

U.S. Department
of Transportation

United States
Coast Guard



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NMC Policy Letter No. 04-02

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From: Commanding Officer, U. S. Coast Guard National Maritime Center
To: Distribution

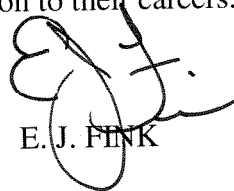
Subj: APPLICANTS FOR OCEAN OR NEAR COASTAL MASTER AND CHIEF MATE
LICENSES FOR SERVICE ON VESSELS OF 3000 GROSS TONNAGE (GT) OR MORE
WITH QUALIFYING SERVICE OR TRAINING BEGINNING ON OR AFTER 1
AUGUST 1998 AND ALL APPLICANTS BEGINNING 1 FEBRUARY 2002

Ref: (a) International Convention on Standards of Training, Certification and
Watchkeeping for Seafarers, 1978, as amended (STCW)
(b) Title 46, Code of Federal Regulations (46 CFR), Part 10

1. **PURPOSE.** This policy letter provides guidance about the requirements for processing and evaluating an application, and issuance of, a master or chief mate license valid for service on ships of 3,000 gross tonnage or more and STCW certification for master or chief mate. It applies to:
 - a. Applicants who began the service or training to qualify for the license after 1 August 1998; and
 - b. All applicants beginning 1 February 2002
2. **ACTION.** Commanding officers of units with marine safety responsibilities should bring this policy letter to the attention of those segments of maritime industry with interest in the personnel field. Personnel at Regional Examination Centers should use the information in this policy letter for evaluating applicants for the licenses to which it applies. This policy letter will be distributed by electronic means only. It is available on the World Wide Web at <http://www.uscg.mil/STCW/m-policy.htm>.
3. **DISCUSSION.**
 - a. Applicants for licenses as master or chief mate that authorize service on seagoing vessels of any gross tonnage or more must meet the requirements of the STCW as well as the requirements of the licensing regulations. Many of the STCW's requirements exceed the requirements of the domestic regulations and therefore take precedence; e.g., length of required sea service. Where the requirements of the domestic regulations exceed the STCW's requirements or have no STCW equivalent, they will apply; e.g., character requirements. Enclosure (1) is a summary of the requirements and provides guidance to a license applicant. Evaluators will find enclosure (1) essential for reviewing applications for these licenses.

Subj: APPLICANTS FOR OCEAN OR NEAR COASTAL MASTER AND CHIEF MATE LICENSES FOR SERVICE ON VESSELS OF 3000 GROSS TONNAGE (GT) OR MORE WITH QUALIFYING SERVICE OR TRAINING BEGINNING ON OR AFTER 1 AUGUST 1998 AND ALL APPLICANTS BEGINNING 1 FEBRUARY 2002

- b. There were two significant changes imposed as a result of the 1995 amendments to the STCW. One relates to required training, and the other applies to the assessments of professional skills. These are discussed below.
- c. The STCW requires that each applicant "have completed approved education and training..." Enclosure (1) includes a list of required training. Applicants must provide evidence of having completed training in these subjects by producing course completion certificates.
- d. Under the STCW, an applicant must actually demonstrate the practical ability to carry out certain professional duties and tasks. Enclosure (2) provides guidance to those who will witness and attest to the applicant's successful completion of these tasks. Enclosure (3) is a summary of the tasks that must be demonstrated, and it may serve as a record of successful completion of the assessments of the applicant's professional skills. Enclosure (4) lists the criteria that the designated examiner must follow when assessing a mariner's professional skills. Strict adherence to the standards therein ensures that all applicants are evaluated equally.
- e. Mariners who seek issuance of a license as master or chief mate on or shortly after 1 February 2002 will not have had sufficient time to complete all of the professional requirements set forth in Enclosure (1) to qualify for certification under the STCW. Enclosure (5) provides an alternative scheme for those mariners to qualify for the STCW certification with minimum disruption to their careers.


E. J. FINK

Encl: (1) Qualification as master and chief mate on vessels of 3000 GT or more.
(2) Conducting Mariner Assessments
(3) Record of completion of practical assessments
(4) Performance standards for assessments of competence
(5) Alternative Scheme

Dist: Commandant (G-MSO)
All District Commanders (m)
COs, all MSOs
All Activity Commanders
All RECs

QUALIFICATION AS A MASTER OR CHIEF MATE
ON SHIPS OF 3000 GT OR MORE

1. APPLICABILITY. These requirements apply to applicants for the licenses listed below who began the service or training for the license on or after 1 August 1998 and beginning 1 February 2002, it will apply to all applicants for these licenses:

- (1) Master of ocean or near coastal steam or motor vessels of any gross tons;
- (2) Chief Mate of ocean or near coastal steam or motor vessels of any gross tons.

2. APPLICATION. Application must be submitted on U. S. Coast Guard form CG-719B along with proofs of having completed the sea service, training, assessments, physical examination, and drug screening. Attachment A is a summary of all the requirements.

3. PHYSICAL AND MEDICAL. Applicants must meet the existing medical and physical standards set forth in the regulations, 46 CFR Part 10, and Navigation and Vessel Inspection Circular 2-98, *Physical Evaluation Guidelines for Merchant Mariner's Documents and Licenses*. The results of the physical examination should be reported on Coast Guard form 719K available from a Regional Examination Center or on the World Wide Web at <http://www.uscg.mil/STCW/m-forms.htm>.

4. AGE, CITIZENSHIP, AND CHARACTER. Applicants must meet the standards set forth in 46 CFR 10.201.

5. SEA SERVICE.

a. Applicants for a master's license must present evidence of **one** year of sea service as chief mate **OR one** year of sea service while holding a chief mate's license and serving a minimum of **six** months of service as chief mate AND **one** year as an officer in charge of a navigational watch. Applicants must provide evidence of actual sea service; shoreside service such as a port captain, instructor, or other closely related service is not creditable towards STCW qualifications.

b. Applicants for a chief mate's license must present evidence of **one** year of seagoing service as officer in charge of a navigational watch while holding a license as second mate. Applicants must provide evidence of actual sea service; shoreside service such as a port captain, instructor, or other closely related service is not creditable towards STCW qualifications.

c. Proof of sea service may be in the form of Certificates of Discharge, or letter(s) from the master or company official.

d. The requirement for recency of service found in 46 CFR 10.202(e) applies.

e. The character of the sea service required to qualify for a master's or chief mate's license is set forth in 46 CFR 10.402.

6. TRAINING AND ASSESSMENTS OF SKILLS.

a. The STCW requires that all training and assessment of seafarers for certification under the Convention be structured in accordance with written programs and conducted, monitored, and evaluated by qualified persons. Accordingly, every applicant for a license and STCW certificate must participate in structured, approved or accepted training. The following table provides subjects of training courses which a mariner is required to complete. These subjects are broken down further into topic areas in Attachment B of this enclosure. A mariner must provide evidence of having completed training in each topic area included in attachments A.

Advanced Navigation	Advanced COLREGS	ARPA *
Advanced Meteorology	Advanced Stability	Cargo Handling
SAR	Marine Propulsion Plants	Advanced Shiphanding
Radar *	Ship Management Including Emergency Response	

*Must be completed if not already completed

Upon completion of the any of the above required training, an applicant must have been assessed in his or her abilities to actually perform the duties expected of a mariner. The Record of Completion of the Assessments of Practical Demonstrations of Skills, enclosure (3) to this policy letter, or its equivalent, may be used to record successful completion of the assessments. Where approved by the U. S. Coast Guard to do so, designated examiners at approved or accepted training courses may have completed some of the assessments as part of an applicant's completion of a course.

b. Applicants must have demonstrated competency in Basic Safety Training within the past five years by either completing an approved course or through continuing sea service. See NMC Policy Letter 12-01.

7. ON BOARD ASSESSMENTS.

a. An applicant for a license must demonstrate his or her ability to carry out certain tasks and functions. Enclosure (3) is a listing of every task in which a mariner must be assessed. It may be used as a checklist when reviewing a mariner's records to ensure that every practical demonstration has been completed.

b. Enclosure (4) contains a specification/check-off sheet for each practical demonstration required to be completed by the mariner. When the mariner has satisfactorily completed a practical demonstration, the shipboard assessor should complete the information on the bottom of the individual assessment specification. The applicant should present this signed copy of each specification as part of the application package.

c. The assessments of competency for this certification may be carried out by a mariner who is serving on the vessel upon which the applicant is employed and who holds a STCW certification at the management level (master or chief mate). This person, titled a shipboard assessor, must attest that he or she has read enclosure (2) and the document, *CONDUCTING MARINER ASSESSMENTS*. Enclosure (2) provides specific information about qualification as a shipboard assessor.

d. Once assessed, to qualify for a chief mate's license no assessments are required to progress to a master's license.

8. PREREQUISITE QUALIFICATION. An applicant for a master license must meet the requirements for an officer in charge of a navigational watch on ships of 500 gross tonnage or more.

9. COAST GUARD EXAMINATION.

a. After an application package has been approved by the Regional Examination Center, an applicant will be required to pass a Coast Guard Examination. The examination will consist of the modules shown in the following table. The numbers in the table represent the number of questions contained in the module.

MODULE	OCEAN	N/C	PASSING
Rules of the Road	50	50	90%
Deck General – Part A	50	50	70%
Deck General – Part B	50	50	70%
Navigation General	70	70	70%
Deck Safety and Environmental Protection	70	70	70%
Stability Problems	15	15	80%
Navigation Problems- Chart Plot	10	10	90%
Navigation - Terrestrial	10	10	90%
Navigation - Celestial	15	--	90%

b. An applicant who completed the above testing for a chief mate's license is not required to test for a master's license.

c. The written examination may include questions on the following topics: Celestial Navigation (ocean licenses only); Terrestrial Navigation; Electronic Navigation and Position System; Echo Sounders; Magnetic and Gyro-compasses; Steering Control Systems; Meteorology; Watchkeeping, including Bridge Resource Management and Voyage Planning; Radar Navigation; Emergency Procedures; Search and Rescue; Visual Signaling; Ship Handling; Cargo Handling and Stowage; Pollution Prevention; Ship Stability; Fire Fighting and Fire Prevention; Life Saving; Medical Aid; and IMO Conventions concerning Safety of Life at Sea.

10. USER FEES. Applicants must pay the appropriate user fees set forth in 46 CFR 10.109.

11. RAISE OF GRADE OR INCREASE IN SCOPE. The following paragraphs include the professional requirements for an applicant seeking a raise of grade, extension of route, or increase in a tonnage limitation of his or her existing license. In situations occurring before 1 February 2002, that are not provided for below, the policies and procedures of the former licensing scheme still apply.

a. Effective 1 February 2002, an applicant who holds a near coastal license and STCW certification and applies for an increase in scope to an ocean route must:

(1) Complete the assessments of skills related to celestial navigation; and

(2) Pass the written examination module for celestial navigation.

b. Effective 1 February 2002, a chief mate who was licensed under the former licensing scheme based on service before 1 August 1998 and who applies for a master's license, must:

(1) Acquire the sea service required by 46 CFR 10.404; and

(2) Pass the master's examination from the former licensing scheme.

c. A chief mate who holds a license and STCW certification that was issued in accordance with the standards in this policy letter and wishes to upgrade to a master's license is only required to acquire the additional sea service required by 46 CFR 10.404. No further training, testing or assessments are required.

