt, short sleeve, pocket-T (2)
- _ Shirt, short sleeve, polo (2)
- _ Shirt, sweat-suit, medium-weight
- _ Socks, athletic, cotton, white (3 pr)
- _ Socks, boot, wool/nylon blend (2 pr)
- _ Trousers, hiking shorts
- _ Trousers, rip-stop cotton (2)
- _ Trousers, sweat-suit, medium-weight
- _ Underwear (3)
- _ Underwear, thermal, shirt
- _ Underwear, thermal, trousers

Personal Items:

- _ Comb
- _ Dental Floss
- _ Dental Picks
- _ Ear Plugs, disposable foam (5 pr)
- _ Lip Balm, Carmex
- _ Lotion, antiperspirant
- _ Lotion, hand sanitizer, waterless
- _ Lotion, sunscreen
- _ Medications, prescription (3 daily doses)
- _ Mirror, 3" x 5"
- _ Mouthwash
- _ Shampoo

Forsyth County Amateur Radio Emergency Services ARES Member Standard Operating Procedures

- _ Soap, bath
- _ Swabs, cotton
- _ Toothbrush
- _ Toothpaste

First Aid Kit:

- _ Can Opener
- _ Clippers, nail
- _ Fire Starter, magnesium
- _ Magnifier, hand, 10-power
- _ Handbook, emergency
- _ Scissors, bandage, small
- _ Tweezers
- _ Bag, Ziploc, quart
- _ Bandage, butterfly closure, large (6)
- _ Bandage, gauze roll, 3" x 5 yd
- _ Bandage, liquid, first-aid, antiseptic
- _ Bandage, triangular
- _ Blade, razor, single edge
- _ Dressing, adhesive, 2" x 3" (5)
- _ Dressing, adhesive, 3" x 4" (3)
- _ Dressing, adhesive, finger (3)
- _ Dressing, adhesive, knuckle (3)
- _ Dressing, adhesive, strip (10)
- _ Dressing, eye
- _ Dressing, gauze pad, 3" x 4" (3)
- _ Dressing, gauze sponge, 4" x 4" bulk
- _ Gloves, examination, vinyl (2 pr)
- _ Matches, wind and water proof
- _ Moleskin, 3" x 4", (3)
- _ Pin, safety, asstd.
- _ Solution, Iodine
- _ Splint, wire, small
- _ Tablets, acid reducer, Zantac 75
- _ Tablets, anti-diarrheal, Imodium A-D
- _ Tablets, Ibuprofen 200 m

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Office Kit

May be carried in vehicle or stationed at home. Kit contains operational references, assorted office supplies, and a supply of forms useful for maintaining a base or portable communications station.

- _ Emergency cell phone charger
- _ Spare Batteries, AA (4)
- _ Clipboard, Aluminum
- _ Flashlight, LED
 - _ Spare Batteries, (1 set)
- _ Map Book
 - _ Forsyth County
 - _ Davie County
 - _ Davidson County
 - _ Yadkin County
 - _ Stokes County
 - _ Gilford County
 - _ North Carolina State
- _ Pen, highlighter, yellow (2)
- _ Pen, rolling ball, blue (2)
- _ Pen, Sharpie marker, black (2)
- _ Scissors
- _ Stapler
- _ Staples
- _ Envelope, 9" x 12" (2)
- _ Paper, stenographer's pad, 6" x 9"
- _ Paper, Post-It note pad, 3" x 3"
- _ Paper clips, asstd.
- _ Rubber bands, asstd.
- _ Tablets, Ibuprofen 200 mg
- _ Tape, cellophane, ½"

Food and Water:

- _ Water, Bottled, 0.5 L (2)

Information Binder:

- _ Emergency Reference Information, FSD-255
- _ FCC Licenses, Amateur Radio/GMRS (copies)
- _ Driver's License (copies)
- _ ARRL/FEMA Course Certifications (copies)
- _ US Amateur Radio Band/HF Band Charts
- _ Numbered Radiograms, FSD-3
- _ Formal Messages, FSD-218
- _ Communication Procedures, FSD-220
- _ Radio Programming Chart
- _ Forsyth County ARES Frequency Chart
- _ Forsyth County ARES Operations Manual

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Forms:

- _ ICS 205—Incident Radio Communications Plan
- _ ICS 205-A—Communications List
- _ ICS 213—General Message
- _ ICS 216—Radio Requirements Worksheet
- _ ICS 217—Radio Frequency Assignment Workbook
- _ ICS 309—Communications Log
- _ ARC 2079H—Amateur Radio Operator Intake
- _ Damage Assessment Report
- _ Net Control Sheet
- _ Radiogram, ARRL NTS format

Computer

This is the computer I use to run Packet and PSK-31; usually kept at home.

