CHAPTER 1
Boat Crewmember 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 mentor 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.

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:

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

TASK BCM-01-01-AUX: Crew Fatigue

1. Mental and physical fatigue is among the greatest dangers during rough weather operations.
   Ref: BCH 16114.1, E.1, pg 2-26
2. The primary symptoms of fatigue are:
   a. Inability to focus or concentrate/narrowed attention span.
   b. Mental confusion or judgment error
   c. Decreased coordination of motor skills and sensory ability (hearing, seeing).
   d. Increased irritability.
   e. Decreased performance.
   f. Decreased concern for safety.
   Ref: BCH 16114.1, E.3
3. Some preventive measures are:
   a. Adequate rest.
   b. Appropriate dress for weather conditions.
   c. Rotating crew duties.
   d. Providing food and refreshments suitable for conditions.
   e. Observing other crewmembers for signs of fatigue.
   Ref: BCH 16114.1, E.4, pg 2-27
4. Some other environmental conditions that also promote fatigue are:
   a. Motion sickness,
   b. Glare from the sun,
   c. Wind and rough sea conditions,
   d. Fog, Rain or snow,
   e. Vibration and sound (boat engine).
   Ref: BCH 16114.1, E.5, pg 2-28

TASK BCM-01-02-AUX: Motion Sickness

1. Motion sickness occurs when there is an imbalance between visual images and the portion of the middle ear which senses motion. Ref: BCH 16114.5, Introduction, pg 2-6
2. Reading chart work, or other tasks that require close attention, will aggravate motion sickness. Ref: BCH 16114.5, B.1, pg 2-6

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:

Task Number	Task Title	Reading Assignment	See Page
BCM-02-01-AUX	Personal Physical Requirements and Policy	None Assigned	
BCM-02-02-AUX	Personal Physical Fitness and Vision	None Assigned	
BCM-02-03-AUX	Don the Type III PFD	Boat Crew Handbook - Rescue and Survival Procedures, BCH 16114.2 (series)	
BCM-02-04-AUX	Don the Automatic Inflatable PFD, (if applicable)	None Assigned	
BCM-02-05-AUX	Don Anti-Exposure Coveralls (as applicable)	Rescue and Survival Systems Manual, COMDTINST M10470.10 (series) Boat Crew Handbook - Rescue and Survival Procedures, BCH 16114.2 (series)	
BCM-02-06-AUX	Don the Boat Crew Dry Suit (as applicable)	Rescue and Survival Systems Manual, COMDTINST M10470.10 (series) Boat Crew Handbook - Rescue and Survival Procedures, BCH 16114.2 (series)	
BCM-02-07-AUX	Identify Boat Crew Survival Equipment	Boat Crew Handbook - Rescue and Survival Procedures, BCH 16114.2 (series)	
BCM-02-08-AUX	Use the Emergency Signaling Mirror	None Assigned	
BCM-02-09-AUX	Describe the Use of Hand-Held Distress Flares	None Assigned	
BCM-02-10-AUX	Describe the Use of Aerial Flares	None Assigned	
BCM-02-11-AUX	Operate the Personal Marker Light (PML) or Strobe Light	None Assigned	
BCM-02-12-AUX	Operate the Personal Locator Beacon	None Assigned	
BCM-02-13-AUX	State Survival Procedures in Event the Boat Capsizes or Swamps	Boat Crew Handbook - Rescue and Survival Procedures, BCH 16114.2 (series)	

Task Number	Task Title	Reading Assignment	See Page
BCM-02-14-AUX	Perform Water Survival Exercise	Boat Crew Handbook - Rescue and Survival Procedures, BCH 16114.2 (series) Rescue and Survival Systems Manual, COMDTINST M10470.10 (series)	
BCM-02-15-AUX	Crew First-Aid Responsibility	None Assigned	
BCM-02-16-AUX	Sun and Heat related Exercise	None Assigned	
BCM-02-17-AUX	State the Symptoms of Shock	None Assigned	
BCM-02-18-AUX	State the Symptoms of Anaphylactic Shock (Allergic Reaction)	None Assigned	
BCM-02-19-AUX	State the Signs for Burn	None Assigned	
BCM-02-20-AUX	State the Symptoms of Hypothermia	None Assigned	

TASK BCM-02-03-AUX: Don the Type III PFD

1. The Type III PFD is normally worn aboard boats when freedom of movement OR great wearing comfort (e.g., water skiing, hunting, sailing) is required. Ref: BCH 16114.2, A.13, pg 3-7
2. True or False. The Type III PFD will turn a crewmember face up if they fall overboard and are rendered unconscious. Ref: BCH 16114.2,A.13, pg 3-7
3. The Type III PFD has a tendency to allow face-up position OR slightly backward position on the wearer in the water. Ref: BCH 16114.2,A.13, pg 3-7

TASK BCM-02-05-AUX: Don Anti-Exposure Coveralls (as applicable)

1. True or False. Wearing a Type I or III PFD over an anti-exposure coverall is dangerous and unauthorized. Rescue and Survival Systems Manual, COMDTINST M10470.10
2. The anti-exposure coveralls have straps located at the waist, thigh and ankle which should be tightened before entering the water. Ref: BCH 16114.2, B.5 Step 2, pg 3-14
3. The anti-exposure coveralls are ideal for cold weather operations with open cockpit boats. Rescue and Survival Systems Manual, COMDTINST M10470.10

