California State University
Maritime Academy

2017 3/C
DECK CRUISE TRAINING MANUAL

CRU 100 SEA TRAINING I (DECK)

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Syllabus

California Maritime Academy
Department of Marine Transportation
CRU 100, Sea Training 1, Summer 2017

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Prerequisites:	DL 100, DL 105, DL 105L, DL 105X, DL 109, DL 110, DL 115, DL 120, NAU 104, NAU 105, NAU 110

Moodle
Copies of the course materials such as the syllabus, major assignment handouts, etc. may be found on Moodle, which is the course management software used for Cal Maritime courses. You are responsible for regularly checking Moodle for course updates. To access Moodle, go the ship's intranet.

Course Description
Comprises the first sea training experience for the student. During this period of training aboard the Training Ship GOLDEN BEAR, the emphasis is on ship familiarization, safety drills and training, basic deck watchstanding skills as helmsman and lookout, vessel maintenance and sanitation, and practical seamanship. Students will be required to demonstrate competencies in selected STCW topics.

Student Learning Outcomes (SLO)
At the successful conclusion of the course, the student should be competent to stand watch as a helmsman and lookout, adequately participate in work projects and programs, and proficient in the training objectives of the Practical, and Navigation Training programs. Those training objectives are listed for each module in this handbook.

Required Textbooks

American Practical Navigator (Bowditch). Free electronic version is available here:
https://msi.nga.mil/NGAPortal/MSI.portal?_nfpb=true&_st=&_pageLabel=msi_portal_page_62&pubCode=0002

Chart 1. Free electronic version is available here:
https://msi.nga.mil/NGAPortal/MSI.portal?_nfpb=true&_st=&_pageLabel=msi_portal_page_62&pubCode=0004

Murphy's Deck Volume 4, Rules of the Road

Smith, Hervey. The Marlinspike Sailor, 1st edition.

International Code of Signals. Free electronic version is available here: https://msi.nga.mil/NGAPortal/MSI.portal?_nfpb=true&_st=&_pageLabel=msi_portal_page_62&pubCode=0006

USCG Navigation Rules and Regulations Handbook. Free electronic version is available here: https://www.navcen.uscg.gov/pdf/navRules/CG_NRHB_20151231.pdf

Recommended Textbooks

Cutler, Thomas. Dutton's Navigation and Piloting, 15th edition.

Other equipment / material requirements
One pad Radar Transfer Plotting Sheets (Rapid Radar Plotting Sheets)
Calculator (TI 30XA)
Plotting gear (two triangles and one set of dividers/compass)
Charts: 12221TR, 12354TR, 12305TR

Classroom Protocol
Students are required to attend all assigned watches and training sessions. Unexcused absences or excessive tardiness may result in course failure. In addition, the student may be referred to the student conduct system. Students are expected to arrive on time and fully prepared.

The instructor may excuse students with valid medical chits that indicate they are not fit for duty. However, the student will be expected to complete any required course components that were missed.

Dropping and Adding Classes
Students are responsible for understanding the policies and procedures about add/drops, academic renewal, etc. Information on add/drops are available on the campus website.

Students should be aware of the current deadlines and penalties for adding and dropping classes.

Assignments and Grading Policy
There will be approximately 45 sea days for CRU 100. Each student will spend approximately 10 days on watch, 10 days on daywork, 10 days on practical training, and 10 days on navigation and simulation training. The student's performance will be evaluated through direct written and oral evaluations, periodic quizzes, multiple choice and short answer exams, written homework, computer-based-training (CBT) and practical demonstrations. By successfully completing each component of the course, a student will demonstrate an acceptable level of competency expected of a sophomore deck student matriculated at this point in the deck license training program.

CRU 100 will be graded on a credit/no-credit basis. To receive credit for this course, a student must successfully pass every component of the course. That includes watches, quizzes and exams, written requirements, practical demonstrations, all training modules, daywork, drills, CBT and routine assignments such as Compartment Cleaning (CC).

Students will be given two opportunities to pass each written exam or quiz (minimum score = 70%). The first opportunity will be during the assigned time. Specifics for each exam can be found in this Cruise Handbook. The second opportunity will be at a time determined by the DTOs. Failure to appear at the 2nd assessment, as directed, will result in failing the 2nd assessment. Failing the retest will result in a failure for that training module, and, therefore, CRU 100.

By use of written exams/quizzes and/or additional demonstrated competencies, the faculty or staff in charge (discussed later in this Cruise Handbook) will determine if you have the minimum knowledge and skill base required for that component. The expectations for each training module are described in this Cruise Handbook. If a DTO observes, or is notified of, a deficiency, either in knowledge or in participation, he/she will issue a Corrective Action Required (CAR) note that will describe what you need to do to improve. It is expected that the student will correct their action(s) at the earliest opportunity. Receiving an excessive number of CARs in a module, or even a single CAR for an egregious act, may result in a failure of that module. It must be emphasized that perfection is not expected in every task, but, instead, adequate preparation and full participation to the best of the student's ability in order to meet the minimum requirements for each training module.

Should a student not meet the requirements for any component of the course, that information will be sent to a Cruise Review Committee consisting of three faculty who will consider the circumstances and totality and quality of the work completed, mitigating circumstances surrounding the student's work, as well as any other relevant information. In its evaluation of student work, the Committee may review the student's records and interview students, faculty, and staff. The Cruise Review Committee will not consider student disciplinary issues. The Cruise Review Committee will prepare a written record of its proceedings and findings, which will be maintained by the CRU 100 Instructor of Record. The Cruise Review Committee will consist of three deck faculty members (or their designate(s) as needed due to conflicts of interest, availability, etc.). After reviewing the above, the Committee may recommend, to the CRU 100 Instructor of Record, awarding a "Credit", or "No Credit" or an "I" (Incomplete) grade. The normal Grade Appeal Process applies to all Cruise grades.

Computer Based Training: Selected components of this course include computer-based-training (CBT). CBTs are to be completed per the schedules provided on Moodle by the Lead DTO at the commencement of Cruise. Dates of completion are subject to change to reflect alterations in the training program and/or technical difficulties.

All CBTs are to be completed on your personal computer or in the Computer Lab. Due to the limited number of CBT accesses cadets are encouraged to complete their modules early. Computer or connectivity problems should be directed to the IT Help Desk (ext. 1826).

Students are encouraged to maintain printed copies of their successfully completed CBT modules as proof of completion. While the administrative tracking software works well, some students fail to register their work correctly. It is the student's responsibility to provide these printed forms in the event of a disputed completion.

Failure to complete an assigned CBT by the posted date will result in the reduction of liberty by two hours from the end of the expiration period on the student's next liberty day. Additionally, you will be required to complete the assigned module within 48 hours of 0800 of the day of sailing from the same port or the same reduction of liberty will apply on your next liberty day. Failure to complete multiple CBTs will apply aggregately. All reductions to liberty for summer cruise run consecutively, not concurrently. Failure to complete any CBTs after the last liberty port will result in a grade of Incomplete ("I") for CRU 100.

STCW Assessments: Pass/Fail STCW competencies will be assessed during this at-sea training period. Information on STCW assessments scheduled to be conducted during the training rotations will be found throughout this manual.

Cruise Training Manual: The 2017 3/C Cruise Training Manual, of which this Marine Transportation Syllabus is a portion, is incorporated in its entirety into this syllabus.

University Policies

Academic integrity
Students should know that the University's Academic Integrity Policy is available at https://www.csum.edu/c/document_library/get_file?uuid=ae78af01-0291-4d0f-ad97-060861e514d2&groupId=42499 Your own commitment to learning, as evidenced by your enrollment at Cal Maritime and the University's integrity policy, require you to be honest in all your academic course work. Instances of academic dishonesty will not be tolerated. Cheating on exams or plagiarism (presenting the work of another as your own, or the use of another person's ideas without giving proper credit) will result in a failing grade and sanctions by the University. For this class, all assignments are to be completed by the individual student unless otherwise specified.

Campus Policy in Compliance with the American Disabilities Act
California Maritime Academy is committed to providing reasonable accommodations to students with documented disabilities. Students who believe they may need accommodations are encouraged to contact Siobhan Case, Disability Services Office (DSO) in the Student Engagement & Academic Success Center via email scase@csum.edu, preferably within the first two weeks of class.

SHIP ISSUED EQUIPMENT/GEAR

All persons on cruise are personally responsible for the timely return and maintenance of any issued academic equipment. Marks, damage, stray stencils or artwork, tears, burns, etc. will not be tolerated and any charges incurred by the MT Department will be passed on to the involved party.

ITEMS TO BRING ON CRUISE

This list is in addition to required uniforms, etc. and is by no means exhaustive, but rather a list of suggestions from faculty of things you may otherwise overlook.

- **Do Not Bring Any Laundry Detergent or Cleaning Gear!** Shipboard systems require use of certain chemicals for proper function. Bleach or substances of an incorrect pH render treatment systems ineffective and may damage the system.

