

United States Coast Guard Auxiliary

Auxiliary Communications Program

Standard Operating Procedures

21 March 2016



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MEMORANDUM

Reply to CG-BSX-12
Attn of: (202) 372-1056

From: 
F.T. Bross
COMDT (CG-BSX)

To: Distribution

Subj: AUXILIARY COMMUNICATIONS PROGRAM STANDARD OPERATING
PROCEDURES

1. PURPOSE. To establish Standard Operating Procedures (SOP) and guidelines to manage and conduct Auxiliary Communications Mission activities.
2. ACTION. Elected and appointed leaders and program managers at all levels of the Auxiliary organization shall ensure Auxiliarists who participate in communications activities adhere to policies, procedures, and guidelines contained in Enclosures (1-6).
3. DIRECTIVES AFFECTED. None.
4. BACKGROUND. The Auxiliary Communications Program (ACP) has undergone extensive changes in recent years, and will continue to evolve as new technologies and customer service needs emerge. The ACP strives to provide reliable and responsive service to Coast Guard operational commanders, the recreational boating public, and the Auxiliary itself. This collection of ACP protocols enables Auxiliarists participating in the program to provide world-class levels of service.
5. DISCLAIMER. This SOP is not a substitute for applicable legal requirements, nor is it itself a rule. It is intended to provide guidance for Auxiliary personnel. It is not intended to, nor does it impose, legally-binding requirements on any party outside the Coast Guard or Auxiliary.
6. MAJOR CHANGES. None.
7. DISTRIBUTION. Copies of this SOP will be electronically distributed as described below. An electronic version shall be located on the Coast Guard Auxiliary web site:
<http://www.cgaux.org/>.

8. REQUEST FOR CHANGES. Units and individuals may recommend changes via the cognizant Auxiliary chain of leadership and management. Revisions to this SOP shall be included into the next update to the Auxiliary Operations Policy Manual, COMDTINST M16798.3 (series).

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- Encl: (1) Auxiliary Communications Concept of Operations
(2) Augmentation Communications (AUGCOM) Mission
(3) Auxiliary Monitoring Station Program
(4) Augmentation Communication (AUGCOM) Mission Tactics, Techniques, & Procedures
(5) Coast Guard Auxiliary VHF Telecommunications Program Policies and Procedures
(6) VHF Repeater Program Planning Steps and Approval Process

Dist: NACO, VNACO, DNACO-O, DNACO-MS

UNITED STATES COAST GUARD AUXILIARY

AUXILIARY COMMUNICATIONS

CONCEPT OF OPERATIONS



EXECUTIVE SUMMARY

This document is intended to define the purpose, missions, components, management, operational description, and governance of the US Coast Guard Auxiliary Communications Program.

Radio communications in the US Coast Guard Auxiliary (AUX) have undergone extensive changes in recent years, and will continue to evolve. Driven by customer requirements along with new technologies, the Auxiliary Communications Program (ACP) is the foundation for future growth.

The ACP is the umbrella under which assets are strategically combined and used to form the Auxiliary Communications System (ACS) so as to meet the requirements of:

- The US Coast Guard
- The Auxiliary District Commodores
- The recreational boating public

District Commodores (DCO) are served by the same strategic array of capabilities that serve the Coast Guard (CG) and the recreational boating public. This includes normal, surge and contingency communications events. In addition, the ACS can and does provide radio-based services such as alerting, recall of personnel, and distribution of message traffic to and between DCO's during contingency communications events.

The ACS serves the CG by providing radio-based contingency communications in the event of a loss of normal communications such as landlines, cell phone, and Internet. At the request of the CG, the Auxiliary also undertakes augmentation missions such as the monitoring of high frequency DCS channels in support of CG Communications Command (COMMCOM).

GMDSS and Rescue 21 are two of the technological enablers that have positioned the Auxiliary to better serve the boating public through a variety of operational missions.

While any communications system is dependent on components such as radios, computers, and modems, it is our members who volunteer their equipment, time, and talent in support of the ACS. **We value the work that they do.**

SECTION 1: INTRODUCTION & PURPOSE

This “CONCEPT OF OPERATIONS” for Auxiliary Communications is intended to provide a foundation for the growth and development of current Auxiliary communications capabilities while conveying to the US Coast Guard Auxiliary (CGAUX) and the US Coast Guard (CG), the role, assets, activities, operations and overall policies of the Auxiliary Communication System (ACS).

SECTION 2: POLICY SOURCES

This section identifies supplemental operational guidance for the activities and policies of the ACP. Guidance listed as: (b) & (d-k) are available at the Response Directorate, Telecommunications website: <http://wow.uscgaux.info/content.php?unit=R-DEPT&category=telecomms-documents-1>

- a. **AUXILIARY OPERATIONS POLICY MANUAL – COMDTINST M16798.3 (series)** – This manual (Annex 4) contains the operational policy for ACS. The full text is available online at: https://www.uscg.mil/directives/cim/16000-16999/CIM_16798_3E.pdf
- b. **TELECOMMUNICATIONS - OPERATOR/PERSONAL QUALIFICATION STANDARD (TCO/PQS) March 2009** – This document describes the standardized level of qualification for CGAUX telecommunications operators. The full text is available at the Response Directorate, Telecommunications website.
- c. **TELECOMMUNICATION MANUAL COMDTINST M2000.3 (series)** – This manual is the controlling document for operations and activities of the Coast Guard Telecommunications System (CGTS). It delineates the relationship between the CG and ACS, and the overall rules and regulations as to how the ACS operates with the CG. The full text is available at the Response Directorate, Telecommunications website.
- d. **SPECTRUM MANAGEMENT (CG-652) POLICY AND PROCEDURES COMDTINST M2400.1 (series)** – This manual defines the policies and procedures for electromagnetic spectrum use by the CG and the ACS. The full text is available at the Response Directorate, Telecommunications website.
- e. **COAST GUARD AUXILIARY HF TELECOMMUNICATIONS PROGRAM POLICIES AND PROCEDURES, 13 APR 2011** – This document defines and establishes the policy and procedures which govern the Auxiliary HF Contingency Communications program. The full text is available at the Response Directorate, Telecommunications website.
- f. **COAST GUARD AUXILIARY VHF TELECOMMUNICATIONS PROGRAM POLICIES AND PROCEDURES, 01 MAY 2015** – This policy defines the VHF telecommunications program for short-range communications between Coast Guard and Coast Guard Auxiliary Units as well as between Auxiliary Operational Facilities and mobile units that support various Coast Guard missions. The full text is available at the Response Directorate, Telecommunications website.

- g. **COAST GUARD AUXILIARY VHF REPEATER PROGRAM, 01 MAY 2015** – This program provides the planning and approval process for the deployment or Auxiliary radio repeaters that increase the range coverage of the Auxiliary unit’s portable or mobile VHF radio communications. The full text is available at the Response Directorate, Telecommunications website.
- h. **AUGMENTATION (AUGCOM) MISSION, 08JAN16** - This document defines the AUGCOM mission, station and operator requirements. The full text is available at the Response Directorate, Telecommunications website.
- i. **AUGMENTATION COMMUNICATION (AUGCOM) MISSION: TACTICS, TECHNIQUES, AND PROCEDURES** - This document enables qualified AUX radio facility operators to participate in AUGCOM activities specifically authorized by the USCG Communication Command (COMCOM). The full text is available at the Response Directorate, Telecommunications website.
- j. **COAST GUARD AUXILIARY MONITORING (AUXMON) STATION PROGRAM – updated 2010.** This document defines the AUXMON mission, station and operator requirements. The full text is available at the Response Directorate, Telecommunications website.
- k. **AUXILIARY HF SHARES PROGRAM POLICIES, 01 JAN 2011.** Stations and operators authorized to participate in the Auxiliary HF program may, when specifically designated, participate in the SHARES network.
- l. **MARITIME MOBILE SERVICE IDENTITY (MMSI) FIXED LAND GUIDANCE, 16 JAN 2011.** This document provides guidance on how to request an MMSI number for a fixed land station.
- m. **MARITIME MOBILE SERVICE IDENTITY (MMSI) AUXILIARY AIRCRAFT GUIDANCE 09 FEB 2015.** This document provides Coast Guard guidance on MMSI numbers for Auxiliary Aircraft.

SECTION 3: MISSIONS

The Auxiliary Communication Program is designed to accomplish a variety of missions, with its variety of components. The missions are defined in this section and the components are defined in the following Section (4).

Section 3.1 -- Operational Communications

Operational Communications are defined as those that directly support Auxiliary functions such as surface vessel patrols, aircraft patrols, and “land mobile” patrols such as Search and Rescue Operations, Marine Observation Missions and Marine Domain Awareness Missions. The primary purpose of these communications is safety of life and property for Auxiliary assets and “command and control” of those assets.

A related type of operational communications directly supports CG surface and air assets during joint operations.

The final type of operational communications is in direct support of special CG operations where the CG unit involved utilizes Auxiliary hardware assets and Auxiliary personnel to augment existing CG communications capabilities.

Section 3.2 -- Contingency Communications

Contingency Communications are those carried out in the event of the loss of normal communications tools or when there is a requirement generated by “surge” operations.

Section 3.2.1 USCGAUX

In the event of loss of normal communications tools such as cell phones, landline telephones, and Internet connectivity, ACS can provide radio-based services for a variety of purposes associated with Auxiliary assets. Such purposes include alerting, personnel recall, distribution of message traffic via an email-like service, and similar functions. The assets and abilities of ACS are fundamental tools that enable all CGAUX District Commodores to maintain communications when other modalities are not available. Employment of ACS will enable communications with the CG and other Distinct Commodores and Divisions as outlined above. The District Staff Officer for Communications (DSO-CM) is responsible to work directly with the DCO to conduct quarterly drills that support the radio-based services as outlined above.

Section 3.2.2 CG Units

On behalf of CG units, the ACS provides access to hardware and/or personnel assets to temporarily provide or supplement communications services between CG units for command and control or to provide services to the maritime public when normal CG communications assets are unavailable.

Section 3.2.3 Disaster Communications

Since the CG provides a variety of services to communities impacted by natural disasters and other unplanned events, ACS may be tasked to support CG units by providing hardware and/or personnel assets to directly or indirectly support such activities. As a part of this mission, ACS provides “interoperability services” to facilitate communications between various first responder agencies. ACS at the National, District, or Sector level may be authorized to enter into Memoranda of Understanding to facilitate such efforts.

