

Santa Clara County ARES®/RACES

Message Handling Procedures

Revised: 28-June-2024

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Introduction

Emergency Communications is serious business. Whether we are simply speaking to another radio operator about something we observed, or we are passing official message traffic on behalf of a 3rd party, we have two overarching goals. They are, in priority order:

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- 1. Transfer the message accurately (zero errors)
- 2. Transfer the message efficiently (quickly, with as few words as possible)

In order to accomplish both goals, we all need to agree on a set of "rules" that we will use when speaking on the radio. In most respects, it doesn't really matter what the rules are, as long as we all operate by the same rules. Failure to follow the same set of rules results in either inaccurate copy of the message, or unnecessary repeats and extra words used, or both!

All Santa Clara County ARES/RACES operators are expected to follow these procedures when passing message traffic. These procedures will be used as the standard performance criteria during performance evaluations of candidates for SCCo RACES Credentials.

Message Passing Terminology

Message Passing Roles

When discussing the various people involved in handling a message, words like "Sender" or "Receiver" can be ambiguous. For example, does "Sender" mean the person that wrote the message? Or does it mean the radio operator who is sending the message?

We define the following terms to unambiguously identify the different people involved in the message passing process:

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Message author: Creator of the message (often a 3rd party)
 Sending station: Radio operator sending the message
 Receiving station: Radio operator receiving the message

Relay station: Acts first as a receiving station, then as a sending station

Origin station: The first sending stationDestination station: The last receiving station

Message recipient: The person/position to which message is addressed (often a 3rd party)

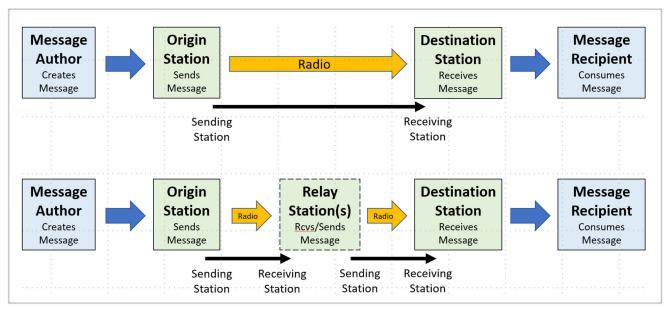


Figure 1 - Message Passing Roles

The Origin Station and Destination station are particularly important because we use the message numbers that they assign for logging and tracking the message, even when a relay is involved.

Operator-to-Operator Messages

Operator-to-operator messages are messages where the radio operators are both the authors and recipients of the message. Using the terms defined above, the Message Author is the same person as the Origin Station, and the Destination Station is the same person as the Message Recipient.

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Examples of operator-to-operator messages are:

- Check-in and check-out messages
- Health & welfare checks
- Status reports (such as crowd counts, water level reports, traffic reports, etc.)
- Damage assessments (such as Mike-Mike reports, windshield surveys, etc.)

Note that the destination station may forward the information to someone else, like an event or incident official, perhaps after some summarization and analysis. But the key point is that the person who authors the messages and the person for which the message it destined is a radio operator.

Because the creator and consumer of the message are both radio operators, the operators have some freedom to define what the format should be and how it should be sent. In a directed net, the net control often specifies how the net will operate. In an open net, the two individual operators may decide how best to handle the message. This is very different from passing messages on behalf of a 3rd party.

3rd Party Messages

3rd party messages are sent and received by radio operators on behalf of others (3rd parties). That means that the 3rd party determines:

- Message format (usually some type of form used by that agency)
- Message content (often including terms that are unfamiliar to the radio operator)
- Message to/from information (typically, an ICS position and location)
- Message handling order (how quickly they need it sent)

With 3rd party messages, the radio operator must adapt to and operate within the served agency's workflow, not the other way around. A good way to think of the radio operator's job is to compare it to a fax machine. What should come out the other end of the radio channel and be delivered to the message recipient should be a very close facsimile or replica of the message that the message author created. The radio operator must not interpret or change the message and it must arrive at the other end in the correct format and fully legible.

The key operational difference between handling operator-to-operator messages and 3rd party messages is the need to send the 3rd party messages exactly, so that the message recipient receives what the message author sent. Decades of experience has shown that the only effective and efficient way to do that is to use a shared set of procedures.

The Appendix gives examples of the common forms used for 3rd party messages and provides recommended field groupings to be used when sending the form.

A summary of Prowords is also found in the Appendix.

Enhancements to NTS Procedures

The set of rules used by SCCo ARES/RACES is based on the message passing rules used by the ARRL National Traffic System (NTS) and spelled out in their documentation:

- ARRL NTS Message Passing Guide Chapter 1 The ARRL Message Format
 - o http://www.arrl.org/files/file/Public%20Service/MPG104A.pdf
 - We don't usually deal with ARRL Radiograms. So this chapter is mostly useful as introductory information for Chapter 2
- ARRL NTS Message Passing Guide Chapter 2 Sending Messages on Voice
 - o http://www.arrl.org/files/file/Public%2520Service/MPG204A.pdf
 - Chapter 2 defines how to voice various types of message content, such as numbers, initials, addresses, etc.

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• Note: This is the most important chapter for our purposes.

Where this document references the NTS documentation, you will see "[NTS ...]", where "..." is the section of the NTS document that applies. The reader is encouraged to keep a copy of the NTS documentation (at least Chapter 2) along with this document and to refer to the NTS documentation where referenced.

In most cases, the procedures in this document are consistent with the NTS documentation. But there are two situations where we differ from the NTS documentation:

- a. When the NTS manual doesn't account for messages written by 3rd parties. This mostly applies to punctuation.
 - For example, the ARRL NTS documentation expects that the ARRL Radiogram is written by an NTS radio operator that knows to use their unique procedures. They use an "X" (capital X) for a period at the end of a sentence. But the messages we must send are written by 3rd parties in normal English, with a period (".") at the end of sentences.
- b. When the NTS manual doesn't have a rule that covers the situation.
 - For example, the ARRL NTS documentation doesn't cover how to speak symbols or GPS coordinates and doesn't account for the need to specify capitalization (such as in a web URL or a password).
 - NTS does not address how to deal with unclear symbols or characters written by a 3rd party that cannot be clarified with the message author.

ARES/RACES operators should keep a copy of this document in their go kit so they can refer to it frequently during operations.

Note: This document cannot be used during a performance evaluation for an SCCo RACES Credential. The candidate for a credential must know these procedures and be able to pass messages without the assistance of documentation or assistance from others.

Syntax and Symbology

Standard ITU Phonetics

We use standard ITU phonetic alphabet pronunciation. Note that the standard ITU pronunciation for some letters and numbers is not the same as the way it is written. These differences are marked with an asterisk ("*") below. Practice until they are second nature.