Personal Effects

- Medical prescriptions (must be cleared with medical staff prior to cruise)
- Small pocket flashlight, spare batteries, and red and white lenses
- Phone card or the like (some places you can't make collect calls)
- Camera, spare batteries (as needed)
- Battery powered alarm clock
- Watch (so you are not late for class, duties or from liberty)
- Personal sewing kit
- Sunscreen
- Lip protectant
- Writing utensils, envelopes, etc.
- Address book
- Calendar/diary
- Earphones for any audio equipment and computers
- Toiletries, vitamins for 65 days

Clothing

- Uniforms, coveralls, undershirts
- Rain gear
- Long sleeved shirts for E/R tours, drills, etc.
- Swimsuit, fins, mask, etc.
- Comfortable walking shoes for port adventures. Open-toed shoes are often not allowed (no sandals without heel strap).
- Beach towel
- Spare eyeglasses or contact lenses

- Woolen cap
- Baseball cap
- Good UV blocking sunglasses with keeper
- Properly fitting work gloves
- Safety-toe work shoes

Required Texts and Gear

For Navigation

- Good digital watch with stopwatch feature; illuminated dials are nice, as are dual-time capabilities
- Calculator (TI 30XA)
- Plotting gear (two triangles and one set of dividers/compass)
- Small flashlight with red lens

For Training Modules

- Paper for notes, drawings, etc.
- Pens, pencils, erasers
- Folding knife with a safety tip (rounded)

Books & Publications (See pages 4-5)

- The Marlinespike Sailor or other marlinespike/knot-tying text
- Bowditch
- Rules of the Road
- One pad Radar Transfer Plotting Sheets (Rapid Radar Plotting Sheets)
- American Merchant Seaman's Manual
- Charts: 12221TR, 12354TR, 12305TR
- Chart No. 1

PROGRAM DESCRIPTION & REQUIREMENTS

Introduction

The deck training program requires students to participate actively in all aspects of their training. We recognize that many of you will be doing these activities for the first time, or perhaps some of you have sailed before but your skills are rusty. That's OK. It is expected, however, that you will diligently, and actively, participate in each activity to the best of your ability. We will be looking to find an adequate level of competency and to see personal growth as you develop new professional skills that you will be adding to your professional "tool bag."

Rotational Format

Each cadet will be assigned to one of four training groups. Each training group will rotate through the four activity cycles (two rotations of five days each). Extra sea days and duties are marked as such on the Deck Training Schedule. Students must pass all four rotations as well as other ongoing requirements (e.g. CBTs) as determined by the supervisor for each rotation/requirement. (E.g. the Watch Coordinator will monitor a student's progress on the watch rotations.) The Deck Training Officers (DTOs) will monitor each student's progress overall. Cruise Deck Faculty meetings will be held periodically to review students' progress.

There will be approximately 43 at-sea days (including the three Underway Training Days) each cruise. Each student will spend approximately 10 days on Watch, 10 days on Daywork, 10 days on Practical Training, and 10 days on Navigation Training. The rotation and watch bills will be posted. Any scheduling concerns should be brought to the attention of the Instructor of Record/Lead DTO.

Watch:
- Bridge Watches (at sea and in port)
- Navigation Watches
- Safety Watches
- Security Watches

Daywork:
- Daywork
- Compartment Cleaning
- 3/C FMB Simulation Assignment

Practical Training:
- Deck Training
- Professional Training

Navigation and Simulation:
- Navigation Training
- Radar Simulation

Ongoing During the Rotation Cycles:

Underway Training
STCW Assessments
Computer-Based Training (CBT)

WATCH ROTATION

At Sea Bridge Watch

Rotations begin and end at 0000. Note, however, that the watch is relieved 15 minutes prior to the hour. The oncoming watch should be on the port bridge wing 10 to 15 minutes prior to watch turnover to ensure their eyes are adjusted and a proper turnover is accomplished. (E.g. **If you have the 0000-0400 watch, be on the bridge wing at 2330**.)

The watch rotation is activity is designed to develop bridge familiarization, steering, and watch proficiency skills. The Cadet Watch Officer (CWO), under the direction of the Licensed Watch Officer (LWO), evaluates each 3/C bridge watch. The primary purpose of these evaluations is to assist the students in attaining proficiency. Conduct of the watch is evaluated based on compliance with the Standing Orders and industry standards. Should a student's bridge evaluations be determined to be substandard, additional watches may be assigned for assessment purposes. 3/C cadets will be evaluated on criteria found in 3/C Bridge Watch Evaluation Form (Appendix 1).

During the watch, the Assistant Licensed Watch Officer (ALWO) will be conducting training on watch standing and navigation and conducting STCW assessments.

STCW Steering Assessment

During the course of cruise, each 3/C cadet will be assessed in their ability to perform the duties of helmsman. To meet the requirements of the STCW, each student will have to demonstrate their ability to understand and execute helm orders, change the ship’s heading to a new course, and maintaining the ship’s heading on a given course. In addition to standard helm orders, each student must also demonstrate their ability to shift from hand steering to auto pilot and back.

STCW Lookout Assessment

During the course of cruise, each 3/C cadet will be assessed in their ability to perform the duties of lookout. To meet the requirements of the STCW, each student will have to demonstrate their ability to accurately report large and small objects and light/sound characteristics, and identify basic vessel running light configurations and sound signals.

Helm/Steering and Lookout Exams

Prior to leaving the dock in Vallejo exams on basic lookout duties and helmsman/steering commands and procedures will be given to all 3/C deck cadets. Basic information for each position is described in many of your texts (American Merchant Seaman’s Manual, Knights Modern Seamanship, etc.). Great emphasis is placed on these exams as they are the most

important duties for the safe navigation and conduct of the ship while underway. A 70% grade is required to pass.

Potential topics for this exam include, but are not limited to:

- Steering commands, required responses and actions
- Lookout duties
- Lookout reports
- Relative bearings
- Compass points
- Communication procedures

Safety Watch

Each 3/C cadet will be assigned to at least one safety watch under the direction of the 1/C Cadet Safety Officer. The Chief Mate will describe and assign the duties for this position.

Security Watch

Each 3/C cadet will be assigned at least one security watch under the direction of the 1/C Cadet Security Officer. The Ship Security Officer (SSO) will describe and assign the duties for this position.

In Port Watches

In port duty days begin and end at 0800. Note, however, that the watch is relieved 15 minutes prior to the hour. The oncoming watch should be on the bridge or the quarterdeck 10 to 15 minutes prior to watch turnover to ensure a proper turnover is accomplished. (E.g. **If you have the 0000-0400 watch, be at the assigned station at 2330**.)

Duties and responsibilities:

- The watch is to be stood. No sitting.
- Chairs or stools are not permitted in the wheelhouse, chartroom or quarterdeck.
- Use of bridge and chartroom computers is not permitted without specific permission of the Licensed Watch Officer.
- Follow instructions of LWO, CWO and senior cadets on watch.
- Maintain security lookout and monitoring from alternating bridge wings.
- Conduct safety and security rounds as directed.
- Answer phone.
- On the bridge, make coffee for watch.
- Turn on lights from bridge circuits.
- Tend flags as directed.

STCW Assessments During Watch Rotation

During the watch rotation, each student will be assessed on the following STCW competencies:

Item	STCW TABLE A-II/4 TASKS	STCW Competency
1	Steady on a new course	RFPNW 1.1.A
2	Steer a course by gyrocompass	RFPNW 1.1.B
3	Steer a course by magnetic compass	RFPNW 1.1.C
4	Right (starboard) rudder	RFPNW 1.2.A
5	Left (port) rudder	RFPNW 1.2.B
6	Ease to 5	RFPNW 1.2.D
7	Midships the wheel	RFPNW 1.2.E
8	Shift you rudder	RFPNW 1.2.F
9	Meet her or check her	RFPNW 1.2.G
10	Steady as she goes	RFPNW 1.2.H
11	Nothing to the right/left	RFPNW 1.2.I
12	Change from auto pilot to hand steering	RFPNW 1.3.A
13	Change from hand steering to auto pilot	RFPNW 1.3.B
14	Relief of the lookout	RFPNW 3.4.A
15	Relief of the helmsman	RFPNW 3.4.B
16	Environmental protection at sea	RFPNW 3.6.A
17	Environmental protection in port	RFPNW 3.6.B

DAYWORK ROTATION

Rotations are run by the Chief Mate. Attendance is mandatory. Illness, with a doctor's note, is the only reason for missing daywork. Even with that, more than one absence may result in an incomplete for cruise. This incomplete must be corrected during the first six weeks of the fall semester. Failure to make up the work will result in a no-credit grade for cruise.

Cleaning Crew (CC)

The Cleaning Crew (CC) consists of 3/C cadets from all majors and from all schools on cruise. Under the direction of the Master-at-Arms (MAA), the CC ensures the common areas of the ship are kept neat, clean, and sanitary. The CC is also responsible for carrying out any other duties as assigned by the MAA. The work day for the CC begins at 0600 with a muster with the MAA in the 3/C Mess and generally ends at 0015 when the night meal is secured. Further instructions will be given by the Commandant.

3/C FMB Simulation Assignment

The 3/C Full-Mission Bridge (FMB) Simulation Assignment gives cadets one or two additional opportunities to perform the duties of the helmsman. The assigned 3/C cadet will join the 1/C simulation team in the NavLab and function as helmsman during the exercise. For this task, the 3/C cadet will report in khaki uniform and appropriate footwear to the Training Bridge. A schedule of this assignment and reporting times will be posted. The 3/C cadet should review basic information for the helmsman as described in many of your texts (American Merchant Seaman's Manual, Knights Modern Seamanship, etc.) and Appendix 2 prior to reporting to this duty.

PRACTICAL TRAINING ROTATION

The Practical Training Rotation is designed to introduce and reinforce various professional "on deck" knowledge and skill sets and as an introduction to industry related topics. The rotation will be administered by the Deck Training Officers (DTOs) and will convene at the location designated by the Deck Training Schedule unless otherwise directed. Prior to attending each training module, you should read about it in this Training Manual. It also describes any exam or quiz that will be given, when it will be given, and how you will be assessed. It is very important that you prepare yourself adequately for the module. This means that you should review the reference material for that module prior to its beginning. This is your responsibility! Due to operational considerations, modules may be modified, delayed, re-ordered or eliminated. The DTOs will notify students of substantial changes as soon as practicable.

