

1 Military Auxiliary Radio System Navy-Marine Corps MARS

MARS Operator Course

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Unit Seven Shared Resources (SHARES) interoperability

Contents:

* Lesson 1 – An overview of SHARES and it's application within MARS

Lesson 1 The Shared Resources (SHARES) Program

(References)

- A. NTP-8 (D) DRAFT Annex D, Paragraph D903
- B. NTP-8 (D) DRAFT Annex K, Paragraph K200.c
- C. NCS Directive 3-3 Telecommunications Operations Shared Resources (SHARES) High Frequency (HF) Radio Program

The terms Navy-Marine Corps MARS, NAVMARCORMARS, and NMCMARS are used interchangeably in this lesson.

Lesson Intent.

The intent of this discussion is to introduce the Navy-Marine Corps MARS operator to the National Communications System (NCS) Shared Resources High Frequency (HF) Radio program, commonly referred to as "SHARES".

SHARES grew out of Executive Order 12472 of April 1984, which was based on Presidential Directive/NSC-53 of November 1979. Navy-Marine Corps MARS and the National Communications System signed an MOU in November 1983. NMCMARS thus became a charter member of SHARES.

Although the MARS programs are major participants in the SHARES system, each service is limited in the number of members who are authorized to operate in the program. This training lesson plan is intended to provide MARS members with an

overview of the SHARES program. It should help you understand how NMCMARS participation fits in the overall picture of governmental emergency communications. It is only an introduction. It is not intended to make the student fully versed in SHARES operations. Members interested in SHARES, or who would like to know more, should contact their State Director or another MARS member who is a SHARES member station.

Many of you may already be familiar with the term "SHARES" and perhaps have seen periodic messages from the Chief, NAVMARCORMARS announcing quarterly SHARES exercises. Most students, particularly those new to MARS, do not know what SHARES is and how we as NMCMARS operators fit into and support the SHARES system. This discussion should help you understand how NMCMARS participation in the SHARES program is an important role in the overall scope of emergency communications. Even if you are not a designated SHARES member station, you still have a vital role in the SHARES system.

Background:

The National Communications System, or "NCS" began in 1962 after the Cuban missile crisis when communications problems among the United States, the Soviet Union, NATO, and foreign heads of state threatened to complicate the crisis. (Remember in Unit One, the time frame for the advent of NMCMARS as a separate MARS entity?)

After the missile crisis, President Kennedy ordered an investigation of national security communications, and the result was a single unified communications system to serve the President, Department of Defense, diplomatic and intelligence activities, and civilian leaders. A Presidential Memorandum on 21 August 1963 established the NCS, whose mandate included linking, improving, and extending the communications facilities and components of various Federal agencies, focusing on inter-connectivity and survivability. The NCS program is structured to ensure that a national telecommunications infrastructure is in place and is designed to interchange traffic in support of the needs of the U.S. Government. A segment of this effort includes the sharing of federally controlled HF radio resources to establish a robust national emergency HF communications system. The SHARES HF Radio program of today is just one component of the NCS and helps ensure this critical connectivity (note that "SHARES" is derived from the program's title - SHAred RESources).

Overview:

Many Federal departments and agencies use HF radio communication systems to support their mission responsibilities. These systems and the favorable propagation characteristics of the HF spectrum can be valuable assets during National Security and Emergency situations when regular communications links may be over whelmed, disrupted, or destroyed.

The SHARES network system provides backup capability for the exchange of critical information among Federal entities by HF radio in crisis situations. The program is just one of many that supports inter-operability using existing communications resources in a way that will not interfere with the essential operations of the participating departments and agencies. The bottom line is that the SHARES program enables any

Federal station to contact any participating Federal station on an assigned HF operating frequency to pass or relay a SHARES message.

SHARES Objectives:

The objectives of the SHARES HF Radio Program include:

- Provide participating departments and agencies with extended HF coverage and enhanced emergency high frequency radio communications.
- Provides an enduring backup to vulnerable leased telecommunications.
- Establishes the "flag word" SHARES, in other words a unique identifying title for messages, which is used to expedite the identification and processing of emergency Federal government message traffic.
- Standardizes message preparation and procedures to simplify inter-agency message handling.
- Provide an alternate communications resource to potentially compromised normal communications resources (such as wireline or satellite).