TASK BCM-02-06-AUX: Don the Boat Crew Dry Suit (as applicable)

1. The dry suit, undergarments, PFD, and neoprene hood shall be worn when the water temperature is below 50 ° F and the air temperature is below 50 F. Ref: Rescue and Survival Systems Manual, COMDTINST M10470.10, A.2, PG 2-17
2. The dry suit has watertight seals at the neck and right side. Ref: BCH 16114.2, A.11.a., pg 3-18
3. The dry suit, with thermal gloves, socks, underwear and neoprene hoods provides the best protection for crewmembers in adverse weather and cold water immersion. Ref: BCH 16114.2, pg 2-12
4. A PFD must be worn over a dry suit at all times while underway. Ref: PFD, B.6, pg 3-15 and A.8, pg 3-5

TASK BCM-02-07-AUX: Identify Boat Crew Survival Equipment

1. The boat crew survival equipment provides crewmembers a means to signal their position on the surface of the water day or night. Ref: BCH 16114.2, C, Introduction, pg 3-17
2. The survival knife is is a basic tool used to free the crewmember from entangling lines. Ref: BCH 16114.2, C.22, pg 3-38
3. The emergency signaling mirror is used to attract the attention of passing aircraft, boats, or ground rescue teams. Ref: BCH 16114.2, C.4, pg 3-29
4. Reflected light from the emergency signal mirror can be seen at a distance of five miles or more from the point of origin. Ref: BCH 16114.2, Appendix A, pg A-3
5. It does this by reflecting light at them. Ref: BCH 16114.2, Appendix A, pg A-3 and C.4, pg 3-29
6. To use the mirror, you should face a point about halfway between the sun and the object you wish to signal. Ref: BCH 16114.2, C.6, pg 3-29

TASK BCM-02-13-AUX: State Survival Procedures in Event the Boat Capsizes or Swamps

1. While capsizing, personnel should grab something sturdy. Ref: BCH 16114.2, A.2, 05, pg 4-3
2. Before attempting to escape, an inventory should be made of all survival gear that might be taken along. Ref: BCH 16114.2, A.6, 05, pg 4-5
3. Because air will eventually leak or run out, every effort should be made to conserve oxygen. Ref: BCH 16114.2, A.6a, 04, pg 4-5
4. Sometimes it is necessary to remove your PFD in order to exit. Ref: BCH 16114.2, A.5, 05 pg 4-5

TASK BCM-02-14-AUX: Perform Water Survival Exercise

1. A signal whistle's audible sound may be heard up to 1000 yards. Ref: BCH 16114.2, C.17, pg 3-35
2. Define the acronym HELP in regard to water survival. Heat Escape Lessoning Position Ref: BCH 16114.2, C.4, (05), pg 2-21
3. True or False. Swimming in cold water will warm you up and increase your chances for survival. Ref: BCH 16114.2, C.4, (04), pg 2-20

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:

Task Number	Task Title	Reading Assignment	See Page
BCM-03-01-AUX	State Common Boat Nomenclature and Terminology	Boat Crew Handbook – Seamanship Fundamentals, BCH16114.4 (series)	
BCM-03-02-AUX	Locate and Identify the Purpose of the Equipment Aboard the Boat	Boat Crew Handbook – Seamanship Fundamentals, BCH16114.4 (series)	
BCM-03-03-AUX	Boat Characteristics – Boat Construction	Boat Crew Handbook – Seamanship Fundamentals, BCH16114.4 (series)	
BCM-03-04-AUX	Boat Characteristics – Watertight Integrity	Boat Crew Handbook – Seamanship Fundamentals, BCH16114.4 (series)	
BCM-03-05-AUX	Stability	Boat Crew Handbook – Seamanship Fundamentals, BCH16114.4 (series)	
BCM-03-06-AUX	Identify the Different Parts of a Line and Hitches Used in Line Handling	Boat Crew Handbook – Seamanship Fundamentals, BCH16114.4 (series)	
BCM-03-07-AUX	Tie Various Knots, Hitches, and Bends	Boat Crew Handbook – Seamanship Fundamentals, BCH16114.4 (series)	
BCM-03-08-AUX	Secure Lines to Cleats, Bitts, and Posts	Boat Crew Handbook – Seamanship Fundamentals, BCH16114.4 (series)	
BCM-03-09-AUX	Identify the Types of Breaking Seas, Characteristics, and Causes	Boat Crew Handbook – Seamanship Fundamentals, BCH16114.4 (series)	

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

1. The front end of the boat is the bow. Ref: BCH 16114.4, A.1.a, 3-2, pg 3-2
2. When proceeding toward the bow, you are going forward. Ref: BCH 16114.4, A.1.a, 3-2, pg 3-2
3. The right side of the bow is the starboard bow. Ref: BCH 16114.4, A.1.d, pg 3-2
4. The central or middle area of the boat is amidships. Ref: BCH 16114.4, A.1.b, pg 3-2
5. The left center side of the boat is the port beam. Ref: BCH 16114.4, A.1.b, pg 3-2
6. The rear of the boat is the stern. Ref: BCH 16114.4, A.1.c, pg 3-2
7. The left rear section of the boat is the port quarter. Ref: BCH 16114.4, A.1.c, pg 3-2
8. A line running from one side of the boat to the other is said to be athwartships. Ref: BCH 16114.4, A.1.g, pg 3-2
9. From the center line toward either side is referred to as outboard. Ref: BCH 16114.4, A.1.h, pg 3-3
10. From either side toward the centerline is called inboard. Ref: BCH 16114.4, A.1.i, pg 3-3
11. The side of the boat against a dock is also called inboard. Ref: BCH 16114.4, A.1.i, pg 3-3
12. If you go down inside the boat, you are going below. Ref: BCH 16114.4, A.1.k, pg 3-3
13. If you are up into the rigging of the boat, you are going aloft. Ref: BCH 16114.4, A.1.l, pg 3-3