Following this page are the 3/C practical training modules overviews, as follows:

Training Activity	**Number of Modules** (Each module = ½ day of training)
Basic Communications	2
Block and Tackle	1
Canvas Bag	1
Firefighting	3
Ground Tackle	1
Knots, Bends, and Hitches	1
Modern Splicing	2
Mooring	4
SCBA	1
Splicing	3
Trick Wheel	1

STCW Assessments During Practical Rotation

During the rotation, each student will be assessed on the following STCW competencies:

Item	STCW TABLE A-II/5 TASKS	STCW Competency
1	Describe characteristics and function of line handling equipment	ASD 2.2.D
2	Describe berthing operations	ASD 2.3.A
3	Describe unberthing operations	ASD 2.3.B
4	Describe procedures for mooring to a buoy	ASD 2.5.A
5	Demonstrate operation of deck equipment, including hatches, watertight doors, ports, and related equipment	ASD 4.3.A
6	Demonstrate use of a heaving line	ASD 5.5.A
7	Demonstrate pulling mooring lines	ASD 5.5.B
8	Demonstrate use of a messenger line	ASD 5.5.C
9	Adjust tension on mooring lines	ASD 5.5.D

Basic Communications

Subject:	Basic Communications
Concept:	To reinforce the student's understanding and increase knowledge of vessel internal and external communications.
Time Allotted:	Two modules
Training Objectives:	The student will: 1. Demonstrate proficiency in general communications. 2. Learn about vessel communication equipment. 3. Learn about proper formatting and internal communication procedures. 4. Learn about proper formatting and external communication procedures. 5. Learn about IAMSAR.
Material Needed:	Materials for note-taking.
Student Provided Equipment:	The student will report in khakis.
Assessment:	The student shall demonstrate, through preparation, participation and a completion of the exercises, a proficiency in the subject matter described above. Students failing to participate as described above will receive a failing grade for this component of CRU 100.

Blocks and Tackle

Subject: Blocks and Tackle

Concept: To reinforce the students' basic understanding and increase their knowledge of the different types of blocks and tackle and their uses. This study will also include mechanical advantages and the ways to increase it.

Time Allotted: One module

Training Objectives: The student will:

1. Identify and name the different types of block and tackle arrangements as listed in the USCG Deck Illustration Book and seamanship manuals.

2. Reeve the block and tackle arrangements as in the above references.

3. Splice into the becket using three-strand lines as required to reeve the various block and tackle arrangements.

4. Prove the mechanical advantage formulas for the various block and tackle arrangements.

5. Prove the mechanical advantage formulas while combining different block and tackle arrangements.

Material Needed: Provided various blocks, three-strand manila line, scale, weights, various shackles and straps, beam clamps, and tape.

Student Provided Equipment: The students will report in the proper work uniform and be prepared to take notes as required.
Seamanship books, USCG Deck Illustration Book, notes from Seamanship and Marlinespike class and a knife.

Procedure:

1. The students will meet at the location specified on the training schedule, unless otherwise directed by the instructor.

2. Students will break out all the necessary equipment and bring it to the main deck aft of the paint locker. At the end of the module, students will stow the equipment.

3. The students will be divided into small groups. Groups will be called upon to correctly reeve the tackles as determined by the Deck Training Officer. This will include splicing into beckets when required.

4. Individual groups will prove the mechanical advantage formulas of their tackle by lifting weights from the deck. Using the small spring scale, the groups will determine the power needed to lift the weight off the deck.

5. Individual groups will prove the mechanical advantage formulas for combined tackle by marrying two tackles together.

Assessment: The students shall demonstrate, through active participation, the aspects of blocks and tackle as listed in the training objectives.

Student Assignment: The students will read appropriate chapters in their Seamanship Manuals and review their notes on these subjects. Students will familiarize themselves with the blocks and tackle as listed in the USCG Deck Illustration Book and their Seamanship Manuals and notes. All review must be completed prior to the start of the first module.

Canvas Bag Project

Subject:	Canvas Bag Project
Concept:	The student will be required to design and make from scratch, within the guidelines described by the instructor, a hand stitched canvas bag. **All materials used for this project will be furnished by the DTOs.**
Time Allotted:	One module (Note: During the module, the DTO will inform the students of the project's completion date.)
Training Objectives:	The students will: 1. Demonstrate their ability to work with canvas by designing and creating a canvas bag. 2. Demonstrate their ability to plan, lay out, and cut canvas for their project. 3. Demonstrate their ability to using a sewing palm, needle, and sail twine while constructing the canvas project. 4. Demonstrate their ability to use a variety of stitches, as described by the Deck Training Officer, while making their canvas bag. 5. Demonstrate their ability to use grommets by incorporating both brass and/or hand sewn grommets into their project. 6. Demonstrate their ability to use punches and dies when incorporating brass grommets into the canvas bag project. 7. Demonstrate their ability to follow instructions while creating a unique canvas bag.
Material Needed:	Seamanship Manual(s), punches and dies, and brass grommets.
Student Provided Equipment:	The students will report in the proper work uniform and be prepared to take notes as required. Sewing-palm, needle, knife, sail twine, and canvas (size #4 measuring 36 inches by 48 inches) will be available.
Procedure:	Students will meet in the Fo'c'sle. During this time, students working individually and under the direct supervision of the Deck Training Officer

will be given instructions in the use of canvas. These instructions will include:

- types and number of stitches required;
- use of punches and dies;
- insertion of brass grommets;
- use of hand sewn grommets;
- use of sewing palm and needle; and
- ideas in designing canvas sea bags.

Assessment: The canvas bag project grade will be based the student's ability to follow directions and in his/her ability to create a unique canvas bag. Additionally, a grade of 70% or better will be based on:

- the student's ability to follow instructions;
- on-time completion of the project;
- uniqueness;
- neatness;
- number and types of stitches; and
- use of grommets.

Student Assignment: The students will read appropriate chapters in their Seamanship Manual prior to the start of this module.

Fire Fighting

Subject: Third Class Fire Fighting

Concept: To provide the student with a basic understanding of the concepts and practice of marine fire fighting, fire fighting equipment, fire team operations, teamwork, and fire safety.

Time Allotted: Three modules

Training Objective: The student will:

1. Demonstrate the ability to properly use fire fighting equipment, including hoses, nozzles, fog applicators, SCBAs and fire fighting hand tools.
2. Become familiar with fire fighting techniques on various classes of fires in both internal and external locations.
3. Become part of a fire team under the direction of a 1/C Cadet.
4. Communicate with the fire team leader and fire team members as required.
5. Participate in a team pre-brief and debrief for each fire scenario.
6. Assist 1/C cadets in correctly using the cascade system to refill used SCBA bottles.

Material Needed: Provided: a fire fighting outfit for each fire team member, including turnout gear (fire coat, fire pants, helmet, gloves) and, possibly, a SCBA. Fire fighting equipment for drills, including fire hoses, nozzles, low velocity fog applicators, spare SCBA bottles, and radios. Related equipment, including stokes litter, trauma kit, and oxygen administration kit.

Student Provided Equipment: The students will report in the proper work uniform. They will bring gloves, paper, and pencil.

Procedure:

1. A classroom session will be conducted to include classes of fire, fire fighting techniques, fire safety and communications.

2. The students will be divided into teams. The teams will be instructed in and practice hose, nozzle and fog applicator handling techniques.

3. Each 3/C cadet will be assigned to a fire team under the direction of 1/C cadet. The composite teams will conduct drills, including donning equipment and equipment usage, hose drills and command and control drills. The 1/C cadets will act as team leaders and instructors.

4. Fire scenarios, developed by the 1/C cadets, will be selected for actual drills. Students will participate in the pre-brief, the drill and debrief following the drill.

5. Upon completion of drills and exercises, each team will be responsible for filling used SCBA bottles as necessary. Equipment will be cleaned, dried, and stowed as necessary.

Assessment: The student shall demonstrate through participation a proficiency in the aspects of fire fighting as listed in the Training Objective.

Student Assignment: The student will read the appropriate chapters in Marine Fire Fighting prior to this training topic.

Ground Tackle

Subject: Ground Tackle

Concept: To reinforce the student's basic understanding and increase their knowledge of ground tackle.

Time Allotted: One module

Training Objectives: The students will:

1. Identify parts of ground tackle using proper nomenclature.
2. Demonstrate their ability to energize and de-energize the anchor windlass.
3. Demonstrate their ability to engage and disengage the wildcat.
4. Demonstrate their ability to identify all anchor chain shot markings.
5. Demonstrate their ability to understand anchoring commands and hand signals, while communicating effectively with the CPIC (cadet person in charge) and PIC.
6. Demonstrate their ability to maintain a safe working environment as a member of the anchoring detail.

Material Needed: TSGB anchor windlass and other ground tackle equipment, and Seamanship Manuals.

Student Provided Equipment: The students will report in the proper work uniform. They will bring foul weather gear, hard hats, gloves, goggles, and be prepared to take notes as required. Students are expected to bring their Seamanship Manuals and their notes from Seamanship.

Procedure:

1. The students will meet, weather permitting, at the anchor windlass.
2. 3/C cadets will demonstrate their ability to identify the parts of the ground tackle using proper nomenclature by passing the written exam with a minimum grade of 70% correct. The exam will be taken at the start of the first lesson. The test will cover components and nomenclature of a typical anchor windlass, anchor chain markings, and

parts of an anchor as indicated by the drawings in the reference section.

3. Students working in small groups will energize and de-energize the anchor windlass.

4. Students working in small groups will engage and disengage the anchor windlass wildcat.

5. Students working in small groups will describe and demonstrate the proper use of the anchor windlass band brake.

6. Students will describe and demonstrate their knowledge of anchoring commands and hand signals and anchor chain shot markings. They will also demonstrate their ability to communicate and understand this information while carrying out their duties.

7. Students will demonstrate their ability to work in anchoring details while working for the CPIC and PIC of anchoring while maintaining a safe working environment.

Assessment: The students shall demonstrate, through active participation, the aspects of ground tackle and anchoring listed in the training objectives. In addition, each student must pass the written exam. **Only one re-test for the written exam will be offered.** The exact date and time of the re-test will be determined by the Deck Training Officer. **Students who fail the test on their second attempt will fail this module.**

Student Assignment: The students will read appropriate chapters in their Seamanship Manuals **prior to the start** of this module, and will review their notes on these subjects.

