

**U.S. Department of  
Homeland Security  
United States  
Coast Guard**



# **Boat Crew Qualification Handbook, Volume 1 - Boat Crewmember and Engineer *“Train, Maintain, Operate”***



**BQH 16115.1**

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Commandant  
United States Coast Guard

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## BOAT CREW QUALIFICATION HANDBOOK, VOLUME 1 - BOAT CREWMEMBER AND ENGINEER – BQH 16115.1

Subj: BOAT CREW QUALIFICATION HANDBOOK, VOLUME 1 - BOAT CREWMEMBER AND ENGINEER

1. PURPOSE. This Handbook provides standardized performance objectives and guidance for the purpose of training and certifying personnel as crewmembers on Coast Guard boats.
2. DIRECTIVES AFFECTED. U.S. Coast Guard Boat Operations and Training (BOAT) Manual, Volume I, COMDTINST M16114.32E, and U.S. Coast Guard Boat Operations and Training (BOAT) Manual, Volume II, COMDTINST M16114.33D, have been reorganized.
3. DISCUSSION. This Handbook provides guidance on how to engage in safe and effective boat operations.
4. MAJOR CHANGES. No major changes.
5. DISCLAIMER. This guidance is not a substitute for applicable legal requirements, nor is it itself a rule. It is intended to provide operational guidance for Coast Guard personnel and is not intended to nor does it impose legally-binding requirements on any party outside the Coast Guard.
6. IMPACT ASSESSMENT. No impact assessment warranted.
7. ENVIRONMENTAL ASPECT AND IMPACT CONSIDERATIONS.
  - a. The development of this Handbook and the general guidance contained within it have been thoroughly reviewed by the originating office in conjunction with the Office of Environmental Management, and are categorically excluded (CE) under current USCG CE #33 from further environmental analysis, in accordance with Section 2.B.2. and Figure 2-1 of the National Environmental Policy Act Implementing Procedures and Policy for Considering Environmental Impacts, COMDTINST M16475.1 (series). Because this Handbook contains guidance documents that implement, without substantive change, the applicable Commandant Instruction and other guidance documents, Coast Guard categorical exclusion #33 is appropriate.

- b. This Handbook will not have any of the following: significant cumulative impacts on the human environment; substantial controversy or substantial change to existing environmental conditions; or inconsistencies with any Federal, State, or local laws or administrative determinations relating to the environment. All future specific actions resulting from the general guidance in this Handbook shall be individually evaluated for compliance with the National Environmental Policy Act (NEPA), Department of Homeland Security (DHS) and Coast Guard NEPA policy, and compliance with all other environmental mandates.
7. DISTRIBUTION. No paper distribution will be made of this Handbook. An electronic version will be located on the Office of Boat Forces (CG-731) Portal site:  
<https://cg.portal.uscg.mil/units/cg731/SitePages/Manuals.aspx>.
8. FORMS/ REPORTS. None
9. REQUESTS FOR CHANGES. To recommend edits and changes to this Handbook, please submit a formal request at the following link:  
<https://cg.portal.uscg.mil/communities/bfco/doctrine/SitePages/Home.aspx>.

J. BRIAN RUSH /s/  
U.S. Coast Guard  
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# Table of Contents

<b>PART 1 INTRODUCTION TO CG BOAT CREW QUALIFICATION SYSTEM.....</b>	<b>1-1</b>
CHAPTER 1 HOW TO USE THIS HANDBOOK .....	1-2
CHAPTER 2 BOAT CREW QUALIFICATIONS.....	1-3
A.1. Qualification List.....	1-3
CHAPTER 3 QUALIFICATION SYSTEM STRUCTURE.....	1-4
A.1. Organization .....	1-4
CHAPTER 4 TASK DESIGNATIONS.....	1-5
A.1. Task Designation Components .....	1-5
A.2. Task Structure.....	1-5
A.3. Task Completion Requirement .....	1-5
CHAPTER 5 OVERVIEW OF QUALIFICATION TASKS.....	1-6
A.1. Organization .....	1-6
A.2. Sample Task .....	1-6
A.3. References.....	1-7
A.4. Conditions .....	1-7
A.5. Standards.....	1-8
A.6. Criteria.....	1-8
CHAPTER 6 INSTRUCTOR GUIDANCE.....	1-9
A.1. General Process.....	1-9
A.2. Provide Chapter 3.....	1-9
A.3. Assign Task .....	1-9
A.4. Assign Reading.....	1-10
A.5. Confirm Knowledge .....	1-10
A.6. Demonstrate Task .....	1-10
A.7. Walk- Through Task.....	1-10
A.8. Monitor Progress.....	1-10
A.9. Evaluate.....	1-10
A.10. Sign-Off.....	1-10
A.11. Records.....	1-10
A.12. Changes to Qualification Requirement.....	1-11
A.13. Comprehensive Examination and Practical Assessment .....	1-11
A.14. Recommend Certification.....	1-11
CHAPTER 7 TRAINEE GUIDANCE .....	1-12
A.1. Introduction.....	1-12
A.2. Qualification Learning Tips .....	1-12
<b>PART 2 BOAT CREW MEMBER QUALIFICATION .....</b>	<b>2-1</b>
CHAPTER 1 TASK ACCOMPLISHMENT RECORD FOR BOAT CREW MEMBER.....	2-2
CHAPTER 2 BOAT CREW MEMBER QUALIFICATION TASKS.....	2-7
Section A. Crew Efficiency Factors, Risk Factors and Team Coordination.....	2-8
Section B. Capacity, Physical Fitness, First-Aid, and Survival.....	2-11
Section C. Marlinespike Seamanship, Boat Nomenclature, Nautical Terminology, and Basic Stability ...	2-29
Section D. Boat Handling .....	2-38
<b>TASK BCM-04-13-TYPE: CUTTERBOAT LAUNCH AND RECOVERY-SINGLE POINT DAVIT .....</b>	<b>2-51</b>
Section E. Communications .....	2-56
Section F. Navigation.....	2-60
Section G. Mission-Oriented Operations.....	2-79
Section H. Boat Crew Communication Systems .....	2-104
Section I. Forward Looking Infrared RADAR (FLIR) Imaging Systems .....	2-111
CHAPTER 3 BOAT CREW MEMBER TRAINEE STUDY GUIDE .....	2-113



Section A.	Reading Assignments – Crew Efficiency Factors, Risk Factors and Team Coordination .	2-114
Section B.	Reading Assignments – Physical Fitness, First Aid, and Survival.....	2-116
Section C.	Reading Assignments – Marlinespike Seamanship, Boat Nomenclature, Nautical Terminology, and Basic Stability.....	2-125
Section D.	Reading Assignments – Boat Handling .....	2-130
Section E.	Reading Assignments – Communications .....	2-138
Section F.	Reading Assignments – Navigation .....	2-140
Section G.	Reading Assignments – Mission-Oriented Operations.....	2-148
Section H.	Reading Assignments – Boat Crew Communication System.....	2-156
Section I.	Reading Assignments – FLIR Imaging Systems .....	2-159
<b>PART 3 ENGINEER QUALIFICATION .....</b>		<b>3-1</b>
CHAPTER 1 TASK ACCOMPLISHMENT RECORD FOR ENGINEER .....		3-2
CHAPTER 2 ENGINEER QUALIFICATION TASKS .....		3-5
Section A.	Pre-Operational Checks.....	3-6
Section B.	Propulsion System Start Checks and Casualty Responses.....	3-20
Section C.	Boat Disabling Casualties.....	3-33
Section D.	Post-Operational Checks.....	3-37
CHAPTER 3 ENGINEER TRAINEE STUDY GUIDE.....		3-38
Section A.	Reading Assignments – Pre-Operational Checks .....	3-39
Section B.	Reading Assignments – Propulsion System Start Checks and Casualty Responses.....	3-47
Section C.	Reading Assignments – Boat Disabling Casualties.....	3-57
Section D.	Reading Assignments – Post-Operational Checks.....	3-60
<b>APPENDIX A GLOSSARY.....</b>		<b>A-1</b>
<b>APPENDIX B LIST OF ACRONYMS .....</b>		<b>B-1</b>



## List of Tables

TABLE 1-1 BOAT CREW QUALIFICATION PARTS .....	1-3
TABLE 1-2 QUALIFICATION PART STRUCTURE.....	1-4
TABLE 1-3 WIND AND SEA CONDITIONS DEFINITIONS.....	1-7
TABLE 1-4 TASK PERFORMANCE STANDARDS .....	1-8
TABLE 1-5 GENERAL TASK PROCESS .....	1-9





# PART 1

## Introduction to CG Boat Crew Qualification System

**In this Part** This Part contains the following Chapters:

Chapter	Title	See Page
1	<a href="#">How to Use this Handbook</a>	1-2
2	<a href="#">Boat Crew Qualifications</a>	1-3
3	<a href="#">Qualification System Structure</a>	1-4
4	<a href="#">Task Designations</a>	1-5
5	<a href="#">Overview of Qualification Tasks</a>	1-6
6	<a href="#">Instructor Guidance</a>	1-9
7	<a href="#">Trainee Guidance</a>	1-12

**Instructors** Instructors have several key responsibilities. They must:

- (01) Be proficient with all installed boat equipment and operational procedures. All instructors must ensure that their boat crew position certifications remain current.
- (02) Instruct in a way which maintains a high level of professionalism yet encourages each trainee toward challenges that the instructor understands to be within the trainee’s grasp.
- (03) Completely execute the training qualification process described in this Part.



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## CHAPTER 1

### How to Use this Handbook

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**References for this Chapter**

Commandant directives and other official reference documents are listed here. References will be provided at the beginning of each Chapter.

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**Part Layout**

The first page of each *Part* includes an *In this Part*, which lists each Chapter title. In the left column of most pages are block titles, which provide descriptive words for the corresponding blocks of text to their right.

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**Warnings, Cautions, and Notes**

The following definitions apply to “Warnings, Cautions, and Notes” found throughout the Handbook.

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**Warning**

**WARNING**  Operating procedures or techniques that must be carefully followed to avoid personal injury or loss of life.

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**Caution**

**CAUTION!** Operating procedures or techniques that must be carefully followed to avoid equipment damage.

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**Note**

**NOTE**  An operating procedure or technique that is essential to emphasize.

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## CHAPTER 2

### Boat Crew Qualifications

**A.1.  
Qualification  
List**

The *qualification Parts* are:

Qualification	Part
Boat Crew Member Qualification	PART 2
Engineer Qualification	PART 3
<p><b>NOTE</b> <i>↪</i> Tactical and Pursuit Lvl IV qualification programs are contained in U.S. Coast Guard Boat Operations and Training (BOAT) Manual, Volume III, COMDTINST M16114.42</p>	

**Table 1-1  
Boat Crew Qualification Parts**



## CHAPTER 3

### Qualification System Structure

**A.1.  
Organization**

Each *qualification part* is structured as follows:

Chapter	Title	Provides:
1	<i>Task Accomplishment Record</i>	The Instructor's task-level record of trainee's qualification progress. Contains <u>Instructor's initials</u> and <u>task completion date</u> signifying the trainee successfully performed the task in accordance with the prescribed standards.
2	<i>Qualification Tasks</i>  This Chapter is sub-divided into lettered <i>sections</i> representing training <i>divisions</i> . (e.g. Section B. Physical Fitness, First Aid and Survival.)	The instructor's criterion-level record of trainee's qualification progress. Contains:  (01) <u>Instructor's initials</u> and <u>completion date</u> , signifying the trainee successfully performed each criterion in accordance with the prescribed standards.  (02) <u>Comments</u> . Circumstances or conditions which may affect task completion (including if task was attempted/completed under more arduous conditions than those required) and failure to complete any performance criterion.
3	<i>Trainee Study Guide</i>  This Chapter's sections match those found in Chapter 2.	Reading assignments and questions.  Chapter 3 is to be removed and retained by the trainee.

**Table 1-2**  
**Qualification Part Structure**

**NOTE**

Boat Crew Qualification Handbooks should be reproduced locally and provided to trainees.



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## CHAPTER 4

### Task Designations

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#### A.1. Task Designation Components

A task designation is comprised of three elements followed by the word “ANY” or “TYPE.” The three elements of a task designation are:

- (01) Qualification
- (02) Division Designation Number
- (03) Task Designation Number

Below are two examples:

#### A.2. Task Structure

A task designation is a combination of qualification, task sequence numbers and the word “ANY” or “TYPE.” Below are two examples:

BCM-01-01-ANY

BCM-07-05-TYPE

ANY: task can be accomplished on any boat, *provided the boat is capable of the task*. ANY tasks are considered transferable from boat to boat and, therefore, are to be completed only once.

TYPE: task must be done individually for each different boat type for which qualification is desired.

Task designation number. The task is a knowledge or skill objective to be performed.

Division designation number

Qualification (e.g. Boat Crew Member).

#### A.3. Task Completion Requirement

All tasks shall be completed unless specifically stated otherwise. When situations exist that preclude a member from completing a task, the task may be eligible for *deferment*, per *U.S. Coast Guard Boat Operations and Training (BOAT) Manual, Volume II, COMDTINST M16114.33 (series)*.

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## CHAPTER 5

### Overview of Qualification Tasks

#### A.1. Organization

Each task is organized into four components:

- (01) Reference(s)
- (02) Conditions
- (03) Standards
- (04) Performance Criteria

Locate the four components in the *sample task* shown below.

#### A.2. Sample Task

<b>TASK ENG-01-33</b>	<b>Identify the Breaker Panels</b>		
<b>TYPE</b>			
<b>Reference</b>	a. <i>45 FT Response Boat-Medium (RB-M) Operator's Handbook, COMDTINST M16114.41 (series)</i>		
<b>Conditions</b>	Task should be performed at any time aboard any of the unit's standard boats without the use of reference or prompting.		
<b>Standards</b>	Update per new RB-M tasks.		
<b>Performance Criteria</b>			<b>Completed (Initials)</b>
Update per new RB-M tasks.			<u>IMU</u>
Update per new RB-M tasks.			<u>IMU</u>
Update per new RB-M tasks.			<u>IMU</u>
<b>Instructor</b>	<b>BMI I. M. UNDERWAY</b>	<b>Date</b>	<b>10DEC13</b>
<b>Comments</b>	<hr/> <hr/> <hr/>		



**A.3. References** *References* are the information sources which describe how to do the task.

**A.4. Conditions** *Conditions* are the environmental and physical circumstances under which the tasks must be performed. Any tools or special equipment needed for the completion of the task are listed here. The conditions listed with each task must be met. The following table describes task conditions and standards terms that are not contained in the stated references used in this Handbook:

Term	Definition	
Sea Conditions	<b>Calm</b>	Seas less than 4 FT
	<b>Moderate</b>	Seas 4 to 10 FT
	<b>Heavy</b>	Platform specific. See U.S. Coast Guard Boat Operations and Training (BOAT) Manual, Volume I, COMDTINST M16114.32 (series).
Wind Conditions	<b>Calm</b>	Less than 1 to 6 knots.
	<b>Moderate</b>	7 to 19 knots
	<b>Heavy</b>	20 knots and above.
<p>Note: During qualification, the minimum sea conditions are just that, minimums. The qualification period should include demonstration of skills during wind and sea conditions appropriate for the area. <i>The unit CO/OIC should consider maximum weather limitations in conjunction with Commandant policies to ensure trainees gradually build confidence and platform proficiency.</i> The trainee must practice in varied conditions within the above ranges and not just the minimums prior to certification.</p>		

**Table 1-3**  
**Wind and Sea Conditions Definitions**



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**A.5. Standards** *Standards* describe how well a task must be performed in order to be acceptable. Standards will often refer to *task criteria* to put steps into logical order for learning. Successful task completion is a function of how well a trainee is able to complete the task without assistance. Generally, the task performance standards are as follows:

Type	Requirement
Parameter	A specific standard must be met, e.g. “recover a man overboard within X minutes.” X is the parameter.
Knowledge	Recite, from memory, the required information. <i>Instructors may wish to ask questions concerning particular steps for accomplishment in order to measure the trainee’s total comprehension of the subject matter.</i>
Skill	Perform tasks without prompting or assistance from the instructor. (Prompting should not be confused with cueing. A cue is a signal, such as a word or action, used to initiate another step in a procedure, etc. Example: when the instructor announces “Man Overboard,” that is a cue, not a prompt.)  Each task demonstration must follow the correct sequence with little or no hesitation between the steps for accomplishment.

**Table 1-4**  
**Task Performance Standards**

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**A.6. Criteria** *Criteria* are the specific learning items required for each task. Criteria work hand-in-hand with *Reading Assignments* to move the trainee from gaining knowledge (facts, concepts and principles) to demonstrating skills.

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## CHAPTER 6

### Instructor Guidance

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**A.1. General Process**

Tasks are meant to be learned through constant practice under the instructor’s guidance and evaluation. The process normally proceeds as follows:

<b>Initial Preparation</b>
Provide Chapter 3 of the appropriate <i>qualification Part</i> (e.g. <i>Part 2, Boat Crew Member</i> ) to trainee
<b>Qualification Process:</b>
Assign the task
Assign reading
Confirm the completion of the reading assignment
Demonstrate the task
Walk-through the task
Monitor performance
Evaluate performance
Sign-off the task
Maintain records
<b>Certification Process:</b>
Schedule Boat Crew Examination Board (BCEB) comprehensive examination
Schedule Practical assessment.
BCEB: recommend certification

Table 1-5  
 General Task Process

**A.2. Provide Chapter 3**

Remove *Chapter 3* from the appropriate Part and give it to the trainee to retain.

**A.3. Assign Task**

While *divisions* may at times be done concurrently, the tasks within each division should be accomplished in the order listed.

- (01) Tasks are based on the crew position and type of boat for which the trainee is being qualified. Where needed, *notes* specifying applicability may be found at the beginning of each task.
- (02) Tasks designated as TYPE are considered to be specific to each boat type. These must be completed individually for each desired boat type qualification.
- (03) Tasks designated as ANY are considered general in nature. Completion of these tasks on any boat type is sufficient for the qualification process and need not be repeated when qualification is desired on another boat type.



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**A.4. Assign Reading**

Provide the trainee the reading assignments and study guide questions.

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**A.5. Confirm Knowledge**

Review study guide questions for completeness and accuracy. Clarify any misunderstandings the trainee might have about the material.

Instructors should identify consistent problem areas for trainees, and forward recommendations for improvements via the chain of command.

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**A.6. Demonstrate Task**

Demonstrate the steps required to complete the task. During the demonstration, the instructor should narrate the procedures, including problem solving (also known as “thinking out loud”).

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**A.7. Walk-Through Task**

Walking a trainee through a procedure can take several forms and sessions. Walk-throughs typically begin with the trainee observing the instructor, while describing to the instructor the instructor’s actions and any problem solving. Next, the trainee performs the procedure for the instructor, including describing any problem solving. There is no limit to the number of times the instructor performs the walk-through, however, trainee understanding must be ensured before continuing.

Successive walk-throughs should be used to allow the trainee to master basic skills before attempting more complex skills.

---

**A.8. Monitor Progress**

Qualification does not end the first time a task is successfully completed; it ends when successful task completion can be met consistently, during operations and training.

---

**A.9. Evaluate**

Verify that the trainee’s performance meets the standard. This includes two parts:

- (01) The trainee must perform the task to established standards and conditions.
- (02) The trainee must perform the task with no assistance.

The trainee is expected to perform each task on a consistent basis in accordance with the established standards and conditions.

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**A.10. Sign-Off**

The instructor signs the task at the bottom of the page when he/she is confident that the trainee can perform the task consistently, while unsupervised.

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**A.11. Records**

Maintain records as follows:

Paper documentation: Transfer records to individual members following qualification entry in the e-Training system (e.g. Abstract of Operations System (AOPS) / Training Management Tool (TMT)). *It is the responsibility of the member to retain the original completed qualification tasks in his/her personal records.*

Electronic documentation: Make e-Training entries as each task is completed and/or when all qualification tasks are complete.

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**A.12. Changes to Qualification Requirement**

If qualification requirements change due to issuance of a new Handbook or change to a Handbook, then a qualified boat crewmember is grandfathered, unless specifically stated otherwise. A member may only be grandfathered if the member was previously qualified or had started the qualification process prior to the effective date of the new Handbook or change.

---

**A.13. Comprehensive Examination and Practical Assessment**

Inform the unit CO/OIC when all qualification tasks are completed. When the trainee has completed all of the required tasks for the position and boat type, the qualification process is complete.

The instructor should inform the Boat Crew Examination Board and schedule the trainee for a comprehensive examination and practical assessment.

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**A.14. Recommend Certification**

When the Boat Crew Examination Board is satisfied with the trainee's performance and abilities, they may recommend to the unit CO/OIC that the trainee be certified.

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## CHAPTER 7

### Trainee Guidance

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#### A.1. Introduction

This guidance is written to you, the trainee. *What* you learn during qualification, as well as *how well* you learn, will impact your future, as well as those who follow you. Taking the time to thoroughly learn the qualification knowledge and skills will prove invaluable when you advance to the role of instructor.

If you have not read the material in Chapters 1 through 5 of this Part, do so.

---

#### A.2. Qualification Learning Tips

The following tips will help you in your qualification process:

- (01) You will have many reading assignments. Always make sure that you are using up-to-date material. Commandant directives may be superseded by record message traffic.
  - (02) Always complete the written questions, and if an answer is found to be in error, correct it.
  - (03) If information must be recited from memory, practice reciting information out loud.
  - (04) Help improve training materials. Often trainees are in a position to spot inconsistencies in publications, procedures, etc. When this happens, work with your instructor to resolve any issues, and when needed, report recommendations up the chain of command.
-



# PART 2

## Boat Crew Member Qualification

**Introduction** This Part contains a collection of tasks, which must be learned, practiced, and performed by the trainee. These tasks represent the minimum elements of skill and knowledge necessary for safe and effective performance of a Coast Guard Boat Crew Member.

**NOTE** This Volume is not meant to be ordered for purposes of obtaining individual qualification tasks. Qualification tasks should be reproduced locally and provided for trainees.

**In this Part** This Part contains the following chapters:

Chapter	Title	See Page
1	<a href="#">Task Accomplishment Record for Boat Crew Member</a>	<a href="#">2-2</a>
2	<a href="#">Boat Crew Member Qualification Tasks</a>	<a href="#">2-7</a>
3	Boat Crew Member Trainee Study Guide	<a href="#">2-113</a>




---

## CHAPTER 1

### Task Accomplishment Record for Boat Crew Member

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**NOTE**

Instructors shall use a copy of this form (for each trainee) to record accomplishment of tasks. Following task completion, task shall be recorded in the e-Training system.

TRAINEE NAME: \_\_\_\_\_ RATE: \_\_\_\_\_

INSTRUCTOR NAME: \_\_\_\_\_ RATE: \_\_\_\_\_

POSITION/QUALIFICATION CODE TO BE TRAINED FOR: \_\_\_\_\_

**NOTE**

Instructors should line through those tasks not applicable to this qualification and enter them as deferred tasks in the e-Training system.

Task	Date Started	Date Completed	Instructor's Initials
BCM-01-01-ANY			
BCM-01-02-ANY			
BCM-01-03-ANY			
BCM-02-01-ANY			
BCM-02-02-ANY			
BCM-02-03-ANY			
BCM-02-04-ANY			
BCM-02-05-ANY			
BCM-02-06-ANY			
BCM-02-07-ANY			
BCM-02-08-ANY			
BCM-02-09-ANY			
BCM-02-10-ANY			
BCM-02-11-ANY			
BCM-02-12-ANY			
BCM-02-13-ANY			
BCM-02-14-ANY			

Part 2 – Boat Crew Member Qualification  
 Chapter 1 - Task Accomplishment Record for Boat Crew Member



<b>Task</b>	<b>Date Started</b>	<b>Date Completed</b>	<b>Instructor's Initials</b>
BCM-02-15-TYPE			
BCM-02-16-TYPE			
BCM-02-17-ANY			
BCM-02-18-ANY			
BCM-02-19-TYPE			
BCM-03-01-ANY			
BCM-03-02-TYPE			
BCM-03-03-TYPE			
BCM-03-04-TYPE			
BCM-03-05-TYPE			
BCM-03-06-ANY			
BCM-03-07-ANY			
BCM-03-08-ANY			
BCM-03-09-ANY			
BCM-03-10-ANY			
BCM-04-01-ANY			
BCM-04-02-TYPE			
BCM-04-03-TYPE			
BCM-04-04-TYPE			
BCM-04-05-ANY			
BCM-04-06-ANY			
BCM-04-07-ANY			
BCM-04-08-ANY			
BCM-04-09-TYPE			
BCM-04-10-TYPE			
BCM-04-11-TYPE			
BCM-04-12-TYPE			
BCM-04-13-TYPE			



Part 2 – Boat Crew Member Qualification  
Chapter 1 - Task Accomplishment Record for Boat Crew Member

Task	Date Started	Date Completed	Instructor's Initials
BCM-04-14-TYPE			
BCM-04-15-TYPE			
BCM-05-01-ANY			
BCM-05-02-ANY			
BCM-05-03-ANY			
BCM-05-04-ANY			
BCM-06-01-ANY			
BCM-06-02-ANY			
BCM-06-03-ANY			
BCM-06-04-ANY			
BCM-06-05-ANY			
BCM-06-06-ANY			
BCM-06-07-ANY			
BCM-06-08-ANY			
BCM-06-09-TYPE			
BCM-06-10-ANY			
BCM-06-11-ANY			
BCM-06-12-TYPE			
BCM-06-13 TYPE			
BCM-06-14-TYPE	Not currently assigned.		
BCM-06-15-TYPE			
BCM-06-16-ANY			
BCM-07-01-TYPE			
BCM-07-02-TYPE			
BCM-07-03-ANY			
BCM-07-04-ANY			
BCM-07-05-TYPE			
BCM-07-06-ANY			
BCM-07-07-TYPE			

Part 2 – Boat Crew Member Qualification  
 Chapter 1 - Task Accomplishment Record for Boat Crew Member



<b>Task</b>	<b>Date Started</b>	<b>Date Completed</b>	<b>Instructor's Initials</b>
BCM-07-08-ANY			
BCM-07-09-ANY			
BCM-07-10-TYPE			
BCM-07-11-ANY			
BCM-07-12-TYPE			
BCM-07-13-ANY			
BCM-07-14-TYPE			
BCM-07-15-TYPE			
BCM-07-16-ANY			
BCM-07-17-TYPE			
BCM-07-18-ANY			
BCM-07-19-ANY			
BCM-07-20-TYPE			
BCM-07-21-TYPE			
BCM-07-22-TYPE			
BCM-07-23-TYPE	Not currently assigned.		
BCM-07-24-TYPE			
BCM-07-25-TYPE			
BCM-07-26-TYPE			
BCM-08-01-ANY			
BCM-08-02-ANY			
BCM-08-03-ANY			
BCM-08-04-ANY			
BCM-08-05-ANY			
BCM-08-06-ANY			
BCM-08-07-ANY			
BCM-09-01-ANY	Not currently assigned.		
BCM-09-02-ANY	Not currently assigned.		



Part 2 – Boat Crew Member Qualification  
Chapter 1 - Task Accomplishment Record for Boat Crew Member

<b>Task</b>	<b>Date Started</b>	<b>Date Completed</b>	<b>Instructor's Initials</b>
BCM-09-03-ANY	Not currently assigned.		
BCM-09-04-ANY	Not currently assigned.		
BCM-09-05-ANY			
BCM-09-06-ANY			




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## CHAPTER 2

### Boat Crew Member Qualification Tasks

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**Introduction**

The following are the instructions for this Chapter:

- (01) The purpose of this Chapter is to provide guidance on the trainee's progress through the qualification tasks.
- (02) The instructor should present the tasks to the trainee in a logical order using the instructions provided in *Part 1*.
- (03) Tasks should be signed, dated, and transferred into the e-Training system when the instructor is satisfied that the trainee can consistently perform a task in accordance with all standards and conditions.

**In this Chapter**

This Chapter contains the following sections:

Section	Title	See Page
A	Crew Efficiency Factors, Risk Factors and Team Coordination	2-8
B	Capacity, Physical Fitness, First-Aid, and Survival	2-11
C	Marlinespike Seamanship, Boat Nomenclature, Nautical Terminology, and Basic Stability	2-29
D	Boat Handling	2-38
E	Communications	2-56
F	Navigation	2-60
G	Mission-Oriented Operations	2-79
H	Boat Crew Communication Systems	2-104
I	Forward Looking Infrared RADAR (FLIR) Imaging Systems	2-111



## Section A. Crew Efficiency Factors, Risk Factors and Team Coordination

**Introduction** The following are objectives of Division One:

- (01) **Demonstrate** knowledge of the factors that affect crew performance.
- (02) **Attend** Team Coordination Training.

**In this Section** This Section contains the following tasks:

Task Number	Task	See Page
BCM-01-01-ANY	Crew Fatigue	2-8
BCM-01-02-ANY	Motion Sickness	2-9
BCM-01-03-ANY	Team Coordination Training (TCT)	2-10

**TASK BCM-01-01-ANY: Crew Fatigue**

**Reference** a. *Boat Crew Handbook – Boat Operations, BCH16114.1 (series)*

**Conditions** Task should be performed at any time, at facilities available to the unit.

**Standards** Trainee must demonstrate knowledge of each task to the minimum standards included in each performance step.

Performance Criteria	Completed (Initials)
1. State the situations that may cause fatigue.	_____
1. State the crew’s responsibility.	_____
2. State the primary symptoms of fatigue.	_____
3. State the prevention measures.	_____
4. State underway limits for unit’s boats.	_____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments** \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



**TASK BCM-01-02-ANY: Motion Sickness**

<b>References</b>	a. <i>Boat Crew Handbook – First Aid, BCH16114.5 (series)</i>
<b>Conditions</b>	Task should be performed at any time, at facilities available to the unit.
<b>Standards</b>	Trainee must demonstrate knowledge of each task to the minimum standards included in each performance step.

Performance Criteria	Completed (Initials)
1. State the causes of motion sickness.	_____
2. List the symptoms of motion sickness.	_____
3. List the prevention and medication for motion sickness.	_____
4. State when best to take anti-motion sickness medication.	_____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments**  
 \_\_\_\_\_  
 \_\_\_\_\_



**TASK BCM-01-03-ANY: Team Coordination Training (TCT)**

**References**

- a. *Team Coordination Training, COMDTINST M1541.1 (series)*
- b. *Operational Risk Management, COMDTINST 3500.3 (series)*
- c. *Boat Forces Standardized Drill Checklists*

**Conditions**

Task should be performed at any time, at facilities available to the unit.

**Standards**

Trainee must attend the training as prescribed reference (a) or successful completion of CG Institute Correspondence Course 0652-2.

**NOTE**

Completion of TCT training or completion of the CG Institute TCT course must be entered into the e-Training system.

Performance Criteria	Completed (Initials)
1. Date initial training completed: _____	_____
2. State importance of a crew communications and operational communications plan encompassing boat-to-boat, boat-to-shore, shore-to-boat. Include discussion of cellular phone technology and policy, backup radio use and location.	_____
3. Conduct risk assessment for sortie using appropriate risk management tools (SPE, GAR or other) from TCT/ORM and include discussion of risks as part of crew briefs.	_____
4. State the meaning of the standardized drill checklist item “Monitor each other’s performance, assist and back-up each other’s actions and decisions.”	_____

**Instructor**

**Date**

**Comments**




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## Section B. Capacity, Physical Fitness, First-Aid, and Survival

---

### Introduction

The following are objectives of Division Two:

- (01) **Achieve and maintain** the level of physical conditioning necessary to safely and properly carry out the duties of a Boat Crew Member aboard a Coast Guard boat.
- (02) **Identify and become** proficient in those skills necessary for coping with open water survival situations.
- (03) **Effectively** use all standard boat crew signaling and survival equipment.

### In this Section

This Section contains the following tasks:

Task Number	Task	See Page
BCM-02-01-ANY	Personal Physical Fitness and Vision	2-12
BCM-02-02-ANY	Crew First-Aid Responsibility	2-12
BCM-02-03-ANY	Demonstrate Adult, Child, and Infant CPR	2-13
BCM-02-04-ANY	Don the Type III PFD	2-13
BCM-02-05-ANY	Don Anti Exposure Coveralls	2-14
BCM-02-06-ANY	Don the Boat Crew Dry Suit	2-14
BCM-02-07-ANY	Identify Boat Crew Survival Vest Equipment	2-15
BCM-02-08-ANY	Use the Emergency Signaling Mirror	2-15
BCM-02-09-ANY	Use the MK-124 Smoke and Illumination Signal	2-16
BCM-02-10-ANY	Use the MK-79 Illumination Signal Kit	2-17
BCM-02-11-ANY	Operate the Distress Signal Light	2-18
BCM-02-12-ANY	Operate the Personal Locator Beacon	2-18
BCM-02-13-ANY	Don the Boat Crew Survival Vest	2-19
BCM-02-14-ANY	Don the Automatic Inflatable PFD	2-20
BCM-02-15-TYPE	Rescue and Survival Raft Procedures	2-21
BCM-02-16-TYPE	Boat Egress Principles and Procedures	2-22
BCM-02-17-ANY	Open Water Survival Skills	2-26
BCM-02-18-ANY	Perform Water Survival Exercise	2-27
BCM-02-19-TYPE	Identify and Demonstrate PPE and Safety Equipment for Heavy Weather	2-28



**TASK BCM-02-01-ANY: Personal Physical Fitness and Vision**

<b>Reference</b>	a. <i>U. S. Coast Guard Boat Operations and Training (BOAT) Manual Volume II, COMDTINST M16114.33 (series)</i>
<b>Conditions</b>	Vision examination may be conducted at any time. Physical fitness tasks are completed per reference (a).
<b>Standards</b>	Trainee must demonstrate the ability to perform the requirements set forth in the above reference.

Performance Criteria	Completed (Initials)
3. Demonstrate normal color vision using the Farnsworth Lantern Test or the Pseudoisochromatic Plate Test.	_____
2. Accomplish all physical fitness requirements in accordance with reference (a).	_____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments** \_\_\_\_\_

\_\_\_\_\_

**TASK BCM-02-02-ANY: Crew First-Aid Responsibility**

<b>References</b>	a. <i>Boat Crew Handbook – First Aid, BCH16114.5</i> b. <i>Certifying Organization’s Training Manual</i>
<b>Conditions</b>	Task should be performed at any time, at facilities available to the unit. Trainee must accomplish task without prompting or use of a reference.
<b>Standards</b>	Complete initial certification on one of the following: American Red Cross, National Safety Council, American Heart Association or American Safety and Health Institute First-Aid Course.

Performance Criteria	Completed (Initials)
1. Certification Type and Date course completed. Course: _____ Date: ___/___/___	_____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments** \_\_\_\_\_

\_\_\_\_\_



**TASK BCM-02-03-ANY: Demonstrate Adult, Child, and Infant CPR**

**References**

- a. *Boat Crew Handbook – First Aid, BCH16114.5*
- b. *Certifying Organization’s Training Manual*

**Standards**

Complete initial certification on one of the following: American Red Cross, American Heart Association, National Safety Council, or American Safety and Health Institute CPR course.

Performance Criteria	Completed (Initials)
1. Certification Type and Date course completed. Course: _____ Date: __/__/__	_____

**Instructor** \_\_\_\_\_

**Date** \_\_\_\_\_

**Comments**

\_\_\_\_\_

\_\_\_\_\_

**TASK BCM-02-04-ANY: Don the Type III PFD**

**Reference**

- a. *Rescue and Survival Systems Manual, COMDTINST M10470.10 (series)*
- b. *Boat Crew Handbook - Rescue and Survival Procedures, BCH 16114.2 (series)*

**Conditions**

Task should be performed at any time, at facilities available to the unit.

**Standards**

In response to the instructor, the trainee shall, without error, don the Type III PFD.

Performance Criteria	Completed (Initials)
1. Demonstrate proper donning of the Type III PFD and adjust for proper fit.	_____
2. State when the Type III PFD is required to be worn.	_____

**Instructor** \_\_\_\_\_

**Date** \_\_\_\_\_

**Comments**

\_\_\_\_\_

\_\_\_\_\_



**TASK BCM-02-05-ANY: Don Anti-Exposure Coveralls**

<b>Reference</b>	a. <i>Rescue and Survival Systems Manual, COMDTINST M10470.10 (series)</i> b. <i>Boat Crew Handbook - Rescue and Survival Procedures, BCH 16114.2 (series)</i>
<b>Conditions</b>	Task should be performed at any time, at facilities available to the unit.
<b>Standards</b>	In response to the instructor, the trainee shall, without error, don the anti-exposure coveralls.

Performance Criteria	Completed (Initials)
1. Demonstrate proper donning of the anti-exposure coveralls and adjust for proper fit.	_____
2. Demonstrate proper use of the special construction features of the anti-exposure coveralls (i.e. zipper closures; ankle, thigh and wrist straps; pillow; waist belt and hood, and state how these increase hypothermia protection when Used in the water.	_____
3. State when the anti-exposure coveralls are required to be worn.	_____
4. Demonstrate donning attached hood.	_____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments** \_\_\_\_\_  
\_\_\_\_\_

**TASK BCM-02-06-ANY: Don the Boat Crew Dry Suit**

<b>Reference</b>	a. <i>Rescue and Survival Systems Manual, COMDTINST M10470.10 (series)</i> b. <i>Boat Crew Handbook - Rescue and Survival Procedures, BCH 16114.2 (series)</i>
<b>Conditions</b>	Task should be performed at any time, at facilities available to the unit.
<b>Standards</b>	In response to the instructor, the trainee shall, without error, don a boat crew dry suit.

**NOTE** 🖐️

Task MAY BE DEFERRED for units not meeting the criteria outlined in reference (a).

Performance Criteria	Completed (Initials)
1. State the proper thermal protective layers to be worn under the boat crew dry suit.	_____
<b>WARNING</b> 🖐️ Cotton undergarments other than personal underwear are NOT authorized.	
2. Demonstrate proper donning of the boat crew dry suit and adjust for proper fit. Demonstrate proper donning of attached or neoprene hood.	_____
3. State the requirements for when a boat crew dry suit is to be worn.	_____
4. State materiel condition inspection procedure; methods for sizing neck and wrist seals; problems that would make a boat crew dry suit unserviceable..	_____
5. State requirements and proper methods for maintenance and stowage of the boat crew dry suit.	_____



**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments** \_\_\_\_\_

**TASK BCM-02-07-ANY: Identify Boat Crew Survival Vest Equipment**

- References**
- a. *Rescue and Survival Systems Manual, COMDTINST M10470.10 (series)*
  - b. *Boat Crew Handbook - Rescue and Survival Procedures, BCH 16114.2 (series)*

**Conditions** Task should be performed at any time, at facilities available to the unit.

Performance Criteria	Completed (Initials)
1. State from memory the proper location and contents of the boat crew survival vest.	_____
2. Identify each item from the vest and State its use: e. Emergency signal mirror, f. Signal whistle, g. MK-124 marine smoke and illumination signal, h. MK-79 signal kit, i. Distress signal light, j. Survival knife, k. Personal Locator Beacon.	_____
3. State when the boat crew survival vest is required to be worn.	_____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments** \_\_\_\_\_

**TASK BCM-02-08-ANY: Use the Emergency Signaling Mirror**

- References**
- a. *Boat Crew Handbook - Rescue and Survival Procedures, BCH 16114.2 (series)*
  - b. *Manufacturer Guidelines*
  - c. *Rescue and Survival Systems Manual, COMDTINST M10470.10 (series)*

**Conditions** Task shall be performed while floating in water deeper than the trainee’s height, during daylight hours. Trainee should be wearing survival gear consistent with the weather and water temperature, and a boat crew personnel survival vest. Sunlight should be reflected onto a predetermined target (i.e. boat, location on a wall, etc.). Trainee must accomplish the task without prompting or use of a reference.

**Standards** The light rays from the sun must be reflected onto the predetermined object within one minute of trainee receiving a signal from the instructor.

Performance Criteria	Completed (Initials)
1. Locate and break out signal mirror.	_____
2. Reflect sunlight from the mirror onto a nearby surface (i.e. hand, wall, boat).	_____
3. Bring mirror to eye level, and sight target through sighting hole.	_____



Performance Criteria	Completed (Initials)
4. Hold mirror close to eye and manipulate so that light spot is on designated target.	_____
5. Sweep horizon to demonstrate attention-attracting technique.	_____

Instructor \_\_\_\_\_ Date \_\_\_\_\_

Comments \_\_\_\_\_  
\_\_\_\_\_

**TASK BCM-02-09-ANY: Use the MK-124 Smoke and Illumination Signal**

- References**
- a. *Boat Crew Handbook - Rescue and Survival Procedures, BCH 16114.2 (series)*
  - b. *Rescue and Survival Systems Manual, COMDTINST M10470.10 (series)*

**Conditions**

Task is accomplished in two parts:

- (01) Ashore - Trainee identifies the signal ends and describes sequence required to ignite the signal. Identification of signal ends should be done in a well-darkened room.
- (02) Afloat - In water deeper than the trainee's height, activate the signal. Trainee should wear survival gear consistent with the weather and water temperature, and a boat crew personnel survival kit. Either end of the signal can be activated.

Trainee must accomplish the task without prompting or use of a reference.

**Standards**

Trainee must immediately identify the signal. Trainee must be able to distinguish between the day and night ends of the signal by touch alone. Trainee must be able to activate the signal while floating within one minute of receiving a signal from the instructor.

**NOTE**

If adequate quantities of the MK-124 smoke and illumination signal are not available for training, task 2.e. may be waived.

Performance Criteria	Completed (Initials)
1. Complete the following tasks ashore: a. Identify and break out signal. b. Identify day and night ends of the signal by touch alone.	_____
2. Complete the following tasks in the water: a. Break out signal while floating. b. Remove cap on end of signal. c. Extend plastic lever out fully. d. Hold signal downwind, at arms length, at 45° angle from the horizon over the side of the raft or away from dry debris. e. Pull down on tab to ignite signal.	_____

Instructor \_\_\_\_\_ Date \_\_\_\_\_

Comments \_\_\_\_\_  
\_\_\_\_\_



**TASK BCM-02-10-ANY: Use the MK-79 Illumination Signal Kit**

**References**

- a. *Boat Crew Handbook - Rescue and Survival Procedures, BCH 16114.2 (series)*
- b. *Rescue and Survival Systems Manual, COMDTINST M10470.10 (series)*

**Conditions**

Task must be accomplished while afloat in water deeper than the trainee’s height during daylight hours. Trainee should wear survival gear consistent with the weather and water temperature, and a boat crew personnel survival vest. Trainee should not fire the cartridge until directed by the instructor. Trainee must accomplish the task without prompting or use of a reference.

**Standards**

Trainee must immediately identify the signal. Trainee must be able to load the cartridge into the launcher and fire, or simulate firing the signal within two minutes of receiving a signal from the instructor. All steps must be done in the order listed.

**NOTE**

If adequate quantities of the MK-79 illumination signal kit are not available, non-firing/simulated training shall be completed with an expended MK-80 signal cartridge.

Performance Criteria	Completed (Initials)
1. Identify and break out MK-79 signal kit.	_____
2. Break out launcher and bandoleer from plastic envelope.	_____
3. Pull trigger screw of launcher into safety slot.	_____
4. Bend protective tab away from the signal.	_____
5. Load signal cartridge into launcher and rotate clockwise until signal is seated.	_____
6. Hold launcher over head with arm fully extended. Point launcher away from the body on a slight angle.	_____
7. On command of the instructor, fire signal by slipping the trigger screw out of the safety slot and into the firing slot.	_____

**Instructor** \_\_\_\_\_

**Date** \_\_\_\_\_

**Comments** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



**TASK BCM-02-11-ANY: Operate the Distress Signal Light**

- References**
- a. *Boat Crew Handbook - Rescue and Survival Procedures, BCH 16114.2 (series)*
  - b. *Rescue and Survival Systems Manual, COMDTINST M10470.10 (series)*

**Conditions** Task must be accomplished while afloat in water deeper than the trainee’s height during daylight hours. Trainee should wear survival gear consistent with the weather and water temperature, and a boat crew personnel survival vest. Trainee must accomplish task without prompting or use of a reference.

**Standards** Trainee must immediately identify the signal. Trainee must be able to break out and activate the signal within one minute of entering the water or being given a signal by the instructor.

Performance Criteria	Completed (Initials)
1. Locate and remove the distress signal light from its case.	_____
2. Activate strobe light.	_____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments**  
\_\_\_\_\_  
\_\_\_\_\_

**TASK BCM-02-12-ANY: Operate the Personal Locator Beacon**

- References**
- a. *Personal Locator Beacon Operator’s Manual*
  - b. *Rescue and Survival Systems Manual, COMDTINST M10470.10 (series)*

**Conditions** Task should be performed at any time, at facilities available to the unit. Trainee must accomplish task without prompting or use of a reference.

**Standards** In response to the instructor, the trainee shall, without error, simulate the activation of the Personal Locator Beacon.

**NOTE**

For the purpose of qualification and training, PLB shall not be activated unless within prescribed PMS Standards.

Performance Criteria	Completed (Initials)
1. Locate and remove PLB.	_____
2. Simulate Activation of unit.	_____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments**  
\_\_\_\_\_  
\_\_\_\_\_



**TASK BCM-02-13-ANY: Don the Boat Crew Survival Vest**

**Reference**

- a. *Rescue and Survival Systems Manual, COMDTINST M10470.10 (series)*
- b. *Boat Crew Handbook - Rescue and Survival Procedures, BCH 16114.2 (series)*

**Conditions**

Task should be performed at any time, at facilities available to the unit.

**Standards**

In response to the instructor, the trainee shall, without error, don the boat crew survival vest.