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

1. A swivel is used to allow the anchor line to spin freely. Ref: BCH 16114.4, D.1, Table 3-1, A.1.i, pg 3-23
2. 75 FT and 100 FT heaving lines are used for passing the towline when maneuverability is restricted. Ref: BCH 16114.4, D.1, Table 3-1, A.1.i, pg 3-24
3. A kicker hook is used to attach a towline to a trailer eyebolt on boats. Ref: BCH 16114.4, D.1, Table 3-1, A.1.i, pg 3-24
4. When securing chafing gear to a line, you should use old hoses, leather, or heavy canvas. Ref: BCH 16114.4, D.1, B-17, pg 2-16
5. Ring buoys are used during man overboard emergencies. Ref: BCH 16114.4, D.1, Table 3-1, pg 3-24

TASK BCM-03-03-AUX: Boat Characteristics – Boat Construction

1. The three basic types of hull forms based on boat speed are displacement, planning, and semi-displacement. Ref: BCH 16114.4, B.1, pg 3-5
2. A displacement hull boat pushes away (displaces) water allowing hull to settle down into the water. Ref: BCH 16114.4, B.7, pg 3-8
3. Heavy displacement hulls cannot exceed a speed of 1.34 times the square root of their waterline length without requiring excessive power. Ref: BCH 16114.4, B.7, pg 3-8
4. Once "on top," the planing hull skims along the surface of the water, whereas the displacement hull always forces water around it. Ref: BCH 16114.4, B.8, pg 3-10
5. The semi-displacement hull is a combination of characteristics of the displacement hull and the planing hull. Ref: BCH 16114.4, B.9, pg 3-11
6. The keel is the backbone of the boat. Ref: BCH 16114.4, B.9, pg 3-11
7. Frames are attached to the keel, which extend athwartships. The skin of the boat is attached to the frames. Ref: BCH 16114.4, B.11.a, pg 3-11
8. The rudder controls the direction of the boat and may vary widely in size, design, and method of construction. Ref: BCH 16114.4, B.15, pg 3-14
9. The three rudder types are balanced, semi-balanced, and unbalanced. Ref: BCH 16114.4, B.7, pg 3-8
10. Pitch is the distance a propeller advances in one revolution with no slip. Ref: BCH 16114.4, B.16.c, pg 3-15
11. Longitudinal frames provide hull strength along the length of the hull. Ref: BCH 16114.4, B.17.b, pg 3-17
12. A deck is a seagoing floor and provides strength to the hull by reinforcing the transverse frames and deck beams. Ref: BCH 16114.4, B.18, pg 3-17
13. Scuttles are small openings. Ref: BCH 16114.4, B.20, pg 3-18

TASK BCM-03-04-AUX: Boat Characteristics – Watertight Integrity

1. 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 watertight compartment. Ref: BCH 16114.4, B.24, pg 3-19

TASK BCM-03-05-AUX: Stability

1. The tendency to remain upright is its (the boat's) stability. Ref: BCH16114.4, Section A, Introduction, pg 4-2
2. Gravity and buoyancy are the two primary forces acting upon a floating boat that affect stability. Ref: BCH16114.4, Section A, Introduction, pg 4-2
3. The center of gravity is the point at which the weight of the boat acts vertically downwards. Ref: BCH16114.4, A.1, pg 4-2
4. The buoyancy is the upward force of water displaced by the hull. Ref: BCH16114.4, A.2, pg 4-2
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 equilibrium. Ref: BCH16114.4, A.3, pg 4-3
6. A boat has two principal types of stability: longitudinal and transverse. Ref: BCH16114.4, A.4, pg 4-5
7. General boat design features that influence stability include:
   (01) Size and shape of the hull,
   (02) Draft of the boat (the distance from the surface of the water to the keel),
   (03) Trim(the angle from horizontal at which a vessel rides),
   (04) Displacement,
   (05) Freeboard,
   (06) Superstructure size,shape,and weight,
   (07) Non-watertight openings.
   Ref: BCH16114.4, A.5.c, pg 4-7

TASK BCM-03-06-AUX: 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 working or bitter end. Ref: BCH16114.4, C.4, pg 2-21
2. The long, unused, or belayed end is called the standing end. Ref: BCH16114.4, C.4, pg 2-21
3. An overhang loop is made by crossing the bitter end over the standing part. Ref: BCH16114.4, C.4, pg 2-21
4. A bight is a half loop formed by turning the line back on itself. Ref: BCH16114.4, C.4, pg 2-23
5. A turn is a single turn and a round turn is a complete turn around an object. Ref: BCH16114.4, C.4, pg 2-23