Knots, Bends, and Hitches

Subject: Knots, Bends, and Hitches

Concept: To reinforce the student's basic understanding and increase their knowledge of knot tying and the uses of these knots, bends, and hitches.

Time Allotted: One module

Training Objective: The students will demonstrate their ability to tie the following knots, bends, and hitches, most of which were previously covered in Marlinespike (DL 115):

- Trucker's hitch
- Bowline
- Bowline on a Bight (single & double)
- French Bowline
- Becket (Sheet) Bend (single & double)
- Carrick Bend (single & double)
- Half Hitch
- Marlin Hitch
- Timber Hitch
- Rolling Hitch
- Clove Hitch
- Reef Knot
- Securing lines to bitts and cleats

Material Needed: Seamanship Manual(s), knot book, length of small stuff.

Student Provided Equipment: The students will report in the proper work uniform and be prepared to take notes as required.
Knot book, marlinespike notes, Seamanship Manuals, and a one fathom length of practice line.

Procedure:

1. Students will meet in the Fo'c'sle. During this time students, working individually and under the direct supervision of the Deck Training Officer, will review the knots previously learned in DL 115.

2. Students will be instructed in the methods of tying additional knots not covered in Marlinespike. Students will practice tying these knots and demonstrate their proficiency in all knot tying as indicated under the objectives previously listed.

Assessment: The students shall demonstrate, through active participation, the aspects of this module as listed in the training objectives.

Student Assignment: The students will read appropriate chapters in their Seamanship Manuals and knot and splices manuals prior to the start of this module. It is also expected that students will review their notes on these topics from applicable course prior to the start of this subject.

Modern Splicing

Subject: Modern Splicing

Concept: To introduce students to the advancements in modern line construction with emphasis on mooring lines, their usage, and their splices.

Time Allotted: Two modules

Training Objective: Students will be conversant with modern mooring techniques and materials, particularly in the strengths of line available, their ease of use and the properties of different constructions. Students will understand:

1. New splicing requirements and care required to maintain each line in working condition.

2. Problems with these lines that may occur and how best to avoid them.

3. The requirements for using winches and deck equipment associated with using fiber lines as opposed to steel wire rope (SWR).

4. The care required when using equipment that has been scarred by SWR.

5. The terminology used in the technical bulletins provided by the manufacturers of these types of lines (i.e. minimum bending ratios, minimal tensile strengths, etc.).

Materials needed: Work uniform, notepad and pen, pocket knife.

Assessment Method: The student shall demonstrate, through preparation and participation, a basic proficiency in the subject matter described above.

Mooring

Subject: Mooring

Concept: To reinforce the students understanding and increase their practical knowledge of mooring lines, safe mooring practices, and the preparation of the deck for line handling.

Time Allotted: Four modules

Training Objectives: The students will:

1. Demonstrate their understanding of line handling commands and the common names of mooring lines used aboard merchant ships by passing a line-handling test with at least 70% correct. The exam will be given at the beginning of Module 1 and will cover mooring lines and line handling commands as described in the reference section (Appendix 3).

2. Participate in laying out mooring lines and preparing the deck for all aspects of the line handling exercises.

3. Demonstrate their knowledge of mooring line types and their breaking strains.

4. Demonstrate their understanding of faking lines, use of fairleads, and issues concerning mooring line preservation.

5. Demonstrate their ability to make up and throw heaving lines.

6. Describe and demonstrate their knowledge of mooring equipment aboard the training vessel. This will include the nomenclature, starting and stopping and engaging and disengaging of the winches, proper use of capstans and warping heads, and the use of the line handling commands.

7. Practice following line-handling commands and hand signals while working with mooring lines.

8. Demonstrate the correct usage of stoppers and the correct procedure for letting go mooring lines and tug wires/lines.

9. Actively participate as line handlers during line handling scenarios with an emphasis on safety and proper technique.

Material Needed: TSGB line handling winches, stoppers, heaving lines, Seamanship Manual, and other applicable resources.

Student Provided Equipment: The students will report in the proper work uniform. They will bring foul weather gear, hard hats, gloves, and be prepared to take notes as required.

Procedure:

1. Students will demonstrate their understanding of line handling commands by taking an exam covering the commonly used commands and hand signals used in the merchant marine.

2. Under the supervision of the Deck Training Officer, students will break out all necessary lines to be used during all the mooring modules and fake them out on the deck at their appropriate locations.

3. Working in small groups, the students, under the supervision of the Deck Training Officer, will re-energize the winches. Students will demonstrate their knowledge of winch nomenclature and their knowledge of the basic line handling commands and hand signals.

4. The students will demonstrate and practice rolling over the winches and engaging and disengaging them.

5. The students will practice throwing heaving lines from the main deck aft.

6. The students will demonstrate their understanding of securing mooring lines to bitts and the use of fairleads.

7. The students will demonstrate their ability to tie, and practice using, stopper knots on mooring lines.

8. Working as members of a line handling team, and under the direction of the 1/C PIC, the underclass will participate in line handling scenarios. The emphases will be on proper technique while maintaining a safe working environment.

Assessment: Students are expected to have an understanding of fundamental line handling commands and mooring line names at the start of this lesson and will demonstrate this by passing the exam with at least 70%. One re-test will be given on the line handling commands and hand signals. **Students who fail on their second attempt will fail this module.** The students shall demonstrate, through active participation, a proficiency in the aspects

of line handling and mooring equipment as listed in the training objectives.

Student Assignment: The students will re-read appropriate chapters in their seamanship manuals and review their notes on these subjects, as necessary.

SCBA

Subject: Self-Contained Breathing Apparatus

Concept: This module will introduce the student to the Self Contained Breathing Apparatus found on board ships. The student will gain knowledge and understanding in the donning, operation and maintenance of SCBAs.

Time Allotted: One module

Training Objectives: The student will:

1. Become familiar with the SCBA. The various parts will be described and discussed.
2. Become familiar with the donning of the SCBA.
3. Learn to function while wearing an SCBA.
4. Learn to fill SCBA bottles.
5. Correctly clean and stow SCBA units after use.

Material Needed: Training SCBAs, compressor, cleaning pads, and wipes.

Student Provided Equipment: The students will report in the proper work uniform.

Procedure:

1. The students will report to the Deck Training Locker and be issued an SCBA.
2. A demonstration will be conducted of SCBA components and component function.
3. Students will learn to conduct inspections and function tests on the unit.
4. Students will learn to correctly don the unit and function while breathing from the unit. This will include various tasks such as climbing stairs, carrying equipment and crawling while on air. The student will learn about breathing control. Exiting the space when the low-pressure alarm sounds will be discussed.

5. Upon completion of exercises, each student will learn how to clean and stow the SCBA unit. Students will learn how to refill bottles using the cascade system and/or the Bauer compressor.

Assessment: The student shall demonstrate, through participation, a proficiency in the examination, testing, use, cleaning, refilling and stowage of SCBA as listed in the training objectives.

Splicing

Subject: Splicing

Concept: To reinforce the students' basic understanding and increase their knowledge of splicing and whippings in soft line primarily using eight and three strand soft lines.

Time Allotted: Three modules

Training Objective: The students will:

1. Demonstrate the ability to make short, long and eye splices (with and without thimbles) using three-strand soft line.

2. Demonstrate the ability to make eye splices in eight-strand soft line.

3. Demonstrate the ability to make temporary and permanent whippings.

4. If time allows and after proficiency has been demonstrated in the above, practice making temporary eye splices in wire rope using wire rope clips and investigate the use of other techniques commonly used in wire rope splicing.

5. If time allows and after proficiency has been demonstrated in training objectives 1-3, practice making eye splices in yacht braid.

Material Needed: Seamanship Manual(s), knot book, length of three and eight strand soft line, masking tape, fids as required, and wax.

Student Provided Equipment: The students will report in the proper work uniform and be prepared to take notes as required.
Sewing palm, needle (size #12 or smaller), whipping material, and sail twine.

Procedure:

1. Students will meet in the Fo'c'sle. During this time students, working individually and under the direct supervision of the instructor, will be given a length of three strand soft line and practice making eye, long and short splices.

2. Students will make eye splices using eight-strand soft line.

3. Students mastering the above-mentioned skills will then practice making whippings and splices using thimbles.

4. Students demonstrating mastery of soft line splicing using three and eight strand will then explore the techniques for placing temporary eye splices in wire rope.

Assessment: The students shall demonstrate the ability to splice both eight and three strand soft line. They will be required to demonstrate the ability to make eye splices and long and short splices in soft line. They will also demonstrate the ability to place an eye in a soft line using a thimble and to properly whip the end of a line.

Student Assignment: The students will re-read appropriate chapters in their Seamanship Manuals and knot and splices manuals prior to the start of this module. It is also expected that students will review their notes on these topics from applicable courses prior to the start of this subject. Knot books and Seamanship Manuals will be available in the ship's library.

Trick Wheel

Subject: Emergency Steering

Concept: To reinforce the students' basic understanding and increase their practical knowledge of steering gear and emergency methods of steering while demonstrating an understanding of steering commands.

Time Allotted: One module

Training Objective: The students will:

1. Demonstrate their understanding of proper helm commands (as listed in the American Merchant Seaman's Manual) and responses by passing a written test with at least 70 percent correct.

2. List, describe and compare the four methods of steering from after steering.

3. Demonstrate their ability to switch into the trick wheel and NFU from after steering.

4. Demonstrate their ability to receive and follow steering orders while maintaining the vessel's ordered course using the trick wheel and NFU from the after steering room.

5. Demonstrate their ability to receive and communicate steering orders while using the sound powered phones located in aft steering.

6. Describe the use of the hand pump and ratchet methods of steering located in after steering. Students will describe the advantage of the ratchet system over the hand pump system.

Material Needed: TSGB after steering flat, Seamanship Manual, and ear protection.