Performance Criteria	Completed (Initials)
1. Demonstrate proper donning of the boat crew survival vest over the following PFDs and adjust for proper fit: <ul style="list-style-type: none"> <li>a. Type III PFD,</li> <li>b. Dry Suit and type III,</li> <li>c. Anti-exposure coverall.</li> </ul>	_____
2. Access the following equipment: <ul style="list-style-type: none"> <li>a. Distress signal light,</li> <li>b. Whistle,</li> <li>c. Signal mirror,</li> <li>d. MK-124 day/night signal,</li> <li>e. MK-79 signal kit,</li> <li>f. Knife,</li> <li>g. PLB (if carried),</li> <li>h. Tether (if carried).</li> </ul>	_____
3. State the requirements for when the boat crew survival vest is to be worn.	_____

**Instructor** \_\_\_\_\_

**Date** \_\_\_\_\_

**Comments**

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



**TASK BCM-02-14-ANY: Don the Automatic Inflatable PFD**

<b>Reference</b>	<ul style="list-style-type: none"> <li>a. <i>Rescue and Survival Systems Manual, COMDTINST M10470.10 (series)</i></li> <li>b. <i>Inflatable PFD Manufacturer’s Operating Instructions Manual</i></li> <li>c. <i>Applicable Maintenance Procedure Card (MPC)</i></li> <li>d. <i>Boat Crew Handbook - Rescue and Survival Procedures, BCH 16114.2 (series)</i></li> </ul>
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<b>Conditions</b>	<p>Task should be performed at any time, at facilities available to the unit, ashore.</p> <p>Criterion 13 required only for personnel assigned LE competencies.</p> <p>Criterion 16: the intent is to <u>simulate</u> response to a failed inflation sequence (i.e. a failed automatic or pull cord inflation). The CO2 cartridge expended for criteria 11 remains in place until criteria 16 is completed.</p>
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<b>NOTE</b>	Task <b>MAY BE DEFERRED</b> for units not using inflatable PFDs.
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<b>Standards</b>	In response to the instructor, the trainee shall, without error, don the inflatable PFD, identify from memory key components, and demonstrate procedures to obtain buoyancy if automatic inflation mechanism fails.
------------------	---

Performance Criteria	Completed (Initials)
1. Identify key components of the inflatable PFD. (pull cord, automatic inflation device, automatic inflation device status indicators/meanings, manual inflation tube, bladder, etc.)	_____
2. Explain the 3 modes of inflation.	_____
3. Describe how the ‘automatic inflation’ device works.	_____
4. State the pounds of positive buoyancy provided by the inflatable PFD when it is properly filled.	_____
5. State the effect of wearing seat belts or other constraining equipment when a PFD is inflated.	_____
6. State when an inflatable PFD is required to be worn.	_____
7. Name the equipment that may be worn over the inflatable PFD.	_____
8. State the policy associated with carrying required survival/signal equipment as part of the inflatable PFD outfit in lieu of wearing the boat crew survival vest.	_____
9. Conduct a pre-wear inspection of the PFD.	_____
10. Don the Automatic Inflating PFD	_____
11. Manually inflate PFD using pull cord.	_____
12. Access the following equipment: <ul style="list-style-type: none"> <li>a. Distress signal light</li> <li>b. Whistle</li> <li>c. Signal mirror</li> <li>d. MK-124 day/night signal</li> <li>e. MK-79 signal kit</li> <li>f. Knife</li> <li>g. PLB (if carried)</li> <li>h. Tether (if carried)</li> </ul>	_____
13. Grasp, draw and stow all equipment from the LE belt.	_____



Performance Criteria	Completed (Initials)
14. While wearing, deflate PFD.	_____
15. Remove PFD and provide it to the instructor to prepare for criteria 16.	_____
16. Respond to an inflation failure. (PFD must be set for training, per above ‘conditions’.) a. Don PFD. b. Attempt manual inflation via pull cord. c. Identify inflation failure. d. Manually inflate PFD using inflation tube within 1 minute.	_____
17. Replace CO2 cartridge per Maintenance Procedure Card (MPC).	_____
18. Inspect PFD per MPC and document.	_____
19. State the requirements and proper methods for maintenance and stowage of the inflatable PFD.	_____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_  
**Comments** \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**TASK BCM-02-15-TYPE: Rescue and Survival Raft Procedures**

- References**
- a. *Boat Crew Handbook - Rescue and Survival Procedures, BCH 16114.2 (series)*
  - b. *Rescue and Survival Systems Manual, COMDTINST M10470.10 (series)*

**Conditions** Task should be performed only for those boats equipped with a life raft. Task may be performed at any time. Trainee must accomplish the task without prompting or the use of a reference.

**Standards** Trainee should be able to identify equipment, and cite steps in the procedures without error. When practical, consideration should be given to deploying the raft for training (i.e. prior to yearly inspection).

Performance Criteria	Completed (Initials)	Boat Type
1. Identify and locate raft and container.	_____ _____ _____	_____ _____ _____
2. Describe automatic raft deployment.	_____ _____ _____	_____ _____ _____
3. State procedures for manual raft deployment.	_____ _____ _____	_____ _____ _____



Performance Criteria	Completed (Initials)	Boat Type
4. State best location to deploy the raft dependent upon environmental conditions.	_____ _____ _____	_____ _____ _____
5. Describe procedures for use a of life raft as a rescue and assistance device.	_____ _____ _____	_____ _____ _____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments** \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**TASK BCM-02-16-TYPE: Boat Egress Principles and Procedures**

**References**

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a. *Boat Crew Handbook - Rescue and Survival Procedures, BCH 16114.2 (series)*  
 b. *Boat Crew Handbook – Seamanship Fundamentals, BCH16114.4 (series)*  
 c. *Specific Boat Type Operator's Handbook, COMDTINST M16114 (series)*

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**Conditions**

Task should be performed at any time, onboard the unit's boats. Trainee must accomplish task without prompting or use of a reference. Doors, windows, and hatches are closed and set to maximum watertight integrity.

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**Standards**

Trainee should be able to list all steps in the procedure without error. Steps 6 through 9 apply to closed cabin boats only.

---

Performance Criteria	Completed (Initials)	Boat Type
1. Describe the differences between a knockdown, rollover, and a capsize.	_____ _____ _____	_____ _____ _____



Performance Criteria	<u>Completed</u> <u>(Initials)</u>	<u>Boat</u> <u>Type</u>
2. State the likely effects and conditions of a knockdown, rollover, and capsize on the boat and personnel. c. Unrestrained vs. restrained personnel d. Windows, doors, antennas, mast, electronics, and superstructure e. Propulsion f. Compartmentalization	_____ _____ _____	_____ _____ _____
3. Demonstrate handholds and bracing for each crewmember task location (e.g. seated positions, reels, bitts, cleats, etc.).	_____ _____ _____	_____ _____ _____
4. State knockdown/rollover casualty control procedures.	_____ _____ _____	_____ _____ _____
5. State post rollover/capsize/knockdown essential information to report to the Operational Commander and alternative for communicating status.	_____ _____ _____	_____ _____ _____
6. State the hazards of underwater egress: a. Difficulty egressing under disorienting conditions, including discussion of effect of buoyant vest on crewmember following seat belt release b. Importance of following proper egress procedures c. Importance of maintaining reference points d. Importance of maintaining orientation to the vessel e. Importance of maintaining one’s composure and remaining calm f. Cold water immersion and the gasp reflex	_____ _____ _____	_____ _____ _____
7. Identify handholds, egress points, and routes for each enclosed cabin crewmember position. a. Identify position handholds, primary egress point handles and latches, and route to safe water. b. Identify alternate egress point, route to safe water, and handholds along route. c. Rehearse, with eyes closed, the actions completed for the restrained position, up-to and including releasing restraints. d. Visualize in the minds-eye completing the rest of the egress. Remember, in a capsized boat, the crewmember wearing flotation will likely be buoyed upward, toward the <i>cabin deck</i> , making the use of handholds along the overhead critically important for maintaining orientation and egress.	_____ _____ _____	_____ _____ _____



Performance Criteria	<u>Completed</u> <u>(Initials)</u>	<u>Boat</u> <u>Type</u>
<p>8. Demonstrate primary egress (to maximum extent feasible) for each enclosed cabin crewmember position. For each position, begin with the crewmember seated and restrained. The instructor triggers performance by providing cues.</p> <ol style="list-style-type: none"> <li>a. Cue: “Brace for impact, going over.”</li> <li>b. The trainee makes and maintains handhold(s).</li> <li>c. Cue: Hand moving from overhead to deck, signifying turbulent water is filling the cabin.</li> <li>d. The trainee takes a deep breath and holds breath for duration of performance:           <ol style="list-style-type: none"> <li>1. Maintain handhold</li> <li>2. IF ALL LATCHES ARE IN REACH:               <ol style="list-style-type: none"> <li>a. Activate release handles, dogs, and/or latches to nearest egress point.</li> <li>b. Open doors and/or hatches.</li> <li>c. Release restraints.</li> <li>d. Using hands to maintain reference points, exit through the opening using hand-over-hand technique.</li> </ol> </li> <li>3. IF ALL LATCHES ARE NOT IN REACH:               <ol style="list-style-type: none"> <li>a. Activate release handles, dogs, and/or latches that you can reach.</li> <li>b. Release restraints.</li> <li>c. Open remaining doors or hatches.</li> <li>d. Using hands to maintain reference points, exit through the opening using hand-over-hand technique.</li> </ol> </li> <li>e. The trainee egresses. Cue: “You are on the surface.” The trainee may now breathe normally.</li> </ol> </li> </ol> <p>NOTE: Since the training vessel is not capsized in the water, the trainee will not experience the in-water effects of inverted orientation, buoyancy, turbulence, etc. For window egress points, trainees need only demonstrate the initial movement of the body through the egress point (e.g. upper torso).</p>	<p>_____</p> <p>_____</p> <p>_____</p>	<p>_____</p> <p>_____</p> <p>_____</p>



Performance Criteria	<u>Completed</u> <u>(Initials)</u>	<u>Boat</u> <u>Type</u>
<p>9. Demonstrate alternate egress (to maximum extent feasible) for each enclosed cabin crewmember position. For each position, begin with the crewmember seated and restrained. The instructor triggers performance by providing cues.</p> <ol style="list-style-type: none"> <li>a. Cue: “Brace for impact, going over.”</li> <li>b. The trainee makes and maintains handhold(s).</li> <li>c. Cue: Hand motion moving from overhead to deck, signifying turbulent water is filling the cabin.</li> <li>d. The trainee takes a deep breath and holds breath for duration of performance:               <ol style="list-style-type: none"> <li>1. Maintain handhold.</li> <li>2. Activate release handles, dogs, and/or latches to nearest egress point.</li> <li>3. Attempt to open window or door. (Cue: The instructor uses hand pressure, not a verbal cue, to keep the door or window closed, simulating a jammed fitting. The trainee MUST then proceed to the next step.)</li> <li>4. Motion toward the alternate egress point.</li> <li>5. Release restraints while maintaining a handhold.</li> <li>6. Using hand-over-hand technique, move to the alternate egress point.</li> <li>7. Activate and release handles, dogs, and/or latches as needed to egress.</li> <li>8. Open window or door.</li> <li>9. Exit through the alternate egress point using hand-over-hand technique.</li> <li>10. The trainee egresses. Cue: “You are on the surface.” The trainee may now breathe normally.</li> </ol> </li> </ol> <p>NOTE: Since the training vessel is not capsized in the water, the trainee will not experience the in-water effects of inverted orientation, buoyancy, turbulence, etc. For window egress points, trainees need only demonstrate the initial movement of the body through the egress point (e.g. upper torso).</p>	<p>_____</p> <p>_____</p> <p>_____</p>	<p>_____</p> <p>_____</p> <p>_____</p>
<p>10. Describe activities to complete following resurfacing:</p> <ol style="list-style-type: none"> <li>a. Climb onto hull of vessel.</li> <li>b. Take personnel muster. If personnel missing, consider tapping on hull to establish communications with missing personnel (if inside).</li> <li>c. Activate PLB.</li> <li>d. Visually scan for possible rescue vessels. If in range, personnel act as a team to signal using pyro, signal mirror, etc.</li> <li>e. Inventory survival gear.</li> <li>f. Stay with the boat until rescued or boat sinks.</li> </ol>	<p>_____</p> <p>_____</p> <p>_____</p>	<p>_____</p> <p>_____</p> <p>_____</p>

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments** \_\_\_\_\_

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\_\_\_\_\_



**TASK BCM-02-17-ANY: Open Water Survival Skills**

**References**

- a. *Boat Crew Handbook - Rescue and Survival Procedures, BCH 16114.2 (series)*
- b. *Rescue and Survival Systems Manual, COMDTINST M10470.10 (series)*
- c. *Team Coordination Training, COMDTINST 1541.1 (series)*
- d. *Water Survival Training Program (WSTP) TTP, CGTTP 3-95.3 (series)*

**Conditions**

Task should be performed at any time, at facilities available to the unit.

**Standards**

In response to the instructor, the trainee shall State risk-based decisions associated with open water survival skills.

Performance Criteria	Completed (Initials)
1. State the benefits associated with the different levels of hypothermia protective garments and how they relate to Tables 3-1 and 3-2 of reference b.	_____
2. State the factors that accelerate the onset of hypothermia.	_____
3. State the preventive measures that can be used to increase the chances for successful open water survival including methods of tethering.	_____
4. State the benefits for getting your body out of the water as much as possible in open water survival situations.	_____
5. State risk-based decisions associated with swimming in open water survival situations.	_____
6. State the method for: <ul style="list-style-type: none"> <li>a. Climbing onto an overturned boat hull.</li> <li>b. Boarding a boat from the water.</li> <li>c. Boarding a life raft.</li> </ul>	_____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments**  
 \_\_\_\_\_  
 \_\_\_\_\_



**TASK BCM-02-18-ANY: Perform Water Survival Exercise**

**References**

- a. *Boat Crew Handbook - Rescue and Survival Procedures, BCH 16114.2 (series)*
- b. *Rescue and Survival Systems Manual, COMDTINST M10470.10 (series)*

**Conditions**

This exercise shall be completed by entering water from a height of approximately 3 FT above the surface or from the level of the boat’s main deck. Trainee shall wear flotation, hypothermia, protective garments and survival equipment consistent with the coldest weather and water, temperature experienced at the unit. When anti-exposure coveralls are worn, ODU shall be worn underneath to properly simulate the exercise. If this task is completed near a boat or unit docks, ensure the area is free of any dangers (i.e. debris, snags, shoals, excess currents, or biological hazards). An immediate means of response must be available to assist any member that develops trouble during the completion of this task. Trainee shall accomplish task without prompting or use of a reference.

**Standards**

In response to the instructor, the trainee shall, without error, complete all steps of the water survival exercise.

Performance Criteria	Completed (Initials)
1. Don flotation, hypothermia protective garments and survival equipment, and adjust for proper fit. Personnel wearing dry suits shall don the required attached hood, or neoprene after entering the water.	_____
2. Execute the following steps: a. Enter the water from a height of approximately 3 FT or from the level of the boat’s main deck. b. Check surrounding water for debris and depth. c. Look straight ahead when entering water, but maintain awareness of surroundings (i.e. boat movement, wave action, currents). d. Maintain vertical position (body erect) upon entry into water. e. Minimize initial immersion by spreading arms and applying a scissors kick upon entry.	_____
3. Adjust flotation, hypothermia protective garments and survival equipment to reduce water intrusion, heat loss, and to improve mobility and buoyancy.	_____
4. Swim 100 yards using an energy conserving stroke or movement.	_____
5. Demonstrate the Heat Escape Lessening Position (HELP) for a single person in the water.	_____
6. Demonstrate the HELP for multiple survivors.	_____
7. Access and demonstrate the use of the following equipment: a. Distress signal light b. Whistle c. Signal mirror d. MK-124 day/night signaling device e. MK-79 signal kit f. Knife g. PLB	_____

**Instructor** \_\_\_\_\_

**Date** \_\_\_\_\_

**Comments**

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 \_\_\_\_\_  
 \_\_\_\_\_



**TASK BCM-02-19-TYPE: Identify and Demonstrate PPE and Safety Equipment for Heavy Weather**

**NOTE**

This task applies to Heavy Weather platforms **ONLY**.

**References**

- a. *Rescue and Survival Systems Manual, COMDTINST M10470.10 (series)*
- b. *Specific Boat Type Operator's Handbook, COMDTINST M16114 (series)*

**Conditions**

Task to be performed at any time onboard the unit's boats without prompting or use of a reference.

**Standards**

The trainee must state without error the safety precautions and safety equipment for heavy weather and surf operations.

Performance Criteria	Completed (Initials)
1. State safety belts and seat belts usage policy.	_____
2. State helmet usage policy.	_____
3. Demonstrate donning the Heavy weather Belt.	_____
4. Demonstrate the use of the shock absorbing chair.	_____
5. Demonstrate donning Helmet and Goggles.	_____
6. Locate Heavy weather Belt attachment points (D-Rings).	_____
7. Demonstrate maneuvering and clipping in at all attachment points around the boat wearing the Heavy weather Belt.	_____

**Instructor** \_\_\_\_\_

**Date** \_\_\_\_\_

**Comments**

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## Section C. Marlinespike Seamanship, Boat Nomenclature, Nautical Terminology, and Basic Stability

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### Introduction

The following are objectives of Division Three:

- (01) **Identify, State** the use of, and be able to consistently tie the basic knots and hitches used aboard Coast Guard boats.
- (02) **Demonstrate** the ability to secure lines of various sizes to several types of deck and dock fittings.
- (03) **Identify** the different parts of a boat’s ground tackle and be able to assist in anchoring a boat.

### In this Section

This Section contains the following tasks:

Task Number	Task	See Page
BCM-03-01-ANY	State Common Boat Nomenclature and Terminology	2-30
BCM-03-02-TYPE	Locate and Identify the Purpose of the Equipment Aboard the Boat	2-30
BCM-03-03-TYPE	Boat Characteristics - Boat Construction	2-31
BCM-03-04-TYPE	Boat Characteristics - Watertight Integrity	2-31
BCM-03-05-TYPE	Stability	2-32
BCM-03-06-ANY	Identify the Different Parts of a Line and the Hitches Used in Line Handling	2-33
BCM-03-07-ANY	Tie Various Knots, Hitches, and Bends	2-34
BCM-03-08-ANY	Secure Lines to Cleats, Bitts, and Posts	2-35
BCM-03-09-ANY	State the Types of Breaking Seas, Characteristics, and Causes	2-36
BCM-03-10-ANY	State the Geographical Causes of Local Heavy Weather Conditions	2-37



**TASK BCM-03-01-ANY: State Common Boat Nomenclature and Terminology**

<b>Reference</b>	a. <i>Boat Crew Handbook – Seamanship Fundamentals, BCH16114.4 (series)</i>
<b>Conditions</b>	Task should be performed onboard one of the unit’s boats. Trainee must accomplish the task without prompting or use of a reference.
<b>Standards</b>	In response to the instructor, the trainee must, without error, identify different locations and positions aboard the boat.

Performance Criteria	Completed (Initials)
1. Identify bow of the boat.	_____
2. On command, move forward on the boat.	_____
3. Identify starboard side of boat.	_____
4. Identify port side of boat.	_____
5. Identify athwartships.	_____
6. Identify outboard and inboard areas.	_____
7. Identify stern of the boat.	_____
8. Identify port quarter.	_____
9. Identify starboard bow.	_____
10. Identify windward and leeward side of the boat.	_____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments**  
\_\_\_\_\_  
\_\_\_\_\_

**TASK BCM-03-02-TYPE: Locate and Identify the Purpose of the Equipment Aboard the Boat**

<b>Reference</b>	a. <i>Boat Crew Handbook – Seamanship Fundamentals, BCH16114.4 (series)</i> b. <i>Specific Boat Type Operator's Handbook, COMDTINST M16114 (series)</i>
<b>Conditions</b>	Task should be performed using a simple line diagram of a boat and the boat Check Off sheet or boat outfit list. Trainee should list the location of each piece of equipment on the diagram. Trainee must accomplish the task without prompting or use of a reference.
<b>Standards</b>	Trainee must label and State the use of installed equipment and fittings.

Performance Criteria	Completed (Initials)	Boat Type
1. Label each piece of equipment or fitting.	_____ _____ _____	_____ _____ _____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_



Comments \_\_\_\_\_  
 \_\_\_\_\_

**TASK BCM-03-03-TYPE: Boat Characteristics - Boat Construction**

**Reference** a. *Boat Crew Handbook – Seamanship Fundamentals, BCH16114.4 (series)*

**Conditions** Task should be performed at any time, at facilities available to the unit.

**Standards** Trainee must demonstrate knowledge of each task from memory, without references.

Performance Criteria	Completed (Initials)	Boat Type
1. Describe the hull type.	_____ _____ _____	_____ _____ _____
2. Define keel type.	_____ _____ _____	_____ _____ _____
3. Recite the following: a. Length b. Beam c. Maximum fixed height above water, not making way. d. Maximum height above water (e.g. antennas up) e. Draft (keel and lowest appendage) f. Maximum fixed height above ground when properly prepared for trailering	_____ _____ _____ _____ _____ _____	_____ _____ _____ _____ _____ _____
4. Name and define the measurements used to define boat displacement.	_____ _____ _____	_____ _____ _____

Instructor \_\_\_\_\_

Date \_\_\_\_\_

Comments \_\_\_\_\_  
 \_\_\_\_\_

**TASK BCM-03-04-TYPE: Boat Characteristics - Watertight Integrity**

**Reference** a. *Boat Crew Handbook – Seamanship Fundamentals, BCH16114.4 (series)*  
 b. *Specific Boat Type Operator's Handbook, COMDTINST M16114 (series)*

**Conditions** Task should be performed at any time, onboard the unit's boats. Trainee must accomplish task without prompting or use of a reference.

**Standards** Trainee must either demonstrate knowledge of, or perform each task.



Part 2 – Boat Crew Member Qualification  
Chapter 2 – Boat Crew Member Qualification Tasks

Performance Criteria	Completed (Initials)	Boat Type
1. Identify all water tight doors, hatches and through hull fittings.	_____ _____ _____	_____ _____ _____
2. State the watertight compartments of each boat type.	_____ _____ _____	_____ _____ _____
3. State the factors that should be determined before you open watertight doors, hatches, and scuttle covers on a damaged boat.	_____ _____ _____	_____ _____ _____
4. Open a watertight door and hatch.	_____ _____ _____	_____ _____ _____
5. Close a watertight door and hatch.	_____ _____ _____	_____ _____ _____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**TASK BCM-03-05-TYPE: Stability**

**Reference** a. *Boat Crew Handbook – Seamanship Fundamentals, BCH16114.4 (series)*

**Conditions** Task should be performed at any time, at facilities available to the unit.

**Standards** Trainee must either demonstrate knowledge of or perform each task.

Performance Criteria	Completed (Initials)	Boat Type
1. State the two primary forces that affect a boat’s stability.	_____ _____ _____	_____ _____ _____
2. Define center of gravity and state how it changes as weight is added or subtracted upon the boat.	_____ _____ _____	_____ _____ _____
3. Define buoyancy.	_____ _____ _____	_____ _____ _____



Performance Criteria	Completed (Initials)	Boat Type
4. Define equilibrium and state how it is changed during rolling, heeling, and listing.	_____ _____ _____	_____ _____ _____
5. State the two types of stability.	_____ _____ _____	_____ _____ _____
6. State the two types of forces that affect stability.	_____ _____ _____	_____ _____ _____
7. List the general boat design features that influence stability.	_____ _____ _____	_____ _____ _____
8. State the effects of freezing spray.	_____ _____ _____	_____ _____ _____
9. Describe the effect on boat stability when transiting from ice to open water and vice-versa (SPC-AIR Only)	_____ _____ _____	_____ _____ _____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments**  
 \_\_\_\_\_  
 \_\_\_\_\_

**TASK BCM-03-06-ANY: Identify the Different Parts of a Line and the Hitches Used in Line Handling**

**Reference** a. *Boat Crew Handbook – Seamanship Fundamentals, BCH16114.4 (series)*

**Conditions** Task should be performed at any time, ashore or afloat, without prompting or use of a reference.

**Standards** In response to the instructor, the trainee must, without error, identify the different parts and configuration of a line.

Performance Criteria	Completed (Initials)
1. Define lay of line for: a. Double braid, b. Plain laid.	_____
2. Define line material: g. Polypropylene, h. Nylon, including double braid,	_____



Performance Criteria	Completed (Initials)
i. Natural fiber.	
3. Identify bitter end of line.	_____
4. Identify standing part of line.	_____
5. Make bight in the line.	_____
6. Make overhand loop in the line.	_____
7. Make underhand loop in the line.	_____
8. Make turn around an object.	_____
9. Make round turn around an object.	_____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments**  
\_\_\_\_\_  
\_\_\_\_\_

**TASK BCM-03-07-ANY: Tie Various Knots, Hitches, and Bends**

**Reference** a. *Boat Crew Handbook – Seamanship Fundamentals, BCH16114.4 (series)*

**Conditions** Task should be performed at any time, onboard one of the unit’s boats, cutter, or at the unit’s pier, without prompting or use of a reference.

**Standards** In response to the instructor, the trainee must, without error, tie the following hitches, knots and bends quickly and confidently.

Performance Criteria	Completed (Initials)
1. Tie a square (reef) knot.	_____
2. Tie bowline in the end of a mooring line.	_____
3. Put a temporary eye in towline, using a bowline.	_____
4. Untie knot by “breaking” the bowline.	_____
5. Secure line to a rail using a clove hitch.	_____
6. Secure clove hitch by using two half hitches.	_____
7. Mount fender using a slip clove hitch.	_____
8. Attach heaving line to a towline using a sheet bend, snap hook, bowline and/or clove hitch with two half hitches.	_____
9. Add length of mooring line to a towline using a double becket bend.	_____
10. Secure log, board, or other rough surfaced object, by using a timber hitch and two half hitches.	_____
11. Tie bowline around an object.	_____



**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments** \_\_\_\_\_

**TASK BCM-03-08-ANY: Secure Lines to Cleats, Bitts, and Posts**

**Reference** a. *Boat Crew Handbook – Seamanship Fundamentals, BCH16114.4 (series)*

**Conditions** Task should be performed at any time, onboard one of the unit’s boats, cutter, or at the unit’s pier, without prompting or use of a reference.

**Standards** In response to the instructor, the trainee must demonstrate the correct method for securing a line to cleats, bitts and posts.

Performance Criteria	Completed (Initials)
1. Secure a line to a cleat: j. Locate all standard cleats on boat. k. Place complete round turn around the base of the cleat. l. Lead line over the top of the cleat and around the horns to form a figure eight. m. Secure additional figure eights until the cleat is secured with at least three figure eights.	_____
2. Secure a line to a mooring cleat: n. Locate mooring cleats on dock. o. Feed eye of the line through the opening in the base of the cleat. p. Loop line back over horns and pull taut.	_____
3. Dip the eye on a bollard: q. Identify bollards on dock. r. Place eye of first mooring line over the bollard. s. Run eye of second mooring line through the eye of the first. t. Place eye of second mooring line over the bollard.	_____
4. Secure a line to a bit: u. Identify all bitts on boat. v. Make a complete turn around the near horn. w. Make three or more figure eights around both horns.	_____
5. Secure a line to a Samson post: x. Identify Samson post on boat. y. Make complete round turn around the base of the Samson post. z. Make several figure eights around horns of the post.	_____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments** \_\_\_\_\_



**TASK BCM-03-09-ANY: State the Types of Breaking Seas, Characteristics, and Causes**

**References**

- a. *Boat Crew Handbook – Seamanship Fundamentals, BCH16114.4*
- b. *Bowditch*
- c. *Chapman Piloting*

**Conditions**

Task should be performed at any time, at facilities available to the unit.

**Standards**

Trainee must demonstrate knowledge of each task to the minimum standards included in each performance step.

Performance Criteria	Completed (Initials)
1. State differences between deep-water waves and near shore breaking waves.	_____
2. State characteristics of various breaker types (plunging, spilling, surging).	_____
3. State the causes of each type of breaker.	_____
4. State the effects of bottom contour, jetties, islands and obstructions.	_____
5. State the effects of wind on sea conditions.	_____
6. State the effects of current and tidal conditions on breaking seas.	_____
7. Define the following terms: <ul style="list-style-type: none"> <li>a. Closeout</li> <li>b. Window</li> <li>c. Saddle</li> <li>d. Shoulder</li> <li>e. Low/High Side</li> </ul>	_____

**Instructor**

**Date**

**Comments**



**TASK BCM-03-10-ANY: State the Geographical Causes of Local Heavy Weather Conditions**

**References** a. *Boat Crew Handbook – Seamanship Fundamentals, BCH16114.4)*

**Conditions** Task to be performed at any time, or place with the use of visual references and accomplished without prompting

**Standards** The trainee must state without error the local surf conditions, causes, areas to be avoided and preferred training areas.

Performance Criteria	Completed (Initials)
1. State local surf conditions.	_____
2. State effects of local contour, jetties, islands and obstructions.	_____
3. State effects of winds.	_____
4. State effects of local tides and currents.	_____
5. State local surf areas to be avoided.	_____
6. State characteristics (depths, shoaling areas, local names) for typical surf zones in operating area.	_____
7. State effects of local weather systems and patterns.	_____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments** \_\_\_\_\_  
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## Section D. Boat Handling

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### Introduction

The following are objectives of Division Four:

- (01) **Define** the common terms used for identification aboard a Coast Guard boat.
- (02) **Identify** and **State** the purpose or use of the different fittings and equipment located on a Coast Guard boat.
- (03) **Demonstrate** the ability to participate in the common watches performed aboard Coast Guard boats.

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### In this Section

This Section contains the following tasks:

Task Number	Task	See Page
BCM-04-01-ANY	Rig Fenders to Side of the Boat	2-39
BCM-04-02-TYPE	Make Fast a Boat to a Pier (Bow On Mooring, No Current/Wind)	2-40
BCM-04-03-TYPE	Assist in Anchoring the Boat	2-41
BCM-04-04-TYPE	Assist in Weighing the Boat's Anchor	2-42
BCM-04-05-ANY	Identify the Common Navigation Lights Displayed by Ships and Boats	2-43
BCM-04-06-ANY	Identify Common Sound Signals Used by Ships and Boats	2-44
BCM-04-07-ANY	Identify Maritime Distress Signals	2-45
BCM-04-08-ANY	Stand a Lookout Watch	2-46
BCM-04-09-TYPE	Act as a Helmsman and Steer a Compass Course	2-47
BCM-04-10-TYPE	Get the Boat Away from a Pier/Cutter	2-48
BCM-04-11-TYPE	Moor the Boat to a Pier/Cutter	2-49
BCM-04-12-TYPE	Boat Handling	2-50
BCM-04-13-TYPE	Cutterboat Launch and Recovery-Single Point Davit	2-51
BCM-04-14-TYPE	Cutterboat Launch and Recovery- Dual Point Davit	2-53
BCM-04-15-TYPE	Cutterboat Launch and Recovery-Stern Ramp	2-54



**TASK BCM-04-01-ANY: Rig Fenders to Side of the Boat**

**Reference** a. *Boat Crew Handbook – Seamanship Fundamentals, BCH16114.4 (series)*

**Conditions** Task should be performed at any time onboard a unit boat, without prompting or the use of a reference.

**Standards** In response to the instructor, the trainee must correctly rig fenders to the side of the boat. Fenders should be the proper height to avoid damage.

Performance Criteria	Completed (Initials)
1. Tie fenders in place using a slip clove hitch.	_____
2. Position all fenders appropriately for width and height of pilings and piers.	_____
3. Place fenders at contact points between boat and pier, dock or another boat.	_____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments**  
 \_\_\_\_\_  
 \_\_\_\_\_



**TASK BCM-04-02-TYPE: Make Fast a Boat to a Pier (Bow On Mooring, No Current/Wind)**

<b>References</b>	a. <i>Boat Crew Handbook – Seamanship Fundamentals, BCH16114.4 (series)</i> b. <i>Chapman Piloting</i>
<b>Conditions</b>	Task should be performed at any time, onboard the unit's boats. Trainee must accomplish task without prompting or use of a reference.
<b>Standards</b>	In response to the instructor, the trainee must demonstrate, in proper sequence, the correct procedures for securing a boat to a pier using the boats mooring lines.

Performance Criteria	Completed (Initials)	Boat Type
1. Place forward spring line on pier cleat tended and secure to the boat.	_____ _____ _____	v _____ _____ _____
2. Place stern line on pier cleat and secure to the boat.	_____ _____ _____	_____ _____ _____
3. Place bow line on pier cleat and secure to the boat.	_____ _____ _____	_____ _____ _____
4. Place aft spring line on pier cleat and secure to the boat.	_____ _____ _____	_____ _____ _____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments**  
 \_\_\_\_\_  
 \_\_\_\_\_



**TASK BCM-04-03-TYPE: Assist in Anchoring the Boat**

<b>Reference</b>	a. <i>Boat Crew Handbook – Seamanship Fundamentals, BCH16114.4 (series)</i>
<b>Conditions</b>	Task should be performed at any time, onboard the unit’s boats. Trainee must accomplish task without prompting or use of a reference.
<b>Standards</b>	In response to the instructor, trainee must demonstrate, in proper sequence, the correct procedure for anchoring the boat.

Performance Criteria	Completed (Initials)	Boat Type
1. State the main parts of the anchor.	_____ _____ _____	_____ _____ _____
2. State the equipment associated with anchoring.	_____ _____ _____	v _____ _____ _____
3. Establish communications with Coxswain during the evolution.	_____ _____ _____	_____ _____ _____
4. Ascertain amount of scope needed based on depth of water and type of bottom.	_____ _____ _____	_____ _____ _____
5. Break out and attach anchor line to anchor.	_____ _____ _____	v _____ _____ _____
6. Deploy anchor by safest means.	_____ _____ _____	_____ _____ _____
7. Inform Coxswain of direction line tending at all times as anchor line pays out (veers).	_____ _____ _____	_____ _____ _____
8. Secure anchor line to bitt at Coxswain’s command.	_____ _____ _____	_____ _____ _____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments**  
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**TASK BCM-04-04-TYPE: Assist in Weighing the Boat’s Anchor**

<b>Reference</b>	a. <i>Boat Crew Handbook – Seamanship Fundamentals, BCH16114.4 (series)</i>
<b>Conditions</b>	Task should be performed at any time, onboard the unit’s boats. Trainee must accomplish task without prompting or use of a reference.
<b>Standards</b>	The trainee must demonstrate, in proper sequence, the procedures for weighing the boat’s anchor.

Performance Criteria	Completed (Initials)	Boat Type
1. Establish communications with Coxswain.	_____	_____
2. Remove slack from anchor line as boat moves ahead.	_____	_____
3. Stow anchor line below deck, away from work area, immediately as it’s brought aboard.	_____	_____
4. Signal to Coxswain when the anchor line is at short stay (up and down).	_____	_____
5. Break anchor free from bottom (if anchor does not break free, trainee makes fast anchor line to bitt while Coxswain moves the boat ahead to break it free).	_____	_____
6. Determine if anchor is clear and clean.	_____	_____
7. Haul anchor aboard the boat.	_____	_____
8. Make up and stow all equipment.	_____	_____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments**  
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**TASK BCM-04-05-ANY: Identify the Common Navigation Lights Displayed by Ships and Boats**

**References**

- a. *Shipboard Lookout Manual, COMDTINST M9450.1 (series)*
- b. *Promulgation of the Navigation Rules and Regulations Manual, COMDTINST 16672.2 (series)*
- c. *Chapman Piloting*

**Conditions**

Task criteria 1-2 may be performed anytime ashore. Criteria 3 should be performed at night, onboard any unit boat or cutter. Trainee must identify the lights, aspect and type of vessel when presented with pictures or actual lights by the instructor. Trainee must accomplish the task without prompting or use of a reference.

**Standards**

In response to the instructor, the trainee must, without error, verbally complete the below criteria:

Performance Criteria	Completed (Initials)
1. State the location, color, visibility range, and arc of visibility of the following navigation lights: <ul style="list-style-type: none"> <li>a. Mastheads</li> <li>b. Side lights</li> <li>c. Stern light</li> <li>d. Towing light(s)</li> <li>e. All around light</li> <li>f. Flashing light</li> <li>g. Special flashing light</li> <li>h. Combination lantern/lights (sailing vessel/boats)</li> <li>i. Forward and aft anchor lights</li> </ul>	_____
2. State navigation light aspects for vessels of various sizes, propulsion, and nature of work. <ul style="list-style-type: none"> <li>a. Heading directly toward you (bow-on)</li> <li>b. PORT &amp; STBD bow</li> <li>c. Beam</li> <li>d. Stern</li> </ul>	_____
3. Identify the lights for the following vessels: <ul style="list-style-type: none"> <li>a. Power driven vessel over 50 meters in length</li> <li>b. Power driven vessel under 50 meters in length</li> <li>c. Not under command</li> <li>d. Restricted in ability to maneuver</li> <li>e. Constrained by draft</li> <li>f. Fishing</li> <li>g. Sailing</li> <li>h. Towing</li> <li>i. Pilot boat</li> </ul>	_____

**Instructor**

**Date**

**Comments**



**TASK BCM-04-06-ANY: Identify Common Sound Signals Used by Ships and Boats**

**References**

- a. *Chapman Piloting*
- b. *Promulgation of the Navigation Rules and Regulations Manual, COMDTINST 16672.2 (series)*

**Conditions**

Task should be performed at any time, onboard any unit boat. Given an actual sound signal by the instructor, the trainee must identify the sound signal characteristics and the general meaning (e.g. “one prolonged-three short: manned vessel in tow during restricted visibility). Trainee must accomplish the task without prompting or use of a reference.

**Standards**

In response to the instructor, the trainee must, without error, verbally identify the signals listed below.

Performance Criteria	Completed (Initials)
1. State the characteristics of a short blast.	_____
2. State the characteristics of a prolonged blast.	_____
3. State function of supplemental light signal.	_____
4. Identify common boat sound signal equipment (whistle/horn, bell, portable signal horn).	_____
5. Identify sound signals for vessels in sight of one another (inland & international) <ol style="list-style-type: none"> <li>a. Alteration of course to STBD</li> <li>b. Alteration of course to PORT</li> <li>c. Overtaking and agreement signal</li> <li>d. Operating astern propulsion</li> </ol>	_____
6. Identify the danger signal (inland & international).	_____
7. Identify sound signals for vessels during periods of restricted visibility (inland & international). <ol style="list-style-type: none"> <li>a. Underway, making way</li> <li>b. Underway, not making way</li> <li>c. One prolonged followed by two short blasts.</li> <li>d. One prolonged followed by three short blasts.</li> <li>e. At anchor</li> <li>f. One short, one prolonged, one short blast.</li> </ol>	_____

**Instructor** \_\_\_\_\_

**Date** \_\_\_\_\_

**Comments**

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**TASK BCM-04-07-ANY: Identify Maritime Distress Signals**

**References**

- a. *Promulgation of the Navigation Rules and Regulations Manual, COMDTINST 16672.2 (series)*
- b. *47 CFR 80.317 - Radiotelegraph and radiotelephone alarm signals.*

**Conditions**

Task should be performed at any time, at facilities available to the unit. Given various operational scenarios, the trainee must report maritime distress signals. Trainee must accomplish the task without prompting or use of a reference. The scenarios should challenge the trainee to differentiate maritime distress signals from other similar signals, etc. Example: MAYDAY vs. PAN PAN, etc.

**Standards**

The trainee must, without error, verbally report the distress signals listed below when given a operational scenario of each distress signal (e.g. while underway, you sight by the instructor.

Performance Criteria	Completed (Initials)
1. Red star shells.	_____
2. Continuous sounding fog horn.	_____
3. Orange smoke marker.	_____
4. Dye marker (any color).	_____
5. Red parachute flare.	_____
6. Flames on a boat.	_____
7. November code flag flown over the Charlie code flag.	_____
8. Emergency Position Indicating Radio Beacon (EPIRB).	_____
9. Orange board with a black square over a black circle.	_____
10. "MAYDAY" radio broadcast.	_____
11. Person waving arms.	_____
12. A signal consisting of a square flag having above or below it a ball or anything resembling a ball.	_____
13. Radio telephone alarm.	_____
14. Radio telegraph alarm.	_____
15. SOS – Morse code signal.	_____
16. Gun fired at intervals of one minute.	_____
17. High intensity white light flashing at intervals of 50 to 70 times per minute (inland waters only).	_____

**Instructor** \_\_\_\_\_

**Date** \_\_\_\_\_

**Comments** \_\_\_\_\_

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**TASK BCM-04-08-ANY: Stand a Lookout Watch**

<b>References</b>	<ul style="list-style-type: none"> <li>a. <i>Boat Operations and Training Manual, Volume I, COMDTINST M16114.42 (series)</i></li> <li>b. <i>Boat Crew Handbook – Boat Operations, BCH16114.1 (series)</i></li> <li>c. <i>Promulgation of the Navigation Rules and Regulations Manual, COMDTINST 16672.2 (series)</i></li> <li>d. <i>Shipboard Lookout Manual, COMDTINST M9450.1 (series)</i></li> </ul>
<b>Conditions</b>	Task should be performed at any time, onboard any of the unit’s boats or cutter. Trainee must report the range and relative bearing of objects identified by the instructor. Trainee must accomplish the task without prompting or use of a reference.
<b>Standards</b>	In response to the instructor, the trainee must, without error, identify objects and state relative bearing and range.

Performance Criteria	Completed (Initials)
1. State importance of a lookout.	_____
2. State lookout assignment policies.	_____
3. State boat characteristics and operations that may limit lookout visibility, and how these risks are mitigated.	_____
4. State objects a lookout can detect but radar cannot.	_____
5. State the effects of dark adaptation on a lookout’s vision.	_____
6. State offcenter vision and how it may be used to see objects at night.	_____
7. Identify true, compass, and relative bearings.	_____
8. State position angle.	_____
9. State target angle and how it may be figured at night by the appearance of a ship’s lights.	_____
10. Define terms: hull up, hull down, on the horizon.	_____
11. State lookout responsibilities during man overboard.	_____
12. Recognize and report the following situations: <ul style="list-style-type: none"> <li>a. Meeting (head on) [Rule 14],</li> <li>b. Crossing [Rule 15],</li> <li>c. Overtaking [Rule 13].</li> </ul>	_____
13. Identify and report the range and relative bearing of four different type vessels, common to local area.	_____
14. Identify and report the relative bearing and position angle of four aircraft.	_____
15. Identify and report the range and relative bearing to deadhead or other floating hazard to navigation.	_____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments**

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**TASK BCM-04-09-TYPE: Act as a Helmsman and Steer a Compass Course**

<b>Reference</b>	<ul style="list-style-type: none"> <li>a. <i>Boat Crew Handbook – Navigation and Piloting, BCH16114.3 (series)</i></li> <li>b. <i>Coast Guard Navigation Standards Manual, COMDTINST 3530.2 (series)</i></li> <li>c. <i>CG Readiness and Standardization Drill Checklist</i></li> </ul>
<b>Conditions</b>	Task should be performed at any time, onboard the unit’s boats. Trainee must accomplish task without prompting or use of a reference.
<b>Standards</b>	In response to the Coxswain, the trainee must respond, without error, to various helm commands. All courses must be maintained to within 5° of ordered course.

Performance Criteria	Completed (Initials)	Boat Type
1. State meaning of standard helm commands, including rudder, throttle, joystick and/or tiller commands as appropriate for boat type.	_____ _____ _____	_____ _____ _____
2. Demonstrate procedures for shifting helm control, as appropriate for boat type.	_____ _____ _____	_____ _____ _____
3. Steer course ordered by the Coxswain.	_____ _____ _____	_____ _____ _____
4. Maintain course to within ±5° of ordered course over a ten-minute staged run.	_____ _____ _____	_____ _____ _____
5. Alter course (at least 35°) to new course on Coxswain’s command.	_____ _____ _____	_____ _____ _____
6. Steady-up on new course and hold to within ±5° of ordered course.	_____ _____ _____	_____ _____ _____
7. Demonstrate, and report completion of, specific rudder, throttle, joystick and/or tiller commands as appropriate for boat type.	_____ _____ _____	_____ _____ _____
8. Monitor and report propulsion system gauges, indicators and/or alarms.	_____ _____ _____	_____ _____ _____
9. Keep careful watch of the surrounding area.	_____ _____ _____	_____ _____ _____



**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_  
**Comments** \_\_\_\_\_  
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**TASK BCM-04-10-TYPE: Get the Boat Away from a Pier/Cutter**

**References** a. *Boat Crew Handbook – Seamanship Fundamentals, BCH16114.4 (series)*  
 b. *Chapman Piloting*

**Conditions** Task should be performed at any time, onboard the unit’s boats in light to moderate winds. The boat may be made fast to either side of the pier or mooring object. All mooring lines must be attached before task is begun. Trainee must accomplish the task without prompting or use of a reference. Cutter, if used, is moored dockside.

**Standards** Trainee must perform the task in accordance with the procedures in the listed steps. Any endangering of personnel or boat will cause the task to be secured until further training can be accomplished.

Performance Criteria	Completed (Initials)	Boat Type
1. Brief crew on procedure to be used and their duties.	_____ _____ _____	_____ _____ _____
2. Remove mooring lines from pier as directed.	_____ _____ _____	_____ _____ _____
3. Ensure area aft is clear of personnel, obstructions and debris (SPC-AIR Only)	_____ _____ _____	_____ _____ _____
4. Clear stern of the boat from the pier.	_____ _____ _____	_____ _____ _____
5. Clear boat of pier.	_____ _____ _____	_____ _____ _____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_  
**Comments** \_\_\_\_\_  
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**TASK BCM-04-11-TYPE: Moor the Boat to a Pier/Cutter**

**WARNING** 

Boat operators shall pause briefly at the neutral position when shifting between ahead to astern or astern to ahead propulsion. Skipping this step may cause the engines to shut down and lose propulsion and damage the lower units.

**References**

- a. *Boat Crew Handbook – Seamanship Fundamentals, BCH16114.4 (series)*
- b. *Chapman Piloting*

**Conditions**

Task should be performed at any time, onboard the unit’s boats in light to moderate winds. Trainee must accomplish the task without prompting or use of a reference. Cutter, if used, is moored dockside.

**Standards**

Trainee must perform the task in accordance with procedures in the listed steps. Any endangering of personnel or boat will cause the task to be secured until further training can be accomplished.

Performance Criteria	Completed (Initials)	Boat Type
1. Brief crew on procedure to be used and their duties.	_____ _____ _____	_____ _____ _____
2. Demonstrate checking engine control (forward and reverse on each engine.)	_____ _____ _____	_____ _____ _____
3. Approach slowly.	_____ _____ _____	_____ _____ _____
4. Apply appropriate power/thrust and rudder/nozzle, use spring line if desired.	_____ _____ _____	_____ _____ _____
5. Bring boat alongside.	_____ _____ _____	_____ _____ _____
6. Repeat above task using <i>docking mode</i> (45 RB-M only).	_____ _____ _____	_____ _____ _____
7. Secure lines.	_____ _____ _____	_____ _____ _____



Instructor \_\_\_\_\_ Date \_\_\_\_\_

Comments \_\_\_\_\_

**TASK BCM-04-12-TYPE: Boat Handling**

**WARNING** 

Boat operators shall pause briefly at the neutral position when shifting between ahead to astern or astern to ahead propulsion. Skipping this step may cause the engines to shut down and lose propulsion and damage the lower units.