Section 3.2.4 SHARES/NCC

A special segment of “Contingency Communications” for the ACS is regular participation in the weekly exercises of the National Coordinating Center for Communications (NCC - SHARED RESOURCES network (SHARES)). This network includes all federal agencies and also many state and regional Emergency Operations Centers. The network, which operates on designated high frequency channels, is organized into “Regions” which are a mirror image of the FEMA regions. In addition to the weekly “region nets”, selected Auxiliary Communications stations (Operational Radio Facilities) are participants in the “National Emergency Coordination Net” for exercises and when activated for “events of National significance”.

Section 3.3 -- Auxiliary Monitoring Program (AUXMON)

AUXMON is a core Auxiliary program tasked by COMMCOM to provide “quality control” monitoring of the variety of Marine Safety Information broadcasts that originated from COMMCOM. This mission has been requested by the CG in order to provide “early warning” of problems (hardware, content, and operations) that might interfere with the CG’s fulfillment of the United States treaty obligations as a part of a worldwide network of sources of maritime safety and weather information.

Section 3.4-- Augmentation Missions (AUGCOM)

AUGCOM is a core Auxiliary mission in direct support of the U.S.C.G. effort to help ensure adequate coverage of GMDSS HF/MF maritime communications, and other radio services, as ordered. This mission is performed upon request of, and under the control of, COMMCOM, or Sector authority and is focused on the augmentation of active duty watch, especially during major storms, technical outages, and other events. Auxiliarists participating in AUGCOM missions are required to have successfully completed both the Telecommunications Operator PQS (TCO/PQS) and the Auxiliary Communications Specialty Course (AUXCOM). Because these missions often require coordination across District boundaries, these protocols will apply:

- a. Missions assigned by COMMCOM will be coordinated by the Auxiliary National Branch Chief, Response Telecommunications Contingency Operations (BC-RTC), or designee.
- b. Missions assigned by Sectors will be coordinated by the appropriate District Staff Officer for Communications (DSO-CM)

A Registry of AUGCOM approved stations may be found in the “Members Only” section at <http://wow.uscgaux.info/content.php?unit=R-DEPT&category=communications>

Section 3.4.1 Digital Selective Calling (DSC)

The Auxiliary also undertakes augmentation missions such as monitoring of high frequency DSC channels in support of the CG Communication Command. Support includes, acting as a “back up” to those units, quality control monitoring of the MF and HF performance of those units’ operations, monitoring of the VHF DSC channel, use of VHF DSC for command and control (“ops normal” reports) of Auxiliary vessels, and delivery of public education events introducing DSC to the recreational boating community on behalf of the CG Office of Search and Rescue.

Section 3.4.2 Automatic Identification System (AIS)

The AIS is a VHF radio based system for vessels, similar in concept to the radar transponders that have been a major part of air traffic control for many years. The ACS’s Operational Radio Facilities (usually fixed land stations) have begun to play an assist role in the monitoring of AIS for both safety and Marine Domain Awareness purposes. This includes coverage of otherwise unmonitored geographic areas and providing AIS traffic data to selected Sectors for inclusion in the “Common Operating Picture” distributed to “port partners”.

SECTION 4: COMPONENTS

The components of ACS fall into several categories. Specific assets are made up of a combination of these components selected to satisfy mission requirements.

Section 4.1 – Frequencies Authorization

The ACS is authorized to use specific VHF and HF channels for designated purposes and to utilize the procedures defined in the CG’s SPECTRUM MANAGEMENT POLICY AND PROCEDURES MANUAL (COMDTINST M2400.1 (series) – Chapter 2.B.12). VHF and HF frequency matrices may be found in the “Members Only” section at: <http://wow.uscgaux.info/content.php?unit=R-DEPT&category=communications>

The Division Chief of Telecommunications is responsible for the assignment of compliant HF call signs. A Registry of approved Auxiliary HF stations, and call signs, may be found in the “Members Only” section at: <http://wow.uscgaux.info/content.php?unit=R-DEPT&category=communications>

Section 4.2 -- Hardware Assets

The personal property of individual members or property of CGAUX units and equipment relevant to providing communications services in support of the missions defined in Section 3 & 4 above is made available to ACS and to the CG COMMSYS (CGTS). Such equipment includes, but not limited to receivers, transmitters, repeaters, transceivers, antennas, modems, computers, software and associated pieces of peripheral equipment. This equipment is part of an Operational Radio Facility which has been “offered for use” and “accepted for use” through the CG Director of Auxiliary at the District level. Such offer and acceptance is contingent on the completion of an inspection of the equipment for technical and safety compliance.

Section 4.3 -- Personnel Assets & Training

In addition to the provision of Operational Radio Facilities, the ACS also makes available individual members and teams of trained and qualified members or personnel to act as operators of Auxiliary Communications Units (ACU) and also to provide manning for CG Units upon request.

The National Communications Division (as a part of the Response Directorate) is responsible for the creation and maintenance of appropriate personal qualification standards relevant to its activities. In addition, the Division also provides training guidance, exercise opportunities, and training materials for the use of the District Staff Officers for Communications (DSO-CM).

Section 4.4 -- Operational Radio Facilities

While officially designated as Operational Radio Facilities, Auxiliary radio facilities may also be known as Auxiliary Communications Units (ACU’s). They are categorized into two groups. One group relates to the operational style: land mobile units, fixed land units, and transportable units. The second group of ACU’s is based on their operational

capabilities with regard to both spectrum and mode (voice, data, etc.). The categories are based on the classes of communications facilities defined in the Coast Guard's Telecommunications Manual (COMDTINST M2000.3 [series]), Chapter 1.B.1

SECTION 5: CHAIN OF LEADERSHIP AND MANAGEMENT

The Auxiliary Chain of Leadership and Management is through Flotilla, Division, and District appointed and elected officers. Overall program management and support is provided by the National Communications Division (part of the Response Directorate).

Section 5.1 – CG and Auxiliary Oversight of the ACS

CG Oversight is provided by COMDTINST M2000.3 (Series), Chapter 10.B: “The CG Communications Command (COMMCOM) is responsible for control of the Coast Guard Auxiliary Communication network. This includes such activities as training and drills..... “.

Section 5.2 -- Auxiliary Communications System Leadership

The Auxiliary leadership and management structure is designed to focus the ACS on the three missions defined in Section 3 as well as facilitate interfaces between the primary stakeholders – CGAUX elected and appointed leadership, the owners and operators of ACU's, and the CG commands/units who are customers.

Section 5.3 -- Telecommunications Division Chief and Division Staff

The role of the Telecommunications Division staff is to provide program management, draft policy recommendations for action by NEXCOM, and to work in concert with other National Staff Departments to achieve the strategic objectives of the CGAUX. The Division Chief and the staff utilize the power of parallel staffing to support their District partners. To better focus this support the staff deploys information via the National web site, monthly conference calls and WebEx. The Division staff is organized around the missions outlined in Section 3 along with training and technical support. The Telecommunication Division Chief, with concurrence of the Response Director, has additional responsibility for interfacing with other communications entities to facilitate inter-operability between the ACS and other agencies as appropriate. In addition, designated members of the Telecommunications Division may act as POC's between COMMCOM, Sectors and the Auxiliary for the purposes of information flow and tasking.

Section 5.4 -- District Staff Officers – Communications (DSO-CM)

The DSO-CM's are the primary link between the ACS leadership, activities and operations at the District, Division, and Flotilla levels. Their role is to provide leadership and encouragement for integration of the ACS with the CG Sector command cadre including the Sector Command Centers. It is strongly recommended that the DSO-CM appoint an Assistant DSO-CM to be responsible for coordination between the ACS and each Auxiliary Sector Coordinator. The DSO-CM is also responsible to work directly with the DCO to conduct quarterly drills that support the radio-based services as outlined in Section 3.2.1 of this document.

SECTION 6: OPERATIONAL DESCRIPTION

This Section outlines in specific detail how and who makes the ACS function in conjunction with the CG and AUX for normal, surge and contingency communications.

Section 6.1 – Normal Communications

Normal communications events are those to support both the CG and AUX assets while on surface and/or air patrols taking the radio guard of such assets to monitor and record their operational status and location, known as OPS and Position reports. Other normal communications could involve any other non-sensitive traffic.

Communications elements typically involve either a CG communications unit or an ACU manned by qualified watch standers, and the Communications Watch on the patrolling asset. Communications may originate from either element and typically is not trafficked to higher levels in either the CG or AUX. All such communications are documented by both elements.

Section 6.2 – Surge Communications

Surge communications would typically involve local CG Command calling for ACU's activation to support surface and/or air surge operations. Such surge operations could either be pre-planned or emergent depending on the nature of the event, and could involve MF, HF and/or VHF assets.

Surge communications are typically originated from the CG Command via landline directly to the local affected DSO-CM. At this point, two communications paths are employed – both via land line.

6.2.1 – Operational Communications Path

Operational communications involve the DSO-CM directly contacting the ACU's designated POC requesting activation of the ACU to support the surge operations. The normal 'chain of communications' is bypassed in this operational communications path to ensure rapid supporting response. The ACU's POC contacts the DSO-CM when the ACU is active.

6.2.2 – Informational Communications Path

An event may drive the need for informational communications. Such communications may involve the DSO-CM contacting, via land line, the DCO and Division Commander (DCRM) of the event. This may be for information purposes only as no operational actions are necessary. The event information should then be trafficked to appropriate levels in the District, Division and Flotilla(s) involved.

Section 6.3 – Contingency Communications

Contingency communications may be enabled in the event of loss of land line, cell phone, and Internet communications capability, and could involve using MF, HF, and/or VHF systems at ACU's.

When there is no 'normal' means of a CG Command or AUX leadership to affect a call out to activate the needed ACU's, local pre-planned procedure need to be established to 'automatically' staff the ACU to support the CG, AUX leadership and other local government agencies as needed.

As an example, a unit plan could have watch standers report to their ACU once they became aware of massive communications loss and then contact the CG Command regarding their readiness to provide the necessary communications using their battery or auxiliary power units to activate the ACU.

All DCO's and AUX communications officers should be made aware of their 'automatic' muster plan and provide any support as needed. This provides the DCO's with the capability to communicate across Districts if necessary. As indicated earlier in this document, these plans and capabilities must be established at the Auxiliary unit level and be supported by quarterly drills.



U.S. COAST GUARD AUXILIARY
AUGMENTATION COMMUNICATIONS MISSION

INTRODUCTION

1. The Coast Guard from time-to-time requires support and monitoring of the GMDSS response system (voice and data) and other GMDSS maritime communications systems to augment active duty systems, especially during major storms, technical outages and other events.

