



Auxiliary Specialty Course

COMMUNICATIONS

(AUXCOM)



INSTRUCTOR GUIDE

PUBLISHED FOR EDUCATIONAL PURPOSES ONLY



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MEMORANDUM

From: M.D. RIZZO, CAPT
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Reply to: CG-5421
Attn of: Ms. L. McDaniel

To: Distribution

Subj: AUXILIARY COMMUNICATIONS SPECIALTY COURSE (AUXCOM)
INSTRUCTOR GUIDE

Ref: (a) Auxiliary Manual, COMDTINST M16790.1(series)

1. PURPOSE. This publication is intended for use as the instructor guide for the Auxiliary Communications Specialty Course. It is published for instructional purposes only and is not policy material.

2. ACTION. Elected and appointed leaders and program managers at all levels of the Auxiliary organization shall ensure Auxiliarists who oversee, direct, or participate in Auxiliary operations adhere to this publication's provisions.

3. PUBLICATION AFFECTED. The Auxiliary Communications Specialty Course Instructor Guide, Commandant Publication 16794.33B is canceled.

4. DISCUSSION. The Auxiliary Communications Specialty Course Instructor Guide is not a substantial revision of earlier text materials.

5. SUMMARY OF CHANGES. Changes to this course are listed below:

- a. Chapter test questions now reference page number where answer may be found.
- b. The pages for creating slides have been removed.
- c. Added chapter for information relating to Rescue 21.
- d. Added chapter for Communication Staff Officer responsibilities.

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CHAPTER ONE - BASIC MARINE RADIOTELEPHONE SYSTEMS NOMENCLATURE AND THEORY

A. OVERVIEW

1. In order to be an Auxiliary Communications Specialist it is necessary to have a basic knowledge of the terminology and principles of electronic communications. The Auxiliary radio communications are mostly involved with the VHF marine frequencies in addition to VHF and HF frequencies. Coast Guard communications involve the entire spectrum of radio frequencies. It is expected that Auxiliary Communications Specialists may become directly involved with service communications, such knowledge can be very helpful, if not necessary. Chapter One provides an introduction to the terminology and principles as well as a review of the radio frequency spectrum.

B. CHAPTER ONE GUIDE.

TIME	MAJOR TOPIC	SUBTOPIC	PRESENTATION NOTES
	Nomenclature	Terminology Frequency spectrum Radio waves	
	Radio Waves	Electromagnetic waves Wave intensity Ionospheric, Tropospheric, and Ground Waves Skip zone, skip distance	
	Circuit Types	Simplex Duplex	
	Radiotelephone Systems	Basic functions 2 - 30 MHz SSB system	

	Single Sideband	Theory AM power distribution SSB power saved with suppressed carrier	
	156-158 MHz System	Description and advantages Channel Usage Channel/frequency assignments Pros and Cons.	
	Cell Phones	Not preferable. Pros and Cons.	
	Citizens Band	Description Limitations Pros and Cons.	
	FRS, GMRS, and MURS Radios	Description Advantages Limitations	
	Radio Repeaters	Concept Operation Authorization	

C. CHAPTER ONE STUDY QUESTIONS

1. In communications nomenclature, the band named "very high frequency" covers what frequency range? *(page 2)*
 - a) 3 - 30 Hz
 - b) 30 - 300 kHz.
 - c) **30 - 300 MHz.**
 - d) 3 - 300 MHz.
2. Express 2.182 MHz in kilohertz (kHz). *(page 7)*
 - a) **2182 kHz.**
 - b) 21.82 kHz.
 - c) 2.182 kHz.
 - d) 218.2 kHz.
3. What is the typical range of VHF-FM radio communications? *(page 5) (page 15)*
 - a) Up to 25 miles, depending on antenna height.
 - b) Line of sight.
 - c) Handhelds, 1 - 2 miles.
 - d) **All of the above.**
4. What is a most important characteristic of the VHF-FM frequencies? *(page 9)*
 - a) Free of interference and static.
 - b) **Line of sight.**
 - c) Only specific frequencies permitted.
 - d) All the above.
5. What is the difference between Simplex and Duplex circuits? *(page 6)*
 - a) **Simplex circuits use one frequency for both send and receive.**
 - b) **Duplex circuits have separate send and receive frequencies.**
 - c) There is no difference.
 - d) **Both a and b.**
6. Skip is most often found within what range of frequencies? *(page 5)*
 - a) 156 - 162 MHz
 - b) VLF frequencies
 - c) **2 to 30 MHz**
 - d) 3 to 30 GHz

7. What is the SSB Distress and Calling frequency? (*page 7*)
- a) **2182 kHz**
 - b) Channel 16
 - c) 156.8 MHz
 - d) Channel 13
8. What is the VHF-FM marine calling and distress frequency? (*page 7*)
- a) 2182 kHz
 - b) **Channel 16**
 - c) 156.60 MHz
 - d) Channel 13
9. The bridge tender will likely be listening on what channel? (*page 10*)
- a) Channel 16.
 - b) Channel 09.
 - c) Channel 12.
 - d) **Channel 13.**
10. After calling a commercial vessel on Channel 16, what are some of the working channels you could switch to? (*page 11*)
- a) **Channel 68.**
 - b) **Channel 69.**
 - c) **Channel 71.**
 - d) **All of the above.**
11. Why is Class D Citizens Band unreliable for boaters? (*page 13*)
- a) **No radio watch maintained.**
 - b) **No broadcast of emergency information.**
 - c) **No communication with Coast Guard.**
 - d) **All the above.**
12. What is a radio repeater? (*page 15*)
- a) **A radio station that receives on one frequency and retransmits on another frequency.**
 - b) **A radio station that can be a relay.**
 - c) **A radio station that can extend the communications range.**
 - d) **All of the above.**