**Reference** a. *Boat Crew Handbook – Seamanship Fundamentals, BCH16114.4 (series)*

**Conditions** Task should be performed at any time, onboard the unit’s boats in light to moderate winds. Trainee must accomplish the task without prompting or use of a reference.

**Standards** Trainee must perform each task to the minimum standards included in each performance step. Any endangering of personnel or boat will cause the task to be secured until further training can be accomplished. Maintain safe speed for trainee’s ability, potential wake damage and weather conditions.

Performance Criteria	Completed (Initials)	Boat Type
1. Determine the rudder/tiller limits.	_____ _____ _____	_____ _____ _____
2. Check engine control action.	_____ _____ _____	_____ _____ _____
3. Move boat forward in a straight line.	_____ _____ _____	_____ _____ _____
4. Turn the boat (as directed) with the helm/tiller.	_____ _____ _____	_____ _____ _____
5. Stop the boat in a safe manner.	_____ _____ _____	_____ _____ _____
6. Hold a course while backing the boat.	_____ _____ _____	_____ _____ _____



Performance Criteria	Completed (Initials)	Boat Type
7. Rotate boat about the pivot point.	_____ _____ _____	_____ _____ _____
8. Turn boat with a reduced tactical diameter.	_____ _____ _____	_____ _____ _____

Instructor \_\_\_\_\_ Date \_\_\_\_\_

Comments \_\_\_\_\_  
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 \_\_\_\_\_

**TASK BCM-04-13-TYPE: Cutterboat Launch and Recovery-Single Point Davit**

**NOTE**

This task applies to cutterboats **ONLY**.

**Reference**

- a. *Shipboard Launch and Recovery Procedures Manual, COMDTINST M3120.6 (series)*
- b. *CG Readiness and Standardization Drill Checklist*

**Conditions**

Task shall be performed day or night, onboard the unit's boats in light to moderate winds with cutter underway, making way. The boat may be made cradled, at the rail, or in the water, depending on boat and davit type. Trainee must accomplish the task without prompting or use of a reference.

**Standards**

Trainee must perform the task in accordance with the procedures in the listed steps. Any endangering of personnel or boat will cause the task to be secured until further training can be accomplished.

Performance Criteria	Completed (Initials)	Boat Type
1. Identify the parts and functions of single point davit-boat hoist equipment: <ul style="list-style-type: none"> <li>aa. Davit Arm</li> <li>bb. Jib Boom</li> <li>cc. Anti-two-block Control</li> <li>dd. Lift Cylinder</li> <li>ee. Down-stop Control</li> <li>ff. Quick Release Hook</li> <li>gg. Cable Tension Sensor</li> <li>hh. Hand Pump (emergency operations)</li> <li>ii. Operator Controls</li> <li>jj. Control Console</li> </ul>	_____ _____ _____ _____ _____ _____ _____ _____ _____ _____	_____ _____ _____ _____ _____ _____ _____ _____ _____ _____
2. Describe the positioning and function of the following roles:	_____	_____



Part 2 – Boat Crew Member Qualification  
 Chapter 2 – Boat Crew Member Qualification Tasks

Performance Criteria	Completed (Initials)	Boat Type
kk. OOD ll. Safety Observer mm. Boat Deck Captain nn. Davit Operator oo. Line Tenders	_____ _____	_____ _____
3. Describe actions taken when given the following verbal commands for single point davit launch and recovery: pp. Boat Deck manned and ready                      e. Pass the sea painter qq. Lay into/ out of the boat                              f. Send down whip rr. Ready in the boat    g. Hook it ss. Release	_____ _____ _____	_____ _____ _____
4. Inspect hoisting strap and its connections, block, and for cargo or load interference.	_____ _____ _____	_____ _____ _____
5. Brief crew on procedure to be used and their duties.	_____ _____ _____	_____ _____ _____
6. Perform launch procedure: a. When directed, disconnect and release the block. b. When directed, release the fore and aft tending lines. c. When directed, release the sea painter.	_____ _____ _____	_____ _____ _____
7. Perform recovery procedure: a. When directed, connect the sea painter. b. Assist in the disembarkation of passengers and crew not essential to hoisting the boat. c. When directed, pass or receive fore and aft tending lines. d. When directed, connect the block to the hoisting strap.	_____ _____ _____	_____ _____ _____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments**  
 \_\_\_\_\_  
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**TASK BCM-04-14-TYPE: Cutterboat Launch and Recovery- Dual Point Davit**

**NOTE**

This task applies to cutterboats **ONLY**.

**Reference**

- a. *Shipboard Launch and Recovery Procedures Manual, COMDTINST M3120.6 (series)*
- b. *CG Readiness and Standardization Drill Checklist*

**Conditions**

Task shall be performed day or night, onboard the unit’s boats in light to moderate winds with cutter underway, making way. The boat may be made cradled, at the rail, or in the water, depending on boat and davit type. Trainee must accomplish the task without prompting or use of a reference.

**Standards**

Trainee must perform the task in accordance with the procedures in the listed steps. Any endangering of personnel or boat will cause the task to be secured until further training can be accomplished.

Performance Criteria	Completed (Initials)	Boat Type
1. Identify the parts and functions of dual point davit-boat hoist equipment: <ul style="list-style-type: none"> <li>a. Davit Arm</li> <li>b. Anti-2-block Control</li> <li>c. Constant Tension Winch</li> <li>d. Lift Cylinder</li> <li>e. Boat Chocks / Cradle</li> <li>f. Quick Release Hook</li> <li>g. Control Station</li> </ul>	_____ _____ _____	_____ _____ _____
2. Describe the positioning and function of the following roles: <ul style="list-style-type: none"> <li>a. OOD</li> <li>b. Safety Observer</li> <li>c. Boat Deck Captain</li> <li>d. Davit Operator</li> <li>e. Line Tenders</li> </ul>	_____ _____ _____	_____ _____ _____
3. Describe actions taken when given the following verbal commands for dual point davit launch and recovery: <ul style="list-style-type: none"> <li>a. Boat Deck manned and ready</li> <li>b. Lay into/ out of the boat</li> <li>c. Ready in the boat</li> <li>d. Release forward/ release aft</li> <li>e. Pass the sea painter</li> <li>f. Send down forward/ aft (falls)</li> <li>g. Hook forward/ hook aft</li> </ul>	_____ _____ _____	_____ _____ _____
4. Recite, from memory, the entire launch procedure.	_____ _____ _____	_____ _____ _____
7. Perform launch procedure: <ul style="list-style-type: none"> <li>a. When directed, disconnect and release the fore or aft block.</li> <li>b. When directed, release the fore and aft tending lines.</li> <li>c. When directed, release the sea painter.</li> </ul>	_____ _____ _____	_____ _____ _____



Performance Criteria	Completed (Initials)	Boat Type
5. Perform recovery procedure: <ul style="list-style-type: none"> <li>a. When directed, connect the sea painter.</li> <li>b. Assist in the disembarkation of passengers and crew not essential to hoisting the boat.</li> <li>c. When directed, pass or receive fore and aft tending lines.</li> <li>d. When directed, connect the fore or aft block to the boat.</li> </ul>	_____ _____ _____	_____ _____ _____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments** \_\_\_\_\_

\_\_\_\_\_

**TASK BCM-04-15-TYPE: Cutterboat Launch and Recovery- Stern Ramp**

**NOTE**

This task applies to cutterboats **ONLY**.

**Reference**

- a. *Shipboard Launch and Recovery Procedures Manual, COMDTINST M3120.6 (series)*
- b. *CG Readiness and Standardization Drill Checklist*

**Conditions**

Task shall be performed day or night, onboard the unit's boats in light to moderate winds with cutter underway, making way. The boat may be made cradled, at the rail, or in the water, depending on boat and davit type. Trainee must accomplish the task without prompting or use of a reference.

**Standards**

Trainee must perform the task in accordance with the procedures in the listed steps. Any endangering of personnel or boat will cause the task to be secured until further training can be accomplished.

Performance Criteria	Completed (Initials)	Boat Type
1. Identify the parts and functions of stern ramp launch and recovery equipment. <ul style="list-style-type: none"> <li>a. Gripes</li> <li>b. Recovery winch</li> <li>c. Capture line/ winch system</li> </ul>	_____ _____ _____	_____ _____ _____
2. Describe the positioning and function of the following roles: <ul style="list-style-type: none"> <li>d. OOD</li> <li>e. Safety Observer</li> <li>f. Boat Deck Captain</li> </ul>	_____ _____ _____	_____ _____ _____
3. Describe actions taken when given the following verbal commands for launch and recovery: <ul style="list-style-type: none"> <li>a. Boat deck manned and ready</li> <li>b. Lay into/ out of the boat</li> <li>c. Ready in the boat</li> <li>d. Release</li> </ul>	_____ _____ _____	_____ _____ _____

Part 2 – Boat Crew Member Qualification  
 Chapter 2 – Boat Crew Member Qualification Tasks



Performance Criteria	Completed (Initials)	Boat Type
4. Brief crew on procedure to be used and their duties.	_____ _____ _____	_____ _____ _____
5. Remove the capture line, when directed by the coxswain. (FRC and 87 WPB only)	_____ _____ _____	_____ _____ _____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments**  
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## Section E. Communications

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### Introduction

The following are objectives of Division Five:

- (01) **State** radio communications security policy.
- (02) **Demonstrate** the ability to operate a VHF-FM radiotelephone and the SSB-HF transceiver.
- (03) **Demonstrate** the ability to use the radiotelephone to give a position or operations report.

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### In this Section

This Section contains the following tasks:

Task Number	Task	See Page
BCM-05-01-ANY	Operate a VHF-FM Radiotelephone	2-57
BCM-05-02-ANY	Operate a SSB-HF Transceiver	2-57
BCM-05-03-ANY	Use the VHF-FM Radiotelephone to Give a Operations and Position Report	2-58
BCM-05-04-ANY	State General Communications Policy and Doctrine	2-59



**TASK BCM-05-01-ANY: Operate a VHF-FM Radiotelephone**

<b>References</b>	a. <i>Radio Telephone Manual, TTP 06-01.1 (series)</i>
<b>Conditions</b>	Task should be performed at any time, onboard one of the unit’s boats or cutter. Trainee must accomplish task without prompting or use of a reference.
<b>Standards</b>	In response to the instructor, the trainee must, without error, identify the different operating parts of the radio and operate the radio.

Performance Criteria	Completed (Initials)
1. Identify VHF-FM transceiver and speakers.	_____
2. Identify breaker that energizes radio.	_____
3. Identify power switch and turn radio on.	_____
4. Identify channel selection switch or buttons for emergency and working frequencies.	_____
5. Identify volume controls and adjust volume.	_____
6. Identify squelch control and adjust to the point where static disappears.	_____
7. Identify microphone and transmitting button and obtain a radio check on appropriate working frequency.	_____
<b>NOTE</b> No radio checks are permitted on the International VHF distress and calling frequency, Channel 16.	

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments**  
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**TASK BCM-05-02-ANY: Operate a SSB-HF Transceiver**

<b>References</b>	a. <i>Radio Telephone Manual, TTP 06-01.1 (series)</i> b. <i>SSB-HF Transceiver – Operator’s Manual</i>
<b>Conditions</b>	Task should be performed at any time, onboard one of the unit’s boats or cutter with SSB-HF radio onboard. Trainee must accomplish task without prompting or use of a reference.
<b>Standards</b>	In response to the instructor, the trainee must, without error, identify the different operating parts of the radio and operate the radio.

Performance Criteria	Completed (Initials)
1. Identify SSB-HF transceiver and speakers.	_____
2. Identify power switch and turn radio on.	_____
3. Identify channel selection switch or buttons and select appropriate working frequency.	_____
4. Identify and adjust volume control.	_____
5. Identify and adjust squelch control to just beyond the point where the static disappears.	_____



Performance Criteria	Completed (Initials)
6. Identify microphone and operating button and demonstrate radio check on appropriate working frequency.	_____
<p><b>NOTE</b>  No radio checks are permitted on the International distress and safety frequency.</p>	

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments**  
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**TASK BCM-05-03-ANY: Use the VHF-FM Radiotelephone to Give a Operations and Position Report**

**References**

- a. *U.S. Coast Guard Boat Operations and Training (BOAT) Manual, Volume I, COMDTINST M16114.32 (series)*
- b. *Radio Telephone Manual, TTP 06-01.1 (series)*

**Conditions**

Task should be performed at any time, onboard one of the unit’s boats or cutter. Message to be sent should be composed by the trainee and the instructor prior to the beginning of the task. Trainee must accomplish task without prompting or use of a reference.

**Standards**

In response to the instructor, the trainee must, without error, send a short operations and position report. Task must be accomplished using proper radio telephone procedures, including prowords and phonetic alphabet, in accordance with the above reference.

Performance Criteria	Completed (Initials)
1. Turn on, tune, and set radio to unit’s working frequency.	_____
2. Hail Station using unit’s working frequency.	_____
3. Ensure that Channel 16 (emergency frequency) is being monitored at the same time.	_____
4. Send status of operations and position.	_____
5. Sign off using proper prowords at conclusion of the message.	_____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments**  
\_\_\_\_\_  
\_\_\_\_\_



**TASK BCM-05-04-ANY: State General Communications Policy and Doctrine**

**References**

- a. *Radio Telephone Manual, TTP 06-01.1 (series)*
- b. *U.S. Coast Guard Boat Operations and Training (BOAT) Manual, Volume I, COMDTINST M16114.32 (series)*

**Conditions**

Task should be performed at any time, onboard one of the unit's boats or cutter. Trainee must accomplish task without prompting or use of a reference.

**Standards**

In response to the instructor, the trainee must describe, without error, the following criteria in accordance with the above reference.

Performance Criteria	Completed (Initials)
1. State secure radio communications policy in accordance with reference a.	_____
2. State the visual and audible indicators of a radio transceiver operating in encrypted and non-encrypted modes.	_____
3. State the meaning of primary, secondary and tertiary communications.	_____
4. State policy on cell phone / smart phone usage, texting and web surfing in accordance with reference a.	_____
5. State position and status report policy in accordance with reference a.	_____
6. State lost communications procedures.	_____

**Instructor** \_\_\_\_\_

**Date** \_\_\_\_\_

**Comments**

\_\_\_\_\_  
 \_\_\_\_\_



## Section F. Navigation

### Introduction

The following are objectives of Division Six:

- (01) **Demonstrate** the use of paper and electronic nautical charts.
- (02) **Demonstrate** the ability to identify navigation and general landmark symbols on paper and electronic nautical charts.
- (03) **Demonstrate** the ability to plan a voyage by laying down a track line across safe water and through marked channels using paper based and electronic charting systems.
- (04) **Demonstrate** the ability to take a fix and plot a position on a paper chart.
- (05) **Demonstrate** ability to calculate actual speed of boat, determine amount of water beneath keel, and recommend adjustments to boat's course and speed to match voyage plan at specified intervals.

### In this Section

This Section contain the following tasks:

Task Number	Task	See Page
BCM-06-01-ANY	Identify the Symbols, Abbreviations and Basic Parts of a Nautical Chart	2-61
BCM-06-02-ANY	Identify Common Aids to Navigation Used for Inland and Coastal Piloting	2-63
BCM-06-03-ANY	Identify Local Landmarks on a Nautical Chart	2-64
BCM-06-04-ANY	Plot a Position Using Latitude and Longitude	2-65
BCM-06-05-ANY	Plot a Magnetic Course on a Nautical Chart	2-66
BCM-06-06-ANY	Measure Distance on a Nautical Chart	2-67
BCM-06-07-ANY	Compute Time, Speed, and Distance	2-68
BCM-06-08-ANY	Determine the Depth of Water Using a Fathometer, Depth Sounder	2-69
BCM-06-09-TYPE	Operate RADAR	2-70
BCM-06-10-ANY	Report Range and Bearing of Charted RADAR Objects	2-71
BCM-06-11-ANY	Use RADAR to Determine if Risk of Collision Exists	2-72
BCM-06-12-TYPE	Operate the VHF-FM Direction Finder and Steer on a Signal	2-74
BCM-06-13-ANY	Obtain a Fix Using GPS/DGPS	2-75
BCM-06-14-TYPE	Not Currently Assigned	
BCM-06-15-TYPE	Operate Electronic Charting System	2-76
BCM-06-16-ANY	Operate Automatic Identification System	2-78



**TASK BCM-06-01-ANY: Identify the Symbols, Abbreviations and Basic Parts of a Nautical Chart**

**NOTE**

This task **DOES NOT** apply to Non standard cutterboats, skiffs or punts.

**Reference**

- a. *Boat Crew Handbook – Navigation and Piloting, BCH16114.3 (series)*
- b. *Nautical Chart Symbols, Abbreviations, and Terms, Chart No. 1*
- c. *American Practical Navigator*

**Conditions**

Task should be performed ashore, at any time, using a corrected paper chart of the local area. Trainee must accomplish task without prompting or use of a reference.

**Standards**

In response to the instructor, the trainee must, without error, identify the different parts of a nautical chart listed in the steps below.

Performance Criteria	Completed (Initials)
1. Identify the longitude and longitude scales.	_____
2. Identify the Nautical Mile (NM) and yards (YDs) scale and describe the relationship between 1 NM, 1 minute of latitude and approximately 2025 YDs.	_____
3. Identify 1 NM using the <i>latitude</i> scale.	_____
4. Identify the chart coordinate format as degrees-minutes-decimal minutes <i>or</i> degree-minutes-seconds.	_____
5. Identify the scale of a chart.	_____
6. Identify datum used for water depths (tidal datum).	_____
7. Identify sounding units of measure (meters/feet/fathoms).	_____
8. Identify the depth conversion scale and the relationship between meters, feet and fathoms.	_____
9. Identify depth curves (contours).	_____
10. Identify shading colors and stated meaning of each.	_____
11. Identify datum used for overhead clearances of bridges, cables, etc.	_____
12. Identify horizontal and vertical clearances of overhead bridges and cables.	_____
13. Identify the general information block.	_____
14. Identify chart symbols for aids to navigation, to include port and starboard hand marks, preferred channel marks, cardinal marks, safe water marks, isolated danger marks, special purpose marks, mooring buoy, beacons, ICW ATON and state waterways markings, ranges (boards and leading lights). If an above chart symbol is not found on the chart, then locate and identify the symbol in CHART 1. Use column appropriate for symbols used on the local chart; if National Ocean Service Chart (NOS), use Column 9A.	_____
15. Identify sound signals used on ATON, including BELL, GONG, and WHIS. If an above chart symbol is not found on the chart, then locate and identify the symbol in CHART 1. Use column appropriate for symbols used on the local chart; if National Ocean Service Chart (NOS), use Column 9A.	_____
16. Identify light patterns used on ATON.	_____
17. Identify the symbols for prominent local landmarks, including type, number, and characteristics of the primary aids used for entering and exiting the unit's berths.	_____
18. Identify the compass rose and indicate the purpose of each of its prominent parts.	_____



Part 2 – Boat Crew Member Qualification  
Chapter 2 – Boat Crew Member Qualification Tasks

Performance Criteria	Completed (Initials)
19. Identify the symbol for a wreck, rock, or other submerged obstruction.	_____
20. Identify latest changes to the chart determined by Notice to Mariners and Local Notice to Mariners.	_____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments**  
\_\_\_\_\_  
\_\_\_\_\_



**TASK BCM-06-02-ANY: Identify Common Aids to Navigation Used for Inland and Coastal Piloting**

**References**

- a. *Boat Crew Handbook – Navigation and Piloting, BCH16114.3 (series)*
- b. *Nautical Chart Symbols, Abbreviations, and Terms, Chart No. 1*
- c. *The American Practical Navigator*

**Conditions**

Task should be performed while underway, using a corrected paper nautical chart of the unit’s local operating area. A stopwatch will be used to time and identify lighted ATON. Trainee must accomplish task without prompting or use of a reference.

**Standards**

In response to the instructor, the trainee must, without error, identify the stated aids to navigation and their corresponding chart symbols.

Performance Criteria	Completed (Initials)
1. State the key features of IALA Maritime Buoyage Region B (area, ATON colors, numbering, etc.).	_____
2. State the difference between cardinal and lateral marks, and where they are encountered.	_____
3. Identify port and starboard marks.	_____
4. Identify preferred channel marks.	_____
5. Identify cardinal marks.	_____
6. Identify safe water marks.	_____
7. Identify isolated danger marks.	_____
8. Identify special purpose marks.	_____
9. Identify mooring buoys.	_____
10. Identify beacons.	_____
11. Identify ICW ATON and state waterways markings.	_____
12. Identify ranges and state their purpose.	_____
13. Identify sound signals used on ATON, including BELL, GONG, and WHIS.	_____
14. Identify light patterns used on ATON to include flashing, quick flashing, morse ALFA, ISO Phase, etc.	_____
15. While underway, identify by type, number, and characteristic the primary aids used for entering and exiting the unit’s berths.	_____

**Instructor** \_\_\_\_\_

**Date** \_\_\_\_\_

**Comments**

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



**TASK BCM-06-03-ANY: Identify Local Landmarks on a Nautical Chart**

**NOTE** 

This task **DOES NOT** apply to Non standard cutterboats, skiffs or punts.

**References**

- a. *Boat Crew Handbook – Navigation and Piloting, BCH16114.3 (series)*
- b. *Nautical Chart Symbols, Abbreviations, and Terms, Chart No. 1*

**Conditions**

Task should be performed while underway, using a corrected paper nautical chart of the unit's local operating area. Trainee must accomplish task without prompting or use of a reference.

**Standards**

In response to the instructor pointing out aids to navigation and prominent landmarks, the trainee must, without error, correctly identify on the chart those objects pointed out.

Performance Criteria	Completed (Initials)
1. Identify all major piers and docks in the area.	_____
2. Identify any prominent dangerous submerged or semi-submerged rocks, shoals and structures.	_____
3. Identify all prominent submerged or partially submerged wrecks in the area.	_____
4. Identify all prominent antennas and towers used as navigational landmarks in the area.	_____
5. Identify all prominent buildings and structures used as navigational landmarks in the area.	_____
6. Identify all prominent landmarks in the area.	_____
7. Identify all bridges and their types in the area.	_____

**Instructor** \_\_\_\_\_

**Date** \_\_\_\_\_

**Comments** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



**TASK BCM-06-04-ANY: Plot a Position Using Latitude and Longitude**

- References**
- Boat Crew Handbook – Navigation and Piloting, BCH16114.3 (series)*
  - Coast Guard Navigation Standards Manual, COMDTINST 3530.2 (series)*
  - The American Practical Navigator*

**Conditions**

Trainee shall be given a paper nautical chart (scale 1:80,000 or larger), plotting gear, and five position coordinates expressed as degrees, minutes and seconds (DD-MM-SS λ DDD-MM-SS) Trainee must convert the positions to degrees, minutes and decimal minutes (DD-MM.MM λ DDD-MM.MM), then plot the five positions as waypoints without prompting or use of a reference.

Note to trainer: given positions will be used in later tasks to form a navigation trackline.

**Standards**

Convert, without error, the positions within 5 minutes. Then, plot and label (“A”, “B”, etc.) the latitude and longitude coordinates within five minutes. Positions must be accurate within 100 yards.

Performance Criteria			Completed (Initials)
Position	Given Coordinates (DD-MM-SS λ DDD-MM-SS)	Converted Coordinates (DD-MM.MM λ DDD-MM.MM)	
A	<u>LAT</u>	<u>LAT</u>	_____
	<u>LONG</u>	<u>LONG</u>	
B	<u>LAT</u>	<u>LAT</u>	_____
	<u>LONG</u>	<u>LONG</u>	
C	<u>LAT</u>	<u>LAT</u>	_____
	<u>LONG</u>	<u>LONG</u>	
D	<u>LAT</u>	<u>LAT</u>	_____
	<u>LONG</u>	<u>LONG</u>	
E	<u>LAT</u>	<u>LAT</u>	_____
	<u>LONG</u>	<u>LONG</u>	

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments**

\_\_\_\_\_

\_\_\_\_\_



**TASK BCM-06-05-ANY: Plot a Magnetic Course on a Nautical Chart**

**References** a. *Boat Crew Handbook – Navigation and Piloting, BCH16114.3 (series)*  
 b. *American Practical Navigator*

**Conditions** Trainee shall be given plotting gear, the nautical chart used in TASK BCM-06-04-ANY with the five waypoint positions plotted (and verified correct). Trainee must accomplish task without prompting or use of a reference.

**Standards** Plot, without error, the trackline legs between positions A and E, then label each track leg with magnetic course, within five minutes. Courses must be accurate to within 3°.

Performance Criteria			Completed (Initials)
Position	Given Coordinates	Magnetic Course (to next waypoint)	
A	<u>LAT</u>		_____
	<u>LONG</u>		
B	<u>LAT</u>		_____
	<u>LONG</u>		
C	<u>LAT</u>		_____
	<u>LONG</u>		
D	<u>LAT</u>		_____
	<u>LONG</u>		
E	<u>LAT</u>	N/A <i>Next Coordinates not specified.</i>	
	<u>LONG</u>		

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments** \_\_\_\_\_

\_\_\_\_\_



**TASK BCM-06-06-ANY: Measure Distance on a Nautical Chart**

**References**

- a. *Boat Crew Handbook – Navigation and Piloting, BCH16114.3 (series)*
- b. *The American Practical Navigator*

**Conditions**

Trainee shall be given plotting gear, the nautical chart used in TASK BCM-06-04-ANY with the five waypoint positions and magnetic courses plotted (and verified correct). Distances shall be consistently labeled using nautical miles or yards, as appropriate for the scale of chart in use. Trainee must accomplish task without prompting or use of a reference.

**Standards**

Trainee must, without error, measure and label the distances indicated in the below criteria within three minutes. Distance must be accurate to within 200 yards (.1NM).

Performance Criteria	Completed (Initials)
Distance from A to B = ____ _	_____
Distance from B to C = ____ _	_____
Distance from C to D = ____ _	_____
Distance from D to E = ____ _	_____

**Instructor**

**Date**

**Comments**

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**TASK BCM-06-07-ANY: Compute Time, Speed, and Distance**

<b>References</b>	a. <i>Boat Crew Handbook – Navigation and Piloting, BCH16114.3 (series)</i> b. <i>The American Practical Navigator</i>
<b>Conditions</b>	Trainee shall be given a nautical chart, nautical slide rule, and the positions and distance calculated in TASK BCM-06-06-ANY (verified correct). All answers should be given to the nearest tenth of an hour, knot, or nautical mile as indicated in the criteria. Trainee must accomplish task without prompting or use of a reference.
<b>Standards</b>	The trainee must, without error, calculate the answer indicated for all criteria within five minutes.

**NOTE**

The Nautical Slide Rule may be used for criteria 1 through 4. In criteria 5 and 6, calculations are done mentally; use of the Nautical slide Rule is not allowed.

Performance Criteria	Completed (Initials)
1. Calculate the time, in minutes, required to travel from point A to point B at 8 KTS.	_____
2. Calculate the time, in hours, required to travel from point A to point E at 8 KTS.	_____
3. Calculate the speed, in knots, required to travel from point A to point B in 18 minutes.	_____
4. Calculate the speed, in knots, required to travel from point A to point E in 90 minutes.	_____
5. Apply 3 Minute Rule: measure from point B to point C in YARDS, then state speed required to transit from point B to point C in three minutes.	_____
6. Apply 6 Minute Rule: measure from point C to point D in NM, then state speed required to transit from point C to point D in six minutes.	_____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments**

\_\_\_\_\_

\_\_\_\_\_



**TASK BCM-06-08-ANY: Determine the Depth of Water Using a Fathometer, Depth Sounder**

- References**
- a. *Boat Crew Handbook – Navigation and Piloting, BCH16114.3 (series)*
  - b. *Coast Guard Navigation Standards Manual, COMDTINST 3530.2 (series)*
  - c. *Applicable Fathometer / Depth Sounder Operator's Manual*
  - d. *Specific Boat Type Operator's Handbook, COMDTINST M16114 (series)*

**Conditions**  
 Task should be performed at any time, while underway. Trainee will be provided the state of the tide by the instructor. Criteria 1 through 3 should be accomplished in water greater than 5 fathoms. Steps 4 and 5 should be accomplished in water less than 30 FT. Trainee must accomplish task without prompting or use of a reference.

**Standards**  
 In response to the instructor, the trainee must, without error, identify different parts of the fathometer depth sounder, operate various functions, report sounding and determine if sounding agrees with charted depth. Soundings should be within 10% (allowing for range of tide) of the charted depth when working in water less than 30 FT. All other soundings should be within 2 fathoms of the charted depth.

Performance Criteria	Completed (Initials)
1. State depth sounder principle of operation.	_____
2. Energize fathometer/depth sounder, and related equipment as required.	_____
3. Identify location of fathometer depth readout(s).	_____
4. Identify location of video sounder display (if available).	_____
5. Adjust illumination, backlighting and contrast as appropriate.	_____
6. Demonstrate setting depth units to match paper chart.	_____
7. Demonstrate entering "Offset Setup". Set appropriate depth.	_____
8. Correct "Offset Depth" in each piece of equipment as required.	_____
9. Demonstrate setting shallow water alarm.	_____
10. State boat operations / conditions that may interfere with obtaining a reliable sounding.	_____
11. Using fathometer depth readout, report the depth and whether sounding agrees with charted depth (allowing for state of tide) in three different positions. Instructor will provide fix position and verify sounding.	_____
12. Using video sounder display (if available), report depth based on interpretation of sea-bed display and whether sounding agrees with charted depth (allowing for state of tide) in three different positions. Instructor will provide fix position and verify sounding.	_____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments**  
 \_\_\_\_\_  
 \_\_\_\_\_



**TASK BCM-06-09 TYPE: Operate RADAR**

<b>References</b>	<ul style="list-style-type: none"> <li>a. <i>Boat Crew Handbook – Navigation and Piloting, BCH16114.3 (series)</i></li> <li>b. <i>Radar Operator’s Manual</i></li> <li>c. <i>The American Practical Navigator</i></li> <li>d. <i>Nautical Chart Symbols, Abbreviations, and Terms, Chart No. 1</i></li> <li>e. <i>Specific Boat Type Operator's Handbook, COMDTINST M16114 (series)</i></li> </ul>
<b>Conditions</b>	Task should be performed at any time, while underway, onboard each of the unit’s boats. This task requires the demonstration of sea and rain clutter controls: weather should include rain; sea state should include moderate chop. All of the steps must be accomplished using the installed radar. Trainee must accomplish task without prompting or use of a reference.
<b>Standards</b>	In response to the instructor, the trainee must, without error, correctly demonstrate the task criteria.

Performance Criteria	Completed (Initials)
1. Energize radar and related equipment and allow unit to warm up.	_____
2. Demonstrate toggling between transmit and stand-by modes.	_____
3. Demonstrate automatic and manual tuning.	_____
4. Demonstrate the use of <i>Gain</i> , Anti-Clutter Sea (A/C Sea) and Anti-Clutter Rain (A/C Rain).	_____
5. Identify the following RADAR display graphics: <ul style="list-style-type: none"> <li>a. Heading (indicator for True and Magnetic)</li> <li>b. Cursor, Cursor readout</li> <li>c. Boat’s velocity vector, how system calculates the boat’s velocity vector.</li> <li>d. EBL(1-2), EBL(1-2) readouts</li> <li>e. Range Rings</li> <li>f. Presentation mode.</li> </ul>	_____
6. Demonstrate the use of all presentation modes available, including description of when each mode would be used. <ul style="list-style-type: none"> <li>a. Head Up</li> <li>b. Course Up</li> <li>c. North Up</li> <li>d. True Motion</li> <li>e. Offset</li> </ul>	_____
7. Demonstrate adjusting range scale for long range scanning and close-in target detection.	_____



Performance Criteria	Completed (Initials)
8. If applicable, state the use of and demonstrate adjusting or enabling the following. <ul style="list-style-type: none"> <li>a. <i>Optimize Pulse Length</i></li> <li>b. <i>FTC (Fast Time Constant)</i></li> <li>c. <i>Reduce Noise Interface</i></li> <li>d. <i>Reject RADAR Interference</i></li> <li>e. <i>Display Echo Trails</i></li> <li>f. <i>Adjust Echo Stretch setting, state relationship to sea clutter and interference.</i></li> <li>g. <i>Adjust Echo Averaging settings, state consequences to RADAR search.</i></li> </ul>	_____
9. Demonstrate setting RADAR OVERLAY mode (if available) and adjusting RADAR for optimal overlay display.	_____
10. Identify a RACON on the radar screen (if applicable). If not available, describe the appearance of a RACON on a radar display.	_____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments** \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**TASK BCM-06-10-ANY: Report Range and Bearing of Charted RADAR Objects**

**NOTE**

This task **DOES NOT** apply to Nonstandard cutterboats, skiffs, punts or platforms not outfitted with a radar as part of its electronics suite.

**References**

- a. *Boat Crew Handbook – Navigation and Piloting, BCH16114.3 (series)*
- b. *Radar Operator’s Manual*
- c. *The American Practical Navigator*

**Conditions**

Task should be performed at any time, while underway, onboard each of the unit’s boats. This task requires the trainee to adjust and operate the RADAR to obtain RADAR data on objects designated by the instructor. Weather should include rain; sea state should include moderate chop. All of the steps must be accomplished using the installed radar and a corrected local area paper chart. Trainee must accomplish task without prompting or use of a reference.

**Standards**

The trainee must, without error, report the RADAR range and bearing to charted objects and vessels designated by the instructor. RADAR bearings must be reported consistent with RADAR *stabilization mode* in use (e.g. true, relative). Bearings are to be visually confirmed by the instructor. A *turn range report* should include at least 3 statements at regular intervals. Each report should include object name (or designation), actual range to turn object, range to turn, and “mark turn range” when at turn range.

Performance Criteria	Completed (Initials)
1. Energize radar and related equipment; adjust as required for optimal target return.	_____
2. State the type of radar bearing obtained for each presentation mode: <ul style="list-style-type: none"> <li>a. Head Up</li> <li>b. Course Up</li> </ul>	_____



c. North Up d. True Motion	
3. State factors effecting accuracy and reliability of radar bearings.	_____
4. Report range and bearing to three different prominent charted landmarks.	_____
5. Report range and bearing to three different charted aids to navigation.	_____
6. Report range and bearing to three different moving targets.	_____
7. State the concept of using a <i>turn range</i> to assist in piloting and navigation and proper turn range object selection.	_____
8. Provide a <i>turn range report</i> for a turn.	_____ _____ _____
9. State the concept of using a <i>danger range</i> to assist in navigation and proper radar danger object selection.	_____
10. Provide a <i>danger range report</i> to a danger object.	_____ _____ _____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_  
**Comments** \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**TASK BCM-06-11-ANY: Use RADAR to Determine if Risk of Collision Exists**

**NOTE** 

This task **DOES NOT** apply to Nonstandard cutterboats, skiffs, punts or platforms not outfitted with a radar as part of its electronics suite.

**References**

- a. *Radar Navigation Manual, Pub 1310*
- b. *Promulgation of the Navigation Rules and Regulations Manual, COMDTINST 16672.2 (series)*
- c. *Radar System Operator's Manual*
- d. *The American Practical Navigator*

**Conditions**

Task may be performed at any time, while underway, onboard the unit's boats. Weather should be calm to moderate. Trainee will use radar target bearings and ranges to aid in establishing risk of collision on vessels in sight of one another, and, during simulated (.1NM) or actual restricted visibility, use RADAR to determine if risk of collision exists and recommend action to avoid collision. All of the steps must be accomplished manually using the installed RADAR without active ARPA functions. Collision avoidance determinations shall be verified by sight by the instructor. Trainee must accomplish task without prompting or use of a reference.

**Standards**

Trainee must be able to determine the relative motion of the target within a "reasonable" amount of time and recommend an adjustment to the boat's course to a risk of collision.

Performance Criteria	Completed (Initials)
1. State the meaning of "Constant Bearing, Decreasing Range".	_____

Part 2 – Boat Crew Member Qualification  
 Chapter 2 – Boat Crew Member Qualification Tasks



Performance Criteria	Completed (Initials)
2. Detect and verbally designate (3) radar targets.	_____
3. For vessels in sight of one another (complete 3 times): a. Correlate radar target to visual target. b. Systematically observe (i.e. record at regular intervals) radar target bearing and range. c. Report target bearing change (bearing drift). d. Report situation as meeting, crossing, or overtaking. e. Recommend action to avoid collision.	_____ _____ _____
4. For vessels not in sight of one another (i.e. restricted visibility)(complete 3 times): a. Correlate radar target to sound signal, audible noise, AIS track, etc. b. Systematically observe (i.e. record at regular intervals) radar target bearing and range. c. Determine target time and bearing of Closest Point of Approach (CPA). d. Determine target true course and speed. e. Recommend action to avoid collision.	_____ _____ _____
5. For vessels not in sight of one another (i.e. restricted visibility)(complete 3 times): a. Scan next track leg ahead for contacts. b. Report whether next leg clear or not clear.	_____ _____ _____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments** \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



**TASK BCM-06-12-TYPE: Operate the VHF-FM Direction Finder and Steer on a Signal**

<b>Reference</b>	a. <i>Manufacturer's Operating Manual</i>
<b>Conditions</b>	Task should be performed at any time, while underway, onboard the unit's boats. Task will require the use of another radio transceiver at a known location. Trainee must accomplish task without prompting or use of a reference.
<b>Standards</b>	In response to the instructor, the trainee must demonstrate the use of the FM direction finder. The instructor will coordinate signal transmission via working frequency. Course should be steered within 5° of the charted LOP.

Performance Criteria	Completed (Initials)
1. Energize direction finder and related equipment.	_____ _____ _____
2. Identify front panel indicator and controls.	_____ _____ _____
3. Identify volume control and adjust.	_____ _____ _____
4. Identify squelch control and adjust to just beyond the point where static disappears.	_____ _____ _____
5. Enter homing frequency.	_____ _____ _____
6. State the signal direction and signal strength.	_____ _____ _____
7. Steer on signal. Report change in signal strength, whether closing or opening range.	_____ _____ _____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments** \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



**TASK BCM-06-13-ANY: Obtain a Fix Using GPS/DGPS**

**NOTE** 

Cutterboats complete items 1-6; CB-OTH crews perform all steps.

**References**

- a. *Coast Guard Navigation Standards Manual, COMDTINST 3530.2 (series)*
- b. *Boat Crew Handbook – Navigation and Piloting, BCH16114.3 (series)*
- c. *Manufacturer’s Operator Manual*
- d. *The American Practical Navigator*

**Conditions**

Task should be performed at any time, onboard the unit’s boats. Trainee must accomplish task without prompting or use of a reference.

**Standards**

In response to the instructor, the trainee must correctly demonstrate the use of the GPS/DGPS receiver.

Performance Criteria	Completed (Initials)
1. Define the following terms, in regard to GPS accuracy, positioning source category (A or B). a. Selective Availability Off b. Selective Availability On c. Differential GPS d. Wide Area Augmentation System (WAAS) e. Precise Positioning Service (PPS)	_____
2. State the indicators of loss of GPS signal.	_____
3. State the meaning of GPS Course Over Ground and Speed Over Ground.	_____
4. State the type of position displayed and update source, on the GPS unit during a loss of GPS signal.	_____
5. Energize set and report signal type being received (per criteria number 1, this task).	_____ _____ _____
6. Report GPS latitude and longitude.	_____ _____ _____
7. Plot latitude and longitude position on chart.	_____ _____ _____

**Instructor** \_\_\_\_\_

**Date** \_\_\_\_\_

**Comments** \_\_\_\_\_



**TASK BCM-06-15-TYPE: Operate Electronic Charting System**

<b>Reference</b>	<ul style="list-style-type: none"> <li>a. <i>Coast Guard Navigation Standards Manual, COMDTINST 3530.2 (series)</i></li> <li>b. <i>The American Practical Navigator</i></li> <li>c. <i>Boat Crew Handbook – Navigation and Piloting, BCH16114.3 (series)</i></li> <li>d. <i>Electronic Charting System Operation Manual</i></li> <li>e. <i>Local Command Navigation Standards</i></li> </ul>
------------------	--

<b>Conditions</b>	Task should be performed at any time, at facilities available to the unit. Some features may not be available in all charting systems.
-------------------	--

<b>Standards</b>	Trainee must either demonstrate knowledge or perform each task to the minimum standards included in each performance step. Trackline will contain at least 5 waypoints and 4 legs.
------------------	--

Performance Criteria	Completed (Initials)	Boat Type
1. Energize the chart plotter and associated equipment as needed.	_____ _____ _____	_____ _____ _____
2. Adjust screen for daytime and nighttime viewing.	_____ _____ _____	_____ _____ _____
3. Display electronic chart.	_____ _____ _____	_____ _____ _____
4. Compare electronic chart symbols (ATON, etc.) to paper chart symbols.	_____ _____ _____	_____ _____ _____
5. Query charted object for additional information.	_____ _____ _____	_____ _____ _____
6. Create waypoint(s): <ul style="list-style-type: none"> <li>a. From command approved trackline coordinates.</li> <li>b. Using cursor.</li> <li>c. Using MAN OVERBOARD / SAVE function.</li> </ul>	_____ _____ _____	_____ _____ _____
7. Create trackline route from <i>command approved trackline</i> .	_____ _____ _____	_____ _____ _____
8. Evaluate trackline route (from item 7) for safety.	_____ _____ _____	_____ _____ _____
9. State the following items from the local Command Navigation Standards, to include: <ul style="list-style-type: none"> <li>a. Alarm management</li> </ul>	_____ _____ _____	_____ _____ _____

Part 2 – Boat Crew Member Qualification  
 Chapter 2 – Boat Crew Member Qualification Tasks



Performance Criteria	Completed (Initials)	Boat Type
b. Method of indicating approved tracklines. c. Filter Settings, intentional overscale d. Fix source comparison interval. e. Policy regarding deleting information recorded by navigation system.	_____ _____ _____	_____ _____ _____
10. Identify boat's position symbol, to include heading , course/speed vector.	_____ _____ _____	_____ _____ _____
11. Identify boat's navigation data (Position, COG/SOG, etc.)	_____ _____ _____	_____ _____ _____
12. Diagram concept "Maximum Allowable Cross Track Error" alarm.	_____ _____ _____	_____ _____ _____
13. Enter Cross Track Error Alarm value.	_____ _____ _____	_____ _____ _____
14. Diagram concepts: depth below keel, sounder offset, depth alarm.	_____ _____ _____	_____ _____ _____
15. Enter Depth Alarm value.	_____ _____ _____	_____ _____ _____
16. Activate a route and identify route navigational data display.	_____ _____ _____	_____ _____ _____
17. Display integrated tide and current data for area along route (if equipped).	_____ _____ _____	_____ _____ _____
18. Select alternate positioning source (if equipped and available, e.g. radar map match, LOP fix).	_____ _____ _____	_____ _____ _____
19. Provide navigation recommendations while completing three (3) "Day Night Navigation and Piloting-Mode 1" drills.	_____ _____ _____	_____ _____ _____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments**  
 \_\_\_\_\_  
 \_\_\_\_\_



**TASK BCM-06-16-TYPE: Operate Automatic Identification System**

<b>Reference</b>	<ul style="list-style-type: none"> <li>a. <a href="http://www.navcen.uscg.gov/?pageName=NAISmain">http://www.navcen.uscg.gov/?pageName=NAISmain</a></li> <li>b. <i>Coast Pilot (local region)</i></li> <li>c. <i>AIS Manufacturer’s Operation Manual</i></li> </ul>
<b>Conditions</b>	Task should be performed at any time, at facilities available to the unit.
<b>Standards</b>	Trainee must either demonstrate knowledge or perform each task to the minimum standards included in each performance step. Criterion 5 only applies only if ARPA-AIS integrated system is available).

Performance Criteria	Completed (Initials)
1. State AIS concepts, to include: <ul style="list-style-type: none"> <li>a. The purpose of AIS.</li> <li>b. Relationship to Nationwide Automatic Identification System (NAIS).</li> <li>c. Which vessels are required by law to have operational AIS.</li> <li>d. Role of AIS in Vessel Traffic Service Areas</li> <li>e. Function of Maritime Mobile Service Identity (MMSI ) number.</li> </ul>	_____
2. State AIS capabilities, to include: <ul style="list-style-type: none"> <li>a. Operation modes.</li> <li>b. Information broadcast.</li> <li>c. Range.</li> <li>d. Operational Security procedures.</li> <li>e. Relationship of AIS to <i>Blue Force Tracking</i>.</li> </ul>	_____
3. State main AIS system components, to include: <ul style="list-style-type: none"> <li>a. Operator Interface</li> <li>b. Transceiver, frequencies/channels</li> <li>c. GPS</li> <li>d. Distributed track data (to integrated ARPA, ECDIS, etc.)</li> </ul>	_____
4. Energize unit.	_____
5. Verify your boat information is correct.	_____
6. Change the mode of operation.	_____
7. Change the navigation status of your vessel.	_____
8. Report visual and radar correlation of at least three AIS tracks (from AIS Operator’s Interface and AIS integrated ARPA, if available) to actual radar target.	_____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments**  
\_\_\_\_\_  
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## Section G. Mission-Oriented Operations

### Introduction

The following are objectives of Division Seven:

- (01) **Demonstrate** actions to take during a man overboard emergency.
- (02) **Demonstrate** procedures to signal an emergency.
- (03) **Demonstrate** procedures for helo hoist operation.
- (04) **Demonstrate** procedures for towing astern and alongside.
- (05) **Demonstrate** procedures for dewatering another boat.
- (06) **Demonstrate** procedures to combat a fire onboard own boat or another boat.