STCW 95
MASTERS AND CHIEF MATES ON SHIPS
OF 3000 GT OR MORE
AFTER FEBRUARY 1, 2002

NAME: _____
 SOCIAL SECURITY#: _____

GENERAL REQUIREMENTS	
	1. Passport photo
	2. Current license or document
	3. Physical and Medical
	4. 18 years old
	5. Basic Safety Training <ul style="list-style-type: none"> a. Personal survival techniques b. Fire fighting c. First aid d. Personal safety and social responsibility
	6. For certification as chief mate, meet the requirements of OICNW on ships of 500 GT or more.
	7. Have completed approved education and training and present the following approved course completion certificates: <ul style="list-style-type: none"> a. Advanced Navigation b. Advanced COLREGS c. ARPA * d. Advanced Meteorology e. Advanced Stability f. Cargo Handling g. SAR h. Marine Propulsion Plants i. Advanced Shiphanding j. Radar * k. Ship Management Including Emergency Response
	8. Have completed all practical assessment control sheets for master and chief mate of ships over 3,000 GRT
	9. U.S.C.G. Exam
	NOTE: CERTIFICATION AS MASTER CAN BE OBTAINED ON SEASERVICE ALONE AFTER AQUIRING 12 MONTHS OF SEATIME WHILE HOLDING A CHIEF MATES LICENSE. SIX MONTHS OF THE SERVICE MUST HAVE BEEN GAINED WHILE SAILING AS CHIEF MATE

*Must be completed if not already completed

Chief Mate / Master Courses For STCW

Subjects

Weeks

<p>1. Advanced Navigation</p> <ul style="list-style-type: none"> • Adaptive Steering Systems • GPS & DGPS • ECDIS • Navigational Software Programs 	
<p>2. Watchkeeping</p> <ul style="list-style-type: none"> • Principles of Safe Navigational Watchkeeping • COLREGS • Voyage Planning • Bridge Teamwork 	
<p>3. Advanced Shiphandling</p> <ul style="list-style-type: none"> • Restricted Waters • Docking and undocking • Anchoring • Using Tugs • Response to Shiphandling Emergencies • Heavy Weather Maneuvering • SAR 	
<p>4. Marine Propulsion Plants</p> <ul style="list-style-type: none"> • Steam • Diesel • Gas Turbine • Auxiliary Systems 	
<p>5. Cargo Operations</p> <ul style="list-style-type: none"> • Container Ships • Bulk Carriers • Tank Vessels • Hazardous Materials (IMDG Code) • Cargo Operation Software Programs 	
<p>6. Advanced Stability</p> <ul style="list-style-type: none"> • Trim • Stress • Bending Moments • Damage Stability • Use of Stability Software Programs 	
<p>7. Advanced Meteorology</p> <ul style="list-style-type: none"> • Weather Systems • Oceans Systems • Synoptics Charts <ul style="list-style-type: none"> a. Surface b. 500 Milibars • Forecasting • Routing Software Programs 	
<p>8. Ship Management</p> <ul style="list-style-type: none"> • Legislative Requirements • Personnel Management • International Conventions (ISM)(MARPOL)(SOLAS) • Emergency Preparedness • Managing Medical Care 	

CONDUCTING MARINER ASSESSMENTS

QUALIFICATION AS A SHIPBOARD ASSESSOR AND ASSESSING APPLICANTS FOR AN STCW-95 CERTIFICATE

1. A candidate for any license authorizing service as a master or chief mate of vessels of 3000 or more GT (1,600 GRT) must demonstrate his or her ability to perform the professional tasks listed in enclosure (3). Satisfactory completion of these tasks must be witnessed by a shipboard assessor who uses the performance standards set forth in enclosure (4) or alternative performance standards that have been approved by the Coast Guard.
2. To serve as a shipboard assessor for assessment of an applicant's practical demonstrations of skill, a mariner must read the publication *CONDUCTING MARINER ASSESSMENTS: A Practical Manual for Assessors*. This 13-page document is available on the World Wide Web at <http://www.uscg.mil/nmc/assessorman.pdf> . A shipboard assessor who witnesses a practical assessment must sign the assessment standard and indicate that he or she has read and followed the guidance in the manual. A shipboard assessor who has read this document and uses the assessment standards [enclosure (4)] will ensure a fair, standardized assessment of an applicant's ability to competently perform the assessed task.
3. The assessment standards identify those skills in the STCW Code Table A-II/2 that must be demonstrated, establish the conditions under which the assessment must occur, the performance or behavior the candidate must demonstrate, and the standards against which the performance or behavior must be measured. After a candidate has successfully completed a demonstration of a skill, the witnessing shipboard assessor should complete the information at the bottom of the applicable assessment standard.
4. Certain licensed officers serving on board ship may serve as a shipboard assessor of applicants for these licenses. The prospective shipboard assessor must hold an STCW certificate at the management level (master or chief mate) and as such be employed on the vessel serving as the platform for the demonstrations and. He or she must comply with the requirements set forth in paragraph 2 above.
5. The vessel upon which the assessments are performed must be fitted out with the equipment pertaining to the assessments. Simulation is not permitted unless specifically authorized by enclosure (4). For example, if a gyro compass is required to perform a demonstration, a magnetic compass may not be used to simulate a gyro compass.

**Record of Completion of Practical Assessments
Masters and Chief Mates on Ships of 500 Gross Tonnage or More (ITC)**

STCW Competence	Knowledge, Understanding and Proficiency (KUP)	Assessments	
		Number	Task
Plan a voyage and conduct navigation	Voyage planning and navigation for all conditions by acceptable methods of plotting ocean tracks; Routing in accordance with the General Principles on Ship's Routing	M-1-1A	Create a Navigation Plan
		M-1-1B	Position Reporting Systems
	Reporting in accordance with the Guidelines and Criteria for Ship Reporting Systems	M-1-2A	Latitude by Ex-Meridian (Sun)
		M-1-2B	Latitude by Meridian Transit (Other Than Sun)
	Position determination by celestial observation	M-1-2C	Star Identification
		M-1-2D	Star Selection
		M-1-2E	LOP From High Altitude Sight
		M-1-2F	Celestial Navigation Fix
		M-1-2G	Great Circle Sailing
		M-1-2H	Mercator Sailing – Course & Distance
		M-1-2I	Mercator Sailing – Final Position

**Record of Completion of Practical Assessments
Masters and Chief Mates on Ships of 500 Gross Tonnage or More (ITC)**

	Position determined by terrestrial observations, including the ability to use appropriate charts, notices to mariners and other publications to assess the accuracy of the resulting position fix	M-1-3A	Position Fix by Terrestrial Bearings
Plan a voyage and conduct navigation	Voyage planning and navigation for all conditions by acceptable methods of plotting ocean tracks; Routing in accordance with the General Principles on Ship's Routing	M-1-4A	GPS – Waypoint Entry
Determine and allow for compass errors	Ability to determine and allow for errors of the magnetic and gyro compasses	M-2-1A	Determine Magnetic Compass Deviation
		M-2-1B	Construct a deviation table
		M-2-1C	Amplitude of the Sun
		M-2-1D	Apply Compass Error to Magnetic Course
		M-1-2E	Apply Compass Error to Magnetic Bearings
		M-2-1F	Apply Compass Error to Gyrocompass Course
Coordinate search and rescue operations	A thorough knowledge of and ability to apply the procedures contained in the <i>IMO Merchant Ship Search and Rescue Manual (MERSAR)</i>	M-3-1A	Coordinate Search & Rescue Operations

**Record of Completion of Practical Assessments
Masters and Chief Mates on Ships of 500 Gross Tonnage or More (ITC)**

Establish watchkeeping arrangements and procedures	Thorough knowledge of content, application and intent of the International Regulations for Preventing Collisions at Sea	M-4-1A	Identify Vessels by Light Configurations	
		M-4-1B	Identify Vessels by Day Shapes	
		M-4-1C	Apply the Rules of the Road to Avoid Collision	
Maintain safe navigation through the use of radar and ARPA and modern navigation systems to assist command decision-making	Thorough knowledge of the content, application and intent of the Principles to be observed in keeping a navigational watch -- Effective bridge teamwork procedures	M-4-2A	Determine Risk of Collision	
		M-5-1A	Operate ARPA Controls & Functions	
		M-5-1B	Determine Target Data	
		M-5-1C	Parallel Indexing	
Forecast weather and oceanographic conditions	An appreciation of system errors and thorough understanding of the operational aspects of modern navigational systems, including radar and ARPA.	M-5-1D	Bridge Resource Management	
		M-6-1A	Weather Forecast (24 Hours)	
		M-6-2A	Identify Weather Fronts	
Forecast weather and oceanographic conditions	Ability to understand and interpret a synoptic chart and to forecast area weather, taking into account local weather conditions and information received by weather fax	M-6-3A	Calculate Height of Tide	
		M-6-3B	Calculate Tidal Current	
		M-6-3C	Calculate Time of Height of Tide	
Forecast weather and oceanographic conditions	Knowledge of the characteristics of various weather systems, including tropical revolving storms and avoidance of storm centers and the dangerous quadrants	M-6-3A	Calculate Height of Tide	
		M-6-3B	Calculate Tidal Current	
		M-6-3C	Calculate Time of Height of Tide	

**Record of Completion of Practical Assessments
Masters and Chief Mates on Ships of 500 Gross Tonnage or More (ITC)**

Respond to navigational emergencies	Action to be taken if grounding is imminent, and after grounding	M-7-1A	Actions After a Grounding
	Re-floating a grounded ship with and without assistance	M-7-2A	Re-Floating a Grounded Ship
	Action to be taken if collision is imminent and following a collision or impairment of the watertight integrity of the hull by any cause	M-7-3A	Prepare for Collision
		M-7-3B	Actions After a Collision
	Emergency steering	M-7-4A	Emergency steering
Maneuver and handle a ship in all conditions	Emergency towing arrangements and towing procedures	M-7-5A	Emergency Towing
	Maneuvers when approaching pilot stations and embarking or disembarking pilots, with due regard to weather, tide, head reach and stopping distances	M-8-1A	Maneuver to Embark/Disembark a Pilot
		M-8-2A	Transit Restricted Waters
Application of constant rate of turn techniques	M-8-3A	Constant Rate of Turn Techniques	

**Record of Completion of Practical Assessments
Masters and Chief Mates on Ships of 500 Gross Tonnage or More (ITC)**

Plan and ensure safe loading, stowage, securing, care during the voyage and unloading of cargoes	Maneuvering in shallow water, including the reduction in under keel clearance caused by squat, rolling and pitching	M-8-4A	Shallow Water Effects -- Squat	
	Interaction between passing ships and between own ship and nearby banks (canal effect)	M-8-5A	Shallow Water Effects – Passing Vessels	
	Berthing and unberthing under various conditions of wind, tide and current with and without tugs	M-8-6A	Vessel Docking – Starboard Side To	
	Ship and tug interaction	M-8-6B	Vessel Docking – Port Side To	
	Choice of anchorage; anchoring with one or two anchors in limited anchorages and factors involved in determining the length of anchor cable to be used	M-8-7A	Turn Vessel w. Tug Assistance	
	Dragging anchor; clearing fouled anchors	M-8-8A	Anchoring	
	Use of stability and trim diagrams, and stress-calculating equipment, including automatic data-based (ADB) equipment, and knowledge of loading cargoes and ballasting in order to keep hull stress within acceptable limits	M-8-9A	Dragging Anchor	
		M-9-1A	Determine GM – Arrival	
		M-9-1B	Determine GM – Flooded Engine Room	
		M-9-1C	Determine GM – Flooded Hatch	
		M-9-1D	Determine Sheering Forces and Bending Moment	

**TABLE A-II/2 Performance Standards for Assessments of Competence
Masters and Chief Mates on Ships of 3000 Gross Tonnage or More (ITC)**

Control Sheet

ASSESSMENT NO. M-1-1A

FUNCTION: Navigation at the Management Level

COMPETENCE: Plan a voyage and conduct navigation

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Voyage planning and navigation for all conditions by acceptable methods of plotting ocean tracks; Routing in accordance with the General Principles on Ship's Routing

TASK: Create a Navigation Plan

PERFORMANCE CONDITION: On a ship underway or in a navigational laboratory.

PERFORMANCE BEHAVIOR: Create a navigation plan for a coastwise voyage of at least 600 miles at night in restricted waters.

PERFORMANCE STANDARD:

Appraisal The candidate's plan took into account paragraph 2 of the annex to IMO Assembly Resolution A 893(21):

1. The condition of the vessel, equipment, operational limitations, draft and maneuvering characteristics;
2. Any special characteristics of the cargo and its stowage;
3. Crew members competency and rest status;
4. The status of all ship's certificates and documents were up to date;
5. Up to date charts of proper scale, and the latest notices to mariners and radio navigational warnings;
6. Up to date coast pilots, sailing directions, and other information sources appropriate for the voyage;
7. Relevant routing guides;
8. Up to date tide and current tables and atlases;
9. Weather information;
10. Weather routing services;
11. Ship reporting systems, VTS and environmental protection measures;
12. Vessel traffic density for the route;
13. Pilotage requirements and information exchange; and,
14. Port information, including emergency response capability.