13. List the three basic communication functions of the marine radiotelephone system in priority order. *(page 7)*
- a) **Safety, Operational, Business.**
 - b) Operational, Safety, Business.
 - c) Business, Safety, Operational.
 - d) Business, Operational, Safety.
14. What are the major components of a radio station? *(page 16)*
- a) Radio equipment, feed line, antenna.
 - b) **Power supply, radio equipment, antenna.**
 - c) Power supply, feed line, antenna.
 - d) Power supply, radio equipment, feed line.
15. Lightning protection should be used with what type of antennas? *(page 17)*
- a) **All types of antennas.**
 - b) Only beam antennas.
 - c) Only vertical antennas.
 - d) One horizontal antennas.
16. What are some of the precautions that should be taken when erecting an antenna. *(page 16)*
- a) **Ensure the antenna away from power lines.**
 - b) **Locate the antenna away from telephone lines.**
 - c) **Exercise extreme caution while installing to avoid contact with any lethal conductors.**
 - d) **All of the above.**

CHAPTER TWO - VOLUNTARILY INSTALLED MARINE RADIOTELEPHONE STATION REGULATIONS

A. OVERVIEW

1. The VHF marine radiotelephone is the primary radio service used by pleasure boaters and the Auxiliary. Knowledge of the FCC regulations governing the civilian use of these channels is a must for Auxiliarists. Chapter Two summarizes these regulations and operating procedures as they apply to non-government stations. It does not address government (Auxiliary) radio stations.

B. CHAPTER TWO GUIDE.

TIME	MAJOR TOPIC	SUBTOPIC	PRESENTATION NOTES
	Station License	Authorization Posting Application Renewal	
	Operator License	Requirement	
	Distress/Calling Frequencies	2182 kHz Channel 16 Usage Time Limitations	
	Ship/Ship Working Frequencies	2 - 30 MHz SSB 156 - 162 MHz Usage Time Limitations	

	Identification	On the air Documents	
	Radio Adjustments	Technical operation Ground connection	
	Secrecy of Communications	Non-disclosure Exceptions	
	Obscenity, Profanity	Restriction Fines	
	Loss of License	Revocation Suspension	
	Fines	Licensee/Operator Licensee only Fines	
	Summary	Licensee responsibilities Voice techniques Pro-words/Abbreviations Phonetic Alphabet Procedures	

	GMDSS	General	
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C. CHAPTER TWO STUDY QUESTIONS

1. A non-government radio station may only be operated in accordance with the rules and regulations established by? *(page 1)*
 - a) **FCC**
 - b) IRAC
 - c) ITU
 - d) NTIA

2. All ship radiotelephone stations using the 2-30 MHz marine band must maintain an efficient listening watch on which frequency? *(page 2)*
 - a) 2182 MHz
 - b) **2182 kHz**
 - c) 2182 HZ
 - d) 2182 GHz

3. An efficient listening watch is required on which VHF-FM channel and under what conditions? *(page 3)*
 - a) **Channel 16 (156.8 MHz) if radio is on and not in use.**
 - b) Channel 70 (156.525 MHz) for non-DSC equipped vessels.
 - c) Channel 68 (156.425 MHz) unless another channel is being used.
 - d) Channel 17 (156.850 MHz) unless another channel is being used.

4. When a station does not respond to a call sent three times at intervals of two minutes, you are permitted to call again after how many minutes have elapsed? *(page 3)*
 - a) Five
 - b) Ten
 - c) **Fifteen**
 - d) Twenty

5. What is the procedure to initiate a call on a ship's radiotelephone? *(page 10)*
 - a) **Listen to see if the channel is free.**
 - b) **make contact on the calling frequency.**
 - c) **switch to a working channel.**
 - d) **All of the above.**

6. Is it always necessary to establish contact on a calling channel? *(page 3)*
- a) Yes, it is required.
 - b) **No, if you know the other station is monitoring a working channel, it is okay to call them on it.**
 - c) No, it is not required.
 - d) None of the above.
7. What is the PRIMARY use of the inter-ship frequencies? *(page 5)*
- a) Talk about fishing conditions.
 - b) **Safety of navigation.**
 - c) Business requirements.
 - d) Docking procedures.
8. After two ship stations have established contact on an inter-ship working frequency, FCC regulations limit maximum duration of the communication to what time period? *(page 6)*
- a) No limit, talk as long as you want.
 - b) **Three minutes.**
 - c) Five minutes.
 - d) Fifteen minutes.
9. All transmitter adjustments to marine radiotelephone transmitters must be performed by or under the immediate supervision of a person holding which class of license? *(page 2)*
- a) **General Radiotelephone.**
 - b) **First Class Radiotelegraph.**
 - c) **Second Class Radiotelegraph.**
 - d) **Any of the above.**
10. The secrecy provision of the communications regulations does not apply to what type of communications? *(page 8)*
- a) Location of good fishing spots.
 - b) **Distress.**
 - c) Current location, speed, and heading of the vessel.
 - d) Plans to dump stock because of market values.