### In this Section

This Section contains the following tasks:

Task Number	Task	See Page
BCM-07-01-TYPE	Participate in a Man Overboard Evolution as a Pointer	2-80
BCM-07-02-TYPE	Participate in a Man Overboard Evolution as a Recovery/Pickup Person	2-81
BCM-07-03-ANY	Participate in a Man Overboard Evolution as a Boat Swimmer	2-82
BCM-07-04-ANY	Stokes Litter	2-83
BCM-07-05-TYPE	Recover a Person-in-the-Water with the Stokes Litter	2-84
BCM-07-06-ANY	Helicopter Operations	2-85
BCM-07-07-TYPE	Conduct Helo-Ops	2-86
BCM-07-08-ANY	Fire the M127A1 Ground Illumination Signal	2-87
BCM-07-09-ANY	Bend a Heaving Line to a Bridle and Pass the Heaving Line to Another Boat	2-88
BCM-07-10-TYPE	Pass a Towline to Another Boat	2-88
BCM-07-11-ANY	Connect a Towline to a Trailer Eyebolt Using a Skiff Hook	2-89
BCM-07-12-TYPE	Secure an Alongside Tow	2-90
BCM-07-13-ANY	Prepare the Portable Pump for Operation, Start, and Obtain Suction	2-91
BCM-07-14-TYPE	Assist in Passing a Portable Pump Directly to Another Boat	2-92
BCM-07-15-TYPE	Rig and Operate an Eductor to Obtain Suction	2-93
BCM-07-16-ANY	State Fire Fuel Source Classification and Extinguishing Agents	2-94
BCM-07-17-TYPE	Locate and Identify the Firefighting Equipment Carried Onboard the Boat	2-94
BCM-07-18-ANY	Operate a CO2 Fire Extinguisher	2-96
BCM-07-19-ANY	Operate a Dry Chemical Fire Extinguisher	2-96



Part 2 – Boat Crew Member Qualification  
 Chapter 2 – Boat Crew Member Qualification Tasks

Task Number	Task	See Page
BCM-07-20-TYPE	Assemble Equipment for the Boat's Main Firefighting System (Installed System or Portable Pump with Vari Nozzle optional Hose)	2-97
BCM-07-21-TYPE	Engage the Boat's Main Fire Pump	2-98
BCM-07-22-TYPE	Operate a Vari-Nozzle	2-99
BCM-07-23-TYPE	Not currently assigned	
BCM-07-24-TYPE	Demonstrate the Appropriate Response to the Basic Engineering Casualty Control Exercises (BECCE)	2-100
BCM-07-25-TYPE	Participate in a Man Overboard Evolution as a Recovery/Pickup Person in Heavy Weather	2-102
BCM-07-26-TYPE	Pass and Recover a Towline/Pump in Heavy Weather	2-103

**TASK BCM-07-01-TYPE: Participate in a Man Overboard Evolution as a Pointer**

**Reference**

a. *Boat Crew Handbook – Boat Operations, BCH16114.1 (series)*

**Conditions**

Task should be performed during the day and at night, while underway onboard the unit's boats. Training boat crews for Person in the Water Recovery requires the use of a life-like dummy (OSCAR). The recommended OSCAR is a stuffed and weighted (approximately 180 lbs dry) Anti-Exposure Coverall secured at the neck and feet. Trainee must accomplish task without prompting or use of a reference.

**Standards**

In response to the instructor, the trainee must move to his/her correct Station and perform the task steps without hesitation.

Performance Criteria	Completed (Initials)	Boat Type
1. Keep PIW in sight continuously and sound alarm.	_____ _____ _____	_____ _____ _____
2. Proceed immediately to assigned position.	_____ _____ _____	_____ _____ _____
3. Keep Coxswain continuously informed of PIW position both vocally and by pointing.	_____ _____ _____	_____ _____ _____
4. Upon command, move to assigned position, and assist with pickup of PIW.	_____ _____ _____	_____ _____ _____

**Instructor** \_\_\_\_\_

**Date** \_\_\_\_\_

**Comments** \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



**TASK BCM-07-02-TYPE: Participate in a Man Overboard Evolution as a Recovery/Pickup Person**

**Reference**

a. *Boat Crew Handbook – Boat Operations, BCH16114.1 (series)*

**Conditions**

Task should be performed at any time, onboard the unit's boats. Training boat crews for Person in the Water Recovery requires the use of a life-like dummy (OSCAR). The recommended OSCAR is a stuffed and weighted (approximately 180 lbs dry) Anti-Exposure Coverall secured at the neck and feet. Trainee must accomplish task without prompting or use of a reference.

**Standards**

In response to the instructor, the trainee must move to his/her correct Station and perform the task steps without hesitation.

Performance Criteria	Completed (Initials)	Boat Type
1. Proceed immediately to assigned position (should be lowest point of free board away from screws, nozzles, buckets).	_____ _____ _____	_____ _____ _____
2. Prepare a rescue heaving line, if PIW is conscious.	_____ _____ _____	_____ _____ _____
3. On command, throw a rescue heaving line to PIW, if PIW is conscious.	_____ _____ _____	_____ _____ _____
4. Pull PIW alongside the boat, if PIW is conscious.	_____ _____ _____	_____ _____ _____
5. Pull the PIW aboard using two persons.	_____ _____ _____	_____ _____ _____
6. Deploy with ice rescue team and recover victim using standard ice rescue techniques. (SPC-AIR Only)	_____ _____ _____	_____ _____ _____

**Instructor**

**Date**

**Comments**



**TASK BCM-07-03-ANY: Participate in a Man Overboard Evolution as a Boat Swimmer**

- References**
- a. *U.S. Coast Guard Boat Operations and Training (BOAT) Manual, Volume I, COMDTINST M16114.32 (series)*
  - b. *Rescue and Survival Systems Manual, COMDTINST M10470.10 (series)*
  - c. *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 M16130.2 (series)*
  - d. *Boat Crew Handbook – Boat Operations, BCH16114.1 (series)*

**Conditions** This task should be performed with an actual person in the water. When not possible due to weather conditions or water temperature, a life-like dummy (OSCAR) is authorized. The recommended OSCAR is a stuffed and weighted (approximately 180 lbs dry) Anti-Exposure Coverall.

**Standards** Trainee will perform evolution as a Swimmer Tender and as a Boat Swimmer using OATH signals as appropriate. The trainee must perform the task criteria without hesitation.

**NOTE**

The intent of this task is to ensure a team consisting of the swimmer tender and the boat swimmer can recover a person in the water. Task may need to be modified, depending upon equipment carried as part of boat outfit.

Performance Criteria	Completed (Initials)
1. State boat swimmer policy as outlined in above References a-d.	_____
2. State OATH signals per above Reference d.	_____
3. Use available flotation (life ring, bouy, etc.) to provide buoyancy to simulated victim.	_____
4. Tender: assist boat swimmer in dressing out.	_____
5. Swimmer: don appropriate hypothermia protective clothing, if required.	_____
6. Swimmer: don additional flotation (PFD) if required.	_____
7. Swimmer: don Boat Swimmer harness.	_____
8. Swimmer: don Boat Swimmer equipment (mask w/snorkel, fins, signal whistle, chemical light, etc.), if applicable.	_____
9. Tender: connect tending line, tend the boat swimmer, using proper tending technique.	_____
10. Tender: tend the boat swimmer, using proper tending technique, during a drill scenario.	_____
11. Swimmer: on command, enter the water feet first.	_____
12. Swimmer: swim out minimum of 75% of tending line and retrieve a non-violent, conscious, simulated victim. Use OATH signals as appropriate.	_____
13. Swimmer: hold PIW in cross shoulder position, while pulled back to boat by Tender.	_____
14. Swimmer & Tender: place PIW in stokes litter (only if person is seriously injured and seas are calm).	_____



Performance Criteria	Completed (Initials)
15. Swimmer: assist while crew hauls PIW onboard.	_____
16. Tender: assist in recovering swimmer.	_____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments**  
 \_\_\_\_\_  
 \_\_\_\_\_

**TASK BCM-07-04-ANY: Stokes Litter**

**Reference**  
 a. *Rescue and Survival Systems Manual, COMDTINST M10470.10 (series)*  
 b. *Boat Crew Handbook – Boat Operations, BCH16114.1 (series)*

**Conditions**  
 Task should be performed at any time at facilities available to the unit.

**Standards**  
 Trainee must either demonstrate knowledge or perform each task to the minimum standards included in each performance step.

Performance Criteria	Completed (Initials)
1. Review stokes litter policy and guidelines provided in Reference (a).	_____
2. State what type of stokes litter is authorized for Coast Guard use.	_____
3. State procedures necessary for securing a patient in the litter.	_____
4. State flotation kit requirements.	_____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments**  
 \_\_\_\_\_  
 \_\_\_\_\_



**TASK BCM-07-05-TYPE: Recover a Person-in-the-Water with the Stokes Litter**

<b>References</b>	a. <i>Boat Crew Handbook – Boat Operations, BCH16114.1 (series)</i> b. <i>Rescue and Survival Systems Manual, COMDTINST M10470.10 (series)</i>
<b>Conditions</b>	Task should be performed at any time, onboard the unit’s boats. Where possible, this task should be performed with an actual person in the water. When not possible due to weather conditions or water temperature, Training boat crews for Person in the Water Recovery requires the use of a life-like dummy (OSCAR). The recommended OSCAR is a stuffed and weighted (approximately 180 lbs dry) Anti-Exposure Coverall secured at the neck and feet. Trainee must accomplish task without prompting or use of a reference.
<b>Standards</b>	In response to the instructor the trainee must perform the task steps without hesitation. Review the policy outlined in References (a) and (b).

**NOTE**

The intent of this task is to ensure crewmember can remove another person from the water. Task may need to be modified, depending upon equipment

Performance Criteria	Completed (Initials)	Boat Type
1. Make ready stokes litter, manila tending lines, and patient securing straps.	_____ _____ _____	_____ _____ _____
2. Place stokes litter in water and tend with assistance of another crewmember.	_____ _____ _____	_____ _____ _____
3. Place patient or Oscar in litter and attach all straps in correct order.	_____ _____ _____	_____ _____ _____
4. Assist while patient is hauled onboard (head first).	_____ _____ _____	_____ _____ _____
5. Check the patient to assess their physical condition and give first-aid as needed.	_____ _____ _____	_____ _____ _____
6. Assist in carrying stokes litter with patient from the boat to the shore.	_____ _____ _____	_____ _____ _____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments**  
 \_\_\_\_\_  
 \_\_\_\_\_



**TASK BCM-07-06-ANY: Helicopter Operations**

<b>Reference</b>	a. <i>Boat Crew Handbook – Boat Operations, BCH16114.1 (series)</i>
<b>Conditions</b>	Task should be performed at any time at facilities available to the unit.
<b>Standards</b>	Trainee must either demonstrate knowledge or perform each task to the minimum standards included in each performance step. For criteria 4 the instructor presents hand signals, 100% accuracy is required. For criteria 5, the student demonstrates hand signals to the instructor, 100% accuracy is required.

Performance Criteria	Completed (Initials)
1. Review air operations chapter of Reference (a).	_____
2. State delivery and hoisting methods.	_____
3. State safety precautions associated with delivery and hoisting.	_____
4. Identify positioning of Safety Observer.	_____
5. State the possible helicopter actions in the event of a snagged hoist cable.	_____
6. Identify helicopter hoist hand signals.	_____
7. Demonstrate helicopter hoist hand signals.	_____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments**  
 \_\_\_\_\_  
 \_\_\_\_\_



**TASK BCM-07-07-TYPE: Conduct Helo-Ops**

**NOTE**

This task applies **ONLY** to boats 40 FT and above.

**Reference**

a. *Boat Crew Handbook – Boat Operations, BCH16114.1 (series)*

**Conditions**

Task should be performed onboard the unit’s boats during daylight hours, in fair weather conditions. All crewmembers should be wearing gloves, helmets, goggles, PFDs, hearing protection, in addition to appropriate exposure gear and boat crew personnel survival vests. Rescue device and/or line must not become entangled or otherwise attached to the boat at any time. Rescue device must be grounded to the boat before crewmembers handle it. Trainee must accomplish task without prompting or use of a reference.

**NOTE**

If no helicopter training is available, this task may be deferred. Task must be completed at the earliest possible time.

**Standards**

In response to the instructor, the trainee should perform the tasks in accordance with the steps listed below.

Performance Criteria	Completed (Initials)	Boat Type
1. Secure loose gear before operations.	_____ _____ _____	_____ _____ _____
2. Ground rescue device using a deadman stick.	_____ _____ _____	_____ _____ _____
3. Bring rescue device onto the boat’s deck by hand or by using a tag line.	_____ _____ _____	_____ _____ _____
4. Tend rescue device as it is lifted from boat and hoisted to helicopter.	_____ _____ _____	_____ _____ _____

**Instructor** \_\_\_\_\_

**Date** \_\_\_\_\_

**Comments** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



**TASK BCM-07-08-ANY: Fire the M127A1 Ground Illumination Signal**

**Reference** a. *Boat Crew Handbook - Rescue and Survival Procedures, BCH 16114.2 (series)*

**Conditions** Task should be performed at night, ashore or underway. Trainee must accomplish task without prompting or use of a reference.

**Standards** Trainee must break out, prepare, and launch the M127A1 signal.

Performance Criteria	Completed (Initials)
1. Remove signal from its container.	_____
2. Hold signal in left hand with red band facing up.	_____
3. Withdraw firing cap from lower end.	_____
4. Inspect cork sealing disc for looseness. If disc is loose, flare should not be fired.	_____
5. Point ejection end, opposite the red band, away from body and other people or objects.	_____
6. Push firing cap slowly onto primer end until cap is aligned with the lower edge of the red band.	_____
7. Position signal so that firing end is perpendicular to the deck with the firing cap facing downward.	_____
8. Fire signal by striking firing cap bottom with the palm of the right-hand.	_____
9. Keep the arm rigid and pointed straight up.	_____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments**  
 \_\_\_\_\_  
 \_\_\_\_\_



**TASK BCM-07-09-ANY: Bend a Heaving Line to a Bridle and Pass the Heaving Line to Another Boat**

<b>Reference</b>	a. <i>Boat Crew Handbook – Boat Operations, BCH16114.1 (series)</i>
<b>Conditions</b>	Task should be performed at any time onboard one of the unit’s boats. Heaving line used should be at least 75 FT long. The target boat must be at least 40 FT away from the boat at the time of the toss. Trainee must accomplish task without prompting or use of a reference.
<b>Standards</b>	In response to the instructor, the trainee must pass the line to the target boat, in accordance with the steps listed below, on two out of three throws. The heaving line should pass over the target boat, but not hit it.

Performance Criteria	Completed (Initials)
1. Wet down heaving line to relieve stiffness.	_____
2. Bend one heaving line onto the bridle eye using a bowline and second onto the throat using a clove hitch with two half hitches, or a snap hook.	_____
3. Make heaving line into tight coils.	_____
4. Place two-thirds of coil in casting hand.	_____
5. Instruct people on other boat to take cover.	_____
6. On command, throw heaving line over the target boat and tend.	_____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments**  
 \_\_\_\_\_  
 \_\_\_\_\_

**TASK BCM-07-10-TYPE: Pass a Towline to Another Boat**

<b>Reference</b>	a. <i>Boat Crew Handbook – Boat Operations, BCH16114.1 (series)</i>
<b>Conditions</b>	Task should be performed at any time, onboard the unit’s boats, while taking another boat in tow. Trainee must accomplish task without prompting or use of a reference.
<b>Standards</b>	In response to the instructor, the trainee must, in accordance with the procedures listed below, perform all line handling related to passing a tow line.

Performance Criteria	Completed (Initials)	Boat Type
1. Using heaving lines, pass towline to the boat to be towed.	_____ _____ _____	_____ _____ _____
2. Tend towline while people on other boat make attachment.	_____ _____ _____	_____ _____ _____



Performance Criteria	Completed (Initials)	Boat Type
3. Place a proper working turn around the towing bitt and pay out the line, as directed.	_____ _____ _____	_____ _____ _____
4. On command, secure towline to the towing bitt.	_____ _____ _____	_____ _____ _____
5. On command, break towing bitt down to a working turn, pay towline out.	_____ _____ _____	_____ _____ _____
6. On command, make up bitt.	_____ _____ _____	_____ _____ _____

Instructor \_\_\_\_\_ Date \_\_\_\_\_

Comments \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**TASK BCM-07-11-ANY: Connect a Towline to a Trailer Eyebolt Using a Skiff Hook**

- Reference** a. *Boat Crew Handbook – Boat Operations, BCH16114.1 (series)*
- 
- Conditions** Task should be performed at any time, onboard any of the unit’s boats, while taking another boat in tow. Trainee must accomplish task without prompting or use of a reference.
- 
- Standards** In response to the instructor, the trainee must, in accordance with the procedures listed below, perform all line handling related to connecting a towline to a boat’s trailer eyebolt.

Performance Criteria	Completed (Initials)	Boat Type
1. Prepare towing line with skiff hook assembly attached.	_____ _____ _____	_____ _____ _____
2. Connect towline to eyebolt using skiff hook assembly, while disabled boat is off either quarter.	_____ _____ _____	_____ _____ _____
3. Tend towline from towing boat with proper working-turn around the tow bitt.	_____ _____ _____	_____ _____ _____
4. On command, secure towline to the tow bitt.	_____ _____ _____	_____ _____ _____



Performance Criteria	Completed (Initials)	Boat Type
5. On command, break down the tow bitt to a working turn, and pay out towline.	_____	_____ _____ _____
6. On command, make up tow bitt.	_____	_____ _____ _____

Instructor \_\_\_\_\_

Date \_\_\_\_\_

Comments \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**TASK BCM-07-12-TYPE: Secure an Alongside Tow**

**NOTE**

This task **DOES NOT** apply to cutterboats.

**Reference**

c. *Boat Crew Handbook – Boat Operations, BCH16114.1 (series)*

**Conditions**

Task should be performed at any time, onboard the unit's boats. Trainee must accomplish task without prompting or use of a reference.

**Standards**

In response to the instructor, the trainee must, without prompting, correctly tend and secure the towline and side lines in accordance with the procedures listed below.

Performance Criteria	Completed (Initials)	Boat Type
1. Rig fenders and set up lines on the side where tow will be secured.	_____	_____ _____ _____
2. If using stern towline, upon command, walk towline forward and fake out excess line on deck, out of the way.	_____	_____ _____ _____
3. If using stern towline, upon command, lead tow line forward and use as the bow line.	_____	_____ _____ _____
4. Secure other lines as directed by the Coxswain.	_____	_____ _____ _____
5. Identify the purpose of each line (bow, stern, towing strap, back spring).	_____	_____ _____ _____



Performance Criteria	Completed (Initials)	Boat Type
	_____	_____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments** \_\_\_\_\_

\_\_\_\_\_

**TASK BCM-07-13-ANY: Prepare the Portable Pump for Operation, Start, and Obtain Suction**

- References**
- a. *Dewatering Pump Manufacturer’s Instructions*
  - b. *Rescue and Survival Systems Manual, COMDTINST M10470.10 (series)*
  - c. *Boat Crew Handbook – Boat Operations, BCH16114.1 (series)*
- 
- Conditions**
- Task should be performed at any time, onboard the unit’s boats. Trainee must accomplish task without prompting or use of a reference.
- 
- Standards**
- In response to the instructor, the trainee must, without error, prepare and start the pump in accordance with the procedures listed below. The pump must take suction in order for this task to be considered successful.

Performance Criteria	Completed (Initials)
1. Open and remove pump from pump can.	_____
2. Check oil. Fill if needed.	_____
3. Mount and connect fuel tank (if applicable).	_____
4. Connect and unroll discharge hose.	_____
5. Connect suction hose.	_____
6. Place suction hose strainer in water.	_____
7. Prime pump.	_____
8. Start pump engine within six pulls.	_____
9. Take suction and discharge water from the pump.	_____
10. Drain, flush out with freshwater, clean up and secure pump.	_____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments** \_\_\_\_\_

\_\_\_\_\_



**TASK BCM-07-14-TYPE: Assist in Passing a Portable Pump Directly to Another Boat**

<b>Reference</b>	a. <i>Boat Crew Handbook – Boat Operations, BCH16114.1 (series)</i>
<b>Conditions</b>	Task should be performed at any time, onboard the unit's boats, acting as a member of a two-man team. Trainee must accomplish task without prompting or use of a reference.
<b>Standards</b>	In response to the instructor, the trainee must demonstrate passing the pump in accordance with the procedures listed below.

Performance Criteria	Completed (Initials)	Boat Type
1. Attach mooring line to pump can handle.	_____ _____ _____	_____ _____ _____
2. Secure heaving line to mooring line using bowline or double becket bend.	_____ _____ _____	_____ _____ _____
3. Attach mooring line to other handle.	_____ _____ _____	_____ _____ _____
4. Pass heaving line to other boat.	_____ _____ _____	_____ _____ _____
5. Tend pump can using mooring line while people on other boat haul it in (lines never allowed to lay slack in the water around the boats).	_____ _____ _____	_____ _____ _____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments** \_\_\_\_\_

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**TASK BCM-07-15-TYPE: Rig and Operate an Eductor to Obtain Suction**

<b>Reference</b>	a. <i>Boat Crew Handbook – Boat Operations, BCH16114.1 (series)</i>
<b>Conditions</b>	Task should be performed at any time, pierside or underway, on boats carrying eductor equipment. Task should be performed using the installed pump onboard the boat. Trainee must accomplish task without prompting or use of a reference.
<b>Standards</b>	In response to the instructor, the trainee must prepare the eductor and put it into operation in accordance with the procedures listed below. The eductor must take suction in order for this task to be considered successful.

Performance Criteria	Completed (Initials)	Boat Type
1. Connect eductor supply hose to pump outlet using 25 FT length of hose.	_____ _____ _____	_____ _____ _____
2. Connect 1½-inch supply hose to the eductor.	_____ _____ _____	_____ _____ _____
3. Connect 2½-inch discharge hose to the eductor.	_____ _____ _____	_____ _____ _____
4. Submerge eductor in the water to be pumped.	_____ _____ _____	_____ _____ _____
5. Engage pump engine.	_____ _____ _____	_____ _____ _____
6. Observe suction and discharge water through the eductor. Ensure discharge flowing overboard.	_____ _____ _____	_____ _____ _____
7. Secure pump.	_____ _____ _____	_____ _____ _____
8. Drain, flush out with freshwater, clean up and secure pump.	_____ _____ _____	_____ _____ _____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments**  
 \_\_\_\_\_  
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**TASK BCM-07-16-ANY: State Fire Fuel Source Classification and Extinguishing Agents**

<b>Reference</b>	a. <i>Boat Crew Handbook – Boat Operations, BCH16114.1 (series)</i>
<b>Conditions</b>	Task should be performed at any time ashore or afloat. Trainee must accomplish task without prompting or use of a reference.
<b>Standards</b>	In response to the instructor, the trainee must, without error state, the answers called for in the steps below.

Performance Criteria	Completed (Initials)
1. State most common fuels for Class A fires, and state the primary extinguishing agent for a Class A fire.	_____
2. State most common fuels for Class B fires, and state the primary extinguishing agent for a Class B fire.	_____
3. State most common source for Class C fires, and state the primary extinguishing agent for a Class C fire.	_____
4. State most common fuels for Class D fires, and state the primary agents for containing a Class D fire.	_____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments**  
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\_\_\_\_\_

**TASK BCM-07-17-TYPE: Locate and Identify the Firefighting Equipment Carried Onboard the Boat**

<b>Reference</b>	d. <i>Specific Boat Type Operator's Handbook, COMDTINST M16114 (series)</i> e. <i>Boat Crew Handbook – Boat Operations, BCH16114.1 (series)</i>
<b>Conditions</b>	Task should be performed at any time, onboard the unit's boats. Only those items carried on the boat need to be identified. Trainee must accomplish task without prompting or use of a reference.
<b>Standards</b>	In response to the instructor, the trainee must identify all of the fire fighting equipment carried on the boat, and state the purpose of each piece.

Performance Criteria	Completed (Initials)	Boat Type
1. Identify and state the purpose of the installed fire pump and controls.	_____ _____ _____	_____ _____ _____
2. Identify and state the purpose of the portable fire pump(s).	_____ _____ _____	_____ _____ _____
3. Identify and state the purpose of all fire hoses.	_____ _____ _____	_____ _____ _____

Part 2 – Boat Crew Member Qualification  
 Chapter 2 – Boat Crew Member Qualification Tasks



Performance Criteria	Completed (Initials)	Boat Type
4. Identify and state the purpose and capabilities of the nozzle.	_____ _____ _____	_____ _____ _____
5. Identify and state the purpose of all Y or tri-gates and hose fittings.	_____ _____ _____	_____ _____ _____
6. Identify and state the purpose of all spanner wrenches.	_____ _____ _____	_____ _____ _____
7. Identify and state the purpose of the fixed extinguishing system.	_____ _____ _____	_____ _____ _____
8. Identify and state the purpose of all CO <sub>2</sub> fire extinguishers.	_____ _____ _____	_____ _____ _____
9. Identify and state the purpose of all dry chemical extinguishers.	_____ _____ _____	_____ _____ _____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments**  
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**TASK BCM-07-18-ANY: Operate a CO2 Fire Extinguisher**

<b>Reference</b>	a. <i>Boat Crew Handbook – Boat Operations, BCH16114.1 (series)</i>
<b>Conditions</b>	Task should be performed at any time, ashore or afloat. Trainee must accomplish task without prompting or use of a reference. Actual discharge is not required and may be simulated for training purposes.
<b>Standards</b>	In response to the instructor, the trainee must demonstrate the use of a CO <sub>2</sub> fire extinguisher in accordance with the guidelines listed below.

Performance Criteria	Completed (Initials)
1. Carry extinguisher in upright position.	_____
2. Identify the locking pin and state its purpose, and remove from valve (simulate removing pin).	_____
3. Ground cylinder by placing it on deck.	_____
4. Point horn at target and state how to activate the extinguisher.	_____
5. Direct CO <sub>2</sub> at the base of the fire (simulate).	_____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments**  
 \_\_\_\_\_  
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**TASK BCM-07-19-ANY: Operate a Dry Chemical Fire Extinguisher**

<b>Reference</b>	a. <i>Boat Crew Handbook – Boat Operations, BCH16114.1 (series)</i>
<b>Conditions</b>	Task should be performed at any time, ashore or afloat. Trainee must accomplish task without prompting or use of a reference. Actual discharge is to be simulated.
<b>Standards</b>	In response to the instructor, the trainee must demonstrate the use of a dry chemical fire extinguisher in accordance with the guidelines listed below.

Performance Criteria	Completed (Initials)
1. Check fill cap for tightness.	_____
2. Identify and explain removal of the locking pin from the cutter assembly.	_____
3. State how puncture lever is pushed down, and why this is done.	_____
4. Approach fire from the windward side.	_____
5. Remain at least 8 FT from the fire.	_____
6. Point extinguisher at base of fire, explain discharge procedure.	_____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments**  
 \_\_\_\_\_  
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**TASK BCM-07-20-TYPE: Assemble Equipment for the Boat’s Main Firefighting System (Installed System or Portable Pump with Vari Nozzle optional Hose)**

**Reference** a. *Boat Crew Handbook – Boat Operations, BCH16114.1 (series)*

**Conditions** Task should be performed at any time, onboard the unit’s boats, acting as a member of a team. Only those steps applicable to the boat type need to be accomplished. Trainee must accomplish task without prompting or use of a reference.

**Standards** In response to the instructor, the trainee must correctly connect those pieces of equipment necessary to use the boat’s firefighting equipment for fighting a fire. Demonstration should be completed within 15 minutes.

Performance Criteria	Completed (Initials)	Boat Type
1. Connect Y or tri-gate to the firemain (as applicable).	_____ _____ _____	_____ _____ _____
2. Connect 1½-inch hose to Y or tri-gate and attach vari-nozzle.	_____ _____ _____	_____ _____ _____
3. Place correct gates of the Y or tri-gate in open position.	_____ _____ _____	_____ _____ _____
4. Charge fire hose.	_____ _____ _____	_____ _____ _____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments** \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



**TASK BCM-07-21-TYPE: Engage the Boat’s Main Fire Pump**

<b>Reference</b>	a. <i>Specific Boat Type Operator’s Handbook, COMDTINST M16114 (series)</i>
<b>Conditions</b>	Task should be performed at any time, onboard the unit's boats. Task need only be done for those boats with an installed fire fighting system, or a semi-attached portable pump used for firefighting. Only those steps applicable to the boat type should be done. Trainee must accomplish task without prompting or use of a reference.
<b>Standards</b>	In response to the instructor, the trainee must correctly demonstrate the use of the boat’s fire pump in accordance with the guidelines listed below. Task must be completed within ten minutes.

Performance Criteria	Completed (Initials)	Boat Type
1. Place engine in neutral.	_____ _____ _____	_____ _____ _____
2. Open firemain sea suction valve.	_____ _____ _____	_____ _____ _____
3. Energize fire pump.	_____ _____ _____	_____ _____ _____
4. Break out and rig portable pump.	_____ _____ _____	_____ _____ _____
5. Locate sea suction standpipe and connect hose to pump.	_____ _____ _____	_____ _____ _____
6. Open discharge valve.	_____ _____ _____	_____ _____ _____
7. Open air vent valve.	_____ _____ _____	_____ _____ _____
8. Start pump engine (if separate).	_____ _____ _____	_____ _____ _____
9. Engage and charge system.	_____ _____ _____	_____ _____ _____



**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments** \_\_\_\_\_  
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**TASK BCM-07-22-TYPE: Operate a Vari-Nozzle**

**Reference** a. *Boat Crew Handbook – Boat Operations, BCH16114.1 (series)*

**Conditions** Task should be performed at any time, onboard the unit's boats that are equipped with the applicable equipment. Hose should be charged and water discharged. Trainee must accomplish task without prompting or use of a reference.

**Standards** In response to the instructor, the trainee must demonstrate the use of the vari-nozzle in accordance with the guidelines listed below. Task should be completed within five minutes.

Performance Criteria	Completed (Initials)	Boat Type
1. Connect nozzle to 1½-inch hose.	_____ _____ _____	_____ _____ _____
2. Man nozzle and open nozzle.	_____ _____ _____	_____ _____ _____
3. Demonstrate wide-angle fog.	_____ _____ _____	_____ _____ _____
4. Demonstrate narrow angle fog (power cone).	_____ _____ _____	_____ _____ _____
5. Demonstrate straight stream.	_____ _____ _____	_____ _____ _____
6. Demonstrate flush feature.	_____ _____ _____	_____ _____ _____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments** \_\_\_\_\_  
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**TASK BCM-07-24-TYPE: Demonstrate the Appropriate Response to the Basic Engineering Casualty Control Exercises (BECCE)**

**References**

- a. *Manufacturers Operator’s Manual and Technical Publication*
- b. *Platform Specific Underway Drill Checklists for Basic Engineering Casualty Control Exercises*
- c. *Specific Boat Type Operator’s Handbook, COMDTINST M16114 (series)*

**Conditions**

Task should be performed at any time, onboard the unit’s boats. Trainee must accomplish task without prompting or use of a reference.

**Standards**

In response to the instructor, the trainee must, without error, demonstrate the steps taken for each of the BECCes listed, as stated in the above reference.

Performance Criteria	Completed (Initials)	Boat Type
1. Main Engine High Water Temperature.	_____ _____ _____	_____ _____ _____
2. Loss of Main Engine Lube Oil Pressure.	_____ _____ _____	_____ _____ _____
3. Loss of Fuel Oil Pressure.	_____ _____ _____	_____ _____ _____
4. Main Engine High Lube Oil Pressure.	_____ _____ _____	_____ _____ _____
5. Loss of Control Engine RPM’s.	_____ _____ _____	_____ _____ _____
6. Reduction Gear Failure.	_____ _____ _____	_____ _____ _____
7. Steering Casualty (Loss of Steering).	_____ _____ _____	_____ _____ _____
8. Fire in the Engine Room.	_____ _____ _____	_____ _____ _____
9. Outboard Engine Fire.	_____ _____ _____	_____ _____ _____

Part 2 – Boat Crew Member Qualification  
 Chapter 2 – Boat Crew Member Qualification Tasks



Performance Criteria	Completed (Initials)	Boat Type
10. Fire in the Auxiliary Machinery Space.	_____ _____ _____	_____ _____ _____
11. Collision with a Submerged Object.	_____ _____ _____	_____ _____ _____
12. Generator Emergency Procedures.	_____ _____ _____	_____ _____ _____
13. Hard Grounding.	_____ _____ _____	_____ _____ _____
14. Loss of GPS /Chartplotter (Electronic Casualty Control)	_____ _____ _____	_____ _____ _____
15. Fouled Waterjet (Jet Drive Boats Only).	_____ _____ _____	_____ _____ _____
16. Unusual Noise or Vibration in Power Train (Jet Drive Boats Only).	_____ _____ _____	_____ _____ _____
17. Loss of Generator (45 RB-M only).	_____ _____ _____	_____ _____ _____
18. Emergency Engine Restart (outboard platforms only).	_____ _____ _____	_____ _____ _____

**Instructor** \_\_\_\_\_

**Date** \_\_\_\_\_

**Comments** \_\_\_\_\_

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**TASK BCM-07-25-TYPE: Participate in a Man Overboard Evolution as a Recovery/Pickup Person in Heavy Weather**

**References**

- a. *Boat Crew Handbook – Boat Operations, BCH16114.1 (series)*
- b. *Specific Boat Type Operators Handbook, COMDTINST M16114 (series)*
- c. *Rescue and Survival Systems Manual, COMDTINST M10470.10 (series)*

**Conditions**

Task performed while underway in seas up to 8 FT. Trainee must accomplish task without prompting or use of a reference. A life-like dummy (Oscar) will be used.

**NOTE**

This task is required for designated Heavy Weather units only.

**Standards**

Task must be accomplished without excessive risk to the boat or crew. Task must be accomplished without injury or excessive risk to the person (life-like dummy) in the water.

Performance Criteria	Completed (Initials)	Boat Type
1. State the importance of ensuring that proper PPE is used.	_____ _____ _____	_____ _____ _____
2. State the standard Coxswain/Crew communication expected during the recovery phase.	_____ _____ _____	_____ _____ _____
3. Clip into the D-Rings in the recess port and recover PIW.	_____ _____ _____	_____ _____ _____
4. Discuss the use of life rings, throw bags and boat hooks.	_____ _____ _____	_____ _____ _____

**Instructor** \_\_\_\_\_

**Date** \_\_\_\_\_

**Comments** \_\_\_\_\_  
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**TASK BCM-07-26-TYPE: Pass and Recover a Towline/Pump in Heavy Weather**

**References**

- a. *Boat Crew Handbook – Boat Operations, BCH16114.1 (series)*
- b. *Specific Boat Type Operators Handbook, COMDTINST M16114 (series)*
- c. *Rescue and Survival Systems Manual, COMDTINST M10470.10 (series)*

**Conditions**

Task performed while underway in seas up to 8 FT without prompting or use of a reference

**NOTE**

This task is required for designated Heavy Weather units only.

**Standards**

The Trainee must accomplish without error the proper procedures for underway operations while using a heavy weather belt.

Performance Criteria	Completed (Initials)	Boat Type
1. Don Heavy Weather Belt	_____ _____ _____	_____ _____ _____
2. Pass heaving line to a disabled boat.	_____ _____ _____	_____ _____ _____
3. Pass towline/pump to a disabled boat.	_____ _____ _____	_____ _____ _____
4. Recover the towline/pump.	_____ _____ _____	_____ _____ _____

**Instructor** \_\_\_\_\_

**Date** \_\_\_\_\_

**Comments** \_\_\_\_\_

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## Section H. Boat Crew Communication Systems

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### Introduction

The following are objectives of Division Eight:

- (01) **State** operating modes.
- (02) **State** the difference between full-duplex and simplex.
- (03) **Identify** system components.
- (04) **Operate** system.
- (05) **Join** other crewmembers in a network.

### NOTE

This section applies only to units with the Boat Crew Communication System equipment. Detailed tasks are provided for TruLink and Gentex systems.

**For other systems, use BCM-08-15-ANY Boat Crew Communications Systems.**

### In this Section

This Section contains the following tasks:

Task Number	Task	See Page
BCM-08-01-ANY	TruLink - Overview	2-105
BCM-08-02-ANY	TruLink- TAP Overview (47 FT MLB)	2-105
BCM-08-03-ANY	TruLink - Components	2-106
BCM-08-04-ANY	TruLink - Menu Options	2-107
BCM-08-05-ANY	Trulink - Setting the TAP Channel (47 FT MLB & RB-M Only)	2-107
BCM-08-06-ANY	Trulink - Joining a Network	2-108
BCM-08-07-ANY	TruLink - Modes of Operation	2-108
BCM-08-08-ANY	Operate Boat Crew Communications System-GENTEX LVIS	2-109
BCM-08-09-TYPE	Operate Boat Crew Communications System-GENERIC	2-110



**TASK BCM-08-01-ANY: TruLink - Overview**

<b>Reference</b>	a. <i>TruLink Operator's Manual</i>
<b>Conditions</b>	Task should be performed at any time. Trainee must accomplish the task without prompting or use of a reference.
<b>Standards</b>	Task must be accomplished in accordance with the above reference.

Performance Criteria	Completed (Initials)
1. State: a. When can multiple crewmembers speak simultaneously b. Whether the TruLink system is full-duplex or simplex	_____
2. Defender Class: State: a. How many channels are supported b. How many crewmembers can be logged on to a channel c. How many crewmembers speak simultaneously	_____
3. 47 FT / RB-M: State: a. How many channels are supported b. How many crewmembers can be logged on to a channel c. How many crewmembers speak simultaneously	_____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments** \_\_\_\_\_

\_\_\_\_\_

**TASK BCM-08-02-ANY: TruLink- TAP Overview (47 FT MLB)**

<b>Reference</b>	a. <i>TruLink Operator's Manual</i>
<b>Conditions</b>	Task should be performed at any time. Trainee must accomplish the task without prompting or use of a reference.
<b>Standards</b>	In response to the instructor, the trainee shall state the purpose of the TruLink Access Point (TAP) and which radios it allows you to use.

Performance Criteria	Completed (Initials)
1. State what the TAP allows crewmembers to do.	_____
2. State which radios crewmembers will be able to transmit and receive using TruLink TAP	_____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments** \_\_\_\_\_

\_\_\_\_\_



**TASK BCM-08-03-ANY: TruLink - Components**

<b>Reference</b>	a. <i>TruLink Operator's Manual</i>
<b>Conditions</b>	Task should be performed at any time. Trainee must accomplish the task without prompting or use of a reference.
<b>Standards</b>	Task must be accomplished in accordance with the above reference.

Performance Criteria	Completed (Initials)
1. Identify: <ul style="list-style-type: none"> <li>a. TruLink Portable Transceiver (TPT)</li> <li>b. TruLink Talk-through Headset</li> <li>c. TruLink Access Point (TAP) (47 FT)</li> <li>d. Charging Base</li> </ul>	_____
2. State: <ul style="list-style-type: none"> <li>a. What are the two types of batteries that can be used in the TPT</li> <li>b. How many batteries does the TPT require</li> <li>c. What is the expected battery life</li> </ul>	_____
3. Demonstrate: <ul style="list-style-type: none"> <li>a. Connect the headset to the TPT</li> <li>b. Turn on the TPT</li> <li>c. Connecting the TPT to the charging base (NiMH batteries only)</li> </ul>	_____
4. Demonstrate: <ul style="list-style-type: none"> <li>a. Turn on the headset</li> <li>b. Adjust the volume on the headset</li> </ul>	_____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments**  
\_\_\_\_\_  
\_\_\_\_\_



**TASK BCM-08-04-ANY: TruLink - Menu Options**

<b>Reference</b>	a. <i>TruLink Operator's Manual</i>
<b>Conditions</b>	Task should be performed at any time. Trainee must accomplish the task without prompting or use of a reference.
<b>Standards</b>	Task must be accomplished in accordance with the above reference.

Performance Criteria	Completed (Initials)
1. Demonstrate: <ul style="list-style-type: none"> <li>a. How to access the menu options</li> <li>b. How to select channels that the TPT will operate on</li> <li>c. How to select Master or Slave (Defender Class Only)</li> <li>d. How to select the different Radio Modes or No Radios</li> <li>e. How to adjust the brightness of the Light Emitting diode (LED).</li> <li>f. How to turn on and turn off the Voice Operated Transmit (VOX) feature.</li> </ul>	_____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments**  
 \_\_\_\_\_  
 \_\_\_\_\_

**TASK BCM-08-05-ANY: Trulink - Setting the TAP Channel (47 FT MLB & RB-M Only)**

<b>Reference</b>	a. <i>TruLink Operator's Manual</i>
<b>Conditions</b>	Task should be performed at any time. Trainee must accomplish the task without prompting or use of a reference.
<b>Standards</b>	Task must be accomplished in accordance with the above reference.

Performance Criteria	Completed (Initials)
1. State: <ul style="list-style-type: none"> <li>a. When a TAP is in the network, what is ALWAYS the Master.</li> <li>b. What will happen to all logged on operators if the channel of the Master unit is changed.</li> </ul>	_____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments**  
 \_\_\_\_\_  
 \_\_\_\_\_



**TASK BCM-08-06-ANY: Trulink - Joining a Network**

<b>Reference</b>	a. <i>TruLink Operator's Manual</i>
<b>Conditions</b>	Task should be performed at any time. Trainee must accomplish the task without prompting or use of a reference.
<b>Standards</b>	In response to the instructor, the trainee shall state how to join/log into a network.

Performance Criteria	Completed (Initials)
1. State what must first be selected before attempting to join a network	_____
a. Demonstrate how to select the correct channel to join the network	_____
b. State which modes do not encrypt the communications	_____
c. State when you should not transmit sensitive information over the network	_____
d. Demonstrate: <ul style="list-style-type: none"> <li>a. Proper communications procedures using VOX</li> <li>b. Proper communications procedures using Press To Talk (PTT)</li> </ul>	_____
e. State when VOX should not be used and the TPT should be switched to Press To Talk (PTT)	_____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments** \_\_\_\_\_

\_\_\_\_\_

**TASK BCM-08-07-ANY: TruLink - Modes of Operation**

<b>Reference</b>	a. <i>TruLink Operator's Manual</i>
<b>Conditions</b>	Task should be performed at any time. Trainee must accomplish the task without prompting or use of a reference.
<b>Standards</b>	In response to the instructor, the trainee shall state how to switch between radio types.

Performance Criteria	Completed (Initials)
1. State what four radio types are available and what they are used for	_____
2. Demonstrate how to select the different radio types	_____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments** \_\_\_\_\_

\_\_\_\_\_



**TASK BCM-08-08-ANY: Operate Boat Crew Communications System-GENTEX LVIS**

<b>Reference</b>	a. <i>Gentex LVIS Operators Manual</i>
<b>Conditions</b>	Task should be performed while underway with several personnel on network Trainee must accomplish the task without prompting or use of a reference.
<b>Standards</b>	Task must be accomplished in accordance with the above reference.

Performance Criteria	Completed (Initials)
1. State how multiple crewmembers can speak simultaneously.	_____
2. State whether the Gentex LVIS System is full-duplex or simplex	_____
3. Identify integrated boat to shore transceivers.	_____
4. State purpose of Crew Connection Point (CCP).	_____
5. Identify CCP locations.	_____
6. State which radios crewmembers will be able to transmit and receive from using the CCP.	_____
7. Connect the headset to the Crew Connection Point (CCP).	_____
8. Select CPP channel.	_____
9. Select CPP radio mode.	_____
10. Adjust CPP display (brightness/backlighting/day-night).	_____
11. Adjust CCP volume including combat mode.	_____
12. Select CPP ALL/ISO and radio/crew mode.	_____
13. Select CPP available long-range radios.	_____
14. Communicate with crew via CCP VOX and PTT modes.	_____
15. Identify Gentex Portable Transceivers (GPT).	_____
16. State GPT battery types, quantities and expected life during typical operations.	_____
17. Identify GPT Charging Base, charge indicator.	_____
18. Connect the headset to the GPT.	_____
19. State indicators of when a GPT is in the network.	_____
20. State what happens to all logged on operators if the channel of the Master unit is changed.	_____
21. Communicate with crew via GPT VOX and PTT modes.	_____
22. State indicators of GPT operating in encrypted and non-encrypted modes.	_____
23. Secure system / stow components.	_____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_



Comments \_\_\_\_\_  
\_\_\_\_\_

**TASK BCM-08-09-TYPE: Boat Crew Communications System -GENERIC**

**NOTE** 

This task applies to systems other than TruLink and Gentex LVIS **ONLY**.

**Reference**

a. *Manufacturer's Operators Manual*

**Conditions**

Task should be performed while underway with several personnel on network. Trainee must accomplish the task without prompting or use of a reference.

**Standards**

Task must be accomplished in accordance with the above reference.

Performance Criteria	Completed (Initials)
1. Identify system components.	_____
2. State system capabilities (include encryption and security precautions, for over-the-air capable systems).	_____
3. State indicators of operating in encrypted and non-encrypted modes (for over-the-air capable systems).	_____
4. State difference between VOX and PTT.	_____
5. Demonstrate system configuration settings (charging modes, primary-subordinate control, etc. )	_____
6. State difference between SIMPLEX and full DUPLEX modes.	_____
7. Energize system components	_____
8. Establish communications with crew using VOX and PTT modes.	_____
9. Establish communications with other unit via integrated transceiver (if equipped).	_____
10. Shut down system	_____
11. Stow system gear (headsets, etc.).	_____

**Instructor** \_\_\_\_\_

**Date** \_\_\_\_\_

**Comments** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



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## Section I. Forward Looking Infrared RADAR (FLIR) Imaging Systems

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### Introduction

The following are objectives of this Section:

- (01) **Identify** FLIR operating principles.
- (02) **Identify** FLIR operating modes.
- (03) **Identify** FLIR component functions.
- (04) **Operate** FLIR.

### NOTE

This section is only required to be completed by personnel at units with boats outfitted with the FLIR systems. For units without FLIR, task is not required for qualification or certification and may be deferred at CO/OIC discretion.

### In this Section

This Section contains the following tasks:

Task Number	Task	See Page
BCM-09-01-ANY	Not currently assigned	
BCM-09-02-ANY	Not currently assigned	
BCM-09-03-ANY	Not currently assigned	
BCM-09-04-ANY	Not currently assigned	
BCM-09-05-ANY	Forward Looking Infrared (FLIR) Systems	2-112



**TASK BCM-09-05-ANY: Forward Looking Infrared (FLIR ) Imaging Systems**

**Reference**

a. *FLIR manufactures System Operator's Manual*

**Conditions**

Task should be performed while underway, at night or in restricted visibility. Trainee must accomplish the task without prompting or use of a reference.