PURPOSE

1. The purpose of this initiative is to provide mission definition for Auxiliary Augmentation of Communications (AUGCOM) for the in support of the USCG, as authorized by existing regulations.

MISSION

1. The U.S. Coast Guard Auxiliary (USCGAUX) will support the USCG's efforts to help ensure adequate coverage of, and response to, GMDSS HF/MF maritime communication, and other radio services, as ordered.
2. These missions will be performed upon request of, and under the control of the USCG COMMUNICATIONS COMMAND (COMMCOM) or Sector authority.
 - a. Missions assigned by COMMCOM will be coordinated by the Auxiliary National Branch Chief, Response Telecommunications Contingency Operations (BC-RTC), or designee.
 - b. Missions assigned by Sectors will be coordinated by the appropriate District Staff Officer for Communications (DSO-CM).

STATION/ OPERATOR REQUIREMENTS

1. The USCG desires properly equipped and experienced USCGAUX members at defined locations to monitor HF/MF GMDSS communications (voice and data) on either regularly scheduled or as-needed bases.
2. Enrollment in the Auxiliary Augmentation Communications (AUGCOM) activity is limited to operators that:
 - a. Have current TCO qualification
 - b. Have successfully completed AUXCOM

- c. Are owners of approved USCGAUX HF/MF radio facilities or operational vessel facilities which are properly equipped to monitor and report HF GMDSS/DSC, GMDSS and other communications?
 - d. Are specifically approved by the USCG COMMCOM.
3. Equipment and member qualification shall be detailed in the member application for initial endorsement by the BC-RTC for approval by the Commanding Officer of COMMCOM. Approved candidates will be notified of their appointment by the BC-RTC with copies to the appropriate DIRAUX for inclusion in AUXDATA.
 - a. Stations will be designated as Auxiliary Augmentation Communications Stations (AUGCOMSTA).
 - b. Operators will be designated as Auxiliary Augmentation Communications Operators (AUGCOMOP).
4. Only those operators qualifying as AUGCOMOP may be the lead operator at any time at an AUGCOM facility or operation.

MONITORING METHODOLOGY

1. Stations will monitor as assigned by COMMCOM or Sector(s). Assignments shall detail:
 - a. Start time and duration of monitoring
 - b. Monitoring may be assigned as fixed or random during the date/time window
 - c. Frequencies to be monitored
 - d. Information to be reported
2. Monitoring stations shall log their findings and report to the appropriate CG command, with copies to the BC-RTC or designee.
3. **Monitoring stations shall not transmit responses to any transmissions, unless specifically authorized by the OIA.**
4. A listing of authorized AUGCOM stations and operators will be maintained by the BC-RTC or the designated Branch Assistant and regularly provided to each USCG CAMS, as a means to verify the identity of the reporter and validity of any report.

MISSION ORDERS AND REPORTING

1. The Auxiliary Operations Policy Manual COMDTINST M16798.3 (series) applies to this operational support mission. Approved individuals performing this mission at fixed locations shall be considered “assigned to duty”. Orders may be specifically written or assignments may be part of a general OPORDER. Any movement of an USCGAUX facility (vessel, land mobile radio) requires patrol orders to be issued pursuant to the Auxiliary Operations Policy Manual.

2. In the event there is a need to have this mission performed to assist the USCG in resolving a specific problem, or to determine the nature, extent or validity of a reported problem (e.g. a “call-out” situation), orders may be issued by the appropriate USCG command, in accordance with existing policies and regulations.
3. Hours performing this mission will be reported and entered in AUXDATA via an ANSC-7030 (Mission Activity Report), using Category “???” – Radio Net – GMDSS Watchstanding, unless otherwise directed by National Response Department staff.
4. **Mission hours to be reported are only those hours where the facility is manned and ready for intervention by the operator.** This may be different from days/hours in operation for automated stations, whose service may be reported as comments on the mission hour form or on other documents.

MEMBER APPLICATIONS

1. USCGAUX members possessing the desire, time, required equipment, and skills necessary to perform this mission shall make an application via e-mail to the USCGAUX Branch Chief, Response Telecommunications, Contingency Operations (BC-RTC) or the designated Branch Assistant.
2. The application shall contain an accurate listing of receiving equipment (antenna, receiver, decoder(s), recording devices); platform type (fixed, mobile, vessel); location (latitude/longitude coordinates); day(s) and timeframe(s) available to be committed to performing the mission; along with point of contact data. An informal, brief outline or statement of the member’s training and experience which indicates the member’s ability to properly perform the mission must be included.
3. USCGAUX receiving stations and personnel selected for this mission will be designated “Auxiliary Augmentation Communications Stations” (AUGCOMSTA) and “Auxiliary Augmentation Communications Operators” (AUGGCOMOP).

TRAINING

1. The USCGAUX Branch Chief, Training and Qualification (BC-RTQ) or the designated Branch Assistant shall provide any needed training material.

SPECIFIC EQUIPMENT AND SKILL REQUIREMENTS

1. Fixed, mobile and vessel AUGCOM facilities must be equipped with the capability to receive and decode the GMDSS data modes (DSC), and should be able to receive and record the voice transmissions as well as provide decoded digital traffic in electronic form.
2. Applicant shall possess an understanding of HF/MF GMDSS/DSC and its significance within the SOLAS Treaty.

3. Internet e-mail access is required for reporting, administrative use, and distribution of training materials. Broadband internet access is strongly encouraged.
4. Other RF and information technology capabilities as specified by COMMCOM may be required from time to time to meet specific mission requirements.

PROGRAM POINT OF CONTACT

1. The Point of Contact (POC) for this mission is: USCGAUX Branch Chief, Response Telecommunications Contingency Operations (BC-RTC)



U.S. COAST GUARD AUXILIARY MONITORING STATION PROGRAM

INTRODUCTION

As part of the United States' effort to meet International agreements regarding the Global Maritime Distress and Safety System (GMDSS), the U. S. Coast Guard (USCG) broadcasts Weather Facsimile (WEFAX); Voice Broadcasts (VOBRA); Urgent Marine Information Broadcasts, using Narrow Band Direct Printing (NAVTEX); and Ice Information, using Ship Telex Over Radio (SITOR) messages and WEFAX.

Recreational, governmental, and commercial vessels within the United States' (U.S.) 200-mile territorial limit must be able to receive those transmissions error-free to help ensure the safety of life and property at sea.

The USCG regards the end users of the broadcasts as its customers and considers itself in a provider/customer relationship. Therefore, maintaining a high standard of broadcast quality for the broadcasts (the product) is important to the USCG. Customer satisfaction is dependent upon timely, quality data that is received aboard a vessel in a readable and error-free format.

The USCG is responsible to provide a sufficient signal density throughout the 200-mile territorial limit to ensure a receivable signal by its customers using commercial-off-the-shelf (i.e., average) receiving equipment.

Currently, the only mechanisms available to the USCG to gauge the effectiveness of their broadcasts are

- 1) self-monitoring on a limited basis, when and where possible, from USCG fixed and ship stations (as operations permit); and,
- 2) feedback from its customers, which usually only comes in when a problem exists.

Neither mechanism affords the USCG the reliable and proactive (preemptive) means of quality control it needs or desires.

PURPOSE

The purpose of this program is to provide a new mission for the U.S. Coast Guard Auxiliary (USCGAUX) in support of the USCG, as authorized by existing regulations.

MISSION

The USCGAUX will support the USCG's efforts to help ensure USCG GMDSS HF/MF broadcasts meet quality standards by monitoring and reporting the quality of received broadcasts across a wide area.

The USCGAUX will utilize a select group of members with the desire, technical expertise and equipment to monitor the USCG GMDSS broadcasts (with an emphasis on the WEFAX, SITOR and NAVTEX broadcasts) to ensure the broadcasts meet the USCG's quality standards.

Broadcasts will be monitored for:

- 1) Consistency with publicly published schedules;
- 2) Signal distortion and density (strength);
- 3) Frequency interference;
- 4) Other technical details.

The USCG desires to have this mission performed daily, covering as many scheduled broadcast hours each day as possible. Some broadcasts are lengthy and last over an hour. Ideally, the mission would be performed 365 days per year. Even without such coverage, detection and reporting of quality problems has high value to the USCG.

This mission was originally requested by the appropriate representatives at USCG Headquarters (CG-62); and at the time, USCG CAMSLANT, AND USCG CAMSPAC (CAMS). Modifications to the initial request have been made, over time, after consultations with CG-62, the CAMS, and COMMCOM, the successor command to the CAMS, in order to meet the needs of all concerned.

COVERAGE METHODOLOGY

Ideally, the USCG desires properly equipped and experienced USCGAUX members at fixed locations in coastal regions, within a 25-mile distance inland from the Atlantic, Gulf, Pacific, Hawaiian, or Alaskan coasts to monitor the broadcasts on a regular (e.g., daily or weekly) basis.

To help ensure that enough USCGAUX members are recruited to fulfill the mission and to provide even better coverage, the Auxiliary Monitoring Station program is open to

- 1) USCGAUX members at fixed sites with the proper equipment, skills, and commitment, located within a 200-mile distance inland from the Atlantic, Gulf, Pacific, Hawaiian, or Alaskan coasts; these fixed sites might or might not also be USCGAUX fixed land radio facilities;
- 2) USCGAUX members, owning or otherwise authorized aboard, USCGAUX operational vessel facilities or land mobile radio facilities which are properly equipped to monitor the broadcasts, and operate within the 200-mile territorial sea or up to 200-miles inland from the Atlantic, Gulf, Pacific, Hawaiian, or Alaskan coasts.

With omni-directional antennas used to transmit the broadcasts, the 200-mile distance inland closely (but not exactly) simulates reception from vessels at sea in the 200-mile territorial coastal area. It is the best/only alternative to being able to perform the monitoring mission exclusively at sea.

MONITORING METHODOLOGY

Potential USCGAUX participants must be willing and able to commit to performing the mission by monitoring at least one of the three non-voice (WEFAX, SITOR and NAVTEX) broadcasts at least once weekly. Fixed and mobile participants must also be willing and able to monitor at least one voice broadcast (VOBRA) weekly, if equipped for VOBRA reception.

This monitoring methodology will not be sufficient to catch all individual broadcast quality issues in real-time, but will catch systemic quality issues promptly.