11. What are some of the violations which can cause license revocation or fines against the licensee or operator? (*page 8*) (*page 9*)
- a) **Transmission of false distress signals.**
 - b) **Use of obscene, indecent, or profane language.**
 - c) **Repeated violation of FCC regulations.**
 - d) **All of the above.**
12. What are desirable voice characteristics when speaking on the radio? (*page 11*)
- a) A high pitched monotone.
 - b) A low pitched monotone.
 - c) **Normal speaking tone, yet distinct.**
 - d) Use of extreme dialect and accent.
13. Under what conditions are radio checks with the Coast Guard allowed on Channel 16? (*page 12*)
- a) Never.
 - b) **When made by licensed FCC technicians and inspectors when making station repairs or adjustments.**
 - c) At the beginning of your voyage.
 - d) Only between 0001 and 0030 hours.
14. Use of VHF-FM Channel 16 is restricted to what type of communications? (*page 3*)
- a) All types of communications are permitted.
 - b) **Distress, Safety, and Calling.**
 - c) Fishing reports.
 - d) Distress, calling, and fishing reports.
15. Which SSB working frequency can be used in all areas? (*page 4*)
- a) **2638 kHz**
 - b) 2082.5 kHz
 - c) 2009 kHz
 - d) 2203 kHz
16. What is the VHF distress and calling frequency for the GMDSS? (*page 13*)
- a) Channel 16 (156.8 MHz)
 - b) Channel 09 (156.45 MHz)
 - c) **Channel 70 (156.525 MHz)**
 - d) Channel 06 (156.3 MHz)

17. What is AIS? (*page 13*)
- a) Global Maritime Distress and Safety System.
 - b) **Automatic Identification System.**
 - c) Automatic Position Indicating System.
 - d) Automatic Distress Reporting System.
18. What channel is used for DSC in VHF-FM? (*page 13*)
- a) Channel 16
 - b) Channel 09
 - c) **Channel 70**
 - d) Channel 68
19. On which VHF-FM channel is voice communication forbidden? (*page 13*)
- a) Channel 06
 - b) Channel 09
 - c) Channel 13
 - d) **Channel 70**
20. What is the maximum penalty for willingly making a false MAYDAY call?
(*page 10*)
- a) 5 years imprisonment and a \$20,000 fine.
 - b) **6 years imprisonment and a \$250,000 fine.**
 - c) 5 years probation.
 - d) 5 years imprisonment.
21. Two ships have communicated for three minutes and need to continue communicating.
How long do they have to wait before they can communicate again? (*page 6*)
- a) Five minutes.
 - b) **Ten minutes.**
 - c) Fifteen minutes.
 - d) Twenty minutes.

CHAPTER THREE- CALLING AND ANSWERING PROCEDURES

A. OVERVIEW

1. An effective communicator must have a thorough knowledge of calling and answering procedures. An Auxiliary communicator must be familiar with both civilian and Coast Guard procedures. Chapter Three explains the civilian step-by-step procedures which, if initially learned and used, will ensure the most reliable and rapid radiotelephone communication and set an example for the boating public. This will influence a decrease in the public misuse and abuse of the marine band that is nothing more than a lack of knowledge of the proper procedures.

B. CHAPTER THREE GUIDE.

TIME	MAJOR TOPIC	SUBTOPIC	PRESENTATION NOTES
	Calling Procedure	Listen First Proper channel Ship-to-ship calls Ship-to-shore calls.	
	Answering Procedure	Listening watch Dual/scan capability	
	Test Transmissions	Precautions Procedures	
	Radio Checks	Terminology	

C. CHAPTER THREE STUDY QUESTIONS

1. What should you do before calling a station? (*page 1*)
 - a) Press the PTT button; then decide who to call.
 - b) **Listen to see if the frequency is in use.**
 - c) Decide if the call is necessary.
 - d) Press the PTT button and announce your intent to use the frequency.

2. Are the calling procedures on the 2-30 MHz the same as on the VHF-FM marine band?
(page 1)
- a) **Yes**
 - b) No, CB methods are used in the MF/HF band.
 - c) No
 - d) None of the above.
3. At the beginning of your call to establish radio contact with another vessel what pro-word should be used? (page 2)
- a) **Out**
 - b) Roger
 - c) Wilco
 - d) Over
4. When calling another station, what are the time limitations on the initial call and any additional calls? (page 1)
- a) **Transmission limit of thirty seconds, may be sent three times at 2 minute intervals.**
 - b) Call for no more than 30 seconds every two minutes until the call is answered.
 - c) Make three calls of no more than one minute at three minute intervals and then announce, "No response from the station called".
 - d) There are no time limits for calls.
5. Who may conduct radio checks with the Coast Guard when installing equipment?
(page 4)
- a) Anyone.
 - b) **Only a person holding a General Radiotelephone license.**
 - c) **Only FCC technicians and inspectors.**
 - d) **Either b or c.**
6. Who may answer requests for a radio check? (page 4) (page 5)
- a) Any station hearing the request.
 - b) **Only the station to which the request is made.**
 - c) All stations hearing the request.
 - d) Only the Coast Guard.

CHAPTER FOUR - DISTRESS, URGENCY, AND SAFETY MESSAGES

A. OVERVIEW

1. The proper use of a marine radiotelephone requires a thorough knowledge of distress, urgency, and safety communications. Chapter Four covers this subject in detail and must be discussed its entirety.