Student Provided Equipment: The students will report in the proper work uniform and be prepared to take notes as required. Ear protection, Seamanship Manuals, and notes from Seamanship are required.

Procedure:

1. The students will meet, weather permitting, on the main deck aft by the paint locker.

2. The cadets will demonstrate their ability to understand helm commands and the role of the helmsman at the start of this module. They will be required to take and pass with at least 70% correct a written test on helm commands. This test will be given at the start of cruise.

3. Students will be asked to explain the four methods of steering from the aft steering room and to explain the reasons and methods for using one over the other.

4. Students working in small groups will take control of the steering of the TSGB from aft steering using both NFU and Trick Wheel modes. This will **only be attempted after permission** from the TSGB Master and Bridge Licensed Watch Officer.

5. Students will steer the training ship using either the NFU or the Trick Wheel mode.

Assessment: The students shall demonstrate, through active participation, a basic competency and an understanding of emergency methods of steering as listed in the training objectives. Students must also demonstrate their ability to steer from the aft steering flat while maintaining the ordered course. Students who are not successful at scoring at least 70% on the written test will be scheduled to re-test. **Students who fail on their second attempt will fail this module.**

Student Assignment: The students will re-read appropriate chapters in their Seamanship Manuals prior to the start of this module and the Emergency Steering Procedures in Appendix 5.

SIMULATION AND PROFESSIONAL TRAINING ROTATION

The Simulation and Professional Training rotation is designed to introduce and reinforce various skills necessary for maritime officers. The rotation will be administered by the Deck Training Officers (DTOs) at the location indicated by the Deck Training Schedule unless otherwise directed. Prior to attending each training module, you should read about it in this Training Manual. Each module's description includes the objectives of the module, what to wear, what to bring, and references to review. It also describes any homework, exam or quiz that will be given, when it will be given, and how you will be assessed. It is very important that you prepare yourself adequately for each module. This means that you should review the reference material for that module prior to its beginning. This is your responsibility! Due to operational considerations, modules may be modified, delayed, re-ordered or eliminated. The DTOs will notify students of substantial changes as soon as practicable.

Following this page are the third class navigational training modules overviews, as follows:

Training Activity	**Number of Modules** (Each module = ½ day of training)
ARPA	1
Basic First Aid	4
Basic Navigation	5
ECDIS	1
Radar Plotting	4
Rules of the Road	1
STCW Assessments	4

STCW Assessments During Simulation and Professional Rotation

Item	STCW TABLE A-II/4 TASKS	STCW Competency
1	Rudder hard over	RFPNW 1.2.C
2	Report bearings in daylight	RFPNW 2.1.A
3	Report bearings at night	RFPNW 2.1.B
4	Report bearings by sound	RFPNW 2.1.C
5	Use of communication and alarm systems	RFPNW 3.2.A
6	Communicate potential collision situations in daylight	RFPNW 3.3.A
7	Communicate potential collision situations at night	RFPNW 3.3.B
8	Relief of anchor watch	RFPNW 3.5.A
9	Relief of a port watch	RFPNW 3.5.B

ARPA

Subject:	Introduction to Automatic Radar Plotting Aids (ARPA)
Concept:	To introduce the basic functions of Automatic Radar Plotting Aids (ARPA) and their use in collision avoidance and safe navigation.
Time Allotted:	One module
Training Objective:	The student will: 1. Understand basic theory of ARPA. 2. Learn basic functions of ARPA including target tracking, trial maneuvers, and parallel indexing. 3. Use ARPA to determine risk of collision and maneuver as appropriate in accordance with the Rules of the Road.
Material Needed:	Materials for note-taking.
Student Provided Equipment:	The student will report in khakis.
Assessment:	The student shall demonstrate, through preparation, participation, and a completion of the exercises, a proficiency in the subject matter described above. Students failing to participate as described above will receive a failing grade for this component of CRU 100.

Basic First Aid

Subject:	Introduction to Basic First Aid
Concept:	To introduce the basic knowledge and skills necessary to administer first aid to an ill or injured crewmember. First aid is defined as a one-time treatment that typically does not require more advanced training.
Time Allotted:	Four modules
Training Objective:	Upon completion of the course the student will be able to understand the concepts of first aid and demonstrate competency in: 1. General principles 2. Body structure 3. Positioning of the casualty 4. The unconscious casualty 5. Application of resuscitation to a casualty 6. Control bleeding and use of improvised bandages and emergency first aid kits 7. Application of appropriate measures in basic shock management 8. Application of appropriate measures in the event of burns and scalds including accidents caused by electrical current 9. Rescue and transport of a casualty 10. Other topics (hypothermia, hypothermia, etc.)
Materials needed:	Uniform of the day, notepad and pen
Student Provided Equipment:	All medical equipment will be provided to ensure technique and proficiency in the administration of first aid.
Assessment Area:	TSGB Medical Treatment Facility TSGB Environment and Classroom
Assessment Method:	The student shall demonstrate, through preparation, participation, and a completion of the exercises, a proficiency in the subject matter described above. Students failing to participate as described above will receive a failing grade for this component of CRU 100.

Basic Navigation

Subject:	Basic Navigation
Concept:	To introduce a broad scope of terrestrial navigation skills and knowledge.
Time Allotted:	Five modules
Training Objective:	The student will: 1. Learn basic Mercator charting knowledge. 2. Learn introductory plotting skills.
Material Needed:	Materials for note-taking and plotting (pencil, triangles, dividers).
Student Provided Equipment:	The student will report in khakis.
Assessment:	The student shall demonstrate, through preparation, participation, and a completion of the exercises, a proficiency in the subject matter described above. Students failing to participate as described above will receive a failing grade for this component of CRU 100.

ECDIS

Subject:	Introduction to Electronic Chart Display Information Systems (ECDIS)
Concept:	To introduce electronic charting systems including ARPA, GPS, gyro, and AIS overlays.
Time Allotted:	One module
Training Objective:	The student will: 1. Learn basic functions of ECDIS. 2. Create basic routes using ECDIS. 3. Plan and execute a simple voyage and monitor voyage progress using ECDIS.
Material Needed:	Materials for note-taking.
Student Provided Equipment:	The student will report in khakis.
Assessment:	The student shall demonstrate, through preparation, participation, and a completion of the exercises, a proficiency in the subject matter described above. Students failing to participate as described above will receive a failing grade for this component of CRU 100.

Radar Plotting

Subject:	Introduction to radar plotting
Concept:	To introduce the student to radar plotting techniques.
Time Allotted:	Four modules
Training Objective:	The student will: 1. Learn basic radar plotting techniques. 2. Learn radar plotting triangles and solution methods. 3. Practice radar plotting techniques utilizing the Nav Lab simulation equipment (as available).
Material Needed:	Materials for note-taking, radar plotting sheets, and plotting gear.
Student Provided Equipment:	The student will report in khakis.
Assessment:	The student shall demonstrate, through preparation, participation, and a completion of the exercises, a proficiency in the subject matter described above. Students failing to participate as described above will receive a failing grade for this component of CRU 100.

Rules of the Road

Subject:	An introduction to the Nautical Rules of the Road
Concept:	To introduce the student to the rules governing vessel traffic and conduct at all times.
Time Allotted:	One module
Training Objective:	The student will: 1. Learn the basic rules for the conduct of vessels. 2. Learn the special rules for the conduct of vessels in certain circumstances.
Material Needed:	Materials for note-taking.
Student Provided Equipment:	The student will report in khakis.
Assessment:	The student shall demonstrate, through preparation, participation, and a comprehensive concluding quiz, a proficiency in the subject matter described above. Students must pass the exam with at least 70%. One re-test will be given. The time will be during your liberty day in port where practicable. **Students who fail on their second attempt will fail this module.**

APPENDIX 1 – 3/C BRIDGE WATCH EVALUATION FORM

Watch (circle one)	Arrival/Departure		Coastal	Ocean
Traffic (circle one)	None	Light	Moderate	Heavy
Visibility (circle one)	Poor	Fair	Good	Excellent

Name	Helm	Lookout	Messenger	Security

Evaluation Factors (use +, √, –) *" – " must include comments*

COMMENTS _____

_____

_____

_____

_____

_____

_____

DATE and WATCH _____

CWO SIGNATURE _____

LWO SIGNATURE _____

APPENDIX 2 – 3/C STCW STEERING ASSESSMENT FORM

Cadet Name: _____ Date: _____

LAT:_____ LONG:_____ SOG: ____ Weather/Seas: Calm Mod Rough

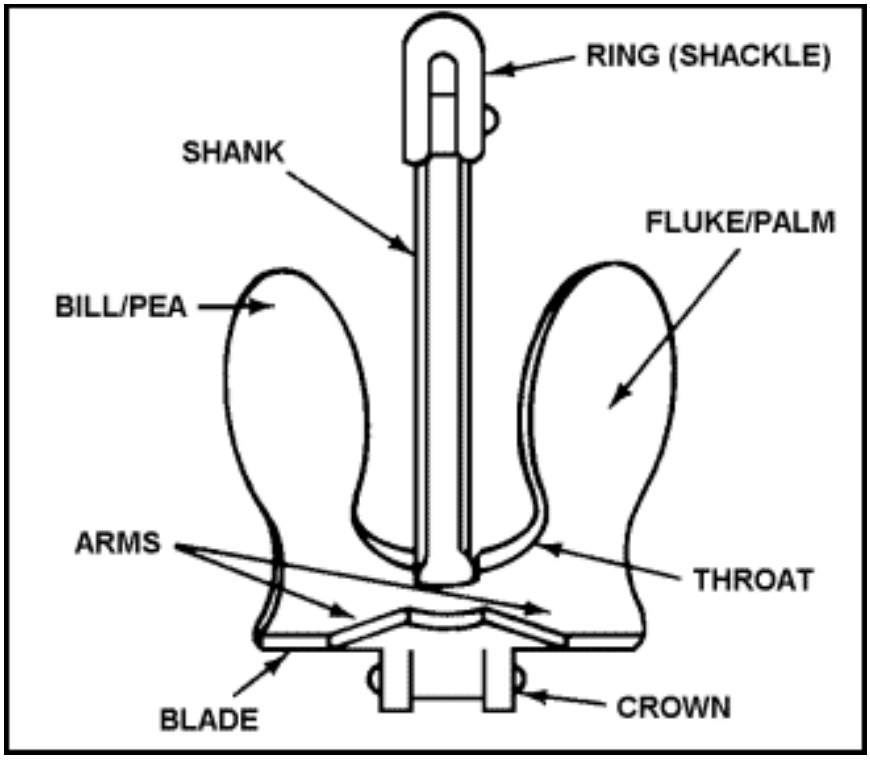
Starting condition: Vessel in hand steering, no traffic of concern, and in safe water, with approval of the LWO.