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Wikipedia references:

- Search for NATO phonetic alphabet: https://en.m.wikipedia.org/wiki/NATO phonetic alphabet
- Voice Recording of properly spoken letters and numbers (on the above page):
 https://upload.wikimedia.org/wikipedia/commons/a/a5/NATO Phonetic Alphabet reading.ogg

Letters

Written (Spoken), * = indicates a special pronunciation (see ITU Phonetic Alphabet above)

Α	-	alpha (AL-fa)	Ν	-	november (no-VEM-ber)	
В	-	bravo (BRAH-voh)	О	-	oscar (OSS-cah)	*
С	-	charlie (CHAR-lee)	Р	-	papa (pah-PAH)	*
D	-	delta (DELL-tah)	Q	-	quebec (keh-BECK)	*
Ε	-	echo (ECK-oh)	R	-	romeo (ROW-me-oh)	
F	-	foxtrot (FOKS-trot)	S	-	sierra (see-AIR-rah)	
G	-	golf (GOLF)	Т	-	tango (TANG-go)	
Н	-	hotel (hoh-TELL)	U	-	uniform (YOU-ni-form)	
1	-	india (IN-dee-ah)	V	-	victor (VIK-tah)	*
J	-	juliet (JU-lee-ETT)	W	-	whiskey (WISS-key)	
K	-	kilo (KEY-loh)	Χ	-	x-ray (ECKS-RAY)	
L	-	lima (LEE-mah)	Υ	-	yankee (YANG-key)	*
М	-	mike (MIKE)	Z	-	zulu (ZOO-loo)	

Numbers

Written (Spoken), * = indicates a special pronunciation (see ITU Phonetic Alphabet above)

Multi-digit numbers are spoken one digit at a time

• Example: 600 = "six zero zero"

Symbols

Symbols are increasingly used in our everyday messages. We must have a mutually agreed-upon set of names for symbols so we can understand each other exactly.

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Unfortunately, the NTS documentation doesn't cover how to handle symbols. So, we define the standard symbol names in Figure 2. As you will see, we use the common name for symbols, which should make speaking and copying symbols very straight-forward.

Some symbols have multiple common names:

- For symbols that have context sensitive names, we use the commonly used, context sensitive name
 - Examples: "." (period, decimal, dot) and "-" (minus-sign, hyphen, dash)
- For symbols that have multiple names that are not context sensitive, we pick one name and stick with it
 - Examples: "#" (pound-sign instead of hash) and "/" (slash instead of stroke)

Unknown character or symbol

You may encounter data that cannot be read due to poor handwriting, or a symbol that we do not recognize. In these cases, the preferred action is to contact the message originator and get clarification. If that is not possible, then send the message, but inform the receiver that the message has some unknown characters or symbols <u>before starting to send the message</u>. When the unknown character/symbol is encountered simply say "unknown symbol" or "unknown character" as appropriate.

•	Examp	יםו
•	LAGITID	

○ Written: Send 50 ₹ today

Spoken: "send FIGURES fife zero <pause> UNKNOWN SYMBOL <pause> today

The receiver draws an empty box on their message form where the unknown symbol would appear.

○ Receiver writes: Send 50 ☐ today

Example:

Written: We can use AB§δ instead

Spoken: "We can use MIXED GROUP alpha bravo UNKNOWN SYMBOL UNKNOWN
 SYMBOL pause> instead

 \circ Receiver writes: We can use AB \square instead

Voicing Symbols

The important thing is for everyone to use the same name for each symbol.

	Voicing		Voicing		Voicing		
	decimal (in numbers), or	&	ampersand	<	less-than-sign		
	dot (in email, packet, andinternet addresses), or		asterisk	>	greater-than-sign		
	<pre>period (end of sentence and elsewhere)</pre>	1	slash	_	underscore		
	comma	١	backslash	-1	vertical-line		
	colon	u	seconds (In GPS coordinates),	^	caret \ care et \		
			double-quote (elsewhere)	~	tilde \ till dee \		
;	<u>question-mark</u>	•	apostrophe (within a word), minutes (in GPS coordinates), or single-quote (elsewhere)	•	degrees (in GPS coordinates) degree-sign (elsewhere)		
!	exclamation-point	•	back-quote	,	Voicings are shown in bold.		
	minus-sign (in numbers), hyphen (in words), or dash (elsewhere)	% percent-sign			Voice hyphenated words as		
		(left-parenthesis		f they are a single-word .		
+	plus-sign)	right-parenthesis		<u>Punctuation</u> symbol voicings are underlined.		
=	equal-sign	[left-square-bracket				
@	at-sign]	right-square-bracket	(Context is shown in italics.		
#	pound-sign	{	left-curly-bracket		Pronunciation \ is between backslashes.		
\$	dollar-sign	}	right-curly-bracket		actional to a		

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Figure 2 - Voicing Symbols

Groups vs. Words

- Some parts of messages are not words.
 - o Examples include call signs, numbers, abbreviations, email addresses, etc.
 - This example contains no words: 305B NW 1st Ave
- The generic term "group" is used to refer to combinations of letters, numbers, and/or symbols, typically separated by whitespace
 - o This example contains 4 groups: 305B NW first Ave
- All words are groups, but not all groups are words
- Example groups: car, 53, WD-40, ARRL, W6XRL4/7, radio, w6xrl4@arrl.net, http://arrl.org, St.

Punctuation

- The messages we pass are often written by, and for, non-hams (i.e. 3rd party messages)
- They include the usual punctuation symbols common to normal writing
 - Refer to the "Voicing Symbols" chart (Figure 2) shown earlier for what we consider punctuation symbols. The six punctuation symbols are underlined in Figure 2.

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- When used as punctuation, voice symbols as they are encountered in a message
 - o E.g. a "," [comma] after a word, or a "." [period] at the end of a sentence
 - This differs from ARRL NTS procedures
- Otherwise, treat punctuation symbols like any other symbol
- Example phrases containing punctuation:
 - o "Deliver blankets, cots, and pillows."
 - Written: deliver blankets, cots, and pillows.
 - Spoken: "deliver blankets comma cots comma and pillows period"
 - "Expected weather: rain and snow!"
 - Written: expected weather: rain and snow!
 - Spoken: "expected weather colon rain and snow exclamation point"
- Example phrases without punctuation:
 - o "The password is Ab:1,5!+"
 - o "5!=6"
 - o "Join the discussion on groups.io"
 - We will learn to deal with these later...

Message Passing Prowords

Prowords are special words or phrases used to facilitate message passing by voice. They allow the sending and receiving stations to be clear with each other, while still being as efficient as possible (using as few words as possible, avoiding repeats).

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Prowords are NOT part of the message and are NOT written down when copying the message. This makes it critical that both the sending station and receiving station know the prowords and how they are used. The sending station must use the proper prowords or else the receiving station may write the word into the message. The receiving station needs to recognize the prowords, so they don't write them into the message.

Prowords can be grouped into four general categories, depending on how they are used. We group them into these categories only because the prowords in each category have similar behavior and it's easier to learn them this way. The names of the categories are not important. Neither is knowing which proword is in each category. Knowing the prowords themselves and how/where to use each one is all that is important.