B. CHAPTER FOUR GUIDE.

TIME	MAJOR TOPIC	SUBTOPIC	PRESENTATION NOTES
	Distress	Procedures Responsibility Priority Radiotelephone alarm signal Call/acknowledgement Radio silence	
	Urgency	Procedure Responsibility Priority Message Example	
	Safety	Procedure Responsibility Priority Message Example	
	Distress Radio Beacons	Types	

		EPIRBs	
		ELTs	

C. CHAPTER FOUR STUDY QUESTIONS

1. Who is authorized to issue a distress call? (*page 1*)
 - a) The first person who sees the problem.
 - b) **The person responsible for the unit in distress.**
 - c) The person who knows how to call for help.
 - d) Any of the above.

2. Distress radio beacons aid in the detection and location of? (*page 7*)
 - a) **Aircraft in distress.**
 - b) **Boats in distress.**
 - c) **People in distress.**
 - d) **All of the above.**

3. You hear a distress broadcast and the nearby Coast Guard station does not answer. What action should you take? (*page 3*)
 - a) Ignore the call.
 - b) **You should acknowledge the call.**
 - c) Tell them to call the Coast Guard on a landline.
 - d) None of the above.

4. The vessel in distress or the station in control of distress communications may impose silence on any station that interferes by saying what? (*page 4*)
 - a) SEELONCE DISTRESS
 - b) **SEELONCE MAYDAY**
 - c) SEELONCE FEENEE
 - d) Any of the above.

5. When a MAYDAY situation is in progress, any station which believes silence is essential may transmit what? (*page 4*)
 - a) **SEELONCE DISTRESS**
 - b) SEELONCE MAYDAY
 - c) SEELONCE FEENEE
 - d) Any of the above.

6. What is the Urgency signal? (*page 5*)
- a) MAYDAY spoken three times.
 - b) SECURITE spoken three times.
 - c) **PAN PAN spoken three times.**
 - d) None of the above.
7. What precedes an announcement of a message to be transmitted concerning the safety of navigation? (*page 6*)
- a) **SECURITE spoken three times.**
 - b) PAN PAN spoken three times.
 - c) Both A and B.
 - d) None of the above.
8. What is the priority order for distress, urgency, and safety messages? (*page 1*)
- a) PAN PAN, SECURITE, and MAYDAY.
 - b) **MAYDAY, PAN PAN, and SECURITE.**
 - c) MAYDAY, SECURITE, and PAN PAN.
 - d) SECURITE, PAN PAN, and MAYDAY.
9. What class of EPIRBs transmit an identification and on what frequency? (*page 9*)
- a) Only Category I on 121.5/243 MHz.
 - b) Only Category II on 121.5/243 MHz.
 - c) **Category I and II on 406 MHz.**
 - d) Any of the above.

CHAPTER FIVE - AUXILIARY COMMUNICATIONS SYSTEM

A. OVERVIEW

1. This chapter contains the information on the day-to-day operation as well as policy guidance which is critical to the establishment and maintenance of an Auxiliary Radio Facility.

B. CHAPTER FIVE GUIDE.

TIME	MAJOR TOPIC	SUBTOPIC	PRESENTATION NOTES
	Auxiliary Communications System	Definitions Purpose Control	
	Radio Facilities	Government station Portable radios FCC license Owner/operator Equipment	
	Radio Call Signs	Authorization Designations	
	Administration	Coast Guard Decal display	
	Bridge-to-Bridge	Channel 13 usage	
	Radio Logs	Requirement/exceptions	

		Operational cautions	
	Computers	Computer usage	
	Authorized / Frequencies	Frequencies authorized Frequencies required	
	Inspection	Inspectors/forms used	
	Military Auxiliary Radio Service	Auxiliary participation	
	Radio Violations	How/what to report	
	Auxiliary Watchstanders	Qualifications On-the-air-conduct	
	Mariner Requests for Information	Navigational information Lost/disoriented boaters Weather information Third party traffic Accuracy Timeliness	
	Civil Emergency Services	Intercommunications	
	Frequency Request	(Sample letter request)	

C. NOTE TO THE INSTRUCTOR.

1. A current copy of the Operations Policy Manual is required to ensure the information in this chapter is correct and current. Also, any communications policy guidance that has been issued, especially changes, since the last Policy Manual was published must be reviewed with the students to insure complete coverage of the subject matter.

D. CHAPTER FIVE STUDY QUESTIONS

1. Can an individual radio used on a boat or aircraft facility be used as an Auxiliary radio for any other facility? *(page 1)*
 - a) Yes
 - b) **No**
 - c) With a DIRAUX waiver
 - d) None of the above.
2. What are the various types of Auxiliary radio facilities? *(page 1)*
 - a) **Fixed land.**
 - b) **Land mobile.**
 - c) **RDF.**
 - d) **All of the above.**
3. Can a portable radio qualify as a facility? *(page 5)*
 - a) No
 - b) **Yes**
 - c) Only if it supports RDF
 - d) None of the above.
4. All operations on the Coast Guard frequencies by Auxiliarists must be conducted in accordance with the rules and procedures promulgated by? *(page 2)*
 - a) **The District Commander.**
 - b) The DIRAUX.
 - c) The District Commodore.
 - d) An Auxiliary communications staff officer.
5. Vessel facility radios are considered government stations under what conditions? *(page 5)*
 - a) While in personal use.
 - b) After being certified as a radio facility.
 - c) **When assigned to Coast Guard duty.**
 - d) All of the above.

