2017 CRUISE TRAINING PROGRAM

Department of Marine Transportation

THIRD CLASS

A Second 100 Years of Maritime Excellence

2017 TRAINING VOYAGE OF THE T.S. KENNEDY

Manual # _____

Cadet _____

Division_____

Berthing Location _____

2017 Version

Department of Marine Transportation

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COURSE
MT-2371 - Sea Term II - Deck

CREDITS
6 academic credits

COURSE DESCRIPTION
Provides an opportunity for cadets to obtain sea service as an officer in charge of a navigational watch in a structured shipboard training program which is compliant with Chapter II of STCW and the requirements of 46 CFR Subpart C. The training uses a building block approach, bringing the cadet up to an acceptable level of proficiency in each area of required competence. Shipboard training is closely integrated with the shore-based academic curriculum at the Academy. The Sophomore Sea Term focuses upon all facets of shipboard operations and provides cadets an opportunity to practice terrestrial navigation skills.

PREREQUISITE
All Cadets MUST HAVE PASSED Deep Sea Navigation (MT-21-21) and the Four Practical STCW Assessments associated with that course with a C- or better to be eligible to participate in Sea Term II.

STCW KNOWLEDGE-BASED LEARNING OBJECTIVES
Completion of this course will demonstrate knowledge and understanding of the following STCW elements:
- OICNW-A1.08 Knowledge of steering control systems
- OICNW-A1.08 Steering system operational procedures
- OICNW-A1.08 Steering system change-over from manual to automatic control and vice versa
- OICNW-A1.08 Adjustment of steering system controls for optimum performance
- RFPNW-X1.3 Change-over from automatic pilot to hand steering and vice versa

STCW PRACTICAL ELEMENT LEARNING OBJECTIVE (See Section 2)
Completion of this course may demonstrate proficiency in the following skills:
- OICNW 1-3B - Chart Selection
- OICNW 1-3C - Route Planning
- OICNW 1-7A - Read Barometric Pressure
  Assessments may be attempted on Sea Term II, but must be completed by the end of Sea Term IV.
  Assessments will be scheduled for:
  - CHART SELECTION & BAROMOTER READING - ALL DIVISIONS 26 JAN
  - ROUTE PLANNING – ALL DIVISIONS 17 FEB

COURSE CONDUCT
- Course conduct will be in accordance with the MMA regimental system and T.S. Kennedy rules.
- All Cadets shall wear the appropriate uniform to each class.
- The MMA honor code will be strictly followed.

COURSE INTRODUCTION

Sea Term II is intended to build upon skills achieved in all previous Departmental Programs to attain professional competency level in the following STCW /USCG areas:

A. Navigation at the Operational Level
B. Ship Maneuvering and Handling
C. Cargo Operations-Dry Cargo Vessels
D. Personal safety, lifesaving and social responsibilities
E. Fire prevention and equipment
F. General Seamanship
G. Watchkeeping
H. Meteorology

We are fortunate to have the training opportunity afforded by the T.S. KENNEDY. What we accomplish on her over the next few months towards achieving the Marine Transportation Department's training objectives and your personal cruise goals will be largely up to you. You will be expected to use every opportunity that the vessel affords to make yourself professionally the best.

Profiles of training lectures which each of you will experience on this cruise and which will address certain watch-station qualification requirements are included as Section 4.

COURSE REQUIREMENTS

All Third Class Cadets will be required to complete a VOYAGE PLAN piloting project during the Third Class cruise. Detailed procedures for completing this project and minimum content requirements for the project will be provided in a VOYAGE PLAN Manual given to you at the start of this Sea Term. The Third Class Voyage Plan project will comprise 30% of your cruise grade. It is expected that it will be completed in a professional manner in accordance with published time frames. If you are experiencing difficulty with any aspect of the Third Class Voyage Plan, see the Deck Training Coordinator for assistance.

TRAINING MATERIAL AND EQUIPMENT

The following equipment and textbooks will be required to complete the Third Class Deck Training Program:

1. Rules of the Road Manual – USCG
2. Dutton’s Nautical Navigation
3. Cornell Manual for Lifeboatmen, Able Seaman and QMED
4. Marine Fire Fighting - Brady
5. T.S. KENNEDY SAFETY MANUAL
6. Personal calculator
7. Plotting Equipment - Navigation triangles, dividers, compass, mechanical pencil
8. Pocket knife, flashlight (with red lens), hard hat, accurate watch, and work gloves

Any other equipment required by Com Cad Sea Bag Requirements.

TRAINING MATERIAL AND EQUIPMENT CONT

Recommended additional books (not required)

1. AMERICAN MERCHANT SEAMAN'S MANUAL
2. AMERICAN PRACTICAL NAVIGATOR, NAVPUB #9
3. AMERICAN MERCHANT MARINE OFFICER'S HANDBOOK
4. MODERN SEAMANSHIP - Knights
5. WEATHER FOR THE MARINER
6. Coastal & Deep Sea Nav Class Notes
7. Basic Seamanship Class Notes
8.

None of the above items will be provided by the Academy. Students will be provided a sextant from the instructor prior to any class requiring them. Sextants may be retained only during that class unless special permission is received from the training officer. Cadets losing or damaging a sextant through inattention or negligence will be charged for its replacement value.

A cruise grade will not be forwarded to the Registrar until this bill is paid.

COURSE/CRUISE GRADING POLICY

The following grading policy applies to all cadets participating in Sea Term II – sophomore cruise.

- Successful completion of the Sea Term is a prerequisite for graduation.
- In accordance with the Mass Maritime Academy academic policy, the minimum passing grade for Sea Term II, MT-2371 is 60%.
- Grades will not be scaled.
- The + - system will be used.
- Final grades for Sea Term II will be based on the following percentage values:

Written Examinations*	40%
Voyage Plan Project	30%
Bridge Watchstanding**	20%
Maintenance (Provided by Chief Mate)	10%

*Two written examinations will be administered during the cruise training cycle. Examinations will be scheduled as follows:
MID TERM Covering Phase One Training Subjects ALL DIVISIONS 26 Jan
FINAL Covering Phase Two Training Subjects ALL DIVISIONS 17 Feb

You will be evaluated for your performance on the bridge while performing the roles of **Cadet Helmsman, **Cadet Quartermaster, Cadet Assistant Navigator, Cadet Weatherobserver, etc.** These grades will be assigned daily by the bridge watch officer with comments from the bridge training officer to give you your Bridge Watchstanding grade component. An explanation of the evaluation process is contained in the Watch Evaluation Procedures Section 3.

DEPARTMENTAL TRAINING SCHEDULES

Cadets are advised to consult the Third Class Deck Long Term Training Schedule (Section 5) to determine subjects and locations of daily training evolutions. A Daily Training Schedule will be posted at 1900 each evening to update the Long Term Training Schedule to reflect last minute changes resulting from ship operational requirements, weather or other circumstances.

The Daily Training Schedule will be posted in the following locations:

1. Deck Training Office
2. Main Deck Stbd Side Mess Deck
3. Library Bulletin Board
4. Forward House Rate Bulletin Board
5. Cadet Berthing Upper Tween
6. Cadet Information Bulletin Board outside Machine Shop
7. Deck Training Classrooms

Make sure you see a copy of the next day's training schedule if you have training the next day.

The Daily Training Schedule will take precedence over the long-term schedule.

Cadets will be held accountable for its contents and must report for all classes as scheduled.

Cadets failing to meet a class as scheduled, leaving a class without the permission of the instructor, or returning late from a Fire/Abandon Ship or other drill will be placed on report. Students with any misunderstanding of use of any of these schedules or any other questions relating to your Deck Training Program should see the Deck Training Coordinator at the Deck Training Office for clarification or assistance.

A great deal of effort has been made in providing you with insight into the contents of each lecture which you are scheduled to attend. It is your responsibility to familiarize yourself with the contents of the lecture profile found in Section 4 for your scheduled class prior to your attending that session. **You will be held accountable for the reading material assigned in the lecture profile and for providing any equipment specified in the lecture profile required to carry out the session.** Cadets failing to report to a scheduled class without the required publications and or equipment necessary to complete the scheduled class or evolution will be placed on report.

Massachusetts Maritime Academy is committed to providing reasonable accommodations to students with documented disabilities. Students who believe they may need accommodations in this class are required to contact the Sea Term Director of Disability Compliance, within the first two weeks of classes.

CONCLUSION

Our practical goal for you for this Sea Term is to ensure that you have progressed to a professional Able Seaman competency. If you need assistance at any time, please seek out the Deck Training Coordinator or any Deck Training Officer. Do not wait until the end of the training cycle to achieve these performance skills. You will be tested during the mid-cruise exam period and at the end of cruise to determine your progress in meeting these performance standards. To a large extent, your cruise grade will be determined by your demonstrated proficiency in all Third Class Cadet watch station requirements

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SECTION 1

Safety Familiarization

SECTION 1 VESSEL SAFETY FAMILIARIZATION PROGRAM

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SAFETY FAMILIARIZATION
All individuals assigned to a vessel and who commence training after August 2, 1998 must meet the following international minimum competencies before being assigned to the vessel. The minimum training requirements and expected outcomes for the Vessel Safety Familiarization Training which you have received is indicated below. Emphasis of the Third Class Deck Training Program will be to dramatically increase your skill above these minimum levels.

VESSEL SAFETY FAMILIARIZATION

Be able to understand:
Understand safety information symbols, signs and alarm signals.
Must be able to speak, read and understand English. Safety information symbols, signs and alarm signals are correctly interpreted. Safety instructions are clearly understood. Orders are carried out and properly complied with.

Know what to do if:
The fire and emergency signal is sounded. *Actions taken during relevant drills or actual emergency situations are appropriate to the circumstances and in accordance with emergency procedures or safety regulations. The type and scale of emergency must be promptly identified. Initial actions are appropriate to the urgency of the situation.*

Be able to identify:
Identify muster and embarkation stations and emergency escape routes. *Actions taken during relevant drills or actual emergency situations are appropriate to the circumstances and in accordance with the station bill, emergency procedures or safety regulations.*
The distress or emergency signals are immediately recognized. Reports to designated station properly dressed wearing life jacket or immersion suit, ready to carry out duties on command.

Emergency procedures and safety regulations:
Read and demonstrate an understanding of T. S. KENNEDY's emergency procedures and safety regulations for:

A. At sea fire control plan
B. In port fire control plan

Actions taken during relevant drills or actual emergency situations are appropriate to the circumstances and in accordance with emergency procedures or safety regulations. The type and scale of emergency must be promptly identified. Actions are appropriate to the urgency of the situation.

Be able to raise the alarm:
Raise the alarm and have a basic knowledge of the use of portable fire extinguishers.
Actions taken during relevant drills or actual emergency situations are appropriate to the circumstances and in accordance with emergency procedures or safety regulations. The type and scale of emergency must be promptly identified. Makes a preliminary assessment of the situation and then raises the alarm. Proper portable fire extinguisher and suitable extinguishing agents are selected and utilized for various classes of fire.

Be able to locate:
Locate and explain how to operate fire-fighting equipment; fire monitoring systems, alarm activating points, general alarm bells, fire extinguishers, fire hydrants, fire axes and hoses. *Actions taken during relevant drills or actual emergency situations are appropriate to the circumstances and in accordance with emergency procedures or safety regulations. Demonstrate the ability to access and utilize fire-fighting equipment in a timely manner.*

Be able to locate:
Locate, close and open the fire (flame screen), watertight doors, and weather tight doors fitted aboard, other than those for hull openings.
Actions taken during relevant drills or actual emergency situations are appropriate to the circumstances and in accordance with emergency procedures or safety regulations. Demonstrate the ability to access and utilize fire-fighting equipment in a timely manner.

Be able to locate:
Locate fixed CO_2 bottle rooms and control valves. Explain how to operate fixed fire-fighting systems:
Actions taken during relevant drills or actual emergency situations are appropriate to the circumstances and in accordance with emergency procedures or safety regulations. The type and scale of emergency must be promptly identified. Demonstrate the ability to access and utilize fire-fighting equipment in a timely manner.

Be able to locate:
Locate and explain the operation of the emergency fire pump. *Actions taken during relevant drills or actual emergency situations are appropriate to the circumstances and in accordance with emergency procedures or safety regulations. Demonstrate the ability to access and utilize fire-fighting equipment in a timely manner.*

Be able to locate:
Locate the damage control lockers, breathing apparatus and fire-fighter's outfits.
Actions taken during relevant drills or actual emergency situations are appropriate to the circumstances and in accordance with emergency procedures or safety regulations. The type and scale of emergency must be promptly identified. Demonstrate the ability to access and utilize fire-fighting equipment in a timely manner.

Be able to locate:
Locate and explain how to operate the emergency deck stop mechanism for the main engine, including other emergency stop valves.
Actions taken during relevant drills or actual emergency situations are appropriate to the circumstances and in accordance with emergency procedures or safety regulations. The type and scale of emergency must be promptly identified. Demonstrate the ability to access and utilize the emergency deck stop mechanism for the main engine, including other emergency stop valves in a timely manner.

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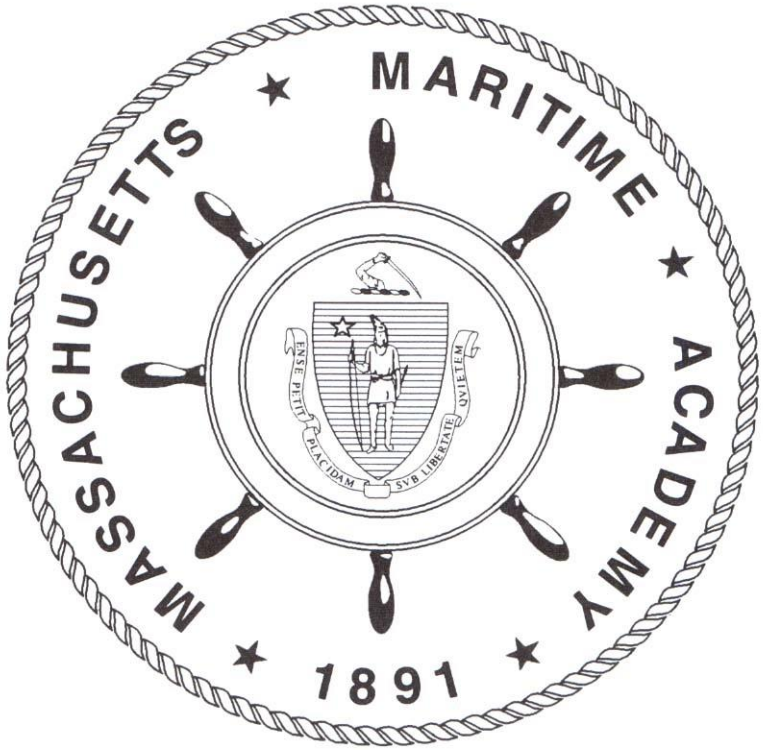

SECTION 2
STCW ASSESSMENTS

STCW Assessment Procedures

Captain Mayhofer – STCW Cruise Compliance Officer

Third Class cadets will be given the opportunity to pass each of the cruise assessments listed below on Sea Term II (sophomore cruise). However, it is each cadet's sole responsibility to satisfactorily complete all of these assessments by the end of Sea Term IV (senior cruise). The Read Barometric Pressure and Chart Selection assessments will be administered on the mid-term examination day while the Route Planning assessment will be administered on the final examination day. Schedules will be posted and explained on cruise.

Any questions regarding these Assessments come and see me immediately.

ASSESSMENT #	TASK NOTES
OICNW-7-7A	**Read Barometric Pressure**
OICNW-1-3B	**Chart Selection**
OICNW-1-3C	**Route Planning IMO Resolution A.893(21)**

STCW ASSESSMENTS RULES

- **A training session will be provided prior to the administration of each assessment.**
- **All Cadets shall learn each assessment task and performance standard prior to commencement of any assessments.**
- **Each cadet shall inform the Assessor that he/she would like to be assessed on a particular assessment prior to performing each task.**
- **Each assessment must be completed to the satisfaction of STCW Compliance Officer, Captain Mayhofer**

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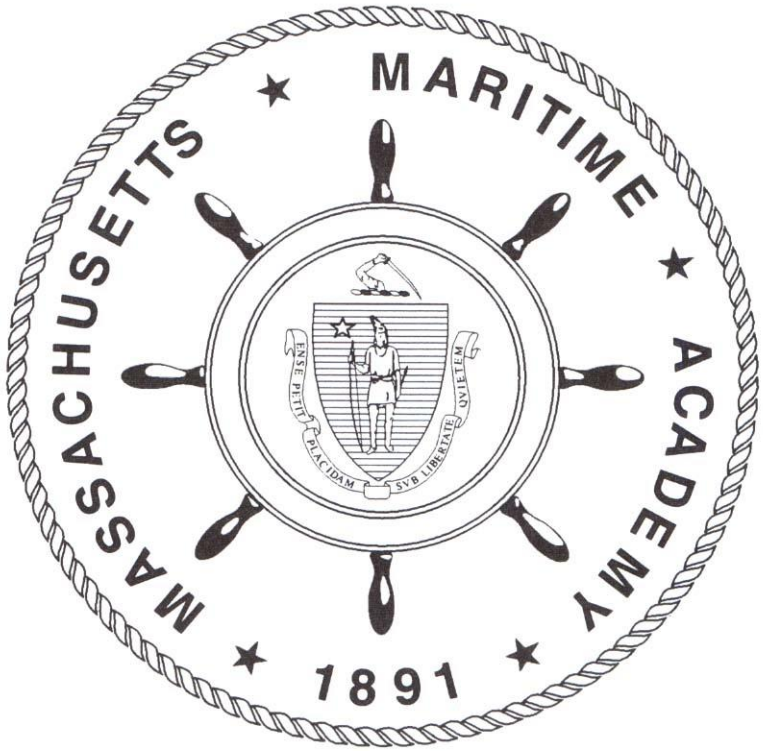


SECTION 3
WATCH EVALUATION PROCEDURES

Department of Marine Transportation
Third Class Sea Term Watch Evaluation

Explanation of the Watch Evaluation Procedures

"Bridge watchkeeping is the single most important activity conducted at sea. Upon the watchkeeper's diligence rest the security of the ship and all who sail on board. It is a demanding activity, frequently undervalued, which needs support, encouragement, motivation, self discipline and high standards of professionalism".

The Nautical Institute on Bridge Watchkeeping, 1993

It remains the responsibility of every cadet who assumes a watch station on the bridge to be keenly aware of the contents of the Master's Standing Orders and the *T.S. KENNEDY* Bridge Procedures Manual.