Planning The candidate's plan contained the following in accordance with paragraph 3 of the annex to IMO Assembly Resolution A 893(21):

1. Courses plotted on the appropriately scaled charts noting the ETA at each way point, including the final way point;
2. Courses and distances between way points were correctly calculated and indicated on the charts;
3. The most direct route that avoided all hazards to navigation by the margin of safety of three miles, where possible;
4. The areas of all required speed changes;
5. The minimum under keel clearances in critical areas; positions requiring a change of machinery status;
6. Way points of all course changes;
7. The methods and frequency of position fixing, including areas requiring the highest accuracy;

**TABLE A-II/2 Performance Standards for Assessments of Competence
Masters and Chief Mates on Ships of 3000 Gross Tonnage or More (ITC)**

Control Sheet

- The positions and radio hailing frequencies or channels where port authorities, pilots and VTS services must be notified were noted on the relevant chart;
8. The state of the tide and currents at the port of departure for the times of departure and transit were determined;
 9. Contingency plan for alternative actions in cases of emergency

A ship's officer who signs below attests that he/she has met the requirements to qualify as a shipboard assessor.

Mariner	SSN No.	Date
Assessor (sign and print name)	License No.	MMD No.
Position	Vessel or Training Course	

**TABLE A-II/2 Performance Standards for Assessments of Competence
Masters and Chief Mates on Ships of 3000 Gross Tonnage or More (ITC)**

Control Sheet

ASSESSMENT NO. M-1-1B

FUNCTION: Navigation at the Management Level

COMPETENCE: Determine position and the accuracy of resultant position fix by any means

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Reporting in accordance with the Guidelines and Criteria for Ship Reporting Systems

TASK: Position Reporting Systems

PERFORMANCE CONDITION: On a ship underway or in a navigational laboratory.

PERFORMANCE BEHAVIOR: Describe all ship position reporting and VTS systems required for the route.

PERFORMANCE STANDARD:

1. All shore side entities requiring ship positions reports and all VTS services for the route are correctly identified.
2. All reporting requirements are correctly described.
3. The hailing frequencies, and position reporting requirements of all VTS services are noted on the appropriate charts.

A ship's officer who signs below attests that he/she has met the requirements to qualify as a shipboard assessor.

_____	_____	_____
Mariner	SSN No.	Date
_____	_____	_____
Assessor (sign and print name)	License No.	MMD No.
_____	_____	
Position	Vessel or Training Course	

**TABLE A-II/2 Performance Standards for Assessments of Competence
Masters and Chief Mates on Ships of 3000 Gross Tonnage or More (ITC)**

Control Sheet

ASSESSMENT NO. M-1-2A

FUNCTION: Navigation at the Management Level

COMPETENCE: Determine position and the accuracy of resultant position fix by any means

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Position determination by celestial observation

TASK: Latitude by Ex-Meridian (Sun)

PERFORMANCE CONDITION: On a ship underway, with the sun and the horizon visible, and at least three minutes before or three minutes after the time of meridian passage over the meridian of the observer.

PERFORMANCE BEHAVIOR: Measure the altitude of the sun and calculate the latitude of the ship at meridian passage using the ex-meridian observation.

PERFORMANCE STANDARD:

The latitude calculated at meridian passage is within $\pm .1$ nm of the assessor's position.

A ship's officer who signs below attests that he/she has met the requirements to qualify as a shipboard assessor.

_____	_____	_____
Mariner	SSN No.	Date
_____	_____	_____
Assessor (sign and print name)	License No.	MMD No.
_____	_____	
Position	Vessel or Training Course	

**TABLE A-II/2 Performance Standards for Assessments of Competence
Masters and Chief Mates on Ships of 3000 Gross Tonnage or More (ITC)**

Control Sheet

ASSESSMENT NO. M-1-2B

FUNCTION: Navigation at the Management Level

COMPETENCE: Determine position and the accuracy of resultant position fix by any means

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Position determination by celestial observation

TASK: Latitude by Meridian Transit (Other Than Sun)

PERFORMANCE CONDITION: On a ship underway, with a celestial body other than the sun at upper transit and a clear horizon.

PERFORMANCE BEHAVIOR: Measure the altitude of the body as it crosses the meridian of the observer and calculate the latitude of the ship.

PERFORMANCE STANDARD:

The latitude calculated at meridian passage is within $\pm .1$ nm of the assessor's position.

A ship's officer who signs below attests that he/she has met the requirements to qualify as a shipboard assessor.

_____	_____	_____
Mariner	SSN No.	Date
_____	_____	_____
Assessor (sign and print name)	License No.	MMD No.
_____	_____	
Position	Vessel or Training Course	

**TABLE A-II/2 Performance Standards for Assessments of Competence
Masters and Chief Mates on Ships of 3000 Gross Tonnage or More (ITC)**

Control Sheet

ASSESSMENT NO. M-1-2C

FUNCTION: Navigation at the Management Level

COMPETENCE: Determine position and the accuracy of resultant position fix by any means

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Position determination by celestial observation

TASK: Star Identification

PERFORMANCE CONDITION: On a ship underway or in a navigational laboratory, given the times of observation, altitudes and azimuths of three unknown stars.

PERFORMANCE BEHAVIOR: Identify the three stars.

PERFORMANCE STANDARD:

Within 20 minutes, the stars are correctly identified.

A ship's officer who signs below attests that he/she has met the requirements to qualify as a shipboard assessor.

_____	_____	_____
Mariner	SSN No.	Date
_____	_____	_____
Assessor (sign and print name)	License No.	MMD No.
_____	_____	
Position	Vessel or Training Course	

**TABLE A-II/2 Performance Standards for Assessments of Competence
Masters and Chief Mates on Ships of 3000 Gross Tonnage or More (ITC)**

Control Sheet

ASSESSMENT NO. M-1-2D

FUNCTION: Navigation at the Management Level

COMPETENCE: Determine position and the accuracy of resultant position fix by any means

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Position determination by celestial observation

TASK: Star Selection

PERFORMANCE CONDITION: On a ship underway or in a navigational laboratory, given the times of observation.

PERFORMANCE BEHAVIOR: Identify the best three stars or planets to obtain a fix.

PERFORMANCE STANDARD:

Within 20 minutes, the candidates selected three stars which:

1. Are the three brightest; and,
2. Have the greatest crossing angles between each other.

A ship's officer who signs below attests that he/she has met the requirements to qualify as a shipboard assessor.

_____	_____	_____
Mariner	SSN No.	Date
_____	_____	_____
Assessor (sign and print name)	License No.	MMD No.
_____	_____	
Position	Vessel or Training Course	

**TABLE A-II/2 Performance Standards for Assessments of Competence
Masters and Chief Mates on Ships of 3000 Gross Tonnage or More (ITC)**

Control Sheet

ASSESSMENT NO. M-1-2E

FUNCTION: Navigation at the Management Level

COMPETENCE: Determine position and the accuracy of resultant position fix by any means

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Position determination by celestial observation

TASK: LOP From High Altitude Sight

PERFORMANCE CONDITION: On a ship underway or in a navigational laboratory, given the time of observation and measurement of a body at a high altitude.

PERFORMANCE BEHAVIOR: Plot the line of position of the ship at the time of the observation.

PERFORMANCE STANDARD:

1. Within 20 minutes, the intercept and azimuth is correctly determined; and,
2. The LOP is plotted within 2 miles of the ship's position at the time of the observation as determined by the GPS or other equally accurate means.

A ship's officer who signs below attests that he/she has met the requirements to qualify as a shipboard assessor.

Mariner	SSN No.	Date
Assessor (sign and print name)	License No.	MMD No.
Position	Vessel or Training Course	

**TABLE A-II/2 Performance Standards for Assessments of Competence
Masters and Chief Mates on Ships of 3000 Gross Tonnage or More (ITC)**

Control Sheet

ASSESSMENT NO. M-1-2F

FUNCTION: Navigation at the Management Level

COMPETENCE: Determine position and the accuracy of resultant position fix by any means

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Position determination by celestial observation

TASK: Celestial Fix

PERFORMANCE CONDITION: On a ship underway or in a navigational laboratory, given at least four intercepts and azimuths obtained from celestial sight reductions, and the times and assumed positions for each.

PERFORMANCE BEHAVIOR: Plot the ship's position at the time of the last observation.

PERFORMANCE STANDARD:

1. The position is plotted within 12 minutes; and,
2. The position is within $\pm .1$ nm of the assessor's position.

A ship's officer who signs below attests that he/she has met the requirements to qualify as a shipboard assessor.

_____	_____	_____
Mariner	SSN No.	Date
_____	_____	_____
Assessor (sign and print name)	License No.	MMD No.
_____	_____	
Position	Vessel or Training Course	

**TABLE A-II/2 Performance Standards for Assessments of Competence
Masters and Chief Mates on Ships of 3000 Gross Tonnage or More (ITC)**

Control Sheet

ASSESSMENT NO. M-1-2G

FUNCTION: Navigation at the Management Level

COMPETENCE: Determine position and the accuracy of resultant position fix by any means

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Position determination by celestial observation

TASK: Great Circle Sailing

PERFORMANCE CONDITION: In a navigation laboratory or on a ship underway, given a latitude and longitude of departure and a latitude and longitude of arrival at least 3,000 miles apart, and using a hand held non-programmable calculator, sight reduction tables, or Publication Number 9 Tables.

PERFORMANCE BEHAVIOR: Calculate the great circle between the point of departure and the point of arrival.

PERFORMANCE STANDARD:

1. The initial course is determined within $\pm .5^\circ$ of the assessor's solution.
2. The total distance is within 1 nm of the assessor's position.
3. The position of the vertex is within .1 nm of the assessor's position.
4. The position of points along the great circle at intervals of 5° (300 miles) are within 1 nm of the assessor's solution.

A ship's officer who signs below attests that he/she has met the requirements to qualify as a shipboard assessor.

_____	_____	_____
Mariner	SSN No.	Date
_____	_____	_____
Assessor (sign and print name)	License No.	MMD No.
_____	_____	
Position	Vessel or Training Course	

**TABLE A-II/2 Performance Standards for Assessments of Competence
Masters and Chief Mates on Ships of 3000 Gross Tonnage or More (ITC)**

Control Sheet

ASSESSMENT NO. M-1-2H

FUNCTION: Navigation at the Management Level

COMPETENCE: Determine position and the accuracy of resultant position fix by any means

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Position determination by celestial observation

TASK: Mercator Sailing – Course & Distance

PERFORMANCE CONDITION: In a navigation laboratory or on a ship underway, given a latitude and longitude of departure and a latitude and longitude of arrival at least 1,000 miles apart, and using a hand held non-programmable calculator, sight reduction tables, or Publication Number 9 Tables.

PERFORMANCE BEHAVIOR: Calculate the Mercator course and distance between the point of departure and the point of arrival.

PERFORMANCE STANDARD:

1. The initial course is determined within $\pm .5^\circ$ of the assessor's solution.
2. The total distance is within 1 nm of the assessor's position.

A ship's officer who signs below attests that he/she has met the requirements to qualify as a shipboard assessor.

_____	_____	_____
Mariner	SSN No.	Date
_____	_____	_____
Assessor (sign and print name)	License No.	MMD No.
_____	_____	
Position	Vessel or Training Course	

**TABLE A-II/2 Performance Standards for Assessments of Competence
Masters and Chief Mates on Ships of 3000 Gross Tonnage or More (ITC)**

Control Sheet

ASSESSMENT NO. M-1-2I

FUNCTION: Navigation at the Management Level

COMPETENCE: Determine position and the accuracy of resultant position fix by any means

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Position determination by celestial observation

TASK: Mercator Sailing – Final Position

PERFORMANCE CONDITION: In a navigation laboratory or on a ship underway, given a latitude and longitude of departure and a course and distance for a passage of at least 1,000 miles nm, and using a hand held non-programmable calculator, or Publication Number 9 Tables.

PERFORMANCE BEHAVIOR: Calculate the final position using the Mercator formula.

PERFORMANCE STANDARD:

The initial course is determined within ± 1 nm of the assessor's solution.

A ship's officer who signs below attests that he/she has met the requirements to qualify as a shipboard assessor.