**Standards**

Task must be accomplished in accordance with the above reference.

Performance Criteria	Completed (Initials)
1. State purpose of FLIR Thermal Imager Systems.	_____
2. Identify major component functions.	_____
3. Identify imaging modes.	_____
4. State the effect of background temperature on target contrast.	_____
5. State range of gimbal motion.	_____
6. Identify stabilization modes.	_____
7. Energize system.	_____
8. Pan and tilt camera.	_____
9. Zoom in-Zoom out.	_____
10. Adjust focus.	_____
11. Change imaging modes.	_____
12. Change between Black & White and color modes.	_____
13. Sweep search area.	_____
14. Detect and report (3) unlit FLIR contacts.	_____
15. Correlate (3) FLIR contacts to radar and/or visual.	_____
16. Track moving contact both manually and automatically.	_____
17. Record and playback FLIR images.	_____
18. Shut down and stow system components.	_____

**Instructor** \_\_\_\_\_

**Date** \_\_\_\_\_

**Comments**

\_\_\_\_\_  
 \_\_\_\_\_




---

## CHAPTER 3

### Boat Crew Member Trainee Study Guide

---

**Introduction**

This Chapter should be removed and given to the trainee to keep. Its purpose is to provide guidance for the trainee's reading assignments and is not a part of the training record.

The trainee should read the appropriate reading assignment and answer the related questions prior to beginning training in each new task. The instructor should then discuss the trainee's answers to ensure understanding of the subject matter prior to beginning instruction for each new task.

**NOTE**

If there is no reading assignment assigned for a specific task, then the task will not have a page number to reference.

**In this Chapter**

This Chapter contains the following sections:

Section	Title	See Page
A	Reading Assignments – Crew Efficiency Factors, Risk Factors and Team Coordination	2-114
B	Reading Assignments – Physical Fitness, First Aid, and Survival	2-116
C	Reading Assignments – Marlinespike Seamanship, Boat Nomenclature, Nautical Terminology, and Basic Stability	2-125
D	Reading Assignments – Boat Handling	2-130
E	Reading Assignments – Communications	2-138
F	Reading Assignments – Navigation	2-140
G	Reading Assignments – Mission-Oriented Operations	2-148
H	Reading Assignments – Boat Crew Communication System	2-156
I	Reading Assignments – FLIR Imaging Systems	2-159



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## Section A. Reading Assignments – Crew Efficiency Factors, Risk Factors and Team Coordination

---

**Introduction** The reading assignment(s) should be read prior to beginning instruction of each task.

---

**In this Section** This Section contains the following reading assignments:

<b>Task Number</b>	<b>Task Title</b>	<b>Reading Assignment</b>	<b>See Page</b>
BCM-01-01-ANY	Crew Fatigue	Boat Crew Handbook – Boat Operations, BCH16114.1 (series)	2-115
BCM-01-02-ANY	Motion Sickness	Boat Crew Handbook – First Aid, BCH16114.5 (series)	2-115
BCM-01-03-ANY	Team Coordination Training (TCT)	None assigned	2-115



**TASK BCM-01-01-ANY: Crew Fatigue**

---

1. Mental and physical fatigue is among the \_\_\_\_\_ during rough weather operations.
  2. The primary symptoms of fatigue are:
    - a.
    - b.
    - c.
    - d.
    - e.
    - f.
  3. Some preventive measures are:
    - a.
    - b.
    - c.
    - d.
    - e.
  4. Some other environmental conditions that also promote fatigue are:
    - a.
    - b.
    - c.
- 

**TASK BCM-01-02-ANY: Motion Sickness**

---

1. Motion sickness occurs when there is an imbalance between \_\_\_\_\_ images and the portion of the \_\_\_\_\_ which senses motion.
  2. Reading chart work, or other tasks that require close attention, will \_\_\_\_\_ motion sickness.
  3. *Anti-motion Sickness Medications*, COMDTINST 6710.15 (series), restricts medication use. Specifically, it must not be given under the following circumstances:
    - a.
    - b.
- 

**TASK BCM-01-03-ANY: Team Coordination Training (TCT) - None Assigned**

---



## Section B. Reading Assignments – Physical Fitness, First Aid, and Survival

**Introduction** The reading assignment(s) should be read prior to beginning instruction of each task.

**In this Section** This Section contains the following reading assignments:

<b>Task Number</b>	<b>Task Title</b>	<b>Reading Assignment</b>	<b>See Page</b>
BCM-02-01-ANY	Personal Physical Fitness and Vision	None Assigned	
BCM-02-02-ANY	Crew First-Aid Responsibility	Certifying Organization's Manual (e.g. American Red Cross)	
BCM-02-03-ANY	Demonstrate Adult, Child, and Infant CPR	Certifying Organization's Manual (e.g. American Red Cross)	
BCM-02-04-ANY	Don the Type III PFD	<i>Rescue and Survival Systems Manual, COMDTINST M10470.10 (series)</i> <i>Boat Crew Handbook - Rescue and Survival Procedures, BCH 16114.2 (series)</i>	2-119
BCM-02-05-ANY	Don Anti-Exposure Coveralls	<i>Rescue and Survival Systems Manual, COMDTINST M10470.10 (series)</i> <i>Boat Crew Handbook - Rescue and Survival Procedures, BCH 16114.2 (series)</i>	2-119
BCM-02-06-ANY	Don the Boat Crew Dry Suit	<i>Rescue and Survival Systems Manual, COMDTINST M10470.10 (series)</i> <i>Boat Crew Handbook - Rescue and Survival Procedures, BCH 16114.2 (series)</i>	2-119
BCM-02-07-ANY	Identify Boat Crew Survival Vest Equipment	<i>Boat Crew Handbook - Rescue and Survival Procedures, BCH 16114.2 (series)</i>	2-120
BCM-02-08-ANY	Use the Emergency Signaling Mirror	None Assigned	
BCM-02-09-ANY	Demonstrate the Use of the MK-124 Smoke and Illumination Signal	None Assigned	
BCM-02-10-ANY	Demonstrate the Use of the MK-79 Illumination Signal Kit	None Assigned	
BCM-02-11-ANY	Operate the Distress Signal Light	None Assigned	
BCM-02-12-ANY	Operate the Personal Locator Beacon	None Assigned	
BCM-02-13-ANY	Don the Boat Crew Survival Vest	<i>Boat Crew Handbook - Rescue and Survival Procedures, BCH 16114.2 (series)</i>	2-121

Part 2 - Boat Crew Member Qualification  
 Chapter 3 - Boat Crew Member Trainee Study Guide



<p>BCM-02-14-ANY</p>	<p>Don the Inflatable PFD</p>	<p><i>Boat Crew Handbook - Rescue and Survival Procedures, BCH 16114.2 (series)</i></p> <p><i>Rescue and Survival Systems Manual, COMDTINST M10470.10 (series)</i></p> <p><i>Inflatable PFD Manufacturer's Operating Instructions Manual</i></p> <p><i>Applicable Maintenance Procedure Card (MPC)</i></p>	<p>2-121</p>
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Part 2 – Boat Crew Member Qualification  
 Chapter 3 – Boat Crew Member Trainee Study Guide

BCM-02-15-TYPE	State the Manual Deployment and Boarding Procedures for the Rescue and Survival Raft	<i>Boat Crew Handbook - Rescue and Survival Procedures, BCH 16114.2 (series)</i> <i>Rescue and Survival Manual, COMDTINST M10470.10 (series)</i>	2-121
BCM-02-16-TYPE	Boat Egress Principles and Procedures	<i>Boat Crew Handbook - Rescue and Survival Procedures, BCH 16114.2 (series)</i>	2-123
BCM-02-17-ANY	Open Water Survival Skills	<i>Boat Crew Handbook - Rescue and Survival Procedures, BCH 16114.2 (series)</i> <i>Rescue and Survival Systems Manual, COMDTINST M10470.10 (series)</i> <i>Team Coordination Training, COMDTINST 1541.1 (series)</i>	2-123
BCM-02-18-ANY	Perform Water Survival Exercise	<i>Boat Crew Handbook - Rescue and Survival Procedures, BCH 16114.2 (series)</i> <i>Rescue and Survival Systems Manual, COMDTINST M10470.10 (series)</i>	2-124
BCM-02-19-TYPE	Identify and Demonstrate PPE and Safety Equipment for Heavy Weather	None assigned	



**TASK BCM-02-04-ANY: Don the Type III PFD**

---

1. The Type III PFD is normally worn aboard boats when \_\_\_\_\_ is required.
  2. True or False. The Type III PFD will turn a crewmember face up if they fall overboard and are rendered unconscious.
  3. The Type III PFD has a tendency to \_\_\_\_\_ on the wearer in the water.
- 

**TASK BCM-02-05-ANY: Don Anti-Exposure Coveralls**

---

1. True or False. Wearing a Type I or III PFD over an anti-exposure coverall may be dangerous in certain situations.
  2. The anti-exposure coveralls have straps located at the \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_ and \_\_\_\_\_ which should be tightened before entering the water.
  3. The anti-exposure coveralls is ideal for cold weather operations with \_\_\_\_\_ cockpit boats.
- 

**TASK BCM-02-06-ANY: Don the Boat Crew Dry Suit**

---

1. The dry suit, undergarments, PFD, and neoprene hood shall be worn when the water temperature is below \_\_\_\_\_ ° F and the air temperature is below \_\_\_\_\_ ° F.
  2. The dry suit has watertight seals at the \_\_\_\_\_ and \_\_\_\_\_.
  3. The dry suit, with \_\_\_\_\_, provides the best protection for crewmembers in adverse weather and cold water immersion.
  4. A \_\_\_\_\_ must be worn over a dry suit at all times while underway.
-



**TASK BCM-02-07-ANY: Identify Boat Crew Survival Vest Equipment**

---

1. The equipment in the boat crew survival vest provides crewmembers a means to \_\_\_\_\_ their position on the surface of the water \_\_\_\_\_ or \_\_\_\_\_.
  2. The survival knife is a basic tool used to free the crewmember from \_\_\_\_\_.
  3. The emergency signaling mirror is used to attract the attention of passing \_\_\_\_\_, \_\_\_\_\_, or \_\_\_\_\_.
  4. Reflected light from the emergency signal mirror can be seen at a \_\_\_\_\_ from the point of origin.
  5. It does this by \_\_\_\_\_ light at them.
  6. To use the mirror, you should face a point about \_\_\_\_\_ between the sun and the object you wish to signal.
  7. The night end of the MK-124 smoke and illumination signal produces a \_\_\_\_\_.
  8. The day end of the signal produces \_\_\_\_\_ smoke.
  9. Two prominent bands around the circumference identify the \_\_\_\_\_ end.
  10. Using the thumb, pull down on the \_\_\_\_\_ to ignite signal.
  11. The signal should be held downwind and overhead at a \_\_\_\_\_ ° angle \_\_\_\_\_ flame.
  12. The signal in the MK-79 kit can be fired to an altitude of 250 FT to \_\_\_\_\_ FT.
  13. The second step in preparing the signal for launching is to move the \_\_\_\_\_ screw into the safety slot.
  14. The protective tab should be bent \_\_\_\_\_ from the signal.
  15. The signal should be mated to projector and rotated \_\_\_\_\_ until the signal is seated.
  16. When firing, the arm should be extended \_\_\_\_\_.
  17. Spent signals or misfires should be \_\_\_\_\_ overboard.
  18. The Distress Signal Light emits a high \_\_\_\_\_ visual distress signal visible for great distances.
  19. The strobe lights emit approximately \_\_\_\_ - \_\_\_\_ flashes per minute.
  20. If the light, with a new battery, does not operate within limits, \_\_\_\_\_ the light from service.
-



**TASK BCM-02-13-ANY: Don the Boat Crew Survival Vest**

---

1. The boat crew survival vest is worn over all \_\_\_\_\_ with the exception of \_\_\_\_\_ inflatables.
  2. State the manner of wearing the Boat Crew Survival Vest with the following flotation/ hypothermic protection systems:
    - a. Type III PFD
    - b. Anti-exposure coveralls
    - c. Drysuit
  3. State the type of flotation device with which the Boat Crew Survival Vest is NOT worn.
  4. Describe how the fit of the Boat Crew Survival Vest is adjusted.
- 

**TASK BCM-02-14-ANY: Don the Inflatable PFD**

---

1. The inflatable type PFD uses \_\_\_\_\_ as the inflating agent.
  2. True or False. The inflatable type PFD should be inflated before entering the water.
  3. The inflatable type PFD will probably have a \_\_\_\_\_ and \_\_\_\_\_ attached to it.
  4. To maintain the buoyancy of the inflatable PFD, an \_\_\_\_\_ tube is provided.
  5. Name at least three key components of the inflatable PFD.
  6. The three modes of inflation for the Automatic Inflatable PFD are \_\_\_\_\_, \_\_\_\_\_ and \_\_\_\_\_.
  7. Two types of "automatic inflation" devices are \_\_\_\_\_ and \_\_\_\_\_.
  8. When the inflatable PFD is properly filled, \_\_\_\_\_ pounds of positive buoyancy are provided.
  9. The wearing of a harness over an inflatable PFD could potentially prevent \_\_\_\_\_ or cause \_\_\_\_\_ to the upper \_\_\_\_\_.
  10. Name the equipment that may be worn over the inflatable PFD.
  11. The requirement for a whistle and distress signal light may be waived if the PFD is worn in conjunction with a properly outfitted \_\_\_\_\_ or \_\_\_\_\_.
  12. Only \_\_\_\_\_ personnel should be outfitted with the survival vest.
  13. A model specific Readiness Checklist can be found in the inflatable PFD's \_\_\_\_\_.
  14. Activate the manual inflation by jerking firmly in a \_\_\_\_\_ direction on the pull-tab.
  15. Inflatable PFD deflating procedures can be found in the \_\_\_\_\_.
  16. When replacing the CO<sub>2</sub> cartridge, you should use replacement procedures contained in the \_\_\_\_\_.
-



**TASK BCM-02-15-TYPE: State the Manual Deployment and Boarding Procedures for the Rescue and Survival Raft**

---

1. The raft may be inflated either \_\_\_\_\_ or automatically.
  2. The raft may be inflated manually by completely pulling the \_\_\_\_\_ line from the raft container.
  3. The raft should be considered as a means of \_\_\_\_\_ persons stranded in areas where a boat cannot go.
  4. If practical, the raft should be \_\_\_\_\_ directly from the boat - avoid entering the \_\_\_\_\_.
  5. After boarding the raft, you should try to remain in the same general area as the \_\_\_\_\_.
  6. Food and water should be \_\_\_\_\_.
-



**TASK BCM-02-16-TYPE: Boat Egress Principles and Procedures**

---

1. While capsizing, personnel should \_\_\_\_\_ something sturdy.
  2. If trapped in or under a boat, personnel should seek out an \_\_\_\_\_ near the \_\_\_\_\_.
  3. Before attempting to escape, an inventory should be made of all \_\_\_\_\_ that might be taken along.
  4. Because air will eventually leak or run out, every effort should be made to \_\_\_\_\_.
  5. Sometimes it is necessary to \_\_\_\_\_ your PFD in order to exit. If necessary, it should be attached to a \_\_\_\_\_ so it can be \_\_\_\_\_ after exiting.
  6. If the engines are still running, you should \_\_\_\_\_ the stern.
  7. When trapped in an open cockpit, you should exit by swimming \_\_\_\_\_ the gunwales and \_\_\_\_\_ alongside the boat.
  8. If trapped in an enclosed cabin, you must remember that all exits are \_\_\_\_\_ when the boat capsizes.
- 

**TASK BCM-02-17-ANY: Open Water Survival Skills**

---

1. State the four types of hypothermia clothing used by the Coast Guard.
    - a.
    - b.
    - c.
    - d.
  2. \_\_\_\_\_ clothing robs the body of heat by breaking down the thermal protection of insulated clothing.
  3. If a dry suit is worn, Boat Crew Members must wear a \_\_\_\_\_ at all times.
  4. The anti-exposure coveralls are Type \_\_\_\_\_ PFD.
  5. True or False. If possible, board the life raft from the sinking boat to avoid entering the water.
  6. The length of time a person can stay alive in cold water depends on three factors. What are these three factors?
  7. True or False. It is best to climb on an overturned boat hull from the windward side.
  8. If a Coast Guard boat is greater than \_\_\_\_\_ FT, it will normally carry a survival raft.
  9. If trapped under an inverted boat, seek out an \_\_\_\_\_ near the top.
  10. True or False. When swimming out from under an inverted boat, a PFD should be worn at all times.
-



**TASK BCM-02-18-ANY: Perform Water Survival Exercise**

---

1. A signal whistle's audible sound may be heard up to \_\_\_\_\_ yards.
  2. Define the acronym HELP in regards to water survival.
  3. True or False. Swimming in cold water will warm you up and increase your chances for survival
-



## Section C. Reading Assignments – Marlinespike Seamanship, Boat Nomenclature, Nautical Terminology, and Basic Stability

**Introduction**                      The reading assignment(s) should be read prior to beginning instruction of each task.

**In this Section**                      This Section contains the following reading assignments:

<b>Task Number</b>	<b>Task Title</b>	<b>Reading Assignment</b>	<b>See Page</b>
BCM-03-01-ANY	State Common Boat Nomenclature and Terminology	<i>Boat Crew Handbook – Seamanship Fundamentals, BCH16114.4 (series)</i>	2-126
BCM-03-02-TYPE	Locate and Identify the Purpose of the Equipment Aboard the Boat	<i>Boat Crew Handbook – Seamanship Fundamentals, BCH16114.4 (series)</i>	2-126
BCM-03-03-TYPE	Boat Characteristics – Boat Construction	<i>Boat Crew Handbook – Seamanship Fundamentals, BCH16114.4 (series)</i>	2-127
BCM-03-04-TYPE	Boat Characteristics – Watertight Integrity	<i>Boat Crew Handbook – Seamanship Fundamentals, BCH16114.4 (series)</i>	2-127
BCM-03-05-TYPE	Stability	<i>Boat Crew Handbook – Seamanship Fundamentals, BCH16114.4 (series)</i>	2-128
BCM-03-06-ANY	Identify the Different Parts of a Line and Hitches Used in Line Handling	<i>Boat Crew Handbook – Seamanship Fundamentals, BCH16114.4 (series)</i>	2-128
BCM-03-07-ANY	Tie Various Knots, Hitches, and Bends	<i>Boat Crew Handbook – Seamanship Fundamentals, BCH16114.4 (series)</i>	2-128
BCM-03-08-ANY	Secure Lines to Cleats, Bitts, and Posts	<i>Boat Crew Handbook – Seamanship Fundamentals, BCH16114.4 (series)</i>	2-128
BCM-03-09-ANY	Identify the types of breaking seas, characteristics, and causes	<i>Boat Crew Handbook – Seamanship Fundamentals, BCH16114.4 (series)</i>	2-129
BCM-03-10-ANY	State the geographical causes of local heavy weather conditions	<i>Boat Crew Handbook – Seamanship Fundamentals, BCH16114.4 (series)</i>	2-129



**TASK BCM-03-01-ANY: State Common Boat Nomenclature and Terminology**

---

1. The front end of the boat is the \_\_\_\_\_.
  2. When proceeding toward the bow, you are going \_\_\_\_\_.
  3. The right side of the bow is the \_\_\_\_\_ bow.
  4. The central or middle area of the boat is \_\_\_\_\_.
  5. The left center side of the boat is the \_\_\_\_\_.
  6. The rear of the boat is the \_\_\_\_\_.
  7. The left rear section of the boat is the port \_\_\_\_\_.
  8. A line running from one side of the boat to the other is said to be \_\_\_\_\_.
  9. From the center line toward either side is referred to as \_\_\_\_\_.
  10. From either side toward the centerline is called \_\_\_\_\_.
  11. The side of the boat against a dock is also called \_\_\_\_\_.
  12. If you go down inside the boat, you are going \_\_\_\_\_.
  13. If you are up into the rigging of the boat, you are going \_\_\_\_\_.
- 

**TASK BCM-03-02-TYPE: Locate and Identify the Purpose of the Equipment Aboard the Boat**

---

1. A \_\_\_\_\_ is used to allow the anchor line to spin freely.
  2. 75 FT and 100 FT \_\_\_\_\_ are used for passing the towline when maneuverability is restricted.
  3. A \_\_\_\_\_ is used to attach a towline to a trailer eyebolt on boats.
  4. When securing chafing gear to a line, you should use \_\_\_\_\_.
  5. Ring \_\_\_\_\_ are used during man overboard emergencies.
-



**TASK BCM-03-03-TYPE: Boat Characteristics – Boat Construction**

---

1. The three basic types of hull forms based on boat speed are \_\_\_\_\_, \_\_\_\_\_, and semi-displacement.
  2. A displacement hull boat pushes away (displaces) water allowing the \_\_\_\_\_ to \_\_\_\_\_ into the water.
  3. Heavy displacement hulls cannot exceed a speed of \_\_\_\_\_ times the \_\_\_\_\_ of their waterline length without requiring excessive power.
  4. Once “on top,” the \_\_\_\_\_ skims along the \_\_\_\_\_ of the water, whereas the displacement hull always forces water around it.
  5. The semi-displacement hull is a combination of characteristics of the \_\_\_\_\_ hull and the \_\_\_\_\_ hull. Many \_\_\_\_\_ boats are this type.
  6. The \_\_\_\_\_ is the backbone of the boat.
  7. \_\_\_\_\_ are attached to the keel, which extend athwartships. The \_\_\_\_\_ of the boat is attached to the frames.
  8. \_\_\_\_\_ controls the direction of the boat and may vary widely in size, design, and method of construction.
  9. The three rudder types are \_\_\_\_\_, \_\_\_\_\_, and \_\_\_\_\_.
  10. \_\_\_\_\_ is the distance a propeller advances in \_\_\_\_\_ revolution with no slip.
  11. \_\_\_\_\_ frames provide hull strength along the \_\_\_\_\_ of the hull.
  12. A \_\_\_\_\_ is a seagoing floor and provides strength to the \_\_\_\_\_ by reinforcing the transverse \_\_\_\_\_ and deck beams.
  13. If decks are seagoing floors, then hatches are seagoing \_\_\_\_\_.
  14. \_\_\_\_\_ are small openings.
  15. Watertight doors are designed to resist as much \_\_\_\_\_ as the \_\_\_\_\_ through which they provide access.
- 

**TASK BCM-03-04-TYPE: Boat Characteristics – Watertight Integrity**

---

1. Watertight closures must have clean, bright, unpainted, smooth \_\_\_\_\_ for gaskets to press against.
  2. Scuttles must be secured for \_\_\_\_\_ at all times except when they are open for inspection, cleaning, or painting.
  3. The interior of a boat is compartmentalized into bulkheads, decks, and hatches. The hatches are actually “doors” though the bulkheads. With the hatches closed, the space between them becomes watertight and is called a \_\_\_\_\_.
-



**TASK BCM-03-05-TYPE: Stability**

---

1. The tendency to remain upright is its (the boat's) \_\_\_\_\_.
  2. \_\_\_\_\_ and \_\_\_\_\_ are the two primary forces acting upon a floating boat that affect stability.
  3. The \_\_\_\_\_ is the point at which the weight of the boat acts vertically downwards.
  4. The \_\_\_\_\_ is the upward force of water displaced by the hull.
  5. When a boat is at rest, the center of buoyancy acting upward/vertically is below the center of gravity acting downwards. A boat is considered to be in \_\_\_\_\_.
  6. A boat has two principal types of stability: \_\_\_\_\_ and \_\_\_\_\_.
  7. The two principal forces that affect stability are \_\_\_\_\_ and \_\_\_\_\_ forces.
  8. General boat design features that influence stability include:
- 

**TASK BCM-03-06-ANY: Identify the Different Parts of a Line and Hitches Used in Line Handling**

---

1. The running or free end of a line is called the \_\_\_\_\_.
  2. The long, unused, or belayed end is called the \_\_\_\_\_.
  3. An overhang loop is made by crossing the \_\_\_\_\_ over the standing part.
  4. A bight is a \_\_\_\_\_ formed by turning the line back on itself.
  5. A \_\_\_\_\_ is a single turn and a \_\_\_\_\_ is two complete turns around an object.
- 

**TASK BCM-03-07-ANY: Tie Various Knots, Hitches, and Bends**

---

1. The advantage of a bowline is that it does not \_\_\_\_\_.
  2. The best all-around hitch for securing a line to a ring, spar, or other round or near round object is the \_\_\_\_\_.
  3. Timber hitches are used to secure a line to logs, planks, or other \_\_\_\_\_ objects.
  4. \_\_\_\_\_ are used to lengthen one line by bending one to another.
- 

**TASK BCM-03-08-ANY: Secure Lines to Cleats, Bitts, and Posts**

---

1. Deck fittings permit easy handling of lines and reduce \_\_\_\_\_ and friction on lines.
  2. When securing a line to a cleat, bitt, or post, you should first take a \_\_\_\_\_ around the deck fitting.
  3. You should finish securing the line by forming several figure \_\_\_\_\_ and securing them with a half \_\_\_\_\_ over each horn.
  4. To facilitate speed and safety, the dipping the \_\_\_\_\_ method should be used when two mooring lines have to be placed on the same cleat.
-



---

**BCM-03-09-ANY: Identify the Types of Breaking Seas, Characteristics, and Causes**

---

1. Wave \_\_\_\_\_ occurs when the wave passes around a point of land, jetty, or moves into shoaling water and interacts with the bottom and slows down.
  2. \_\_\_\_\_ should be avoided because they can create more energy than a single break.
  3. \_\_\_\_\_ are created along a long beach or reef surf zone.
  4. The three characteristics which determine wind waves are:
    - a. \_\_\_\_\_
    - b. \_\_\_\_\_
    - c. \_\_\_\_\_
- 

**BCM-03-10-TYPE: State the Geographical Causes of Local Heavy Weather Conditions**

---

1. The three basic types of breaking waves are:
    - a. \_\_\_\_\_
    - b. \_\_\_\_\_
    - c. \_\_\_\_\_
-



## Section D. Reading Assignments – Boat Handling

**Introduction** The reading assignment(s) should be read prior to beginning instruction of each task.

**In this Section** This Section contains the following reading assignments:

<b>Task Number</b>	<b>Task Title</b>	<b>Reading Assignment</b>	<b>See Page</b>
BCM-04-01-ANY	Rig Fenders to Side of the Boat	<i>Boat Crew Handbook – Seamanship Fundamentals, BCH16114.4 (series)</i>	2-133
BCM-04-02-TYPE	Make Fast a Boat to a Pier	<i>Boat Crew Handbook – Seamanship Fundamentals, BCH16114.4 (series)</i>	2-133
BCM-04-03-TYPE	Assist in Anchoring the Boat	<i>Boat Crew Handbook – Seamanship Fundamentals, BCH16114.4 (series)</i>	2-133
BCM-04-04-TYPE	Assist in Weighing the Boat's Anchor	<i>Boat Crew Handbook – Seamanship Fundamentals, BCH16114.4 (series)</i>	2-133
BCM-04-05-ANY	Report the Common Navigation Lights Displayed by Ships and Boats	<i>Promulgation of the Navigation Rules and Regulations Manual, COMDTINST 16672.2 (series)</i>	2-134
BCM-04-06-ANY	Identify the Common Sound Signals Used by Ships and Boats	<i>Promulgation of the Navigation Rules and Regulations Manual, COMDTINST 16672.2 (series)</i>	2-134
BCM-04-07-ANY	Identify and State Accepted Maritime Distress Signals	<i>Boat Crew Handbook – Seamanship Fundamentals, BCH16114.4 (series)</i> <i>Promulgation of the Navigation Rules and Regulations Manual, COMDTINST 16672.2 (series)</i>	2-135
BCM-04-08-ANY	Stand a Lookout Watch	<i>U.S. Coast Guard Boat Operations and Training (BOAT) Manual, Volume I, COMDTINST M16114.32 (series)</i> <i>Shipboard Lookout Manual, COMDTINST M9450.1 (series)</i> <i>Boat Crew Handbook – Boat Operations, BCH16114.1 (series)</i>	2-135
BCM-04-09-ANY	Act as a Helmsman and Steer a Compass Course	<i>Boat Crew Handbook – Boat Operations, BCH16114.1 (series)</i> <i>Boat Crew Handbook – Navigation and Piloting, BCH16114.3 (series)</i> <i>Coast Guard Navigation Standards Manual, COMDTINST M3530.2 (series)</i>	2-135
BCM-04-10-TYPE	Get the Boat Away From a Pier	<i>Boat Crew Handbook – Seamanship Fundamentals, BCH16114.4 (series)</i> <i>Chapman Piloting, 61<sup>st</sup> Edition, Page 207</i>	2-136
BCM-04-11-TYPE	Moor the Boat	<i>Boat Crew Handbook – Seamanship Fundamentals, BCH16114.4 (series)</i> <i>Chapman's Navigation &amp; Piloting</i>	2-136
BCM-04-12-TYPE	Boat Handling	<i>Boat Crew Handbook – Seamanship Fundamentals, BCH16114.4 (series)</i>	2-137

Part 2 - Boat Crew Member Qualification  
Chapter 3 - Boat Crew Member Trainee Study Guide





Part 2 – Boat Crew Member Qualification  
Chapter 3 – Boat Crew Member Trainee Study Guide

<b>Task Number</b>	<b>Task Title</b>	<i>Reading Assignment</i>	<b>See Page</b>
BCM-04-13-TYPE	Cutterboat Launch and Recovery- Single Point Davit	<i>Shipboard Launch and Recovery Procedures Manual, COMDTINST M3120.6 (series)</i>	2-137
BCM-04-14-TYPE	Cutterboat Launch and Recovery- Dual Point Davit	<i>Shipboard Launch and Recovery Procedures Manual, COMDTINST M3120.6 (series)</i>	2-137
BCM-04-15-TYPE	Cutterboat Launch and Recovery- Stern Ramp	<i>Shipboard Launch and Recovery Procedures Manual, COMDTINST M3120.6 (series)</i>	2-137



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**TASK BCM-04-01-ANY: Rig Fenders to Side of the Boat**

1. When docking or taking another boat alongside, you should always rig fenders to prevent \_\_\_\_\_ damage.
  2. Fenders should be adjusted to cushion points of \_\_\_\_\_.
  3. Fenders should be secured using a \_\_\_\_\_ or \_\_\_\_\_.
  4. Fenders should be secured to a stanchion, a \_\_\_\_\_, bitt, or cleat.
- 

**TASK BCM-04-02-TYPE: Make Fast a Boat to a Pier**

1. All fenders should be rigged and \_\_\_\_\_ should be broken out and ready before reaching the dock.
  2. Normally the after-most \_\_\_\_\_ line is secured first.
  3. The order in which the lines are attached depends on the \_\_\_\_\_ evaluation of the situation.
- 

**TASK BCM-04-03-TYPE: Assist in Anchoring the Boat**

1. Most Coast Guard boats use a \_\_\_\_\_ type anchor.
  2. The \_\_\_\_\_ of the anchor are the parts that dig into the bottom to provide holding power.
  3. The anchor line, or chafing chain, is secured to the \_\_\_\_\_.
  4. A \_\_\_\_\_ is used to attach the chain so that the anchor line can spin freely.
  5. Never stand in the \_\_\_\_\_ of an anchor line.
  6. The anchor line should always form an angle of \_\_\_\_\_ or less with the bottom.
- 

**TASK BCM-04-04-TYPE: Assist in Weighing the Boat's Anchor**

1. Slack in the anchor line should be \_\_\_\_\_ as the boat is moved ahead.
  2. As the line comes onboard, it should be \_\_\_\_\_ on deck.
  3. If the anchor refuses to break free, the line should be \_\_\_\_\_ around the forward bitt while the Coxswain moves ahead a few feet to break it free.
-



**TASK BCM-04-05-ANY: Report the Common Navigation Lights Displayed by Ships and Boats**

---

1. The purpose of navigational lights is to \_\_\_\_\_ vessels of the presence or approach of another boat.
  2. Navigational lights also aid in determining the \_\_\_\_\_ of the boat.
  3. Lights must be used from \_\_\_\_\_ to \_\_\_\_\_ and in times of restricted visibility.
  4. A green sidelight means you are looking at a boat's \_\_\_\_\_ side.
  5. A red sidelight means you are looking at a boat's \_\_\_\_\_ side.
  6. If you see both a red and green sidelight, it means you are looking at the boat \_\_\_\_\_.
  7. A power-driven boat 50 meters or more in length must display red and \_\_\_\_\_ sidelights, a masthead light, a stern light, and a \_\_\_\_\_ light.
  8. A power-driven boat less than 50 meters in length must display red and \_\_\_\_\_ sidelights, a masthead light, and a \_\_\_\_\_ light.
  9. A power-driven boat less than 7 meters and whose maximum speed does not exceed 7 KTS only has to show an \_\_\_\_\_ light.
  10. Sailing vessels less than 20 meters (international/inland) in length must display sidelights and stern light. Optionally, these lights may be displayed using a \_\_\_\_\_ light.
  11. On sailboats and rowboats less than 7 meters in length, if regular running lights are unavailable, they may display \_\_\_\_\_ or a torch.
- 

**TASK BCM-04-06-ANY: Identify the Common Sound Signals Used by Ships and Boats**

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1. A short blast is a blast of about \_\_\_\_\_ second(s) duration.
  2. A prolonged blast is from \_\_\_\_\_ to \_\_\_\_\_ seconds in duration.
  3. Vessels 12 meters in length or more must carry a \_\_\_\_\_ along with a whistle.
  4. If you hear a rapid striking of the gong for at least 5 seconds, you know the vessel is at least \_\_\_\_\_ meters long.
  5. Vessels under 12 meters in length are required to \_\_\_\_\_.
  6. A power-driven vessel underway, making way, in conditions of reduced visibility sounds \_\_\_\_\_.
  7. When a power driven vessel making way in reduced visibility stops to evaluate the situation (not making way) the whistle signal is shifted to \_\_\_\_\_.
  8. Sailing vessels during periods of reduced visibility sound \_\_\_\_\_.
  9. Bells and gongs are used by vessels that are \_\_\_\_\_.
-



**TASK BCM-04-07-ANY: Identify and State Accepted Maritime Distress Signals**

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1. MAYDAY, MAYDAY, MAYDAY is the \_\_\_\_\_ priority of urgency call.
  2. A gun fired at intervals of about \_\_\_\_\_ minute(s) may be used as an emergency signal.
  3. Rockets, shells, or flares should be of a \_\_\_\_\_ color to indicate an emergency.
  4. A square flag above a \_\_\_\_\_ also can be a distress signal.
  5. Slowly \_\_\_\_\_ and \_\_\_\_\_ outstretched arms indicates an emergency.
  6. The signal  $\cdots - - - \cdots$  means \_\_\_\_\_ and indicates an \_\_\_\_\_ situation.
- 

**TASK BCM-04-08-ANY: Stand a Lookout Watch**

---

1. Lookout(s) shall be \_\_\_\_\_ assigned by the Coxswain
  2. When coming onto a plane, the rise of the \_\_\_\_\_ may limit visibility forward.
  3. It is the lookout's job to report everything \_\_\_\_\_ or \_\_\_\_\_ to the boat Coxswain.
  4. When making reports, the lookout first \_\_\_\_\_ the object, then \_\_\_\_\_ bearing and \_\_\_\_\_ to the object.
  5. Lookouts should always remain at their Station until \_\_\_\_\_.
  6. During an onboard emergency or event, you shall not proceed to your emergency station until \_\_\_\_\_.
  7. If a report to the Coxswain is not acknowledged, it is \_\_\_\_\_.
- 

**TASK BCM-04-09-TYPE: Act as a Helmsman and Steer a Compass Course**

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1. The arc of the compass card is divided into \_\_\_\_\_ °.
  2. A reading of 000° on the magnetic compass card should point toward \_\_\_\_\_ North.
  3. The \_\_\_\_\_ is in line with the boat's centerline and indicates the boat's \_\_\_\_\_.
  4. To ensure understanding, the helmsman always \_\_\_\_\_ all orders given to him/her by the Coxswain.
  5. The helmsman should attempt to maintain a course within  $\pm$  \_\_\_\_\_ ° of ordered course.
  6. The helmsman should not execute any orders unless \_\_\_\_\_ by the Coxswain.
-



**TASK BCM-04-10-TYPE: Get the Boat Away From a Pier**

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- Single-Screw Boats**
1. The pivot point is normally \_\_\_\_\_ of the way aft of the bow.
  2. When the stern is clear, the bow \_\_\_\_\_ should be cast off and the Coxswain should shift the rudder and back away.
- Twin-Screw Boats**
3. The screws are arranged so that the top of each blade moves \_\_\_\_\_.
  4. The starboard screw is right-handed and the port screw is \_\_\_\_\_-handed.
  5. With the starboard screw astern and the port screw stopped, the stern of the boat will move to \_\_\_\_\_.
  6. With the starboard screw ahead and the port screw astern, the boat will \_\_\_\_\_ in a leftward direction.
  7. When clearing a pier, port side to, against the wind or current, the Coxswain should go ahead on the \_\_\_\_\_ engine and astern on the \_\_\_\_\_ with full \_\_\_\_\_ rudder, until the stern clears.
- Jet Drive Boats**
8. Instead of the engine turning a propeller, in a waterjet, the engine turns an \_\_\_\_\_.
  9. Instead of turning using a rudder, a waterjet boat turns via directive \_\_\_\_\_.
  10. If there is no thrust, then maneuverability is \_\_\_\_\_.
  11. While leaving a pier, \_\_\_\_\_ should be checked to ensure it is clear of obstructions and debris.
  12. True/False: Reverse thrust is applied to stop momentum.
- 

**TASK BCM-04-11-TYPE: Moor the Boat**

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- Single-Screw Boats**
1. When mooring port side to, with a wind or current from astern, the approach should be made using an approximately \_\_\_\_\_° angle.
  2. When mooring port side to, against the wind or current, the approach should be made on an angle, as the wind will tend to throw the \_\_\_\_\_ out.
  3. When mooring port side to, against the wind or current, after the bow spring line is secured, the Coxswain should use full \_\_\_\_\_ rudder and kick the engine \_\_\_\_\_.
  4. When mooring starboard side to, with no wind or current, the approach angle should be as \_\_\_\_\_ as possible.
- Twin-Screw Boats**
5. When mooring port side to, the approach should be made slowly at an approximately \_\_\_\_\_° angle.
  6. When mooring port side to, after securing the bow line, the Coxswain should apply \_\_\_\_\_ full rudder and go ahead on the \_\_\_\_\_ engine.
-



**TASK BCM-04-12-TYPE: Boat Handling**

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**Environmental Forces**

1. The \_\_\_\_\_ acts on the hull, topsides, and, on smaller boats, the crew.
2. \_\_\_\_\_ affect the boat handling in various ways, depending on their height and direction and the particular boat's characteristics.
3. A one-knot \_\_\_\_\_ may affect a boat to the same degree as 30 KTS of wind. Strong \_\_\_\_\_ will easily move a boat upwind.

**Vessel Generated Forces**

4. When rotating to move in a forward direction, a \_\_\_\_\_ draws its supply of water from every direction forward of and around the blades.
  5. Regardless of whether the propeller is turning to go ahead or astern, the water flow pattern in the propeller's arc of rotation is called \_\_\_\_\_.
  6. In addition to the thrust along the shaft axis, another effect of propeller rotation is \_\_\_\_\_.
  7. The speed of the water flowing past the \_\_\_\_\_ greatly enhances the \_\_\_\_\_ force.
  8. When a hull moves forward through the water, the effective \_\_\_\_\_ moves forward.
  9. In single-screw vessels, propeller side force presents a major obstacle to \_\_\_\_\_ in the direction you want.
  10. With the rudders over full, the pivot point is generally located at the \_\_\_\_\_.
  11. True/False: Applying significant thrust to the will cause the stern to squat.
-



## Section E. Reading Assignments – Communications

**Introduction**                      The reading assignment(s) should be read prior to beginning instruction of each task.

**In this Section**                      This Section contains the following reading assignments:

<b>Task Number</b>	<b>Task Title</b>	<b>Reading Assignment</b>	<b>See Page</b>
BCM-05-01-ANY	Operate a VHF-FM Radiotelephone	<i>Telecommunications Manual (TCM)</i> , COMDTINST M2000.3 (series) <i>Radiotelephone Manual</i> , COMDTINST M2300.7 (series)	2-139
BCM-05-02-ANY	Operate a SSB-HF Transceiver	<i>Telecommunications Manual (TCM)</i> , COMDTINST M2000.3 (series) <i>Radiotelephone Manual</i> , COMDTINST M2300.7 (series) <i>SSB-HF Transceiver – Operator’s Manual</i>	2-139
BCM-05-03-ANY	Use the VHF-FM Radiotelephone to Give a Position or Operations Report	<i>Telecommunications Manual (TCM)</i> , COMDTINST M2000.3 (series) <i>Radiotelephone Manual</i> , COMDTINST M2300.7 (series)	2-139
BCM-05-04-ANY	State Radio Communications Policy and Doctrine	<i>Telecommunications Manual (TCM)</i> , COMDTINST M2000.3 (series) <i>Radiotelephone Manual</i> , COMDTINST M2300.7 (series) <i>Boat Operations and Training Manual, Volume I</i> , COMDTINST M16114.42 (series)	2-139



**TASK BCM-05-01-ANY: Operate a VHF-FM Radiotelephone**

---

1. The effective range of the VHF-FM radio is up to \_\_\_\_\_ miles.
  2. The squelch control should be turned counterclockwise until just beyond the point where the \_\_\_\_\_ disappears.
  3. The CG VHF-FM radios will automatically monitor Channel \_\_\_\_\_.
  4. 156.65 MHz, Channel 13 is the boat \_\_\_\_\_ to \_\_\_\_\_ frequency.
  5. 156.8 MHz, Channel \_\_\_\_\_ is the international VHF-FM calling and distress frequency.
- 

**TASK BCM-05-02-ANY: Operate a SSB-HF Transceiver**

---

1. Most Coast Guard boats carry an AM radio as a \_\_\_\_\_ communications system.
- 

**TASK BCM-05-03-ANY: Use the VHF-FM Radiotelephone to Give a Position or Operations Report**

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1. Every transmission should be ended with the words \_\_\_\_\_ or \_\_\_\_\_.
  2. Message should be sent \_\_\_\_\_ so that the receiving party will have a chance to copy the entire message.
  3. The microphone should not be \_\_\_\_\_ until you are ready to speak.
  4. Unofficial conversations \_\_\_\_\_ be transmitted.
  5. Only \_\_\_\_\_ prowords or abbreviations should be used.
  6. The \_\_\_\_\_ alphabet is used to spell difficult words, which are hard to understand over a radio.
- 

**TASK BCM-05-04-ANY: State Radio Communications Policy and Doctrine**

---

1. If communications are lost on the primary system, then communications on the \_\_\_\_\_ system shall be used.
  2. When are encrypted communications used? \_\_\_\_\_.
  3. What is the audible indicator that an unencrypted transmission is being executed? \_\_\_\_\_.
  4. How often are position reports required? \_\_\_\_\_. When is this interval reduced?  
\_\_\_\_\_.
-



## Section F. Reading Assignments – Navigation

**Introduction** The reading assignment(s) should be read prior to beginning instruction of each task.

**In this Section** This Section contains the following reading assignments:

<b>Task Number</b>	<b>Task Title</b>	<b>Reading Assignment</b>	<b>See Page</b>
BCM-06-01-ANY	Identify the Symbols, Abbreviations and Basic Symbols of a Nautical Chart	<i>Boat Crew Handbook – Navigation and Piloting, BCH16114.3 (series)</i> <i>Nautical Chart Symbols Abbreviations and Terms Chart No. 1</i> <i>The American Practical Navigator</i>	2-142
BCM-06-02-ANY	Identify Common Aids to Navigation Used for Inland and Coastal Piloting	<i>Boat Crew Handbook – Navigation and Piloting, BCH16114.3 (series)</i> <i>Nautical Chart Symbols Abbreviations and Terms Chart No. 1</i> <i>The American Practical Navigator</i>	2-143
BCM-06-03-ANY	Identify Local Landmarks on a Nautical Chart	<i>Boat Crew Handbook – Navigation and Piloting, BCH16114.3 (series)</i> <i>Nautical Chart Symbols Abbreviations and Terms Chart No. 1</i>	2-143
BCM-06-04-ANY	Plot a Position Using Latitude and Longitude	<i>Boat Crew Handbook – Navigation and Piloting, BCH16114.3 (series)</i> <i>The American Practical Navigator</i>	2-143
BCM-06-05-ANY	Plot a Magnetic Course on a Nautical Chart	<i>Boat Crew Handbook – Navigation and Piloting, BCH16114.3 (series)</i> <i>The American Practical Navigator</i>	2-144
BCM-06-06-ANY	Measure Distance on a Nautical Chart	<i>Boat Crew Handbook – Navigation and Piloting, BCH16114.3 (series)</i> <i>The American Practical Navigator</i>	2-144
BCM-06-07-ANY	Compute Time, Speed, and Distance	<i>Boat Crew Handbook – Navigation and Piloting, BCH16114.3 (series)</i> <i>The American Practical Navigator</i>	2-144
BCM-06-08-ANY	Determine the Depth of Water Using a Depth Sounder	<i>Boat Crew Handbook – Navigation and Piloting, BCH16114.3 (series)</i> <i>Fathometer Depth Sounder Operator’s Manual</i>	2-144
BCM-06-09-TYPE	Use Radar to Identify Objects	<i>Boat Crew Handbook – Navigation and Piloting, BCH16114.3 (series)</i> <i>The American Practical Navigator</i> <i>Radar Operator’s Manual</i>	2-145

Part 2 - Boat Crew Member Qualification  
 Chapter 3 - Boat Crew Member Trainee Study Guide



BCM-06-10-TYPE	Determine the Range and Bearing to an Object Using Radar	<i>Boat Crew Handbook – Navigation and Piloting, BCH16114.3 (series)</i> <i>The American Practical Navigator</i> <i>Radar Operator’s Manual</i>	2-145
BCM-06-11-TYPE	Use Radar to Obtain and Interpret Relative Bearings and Ranges to a Moving Target to Determine if Risk of Collision Exists	<i>Knights Modern Seamanship; Eighteenth Edition, Pages 611-616</i> <i>The American Practical Navigator</i> <i>Radar Operator’s Manual</i>	2-146
BCM-06-12-TYPE	Operate the VHF-FM Direction Finder and Steer on a Signal	<i>Manufacturer’s Operating Manual</i>	2-146
BCM-06-13-TYPE	Obtain a Fix Using GPS/DGPS	<i>Boat Crew Handbook – Navigation and Piloting, BCH16114.3 (series)</i> <i>The American Practical Navigator</i>	2-146
BCM-06-14	Not Currently Assigned		
BCM-06-15-TYPE	Operate the Electronic Charting System	Electronic Charting System Manual Local Command Navigation Standards	2-147
BCM-06-16-ANY	Operate Automatic Identification System	<a href="http://www.navcen.uscg.gov/?pageName=NAISmain">http://www.navcen.uscg.gov/?pageName=NAISmain</a> <i>Coast Pilot (local region)</i> <i>AIS Manufacturer’s Operation Manual</i>	2-147



**TASK BCM-06-01-ANY: Identify the Symbols, Abbreviations and Basic Symbols of a Nautical Chart**

---

1. One degree is equal to \_\_\_\_\_ minutes.
  2. One minute of \_\_\_\_\_ is equal to 1 NM.
  3. \_\_\_\_\_ of latitude are normally indicated by lines running from side to side.
  4. Latitude scales are normally indicated along the \_\_\_\_\_ margins.
  5. The meridian that passes through Greenwich, England is designated as \_\_\_\_\_ °λ (degrees longitude).
  6. All meridians intersect at the \_\_\_\_\_.
  7. Most charts are oriented with \_\_\_\_\_ at the top.
  8. Any location on a chart can be expressed in terms of \_\_\_\_\_ and \_\_\_\_\_.
  9. True direction is printed around the \_\_\_\_\_ of the compass rose.
  10. The sounding numbers show the water level at \_\_\_\_\_ tide.
  11. In regard to tidal datum's, the term "mean" is another way of saying \_\_\_\_\_.
  12. Bridge clearances are based on the height above \_\_\_\_\_ tide.
  13. The scale of a chart is a ratio of a distance on the chart and the actual distance on the \_\_\_\_\_.
  14. A memory aid to remember chart scale is "Small Scale- \_\_\_\_\_ Area"
  15. A buoy's type is indicated by the \_\_\_\_\_ printed with it.
  16. The color of a buoy symbols print indicates the \_\_\_\_\_ of the buoy.
  17. The symbol for a lighthouse or other fixed light is a black \_\_\_\_\_ with a magenta \_\_\_\_\_.
  18. Ranges are indicated by the symbol for lights and a \_\_\_\_\_ indicating the limits of where the range is used.
  19. Day beacons are indicated by small \_\_\_\_\_.
  20. Coastlines are viewed at both \_\_\_\_\_ and \_\_\_\_\_ water.
  21. Preferred channel marks exhibit \_\_\_\_\_ group flashing light.
  22. You sight a large buoy, red and black banded, showing a double ball top mark and flashing "- . .". This is a \_\_\_\_\_ mark.
  23. A white flashing (2) rhythm (two flashes repeated regularly) indicates a \_\_\_\_\_.
  24. \_\_\_\_\_ show a yellow light exhibiting a \_\_\_\_\_ or fixed rhythm.
  25. Quick flashing means \_\_\_\_\_ flashes per minute and is used where a \_\_\_\_\_ cautionary significance is present, such as at \_\_\_\_\_ turns, \_\_\_\_\_ channel constrictions, \_\_\_\_\_, or obstructions.
-



**TASK BCM-06-02-ANY: Identify Common Aids to Navigation Used for Inland and Coastal Piloting**

1. The IALA Maritime Buoyage Region B area consists of \_\_\_\_\_.
2. Complete the following table, based on IALA Maritime Buoyage Region B

Characteristic	Port Hand	STBD Hand
Color		
Shape (buoys)	_____ (can) or _____	_____ (nun) or _____
Dayboard	_____ square	_____ triangle
Topmark (if fitted)		_____, pointed upward
Light Color (if lighted)		
Reflector Color		
Number		

3. When steering on a range, if the top is left of the bottom mark, then you are \_\_\_\_\_ of the center of the channel.
4. A cylindrical buoy that tapers to a blunt point at the top is called a \_\_\_\_\_ buoy.
5. Channel buoys that are painted green should be taken on the \_\_\_\_\_ side of the boat when entering a harbor.
6. If the top stripe of an obstruction or junction buoy were red, it would indicate that it should be taken on the \_\_\_\_\_ side when leaving the harbor.