- _ Computer, laptop or notebook, w/ Li-Ion battery
- _ Power Supply, 110Vac, w/ power cable for computer
- _ Mouse, optical, USB, w/ mouse pad
- _ Adapter, USB to RS-232 interface
- _ Cables and adapters as appropriate for your system
- _ Cable, network, Ethernet Cat-5, 6 ft
- _ Cable, telephone, 6 ft
- _ Cable, USB to mini-USB
- _ Inverter, 110Vac, 350W, w/ Power-Pole connector

Forsyth County Amateur Radio Emergency Services ARES Member Standard Operating Procedures

Radio Kit, VHF/UHF FM Phone/Digital

May be carried in vehicle or stationed at home. This kit provides portable voice or digital capabilities wherever needed.

- _ Radio, 2m/70cm
 - _ DTMF microphone
- _ Terminal Node Controller
 - _ Cables for TNC
- _ Cable, 12Vdc power, w/ PowerPole connector
- _ Antenna, 2m/70cm, 5/8-wave
- _ Antenna Mount, magnetic, NMO w/ 12 ft RG-58
- _ Cable, 12Vdc power, w/ PowerPole connectors, 6 ft
- _ Cable, coaxial, RG-8X, 25 ft, w/ couplers
- _ Cable, HT external 12Vdc power, w/ PowerPole connector
- _ Clock, battery powered
 - _ Spare Batteries, (1 set)
- _ Headphones, lightweight
- _ Adapter, audio, 1/8" stereo jack to 1/8" mono plug
- _ Light Strip, LED, 12Vdc, w/ 6 ft power cable and PowerPole connector
- _ Manuals, for radio and equipment
- _ Power Distribution Panel
- _ Power Supply, 13.8Vdc @ 25A
- _ Cable, 110Vac power
- _ Cable, 12Vdc power output, w/ PowerPole connector

Parts Kit:

- _ Cable Ties, nylon, UV-resistant, asstd.
- _ Fuses, asstd.
- _ PowerPole connectors
- _ PowerPole to OEM radio power adapter
- _ RF adapters and couplers, asstd.

Radio Kit, HF

Although the HF radio is not kept in this kit, the other items are pre-staged in a padded athletic-type bag. All that is needed is to unplug the radio at home, toss it the bag, deploy.

- _ Radio, Portable, HF (May be an all band/mode radio)
- _ DTMF microphone
- _ Power Supply, 110Vac
- _ Tuner, HF antenna (unless internal within radio)
- _ Cables, interconnection (CAT/Auto-Tune/Coax)
- _ Cable, 110Vac power
- _ Cable, 12Vdc power, w/ PowerPole connector
- _ Cable, Control and interconnect as appropriate for your system
- _ HF Frequency/Band reference chart
- _ Manual, Radio, quick reference
- _ Spare Fuse (2)

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Tool Bag

May be your everyday electronics tool kit, which should be kept neatly organized so that it's available for field operations.

- _ Antenna/SWR Analyzer (if available)
 - _ Spare Batteries, (as appropriate, at least 1 spare set)
- _ SWR Wattmeter, HF/144/440
- _ Cable, coaxial, RG-8X, 3 ft (Qty 2)
- _ Multimeter, digital
 - _ Spare Battery, 9V
- _ Cable Stripper, coaxial, RG-8
- _ Flashlight, LED
 - _ Spare Batteries, for flashlight (2 sets)
- _ Knife, utility
 - _ Spare Blades
- _ Knife, X-Acto #1
 - _ Spare Blades, #11
- _ Pliers, bent needle-nose, 4"
- _ Pliers, crimping, PowerPole
- _ Pliers, crimping, wire terminal, w/ wire stripper
- _ Pliers, diagonal cutting, 4"
- _ Pliers, diagonal cutting, 7"
- _ Pliers, lineman's side-cutting, 7"
- _ Pliers, long needle-nose, 4"
- _ Pliers, needle-nose, 4"
- _ Screwdriver, mini-tip, Phillips/flat tip, set of 4
- _ Screwdriver, Phillips, #2
- _ Soldering Iron, 25W, 110Vac
- _ Soldering Iron, resistance tip, battery powered
 - _ Tip, resistance, asstd.
 - _ Spare Batteries, AA (4)
- _ Adhesive, cyanoacrylate
- _ Adhesive, 5-minute epoxy
- _ Cable Ties, nylon, UV-resistant, asstd.
- _ Cable Ties, Velcro
- _ Connectors, PL-259, w/ RG-58/8X adapter, asstd.
- _ Sealant, "liquid electrical tape"
- _ Solder, lead-free, 0.030"
- _ Tape, duct, heavy-duty, 1.88"
- _ Tape, electrical, PVC, 3/4"
- _ Terminals, crimp-on, PowerPole, asstd.
- _ Terminals, crimp-on, ring, asstd.
- _ Wire, #10 AWG, 2-cond. (20 ft)
- _ Wire, #16 AWG, 2-cond. (20 ft)