Control Prowords

Define the start, end, or control the flow of the message

• Clarification Prowords

- Always spoken <u>AFTER</u> a group
- Clarifies or emphasizes what was just said

Qualification Prowords

- Always spoken <u>WITHIN</u> a group
- Defines a quality to allow precise copy

• Introductory Prowords

- Always spoken BEFORE a group
- o Alerts receiving operator to what is coming next

It is important to use each proword in the right place (before, inside, or after a group) to avoid confusing the receiving station and slowing down the message transfer.

Appendix B provides a summary of the Prowords.

Control Prowords

"Control" prowords are used to control the message flow between the two operators. They can be used to:

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[NTS-2.1.4.2]

- Begin a message
- End a message
- Separate parts of the message
- Control the pace
- Request repeats

The control prowords are:

•	"MESSAGE NUMBER"	[NTS-2.1.4.1]
•	"ROGER"	[NTS-2.1.4.11]
•	"BREAK"	
•	"STAND BY"	
•	"CONTINUE" or "GO"	[NTS-2.1.4.12]
•	"NEWLINE"	

"MESSAGE ENDS" or "END OF MESSAGE" "SAY AGAIN ..." or "SPELL [PHONETICALLY] ..."

MESSAGE NUMBER [NTS-2.1.4.1]

• Indicates the start of a message

ROGER [NTS-2.1.4.11]

• Acknowledged, i.e. "I heard and understood" (does NOT mean "yes")

BREAK

• Interrupt. Represents a change in the message flow.

STAND BY

• Wait

CONTINUE or GO [NTS-2.1.4.12]

• Used by the receiver to tell the sender to continue with the next set of five words/groups

NEWLINE

- Skip to a new line; paragraph break
- Example:
 - o Written:

Line one Line two

- o Spoken: "line one NEWLINE line two"
- o Written:

Line one

Line two

Spoken: "line one NEWLINE NEWLINE line two"

MESSAGE ENDS or END OF MESSAGE

[NTS-2.1.4.2]

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- Indicates the end of the message content
- Should be sent immediately after the last group/word in the message

SAY AGAIN ... or SPELL [PHONETICALLY] ...

- Used by the receiver to request a repeat.
- Usually followed by one of the following qualifiers:
 - o "... WORD AFTER ..."
 - "Say again word after ..."
 - Respond with group or part requested
 - o "... WORD BEFORE ..."
 - "Say again word before ..."
 - Respond with group or part requested
 - o "... BETWEEN ... AND ..."
 - "Say again between ... and ..."
 - Respond with group(s) between blanks, observing limits
 - "... ALL AFTER ..."
 - "Say again all after ..."
 - Respond with all groups after the one specified to the end of the message, unless limited
 - o "... ALL BEFORE ..."
 - "Say again all before ..."
 - Respond with all groups in the message to the group specified, unless limited
- If not followed by a qualifier, applies to the entire previous transmission

Clarification Prowords

Clarification prowords are used to clarify or emphasize something that was just said.

- They are ALWAYS spoken AFTER the relevant group
- Usually used for a single group
- Use proactively to avoid confusion and repeats

The clarification prowords are:

- "I SPELL"
- "I SAY AGAIN"

I SPELL [NTS-2.1.4.6]

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- ALWAYS spoken IMMEDIATELY AFTER the group to be spelled
- Use to indicate you are going to phonetically spell the group just voiced
- Use with ONE GROUP AT A TIME
- Use more liberally during bad radio conditions
- Use proactively with words that the receiving station might have difficulty spelling
 - o Examples: unique words, chemical names, long or complicated words, ...
- Use proactively with words that may sound the same under noisy conditions
 - Examples: he/she/we/fee/bee/sea/...; five/fire; ...
- ALWAYS use with words that sound like other words but are spelled differently
 - Examples: to/too/two; be/bee; for/fore/four; see/sea; ...
- ALWAYS use with proper names
 - Examples: John Smith (use I SPELL on both)
- ALWAYS use with misspelled words
- ALWAYS use with all-letter groups that are not real words, but would be spoken like a word in normal conversation
 - o Examples:
 - "Quik" would be voiced like "quick", then spelled phonetically
 - "PackItForms" would be voiced as it sounds, then spelled phonetically
 - In this case, capitalization should also be used (see UPPERCASE and LOWERCASE) because it makes it more readable.

 May be used with mixed groups that contain letters and symbols and are either real words or are normally pronounced like a word

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- o Contractions: "they're", "aren't", "couldn't", ...
- o Possessive: "Jone's", "Jones'", ...
- O Hyphenated words: "well-being", "set-up", "twenty-two", ...
 - The "-" symbol is spoken as "hyphen" when used in words
- ALWAYS use for prowords that are part of the message
- ALWAYS use standard ITU phonetics

Note: I SPELL is <u>not</u> used with unpronounceable, non-word groups (abbreviations, acronyms, amateur call signs, email addresses, etc.). Use the appropriate introductory proword instead. (See Introductory Prowords.)

- Examples:
 - o Written: You need to arrive at ... (to could be too or two)
 - Spoken: "You need to I SPELL tango oscar <pause> arrive at ..."
 - Written: John Smith (proper names are always spelled)
 - Spoken: "John I SPELL juliet oscar hotel november <pause> Smith I SPELL sierra mike india tango hotel"
 - Written: Spelling misstake (mistaken or uncommon spelling)
 - Spoken: "Spelling misstake I SPELL mike india sierra sierra tango alpha kilo echo"
 - Written: Gather at the Quik Stop ("quik" isn't a word, but it is spoken like one)
 - Spoken: "Gather at the Quik I SPELL quebec uniform india kilo <pause> Stop"
 - Written: The figures are correct ("figures" is a proword)
 - Spoken: "The figures I SPELL foxtrot india golf uniform romeo echo sierra <pause> are correct"
 - Written: Don't go (this is not a mixed group, it is a word)
 - Spoken: "Don't I SPELL delta oscar november apostrophe tango <pause> go"
 - Written: They're closed (sounds like "their")
 - Spoken: "They're I SPELL tango hotel echo yankee apostrophe romeo echo <pause> closed"

- Written: twenty-two units (hyphenated words are sent using I SPELL)
- Spoken: "twenty-two I SPELL tango whiskey echo november tango yankee hyphen tango whiskey oscar <pause> units"
- o Written: PackItForms (portmanteau, capitalization helps with clarity)
- Spoken: "PackItForms I SPELL UPPERCASE papa LOWERCASE alpha charlie kilo UPPERCASE india LOWERCASE tango UPPERCASE foxtrot LOWERCASE oscar romeo mike sierra"
 - See UPPERCASE and LOWERCASE on page 17

I SAY AGAIN

• Use # 1: To Repeat for Clarity

[NTS-2.1.4.7]

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- Used to clarify or emphasize or to help ensure receipt of what was just said
- O Say the group(s), then "I say again", then repeat the group(s), and then continue
- Often, voice inflection is also used to communicate emphasis
- Usually, limit repeats for clarity to one group at a time to avoid confusion. However, in very bad radio conditions, repeating phrases or whole lines of a message can increase the chance for correct copy
- o Example:
 - Written: Do **NOT** go in there ...
 - Spoken: "Do not I SAY AGAIN NOT go in there ..."