STCW #	Command	Standard	C	NC
RFPNW 1.2.B	**Left 20**	The candidate: 1. Repeats the order; 2. Turns the helm to the left 20º; 3. Stops turning the helm when the rudder angle indicator reads left 20º; 4. States: "The rudder is left 20", and 5. States the vessel's heading in 10º increments until a new heading is provided (e.g., "passing 060º").		
RFPNW 1.2.D	**Ease to 5**	The candidate: 1. Repeats the order; 2. Immediately turns the helm to reduce the rudder angle; 3. Stops turning the helm when the rudder angle indicator reads right or left 5°; and 4. States: "The rudder is right or left 5°".		
RFPNW 1.2.E	**Midships**	The candidate: 1. Repeats the order; 2. Immediately turns the helm to reduce the rudder angle; 3. Stops turning the helm when the rudder angle indicator reads zero; and 4. States: "The rudder is Midships."		
RFPNW 1.2.A	**Right 10**	The candidate: 1. Repeats the order; 2. Immediately turn the helm to the right; 3. Stops turning the helm when the rudder angle indicator reads right 10º; 4. States: "The rudder is right 10º;" and 5. States the vessel's heading in 10º increments until a new heading is provided (e.g, "passing 320º").		
RFPNW 1.2.G	**Meet her (or check her)**	The candidate: 1. Repeats the order; 2. Immediately turns the helm to reduce the rudder angle; 3. Applies counter rudder until the vessel stops turning; 4. Eases the wheel to midships; and 5. States: "The vessel's heading is …"		
NA	**Right 15**	The candidate: 1. Repeats the order; 2. Immediately turn the helm to the right; 3. Stops turning the helm when the rudder angle indicator reads right 15º; 4. States: "The rudder is right 15º;" and 5. States the vessel's heading in 15º increments until a new heading is provided (e.g, "passing 320º").		

RFPNW 1.2.F	**Shift your rudder**	The candidate: 1. Repeats the order; 2. Immediately turns the helm to the left; 3. Stops turning the helm when the rudder angle indicator reads left 15°. 4. States the vessel's heading in 10º increments until a new heading is provided (e.g., "passing 060º").		
RFPNW 1.2.H	**Steady as she goes**	The candidate: 1. Repeats the order; 2. Notes the heading when the command was given; 3. Immediately applies rudder to stop any swing of the ship; 4. Steers the noted heading; and 5. States: "Steady, heading…"		
RFPNW 1.1.A	**Steer XXX (choose an appropriate course)**	The candidate: 1. Repeats the order; 2. Turns the helm in the direction of the fewest degrees to the ordered course using no more than 15º of rudder; 3. Reports the ship's heading, while swinging, in each 10º increment; 4. Reduces the rudder angle as the vessel approaches the course; 5. Steadies on the course with less than 5° of overshoot; and 6. States: "Steady on XXX."		
RFPNW 1.2.I	**Nothing to the right (or nothing to the left)**	The candidate: 1. Repeats the order; 2. Notes the heading when the command was given; 3. Immediately applies counter rudder to stop any swing of the ship to the right (or left); and 4. Steers the heading noted, but with no error to the right (or left) permitted.		
RFPNW 1.1.B	**Steer XXX (by gyrocompass)**	The candidate: 1. Repeats the order; 2. When steady on the course, states: "Steering XXX;" and 3. Steers the course ordered within ±3° (open ocean), and ±2° (near coastal) for 15 minutes.		
RFPNW 1.1.C	**Steer XXX (by magnetic compass)**	The candidate: 1. Repeats the order; 2. When steady on the course, states: "Steering three four two;" 3. Steers the course ordered within ±5° (open ocean), and ±3° (near coastal) for 15 minutes.		
RFPNW 1.3.B	**Engage the auto pilot**	The candidate: 1. Repeats the order; 2. Puts the wheel amidships; 3. Verifies the course dialed into the autopilot is the same as the course to be steered; 4. Switches the steering mode from hand to auto pilot; 5. Verifies that the auto pilot is responding properly; and 6. States; "She's in auto pilot."		
RFPNW 1.3.A	**Switch to hand steering**	The candidate: 1. Repeats the order; 2. Switches the steering mode from auto pilot to hand; 3. Tests that the new steering mode is responding; and 4. States; "She's in hand steering."		

Assessor's Signature	Printed Name	License Held

APPENDIX 3 – PRACTICAL TRAINING REFERENCE MATERIAL

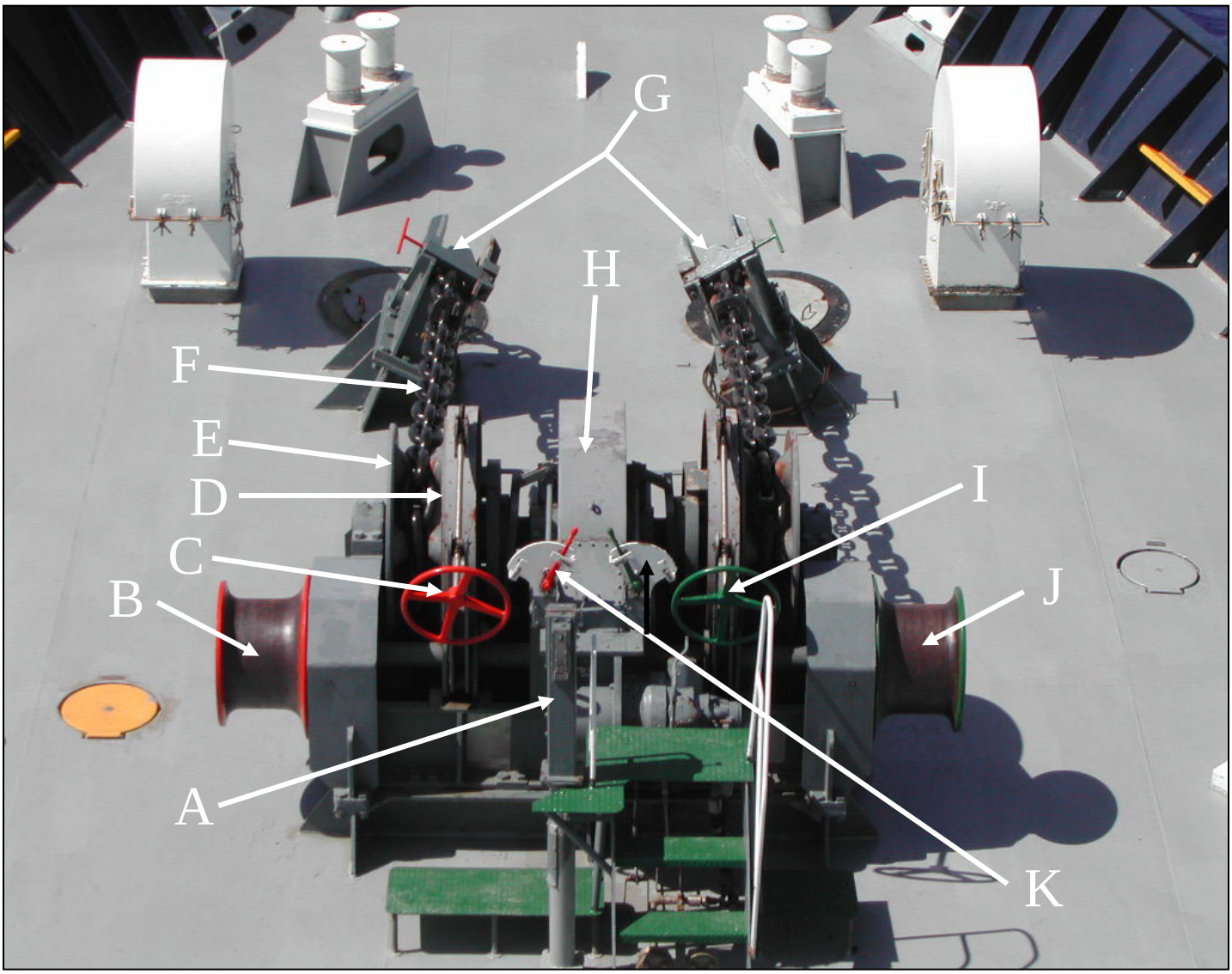


Parts of an anchor (retrieved from www.globalsecurity.org)