Forsyth County Amateur Radio Emergency Services ARES Member Standard Operating Procedures

15-ft Antenna Mast Set

This portable mast set with tripod yoke is used for VHF/UHF communications.

- _ Mast, sectional, aluminum, 1.88" x 44", keyed (4)
- _ Leg sections, w/ anchor eyebolts (3)
- _ Leg extension, 2 ft
- _ Leg extension, 1 ft
- _ Antenna, 2m/70cm J-pole, w/ SO-239 connector
- _ Hose Clamp, adjustable (2)
- _ Stake, tripod anchor, 10" (4)
- _ Tripod Yoke, aluminum, for 1.88" dia. Mast
- _ 10 ft nylon paracord (3)
- _ Stakes (3)
- _ Sandbag, pre-filled (3) (Stored separately) incase mast cannot be staked down

35-ft Antenna Mast Set

This portable mast set is used with the tilt-up base, guys, and wire antenna from the Antenna Setup Kit to rig an HF antenna.

- _ Mast, sectional, aluminum, 1.88" x 44", (9)
- _ Mast, top section, aluminum, 1.88" x 24"
- _ Ground Rod, copper, 4 ft, w/ cable clamp

Emergency Power Equipment

This equipment is not normally cached, and must be gathered as needed
(Suggested as appropriate to your system)

- _ Battery, 12V, 105 AH, deep cycle
- _ Pigtail, equipment power, w/ 30A PowerPole connector
- _ Pigtail, battery paralleling, #4 AWG, w/ 175A PowerPole connector
- _ Battery, 12V, 60 AH, SLA, w/ built-in 1500W Inverter and cigarette lighter socket
- _ Adapter, cigarette lighter plug to PowerPole connector
- _ Pigtail, equipment power, w/ 30A PowerPole connector
- _ Pigtail, battery paralleling, #4 AWG, w/ 175A PowerPole connector
- _ Charger, multi-stage, 5A, w/ PowerPole connector
- _ Generator, gasoline engine, 2kW, 110Vac
- _ Chain and padlocks, for securing generator
- _ Drip Tray, 18" x 24"
- _ Container, Gasoline, 2 gal. (2)

Gear Bag:

- _ Adapter, cigarette lighter socket to PowerPole connector
- _ Cable, 12Vdc extension, w/ PowerPole connectors, 10 ft
- _ Cable, 12V battery charging, w/ generator connector)
- _ Charger, multi-stage, 5A, Deltran BT-Power, w/ PowerPole connector
- _ Motor Oil, 10W-30, w/ squirt bottle (for generator)
- _ Spark Plug (for generator)
- _ Wrench, spark plug (for generator)

Forsyth County Amateur Radio Emergency Services ARES Member Standard Operating Procedures

Antenna Setup Kit

This kit has all the tools and parts needed to set up and guy the 35-ft antenna mast, as well as a stock of feedline.