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

1. The advantage of a bowline is that it does not slip or jam easily. Ref: BCH16114.4, C.5.a, pg 2-24
2. The best all-around hitch for securing a line to a ring, spar, or other round or near round object is the clove hitch. Ref: BCH16114.4, C.5.e, pg 2-28
3. Timber hitches are used to secure a line to logs, planks, or other rough surfaced objects. Ref: BCH16114.4, C.5.g, pg 2-30
4. Becket bends are used to lengthen one line by bending one to another. Ref: BCH16114.4, C.5.h, pg 2-31

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

1. Deck fittings permit easy handling of lines and reduce wear and friction on lines. Ref: BCH16114.4, D.1, pg 2-51
2. When securing a line to a cleat, bitt, or post, you should first take a round turn around the deck fitting. Ref: BCH16114.4, D.2.e, pg 2-54
3. You should finish securing the line by forming several figure eights. Ref: BCH16114.4, D.2.e, pg 2-54
4. To facilitate speed and safety, the dipping the eye method should be used when two mooring lines have to be placed on the same cleat. Ref: BCH16114.4, D.2.g, pg 2-57

TASK BCM-03-09-AUX: Identify the Types of Breaking Seas, Characteristics, and Causes

1. Wave refraction occurs when the wave passes around a point of land, jetty, or moves into shoaling water and interacts with the bottom and slows down. Ref: BCH16114.4, B.3.a, pg 5-16
2. Rip currents are created along a long beach or reef surf zone. Ref: BCH16114.4, B.11.f, pg 5-27
3. The three characteristics which determine wind waves are: Ref: BCH16114.4, B.2, pg 5-13
    a. wind velocity
    b. fetch
    c. duration

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:

Task Number	Task Title	Reading Assignment	See Page
BCM-04-01-AUX	Rig Fenders to Side of the Boat	Boat Crew Handbook – Boat Operations, BCH16114.1 (series) Boat Crew Handbook – Seamanship Fundamentals, BCH16114.4 (series)	
BCM-04-02-AUX	Assist in Anchoring the Boat	Boat Crew Handbook – Seamanship Fundamentals, BCH16114.4 (series)	
BCM-04-03-AUX	Assist in Weighing the Boat's Anchor	Boat Crew Handbook – Seamanship Fundamentals, BCH16114.4 (series)	
BCM-04-04-AUX	Identify the Common Navigation Lights Displayed by Ships and Boats	Promulgation of the Navigation Rules and Regulations Handbook	
BCM-04-05-AUX	Identify the Common Sound Signals Used by Ships and Boats	Promulgation of the Navigation Rules and Regulations Handbook	
BCM-04-06-AUX	Identify and State Accepted Maritime Distress Signals	Promulgation of the Navigation Rules and Regulations Handbook	
BCM-04-07-AUX	Stand a Lookout Watch	Boat Crew Handbook – Boat Operations, BCH16114.1 (series)	
BCM-04-08-AUX	(Boat Handling) Act as a Helmsman and Steer a Compass Course	Boat Crew Handbook – Boat Operations, BCH16114.1 (series) Boat Crew Handbook – Navigation and Piloting, BCH16114.3 (series)	
BCM-04-09-AUX	Get the Boat Away from a Pier/Dock and Secure the Deck	None Assigned	
BCM-04-10-AUX	Prepare for, Moor and Secure the Boat to a Pier/Dock	None Assigned	

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

1. When docking or taking another boat alongside, you should always rig fenders to prevent chafing damage. Ref: BCH16114.4, D.2.c, pg 6-71
2. Fenders should be adjusted to cushion points of contact. Ref: BCH16114.1, B.21.a, pg 3-28
3. Fenders should be secured using a clove hitch or slip clove hitch. Ref: BCH16114.1, C.57.e, pg 3-73 or BCH16114.4, Definitions, pg A-15

TASK BCM-04-02-AUX: Assist in Anchoring the Boat

1. The flukes of the anchor are the parts that dig into the bottom to provide holding power. Ref: BCH16114.4, J.5, part #2, pg 6-121
2. The anchor line, or chafing chain, is secured to the shank. Ref: BCH16114.4, J.5, part #1, pg 6-121
3. A swival is used to attach the chain so that the anchor line can spin freely. Ref: BCH16114.4, J.8, pg 6-123
4. Never stand in the coils of an anchor line. Ref: BCH16114.4, J.14, pg 6-128
5. The anchor line should always form an angle of 8 degrees or less with the bottom. Ref: BCH16114.4, J.14.a, pg 6-128

TASK BCM-04-03-AUX: Assist in Weighing the Boat's Anchor

1. Slack in the anchor line should be taken up as the boat is moved ahead. Ref: BCH16114.4, J.20, step 1, pg 6-131
2. As the line comes onboard, it should be flaked on deck. Ref: BCH16114.4, J.20, step 2, pg 6-131
3. If the anchor refuses to break free, the line should be snubbed around the forward bitt while the Coxswain moves ahead a few feet to break it free. Ref: BCH16114.4, J.21, step 1, pg 6-131

TASK BCM-04-04-AUX: Identify the Common Navigation Lights Displayed by Ships and Boats

1. The purpose of navigational lights is to warn vessels of the presence or approach of another boat. Ref: USCG Rules of the Road, Rule 20
2. Lights must be used from sunset to sunrise and in times of restricted visibility. Ref: USCG Rules of the Road, Rule 20
3. A green sidelight means you are looking at a boat's starboard side. Ref: USCG Rules of the Road, Rule 21
4. A red sidelight means you are looking at a boat's port side. Ref: USCG Rules of the Road, Rule 21
5. A power-driven boat less than 50 meters in length must display red and green sidelights, a masthead light, and a stern light. Ref: USCG Rules of the Road, Rule 23
6. Sailing vessels less than 20 meters (international/inland) in length must display sidelights and stern light. Optionally, these lights may be displayed using a combination light. Ref: USCG Rules of the Road, Rule 25