• Use #2: To Correct an Error

[NTS-2.1.4.8]

- When you recognize you have made an error, stop, say "I SAY AGAIN", go back to the last group (or proword) sent correctly, and continue, starting with that correct group or proword
- o Example:
 - Written: ... please bring water ...
 - Spoken: "... please water I SAY AGAIN please bring water ...

Qualification Prowords

Qualification prowords are used to alert the receiving operator to a special quality for the <u>character(s)</u> that follow. They allow precise copy, such as case-sensitive information (web addresses, passwords, chemical names, etc.) or subscripts and superscripts.

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- ALWAYS spoken WITHIN a group
- Typically, the group will have previously been identified with an Introductory Proword
- Implies that the following characters are going to be sent one character at a time, phonetically

The qualification prowords are:

- "UPPERCASE" and "LOWERCASE" *
- "SUBSCRIPT" and "SUPERSCRIPT" *

Note: * indicates an SCCo ARES/RACES enhancement because this type of content is not covered in the NTS documentation.

UPPERCASE and LOWERCASE

- Used to indicate that following characters should be copied in the appropriate case
- Used with ONE GROUP AT A TIME
- Remain in effect until the end of the group or until over-ridden by another Qualification Proword (think "caps lock")
- No default case is assumed: if you need a particular case, voice the corresponding proword

Not that case doesn't matter most of the time. In fact, some people routinely print in all capital letters. But sometimes case is absolutely critical (e.g. passwords, internet addresses).

- Examples:
 - Written: The password is pasSWOrd
 - Spoken: "The password is password I SPELL LOWERCASE papa alpha sierra UPPERCASE sierra whiskey oscar LOWERCASE romeo delta"
 - Written: Open the PackItForm
 - Spoken: "Open the PackItForm I SPELL UPPERCASE papa LOWERCASE alpha charlie kilo UPPERCASE india LOWERCASE tango UPPERCASE foxtrot LOWERCASE oscar romeo mike"

When in doubt, specify the case. But when case doesn't matter, avoid the extra time and complexity by ignoring case.

SUBSCRIPT TH1] and SUPERSCRIPT

• Used to indicate the following character should be written a half-line lower (SUBSCRIPT) or higher (SUPERSCRIPT) than the rest of the text, such as subscripts and mathematical exponents

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- Used with one character at a time
- Does NOT remain in effect until the end of the group

Examples:

o Written: White blood cell count is 10⁵

o Spoken: "white blood cell count is FIGURES one zero SUPERSCRIPT fife"

Written: Model XS4₆₃

Spoken: "model MIXED GROUP x-ray sierra four SUBSCRIPT six SUBSCRIPT tree"

Written: T_{HALF} is the half life

 Spoken: "INITIALS tango SUBSCRIPT hotel SUBSCRIPT alpha SUBSCRIPT lima SUBSCRIPT foxtrot <pause> is the half life"

o Written: H₂O

Spoken: MIXED GROUP hotel SUBSCRIPT two oscar

- When given a chemical symbol to send, if possible, ask the message author to provide the common English word for the chemical. If that is not possible, then use the procedure outlined above.
 - Written by message author: H₂O₂
 - Corrected by message author: H₂O₂ Hydrogen Peroxide
 - Spoken: hydrogen peroxide (you might use I SPELL here to ensure precise copy)

Introductory Prowords

Introductory prowords alert the receiving operator to a special type of group to follow, such as initial(s), figure(s), mixed groups, or amateur call signs... i.e. things which are not normally English words.

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- Always spoken **BEFORE** the relevant group(s)
- Implies that the next group is going to be sent one character at a time, letters phonetically if present

The Introductory prowords are:

- INITIAL(S)
- FIGURE(S)
- SYMBOL(S)
- MIXED GROUP
- MIXED GROUP FIGURE(S)
- MIXED GROUP SYMBOL(S)
- TELEPHONE FIGURES
- GPS COORDINATES
- AMATEUR CALL
- EMAIL ADDRESS
- PACKET ADDRESS
- INTERNET ADDRESS

Note: * indicates an SCCo ARES/RACES enhancement because this type of content is not covered in the NTS documentation.

INITIAL(S) [NTS-2.1.5.3-4]

- Identifies one or more letters to follow
- Used for non-word letter groups
- Voice each letter phonetically
- Leave a pause after the last letter to help separate it from groups that follow
- Use for letter groups such as Initials, Abbreviations and Acronyms
- Is immediately followed by white space or a punctuation mark . , : ; ! ?
- Examples:
 - o Written: Mr. T is here
 - Spoken: "INITIALS mike romeo period <pause> INITIAL tango <pause> is here"
 - Written: ARRL handbook
 - Spoken: "INITIALS alpha romeo romeo lima <pause> handbook"
 - Written: EOC credentials
 - Spoken: "INITIALS echo oscar charlie <pause> credentials"

- Written: First St.
- Spoken: "First <pause> INITIALS sierra tango period"
- Written: Fire Capt.
- Spoken: "Fire <pause> INITIALS charlie alpha papa tango period"
- o Written: Sacramento, CA
- Spoken: "Sacramento COMMA <pause> INITIALS charlie alpha"
- Note: NTS 2.2.4.1 & 2.2.4.2 suggests saying the complete state name when state initials are written. For 3rd party messages, we will send what the originator provided and not change it.

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FIGURE(S) [NTS-2.1.5.1]

- Identifies one or more numerals to follow
- Voice each digit separately
- If <u>anything</u>, other than a numeral is present, it becomes a MIXED GROUP, MIXED GROUP FIGURE(S), or MIXED GROUP SYMBOL(S).
- Examples:
 - Written: Send 5 dozen jelly donuts right away
 - Spoken: "Send FIGURE fife <pause> dozen jelly donuts right away"
 - Written: 100 containers
 - Spoken: "FIGURES one zero zero <pause> containers"

SYMBOL(S)

- Identifies one or more symbols to follow
- Voice each symbol separately
- Examples:
 - o Written: Replace all? with a value
 - Spoken: "Replace all <pause> SYMBOL question-mark <pause> with a value"
 - O Written: This != that
 - Spoken: "This <pause> SYMBOLS exclamation-point equal-sign <pause> that"

MIXED GROUP [NTS-2.1.5.5]

• Indicates that a group containing at least two of the three types of characters (letters, numbers, symbols) will follow, beginning with a letter