If received broadcasts meet the USCG quality standards, AUXMONSTAs report the quality of each broadcast monitored via a weekly summary report (in a specific format, and sent in a manner to ensure its receipt by e-mail, no later than each Monday morning, EST) to the USCGAUX Branch Chief, Response Telecommunications Coast Guard Support (BC-RTS) or the designated Branch Assistant.

If any broadcast fails to meet the required quality standard, the AUXMONSTA is expected to report the problem immediately to the USCG Communications Command (COMMCOM), utilizing e-mail, with a copy to the USCGAUX Branch Chief, Response Telecommunications Coast Guard Support (BC-RTS) or the designated Branch Assistant. When the use of e-mail is not practical (such as aboard a vessel) or the reporting would be delayed significantly, the report may be made via telephone to COMMCOM, followed up by an e-mail copy of the report as soon as practical, thereafter.

Whenever a broadcast fails to meet the required quality standard, a copy of the broadcast text, image or audio (as applicable) should be sent via the Internet (as a text, audio or image file), Fax (text or image), or on a CD/DVD (any file format) via Priority Mail to the USCGAUX Branch Chief, Response Telecommunications Coast Guard Support or the designated Branch Assistant, as soon as possible, if at all possible, so it may be used to diagnose or correct the problem.

A listing of authorized AUXMONSTAs will be maintained by the USCGAUX Branch Chief, Response Telecommunications Coast Guard Support (BC-RTS) or the designated Branch Assistant and regularly provided to COMMCOM, as a means to verify the identity of the reporter and validity of any report.

MISSION ORDERS AND REPORTING

The Auxiliary Operations Policy Manual COMDTINST M16798.3 (series) applies to this operational support mission. Approved individuals performing this mission at fixed locations shall be considered "assigned to duty". Any movement of an USCGAUX facility (vessel, land mobile radio) requires patrol orders to be issued pursuant to the Auxiliary Operations Policy Manual.

In the event there is a specific need to have this mission performed to assist the USCG in resolving a specific problem, or to determine the nature, extent or validity of a reported problem (e.g. a "call-out" situation), orders may be issued by the appropriate USCG command, in accordance with existing policies and regulations.

Hours performing this mission would be reported and entered in AUXDATA via an ANSC-7030 (Mission Activity Report), using Category "07D" – Other Missions - Operational Support unless otherwise directed by national AUXDATA staff.

MEMBER APPLICATIONS

USCGAUX members possessing the desire, time, required equipment, and skills necessary to perform this mission shall make a simplified application via e-mail to the USCGAUX Branch

Chief, Response Telecommunications Coast Guard Support (BC-RTS) or the designated Branch Assistant.

The application shall contain an accurate listing of receiving equipment (antenna, receiver, decoder, recording device); platform type (fixed, mobile, vessel); location (latitude/longitude coordinates); day(s) and timeframe(s) expected to be committed to performing the mission; along with point of contact data (Member number, name, telephone number, e-mail address, etc.) and an informal, brief outline or statement of the member's training and experience, which indicates the member's ability to properly perform the mission.

USCGAUX receiving stations selected for this mission would be (informally) termed, "Auxiliary Monitoring Stations" (AUXMONSTA). The designation would be made via e-mail and not require additional, more formal paperwork or additional burden on either the member, District or National staff (including USCG and USCGAUX personnel).

TRAINING

The USCGAUX Branch Chief, Response Telecommunications Coast Guard Support (BC-RTS) or the designated Branch Assistant shall provide training material regarding quality standards to apply and how to apply the standards, based on the needs of the USCG.

SPECIFIC EQUIPMENT AND SKILL REQUIREMENTS

Fixed and mobile (non-vessel) AUXMONSTAs must be equipped with the capability to receive and decode one or more of the GMDSS non-voice broadcast modes, and should be able to receive the voice broadcasts. Additionally, an AUXMONSTA must be able to send copies of broadcasts which fail to meet the USCG's required quality standards via the Internet (as a text, audio or image file), FAX (text or image), or on a CD/DVD (any file format) via Priority Mail.

Surface facility (vessel) AUXMONSTAs must be equipped with the capability to receive and decode one or more of the GMDSS non-voice broadcast modes. While the ability to receive the voice broadcasts and be able to send copies of broadcasts which fail to meet the USCG's required quality standards via the Internet (as a text, audio or image file), Fax (text or image), or on a CD/DVD (any file format) via Priority Mail, is desired, given the space limitations on most small boats, there is no requirement to do so.

SITOR, NAVTEX and WEFAX (image) broadcasts can be decoded, stored and sent via e-mail utilizing a terminal unit (TU); computer sound card; a receiver/decoder designed for the specific task, or other device that enables mission completion. Voice broadcasts can be stored and sent as sound files.

Internet e-mail access is essential for reporting, administrative use, and distribution of training materials.

PROGRAM POINT OF CONTACT

The Point of Contact (POC) for this program is: USCGAUX Branch Chief, Response Telecommunications Coast Guard Support (BC-RTS).



USCGAUX Augmentation Communications (AUGCOM)

Mission

Tactics, Techniques and Procedures

The Tactics, Techniques, and Procedures included in this document are for implementation of the USCG Auxiliary Augmentation Communications Mission (AUGCOM) as approved by the USCG Communications Command (COMMCOM) and the USCG Auxiliary. The purpose of this Tactics, Techniques, and Procedures document is to enable Auxiliary Radio Facility operators, who are qualified mission participants, to meet the stated requirements of the Coast Guard while working within the defined mission as approved by the Auxiliary NEXCOM. The mission defining document is “US Coast Guard Auxiliary Augmentation Communications” dated 12 FEB 2015.

OVERVIEW

The AUGCOM mission directly supports the USCG Communications Command (COMMCOM), Sectors, and other Coast Guard commands in their efforts to ensure adequate coverage of, and response to, GMDSS HF/MF maritime communications including both voice (single side band) and digital selective calling modes, as well as other radio services, as may be ordered by COMMCOM. AUGCOM utilizes a select group of qualified Auxiliary HF/MF radio facilities and operators that are specifically approved and authorized to participate in this program. They are designated as Augmentation Communications Stations (AUGCOMSTA). Auxiliarists participating in this mission serve in direct support of the Coast Guard as it fulfills its responsibility to the world-wide Maritime Community.

Participation is encouraged by AUGCOM designated Auxiliary Radio Facilities in the Continental U.S., Alaska, Hawaii, Puerto Rico and Guam. Each AUGCOM station will be expected to commit to monitor as many of the GMDSS radio frequencies and modes as possible when assigned to duty by the Coast Guard, Communications Command (COMMCOM). Assignments and watch standing sessions may be lengthy and can last multiple hours.

AUGCOMSTA operating under orders for watch standing are obligated to report specific information in specific formats to the “watch” of the COMMCOM by telephone and by email. The information and the formats are specified in the “REPORTING OF INTERCEPT EVENTS” section below.

NOTE: A station receiving a GMDSS request shall not respond, unless specifically authorized to do so, by the OIA.

CAPABILITY REQUIREMENTS

AUGCOMSTA must have equipment capable of receiving and decoding High Frequency Digital Selective Calling (HF/DSC) on the six designated channels used for that mode worldwide. Additionally, the station must be capable of two-way, upper sideband voice communications between 2-22 MHz and specifically on the six designated GMDSS voice distress and calling channels. A receiver bandwidth of 2.4 - 2.9 kHz is required for voice modes and 0.7 kHz should be available for HF/DSC.

The AUGCOM stations must also be equipped with appropriate discrete component modems to decode HF/DSC or computer equipment along with approved software to accomplish the same result. In addition to decoding the HF/DSC traffic the modem or computer equipment must be capable of receiving, locally displaying, and storing in permanent electronic form both the decoded HF/DSC traffic received and the "raw" messages that correlate with each decoded HF/DSC message.

Finally, each station must be capable of recording (preferably in digital form) the voice signals received as a part of the intercepts described below. That recording must also be available for transmission via email attachments or to a designated on line website.

In addition to the initial evaluation and approval of station and operator capabilities as a part of the application process, each AUGCOMSTA must demonstrate its continued ability to meet AUGCOMSTA operational requirements at least every six months.

Meeting operational requirements is defined as:

1. Demonstrate the ability to successfully receive, decode, and store HF/DSC traffic no less often than every six months. "Successfully" is defined as receiving, decoding, and storing HF/DSC traffic at least as well as a designated "master" station. That "master" station could be another AUGCOMSTA or one of the remote receiving sites for HF/DSC controlled by COMMCOM; and
2. Each AUGCOMSTA will be required to exchange "radio checks" using upper sideband voice with at least two of the remote transceive sites controlled by COMMCOM or the BC-RTC no less often than every six months.

The BC-RTC or designee will provide both lists of acceptable equipment and software. The BC-RTC or designee will also provide access to the necessary training of operators to be qualified as the lead operator for an AUGCOMSTA.

MINIMUM STATION REQUIREMENTS FOR APPLICATION

The station must be an inspected USCG Auxiliary HF radio facility, with an assigned HF radio call sign and the operator must be AUXCOM and TCO qualified before being considered.

Satisfactory proof of performance capability as described in CAPABILITY REQUIREMENTS above is required. As part of the application process to become an AUGCOMSTA, the candidate station must provide a listing of receiving and transmitting equipment (antenna, transceiver make and model, modem, recording devices). A brief description of the available computer hardware and the operating system in use must be provided as well as the level of internet connectivity. The fixed land location (latitude/longitude coordinates); the tool used to ensure that the computer clock is synchronized to a standard Universal Coordinated Time source at least once every 24 hours; day(s) and time frame(s) available for assignment to the mission, and complete point of contact information must be given.

The owner/operator should send a copy of any FCC commercial and/or amateur radio license, or proof of federal, state, or private communications experience.

STATION EMERGENCY OPERATIONAL CAPABILITY

AUGCOM stations should have the capability of remaining in operational status for monitoring both voice and data GMDSS channels as well as logging and transmitting results via computer regardless of the availability of commercial power for at least 72 hours in order to support Coast Guard activity during maritime and coastal storms as well as other appropriate events.