In order to provide an objective analysis of individual Cadet performance while on watch, the Officer of the Watch will evaluate the performance of individual cadets assigned to designated watch stations using a standardized Watch Evaluation Sheet. On completion of this evaluation, a numerical grade will be assigned for the watch. Cadets are encouraged to review their individual Watch Evaluation Sheet with the Officer of the Watch at a convenient time upon completion of the watch. Every First and Third Class watch station has a multi question section on the Watch Evaluation Sheet. These watch station performance evaluations are provided on the following pages. Cadets are encouraged to become familiar with the Watch Evaluation Sheet criteria before standing their initial watch.

The following pages will provide some explanation and references for each watch station's questions. Cadets can expect higher grades per watch if they attempt to comply with these explanations: However, this does not compromise the Officer of the Watch's individual demands or requirements that he/she may desire of the watch stander.

MAKE SURE THAT YOU TRACK ALL YOUR CRUISE WATCH GRADES AS THEY ARE A MAJOR COMPONENT (20%) OF YOUR 3/C SEA TERM GRADE! IF YOU ARE UNSURE OF A GRADE AFTER STANDING A WATCH SEEK OUT THE WATCH OFFICER OR THE COOW FOR THE WATCH. YOU MAY, OF COURSE, ALWAYS CONSULT WITH ME IN THE DECK TRAINING OFFICE IF THERE REMAINS ANY CONFUSION/CONCERN OVER A GRADE.

DEPARTMENT OF MARINE TRANSPORTATION
CADET WATCH EVALUATION SHEET

OFFICER OF THE WATCH INSTRUCTION

The following Is the instruction to the Bridge Watch Officer for completing the Cadet Watch Evaluation Sheet at the end of each deck watch.

We will be grading each First and Third class watch position using specific questions for that watch station. Watch station questions are included in the Watch Evaluation Sheet. Bridge watch standing will comprise 20% of each cadet's final overall cruise grade.

Separate Watch Evaluation Sheets have been prepared for 1/C watch positions and 3/C watch positions. One of each sheet should be completed for each watch.

- **Please indicate date, division, and watch on the top of the sheet.**
- **Each cadet's name shall be noted adjacent to the watch station for which they are being evaluated.**
- **At the end of each watch, please evaluate the Cadet Officer of the Watch (COOW).**
- **After reviewing this evaluation with the COOW, along with the COOW and with input from the Bridge Training Officer if present, complete the evaluations on the remaining 1/C & 3/C positions.**
- **Watch score totals shall be added and divided as directed on the Watch Evaluation Sheet. √ = 7.5 ; √+ = 9; √ = 6**
- **If the Watch Officer and/or COOW considers performance "Outstanding" or "Unsatisfactory", they are encouraged to make a short comment next to the scoring boxes.**
- **Completed Watch Evaluation Sheets shall be placed in the three ring Watch Evaluation Binder.**
- **Every day or two, the completed evaluations will be collected and watch grades will be transferred from the evaluation sheet to a computer spreadsheet for cruise grade computation.**

Your assistance with this part of cadet grading and evaluation is greatly appreciated and will help our cadets develop and improve their withstanding skills.

If you have any additional questions, please contact me.

Thank You,

J. Belle,
Deck Training Coordinator

3/c Watch Evaluation Sheet

Date: _____ Div:_____ Watch:_____

Assistant Navigator Name:

	√+	√	√-	Score
Carried out a proper watch relief. Obtained thorough passdown from previous watch.				
Demonstrate Ability to fix the vessel's position by all means available and in a timely manner. All means include visual bearings, RADAR ranges, GPS, celestial, etc.				
Determined SMG and CMG at each fix. Calculated accurate ETAs.				
Communicated effectively to the 1/c Cadet Navigator, RADAR Observer, and COOW.				
Obtained observations and calculated compass error.				

Total Score: √+ =9; √ = 7.5; √- = 6 ÷ 5 = Final Watch Grade (out of 10 pts)

Quartermaster Name:

	√+	√	√-	Score
Understood and complied with the watch routine (at-sea, in port, or anchored).				
Demonstrated the proper use of the PA system, alarms, and sound-powered phone.				
Updated the course board on the forward bulkhead.				
Made proper watch log entries. Used EOT correctly and made Bell Book entries (if applicable).				

Total Score: √+ =9; √ = 7.5; √- = 6 ÷ 4 = Final Grade (out of 10 pts)

Helmsman Name:

	√+	√	√-	Score
Carried out proper watch relief. Oversaw proper watch relief by 4/c helmsmen.				
Steered the vessel in a safe manner at all times. Maintained a vigilant steering watch.				
Ensured 4/c helmsmen were supervised, trained, and evaluated in their steering skills.				
Complied with the directions of the OOW and the COOW. Used proper terminology.				

Total Score: √+ =9; √ = 7.5; √- = 6 ÷ 4 = Final Grade (out of 10 pts)

Weather Observer Name:

	√+	√	√-	Score
Determined true wind direction & speed, observed cloud types, & estimated sea state.				
Recorded, encoded, & transmitted WX report according to NOAA & GMDSS guidelines.				
Continuously learned about equipment (e.g. weatherfax). Trained underclass cadets.				

Total Score: √+ =9; √ = 7.5; √- = 6 ÷ 3 = Final Grade (out of 10)

Assistant RADAR Observer Name:

	√+	√	√-	Score
Maintains a vigilant watch. Identifies contacts and keeps supervisors informed.				
Continuously improved knowledge on RADAR and ECDIS systems.				
Trained underclassmen if time was available to train under class cadets on watch.				

Total Score: √+ =9; √ = 7.5; √- = 6 ÷ 3 =

Key to Scoring:

√+ : 9 : Performance demonstrating a very high level of professional skill, maturity and experience. Performance well above that normally expected of a 3/c MTRA Cadet.
√ : 7.5 : Performance normally expected of a hard-working and prepared 3/c MTRA cadet.
√- : 6 : Performance which is less than that normally expected of a person with 3/c training and experience.

2015 CRUISE TRAINING PROGRAM

Department of Marine Transportation

THIRD CLASS

SECTION 4

Cruise Lecture Profiles

TABLE OF CONTENTS
CRUISE LECTURE PROFILES

LECTURE TITLE: CELESTIAL NAVIGATION I

TRAINING SUBJECT: MARINE SEXTANT

SPECIAL REQUIREMENTS:

- One functioning sextant
- One disassembled sextant with adjustment tools
- *Navigation Pub. No. 9 (1995)*
- Three Arm protractor

TRAINING LECTURE OBJECTIVE:

A. Familiarize students with the parts of the sextant
B. Provide the student with an overview of adjustable and non adjustable sextant errors.
C. Familiarize the student the principles of sextant operation, angle of incidence, etc.

DISCUSS:

A. Adjustable and Non - adjustable Sextant errors
B. Prismatic, Graduation and Centering errors
C. Perpendicularity, Index, Side and Collimation errors
D. Use of the sextant for vertical and horizontal measurements
E. Maintenance and care of the instrument
F. Reading a micrometer drum and a vernier sextant
G. Artificial horizons

SHOW/DEMONSTRATE:

A. Measurement of sun's altitude
B. Horizontal angles of geographic objects
C. Use of the sextant and gyro repeater

READING ASSIGNMENT:

Navigation Pub. No. 9 (1995), articles 1600-1615

MISCELLANEOUS:

A. Cadets are instructed to procure a sextant prior to demonstration period
B. Instructor will remove all errors from Academy owned sextant assigned to individual students and facilitate repairs if possible.

TEST QUESTIONS:

- How does one remove side error?
- What is error of collimation?
- How does one remove index error?

WATCHSTATION/GENERAL TRAINING REF:

Navigation at the operational level; Table A-II/1 (a)

LECTURE TITLE: CELESTIAL NAVIGATION II

TRAINING SUBJECT: SUNLINE/AZIMUTH

SPECIAL REQUIREMENTS:

- Nautical almanac, sextant, chronometer, Navigation Pub. No. 229 and plotting sheet for appropriate latitude.
- Navigation plotting equipment, Cadet Navigation Journal, azimuth circle

TRAINING LECTURE OBJECTIVE:

A. To increase cadet proficiency in obtaining a celestial observation of the sun.

B. To increase cadet proficiency working out a sunline and azimuth and making appropriate entries in Cadet Navigation Journal and compass record book.

DISCUSS:

A. Use of Nautical Almanac
B. Use of sextant
C. Use of plotting equipment
D. Use and care of azimuth circle
E. Sight reduction procedures

SHOW/DEMONSTRATE:

A. Instructor to supervise all aspects of sunline observation and reduction including azimuth.

READING ASSIGNMENT:

A. Navigation Pub. No. 9 Art. 2000-2005, 2006-2007, 2014-2010, 1700-1702, 1704-1706

MISCELLANEOUS:

- Use of sextant
- Use of Navigation Pub. No. 229
- Use of Nautical almanac

TEST QUESTIONS:

Observe the sun at 1010 local time today and answer the following questions:

- What was the Hc?
- What was the true azimuth?
- What was the intercept?
- What was the true bearing of the sun at that time?

WATCH/STATION GENERAL REF:

- Navigation at the operational level; Table A-II/1 (a)

❖ See Next Page

LECTURE TITLE: CELESTIAL NAVIGATION II CONT.

TRAINING SUBJECT: SUNLINE/AZIMUTH (CONTINUED)

WATCH/STATION GENERAL REF CONTINUED:

SIGHT REDUCTION TABLES (NO 229, CELESTIAL LINE OF POSITION) - SUNLINE
Explain the function(s) of the SIGHT REDUCTION TABLES (NO 229, CELESTIAL LOP) USING NAUTICAL ALMANAC) SYSTEM as stated in:

A. American Practical Navigator Navigation Pub. No. 9 (Bowditch 1995)
B. Navigation and Piloting (Dutton)

SYSTEM COMPONENTS
Discuss the designated items listed below

A. Explain the function(s) of this component in terms of what it does for the system.
B. Describe the sources of information for this component.

- Date (Greenwich)
- Greenwich mean time (GMT)
- Greenwich hour angle (GHA) of body
- Local hour angle (LHA)
- True declination
- Apparent altitude (Ha)
- Observed altitude (Ho)
- Computed altitude (Hc)
- Altitude intercept (a)
- Azimuth (Zn)
- Assumed position

LECTURE TITLE: CELESTIAL NAVIGATION III

TRAINING SUBJECT: COMPUTATION OF LAN

SPECIAL REQUIREMENTS:

- Sextant, nautical almanac
- Navigation Pub. No. 229
- Universal plotting sheets
- Chronometer
- Cadet Navigation Journal.

TRAINING LECTURE OBJECTIVE:

A. To review procedures for observing a morning sunline and advancing same to LAN.
B. To show student how to determine time of LAN.
C. To show student how to observe the sun at LAN.
D. To determine ship's position at LAN.

DISCUSS:

A. Compute time of LAN
B. Observe the sun's altitude at LAN
C. Determine the ships' position by a running fix at LAN

SHOW/DEMONSTRATE:

A. Determining the ship's position by celestial observations prior to and at LAN.
B. Pre computation of latitude at LAN.

READING ASSIGNMENT:

Navigation Pub. No. 9, Articles 2000-2004, 2006, 2007-2010

MISCELLANEOUS:

Student Navigation Journal entries to be reviewed by instructor.

TEST QUESTIONS:

Based upon your morning sunlines:

- What is the time of LAN?
- What is the ship's position at LAN?
- What has been the distance run and speed made good from the previous noon?

WATCH/STATION GENERAL TRAINING REF:

LECTURE TITLE: CELESTIAL NAVIGATION III CONT.

TRAINING SUBJECT: COMPUTATION OF LAN (CONTINUED)

SIGHT REDUCTION (LATITUDE AT LAN) (USING NAUTICAL ALMANAC) SYSTEM

Explain the function(s) of the SIGHT REDUCTION (LATITUDE AT LAN) (USING NAUTICAL ALMANAC) SYSTEM as stated in:

A. Navigation and Piloting (Dutton)
B. American Practical Navigator Navigation Pub. No. 9 (Bowditch 1995)
C. Quartermaster 3 & 2

Draw a sample sight reduction form of this system from memory using appropriate symbols and showing all components.

SYSTEM COMPONENTS

Discuss the designated items listed below;

A. Explain the function(s) of this component in terms of what it does for the system.
B. Describe the sources of information for this component.
   - Difference in longitude
   - Watch time of local apparent noon (LAN)
   - GMT of LAN
   - Apparent altitude (Ha)
   - Observed altitude (Ho)
   - True declination
   - Zenith distance
   - Latitude
   - Sextant altitude (Hs)

COMPONENT PARTS

Discuss the designated items listed below

A. Explain the function(s) of this component part in terms of what it does for the system component and how it carries out that function.
B. Describe the source(s) of information for this component part.
C. Describe the entering arguments to determine the information for this component part.
D. Describe the placement of correct sign (+ or -) to this component part and explain the reason(s) for that sign.

LECTURE TITLE: CELESTIAL NAVIGATION IV

TRAINING SUBJECT: RISING PHENOMENA SUNRISE/MOONRISE

SPECIAL REQUIREMENTS:

- Nautical Almanac
- Ship's Dead-reckoning position

TRAINING LECTURE OBJECTIVE:

A. To teach or review use of the Nautical Almanac.
B. To determine sunrise, sunset, moonrise, moonset.

DISCUSS:

A. Lecture profile requirements
B. Navigation Journal entries.

SHOW/DEMONSTRATE:

A. Sunrise,
B. Sunset
C. Nautical and Civil twilight,
D. Moonrise and Moonset.

READING ASSIGNMENT:

Navigation Pub. No 9, Articles 1908-1912

Lecture profiles - Moonrise, Sunrise etc.

MISCELLANEOUS:

- Review requirements of Navigation I, 2
- Instructor may review Cadet Navigation Journal

TEST QUESTIONS:

- What will be the time of moonrise tomorrow at Portsmouth, England?
- What will be the time of sunset tonight?

WATCH/STATION GENERAL TRAINING REF:

- Quartermaster - Navigation Assistant
- Navigator - 1.25
- Professional Achievement Examination
- Navigation at the operational level; Table A-II/1 (a)

SUNRISE/SUNSET/TWILIGHT (NAUTICAL ALMANAC)

Explain the function(s) of the SUNRISE/SUNSET/TWILIGHT (NAUTICAL ALMANAC) SYSTEM as stated in:

A. Navigation and Piloting (Dutton)
B. American Practical Navigator (Bowditch 95)
C. Quartermaster 3 & 2

LECTURE TITLE: CELESTIAL NAVIGATION IV CONT.

TRAINING SUBJECT: RISING PHENOMENA SUNRISE/MOONRISE (CONTINUED)

SYSTEM COMPONENTS

Describe the entering arguments to determine the information for this component part.

- Local mean time (LMT) at tabulated latitude
- Local mean time (LMT) of sunrise/sunset/twilight

COMPONENT PARTS

Discuss the designated items listed below

A. Explain the function(s) of this component part in terms of what it does for the system component and how it carries out that function.

B. Describe the entering arguments to determine the information for this component part.

C. Describe the placement of correct sign (+ or -) to this component part and explain the reasons for this sign.

LMT of sunrise/sunset/twilight:

A. LMT as tabulated latitude

B. Latitude correction

Zone time of sunrise/sunset/twilight:

A. LMT of sunrise/sunset/twilight:

B. Difference of longitude correction (+ or -)

PRINCIPLES OF OPERATION

Demonstrate an understanding of the internal operation of this system by describing the necessity for correct and accurate computations of sunrise/sunset/twilight.

MOONRISE/MOONSET (NAUTICAL ALMANAC) SYSTEM CEL NAV 5

Explain the function(s) of the MOONRISE/MOONSET (NAUTICAL ALMANAC SYSTEM) as stated in:

A. Navigation and Piloting (Dutton)

B. American Practical Navigator (Bowditch)

C. Quartermaster 3 & 2

SYSTEM COMPONENTS

Discuss the designated items listed below

A. Explain the function(s) of this component in terms of what it does for the system.

B. Describe the entering arguments to determine the information for this component part.

- Local mean time (LMT) first date
- Local mean time (LMT) second date
- Corrected LMT (standard meridian)
- Zone time (moonrise/moonset)

COMPONENT PARTS

Discuss the designated items listed below

A. Explain the function(s) of this component in terms of what it does for the system component and how it carries out that function.

B. Describe the entering arguments to determine the information for this component part.

LECTURE TITLE: CELESTIAL NAVIGATION VI

TRAINING SUBJECT: STAR SIGHT, H.O. 249 METHOD

SPECIAL REQUIREMENTS:

- Nautical Almanac
- H.O. 249 - appropriate volume for latitude and year
- Sextant, chronometer & plotting sheets
- Ship's Dead-Reckoning position

TRAINING LECTURE OBJECTIVE:

A. Instruct student in the use of H.O. 249 for star sight reduction and identification.

DISCUSS:

A. H.O. 249 - Epoch year, precession and nutation corrections.
B. Local Hour Angle of Aries.
C. Sextant corrections.
D. Selected stars.

SHOW/DEMONSTRATE:

A. Proper use of H.O. 249 to obtain a star fix by observation using four selected stars.

READING ASSIGNMENT:

*Navigation Pub. No. 9 (*1995)
Air Almanac Pub. 249

MISCELLANEOUS:

1. Instructor to assist student to obtain sight using Pub. 249
2. Student's work to be done in Navigation Journal

TEST QUESTIONS:

- How do you determine which selected stars in H.O. 249 will give you the best cut?
- Why must you check to see if you need to apply a precession and nutation correction?

WATCH/STATION GENERAL TRAINING REF:

- Navigation at the operational level; Table A-II/1 (a)

LECTURE TITLE: COMMUNICATION III

TRAINING SUBJECT: VHF RADIO TELEPHONE

SPECIAL REQUIREMENTS:

- Power and access to VHF radio
- VHF Radio Telephone Log
- *IMO Standard Marine Communication Phrases*

TRAINING LECTURE OBJECTIVE:

A. Familiarize cadets with the proper VHF radio operation procedures
B. Familiarize students with VHF licensing and log requirements

DISCUSS:

A. VHF radio station and operator license requirements in accordance with FCC regulations
B. Monitor/Guard responsibilities
C. Frequency spectrum
D. Equipment nomenclature
E. Traffic priority : Mayday, Pan-Pan, Securitee
F. Digital Selective Calling capabilities and responsibilities

SHOW/DEMONSTRATE:

A. Proper tuning procedures
B. Proper communications techniques

READING ASSIGNMENT:

T.S. KENNEDY Bridge Procedures Manual

Manufacturer's operating manual for designated equipment

MISCELLANEOUS:

- Introduce the concept of the Global Maritime Distress and Safety System
- Introduce the concept of the *IMO Standard Marine Communication Phrases*

TEST QUESTIONS:

- Channel 16 corresponds to what frequency?
- What channels are receive only?
- What is the range of the VHF radio telephone?