- Voice each character separately, letters phonetically
- Includes amateur calls with "/..."
- Mixed groups that contain letters and symbols and are commonly pronounced like words may be better handled with I SPELL
 - Words containing apostrophes: they're, aren't, ...
 - o Hyphenated words: well-being, government-mandated, state-owned
 - o Portmanteau words: PackItForms, spork, ...
- Examples:
 - Written: Ford F150 truck
 - Spoken: "Ford <pause> MIXED GROUP foxtrot one fife zero <pause> truck"
 - Written: W6XRL4/VA
 - Spoken: "MIXED GROUP whiskey six x-ray romeo lima four slash victor alpha"
 - Written: high-temp (OK, but may be better voiced with I SPELL)
 - Spoken: "MIXED GROUP hotel india golf hotel hyphen tango echo mike papa"
 - Written: abc-123/\$% (this is not a word, so the "-" is a "dash", not a "hyphen")
 - Spoken: "MIXED GROUP alpha bravo charlie dash one two tree slash dollar-sign percent-sign"

MIXED GROUP FIGURE(S)

[NTS-2.1.5.6]

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- Indicates that a group containing at least two of the three types of characters (letters, numbers, symbols) will follow, beginning with one (or more) number(s)
- Voice each character separately, letters phonetically
- Examples:
 - o Written: 2C
 - Spoken: "MIXED GROUP FIGURE two charlie"
 - o Written: 23/C
 - o Spoken: "MIXED GROUP FIGURES two three slash charlie"

o Written: 146.595 simplex

o Spoken: "MIXED GROUP FIGURES one four six decimal fife niner fife <pause> simplex"

Note: NTS uses the letter R to represent a decimal point within mixed figure groups. We use the decimal point or period because that is what the 3rd party message author will use and the recipient will expect.

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o Written: 14,135 people

o Spoken: "MIXED GROUP FIGURES one four comma one tree fife people"

MIXED GROUP SYMBOL(S)

- Indicates that a group containing at least two of the three types of characters (letters, numbers, symbols) will follow, beginning with one (or more) symbol(s)
- Voice each character separately, letters phonetically
- Examples:

o Written: -10 degrees

Spoken: "MIXED GROUP SYMBOL minus-sign one zero <pause> degrees"

o Written: -32°F outside

 Spoken: "MIXED GROUP SYMBOL minus-sign tree two degree-sign uppercase foxtrot <pause> outside"

o Written: \$32 each

Spoken: "MIXED GROUP SYMBOL dollar-sign tree two <pause> each"

o Written: !,*2#

o Spoken: "MIXED GROUP SYMBOLS exclamation-point comma asterisk two pound-sign"

- Identifies a telephone number to follow
- Best to request that the message author include the area code for clarity
- Use pauses between each number group to help the receiver note breaks in the number sequence. This is especially important for international or satellite telephone numbers

Examples:

- Written: 408-555-1212, (408) 555-1212, or 408.555.1212
- Spoken: "TELEPHONE FIGURES four zero eight<pause> fife fife fife <pause> one two one two"

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- o Written: +8816-408-555-1212 (such as a satellite phone number)
- Spoken: "TELEPHONE FIGURES plus sign eight eight one six <pause> four zero eight<pause> fife fife <pause> one two one two"
- o Written: Call 911 immediately or Call 9-1-1 immediately
- Spoken: "Call TELEPHONE FIGURES niner one one <pause> immediately"

Note: Since the receiving station may expect more than just three digits, you'll want to use intonation and an ample pause before voicing the next group to make sure the receiver understands clearly that 911 was the entire phone number.

GPS COORDINATES

- Identifies a set of GPS coordinates to follow
- Used when a set of numbers, written as a pair of latitude/longitude values, contain one or more
 of the coordinate "marker" symbols: "(degrees), '(minutes), "(seconds)
- N (north), S (south), E (east), W (west)
- Voice the "marker" symbols where they appear
- But don't add them, if not already part of written message.
- Voicings differ from our usual, but follow standard usage
- You may need to adjust the "5 words at a time" rule
- If the numbers look like coordinates, but doesn't contain any "marker" symbols, just send them as FIGURES or MIXED GROUP FIGURES as appropriate.

Examples:

- o Written: 41° 24.20′, 2° 10.44′
- Spoken: "GEE-PEE-ESS COORDINATES four one DEGREES <pause> two four decimal two zero MINUTES comma <pause> two DEGREES <pause> one zero decimal four four MINUTES"

- Written: 41°24′12.2″N 2°10′26.5″E
- Spoken: "GEE-PEE-ESS COORDINATES four one DEGREES <pause> two four MINUTES
 <pause> one two decimal two SECONDS NORTH <pause> two DEGREES <pause> one
 zero MINUTES <pause> two six decimal fife SECONDS EAST"

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- o Written: 32.30 N, 122.61 W
- Spoken: "GEE-PEE-ESS COORDINATES tree two decimal tree zero NORTH comma <pause> one two two decimal six one WEST"
- o Written: 32.30°, -122.61°
- Spoken: "GEE-PEE-ESS COORDINATES tree two decimal tree zero DEGREES comma <pause> MINUS-SIGN one two two decimal six one DEGREES"

AMATEUR CALL [NTS-2.1.5.7]

- Identifies an amateur call sign to follow
- Voice each character phonetically
- Amateur calls with "/" are MIXED GROUPS (page 21)
- Example:
 - o Written: W6XSC
 - Spoken: "AMATEUR CALL whiskey six x-ray sierra charlie"

EMAIL ADDRESS [NTS-2.2.4.6]

- Indicates an email address to follow
- Implies each character will be voiced phonetically
- Has the format of "<localpart>@<domainpart>"
 - o Example: w6xrl4@w6xsc.ampr.org
- "@" is voiced "AT-SIGN", "." is "DOT", "+" is "PLUS-SIGN"
- Although discouraged and rare, <localpart> may be case-sensitive
 - Example: HermanMunster@... MAY be different from hermanmunster@...
 - Use UPPERCASE and LOWERCASE when in doubt (see page 17)
 - o If the message author has provided case, try to clarify, or send the case
- <domainpart> is always case-insensitive

- Examples:
 - o Written: harry@aol.com
 - Spoken: "EMAIL ADDRESS hotel alpha romeo romeo yankee <pause> AT-SIGN <pause> alpha oscar lima <pause> DOT <pause> charlie oscar mike"

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- Written: Herman.Munster+inbox@TheMunsters.TV
- Spoken: "EMAIL ADDRESS UPPERCASE hotel LOWERCASE echo romeo mike alpha november DOT UPPERCASE mike LOWERCASE uniform november sierra tango echo romeo PLUS-SIGN india november bravo oscar x-ray AT-SIGN tango hotel echo mike uniform november siearra tango echo romeo sierra DOT tango victor"

PACKET ADDRESS [NTS-2.2.4.6]