SPECIFIC FREQUENCY AND MODE REQUIREMENTS

Monitoring and reporting is focused on specific frequencies that are defined in USCG, International Maritime Organization, and International Telecommunications Union documents. The primary frequencies (successful monitoring of ALL of which is required) are given in the table below:

GMDSS Channels – VOICE and DSC

Frequency Band	VOICE (Dial) kHz	HF/DSC (Dial) kHz	HF/DSC (Assigned)
<i>2 Megahertz</i>	2182.0 kHz	2185.8 kHz	2187.5 kHz
<i>4 Megahertz</i>	4125.0 kHz	4205.8 kHz	4207.5 kHz
<i>6 Megahertz</i>	6215.0 kHz	6310.3 kHz	6312.0 kHz
<i>8 Megahertz</i>	8291.0 kHz	8412.8 kHz	8414.5 kHz
<i>12 Megahertz</i>	12290.0 kHz	12575.3 kHz	12577.0 kHz
<i>16 Megahertz</i>	16420.0 kHz	16802.8 kHz	16804.5 kHz

For monitoring purposes, radios will always be tuned to the “dial” frequency for either voice or DSC. Assigned frequencies are given in this table ONLY for reference purposes since some documents may refer to them.

The HF GMDSS channels that are in common use are paired. That is, for each frequency band (2, 4, 6, 8, 12, and 16) there are two channels that are commonly

used. The column headed “HF/DSC (Dial) kHz” contains the frequencies on which Digital Selective Calling transmissions are made. Whenever a DSC transmission is made that requires or expects a response via single side band voice, the channel used for the SSB communications will be the matching frequency in the same “band”. For example if a DSC call is made from a ship to a shore station on the 8 MHz DSC channel (8412.8), the ship will expect a voice response to be made on 8291.0 Upper Side Band. In addition the voice channels may also be used as “calling” and “distress” frequencies without the use of HF/DSC.

There are additional non-DSC channels that are defined associated with each DSC channel for modes such as SITOP. **HOWEVER, THESE ARE ALMOST NEVER USED.**

REPORTING OF INTERCEPT EVENTS

The fundamental purpose of the monitoring of the GMDSS HF/DSC channels and the GMDSS calling and distress High Frequency channels is to provide a second “set of ears” to ensure that accurate and complete information concerning either a distress (MAYDAY) or an “urgency” (PAN PAN) call is available to the watchstanders at COMMCOM. To achieve that end, **WHENEVER EITHER TYPE OF MESSAGE IS INTERCEPTED** by an AUGCOMSTA on one or more of the channels being guarded, a report of the message will be provided to the watch officer at COMMCOM by both telephone and by email. In order to be sure that the information reported to the COMMCOM is accurate and complete, it is strongly suggested that the results of monitoring be recorded on the “INITIAL SAR CHECK SHEET” referenced below **BEFORE** reporting the intercept to COMMCOM.

VOICE INTERCEPTS

For voice distress or urgency calls intercepted, the AUGCOMSTA will record on paper the relevant information from the call using the “INITIAL SAR CHECKSHEET” and the “SUPPLEMENTAL SAR CHECKSHEET” which are available as pages G-3 and G-4 of the **U. S. COAST GUARD ADDENDUM TO THE UNITED STATES NATIONAL SEARCH AND RESCUE SUPPLEMENT (NSS) To The International Aeronautical and Maritime Search and Rescue Manual (IAMSAR) COMDTINST M16130.2F.**

The operator at the AUGCOMSTA must record on paper, the following information (at minimum) on an INITIAL SAR CHECKSHEET: Radio Frequency, Type of Comms, Original or Relay, Time, Date, Position (Block 1), Number of persons on board (Block 2), Nature of Distress (Block 3), and Description of Vessel (Block 4)

The initial telephone call to the watch at COMMCOM, should begin with the fact that the AUGCOMSTA has received a MAYDAY or PAN PAN message on the specific frequency, at the specific time, and from a specific vessel. The AUGCOMSTA operator should then request instructions regarding continuation of

monitoring that frequency for further traffic, or other actions that the COMMCOM CWO dictates.

Be sure to give the CWO a fool proof way of re-contacting the AUGCOMSTA and record the name and rate of the person at COMMCOM who is taking the message as well as the exact time of the telephone call.

FOLLOW-UP EMAIL REPORT ON VOICE INTERCEPT

As soon as possible after the telephone call to the COMMCOM watch, an email report should be sent to COMMCOM. In any case, the email should be sent no more than one hour following the initial call to COMMCOM CWO. The email is formatted as follows:

Subject Line: GMDSS VOICE INTERCEPT Report ddhhmmZ MMM YYYY from AUGCOMSTA [name/call sign] MAYDAY/PAN PAN ffff.f

(Date/time group is standard form as shown above. Select between “MAYDAY” and “PAN PAN” depending on the category of message being reported. “ffff.f” is the frequency of intercept in kilohertz, for example: 08291.0

The contents of the email will be a series of fields, each on separate line, as below:

Category: MAYDAY or PAN PAN

Mode: Voice

DTG of intercept: ddhhmmZ MMM YYYY

Frequency of Intercept: ffff.f

Name and/or call sign of vessel:

Position: Latitude/Longitude or geographic reference

Other information from Initial SAR Check Sheet, blocks 2, 3, and 4

Reported by telephone to: Rate Surname at ddhhmmZ

AUGCOMSTA (your station identification)

POC info: NAME, Telephone Number, Email address

NOTE THAT fields where information is not available should be filled in with the word “Unknown”. NO FIELD SHOULD BE LEFT OUT.

HF/DSC INTERCEPTS

Reporting of MAYDAY (Distress) or PAN PAN (Urgency) call intercepts is done in much the same way as the voice intercepts. The difference is that the incoming call will be displayed on a computer screen. That has both advantages and disadvantages. On the advantage side, it will be possible to easily copy the actual message as received and the decoded version of that message to a log (text) file. (NOTE THAT IT CRITICAL THAT BOTH THE “RAW” MESSAGE AND THE DECODED AND FORMATTED VERSIONS BE CORRELATED AND COPIED TO THE TEXT FILE). On the

disadvantage side, the AUGCOMSTA operator is required to transfer the information to other forms (the INITIAL SAR CHECK SHEET) and to ensure that all the appropriate information is correctly logged.

The specific forms of intercepted DSC messages will vary depending on the hardware modem or computer software used for monitoring, but the information reported to the watch at COMMCOM will always be the same.

An example of an HF/DSC message intercepted, decoded, and logged using the "SEATTY" software is given below. The SEATTY software will create a simple text file with a name that reflects the date and time of receipt of the message.

GMDSS DSC Message

Format: All ships call (116)
Category: Urgency
From: 2295650000
Telecommand1: J3E TP (109)
Telecommand2: No information (126)
Frequency1: 04125.0 kHz
Frequency2: 04125.0 kHz
EOS

The above is the decoded message as shown in the SEATTY window. It is an "All Ships" call and the category is "urgency" (PAN PAN). The source of the call is from a ship with the MMSI number of 2295650000. Telecommand 1 indicates a request for single sideband comms with any ship, and frequency1 and frequency2 indicate that the ship will be both receiving and transmitting on 4125.0 kHz

<04:33:14> > 111r 110r 109r 125d 125d 125d 105r 104r 64c 116r 108r 22r 95r 65d 0r 0r 109r 126r 4d 12d 50r 4d 12d 50r 127d 124d >> ECC OK

The two lines above is the "raw" message as actually transmitted by the ship and received by the AUGCOMSTA. Correlating this raw message with the decoded one is important to eliminate any possible confusion in the event of mis-decoding.

The operator at the AUGCOMSTA must transfer to paper, the following information (at minimum) on an INITIAL SAR CHECKSHEET: Radio Frequency, Type of Comms, Original or Relay, Time, Date, Position (Block 1), Number of persons on board (Block 2), Nature of Distress (Block 3), Description of Vessel (Block 4)

In this case, the radio frequency would be 04207.5 kHz, HF/DSC, ALL SHIPS CALL, Urgency category, Original call, Time would be 0433Z, Date is 07 SEP 2015, Position Unknown, Number of POB unknown, Nature of Distress unknown, and Vessel Description unknown. The message requests contact by any vessel or shore station on 4125.0 kilohertz.

The initial telephone call to the watch at COMMCOM, should begin with the fact that the AUGCOMSTA has received a PAN PAN HF/DSC message and convey the above information to the watch. The AUGCOMSTA operator should then request a decision as to whether they should continue to monitor that frequency for further traffic, or take other action that the COMMCOM CWO dictates.

Be sure to give the CWO a fool proof way of re-contacting the AUGCOMSTA and record the name and rate of the person at COMMCOM who is taking the message as well as the exact time of the telephone call.

In addition to filling out the INITIAL SAR CHECK SHEET, the AUGCOMSTA operator must create a text file that contains an exact copy of the decoded DSC message AND the “raw” message as above. Both items should be in a single text file with a file name that reflects the DTG of the message as logged, the category of the intercepted message, and the identification of the AUGCOMSTA. IF requested by the COMMCOM CWO, this file can be attached to the email report described below.

FOLLOW –UP EMAIL REPORT for HF/DSC

Subject Line: GMDSS HF/DSC INTERCEPT Report ddhhmmZ MMM YYYY from AUGCOMSTA [name/call sign] MAYDAY/PAN PAN ffff.f

(Date/time group is standard form as shown above. Select between “MAYDAY” and “PAN PAN” depending on the category of message being reported. “ffff.f” is the frequency of intercept in kilohertz, for example: 04207.5 (NOTE that this is the “assigned” frequency because that is usually used as the reference to an HF/DSC channel)

The contents of the email will be a series of field, each on separate line, as below:

Category: MAYDAY or PAN PAN

Mode: HF/DSC

DTG of intercept: ddhhmmZ MMM YYYY

Frequency of Intercept: ffff.f

Name, call sign, and/or MMSI of vessel:

Position: Latitude/Longitude or geographic reference

Other information from Initial SAR Check Sheet, blocks 2, 3, and 4

Reported by telephone to: Rate Surname at ddhhmmZ

AUGCOMSTA (your station identification)

POC info: NAME, Telephone Number, Email address

NOTE THAT fields where information is not available should be filled in with the word “Unknown”. NO FIELD SHOULD BE LEFT OUT.

Comments about reporting of HF/DSC messages: There will have to be some very substantial and detailed training put together to educate the majority of

new AUGCOMSTA operators about the content and structure of HF/DSC messages to ensure that the intercepted information is correctly interpreted and communicated.

MISSION REPORTING REQUIREMENTS (MANDATORY)

The AUGCOM program requires the use of ANSC Form 7030 for the reporting of time and activity.