WATCHSTATION/GENERAL TRAINING REF:

Navigation at the support level; Table A-II/4 (c)
Operate life saving appliances; Table A-II/1 (m)
Respond to a distress signal at sea; Table A-II/1 (e)

LECTURE TITLE: COMMUNICATION IV

TRAINING SUBJECT: RADIO SHACK / GMDSS WORKSTATION FAMILIARIZATION

SPECIAL REQUIREMENTS:

- Power and access to radio shack equipment and related accessories
- Assistance of Radio Officer requested\

TRAINING LECTURE OBJECTIVE:

A. Help form a good working liaison between the deck cadets and the Radio Officer
B. Familiarize cadets with the Radio Officer's equipment, duties and responsibilities

DISCUSS:

A. Watch requirements
B. Transmitter, Receivers and Antennas
C. Auto alarms and logbooks
D. Time Ticks
E. FCC Regulations and certificates
F. GMDSS

SHOW/DEMONSTRATE:

A. Auto alarm test procedure
B. Proper antenna line-up
C. Time tick procedures
D. *IMO Standard Marine Phrases*
E. SAFETY NET System

READING ASSIGNMENT:

Navigation Pub. No.9 Articles 2800-2808

TEST QUESTIONS:

- What combination of signal sends the radio shack into alarm?
- What frequency does the auto alarm monitor ?
- What is the responsibility of the primary GMDSS radio station operator while underway

WATCHSTATION/GENERAL TRAINING REF:

- Cadet Officer of the Watch
- Cadet Navigator
- Professional Achievement Exam
- Navigation at the Support Level
- Operating life saving appliances

LECTURE TITLE: COMMUNICATION V

TRAINING SUBJECT: GLOBAL MARINE DISTRESS & SAFETY SYSTEM

SPECIAL REQUIREMENTS:
- GMDSS master handbook
- Licensed GMDSS operator
- Access to GMDSS station

TRAINING LECTURE OBJECTIVE:
A. Familiarize cadets with the training ships GMDSS system
B. Enable students to identify different equipment

DISCUSS:
A. SATELLITE CAPABILITIES
B. SEA AREAS
C. FCC AND USCG REGULATIONS FOR GMDSS RADIO STATION OPERATORS
D. COMMUNICATION FUNDEMENTALS
E. NAVTEX AND SAFETYNET
F. PROPER RADIO ETIQUETTE
G. AMVER SEAS

SHOW/DEMONSTRATE:
A. EPIRB
B. SART
C. NAVTEX
D. NBDP

READING ASSIGNMENT:
NAVIGATION PUB NO. 9

MISCELLANEOUS:

TEST QUESTIONS:
- What is the primary cause of false distress under the GMDSS system?
- The term MMSI normally refers to?
- What is the correct procedure to respond to a distress received by HF?

WATCHSTATION/GENERAL TRAINING REF:

LECTURE TITLE: NAVIGATION GENERAL VII

TRAINING SUBJECT: LOG BOOK REVIEW

SPECIAL REQUIREMENTS:

- Azimuth Record Book
- Bell Book
- Deck Log
- Noon Position Reports
- Quartermaster's Notebook

TRAINING LECTURE OBJECTIVE:

A. Prepare cadets to make proper entries in the various bridge logbooks.
B. Prepare cadet to properly complete and distribute ship's noon position report.

DISCUSS:

A. Importance of timely and accurate logbook entries.
B. Proper logging procedures.

SHOW/DEMONSTRATE:

A. Quartermaster's Notebook entries.
B. Bell Book entries.
C. Compass Observation Book entries.
D. Bearing Record Book entries.
E. Deck Log entries.

READING ASSIGNMENT:

MISCELLANEOUS:

- Ship's recent noon position report

TEST QUESTIONS:

- What is the Bell Book symbol for slow astern?
- How and why do vessels log fire and boat drills?
- What reference terminates the sea passage?

WATCH/STATION GENERAL TRAINING REF:

Navigation at the support level Table A-II/4 (c)

Deck Log Book Procedures

Preface

Bridge Procedures Manual was written and edited by Captain Joseph S. Murphy, II in consort with contributing members from the Department of Marine Transportation at the Massachusetts Maritime Academy. These procedures are intended for instructional purposes only during the sea term aboard the academy training vessel and as a bridge procedure training guide in the bridge training simulator at the Massachusetts Maritime Academy.

Principle references consulted include publications of the U.S. Coast Guard, United States Department of Transportation, Maritime Administration, International Maritime Organization, International Chamber of Shipping, as well as published and unpublished data, and information from the files of the Massachusetts Maritime Academy.

An Instructional Guide For Training Purposes Only:
It is impossible to prescribe procedures or provide regulations which will cover every situation. The *Bridge Procedures Manual* are issued for the guidance of the students and are not intended in any way to restrict the Master's authority or obligation to conduct himself, in his/her judgment, in the best interest of the training ship or Massachusetts Maritime Academy. This manual has been designed to address points not covered elsewhere and to provide those onboard, responsible for conducting daily routine operations as well as emergency responses, with background information that may not otherwise be available to them. It in no way replaces or supersedes any of the equipment manuals provided onboard but should be used in conjunction with them. Care has been taken in the preparation of this manual to avoid contradictory information. In the event that discrepancies are found between the advice provided herein and elsewhere, the student should be guided by the official manuals, but shall promptly draw such differences to the attention of the Master who will effect such changes as the circumstances of the particular case admit.

If the procedures described in the *Bridge Procedures Manual* are to produce uniformity in daily routines and understandable procedures, they must be followed in detail, unless the circumstances of the particular case make alternate procedures advisable.

All rights are reserved. No part of this publication can be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopy, recording, or any information storage or retrieval system, without the prior permission from Captain Joseph S. Murphy, II at the Massachusetts Maritime Academy, 101 Academy Drive, Buzzards Bay, MA 02532, (508) 830-5021.

Deck Log Book Procedures

1. INTRODUCTION

A. The Deck Logbook is the legal and permanent record of the ship's life and operation. Because of the many ramifications involved, it is absolutely essential that an accurate, complete and proper logbook be kept. The importance of the Deck Logbook cannot be sufficiently emphasized, as in the case of any proceedings, legal or otherwise, it is the only record that will be accepted as evidence.

B. It is required that all Officers responsible for logbook entries (especially newly assigned Officers) review these instructions. The Master is responsible for proper logbook maintenance and should make a concentrated effort to see that these instructions are followed. How well you write the logbook directly reflects on your personal degree of professionalism.

C. The Deck Logbook is an official record of the vessel and a confidential document. The confidentiality of this logbook will NOT be compromised and NO person will be allowed access to the logbook or to any copies of same, while in the custody of the vessel, for any reason, including, but not limited to such purposes as examination, note-taking, photocopying, etc., without the express authorization of the Master.

2. GENERAL

A. Exceptional care must be used to write the logbook legibly, using proper nautical terms. All entries must be made in non-erasable ink, using a fine or medium point ball pen. All entries will be made in black ink except Arrival, Departure, S. B. E., F.W.E., Drills and Inspections which are to be entered in red ink and underlined. Entries should be neat and as compact as possible, consistent with a complete and comprehensive record of all activities onboard. It is preferred that all entries be printed rather than written in long hand and that the size of all letters not be larger than one line space.

B. Erasures in the Deck Logbook will never be made, nor pages removed from the logbook because of errors. Where an error is made, draw a single line through the error, initial same, and continue with the correct entry. Alterations on the left hand side of the page may be made by drawing a line through the error, initialing same, and inserting the correct data above.

C. Slips of paper will not be attached to the Deck Logbook under any circumstances. Rubber stamps will not be ordered nor used for the Deck Logbook without prior authorization from the Master.

D. Each page of this Deck Logbook is in two (2) copies consisting of a white original copy for retention onboard the vessel and a yellow duplicate copy for submission to the Academy. The white original pages, comprising every other page in this Deck Logbook, are perforated. When all entries for a day are completed, checked, and signed by the Master and Chief Officer, in chronological order, the white perforated original pages will be removed and inserted into a booklet which will be retained onboard the vessel in the vessel's file. The yellow duplicate copy will be retained in the logbook with covers intact and held for delivery to the Academy Administration at the end of the voyage.

E. The Logbook is to be carefully written up by the Officer of the Watch (OOW) every four (4) hours at sea and/or in-port. Officers making single entries shall sign their names and rank after each entry. The officer standing watch must sign his/her name and rank at the end of each watch. Initials are not to be used except when lining out errors as above descried.

F. The Logbook, when completed and its correctness certified by the officer of each watch, and signed by the Chief Officer, shall be placed before the Master for his/her inspection each day at 1200 hours and he/she is to affix his/her signature thereto as proof of his/her having read same and having ascertained that there are no inaccurate or omissions and that he/she agrees with the entries.

G. The Logbook shall be kept continuously day by day from the beginning of the voyage to the end and all times are to be recorded on a 24 hour basis.

H. At sea, the Logbook shall be kept by watches. All appropriate spaces on the left-hand side of the page shall be filled in. On the right-hand side of the page, at sea, watches shall be headed-up as follows: 0000-0400, 0400-0800, 0800-1200, etc. The main intent of the Deck Logbook at sea is to keep a record of the ship's movements and activities so that her passage can be accurately plotted, the weather experienced noted, and all important events recorded. It follows that all navigational data entered must be sufficiently complete and in such form which will facilitate plotting, at any time, the ship's position (dead reckoning) at sea or at anchor or on pilot passage.

3. PARTICULARS *(J. P. GRUNDY PRINTERS, INC., FORM NO. D81)*

TOP OF THE LOG SHEET

A. Heading

(1) **NAME:** Enter *T. S. KENNEDY*
(2) **FROM/TO:** Enter the passage or Port/Pier location
(3) **DATE:** Enter the day, date, and zone description (See: Time Zones Table)
(4) **VOYAGE NO. :** Voyage number-Year (Sample: 001-98).

LEFT-HAND SIDE OF LOG SHEET

B. Columnar Entries

(1) **COURSE:** Courses are entered in degrees - Gyro course, gyro compass error as determined by azimuth, amplitude or range, standard compass course, local variation, heading deviation.
(2) **WIND:** Direction - True wind direction entered in point of the compass; Force - Beaufort force. (See: Beaufort Table)
(3) **BAROMETER:** Enter reading in millibars
(4) **TEMPERATURE:** Air: Enter outside air temperature, dry/wet bulb readings in degrees Fahrenheit. Sea: Enter the sea water injection temperature in degrees Fahrenheit which is obtained from the engine-room at the end of each four (4) watch.
(5) **R. P. M. :** Revolutions per minute of the engines; average R. P. M. is obtained from the engine-room at the end of each four (4) watch.
(6) **LOOK-OUTS, DETEX OR GANGWAY WATCH:** Enter last names of personnel on wheel or serving as look-outs; the names of Detex watchmen and/or gangway watchmen shall also be entered in these spaces as necessary.
(7) **DAILY NOON SUMMARY:** Enter the Noon Position Information daily at sea. Data will be transcribed from the Navigator's and Chief Engineer's Noon Slips.
(8) **SUMMARY PASSAGE:** Enter the passage data which will be transcribed from the Navigator's and Chief Engineer's Passage Reports.
(9) **FUEL/WATER:** Enter the arrival, departure, shifting and/or received fuel oil and water data.
(10) **DRAFTS:** The forward, aft, and mean drafts shall be entered as follows:
    (a) On arrival and departure from any place.
    (b) Daily in-port at 0800, 1600 and 2400 hours.
    (c) Before and after taking bunkers, fresh water, ballast or embarking/disembarking large numbers of personnel. Always note the density of the water in which the vessel is floating, the freshwater allowance correction or list.

3. PARTICULARS

LEFT-HAND SIDE OF LOG SHEET

B. Columnar Entries

(11) **SEA WATCHES:** Enter the time and date that sea watches are broken and/or set for the officer's and crew.

(12) **SAILING/SHIFTING BOARD:** Enter the time and date that the Sailing/Shifting Board is posted and/or changed.

RIGHT-HAND SIDE OF LOG SHEET

A. Remarks at Sea and/or in-port, where applicable.

(1) Each watch shall begin with the time of day, Relieving Officer's name, the chart in use, a brief description of the weather, sea and swell conditions, vessel's riding status, the speed by nozzles and engine revolutions, course being steered and made good and the steering system in use and its operating mode as well as the active radar/ARPA systems.

(2) Any changes in course shall be entered with the time of such changes.

(3) Any changes in speed shall be entered with the time of such changes.

(4) Any changes in vessel status or equipment shall be entered with the time of such changes.

(5) Watch Condition Status which will be set and changed by the Master or watch officer consistent with the Standing Orders as the circumstances of the case admit in order to take proper and effective action to avoid collision. (Red)

(6) Precautions taken during reduced visibility. (Red)

(7) The name, in full, of every pilot assisting the Master as well as the time of boarding or departing, and the time of his/her taking or giving up pilotage duties.

(8) Principal navigational aids used, with true bearings and distance of any land or lights in sight.

(9) Any important bow, beam, and cross bearings taken.

(10) When and what soundings are obtained, including sounding over various depth curves.

(11) Time zone changes, International Date Line and Equator crossings are to be noted. (Red)

(12) Any changes in weather shall be entered with the time of such changes.

(13) Sea - True direction and height (state) of sea conditions

(14) Unusual changes in sea temperature particularly when associated with passage through ocean currents.

(15) When vessel is laboring, pitching, straining, rolling or taking water, the word “spray” is never to be used. The vessel is considered to be either taking seas or not taking seas. Describe all measures taken to ease vessel's motion and secure during heavy weather.

(16) Diversions and detentions - reason, time expended, and miles deviated. (Red)

(17) If radar is not working and repairs are not possible. This entry must be signed by the Master, Chief Officer, and Second Officer. (Red)

(18) Any alleged accidents, casualties, fires, or unusual circumstances or occurrences that may affect the safety of the vessel or cargo, or welfare of the crew and environment. In case of grounding, collision, or other marine disaster, a very careful and complete record of all events leading up to, during and immediately following shall be entered in the Logbook, including the name of the officer of the watch, and the names and stations of the men on the look-out and at the helm. In these cases, entries in the Logbook shall receive early and most careful consideration of the Master and Chief Officer, in consultation with officer writing the Logbook. All entries should be confined to statements of fact and any assistance given to, or received from, an outside party should be recorded in detail. (Red)

(19) Any births or deaths that may occur among the cadets or crew and, in the latter case, the time and place of burial and the disposition of personal effects. (Red)

(20) Details of ballasting and de-ballasting and/or the pumping of bilges or slop tanks noting times, quantity of liquid and tanks involved.

3. PARTICULARS

B. Remarks on Arrivals, Sailing and Shifts.

(1) Time anchors are cleared and ready for immediate use.

(2) Time of S.B.E. or F.W.E. - first bell and time and position of arrival as contained in the Bell Book. Tenth of an hour or six (6) minute time increments will be used to expedite passage report requirements. (Red)

(3) The name, in full, of every pilot assisting the Master as well as the time of boarding or departing, and the time of his/her taking or giving up pilotage duties.

(4) After Pilot is onboard and at the con, make following entry as appropriate: "Various courses and speeds as per Pilot's orders while proceeding to berth/sea as noted in the bell book. "

(5) Names of principal lighthouses, jetties and landmarks, etc. passed.

(6) If vessel anchors, enter time let go, port or starboard anchor, amount of chain, fathoms of water, and true bearings of the anchorage. Enter time began heaving and anchors aweigh. (Red)

(7) Time watertight integrity is changed. The time side ports or hatches are opened/closed.

(8) Names and times tugs are alongside and location alongside the vessel.

(9) Time entering locks, secure in locks, and clear of locks.

(10) The time first line to dock, time alongside, and time secure. (Red)

(11) Time finished with engines and give conditions. (Red)

(12) Times Pilot and tugs away.

