

1 Military Auxiliary Radio System Navy-Marine Corps MARS

MARS Operator Course

3.01.a

06 SEP 2008

Unit Three Operational Concept

Contents:

- * Lesson 1 – Network Operations
 - * Lesson 2 – Call signs, Frequency Management
 - * Lesson 3 – Message Criteria, Minimize and Communications Security
-

Lesson 1 NETWORK OPERATIONS

In 2007 the three MARS services chiefs, Air Force, Army, and Navy-Marine Corps, agreed to establish a set of common, unified voice net procedures to insure that all three services conducted voice nets in the same manner. It was developed by a committee with equal representation from each of the respective services, under the guidance of the three MARS chiefs all working together.

The Voice Standard Operating Procedures (SOP) is officially titled *U.S. Military Auxiliary Radio System (MARS) Joint Air Force, Army, Navy-Marine Corps Standard Operating Procedure for Calling and Operating a Voice Net.*

The SOP was approved by all three MARS chiefs with a letter of promulgation dated 22 NOV 2007, to become effective 01 JAN 2008. This document supersedes Chapter 7 of NTP-8 (D).

Some questions for this unit will be based on that document.

500. Network Establishment

To enable MARS to fulfill its mission, it is necessary that both intra- and inter- Area (within and between areas, respectively) networks be established and maintained to

meet the requirements for effective and efficient communications.

Chief, NAVMARCORMARS will direct, through the area, region, and state directors, and Specialty Network Coordinators, the operations of the MARS networks throughout the world. Networks will be established and disestablished by Chief MARS, the area, region, and state directors to meet requirements of the program.

501. Types of Networks

Administrative Net: A net primarily established for purposes of discussing MARS business at its established level, region business on a region net, etc.

Traffic Net: A net primarily established to handle message traffic.

Emergency Net: A net primarily established to handle communications during an emergency or disaster, or for emergency exercises.

Training Net: A net primarily established with specific training goals in mind, such as the Basic Procedures Net for Tango members (it may have a different title in your area).

Specialty Net: A net primarily established for a purpose other than traffic handling or training. Afloat and Overseas Operations Network, Antarctic Operations Network, and Slow Scan TV Operations Network are examples of specialty nets

Command Net: A net primarily established for coordination purposes among Chief, NAVMARCORMARS, Headquarters Radio Station (NAV), area directors and such other stations specifically authorized.

Tactical Net: A net primarily established to meet requirements for emergency point-to-point operations.

502. Network Operational Controls

Net Control Station (NCS) - The net control station is a station designated by appropriate authority to direct and control the operation and flow of all traffic on the net. NCS responsibilities include:

- Expedite traffic on the net.
- Maintain circuit discipline.
- Monitor net operations to determine procedural discrepancies and initiate corrective action as needed,
- Submit reports on net participation and frequency usage to the designated authority on completion of the net.

Alternate Net Control Station (ALTNCS): is a station designated to assume the duties of NCS when directed or when NCS has failed to answer after three successive calls.

503. Network Operations

Directed Net:

When operating on a directed net, stations must obtain NCS permission prior to

transmitting. Record traffic may only be passed during a directed net.

Free Net:

When operating conditions permit, the NCS may direct that the net be operated as a free net. Member stations are then authorized to communicate with other net stations without obtaining prior permission from the NCS. Record traffic may not be passed on a free net.

504. MARS Data System (MDS)

Effective 01 SEP 2008 the MDS is no longer operational. All record traffic not passed on local nets will be sent via WinLink. Training on WinLink is beyond the scope of this training material. Contact your state training staff or state director for training and assistance with getting established on, and using, WinLink.

505. MARS VHF FM Repeater Systems (MARSREPSYS)

The MARS VHF FM repeater System exists to facilitate the handling of record and voice communications using VHF communication. The MARS VHF Repeater System extends the line of sight communications range of fixed, portable, and mobile VHF communications facilities, thereby providing a more efficient utilization of the limited frequency allocations and reducing congestion in the prime lower frequencies. Additionally, the MARSREPSYS significantly improves the potential of MARS to provide telecommunications support for the Department of the Navy disaster control operations, as well as local civil disaster control, by providing a highly mobile and effective quick reaction communications capability for local communications.