- a. All AUGCOM time is to be entered on the ANSC Form 7030 as mission 20B.
 - b. The only reporting form to be used for the AUGCOM mission will be the ANSC Form 7030. Members may submit either the electronic or PDF version of Form 7030 to their FSO-IS. Forms may be found on the USCG Auxiliary Web Site (www.cgaux.org).
2. The following procedures will be used to fill out the ANSC 7030 form:
- a. Use your web browser and go to www.cgaux.org
 - b. Click on the "AUX MEMBERS" tab at the top of the page
 - c. In the drop down box, select "FORMS WAREHOUSE"
 - d. In the left hand column, select "E-FORMS" or PDF forms
 - e. Select "ANSC 7030 – Activity Report – Mission" by clicking on the button on the right side of
 - f. Fill in the form as follows:

Division Flotilla Mission Date

Section I – Select "Radio".

Section II – In the "TIME" row, fill in the START and FINISH time of your AUGCOM monitoring "watch". A watch is defined as the time you enter your radio room to start monitoring to when you leave the room after completing an AUGCOM mission. In the "MISSION" row click on the blank space in the "START" column. Select CG Support Missions and **xxx**

Section III - Location: Your station location OPCODE: **COMMCOM – 20-32425**
Facility Registration Number: Use your Radio Facility Identification (**use caution here since AUXDATA will not recognize your HF radio call sign**)
Order Number – Enter "**OPORD**"

Section IV – In the "LEAD" row enter your member number, last name and initials.

Section VI – Enter as much mission content as you can. It should look like this:

Remarks: **

MONITORED 8 and 4 MHz GMDSS frequencies, no distress or urgency intercepts. MONITORED 4 MHz HF/DSC channel, one urgency and no distress messages received

In the LOCAL NOTES (non-AUXDATA) box,

>enter the email address of your FSO-IS, followed by a comma (no space)

>enter the email address of the DSO-CM for your area:

> **COMMCOM**: See Reference Annex 1

> Followed by a comma, no space

>Enter the branch chiefs email address: Reference Annex 1

This will send the E form to all three, FSO IS, DSO-CM and BC-RTC. The PDF version should be sent to all three as an e-mail attachment Fill in the "Date Submitted", enter your name and report number. The ANSC Form 7030 must be submitted daily for missions conducted that day.

NOTE: A FILLED OUT COPY OF THE ANSC FORM 7030 MISSION HOUR REPORT IS ATTACHED TO THIS DOCUMENT AS AN EXAMPLE.

AUGCOMSTA LOG KEEPING REQUIREMENT

It is expected that a designated AUGCOM Station will keep an accurate radio log that records all radio transmissions received and any actual transmissions made for the duration of the assigned watch. The training package for the modem or software for intercepting and decoding of HF/DSC must address the logging capabilities of the tool as well as the requirements of the program. ***REMEMBER THIS INFORMATION CAN BECOME LEGAL EVIDENCE!***



COAST GUARD AUXILIARY VHF TELECOMMUNICATIONS PROGRAM POLICIES AND PROCEDURES

References:

NTIA, Manual of Regulations & Procedures for Federal Radio Frequency Management (“Redbook”), see: <http://www.ntia.doc.gov/page/2011/manual-regulations-and-procedures-federal-radio-frequency-management-redbook>

U.S. VHF Channels, see: <http://www.navcen.uscg.gov/?page Name=mtVhf>

FCC Equipment Authorization Search, see: <https://apps.fcc.gov/oetcf/eas/reports/GenericSearch.cfm>

DHS Management Directive Number: 11042.1, Safeguarding Sensitive but Unclassified (For Official Use Only), see: <http://www.fas.org/sgp/othergov/dhs-sbu-rev.pdf>

National Interoperability Field Operations Guide (NIFOG), see:
<http://hflink.com/standards/National Interoperability Field Operations Guide May 2015.pdf>

Part 90, LMR, see: <http://www.ecfr.gov/cgi-bin/text-idx?SID=1a1478c877797d11b35eed84d130d0e2&mc=true&node=pt47.5.90&rgn=div5>

Part 80, Stations in Maritime Service, see: http://www.ecfr.gov/cgi-bin/text-idx?SID=1a1478c877797d11b35eed84d130d0e2&mc=true&tpl=/ecfrbrowse/Title47/47cfr80_main_02.tpl

Coast Guard Telecommunications Manual, COMDTINST M2000.3 (series)

Coast Guard Auxiliary Operations Policy Manual COMDTINST M16798.3 (series)
https://www.uscg.mil/directives/cim/16000-16999/CIM_16798_3E.pdf

Auxiliary, Telecommunications Operator Personal Qualification Standard (TCO/PQS), see: <http://rdept.cgaux.org/documents/TCO%20Mentoring%20Guide%20090308.pdf>

Auxiliary, VHF Repeater Program Policies and Procedures

A.1 Purpose

The very high frequency (VHF) telecommunications program provides short-range infrastructure-dependent communications systems for use between:

- Coast Guard and Coast Guard Auxiliary Units
- Coast Guard Auxiliary Operational Facilities and mobile units to support various Coast Guard missions where constant and reliable communication is vital.

The program also provides an infrastructure independent communications system for use between Auxiliary unit leadership and members for the timely dissemination of information. Secondly, this system can be used to supplement existing Coast Guard VHF communications by utilizing frequencies assigned to the Coast Guard Auxiliary and radio sites independent of Coast Guard units for “Contingency” operations.

A.2 Regulatory Background

The National Telecommunications and Information Administration (NTIA), an Executive Branch agency, within the Department of Commerce, is the President’s principal adviser on domestic and international telecommunications policy. NTIA is also responsible for managing the federal government’s use of the radio frequency spectrum through the Interagency Radio Advisory Committee (IRAC).

The Federal Communications Commission (FCC) is an independent United States government agency that, among other things, regulates non-federal government radio spectrum use. The NTIA and FCC are continuously involved in evaluating spectrum efficiency for their respective user constituents. For VHF spectrum, both the NTIA and FCC have mandated transition to narrowband FM radio channels as a means of doubling the number of available channels within the same bandwidth. The FCC regulations have mandated that all non-federal stations must convert to narrowband FM by January 1, 2013. **NTIA regulations mandated that all federal government spectrum users were to have fully completed their transition no later than 1 January, 2008.**

The U. S. specific narrowband change and transition does not affect marine VHF radio channels that are subject to consensus achieved through the U.S. participation in the United Nations / International Radio Telecommunications Union, (ITU). The ITU coordinates the shared global use of the radio spectrum for the maritime services.

The United States Coast Guard (USCG), Office of Spectrum Management (CG-652) directs policy and procedures for all elements of the USCG, including the Auxiliary. CG-652 is an active member of the NTIA Interagency Radio Advisory Committee (IRAC).

A.3 Administration and Management

Communications officers in all circumstances interpret, implement, and make recommendations about radio telecommunication policy. They do not create policy independent from National Policy. Recommendations at each level are coordinated with communications officers at the higher level to ensure that they do not conflict with a higher-level policy. LMR (Land Mobile Radio) using VHF frequencies in conjunction with repeaters, require close coordination of the repeater site selection with the CG Office of Spectrum Management (CG-652) and the Response Directorate, Telecommunications Division of the Auxiliary. Therefore, the application process for VHF repeater shall be administered by the Response Directorate, Telecommunications Division of the Auxiliary under separate Auxiliary VHF Repeater Program Policies and Procedures

VHF Fixed Land, Mobile, and Transportable facility Offer for Use, ANSC 7004 Forms, are processed via the chain of management with final approval by the district DIRAUX Office. VHF radio equipment used on-board Auxiliary surface and aircraft facilities is considered part of necessary facility radio equipment and must be listed on the ANSC 7003 or ANSC 7005, Offer for Use Form.

A.4 Type Acceptance Requirements

The USCG Office of Spectrum Management (CG-652) and the Auxiliary have set policy that VHF radios on Auxiliary facilities must meet particular FCC Type Acceptance standards. The Type Acceptance process requires the manufacturer to perform specific tests on a sample radio at an accredited laboratory and certify the results to the FCC. The manufacturer then asserts that all future manufactured radios will meet relevant FCC regulations. Upon completion of the process, the FCC grants an equipment ID number to the manufacturer for that particular model of radio.

Relevant FCC Type Acceptance standards are:

- Part 80 – Radios in the Maritime Service (Marine) For information on VHF Marine channels see <http://www.navcen.uscg.gov/?page Name=mtVhf>
- Part 87 – Aviation Services
- Part 90 – Private Land Mobile Radio Services (LMR)
- Part 97 – Amateur Radio Service

It is important to note that since 2007, VHF Part 97 radio equipment manufactured for the amateur radio service is no longer acceptable for use by any Coast Guard Auxiliary facility.

All radio equipment utilized by CG Auxiliary on Federally - allocated spectrum must be compliant with NTIA requirements as listed in the current edition of the Manual of Regulations & Procedures for Federal Radio Frequency Management (“Redbook”). Copies of this manual may be downloaded from the NTIA website at: <http://www.ntia.doc.gov/page/2011/manual-regulations-and-procedures-federal-radio-frequency-management-redbook>.

VHF radios used on Auxiliary OPFACS must either be FCC Part 80 Type Accepted (i.e. off- the- shelf marine VHF radios) or radios that meet the following criteria:

- FCC Part 90 Type Accepted Land Mobile Radio
- Certification by the manufacturer includes the frequency range of 156-158 MHz
- Programmed output power for Auxiliary use on marine channels is limited to 25 watts
- Radios used on the non-marine LMR frequencies must be Part 90 Type Accepted for narrowband operation and limited to 50 watts

Please note that radio equipment that is FCC Type Accepted will have a label on the equipment that includes an FCC ID number. The facility inspector and the Auxiliary OTO, or designee, may use the FCC Office of Engineering and Technology, webpage: <https://apps.fcc.gov/oetcf/eas/reports/GenericSearch.cfm>. to verify equipment authorization. In addition, Auxiliarists are reminded to read and carefully follow the manufacturer's Instructions/User's Manual regarding all safety and installation warnings.

It is the ultimate responsibility of the Auxiliary facility inspector to insure that, without exception, the radio meets all standards.

A.5 Protecting USCG Frequency Information

Information about USCG authorized frequencies is **for the use by qualified Auxiliary members operating Auxiliary Communications Units (ACU)**. Such specific information may not be posted on the web (directly or indirectly), nor may it be passed over the radio.

When programming VHF radios it is best to enter geographical names or call signs, rather than display actual frequencies. In addition, extra care must be exercised in protecting access tones.