(13) Time singled-up, first or last line, and clear of dock or all secure. (Red)

(14) Time and place of departure. (Red)

C. Remarks in-port.

(1) The first remark at the start of each day, should state the status of the vessel and be entered at the top of the lined area of the "Remarks" section, such as: (See Deck Watch Entry in-port). Subsequent watches may indicate "moored as before" supplemented by the following comments.
(2) Summary of weather at sunrise and sunset (supplemented by appropriate entries in the "wind", "barometer", and "thermometer" columns.
(3) Times of use of deck, cargo, gangway and special lights.
(4) All Detex watchmen's names, times of duty, and location.
(5) Exact time barges arrive and leave the vessel, whether loaded or empty. Also, names of tugs towing, location alongside, and work performed i.e. bunkering operations.
(6) Details of bunkering operations including the time and location operations were conducted, type and net barrels of oil received, vendor's name and method of conveyance (barge/pipeline).
(7) Any alleged injuries to personnel other than crew members. These entries should be limited to statement of fact. (Red)
(8) When and for what purpose boats leave the vessel and return, identifying same with the boat number, coxswain or person in charge and the number of persons aboard.
(9) The times and names of any officials, surveyors, or inspectors aboard and purpose and result of the visit, such as:
    (a) USCG Inspectors
    (b) ABS Surveyors
    (c) Board Underwriter Inspectors
    (d) Customs, Immigration,
    (e) Quarantine & Other Officials
    (f) MARAD Officials
    (g) Police
    (h) Private Surveyors
    (i) Shipyard Repair Personnel
    (j) Others
(10) Times of opening and closing side ports and hatches, identifying same. (Red)
(11) Times started and finished required USCG inspections and drills.
(12) If radar is not working and repairs are not possible. This entry must be signed by the Master, Chief Officer, and Second Officer. (Red)
(13) The exact times when passengers/observers are embarked or landed.
(14) Anything of interest that occurs in or around the vessel shall be entered in the Logbook.
(15) The approximate number of Cadet Corps Sections aboard.
(16) All times involving cargo or stores activities to be entered to the minute.
(17) Times of starting and ending training evolutions as well as the instructor in charge.
(18) Times of starting and ending of repair activities including the actual work undertaken, the repair vendor's name and the approximate number of laborers involved.
(19) In cases of unscheduled stoppage of the any of the above operations, enter times stopped and resumed operations and reason for stoppage such as lost ship's power, rain, equipment failure, etc. (Red)
(20) A statement to the effect that the vessel is properly secured and that the vessel has been carefully inspected and is seaworthy and secure for sea in all respects prior to sailing. This entry will be signed by the Master. (Red)

D. Remarks in-port during Dry-dock Periods.

(1) Time entered dry dock. (forefoot over the sill)
(2) Time the vessel rests on keel blocks.
(3) Time vessel is dry.
(4) General condition, observed damage, cleaning and paint of the bottom.
(5) Time began flooding.
(6) Time the vessel is afloat.
(7) Time clear of the dry-dock. (Forefoot clear of the sill)

E. Inspections, Tests, Searches and Drills. (All entries should be made in red ink.)

(1) Fire, emergency and boat drills.
(2) Launching of lifeboats and exercising the crew under oars.
(3) Inspection of lifeboat equipment.
(4) Change-over of lifeboat fuel.
(5) Inspection and service of liferaft equipment.
(6) Inspection of exposure suits.
(7) Inspection and service of firefighting equipment.
(8) Stripping and overhaul of lifeboats.
(9) Test of lifeboat winch motor controllers, control, master disconnect and limit switches.
(10) Test of line-throwing appliance.
(11) Test of EPIRB.
(12) Test of emergency lighting and power systems including storage batteries.
(13) Pre-Arrival tests and inspections.
(14) Pre-Departure tests and inspections.
(15) Emergency steering drills.
(16) Tests and inspections of bridge equipment daily at 1200 zone time:
    (a) Test the ship's whistle.
    (b) Test the General Alarm Bells.
    (c) Test all means of vessel internal control communications.
    (d) Set and synchronize ship's clocks with the chronometers.
    (e) Test bridge and engine-room telegraphs and revolution indicators.
    (f) Test the steering system in all modes of operation and the change-over procedure.
    (g) Test radio-room auto-alarm.
    (h) Test watertight and flame screen doors.
    (i) Test hazard monitoring equipment including change over procedures.
    (j) Test the operation of the radar/ARPA systems.
    (k) Test the operation of speed/distance recorder.
    (l) Test the navigation and emergency lights.
    (m) Test the echo sounder and depth recorder.
    (n) Ventilation of cargo holds and living spaces.
(17) Master's sanitary inspections conducted.
(18) Inspection of shell plate and wheel after docking and shifts.
(19) Inspections prior to bunkering operation.
(20) Inspection of cargo gear.
(21) Inspection of cargo gear prior to loading, discharge or cadet training.
(22) Inspection of cargo holds prior to loading.
(23) Inspections of deck cargo lashings prior to sailing.

(24) Inspections of dangerous cargo, deck cargo, boat and container lashings made daily by the Chief Officer.
(25) Stowaway search. This entry to be signed by the Master and Department Heads. (Red)
(26) Search for contraband prior to arrival and/or departure. This entry to be signed by the Master and Department Heads. (Red)

4. TERMINOLOGY

A. At Sea

The term *"Routine Inspections"* will include:

(1) That the ventilation of training, storage and living spaces has been attended to.
(2) Training and storage spaces secure.
(3) Ventilators properly trimmed.
(4) Radio antennas inspected by Radio Officer.
(5) Lifeboats, launches and davits, side ports, cargo gear, running rigging, deadlights, and watertight doors are properly secured.
(6) Engineer on watch will be notified when temperature falls to 34° F and again when it is 32° F.
(7) Running lights, internal monitoring and alarm systems are operating in proper working condition.

B. Inport

The term *"Routine Inspections"* will include:

(1) When inflammable cargo is being handled, sufficient lengths of fire hose are available and connected to reach vicinity.
(2) Mooring lines are periodically tended.
(3) Deck and passageways are properly lighted.
(4) Gangways are properly rigged, lighted and manned.
(5) Red warning lights are placed on stern.
(6) Detex watchmen know and are attentive to their duties.
(7) Engineer on watch will be notified when temperature falls to 34° F and again when it is 32° F.

5. ANCILLARY DOCUMENTS

A. Official Logbook - must be kept in strict conformity with rules and regulations of the U.S. Coast Guard. Refer to Actions to be Logged (46 CFR 97.35-5).

B. Chronometer Rate Book, Bell Book, Compass Observation Book, Anchor or Bearing Record Book, Navigation Logbook, Radiotelephone Log and Radar Log - these are to be kept with in accordance with the detailed instruction provided on the inside cover of each individual record book. Every attention and care should be exercised so as to show a fair and faithful record of the performance and efficiency of the equipment or the operation being recorded. They must never be removed from the vessel.

C. Tank and Bilge Soundings Book - the books supplied for the purpose of recording the soundings of wells and ballast tanks must be carefully kept. Enter in the Deck Logbook daily at 0800 hours.

D. Master's Voyage Report - Passage Summary and Port Time Information is to be entered on the master's Voyage Report by the navigator and it is not necessary to make these entries on the daily logbook page.

6. NOTES

A. The vessel is never to be left without an Officer of the Watch (OOW). At sea, the Officer of the Watch (OOW) is to keep his/her watch on the Bridge and, when on duty, is not to allow his/her attention to be diverted from his/her work. In case he/she believes the vessel to be running into danger, it is his/her duty to act at once upon his/her own judgment and take the necessary precautionary measures; he/she will, however, immediately pass the word to call the Master. No Officer, on any occasion is to leave the bridge during the watch nor until properly relieved of duty.

B. When the vessel is securely moored in a port, an officer must be assigned for duty who will satisfy himself that everything is in order, Detex watchmen at their posts and vigilant that all precautions against fire have been taken.

C. When bunkering, all regulations must be observed, i. e., red flag or light displayed, scuppers plugged, bilge soundings taken every half-hour and one hour after finish, pass the word that “The smoking lamp is out throughout the vessel during bunkering operations” and appropriate entries made in the Deck Logbook.

D. Immediate steps will be taken to confine and clean oil spills. The U.S. Coast Guard and/or Local Officials also will be advised in accordance with their instructions (1-800-421-8802). An entry will be made in the Deck Logbook regarding the notification of all parties concerned, giving details pertaining to the confinement and clean-up, including the name of the Contractor employed.

E. Entries must conform to the requirements of the U.S. Coast Guard and to applicable master's circulars and memorandums. Obviously, it is not possible to list here all the incidents which should be logged. Refer to the Sample Logbook Entries for additional guidance.

F. At the end of the voyage, the properly completed Deck Logbook, consisting of the yellow duplicate sheets retained in the logbook with covers intact, which has been signed by the Master and Chief Officer, will be forwarded promptly to the Massachusetts Maritime Academy Administration.

OFFICIAL LOGBOOK: ACTIONS REQUIRED TO BE LOGGED

CFR Reference: 46 CFR 97.35-5

(a) The actions and observations noted in this section shall be entered in the official logbook. This section contains no requirements which are not made in other portions of this sub-chapter, the items being merely grouped together for convenience.
  (1) Fire and Boat Drills. Weekly. See 46 CFR 97.15-35
  (2) Steering Gear, Whistle, and Means of Communication. Prior to departure. See 46 CFR 97.15-3, 33 CFR 164.25
  (3) Drafts and Load Line Markings. Prior to leaving port, ocean, coastwise, and Great Lakes services only. See 46 CFR 97.15-5.
  (4) Hatches and other openings. All openings and closings, or leaving port without closing. Except vessels on protected waters. See 46 CFR 97.15-20.
  (5) Line Throwing Appliances. Once every 3 months. See 46 CFR 97.15-25.
  (6) Emergency Lighting and Power Systems. Weekly and semi-annually. See 46 CFR 97.15-30.
  (7) Electric Power Operated Lifeboat Winches. Once every 3 months. See 46 CFR 97.15-40.
  (8) Fuel oil data: Upon receipt of fuel oil onboard. See 46 CFR 97.15-55.
  (9) Cargo gear inspections: At least once a month. See 46 CFR 91.37-70 of this subchapter.

(a) On vessels where an Official Logbook is required by R.S. 4290 (46 U.S.C. 201), all items relative to the crew and passengers, as well as with respect to any casualties which may occur, shall be entered in the Official Logbook as required by this law.

SAMPLE LOGBOOK ENTRIES FOR SAFETY EQUIPMENT

LIFEBOATS - LIFEBOATS DRILLS

CFR Reference: 46 CFR 97.15-35, 46 CFR 97.15-45, 46 CFR 97.15-50; 46 CFR 97.15-30; Weekly

At 1400 hours, in position *Lat. 40°-56' N, Long. 052°-20' W* conducted emergency drills. Fire signals sounded, engine on stand-by cadets and crew mustered and instructed in their duties. Emergency squad mustered and exercised in their duties. Five (5) hoses led out and good pressure applied. Watertight and firescreen doors, emergency lighting and power systems inspected and operated. 1430 hours, fire drill secured. hours, abandon ship drill. 1431 Signals sounded. Cadets and crew mustered at their stations wearing life jackets and instructed in their duties. Six (6) lifeboats lowered to the embarkation deck. Diesel engines in lifeboats No. 1, 2, & 5 operated for five (5) minutes in the ahead and astern modes. Flemming gear in lifeboat No. 6 exercised. Radio receiver operated with artificial aerial. Winches, switches and drains in good order. 1445 hours boats secure, secured from drill. All equipment in good working order. Length of drill Forty-five (45) minutes.

LIFEBOATS - LIFEBOAT EQUIPMENT INSPECTION

CFR Reference: 46 CFR 97.15-35 (b) (9); Monthly

At *1500* hours, in position *Lat. 40°-21' N, Long. 035°-58' W* examined all port and starboard lifeboat equipment this date. All found to be complete and in good working order and condition.

SAMPLE LOGBOOK ENTRIES FOR SAFETY EQUIPMENT

LIFEBOATS - LAUNCHING & EXERCISE AT OARS
CFR Reference: 46 CFR 97.15-35 (b) (6); Quarterly (Every 3 Months)
At *0900* hours, in position *Lat. 45°-26' N, Long. 065°-23' W* lifeboat/lifeboats lowered to the water and released. Releasing gear, blocks, sheaves, falls and all moving parts inspected and greased. Lifeboat engine/Flemming gear operated ahead and astern. Crew exercised at oars. *0928* Lifeboat/lifeboats secured and crew dismissed. All equipment in good working order.

ELECTRIC POWER OPERATED LIFEBOAT WINCH INSPECTION
CFR Reference: 46 CFR 97.15-40; Quarterly (Every 3 Months)
At *1600* hours, in position *Lat. 35°-21' N, Long. 055°-58' W* lifeboat winch motor controllers, control switches, master disconnect switches and limit switches were opened and found to be dry and in good working order.

LIFEBOATS - LIFEBOAT EQUIPMENT INSPECTION
CFR Reference: 46 CFR 97.15-40; Annually (Yearly)
At *1500* hours, in position *Lat. 40°-21' N, Long. 035°-58' W* all lifeboat (s), rescue boat (s) were stripped cleaned and thoroughly overhauled. Fuel tanks of all motor-propelled lifeboats were emptied and the fuel changed. Examined all lifeboat equipment this date. All found to be complete and in good working order and condition.

EMERGENCY POSITION INDICATING RADIOBEACON (EPIRB)
CFR Reference: 46 CFR 97.15-65; Monthly
At *1500* hours, in position *Lat. 40°-21' N, Long. 035°-58' W* examined and tested emergency position indicating radio beacon. Equipment was found to be in good working order.

LINE THROWING APPLIANCES
CFR Reference: 46 CFR 97.15-25; Quarterly (Every 3 Months)
At *1500* hours, in position *Lat. 40°-21' N, Long. 035°-58' W* demonstrated and tested impulse-projected rocket type, line throwing appliance. *Test rocket No. RQ/5671* with flexible line of proper size and length, suitably faked or laid out was used. All equipment was found to be in good working order.

EMERGENCY STEERING DRILL
CFR Reference: 33 CFR 164.25; Quarterly (Every 3 Months)
At *1500* hours, in position *Lat. 40°-21' N, Long. 035°-58' W* conducted an emergency steering drill. Operated and inspected main steering within the steering gear compartment, tested means of communication between the Navigation Bridge and steering compartment, operated alternative power supply for the steering gear. (U.S. Waters only)

EMERGENCY LIGHTING AND POWER SYSTEMS
CFR Reference: 46 CFR 97.15-30 (a); Weekly
At *1500* hours, in position *Lat. 40°-21' N, Long. 035°-58' W* tested emergency storage batteries and emergency generator. Emergency diesel generator was operated under full load conditions. Observed steady state temperatures and electrical load characteristics. All equipment found to be in good working order.

EMERGENCY LIGHTING AND POWER SYSTEMS
CFR Reference: 46 CFR 97.15-30 (b); Monthly
At *1500* hours, in position *Lat. 40°-21' N, Long. 035°-58' W* tested emergency storage batteries and emergency generator. Emergency diesel generator was operated under full load conditions for two (2) hours from *1500 to 1700.* Observed steady state temperatures and electrical load characteristics. All equipment found to be in good working order.

SAMPLE LOGBOOK ENTRIES FOR VESSEL OPERATIONS

EMERGENCY LIGHTING AND POWER SYSTEMS
CFR Reference: 46 CFR 97.15-30 (c); Semi-annually (Every 6 months)
At *1500* hours, in position *Lat. 40°-21' N, Long. 035°-58' W* tested storage batteries for emergency lighting and power systems. Demonstrated the ability of storage batteries to supply the emergency loads for the period of time specified in Table 46 CFR 112.05-5 (a). All equipment found to be in good working order.

NAVIGATION EQUIPMENT
CFR Reference: 46 CFR 97.15-3; Daily (At noon)
At *1200* hours, in position *Lat. 40°-21' N, Long. 035°-58' W* tested and examined engine order telegraphs, general alarm bells, navigation lights, and whistle, echo sounder, smoke detection system, watertight doors, ventilation control systems steering gear and changed over to the *(Port or Starboard)* steering control unit. Synchronized bridge and engine-room clocks. All equipment was found in working good order. (Except as noted)

DANGEROUS CARGO
CFR Reference: 49 CFR 176.39; Daily (When carried aboard)
At *1500* hours, in position *Lat. 40°-21' N, Long. 035°-58' W* conducted a visual inspection of all cargo holds and compartments containing hazardous materials. All was found in good order.

SANITARY INSPECTIONS
CFR Reference: 46 CFR 91.35-1, 46 CFR 97.15-10; Daily or when made.
At *1500* hours, in position *Lat. 40°-21' N, Long. 035°-58' W* Master conducted a sanitary inspection of the vessel. All quarters, toilet and washing spaces, serving pantries, galleys, living and recreations spaces found to be in good order.

SEAWORTHINESS INSPECTION PRIOR TO GETTING UNDERWAY
At *0800 hours, in the port of Buzzards Bay, Massachusetts* the Master conducted a visual inspection of the vessel and found the vessel properly secured and seaworthy in all respects for her intended voyage.

STEERING GEAR, WHISTLE, AND MEANS OF COMMUNICATION
CFR Reference: 46 CFR 97.15-3, 33 CFR 164.25; Tests before entering or getting underway.
At *1500* hours, in position *Lat. 40°-21' N, Long. 035°-58' W* or *(In the Port of Buzzards Bay, Massachusetts)* tested and examined both the primary and secondary steering gear, engine order telegraph, general alarm bells, hand and electric whistles, navigation lights, channel 13 and 16 FM VHF radios, radars and automatic radar plotting aids/collision avoidance systems, echo sounder, all electronic position fixing equipment, compared magnetic and gyro compasses and synchronized master gyro and gyro repeaters, synchronized the bridge and engine-room clocks, tested watertight doors, all internal vessel communications, vessel control alarms, stand-by or emergency generator, storage batteries for emergency lighting and power systems in the vessel control and propulsion machinery spaces and the main propulsion machinery in the ahead and astern modes. Conducted an emergency steering drill. All equipment was found to be in working good order. (Except as noted)

EXPOSURE SUITS
CFR Reference: 46 CFR 97.15-37; Monthly (When carried aboard)
At *1500* hours, in position *Lat. 40°-21' N, Long. 035°-58' W* each member of the crew participated in a demonstration on the donning and use of exposure suits. Each passenger was instructed at the beginning of the voyage on the stowage location of exposure suits and was encouraged to read the instructions for donning and use of exposure suits at that time. Each passenger is instructed at each fire and boat drill on the donning and use of exposure suits.

SAMPLE LOGBOOK ENTRIES FOR VESSEL OPERATIONS

CARGO GEAR INSPECTIONS
CFR Reference: 46 CFR 91.37-70; Monthly
At *1500* hours, in position *Lat. 40°-21' N, Long. 035°-58' W* visually inspected and examined all wire rope, chains other than bridle chains attached to booms or masts, and all rings, hooks, links, shackles, swivels and blocks used in loading or unloading. All equipment found in working good order.

BUNKERING OPERATIONS
CFR Reference: 33 CFR 155-156, 33 CFR 155.710 (e) (1); (Prior to receiving fuel oil aboard)
At *0800 hours, in the port of Buzzards Bay, Massachusetts* prior to the commencement of bunkering operations a complete inspection of the vessel was conducted by the person-in-charge (PIC) of bunkering operations. In the opinion of the person-in-charge (PIC) of bunkering operations all precautions have been taken and that vessel is in compliance with all applicable rules and regulations and is ready in all respects to conduct bunkering operations. Signed by Master, Chief Engineer and Chief Officer

FUEL OIL
CFR Reference: 46 CFR 97.15-55; (When fuel oil is received aboard)
At *0800 hours, in the port of Buzzards Bay, Massachusetts* received onboard *4,600 Net Barrels of IFO 240 Fuel Oil,* with a flash point *120°F*, produced by *Shell Oil Co.* The vendor is *Patriot Petroleum Co.* The fuel oil was received aboard this vessel via the *Barge Petrobas No. 16.*A half pint sample of each lot of fuel oil was drawn, sealed and suitably labeled at the time the supply was delivered. These samples will be preserved until the particular supply of oil is exhausted. Signed by Master, Chief Engineer and Chief Officer

STOWAWAY SEARCH
Prior to sailing from foreign ports and prior to entry into the United States
At *1500* hours, in position *Lat. 40°-21' N, Long. 035°-58' W* completed a search of all quarters, storerooms, machinery and other accessible spaces. No stowaways found. Signed by Master, Chief Engineer and Chief Officer, Commandant of Cadets, Chief Steward.