506. JOINT SERVICE MARS INTEROPERABILITY

Interoperability between the MARS services is available to all members of all services on HF and VHF. Messages best handled or delivered by another MARS service should be crossed over to their circuits at the state level whenever possible.

NTP-8, ANNEX J contains more detailed information and imposes some limitations due to frequency authorizations. The FCC "A" line also affects MARS operations.

You may from time to time hear Army and Air Force MARS stations checking into some of the nets you monitor. However, as a Navy-Marine Corps MARS member, do not attempt to check into an Army or Air Force MARS net without first checking with your state director. There are a few rules (naturally).

507. Amateur Refile Points/Stations

MARS members may engage in amateur/MARS refile for the purpose of accepting amateur radio service messages addressed to Armed Forces personnel or refiling MARS messages with the Amateur Radio Service to effect delivery.

508. MARS/Naval Computer and Telecommunications Refile Points

Area directors, coordinating with the appropriate commanders/CNO state directors and/or

Navy and Marine Corps command/activities, shall be responsible to establish and designate primary MARS/Naval Telecommunication System refile points to facilitate efficient and effective message refile in time of need. The Headquarters MARS Radio Station (NAV) is the designated world-wide primary MARS/Naval Telecommunication System Refile Station.

509. Quality Assurance

The ability of NAVMARCORMARS to fulfill its mission depends upon the readiness of its personnel and material resources. Quality assurance activities provide protection against degradation of "System Readiness" through proactive efforts. Examples include training, and detection and analysis measures which give early warning about impending problems – These include service message inquiries on traffic with excessively old origination dates or having persistent patterns of format errors. The quality of system performance is the direct result of the performance of the individual members; therefore, quality assurance efforts must be the responsibility of all members, not just staff personnel.

Training:

A process of continual training and improvement of operational skills and equipment performance is achieved through routine net operations, dedicated training nets, drill messages, and emergency communications exercises. Adherence to established procedures and constructive on-the-air discussions about points of difficulty are the primary means for assuring overall System performance quality.

Communication Improvement Memorandum (CIM):

In the interest of improving communications within the MARS networks and to enhance Naval communication training, Communication Improvement Memoranda (CIM's) may be exchanged between stations to point out message discrepancies and procedural errors. CIM's exchanged between members must include complete identification of message or incident involved, a concise explanation of the errors, and reference the appropriate paragraph of the governing publication. CIM's will be mailed without delay directly to the station concerned with a copy to the area director or the training assistant, who shall use the information only in compiling data for training purposes.

Forbidden practices:

The following practices are forbidden:

- "On the air" conduct or actions causing embarrassment to, or that which is not in the best interest of, the U.S. Government including MARS and MARS members.
- Violation of radio silence whenever imposed.
- Violation of MINIMIZE when in effect.
- Use of profane, indecent, or obscene language, either spoken or implied.
- Exceeding the specific power ratings placed on MARS frequencies.
- Use of other than authorized prosigns, prowords, or operating signals.

Lesson 2 CALL SIGNS & FREQUENCY MANAGEMENT

510. Call Signs

Chief, NAVMARCORMARS, through area directors, the Afloat and Overseas Operations Network Coordinator, and state directors, assigns MARS call signs from the NNN0AAA-NNN0ZZZ series. Use of MARS call signs normally shall be restricted to MARS networks. When specifically authorized by competent authority, MARS call signs may be used while representing NAVMARCORMARS on other U.S. Government agency networks. The use of amateur radio call signs on MARS networks is not authorized.

Some call signs, known as collective call signs, are not assigned to specific member stations or staff members. They represent a specific predetermined group of addressees. Examples include NNN0ALL is all MARS stations. NNN0ALL REGION TWO is limited to all stations in Region Two. NNN0ALC is all state directors. More information and details on call signs can be found in NTP-8 (D) Annex K. Annex K para K600 deals specifically with use of collective call signs. Be sure to read thoroughly before attempting to use a collective call in a message. Use of collective call signs is restricted.