_____	_____	_____
Mariner	SSN No.	Date
_____	_____	_____
Assessor (sign and print name)	License No.	MMD No.
_____	_____	
Position	Vessel or Training Course	

**TABLE A-II/2 Performance Standards for Assessments of Competence
Masters and Chief Mates on Ships of 3000 Gross Tonnage or More (ITC)**

Control Sheet

ASSESSMENT NO. M-1-3A

FUNCTION: Navigation at the Management Level

COMPETENCE: Determine position and the accuracy of resultant position fix by any means

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Position determined by terrestrial observations, including the ability to use appropriate charts, notices to mariners and other publications to assess the accuracy of the resulting position fix.

TASK: Position Fix by Terrestrial Bearings

PERFORMANCE CONDITION: On a ship underway, or a full mission ship simulator, with land and aids to navigation in sight, using a standard bearing circle, alidade, or other device for taking bearings, and given a chart with a scale of no more than 1: 150,000.

PERFORMANCE BEHAVIOR: Determine the bearings of at least two charted objects and plot them on the chart in use.

PERFORMANCE STANDARD:

1. The position is within $\pm .1$ nm of the assessor's position.
2. Crossing angles of bearings should be not less than 30° and not more than 160° between bearings.
3. The bearings of objects abeam or close to the beam are observed first.
4. The chart in use is the largest scale suitable for the waters being transited.

A ship's officer who signs below attests that he/she has met the requirements to qualify as a shipboard assessor.

_____	_____	_____
Mariner	SSN No.	Date
_____	_____	_____
Assessor (sign and print name)	License No.	MMD No.
_____	_____	
Position	Vessel or Training Course	

**TABLE A-II/2 Performance Standards for Assessments of Competence
Masters and Chief Mates on Ships of 3000 Gross Tonnage or More (ITC)**

Control Sheet

ASSESSMENT NO. M-1-4A

FUNCTION: Navigation at the Management Level

COMPETENCE: Determine position and the accuracy of resultant position fix by any means

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Position determined by using modern electronic navigational aids, with specific knowledge of their operating principles, limitations, sources of error, detection of misrepresentation of information and methods of correction to obtain accurate position fixing.

TASK: GPS – Waypoint Entry

PERFORMANCE CONDITION: On a ship underway, or a full mission ship simulator, or in a navigation laboratory, using a GPS receiver which meets IMO standards, and given a port of departure and a port of arrival at least 2,000 nm apart in a generally east west direction, with at least 3 legs, which include both rhumb line and great circle legs.

PERFORMANCE BEHAVIOR: Enter the waypoints and route for the voyage into the GPS.

PERFORMANCE STANDARD:

1. The way points are correctly determined entered, and saved;
2. The route is correctly entered and saved; and,
3. The great circle or rhumb line legs are correctly designated.

A ship's officer who signs below attests that he/she has met the requirements to qualify as a shipboard assessor.

Mariner	SSN No.	Date
Assessor (sign and print name)	License No.	MMD No.
Position	Vessel or Training Course	

**TABLE A-II/2 Performance Standards for Assessments of Competence
Masters and Chief Mates on Ships of 3000 Gross Tonnage or More (ITC)**

Control Sheet

ASSESSMENT NO. M-2-1A

FUNCTION: Navigation at the Management Level

COMPETENCE: Determine and allow for compass errors

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Ability to determine and allow for errors of the magnetic and gyro compasses

TASK: Determine Magnetic Compass Deviation

PERFORMANCE CONDITION: On a ship underway or a full mission ship simulator, using navigational or natural terrestrial ranges, using only a magnetic compass, and a chart with variation.

PERFORMANCE BEHAVIOR: Note the vessel's magnetic compass heading while aligned on the range and determine magnetic compass deviation.

PERFORMANCE STANDARD:

1. The magnetic heading is compared to the charted range or bearing.
2. The magnetic compass error is determined and properly labeled.
3. Variation is determined from the chart.
4. The deviation solution is $\pm .5^\circ$ of the assessor's solution.
5. The deviation is correctly recorded in the compass record book and the ship's log.

A ship's officer who signs below attests that he/she has met the requirements to qualify as a shipboard assessor.

_____	_____	_____
Mariner	SSN No.	Date
_____	_____	_____
Assessor (sign and print name)	License No.	MMD No.
_____	_____	
Position	Vessel or Training Course	

**TABLE A-II/2 Performance Standards for Assessments of Competence
Masters and Chief Mates on Ships of 3000 Gross Tonnage or More (ITC)**

Control Sheet

ASSESSMENT NO. M-2-1B

FUNCTION: Navigation at the Management Level

COMPETENCE: Determine and allow for compass errors

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Ability to determine and allow for errors of the magnetic and gyro compasses

TASK: Construct a deviation table

PERFORMANCE CONDITION: On a ship underway or a full mission ship simulator, using navigational or natural terrestrial ranges, using only a magnetic compass, and a chart with variation.

PERFORMANCE BEHAVIOR: Construct a Deviation Table

PERFORMANCE STANDARD:

1. The candidate will swing the ship to a cardinal heading by the magnetic compass and compare the magnetic heading to the charted range or bearing;
2. The magnetic compass error is determined and properly labeled.
3. Variation is determined from the chart.
4. The deviation solution is $\pm .5^\circ$ of the assessor's solution.
5. The deviation is correctly recorded in the compass record book and the ship's log.
6. The process is repeated every 15 degrees to the next cardinal heading by magnetic compass.
7. A deviation table is constructed for the 90° compass segment.

A ship's officer who signs below attests that he/she has met the requirements to qualify as a shipboard assessor.

_____	_____	_____
Mariner	SSN No.	Date
_____	_____	_____
Assessor (sign and print name)	License No.	MMD No.
_____	_____	
Position	Vessel or Training Course	

**TABLE A-II/2 Performance Standards for Assessments of Competence
Masters and Chief Mates on Ships of 3000 Gross Tonnage or More (ITC)**

Control Sheet

ASSESSMENT NO. M-2-1C

FUNCTION: Navigation at the Management Level

COMPETENCE: Determine and allow for compass errors

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Ability to determine and allow for errors of the magnetic and gyro compasses

TASK: Amplitude of the Sun

PERFORMANCE CONDITION: On a ship underway, with the center of the sun on either the visible horizon or the celestial horizon.

PERFORMANCE BEHAVIOR: Measure the bearing of the sun.

PERFORMANCE STANDARD:

1. The bearing of the sun is read when the repeater is level.
2. The time of the reading noted.
3. The true bearing of the sun for the time of the reading is determined (if the bearing of the sun was taken on the visible horizon, the Table 28 correction is properly applied).
4. The gyrocompass bearing is compared to the true bearing and the gyro error is determined.
5. The solution is $\pm 1^\circ$ of the assessor's solution.

A ship's officer who signs below attests that he/she has met the requirements to qualify as a shipboard assessor.

_____	_____	_____
Mariner	SSN No.	Date
_____	_____	_____
Assessor (sign and print name)	License No.	MMD No.
_____	_____	
Position	Vessel or Training Course	

**TABLE A-II/2 Performance Standards for Assessments of Competence
Masters and Chief Mates on Ships of 3000 Gross Tonnage or More (ITC)**

Control Sheet

ASSESSMENT NO. M-2-1D

FUNCTION: Navigation at the Management Level

COMPETENCE: Determine and allow for compass errors

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Ability to determine and allow for errors of the magnetic and gyro compasses

TASK: Apply Compass Error to Magnetic Course

PERFORMANCE CONDITION: On a ship underway, a full mission ship simulator, or in a navigational laboratory, and given a deviation table.

PERFORMANCE BEHAVIOR: Correctly apply the compass error to the course by magnetic compass to make good the intended true course.

PERFORMANCE STANDARD:

1. Compass error is correctly applied to the magnetic course.
2. The solution is $\pm 1^\circ$ of the assessor's solution.

A ship's officer who signs below attests that he/she has met the requirements to qualify as a shipboard assessor.

_____	_____	_____
Mariner	SSN No.	Date
_____	_____	_____
Assessor (sign and print name)	License No.	MMD No.
_____	_____	
Position	Vessel or Training Course	

**TABLE A-II/2 Performance Standards for Assessments of Competence
Masters and Chief Mates on Ships of 3000 Gross Tonnage or More (ITC)**

Control Sheet

ASSESSMENT NO. M-2-1E

FUNCTION: Navigation at the Management Level

COMPETENCE: Determine and allow for compass errors

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Ability to determine and allow for errors of the magnetic and gyro compasses

TASK: Apply Compass Error to Magnetic Bearings

PERFORMANCE CONDITION: On a ship underway, or a full mission ship simulator, or in a navigational laboratory, and given a deviation table.

PERFORMANCE BEHAVIOR: Correctly apply the magnetic compass error to the magnetic bearings of at least two charted objects and plot them on the chart in use.

PERFORMANCE STANDARD:

1. Magnetic compass error is correctly applied to the magnetic bearings.
2. The position is within $\pm .5$ nm of the assessor's position on a chart with a scale of no more than 1:150,000.

A ship's officer who signs below attests that he/she has met the requirements to qualify as a shipboard assessor.

_____	_____	_____
Mariner	SSN No.	Date
_____	_____	_____
Assessor (sign and print name)	License No.	MMD No.
_____	_____	
Position	Vessel or Training Course	

**TABLE A-II/2 Performance Standards for Assessments of Competence
Masters and Chief Mates on Ships of 3000 Gross Tonnage or More (ITC)**

Control Sheet

ASSESSMENT NO. M-2-1F

FUNCTION: Navigation at the Management Level

COMPETENCE: Determine and allow for compass errors

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Ability to determine and allow for errors of the magnetic and gyro compasses

TASK: Apply Compass Error to Gyrocompass Course

PERFORMANCE CONDITION: On a ship underway, a full mission ship simulator, or in a navigational laboratory.

PERFORMANCE BEHAVIOR: Correctly apply the compass error to the course by gyrocompass to make good the intended true course.

PERFORMANCE STANDARD:

1. Compass error is correctly applied to the gyrocompass course.
2. The solution is $\pm 1^\circ$ of the assessor's solution.

A ship's officer who signs below attests that he/she has met the requirements to qualify as a shipboard assessor.

_____	_____	_____
Mariner	SSN No.	Date
_____	_____	_____
Assessor (sign and print name)	License No.	MMD No.
_____	_____	
Position	Vessel or Training Course	

**TABLE A-II/2 Performance Standards for Assessments of Competence
Masters and Chief Mates on Ships of 3000 Gross Tonnage or More (ITC)**

Control Sheet

ASSESSMENT NO. M-3-1A

FUNCTION: Navigation at the Management Level

COMPETENCE: Coordinate search and rescue operations

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: A thorough knowledge of and ability to apply the procedures contained in the *IMO Merchant Ship Search and Rescue Manual (MERSAR)*

TASK: Coordinate Search & Rescue Operations

PERFORMANCE CONDITION: On a ship underway, a full mission simulator, a navigational laboratory or in an approved Coast Guard Search and Rescue course.

PERFORMANCE BEHAVIOR: Plan for the coordination of search and rescue operations.

PERFORMANCE STANDARD:

1. The candidate established communication methods and message texts to be used in search patterns in accordance with MERSAR.
2. The candidate determined the most probable search area by calculating:
 - a) the target probability area when the intended course of the target is known; and,
 - b) the set and drift of a life raft using a set and drift graph of approximate drift values.
3. The candidate determined the type of search pattern and plotted from memory from the point of origin a parallel track and an expanding square search pattern on a chart of appropriate scale.
4. The candidate coordinated at least one other vessel in the search pattern.

A ship's officer who signs below attests that he/she has met the requirements to qualify as a shipboard assessor.

Mariner	SSN No.	Date
Assessor (sign and print name)	License No.	MMD No.
Position	Vessel or Training Course	

**TABLE A-II/2 Performance Standards for Assessments of Competence
Masters and Chief Mates on Ships of 3000 Gross Tonnage or More (ITC)**

Control Sheet

ASSESSMENT NO. M-4-1A

FUNCTION: Navigation at the Management Level

COMPETENCE: Establish watchkeeping arrangements and procedures

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Thorough knowledge of content, application and intent of the International Regulations for Preventing Collisions at Sea

TASK: Identify Vessels by Light Configurations

PERFORMANCE CONDITION: On a ship underway or a simulator.