- Indicates a packet address to follow
- Implies each character will be voiced phonetically
- Has the format of: <callsign>@<bbscall>.#<region>.<state>.<country>.<continent>
 - Looks like an email address, except contains "#"
- "#" is voiced "POUND-SIGN"; see EMAIL ADDRESS for the rest
- Some parts may not be present (right to left)
 - o Example: <callsign>@<bbscall>.#<region>.<state>.<country>
 - o Example: <callsign>@<bbscall>.#<region>.<state>
- Packet addresses are NOT case-sensitive
- Example:
 - Written: w6xrl4@w4xsc.#nca.ca.usa.noam
 - Spoken: "PACKET ADDRESS whiskey six x-ray romeo lima four AT-SIGN whiskey four x-ray sierra charlie DOT POUND-SIGN november charlie alpha DOT charlie alpha dot uniform sierra alpha DOT november oscar alpha mike"

INTERNET ADDRESS [NTS-2.2.4.6]

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- Indicates an internet (e.g. "web") address follows
- Implies each character will be voiced phonetically
- Format:
 - o <scheme>://<hostname>[:<port>]/<path>[?<query>]
 - https://www.google.com/
 - ftp://some.host.com:21/
 - https://www.grz.com/db/{W6XRL4}
- Notes:
 - Scheme may not always be used
 - o In some cases the "www" may not be provided
 - Everything after <hostname> is case-sensitive!
- Examples:
 - Written: https://www.scc-ares-races.org
 - Spoken: "INTERNET ADDRESS hotel tango tango papa sierra COLON SLASH SLASH
 whiskey whiskey DOT sierra charlie charlie dash alpha romeo echo sierra DASH
 romeo alpha charlie echo sierra DOT oscar romeo golf"
 - Written: www.scco.org/ops.html#GoKit
 - Spoken: "INTERNET ADDRESS whiskey whiskey whiskey DOT sierra charlie charlie oscar DOT oscar romeo golf SLASH LOWERCASE oscar papa sierra DOT hotel tango mike lima POUND-SIGN UPPERCASE golf LOWERCASE oscar UPPERCASE kilo LOWERCASE india tango"
 - Written: arrl.org/public-service
 - Spoken: "INTERNET ADDRESS alpha romeo romeo lima DOT oscar romeo golf SLASH LOWERCASE papa uniform bravo lima india charlie DASH sierra echo romeo victor india charlie echo"

LONG INTERNET, PACKET, OR EMAIL ADDRESSES

Some long Internet, Packet, and Email addresses may be better sent in multiple parts rather than in one long transmission. This allows the receiver to ask for any fills sooner and allows a repeater to reset before the time-out-timer shuts down the transmitter.

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Use the procedures outlined for those addresses with the following additions.

- Announce to the receiver that the address will be sent in multiple parts. Use the appropriate Proword followed by "in multiple parts". I.E.: "Internet Address in multiple parts".
- The message sender should determine when to break the long address based on several factors.
 - Break after every 5 slashes at most
 - Break every 30 seconds at most
 - o Excessively long strings of characters between slashes may require more breaks
 - Lots of case changes may require more frequent breaks
 - o If possible, break the parts at a punctuation mark (dot or slash)
 - o Reference guidance given for other forms (213RR, Shelter and Jurisdiction Status, etc.)
 - o If the receiver is inexperienced, the breaks may need to be more frequent
 - o The sender is going to have to make the final determination using their best judgement
- The UPPERCASE/LOWERCASE prowords are sticky and apply for the entire address (group) including through the multiple parts.
- When sending the end of each part, say "END OF PART" and wait for the receiver's acknowledgement or request for fills.
- At the end of the last part, say "END OF GROUP" and wait for the receiver's acknowledgement or request for fills.
- Example:
 - Written: https://www.scc-ares-races.org/operations/forms/SCCo-ARES-RACES_MM_Summary_v180705.pdf
 - Spoken: "INTERNET ADDRESS IN MULTIPLE PARTS <pause> hotel tango tango papa sierra COLON SLASH SLASH whiskey whiskey whiskey DOT sierra charlie charlie dash alpha romeo echo sierra DASH romeo alpha charlie echo sierra DOT oscar romeo golf" SLASH LOWERCASE oscar papa echo romeo alpha tango india oscar november sierra SLASH foxtrot oscar romeo mike sierra SLASH <pause> END OF PART <wait for acknowledgement> UPPERCASE sierra charlie charlie LOWERCASE oscar DASH UPPERCASE alpha romeo echo sierra DASH romeo alpha charlie echo sierra UNDERSCORE mike mike UNDERSCORE sierra LOWERCASE uniform mike mike alpha romeo yankee UNDERSCORE victor FIGURES one eight zero seven zero fife DOT papa delta foxtrot <pause> END OF GROUP"

Message Passing Techniques

Techniques for All Messages

Radio Techniques

- DO use only plain language
- DO use standard ITU phonetics
- DO use tactical call signs when appropriate, and identify with your FCC call sign every 10 minutes or at the end of an exchange

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- DO listen for, and follow, instructions
- DO make only necessary transmissions; avoid read-backs
- DO be concise
- DO follow these message passing procedures
- DO complete all communication logs and message forms clearly, concisely, and legibly
- DO ask for clarification when you can't read a message, or you don't understand something
- DO use 24-hour local time, unless instructed otherwise
- DO Transmit only facts, or information from an approved source or authority
- DO avoid transmitting personal, confidential, or sensitive information
 - o E.g. names, phone numbers, patient info, body counts, etc.
- DO use standard ICS position titles, facility names, and/or tactical names
- DO pause 1 to 2 (or more!) seconds after keying up to avoid clipping
- DO leave gaps between transmissions to allow others to break in
- DO drop PTT when not speaking; avoid dead air and open mics

Speaking Techniques

- SPEED
 - After you say each word, pretend to write it down ("ghost write") before you go on to the next word
 - o This slows you down to a pace that the receiver can handle
- PAUSES
 - Pause between groups to provide clarity and separation
 - Pauses provide clues that something different is coming
 - Pauses aid in correct group copying, improving efficiency
- PROWORDS
 - ALWAYS use proper prowords
 - o Proactively use the I SPELL proword (as appropriate) to avoid repeats
- MESSAGE NUMBER, DATE, TIME
 - When sending data in fields clearly identified as containing a Message Number, Date, or
 Time; the use of the appropriate Proword proceeding the field data is not required.