CONTRABAND SEARCH
Prior to entry into the United States
At *1500* hours, in position *Lat. 40°-21' N, Long. 035°-58' W* completed a search of all quarters, storerooms, machinery and other accessible spaces. No dutiable articles, contraband, or narcotics found. Signed by Master, Chief Engineer and Chief Officer, Commandant of Cadets, Chief Steward.

RESTRICTED VISIBILITY
At *1500* hours, in position *Lat. 40°-21' N, Long. 035°-58' W* approaching restricted visibility, established watch condition 2, stand-by-engine, proceeding at safe speed, initiated fog signals, additional look-outs posted and instructed in their duties, both radars in operation with an effective radar watch being maintained by the bridge team. All USCG Rules and Regulations observed.

DECK WATCH RELIEF ENTRY (AT SEA)
1600-2000, the watch was properly relieved by *1/C Will Graduate, COOW*. The Master's Standing and/or Night Orders observed, courses and the vessel's position were verified on Chart No. 13006. Overcast, moderate visibility, vessel rolling and pitching moderately in a rather rough northeasterly sea and high short swell. Engine is at full sea speed at approximately 13 nozzles/85 RPM's. Steering on the starboard steering control unit in the hand steering mode. Both 3cm and 10cm radars are in use.

A chronological list of watch activities follows. The remarks contained in the body of the watch text should reflect the entries which are delineated in The Directions for Keeping the logbook.

The vessel's position at *1950* hours is *Lat. 43°-06.1' N, Long. 069°-08.0' W*. The vessel's position and compasses were checked frequently. The watch was properly relieved at *1950* hours by *1/C Joe Deckie, COOW*. Routine inspections and Detex rounds conducted, all in good order. *1/C Will Graduate, COOW*

SAMPLE LOGBOOK ENTRIES FOR VESSEL OPERATIONS

CHANGE OF COURSE
At 1930 hours, Diamond Shoals Light Tower is abeam to starboard bearing 270° true at a distance of 10.8 miles by radar. Altered course to 197° true, 198° gyro, 214° psc, 1° west gyro error.

CHANGE OF SPEED
At 1930 hours, vessel in a heavy pitching motion shipping white water over the weather decks forward. Removed the look-out from the forecastle and stationed him/her on the lee bridge wing. Reduced speed to 13 nozzles/85 RPM's in order to ease the vessel's motion in very rough quartering seas. Secured the weather decks to all personnel until further notice.

CODE OF FEDERAL REGULATIONS REFERENCE GUIDE

DAILY TESTS & INSPECTIONS

Sanitary inspection (When made)	46 CFR 91.35-1, 46 CFR 97.15-10
Bridge equipment inspection/tests (At noon)	46 CFR 97.15-3

WEEKLY TESTS & INSPECTIONS

Emergency lighting and power systems inspection	46 CFR 97.15-30 (a)
Fire and boat drills	46 CFR 97.15-35
Motor propelled lifeboat engines ahead and astern test	46 CFR 97.15-45 (3) (b)
Radio apparatus for lifeboats test	46 CFR 97.15-50

MONTHLY TESTS & INSPECTIONS

Sanitary inspection (At least monthly)	46 CFR 91.35-1, 46 CFR 97.15-10
Responsibility of ship's officer for inspection of cargo gear	46 CFR 91.37-70
Emergency lighting and power systems (2 hour load test)	46 CFR 97.15-30 (b)
Lifeboat equipment inspection	46 CFR 97.15-35 (b) (9)
Exposure suits inspection and demonstration (When carried)	46 CFR 97.15-37
Emergency position indicating radio beacon (EPIRB) Inspection	46 CFR 97.15-65

QUARTERLY TESTS & INSPECTIONS EVERY (3 MONTHS)

Emergency Steering Drill	33 CFR 164.25 (d)
Line-throwing appliance test	46 CFR 97.15-25
Lifeboat lowered to the water and crew exercised at oars	46 CFR 97.15-35 (b) (6)
Electric power operated lifeboat winch inspection	46 CFR 97.15-40

SEMIANNUAL TESTS & INSPECTIONS EVERY (6 MONTHS)

Emergency lighting & power systems, storage batteries inspection	46 CFR 97.15-30 (c)

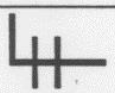
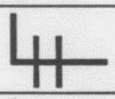
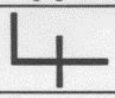
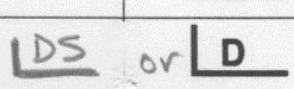
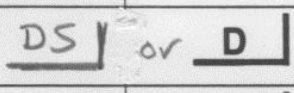
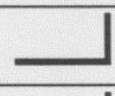
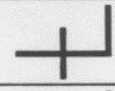
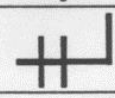
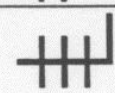
ANNUAL TESTS & INSPECTIONS

Inspection for certification	46 CFR 91.25
Service liferafts	46 CFR 91.25 (a) (6)
Service hydrostatic releases	46 CFR 91.25 (a) (8)
Inspection of assembled cargo gear	46 CFR 91.37-1 (b)
Test and service hand portable, semi-portable, and fixed fire extinguishing systems	46 CFR 91.60 (b)
Flashlight batteries for lifeboats	46 CFR 94.20-15 (j)
Strip and over-haul lifeboats and rescue craft	46 CFR 97.15-45 (c)
Change fuel in motor operated lifeboats and rescue craft	46 CFR 97.15-45 (d)

VESSEL OPERATIONS

Test before entering or getting underway	33 CFR 164.25, 46 CFR 97.15-3
Draft and load line markings	46 CFR 97.15-5
Examination of boilers and machinery	46 CFR 97.15-15
Hatches and other openings	46 CFR 97.15-25
Requirements for fuel oil	46 CFR 97.15-55
Dangerous cargo inspection (When carried)	49 CFR 176.39

Standard Engine Order Telegraph (E.O.T.) signals and symbols will be used by the Bridge and Engine room Watches aboard the *T. S. Empire State* as follows:

ENGINE ORDER TELEGRAPH SIGNALS & SYMBOLS		
ENGINE ORDER SIGNAL	***SYMBOL***	***TELEGRAPH POSITION TACHOMETER INDICATION***
STAND BY ENGINE	**S.B.E.**	*S.B.E. Position* + ± 0 RPM [prior to getting underway
AHEAD MODE +		
FULL THROTTLE +		*Full Ahead Position* Requested by sound-powered-telephone. 80 RPM AHEAD +
EMERGENCY FULL AHEAD +		*Full Ahead Position* Ring Full Ahead two or more times in succession. "Jingle" the telegraph. 60 RPM AHEAD +
FULL AHEAD +		*Full Ahead Position* 60 RPM AHEAD +
HALF AHEAD +		*Half Ahead Position* 40 RPM AHEAD +
SLOW AHEAD +		*Slow Ahead Position* 20 RPM AHEAD +
DEAD SLOW AHEAD +		*Dead Slow Ahead Position* 10 RPM AHEAD +
STOP + ± 0 RPM [		*Stop Position* + ± 0 RPM [
ASTERN MODE [		
DEAD SLOW ASTERN [		*Dead Slow Astern Position* 10 RPM ASTERN [
SLOW ASTERN [		*Slow Astern Position* 20 RPM ASTERN [
HALF ASTERN [		*Half Astern Position* 30 RPM ASTERN [
FULL ASTERN [		*Full Astern Position* 40 RPM ASTERN [
EMERGENCY FULL ASTERN [		*Full Astern Position* Ring Full Astern two or more times in succession. "Jingle" the telegraph. 60 RPM ASTERN [
FINISHED WITH ENGINES	**F.W.E.**	*F.W.E. Position* + ± 0 RPM [

When a mistake is made in the bell book or logbook, cross out the mistake with one line and initial it, then correct the entry made. Never erase logbook entries.

LECTURE TITLE: ELECTRONIC NAVIGATION I

TRAINING SUBJECT: AUTOMATIC IDENTIFICATION SYSTEMS (AIS)

SPECIAL REQUIREMENTS:

- Live or simulated AIS

TRAINING LECTURE OBJECTIVE:

A. Familiarize students with the operating procedures, capabilities, and uses of the AIS system installed aboard the *TS Kennedy*.

DISCUSS:

A. System Configuration
B. System Capabilities
C. System sensor inputs
D. System Errors and Limitations
E. Integration into ECDIS and ARPA

SHOW/DEMONSTRATE:

A. Set-Up
B. Information Input
C. Warnings
D. Errors

READING ASSIGNMENT:

MISCELLANEOUS:

- Instructor handout

TEST QUESTIONS:

WATCHSTATION/GENERAL TRAINING REF.:

LECTURE TITLE: ELECTRONIC NAVIGATION II

TRAINING SUBJECT: GLOBAL POSITIONING SATELLITE NAVIGATION SYSTEMS

SPECIAL REQUIREMENTS:

- Power and access to satellite navigation units

TRAINING LECTURE OBJECTIVE:

A. Familiarize students with the operation and navigational use of installed satellite navigation receivers.

DISCUSS:

A. Capabilities and limitations of GPS and DGPS satellite navigation system
B. Operational features of the Trimble System.
C. Operational features of the Raytheon System.
D. Random errors involved with satellite navigation.
E. System Initialization and fault monitoring.
F. Antenna and other maintenance practices.

SHOW/DEMONSTRATE:

A. Entering information into designated navigation system.
B. Voyage planning with waypoints.
C. Keyboard lock mode.

READING ASSIGNMENT:

Navigation Pub. No. 9 (1995), Articles 1100-1115
T.S. Patriot State Bridge Procedures Manual, P. 240 - Navigation Equipment

MISCELLANEOUS:

TEST QUESTIONS:

- How many satellites are required to obtain a three dimensional fix?
- What is meant by Selective Availability (SA)?
- What is GDOP?
- What are the differences in accuracy and theory between GPS and DGPS satellite navigation systems?
- How can you evaluate the accuracy of a fix obtained on a designated receiver?
- How do you assess Satellite health?
- How do you enter a man overboard position?
- How do you enter a waypoint/route?

WATCHSTATION/GENERAL TRAINING REF:

- Operation Manual for each receiver
- T.S. KENNEDY Standing Orders
- Electronic Position Fixing: T.S. KENNEDY

LECTURE TITLE: ELECTRONIC NAVIGATION III

TRAINING SUBJECT: ELECTRONIC CHART DISPLAY AND INFORMATION SYSTEMS

SPECIAL REQUIREMENTS:

- Live or simulated Electronic Chart Display and Information System (ECDIS)

TRAINING LECTURE OBJECTIVE:

A. Familiarize students with the operating procedures and capabilities of the ECDIS system installed aboard the USTS ENTERPRISE.

DISCUSS:

A. System Configuration
B. System Capabilities
C. System sensor inputs
D. System Errors and Limitations

SHOW/DEMONSTRATE:

A. Start up procedures
B. Chart selection and scale
C. Warnings
D. Environmental selections

READING ASSIGNMENT:

Navigation Pub. No. 9 (1995), Articles 1400-1408

MISCELLANEOUS:

TEST QUESTIONS:

WATCHSTATION/GENERAL TRAINING REF:

LECTURE TITLE: FIREFIGHTING I

TRAINING SUBJECT: FIRE THEORY AND SHIPBOARD DETECTION SYSTEMS

SPECIAL REQUIREMENTS:

- Access to Bridge
- Access to Co2 Room

TRAINING LECTURE OBJECTIVE:

A. Common Sense approach to fire extinguishment
B. First by prevention and use of a proper medium or agent
C. Introduce students to various smoke and fire detection systems aboard T.S. KENNEDY

DISCUSS:

A. Fire Triangle and Tetrahedron – Emphasize that vapors burn (even from solids).
B. Knowledge of contents of a compartment and knowledge of your ship are priceless.
C. Emphasize Fire Prevention. A clean ship is less likely to be a fire statistic
D. Classes of Fires
E. Procedures for dewatering and prevention of reflash
F. Various smoke and fire detection systems in use aboard the T.S. KENNEDY
G.

SHOW/DEMONSTRATE:

A. Extinguishment procedures and agents for Class A, B, C, D Fires
B. Show that if burning Class A materials can be thrown overboard, then no fire
C. Discuss procedures for monitoring systems for smoke or mechanical /electronic failure
D. Test procedures and log requirements

READING ASSIGNMENT:

Marine Fire Fighting, Brady Part I, Chapter I and 2; Part II, Chapters 4 and 5
T.S. KENNEDY Bridge Procedures Manual

MISCELLANEOUS:

Students should read all bridge and smoke detection system instruction placards

TEST QUESTIONS:

- Fire Prevention, Fire Triangle and Tetrahedron
- Knowledge of Vessel, Equipment Required
- Fire Prevention (Galley, Rags, Paint Locker, Improperly used smoking materials)
- Improper / Insufficient Ventilation

WATCHSTATION/GENERAL TRAINING REF:

- Boatswain Mate of the Watch
- Emergency Squad or Fire Party Member
- Navigation at the Support Level
- Prevent, control and fight fires on board

LECTURE TITLE: FIREFIGHTING II

TRAINING SUBJECT: FIREFIGHTING EQUIPMENT - PRIMARY

SPECIAL REQUIREMENTS:

- Access to bridge and fixed systems locations
- Fire Pump on Line
- Fire Hose
- Nozzle
- Applicator

TRAINING LECTURE OBJECTIVE:

A. Location of primary firefighting equipment.
B. Operational procedures for use of various fixed firefighting systems.
C. Maintenance, testing and logging procedures.

DISCUSS:

A. Smoke Detecting and heat sensing systems
B. Operation of CO_2 and Halon fixed systems
C. Test of Sensing/Extinguishing Lines for CO_2, Halon, and Steam Smothering Systems
D. Draining fire lines (on Deck)
F. Exterior sprinkling systems

SHOW/DEMONSTRATE:

A. Emergency jumper for damaged section of fire line using regular fire hose.
B. Smoke test of CO_2 line
C. Activation of CO_2 System - General and Selective
D. Simulate bulk Dry Chemical use

READING ASSIGNMENT:

Marine Firefighting, Brady, Part II, Chapter 9

MISCELLANEOUS:

- Discuss Regulations.
- Discuss required fire main pressure and how determined.
- Discuss placement of fire stations and why?
- Discuss required tests and maintenance.
- Discuss responsibilities under 46 CFR -Prevention of fire line freezing and heavy weather damage.

TEST QUESTIONS:

- Generate from lectures - Dwell on protection, maintenance and inspection of systems on a regular basis.
- What is the pilot valve for on the CO_2 fixed fire fighting system?
- How do you line up the CO_2 fixed system to flood only the engine room?

WATCHSTATION/GENERAL TRAINING REF:

- Prevent, control and fight fires on board; Table A-II/1 (l)

LECTURE TITLE: FIREFIGHTING III

TRAINING SUBJECT: FIXED FIREFIGHTING SYSTEMS

SPECIAL REQUIREMENTS:

- Portable Eductor
- 4 Pieces of 2 1/2" fire hose
- Access to CO_2 and Halon 1301 fixed firefighting systems
- Copy of *46 CFR 95.15*

TRAINING LECTURE OBJECTIVE:

A. Familiarize students with, and provide hands - on practical experience with various vessel damage control appliances.

DISCUSS:

A. Eductors
B. Halon 1301 fixed firefighting systems
C. CO_2 Fixed Firefighting system
D. Ruptured fire main repairs or work around

SHOW/DEMONSTRATE:

A. Rigging portable eductor to dewater an interior space
B. Repair simulated ruptured fire main
C. Secure fire main block valve
D. Operation of the Halon 1301 system

READING ASSIGNMENT:

46 CFR 95.15
Marine Firefighting Manual, BRADY, P. 140-141 and CH. 9

MISCELLANEOUS:

TEST QUESTIONS:

- What is a soft patch?
- What is a hard patch?
- Sketch a properly rigged eductor.

WATCHSTATION/GENERAL TRAINING REF:

Prevent, control and fight fires on board; Table A-II/1 (l)

LECTURE TITLE: FIREFIGHTING IV

TRAINING SUBJECT: PORTABLE EQUIPMENT

SPECIAL REQUIREMENTS:

- All portable equipment at hand
- Miscellaneous firefighting tools available
- Access to Emergency Gear Locker
- Copy of 46 CFR

TRAINING LECTURE OBJECTIVE:

A. Demonstrate the proper use of portable firefighting equipment at the scene of a fire.

B. Familiarize students with proper attack procedures using various types of portable firefighting equipment available in vessel's Damage Control lockers.

DISCUSS:

A. Types of semi-portable firefighting equipment.

B. Proper use of apparatus application of agent.

C. Maintenance, inspection and recharging requirements.

D. Selection criteria for firefighting agents for use in engine room or on deck application.

SHOW/DEMONSTRATE:

A. Use of individual pieces of portable firefighting equipment

B. Inspection procedures

C. Procedures for securing power

D. Procedures for ventilating space

READING ASSIGNMENT:

Marine Firefighting Manual, Brady, Part II, Chapter 8

MISCELLANEOUS:

- Common sense approach to firefighting.
- Example: Throw burning Class A material overboard and you don't have a fire.

TEST QUESTIONS:

- Generated From Lectures/Demonstrations
- Maintenance Under 46 CFR.

WATCHSTATION/GENERAL TRAINING REF:

Prevent, control and fight fires on board; Table A-II/1 (l)

LECTURE TITLE: FIREFIGHTING V

TRAINING SUBJECT: FIREFIGHTING - ON SCENE

SPECIAL REQUIREMENTS:

- Simulate fire in one or more interior compartments.
- Fire pump on line
- Hoses, nozzles and SCBA
- Fireman's suit

TRAINING LECTURE OBJECTIVE:

A. Provide hands on training in firefighting response to members of an emergency squad.

B. To emphasize safety of ship, personnel and cargo.

DISCUSS:

A. Use of liquids, gas, solids, as extinguishing agents.
B. Fire ignition source.
C. Fire fuel source.
D. Fire air and oxygen supply.
E. Most effective way of containing and extinguishing a specific fire.

SHOW/DEMONSTRATE:

A. Use of ship's fire plan and cargo plan and manifests in combating a fire.
B. Establishing fire boundaries.
C. Securing power and ventilation systems.
D. Monitoring bulkheads for hot spots.

READING ASSIGNMENT:

Marine Firefighting Manual, Brady, Part II, Chapter 10

MISCELLANEOUS:

- Advise the Chief Mate and Officer of the Watch of the intended drill and location.
- Conduct evolution in realistic manner.
- Give students opportunity to use the equipment and ask questions.
- Shut down of all ventilation systems and electric supply as appropriate.
- Emphasize that improper firefighting may cause additional damage to the vessel beyond the fire alone.
- Notify Chief Mate and officer of the watch when drill has been completed.
- If conducted as competency demonstration, STCW Table A-II/1 (l) applies.