- _ Antenna, 40/80m Inverted-V dipole, w/ SO-239 center connector and end insulators
- _ Base Plate, tilt-up, for 1.88" mast, w/ ground lug
- _ Stake, base plate anchor, 10" (4)
- _ Guy Assy, Upper, w/ guy ring and (4) sets of 1/4" nylon rope x 45 ft, threaded link and Line-Grip
- _ Guy Assy, Lower, w/ guy ring and (4) sets of 1/4" nylon rope x 33 ft, threaded link and Line-Grip
- _ Guy Extender, 1/4" nylon rope x 10 ft, snap link and Line-Grip (2)
- _ Stake, guy anchor, 18 in, w/ eyebolt & snap link (6)
- _ Adapter, 110Vac, multiple-outlet
- _ Cable, 110Vac extension, 15A Heavy-Duty, 50 ft
- _ Feedline, coaxial, RG-8, w/ ferrite choke, 40 ft (2)
- _ Feedline, coaxial, RG-8, w/ ferrite choke, 33 ft
- _ Feedline, coaxial, RG-8, 33 ft, w/ coupler (3)
- _ Hose Clamps, adjustable (3)
- _ Snap links and threaded links, asstd.
- _ Wire, ground, #4 AWG, green, 40 ft
- _ Cable Ties, nylon, UV-resistant
- _ Rope, UV-resistant Dacron, 3/16" (100 ft)
- _ Tape, duct, heavy-duty, 1.88"
- _ Tape, safety marking, high-visibility
- _ Tape, electrical, PVC, 3/4"
- _ Towel, pre-moistened washcloth (4/pkg)

Tools:

- _ Gloves (2 pr)
- _ Hammer, 4 lb.
- _ Nut Driver, 5/16"
- _ Nut Driver, 3/8"
- _ Pliers, lineman's side-cutting, 9"
- _ Pliers, needle-nose, w/ side cutter and crimper, 6"
- _ Screwdriver, flat, 1/4"
- _ Screwdriver, Phillips, #1
- _ Screwdriver, Phillips, #2
- _ Wrench, adjustable, 8"

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Additional Gear

These items are not normally cached, and must be gathered as needed.

- _ Belt clip
- _ Bracket, car-mount
- _ Cable, 12Vdc power
- _ Spare Batteries, AA (2)
- _ Canopy, pop-up shade, w/ carrying bag
- _ Rope, guy, 1/8" nylon, 12 ft (4)
- _ Sandbag, canvas (4)
- _ Stakes, leg anchor (4)
- _ Chair, folding, w/ carrying bag (2)
- _ Cooler, ice, 7-qt (2)
- _ Cooler, ice, wheeled, 60-qt. (2)
- _ Heater, propane, portable, indoor-safe, 9000 BTU/hr, w/ carrying case
- _ Adapter Hose, propane, for connecting 20-lb. cylinder, 12 ft.
- _ Cylinder, propane, disposable, 1 lb. (12)
- _ Cylinder, propane, 20-lb.
- _ Knife, 3.75" folding lock blade, w/ sheath
- _ Lantern, florescent
 - _ Spare Batteries, (2 sets)
- _ Lantern, propane
- _ Cylinder, propane, disposable, 1 lb. (12)
- _ Lighter, butane
- _ Mantle, replacement (2)
- _ Mattress, self-inflating, Therm-a-Rest
- _ Pillow, w/ pillowcase
- _ Shovel, round nose
- _ Sleeping Bag, mummy
- _ Table, folding, 24" x 48"
- _ Medical Equipment

Seasonal Clothing:

- _ Balaclava, fleece, gore-tex, black
- _ Coat, parka, Gore-Tex
- _ Footwear, boots
- _ Gloves, pile, wind proof, black
- _ Sweater, pullover, fleece

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In-Vehicle Equipment

Vehicle Storage Compartments Should Be Identified

- _ Cable, 12Vdc extension, w/ lighter plug
- _ Cable, cellular telephone 12Vdc power (glove compartment)
- _ Compressor, tire inflator, 12Vdc
- _ Fire Extinguisher, dry chemical, A-B-C (rear) 10Lb minimum
- _ Flashlight, LED, aluminum, 3-cell (driver)
 - _ Spare Batteries (3)
- _ Jack, w/ crank handle
- _ Tie-downs, Elastic "Bungie", asstd.
- _ Wrench, tire lug, folding
- _ Lotion, hand cleaner, waterless
- _ Lotion, sunscreen
- _ Oil, Motor, 1 qt.
- _ Rope, 1/8" Nylon (50 ft)
- _ Toilet Paper, 3 rolls

Trunk Bag:

- _ Blanket, nylon, fleece-lined, 48" x 56"
- _ Cable, automotive jumper
- _ Gloves
- _ Bag, Trash, 33 gal. (4)
- _ Bag, Ziploc, asstd.
- _ Lamp and Fuse Kit
- _ Light stick, chemical (4)
- _ Rope, nylon, 3/8" (75 ft)
- _ Tape, duct, heavy-duty, 1.88"
- _ Tissue Paper, packets (4)
- _ Towels, paper