**TASK BCM-06-03-ANY: Identify Local Landmarks on a Nautical Chart**

1. Prominent landmarks such as towers, smoke stacks, and flagpoles are pinpointed by a standard symbol of a dot surrounded by a \_\_\_\_\_.
2. All symbols and abbreviations found on a nautical chart are defined in \_\_\_\_\_.
3. How are piers, jetties, and wharves displayed on a nautical chart?

**TASK BCM-06-04-ANY: Plot a Position Using Latitude and Longitude**

1. They (lines) are parallel to the Equator and known as \_\_\_\_\_.
2. To measure latitude, put one point of a pair of dividers on the \_\_\_\_\_ nearest the object.
3. To measure longitude, put one point of a pair of dividers on the \_\_\_\_\_ nearest the object.
4. For latitude, use the \_\_\_\_\_ scale.
5. For longitude, use the \_\_\_\_\_ scale.



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**TASK BCM-06-05-ANY: Plot a Magnetic Course on a Nautical Chart**

---

1. Direction, generally referred to as a bearing, is measured in degrees \_\_\_\_\_ through \_\_\_\_\_.
  2. In boat navigation you will usually use \_\_\_\_\_ courses and bearings.
  3. When measuring magnetic direction using a parallel rule, place the rule so the edge passes through the \_\_\_\_\_ of the compass rose and the bearing number on the inner ring.
- 

**TASK BCM-06-06-ANY: Measure Distance on a Nautical Chart**

---

1. In piloting distance is measured in \_\_\_\_\_ or \_\_\_\_\_.
  2. The \_\_\_\_\_ mile is used for measurement on most navigable waters.
  3. One nautical mile is approximately \_\_\_\_\_ yards.
  4. Distance should be measured using the \_\_\_\_\_ scale.
  5. When the distance to be measured is greater than the span of the dividers, the dividers should be set at a \_\_\_\_\_.
- 

**TASK BCM-06-07-ANY: Compute Time, Speed, and Distance**

---

1. In working time, distance, and speed problems when piloting a boat, the distance is always measured in \_\_\_\_\_ miles, the speed in \_\_\_\_\_, and the time in \_\_\_\_\_.
  2. Distance should be expressed to the nearest \_\_\_\_\_ of a nautical mile, speed to the nearest \_\_\_\_\_ of a knot, and time to the nearest \_\_\_\_\_.
  3. The nautical \_\_\_\_\_ was designed to solve time, distance, and speed problems.
  4. By setting any two of the values on their opposite scales, the third can be read from the appropriate \_\_\_\_\_.
- 

**TASK BCM-06-08-ANY: Determine the Depth of Water Using a Depth Sounder**

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1. Fathometers work on the principle of high frequency \_\_\_\_\_ waves being \_\_\_\_\_ off the bottom.
  2. Because the transducer for the fathometer depth sounder is normally mounted above the low point of the hull, the difference must be \_\_\_\_\_ from the reading in order for the reading to be accurate.
  3. On a video sounder display, the picture displayed is made up of a series of vertical scan lines, one for each \_\_\_\_\_.
  4. On a flashing light or video sounder display, flashes or 'hits' at multiple depths may mean: \_\_\_\_\_.
  5. On a flashing light or video sounder display, a "fuzzy" flash may mean: \_\_\_\_\_.
  6. Anything that interferes with the transducer (air bubbles) or the reflected sound wave (e.g. sediment layers) may render the depth readout \_\_\_\_\_.
  7. Sediment layers, etc. may be distinguished from the sea bottom when using a \_\_\_\_\_ or \_\_\_\_\_ display.
  8. The fathometer depth sounder can be set to display depth as \_\_\_\_\_, \_\_\_\_\_ or \_\_\_\_\_.
  9. Why is it important to set the depth sounder depth units to the same as those on the chart?  
\_\_\_\_\_.
-



**TASK BCM-06-09-TYPE: Use Radar to Identify Objects**

---

1. Radar navigation depends on the operator's \_\_\_\_\_ with radar operation and knowledge of the \_\_\_\_\_ operating area.
  2. The advantages of radar are:
    - a. Can be used at night or periods of \_\_\_\_\_ visibility.
    - b. Fixes can be obtained \_\_\_\_\_.
    - c. Fixes are available at greater distances from \_\_\_\_\_ than from most other methods of piloting.
  3. The disadvantages of radar are:
    - a. It is subject to mechanical and \_\_\_\_\_ failure.
    - b. There are both \_\_\_\_\_ and \_\_\_\_\_ range limitations.
    - d. Charts do not always give information necessary for the \_\_\_\_\_ of radar echoes.
  4. The brilliance control should be set so that the sweep is barely \_\_\_\_\_.
  5. The \_\_\_\_\_ control adjusts the receiver for best reception.
  6. The \_\_\_\_\_ selects the operating range and marker interval.
  7. The plan position indicator indicates \_\_\_\_\_ bearing of a target and presents a \_\_\_\_\_ representation of the area around the boat.
  8. The center of the screen represents the position of your \_\_\_\_\_.
  9. Sandy spits, mud flats, and sandy beaches return the \_\_\_\_\_ and \_\_\_\_\_ echoes.
  10. Buoys with radar reflectors will appear \_\_\_\_\_ to their actual size.
- 

**TASK BCM-06-10-TYPE: Determine the Range and Bearing to an Object Using Radar**

---

1. The bearing of a target is represented by the direction of its \_\_\_\_\_ from the center of the screen and the range is represented by its \_\_\_\_\_.
  2. Radar bearings are measured \_\_\_\_\_ the same as you would visual bearings.
  3. When reading bearings, the cursor line is placed over the target and the bearing is read where the cursor crosses the \_\_\_\_\_ ring.
  4. When obtaining target ranges, \_\_\_\_\_ must be used between rings.
  5. If the radar has a \_\_\_\_\_ range marker, the ranges can be read directly.
-



**TASK BCM-06-11-TYPE: Use Radar to Obtain and Interpret Relative Bearings and Ranges to a Moving Target to Determine if Risk of Collision Exists**

---

1. What type of bearings are used to determine risk of collision? Why are relative bearings unreliable for this purpose?
  2. When two power-driven vessels are crossing so as to involve risk of collision, the boat which has the other on her own \_\_\_\_\_ side shall keep out of the way and shall, if the circumstances of the case admit, avoid crossing \_\_\_\_\_ of the other boat.
  3. Unless otherwise agreed, when two power-driven vessels are meeting on \_\_\_\_\_ or nearly \_\_\_\_\_ courses so as to involve risk of collision, each shall alter her course to starboard so that each shall pass on the \_\_\_\_\_ side of the other boat.
  4. Just as is true of a visual bearing, the radar bearing of an approaching boat that remains fairly \_\_\_\_\_ (with a decreasing \_\_\_\_\_), is indicative of a collision course and requires immediate and substantial action.
  5. Assumptions shall not be made on the basis of \_\_\_\_\_, especially scanty radar information.
- 

**TASK BCM-06-12-TYPE: Operate the VHF-FM Direction Finder and Steer on a Signal**

---

1. The VHF-FM homer allows you to zero in on the \_\_\_\_\_ of FM radio signal you are receiving.
  2. The direction is shown on a \_\_\_\_\_ display screen.
  3. The source must continue to \_\_\_\_\_ as you track it.
  4. After tuning the set, the boat is swung in the direction of the pointer until it \_\_\_\_\_ itself.
  5. After centering, the boat's head should be swung \_\_\_\_\_° to be sure the source is ahead, not aft.
- 

**TASK BCM-06-13-TYPE: Obtain a Fix Using GPS/DGPS**

---

1. GPS is a radio navigation system of \_\_\_\_\_ satellites operated by the \_\_\_\_\_.
  2. It is available \_\_\_\_\_ hours per day, \_\_\_\_\_, in all weather conditions.
  3. In a process called “\_\_\_\_\_”, a GPS receiver on the boat uses the signal to determine the distance between it and the satellite.
  4. Once the receiver has computed the range for at least \_\_\_\_\_ satellites, it processes a three-dimensional position that is accurate, at best, to about \_\_\_\_\_ meters for GPS SPS.
  5. GPS provides two levels of service - \_\_\_\_\_ (SPS) for civilian users, and \_\_\_\_\_ (PPS) for military users.
-



---

**TASK BCM-06-15-TYPE: Operate Electronic Charting System**

1. State the maximum allowable cross track error per Command Navigation Standards.
2. State the Command required depth sounder offset for boat type.
3. Meanings for chart symbols that are specific to a particular system manufacturer can be found in \_\_\_\_\_.

---

**TASK BCM-06-16-TYPE: Operate Automatic Identification System**

1. AIS is a ship-to-ship collision avoidance system that allows for communication of \_\_\_\_\_, \_\_\_\_\_, and other ship data via a VHF virtual data link.
  2. \_\_\_\_\_ collects valuable maritime data in \_\_\_\_\_ critical ports throughout the United States for use by CG operators.
  3. Self-propelled vessels of \_\_\_\_\_ or more in length, other than \_\_\_\_\_ and \_\_\_\_\_ vessels, must have a properly installed, operational, type approved AIS.
  4. Maritime Mobile Service Identities (MMSIs) are regulated and managed by the \_\_\_\_\_.
  5. “\_\_\_\_\_ and \_\_\_\_\_” is the default operational mode.
  6. While AIS range is similar to other VHF applications, a typical value to be expected at sea is \_\_\_\_\_ NM.
  7. List the ten navigation statuses:
  8. \_\_\_\_\_ alphanumeric characters are provided for ship name.
  9. The minimum keyboard display (MKD) will default to \_\_\_\_\_ after \_\_\_\_\_ seconds when the unit is idle.
  10. Navigation status of “Underway Using Engine” is abbreviated as \_\_\_\_\_ on the ownship information menu.
  11. The default password for a user is \_\_\_\_\_.
-



## Section G. Reading Assignments – Mission-Oriented Operations

**Introduction** The reading assignment(s) should be read prior to beginning instruction of each task.

**In this Section** This Section contains the following reading assignments:

Task Number	Task Title	Reading Assignment	See Page
BCM-07-01-TYPE	Participate in a Man Overboard Evolution as a Pointer	<i>Boat Crew Handbook – Boat Operations, BCH16114.1 (series)</i>	2-150
BCM-07-02-TYPE	Participate in a Man Overboard Evolution as a Recovery/Pickup Person	<i>Boat Crew Handbook – Boat Operations, BCH16114.1 (series)</i> <i>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 M16130.2 (series)</i>	2-150
BCM-07-03-ANY	Participate in a Man Overboard Evolution as a Boat Swimmer	<i>Boat Crew Handbook – Boat Operations, BCH16114.1 (series)</i> <i>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 M16130.2 (series)</i> <i>Rescue and Survival Systems Manual, COMDTINST M10470.10 (series)</i>	2-150
BCM-07-04-ANY	Stokes Litter	<i>Boat Crew Handbook – Boat Operations, BCH16114.1 (series)</i>	
BCM-07-05-TYPE	Recover a Person-in-the-Water with the Stokes Litter	<i>Boat Crew Handbook – Boat Operations, BCH16114.1 (series)</i>	2-150
BCM-07-06-ANY	Helicopter Operations	U.S. Coast Guard boatcrew hand signals	2-142
BCM-07-07-TYPE	Conduct Helo-Ops	<i>Boat Crew Handbook – Boat Operations, BCH16114.1 (series)</i>	2-152
BCM-07-08-ANY	Fire the M127A1 Ground Illumination Signal	<i>Boat Crew Handbook - Rescue and Survival Procedures, BCH 16114.2 (series)</i>	2-152
BCM-07-09-ANY	Bend a Heaving Line to a Bridle and Pass the Heaving Line to Another Boat	<i>Boat Crew Handbook – Boat Operations, BCH16114.1 (series)</i>	2-152
BCM-07-10-TYPE	Pass a Towline to Another Boat	<i>Boat Crew Handbook – Boat Operations, BCH16114.1 (series)</i>	2-153
BCM-07-11-ANY	Connect a Towline to a Trailer Eyebolt Using a Skiff Hook	<i>Boat Crew Handbook – Boat Operations, BCH16114.1 (series)</i>	2-153
BCM-07-12-TYPE	Secure an Alongside Tow	<i>Boat Crew Handbook – Boat Operations, BCH16114.1 (series)</i>	2-153

Part 2 - Boat Crew Member Qualification  
 Chapter 3 - Boat Crew Member Trainee Study Guide



<b>Task Number</b>	<b>Task Title</b>	<b>Reading Assignment</b>	<b>See Page</b>
BCM-07-13-ANY	Prepare Portable Pump for Operation, Start, and Obtain Suction	<i>Boat Crew Handbook – Boat Operations, BCH16114.1 (series)</i>	2-153
BCM-07-14-TYPE	Assist in Passing a Portable Pump Directly to Another Boat	<i>Boat Crew Handbook – Boat Operations, BCH16114.1 (series)</i>	2-154
BCM-07-15-TYPE	Rig and Operate an Eductor to Obtain Suction	<i>Boat Crew Handbook – Boat Operations, BCH16114.1 (series)</i>	2-154
BCM-07-16-ANY	Identify the Different Classes of Fires and State the Fuel Sources; State the Primary Extinguishing Agents for Each Class of Fire	<i>Boat Crew Handbook – Boat Operations, BCH16114.1 (series)</i>	2-154
BCM-07-17-TYPE	Locate and Identify the Firefighting Equipment Carried Onboard the Boat	<i>Boat Crew Handbook – Boat Operations, BCH16114.1 (series)</i>	
BCM-07-18-ANY	Operate a CO2 Fire Extinguisher	<i>Boat Crew Handbook – Boat Operations, BCH16114.1 (series)</i>	2-155
BCM-07-19-ANY	Operate a Dry Chemical Fire Extinguisher	<i>Boat Crew Handbook – Boat Operations, BCH16114.1 (series)</i>	2-155
BCM-07-20-TYPE	Assemble Equipment for the Boat's Main Firefighting System (Installed System or Portable Pump with Vari Nozzle optional Hose)	<i>Boat Crew Handbook – Boat Operations, BCH16114.1 (series)</i>	
BCM-07-21-TYPE	Engage the Boat's Main Fire Pump	None assigned	
BCM-07-22-TYPE	Operate a Navy Vari-Nozzle	<i>Boat Crew Handbook – Boat Operations, BCH16114.1 (series)</i>	2-155
BCM-07-23-TYPE	Demonstrate Knowledge of the Procedures to Combat a Fire in the Engine Space	None assigned	
BCM-07-24-TYPE	Demonstrate the Appropriate Response to the Basic Engineering Casualty Control Exercises (BECCE)	None assigned	
BCM-07-25-TYPE	Participate in a Man Overboard Evolution as a Recovery/Pickup Person in Heavy Weather	<i>Boat Crew Handbook – Boat Operations, BCH16114.1 (series)</i>	
BCM-07-26-TYPE	Pass and Recover a Towline/Pump in Heavy Weather	<i>Boat Crew Handbook – Boat Operations, BCH16114.1 (series)</i>	



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**TASK BCM-07-01-TYPE: Participate in a Man Overboard Evolution as a Pointer**

---

1. The first crewmember to observe a person overboard should give the alarm by yelling “man \_\_\_\_\_” followed by either “\_\_\_\_\_ side” or “\_\_\_\_\_ side”.
  2. The pointer should \_\_\_\_\_ proceed to his/her \_\_\_\_\_ Station.
  3. The pointer will keep the victim in \_\_\_\_\_ and continuously \_\_\_\_\_ to the victim’s position.
- 

**TASK BCM-07-02-TYPE: Participate in a Man Overboard Evolution as a Recovery/Pickup Person**

---

1. The recovery/pickup person prepares the \_\_\_\_\_ heaving line for casting to the victim.
  2. After the victim has been brought alongside the boat, the recovery/pickup person should \_\_\_\_\_ aboard.
  3. The ice rescue team will deploy if \_\_\_\_\_. (Air Boats Only)
- 

**TASK BCM-07-03-ANY: Participate in a Man Overboard Evolution as a Boat Swimmer**

---

1. A boat swimmer is designated when the man overboard is \_\_\_\_\_ or \_\_\_\_\_.
  2. The boat swimmer must wear a \_\_\_\_\_ with a PFD, a swimmers \_\_\_\_\_, and a helmet.
- 

**TASK BCM-07-05-TYPE: Recover a Person-in-the-Water with the Stokes Litter**

---

1. The stokes litter will float upright at a \_\_\_\_\_ angle with the feet submerged.
  2. The stokes litter is \_\_\_\_\_-righting.
  3. Five restraining straps and mesh netting are for patient restraint. The strap colors are \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, and \_\_\_\_\_ with flotation pad.
  4. The \_\_\_\_\_ strap goes first, under the patient’s arms and over the chest.
  5. Secure the remaining restraint around the patient working from \_\_\_\_\_ to \_\_\_\_\_.
  6. The litter may be a \_\_\_\_\_ one-piece or \_\_\_\_\_ two-piece design.
-

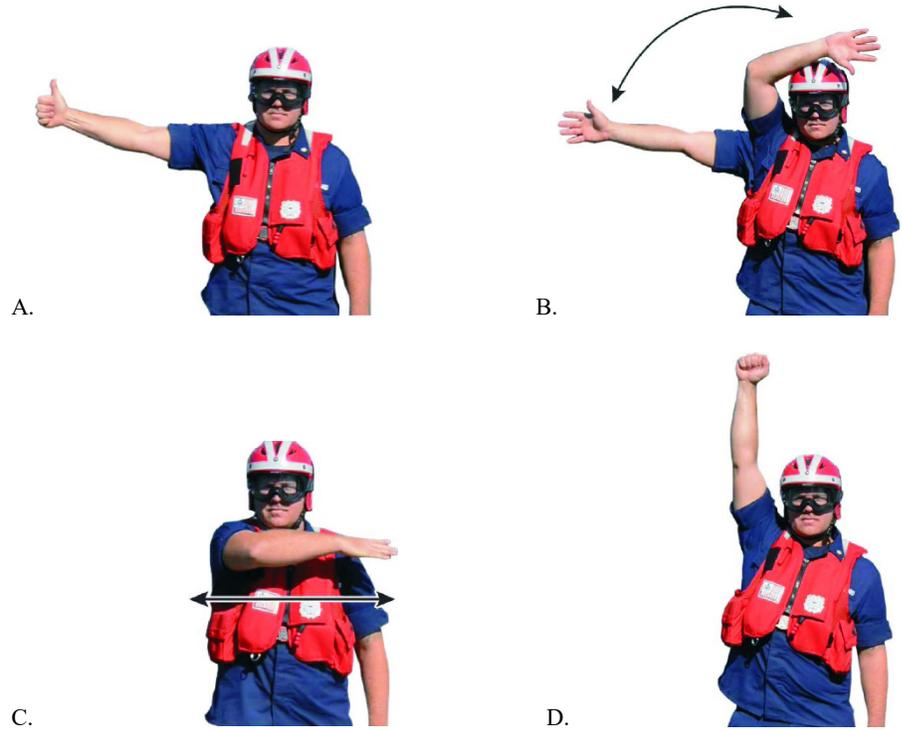


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**TASK BCM-07-06-ANY: Helicopter Operations**

---

1. Explain the meaning of each of the following hand signals:



- A. Right arm held level with shoulder, thumb up.
  - B. Vigorous waving of right arm.
  - C. Either arm and hand level with shoulder, hand moving across throat, palm downward. The hand is moved sideways with the arm remaining bent.
  - D. Right arm held vertical, with fist clenched.
-



**TASK BCM-07-07-TYPE: Conduct Helo-Ops**

---

1. There are \_\_\_\_\_ emergency exits on the HH-60J .
  2. The basket should be \_\_\_\_\_ before being touched by any crewmember.
  3. Trail line, basket slings, or hoisting cables should never be \_\_\_\_\_ to the boat during the operation.
  4. The hoisting cable and trail lines should be \_\_\_\_\_ at all times.
  5. During breakaway procedures, the crewmember is responsible for \_\_\_\_\_ the litter or basket, \_\_\_\_\_ line, and loose cable over the side.
- 

**TASK BCM-07-08-ANY: Fire the M127A1 Ground Illumination Signal**

---

1. Upon ignition, the M127A1 produces a \_\_\_\_\_ star.
  2. The M127A1 can climb to an altitude of \_\_\_\_\_ to \_\_\_\_\_ FT.
  3. The flare will provide illumination for approximately \_\_\_\_\_ seconds.
- 

**TASK BCM-07-09-ANY: Bend a Heaving Line to a Bridle and Pass the Heaving Line to Another Boat**

---

1. A minimum of \_\_\_\_\_ turns of towline should always be kept on the reel.
  2. For offshore work, it is recommended that a minimum of \_\_\_\_\_ FT of towline be carried.
  3. You cannot tow beyond the design characteristics of any towing boat simply by \_\_\_\_\_ the line size.
  4. Thimbles are used to \_\_\_\_\_ load on the eye and provide maximum protection to the inner top of the eye from abrasion and wear.
  5. The towline should be inspected frequently for damage resulting from cutting, \_\_\_\_\_, fusing, and snagging.
  6. A towing bridle should be used in cases where a \_\_\_\_\_ attachment point is not available on the boat to be towed.
  7. The message line is simply a length of light line, which can be \_\_\_\_\_, propelled, or floated further than the tow line.
  8. Having the \_\_\_\_\_ working with the heaving line increases the range.
  9. The heaving line should be \_\_\_\_\_ to make it more flexible and less susceptible to becoming tangled.
-



**TASK BCM-07-10-TYPE: Pass a Towline to Another Boat**

---

1. Where conditions permit and the towing boat can maneuver enough, the towline should be passed \_\_\_\_\_ to one of the people on the other boat.
  2. Before attaching the towline, make certain the fitting attachment it is to be attached to is \_\_\_\_\_ to the deck with through bolts and backing plates.
  3. When attaching to tow bow cleats or bitts, a \_\_\_\_\_ should be used.
  4. A \_\_\_\_\_ is used to reduce wear and chafing at the towline end.
- 

**TASK BCM-07-11-ANY: Connect a Towline to a Trailer Eyebolt Using a Skiff Hook**

---

1. The trailer eyebolt is normally located on the \_\_\_\_\_.
  2. Never use a skiff hook for any operation that exceeds the stress load of towing \_\_\_\_\_ boats.
  3. Attache the skiff hook line to a towline with a \_\_\_\_\_ or \_\_\_\_\_ bend.
- 

**TASK BCM-07-12-TYPE: Secure an Alongside Tow**

---

1. When taking a boat alongside, the \_\_\_\_\_ takes the strain of forward movement.
  2. When taking a boat alongside, the \_\_\_\_\_ takes the strain of backing down.
  3. Always rig \_\_\_\_\_ to prevent hull damage.
  4. When shortening the tow, you should \_\_\_\_\_ in the slack from the towline to bring the disabled boat along side.
  5. When securing the boat alongside, you should lead the \_\_\_\_\_ forward to use as the bow line.
- 

**TASK BCM-07-13-ANY: Prepare Portable Pump for Operation, Start, and Obtain Suction**

---

1. Pull the handle to release a \_\_\_\_\_ on the storage container.
  2. Connect a discharge hose and lay it out on deck so there are no \_\_\_\_\_ or \_\_\_\_\_.
  3. A pump can run dry for \_\_\_\_\_, but it was designed to be started only after suction has been taken.
  4. The engine will run approximately \_\_\_\_\_ hours on one tank of fuel, depending on conditions.
  5. A pump watch must be alert for \_\_\_\_\_ around the strainer and must ensure the strainer remains \_\_\_\_\_. Watch for \_\_\_\_\_.
-



**TASK BCM-07-14-TYPE: Assist in Passing a Portable Pump Directly to Another Boat**

---

1. The bridle should be attached to the \_\_\_\_\_ container handles.
  2. A \_\_\_\_\_ line should be rigged to control the movement of the pump after the pump is in the water.
  3. After passing the heaving line, the \_\_\_\_\_ is lowered over the side and the people on the other boat are directed to \_\_\_\_\_ in on the line.
- 

**TASK BCM-07-15-TYPE: Rig and Operate an Eductor to Obtain Suction**

---

1. Dewatering, using an eductor, is performed when weather conditions permit your boat to \_\_\_\_\_ the disabled boat safely.
  2. After rigging, the eductor is \_\_\_\_\_ in the flooded area.
  3. Vacuum, or \_\_\_\_\_ pulls the water up through the suction hose and out the discharge hose.
- 

**TASK BCM-07-16-ANY: Identify the Different Classes of Fires and State the Fuel Sources; State the Primary Extinguishing Agents for Each Class of Fire**

---

1. Fire is a chemical \_\_\_\_\_ known as combustion.
  2. The four elements of a fire are oxygen, heat, \_\_\_\_\_, and \_\_\_\_\_ chain reaction.
  3. Fires fueled by common combustible materials, such as wood, cloth, or paper, are classified as Class \_\_\_\_\_ fires. The best extinguishing agent for this class fire is \_\_\_\_\_.
  4. Fires fueled by flammable or combustible liquids, flammable gases, or similar material are classified as Class \_\_\_\_\_ fires. The primary extinguishing agent for this class fire is \_\_\_\_\_.
  5. Fires involving combustible \_\_\_\_\_, with fuel sources such as sodium, potassium, or magnesium, are classified as Class \_\_\_\_\_ fire. Given that these type fires are not easily extinguished, the best agents to use for control of the fire are \_\_\_\_\_ or \_\_\_\_\_.
  6. Fires involving energized \_\_\_\_\_ equipment, such as conductors or appliances, are classified as Class \_\_\_\_\_ fires.
  7. The principle remedy for these type fires is to secure the \_\_\_\_\_ and to apply \_\_\_\_\_ to the fire.
-



**TASK BCM-07-18-ANY: Operate a CO<sub>2</sub> Fire Extinguisher**

---

1. The standard CO<sub>2</sub> fire extinguisher used on Coast Guard boats is the \_\_\_\_\_ pound.
  2. The range of the extinguisher is approximately \_\_\_\_\_ FT.
  3. The CO<sub>2</sub> is released in the form of a fine white \_\_\_\_\_.
  4. Be careful not to let the extinguisher's discharge touch your \_\_\_\_\_.
  5. When using the extinguisher, the cylinder should be kept \_\_\_\_\_.
- 

**TASK BCM-07-19-ANY: Operate a Dry Chemical Fire Extinguisher**

---

1. The effective range for a dry chemical fire extinguisher is \_\_\_\_\_ or \_\_\_\_\_ FT.
  2. When using dry chemical approach the fire as close as \_\_\_\_\_ will allow.
  3. The dry chemical should be pointed at the \_\_\_\_\_ of the flame and use a \_\_\_\_\_ movement.
- 

**TASK BCM-07-22-TYPE: Operate a Navy Vari-Nozzle**

---

1. The vari-nozzle can be used for fighting \_\_\_\_\_ classes of fires.
  2. The vari-nozzle bail handle has \_\_\_\_\_ different positions.
  3. The vari-nozzle's spray pattern is adjusted by \_\_\_\_\_ the variable pattern tip.
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## Section H. Reading Assignments – Boat Crew Communication System

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**Introduction**                      The reading assignment(s) should be read prior to beginning instruction of each task.

---

**In this Section**                      This Section contains the following reading assignments:

<b>Task Number</b>	<b>Task Title</b>	<b>Reading Assignment</b>	<b>See Page</b>
BCM-08-01-ANY	TruLink Overview	Trulink Operator’s Manual	2-157
BCM-08-02-ANY	TruLink TAP Overview	Trulink Operator’s Manual	2-157
BCM-08-03-ANY	TruLink TruLink Components	Trulink Operator’s Manual	2-157
BCM-08-04-ANY	TruLink TruLink Menu Options	Trulink Operator’s Manual	2-157
BCM-08-05-ANY	TruLink TruLink Setting the TAP Channel	Trulink Operator’s Manual	2-157
BCM-08-06-ANY	TruLink TruLink Joining a Network	Trulink Operator’s Manual	2-158
BCM-08-07-ANY	TruLink TruLink Mode of Operations	Trulink Operator’s Manual	2-158



**TASK BCM-08-01-ANY: TruLink Overview**

---

1. The TruLink System is a \_\_\_\_\_ system that permits multiple crewmembers to speak simultaneously when in a “No Radio Mode.”
  2. The Defender system supports up to \_\_\_\_ channels. Up to \_\_\_\_ crewmembers can be logged on to a channel with up to \_\_\_\_ speaking simultaneously.
  3. The 47 FT / RB-M system supports up to \_\_\_\_ channels. Up to \_\_\_\_ crewmembers can be logged on to a channel with up to \_\_\_\_ speaking simultaneously. In addition, the 47 FT / RB-M system has the capability to transmit and receive over \_\_\_\_ and \_\_\_\_ radios.
- 

**TASK BCM-08-02-ANY: TruLink TAP Overview**

---

1. The TruLink TAP allows crewmembers on the 47 FT / RB-M system to transmit and receive over \_\_\_\_ and \_\_\_\_ radios.
  2. The crewmembers may gain access to the TAP via their TruLink \_\_\_\_.
- 

**TASK BCM-08-03-ANY: TruLink Components**

---

1. The four components of the Boat Crew Communications System (TruLink) are:
    - a) \_\_\_\_\_
    - b) \_\_\_\_\_
    - c) \_\_\_\_\_
    - d) \_\_\_\_\_
  2. The TPT requires 3 batteries that will normally last \_\_\_\_ - \_\_\_\_ hours.
- 

**TASK BCM-08-04-ANY: TruLink Menu Options**

---

1. Prerecorded messages will prompt you through the menu options (press \_\_\_\_ to scroll through menu options).
  2. Once a specific menu is selected, Press the \_\_\_\_ Button until the desired mode is announced and then immediately the \_\_\_\_\_ Button to set the mode.
- 

**TASK BCM-08-05-ANY: TruLink Setting the TAP Channel**

---

1. When the TAP is in the network, it is always the \_\_\_\_\_.
  2. Changing the channel on the Master unit of the network will \_\_\_\_\_ all logged on users.
-



**TASK BCM-08-06-ANY: TruLink Joining a Network**

---

1. True / False. You should only join a network after the “Master” TPT (Defender Class only) or “Master” TAP (47 FT / RB-M only) has been set up.
  2. After turning on the TPT and the Synvoice tells you which channel you are on, you can change channels by pressing the \_\_\_\_\_ button once. “Channel xx is announced.” You then press the \_\_\_\_\_ button to sequence through the channels. Once the desired channel is announced, immediately press the \_\_\_\_\_ button to finalize our selection.
  3. The user will hear “\_\_\_\_\_”, indicating that the TPT is set up on the correct channel.
  4. When you wish to transmit over the radio, you must press the \_\_\_\_\_ button. Normal conversation between crewmembers will be via VOX, if VOX is turned on.
  5. The VOX should be set to ON during normal operations and turned off when you are in a \_\_\_\_\_ environment.
- 

**TASK BCM-08-07-ANY: TruLink Mode of Operations**

---

1. The four Radio Types are:
    - a) \_\_\_\_\_
    - b) \_\_\_\_\_ 47 FT / RB-M only
    - c) \_\_\_\_\_ 47 FT / RB-M only
    - d) \_\_\_\_\_ 47 FT / RB-M only
-




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## Section I. Reading Assignments – FLIR Imaging Systems

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**Introduction**                      The reading assignment(s) should be read prior to beginning instruction of each task.

**In this Section**                      This Section contains the following reading assignments:

Task Number	Task Title	Reading Assignment	See Page
BCM-09-05-TYPE	Operate FLIR System	FLIR Manufacturer’s Operator’ Manual	2-159

**TASK BCM-09-05-ANY:      Operate FLIR System**

---

1. FLIR provides enhanced detection, recognition, and identification of both \_\_\_\_\_ and \_\_\_\_\_ targets and the ability to track (day/night).
  2. FLIR imaging systems are typically a gyro-stabilized platform that can rotate a continuous \_\_\_\_\_ in both azimuth and elevation.
  3. The color CCD camera is used to view objects during \_\_\_\_\_, or when the scene is otherwise illuminated
  4. FLIR can detect differences in \_\_\_\_\_ and displays them as \_\_\_\_\_ and \_\_\_\_\_ TV video
  5. FLIR sees \_\_\_\_\_ not \_\_\_\_\_ .
  6. FLIR senses the minute differences in heat between objects, and displays the warmer objects as \_\_\_\_\_, and colder objects as \_\_\_\_\_.
  7. Thermal imagers are \_\_\_\_\_ -they only receive incoming energy.
  8. Fog, smog, and rain will \_\_\_\_\_ the range at which you can detect a target.
  9. The \_\_\_\_\_ allows the operator to control where the FLIR is \_\_\_\_\_.
  10. Dimming the brightness control help to protect the operator’s \_\_\_\_\_.
  11. Scene presets changes the \_\_\_\_\_ and \_\_\_\_\_ of the image.
  12. The B/W button toggles between the available image presentation modes: White Hot, Black Hot, Red Hot, Rainbow, and Fusion. Hot objects appear \_\_\_\_\_, \_\_\_\_\_, or \_\_\_\_\_ respectively on the select mode. The choices of video image mode is strictly a personal preference.
-



# PART 3 Engineer Qualification

**Introduction**

This Part contains a collection of tasks, which must be learned, practiced, and performed by the trainee. These tasks represent the minimum elements of skill and knowledge necessary for safe and effective performance of a Coast Guard Engineer.

**NOTE**

This Volume is not meant to be ordered for purposes of obtaining individual qualification tasks. Qualification tasks should be reproduced locally and provided for trainees.

**In this Part**

This Part contains the following chapters:

Chapter	Title	See Page
1	Task Accomplishment Record for Engineer	<a href="#">3-2</a>
2	<a href="#">Engineer Qualification Tasks</a>	<a href="#">3-5</a>
3	<a href="#">Engineer Trainee Study Guide</a>	<a href="#">3-38</a>



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## CHAPTER 1

### Task Accomplishment Record for Engineer

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**NOTE**

Instructors shall use a copy of this form (for each trainee) to record accomplishment of tasks. Following task completion, task shall be recorded in the e-Training system.

TRAINEE NAME: \_\_\_\_\_ RATE: \_\_\_\_\_

INSTRUCTOR NAME: \_\_\_\_\_ RATE: \_\_\_\_\_

POSITION/QUALIFICATION CODE TO BE TRAINED FOR: \_\_\_\_\_

**NOTE**

Instructors should line through those tasks not applicable to this qualification.

Task	Date Started	Date Completed	Instructor's Initials
ENG-01-01-TYPE			
ENG-01-02-TYPE			
ENG-01-03-TYPE			
ENG-01-04-TYPE			
ENG-01-05-TYPE			
ENG-01-06-TYPE			
ENG-01-07-TYPE			
ENG-01-08-TYPE			
ENG-01-09-TYPE			
ENG-02-01-TYPE			
ENG-02-02-TYPE			
ENG-02-03-TYPE			
ENG-02-04-TYPE			
ENG-02-05-TYPE			

Part 3 - Engineer Qualification  
 Chapter 1 - Task Accomplishment Record for Engineer



Task	Date Started	Date Completed	Instructor's Initials
ENG-02-06-TYPE			
ENG-02-07-TYPE			
ENG-02-08-TYPE			
ENG-02-09-TYPE			
ENG-02-10-TYPE			
ENG-02-11-TYPE			
ENG-02-12-TYPE			
ENG-02-13-TYPE			
ENG-02-14-TYPE			
ENG-02-15-TYPE			
ENG-02-16-TYPE			
ENG-02-17-TYPE			
ENG-02-18-TYPE			
ENG-02-19-TYPE			
ENG-02-20-TYPE			
ENG-02-21-TYPE			
ENG-02-22-TYPE			
ENG-02-23-TYPE			
ENG-03-01-TYPE	Not currently assigned.		
ENG-03-02-TYPE			
ENG-03-03-TYPE			
ENG-03-04-TYPE			
ENG-03-05-TYPE			



Part 3 - Engineer Qualification  
Chapter 1 - Task Accomplishment Record for Engineer

<b>Task</b>	<b>Date Started</b>	<b>Date Completed</b>	<b>Instructor's Initials</b>
ENG-03-06-TYPE			
ENG-03-07-TYPE			
ENG-04-01-TYPE			



## CHAPTER 2

### Engineer Qualification Tasks

**Introduction**

The following are the instructions for this Chapter:

- (01) The purpose of this Chapter is to provide guidance on the trainee’s progress through the qualification tasks.
- (02) The instructor should present the tasks to the trainee in a logical order using the instructions provided in *Part 1*.
- (03) Tasks should be signed, dated, and placed in the trainee’s training record when the instructor is satisfied that the trainee can consistently perform a task in accordance with all standards and conditions.

**Prerequisites**

A prospective Engineer must be:

- (01) a certified Boat Crew Member on the boat type for which they are seeking this higher level of qualification, and
- (02) a certified Boom Crane Operator, if applicable.

**In this Chapter**

This Chapter contains the following sections:

Section	Title	See Page
A	Pre-Operational Checks	3-6
B	Propulsion System Start Checks and Casualty Responses	3-20
C	Boat Disabling Casualties	3-33
D	Post-Operational Checks	3-37



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## Section A. Pre-Operational Checks

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### Introduction

The following are objectives of Division One:

- (01) **Demonstrate** the knowledge of the casualties and discrepancies that would prevent a boat from getting underway.
- (02) **Demonstrate** the ability to perform Engineering Casualty Control on a boat.

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### In this Section

This Section contains the following tasks:

Task Number	Task	See Page
ENG-01-01-TYPE	Locate Installed Equipment and Fittings on the Boat	3-7
ENG-01-02-TYPE	Locate Components and Accessories of the Boat's Propulsion and Electrical Systems	3-9
ENG-01-03-TYPE	Locate Components and Accessories of the Boat's Auxiliary System	3-12
ENG-01-04-TYPE	Conduct a Pre-Start Check Off	3-14
ENG-01-05-TYPE	List the Disabling Casualties and Restrictive Discrepancies that Prevent the Boat from Getting Underway	3-15
ENG-01-06-TYPE	State the Equipment Casualties That Will Prevent the Boat from Getting Underway	3-16
ENG-01-07-TYPE	Energize the Electrical and Electronic Systems	3-17
ENG-01-08-TYPE	Set Watertight Integrity	3-18
ENG-01-09-TYPE	Draw/List the Boat's Systems	3-19



**TASK ENG-01-01-TYPE: Locate Installed Equipment and Fittings on the Boat**

**References**

- a. *Applicable Outfit Lists*
- b. *Applicable Technical Manuals*
- c. *Specific Boat Type Operator's Handbook, COMDTINST M16114 (series)*

**Conditions**

This task may be performed when the boat is out of the water. The task will be performed during normal unit training and lecture programs pertaining to boat operations.

**Standards**

Aboard the boat, without reference material, the trainee must locate and describe the operation or purpose of each installed piece of equipment and fittings as listed below.

Performance Criteria	Completed (Initials)	Boat Type
1. Locate and state the purpose of the following: <ul style="list-style-type: none"> <li>a. Deck fittings (cleats, chocks, bits).</li> <li>b. Anchor and anchor rope components.</li> <li>c. Mooring and towing gear.</li> <li>d. Navigation lights.</li> <li>e. Spotlight and/or blue light.</li> <li>f. Hoisting, trailer, or tie-down points.</li> <li>g. Bilge access plate.</li> <li>h. Forward drain plug.</li> <li>i. Forward lift rings.</li> <li>j. Compass sending unit.</li> <li>k. Main deck/deck storage:               <ul style="list-style-type: none"> <li>(1) Escape hatch.</li> <li>(2) Portable dewatering pump sea suction/engine room suction.</li> <li>(3) Window wash reservoir and pump.</li> <li>(4) Shore-tie receptacle.</li> <li>(5) Heat, ventilation and air conditioning (HVAC) raw water discharge ports.</li> <li>(6) Portable dewatering pump.</li> <li>(7) Fuel tank vent.</li> <li>(8) Fuel fill/sounding rod.</li> <li>(9) Bilge pump discharge ports.</li> <li>(10) Hull access plug (MLB only)</li> <li>(11) Aft locker drain plugs (MLB only)</li> <li>(12) Recess well gates.</li> <li>(13) Low level LED lights</li> </ul> </li> </ul>	_____ _____ _____	_____ _____ _____
2. Locate and describe the functions of the following: <ul style="list-style-type: none"> <li>a. Compass.</li> <li>b. Radios.</li> <li>c. Fathometer.</li> <li>d. GPS/DGPS.</li> <li>e. Radar.</li> <li>f. Loudhailer.</li> <li>g. Battery switches.</li> <li>h. Main circuit breakers.</li> <li>i. 12 VDC accessories switch panel.</li> <li>j. Start/stop switches.</li> </ul>	_____ _____ _____	_____ _____ _____



Performance Criteria	Completed (Initials)	Boat Type
k. Kill switch. l. Battery parallel switch/ACR switch. m. Engine air shutdown pull handles/switches.		
3. Reduction Gear Space: a. Transducer. b. Propeller shaft seals/ waterjet bearing housing. c. Bilge pumps and water level switches. d. Fuel stripping port. e. Speed log. f. Cardan shaft seals. g. Fuel tank inspection covers. h. HVAC overboard discharge. i. All outfitted equipment.	_____ _____ _____	_____ _____ _____
4. Lazarette: a. Bilge pump and water sensor switch. b. Standpipes. c. Servo/power cylinder. d. Rudder feedback units. e. Bilge pump overboard discharge. f. Rudder post glands. g. Tie rod. h. Vents. i. Emergency tiller. j. Seachest valves/strainers	_____ _____ _____	_____ _____ _____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments**  
 \_\_\_\_\_  
 \_\_\_\_\_



**TASK ENG-01-02-TYPE: Locate Components and Accessories of the Boat's Propulsion and Electrical Systems**

**References**

- a. *Applicable Technical Manuals*
- b. *Specific Boat Type Operator's Handbook, COMDTINST M16114 (series)*

**Conditions**

This task will be performed pierside, while normal unit training and lecture programs pertaining to boat operations are being conducted. Where practicable, the pierside instructions should be followed by related underway exercises.

**Standards**

Aboard the boat, without reference material, the trainee must locate components and accessories of the propulsion and electrical systems following the steps listed below.