TEST QUESTIONS:

WATCHSTATION/GENERAL TRAINING REF:

Prevent, control and fight fires on board; Table A-II/1 (l)

LECTURE TITLE: FIREFIGHTING VI

TRAINING SUBJECT: BREATHING APPARATUS - SCOTT

SPECIAL REQUIREMENTS:

- Access to Emergency Gear Locker
- Self-Contained Breathing Apparatus as carried in vessel:
- Fresh air mask
- Scott Air Pack
- Personal Escape Hood

TRAINING LECTURE OBJECTIVE:

A. To familiarize cadets with the contents of the Emergency Gear Locker
B. To familiarize cadets with the operation of self contained breathing apparatus and their recharging and maintenance requirements.

DISCUSS:

A. All components of designated apparatus
B. Donning of apparatus
C. Operational limitations
D. Provisions for emergency use (Buddy-Breathing)
E. Differences between various self-contained breathing units
F. Fresh Air Mask - danger to hose feed from heat and flame
G. Fresh Air mask - pump unit placed up wind and operating before equipment is worn
H. Discuss all equipment within the locker

SHOW/DEMONSTRATE:

A. Donning apparatus
B. Clearing mask of foreign material before donning
C. Emergency use
D. Proper cleaning and storage

READING ASSIGNMENT:
Marine Firefighting Manual, Brady : Part III, Chapter 15

MISCELLANEOUS:

- Emphasize why gas masks are not suitable for firefighting
- Emphasize breathing control under stress

TEST QUESTIONS:

WATCHSTATION/GENERAL TRAINING REF:
Prevent, control and fight fires on board; Table A-II/1 (l)

LECTURE TITLE: NAVAL ARCHITECTURE III

TRAINING SUBJECT: SHIPS CONSTRUCTION

SPECIAL REQUIREMENTS:

- All PPE gear related with an engine room entrance

TRAINING LECTURE OBJECTIVE:

A. To associate nomenclature and supplement the Ship's Construction course by physically touring the T.S. KENNEDY

DISCUSS:

A. Structural and Framing Members
B. Types of deck gear
C. Engine room components
D. Steering Gear
E. Emergency egress from the engine room

SHOW/DEMONSTRATE:

A. Demonstrate all of the aforementioned articles on the tour

READING ASSIGNMENT:

Books from the Ship's Construction Course

MISCELLANEOUS:

Call engine room prior to entrance

TEST QUESTIONS:

-
-

WATCHSTATION/GENERAL TRAINING REF:

-
-
-

LECTURE TITLE: NAVIGATION GENERAL IV

TRAINING SUBJECT: MAGNETIC COMPASS SYSTEM

SPECIAL REQUIREMENTS:

- Magnetic Compass and Binnacle or Deviascope
- Deviation Table
- Correcting Magnets
- Pilots Charts
- Isoclinal Chart

TRAINING LECTURE OBJECTIVE:

A. Explain the functions and components of the Magnetic compass systems

DISCUSS:

A. Earth's magnetic field, variation, deviation
B. Various components of the Magnetic Compass – i.e. Card, Float, etc.
C. Procedures for determining compass error
D. Errors / Failures / Faults of magnetic compass systems and comparison procedures.

SHOW/DEMONSTRATE:

A. Components of Magnetic Compass System
B. Compass Record Book
C. Deviation Table

READING ASSIGNMENT:

American Merchant Seamen's Manual, P. 16-2 – 16-11
Navigation Publication No. 9 (1995), Articles 602-609

MISCELLANEOUS:

A. USTS Kennedy bridge procedures manual

TEST QUESTIONS:

- Show the instructor the Flinder's Bar and heeling magnet, and explain their function.
- What is the E Link, why / when would it be necessary?
- What is the use of the spider in the magnetic compass system?

WATCHSTATION/GENERAL TRAINING REF:

- Boatswain Mate of the Watch
- Helmsman 1.9
- Navigator 1.35-1.37, 1.42
- Navigation Assistant 1.19, 1.27, 1.30
- Navigation at the support level Table A-II / 4 (a.)
- Navigation at the support level Table A-II / 4 (c.)

LECTURE TITLE: NAVIGATION GENERAL VI

TRAINING SUBJECT: MAGNETIC COMPASS SYSTEM THEORY AND ADJUSTMENT

SPECIAL REQUIREMENTS:

- Azimuth or Range to determine gyro heading prior to exercise.
- Access to magnetic compasses, deviation tables, and compass record book.
- Control of vessel operation for duration of exercise.
- Magnetic Compass and Binnacle or Deviascope.

TRAINING LECTURE OBJECTIVE:

A. Identify the components of the Magnetic Compass System.
B. Explain the function of the individual components of the Magnetic Compass System.
C. If operationally possible, swing ship and create a deviation table for a specific magnetic compass

DISCUSS:

A. Components of the Magnetic Compass System
B. Principles of operation
C. Compensation / Adjustment procedures
D. Deviation Tables
E. Compass Record Book
F. Earths Magnetic Field, Variation, Deviation
G. Procedures for determining compass error

SHOW/DEMONSTRATE:

A. Parts of the Compass
B. Correcting magnets
C. Compass Record Book
D. Compensation / Adjustment Procedures
E. Use of Deviascope
F. Deviation Table

READING ASSIGNMENT:

American Merchants Seamen's Manual, P. 16.2 -16.11
Navigation Publication No. 9, Articles: 600-602

MISCELLANEOUS:

This exercise is also done aboard the T/V Ranger during semester II

TEST QUESTIONS:

- What are the components of the magnetic compass error?
- What are the components of the gyro compass error?
- Where is the Flinder Bar's normally located?
- Where is the heeling magnet located?

WATCHSTATION/GENERAL TRAINING REF:

- Navigator 1.33 – 1.38
- Helmsman

LECTURE TITLE: NAVIGATION GENERAL XII

TRAINING SUBJECT: GYRO COMPASS

SPECIAL REQUIREMENTS:

- Operational Gyro Compass with attendant repeaters

TRAINING OBJECTIVE:

A. Familiarize the cadet with the basic operation and use of the gyro and repeaters

DISCUSS/ SHOW/DEMONSTRATE:

A. Gyro Manual
B. Start UP / Shut DOWN Procedures
C. Slew
D. Limitations of Gyro
E. Adjustments - Speed and Latitude
F. Caging
G. Lubber's Line
H. Repeater Switches
I. Synchronizing Repeaters

READING ASSIGNMENT:

A: AMSM SECTION 9-1,16-7-16-7
B: GYRO COMPASS MANUAL

MISCELLANEOUS:

TEST QUESTIONS:

A: HOW DOES ONE REMOVE ERROR FOR A GYRO REPEATER?

WATCH STANDING/GENERAL TRAINING REF:

LECTURE TITLE: NAVIGATION GENERAL X

TRAINING SUBJECT: CHART CORRECTION

SPECIAL REQUIREMENTS:

- Charts (corrected and uncorrected).
- Notice to mariners
- Local notice to mariners
- Broadcast notice to mariners
- Charts to correct
- Summary of corrections
-

TRAINING LECTURE OBJECTIVE:

A. To instruct students in proper correction of charts and prepare them for the STCW qual.

DISCUSS:

A. Notice to mariners/chart correlation.
B. Chart notations.
C. STCW requirements

SHOW/DEMONSTRATE:

Correction of:

- Bouys
- Depth / Obstruction
- Lights
- Notes

READING ASSIGNMENT:

Dutton article 3604, Bowditch articles 346, 418,419

MISCELLANEOUS:

TEST QUESTIONS:

LECTURE TITLE: NAVIGATION GENERAL XI

TRAINING SUBJECT: PUBLICATION CORRECTION

SPECIAL REQUIREMENTS:

- Notice to Mariners
- Summary of Corrections
- Coast Pilot
- Light List
- Sailing Directions
- List of Lights
-

TRAINING LECTURE OBJECTIVE:

A. To train students to properly correct various publications and prepare for the STCW qual.

DISCUSS:

A. Publication / resource to correct.
B. Proper notation / correction.

SHOW/DEMONSTRATE:

Correction of:

- Coast Pilot
- Light List
- List of Lights
- Sailing Directions
-

READING ASSIGNMENT:

Dutton article 3604, Bowditch articles 404,406, 418, 419

MISCELLANEOUS:

TEST QUESTIONS:

LECTURE TITLE: NAVIGATION GENERAL II

TRAINING SUBJECT: STEERING SYSTEMS & ENGINE ORDER COMMANDS

SPECIAL REQUIREMENTS:

- Power and access to ADG 6000 steering console, course recorder, rudder angle indicators and tachometers
- Power and access to steering engine room

TRAINING LECTURE OBJECTIVE:

A. Prepare cadets to properly give and respond to helm and engine orders.
B. Familiarize cadets with various steering components.
C. Familiarize students with Engine Order Telegraph and engine monitoring devices on the bridge.
D. Introduce students to Steering Engine Room and equipment

DISCUSS:

A. Proper helm and engine orders.
B. Importance of compass comparisons.
C. Emergency procedures/steering change over.
D. Course recorder operation.
E. Standard procedures for switching steering gear
F. Rate of Turn Indicators.
G. Standard procedures for testing gear - pre-departure, pre-arrival
H. Use of autopilot - adjustments, cautions

SHOW/DEMONSTRATE:

A. ADG 6000 Steering console operation and change from manual to automatic mode.
B. Rudder angle and rpm indicators.
C. Course to steer and gyro error board.
D. NFU System.
E. Course recorder operation and routine maintenance.

READING ASSIGNMENT:

American Merchant Seaman's Manual P. 9-1 - 9-12
Navigation Pub. No. 9 (1995) , Articles 626- 630
Modern Seamanship , Knight, *Sections 9.17 & 9.18*

MISCELLANEOUS:

- *KENNEDY Bridge Procedures Manual*, P. 42-45, Orders to the helm

TEST QUESTIONS:

- What is the lubber's line?
- Why is it important to compare and record magnetic and gyro compass headings frequently?

WATCH/STATION GENERAL TRAINING REF:

Navigation at the support level Table A-II/4 (a)
Navigation at the support level Table A-II/4 (c)

LECTURE TITLE: NAVIGATION GENRAL IX

TRAINING SUBJECT: AFTER STEERING GEAR

SPECIAL REQUIREMENTS:

- Access to Steering gear room.
- Assistance from Engine Department requested.
- Notify Master, Office of the Watch and Chief Engineer

TRAINING LECTURE OBJECTIVE:

A. Familiarize cadets with the steering gear room.
B. Simulate a bridge steering failure making it necessary for the bridge watch to shift steering to after steer vessel from after steering station.

DISCUSS:

A. Steering gear nomenclature: Rapson Slide, transmitter unit, receiving unit, differential gear train, hydraulic pumps, follow-up unit, and crosshead rams.
B. Emergency procedures
C. Testing gear and log entry.

SHOW/DEMONSTRATE:

A. Normal steering operations
B. Emergency steering operation / procedures
C. Emergency hand pump
D. Block and tackle emergency steering rig

READING ASSIGNMENT:

American Merchant Seamen's Manual Ch. 9 P. 9-1 to 9-12
USTS Kennedy Bridge procedures manual

MISCELLANEOUS:

TEST QUESTIONS:

- List three locations from which the training vessel can be steered from.
- Describe h0w to shift steering control to the after steering station.

WATCHSTATION/GENERAL TRAINING REF:

- Cadet Officer of the Watch 2.3, Fundamentals 1.12
- Cadet Navigator 1.13
- Cadet Boatswain Mate of the Watch
- Helmsman 1.4, 1.5, 1.6, 1.7
- Navigation at the support level; table AII / 4 (a.)
- Navigation at the support level; table AII / 4 (c.)

LECTURE TITLE: NAVIGATION GENERAL V

TRAINING SUBJECT: INTRODUCTION TO WEATHER OBSERVATION

SPECIAL REQUIREMENTS:

- Power to Furuno fax machine
- NOAA ship's weather forms
- Basic shipboard meteorology equipment-physchrometer, barometer etc.
- NWS Observing Handbook 1

TRAINING LECTURE OBJECTIVE:

A. To accurately observe weather elements and record same for transmission by radio
B. Introduce students to the marine weather products available on the weather fax.

DISCUSS:

A. Importance of routine accurate weather reports.
B. Barometer, psychrometer, weather elements, determination of direction and velocity of true wind, and use of humidity tables.
C. Ship's weather observation form.
D. Radio weather messages.
E. Fax maps and synoptic charts.

SHOW/DEMONSTRATE:

A. Encoding of ship's weather for radio message.
B. Use of weather fax machine.

READING ASSIGNMENT:

National Weather Service Observing Handbook No.
Navigation Publication No. 9 (1995) Articles 3700-3800
American Merchant Seamen's Manual, P. 16-28, 1-30, P. 17-9, 17-17

MISCELLANEOUS:

Furuno Fax Machine Operation Manual
USTS Kennedy Bridge Procedures Manual, P. 104, 244-245 Navigating in Tropical Storm Area

TEST QUESTIONS:

- What is the reason for taking routine w4eather observations?
- What is relative wind?
- How many numbers must be in each coded group transmitted?
- What does a rising barometer indicate?
- Why must the wet bulb properly read lower than the dry bulb thermometer?
- How is a Pilot Chart used to assist in weather forecasting at sea?

WATCHSTATION/GENERAL TRAINING REF:

- Quartermaster of the Watch 1.14, 1.15, 1.16
- Navigation at the operational level; table A-II / 1 (a.)

LECTURE TITLE: NAVIGATION GENERAL VIII

TRAINING SUBJECT: MARINE WEATHER OBSERVATION 2

SPECIAL REQUIREMENTS:

- NWS Observing Handbook 1
- NOAA Ships Weather Observation Forms
- Radio Messages
- Surface and upper air prognostic and analysis weather maps
- Access to Furuno or Raytheon weather facsimile (w/ operators manual)

TRAINING LECTURE OBJECTIVE:

A. Review recording of accurate weather observations and predicting future weather conditions by studying weather maps and radio messages.
B. Familiarize cadets with the operational capabilities and limitations of facsimile receivers.

DISCUSS:

A. Weather forecast products available by fax or internet.
B. Air mass analysis.
C. Surface and upper air maps
D. Capabilities and limitations of facsimile data.
E. Operational features of the Furuno and Raytheon fax receivers.

SHOW/DEMONSTRATE:

A. Decode radio messages
B. Turning procedures
C. interpreting weather maps
D. Changing recorded paper

READING ASSIGNMENT:

Navigation Pub. No.9 (1995), Articles: 3509-3516, 3524-3526

MISCELLANEOUS:

TEST QUESTIONS:

- How is a cold front depicted on a surface weather map?
- Which map depicts jet stream levels?
- How does one obtain and interpret broadcast schedules?

WATCHSTATION/GENERAL TRAINING REF:

- Quartermaster – 1.15, 1.16
- Navigator – 1.12
- Cadet Officer of the Watch of the Deck – (in port) 1.10
- Navigation at the operational level; table A-II 1 (a.)

LECTURE TITLE: NAVIGATION GENERAL XIV

TRAINING SUBJECT: VOYAGE PLANNING

SPECIAL REQUIREMENTS:

- T.S. KENNEDY Bridge Procedures Manual
- Chart Catalog

TRAINING OBJECTIVE:

A. Requirements for Voyage Planning; Familiarize cadets with the proper process of Voyage Planning using the ports and routes of sea term

DISCUSS:

A. IMO Requirements for Voyage Planning
B. Four Stages of Planning

SHOW/DEMONSTRATE:

Access documents needed for Voyage Planning

READING ASSIGNMENT:

MISCELLANEOUS:

Assign Student Projects

TEST QUESTIONS:

WATCH STANDING/GENERAL TRAINING REF:

LECTURE TITLE: PILOTING 1

TRAINING SUBJECT: INTRODUCTION TO CHART NAVIGATION

SPECIAL REQUIREMENTS:

- Chart Tables
- Plotting equipment
- Chart (Mercator) 13218 or 13205 and one in east longitude

TRAINING LECTURE OBJECTIVE:

A. To familiarize student with elements of piloting
B. To familiarize students with instruments used in piloting

DISCUSS:

A. Mercator charts and chart symbols (Basic)
B. Magnetic and gyro compasses and errors- variation / deviation
C. Direction – True / Compass
D. Bearings, track, dead reckoning, speed, distance, soundings.
E. Latitude, longitude

SHOW/DEMONSTRATE:

A. How to lay down a track with parallel rulers or navigational protractors.
B. How to lay down bearings; obtain fix, and determine vessel's position in terms of latitude and longitude.

READING ASSIGNMENT:

American Merchants Seaman's Manual Ch. 16 (1-52)

MISCELLANEOUS:

TEST QUESTIONS:

- How is distance measured on a Mercator chart?
- What is the latitude and longitude of the Block Island Southeast light?
- What is chain of soundings?
- Where is variation found?

WATCHSTATION/GENERAL TRAINING REF:

- Navigation Assistant
- All Fourth Class
- Navigation at the support level
- Navigation at the operational level

LECTURE TITLE: PILOTING II

TRAINING SUBJECT: PILOTING EVOLUTION ACTUAL OR SIMULATED

SPECIAL REQUIREMENTS:

- Radar Simulator or live radar when available
- Three VHF radios for communication between stations
- One radar designated for Training Division
- Alidade, charts, navigation plotting instruments, sextant, three arm protractor

TRAINING LECTURE OBJECTIVE:

A. Increase piloting and navigational skills of cadets while operating in restricted waters from sea to a selected anchorage or along a coastwise track under visual or simulated radar conditions.

DISCUSS:

A. Necessary pre-voyage planning procedures.
B. Environmental conditions and navigational hazards.
C. Special requirements and communication procedures.