SHARES Concept :

Participants in the SHARES network are Federal departments and agencies, both military and non-military. This may include Amateur Radio operators who have access to Federal HF radio equipment and who are authorized to use it in support of emergency communications by a Federal department or agency. Many other Federal organizations do not possess HF resources, and rely upon National Communications System programs like SHARES to provide back-up emergency communications.

Each participating agency provides a set of frequencies authorized for use in exercises or actual emergencies declared by SHARES. These frequencies can be utilized by another SHARES supported agency station to obtain relay assistance during SHARES exercises and emergencies. SHARES communications links are available on a 24-hour basis to provide an emergency communications link to support intra or inter-agency mission requirements. No SHARES "activation" is required. NAVMARCORMARS has designated the three common ECOM frequencies of reference (H) for use in supporting SHARES.

For procedures on relaying messages within the MARS program to/for SHARES stations by members who are not SHARES authorized contact your state director, state FOUR (Training Assistant), or state TWO (ECOM Assistant).

Only NMCMARS stations that have the additional authorization to support SHARES are also allowed access to the SHARES network by operating on the designated frequencies of other SHARES organizations.

There is some confusion regarding SHARES operations and the requirement that radios be National Telecommunications and Information Administration, or

"NTIA", compliant. Details on NTIA compliance as it applies to NMCMARS and its interoperations with SHARES is beyond the scope of this training lesson. For more information contact your state ECOM assistant (TWO) or state director. If they are uncertain they can make inquiries through the chain of command, if necessary to the Assistant to Chief MARS for Emergency Communications, NNN0ASZ. (This must be done via chain of command, through the state, region, and area TWOs as necessary. Members should not be contacting NNN0ASZ directly.

Federal HF radio stations supporting the SHARES HF Radio Program are identified by Federal departments and agencies, and the military services.

The cornerstone in the SHARES Concept of Operations is that ANY participating Federal station may call any other participating Federal station on the other's HF operating frequency to pass or relay SHARES messages.

The directory of frequencies, call signs, and other information for participating stations are provided to SHARES member stations, usually on a CD-ROM disk.

SHARES stations use this directory to identify stations located in the area where message traffic is addressed. SHARES traffic, like MARS messages, may be relayed through several different stations before being delivered.

SHARES Messages:

SHARES messages are emergency messages sent via the SHARES network. They consist of information that must be communicated to a Federal entity and is of critical importance to the Federal government, the entity's mission, and/or involves the preservation of life and the protection of property.

SHARES voice messages contain the flag word "SHARES" for identification. SHARES digital messages contain the prosign "ZYJ" after the date-time-group. They are used strictly for emergency purposes and are relayed via the SHARES HF radio system when normal communications methods are inoperative or unavailable for use. SHARES messages are formatted in the 16-line military format we use in MARS and can be sent properly over MARS circuits with the addition of a routing indicator prior to the addressee.

SHARES messages are transmitted as unclassified information using voice or data modes. As with the MARS service, encrypted traffic may be passed over SHARES. SHARES messages may contain the additional classification element of "FOUO", Four Official Use Only. Although this is a restriction applied to the dissemination of the content, it is not security classification requiring a level of clearance like "secret" or "top secret". FOUO messages may be passed on MARS circuits if they are classed as "UNCLAS FOUO".

SHARES Networks:

Individual departments and agencies may establish frequencies allocated to their service for SHARES operations. Consult your state director or a SHARES member for

NMCMARS frequencies designated as being available to other SHARES users. NMCMARS stations may utilize these frequencies to relay traffic between the SHARES network and the NMCMARS network. These frequencies are only available to other agency SHARES stations during declared emergencies or exercises.

The SHARES program has established it's own set of frequencies that are continuously available to all authorized SHARES users. These dedicated frequencies make up the SHARES Coordination Network, or "SCN". Only those NMCMARS stations that are designated SHARES representatives may operate on these common SHARES frequencies.

Put simply:

NAVMARCORMARS frequencies designated for SHARES ops may be used by non-SHARES MARS members for passing traffic to and from SHARES stations;

SHARES stations from other agencies and services may use the NAVMARCORMARS frequencies only during an actual SHARES event to communicate with a NAVMARCORMARS station.