Performance Criteria	Completed (Initials)	Boat Type
1. Locate the main engines and ship's service generator (if installed), and state the following: <ul style="list-style-type: none"> <li>a. Make and model.</li> <li>b. Horsepower of each engine.</li> <li>c. Cruising and maximum engine RPMs.</li> <li>d. Rotation of each engine.</li> <li>e. Lube oil capacity and type of oil of each engine.</li> <li>f. Describe the Airsep system.</li> <li>g. Generator rating (kW), as applicable.</li> </ul>	_____ _____ _____	_____ _____ _____
2. Describe the fuel oil system: <ul style="list-style-type: none"> <li>a. State the location of the fuel tank.</li> <li>b. State the capacity of the fuel tank.</li> <li>c. State the usable capacity of the tank.</li> <li>d. Locate the fill tube, sounding rod and fuel gauge.</li> <li>e. Locate the fuel tank vent.</li> <li>f. Locate the manual emergency shutoff valves.</li> <li>g. Locate the primary filters, secondary filters, generator fuel filters, priming pump and stripping port.</li> <li>h. Locate the fuel pump, ECM cooler plate and fuel cooler.</li> <li>i. Locate and state the size and purpose of the restricted orifice.</li> <li>j. Locate the primer bulb/pump.</li> </ul>	_____ _____ _____	_____ _____ _____
3. Describe the engine cooling system: <ul style="list-style-type: none"> <li>a. State the type of system used.</li> <li>b. Locate the sea suction valves and the sea strainers.</li> <li>c. State how the propulsion and generator engines are cooled.</li> <li>d. State how the reduction gears are cooled.</li> <li>e. State how the exhaust gases are cooled.</li> <li>f. State how the raw water system is protected from corrosion.</li> <li>g. Locate and state the purpose of the raw water pump, restrictor plate and shaft seal.</li> <li>h. State the jacket water capacity of the propulsion and generator engines.</li> <li>i. Locate the jacket water pump, oil cooler, aftercooler, thermostats, coolant expansion tank and hot start, as applicable on propulsion and generator engines.</li> </ul>	_____ _____ _____	_____ _____ _____
4. Locate through hull emergency plugs: <ul style="list-style-type: none"> <li>a. Transducer</li> <li>b. Speed log</li> </ul>	_____ _____ _____	_____ _____ _____



Performance Criteria	Completed (Initials)	Boat Type
5. State the following parameters for idle and cruising: <ul style="list-style-type: none"> <li>a. Engine and generator water temperature.</li> <li>b. Engine and generator lube oil pressure.</li> <li>c. Reduction gear clutch apply pressure.</li> <li>d. Reduction gear lube oil temperature.</li> </ul>	_____ _____ _____	_____ _____ _____
6. Locate and state the purpose of the following engine stop systems: <ul style="list-style-type: none"> <li>a. Engine stop buttons (switches).</li> <li>b. Emergency fuel cutout valves.</li> <li>c. Emergency air shutdowns.</li> </ul>	_____ _____ _____	_____ _____ _____
7. Locate the marine gears and state the following: <ul style="list-style-type: none"> <li>a. Make, model and configuration of gear box.</li> <li>b. Gear ratio in forward and reverse.</li> <li>c. Oil dipstick and where oil is added.</li> <li>d. Oil capacity of the gears and what type of oil is used.</li> </ul>	_____ _____ _____	_____ _____ _____
8. Describe the boat shafts and propellers/jet drive, stating the following: <ul style="list-style-type: none"> <li>a. Diameter of shaft.</li> <li>b. Purpose of the shaft seal.</li> <li>c. Propeller diameter and pitch.</li> <li>d. Number of blades.</li> <li>e. Direction of rotation in forward and reverse.</li> <li>f. Waterjet bearing box type/capacity of oil</li> <li>g. Jetdrive emergency cleanout access port.</li> </ul>	_____ _____ _____	_____ _____ _____
9. Describe and state the purpose of the compressed air system: <ul style="list-style-type: none"> <li>a. Locate the air compressor and state the PSI.</li> <li>b. Locate the air tank and state capacity.</li> <li>c. Pressure gauge and bleed valve.</li> <li>d. Cut in/out pressure.</li> <li>e. Relief valve setting.</li> </ul>	_____ _____ _____	_____ _____ _____
10. Describe the fixed fire fighting and installed eductor systems: <ul style="list-style-type: none"> <li>a. Locate the fire pump.</li> <li>b. State the pressure range of the fire pump.</li> <li>c. State the output of the fire pump in gallons per minute.</li> <li>d. State the maximum engine RPMs with the fire pump engaged.</li> <li>e. Locate and state the purpose of the installed eductor and isolation valves.</li> </ul>	_____ _____ _____	_____ _____ _____
11. Describe the hydraulic steering system: <ul style="list-style-type: none"> <li>a. Locate the steering pump.</li> <li>b. Locate and state the capacity of the oil reservoir.</li> <li>c. State the type of oil used.</li> <li>d. Locate and state the purpose of the flow divider.</li> <li>e. Locate and state the purpose of the relief valve.</li> </ul>	_____ _____ _____	_____ _____ _____

Part 3 - Engineer Qualification  
 Chapter 2 - Engineer Qualification Tasks



Performance Criteria	Completed (Initials)	Boat Type
12. Locate and state the purpose of the fixed fire extinguishing system: <ul style="list-style-type: none"> <li>a. Type of agent.</li> <li>b. Cylinder and state the PSI.</li> <li>c. Engine shutdown cylinders.</li> <li>d. Thermal sensors and at what temperature the alarm will sound.</li> <li>e. State what will happen when the cylinder is discharged.</li> </ul>	_____ _____ _____	_____ _____ _____
13. Describe the engine alarm system: <ul style="list-style-type: none"> <li>a. State the purpose of the engine alarm system and at what temperature or pressure the alarm is activated.</li> <li>b. State the purpose of the alarm cutoff switch.</li> </ul>	_____ _____ _____	_____ _____ _____
14. Locate the following DC power equipment: <ul style="list-style-type: none"> <li>a. Batteries.</li> <li>b. Alternators.</li> <li>c. DC power panels and their voltages.</li> <li>d. Main breakers.</li> <li>e. Battery cutout switches.</li> <li>f. Voltage regulators.</li> <li>g. Multi-battery isolators.</li> <li>h. Shore-tie battery charger.</li> <li>i. Inverter.</li> <li>j. Automatic charge relay (ACR)</li> </ul>	_____ _____ _____	_____ _____ _____
15. Locate the following AC power equipment: <ul style="list-style-type: none"> <li>a. Shore-tie box.</li> <li>b. AC power panel.</li> <li>c. Generators.</li> <li>d. Main breaker.</li> </ul>	_____ _____ _____	_____ _____ _____
16. State the power output and purpose of the alternators and generators.	_____ _____ _____	_____ _____ _____
17. Explain how the batteries are connected.	_____ _____ _____	_____ _____ _____
18. State when the batteries are paralleled.	_____ _____ _____	_____ _____ _____
19. Explain the purpose of the start batteries. Describe the results of a battery failure or low voltage in the start batteries.	_____ _____ _____	_____ _____ _____
20. Explain the purpose of the service batteries. Describe the results of a battery failure or low voltage in the service batteries.	_____ _____ _____	_____ _____ _____





Performance Criteria	Completed (Initials)	Boat Type
2. Locate and state the purpose of the following HVAC system components: <ul style="list-style-type: none"> <li>a. Sea suction valve.</li> <li>b. Sea strainer.</li> <li>c. Raw water pumps.</li> <li>d. HVAC raw water piping.</li> <li>e. HVAC units.</li> <li>f. HVAC control panel.</li> <li>g. HVAC system circuit breakers/switches.</li> <li>h. Explain how the HVAC unit both cools and heats.</li> <li>i. Locate and describe the ventilation intakes and ducting.</li> </ul>	_____ _____ _____	_____ _____ _____
3. Locate and state the purpose of the fire detection and suppression system components: <ul style="list-style-type: none"> <li>a. Mechanical actuators/nitrogen bottles.</li> <li>b. Agent.</li> <li>c. Siren.</li> <li>d. Pressure switches.</li> <li>e. Engine room air inlet/exhaust dampers.</li> <li>f. 30 second delay bottle.</li> <li>g. Strobe light.</li> <li>h. System status panel.</li> <li>i. Discharge nozzle.</li> <li>j. Fire alarm warning lights/alarm panel.</li> <li>k. Smoke and heat detector.</li> <li>l. Carbon monoxide detector(s).</li> <li>m. Explain how the system works when actuated.</li> </ul>	_____ _____ _____	_____ _____ _____
4. Locate and state the purpose of the fixed dewatering system components: <ul style="list-style-type: none"> <li>a. Bilge pumps.</li> <li>b. High water sensor switches.</li> <li>c. Bilge pump control and alarm panel.</li> <li>d. Bilge pump overboard discharge points.</li> <li>e. Engine room dewatering standpipe.</li> </ul>	_____ _____ _____	_____ _____ _____
5. Locate and state the purpose of the emergency window release system components: <ul style="list-style-type: none"> <li>a. Compressor and reservoir assembly.</li> <li>b. System parameters.</li> <li>c. Latch assembly.</li> <li>d. Water sensor switches.</li> <li>e. System test switch.</li> <li>f. CO<sub>2</sub> backup actuator.</li> <li>g. Window bladder system.</li> </ul>	_____ _____ _____	_____ _____ _____
6. Locate and state the purpose of the gray water system components (if installed): <ul style="list-style-type: none"> <li>a. Gray water tank.</li> <li>b. Gray water pump.</li> <li>c. Grease trap.</li> <li>d. Deck connection and inport discharge hose.</li> <li>e. Controls and control switches.</li> <li>f. Alarms.</li> </ul>	_____ _____ _____	_____ _____ _____



Performance Criteria	Completed (Initials)	Boat Type
7. Locate and state the purpose of the potable water system (if installed): a. Potable water tank. b. Potable water pump. c. Deck connections and fill hose. d. Controls and control switches. e. Hot water tank. f. Alarms.	_____ _____ _____	_____ _____ _____
8. Locate and state the purpose of the sewage system (if installed): a. Sewage tank. b. Sewage discharge pump. c. Macerator pump. d. Controls and control switches. e. Deck connection and inport discharge hose. f. Alarms.	_____ _____ _____	_____ _____ _____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments**  
 \_\_\_\_\_  
 \_\_\_\_\_

**TASK ENG-01-04-TYPE: Conduct a Pre-Start Check Off**

- References**
- a. *Applicable Technical Manuals*
  - b. *NSB Manufacturer Manuals*
  - c. *Specific Boat Type Operator's Handbook, COMDTINST M16114 (series)*

**Conditions**  
 This task will be performed when the boat is in or out of the water, while normal unit training and lecture programs pertaining to boat operations are being conducted. Use of the applicable MPC is required and where practicable, the instructions should be followed by related underway exercises.

**Standards**  
 The trainee must properly complete all steps below in order to successfully complete this task.

Performance Criteria	Completed (Initials)	Boat Type
1. Complete a pre-start Check Off per the above references.	_____ _____ _____	_____ _____ _____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments**  
 \_\_\_\_\_  
 \_\_\_\_\_



**TASK ENG-01-05-TYPE: List the Disabling Casualties and Restrictive Discrepancies that Prevent the Boat from Getting Underway**

<b>References</b>	a. <i>Specific Boat Type Operator's Handbook, COMDTINST M16114 (series)</i> b. <i>Unit Instructions or Policy</i>
<b>Conditions</b>	This task will be performed pierside, while normal unit training and lecture programs pertaining to boat operations are being conducted. Where practicable, the pierside instructions should be followed by related underway exercises.
<b>Standards</b>	With reference material and without error, the trainee must state the equipment that, should a casualty or discrepancy occur, will prevent the boat from getting underway for an operational mission. The trainee must know the difference between disabling casualties and mission-specific critical casualties. The trainee must know what steps must be followed when a casualty or discrepancy is found.

Performance Criteria	Completed (Initials)	Boat Type
1. State the equipment problems or symptoms that would constitute <i>disabling casualties</i> . Each of these would "make the boat not serviceable" as defined in the <i>U.S. Coast Guard Boat Operations and Training (BOAT) Manual, Volume I, COMDTINST M16114.32 (series)</i> . Describe the actions to be taken if the disabling casualty is found while underway and at dockside.	_____ _____ _____	_____ _____ _____
2. State the equipment problems or symptoms that would constitute <i>restrictive discrepancies</i> . Each of these would "restrict the operations of the boat such that it can perform some missions, but not all missions safely" as defined in the <i>U.S. Coast Guard Boat Operations and Training (BOAT) Manual, Volume I, COMDTINST M16114.32 (series)</i> . Describe the actions to be taken if the restrictive discrepancy is found while underway and at dockside.	_____ _____ _____	_____ _____ _____
3. Describe examples of problems or symptoms that would constitute <i>major discrepancies</i> . These are important maintenance issues that "degrade the effectiveness of the boat to perform one or more missions" as defined in the <i>U.S. Coast Guard Boat Operations and Training (BOAT) Manual, Volume I, COMDTINST M16114.32 (series)</i> . These must be documented and corrected but do not otherwise restrict the boat's service or impact safety of the crew.	_____ _____ _____	_____ _____ _____
4. State the equipment or condition listed in the <i>Specific Boat Type Operator's Handbook, COMDTINST M16114 (series)</i> that constitutes a disabling casualty.	_____ _____ _____	_____ _____ _____
5. State the equipment or condition listed in the <i>Specific Boat Type Operator's Handbook, COMDTINST M16114 (series)</i> that constitutes a restrictive or major discrepancy.	_____ _____ _____	_____ _____ _____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments**  
 \_\_\_\_\_  
 \_\_\_\_\_



**TASK ENG-01-06-TYPE: State the Equipment Casualties That Will Prevent the Boat from Getting Underway**

**References** a. *Specific Boat Type Operator's Handbook, COMDTINST M16114 (series)*  
b. *Unit Standing Orders*

**Conditions** This task will be performed at any time, while normal unit training and lecture programs pertaining to boat operations are being conducted. Where practicable, classroom instruction should be followed by related underway exercises.

**Standards** With reference material and without error, the trainee must state the equipment that, should a casualty or discrepancy occur, will prevent the boat from getting underway for an operational mission.

Performance Criteria	Completed (Initials)	Boat Type
1. State the equipment that, should a casualty occur, will prevent a boat from getting underway on an operational mission: <ul style="list-style-type: none"> <li>a. Radar.</li> <li>b. Engine.</li> <li>c. Steering system.</li> <li>d. VHF-FM radio.</li> <li>e. Depth finder.</li> <li>f. Compass.</li> <li>g. GPS/DGPS.</li> <li>h. ELECTRICAL POWER GENERATION SYSTEM (both)</li> <li>i. Marine gear</li> <li>j. Firefighting/dewatering capability</li> <li>k. Hull</li> </ul>	_____ _____ _____	_____ _____ _____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments** \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



**TASK ENG-01-07-TYPE: Energize the Electrical and Electronic Systems**

**Reference** a. *Specific Boat Type Operator's Handbook, COMDTINST M16114 (series)*  
 b. *Applicable Technical Manuals*

**Conditions** This task will be performed on a boat when making preparations for getting underway, under direct supervision of the Engineer, or while normal unit training and lecture programs pertaining to boat operations are being conducted. All power switches must be in the off position, both at the power panels and on the equipment, before energizing the main breaker.

**Standards** The trainee must properly complete all steps below in order to successfully complete this task.

Performance Criteria	Completed (Initials)	Boat Type
1. State the purpose of the boat alternators or generator and explain how the charging system works.	_____ _____ _____	_____ _____ _____
2. Describe the functions of the electrical systems on the boat: a. Port engine battery switch services. b. AUX battery switch services. c. Starboard engine battery switch services. d. <i>Start</i> battery switch services (RB-M only) e. <i>House</i> battery switch services (RB-M only) f. AC generator (if installed).	_____ _____ _____ _____ _____ _____	_____ _____ _____ _____ _____ _____
3. State the purpose of the battery parallel system onboard the boat.	_____ _____ _____	_____ _____ _____
<p><b>NOTE</b>  Never turn the battery switches to the off position when the engine is running. Serious damage to the engine's electrical system may result. When using emergency battery parallel switch, release the switch once the engine has started or if the engine starter is not cranking. The parallel solenoid is designed for momentary use only and will be damaged if used continuously.</p>		
4. State the purpose of the battery charger (if installed).	_____ _____ _____	_____ _____ _____
5. State the procedures for removing shore power (if applicable).	_____ _____ _____	_____ _____ _____
6. Energize electrical system and electronic components per above references.	_____ _____ _____	_____ _____ _____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments** \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



**TASK ENG-01-08-TYPE: Set Watertight Integrity**

<b>Reference</b>	a. <i>Specific Boat Type Operator's Handbook, COMDTINST M16114 (series)</i>
<b>Conditions</b>	This task will be performed pierside, while normal unit training and lecture programs pertaining to boat operations are being conducted. Where practicable, the pierside instructions should be followed by related underway exercises.
<b>Standards</b>	The trainee, without error, must state the number and location of all watertight compartments, hatches and doors aboard the boat. The trainee must secure all hatches and doors for watertightness.

Performance Criteria	Completed (Initials)	Boat Type
1. State the purpose of watertight integrity.	_____ _____ _____	_____ _____ _____
2. State the number and location of the following watertight closure devices and compartments aboard the boat: a. Watertight hatches. b. Quick-acting watertight doors. c. Watertight compartments.	_____ _____ _____	_____ _____ _____
3. Set watertight integrity.	_____ _____ _____	_____ _____ _____
4. State the number and location of the shelter in place closure devices aboard the boat.	_____ _____ _____	_____ _____ _____
5. List safety precautions that should be observed when the devices are closed	_____ _____ _____	_____ _____ _____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments**  
\_\_\_\_\_  
\_\_\_\_\_



**TASK ENG-01-09-TYPE: Draw/List the Boat's Systems**

**Reference** a. *Specific Boat Type Operator's Handbook, COMDTINST M16114 (series)*

**Conditions** This task will be performed pierside. Trainee must accomplish task without prompting or use of a reference.

**Standards** The trainee must correctly trace out and draw the following systems and list all communications and navigation systems.

Performance Criteria	Completed (Initials)	Boat Type
1. Trace out and draw the following systems: <ul style="list-style-type: none"> <li>a. Fuel oil system.</li> <li>b. Engine cooling water system.</li> <li>c. Potable water system.</li> <li>d. Hydraulic steering/control system.</li> <li>e. Lube oil system.</li> <li>f. Fixed fire fighting system.</li> <li>g. Installed dewatering system.</li> <li>h. Reduction gear lube oil system.</li> <li>i. Buoy handling system.</li> <li>j. Gray water and sewage.</li> <li>k. Electrical charging system.</li> <li>l. Steering system.</li> <li>m. DC electrical system.</li> <li>n. AC electrical system (if applicable).</li> <li>o. HVAC cooling water system.</li> <li>p. VECTOR control system.</li> </ul>	_____ _____ _____	_____ _____ _____
2. List all communications and navigation systems.	_____ _____ _____	_____ _____ _____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments** \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_




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## Section B. Propulsion System Start Checks and Casualty Responses

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### Introduction

The following are objectives of Division Two:

- (01) **Demonstrate** the knowledge of the casualties and discrepancies that would prevent a boat from getting underway.
- (02) **Demonstrate** the ability to perform Engineering Casualty Control on a boat.

### In this Section

This Section contains the following tasks:

Task Number	Task	See Page
ENG-02-01-TYPE	Start the Boat	3-21
ENG-02-02-TYPE	Engine Will Not Turn Over or Start	3-21
ENG-02-03-TYPE	Engine Failing to Start with the Starter Turning Over	3-22
ENG-02-04-TYPE	Engine High Water Temperature	3-22
ENG-02-05-TYPE	Loss of Engine Lube Oil Pressure	3-23
ENG-02-06-TYPE	Loss of Engine Fuel Oil Pressure	3-23
ENG-02-07-TYPE	Engine High Lube Oil Pressure	3-24
ENG-02-08-TYPE	Engine Oil System Failure	3-24
ENG-02-09-TYPE	Outboard Failing to Engage Forward or Reverse	3-25
ENG-02-10-TYPE	Outboard Motor Vibration or Spun Propeller	3-25
ENG-02-11-TYPE	Engine Running Uneven or Stalls	3-26
ENG-02-12-TYPE	Loss of Control of Engine RPMs	3-26
ENG-02-13-TYPE	Reduction Gear Failure	3-27
ENG-02-14-TYPE	Overheating Shaft Packing Gland	3-27
ENG-02-15-TYPE	Excessive Shaft Seal Leakage	3-28
ENG-02-16-TYPE	Steering Casualty	3-28
ENG-02-17-TYPE	Low Voltage Alarm/Loss of Electrical Charging System	3-29
ENG-02-18-TYPE	Fouled Waterjet	3-29
ENG-02-19-TYPE	Fire in the Tank Room	3-30
ENG-02-20-TYPE	Carbon Monoxide Alarm	3-30
ENG-02-21-TYPE	High Wet Exhaust Temperature Alarm	3-31
ENG-02-22-TYPE	Unusual Noise or Vibration	3-31
ENG-02-23-TYPE	Loss of Generator	3-32



**TASK ENG-02-01-TYPE: Start the Boat**

- References**
- a. *Applicable Technical Manuals*
  - b. *Applicable Manufacturer Manuals*
  - c. *Specific Boat Type Operator's Handbook, COMDTINST M16114 (series)*

**Conditions** This task will be performed when the boat is in or out of the water while normal unit training and lecture programs pertaining to boat operations are being conducted. The applicable MPC shall be Used and where practicable, the instructions should be followed by related underway exercises.

**Standards** The trainee must properly complete all steps below in order to successfully complete this task.

Performance Criteria	Completed (Initials)	Boat Type
1. Complete all procedures for starting the boat per the above references.	_____ _____ _____	_____ _____ _____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments**  
 \_\_\_\_\_  
 \_\_\_\_\_

**TASK ENG-02-02-TYPE: Engine Will Not Turn Over or Start**

- References**
- a. *Applicable Technical Manuals*
  - b. *Specific Boat Type Operator's Handbook, COMDTINST M16114 (series)*

**Conditions** This task will be performed when the boat is in the cradle or underway during daylight hours, while normal unit training and lecture programs pertaining to boat operations are being conducted. Where practicable, the instructions should be followed by related underway exercises. The instructor will simulate the casualty by providing the trainee with the casualty symptoms.

**Standards** The trainee, upon being given the casualty symptoms, will perform the correct procedures, following the steps listed below.

Performance Criteria	Completed (Initials)	Boat Type
1. Complete all procedures for troubleshooting an engine that will not start or turn over, the per the above references.	_____ _____ _____	_____ _____ _____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments**  
 \_\_\_\_\_  
 \_\_\_\_\_



**TASK ENG-02-03-TYPE: Engine Failing to Start with the Starter Turning Over**

**Reference** a. *Applicable Technical Manuals*  
b. *Specific Boat Type Operator's Handbook, COMDTINST M16114 (series)*

**Conditions** This task will be performed on a boat while making preparations for getting underway, during daylight hours, in calm or moderate weather conditions. The instructor will simulate the casualty by providing the trainee with the casualty symptoms. The trainee will be assigned as Engineer.

**Standards** The trainee, upon being given the casualty symptoms, will perform the correct procedures, following the steps listed below.

Performance Criteria	Completed (Initials)	Boat Type
1. Complete all procedures for troubleshooting an engine that will not start with the starter turning over, the per the above references.	_____ _____ _____	_____ _____ _____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments** \_\_\_\_\_  
\_\_\_\_\_

**TASK ENG-02-04-TYPE: Engine High Water Temperature**

**References** a. *Applicable Technical Manuals*  
b. *Specific Boat Type Operator's Handbook, COMDTINST M16114 (series)*  
c. *CG Readiness and Standardization Drill Checklist*

**Conditions** This task will be performed while underway. The instructor will simulate the casualty by providing the trainee with the casualty symptoms.

**Standards** The instructor will ask the trainee to state the proper jacket water temperature range and at what temperature the alarm will sound. The trainee must state the correct temperatures. Upon being given the casualty symptoms, the trainee will simulate and state correct procedures to be taken.

Performance Criteria	Completed (Initials)	Boat Type
1. Complete all procedures for troubleshooting engine high water temperature per the above references.	_____ _____ _____	_____ _____ _____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments** \_\_\_\_\_  
\_\_\_\_\_



**TASK ENG-02-05-TYPE: Loss of Engine Lube Oil Pressure**

**Reference** a. *Specific Boat Type Operator's Handbook, COMDTINST M16114 (series)*  
 b. *CG Readiness and Standardization Drill Checklist*

**Conditions** This task will be performed pierside or underway. The instructor will simulate the casualty by providing the trainee with the casualty symptoms.

**Standards** The instructor will ask the trainee to state the proper oil pressure range and at what pressure the alarm will sound. The trainee must state the correct pressures. Upon being given the casualty symptoms, the trainee will simulate and state correct procedures to be taken. The trainee, upon being given the casualty symptoms, will simulate and state the correct procedures, following the steps listed below:

Performance Criteria	Completed (Initials)	Boat Type
1. Complete all procedures for troubleshooting engine loss of lube oil pressure per the above references.	_____	_____
	_____	_____
	_____	_____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments** \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**TASK ENG-02-06-TYPE: Loss of Engine Fuel Oil Pressure**

**Reference** a. *Specific Boat Type Operator's Handbook, COMDTINST M16114 (series)*  
 b. *CG Readiness and Standardization Drill Checklist*

**Conditions** This task will be performed pierside or underway. The instructor will simulate the casualty by providing the trainee with the casualty symptoms.

**Standards** The trainee, upon being given the casualty symptoms, will perform the correct procedures, following the steps listed below:

Performance Criteria	Completed (Initials)	Boat Type
1. Complete all procedures for troubleshooting loss of engine fuel oil pressure per the above references.	_____	_____
	_____	_____
	_____	_____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments** \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



**TASK ENG-02-07-TYPE: Engine High Lube Oil Pressure**

- Reference**
- a. *Applicable Technical Manuals*
  - b. *Specific Boat Type Operator's Handbook, COMDTINST M16114 (series)*
  - c. *CG Readiness and Standardization Drill Checklist*
- 
- Conditions**
- This task will be performed pierside or underway. The instructor will simulate the casualty by providing the trainee with the casualty symptoms.
- 
- Standards**
- The trainee, upon being given the casualty symptoms, will perform the correct procedures, following the steps listed below.

Performance Criteria	Completed (Initials)	Boat Type
1. Complete all procedures for troubleshooting engine high lube oil pressure per the above references.	_____ _____ _____	_____ _____ _____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments**  
\_\_\_\_\_  
\_\_\_\_\_

**TASK ENG-02-08-TYPE: Engine Oil System Failure**

- Reference**
- a. *Applicable Technical Manuals*
  - b. *Specific Boat Type Operator's Handbook, COMDTINST M16114 (series)*
- 
- Conditions**
- This task will be performed on the boat while underway, during daylight hours, in calm or moderate weather conditions. The instructor will simulate the casualty by providing the trainee with the casualty symptoms. The trainee will be assigned as Engineer.
- 
- Standards**
- The trainee, upon being given the casualty symptoms, will perform the correct procedures, following the steps listed below.

Performance Criteria	Completed (Initials)	Boat Type
1. Complete all procedures for troubleshooting engine high lube oil pressure per the above references.	_____ _____ _____	_____ _____ _____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments**  
\_\_\_\_\_  
\_\_\_\_\_



**TASK ENG-02-09-TYPE: Outboard Failing to Engage Forward or Reverse**

**Reference** a. *Applicable Technical Manuals*

---

**Conditions** This task will be performed on a boat both dockside and while underway, during daylight hours, in calm or moderate weather conditions. The instructor will simulate the casualty by providing the trainee with the casualty symptoms. The trainee will be assigned as Engineer.

---

**Standards** The trainee, upon being given the casualty symptoms, will perform the correct procedures, following the steps listed below.

Performance Criteria	Completed (Initials)	Boat Type
1. Complete all procedures for troubleshooting outboard failing to engage forward or reverse per the above references.	_____ _____ _____	_____ _____ _____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments** \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**TASK ENG-02-10-TYPE: Outboard Motor Vibration or Spun Propeller**

**Reference** a. *Applicable Technical Manuals*  
 b. *Specific Boat Type Operator's Handbook, COMDTINST M16114 (series)*

---

**Conditions** This task will be performed on a boat while underway, during daylight hours, in calm or moderate weather conditions. The instructor will simulate the casualty by providing the trainee with the casualty symptoms. The trainee will be assigned as Engineer.

---

**Standards** The trainee, upon being given the casualty symptoms, will perform the correct procedures, following the steps listed below.

Performance Criteria	Completed (Initials)	Boat Type
1. Complete all procedures for troubleshooting outboard motor vibration or spun propeller per the above references.	_____ _____ _____	_____ _____ _____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments** \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



**TASK ENG-02-11-TYPE: Engine Running Uneven or Stalls**

**Reference** a. *Applicable Technical Manuals*  
b. *Specific Boat Type Operator's Handbook, COMDTINST M16114 (series)*

**Conditions** This task will be performed when the boat is in the cradle or underway during daylight hours, while normal unit training and lecture programs pertaining to boat operations are being conducted. Where practicable, the instructions should be followed by related underway exercises. The instructor will simulate the casualty by providing the trainee with the casualty symptoms.

**Standards** The trainee, upon being given the casualty symptoms, will perform the correct procedures, following the steps listed below.

Performance Criteria	Completed (Initials)	Boat Type
1. Complete all procedures for troubleshooting engine running uneven or stalls per the above references.	_____ _____ _____	_____ _____ _____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**TASK ENG-02-12-TYPE: Loss of Control of Engine RPMs**

**Reference** a. *Applicable Technical Manuals*  
b. *Specific Boat Type Operator's Handbook, COMDTINST M16114 (series)*  
c. *CG Readiness and Standardization Drill Checklist*

**Conditions** This task will be performed pierside or underway. The instructor will simulate the casualty by providing the trainee with the casualty symptoms.

**Standards** The trainee, upon being given the casualty symptoms, will perform the correct procedures, following the steps listed below.

Performance Criteria	Completed (Initials)	Boat Type
1. Complete all procedures for troubleshooting loss of control of engine RPMs per the above references.	_____ _____ _____	_____ _____ _____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



**TASK ENG-02-13-TYPE: Reduction Gear Failure**

**Reference**

- a. *Applicable Technical Manuals*
- b. *Specific Boat Type Operator's Handbook, COMDTINST M16114 (series)*
- c. *CG Readiness and Standardization Drill Checklist*

**Conditions** This task will be performed when the boat is underway during daylight hours, while normal unit training and lecture programs pertaining to boat operations are being conducted. Where practicable, the instructions should be followed by related underway exercises. The instructor will simulate the casualty by providing the trainee with the casualty symptoms.

**Standards** The trainee, upon being given the casualty symptoms, will perform the correct procedures, following the steps listed below.

Performance Criteria	Completed (Initials)	Boat Type
1. Complete all procedures for troubleshooting reduction gear failure per the above references.	_____ _____ _____	_____ _____ _____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments** \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**TASK ENG-02-14-TYPE: Overheating Shaft Packing Gland**

**References**

- a. *Applicable Technical Manuals*
- b. *Specific Boat Type Operator's Handbook, COMDTINST M16114 (series)*
- c. *CG Readiness and Standardization Drill Checklist*

**Conditions** This task can be performed pierside or underway. The instructor will simulate the casualty by providing the trainee with the casualty symptoms.

**Standards** The trainee, after being given the casualty symptoms, must accurately identify the casualty and perform the correct procedures, following the steps listed below.

Performance Criteria	Completed (Initials)	Boat Type
1. Complete all procedures for troubleshooting overheating shaft packing gland per the above references.	_____ _____ _____	_____ _____ _____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments** \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



**TASK ENG-02-15-TYPE: Excessive Shaft Seal Leakage**

**References** a. *Applicable Technical Manuals*  
b. *Specific Boat Type Operator's Handbook, COMDTINST M16114 (series)*

**Conditions** This task can be performed pierside or underway. The instructor will simulate the casualty by providing the trainee with the casualty symptoms.

**Standards** The trainee, after being given the casualty symptoms, must accurately identify the casualty and perform the correct procedures, following the steps listed below.

Performance Criteria	Completed (Initials)	Boat Type
1. Complete all procedures for troubleshooting excessive shaft seal leakage per the above references.	_____	_____
	_____	_____
	_____	_____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments** \_\_\_\_\_  
\_\_\_\_\_

**TASK ENG-02-16-TYPE: Steering Casualty**

**Reference** a. *Specific Boat Type Operator's Handbook, COMDTINST M16114 (series)*  
b. *CG Readiness and Standardization Drill Checklist*

**Conditions** This task will be performed while underway. The instructor will simulate the casualty by providing the trainee with the casualty symptoms.

**Standards** The trainee, upon being given the casualty symptoms, will perform the correct procedures, following the steps listed below.

Performance Criteria	Completed (Initials)	Boat Type
1. Complete all procedures for troubleshooting a steering casualty per the above references.	_____	_____
	_____	_____
	_____	_____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments** \_\_\_\_\_  
\_\_\_\_\_



**TASK ENG-02-17-TYPE: Low Voltage Alarm/Loss of Electrical Charging System**

**NOTE**

This task applies **ONLY** to SPC-SW, SPC-TB, SPC-NLB, RB-M, MLB, and SPC-SV.

**References**

- a. *Specific Boat Type Operator's Handbook, COMDTINST M16114 (series)*

**Conditions**

This task can be performed pierside or underway. The instructor will simulate the casualty by providing the trainee with the casualty symptoms.

**Standards**

The trainee, upon being given the casualty symptoms, will perform the correct procedures, following the steps listed below.

Performance Criteria	Completed (Initials)	Boat Type
1. Complete all procedures for troubleshooting low voltage/loss of electrical charging system per the above references.	_____ _____ _____	_____ _____ _____

**Instructor** \_\_\_\_\_

**Date** \_\_\_\_\_

**Comments**

\_\_\_\_\_

\_\_\_\_\_

**TASK ENG-02-18-TYPE: Fouled Waterjet**

**NOTE**

This task applies **ONLY** to CB-M, RB-M, and SPC-SV.

**References**

- a. *Specific Boat Type Operator's Handbook, COMDTINST M16114 (series)*  
 b. *CG Readiness and Standardization Drill Checklist*

**Conditions**

This task can be performed underway. The instructor will simulate the casualty by providing the trainee with the casualty symptoms.

**Standards**

The trainee, upon being given the casualty symptoms, will perform the correct procedures, following the steps listed below.

Performance Criteria	Completed (Initials)	Boat Type
1. Complete all procedures for troubleshooting a fouled waterjet per the above references.	_____ _____ _____	_____ _____ _____

**Instructor** \_\_\_\_\_

**Date** \_\_\_\_\_

**Comments**

\_\_\_\_\_

\_\_\_\_\_



**TASK ENG-02-19-TYPE: Fire in the Tank Room**

**NOTE**

This task applies **ONLY** to SPC-SV.

**References**

a. *Specific Boat Type Operator's Handbook, COMDTINST M16114 (series)*

**Conditions**

This task can be performed underway. The instructor will simulate the casualty by providing the trainee with the casualty symptoms.

**Standards**

The trainee, upon being given the casualty symptoms, will perform the correct procedures, following the steps listed below.

Performance Criteria	Completed (Initials)	Boat Type
1. Complete all procedures responding to a fire in the tank room per the above references.	_____ _____ _____	_____ _____ _____

**Instructor** \_\_\_\_\_

**Date** \_\_\_\_\_

**Comments**

\_\_\_\_\_

\_\_\_\_\_

**TASK ENG-02-20-TYPE: Carbon Monoxide Alarm**

**NOTE**

This task applies **ONLY** to RB-M.

**References**

a. *Specific Boat Type Operator's Handbook, COMDTINST M16114 (series)*

**Conditions**

This task can be performed underway. The instructor will simulate the casualty by providing the trainee with the casualty symptoms.

**Standards**

The trainee, upon being given the casualty symptoms, will perform the correct procedures, following the steps listed below.

Performance Criteria	Completed (Initials)	Boat Type
1. Complete all procedures for responding to a carbon monoxide alarm per the above references.	_____ _____ _____	_____ _____ _____

**Instructor** \_\_\_\_\_

**Date** \_\_\_\_\_

**Comments**

\_\_\_\_\_

\_\_\_\_\_



**TASK ENG-02-21-TYPE: High Wet Exhaust Temperature Alarm**

**NOTE**

This task applies **ONLY** to RB-M.

**References**

a. *Specific Boat Type Operator's Handbook, COMDTINST M16114 (series)*

**Conditions**

This task can be performed underway. The instructor will simulate the casualty by providing the trainee with the casualty symptoms.

**Standards**

The trainee, upon being given the casualty symptoms, will perform the correct procedures, following the steps listed below.

Performance Criteria	Completed (Initials)	Boat Type
1. Complete all procedures for responding to a high wet exhaust temperature per the above references.	_____ _____ _____	_____ _____ _____

**Instructor** \_\_\_\_\_

**Date** \_\_\_\_\_

**Comments**

\_\_\_\_\_

\_\_\_\_\_

**TASK ENG-02-22-TYPE: Unusual Noise or Vibration**

**NOTE**

This task applies **ONLY** to RB-M.

**References**

- a. *Specific Boat Type Operator's Handbook, COMDTINST M16114 (series)*
- b. *CG Readiness and Standardization Drill Checklist*

**Conditions**

This task can be performed underway. The instructor will simulate the casualty by providing the trainee with the casualty symptoms.

**Standards**

The trainee, upon being given the casualty symptoms, will perform the correct procedures, following the steps listed below.

Performance Criteria	Completed (Initials)	Boat Type
1. Complete all procedures for troubleshooting an unusual noise or vibration per the above references.	_____ _____ _____	_____ _____ _____

**Instructor** \_\_\_\_\_

**Date** \_\_\_\_\_

**Comments**

\_\_\_\_\_

\_\_\_\_\_



**TASK ENG-02-23-TYPE: Loss of Generator**

**NOTE** 

This task applies **ONLY** to RB-M.

**References**

- a. *Specific Boat Type Operator's Handbook, COMDTINST M16114 (series)*
- b. *CG Readiness and Standardization Drill Checklist*

**Conditions**

This task can be performed underway. The instructor will simulate the casualty by providing the trainee with the casualty symptoms.

**Standards**

The trainee, upon being given the casualty symptoms, will perform the correct procedures, following the steps listed below.

Performance Criteria	Completed (Initials)	Boat Type
1. Complete all procedures for troubleshooting the loss of the generator per the above references.	_____ _____ _____	_____ _____ _____

**Instructor** \_\_\_\_\_

**Date** \_\_\_\_\_

**Comments**

\_\_\_\_\_  
\_\_\_\_\_



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## Section C. Boat Disabling Casualties

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### Introduction

The following are objectives of Division Three:

- (01) **Demonstrate** the knowledge of the casualties and discrepancies that would prevent a boat from getting underway.
- (02) **Demonstrate** the ability to perform Engineering Casualty Control on a boat.

---

### In this Section

This Section contains the following tasks:

Task Number	Task	See Page
ENG-03-01-TYPE	Not Currently Assigned	N/A
ENG-03-02-TYPE	Fire in the Engine Room	3-34
ENG-03-03-TYPE	Fire Onboard	3-34
ENG-03-04-TYPE	Fire in the Auxiliary Machinery Space	3-35
ENG-03-05-TYPE	Capsizing	3-35
ENG-03-06-TYPE	Flooding	3-36
ENG-03-07-TYPE	Collision with a Submerged Object	3-36



**TASK ENG-03-02-TYPE: Fire in the Engine Room**

**References**

- a. *Boat Crew Handbook – Boat Operations, BCH16114.1 (series)*
- b. *Specific Boat Type Operator’s Handbook, COMDTINST M16114 (series)*
- c. *CG Readiness and Standardization Drill Checklist*

**Conditions**

This task can be performed while underway or pierside. The instructor will simulate the casualty by providing the symptoms to the trainee. Given a boat with required fire fighting equipment and installed systems, take corrective action.

**Standards**

Trainee shall demonstrate proper methods of controlling and extinguishing an engine room fire too large to be combated with only the portable fire extinguishers aboard, in accordance with the steps listed below:

Performance Criteria	Completed (Initials)	Boat Type
1. Complete all procedures for the task per the above references.	_____ _____ _____	_____ _____ _____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments**

\_\_\_\_\_

\_\_\_\_\_

**TASK ENG-03-03-TYPE: Fire Onboard**

**Reference**

- a. *Boat Crew Handbook – Boat Operations, BCH16114.1 (series)*
- b. *Specific Boat Type Operator’s Handbook, COMDTINST M16114 (series)*
- c. *CG Readiness and Standardization Drill Checklist*

**Conditions**

This task will be performed on a boat dockside during daylight hours in calm or moderate weather conditions. Where practicable, the dockside training should be followed up by underway exercises. The instructor will simulate the casualty by providing the trainee with the casualty symptoms. The trainee will be assigned as Engineer.

**Standards**

The trainee will demonstrate the proper methods of controlling and extinguishing a fire onboard without prompting or use of a reference, following the steps listed below:

Performance Criteria	Completed (Initials)	Boat Type
1. Complete all procedures for the task per the above references.	_____ _____ _____	_____ _____ _____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments**

\_\_\_\_\_

\_\_\_\_\_



**TASK ENG-03-04-TYPE: Fire in the Auxiliary Machinery Space**

**Reference** a. *Boat Crew Handbook – Boat Operations, BCH16114.1 (series)*  
 b. *Specific Boat Type Operator’s Handbook, COMDTINST M16114 (series)*  
 c. *CG Readiness and Standardization Drill Checklist*

**Conditions** This task will be performed pierside or underway. The instructor will simulate the casualty by providing the trainee with the casualty symptoms.

**Standards** The trainee, upon being given the casualty symptoms, will perform the correct procedures, following the steps listed below:

Performance Criteria	Completed (Initials)	Boat Type
1. Complete all procedures for the task per the above references.	_____ _____ _____	_____ _____ _____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments** \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**TASK ENG-03-05-TYPE: Capsizing**

**Reference** a. *Boat Crew Handbook - Rescue and Survival Procedures, BCH 16114.2 (series)*  
 b. *Specific Boat Type Operator’s Handbook, COMDTINST M16114 (series)*

**Conditions** This task will be performed pierside or underway. The instructor will simulate the casualty by providing the trainee with the casualty symptoms.

**Standards** The trainee, upon being given the casualty symptoms, will perform the correct procedures, following the steps listed below:

Performance Criteria	Completed (Initials)	Boat Type
1. Complete all procedures for the task per the above references.	_____ _____ _____	_____ _____ _____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments** \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



**TASK ENG-03-06-TYPE: Flooding**

**References**

- a. *Boat Crew Handbook – Boat Operations, BCH16114.1 (series)*
- b. *Specific Boat Type Operator’s Handbook, COMDTINST M16114 (series)*

**Conditions**

This task can be performed pierside or underway. The instructor will simulate the casualty by providing the trainee with the casualty symptoms.

**Standards**

The trainee, after being given the casualty symptoms, must accurately identify the casualty and perform the correct procedures, following the steps listed below:

Performance Criteria	Completed (Initials)	Boat Type
1. Complete all procedures for the task per the above references.	_____ _____ _____	_____ _____ _____

**Instructor** \_\_\_\_\_

**Date** \_\_\_\_\_

**Comments** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**TASK ENG-03-07-TYPE: Collision with a Submerged Object**

**Reference**

- a. *Specific Boat Type Operator’s Handbook, COMDTINST M16114 (series)*
- b. *CG Readiness and Standardization Drill Checklist*

**Conditions**

This task can be performed while underway. The instructor will simulate the casualty by providing the trainee with the casualty symptoms.

**Standards**

The trainee, upon being given the casualty symptoms, will perform the correct procedures, following the steps listed below:

Performance Criteria	Completed (Initials)	Boat Type
1. Complete all procedures for the task per the above references.	_____ _____ _____	_____ _____ _____

**Instructor** \_\_\_\_\_

**Date** \_\_\_\_\_

**Comments** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



## Section D. Post-Operational Checks

**Introduction** The following is the objective of Division Four:  
**Demonstrate** the ability to secure a boat after operations.

**In this Section** This Section contains the following tasks:

Task Number	Task	See Page
ENG-04-01-TYPE	Secure the Boat After Operations	3-37

**TASK ENG-04-01-TYPE: Secure the Boat After Operations**

- References**
- a. *Applicable Technical Manuals*
  - b. *Applicable Manufacturer Manuals*
  - c. *Specific Boat Type Operator's Handbook, COMDTINST M16114 (series)*

**Conditions** This task will be performed when the boat is in or out of the water, while normal unit training and lecture programs pertaining to boat operations are being conducted. Use of the applicable MPC shall be used and where practicable, the instructions should be followed by related underway exercises.

**Standards** The trainee must properly complete all steps below in order to successfully complete this task:

Performance Criteria	Completed (Initials)	Boat Type
1. Complete all procedures for the task per the above references.	_____ _____ _____	_____ _____ _____

**Instructor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Comments** \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



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## CHAPTER 3

### Engineer Trainee Study Guide

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#### Introduction

This Chapter should be removed and given to the trainee to keep. Its purpose is to provide guidance for the trainee's reading assignments and is not a part of the training record.

The trainee should read the appropriate reading assignment and answer the related questions prior to beginning training in each new task. The instructor should then discuss the trainee's answers to ensure understanding of the subject matter prior to beginning instruction for each new task.

#### NOTE

If there is no reading assignment assigned for a specific task, then the task will not have a page number to reference.

#### In this Chapter

This Chapter contains the following sections:

Section	Title	See Page
A	Reading Assignments – Pre-Operational Checks	3-39
B	Reading Assignments – Propulsion System Start Checks and Casualty Responses	3-47
C	Reading Assignments – Boat Disabling Casualties	3-57
D	Reading Assignments – Post-Operational Checks	3-60



## Section A. Reading Assignments – Pre-Operational Checks

**Introduction**                      The reading assignment(s) should be read prior to beginning instruction of each task.