6. Can land mobile radio facilities engage in personal business on the facility radiofrequencies? *(page 1) (page 2)*
- a) When it is only their personal business.
 - b) **No**
 - c) When personal business includes only Auxiliarists.
 - d) Always.
7. Under what conditions may fixed land, land mobile, and RDF facilities be activated? *(page 4) (page 5)*
- a) **When necessary to handle valid distress traffic.**
 - b) **When conducting network drills.**
 - c) **For assisting in times of disaster or national emergency.**
 - d) **All of the above.**
8. What training is required for an Auxiliarist to operate a vessel facility radio? *(page 6)*
- a) **TCO PQS or Auxiliary Communications Specialist course completion.**
 - b) **Crew qualification.**
 - c) **Any additional District required training.**
 - d) **All of the above.**
9. What are the requirements for VHF RDF stations with respect to its location and capabilities? *(page 3)*
- a) **It must be near a patrol area.**
 - b) No requirements.
 - c) **It must meet specific technical requirements.**
 - d) **Both A and C.**
10. How should LOPs from a RDF be reported? *(page 3)*
- a) On VHF-FM 83A.
 - b) **VIA non-marine channels.**
 - c) **By landline.**
 - d) **Either B or C.**
11. Who can inspect radio equipped aircraft facilities? *(page 11)*
- a) **An aircraft inspector.**
 - b) Someone AUXOP qualified.
 - c) DIRAUX.
 - d) A communications staff officer.

12. What are the conditions under which a CB radio can be utilized? (*page 8*)
- a) Whenever a CB radio is available.
 - b) **When no other method of communicating is available.**
 - c) Always.
 - d) None of the above.
13. Under what circumstances may an Auxiliarist contact the FCC about an Auxiliary radio problem? (*page 5*)
- a) Whenever there is a violation of radio procedures.
 - b) When the radio malfunctions.
 - c) **None: Auxiliary communication problems are referred through the chain-of-command.**
 - d) When the Auxiliarist thinks it is necessary.
14. Vessel and aircraft facilities must be capable of operating on which VHF-FM marine channels? (*page 11*)
- a) Only Channel 16.
 - b) Only Channel 22A.
 - c) Only Channel 83A.
 - d) **Channels 6, 16, 22A, and a Group working channel.**
15. Communication with civilian emergency services is preferred on what channels? (*page 16*)
- a) Any working channel.
 - b) **Government channels.**
 - c) A CB channel.
 - d) None of the above.

CHAPTER SIX - MESSAGES

A. OVERVIEW

1. One of the primary reasons for communications is to provide a means of exchanging formal messages. Chapter Six provides a relatively complete, comprehensive discussion of the preparation and transmission of formal messages. Auxiliary communicators, especially watchstanders, should be well versed in all types of message handling.

B. CHAPTER SIX GUIDE.

TIME	MAJOR TOPIC	SUBTOPIC	PRESENTATION NOTES
	Introduction	General Originator/drafter Administrative	
	Message Parts	Heading Text End Break	
	Sending Messages	Voice radio Operation Pronouncing numerals Phonetic alphabet Pro-words Radiotelephone network Sample transmissions	
	Receiving Messages	Introduction	

		Abbreviations	
	Sample Messages	Outgoing message format Patrol Messages SITREP's ATON Reports	
	Signaling	H.O. No. 102	
	Forms	Forms for gathering data	

C. NOTE TO THE INSTRUCTOR

1. The best way to develop message handling and operator skills is through on-the-air drills. The use of hand-held radios on low power in a building where no interference will result to outside operations can provide this training. Use government frequencies and call-signs and the phrase "This is a drill message" at the beginning and ending of all messages. Showing examples of Coast Guard traffic from the local area is also a valuable training aid.
2. A copy of the "International Code of Signals", US Version, H.O. 102, available from the Government Printing Office, Washington, DC 20402 is an excellent training aid for this chapter.

C. CHAPTER SIX STUDY QUESTIONS

1. Why is the knowledge of message types and formats important for an Auxiliarist?
(page 1)
 - a) **A proper understanding of messages is necessary if you are to function as an effective Auxiliarist.**
 - b) To distinguish between authentic and false messages.
 - c) To help understand messages.
 - d) To enable the Auxiliarist to make any corrections to the message.

2. What are the three basic types of messages? (*page 1*)
- a) Single Address, General Address, Routing Address
 - b) **Single Address, Multiple Address, General Address**
 - c) Single Address, Multiple Address, Routing Address
 - d) Single Address, Multiple Address, Return Address
3. What is the key responsibility of a message originator? (*page 2*)
- a) Transmit the message.
 - b) Prepare the message.
 - c) **Determine if a message is necessary.**
 - d) Follow-up on the message.
4. What are the major parts of a message and their locations in the message format? (*page 2*)
- a) Heading, lines 5-10; Text, line 12.
 - b) **Heading, lines 5-10; Text, line 12; Ending.**
 - c) Heading, lines 5-10; Ending.
 - d) Text, line 12; Ending.
5. What separates the parts of a message? (*page 3*)
- a) **Break or BT.**
 - b) Blank spaces.
 - c) Message blocks.
 - d) Dividing lines.
6. What are the message precedents and their corresponding abbreviations? (*page 4*)
- a) Z - Flash; O - Immediate; P - Priority; U - Urgent.
 - b) Z - Flash; P - Priority; U - Urgent; R - Routine.
 - c) **Z - Flash; O - Immediate; P - Priority; R - Routine.**
 - d) Z - Flash; O - Immediate; U - Urgent; R - Routine.
7. The Coast Guard communications organization operates on what time? (*page 5*)
- a) Universal Coordinated Time (UCT)
 - b) Local time
 - c) Daylight savings time
 - d) Washington DC Standard Time