First Aid Kit (kept in Trunk Bag):

- _ Manual, first aid
- _ Mirror, steel, 3" x 5"
- _ Scissors, bandage
- _ Tweezers
- _ Bandage, butterfly closure, large (4)
- _ Bandage, elastic, 3"
- _ Bandage, gauze roll, 2" x 5 yd
- _ Bandage, gauze roll, 3" x 5 yd
- _ Bandage, gauze roll, 4.5" x 4 yd
- _ Bandage, liquid, first-aid, antiseptic
- _ Bandage, triangular
- _ Blade, razor, single edge (8)
- _ Blanket, thermal mylar, 56" x 84"
- _ Cup, paper (2)
- _ Dressing, adhesive, 3/4" strip (10)
- _ Dressing, adhesive, antibiotic, 3/4" strip (10)
- _ Dressing, adhesive, 1" strip (10)
- _ Dressing, adhesive, 2" x 3" (8)

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- _ Dressing, adhesive, 3" x 4" (4)
- _ Dressing, adhesive, finger (5)
- _ Dressing, adhesive, knuckle (5)
- _ Dressing, eye pad (2)
- _ Dressing, gauze combine, 8" x 10"
- _ Dressing, gauze field, 16" x 29"
- _ Dressing, gauze sponge, 4" x 4" (4)
- _ Dressing, gauze sponge, non-stick, 3" x 4" (5)
- _ Gloves, examination (2 pr)
- _ Lip Balm, Carmex
- _ Lotion, hand sanitizer, waterless
- _ Lotion, sunscreen, SPF-30
- _ Mask, face, gauze
- _ Matches, wind and water proof
- _ Moleskin, 3" x 4" (3)
- _ Solution, iodine
- _ Splint, wire, small
- _ Tablets, acid reducer, Zantac 75
- _ Tablets, anti-diarrheal, Imodium A-D
- _ Tablets, ibuprofen, 200 mg
- _ Tape, first aid, 1" cloth

Tool Kit (kept in Trunk Bag):

- _ Awl, 4"
- _ Brush, battery terminal
- _ Cutter, diagonal, 7"
- _ Knife, utility
 - _ Spare Blades
- _ Knife, X-Acto #1
 - _ Spare Blades, #11
- _ Pliers, adjustable-joint, 7"
- _ Pliers, adjustable-joint, 9"
- _ Pliers, needle-nose, w/ side cutter, 6"
- _ Screwdriver, #0 Phillips
- _ Screwdriver, #2 Phillips
- _ Screwdriver, 1/4" flat
- _ Screwdriver, 1/8" flat
- _ Socket set, metric, w/
 - _ Ratchet, 3/8" drive
 - _ Adapter, 3/8" to 1/4"
 - _ Universal Joint, 3/8" drive
 - _ Extension, 3", 3/8" drive
- _ Wrench, adjustable, 10" (2)
- _ Adhesive, thread-locking
- _ Cable Ties, nylon, UV-resistant, asstd.
- _ Tape, electrical, PVC, 3/4"

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Evacuation Kit

Kept in Trunk Bag

- _ Candle, emergency (3)
- _ Cards, playing
- _ Cup, steel, canteen
- _ Filter/Pump, water purification
- _ Tablets, water purification (30)
- _ Flashlight, LED, w/ lantern wand
 - _ Spare Batteries, (2 sets)
- _ Knife, 3" blade, w/ sheath
- _ Manual, first aid
- _ Matches, wind-and-waterproof
- _ Money, \$30 cash (5-\$1's, 2-5's and 1-\$10)
- _ Paper, journal notebook
- _ Pen, highlighter, yellow
- _ Pen, rolling ball, blue or black (2)
- _ Pet Supplies: (As appropriate)
 - _ Dish, pet food and water
 - _ Litter Tray, 12" x 18"
 - _ Liner, litter tray, disposable (2)
 - _ Scoop
 - _ Litter, pre-measured bags (2)
- _ Receiver, AM/FM, battery-operated or hand cranked
 - _ Spare Batteries, AA Lithium (2)
- _ Saw, hand, wire blade
- _ Clothing as appropriate to the season (at least)
 - _ Shirt, short sleeve (2)
 - _ Shirt, sweat-suit, medium-weight
 - _ Socks, cotton (3 pr)
 - _ Trousers, denim (2 pr)
 - _ Underwear (2 pr)