TASK BCM-04-05-AUX: Identify the Common Sound Signals Used by Ships and Boats

1. A short blast is a blast of about 1 second(s) duration. Ref: USCG Rules of the Road, Rule
2. A prolonged blast is from 4 to 6 seconds in duration. Ref: USCG Rules of the Road, Rule 32
3. If you hear a rapid striking of the gong for at least 5 seconds, you know the vessel is at least 100 meters long. Ref: USCG Rules of the Road, Rule 33
4. A power-driven vessel underway, making way, in conditions of reduced visibility sounds one prolonged blast every two minutes. Ref: USCG Rules of the Road, Rule 35
5. When a power-driven vessel making way in reduced visibility stops to evaluate the situation (not making way) the whistle signal is shifted to 2 prolonged blasts in succession every two minutes. Ref: USCG Rules of the Road, Rule 35
6. Sailing vessels during periods of reduced visibility sound in succession, 1 prolonged and 2 shorts every two minutes. Ref: USCG Rules of the Road, Rule 35

TASK BCM-04-06-AUX: Identify and State Accepted Maritime Distress Signals

1. A gun fired at intervals of about one minute(s) may be used as an emergency signal. Ref: USCG Rules of the Road, Rule 37
2. Rockets, shells, or flares should be of a red color to indicate an emergency. Ref: USCG Rules of the Road, Rule 35
3. A square flag above a ball also can be a distress signal. Ref: USCG Rules of the Road, Rule 35
4. Slowly raising and lowering outstretched arms indicates an emergency. Ref: USCG Rules of the Road, Rule 35
5. The signal ···---··· means S.O.S. Ref: USCG Rules of the Road, Rule 35

TASK BCM-04-07-AUX: Stand a Lookout Watch

1. Lookout(s) shall be stationed and assigned by the Coxswain. Ref: BCH16114.1, D.1, pg 2-10
2. When coming onto a plane, the rise of the bow may limit visibility forward. Ref: BCH16114.4, A.30, pg 6-22
3. It is the lookout's job to report everything seen, smelled or heard to the boat Coxswain. Ref: BCH16114.1, D.2, pg 2-10
4. When making reports, the lookout first names the object, then provides direction, bearing and distance or range to the object. Ref: BCH16114.1, D.2, pg 2-10
5. Lookouts should always remain at their Station until relieved. Ref: BCH16114.1, D.3, (02), pg 2-11
6. If a report to the Coxswain is not acknowledged, it is repeated. Ref: BCH16114.1, D.3, (06), pg 2-11

TASK BCM-04-08-AUX: (Boat Handling) Act as a Helmsman and Steer a Compass Course

1. The arc of the compass card is divided into 360 º. Ref: BCH16114.3, D.5.a, pg 3-55
2. A reading of 000º on the magnetic compass card should point toward magnetic North. Ref: BCH16114.3, D.5.a., pg 3-55
3. The lubber line is in line with the boat's centerline and indicates the boat's heading. Ref: BCH16114.3, D.5.b, pg 3-56
4. To ensure understanding, the helmsman always repeats all orders given to him/her by the Coxswain. Ref: BCH16114.1, D.22, pg 2-22
5. The helmsman should attempt to maintain a course within ± 5 º of ordered course. Ref: BCH16114.1, D.22, pg 2-22
6. The helmsman should not execute any orders unless directed by the Coxswain. Ref: BCH16114.1, D.22, pg 2-22

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:

Task Number	Task Title	Reading Assignment	See Page
BCM-05-01-AUX	Operate a VHF-FM Radiotelephone	None Assigned	
BCM-05-02-AUX	Use the VHF-FM Radiotelephone to Give a Position or Operations Report	Radiotelephone Handbook, TTP 06-01.1	
BCM-05-03-AUX	State Radio Communications Policy and Doctrine	Auxiliary Operations Process Guide: Volume I - General/Surface, AOPG 16798.31 (series)	

TASK BCM-05-02-AUX: Use the VHF-FM Radiotelephone to Give a Position or Operations Report

1. Over is used to end a transmission when a response is required. Ref: Radiotelephone Handbook, TTP 06-01.1., Appendix B pg B-4
2. Out is used to end a transmission when no reply is required or expected. Ref: Radiotelephone Handbook, TTP 06-01.1., Appendix B pg B-4
3. Unofficial conversations between operators are prohibited. Ref: Ref: Radiotelephone Handbook, TTP 06-01.1., pg 2
4. Only approved prowords or abbreviations should be used. Ref: Ref: Radiotelephone Handbook, TTP 06-01.1., pg 2 and Appendix B.
5. The Phonetic alphabet is used to identify letters, or spell a word or group of letters. Ref: Ref: Radiotelephone Handbook, TTP 06-01.1., pg 3.

TASK BCM-05-03-AUX: State Radio Communications Policy and Doctrine

1. How often are position reports required every 30 minutes. The OIA may impose a more stringent reporting requirement. Ref: Auxiliary Operations Process Guide: Volume I - General/Surface, AOPG 16798.31 (series), chapter 10.B.2 pg 10-8.