PERFORMANCE BEHAVIOR: Identify vessels through the observation of their light configurations.

PERFORMANCE STANDARD:

The candidate identified the situation or occupation of 19 out of 20 vessels that have different light configurations.

A ship's officer who signs below attests that he/she has met the requirements to qualify as a shipboard assessor.

_____	_____	_____
Mariner	SSN No.	Date
_____	_____	_____
Assessor (sign and print name)	License No.	MMD No.
_____	_____	
Position	Vessel or Training Course	

**TABLE A-II/2 Performance Standards for Assessments of Competence
Masters and Chief Mates on Ships of 3000 Gross Tonnage or More (ITC)**

Control Sheet

ASSESSMENT NO. M-4-1B

FUNCTION: Navigation at the Management Level

COMPETENCE: Establish watchkeeping arrangements and procedures

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Thorough knowledge of content, application and intent of the International Regulations for Preventing Collisions at Sea

TASK: Identify Vessels by Day Shapes

PERFORMANCE CONDITION: On a ship underway or a simulator.

PERFORMANCE BEHAVIOR: Identify vessels through observation of their day shapes.

PERFORMANCE STANDARD:

The candidate identified the situation or occupation of 9 out of 10 vessels that have different day shapes.

A ship's officer who signs below attests that he/she has met the requirements to qualify as a shipboard assessor.

_____	_____	_____
Mariner	SSN No.	Date
_____	_____	_____
Assessor (sign and print name)	License No.	MMD No.
_____	_____	
Position	Vessel or Training Course	

**TABLE A-II/2 Performance Standards for Assessments of Competence
Masters and Chief Mates on Ships of 3000 Gross Tonnage or More (ITC)**

Control Sheet

ASSESSMENT NO. M-4-1C

FUNCTION: Navigation at the Management Level

COMPETENCE: Establish watchkeeping arrangements and procedures

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Thorough knowledge of content, application and intent of the International Regulations for Preventing Collisions at Sea

TASK: Apply the Rules of the Road to Avoid Collision

PERFORMANCE CONDITION: On a ship underway, a full mission ship simulator, or using approved laboratory equipment, when risk of collision with an approaching meeting vessel exists in good visibility in the open ocean.

PERFORMANCE BEHAVIOR: Apply the rules of the road correctly and maneuver the vessel to avoid the collision, if required.

PERFORMANCE STANDARD:

1. The aspect of the approaching vessel was determined.
2. The situation was identified as a meeting situation.
3. Positive action in ample time was taken in accordance with the steering and sailing rules to achieve a CPA of at least 3 nm.
4. Speed or course changes were large enough to be readily apparent to another vessel observing visually or by radar.

A ship's officer who signs below attests that he/she has met the requirements to qualify as a shipboard assessor.

_____	_____	_____
Mariner	SSN No.	Date
_____	_____	_____
Assessor (sign and print name)	License No.	MMD No.
_____	_____	
Position	Vessel or Training Course	

**TABLE A-II/2 Performance Standards for Assessments of Competence
Masters and Chief Mates on Ships of 3000 Gross Tonnage or More (ITC)**

Control Sheet

ASSESSMENT NO. M-4-2A

FUNCTION: Navigation at the Management Level

COMPETENCE: Establish watchkeeping arrangements and procedures

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Thorough knowledge of the content, application and intent of the Principles to be observed in keeping a navigational watch -- Effective bridge teamwork procedures

TASK: Determine Risk of Collision

PERFORMANCE CONDITION: On a ship underway, a full mission ship simulator, or using approved laboratory equipment, and using a gyro-compass repeater and an azimuth circle, bearing circle, alidade, or other device for taking bearings, and a marine radar or ARPA (which meet IMO performance standards) set on the 12 mile scale and the targets more than 8 miles away.

PERFORMANCE BEHAVIOR: Determine if risk of collision exists with approaching meeting, crossing and overtaking vessels.

PERFORMANCE STANDARD:

1. Two visual bearings of an approaching vessel are taken using an azimuth circle, bearing circle or alidade to determine if the bearing to the approaching vessels is appreciably changing.
2. Each observation is within $\pm 2^\circ$ of the assessor's bearing.
3. Two electronic bearings of an approaching vessel are taken on a radar or an ARPA to determine if the bearing to the approaching vessels are appreciably changing.
4. Each observation is within $\pm 2^\circ$ of the assessor's bearing.

A ship's officer who signs below attests that he/she has met the requirements to qualify as a shipboard assessor.

_____	_____	_____
Mariner	SSN No.	Date
_____	_____	_____
Assessor (sign and print name)	License No.	MMD No.
_____	_____	
Position	Vessel or Training Course	

**TABLE A-II/2 Performance Standards for Assessments of Competence
Masters and Chief Mates on Ships of 3000 Gross Tonnage or More (ITC)**

Control Sheet

ASSESSMENT NO. M-5-1A

FUNCTION: Navigation at the Management Level

COMPETENCE: Maintain safe navigation through the use of radar and ARPA and modern navigation systems to assist command decision-making

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: An appreciation of system errors and thorough understanding of the operational aspects of modern navigational systems, including radar and ARPA.

TASK: Operate ARPA Controls & Functions

PERFORMANCE CONDITION: On a radar/ARPA simulator that meets the standards of 33 CFR 164.38 and other applicable national and international performance standards.

PERFORMANCE BEHAVIOR: Operate the controls to accomplish the following tasks:

- set up and maintain the display;
- manually acquire targets; set CPA/TCPA limits;
- turn on past positions in all display modes;
- display true and relative vectors;
- vary vector length
- designate a dangerous target;
- put ARPA display in true, north up relative motion, and head up;
- the trail maneuver mode with both a speed change and a course change;
- obtain a range and bearing;
- activate the lost target alarm;
- silence the lost target alarm;
- cancel a single target;
- cancel all targets;
- ground stabilize the display;
- sea stabilize the display;
- draw a navigation line;
- set up an auto acquisition zone
- suppress auto acquisition in a certain area;
- turn auto acquisition off and on.

A ship's officer who signs below attests that he/she has met the requirements to qualify as a shipboard assessor.

Mariner	SSN No.	Date
Assessor (sign and print name)	License No.	MMD No.
Position	Vessel or Training Course	

**TABLE A-II/2 Performance Standards for Assessments of Competence
Masters and Chief Mates on Ships of 3000 Gross Tonnage or More (ITC)**

Control Sheet

PERFORMANCE STANDARD:

1. The correct controls to accomplish the task are operated.
2. All controls are operated within 2 seconds.

A ship's officer who signs below attests that he/she has met the requirements to qualify as a shipboard assessor.

_____	_____	_____
Mariner	SSN No.	Date
_____	_____	_____
Assessor (sign and print name)	License No.	MMD No.
_____	_____	
Position	Vessel or Training Course	

**TABLE A-II/2 Performance Standards for Assessments of Competence
Masters and Chief Mates on Ships of 3000 Gross Tonnage or More (ITC)**

Control Sheet

ASSESSMENT NO. M-5-1B

FUNCTION: Navigation at the Management Level

COMPETENCE: Maintain safe navigation through the use of radar and ARPA and modern navigation systems to assist command decision-making

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: An appreciation of system errors and thorough understanding of the operational aspects of modern navigational systems, including radar and ARPA.

TASK: Determine Target Data

PERFORMANCE CONDITION: On a radar/ARPA simulator that meets the standards of 33 CFR 164.38 and other applicable national and international performance standards, with 6 targets displayed on the 12 mile range scale, 3 of which have CPA's of less than 2 nm.

PERFORMANCE BEHAVIOR: Determine the direction and speed of relative motion, true course and speed, CPA and time to CPA for each target with a CPA of less than 2 nm.

PERFORMANCE STANDARD:

1. The student obtained the DRM solutions within 2 minutes of the start time and all solutions were within $\pm 3^\circ$ of the assessor's solution;
2. The student obtained the SRM solutions within 3 minutes of the start time and all solutions were within ± 2 knots of the assessor's solution;
3. The student obtained the CPA solutions within 4 minutes and all solutions were within ± 0.5 nm of the assessor's solution; and,
4. The student obtained the TCPA solutions within 5 minutes and all solutions were within ± 2 minutes of the assessor's solution.
5. The student obtained the true course and speed of the 3 ships with CPA's of less than 2 nm within 6 minutes and all solutions were within ± 2 kts and $\pm 3^\circ$ of the assessor's solution.

A ship's officer who signs below attests that he/she has met the requirements to qualify as a shipboard assessor.

_____	_____	_____
Mariner	SSN No.	Date
_____	_____	_____
Assessor (sign and print name)	License No.	MMD No.
_____	_____	
Position	Vessel or Training Course	

**TABLE A-II/2 Performance Standards for Assessments of Competence
Masters and Chief Mates on Ships of 3000 Gross Tonnage or More (ITC)**

Control Sheet

ASSESSMENT NO. M-5-1C

FUNCTION: Navigation at the Management Level

COMPETENCE: Maintain safe navigation through the use of radar and ARPA and modern navigation systems to assist command decision-making

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: An appreciation of system errors and thorough understanding of the operational aspects of modern navigational systems, including radar and ARPA.

TASK: Parallel Indexing

PERFORMANCE CONDITION: On a radar/ARPA simulator that meets the standards of 33 CFR 164.38 and other applicable national and international performance standards, with multiple targets displayed on the 12 mile range scale, in congested coastal waters, while transiting a traffic separation scheme, in the presence of current, and with at least one course change of not less than 30°.

PERFORMANCE BEHAVIOR: Plan and execute a passage through the area of transit, using parallel index lines to monitor the ship's position.

PERFORMANCE STANDARD:

The candidate:

1. Constructs a parallel index line between the 2 nav marks and through the seaward edge of the known hazard to navigation or land mass;
2. Positions the VRM at a distance named by the assessor from the edge of the parallel index line;
3. Monitors the vessel's movement to determine if the edge of the VRM moves inside the parallel index line; and,
4. Obtains a VRM that does not drift more than 10 % of the VRM distance inside the parallel index line.
5. Observed all the requirements of COLREGS Rule 10.

A ship's officer who signs below attests that he/she has met the requirements to qualify as a shipboard assessor.

_____	_____	_____
Mariner	SSN No.	Date
_____	_____	_____
Assessor (sign and print name)	License No.	MMD No.
_____	_____	
Position	Vessel or Training Course	

**TABLE A-II/2 Performance Standards for Assessments of Competence
Masters and Chief Mates on Ships of 3000 Gross Tonnage or More (ITC)**

Control Sheet

ASSESSMENT NO. M-5-1C

FUNCTION: Navigation at the Management Level

COMPETENCE: Maintain safe navigation through the use of radar and ARPA and modern navigation systems to assist command decision-making

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: An appreciation of system errors and thorough understanding of the operational aspects of modern navigational systems, including radar and ARPA.

TASK: Bridge Resource Management

PERFORMANCE CONDITION: On a radar/ARPA simulator that meets the standards of 33 CFR 164.38 and other applicable national and international performance standards, with multiple targets displayed on the 12 mile range scale, in congested coastal waters, while transiting a traffic separation scheme, in the presence of current, and with a least one course change of not less than 30° in the route, and in reduced visibility.

PERFORMANCE BEHAVIOR: Plan and execute a passage through the area of transit, using the principles of bridge resource management.

PERFORMANCE STANDARD:

The candidate:

1. Assigns BRM roles;
2. Monitors the ship's progress;
3. Communicates clearly and effectively;
4. Controls passage for safe navigation and collision avoidance; and,
5. Ensures all team members use all navigational data available.

A ship's officer who signs below attests that he/she has met the requirements to qualify as a shipboard assessor.

_____	_____	_____
Mariner	SSN No.	Date
_____	_____	_____
Assessor (sign and print name)	License No.	MMD No.
_____	_____	
Position	Vessel or Training Course	

**TABLE A-II/2 Performance Standards for Assessments of Competence
Masters and Chief Mates on Ships of 3000 Gross Tonnage or More (ITC)**

Control Sheet

ASSESSMENT NO. M-6-1A

FUNCTION: Navigation at the Management Level

COMPETENCE: Forecast weather and oceanographic conditions

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Ability to understand and interpret a synoptic chart and to forecast area weather, taking into account local weather conditions and information received by weather fax.