B.1 Frequency Authorization

DOD authorized LMR (Land Mobile Radio), VHF frequency usage, requires close coordination with the CG Office of Spectrum Management (CG-652) and the Response Directorate, Telecommunications Division of the Auxiliary. In the case of repeaters, the applicant's frequency assignment and corresponding access tone is done in consultation with the CG District Spectrum Manager prior to the establishment of the input/output frequencies for the repeater. The use of all VHF marine working channels and the LMR non-marine working frequencies is by authorization of the Commandant of the U.S. Coast Guard.

Please note that at the present time the Auxiliary is not authorized to use certain LMR frequencies in analog or P25 modes, either in the clear or encrypted. When operationally required and while under CG order, the CG unit commander may temporarily loan or issue, on a short term-basis, CG encrypted radios for use by specific Auxiliarists. In such cases, the Auxiliarist is subject to the policies and procedures set forth by the CG unit commander.

B.2 Programming and Use of Interoperability Frequencies

A small number of interoperability channels are included in the National Programming Plan (NPP) (see paragraph 8-2). In addition, Coast Guard and Auxiliary units are authorized to program additional identified interoperability channels into positions not already used in the NPP when they are appropriate for use in their area. These channels may include:

B.2.a The Federal Interoperability Channels are listed in paragraph 4.3.16 of the NTIA Manual of Regulations and Procedures for Federal Frequency Management (Redbook). In addition, the Coast Guard or Auxiliary may ask the local or Federal Agency's permission to program and utilize the "Incident Response" channels listed in the referenced paragraph for interoperability communications with Auxiliary VHF facilities. As a Federal entity, the Auxiliary is already authorized to transmit on these channels for interoperability purposes. These channels are for Interoperability use only, and may not be utilized for routine or administrative communications, nor may they be used for Auxiliary internal communications.

B.2.b The Non-Federal VHF National Interoperability Channels as identified in the National Interoperability Field Operations Guide (NIFOG; available at: [http://hflink.com/standards/National Interoperability Field Operations Guide May 2015.pdf](http://hflink.com/standards/National_Interoperability_Field_Operations_Guide_May_2015.pdf)) Some of these channels are already contained in the NPP. Additional NIFOG channels from the list may be programmed if they are used in your area. Authorization to transmit on these channels is contingent on the Coast Guard or Coast Guard Auxiliary receiving a request from the communications leader of an appropriate FCC-licensed agency. These channels are for interoperability use only and must not be used for routine or administrative communications, nor may they be used for Auxiliary internal communications.

B.2.c Prior to the use of any interoperability channels the Auxiliary must have prior authorization from their order issuing authority.

B.3 Emission

The following types of emissions are used for Auxiliary radio communications. Authorized emissions are:

- 25K00F3E, analog frequency modulation (FM), VHF marine channels
- 11K00F3E, analog frequency modulation (FM),
- 8K10F1E, P-25 Digital voice modulation. Limited use at present

In compliance with NTIA standards, all operation on VHF-FM channels is narrowband. Former wideband authorizations have expired and no wideband operation is permitted except on standard marine/aircraft frequencies.

B.4 Output Power

Power output will be limited to the following:

- Marine channels: 25 watts
- Non-Marine frequencies: 50 watts, for all facilities except repeaters
- Repeater: 100 watts

Because of international agreements and other legal requirements, the Auxiliary may be required to reduce power below the limits outlined above in certain geographical areas, including our international borders. In such cases, specific direction will be issued by CG-652. External power amplifiers are not authorized for use under any circumstance.

Operators are reminded that per NTIA requirements, Federal radio stations shall radiate only as much power as is necessary to ensure satisfactory service.)

B.5 Call Sign Assignment

Auxiliary members who meet the facility and personal qualification requirements for issuance of a VHF call sign, may submit an Offer for Use, ANSC Form 7004 via their units' CM Officer, to the District DIRAUX for processing. Upon acceptance of the Offer of Use, a VHF call sign will be assigned by the District OTO. It is the responsibility of the District Staff Officer for Communications (DSO-CM) to maintain an inventory of VHF facilities within their District. This inventory (by division and flotilla) will be maintained by the DSO-CM utilizing the Communications Resource Availability Worksheet (ICS-217A). This document may be found on the Homeport website of the Coast Guard. The DSO-CM is required to submit their current ICS-217A to their District Director of Response at the end of each quarter. In regards to this inventory and to avoid duplication, no radio may be counted in more than one category. Maintenance of this ICS-217A inventory is critical in order to have an accurate count of facilities to assist an ICS Communications Leader (COML) in understanding how many assets, of each type, are available when preparing for or responding to an event. Geographical call signs (i.e. North-Lakes Auxiliary Radio) are given to the VHF radio facility and must be used. The VHF facility identification may not be used as the call sign of the radio facility. Suggested mobile call signs are as follows: Mobile 4B, signifying Division 4, and B is the second mobile asset in the Division. Where mobile assets are used in a different District the unit can be identified as District 1N, Mobile 4B, to avoid any confusion.

C.1 VHF Facility Acceptance

The District Director's office is the acceptance authority for all VHF radio facilities. Members who meet the criteria listed below may submit an Offer for Use Form (ANSC-7004) to their CM Officer for inspection and subsequent review by the District Director's office.

- Successfully completed the TCO/PQS or completed AUXCOM prior to 1 AUG 2008
- Completion of ICS 100
- Completion of ICS 700

The radio facility identification is granted to the radio, not the individual owner and as such the radio may not be double counted. As an example, a radio identified as fixed land facility may not be placed in a vehicle and counted as a land mobile. Likewise a radio installed in a vehicle may not be removed from the vehicle, placed in an Emergency Operations Center ((EOC), and then count as transportable.

C.1.a A ‘**fixed land facility**’ is intended to be operated from only one geographic location.

C.1.b A ‘**land mobile facility**’ per, A.2.b of the Operations Policy Manual COMDTINST M16798.3 (series), is radio equipment that an Auxiliarist can operate while in motion (e.g., in a vehicle, walking, etc.) It may be installed in a vehicle or portable”.

District DIRAUX will only accept handheld radios as the primary radio for a land mobile facility if it has a means to be powered from, or its batteries charged from the vehicles power system, in addition to properly maintained internal batteries. An appropriate external (to the vehicle) antenna is also recommended.

C.1.c As per A.2.d of the Policy Manual “**portable or handheld radios**” are radios that an Auxiliarist can hand-carry and operate by means of a self-contained antenna and power source”. Handheld radios will not be accepted as the primary radio for fixed land facilities (which includes transportable facilities). When used on an Operational Facility, the Auxiliarist must use the OPFAC or aircraft call sign, and have the permission of the Coxswain/Pilot before transmitting.

C.1.d “**Transportable**” is a facility which is transferred to various fixed locations but is not intended to be used while in motion. For example, “Go Kits”, motor homes or trailers meet this definition. At the present time, all transportable facilities should be issued a mobile facility identification. “Transportable” should be entered in the last box of Section 1 of the ANSC 7004 form.

C.1.e “**Repeater**” installations provide significant benefits to the Auxiliary by increasing the effective range of the base, mobile, surface and portable stations utilizing them. However this increased range can also cause interference problems between other VHF spectrum users. Before approval of any repeater installation the applicant must seek advisement from their respective CG Spectrum Manager. Auxiliary VHF Repeater policy is discussed in VHF Repeater Program Policies and Procedures.

C.2 VHF Net Activity

Coast Guard Auxiliary VHF nets utilizing marine channels or LMR non-marine frequencies, shall be allowed ONLY when authorized by the Commanding Officer of cognizant Coast Guard District. These nets shall be directed and controlled by Communication Staff Officers with written authorization from appropriate Coast Guard and Coast Guard Auxiliary District Communication staff officers (DSO-CM).

Approved radio net may only utilize government channels or frequencies during the assigned time specified by agreement between the Commander of the respective Coast Guard District and the Auxiliary District Staff officer for Communications. Ad-hoc net times are discouraged, except in times

of emergencies. In order to provide these nets with a very high level of professionalism and to ensure that all stations hearing the net are aware of the role of the Coast Guard Auxiliary, a net format template should be followed by the net control station. Constant vigilance and training are necessary, at every level, to ensure that Auxiliary communications units adhere to proper radio procedures and maintain a high level of professionalism. The DSO-CM is responsible to work directly with the District Commodore (DCO) to conduct quarterly drills that support the radio based services outlined in this document and Auxiliary Communications Concept of Operations. These drills are intended to combine VHF and HF facilities in support of the DCO's operational responsibilities.

C.3 Other Authorized VHF Activities

There are other forms of authorized usage of the VHF marine channels.

- Participate in Coast Guard operational missions, utilizing VHF marine radio channels i.e. patrols, marine safety assignments, etc.) while under orders.
- Provide radio guard activities intended to supplement Coast Guard VHF communications.
- Participate in VHF contingency communications, when ordered to do so by the Coast Guard, and/or District Communications Officer.

LMR, non-marine frequencies are more suitable for the following type of activities:

- Participate in communications training and drills
- Conduct unit management tasks
- Check on the functioning of VHF equipment
- Maintaining radio watch standing for Auxiliary vessels (OPFACS) on patrol in areas out of range of any Coast Guard stations

It is important to note that it is not the intention of the Auxiliary VHF program to supplement available frequencies for personal communications. By policy, DOD allocated frequencies may not be used for any form of non-Auxiliary related personal communication.

C.4 Operation of Auxiliary Radio Equipment

The NTIA manual states that "the station should be operated by an employee or by a person who operates under the control of the department or agency on a contractual or cooperative agreement and who is under the supervision of the department or agency sufficient to ensure that agency instructions and limits are met (NTIA, paragraph 8.2.17.1.c). Therefore operation privileges may be granted to any Auxiliary member who can demonstrate familiarity with the radio, proper training in radio procedures, and an understanding of the assigned mission. The Auxiliary unit bears the responsibility for training its members in the use of proper radio operating procedures.

Effective 1 August 2008, all new applicants for fixed land and land mobile radio facility certification and/or operation must be certified as Auxiliary Telecommunications Operator (TCO) by successfully

completing the Personal Qualification Standard (TCO/PQS). In addition, Auxiliarists who were AUXCOM rated prior to 1 AUG 2008 are considered to be TCO qualified. Crew members of OPFACS and Auxiliary aircraft, who operate radios, are not required to achieve TCO status. In times of an emergency, active duty/reserve Coast Guard personnel may operate any Auxiliary VHF radio facility.