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:

Task Number	Task Title	Reading Assignment	See Page
BCM-06-01-AUX	Identify the Basic Parts, Symbols and Abbreviations Found on a Nautical Chart	Boat Crew Handbook – Navigation and Piloting, BCH16114.3 (series)	
BCM-06-02-AUX	Identify Common Aids to Navigation Used in Small Boat Piloting	Boat Crew Handbook – Navigation and Piloting, BCH16114.3 (series)	
BCM-06-03-AUX	Identify Local Landmarks Used in Small Boat Piloting	Boat Crew Handbook – Navigation and Piloting, BCH16114.3 (series)	
BCM-06-04-AUX	Plot a Position Using Latitude and Longitude	Boat Crew Handbook – Navigation and Piloting, BCH16114.3 (series)	
BCM-06-05-AUX	Plot a Magnetic Course on a Nautical Chart	Boat Crew Handbook – Navigation and Piloting, BCH16114.3 (series)	
BCM-06-06-AUX	Measure Distance on a Nautical Chart	Boat Crew Handbook – Navigation and Piloting, BCH16114.3 (series)	
BCM-06-07-AUX	Compute Time, Speed, and Distance	Boat Crew Handbook – Navigation and Piloting, BCH16114.3 (series)	
BCM-06-08-AUX	Determine the Depth of Water Using Depth Sounder (If Equipped)	None assigned	
BCM-06-09-AUX	Operate RADAR (If Equipped)	Boat Crew Handbook – Navigation and Piloting, BCH16114.3 (series)	
BCM-06-10-AUX	Operate and obtain a Fix Using GPS (If Equipped)	Boat Crew Handbook – Navigation and Piloting, BCH16114.3 (series)	
BCM-06-11-AUX	Operate Electronic Charting System – if equipped	None assigned	

TASK BCM-06-01-AUX Identify the Basic Parts, Symbols and Abbreviations Found on a Nautical Chart

1. One degree is equal to 60 minutes. Ref: BCH 16114.3, A.2.b, pg 3-2
2. One minute of latitude is equal to 1 NM. Ref: BCH 16114.3, A.3, pg 3-4
3. Lines of latitude are normally indicated by lines running from side to side. Ref: BCH 16114.3, A.3, pg 3-4
4. Latitude scales are normally indicated along the side margins. Ref: BCH 16114.3, A.3, pg 3-4
5. The meridian that passes through Greenwich, England is designated as the Prime meridian or 000 º⁁ (degrees longitude). Ref: BCH 16114.3, A.4, pg 3-5
6. All meridians intersect at the poles. Ref: BCH 16114.3, A.4, pg 3-5
7. Most charts are oriented with North at the top. Ref: BCH 16114.3, B.1, pg 3-8
8. True direction is printed around the outer ring of the compass rose. Ref: BCH 16114.3, A.4, pg 3-5
9. The sounding numbers show the water level at mean low tide. Ref: BCH 16114.3, B.2.b, pg 3-9
10. In regard to tidal datum's, the term "mean" is another way of saying average. Ref: BCH 16114.3, B.2.e, pg 3-9
11. A memory aid to remember chart scale is "Small Scale- Large Area." Ref: BCH 16114.3, B.4, pg 3-13

TASK BCM-06-02-AUX: Identify Common Aids to Navigation Used in Small Boat Piloting

1. The IALA Maritime Buoyage Region B area consists of U.S. and its territories. Ref: BCH 16114.3, Section B, pg 2-18
2. When steering on a range, if the top is left of the bottom mark, then you are left of the center of the channel. Ref: BCH 16114.3, A-29, pg 2-16
3. A cylindrical buoy that tapers to a blunt point at the top is called a nun buoy. Ref: BCH 16114.3, Definitions, pg A-7
4. Channel buoys that are painted green should be taken on the port side of the boat when entering a harbor. Ref: BCH 16114.3, A.8.b, pg 2-6
5. If the top stripe of an obstruction or junction buoy were red, it would indicate that it should be taken on the port side when leaving the harbor. Ref: BCH 16114.3, A.8.b, pg 2-6

TASK BCM-06-03-AUX: Identify Local Landmarks Used in Small Boat Piloting

1. Prominent landmarks such as towers, smokestacks, and flagpoles are pinpointed by a standard symbol of a dot surrounded by a circle. Ref: BCH 16114.3, A.8.b, pg 2-6
2. All symbols and abbreviations found on a nautical chart are defined in Chart No. 1. Ref: BCH 16114.3, A.8.b, pg 2-6
3. How are piers, jetties, and wharves displayed on a nautical chart? Shorthand representations drawn to scale and viewed from overhead. Ref: BCH 16114.3, B.5.i, pg 3-21

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

1. They (lines) are parallel to the Equator and known as latitude. Ref: BCH 16114.3, A.3, pg 3-3
2. To measure latitude, put one point of a pair of dividers on the latitude line nearest the object. Ref: BCH 16114.3, E.4, pg 3-84
3. To measure longitude, put one point of a pair of dividers on the longitude line nearest the object. Ref: BCH 16114.3, E.5, pg 3-86