8. What techniques should be utilized when using a microphone? *(page 9) (page 10)*
- a) **Listen before transmitting.**
 - b) **Use standard pronunciation.**
 - c) **Avoid extremes of voice pitch, etc.**
 - d) **All of the above.**
9. How should the distance 5,000 yards be spoken? *(page 11)*
- a) Fi-ve thou-sand yards.
 - b) Fi-ve thow-zand yards.
 - c) **Fi-yiv thow-zand yards.**
 - d) None of the above.
10. What is the pro-word to indicate numerals follow? *(page 11)*
- a) Numbers
 - b) **Figures**
 - c) Numerals
 - d) Any of the above.
11. What is the meaning of the pro-word ROGER? *(page 14)*
- a) I have received your message, I understand, and will comply.
 - b) **I have received your last transmission satisfactorily.**
 - c) I am ending this transmission, no reply expected from you.
 - d) None of the above.
12. What is the meaning of the pro-word OUT? *(page 8)*
- a) I have received your message, I understand, and will comply.
 - b) I have received your last transmission satisfactorily.
 - c) **I am ending this transmission, no reply expected from you.**
 - d) None of the above.
13. What is the meaning of the pro-word WILCO? *(page 14)*
- a) **I have received your message, I understand, and will comply.**
 - b) I have received your last transmission satisfactorily.
 - c) I am ending this transmission, no reply expected from you.
 - d) None of the above.
14. What is the pro-word that indicates a reply is necessary? *(page 8)*
- a) WILCO
 - b) ROGER
 - c) **OVER**
 - d) OUT

15. You are transmitting a message by radiotelephone and before you have said OVER or OUT, you discover that you have made an error. What is the proper procedure to correct it? *(page 17)*
- a) Stop transmitting and start from the beginning.
 - b) **Transmit the word CORRECTION, return to the last word or phrase sent correctly, make the correction, and proceed with the rest of the message.**
 - c) Transmit the word CORRECTION and wait a second before continuing with the rest of the message.
 - d) Transmit the word CORRECTION, say OUT, and start from the beginning.
16. During the transmission of a message and prior to the transmission of the pro-word OVER or OUT, the message may be cancelled by the use of what pro-word? *(page 17)*
- a) Cancel this message.
 - b) Disregard this message.
 - c) **Disregard this transmission.**
 - d) Cancel this transmission.
17. Safety patrols usually require a minimum of two messages? What are they? *(page 24)*
- a) **The time the patrol begins and the time the patrol secures.**
 - b) The name of the coxswain and the names of the crew.
 - c) The name of the facility and the patrol area.
 - d) None of the above.
18. Who determines the addressee of a message? *(page 2)*
- a) The person sending the message.
 - b) The person receiving the message.
 - c) **The originator of the message.**
 - d) Any of the above.
19. What publication will assist in communicating with foreign vessels? *(page 31)*
- a) AUXCOM Manual.
 - b) Coast Guard Watchstander Manual.
 - c) **The International Code of Signals, H.O., No. 102**
 - d) None of the above.

CHAPTER SEVEN - THE RADIOTELEPHONE LOG

A. OVERVIEW

1. The proper maintenance of a radio log by the owner/operator of a radio facility is a must. Chapter Seven explains how to fulfill the Coast Guard requirements for organizing and maintaining a radio log. Mobile stations are excused from keeping a radio log when working with fixed Coast Guard or Auxiliary stations but must log all radio contacts with other stations. Logging information in Chapter Seven should be referred to when instructing this chapter.

B. CHAPTER SEVEN GUIDE.

TIME	MAJOR TOPIC	SUBTOPIC	PRESENTATION NOTES
	Requirements	General Purpose/requirements Log section Message file Reference section	

C. CHAPTER SEVEN STUDY QUESTIONS

1. When operating as a government station, what is the minimum log requirement? *(page 1)*
 - a) Start time and end time.
 - b) Call sign and date.
 - c) **A written record of all communications with all messages recorded that another communicator can interpret.**
 - d) Operator's name.
2. What are the three sections of a log? *(page 1)*
 - a) Start, middle, and end
 - b) Log, Message File, and Reference
 - c) Log, Middle, and Reference
 - d) None of the above.

3. What are some of the suggested items to be kept in the reference file section? *(page 4)*
- a) **Rosters**
 - b) **SAR Report Forms**
 - c) **Telephone numbers**
 - d) **All of the above.**
4. When is an Auxiliary mobile facility required to maintain a radio log? *(page 1)*
- a) When in communication with a Coast Guard land station.
 - b) When in communication with an Auxiliary land station.
 - c) **When communicating with another Auxiliary mobile unit.**
 - d) None of the above.
5. What are OP notes? *(page 4)*
- a) Operational
 - b) **Notes to remind the operator of the current situation for future reference.**
 - c) Operational priority.
 - d) All of the above.

CHAPTER EIGHT - COAST GUARD COMMUNICATIONS

A. OVERVIEW

1. Coast Guard communications is an extensive topic from an organizational, operational, and administrative standpoint. The average Auxiliarist does not understand the position of the Coast Guard and FCC in radio regulation enforcement and administration. Chapter Eight explains these relationships, outlines the Coast Guard all station broadcasts, and discusses internal district command structure. Coast Guard communication equipment distribution, call signs, and watchstanding are also addressed.