C.5 Maritime Mobile Service Identity (MMSI) numbers

C.5.a Surface Facilities - Marine VHF radios with Digital Selective Calling (DSC) and GMDSS features aboard surface facilities should have a civilian-requested Maritime Mobile Service Identity (MMSI) number. These are available without license (free) from various commercial sources or with license from the FCC (form 605 with payment). One MMSI number applies to all radios aboard a vessel. Note that the “Part 90” radios referred to above do not have the capability for DSC.

Civilian requested MMSI numbers are not authorized for unit-owned vessels, Auxiliary aircraft or land mobile radio facilities.

C.5.b MMSI numbers for Auxiliary fixed land VHF-FM communications units - COMDTINST M2400.1 (series) provides the foundation for the potential issuance of MMSI numbers to Auxiliary Communications Units. MMSI numbers for ACUs may be authorized by the Coast Guard in those situations where a request is endorsed by a CG unit commander. In such cases, the Flotilla will complete CG Form 6086 and prepare a letter of justification (citing COMDTINST M2400.1G). In addition, the Flotilla should obtain a letter of “operational support” from its Order Issuing Authority. It is the responsibility of the Auxiliary Sector Coordinator to manage the document package through the Sector and on to the District. After approval by Sector and District, the District will forward the approved request to CG Spectrum Management (CG-652) where the MMSI numbers may be issued.

C.5.c VHF Radios transferred to the Auxiliary, from any Coast Guard unit should have any residual Coast Guard MMSI numbers removed. The Auxiliary member authorized to sign the DD-1149 is to ensure that the removal has been accomplished.

C.6 Use of Amateur Radio Service by Auxiliary

Auxiliary members acting in any Auxiliary capacity may not use amateur radio frequencies on behalf of the Auxiliary or the Coast Guard. Amateur radio frequencies shall not be programmed into radios owned by an Auxiliary unit.



**VHF REPEATER PROGRAM
PLANNING STEPS AND APPROVAL PROCESS**

References:

NTIA, Manual of Regulations & Procedures for Federal Radio Frequency Management (“Redbook”), see: <http://www.ntia.doc.gov/page/2011/manual-regulations-and-procedures-federal-radio-frequency-management-redbook>

U.S. VHF Channels, see: <http://www.navcen.uscg.gov/?page Name=mtVhf>

FCC Equipment Authorization Search, see:
<https://apps.fcc.gov/oetcf/eas/reports/GenericSearch.cfm>

DHS Management Directive Number: 11042.1, Safeguarding Sensitive but Unclassified (For Official Use Only), see: <http://www.fas.org/sgp/othergov/dhs-sbu-rev.pdf>

National Interoperability Field Operations Guide (NIFOG), see:
http://hflink.com/standards/National_Interoperability_Field_Operations_Guide_May_2015.pdf

Part 90, LMR, see: <http://www.ecfr.gov/cgi-bin/text-idx?SID=1a1478c877797d11b35eed84d130d0e2&mc=true&node=pt47.5.90&rgn=div5>

Part 80, Stations in Maritime Service, see: http://www.ecfr.gov/cgi-bin/text-idx?SID=1a1478c877797d11b35eed84d130d0e2&mc=true&tpl=/ecfrbrowse/Title47/47cfr80_main_02.tpl

Coast Guard Telecommunications Manual, COMDTINST M2000.3 (series)

Coast Guard, Auxiliary Operations Policy Manual COMDTINST M16798.3 (series)
https://www.uscg.mil/directives/cim/16000-16999/CIM_16798_3E.pdf

Auxiliary, Telecommunications Operator Personal Qualification Standard (TCO/PQS), see: <http://rdept.cgaux.org/documents/TCO%20Mentoring%20Guide%20090308.pdf>

Auxiliary, VHF Telecommunications Program Policies & Procedures

A.1 Introduction: The Coast Guard Auxiliary VHF Repeater Program has been established to define the planning steps and approval process for all Auxiliary VHF Repeaters and provide for the establishment and maintenance of a National Registry of approved Auxiliary VHF repeaters that may be accessed by the Auxiliary and the Coast Guard. The approval process includes the Coast Guard Auxiliary Response Directorate, Telecommunications Division, Coast Guard Office of Spectrum Management (CG-652) and cognizant DIRAUX.

A.2 Background: The amateur radio community has been using VHF radio repeaters for over 40 years. The Civil Air Patrol (CAP) and the Military Affiliate Radio System (MARS) have a history of employing VHF radio repeaters in their radio communication programs and both have developed elaborate policies governing their use.

In 2008 the Coast Guard Auxiliary was granted authorization to use several non-marine, narrow-band VHF frequencies. While repeaters have been in use by several districts prior to this time, this authorization renewed interest in using repeaters to enhance the Auxiliary communications program. However, there was no written Coast Guard Auxiliary repeater policy and no nationally-defined means of applying for and then inventorying repeaters. This document corrects those deficiencies by providing due diligence steps, an application process, and assigning responsibility for maintaining a national registry of repeaters.

The National Response Directorate, Telecommunications Division has been tasked with program responsibility for all Auxiliary VHF repeaters. This program responsibility includes all repeaters, both privately owned and Auxiliary unit owned that utilize the narrow-band VHF frequencies assigned to the Auxiliary. This responsibility includes repeaters that are installed on, or are being planned for installation on, both private and government owned property. The National Response Directorate, Telecommunications Division is also tasked with maintaining an accurate Registry of all radio repeaters and providing this information to the Coast Guard Office of Spectrum Management (CG-652).

A.3 Purpose: The primary purpose of a radio repeater is to increase the range and coverage capabilities of the Auxiliary unit's portable or mobile VHF radio communications. A duplex repeater consists of a high quality Part 90-approved narrowband VHF radio repeater that detects a signal on one frequency, and simultaneously transmits the intelligence on a second frequency. A second type of repeater (simplex) sequentially repeats a transmission received on one frequency and transmits it on the same frequency following a brief time delay. A repeater facility may be fixed, transportable or mobile (surface or airborne). A Coast Guard Auxiliary unit (Flotilla, Division or District) may desire a repeater to enhance their radio communications program and assist in carrying out the mission assigned by the U.S. Coast Guard. Once approved, the applicant must realize that the repeater may also be used by the Coast Guard.

A.4 Requirements: Auxiliary repeaters must meet the following criteria:

1. The applicant must be an Auxiliary unit, or the repeater must be assigned to a specific Auxiliary unit AOR or unit purpose (such as “District XX Transportable Contingency Repeater”, or “Division YY Repeater”). An Auxiliary member can own a repeater; however it will be categorized as a private repeater. Under no circumstance will a private citizen (non-Auxiliary member), be authorized to own an Auxiliary repeater.
2. No amateur radio repeater may be used for Coast Guard Auxiliary communications. In addition, the linking of Auxiliary repeaters through the use of amateur radio frequencies is not authorized. The use of amateur frequencies for repeater controller purposes is also prohibited.
3. Repeaters must be FCC Part 90 compliant, narrowband equipment.
4. Auxiliary units or individual member shall not grant permission to any other agency, to use repeater frequencies authorized for use by the Coast Guard Auxiliary.
5. Repeaters may not be used on marine frequencies unless specifically authorized by CG 652. Allowable frequencies are narrow-band, VHF frequencies pre-assigned to the Coast Guard Auxiliary A list of these frequencies may be found at the Response Directorate, Telecommunications Web Site <http://wow.uscgaux.info/content.php?unit=R-DEPT&category=communications>. Repeater frequencies must be authorized for use by the Coast Guard Spectrum Manager. In some cases, unique frequencies may be assigned by the Coast Guard District Spectrum Manager. Such frequency assignments may be driven by proximity requirements, emergency situations, or special events.
6. Auxiliary repeaters must have a two or three digit Morse identifier. The identifier is selected by the applicant and is usually shorthand for the geographical location of the repeater (i.e. ST or STU for Stuart, FL)
7. In order to restrict use of a repeater by an unauthorized user, a CTCSS access tone or other service restriction must be utilized. A choice of access tones is supplied with each repeater and should be programmed at time of installation. Selection of this tone is at the discretion of the Auxiliary unit, giving consideration to a nearby repeater that may be using the same tone.

B. Pre-Planning Considerations:

1. Applicants are required to have a discussion with their District Spectrum Manager early in the process. This discussion will facilitate frequency assignment and the evaluation of the repeater location so as to minimize inter-mod possibilities. Of particular concern is the proximity of the planned repeater to other government agency radio installations.

2. Consider topographical features of the area while planning.
3. Other factors to be considered include the distance between the enclosure housing the repeater and the antenna, the type of coaxial cable installed between the repeater output and the antenna, antenna gain and orientation, repeater power output (usually not to exceed 50 watts), emission type and the antenna polarization. This information is required on the Coast Guard 6086, Frequency Authorization Request Form, http://www.uscg.mil/forms/cg/CG_6086.pdf
4. Unit leadership is cautioned that antenna installation may require the use of a professional installer.
5. The site must provide emergency power or the repeater must have battery backup.
6. Applicants and unit leaders are reminded to consult with their unit legal officer in those situations that require formal agreements with land, site, and structure owners.

C. Approval Process:

1. The applicant must be an Auxiliary unit or in some circumstances an Auxiliary member.
2. The Repeater application package is submitted to the District Office of Spectrum Management via the communications leadership chain, with a copy to Branch Chief, Program Integration (BC-RTI)
3. The application package as submitted to the District office of Spectrum Management and the Branch Chief, Program Integration (BC-RTI) shall consist of:
 - a. A completed FREQUENCY AUTHORIZATION REQUEST - FORM (CG-6086) http://www.uscg.mil/forms/cg/CG_6086.pdf
 - b. Written letters of endorsement from unit leadership and the DSO-CM.
4. Upon approval by the BC-RTI and the CG office of Spectrum Management (CG-622), the applicant may proceed with acquisition and installation of equipment.
5. Upon completion of the installation, the applicant must complete a RADIO INSPECTION AND OFFER FOR USE FORM (ANSC 7004) and arrange for inspection by the DSO-CM or appropriate CM officer.
6. The inspecting officer will be responsible for submitting the FORM 7004 via their communications leadership chain to DIRAUX for approval, and the DSO-CM will furnish a copy of the approved form to the Branch Chief, Program Integration (BC-RTI).

7. The Branch Chief, Program Integration (BC-RTI) will enter the Facility ID as assigned by DIRAUX and all other information into the National Repeater Registry.