

**U.S. Navy-Marine Corps
Military Auxiliary Radio System
(MARS)**



**Digital Procedures Training Guide
Region 10**

NNNØASØ FOUR

12/25/2ØØ9

REVISION - CORRECTION HISTORY

Based on "RATT Training, Dick Cook, NNNØWTY WA, 27 Feb 1995"

24 Oct 2006, NNNØFHA, changed for general digital operations

8 Jun 2008, NNNØFHA, changed to conform to Joint MARS Voice SOP

4 Jul 2009, NNNØFHA, corrected typos, added Q-Z signals at end

25 Dec 2009, NNNØFHA, removed redundant ZKB from net calls

LESSON NUMBER ONE

MESSAGE ALIGNMENT

- a. The end of message function is the letter "N" four times.
- b. No line shall exceed 69 (sixty nine) characters including spaces.

NET CALLS

1. It is assumed that some of the stations checking in will be doing so for the very first time. Therefore every "Z" and "Q" signal and every prosign may seem like a "foreign language". Operating signals (Z and Q) may be found in NTP-8(D) annex "C".
2. The Net Control Station (NCS) should transmit a test signal, or preliminary call, prior to calling the net.
 - a. For RTTY, the call consists of the designation of the called station(s) or net (made two times), the prosign DE (made once), the designation of the calling station (made two times), a net, followed by one line of 64 RY's and one line of 64 SG's

Example:

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ØX2A ØX2A DE NNNØEEE NNNØEEE
RYRYRYRYRYRYRYRYRYRYRYRYRYRYRY (total of 64 characters)
SGSGSGSGSGSGSGSGSGSGSGSGSGSGSG (total of 64 characters)
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- b. In the AMTOR, PACTOR and Clover forward error correction (FEC) mode, at least 30 seconds of idle signals shall be sent, followed by the net designator and the calling stations call sign. Lines of RY's and SG's are not used for these modes.

Example:

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Ø01B Ø01B DE NNNØBBB NNNØBBB
Ø01B Ø01B DE NNNØBBB NNNØBBB
Ø01B Ø01B DE NNNØBBB NNNØBBB
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- c. For other transmission systems, the call shall be sufficiently long to permit receiving station(s) to lock on to the signal, and will contain call signs and identification as noted above.

Examples:

ØX2C ØX2C DE NNNØDDD NNNØDDD

ØX2C ØX2C DE NNNØFFF NNNØFFF
ØX2C ØX2C DE NNNØFFF NNNØFFF

3. The net control station will open the net in the following manner:

ØX2C ØX2C DE NNNØHHH NNNØHHH ZKA K

(ØX2C net designator, ZKA I am net control, K over)

The above indicates to the members checking in, who is the net control and that the net is a directed net. No station is to transmit traffic unless so directed by the NCS.

4. The above net call-up would appear as follows, all on one line:

ØX2A ØX2A DE NNNØHHH NNNØHHH ZKA K

Following the call for check-ins, each station calls in turn:

NNNØHHH NNNØHHH DE NNNØAAA NNNØAAA ZKE QRU K
(I check into the net, no traffic)

You add to the above response:

QRU (I have no traffic or nothing for you) or

ZBO (I have traffic) followed by the number of messages, their precedence and destination.

K (over) the "K" indicates the station is expecting an answer.

This also will be all on one line or within the 69 character limit.

NNNØHHH NNNØHHH DE NNNØAAA NNNØAAA ZKE QRU K

or

NNNØHHH NNNØHHH DE NNNØAAA NNNØAAA ZKE ZBO 1R TACOMA K

The NCS call sign and the station call sign should be sent three times on initial check-ins.

5. When no further stations are heard by the NCS, he/she will respond:

NNNØAAA NNNØBBB NNNØCCC ... DE NNNØHHH R AR (out)

Stations are checked in, in the order they checked into the net. NNNØAAA, NNNØBBB, AND NNNØCCC are example call signs only and may be used through out these lessons.

6. The NCS now repeats the above process to pick up any late stations.

On the last call for check-ins, hearing nothing, the NCS will respond:

ØX2C DE NNNØHHH ZGN AR (no stations heard) (out)

7. Some of the stations checking in may be off frequency. The NCS will call them:

NNNØAAA DE NNNØHHH ZRA2 (your frequency is high)

or ZRA3 (your frequency is low)

or ZRC (zero beat this signal)

K (over)

8. NNNØAAA retunes and calls the NCS:

NNNØHHH DE NNNØAAA INT ZRA K (how is my frequency)

NCS responds:

NNNØAAA DE NNNØHHH ZRA1 AR (your frequency is correct) (out)

LESSON NUMBER TWO

PROSIGNS

1. In digital operation, the use whenever possible of prosigns will greatly speed up operations. Operating personnel should not however, under any circumstances, substitute prosigns for the textual content of a message received for transmission without the consent or approval of the originator of the message.
2. Some prosigns, their meanings and use are listed below:

AA proword equivalent is "all after" the prosign AA is also used in lieu of a call sign in establishing communication with a station whose call sign is not known or is not recognized.
(Unknown station)

Example:

NNNØHHH hears its own call sign but misses the call sign of the calling station. NNNØHHH transmits:

AA AA DE NNNØHHH

In the case of a correction or repetition, AA is used as follows:

Example:

NNNØAAA DE NNNØBBB IMI AA TRANSMITTER K

Reply:

NNNØBBB DE NNNØAAA AA TRANSMITTER

(insert all after the word transmitter in the message).