SHOW/DEMONSTRATE:

A. Navigation of vessel in restricted waters
B. Special case running fixes
C. Use of horizontal and vertical sextant angles
D. Danger bearings
E. Chain of soundings

READING ASSIGNMENT:

Navigation Pub. No. 9 (1995) Articles 801-820

MISCELLANEOUS:

- May be conducted in conjunction with Radar Navigation evolution

TEST QUESTIONS:

- What was the set and drift encountered during the approach?
- Demonstrate obtaining a fix using horizontal sextant angles

WATCHSTATION/GENERAL TRAINING REF:

Navigation at the operational level; Table A-II/1 (a)

LECTURE TITLE: RADAR I

TRAINING SUBJECT: INTRODUCTION TO RADAR WATCHSTANDING

SPECIAL REQUIREMENTS:

- Live RADAR with traffic or RADAR simulator
- Grease pencils, speed sticks and RADAR log
- RADAR plotting sheets

TRAINING LECTURE OBJECTIVE:

A. Introduce students to principles of RADAR systems

DISCUSS:

A. True Motion and Relative Motion
B. Components of a basic pulse modulated RADAR
C. Stabilized and unstabilized displays
D. Principles of system operation
E. RADAR Indicator controls

SHOW/DEMONSTRATE:

A. Display Set-up and Tuning
B. EBL, VRM, and Cursor operation
C. Reflection Plotter Use

READING ASSIGNMENT:

T.S. KENNEDY Bridge Navigation Manual
Navigation Pub. No. 9 (1995) Article 1300-1315

MISCELLANEOUS:

Prepare students to meet Assistant RADAR Watch standing Qualifications

TEST QUESTIONS:

- What is STC used for?
- What is FTC used for?
- What is the sweep or trace?
- What is the performance monitor?
- What is the preferred marine RADAR system for collision avoidance purposes? Why?

WATCHSTATION/GENERAL TRAINING REF:

- RADAR Observer 1.5 through 1.9
- Assistant RADAR Observer
- Navigation at the Support Level
- Navigation at the Operational Level

LECTURE TITLE: RADAR II

TRAINING SUBJECT: RADAR PLOTTING

SPECIAL REQUIREMENTS:

- Live RADAR with traffic or RADAR simulator
- Grease pencils, speed sticks and RADAR log
- RADAR plotting sheets

TRAINING LECTURE OBJECTIVE:

A. Introduce students to rapid RADAR plotting
B. Introduce students to RADAR derived collision assessment practice

DISCUSS:

A. True Motion and Relative Motion
B. Bearing Drift
C. Vector Triangle
D. Speed Stick
E. Reflection Plotter

SHOW/DEMONSTRATE:

A. Mark targets at standard plotting intervals
B. Determine bearing drift and risk of collision
C. Draw RM vector and ER vector
D. Solve for EM Vector
E. Solve for new course to maintain prescribed minimum CPA

READING ASSIGNMENT:

T.S. KENNEDY Bridge Navigation Manual
Navigation Pub. No. 9 (1995) Article 1300-1315

MISCELLANEOUS:

Prepare students to meet Assistant RADAR Watch standing Qualifications

TEST QUESTIONS:

- What is the direction of Relative Motion of the designated contact?
- Course change or speed change scenario with designated contact
- At what time will designated target be at the CPA?

WATCHSTATION/GENERAL TRAINING REF:

- RADAR Observer 1.5 through 1.9
- Assistant RADAR Observer
- Navigation at the Support Level
- Navigation at the Operational Level

LECTURE TITLE: RADAR III

TRAINING SUBJECT: RADAR NAVIGATION

SPECIAL REQUIREMENTS:

- Live RADAR with traffic or RADAR simulator with correlating land mass charts
- Grease pencils, speed sticks and RADAR log

TRAINING LECTURE OBJECTIVE:

A. Introduce students to RADAR navigation techniques
B. Demonstrate parallel indexing and radar range fixing methods

DISCUSS:

A. Use of RADAR ranging vice RADAR bearing for fixing positions
B. Use of 3cm RADAR with large scanner to optimize bearing resolution and optimum fix accuracy when using RADAR bearings
C. Parallel Indexing as track monitoring
D. Effects of scale on chart-like presentation; fix accuracy, and proper RADAR range scale selection for effective position determination

SHOW/DEMONSTRATE:

A. Standard and Franklin methods of parallel indexing
B. RADAR position determining with 3 or more interesting range arcs

READING ASSIGNMENT:

Navigation Pub. No. 9 (1995) Article 1300-1315

MISCELLANEOUS:

Prepare students to meet Assistant RADAR Watch standing Qualifications

TEST QUESTIONS:

- Prepare a chart using parallel indexes
- Obtain a RADAR fix with 3 appropriate targets
- Obtain the XTE

WATCHSTATION/GENERAL TRAINING REF:

- RADAR Observer 1.5 through 1.9
- Assistant RADAR Observer
- Navigation at the Support Level
- Navigation at the Operational Level

LECTURE TITLE: RIGGING I

TRAINING SUBJECT: PRACTICAL SEAMANSHIP TRAINING

SPECIAL REQUIREMENTS:
- Pilot ladder and grablines and illumination requirements
- Boatswain's chair and gantline
- Staging
- 2 x 50' Gantlines
- 1 x 15' piece 2" diameter steel pipe
- 3 x 10' pieces 4x4 wood
- Students to wear hard hats and safety shoes

TRAINING LECTURE OBJECTIVE:

A. To train students in the proper and safe rigging of the above units.

DISCUSS:

A. Reasons for rigging this equipment.
B. Safety precautions to be observed.

SHOW/DEMONSTRATE:

Rigging of:
- Pilot Ladder
- Boatswain's Chair
- Staging
- Gin Pole
- Shear legs

READING ASSIGNMENT:

American Merchant Seaman's Manual, Chapter 4

MISCELLANEOUS:
- Pilot ladder
- Boatswain's chair
- Staging
- Gin Pole & Shear legs

TEST QUESTIONS:

WATCHSTATION/GENERAL TRAINING REF:

Boatswain Mate of the Watch 1.2
Seaman 1.3, 1.4,
Monitor the loading, stowage etc. of cargo; Table A-II/1 (i)
Respond to emergencies; Table A-II/1 (d)

LECTURE TITLE: RIGGING II

TRAINING SUBJECT: RIGGING BASICS

SPECIAL REQUIREMENTS:

- Rigging Box
- Clean 55 gallon Drum
- *Marine Lifting and Lashing Handbook,* MTMCTEA Reference 95-55-22

TRAINING LECTURE OBJECTIVE:

A. Demonstrate common rigging techniques used frequently aboard ship
B. Safety considerations in the transportation and handling of heavy machinery and equipment.

DISCUSS:

A. Estimate weight of load
B. Safety factors- always err on side of safety
C. Proper sling application
D. Proper sling angle
E. Parbuckling

SHOW/DEMONSTRATE:

A. Make up of a bridle
B. Use of beam clamps
C. Drifting a load
D. Parbuckle a load
E. Hook and shackle inspections.

READING ASSIGNMENT:

MISCELLANEOUS:

A. Marine *Lifting and Lashing Handbook,* Military Traffic Command, March 1995

TEST QUESTIONS:

- What size wire would you use to lift 3500 pounds?
- Why is double wrap better than single wrap?

WATCHSTATION/GENERAL TRAINING REF:

- Boatswain Mate of the Watch
- Seamen 1.3, 1.4, 1.5, 1.6
- Monitor the loading, stowage etc. of cargo; Table A-II/1 (i.)

LECTURE TITLE: RIGGING III

TRAINING SUBJECT: RIGGING EXERCISE

SPECIAL REQUIREMENTS:

- Rigging box with full complement
- 55 Gallon drum filler with water
- Access to # 5 hold
- Students to wear hard hats and safety shoes
- Monitor the loading, stowage etc. of cargo; Table A-II / 1 (i.)

TRAINING LECTURE OBJECTIVE:

A. To utilize techniques and skills presented in RIGGING 2

DISCUSS:

A. Safety considerations
B. Identifying personnel hazards

SHOW/DEMONSTRATE:

A. Students are tasked with a rigging problem; solve the amount of pull needed using the configuration.

READING ASSIGNMENT:

MISCELLANEOUS:

TEST QUESTIONS:

WATCHSTATION/GENERAL TRAINING REF:

- Boatswain Mate of the Watch
- Seaman
- Monitor the loading, stowage etc. of cargo; table A-II / 1 (i.)

LECTURE TITLE: SAFETY I

TRAINING SUBJECT: HAND TOOLS

SPECIAL REQUIREMENTS:

- Various hand tools
- Painting equipment
- Cleaning equipment
- Students to wear hard hats, safety shoes, eye, ear, berthing and hand protection gear as appropriate
- Air or electric scaling, grinding and wire brushing equipment

TRAINING LECTURE OBJECTIVE:

A. To instruct the student in the proper use and care of hand tools.
B. To demonstrate personal safety protection appropriate to the job.
C. To demonstrate proper set up and use of electric or air driven tools commonly used on deck.

DISCUSS:

A. Proper use of screwdriver, wrenches, saws and pliers
B. Selection of the right tool and clothing for the job.
C. Care of tool.
D. Nautical names use for tools commonly used on deck.
E. Proper safety equipment and procedures when using power tools.
F. Electric shock protection.

SHOW/DEMONSTRATE:

A. What can happen if tool is used for wrong job.
B. Safe use of tools
C. Proper use of air or electric tools

READING ASSIGNMENT:

MISCELLANEOUS:

TEST QUESTIONS:

WATCHSTATION/GENERAL TRAINING REF:

- Boatswain Mate of the Watch
- Seaman

LECTURE TITLE: SAFETY III

TRAINING SUBJECT: SAFETY PROCEDURES

SPECIAL REQUIREMENTS:

- KENNEDY'S MSDS Manual
- KENNEDY'S Safety Manual
- Copies of Permits
- Gas Meter from Chief Mate

TRAINING LECTURE OBJECTIVE:

A. To prepare cadets for proper procedures in permitting and safe operations of:
Enclosed Space Entries
Hazardous Atmospheres
Lock Out / Tag Out
Working Aloft
Respiratory Protection
Hearing Protection

B. To prepare cadets for safety duties normally found on merchant ships as 3rd mate.

DISCUSS:

A. Safety Equipment Inspections
B. Permitting Procedures on Enterprise
C. Safety of Enclosed spaces
D. Slips, Trips, Falls
E. Use of MSDS
F. Lock out tag out

SHOW/DEMONSTRATE:

A. Proper method of checking safety equipment
B. Do sample permits
C. Demonstrate awareness of dangers on board

READING ASSIGNMENT:

A: T.S. KENNEDY SHIPBOARD SAFETY MANUAL

MISCELLANEOUS:

TEST QUESTIONS:

- How long do MSDS sheets need to be kept on board?
- Who can remove a lock out Tag Out

WATCH/STATION GENERAL TRAINING REF:

LECTURE TITLE: SAFETY V

TRAINING SUBJECT: SAFETY MANAGEMENT SYSTEM

SPECIAL REQUIREMENTS:

- Access to bridge and Nav Labs

TRAINING LECTURE OBJECTIVE:

- To teach the student about management systems used in crisis situations.

DISCUSS:

A. What SMS is.
B. Where it comes from.
C. IMO
D. ISM
E. OPA 90

SHOW/DEMONSTRATE:

A. Factors involved in the safety of the ship
B. How different systems interact to provide for the entire safety of the ship
C. Use of T.S. KENNEDY Safety Manual

READING ASSIGNMENT:

MISCELLANEOUS:

TEST QUESTIONS:

-
-
-

LECTURE TITLE: SEAMANSHIP I

TRAINING SUBJECT: MARLINESPIKE SEAMANSHIP

SPECIAL REQUIREMENTS:

- 6' Piece of 1/2" diameter line (9 Thread)
- # 16 Needle
- Sail makers Palm
- 3' Piece of Sail Twine

TRAINING LECTURE OBJECTIVE:

A. To instruct students in the tying, practical use and safety considerations individual basic knots.

DISCUSS:

A. Knots:

Overhand	Square
Figure Eight	Half Hitch
Clove Hitch	Becket Bend
Bowline	Rolling Hitch

SHOW/DEMONSTRATE:

A. All the above knots and their practical application

READING ASSIGNMENT:

American Merchants Seaman's Manual, Chapter 1

MISCELLANEOUS:

TEST QUESTIONS:

- Make a double Becket bend
- Make a rolling hitch

WATCHSTATION/GENERAL TRAINING REF:

- Boatswain Mate of the Watch
- Seaman 1.2 (d.)
- All fourth Class

LECTURE TITLE: SEAMANSHIP II

TRAINING SUBJECT: SPLICING FIBER ROPE

SPECIAL REQUIREMENTS:

- Six feet of three inch manila line per student.
- Fid, sail twine, sail needle, masking tape, thimble and knife.

TRAINING LECTURE OBJECTIVE:

A. Instruct the student in the procedures for making an eye splice and a short splice in fiber rope.

DISCUSS:

A. Tools required
B. Whippings
C. Tucks
D. Safety factors of finished splices
E. Safety precautions
F. Thimbles
G. Tapers

SHOW/DEMONSTRATE:

A. Eye splice
B. Short splice
C. Back splice

READING ASSIGNMENT:

American Merchant Seaman's Manual , P. 1-28 to 1-31
Modern Seamanship, Knight, P. 617- 619

MISCELLANEOUS:

TEST QUESTIONS:

- What percentage of the strength of a line is lost in the splice?
- Which of the following is stronger, the short splice or the long splice?
- What is a cant line?
- Which of the lines shown is a right lay rope?
- What is a cable laid rope?
- What is a plaited rope?

WATCHSTATION/GENERAL TRAINING REF:

Boatswain Mate of the Watch
Seaman 1.2
Cadet Officer of the Deck Inport 1.5, 3.3, 3.4, 3.10

LECTURE TITLE: SEAMANSHIP III

TRAINING SUBJECT: DOCKING AND MOORING WITH FIBER LINES & WIRE ROPE

SPECIAL REQUIREMENTS:

- Heaving lines
- Mooring lines and rope stoppers
- After Mooring Station

TRAINING LECTURE OBJECTIVE:

A. Teach students proper line handling and mooring procedures.
B. Instill in students a need for constant safety awareness when working with mooring lines.

DISCUSS:

A. Mooring line commands
B. Names and positions of mooring lines
C. How lines are faked, coiled and fleshed
D. Safety procedures- Hospital side and safe side of a synthetic mooring line under tension
E. Winches and capstans
F. Mooring lines singled up, bights singled up, doubled up
G. Dipping the eye
H. Elongation and slipping

SHOW/DEMONSTRATE:

A. Directing mooring operations as a Mate
B. Winch operation including start-up and shut-down procedures
C. Taking mooring lines to winch and heaving with winches
D. Passing types of rope stoppers – Port Arthur, Chinese, Chinese with an overhand
E. Making lines fast to bits
F. Proper way to throw heaving lines
G. Methods of letting go safely

READING ASSIGNMENT:

American Merchant Sea Manual, Chapter 4, P. 9-17

MISCELLANEOUS:

TEST QUESTIONS:

- Where is the hospital side of a nylon line?
- What is a backhand rope?
- What is meant by the lay of a rope?
- What is a contline? A cable laid rope? A plaited rope?
- What is hard laid rope?

WATCH/STATION GENERAL TRAINING REF:

LECTURE TITLE: SEAMANSHIP IV

TRAINING SUBJECT: BLOCKS AND TACKLES

SPECIAL REQUIREMENTS:

- Rope block
- Wire rope block
- Snatch block.
- Purchases: gun, luff, 2-fold, double luff, 3-fold
- Bosn Chair and Staging

TRAINING LECTURE OBJECTIVE:

A. To review with students the use of blocks and tackles
B. Instruct in how to rig a bosn chair
C. Instruct in how to rig staging

DISCUSS:

A. Review Blocks and tackle
B. Proper method of rigging a bosn chair
C. Where bosn chair can be used
D. Safety of using bosn chair
E. Proper method to rig staging
F. Where staging can be used
G. Safety precautions with staging

SHOW/DEMONSTRATE:

A. Rigging of bosn Chair
B. Rigging of Staging

READING ASSIGNMENT:

American Merchant Seaman's Manual -Chapter 3
Instructor handout

MISCELLANEOUS:

TEST QUESTIONS:

WATCH/STATION GENERAL TRAINING REF:

Boatswain Mate of the Watch
Seaman 1.6

LECTURE TITLE: SEAMANSHIP VII

TRAINING SUBJECT: SPLICING BRAIDED LINE

SPECIAL REQUIREMENTS:

- Tools for splicing: masking tape, unifid, marking pen, sail twine, fid
- Six feet of braided line per student

TRAINING LECTURE OBJECTIVE:

A. To teach cadets to splice double braid line.

DISCUSS:

A. Construction of line, strands, picts, strand pair, cover, core.
B. Handling and care of double braid.
C. Elongation – recoverable & non-recoverable.
D. Effects of sunlight, chemicals and abrasion on tensile strength.
E. Use of braided rope in mooring.

SHOW/DEMONSTRATE:

A. How to make a splice in braid line.

READING ASSIGNMENT:

Handout to be provided by instructor
American Merchant Seaman's Manual, P. 1-7 to 1-9

MISCELLANEOUS:

TEST QUESTIONS:

- What is step 1 in the construction of an eye splice in braided line?
- What is step 2 in the construction of an eye splice in braided line?

WATCHSTATION/GENERAL TRAINING REF:

- Boatswain Mate of the Watch
- Seaman 1.2

LECTURE TITLE: SEAMANSHIP VIII

TRAINING SUBJECT: SPLICING BRAIDED LINE

SPECIAL REQUIREMENTS:

- Tools for splicing: masking tape, marking pen, sail twine, fid.
- Six feet of plaited line per student

TRAINING LECTURE OBJECTIVE:

A. To teach cadets to splice plaited line.

DISCUSS:

A. Construction of line, strands, and strand pairs.
B. Handling and care of plaited rope.
C. Elongation: recoverable, non-recoverable
D. Effects of sunlight, chemicals and abrasion on tensile strength.
E. Use of plaited rope in mooring.

SHOW/DEMONSTRATE:

A. How to make an eye splice in plaited line.

READING ASSIGNMENT:

Handout to be provided by instructor
American Merchant Seaman's Manual, 1-7 to 1-9

MISCELLANEOUS:

TEST QUESTIONS:

- What is step 1, in the construction of an eye splice in plaited line?
- What is step 2, in the construction of an eye splice in plaited line?

WATCHSTATION / GENERAL TRAINING REF:

- Boatswain Mate of the Watch
- Seaman 1.2

LECTURE TITLE: TANKER 1

TRAINING SUBJECT: ATMOSPHERE TESTING

SPECIAL REQUIREMENTS:

- Suitable enclosed space for atmosphere testing.
- MSA 260, MSA Tankscope, MSA Explosimeter, and calibration kit for meters.
- Dragermeter and sample tubes.
- *Chemical Data Guide* CG 388.