B. CHAPTER EIGHT GUIDE.

TIME	MAJOR TOPIC	SUBTOPIC	PRESENTATION NOTES
	Frequency Allocation	Management (IRAC) Assignments	
	CG All Station Broadcasts	Urgency Safety Scheduled	
	Organization	District (OPLAN) Equipment Call signs	
	Watchstanding	Auxiliary augmentation	

C. CHAPTER EIGHT STUDY QUESTIONS

1. Since the Coast Guard is a government agency, the frequencies it uses are assigned by?
(page 1)
 - a) FCC
 - b) DHS
 - c) **NTIA**
 - d) Any of the above.
2. The Coast Guard makes three types of all station broadcasts. What are they?
(page 1) (page 2)
 - a) Urgency, scheduled marine information, and weather.
 - b) **Urgency, safety, and scheduled marine information.**
 - c) Urgency, safety, and news.
 - d) Urgency, safety, and weather.
3. Who is responsible for the coordination of the District's communications? (page 2)
 - a) **Chief, Telecommunications Branch (dt).**
 - b) District Commander (d).
 - c) District Staff Officer for Communications (DSO-CM).
 - d) District Commodore (DCO).
4. A radio operator speaks with whose authority? (page 2)
 - a) Auxiliary commander.
 - b) DIRAUX
 - c) **Their commanding officer or Officer-in-Charge.**
 - d) None of the above.
5. Watchstander qualification by an Auxiliary Communications Specialist at a station will usually require completing what criteria?
(page 4)
 - a) Only AUXCOM.
 - b) Only TSO PQS.
 - c) **Communications Watchstander Qualification Guide, COMDTINST M16120.7A (Series).**
 - d) Only A and B.

CHAPTER NINE - RADIO DIRECTION FINDING

A. OVERVIEW

1. Radio Direction Finding (RDF) has been a part of communications since the early days of wireless and a valuable asset in locating target transmitters, whether to assist a distressed situation or to silence an interfering station. Chapter Nine provides a basic knowledge of RDF, its advantages and precautions. Some common RDF equipment is described.

B. CHAPTER NINE GUIDE.

TIME	MAJOR TOPIC	SUBTOPIC	PRESENTATION NOTES
	Introduction	General	
	RDF Applications	Distress EPIRB/ELTs SAR vectoring Hoax's Interference	
	Precautions	Bearing information Trespassing CG control	
	Theory/Operation	Phase relationship LOPs/Fixes True/magnetic bearings	

	Equipment	Commercial Antenna switching	
	Operator Training	Operator skill	

C. NOTE TO THE INSTRUCTOR.

1. If your district is involved in RDF it would benefit the students to present a short briefing on what is available and the local benefits of establishing an RDF facility. Information on the types of equipment locally used and equipment costs would be helpful.

D. CHAPTER NINE STUDY QUESTIONS

1. What type of bearing is usually taken by a mobile and a fixed RDF unit?
(page 3)
 - a) **Mobile units, including vessels, are usually taking relative bearings converting them into magnetic bearings while fixed units usually take True bearings.**
 - b) Magnetic
 - c) True
 - d) None of the above.
2. What are the two basic types of RDF units? (page 1)
 - a) Automatic, electronic
 - b) **Automatic, manual**
 - c) Fixed, handheld
 - d) All of the above.
3. How does a RDF unit determine the LOP? (page 2)
 - a) By measuring the strength of the signal.
 - b) By measuring the strength of the wave front.
 - c) **By drawing a line perpendicular to the wave fronts.**
 - d) By measuring the phase relationship on the omni-directional antenna.

4. What law enforcement powers does an Auxiliarist have when locating an illegal transmitter? (page 2)
- a) Citizens
 - b) Maritime
 - c) None
 - d) A and B
5. Do automatic RDF units give bi-directional LOPs? (page 3)
- a) Yes
 - b) **No**
 - c) Depends on conditions
 - d) Only give an omni-directional LOP
6. What are some of the uses for RDF units? (page 1) (page 2)
- a) **Location of distressed vessel.**
 - b) **Location of distressed beacon.**
 - c) **Location of an interfering signal.**
 - d) **All of the above.**
7. Several LOPs intersecting at a point is called? (page 3)
- a) An intersection.
 - b) **A fix.**
 - c) A point.
 - d) None of the above.
8. The bearing information should only be given to? (page 2)
- a) Any requesting parties.
 - b) **Coast Guard authorized recipients.**
 - c) Boaters.
 - d) All of the above.

CHAPTER TEN - RESCUE 21

A. OVERVIEW

1. Rescue 21 was created to better locate mariners in distress and save lives and property at sea and on navigable rivers. By harnessing today's cutting-edge technology, Rescue 21 enables the Coast Guard to execute all its missions, especially its search and rescue mission, with greater agility and efficiency. The system can also identify suspected hoax calls, thereby eliminating unnecessary response actions and conserving Coast Guard resources.