AB proword equivalent is "all before" (not all between, there is no such prosign or proword as all between) this prosign is used to request repetitions of a message/portion, as you are receiving it. In addition, it is used to repeat or correct a portion of a message.

Example:

NNNØAAA DE NNNØBBB IMI AB FORMATION K

NNNØBBB DE NNNØAAA R AB FORMATION (insert all before the word formation in the message)

C proword equivalent is "correct", used to indicate a correction to a message or a portion of one.

Example:

NNNØAAA DE NNNØBBB C WA SOON WILL K

Indicating that the word after soon is being corrected to read "will". The prosign "C" is also used when responding to a query.

Example:

NNNØAAA DE NNNØBBB INT QTH SEATTLE K
(is your location seattle ?)

Response:

NNNØBBB DE NNNØAAA C AR

Do not use the proword "ROGER" (prosign "R") in place of "C" the correct response to INT C is C. Roger ("R") only means that you have received a transmission correctly.

AS proword equivalent is "wait" when "AS" is used without an ending sign it means a short pause. If you expect the station will be required to wait longer than a few seconds, you will use the prosigns "AS AR" (wait out), this would mean wait, I will call you back.

LESSON NUMBER THREE

PROSIGNS (continued)

Several more prosigns commonly used in digital operations will be discussed in this lesson.

INT query - used preceding the question. Also used preceding operating signals and prosigns when it is desired to utilize the OPSIG or prosign as a query.

Example:

INT ZRA - is my frequency correct

INT WA SHIPS BOATS

Meaning " is the word after ships boats". If this was the correct content of the message the response would be "c" it is not necessary in this case to repeat the content of the message queried.

IMI the proword equivalent is "say again" or "I say again" used when requesting, or giving, a repetition or correction to a message.

Example:

IMI PARA 1. WA NOW (say again in para 1. The word after now)

Response is:

DE NNNØAAA PARA 1. WA NOW IS K

It is also sent between messages when requested to ZS02

K proword equivalent is "over". Used at the end of a transmission when a reply is necessary or expected.

AR proword equivalent is "out". Used at the end of a transmission when a reply is not needed or expected. "K" or "AR" must be used at the end of every transmission. When rogering for a message and no further message is expected the proper prosign is "AR". No reply from the sending station is necessary. Do not use "K" unless further communications with the sending station is needed.

- B proword equivalent is "more to follow". Used on the next line following the ending bt of a message to indicate that there is more to follow.
- R proword equivalent is "ROGER". Your transmission received. The letter "R" is sent, not an abbreviation of ROGER such as RGR. Do not use "R" in place of "C".
- T proword equivalent is "RELAY". Placed on the line preceding the precedence of a message. When used alone it indicates to the receiving station that he is to accept responsibility for delivery (or relay) to all action and all info addressees of the message. When followed by one or more call signs it indicates to the receiving station that he is responsible only for those calls listed after the "T".
- WB proword equivalent is "WORD BEFORE".

Example:

DE NNNØAAA IMI WB PARA 2

The response would be:

DE NNNØBBB R WB PARA 2. EFFECTIVE

("EFFECTIVE" then, would be the last word in para 1. In this case.)

LESSON NUMBER FOUR

CHECKING IN/OUT OF A DIGITAL NET

1. Checking into a digital net

a. start transmission

b. type:

NNNØHHH NNNØHHH DE NNNØBBB NNNØBBB ZKE ZKP QRU K

ZKE - I report into net

ZKP - guard for if it applies

QRU - no traffic or nothing for you

K - over

c. Other Typical Checkins:

NNNØBBB who does not guard, and has no traffic, would be:

NNNØHHH NNNØHHH DE NNNØBBB NNNØBBB ZKE QRU K

NNNØBBB who is guard for NNNØGZZ, and has 1 message for Portland OR, would be:

NNNØHHH NNNØHHH DE NNNØBBB NNNØBBB ZKE ZKP NNNØGZZ ZB0
1R PORTLAND OR K

(ZB0 means traffic and precedence "1R Portland OR")

2. Checking out of a digital net

a. To check out of a net before it is formally ended by the NCS, wait for a NCS call up, or if declared a free net type:

NNNØHHH DE NNNØBBB INT ZKJ K

(INT means ? and ZKJ means CLOSE DOWN, so INT ZKJ basically means "REQUEST TO CLOSE DOWN" this station)

b. NCS will come back with:

NNNØBBB DE NNNØHHH ZKJ 1 K

(which means you may CLOSE DOWN)

3. Closing Down the Net

To close down the net the NCS will send the following command:

ØX2C ØX2C DE NNNØHHH NNNØHHH ZKA ZKJ 2 AR

ZKA - I am net control
ZKJ 2 - I am closing down the net
AR - Out

COMMON DIGITAL SIGNALS

AA	all after or unknown station depending on usage
AB	all before
WA	word after
WB	word before
AR	out
AS	wait
C	correct
R	roger
K	over
IMI	say again or I say again
INT ZKE	calling for net checkins
QRU	I have no traffic or no further traffic for you
ZB0	I am checking into the net with traffic
ZEN	message sent by other means
ZES	re-transmit entire message
ZGN	nothing heard
ZKA	I am net control
ZKD	assume NCS
ZKS	the following stations are checked into the net
ZOE	send me your message
ZOG	send your message to ...
ZUE	affirmative
ZUG	negative
ZXX	message sent to all info addrees by other means