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

1. Direction, generally referred to as a bearing, is measured in degrees 000 clockwise through 360. Ref: BCH 16114.3, D.13, pg 3-74
2. In boat navigation you will usually use magnetic courses and bearings. Ref: BCH 16114.3, D.13, pg 3-74
3. When measuring magnetic direction using a parallel ruler, place the rule so the edge passes through the center of the compass rose and the bearing number on the inner ring. Ref: BCH 16114.3, E.9.a, step 4, pg 3-95

TASK BCM-06-06-AUX: Measure Distance on a Nautical Chart

1. In piloting distance is measured in nautical miles or yards. Ref: BCH 16114.3, F.11.c, pg 3-318
2. The nautical mile is used for measurement on most navigable waters. Ref: BCH 16114.3, e.8.a, pg 3-88
3. One nautical mile is approximately 2,000 yards. Ref: BCH 16114.3, E.8.a, pg 3-88
4. Distance should be measured using the latitude scale or graphic scales found on the top or bottom of the chart. Ref: BCH 16114.3, E.8.c, pg 3-89
5. When the distance to be measured is greater than the span of the dividers, the dividers should be set at a line above the position and drop the other point down. Ref: BCH 16114.3, E.4, pg 3-85

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

1. In working time, distance, and speed problems when piloting a boat, the distance is always measured in nautical miles, the speed in knots, and the time in hours and minutes. Ref: BCH 16114.3, F-11.c, pg 3-118
2. Distance should be expressed to the nearest tenth of a nautical mile, speed to the nearest tenth of a knot, and time to the nearest minute. Ref: BCH 16114.3, E.4, pg 3-8
3. The nautical slide rule was designed to solve time, distance, and speed problems. Ref: BCH 16114.3, F.13 3-125

TASK BCM-06-09-AUX: Operate RADAR (If Equipped)

1. The advantages of radar are: Ref: BCH 16114.3, C.7, pg 3-39
   a. Can be used at night or periods of reduced visibility.
   b. Fixes can be obtained using range and bearings.
2. The disadvantages of radar: Ref: BCH 16114.3, C.7, pg 3-39
   a. Charts do not always give information necessary for the identification of radar echoes.
3. The center of the screen represents the position of your vessel. Ref: BCH 16114.3, C.7.r, pg 3-45
4. Buoys with radar reflectors will appear out of proportion to their actual size. Ref: BCH 16114.3, C.7, pg 3-39
5. Radar bearings are measured true, magnetic, or relative the same as you would visual bearings. Ref: BCH 16114.3, C.7.o, pg 3-44

TASK BCM-06-10-AUX: Operate and obtain a Fix Using GPS (If Equipped)

1. GPS is a radio navigation system of 24 satellites operated by the Department of Defense. Ref: BCH 16114.3, C.6, pg 3-35
2. In a process called "ranging", a GPS receiver on the boat uses the signal to determine the distance between it and the satellite. Ref: BCH 16114.3, C.6, pg 3-35`
3. Once the receiver has computed the range for at least four satellites, it processes a three-dimensional position that is accurate, at best, to about 33 meters for GPS SPS. Ref: BCH 16114.3, C.6, pg 3-35.

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-AUX	Participate in a Man Overboard (Direct Pickup)	Boat Crew Handbook – Boat Operations, BCH16114.1 (series)	
BCM-07-02-AUX	Participate in a Man Overboard Evolution (Indirect Pickup)	Boat Crew Handbook – Boat Operations, BCH16114.1 (series)	
BCM-07-03-AUX	Stand a Towing Watch	None assigned	
BCM-07-04-AUX	Bend a Heaving Line to a Bridle and Pass the Heaving Line to Another Boat	Boat Crew Handbook – Boat Operations, BCH16114.1 (series)	
BCM-07-05-AUX	Pass a Towline to Another Boat	Boat Crew Handbook – Boat Operations, BCH16114.1 (series)	
BCM-07-06-AUX	Connect a Towline to a Trailer Eyebolt Using a Skiff Hook	Boat Crew Handbook – Boat Operations, BCH16114.1 (series)	
BCM-07-07-AUX	Secure an Alongside Tow	Boat Crew Handbook – Boat Operations, BCH16114.1 (series)	
BCM-07-08-AUX	Identify the Different Classes of Fires and State the Fuel and Primary Extinguishing Agents Associated with Each	Boat Crew Handbook – Boat Operations, BCH16114.1 (series)	
BCM-07-09-AUX	Locate and Identify the Firefighting Equipment Carried Onboard the Boat	None assigned	
BCM-07-10-AUX	Operate a Dry Chemical Fire Extinguisher (Simulate)	Boat Crew Handbook – Boat Operations, BCH16114.1 (series)	
BCM-07-11-AUX	Locate and Operate the Boat's Bilge Pump	None assigned	
BCM-07-12-AUX	Demonstrate the Appropriate Responses to the Applicable Basic Engineering Casualty Control Exercises (BECCE)	None assigned	

TASK BCM-07-01-AUX: Participate in a Man Overboard (Direct Pickup)

1. The first crewmember to observe a person overboard should give the alarm by yelling "man overboard" followed by either "port side" or "starboard side". Ref: BCH 16114.1, A.3, pg 4-4
2. The pointer will keep the victim in sight and continuously point to the victim's position. Ref: BCH 16114.1, A.3/A.9, pg 4-4/4.6

TASK BCM-07-02-AUX: Participate in a Man Overboard Evolution (Indirect Pickup)