Message Prioritization

- Prioritize according to handling order, date, and time
 - o Handling order: Immediate, Priority, Routine
 - o Note: ARRL Precedence: Emergency, Priority, Welfare, Routine
 - o Note: Red Cross DWI (Disaster Welfare Inquiry) has Welfare precedence

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- Use date to prioritize between same handling order
- Use Time to prioritize between same dates
- Ultimately, the served agency decides the order; it's their message

Announcing a Message

- Step 1: Announce quantity and handling order of messages ready to send
 - Examples
 - "Net Control, I have 2 Priority messages for you"
 - "Net Control, I have 1 Immediate and 1 Routine message for you"
 - The receiver will prioritize vs. other messages that may be waiting, then says: "go ahead" or "ready to copy"
- Step 2: If the message is a form, announce the form type before sending
 - This lets the receiver know what's coming so they can prepare the right form
 - If the form requires a routing slip (because it doesn't contain the radio routing information fields), also include "... with Routing Slip"
 - o Examples:
 - "Message type is ICS-213"
 - "Message type is 213RR with Routing Slip"
 - The receiver readies the right form (and routing slip, if needed), then says: "go ahead" or "ready to copy"
- Step 3: Send the message
 - See "Sending a Message ..." for details
- Step 4: Log the message
 - Log all of your communications activity on ICS 309 Communications Log
 - Shadows (and only Shadows) may use their ICS 214 Activity Log instead

Sending a Message to One Station

- Say "My message number is ..." followed by your message number (phonetically) to signal the start of transmission
- Say field name (or number), followed by field value
 - o Or use another, previously agreed-upon plan

- Pass fields in logical chunks, according to the form
 - o By row? By column? By section?
 - o If the form has sections, say the section name as you enter that section
 - o If the form has field numbers, say the field number rather than the field name
 - o Shoot for sending five items at a time (depending on how complicated each field is)
 - For short text fields, send up to five fields at a time
 - For longer text fields (such as the message body in an ICS-213), send five words at a time

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- Some heavily used forms (e.g. ICS 213) have a preferred field grouping for maximum efficiency. See Appendix A, Recommended Field Grouping for details.
- Pause after each group
 - Receiver's opportunity to request fills
 - o Receiver responds with "Go" or "Continue" when ready for more
- Say "End of message" to signal form transmission complete
 - Receiver responds with "My message number is <Their Message Number>", followed by "<Their FCC call sign>".
- Say "<Your FCC call sign>" to end the process
- Log the message

Sending a Message to Multiple Stations

- Announce quantity and priority of message for ...
 - o "All stations, all stations, stand by for one priority message"
 - "All shelters, all shelters, stand by for one routine message"
- [Optional] Poll for readiness of all stations
- Select a pacing station
 - "Mountain View, will you be my pacing station?"
- Send the message to the pacing station (see "Sending a Message to One Station")
- Poll all other receiving stations
 - Each receiving station responds with requests for fills (if any), followed by <Their Message Number> and <Their FCC call sign>.
- Log all receiving station message numbers and call signs

Forms Containing Signature Fields

- On forms with signatures fields (213RR and RACES Mutual Aid Request) simply voice 'with signature' if a signature is present.
- The sender is not expected to determine what the signature reads. If someone wants to see who signed the form later, the original form will be part of the records that are turned in after the event.
- The message receiver with write "with signature" on the form in the signature field.

Techniques for Handling 3rd Party Messages

3rd Party Spoken Messages

- For simple verbal messages, handle verbally
 - o Example: Most messages between shadows are simple, spoken messages
 - "Ask Steven to call Jenny at 867-5309"
- Use your judgement
 - IF message is longer or more complicated
 - Such as: a complicated message that needs to be delivered exactly

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- OR if it needs routing information for delivery outside the radio room
 - Such as: a message to be delivered to an ICS position in an EOC
- OR if the message should be tracked
 - Such as: the 3rd parties may need to refer to it again
- o THEN write it down on the appropriate form; handle as a written message
- Log all 3rd party spoken messages on an ICS 309 Communications Log
 - Shadows (and <u>only</u> Shadows) can log on their ICS 214 Unit Activity log

3rd Party Written Messages

- 3rd party written messages always use an appropriate form
 - o General messages on ICS 213; resource requests on EOC 213RR; etc.
- If the message is not on the appropriate form:
 - o Best: Ask the author to use the correct form
 - If they don't have one, provide it to them
 - o Next best: Transcribe the message to the form, asking the author to clarify as you go
 - Clarify spelling, other details
 - Worst case: Staple original to the new form only if necessary
- If the form doesn't have radio routing information, use a Radio Routing Slip
 - Radio routing info: message numbers, date, time, to/from position/location, operator info
- If the handling order, to location or to position is unknown, use the Recommended Routing Cheat Sheet
- The basic process of passing the message is the same, regardless of form
 - Generally, left to right, top to bottom
 - o Group fields in the same section together
 - o If the form has sections, say the section name or number when starting a new section
 - For message text, send five groups at a time. If some groups are extra long or complicated, send the approximate equivalent of 5 groups at a time.
 - On forms with multiple short fields, send several fields at one time to approximate 5 groups. A long internet address or GPS Coordinate may be considered as the equivalent of 5 groups.
 - Some forms may have a specific technique

APPENDIX A - Recommended Field Grouping

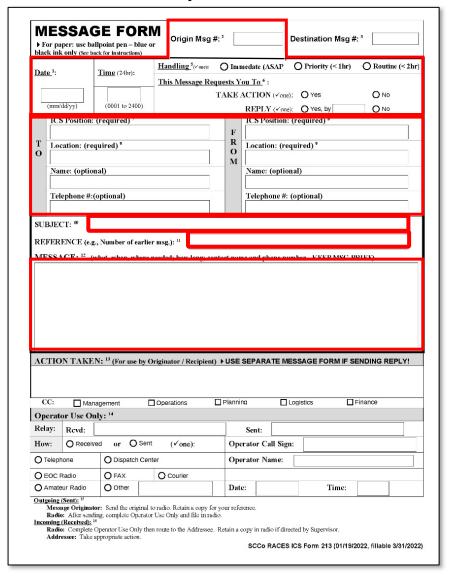
Some commonly used forms have preferred field groupings for maximum efficiency. Send all the fields in the group and wait for the receiver to acknowledge before sending the next group.

ICS 213 Message Form

- · Recommended field groupings
 - Message Nbr, Date, Time, Handling, Msg Requests
 - o To, From
 - Subject
 - Reference (if present)
 - Message 5 groups at a time