TRAINING LECTURE OBJECTIVE:

A. To familiarize students with techniques involved in testing a space for; explosive gases, toxic gases and oxygen content.

DISCUSS:

A. Need for atmosphere testing.
B. Theory of operation of each instrument.
C. Application and limitation of instruments.
D. Proper calibration.
E. Techniques in safely testing a space.
F. Interpretation of sample results.

SHOW/DEMONSTRATE:

A. Calibration, operation and maintenance of instruments.
B. Sample atmosphere in space.
C. Interpretation of sample results.

READING ASSIGNMENT:

Tanker Operations , Martin, P. 141-147
Marine Firefighting, Brady, P. 361-365
American Merchant Seaman's Manual, P. 20-5 to 20-13

MISCELLANEOUS:

TEST QUESTIONS:

- To insure that inerted cargo tank does not pass through the flammable range upon gas freeing, the tank must be purged until the hydrocarbon content is less than what percentage?
- Explain the procedures for spanning and zeroing of an oxygen meter.
- Explain the theory of operation of an explosimeter.

WATCHSTATION/GENERAL TRAINING REF:

Cadet Officer of the Watch
Boatswain Mate of the Watch
Professional Achievement Examination
Monitor the loading, stowage etc. of cargo; Table A-II/1 (i)

LECTURE TITLE: WATCH STANDING II

TRAINING SUBJECT: BRIDGE COMMAND AND CONTROL PROCEDURES

SPECIAL REQUIREMENTS:

- T.S. Kennedy's Bridge Procedure Manual

TRAINING LECTURE OBJECTIVE:

A. Familiarize the cadet with the Kennedy's command and control procedures for routine and emergency watch conditions.

DISCUSS:

A. T. S. Kennedy's Vessel Particulars.
B. T. S. Kennedy's Standing Orders
C. T. S. Kennedy's Bridge Procedures for Routine Operations.
D. T. S. Kennedy's Bridge Procedures for Emergency Operations Check.
E. T. S. Kennedy's Deck Logbook Procedures.
F. Bridge Resource Management (Data) aboard T. S. Kennedy.
G. Bridge Team Management (Personnel) abouard T. S. Kennedy.

SHOW/DEMONSTRATE:

A. Use of the *T. S. Kennedy's Bridge Procedures Manual* as a policy for response to routine and emergency operations aboard the T. S. Kennedy.

READING ASSIGNMENT:

T. S. Kennedy's Bridge Procedure Manual:
-Vessel Particulars
-Standing Orders
-Bridge Procedures for Routine Operations
-Bridge Procedures for Emergency Operations Check
-Deck Logbook Procedures

MISCELLANEOUS:

TEST QUESTIONS:

WATCHSTATION/GENERAL TRAINING REF:

- All Third Class Deck
- Quartermaster of the Watch
- Professional Achievement Examination
- Navigation at the support level; Table A-II/4 (d.)
- Navigation at the operational level; Table A-II/1 (b.)

LECTURE TITLE: WATCH STANDING III

TRAINING SUBJECT: BRIDGE INTRODUCTION

SPECIAL REQUIREMENTS:

- Bearing Circle
- Charts
- Sound powered phone, operational.

TRAINING LECTURE OBJECTIVE:

A. Familiarize students about the basic operations of the bridge
B. Familiarize students with the bridge equipment.

DISCUSS:

A. Electronics
B. Radar (3cm / 10 cm)
C. Gyro's
D. GMDSS
E. Helm
F. Bow Thruster
G. Fire Panel
H. Fathometer
I. Lifesaving Equipment
J. Chart table
K. Barometer
L. Course recorder
M. ECDIS
N. Sound powered phone
O. Engine order telegraph
P. Navigation lights

SHOW/DEMONSTRATE:

A. How the sound powered phone is operated.
B. How to take a bearing.

READING ASSIGNMENT:

MISCELLANEOUS:

TEST QUESTIONS:

-
-
-
-

LECTURE TITLE: WATCH STANDING IV

TRAINING SUBJECT: MARINE MAMMAL REPORTING

SPECIAL REQUIREMENTS:

- PC and projector
- Collision avoidance with North Atlantic Right Whales power point

TRAINING LECTURE OBJECTIVE:

A. To familiarize cadets with identifying, reporting and the associated hazards with North Atlantic Right Whales

DISCUSS:

A. How to identify
B. How to report a sighting
C. Rules of navigation associated with Right Whales
D. The protection of Right Whales
E. Major populated areas

SHOW/DEMONSTRATE:

A. Photos of Right Whales
B. Areas of population
C. NOAA fisheries placard for MSR reporting

READING ASSIGNMENT:

MISCELLANEOUS:

Voyage Planning Precautions

TEST QUESTIONS:

-
-

WATCHSTATION/GENERAL TRAINING REF:

LECTURE TITLE: WATCH STANDING V

TRAINING SUBJECT: COLLISION AVOIDANCE

SPECIAL REQUIREMENTS:

- Rules of the Road book
- White board

TRAINING LECTURE OBJECTIVE:

A. Instruct the students on the basic principals of safe navigation, by using the Navigation Rules and good seamanship.

DISCUSS:

A. Navigation rules
B. Navigation lights
C. Inland / International rules
D. VTS
E. Sound and light signals
F. Types of vessel designations (NUC, RAM, Fish, etc.)

SHOW/DEMONSTRATE:

A. Head on collision
B. Overtaking situation
C. Crossing situation
D. Narrow channel
E. Vessel traffic separation scheme

READING ASSIGNMENT:

MISCELLANEOUS:

TEST QUESTIONS:

-
-
-
-

2015 CRUISE TRAINING PROGRAM

Department of Marine Transportation

THIRD CLASS

SECTION 5

Long Term Training Schedule

SEA TERM 2017 Watch, Maintenance, & Training Schedule

DRAFT SEA TERM 2017 Watch, Maintenance, Training & Utility Schedule

Date	Day	TD	D1	D2	D3	D4	Fourth Class 1A	2A	3A	4A	Fourth Class 1B	2B	3B	4B
30-Dec-16	FRI													
31-Dec-16	SAT													
1-Jan-17	SUN						Cadets Report Time & Date TBD							
2-Jan-17	MON													
3-Jan-17	TUE													
4-Jan-17	WED													
5-Jan-17	THU													
6-Jan-17	FRI						USCG Fire and Security Drills							
7-Jan-17	SAT													
8-Jan-17	SUN	SS	W	M	M	U	DEPART BUZZARDS BAY 0530							
9-Jan-17	MON	1	W	M	T	U	DW	DM	DT	DU	EW	EM	ET	EU
10-Jan-17	TUE	2	W	M	T	U	DW	DM	DT	DU	EW	EM	ET	EU
11-Jan-17	WED	3	W	M	T	U	DW	DM	DT	DU	EW	EM	ET	EU
12-Jan-17	THU	4	M	T	U	W	DM	DT	DU	DW	EM	ET	EU	EW
13-Jan-17	FRI	5	M	T	U	W	DM	DT	DU	DW	EM	ET	EU	EW
14-Jan-17	SAT	6	M	T	U	W	DM	DT	DU	DW	EM	ET	EU	EW
15-Jan-17	SUN	SS	M	M	U	W	Sunday At Sea							
16-Jan-17	MON	7	T	U	W	M	DT	DU	DW	DM	ET	EU	EW	EM
17-Jan-17	TUE	8	T	U	W	M	DT	DU	DW	DM	ET	EU	EW	EM
18-Jan-17	WED	9	T	U	W	M	DT	DU	DW	DM	ET	EU	EW	EM
19-Jan-17	THU		M	U	W	M	STCW/ Maintenance / Field Day							
20-Jan-17	FRI		OFF		W		*Aruba*							
21-Jan-17	SAT		OFF			W								
22-Jan-17	SUN		OFF	W										
23-Jan-17	MON	10	U	W	M	T	DU	DW	DM	DT	EU	EW	EM	ET
24-Jan-17	TUE	11	U	W	M	T	DU	DW	DM	DT	EU	EW	EM	ET
25-Jan-17	WED	12	U	W	M	T	DU	DW	DM	DT	EU	EW	EM	ET
26-Jan-17	THU	E-1	U	W	M	M	EXAM DAY #1							
27-Jan-17	FRI			W	OFF		*Barbados*							
28-Jan-17	SAT				OFF	W								
29-Jan-17	SUN		W		OFF									
30-Jan-17	MON	13	W	M	T	U	EW	EM	ET	EU	DW	DM	DT	DU
31-Jan-17	TUE	14	W	M	T	U	EW	EM	ET	EU	DW	DM	DT	DU
1-Feb-17	WED	15	W	M	T	U	EW	EM	ET	EU	DW	DM	DT	DU
2-Feb-17	THU	16	M	T	U	W	EM	ET	EU	EW	DM	DT	DU	DW
3-Feb-17	FRI		W	OFF			*St Thomas, USVI*							
4-Feb-17	SAT			OFF	W									
5-Feb-17	SUN			OFF		W								
6-Feb-17	MON	17	M	T	U	W	EM	ET	EU	EW	DM	DT	DU	DW
7-Feb-17	TUE	18	M	T	U	W	EM	ET	EU	EW	DM	DT	DU	DW
8-Feb-17	WED	19	T	U	W	M	ET	EU	EW	EM	DT	DU	DW	DM
9-Feb-17	THU	20	T	U	W	M	ET	EU	EW	EM	DT	DU	DW	DM
10-Feb-17	FRI		W			OFF	*Ft Lauderdale, FL*							
11-Feb-17	SAT			W		OFF								
12-Feb-17	SUN				W	OFF								
13-Feb-17	MON	21	T	U	W	M	ET	EU	EW	EM	DT	DU	DW	DM
14-Feb-17	TUE	22	U	W	M	T	EU	EW	EM	ET	DU	DW	DM	DT
15-Feb-17	WED	23	U	W	M	T	EU	EW	EM	ET	DU	DW	DM	DT
16-Feb-17	THU	24	U	W	M	T	EU	EW	EM	ET	DU	DW	DM	DT
17-Feb-17	FRI	E-2		W			EXAM DAY #2							
18-Feb-17	SAT					W	FIELD DAY - CAPE COD BAY							
19-Feb-17	SUN		W				ARRIVE BUZZARDS BAY 1636							
20-Feb-17	MON						*Buzzards Bay, MA*							
21-Feb-17	TUE													
22-Feb-17	WED													

Upperclass Legend: (M) Maintenance, (T) Training, (W) Watch, (U) Utility

4/c Legend: (DW) Deck Watch, (DM) Deck Maint., (DU) Deck Utility, (DT) Deck Training, (EW) Engine Watch, (EM) Engine Maint., (EU) Engine Utility, (ET) Engine Training

Number of days on each:	W	11	11	10	11
	M	8	8	8	8
	T	6	6	6	6
	U	7	7	7	7

DIVISION 1 PHASE 1

TRAINING DAY & DATE	PERIOD	TRAINING PROGRAM TITLE - UNIT	MUSTER LOCATION
Jan 16 TD #1	1	Weather – VOS Reporting	Aft Nav Lab
	2	Voyage Plan 1	Rm 6-3
	3	AIS / GPS	6-5/Fwd Nav Lab
	4	Firefighting-Fixed Systems	Seatorium
Jan 13 TD #2	1 & 2	Voyage Plan 2	Rm 6-3
	3 & 4	Blue: ECDIS	Aft Nav Lab
	3 & 4	Gold: Ship Construction	Aft Nav Lab
Jan 18 TD #3	1 & 2	Charts & Publications	Rm 6-3
	3 & 4	Seamanship–Thimbles, Mooring	Seatorium

DIVISION 1 PHASE 2

Feb 8 TD #4	1	Blue-GMDSS/Gold Steering	Aft Nav Lab
	2	Gold-GMDSS/Blue-Steering	Aft Nav Lab
	3 & 4	Cel Nav & Sextant Intro	Aft Nav Lab
Feb 9 TD #5	1	Adv Weather Obs	Aft Nav Lab
	2	Safety Mgmt Systems	Rm 6-5
	3 & 4	Gold- ECDIS	Aft Nav Lab
	3 & 4	Blue-Ship Construction	Aft Nav Lab
Feb 13 TD #6	1	Confined Space	Aft Nav Lab
	2	Voyage Plan 3	Rm 6-5
	3 & 4	Rigging–Bosun Chair, Stokes	Seatorium

CONSULT DAILY POSTED SCHEDULES AFTER 1900 FOR CHANGES

January 26 is Mid-term Exam day & Read Barometric Pressure and Chart Selection Assessments
February 17 is Final Exam Day & Route Planning Assessment
Schedules for TESTS will be posted

WHEN AN EMERGENCY DRILL IS SCHEDULED, EXCEPT WHEN SUCH DRILLS OCCUR AT 1530 OR LATER, TRAINING SESSIONS WILL RESUME/COMMENCE 10 MINUTES AFTER "SECURE FROM ALL DRILLS" IS PIPED.

DIVISION 2 PHASE 1

TRAINING DAY & DATE	PERIOD	TRAINING PROGRAM TITLE - UNIT	MUSTER LOCATION
Jan 12 TD #1	1	Weather – VOS Reporting	Aft Nav Lab
	2	Voyage Plan 1	Rm 6-3
	3	AIS / GPS	6-5/Fwd Nav Lab
	4	Firefighting-Fixed Systems	Seatorium
Jan 13 TD #2	1 & 2	Voyage Plan 2	Rm 6-3
	3 & 4	Blue: ECDIS	Aft Nav Lab
	3 & 4	Gold: Ship Construction	Aft Nav Lab
Jan 14 TD #3	1 & 2	Charts & Publications	Rm 6-3
	3 & 4	Seamanship–Thimbles, Mooring	Seatorium

DIVISION 2 PHASE 2

Feb 2 TD #4	1	Blue-GMDSS/Gold Steering	Aft Nav Lab
	2	Gold-GMDSS/Blue-Steering	Aft Nav Lab
	3 & 4	Cel Nav & Sextant Intro	Aft Nav Lab
Feb 3 TD #5	1	Adv Weather Obs	Aft Nav Lab
	2	Safety Mgmt Systems	Rm 6-5
	3 & 4	Gold- ECDIS	Aft Nav Lab
	3 & 4	Blue-Ship Construction	Aft Nav Lab
Feb 6 TD #6	1	Confined Space	Aft Nav Lab
	2	Voyage Plan 3	Rm 6-5
	3 & 4	Rigging–Bosun Chair, Stokes	Seatorium

CONSULT DAILY POSTED SCHEDULES AFTER 1900 FOR CHANGES

January 26 is Mid-term Exam day & Read Barometric Pressure and Chart Selection Assessments
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WHEN AN EMERGENCY DRILL IS SCHEDULED, EXCEPT WHEN SUCH DRILLS OCCUR AT 1530 OR LATER, TRAINING SESSIONS WILL RESUME/COMMENCE 10 MINUTES AFTER "SECURE FROM ALL DRILLS" IS PIPED.

DIVISION 3 PHASE 1

TRAINING DAY & DATE	PERIOD	TRAINING PROGRAM TITLE - UNIT	MUSTER LOCATION
Jan 9 TD #1	1	Weather – VOS Reporting	Aft Nav Lab
	2	Voyage Plan 1	Rm 6-3
	3	AIS / GPS	6-5/Fwd Nav Lab
	4	Firefighting-Fixed Systems	Seatorium
Jan 10 TD #2	1 & 2	Voyage Plan 2	Rm 6-3
	3 & 4	Blue: ECDIS	Aft Nav Lab
	3 & 4	Gold: Ship Construction	Aft Nav Lab
Jan 11 TD #3	1 & 2	Charts & Publications	Rm 6-3
	3 & 4	Seamanship–Thimbles, Mooring	Seatorium

DIVISION 3 PHASE 2

Jan 30 TD #4	1	Blue-GMDSS/Gold Steering	Aft Nav Lab
	2	Gold-GMDSS/Blue-Steering	Aft Nav Lab
	3 & 4	Cel Nav & Sextant Intro	Aft Nav Lab
Jan 31 TD #5	1	Adv Weather Obs	Aft Nav Lab
	2	Safety Mgmt Systems	Rm 6-5
	3 & 4	Gold- ECDIS	Aft Nav Lab
	3 & 4	Blue-Ship Construction	Aft Nav Lab
Feb 1 TD #6	1	Confined Space	Aft Nav Lab
	2	Voyage Plan 3	Rm 6-5
	3 & 4	Rigging–Bosun Chair, Stokes	Seatorium

CONSULT DAILY POSTED SCHEDULES AFTER 1900 FOR CHANGES

January 26 is Mid-term Exam day & Read Barometric Pressure and Chart Selection Assessments
February 17 is Final Exam Day & Route Planning Assessment
Schedules for TESTS will be posted

WHEN AN EMERGENCY DRILL IS SCHEDULED, EXCEPT WHEN SUCH DRILLS OCCUR AT 1530 OR LATER, TRAINING SESSIONS WILL RESUME/COMMENCE 10 MINUTES AFTER "SECURE FROM ALL DRILLS" IS PIPED.

DIVISION 4 PHASE 1

TRAINING DAY & DATE	PERIOD	TRAINING PROGRAM TITLE - UNIT	MUSTER LOCATION
Jan 23 TD #1	1	Weather – VOS Reporting	Aft Nav Lab
	2	Voyage Plan 1	Rm 6-3
	3	AIS / GPS	6-5/Fwd Nav Lab
	4	Firefighting-Fixed Systems	Seatorium
Jan 24 TD #2	1 & 2	Voyage Plan 2	Rm 6-3
	3 & 4	Blue: ECDIS	Aft Nav Lab
	3 & 4	Gold: Ship Construction	Aft Nav Lab
Jan 25 TD #3	1 & 2	Charts & Publications	Rm 6-3
	3 & 4	Seamanship–Thimbles, Mooring	Seatorium

DIVISION 4 PHASE 2

Feb 14 TD #4	1	Blue-GMDSS/Gold Steering	Aft Nav Lab
	2	Gold-GMDSS/Blue-Steering	Aft Nav Lab
	3 & 4	Cel Nav & Sextant Intro	Aft Nav Lab
Feb 15 TD #5	1	Adv Weather Obs	Aft Nav Lab
	2	Safety Mgmt Systems	Rm 6-5
	3 & 4	Gold- ECDIS	Aft Nav Lab
	3 & 4	Blue-Ship Construction	Aft Nav Lab
Feb 16 TD #6	1	Confined Space	Aft Nav Lab
	2	Voyage Plan 3	Rm 6-5
	3 & 4	Rigging–Bosun Chair, Stokes	Seatorium

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