1. The recovery/pickup person prepares the rescue heaving line for casting to the victim. Ref: BCH 16114.1, A.15.b, pg 4-10
2. After the victim has been brought alongside the boat, the recovery/pickup person should pull the PIW aboard. Ref: BCH 16114.1, A.26, pg 4-18

TASK BCM-07-04-AUX: Bend a Heaving Line to a Bridle and Pass the Heaving Line to Another Boat

1. You cannot tow beyond the design characteristics of any towing boat simply by increasing the line size. Ref: BCH 16114.1, B.1, pg 3-13
2. The towline should be inspected frequently for damage resulting from cutting chafing, flattening, fusing, snagging, and hardening.
   Ref: BCH 16114.1, B.1.b, pg 3-14
3. A towing bridle should be used in cases where a single attachment point is not available on the boat to be towed. Ref: BCH 16114.1, B.2, pg 3-15`
4. The messenger line is simply a length of light line, which can be thrown, propelled, or floated further than the tow line. Ref: BCH 16114.1, B.7, pg 3-20
5. The heaving line should be wet to make it more flexible and less susceptible to becoming tangled. Ref: BCH 16114.1, C.20.b, pg 3-43

TASK BCM-07-05-AUX: Pass a Towline to Another Boat

1. Where conditions permit and the towing boat can maneuver enough, the towline should be passed carefully to one of the people on the other boat. Ref: BCH 16114.1, C.20.a, pg 3-43
2. Before attaching the towline, make certain the fitting attachment it is to be attached to is secured to the deck with through bolts and backing plates. Ref: BCH 16114.1, C.27, pg 3-49
3. When attaching to tow bow cleats or bitts, a bridle should be used. Ref: BCH 16114.1, B.2, pg 3-15
4. A pendant is used to reduce wear and chafing at the towline end. Ref: BCH 16114.1, B.7, pg 3-20

TASK BCM-07-06-AUX: Connect a Towline to a Trailer Eyebolt Using a Skiff Hook

1. The trailer eyebolt is normally located on the bow. Ref: BCH 16114.1, D.8, pg 3-21
2. Never use a skiff hook for any operation that exceeds the stress load of towing small trailerable boats. Ref: BCH 16114.1, B.10, pg 3-22
3. Attach the skiff hook line to a towline with a shackle or double becket/sheet bend. Ref: BCH 16114.1, B.7, pg 3-20

TASK BCM-07-07-AUX: Execute an Alongside Tow and Moor a Towed Vessel

1. When taking a boat alongside, the tow strap takes the strain of forward movement. Ref: BCH 16114.1, C.59.a, pg 3-75
2. When taking a boat alongside, the backing strap takes the strain of backing down. Ref: BCH 16114.1, C.59.a, pg 3-75
3. Always rig fenders to prevent hull damage. Ref: BCH 16114.1, B.21.a, pg 3-29
4. When shortening the tow, you should take in the slack from the towline to bring the disabled boat alongside. Ref: BCH 16114.1, C.59.a, pg 3-66
5. When securing the boat alongside using a backdown approach, you should lead the towline forward to use as the bow line. Ref: BCH 16114.1, C.57.b, pg 3-72

TASK BCM-07-08-AUX: Identify the Different Classes of Fires and State the Fuel and Primary Extinguishing Agents Associated with Each

1. Fire is a chemical reaction known as combustion. Ref: BCH 16114.1, D.1, pg 5-24
2. The four elements of a fire are oxygen, heat, fuel, and chain reaction. Ref: BCH 16114.1, D.1.a, pg 5-24`
3. Fires fueled by common combustible materials, such as wood, cloth, or paper, are classified as Class A fires. The best extinguishing agent for this class fire is water. Ref: BCH 16114.1, F.1, pg 5-26
4. Fires fueled by flammable or combustible liquids, flammable gases, or similar material are classified as Class B fires. The primary extinguishing agent for this class fire is dry chemical. Ref: BCH 16114.1, F.1, pg 5-26
5. Fires involving combustible metals, with fuel sources such as sodium, potassium, or magnesium, are classified as Class D fire. Given that these type fires are not easily extinguished, the best agents to use for control of the fire are water or sand. Ref: BCH 16114.1, F.1, pg 5-26
6. Fires involving energized electrical equipment, such as conductors or appliances, are classified as Class C fires. Ref: BCH 16114.1, F.1, pg 5-26
7. The principal remedy for Class C fires is to secure the power and to apply CO2 to the fire. Ref: BCH 16114.1, F.1/F11, pg 5-26/5-40

TASK BCM-07-10-AUX: Operate a Dry Chemical Fire Extinguisher (Simulate)

1. The effective range for a dry chemical fire extinguisher is 10 or 12 FT. Ref: BCH 16114.1, F.12.a, pg 5-43
2. When using dry chemical approach the fire as close as safety will allow. Ref: BCH 16114.1, F.12.b, pg 5-44
3. The dry chemical should be pointed at the base of the flame and use a sweeping movement. Ref: BCH 16114.1, F.12.b, pg 5-44

Section H. Reading Assignments – Auxiliary Specific Tasks

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-08-01-AUX	Basic Knowledge of Boating Skills	None Assigned	
BCM-08-02-AUX	Perform as a Crewmember During a Navigation and Piloting Exercise	None Assigned	
BCM-08-03-AUX	Dockside Oral Examination	None Assigned	
BCM-08-04-AUX	Underway Check Ride	None Assigned	