TASK: Weather Forecast (24 Hours)

PERFORMANCE CONDITION: On a ship underway or in a laboratory, given synoptic surface weather charts and 500mb weather charts of the previous 24 hour period, and temperature, pressure and wind readings for the previous 8 hours.

PERFORMANCE BEHAVIOR: Determine the weather to be encountered during the next 24-hour period.

PERFORMANCE STANDARD:

The candidate's determinations of expected wind, sea and weather conditions (types and amount of cloud cover, rain and fog) are correct (when compared with the movement of the systems and fronts during subsequent 24-hour period).

A ship's officer who signs below attests that he/she has met the requirements to qualify as a shipboard assessor.

_____	_____	_____
Mariner	SSN No.	Date
_____	_____	_____
Assessor (sign and print name)	License No.	MMD No.
_____	_____	
Position	Vessel or Training Course	

**TABLE A-II/2 Performance Standards for Assessments of Competence
Masters and Chief Mates on Ships of 3000 Gross Tonnage or More (ITC)**

Control Sheet

ASSESSMENT NO. M-6-2A

FUNCTION: Navigation at the Management Level

COMPETENCE: Forecast weather and oceanographic conditions

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Knowledge of the characteristics of various weather systems, including tropical revolving storms and avoidance of storm centers and the dangerous quadrants.

TASK: Identify Weather Fronts

PERFORMANCE CONDITION: On a ship underway or in a laboratory, given the characteristics of a warm, cold, and occluded front, including the types of clouds found with each front.

PERFORMANCE BEHAVIOR: Correctly identify the fronts.

PERFORMANCE STANDARD:

Within 1 minute, the candidate correctly identified the warm, cold and occluded front.

A ship's officer who signs below attests that he/she has met the requirements to qualify as a shipboard assessor.

_____	_____	_____
Mariner	SSN No.	Date
_____	_____	_____
Assessor (sign and print name)	License No.	MMD No.
_____	_____	
Position	Vessel or Training Course	

**TABLE A-II/2 Performance Standards for Assessments of Competence
Masters and Chief Mates on Ships of 3000 Gross Tonnage or More (ITC)**

Control Sheet

ASSESSMENT NO. M-6-3A

FUNCTION: Navigation at the Management Level

COMPETENCE: Forecast weather and oceanographic conditions

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Ability to calculate tidal conditions.

TASK: Calculate Height of Tide

PERFORMANCE CONDITION: On a ship underway or in a navigation laboratory, given a zone time at a subordinate location.

PERFORMANCE BEHAVIOR: Correctly calculate the height of the tide.

PERFORMANCE STANDARD:

The height of the tide for the designated time is correctly determined.

A ship's officer who signs below attests that he/she has met the requirements to qualify as a shipboard assessor.

_____	_____	_____
Mariner	SSN No.	Date
_____	_____	_____
Assessor (sign and print name)	License No.	MMD No.
_____	_____	
Position	Vessel or Training Course	

**TABLE A-II/2 Performance Standards for Assessments of Competence
Masters and Chief Mates on Ships of 3000 Gross Tonnage or More (ITC)**

Control Sheet

ASSESSMENT NO. M-6-3B

FUNCTION: Navigation at the Management Level

COMPETENCE: Forecast weather and oceanographic conditions

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Ability to calculate tidal conditions.

TASK: Calculate Tidal Current

PERFORMANCE CONDITION: On a ship underway or in a navigation laboratory, given a zone time at a subordinate location.

PERFORMANCE BEHAVIOR: Correctly calculate the current.

PERFORMANCE STANDARD:

The current for the designated time is correctly determined.

A ship's officer who signs below attests that he/she has met the requirements to qualify as a shipboard assessor.

_____	_____	_____
Mariner	SSN No.	Date
_____	_____	_____
Assessor (sign and print name)	License No.	MMD No.
_____	_____	
Position	Vessel or Training Course	

**TABLE A-II/2 Performance Standards for Assessments of Competence
Masters and Chief Mates on Ships of 3000 Gross Tonnage or More (ITC)**

Control Sheet

ASSESSMENT NO. M-6-3C

FUNCTION: Navigation at the Management Level

COMPETENCE: Forecast weather and oceanographic conditions

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Ability to calculate tidal conditions.

TASK: Calculate Time of Height of Tide

PERFORMANCE CONDITION: On a ship underway or in a navigation laboratory, given a zone time at a subordinate location.

PERFORMANCE BEHAVIOR: Correctly calculate the time of the height of the tide.

PERFORMANCE STANDARD:

The time of a designated height of the tide is correctly determined.

A ship's officer who signs below attests that he/she has met the requirements to qualify as a shipboard assessor.

_____	_____	_____
Mariner	SSN No.	Date
_____	_____	_____
Assessor (sign and print name)	License No.	MMD No.
_____	_____	
Position	Vessel or Training Course	

**TABLE A-II/2 Performance Standards for Assessments of Competence
Masters and Chief Mates on Ships of 3000 Gross Tonnage or More (ITC)**

Control Sheet

ASSESSMENT NO. M-7-1A

FUNCTION: Navigation at the Management Level

COMPETENCE: Respond to navigational emergencies

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Action to be taken if grounding is imminent, and after grounding.

TASK: Actions After Grounding

PERFORMANCE CONDITION: In a practical course of instruction, or on a full mission ship simulator, or a ship at sea, during a drill simulation of a grounded vessel.

PERFORMANCE BEHAVIOR: Order the appropriate steps to minimize grounding damage.

PERFORMANCE STANDARD:

The candidate ordered:

1. All watertight doors closed, the hull checked, the bilges and tanks sounded and all spaces below the waterline visually inspected where possible;
2. The transfer of ballast and fuel as necessary;
3. Notification of the radio room/GMDSS station, satellite terminals and other automatic distress transmitters of the ship's position as necessary;
4. Communications with the engine room established and the sea suction switched if necessary;
5. The OICNW to determine the type of bottom on which the vessel grounded;
6. The Chief Mate to determine the threat of oil pollution.

A ship's officer who signs below attests that he/she has met the requirements to qualify as a shipboard assessor.

Mariner	SSN No.	Date
Assessor (sign and print name)	License No.	MMD No.
Position	Vessel or Training Course	

**TABLE A-II/2 Performance Standards for Assessments of Competence
Masters and Chief Mates on Ships of 3000 Gross Tonnage or More (ITC)**

Control Sheet

ASSESSMENT NO. M-7-2A

FUNCTION: Navigation at the Management Level

COMPETENCE: Respond to navigational emergencies

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Re-floating a grounded ship with and without assistance.

TASK: Re-Floating a Grounded Ship

PERFORMANCE CONDITION: In a practical course of instruction, or on a full mission ship simulator, or a ship at sea, during a drill simulation of a grounded vessel.

PERFORMANCE BEHAVIOR: Order the appropriate steps to prepare for re-floating a grounded vessel.

PERFORMANCE STANDARD:

The candidate ordered:

1. The depth of water around vessel to be determined;
2. The effects of tide and current;
3. The time and height of the next high tide;
4. The best placement of assist boats (if available);
5. Constant radio communications with assist boats maintained;
6. The proper day and night signals displayed;
7. Continuous update of weather forecasts;
8. The structural integrity of the hull determined;
9. The ship's stability and stresses aground to be determined;
10. The effect of deballasting or cargo removal are determined; and
11. The placement of the crew away from towing lines once pulling commences.

A ship's officer who signs below attests that he/she has met the requirements to qualify as a shipboard assessor.

Mariner	SSN No.	Date
Assessor (sign and print name)	License No.	MMD No.
Position	Vessel or Training Course	

**TABLE A-II/2 Performance Standards for Assessments of Competence
Masters and Chief Mates on Ships of 3000 Gross Tonnage or More (ITC)**

Control Sheet

ASSESSMENT NO. M-7-3A

FUNCTION: Navigation at the Management Level

COMPETENCE: Respond to navigational emergencies

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Action to be taken if collision is imminent and following a collision or impairment of the watertight integrity of the hull by any cause.

TASK: Prepare for Collision

PERFORMANCE CONDITION: In a practical course of instruction, or on a full mission ship simulator, or a ship at sea, during a drill simulation of an imminent collision.

PERFORMANCE BEHAVIOR: Order the appropriate steps to prepare for a collision.

PERFORMANCE STANDARD:

1. Close all water tight doors;
2. Broadcast appropriate radio messages;
3. Sound danger, maneuvering, and ship's emergency signals, as required;
4. Alert engine room; and,
5. Maneuver the ship to lesson the force of impact.

A ship's officer who signs below attests that he/she has met the requirements to qualify as a shipboard assessor.

_____	_____	_____
Mariner	SSN No.	Date
_____	_____	_____
Assessor (sign and print name)	License No.	MMD No.
_____	_____	
Position	Vessel or Training Course	

**TABLE A-II/2 Performance Standards for Assessments of Competence
Masters and Chief Mates on Ships of 3000 Gross Tonnage or More (ITC)**

Control Sheet

ASSESSMENT NO. M-7-3B

FUNCTION: Navigation at the Management Level

COMPETENCE: Respond to navigational emergencies

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Action to be taken if collision is imminent and following a collision or impairment of the watertight integrity of the hull by any cause.

TASK: Actions After a Collision

PERFORMANCE CONDITION: In a practical course of instruction, or on a full mission ship simulator, or a ship at sea, during a drill simulation of the ship after a collision.

PERFORMANCE BEHAVIOR: Order the appropriate steps to maximize the safety of crew and vessel.

PERFORMANCE STANDARD:

1. Assess damage and determine if vessel has lost watertight integrity;
2. Determine the ship's stability and hull stresses;
3. Check for injuries to personnel;
4. Determine if threat of oil pollution exists;
5. Maintain communication with other vessel and render assistance if possible;
6. Monitor the weather; and,
7. Maneuver the vessel to minimize the effect of further damage.

A ship's officer who signs below attests that he/she has met the requirements to qualify as a shipboard assessor.

Mariner	SSN No.	Date
Assessor (sign and print name)	License No.	MMD No.
Position	Vessel or Training Course	

**TABLE A-II/2 Performance Standards for Assessments of Competence
Masters and Chief Mates on Ships of 3000 Gross Tonnage or More (ITC)**

Control Sheet

ASSESSMENT NO. M-7-4A

FUNCTION: Navigation at the Management Level

COMPETENCE: Respond to navigational emergencies

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Emergency steering.

TASK: Emergency Steering

PERFORMANCE CONDITION: In a practical course of instruction, or on a full mission ship simulator, or a ship at sea, during a drill simulation of the ship suffering a steering casualty that can not be corrected by switching steering motors.

PERFORMANCE BEHAVIOR: Order the correct actions to operate the emergency steering system.

PERFORMANCE STANDARD:

The candidate ordered:

1. The steering motor switched to the motor not in use;
2. Crewmen to aft steering room;
3. Communications with the steering engine room established;
4. Steering control switched from the bridge to the steering engine room; and,
5. Appropriate helm orders or courses to be steered.

A ship's officer who signs below attests that he/she has met the requirements to qualify as a shipboard assessor.

_____	_____	_____
Mariner	SSN No.	Date
_____	_____	_____
Assessor (sign and print name)	License No.	MMD No.
_____	_____	
Position	Vessel or Training Course	

**TABLE A-II/2 Performance Standards for Assessments of Competence
Masters and Chief Mates on Ships of 3000 Gross Tonnage or More (ITC)**

Control Sheet

ASSESSMENT NO. M-7-5A

FUNCTION: Navigation at the Management Level

COMPETENCE: Respond to navigational emergencies

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Emergency towing arrangements and towing procedures.

TASK: Emergency Towing

PERFORMANCE CONDITION: In a practical course of instruction, or on a full mission ship simulator, or a ship at sea, during a drill simulation of the ship suffering a engine casualty.

PERFORMANCE BEHAVIOR: Order the correct actions to arrange the vessel for emergency towing.

PERFORMANCE STANDARD:

1. Order the anchor and chain lowered to the water (or into the water as directed by the towing vessel);
2. Make sure the chain will not pay out until towing vessel requests additional chain; and,
3. Lower a messenger to the water line in case it is needed.