Based on the Joint MARS Voice SOP (see Unit 5, lesson one) net designators are considered a special case of collective call sign. In addition to identifying the net it also serves to reference all stations on that net, or wishing to check into that net. For example, 0W1B identifies the first traffic net of the Zulu day. It is a Washington state net in Region Ten. When the NCS, or any station, wishes to call all stations on that net he or she will use it as a collective call sign thus transmitting:
“0W1B THIS IS NNN0AAA...”

520. Frequency Management

The Navy-Marine Corps Spectrum Center (NMSC) assigns MARS frequencies to Chief, NAVMARCORMARS. Chief, NAVMARCORMARS will coordinate and effect implementation of MARS frequency assignments. These assignments must be utilized so as to avoid interference with other naval communications, which take precedence. Stations will use minimum power consistent with good communications. At no time shall power be used in excess of that authorized for the frequency. Additional information may be found in Annex B of NTP-8

It is the policy of Chief, NAVMARCORMARS to get maximum use of the limited number of frequencies through sharing of the frequencies among the various states, regions, and areas; as well as with other users. This is achieved through time schedules, frequency offset within the allowed bandwidth, or geographic separation.

MARS frequencies must be utilized in such a manner as to avoid interference to other military communications, which take precedence. If such interference develops and the station affected requests that the MARS station cease operation on the frequency in use, such action shall be taken immediately until the frequency is clear.

530.-Message Handling

Origination responsibility - no one shall knowingly or willfully originate or accept for transmission false or misleading messages. Each MARS member who originates messages, or accepts any message for transmission via MARS is responsible for screening and determining that the message meets the criteria in paragraph 540 prior to transmission. **If you encounter a message you believe to be unlawful or unacceptable by these criteria contact your state or region director immediately for further guidance.**

Any person or command originating a message is the one by whose authority a message is sent. An originating station is the station whose call sign or command title appears in the FROM line (FM) of the message header and is normally the station or command who first transmits the message.

MARS members are authorized to originate messages. The originator has the following specific responsibilities:

- Designate the addressees. Keep the number of addressees to a minimum.
- Assign the precedence. Reserve high precedence for messages requiring immediate action.
- Properly draft the message. Keep the text brief through proper choice of words, use of punctuation, and good writing techniques. Avoid repetitious words and phrases. Abbreviations will not be used unless the originator is certain that the meaning is clear and unmistakable to all addressees. In the interest of brevity, the NAVMARCORMARS and ARRL Abbreviated Texts (NMAT and ARL) should be used whenever possible. See Annex L.

Note: many punctuation marks and formatting codes are not allowed as they will cause problems in some digital modes. Be sure to draft your messages for digital transmission using an ASCII Text program such as Notepad. Where necessary, use spaces not the tab key. A tab code will cause an end of message code to some digital modes and all after the tab will be lost. NTP-8(D) chapter 56 discusses punctuation, but for proper digital transmission refer to NTP-8(D), para 802.b. for acceptable punctuation marks.

Always consider who your audience is, or might be. Write so all addressees will understand your message. Don't assume your meaning is always clear to others. A most common error is use of abbreviations or acronyms. If you are not absolutely certain an addressee will understand abbreviations you use, spell them out the first time you use them in a message. For example, everyone in the MARS services knows what ECOM and NAVMARCORMARS stand for. How about COMNAVNETSPAOPSCOM?

531. Safeguarding Communications

Official messages are inviolable. Their content shall not be revealed to anyone except as designated by the originator, addressees, or their designated representative(s). Transmission or revelation of information to any unauthorized persons affecting the national defense of the United States is prohibited by law.

Espionage laws, Title 18, U.S.C., SECTIONS 793 and 794 apply. (USC stands for United States Code, the rather extensive set of Federal laws passed by congress.)