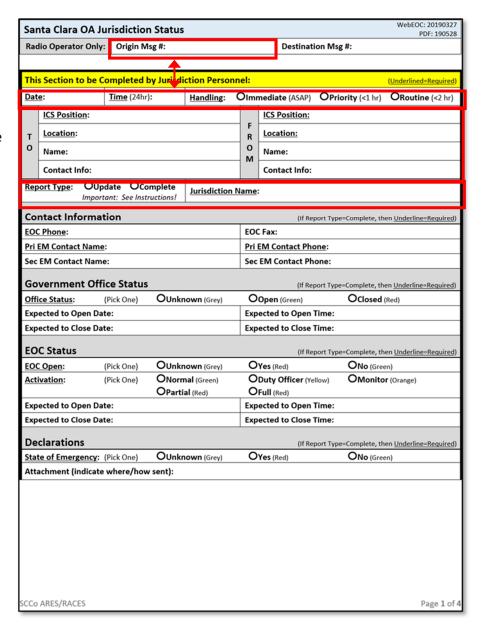
Example: ICS-213

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OA Jurisdiction Status

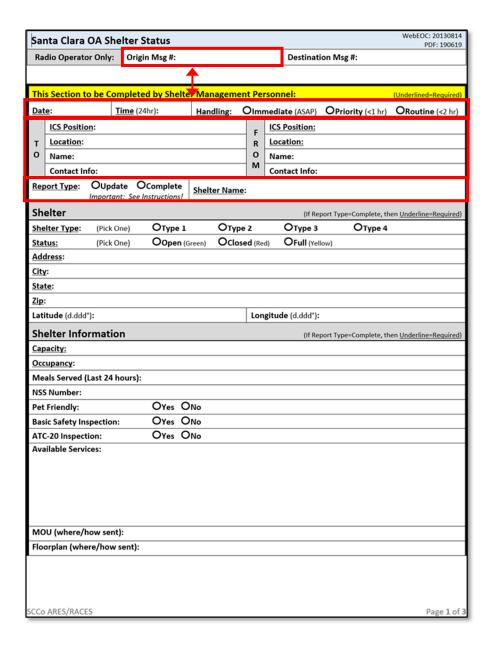
- · Recommended field groupings
 - o Msg Nbr, Date, Time, Handing
 - o To, From
 - o Report Type, Jurisdiction Name
 - o Then go section by section
 - Say section name
 - Say field name(s) and value(s)
 - Shoot for about 5 items (fields/groups) at a time
 - Skip empty fields & sections



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OA Shelter Status

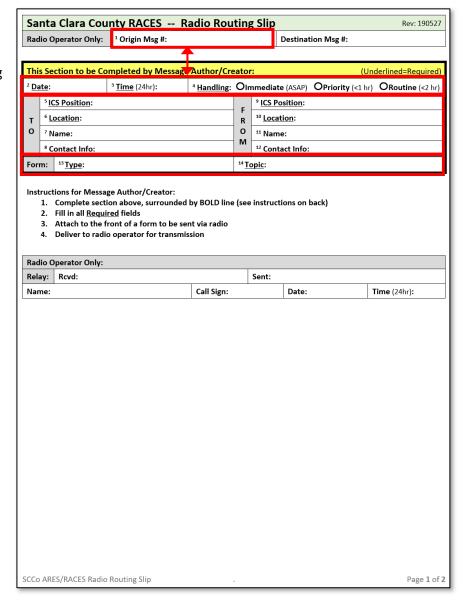
- · Recommended field groupings
 - o Msg Nbr, Date, Time, Handing
 - o To, From
 - o Report Type, Shelter Name
 - Then go section by section
 - o Say section name
 - Say field name(s) and value(s)
 - Shoot for about 5 items (fields/groups) at a time
 - Skip empty fields & sections



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Radio Routing Slip

- · Recommended field groupings
 - o Message Nbr, Date, Time, Handling
 - o To, From
 - o Form Type, Topic

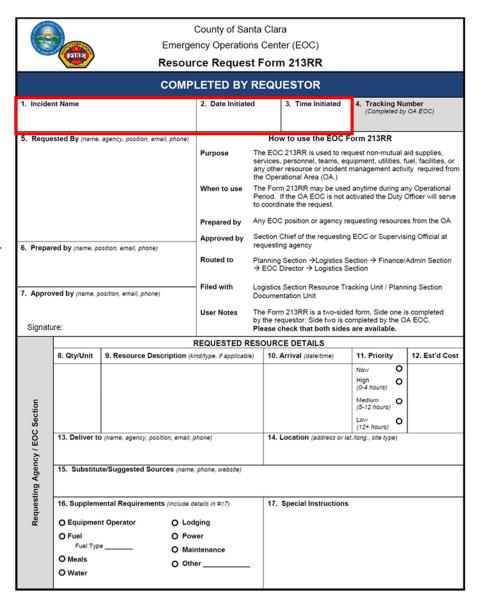


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EOC 213RR Resource Request Form

- · Recommended field groupings
 - o Incident Name, Date, Time
 - o Then, use your best judgement
 - Say field number and value(s)
 - Shoot for about 5 items (fields/groups) at a time
 - Skip empty fields
- If a signature is present in Field 7, voice 'with signature' when sending the message. The receiver will enter 'with signature' in the signature area of Field 7.

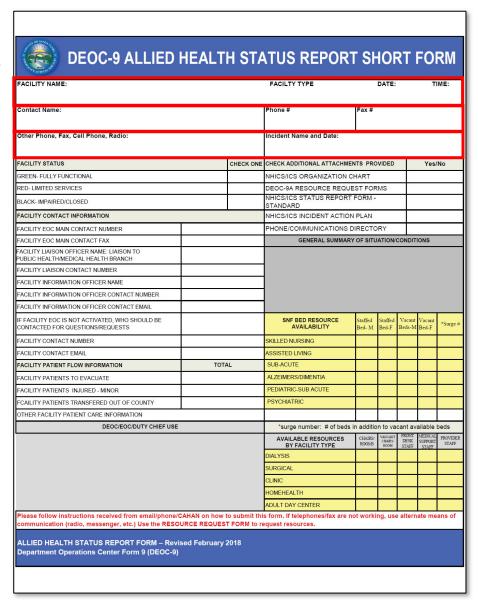
The same procedures applies to the signature block on the RACES Mutual Aid Request Form.



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Allied Health Facility Status

- · Recommended field groupings
 - o Facility Name, Type, Date, Time
 - Contact Name, Phone, Fax
 - o Other, Incident Name & Date
 - Then go section by section
 - o Say section name
 - Say field name(s) and value(s)
 - Shoot for about 5 items (fields/groups) at a time
 - Skip empty fields & sections



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APPENDIX B - Summary of Prowords used in Message Passing

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Control Prowords

Define the start, end, or control the flow of the message.

MESSAGE NUMBER

ROGER

BREAK

STAND BY

CONTINUE or GO

NEWLINE

END OF MESSAGE or MESSAGE ENDS

SAY AGAIN or SPELL (PHONETICALLY)

Clarification Prowords

Always spoken AFTER a group. Clarifies or emphasizes what was just said .

I SPELL

I SAY AGAIN

Qualification prowords

Always spoken WITHIN a group. Defines a quality to allow precise copy.

UPPERCASE and LOWERCASE

SUBSCRIPT and SUPERSCRIPT

Introductory Prowords

Always spoken BEFORE a group. Alerts receiving operator to what is coming next.

INITIAL(S)

FIGURE(S)

SYMBOL(S)

MIXED GROUP, MIXED GROUP FIGURE(S), MIXED GROUP SYMBOL(S)

TELEPHONE FIGURES

GPS COORDIANTES

AMATEUR CALL

EMAIL ADDRESS

PACKET ADDRESS

INTERNET ADDRESS

It is important to use each proword in the right place (before, inside, or after a group) to avoid confusing the receiving station and slowing down the message transfer.

Change Log

Summary of changes

Page #	Topic Summary		
Various		Corrected typos and minor typos	
8, 24, 27, 32	Appendix A - ICS-213	Made changes noted or Errata Sheet dated Jan 2024	

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