**In this Section**                      This Section contains the following reading assignments:

<b>Task Number</b>	<b>Task Title</b>	<b>Reading Assignment</b>	<b>See Page</b>
ENG-01-01-TYPE	Locate Installed Equipment and Fittings on the Boat	Applicable Technical Manuals <i>Specific Boat Type Operator's Handbooks,</i> COMDTINST M16114 (series)	3-40
ENG-01-02-TYPE	Locate Components and Accessories of the Boat's Propulsion and Electrical System	Applicable Technical Manuals <i>Specific Boat Type Operator's Handbooks,</i> COMDTINST M16114 (series)	3-41
ENG-01-03-TYPE	Locate Components and Accessories of the Boat's Auxiliary System	None assigned	
ENG-01-04-TYPE	Conduct a Pre-Start Check Off	Applicable Technical Manuals <i>Specific Boat Type Operator's Handbooks,</i> COMDTINST M16114 (series)	3-43
ENG-01-05-TYPE	List the Disabling Casualties and Restrictive Discrepancies that Prevent the Boat from Getting Underway	<i>Specific Boat Type Operator's Handbooks,</i> COMDTINST M16114 (series)	3-44
ENG-01-06-TYPE	State the Equipment Casualties That Will Prevent the Boat from Getting Underway	<i>Specific Boat Type Operator's Handbooks,</i> COMDTINST M16114 (series) Applicable Technical Manuals	3-45
ENG-01-07-TYPE	Energize the Electrical and Electronic Systems	<i>Specific Boat Type Operator's Handbooks,</i> COMDTINST M16114 (series) Applicable Technical Manuals	3-45
ENG-01-08-TYPE	Set Watertight Integrity	<i>Specific Boat Type Operator's Handbooks,</i> COMDTINST M16114 (series)	3-46
ENG-01-09-TYPE	Draw the Boat's Systems	<i>Specific Boat Type Operator's Handbooks,</i> COMDTINST M16114 (series)	3-46



**TASK ENG-01-01-TYPE:    Locate Installed Equipment and Fittings on the Boat**

---

1. State the location of the following items:
    - a. Weapons mount
    - b. Bilge pump access plate
    - a. Anchor locker
    - c. Forward drain plug
    - d. Battery parallel switch(es)
    - e. Loudhailer control
    - f. Start/Stop switch
    - g. Engine circuit breakers
    - h. Kill switch
    - i. Main circuit breakers
    - j. Depth finder transducer
  2. Locate and state the purpose of the following:
    - b. Navigation lights (color and location)
    - c. Spotlights or searchlights
    - d. Deck fittings (cleats, chocks, bits, lifting eyes)
    - e. Anchor, anchor line, tow line (if equipped)
    - f. Lanyard for engine kill switch
    - g. Electric and manual bilge pumps
    - h. Inflatable collar fittings (if equipped)
    - i. Weapons and ammunition stowage
  3. Describe the location and purpose of the following communications/navigation equipment:
    - j. GPS or DGPS
    - k. Surface radar
    - l. Fathometer (location of transmitter)
    - m. Loudhailer control and speakers
    - n. UHF radios
    - o. VHF-FM radios
    - p. Installed onboard intercom system (if equipped)
    - q. EPIRB
    - r. Standby compass (magnetic compass)
    - s. Crew Communication System
  4. The installed bilge pump system is a \_\_\_\_\_ system.
  5. It will require approximately \_\_\_\_\_ of water in a bilge space to activate the bilge pumps when set in the \_\_\_\_\_ mode.
  6. The craft's cooling water (raw water) system is used for \_\_\_\_\_.
-



**TASK ENG-01-02-TYPE: Locate Components and Accessories of the Boat's Propulsion and Electrical System**

---

1. The main engines are \_\_\_\_\_. State make and model.
2. The AC generator is \_\_\_\_\_. State make and model (if installed).
3. State the following specifications for the engines:
  - a. \_\_\_\_\_ horsepower
  - b. \_\_\_\_\_ stroke
  - c. \_\_\_\_\_ cylinder
  - d. \_\_\_\_\_ cooled
4. State the following specifications for the AC generator set engine (if installed):
  - a. \_\_\_\_\_ horsepower
  - b. \_\_\_\_\_ stroke
  - c. \_\_\_\_\_ cylinder
  - d. \_\_\_\_\_ cooled
  - e. \_\_\_\_\_ kW rating
5. \_\_\_\_\_ rotation standing aft looking forward
6. The boat's fuel (\_\_\_\_\_ diesel) is carried in a \_\_\_\_\_ gallon tank located in the \_\_\_\_\_.
7. Operating fuel pressure at \_\_\_\_\_ RPM should be between \_\_\_\_\_ - \_\_\_\_\_ PSI.
8. Direct cooling of the engines is done by a \_\_\_\_\_ - \_\_\_\_\_ freshwater system.
9. The engine alarm system is operated by the \_\_\_\_\_ volt \_\_\_\_\_ electrical system and consists of:
  - a.
  - b.
  - c.
  - d.
  - e.
10. Normal clutch-apply pressure is \_\_\_\_\_ to \_\_\_\_\_ PSI.
11. State the location of the fuel tank(s) and capacity at 95 percent, the location of the filler neck, vent valve and if applicable, primer bulb.
12. State the location of the following components on the engine:
  - a. Alternator/Electrical Power Generation System
  - b. Freshwater reservoir/expansion tank
  - c. Oil level dipstick
  - d. Fuel pump
  - e. Throttle control connection (if applicable)



- f. Oil fill cap
  - g. Raw water (seawater) pump
  - h. Oil filter
  - i. Fuel filter(s)
  - j. Glow plugs (if installed)
  - k. Hot start system (if installed)
  - l. Engine coolant heat exchanger
  - m. Turbocharger (if installed)
  - n. Oil cooler (if installed)
  - o. Charge Air Cooler/Intercooler (if installed)
  - p. Marine Gear
13. State the location of the following gauges:
- a. Oil level gauge
  - b. Trim level gauge
  - c. Tachometers
  - d. Water temperature
  - e. Vector Control Panel
14. State the idle and cruising readings for the following gauges:
- a. Engine lube oil pressure
  - b. Engine coolant temperature
  - c. Marine gear oil pressure (if installed)
  - d. Boost pressure (if installed)
  - e. Engine RPM at idle/cruising
15. State the location of installed seawater strainers and seachest suction valves.
16. The cooling system suction is located \_\_\_\_\_ and the cooling system weep hole is located \_\_\_\_\_.
17. Describe the DC electrical system on your craft and state the location of the following components:
- a. Batteries
  - b. Battery charger
  - c. Shore power connector
  - d. Battery switch and indicator
  - e. Automatic Charge Relay (ACR)
  - f. Essential breakers and switches
18. The engine stop controls are located \_\_\_\_\_.



19. Batteries are located \_\_\_\_\_.
20. Compassing sending unit is located \_\_\_\_\_.
21. Describe the boat's steering/hydraulic control system. Include all major components. State how to fill and purge the system.
22. Describe the cathodic protection system installed in the assigned boat.
23. State the type of coolant, oil or lubricant required for the engine, outdrive, outboard and steering/hydraulic control system.
24. State the function of the engine kill switch.
25. Describe the gray water system (if installed) on the assigned boat.
26. Describe the sewage system (if installed) on the assigned boat.
27. Describe the potable water system (if installed) on the assigned boat.

**TASK ENG-01-04-TYPE: Conduct a Pre-Start Check Off**

---

1. The fuel tanks should be at or near \_\_\_\_\_ percent during pre-start checks.
2. State the correct procedure for disconnecting the shore power cable.
3. State the coolant, fluid, lubricant or lubricating oil level that must be checked prior to operation.
4. Check engine drive belt tension. No greater than \_\_\_\_\_-inch deflection per foot of span is allowed.
5. The engine steering and throttle controls should be checked for \_\_\_\_\_.
6. Visually inspect the \_\_\_\_\_ filter for the presence of sediment and water.
7. Ensure the \_\_\_\_\_ suction valve is open.
8. With the engine cool or cold, state the location and level for the engine coolant system.
9. State why the engine should not be operated with the shore power system energized.
10. State the location (side of engine, near) of the engine oil dipstick.
11. State in what position the battery switch(es) should be for starting.
12. When the engine is secured, the marine gear oil level \_\_\_\_\_ should be above the \_\_\_\_\_ mark on the dipstick.
13. The marine gear oil level must be rechecked after the engine is \_\_\_\_\_ and \_\_\_\_\_ to confirm the correct level on the \_\_\_\_\_.
14. Never start or \_\_\_\_\_ the engines with the \_\_\_\_\_ power energized. Damage to the \_\_\_\_\_ may occur.
15. Ensure all \_\_\_\_\_ electrical power switches are in the \_\_\_\_\_ position.
16. When the engine is secured, the marine gear oil level \_\_\_\_\_ should be above the \_\_\_\_\_ mark on the dipstick.
17. The marine gear oil level must be rechecked after the engine is \_\_\_\_\_ and \_\_\_\_\_ to confirm the correct level on the \_\_\_\_\_.



TASK ENG-01-05-TYPE: List the Disabling Casualties and Restrictive Discrepancies that Prevent the Boat from Getting Underway

---

1. A disabling casualty is a casualty that makes the boat \_\_\_\_\_.
  2. Define the term restrictive discrepancy.
  3. Describe what actions must be taken if a disabling casualty occurs while underway.
  4. Give some examples of major discrepancies for an assigned boat.
  5. State what must be done if a restrictive discrepancy occurs while underway or dockside.
  6. List three restrictive discrepancies for an assigned boat.
    - a.
    - b.
    - c.
  7. List three disabling casualties for an assigned boat.
    - a.
    - b.
    - c.
  8. The Operational Commander will be notified immediately or within \_\_\_\_\_ hours after the casualty has been discovered.
  9. If the casualty cannot be repaired within 48 hours, a \_\_\_\_\_ shall be sent within \_\_\_\_\_ hours.
-



**TASK ENG-01-06-TYPE:** State the Equipment Casualties That Will Prevent the Boat from Getting Underway

---

1. List the eight pieces of equipment that, should a casualty occur, would prevent the boat from getting underway.
  - a.
  - b.
  - c.
  - d.
  - e.
  - f.
  - g.
  - h.

**TASK ENG-01-07-TYPE:** Energize the Electrical and Electronic Systems

---

1. What is the purpose of the boat stators?
  2. The port engine battery switch serves the \_\_\_\_\_ and \_\_\_\_\_ loads.
  3. The AUX battery switch supplies power to \_\_\_\_\_.
  4. The starboard engine battery switch serves the \_\_\_\_\_ and the \_\_\_\_\_.
  5. House battery switch provides power for \_\_\_\_\_ loads. (RB-M only).
  6. Start battery switch services the \_\_\_\_\_ and \_\_\_\_\_ engines (RB-M only).
  7. What is the function of the battery parallel system?
-



---

**TASK ENG-01-08-TYPE: Set Watertight Integrity**

---

1. How many watertight compartments are aboard the boat?
2. Name them and list fore and aft bulkheads:
3. There are \_\_\_\_\_ shelter in place closure devices aboard the boat and where are they located.
4. List safety precautions that should be observed when the devices are open.
5. The following are secondary watertight compartments which aid in self-righting the craft in event of a capsize:
  - a.
  - b.
  - c.
  - d.

---

**TASK ENG-01-09-TYPE: Draw the Boat's Systems**

---

1. Draw the following systems and label all components:
    - a. Fuel oil system (tank to engine)
    - b. Raw water (seawater) cooling system
    - c. Freshwater cooling system
    - d. Steering/hydraulic control system
    - e. Electrical system(s), AC and DC (include shore power interface)
    - f. HVAC Colling System
    - g. Vector Control System
-



## Section B. Reading Assignments – Propulsion System Start Checks and Casualty Responses

**Introduction** The reading assignment(s) should be read prior to beginning instruction of each task.

**In this Section** This Section contains the following reading assignments:

Task Number	Task Title	Reading Assignment	See Page
ENG-02-01-TYPE	Start the Boat	Applicable Technical Manuals <i>Specific Boat Type Operator's Handbooks</i> , COMDTINST M16114 (series)	3-49
ENG-02-02-TYPE	Engine Will Not Turn Over or Start	Applicable Technical Manuals <i>Specific Boat Type Operator's Handbooks</i> , COMDTINST M16114 (series)	3-49
ENG-02-03-TYPE	Engine Failing to Start with the Starter Turning Over	<i>Specific Boat Type Operator's Handbooks</i> , COMDTINST M16114 (series)Applicable Technical Manuals	3-50
ENG-02-04-TYPE	Main Engine High Water Temperature	Applicable Technical Manuals <i>Specific Boat Type Operator's Handbooks</i> , COMDTINST M16114 (series) <i>CG Readiness and Standardization Drill Checklist</i>	3-50
ENG-02-05-TYPE	Loss of Main Engine Lube Oil Pressure	<i>Specific Boat Type Operator's Handbooks</i> , COMDTINST M16114 (series) <i>CG Readiness and Standardization Drill Checklist</i>	3-51
ENG-02-06-TYPE	Loss of Fuel Oil Pressure	<i>Specific Boat Type Operator's Handbooks</i> , COMDTINST M16114 (series) <i>CG Readiness and Standardization Drill Checklist</i>	3-51
ENG-02-07-TYPE	Main Engine High Lube Oil Pressure	<i>Specific Boat Type Operator's Handbooks</i> , COMDTINST M16114 (series) Applicable Technical Manuals	3-51
ENG-02-08-TYPE	Engine Oil System Failure	Applicable Technical Manuals	3-52
ENG-02-09-TYPE	Outboard Failing to Engage Forward or Reverse	Applicable Technical Manuals	3-52
ENG-02-10-TYPE	Outboard Motor Vibration or Spun Propeller	Applicable Technical Manuals	3-52
ENG-02-11-TYPE	Engine Running Uneven or Stalls	Applicable Technical Manuals	3-52
ENG-02-12-TYPE	Loss of Control of Engine RPMs	<i>Specific Boat Type Operator's Handbooks</i> , COMDTINST M16114 (series) <i>CG Readiness and Standardization Drill Checklist</i>	3-53
ENG-02-13-TYPE	Reduction Gear Failure	Applicable Technical Manuals	3-53



<b>Task Number</b>	<b>Task Title</b>	<b>Reading Assignment</b>	<b>See Page</b>
		<i>Specific Boat Type Operator's Handbooks, COMDTINST M16114 (series) CG Readiness and Standardization Drill Checklist</i>	
ENG-02-14-TYPE	Overheating Shaft Packing Gland	Applicable Technical Manuals <i>Specific Boat Type Operator's Handbooks, COMDTINST M16114 (series) CG Readiness and Standardization Drill Checklist</i>	3-54
ENG-02-15-TYPE	Excessive Shaft Seal Leakage	<i>Specific Boat Type Operator's Handbooks, COMDTINST M16114 (series)</i>	3-54
ENG-02-16-TYPE	Steering Casualty	<i>Specific Boat Type Operator's Handbooks, COMDTINST M16114 (series) CG Readiness and Standardization Drill Checklist</i>	3-54
ENG-02-17-TYPE	Low Voltage Alarm/Loss of Electrical Charging System	<i>None assigned</i>	
ENG-02-18-TYPE	Fouled Waterjet	<i>Specific Boat Type Operator's Handbooks, COMDTINST M16114 (series)</i>	3-56
ENG-02-19-TYPE	Fire in the Tank Room	<i>Specific Boat Type Operator's Handbooks, COMDTINST M16114 (series)</i>	3-56
ENG-02-20-TYPE	Carbon Monoxide Alarm	<i>None assigned</i>	
ENG-02-21-TYPE	High Wet Exhaust Temperature Alarm	<i>None assigned</i>	
ENG-02-22-TYPE	Unusual Noise or Vibration	<i>None assigned</i>	
ENG-02-23-TYPE	Loss of Generator	<i>None assigned</i>	



**TASK ENG-02-01-TYPE: Start the Boat**

---

1. State the location and purpose of the engine kill switch (if equipped).
2. The throttle joystick should be in \_\_\_\_\_ prior to engaging the starter.
3. The start button should be depressed for \_\_\_\_\_ seconds. If the engine fails to start, release the button and wait \_\_\_\_\_ seconds before attempting another start.
4. State the location of the raw water (seawater) overboard discharge for engine cooling.
5. At idle, the oil pressure gauge should read at or above \_\_\_\_\_ PSI.
6. At idle, the engine RPM should be approximately \_\_\_\_\_ RPM.
7. State what visual checks should be conducted on the engine prior to getting the boat underway.
8. State any procedures for energizing the installed communications/navigation equipment.
9. Do not depress both starter buttons \_\_\_\_\_. Start engines \_\_\_\_ at a time.
10. With the main engines at idle, the oil levels of the marine gear should be between \_\_\_\_\_ and \_\_\_\_\_ on the dipstick.
11. If proper oil pressure is not evident, \_\_\_\_\_ and investigate.
12. At idle the water temperature should be \_\_\_\_\_ ° F and the water pressure \_\_\_\_\_ PSI.
13. The primer bulb/pump should be squeezed/pumped \_\_\_\_\_.
14. List the possible causes for an engine that will not start:

---

**TASK ENG-02-02-TYPE: Engine Will Not Turn Over or Start**

1. The engine/throttle should be in the \_\_\_\_\_.
  2. Depress the \_\_\_\_\_ engine \_\_\_\_\_ button and hold until the engine starts. If an engine does not start within \_\_\_\_\_ seconds, release the \_\_\_\_\_ button and let stand \_\_\_\_\_ minutes, and repeat starting procedures.
  3. State the location of the engine kill switch and in what position it should be prior to start.
  4. What is the normal battery voltage for the assigned craft and where can it be read?
  5. Where is the engine starter located?
  6. Describe (if applicable) how to prime the engine fuel system for the assigned craft.
  7. If outside temperature is below freezing, state what systems might need to be energized to start the craft.
-



TASK ENG-02-03-TYPE: Engine Failing to Start with the Starter Turning Over

---

1. Check the \_\_\_\_\_ switch \_\_\_\_\_.
  2. Check the condition of the fuel system \_\_\_\_\_ bulbs.
  3. Check the fuel system, in particular the system \_\_\_\_\_ and the \_\_\_\_\_ and housing.
  4. Check the engine main \_\_\_\_\_.
- 

TASK ENG-02-04-TYPE: Main Engine High Water Temperature

---

1. What is the normal operating range for the water temperature?
  2. State the six corrective actions to be taken for engine high water temperature:
    - a.
    - b.
    - c.
    - d.
    - e.
    - f.
  3. What procedure should be followed to keep an engine from seizing?
  4. If steam is present or engine temperature is above \_\_\_\_\_ ° F, \_\_\_\_\_ engine.
  5. Removing \_\_\_\_\_ while engine is hot may cause coolant to flash to steam causing \_\_\_\_\_.
  6. If the strainers are clean, check the \_\_\_\_\_ pump cover lightly with the \_\_\_\_\_ of the \_\_\_\_\_ for coolness.
  7. If the \_\_\_\_\_ is burned up, the cover will be very hot.
-



---

**TASK ENG-02-05-TYPE: Loss of Main Engine Lube Oil Pressure**

---

1. If engine oil pressure gauge reads \_\_\_\_\_, \_\_\_\_\_ engine immediately.
2. Check the following for possible problems:
  - a.
  - b.
  - c.
  - d.
  - e.
  - f.
3. The operating parameters are \_\_\_\_\_ min \_\_\_\_\_ max at idle \_\_\_\_\_ min \_\_\_\_\_ max at cruising.

---

**TASK ENG-02-06-TYPE: Loss of Fuel Oil Pressure**

---

1. The Engineer should request that the Coxswain reduce the engine RPMs to \_\_\_\_\_.
2. Check the primary \_\_\_\_\_ for \_\_\_\_\_ and/or \_\_\_\_\_.
3. Verify the \_\_\_\_\_ levels.
4. If necessary \_\_\_\_\_ the fuel system.

---

**TASK ENG-02-07-TYPE: Main Engine High Lube Oil Pressure**

---

1. Water \_\_\_\_\_ in the engine will cause \_\_\_\_\_ pressure.
  2. Leaky engine hatch gaskets in \_\_\_\_\_ or \_\_\_\_\_ can lead to water intrusion at the \_\_\_\_\_ intakes.
-



---

**TASK ENG-02-08-TYPE: Engine Oil System Failure**

---

1. If an engine experiences no/low oil pressure, the throttles should be placed in \_\_\_\_\_ and the engines secured.
2. Perform a quick \_\_\_\_\_ - \_\_\_\_\_ and if oil pressure continues to decrease \_\_\_\_\_ the \_\_\_\_\_.
3. The oil system should be \_\_\_\_\_ using the \_\_\_\_\_ bulb.
4. Once the engine is secured, check for an \_\_\_\_\_ around the lower unit.
5. State what S.L.O.W. means in regards to an engine oil failure casualty.

---

**TASK ENG-02-09-TYPE: Outboard Failing to Engage Forward or Reverse**

---

1. Check the linkage at the \_\_\_\_\_ and the \_\_\_\_\_.
2. With the engine operating, verify that the \_\_\_\_\_ is \_\_\_\_\_.

---

**TASK ENG-02-10-TYPE: Outboard Motor Vibration or Spun Propeller**

---

1. Note the \_\_\_\_\_ at which the vibration occurs.
2. Bringing throttles to \_\_\_\_\_ note any change in vibration.
3. Secure the engine and \_\_\_\_\_ the outboard to inspect the \_\_\_\_\_ and \_\_\_\_\_.

---

**TASK ENG-02-11-TYPE: Engine Running Uneven or Stalls**

---

1. Check the fuel system \_\_\_\_\_ alignment if the engine runs uneven or stalls.
2. Check the \_\_\_\_\_ for visual contamination.
3. Check the \_\_\_\_\_ linkage for security and worn or missing hardware.
4. Verify the \_\_\_\_\_ level.
5. Verify the \_\_\_\_\_ intake system for obstructions.



---

**TASK ENG-02-12-TYPE: Loss of Control of Engine RPMs**

---

1. Bring the engine back to \_\_\_\_\_.
2. If the engine fails to secure, the Engineer should proceed to the \_\_\_\_\_ and pull the fuel \_\_\_\_\_ for the affected and allow the engine to \_\_\_\_\_.
3. DO NOT use the \_\_\_\_\_ system to secure the engine.

---

**TASK ENG-02-13-TYPE: Reduction Gear Failure**

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1. Ensure that the \_\_\_\_\_ light is lit at the control station in use.
  2. Check the \_\_\_\_\_-volt power panel for tripped breakers.
  3. Check that the \_\_\_\_\_ are attached to the reduction gear controls.
  4. Check oil level and restart the engine and check the clutch apply pressure, should be \_\_\_\_\_ to \_\_\_\_\_ PSI.
  5. The \_\_\_\_\_ valve on the reduction gear allows for \_\_\_\_\_ operation.
  6. When the clutch is engaged, the clutch-apply pressure should be \_\_\_\_\_ - \_\_\_\_\_ PSI.
  7. Using the free wheel feature, fill the marine gear \_\_\_\_\_ with oil.
  8. List the steps that need to be accomplished after you free wheel for over 8 hours of operation.
    - e.
    - g.
    - h.
-



---

**TASK ENG-02-14-TYPE: Overheating Shaft Packing Gland**

---

1. If there is no water coming from the shaft packing gland \_\_\_\_\_ to \_\_\_\_\_ drops per and the \_\_\_\_\_ box gland is too hot to \_\_\_\_\_, immediately take the following three corrective actions:
  - a.
  - b.
  - c.
2. Do not place a \_\_\_\_\_ near the turning \_\_\_\_\_ until you bring the \_\_\_\_\_ to clutch speed.

---

**TASK ENG-02-15-TYPE: Excessive Shaft Seal Leakage**

---

1. The Engineer should realign the \_\_\_\_\_ assembly and check to see if the \_\_\_\_\_ has backed off.
2. If after alignment excessive water continues to leak from the seal, the Engineer should recommend \_\_\_\_\_.
3. If after alignment the seal continues to leak, stop the engine, \_\_\_\_\_ the affected shaft with \_\_\_\_\_.

---

**TASK ENG-02-16-TYPE: Steering Casualty**

---

1. List the four likely causes of steering loss:
    - a.
    - b.
    - c.
    - d.
  2. If the helm turns \_\_\_\_\_ without any effect on the \_\_\_\_\_, suspect a broken \_\_\_\_\_, air in the system, or \_\_\_\_\_ fitting.
  3. \_\_\_\_\_ oil is used in the steering system.
  4. Where is the emergency tiller located on the boat?
  5. The emergency back up box is located in the \_\_\_\_\_.
  6. The emergency back up box attaches to a plug in the back of the lower \_\_\_\_\_ console.
  7. Before plugging in the emergency back up box ensure all the rocker switches are in the \_\_\_\_\_ position.
-



---

**TASK ENG-02-17-TYPE: Main Engine Runaway**

---

1. If there is a main engine runaway reduce the affected engines \_\_\_\_\_'s bringing both main engines back to \_\_\_\_\_.
2. If engine continues to runaway pull the main engine \_\_\_\_\_ for the affected engine.
3. If pulling the fuel stop does not work place the \_\_\_\_\_ engine in \_\_\_\_\_ and turn in the direction of the \_\_\_\_\_ engine.

---

**TASK ENG-02-19-TYPE: Buoy Deck Hydraulic Failure**

---

1. If hydraulic failure occurs during buoy deck evolution any suspended gear should be \_\_\_\_\_ and \_\_\_\_\_ so that the BUSL can mauver safely.
2. Crewmembers will retrieve \_\_\_\_\_ from the \_\_\_\_\_.
3. If chain is suspended, ensure that it is in the \_\_\_\_\_ then lower the chain into the \_\_\_\_\_ and clear the \_\_\_\_\_.

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**TASK ENG-02-20-TYPE: Major Fuel Oil/Lube Oil Leak**

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1. Report the following to the pilothouse upon discovering a major fuel oil, lube oil leak:
    - a.
    - b.
    - c.
  2. Isolate the leak locally or remotely by securing the \_\_\_\_\_.
  3. Wash flammable liquid into the bilge by using a \_\_\_\_\_ fire extinguisher.
-



**TASK ENG-02-26-TYPE: Outdrive Failure**

---

1. Upon discovering an outdrive failure crewmember should do the following :
    - a.
    - b.
    - c.
    - d.
- 

**TASK ENG-02-27-TYPE: Fouled Waterjet**

---

1. Upon discovering a fouled waterjet:
    - a. Bring engines to \_\_\_\_\_ thrust position.
    - b. Disengage the \_\_\_\_\_ engine.
    - c. Backflush the affected waterjet using a maximum of \_\_\_\_\_ RPM's.
    - d. If backflushing did not clear the waterjet return to port and open the \_\_\_\_\_ to clear the jet.
- 

**TASK ENG-02-29-TYPE: Fire in Tank Room**

---

1. Upon discovering a fire in the tank room, crewmember should do the following:
    - a.
    - b.
    - c.
    - d.
-



## Section C. Reading Assignments – Boat Disabling Casualties

**Introduction** The reading assignment(s) should be read prior to beginning instruction of each task.

**In this Section** This Section contains the following reading assignments:

<b>Task Number</b>	<b>Task Title</b>	<b>Reading Assignment</b>	<b>See Page</b>
ENG-03-01-TYPE	Not Currently Assigned		
ENG-03-02-TYPE	Fire in the Engine Room	<i>Boat Crew Handbook – Boat Operations, BCH16114.1 (series)</i> <i>Specific Boat Type Operator’s Handbook, COMDTINST M16114 (series)</i>	3-58
ENG-03-03-TYPE	Fire Onboard	Applicable Technical Manuals	3-58
ENG-03-04-TYPE	Fire in the Auxiliary Machinery Space	<i>Specific Boat Type Operator’s Handbook, COMDTINST M16114 (series)</i>	3-58
ENG-03-05-TYPE	Capsizing	<i>Specific Boat Type Operator’s Handbook, COMDTINST M16114 (series)</i>	3-59
ENG-03-06-TYPE	Flooding	<i>Boat Crew Handbook – Boat Operations, BCH16114.1 (series)</i> <i>Specific Boat Type Operator’s Handbook, COMDTINST M16114 (series)</i>	3-59
ENG-03-07-TYPE	Collision with a Submerged Object	Applicable Technical Manuals <i>Specific Boat Type Operator’s Handbook, COMDTINST M16114 (series)</i>	3-59



**TASK ENG-03-02-TYPE: Fire in the Engine Room**

---

1. The most logical and best \_\_\_\_\_ action is to remain \_\_\_\_\_ and take early \_\_\_\_\_ action when fire \_\_\_\_\_ conditions are observed.
2. The fixed \_\_\_\_\_ fire extinguishing system has the capacity to extinguish and \_\_\_\_\_ fire provided the \_\_\_\_\_ for its use are followed carefully.
3. If at any \_\_\_\_\_ there is doubt as to the ability to \_\_\_\_\_ and extinguish and \_\_\_\_\_ fire, or if it is determined to be \_\_\_\_\_ the capability of the portable fire extinguishers, use the \_\_\_\_\_ fire extinguishing system.
4. The fixed Halon 1301 fire extinguishing system is \_\_\_\_\_ operated.
5. The fixed CO<sub>2</sub> fire extinguishing system must be \_\_\_\_\_ operated.
6. The fixed FM-200 fire extinguishing system is \_\_\_\_\_ operated.
7. How long should the compartment be ventilated?

---

**TASK ENG-03-03-TYPE: Fire Onboard**

---

1. Bring the \_\_\_\_\_ to neutral and \_\_\_\_\_ the \_\_\_\_\_.
2. Notify the \_\_\_\_\_.
3. If required by the location/type of fire, secure the \_\_\_\_\_.

---

**TASK ENG-03-04-TYPE: Fire in the Auxiliary Machinery Space**

---

1. True or False - There are no fire or smoke detectors in the auxiliary machinery space.
  2. The Engineer should proceed to the survivor's compartment and secure the \_\_\_\_\_ on the \_\_\_\_\_ bulkhead.
-



TASK ENG-03-05-TYPE: Capsizing

---

1. The average time under water will be approximately \_\_\_\_\_ to \_\_\_\_\_ seconds.
  2. Once dewatering is complete, check the \_\_\_\_\_ in both main engines.
  3. Do not hook up the \_\_\_\_\_. Electronic equipment in all below deck spaces may be soaked with \_\_\_\_\_ and \_\_\_\_\_.
  4. Roll over switch gets activated at \_\_\_\_\_ degrees and will \_\_\_\_\_ the engines.
- 

TASK ENG-03-06-TYPE: Flooding

---

1. The Engineer will check the \_\_\_\_\_ to identify the space where flooding is indicated.
  2. What is the bilge flooding alarm system designed for?
  3. The central alarm panel located \_\_\_\_\_ will provide an audible and visual indication of flooding.
  4. When is it required to verify the operation of the bilge alarm system?
  5. The Engineer should proceed to the space with the flooding alarm and report to the Coxswain the \_\_\_\_\_, \_\_\_\_\_ and \_\_\_\_\_.
  6. List the location of the installed electric bilge pump(s).
- 

TASK ENG-03-07-TYPE: Collision with a Submerged Object

---

1. List the four actions that the crew should take after striking a submerged object:
    - a.
    - b.
    - c.
    - d.
  2. If engine vibration is noted after striking a submerged object, the engine RPM should be kept at \_\_\_\_\_ RPM below the vibration range.
  3. Bring the \_\_\_\_\_ to neutral. Notify the crew.
  4. Check \_\_\_\_\_ and \_\_\_\_\_ for flooding.
-



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## Section D. Reading Assignments – Post-Operational Checks

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**Introduction** The reading assignment(s) should be read prior to beginning instruction of each task.

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**In this Section** This Section contains the following reading assignments:

Task Number	Task Title	Reading Assignment	See Page
ENG-04-01-TYPE	Secure the Boat After Operations	Applicable Technical Manuals <i>Specific Boat Type Operator’s Handbook</i> , COMDTINST M16114 (series)	3-60

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**TASK ENG-04-01-TYPE: Secure the Boat After Operations**

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1. The engine should be allowed to idle \_\_\_\_\_ to \_\_\_\_\_ minutes prior to securing.
  2. Prior to stopping the engine, secure all \_\_\_\_\_ except for the main DC power switch.
  3. Once the engine is stopped, trim or tilt the outdrive into the \_\_\_\_\_ position.
  4. Refill the fuel tank(s) to \_\_\_\_\_ percent.
  5. Once shore power is energized, the \_\_\_\_\_ and \_\_\_\_\_ should be turned on.
  6. Inspect all \_\_\_\_\_ compartments and \_\_\_\_\_ all hatches and \_\_\_\_\_.
  7. If necessary, when the boat is installed in a trailer or boat davit cradle, it may be necessary to \_\_\_\_\_ the engine(s).
  8. The external alarm on the RB-M activates the \_\_\_\_\_ and \_\_\_\_\_ to indicate flooding/fire etc.
-



# APPENDIX A

## Glossary

**Introduction** This appendix contains a list of terms that may be useful when reading this Handbook.

**In this appendix** This appendix contains the following information:

Topic	See Page
Glossary	<a href="#">A-2</a>



TERM	DEFINITION
<b>Aids to Navigation Team</b>	An Aids to Navigation Team is a Coast Guard shore facility with an OPFAC, command cadre, and permanently assigned dutystanders, unit boat allowance, and equipment, which reports to a Group, Section or Activity command, or District Commander (in the case of D17).
<b>Air Station</b>	An Air Station is a Coast Guard shore facility with an OPFAC, command cadre, and permanently assigned dutystanders, unit boat allowance, and equipment, which reports to a Group, Section or Activity command, or District Commander (in the case of D17).
<b>Auxiliary-Operated Station (Small)</b>	An Auxiliary-Operated Station (small) is a Station (small) that relies on auxiliary members for its primary duty section staffing for three or more months a year is considered to be an “auxiliary operated” unit. Auxiliary operated Units may or may not have an active duty command cadre (i.e., OIC).
<b>Boat Crew</b>	Includes the coxswain, boat engineer, crewmen, and all other personnel required onboard a boat acting in an official capacity.
<b>Boat Crew Examination Board (BCEB)</b>	A group of certified boat crew members, consisting of experienced surfmen, heavy weather coxswains, boat coxswains, engineers, and crew members, as applicable, selected by the unit commander and organized to examine and evaluate boat crew candidates. BCEB is designated in writing.
<b>Boat Outfit/Stowage Plans</b>	The configuration requirements for standard boat outfits and equipment stowage plans are set forth in the applicable specific boat type Operator’s Handbook, COMDTINST M16114 (series).
<b>Certification</b>	Formal command verification that an individual has met all requirements and is authorized to perform the boat crew duties at a specific level aboard a particular boat type.
<b>Command Cadre</b>	The CO or OIC, the Executive Officer or Executive Petty Officer, the Engineering Petty Officer and senior Boatswain’s Mate (at units with COs) are a unit’s command cadre.
<b>Crew Rest</b>	Time during which alert crews do not engage in any Station work or operations. Crews are allowed to recreate and sleep.
<b>Crew Underway Time</b>	Begins when the crewmember reports to the designated place to prepare for a specific boat mission. Computation of such time ends when the mission is complete. Crew underway time includes time spent accomplishing pre-mission and post-mission boat checks.



TERM	DEFINITION
<b>Current</b>	A current crewmember is certified and has all recurring training requirements completed and up to date. Currency is maintained by completing the regularly scheduled minimum proficiency requirements of their current crew position.
<b>Cutter</b>	A Cutter, to which a cutterboat is assigned, contains an OPFAC, command cadre, and permanently assigned dutystanders, unit boat allowance, and equipment, which reports to a Sector, Group/Air Station, District or Area Commander.
<b>Electronic Training Systems (e-Training)</b>	Coast Guard electronic systems that captures required training, qualification tasks and currencies.
<b>Engineering Changes (ECs)</b>	<p>These are the only authorized modifications to a standard boat. No one other than Commandant (G-SEN) is authorized to approve ECs to standard boats. The Specific Boat Type Operator's Handbook, COMDTINST M16114 (series) provides amplifying details on the EC process.</p> <p><b>NOTE</b>  Engineering Changes (ECs) were formerly known as BOATALTS.</p>
<b>Fatigue</b>	A condition of impaired mental and physical performance brought about by extended periods of exertion and stress which reduces the individual's capability to respond to external stimuli. Some factors contributing to fatigue are sleep loss, exposure to temperature extremes (hypothermia and heat stress), motion sickness, changes in work and sleep cycles, physical exertion, workload, illness, hunger, and boredom. While an individual or crew may be considered to be fatigued at any time, at a minimum, they are considered to be fatigued when they exceed the underway or alert posture standards in this Section.
<b>Fatigue Waiver</b>	A waiver to crew rest or rest-recovery requirements granted by a Group Commander.
<b>Night</b>	Night is defined as ½ hour after nautical sunset and ½ hour before nautical sunrise.
<b>Non-Pooled Station (Small)</b>	A Non-Pooled Station (small) is a Station (small) with permanently assigned personnel. These units will be assigned an Operating Facility (OPFAC) number, unit boat allowance and OIC.
<b>Operational Commander</b>	For the purpose of this Handbook, Operational Commanders are defined as commanders of Sectors, Group/Air Stations, and Sections, who exercise direct operational control of a subordinate unit with a standard boat or non-standard boat assigned. This definition specifically does not include Station COs/OICs exercising operational control of a Station (small).
<b>Operations</b>	Time spent on pre-mission planning, underway, and post mission reporting or follow-up.



TERM	DEFINITION
<b>Parent Station</b>	A parent Station is a unit with one or more subordinate Stations (small/s). Its command cadre allowance may be different from that of a typical unit to account for the increased responsibility associated with the assignment of subordinate Stations (small/s).
<b>Pooled Station (Small)</b>	The Pooled Station (small) is essentially a “remote operating location”. A Pooled Station (small) appears in the <i>Operating Facilities Change Order (OFCO)</i> , COMDTINST M5440.3 (series), but will not have an assigned OPFAC number, assigned unit boat allowance, personnel, or an OIC. The parent unit for this Pooled Station (small) has additional personnel to operate a boat from the physical location of the Station (small).
<b>Qualification</b>	The satisfactory completion of the appropriate qualification tasks.
<b>Readiness</b>	The ability of a boat to perform the functions and missions for which it was designed.
<b>Ready for Operations Team (RFO Team)</b>	A minimum of three members, the RFO team consists of members designated by the Operational Commander. Teams conduct annual assessment visits to ensure the goals of the Readiness and Standardization Program are achieved.
<b>Recertification Process</b>	The steps a crew member takes to regain command authorization to be assigned boat crew duties when prior certification has lapsed due to permanent change of station (PCS) transfer, failure to meet semi-annual/annual currency requirements, or revocation.
<b>Reserve Augmented Unit</b>	A Reserve Augmented Unit is a unit that relies on reserve personnel for at least one third of its primary duty section staffing for three or more months a year.
<b>Rough Bar</b>	A rough bar is a river entrance or inlet where Heavy weather or surf conditions exist. Also, in situations when the coxswain or the CO/OIC is unsure, a rough bar is assumed.



TERM	DEFINITION
<b>Senior Boatswain's Mate</b>	The senior Boatswain's Mate permanently assigned, other than the OIC or XPO. For purposes of Boat Crew Training, this individual is considered a member of the command cadre whose primary function is to lend experience to the unit training program, and assist in the training and mentoring of subordinate personnel.
<b>Sleep Period</b>	A period of time available for an individual to devote to sleeping that is not interrupted by official responsibilities.
<b>Standardization Team (Stan Team)</b>	A three to five member deployable evaluation team that consists of highly trained and experienced professionals specializing in the operational/deck and engineering aspects of each standard boat platform. Each team conducts biennial assessment visits to ensure the goals of the Readiness and Standardization Assessment (outlined in this Handbook) are achieved. These teams act as a deployable asset to the centers of excellence (UTBSC/NMLBS/NATON) for each standard boat platform, and in addition to providing field units with technical information, they support the centers by providing guidance and feedback to improve school training and program functions.
<b>Station</b>	A Station is a Coast Guard shore facility with an OPFAC, command cadre, and permanently assigned dutystanders, unit boat allowance, and equipment, which reports to a Group, Section or Activity command, or District Commander (in the case of D17).
<b>Station (Small)</b>	A Station (small) is a minimally staffed and resource constrained unit that receives operational direction, command, and support from its parent unit.
<b>Station Aids to Navigation Team (STANT)</b>	A STANT is a Coast Guard shore facility with an OPFAC, command cadre, and permanently assigned dutystanders, unit boat allowance, and equipment, which reports to a Group, Section or Activity command, or District Commander (in the case of D17).
<b>Station Work</b>	Activities that constitute normal unit work which are not directly associated with duty, boat operations, pre-mission planning, or post-mission reporting and follow-up. Ex: boat maintenance, Station cleanup, non-mission administrative tasks.
<b>Structural Configuration Characteristics</b>	This applies to the fit, form, and function of structural vessel parts. Watertight closures, vessel coatings, and mounted equipment locations are managed by structural configuration requirements.
<b>Surf</b>	Surf is defined as the waves or swell of the sea breaking on the shore or a reef.
<b>Task</b>	A separate training step learned in order to perform a particular job skill.
<b>Task Code</b>	A four-element code used to identify the applicability of tasks listed in this Handbook.



<b>TERM</b>	<b>DEFINITION</b>
<b>Training Mentor</b>	Certified individual who meets all prerequisites to sign training PQS.
<b>Training Petty Officer</b>	The petty officer assigned by the unit commander to supervise all aspects of unit training.
<b>Type</b>	A particular class of boat, such as 41' UTB, 49' BUSL, or 47' MLB.
<b>Unit Commander</b>	A CO or OIC of a unit with a standard or non-standard boat assigned.
<b>Unit Training Petty Officer</b>	The person designated by unit and billet assignment to supervise all aspects of unit training.
<b>Urgent Operations</b>	A mission of sufficient importance that the District Commander elects to execute it with a fatigued boat crew.
<b>Urgent SAR</b>	A mission which involves the probable loss of life unless the Coast Guard intervenes.



## APPENDIX B

### List of Acronyms

**Introduction** This appendix contains a list of acronyms used throughout the Handbook.

**In this appendix** This appendix contains the following information:

Topic	See Page
List of Acronyms	<a href="#">B-2</a>



ACRONYM	DEFINITION
ABCM	ATON Boat Crew Member
AC	Alternating Current
ACOXN	ATON Coxswain
AIRBCM	Air Boat Boat Crew Member
AIRCOXN	Air Boat Coxswain
AOR	Area of Responsibility
BCEB	Boat Crew Examination Boards
BCM	Boat Crew Member
BCO	Boom/Crane Operator
BDS	Buoy Deck Supervisor
BECCE	Basic Engineering Casualty Control Exercises
BFCO	Boat Forces and Cutter Operations
BM	Boatswain's Mate
BUSL	Buoy Utility Stern Loading
CASREP	Casualty Report
CDV	Course Deviation Variance
CFR	Code of Federal Regulations
CO	Commanding Officer
CO/OIC	Commanding Officer/Officer-in-Charge
COMDTINST	Commandant Instruction
COXN	Coxswain
CS	Creeping Line Search
CSP	Commence Search Point
DC	Direct Current
DGPS	Differential Global Positioning System
DR	Dead Reckoning
E-SAR	Electronic Search and Rescue Fundamentals Course
EBL	Electronic Bearing Line
EC	Engineering Change
ECM	Electronic Control Module
EMT	Emergency Medical Technician



EPIRB	Emergency Position Indicating Radio Beacon
ENG	Engineer
ETA	Estimated Time of Arrival
FLIR	Forward Looking Infra Red
GAR	Green-Amber-Red
GPS	Global Positioning System
GSA	General Services Administration
HCU	Hand Control Unit
HDOP	Horizontal Dilution of Precision
HELP	Heat Escape Lessening Position
HVAC	Heating, Ventilation, and Air Conditioning
HWX	Heavy Weather Coxswain
ICW	Intracoastal Waterways
IMF	International Medium Frequency
IR	Infra Red
KTS	Knots
LOP	Line of Position
MARB	Marine Assistance Request Broadcast
MLB	Motor Lifeboat
MLC	Maintenance and Logistics Command
MOB	Man Overboard
NAVRULS	Navigation Rules
NCV	Noncompliant Vessel
NM	Nautical Miles
NMEA	National Marine Electronics Association
NMLBS	National Motor Lifeboat School
NSB	Non-Standard Boat
OIC	Officer-in-Charge
OPAREA	Operational Area
OPFAC	Operating Facility
ORM	Operational Risk Management
PCS	Permanent Change of Station
PFD	Personal Flotation Device
PIW	Person-in-the-Water
PLB	Personal Locator Beacon
PMS	Preventive/Planned Maintenance System
POB	Person Onboard
PPE	Personal Protective Equipment
PPS	Precise Positioning Service



PQS	Personnel Qualification Standard
PS	Parallel Search
PTO	Power Take-Off
PTT	Press to Talk
PWCS	Ports Waterways and Coastal Security
RB-S	Response Boat Small
RB-HS	Response Boat Homeland Security
RB-M	Response Boat Medium
RFO	Ready for Operations
RPM	Revolutions per Minute
SAR	Search and Rescue
SGA	Stabilized Gimball Assembly
SINS	Scalable Integrated Navigation System
SMC	SAR Mission Coordinator
SOG	Speed Over Ground
SOP	Standard Operating Procedures
SPC (HWX)	Special Purpose Craft Heavy Weather
SPC-LE	Special Purpose Craft Law Enforcement
SPE	Severity-Probability-Exposure
SPE/GAR	Severity-Probability-Exposure/Green-Amber-Red
SPS	Standard Positioning Service
SRF	Surfman
SS	Square Search
SSB-HF	Single Side Band-High Frequency
STANT	Station Aids to Navigation Team
TAP	TruLink Access Point
TCT	Team Coordination Training
TD	Time Difference
TPT	TruLink Portable Transceiver
TSN	TrackLine Single-Unit Non-Return
TSR	TrackLine Single-Unit Return
U/W	Underway
UHF	Ultra High Frequency
UPH	Unaccompanied Personnel Housing
UTB	Utility Boat
UTM	Utility Boat Medium
VAC	Volts Alternating Current
VDC	Volts Direct Current
VHF	Very High Frequency

Appendix B - List of Acronyms



VOX	Voice Operated Transmitter
VRM	Variable Range Marker
VRO	Variable Ratio Oiler
VS	Sector Search
WLL	Working Load Limit
XPO	Executive Petty Officer
XTE	Cross Track Error