All personal and commercial messages handled by naval communications are equally inviolable. Contents of such messages shall not be revealed to anyone but the person addressed and as necessary for communication processing. Unauthorized disclosure of the contents of any personal or commercial message is prohibited by law and punishable under the Federal Communications Act of 1934.

No person is entitled to knowledge or possession of classified or unclassified communications solely by virtue of his rank, position, office, or security clearance. Always apply the rule, "a need **and** a right to know".

Relay and Delivery Responsibility - The station accepting a message for transmission, relay or delivery is responsible for the message until it has been accepted by another station or delivered to the addressee. When a station cannot relay or deliver a message, the station operator must notify the originating station via service message. Messages containing instructions from the originating station to "take no further action" if the message is undeliverable relieves the station holding the message of any further responsibility.

Cancellation of Messages - Only the originating station can cancel a message. Cancellation of a message which has been transmitted may be accomplished only by a new message, which may be a message taking the place of the one canceled. Operating signals shall not be used to cancel a message which has been receipted.

Lesson 3

MESSAGE CRITERIA, MINIMIZE, AND COMMUNICATIONS SECURITY

540. Message Criteria

Types of messages authorized for transmission on MARS networks will be restricted to the following unclassified messages:

- Administrative traffic pertaining to MARS;
- Traffic of an official, semi- or quasi-official nature;
- ECOM exercise traffic, drill messages, and practice messages for training;
- During periods of local, national, or international emergencies, any message relative to the emergency;
- Personal messages addressed to or from Armed Forces personnel (active duty, retired, or reserve), NAVMARCORMARS members, Veterans Hospital patients and staff, and authorized government employees.

Only personal messages in the English language that are of non-business nature and which would not normally be sent by available commercial means may be handled.

Messages concerning the initial notification of serious illness or death of a member of the immediate family shall not be handled via MARS. Individuals desiring to originate such messages should be referred immediately to the American Red Cross.

No messages will be handled by MARS which relate to legislative matters. No message addressed to a legislator which circumvents the normal military chain of command will be accepted for transmission.

Personal messages which relate to military operations will not be handled by MARS.

Any message which may result in financial or material gain is considered business in nature and will not be handled via MARS networks. Consult your state director for guidance regarding use of messages to let other members know of communications related equipment you may have for sale, or know about.

Messages deemed to be an obvious attempt to avoid postage fees will not be accepted by the originating MARS station.

Any additional topics as may be designated by appropriate authority.

The use of personally derived codes in any message is prohibited.

The maximum length of the text of any morale and welfare message (MARSGRAM) is limited to fifty words. If an address is included in the text, the address will count as only one word. Abbreviated texts, if used, will be counted as the number of words in the abbreviation. For example, NMAT ONE counts as two words.

550. Message Solicitation

MARS members may publicize their personal message handling capabilities, but will not actively solicit personal messages from the general public for transmission via MARS.

Stations may contact emergency management agencies and local and state police, etc., to advise them of MARS capabilities.

MARS members may request permission to establish a portable station for the purpose of accepting messages from the general public, provided that such a station is co-located with an appropriate MARS display that depicts the purpose of MARS and that the station will be operated in conjunction with a public event which is consistent with the MARS mission.

560. Amateur Radio Service

Refiling of MARS administrative official, semi- or quasi-official traffic into the amateur radio services is strictly forbidden. Only personal messages may be refiled into the amateur radio service. Messages are to be refiled into the amateur radio service only when it is impracticable to effect delivery via MARS channels, without undue delay. Messages that are to be refiled from the amateur radio service into a MARS network must meet the message criteria set forth in paragraph 540.

570. Message and Station Records

Every MARS station will maintain a **Message File**. It will contain a copy of every message sent or received by this station. Messages are to be filed in order of the date-time-group. General messages, including broadcasts, are filed differently. See below.

Stations involved in message relay will establish a **Station File** which contains a copy of every message relayed.

The **General Message File** contains a copy of all general messages that require retention by the member.

The General Message File is subdivided by the title of each General message and filed in serial number order. Files may be combined for convenience of storage, filing, and referencing.