A ship's officer who signs below attests that he/she has met the requirements to qualify as a shipboard assessor.

_____	_____	_____
Mariner	SSN No.	Date
_____	_____	_____
Assessor (sign and print name)	License No.	MMD No.
_____	_____	
Position	Vessel or Training Course	

**TABLE A-II/2 Performance Standards for Assessments of Competence
Masters and Chief Mates on Ships of 3000 Gross Tonnage or More (ITC)**

Control Sheet

ASSESSMENT NO. M-8-1A

FUNCTION: Navigation at the Management Level

COMPETENCE: Maneuver and handle a ship in all conditions

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Maneuvers when approaching pilot stations and embarking or disembarking pilots, with due regard to weather, tide, head reach and stopping distances.

TASK: Maneuver to Embark/Disembark a Pilot

PERFORMANCE CONDITION: At sea, on a ship of at least 3,000 gross tons (ITC), or in a full mission ship simulator using the math model of a ship of at least 3,000 gross tons (ITC), when approaching a pilot station or in a simulator exercise approaching a pilot station, with other ships maneuvering to and from the station.

PERFORMANCE BEHAVIOR: Maneuver the vessel for embarkation or disembarkation of a pilot.

PERFORMANCE STANDARD:

1. Notify the engine room the time at which the vessel will begin maneuvering;
2. Determine the direction and force of the wind and sea;
3. Determine which side the pilot boat wishes to use;
4. Determine the heading needed to make a lee;
5. Approach the pilot station after determining how the presence of other traffic maneuvering to or from the pilot station affects your safe approach;
6. Maneuver and slow the vessel to make a lee and allow the pilot boat to safely maintain a position at the pilot ladder.
7. Make sure the pilot is aboard, and the pilot boat away before resuming normal maneuvering.

A ship's officer who signs below attests that he/she has met the requirements to qualify as a shipboard assessor.

_____	_____	_____
Mariner	SSN No.	Date
_____	_____	_____
Assessor (sign and print name)	License No.	MMD No.
_____	_____	
Position	Vessel or Training Course	

**TABLE A-II/2 Performance Standards for Assessments of Competence
Masters and Chief Mates on Ships of 3000 Gross Tonnage or More (ITC)**

Control Sheet

ASSESSMENT NO. M-8-2A

FUNCTION: Navigation at the Management Level

COMPETENCE: Maneuver and handle a ship in all conditions

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Handling ship in rivers, estuaries and restricted waters, having regard to the effects of current, wind and restricted water on helm response.

TASK: Transit Restricted Waters

PERFORMANCE CONDITION: At sea, on a ship of at least 3,000 gross tons (ITC), or in a full mission ship simulator using the math model of a ship of at least 3,000 gross tons, in an exercise of at least 30 minutes, transiting restricted waters.

PERFORMANCE BEHAVIOR: Pilot the vessel.

PERFORMANCE STANDARD:

The candidate:

1. Determined the intended track of the vessel;
2. Determined the force and direction of the wind and current;
3. Set courses to counter the effect of wind and current to maintain the ship on the intended track;
4. Used the proper speed and rudder orders to maintain the ship on the intended track (in the deepest water) during turns around points and bends in the river.

A ship's officer who signs below attests that he/she has met the requirements to qualify as a shipboard assessor.

_____	_____	_____
Mariner	SSN No.	Date
_____	_____	_____
Assessor (sign and print name)	License No.	MMD No.
_____	_____	
Position	Vessel or Training Course	

**TABLE A-II/2 Performance Standards for Assessments of Competence
Masters and Chief Mates on Ships of 3000 Gross Tonnage or More (ITC)**

Control Sheet

ASSESSMENT NO. M-8-3A

FUNCTION: Navigation at the Management Level

COMPETENCE: Maneuver and handle a ship in all conditions

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Application of constant rate of turn techniques.

TASK: Constant Rate of Turn Techniques

PERFORMANCE CONDITION: At sea, on a ship of at least 3,000 gross tons (ITC), or in a full mission ship simulator using the math model of a ship of at least 3,000 gross tons (ITC), in an exercise with a turn of least 50°.

PERFORMANCE BEHAVIOR: Complete the turn while maintaining a constant rate of turn throughout the maneuver.

PERFORMANCE STANDARD:

The candidate:

1. Determined the radius of the turn;
2. Determine the rate of turn to maintain a constant;
3. Applied the correct amount of rudder to maintain the rate of turn with no more than two adjustments of less than 5° each.

A ship's officer who signs below attests that he/she has met the requirements to qualify as a shipboard assessor.

_____	_____	_____
Mariner	SSN No.	Date
_____	_____	_____
Assessor (sign and print name)	License No.	MMD No.
_____	_____	
Position	Vessel or Training Course	

**TABLE A-II/2 Performance Standards for Assessments of Competence
Masters and Chief Mates on Ships of 3000 Gross Tonnage or More (ITC)**

Control Sheet

ASSESSMENT NO. M-8-4A

FUNCTION: Navigation at the Management Level

COMPETENCE: Maneuver and handle a ship in all conditions

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Maneuvering in shallow water, including the reduction in under keel clearance caused by squat, rolling and pitching.

TASK: Shallow Water Effects -- Squat

PERFORMANCE CONDITION: At sea, on a ship of at least 3,000 gross tons (ITC), or in a full mission ship simulator using the math model of a ship of at least 3,000 gross tons.

PERFORMANCE BEHAVIOR: Set the speed to prevent the vessel from touching bottom.

PERFORMANCE STANDARD:

The candidate:

1. Determined the under keel clearance;
2. Determined the maximum speed allowable to keep the vessel from squatting and touching bottom; and,
3. Set the speed of the vessel to keep the ship on an even trim on straight courses and during turns.

A ship's officer who signs below attests that he/she has met the requirements to qualify as a shipboard assessor.

_____	_____	_____
Mariner	SSN No.	Date
_____	_____	_____
Assessor (sign and print name)	License No.	MMD No.
_____	_____	
Position	Vessel or Training Course	

**TABLE A-II/2 Performance Standards for Assessments of Competence
Masters and Chief Mates on Ships of 3000 Gross Tonnage or More (ITC)**

Control Sheet

ASSESSMENT NO. M-8-5A

FUNCTION: Navigation at the Management Level

COMPETENCE: Maneuver and handle a ship in all conditions

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Interaction between passing ships and between own ship and nearby banks (canal effect).

TASK: Shallow Water Effects – Passing Vessels

PERFORMANCE CONDITION: At sea, on a ship of at least 3,000 gross tons (ITC), or in a full mission ship simulator using the math model of a ship of at least 3,000 gross tons, while conning a deep draft vessel in a narrow channel, and meeting a vessel on the opposite course.

PERFORMANCE BEHAVIOR: Pass the other vessel close aboard.

PERFORMANCE STANDARD:

The candidate will:

1. Order the rudder hard left before the bow waves of each vessels intersect;
2. Shift the rudder after the bows pass;
3. When the sterns clear, shift the rudder and than steady on the original course.

A ship's officer who signs below attests that he/she has met the requirements to qualify as a shipboard assessor.

_____	_____	_____
Mariner	SSN No.	Date
_____	_____	_____
Assessor (sign and print name)	License No.	MMD No.
_____	_____	
Position	Vessel or Training Course	

**TABLE A-II/2 Performance Standards for Assessments of Competence
Masters and Chief Mates on Ships of 3000 Gross Tonnage or More (ITC)**

Control Sheet

ASSESSMENT NO. M-8-6A

FUNCTION: Navigation at the Management Level

COMPETENCE: Maneuver and handle a ship in all conditions

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Berthing and unberthing under various conditions of wind, tide and current with and without tugs.

TASK: Vessel Docking – Starboard Side To

PERFORMANCE CONDITION: At sea, on a ship of at least 3,000 gross tons, or in a full mission ship simulator using the math model of a ship of at least 3,000 gross tons, in clear visibility, with a wind speed of less than 15 knots and a current of less than 3 knots, on a single-screw vessel with a right hand propeller.

PERFORMANCE BEHAVIOR: Demonstrate docking a vessel starboard side to a pier.

PERFORMANCE STANDARD:

1. Planning
 - a) Determine the depth of water at the berth for the state of the tide;
 - b) Determine the strength and direction of the current for the route to the berth and at berth;
 - c) Determine the direction and velocity of the wind; and
 - d) Determine the appropriate courses and maneuvers for the approach to the berth.
2. Approach
 - a) Approach the dock at the angle required by the wind and current, and at a speed that allows the vessel to maintain its heading and be stopped before alliding;
3. Docking
 - a) The engines and spring line, as necessary, were used to stop the ship or move the vessel into final position.
 - b) The mooring lines were properly run;
 - c) All slack lines were taken in until the vessel lay secure alongside.

A ship's officer who signs below attests that he/she has met the requirements to qualify as a shipboard assessor.

Mariner	SSN No.	Date
Assessor (sign and print name)	License No.	MMD No.
Position	Vessel or Training Course	

**TABLE A-II/2 Performance Standards for Assessments of Competence
Masters and Chief Mates on Ships of 3000 Gross Tonnage or More (ITC)**

Control Sheet

ASSESSMENT NO. M-8-6B

FUNCTION: Navigation at the Management Level

COMPETENCE: Maneuver and handle a ship in all conditions

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Berthing and unberthing under various conditions of wind, tide and current with and without tugs.

TASK: Vessel Docking – Port Side To

PERFORMANCE CONDITION: At sea, on a ship of at least 3,000 gross tons, or in a full mission ship simulator using the math model of a ship of at least 3,000 gross tons, in clear visibility, with a wind speed of less than 15 knots and a current of less than 3 knots, on a single-screw vessel with a right hand propeller.

PERFORMANCE BEHAVIOR: Demonstrate docking a vessel starboard side to a pier.

PERFORMANCE STANDARD:

2. Planning

- e) Determine the depth of water at the berth for the state of the tide;
- f) Determine the strength and direction of the current for the route to the berth and at berth;
- g) Determine the direction and velocity of the wind; and
- h) Determine the appropriate courses and maneuvers for the approach to the berth.

4. Approach

- b) Approach the dock at the angle required by the wind and current, and at a speed that allows the vessel to maintain its heading and be stopped before alliding;

5. Docking

- c) The engines and spring line, as necessary, were used to stop the ship or move the vessel into final position.
- d) The mooring lines were properly run;
- c) All slack lines were taken in until the vessel lay secure alongside.

A ship's officer who signs below attests that he/she has met the requirements to qualify as a shipboard assessor.

_____	_____	_____
Mariner	SSN No.	Date
_____	_____	_____
Assessor (sign and print name)	License No.	MMD No.
_____	_____	
Position	Vessel or Training Course	

**TABLE A-II/2 Performance Standards for Assessments of Competence
Masters and Chief Mates on Ships of 3000 Gross Tonnage or More (ITC)**

Control Sheet

ASSESSMENT NO. M-8-7A

FUNCTION: Navigation at the Management Level

COMPETENCE: Maneuver and handle a ship in all conditions

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Ship and tug interaction.

TASK: Turn Vessel w. Tug Assistance

PERFORMANCE CONDITION: At sea, on a ship of at least 3,000 gross tons (ITC), or in a full mission ship simulator using the math model of a ship of at least 3,000 gross tons.

PERFORMANCE BEHAVIOR: Turn the ship short around using a tug forward and a tug aft.

PERFORMANCE STANDARD:

The candidate will complete a 180° turn in 2 ship lengths.

A ship's officer who signs below attests that he/she has met the requirements to qualify as a shipboard assessor.

_____	_____	_____
Mariner	SSN No.	Date
_____	_____	_____
Assessor (sign and print name)	License No.	MMD No.
_____	_____	
Position	Vessel or Training Course	

**TABLE A-II/2 Performance Standards for Assessments of Competence
Masters and Chief Mates on Ships of 3000 Gross Tonnage or More (ITC)**

Control Sheet

ASSESSMENT NO. M-8-8A

FUNCTION: Navigation at the Management Level

COMPETENCE: Maneuver and handle a ship in all conditions

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Choice of anchorage; anchoring with one or two anchors in limited anchorages and factors involved in determining the length of anchor cable to be used.