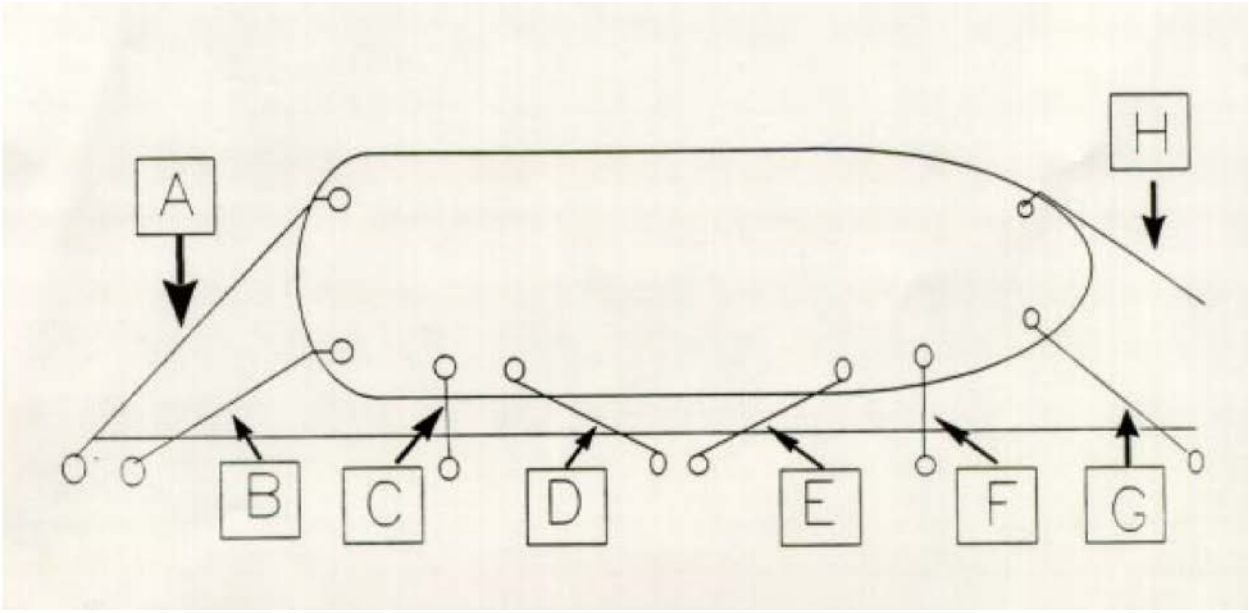
Shot Number	*Number of Adjacent Links Painted White*	*Turns of Wire on Last White Link*
1 (15 fathoms)	1	1
2 (30 fathoms)	2	2
3 (45 fathoms)	3	3
4 (60 fathoms)	4	4
5 (75 fathoms)	5	5
6 (90 fathoms)	6	6

Markings on an anchor chain

Training Ship *Golden Bear*
Anchor Windlass



A. Control Stand
B. Port Warping Head
C. Port Brake Wheel
D. Break Band
E. Wildcat
F. Anchor Chain
G. Compression Bars
H. Bull Gear
I. Starboard Brake Wheel
J. Starboard Warping Head
K. Engaging Levers

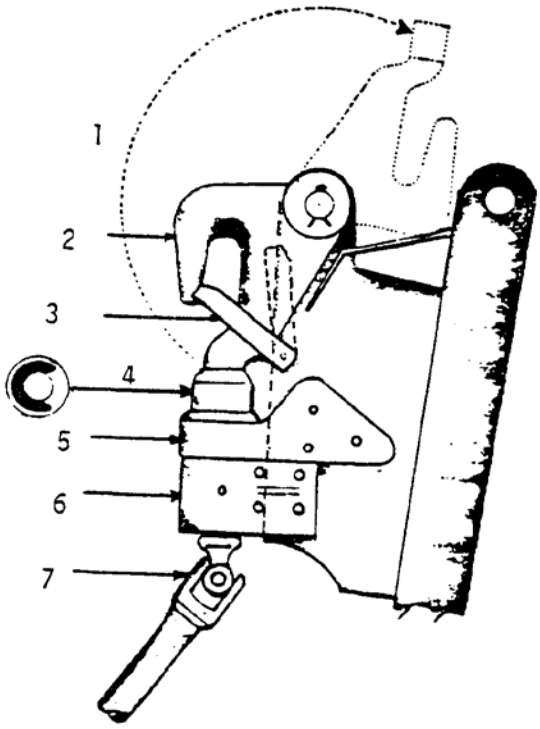


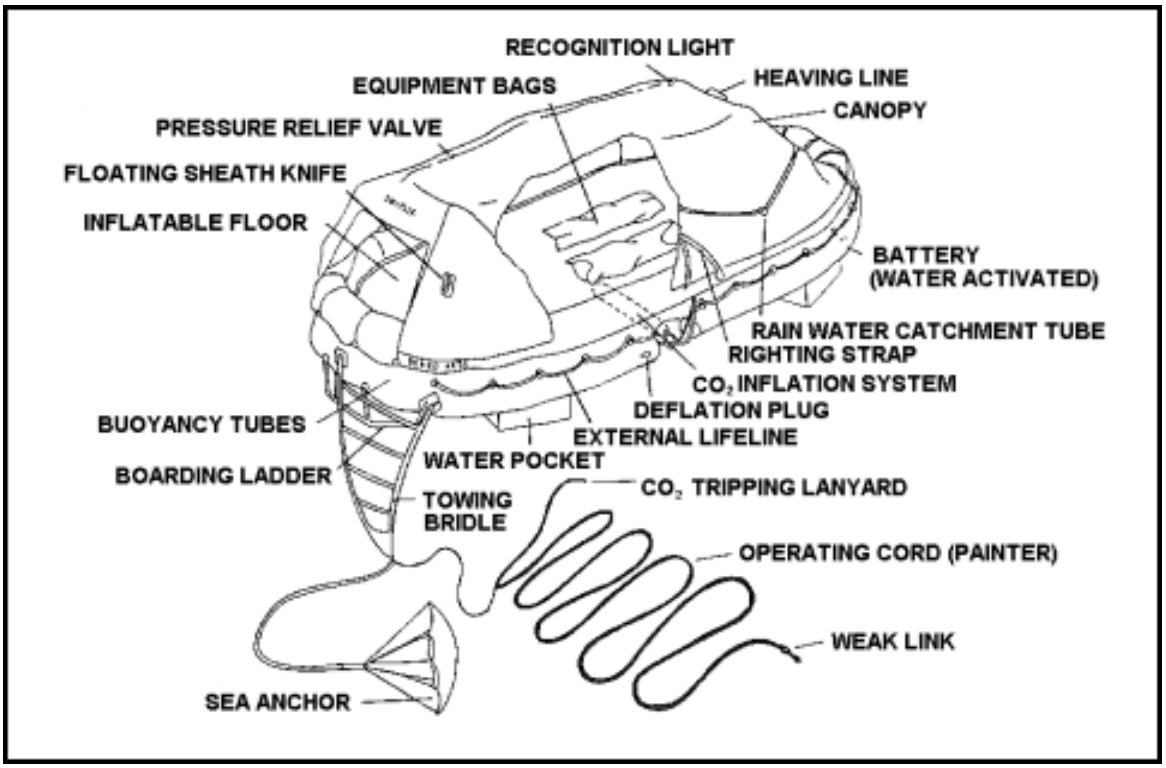
Mooring Lines

A. Offshore Stern Line
B. Inshore Stern Line
C. After Breast Line
D. After Spring Line
E. Forward (or Bow) Spring Line
F. Forward (or Bow) Breast Line
G. Inshore Head (or Bow) Line
H. Offshore Head (or Bow) Line

Rottmer Releasing Gear

1. Hook in open position
2. Hook
3. Preventer bar
4. Hook lock
5. Upper guide bearing
6. Lower guide bearing
7. Universal joint





Line Handling Commands

Command	Action
Pass / Put Over (line name or #)	Pass the specified line to the pier with enough slack to allow line handlers to place the line over the bitt, cleat or bollard.
Hold (line name or #)	Do not let any more line out even at the risk of parting the line.
Check (line name or #)	Hold heavy tension on the line but ease it as necessary to prevent parting the line.
Surge (line name or #)	Hold moderate tension on the line but ease it as necessary to permit movement of the ship.
Ease (line name or #)	Let the line out until it is under less tension but not slack.
Slack (line name or #)	Take all tension off of the line.
Take the slack out of (line name or #)	Take all the slack off of the line but do not take a strain.
Shift (line name or #)	Move the line to a specified location.
Heave around on (line name or #)	Take a strain on the line.
Take (line name or #) to power	Take the line to the capstan or gypsy head.
Single up (line name or #)	Take in all but one part to a line. May be used to single up all lines.
Double up (line name or #)	Pass an additional part to the line. May be used to double up all lines.
Avast heaving	Stop taking a strain on the line with the capstan.
Take in (line name or #)	Slack the line sufficiently so the line handler can take the line off the bitt, cleat or bollard and then bring the line aboard.
Cast off or let go (line name or #)	When another vessel's lines are secured on our vessel, let go the end of their line.
Make fast (line name or #)	Apply a stopper, remove the turns from the capstan, and secure the line to the bitt or cleat on deck.