A **log of station operations** will be maintained in chronological order. Contents should include, at the minimum, time, frequency, station called, mode of operation, and summary of traffic handled. Any transmission relating to a significant event or emergency also should be summarized. Relevant, unchanging information such as power output need not be repeated.

571. Records Disposal

- Communication files and logs shall be retained as follows:
- Messages incident to distress or disaster: THREE YEARS

- Messages incident to or involved in any claim or complaint of which the station has been notified: TWO YEARS, or until complaint or claim has been fully satisfied (whichever happens last).
- Messages of historical or continuing interest: PERMANENTLY. When no longer needed for local reference, these messages shall be forwarded to Chief, NAVMARCORMARS.
- General Messages: UNTIL SUPERSEDED OR CANCELED
- All other messages: SIXTY DAYS

580. Minimize

MINIMIZE is a condition designed to drastically reduce normal message and radiotelephone traffic in order that messages connected with an actual or simulated emergency will not be delayed.

Authority to impose MINIMIZE on MARS networks is limited to Chief, Navy-Marine Corps MARS and above. MINIMIZE may be imposed in a specific MARS state or world-wide and include either message or radiotelephone traffic or both. Depending upon the circumstances, MINIMIZE may include incoming and/or outgoing traffic to the state. When MINIMIZE is imposed on MARS networks, the criteria set forth below will be followed by all stations:

- The release of welfare and routine traffic destined for the state having the emergency will be discontinued.
- Routine traffic already in the system and destined for the that state will be held by the respective station until MINIMIZE is lifted.
- Stations will continue to transmit any message that is PRIORITY or above via normal channels.
- Official communications will normally be handled ahead of personal messages regardless of precedence.

Chief, NAVMARCORMARS will cancel MINIMIZE when conditions permit. Additional information on MINIMIZE can be found in NTP-8 para 580.

590. Communications Security

Communications security is the protective measure taken to deny unauthorized persons information derived from communications material or to mislead unauthorized persons in their interpretation of such communications. Classified matter is information or material in any form or of any nature which requires protection in the interest of national defense. MARS members shall not knowingly accept any message containing classified matter. Sensitive information may not necessarily be classified, but could be harmful to the United States interests, activities, or policies if improperly disclosed.

591. Preventing and Reporting Loss or Unauthorized Disclosure

Each person who has knowledge or custody of classified information is responsible for preventing its loss or unauthorized disclosure. Any person discovering a suspected loss or unauthorized disclosure of classified matter shall notify the MARS Area Director, or in

the case of an operator at the military auspices station, his immediate superior or other appropriate authority, as rapidly as possible.

A520. Net Designators, Method of Assigning (that's Annex 'A' para 520)

The first character of the net designator (a numeral or letter) will denote the MARS area or region in which the net is located. Regions will be identified by figures 0 through 9 for the respective region. Areas are identified as follows:

- C - Central Area
- N - Northeast Area
- P - Pacific Area
- S - South Area

The second character of the net designator (a letter) will indicate the state in which the net is located. This letter will be assigned by the cognizant region director. If not a state net then the 2nd letter is as follows.

- Area nets are denoted by the letter "A",
- region nets, use the letter "X".
- national level nets and/or nets under the cognizance of Chief NAVMARCORMARS, use the letter "Z".

The third character of the net designator (a numeral) will denote the first, second, third, etc., net within the region or state (regardless of its purpose or mode of operation). (The third digit in designators for nets under the cognizance of Chief, NAVMARCORMARS will denote the first, second, third, etc., net within each specialty network.)

The fourth character of the net designator (a letter) will denote the type of net as follows:

- "A" Administrative Net
- "B" Traffic Net
- "C" Training Net
- "E" ECOM Net
- "V" Radio Telephone
- "W" Radio teletypewriter
- "X" Slow Scan TV
- "Y" Single Channel Data (SCD) * see note
- "Z" Other

*Note: Single Channel Data (SCD) includes Baudot, ASCII, Packet, AMTOR, ARQ (FEC), Pactor, Clover or other digital modes.

End of Unit 3 proceed to Unit Four

You may start the review test at any time.