Only Authorized SHARES stations may operate on the frequencies assigned to SHARES itself (these are not the NMCMARS frequencies).

The SCN frequencies are individually assigned for voice, Automatic Link Establishment or "ALE", phone patch, and HF bulletin board systems.

The use of ALE provides automated HF radio control. This allows radios to automatically initiate contact with a similarly equipped radio using the best possible frequency, establish a communications link, and send and receive data or voice traffic. NMCMARS stations who are also members of SHARES are authorized to participate in the SHARES ALE network system.

The SHARES program requires that all personnel who normally operate HF radios in the network during emergencies be trained in accordance with standard communications procedures. These procedures, for the most part, mirror those that we use in NMCMARS.

How NAVMARCORMARS Fits:

NMCMARS stations are authorized to use the selected MARS frequencies we just discussed to relay traffic between the SHARES and NMCMARS networks. In such a case another agency's or department's SHARES station would identify themselves on one of the NMCMARS frequencies allocated to SHARES and request assistance in relaying their traffic. A NMCMARS station operating on that frequency would accept the traffic and either deliver the traffic if the addressee were local or further relay the traffic via their respective state or region networks. In addition, these frequencies are available to other agency SHARES authorized federal stations during SHARES declared emergencies or exercises. Voice and ALE operations are authorized on these frequencies.

For example, a FEMA SHARES station may come on a NAVMARCORMARS designated SHARES frequency and request assistance from a MARS member. However, a Homeland Security SHARES station is not authorized to come onto that same frequency and pass traffic to the FEMA station.

MARS Transmission of SHARES Messages:

Messages received for relay from other emergency support agencies, through SHARES for example, may be formatted differently from the military's 16-line message format. These messages can be transmitted properly via MARS by encapsulating the complete agency message between the two breaks for text (BT) within a standard 16-line formatted message. This technique preserves the original message content and meets the requirement of proper MARS message formatting. This is similar to message readdressal discussed in ref B.

SHARES Exercises:

SHARES members are individually notified when exercises are planned. Instructions for their participation are included in the notification. An exercise activation message is then sent to all NMCMARS members from the Chief, NMCMARS with any additional instructions that includes participation authorized for non-SHARES members.

There are routine SHARES nets conducted weekly. During these nets, stations report their availability, check their equipment and propagation, receive credit for participation, and validate their readiness to operate in the system. NMCMARS members must also file a participation report to account for their time and receive credit within the MARS program. SHARES HF network participation is in addition to the minimum requirement of 12 hrs per quarter on state, region, or area HF nets.

Joining SHARES:

If you are interested in volunteering for the additional duty as a SHARES station, contact your State Director. Since the allocation for SHARES members in the MARS service is limited you may be placed on awaiting list once approved within NMCMARS. It could be some time before any openings become available. This will usually happen only as other members leave the program or resign from their SHARES appointment. In addition, since NAVMARCORMARS has limited SHARES positions, assignments are also made based on geography and population to ensure adequate support to emergency communications efforts.

For further information contact your state director, or ask a SHARES designated NAVMARCORMARS station.

Conclusion:

The SHARES HF radio program is an important back up system supporting the communications needs of Federal departments and agencies during emergency conditions when normal means are degraded or unavailable. All three MARS programs are key players in the SHARES network system. Although our participation is limited in the number of stations authorized to operate on the frequencies of other organizations,

any NMCMARS member could be called on to provide support to SHARES communications within our own networks.

End UNIT SEVEN

If you have not yet completed the review test for this course, do so now and forward your answer sheet to your state director or state FOUR for grading.

After you have been notified of satisfactory completion of the review test proceed to the final exam. Double check your answers before submitting the answer sheet. Be sure your name, MARS call sign, and other information are filled in on the answer sheet then send it to your area FOUR for grading. Important, this does not go to your state or region director or FOUR, it must go to your **area** FOUR. If there is no area four it will go to your area ONE or area Director.

This concludes The MARS Operator Course.

We hope you found this course informative and beneficial, particularly if you are new to Navy-Marine Corps MARS. If you have any comments, feedback, or suggestions please forward them via your state director and the chain of command to Assistant to Chief MARS for Training, NNN0ASN