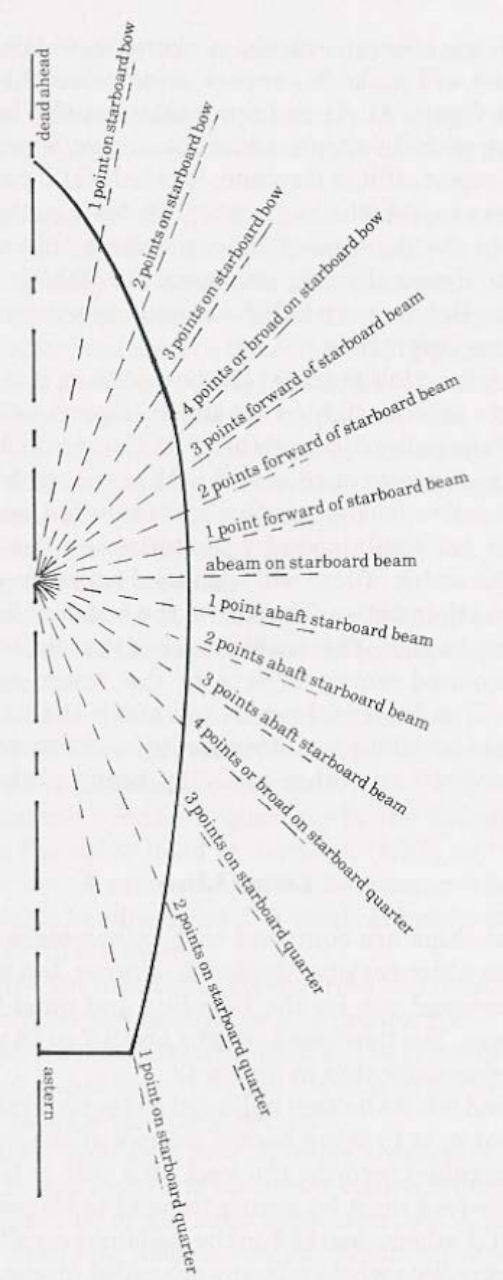
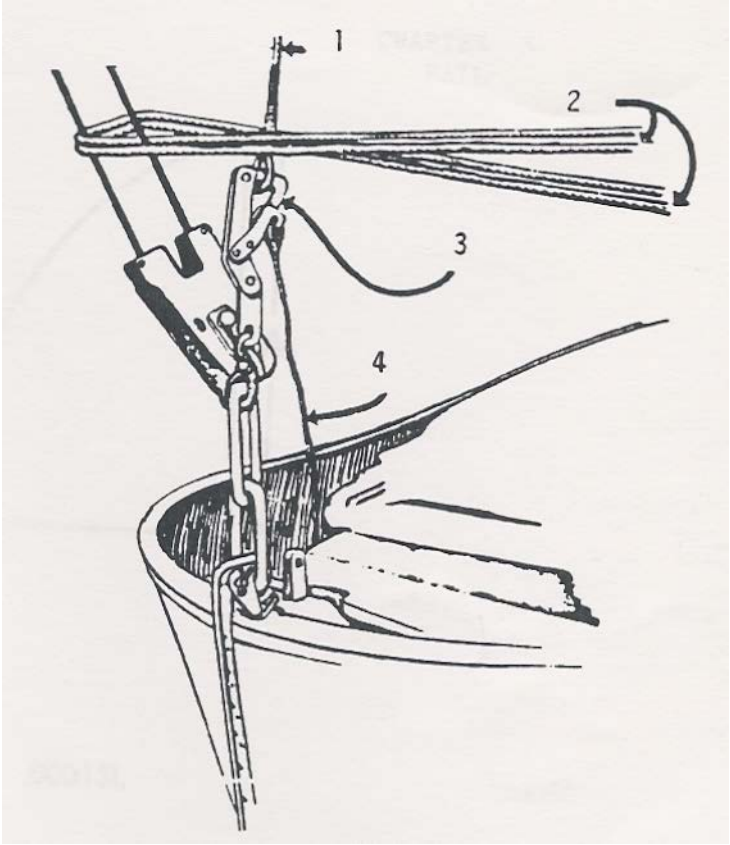
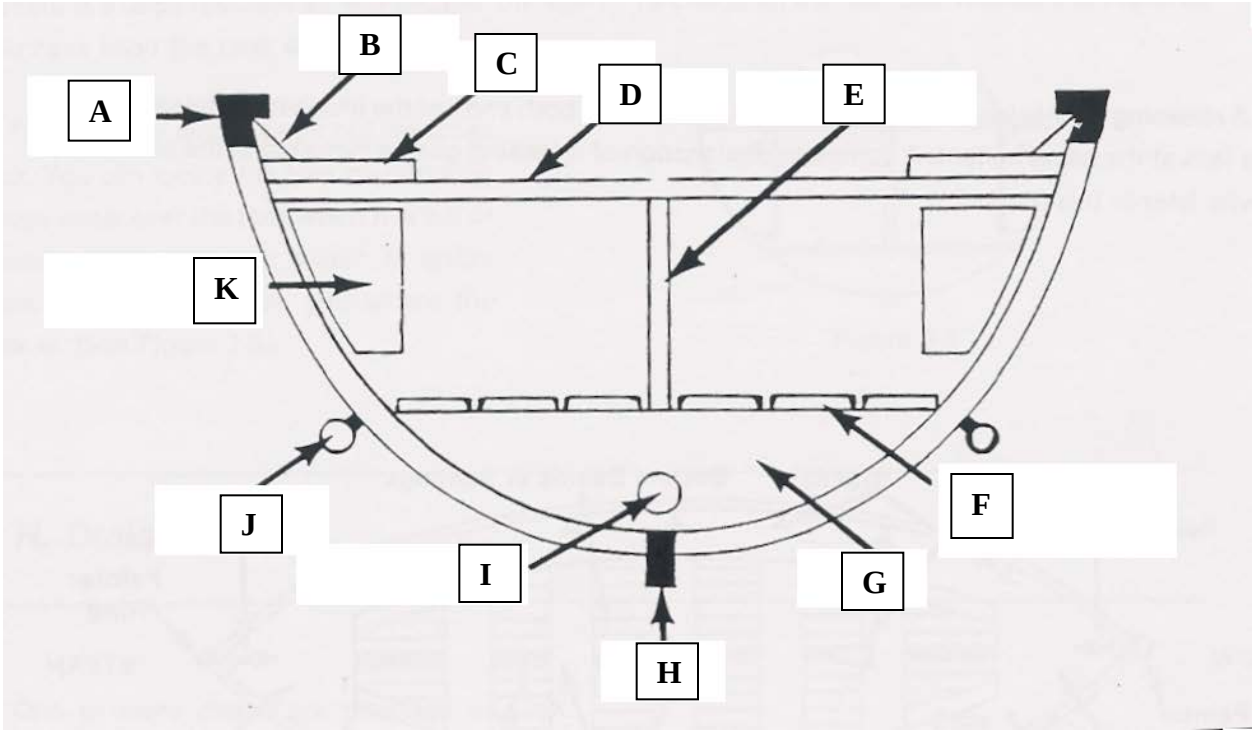


Fig. 41. Relative bearings from a ship.



1. Tricing Pendant
2. Frapping Line
3. MacCluney Hook
4. Trip Line



Cross-section of a lifeboat

A. Sheer strake	F. Footings
B. Bracket	G. Floor
C. Side bench	H. Keel
D. Thwart	I. Limber hole
E. Stanchion	J. Grab rail
	K. Buoyancy tank

APPENDIX 4 – EMERGENCY STEERING PROCEDURES

- Communication with the Bridge: The phone and headset are on the IJV system.

- There are four ways to steer the ship from after steering, two require a hydraulic steering pump be running, two do not and only the ratchet method is effective if the hydraulic line integrity has been breached. Your choice of steering methods may be dictated by the nature of the problem.

Choice	Steering Method	Needs Pump On?	Needs Hydraulic Line Intact?
#1	Trick Wheel	Yes	Yes
#2	NFU	Yes	Yes
#3	Hand Crank	No	Yes
#4	Ratchets	No	No

Starting/Stopping Pumps

- The #2 pump on the port side is the only pump on the emergency circuit.
- Only one pump can supply hydraulic pressure to the system at a time. If two pumps are running, the pump started first will be the one supplying the pressure. To get pressure from the other pump, the first pump must be shut down.
- Each pump has its own control box. The breaker should be up and the red "STOP" plunger should be pulled out or the pump won't start.

To start a pump:

1 - Switch black switch from "wheelhouse" to "local". This gives control to you back aft.
2 - Ensure red plunger is pulled out. This is an emergency kill button. If it's in, no one can start the pump.
3 - Push black button "START".

THE FOUR EMERGENCY STEERING METHODS

TRICK WHEEL INSTRUCTIONS

1 - Ensure a steering pump is running.
2 - Next to the trick wheel on the port side is a box labeled **"STR GR DUAL SEL SW".**
3 - On this box, switch the black "Steering Gear Dual Select Switch" to either **"PORT AFT"** or **"STBD AFT"** depending on which trick wheel you want to use. Either pump can run either trick wheel.
4 - On the aft bulkhead behind whichever trick wheel you are using, pull the **"GYRO PILOT STEERING"** breaker down into the **"OFF"** position.
5 - Pull out the pin on the trick wheel stem and push the wheel to engage it.
6 - Replace the pin to lock the trick wheel to the steering gears. You now have control.

NFU INSTRUCTIONS

1 - Ensure a steering pump is running.
2 - Next to the trick wheel on the port side is a box labeled **"STR GR DUAL SEL SW".**
3 - On this box, switch the black **"Steering Gear Dual Select Switch"** to either **"PORT AFT"** or **"STBD AFT"** depending on which NFU system you want to use. Either pump can run either system.
4 - You now have NFU control.

HAND CRANK INSTRUCTIONS

1 - Ensure steering pumps are off.
2 - Next to the trick wheel on the port side is a box labeled **"STR GR DUAL SEL SW".**
3 - On this box, switch the black **"Steering Gear Dual Select Switch"** to either **"PORT AFT"** or **"STBD AFT"** to isolate bridge steering input.
4 - On the aft bulkhead, pull both **"GYRO PILOT STEERING"** breakers down into the **"OFF"** position.
5 - Open and close valves as indicated on diagram on aft bulkhead with wrenches in the labeled box mounted on the aft bulkhead.
6 - Mount yellow hand crank handles on hand pump. They are hung on aft bulkhead.
7 - You now have hand pump steering control.
8 - Use attached safety pins to hold cranks in place when not cranking.

RATCHETS

1 - Ensure steering pumps are off.
2 - Next to the trick wheel on the port side is a box labeled **"STR GR DUAL SEL SW"**.
3 - On this box, switch the black **"Steering Gear Dual Select Switch"** to either **"PORT AFT"** or **"STBD AFT"** to isolate bridge steering input.
4 - Pull both **"GYRO PILOT STEERING"** breakers down into the **"OFF"** position.
5 - Open and close valves as indicated on diagram on aft bulkhead with wrenches in the labeled box mounted on the aft bulkhead.
6 - Using ratchets and yellow pipe cheater bars, ratchet the rudderstock appropriately.