B. CHAPTER TEN GUIDE.

TIME	MAJOR TOPIC	SUBTOPIC	PRESENTATION NOTES
	Introduction	Coast Guard response Maritime activity	
	Rescue 21	Implementation Infrastructure Search and rescue Use of digital information False Mayday calls Digital Selective calling	
	Disaster Recovery System	Emergency communications package	
	Rescue 21 Success Stories	Success Stories	
	How Does Rescue 21 Work	What happens Rescue 21 consists of	

	Do I Need Rescue 21	Boater and mariners 911	
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C. CHAPTER TEN STUDY QUESTIONS

1. What is causing greater congestion in the nation's waterways? *(page 1)*
 - a) **Both the size and the number of ships using inland, coastal, and international waterways keep on increasing.**
 - b) **The fishing vessels are travelling farther offshore.**
 - c) **The number of personal watercraft and the time spent in recreational boating continues to grow yearly.**
 - d) **All of the above.**
2. How many miles of coastline, navigable rivers, and waterways in the continental United States, Alaska, Guam, Hawaii, and Puerto Rico will Rescue 21 cover when completed? *(page 1)*
 - a) 50,000
 - b) 75,000
 - c) 110,000
 - d) **95,000**
3. How does the Rescue 21 system reduce the amount of time between a call for help and the actual rescue? *(page 1) (page 2)*
 - a) **Through the direction-finding capability and the Digital Selective Calling (DSC).**
 - b) **By using the digital information to increase the range of the maritime communications.**
 - c) **By improving the data accuracy and routing the information to the appropriate responding units.**
 - d) **All of the above.**
4. A ____ watt transmission for about ____ seconds can be received by the Rescue 21 system. *(page 2)*
 - a) **1,2**
 - b) 2,1
 - c) 2,4
 - d) 3,4

5. Can Rescue 21 determine if MAYDAY calls are false? *(page 2)*
- a) **Usually**
 - b) No
 - c) Not part of the system.
 - d) None of the above.
6. What is DSC? *(page 2)*
- a) Digital Source Code.
 - b) Digital Selective Communication.
 - c) Digital Selective Code.
 - d) **Digital Selective Calling.**
7. What is MMSI? *(page 3)*
- a) Maritime Mobile Service Identity.
 - b) **Mobile Maritime Service Identity.**
 - c) Mobile Maritime Service Information.
 - d) Maritime Modular Service Identifier.
8. What is DRS? *(page 3)*
- a) Digital Recovery System.
 - b) Disaster Reporting System.
 - c) **Disaster Recovery System.**
 - d) None of the above.
9. How is a mariner in distress found when Rescue 21 has only one line of bearing?
(page 5)
- a) Narrows the search area.
 - b) **Follow the line of bearing.**
 - c) Cannot, needs two lines of bearing.
 - d) None of the above.
10. Rescue 21 is the ____ for the recreational boater and the professional mariner.
(page 6)
- a) 4-1-1
 - b) **9-1-1**
 - c) 1-2-3
 - d) None of the above.

CHAPTER ELEVEN COMMUNICATIONS STAFF OFFICER RESPONSIBILITIES

A. OVERVIEW

1. Chapter Eleven discusses the duties and responsibilities of Flotilla, Division, and District Communication Staff Officers. These are appointed staff positions who serve at the pleasure of the individual who appoints them. A requirement for a Communications Staff Officer position is completion of an Auxiliary Communications Specialty course.

B. CHAPTER ELEVEN GUIDE.

TIME	MAJOR TOPIC	SUBTOPIC	PRESENTATION NOTES
	FSO-CM	Responsibilities Duties	
	SO-CM	Responsibilities Duties	
	ADSO-CM	Responsibilities Duties	
	DSO-CM	Responsibilities Duties	

C. CHAPTER ELEVEN STUDY QUESTIONS

1. The FSO-CM is appointed by the _____. (*page 1*)
 - a) District Commodore
 - b) **Flotilla Commander**
 - c) Division Commander
 - d) DIRAUX

2. The SO-CM is appointed by the _____. (*page 2*)
- a) District Commodore
 - b) Flotilla Commander
 - c) **Division Commander**
 - d) DIRAUX
3. The ADSO-CM and the DSO-CM are appointed by the _____. (*page 4*)
- a) **District Commodore**
 - b) Flotilla Commander
 - c) Division Commander
 - d) DIRAUX
4. The FSO-CM is primarily concerned with the _____ and the _____. (*page 1*)
- a) **auxiliary fixed land**
 - b) **land mobile radio facilities**
 - c) passing info to National
 - d) **a and b**
5. All communication staff officers should have completed _____ training. (*page 3*)
- a) new member
 - b) **Communications Specialist**
 - c) staff officer
 - d) boating safely
6. The FSO-CM should maintain updated lists of _____, _____, and _____. (*page 1*) (*page 2*)
- a) CAP, RACES, ham clubs.
 - b) Emergency ham clubs, RACES, ARES
 - c) **Flotilla communication specialists, Telecommunication Operators (TCO), radio facilities.**
 - d) VHF marine frequencies, AUXNET frequencies, HF frequencies.
7. _____, _____, and _____ types of radio facilities should be on the list of communication facilities. (*page 1*)
- a) Boat, auto, aircraft
 - b) **Fixed, mobile, portable**
 - c) Amateur, personal, scanner
 - d) Home, auto, handheld

8. ____ or ____ can perform a radio facility inspection. *(page 5)*
- a) FC, FSO-CM
 - b) DCDR, SO-CM
 - c) FSO-CM, FSO-MT
 - d) A communications staff officer, someone who is AUXOP qualified.
9. The _____ can be assigned to develop and implement specific District communication programs. *(page 4)*
- a) DSO-CM
 - b) FSO-CM
 - c) SO-CM
 - d) **ADSO-CM**