TASK: Anchoring

PERFORMANCE CONDITION: At sea, on a ship of at least 3,000 gross tons (ITC), or in a full mission ship simulator using the math model of a ship of at least 3,000 gross tons, in clear visibility, with a wind speed of less than 15 knots and a current of less than 3 knots.

PERFORMANCE BEHAVIOR: Demonstrate anchoring the vessel.

PERFORMANCE STANDARD:

1. The Anchor plan included determining:

- a) depth of water;
- b) type of bottom;
- c) wind and current;
- d) bottom obstructions;
- e) room to swing;
- f) the place to anchor;
- g) courses and maneuvers to the anchor site;
- h) the desired final heading and,
- i) the expected weather for the time at anchor.

2. Approach

- a) If possible, the ship did not pass to windward or up current of any anchored vessel or hazard to navigation; or the ship had enough way to pass safely any anchored ships or hazards to navigation.

3. Placement

- a) The anchor site was approached slowly;
- b) The ship's position was checked by natural landmarks and aids;
- c) the ship's engines were put astern to stop the ship in position on the approximate desired final heading;

A ship's officer who signs below attests that he/she has met the requirements to qualify as a shipboard assessor.

_____	_____	_____
Mariner	SSN No.	Date
_____	_____	_____
Assessor (sign and print name)	License No.	MMD No.
_____	_____	
Position	Vessel or Training Course	

**TABLE A-II/2 Performance Standards for Assessments of Competence
Masters and Chief Mates on Ships of 3000 Gross Tonnage or More (ITC)**

Control Sheet

- d) the anchor was dropped as the vessel began sternway;
 - a) the ship was backed slowly;
 - b) a length of chain 5-7 times the water depth was paid out slowly; and
4. Fetching up
- a) the ship was allowed to fetch up on the chain
 - b) the ship rode on a final heading that was within 40° of the desired final heading.

A ship's officer who signs below attests that he/she has met the requirements to qualify as a shipboard assessor.

Mariner	SSN No.	Date
Assessor (sign and print name)	License No.	MMD No.
Position	Vessel or Training Course	

**TABLE A-II/2 Performance Standards for Assessments of Competence
Masters and Chief Mates on Ships of 3000 Gross Tonnage or More (ITC)**

Control Sheet

ASSESSMENT NO. M-8-1A

FUNCTION: Navigation at the Management Level

COMPETENCE: Maneuver and handle a ship in all conditions

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Dragging anchor; clearing fouled anchors.

TASK: Dragging Anchor

PERFORMANCE CONDITION: At sea, on a ship of at least 3,000 gross tons (ITC), or in a full mission ship simulator using the math model of a ship of at least 3,000 gross tons; with the vessel at anchor.

PERFORMANCE BEHAVIOR: Take all precautions to determine if the vessel is dragging anchor.

PERFORMANCE STANDARD:

The candidate will:

1. Set the GPS anchor watch function;
2. Set the VRM and EBL of the ARPA or radar on prominent fixed objects; and,
3. Take frequent visual bearings on fixed objects approximately 90° apart.

A ship's officer who signs below attests that he/she has met the requirements to qualify as a shipboard assessor.

_____	_____	_____
Mariner	SSN No.	Date
_____	_____	_____
Assessor (sign and print name)	License No.	MMD No.
_____	_____	
Position	Vessel or Training Course	

**TABLE A-II/2 Performance Standards for Assessments of Competence
Masters and Chief Mates on Ships of 3000 Gross Tonnage or More (ITC)**

Control Sheet

ASSESSMENT NO. M-9-1A

FUNCTION: Navigation at the Management Level

COMPETENCE: Plan and ensure safe loading, stowage, securing, care during the voyage and unloading of cargoes

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Use of stability and trim diagrams and stress-calculating equipment, including automatic data-based (ADB) equipment, and knowledge of loading cargoes and ballasting in order to keep hull stress within acceptable limits.

TASK: Determine GM -- Arrival

PERFORMANCE CONDITION: On a ship, or in a stability laboratory, given Coast Guard approved stability software for a container ship of at least 10,000 gross registered tons, and during a loading of 500 containers and a discharge of least 700 containers.

PERFORMANCE BEHAVIOR: Determine the arrival GM at the next port of call.

PERFORMANCE STANDARD:

The candidate will properly enter the following data:

1. The loading and discharge data;
2. Potable fresh water and ballast;
3. All stores taken aboard;
4. All fuel data;
5. All free surface; and,
6. All changes due to fuel ,water and stores consumed.

A ship's officer who signs below attests that he/she has met the requirements to qualify as a shipboard assessor.

_____	_____	_____
Mariner	SSN No.	Date
_____	_____	_____
Assessor (sign and print name)	License No.	MMD No.
_____	_____	
Position	Vessel or Training Course	

**TABLE A-II/2 Performance Standards for Assessments of Competence
Masters and Chief Mates on Ships of 3000 Gross Tonnage or More (ITC)**

Control Sheet

ASSESSMENT NO. M-9-1B

FUNCTION: Navigation at the Management Level

COMPETENCE: Plan and ensure safe loading, stowage, securing, care during the voyage and unloading of cargoes

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Use of stability and trim diagrams and stress-calculating equipment, including automatic data-based (ADB) equipment, and knowledge of loading cargoes and ballasting in order to keep hull stress within acceptable limits.

TASK: Determine GM – Flooded Engine Room

PERFORMANCE CONDITION: On a ship, or in a stability laboratory, given Coast Guard approved stability software for a container ship of at least 10,000 gross registered tons, with a loaded voyage condition entered, and given a simulation of a flooded engine room.

PERFORMANCE BEHAVIOR: Determine the GM.

PERFORMANCE STANDARD:

The candidate correctly completed the determination in 5 minutes or less.

A ship's officer who signs below attests that he/she has met the requirements to qualify as a shipboard assessor.

_____	_____	_____
Mariner	SSN No.	Date
_____	_____	_____
Assessor (sign and print name)	License No.	MMD No.
_____	_____	
Position	Vessel or Training Course	

**TABLE A-II/2 Performance Standards for Assessments of Competence
Masters and Chief Mates on Ships of 3000 Gross Tonnage or More (ITC)**

Control Sheet

ASSESSMENT NO. M-9-1C

FUNCTION: Navigation at the Management Level

COMPETENCE: Plan and ensure safe loading, stowage, securing, care during the voyage and unloading of cargoes

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Use of stability and trim diagrams and stress-calculating equipment, including automatic data-based (ADB) equipment, and knowledge of loading cargoes and ballasting in order to keep hull stress within acceptable limits.

TASK: Determine GM – Flooded Hatch

PERFORMANCE CONDITION: On a ship, or in a stability laboratory, given Coast Guard approved stability software for a container ship of at least 10,000 gross registered tons, with a loaded voyage condition entered, and given a simulation of a flooded hatch.

PERFORMANCE BEHAVIOR: Determine the GM.

PERFORMANCE STANDARD:

The candidate correctly completed the determination in 5 minutes or less.

A ship's officer who signs below attests that he/she has met the requirements to qualify as a shipboard assessor.

_____	_____	_____
Mariner	SSN No.	Date
_____	_____	_____
Assessor (sign and print name)	License No.	MMD No.
_____	_____	
Position	Vessel or Training Course	

**TABLE A-II/2 Performance Standards for Assessments of Competence
Masters and Chief Mates on Ships of 3000 Gross Tonnage or More (ITC)**

Control Sheet

ASSESSMENT NO. M-9-1D

FUNCTION: Navigation at the Management Level

COMPETENCE: Plan and ensure safe loading, stowage, securing, care during the voyage and unloading of cargoes

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Use of stability and trim diagrams and stress-calculating equipment, including automatic data-based (ADB) equipment, and knowledge of loading cargoes and ballasting in order to keep hull stress within acceptable limits.

TASK: Determine Sheering Forces and Bending Moment

PERFORMANCE CONDITION: On a ship, or in a stability laboratory, given Coast Guard approved stability software for a ship of at least 10,000 gross registered tons, that is loaded to between 1/3 and 1/2 of its capacity and given a simulation of cargo loading of adjacent cargo spaces.

PERFORMANCE BEHAVIOR: Determine the sheering forces and bending moments during the loading.

PERFORMANCE STANDARD:

The candidate:

1. Properly entered the data for the cargo and its location;
2. Determined sheering forces and bending moments in 10 minutes or less.

A ship's officer who signs below attests that he/she has met the requirements to qualify as a shipboard assessor.

_____	_____	_____
Mariner	SSN No.	Date
_____	_____	_____
Assessor (sign and print name)	License No.	MMD No.
_____	_____	
Position	Vessel or Training Course	

Alternative Scheme For Mariners who apply after 01 February 2002

1. Because mariners may not have sufficient time to complete professional requirements set forth in enclosure (1), the following scheme has been developed to aid those mariners. This alternative scheme only affects the requirements for the training and assessments set forth by STCW 95 and provides adequate time for mariners to complete all required assessments, with little interruption to their sailing career. The plan is two-fold and will be effective until February 2003. These new requirements can be found below. No other exceptions will be allowed. Effective 1 February 2003, the alternative scheme will no longer be accepted.

2. The first phase pertains to those mariners who apply between 1 February 02 and 1 June 02. During this time frame, those mariners who apply for a license as master or chief mate any gross tons and an STCW certification, must complete only the training and assessments listed below. These lists are in lieu of the list of training in Enclosure (1) and its attachments, and the list of assessments in enclosures (3) and (4).

a. Training:

Advanced Navigation

- Adaptive Steering Systems
- GPS & DGPS
- ECDIS
- Navigational Software

b. Advanced Shiphandling

- Restricted Waters
- Docking and Undocking
- Anchoring
- Using Tugs
- Response to Shiphandling Emergencies
- Heavy Weather Maneuvering
- SAR

b. List of Assessments

Number	Task
M-1-1A	Create a Navigation Plan
M-1-1B	Position Reporting Systems
M-1-2A	Latitude by Ex-Meridian (Sun)
M-1-2B	Latitude by Meridian Transit (Other Than Sun)
M-1-2C	Star Identification
M-1-2D	Star Selection
M-1-2E	LOP From High Altitude Sight
M-1-2G	Great Circle Sailing
M-1-2H	Mercator Sailing – Course & Distance

M-1-2I	Mercator Sailing – Final Position
M-1-4A	GPS – Waypoint Entry
M-2-1A	Determine Magnetic Compass Deviation
M-2-1B	Construct a deviation table
M-2-1C	Amplitude of the Sun
M-2-1D	Apply Compass Error to Magnetic Course
M-1-2E	Apply Compass Error to Magnetic Bearings
M-2-1F	Apply Compass Error to Gyrocompass Course
M-3-1A	Coordinate Search & Rescue Operations
M-4-1C	Apply the Rules of the Road to Avoid Collision
M-6-1A	Weather Forecast (24 Hours)
M-6-2A	Identify Weather Fronts
M-7-1A	Actions After a Grounding
M-7-2A	Re-Floating a Grounded Ship
M-7-3A	Prepare for Collision
M-7-3B	Actions after a Collision
M-7-4A	Emergency Steering
M-7-5A	Emergency Towing
M-8-1A	Maneuver to Embark/Disembark a Pilot
M-8-2A	Transit Restricted Waters
M-8-3A	Constant Rate of Turn Techniques
M-8-4A	Shallow Water Effects -- Squat
M-8-5A	Shallow Water Effects – Passing Vessels
M-8-6A	Vessel Docking – Starboard Side To
M-8-6B	Vessel Docking – Port Side To
M-8-7A	Turn Vessel w. Tug Assistance
M-8-8A	Anchoring
M-8-9A	Dragging Anchor
M-9-1A	Determine GM – Arrival
M-9-1B	Determine GM – Flooded Engine Room
M-9-1C	Determine GM – Flooded Hatch
M-9-1D	Determine Sheering Forces and Bending Moment

3. The second phase applies to those mariners who apply between 1 June 2002 and 1 February 2003. In addition to the training requirements of paragraph 2 above, these mariners must also complete the training listed below and applicants must meet **all** of the assessment requirements in enclosure (3) and (4).

Advanced Stability

- Trim
- Stress
- Bending Moments
- Damage Stability
- Use of Stability Software

Advanced Meteorology

- Weather Systems
- Ocean Systems
- Synoptic Charts
 - a. Surface
 - b. 500 milibar
- Forecasting
- Routing Software Program